





DIRECTORY
OF THE
IRON AND STEEL
WORKS

OF THE
UNITED STATES AND
CANADA

TWENTIETH EDITION



r TS301.A6

20th ed.

Directory of the iron and
steel works of the United
States and Canada

New York, N.Y. : The
Institute,

AMERICAN IRON AND STEEL INSTITUTE

40 RECTOR ST., NEW YORK

1926

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PRINTED BY
THE DEVINNE-HALLENBECK CO., INC.
NEW YORK

17 1928

LETTER OF TRANSMITTAL

HON. ELBERT H. GARY, PRESIDENT,

American Iron and Steel Institute, New York City.

DEAR SIR: Herewith is submitted a new edition of the Directory of Iron and Steel Works of the United States and Canada. This is a revision of the nineteenth edition published by the American Iron and Steel Institute in 1920 and a continuation of similar works published from time to time by the American Iron and Steel Association of Philadelphia.

As in previous editions, the present edition of the Directory of Iron and Steel Works includes all companies, firms and individuals engaged in the manufacture of pig iron, steel ingots, steel castings, hot rolled iron and steel products, charcoal blooms, and tinplates and terne plates.

In order to present this information and to keep the size of the book within reasonable limits, a system of abbreviations has been adopted. In general the word can be readily identified in its abbreviated form; where any doubt arises reference should be made to the Table of Abbreviations provided for that purpose.

The method of arrangement adopted in editions of the Directory previous to that of 1916, which had been found to be cumbersome, inconvenient and productive of frequent duplications and repetitions, has been entirely discarded and the companies are treated in one alphabetic list. Nevertheless, the advantages of the former geographic arrangement have been retained by giving supplementary lists of blast furnaces, steel works, steel casting plants and rolling mills, arranged by States and localities in which the plants are situated. A system of abbreviations used in connection with these lists shows the kinds of pig iron made, the process by which steel ingots and castings are made and whether such products are for the use of the company or for sale. Supplementary lists also give the names of the companies manufacturing leading rolled products, galvanized sheets,

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tinplates and terne plates, wrought pipe, seamless steel tubes, cut and wire nails.

Historical connection with the previous edition of the Directory has been provided for by the insertion, in the alphabetic list of companies, of notes describing the changes in plant ownership, changes in corporate title, and the dismantlement of plants. The length of time since the last revision and the consequent large number of such changes have made these notes very numerous; and in order to distinguish more significant matter from these notes, the titles of active companies have been given in the alphabetic list in display type.

HOWARD H. COOK,

Assistant Secretary.

NEW YORK, MARCH 15, 1926.

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TABLE OF ABBREVIATIONS

A.	Auditor.	G.S.M.	General Sales Manager.
A.A.	Assistant Auditor.	G.P.A.	General Purchasing Agent.
A.G.M.	Assistant General Manager.	G.W.M.	General Works Manager.
A.G.S.	Assistant General Superintendent.	h.	high (2-h., 3-h., etc., two-high and three-high rolling mills respectively.)
A.G.S.M.	Assistant General Sales Manager.	ham.	hammer or hammers.
A.M.	Assistant Manager.	heat.	heating.
A.O.H.	acid open hearth.	H.P.	horse power.
A.P.	Assistant to President.	inc.	incorporated.
A.S.	Assistant Superintendent.	lb.	pound.
A.Sec.	Assistant Secretary.	lbs.	pounds.
A.T.	Assistant Treasurer.	Ltd.	Limited.
auth.	authorized.	M.	Manager.
Ave.	Avenue.	mach.	machine or machines.
Bess.	Bessemer.	M.D.	Managing Director.
bit.	bituminous.	M.S.	Manager of Sales.
bldg.	Building.	nat.	natural.
blt.	built.	O.H.	open hearth.
Blvd.	Boulevard.	orig.	originally.
B.O.H.	basic open hearth.	org.	organized
Bros.	Brothers.	P.	President.
bu.	bushels.	p.	page.
C.	Comptroller or Controller.	pp.	pages.
cap.	capacity.	P.A.	Purchasing Agent.
C.E.	Chief Engineer.	port.	portable.
cfm.	cubic feet per minute.	pref.	preferred stock.
Ch.	Chairman.	press.	pressure.
Co.	Company.	prod.	producer or producers.
com.	common stock.	Prop.	Proprietor.
comb.	combination.	reblt.	rebuilt.
Conn.	Connellsville. (coke)	regen.	regenerative.
cont.	continuous.	reheat.	reheating.
Corpn.	Corporation.	rel.	relined.
cum.	cumulative.	remod.	remodeled.
d.	door (1-d., 2-d., etc., with one door, with two doors, etc.)	R.R.	railroad.
Dept.	department.	Ry.	railway.
dia.	diameter.	S.	Superintendent.
eng.	engine or engines.	S.A.	Sales Agent.
enl.	enlarged.	Sec.	Secretary.
est.	established.	S.F.	Superintendent of Blast Furnaces.
Ex.Com.	Executive Committee.	S.M.	Sales Manager.
f.o.	first put in operation.	St.	Street.
F.S.	Blast Furnace Superintendent.	st.	in plant descriptions, stand or stands. (2-st., 3-st., etc., with two stands, with three stands, etc.)
fur.	furnace or furnaces.	s.t.	single turn.
galv.	galvanizing.	S.W.	Superintendent of Works.
G.F.A.	General Freight Agent.	T.	Treasurer.
G.M.	General Manager.	V.Ch.	Vice-Chairman.
gran.	granulating.	V.P.	Vice President.
G.S.	General Superintendent.	'	Feet.
G.S.A.	General Sales Agent.	"	Inches.

The ordinary abbreviations for States, Provinces (Canada), and months are used but are not included in above table.

ABRASIVE COMPANY OF CANADA, Ltd., Hamilton, Ont., Canada.

Works at Burlington St. & Harvey Lane, Hamilton, Ont.: Electric furnace plant for manufacture of abrasives; make 17 to 18% ferro-silicon as a by-product. (D. A. Brebner, Ltd. to Oct., 1919).
Product: ferro-silicon, annual cap., 250 tons.

ACME STEEL CO., 2840 Archer Ave., Chicago, Ill.

Inc. 1880 in Illinois as Acme Steel Goods Co., named changed to Acme Steel Co. in 1925. Capital stock: com., par value \$25, issued \$4,271,775; bonds, \$1,440,000.

James E. MacMurray, Ch.; R. H. Norton, P.; F. C. Gifford, V. P. & G. S. M.; Donald MacMurray, V. P. & Sec.; T. W. Lux, A.; Hiley H. Onstott, P. A.; at Chicago. C. S. Traer, T. & Works M. at Riverdale, Ill.; C. M. MacChesney, Works M. at Chicago, Ill.

Sales offices:

Atlanta, Ga., 101 Stewart Ave.
Boston, Mass., 146 Summer St.
Los Angeles, Calif., 300 Avery St.
Montreal, P. Q., 435 St. Paul St. West.
New Orleans, La., 610 United Fruit Co. Bldg.
New York, 253 36th St., Brooklyn (export).
San Francisco, Calif., 200 Davis St.
Seattle, Wash., 114 Railroad Ave.
Vancouver, B. C., 848 Cambie St.
Winnipeg, Man., McArthur Bldg.

The company owns and operates plants at Chicago and Riverdale, Ill., for manufacture of cold rolled strip steel.

Archer Avenue Plant, Chicago: 3 trains of 3 stands each 10" cold rolls, supplement cold rolling dept. of Riverdale Plant. Punch press and specialty departments. Product: light cold rolled strip steel, annual cap., 2,200 tons.

Riverdale Plant, Riverdale, Ill.; blt. 1918-19, f. o. June 1, 1919; 1 Morgan cont. billet heat. fur., fuel prod. gas; Morgan cont. hoop mill with 12" 2-h. 7-st. roughing, 10" 2-h. 1-st. intermediate edging, 10" 2-h. 5-st. finishing; 64 stands cold rolls comprising 15 four-stand trains (one 16", one 12", and thirteen 10") and 4 single stands (one 16", two 12", one 10"); 3 cont. and 2 tub pickling mach.; 5 box annealing fur. coal-fired. Product: hoops, bands and hot rolled strip, annual cap., 65,000 tons; cold rolled strip and hoop steel, 60,000 tons.

Acme Steel Co. (The), Akron, Ohio, went out of business in 1921. Equipment and machinery sold.

ACME STEEL CO., Glassmere, Pa.

Inc. 1922 in Delaware. Capital stock: com., par value \$50, auth. \$200,000, issued \$130,000; bonds \$238,000.

S. M. Hazlett, P.; F. N. Christy, V. P.; T. O. Jones, V. P.; at Tarentum. J. M. Griffith, Sec., T., G. M. & P. A.; J. A. Nixon, A.; Robert Findon, G. S.; F. V. Flynn, G. S. M.; at Glassmere.

Works at Glassmere: blt. 1920, f. o. Oct. 8, 1920; one Moore Lectromelt electric furnace (5-ton).

Product: steel castings (up to 5-ton) for sale, annual cap., 750 tons.

Acme Steel & Malleable Iron Works, Inc., Buffalo, N. Y., abandoned the manufacture of steel castings in 1920.

Acme Steel Goods Co., Chicago, Ill., name changed to Acme Steel Co.

Adams, W. T., Corinth, Miss. Former Birmingham Steel & Iron Works, Birmingham, Ala., with 1 B. O. H. fur. (10-ton) long idle, was dismantled in 1925.

ADAMSON MACHINE CO. (The), 730 Carroll St., Akron, Ohio.

Inc. Dec., 1907 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$230,300.

Alexander Adamson, P. & G. M.; W. E. Slabaugh, V. P.; R. B. Koontz, Sec., T., G. S. M., & P. A.; L. D. Wolfspurger, G. S. M.

Sales offices:

Cleveland, Ohio, E. E. Lenarz.

Pittsburgh, Pa., W. C. Edgar.

Company manufactures rubber machinery, moulds and general machinery and operates gray iron and steel foundry in connection therewith for own use and for jobbing.

Works at 730 Carroll St., Akron: steel foundry, blt. 1913, f. o. July 7, 1913; 2 Tropenas converters (2-ton) idle; 1 A. O. H. fur. (10-ton) added 1917, f. o. Nov. 20, 1917; fuel, oil. Gray iron foundry for castings up to 15-ton for own use and for sale, annual cap., 4,000 tons.

Product: steel castings for own use and for sale, annual cap., 3,000 tons acid open-hearth castings.

ADIRONDACK STEEL FOUNDRIES CORPN., Watervliet, N. Y.

Inc. Aug. 1, 1919, in New York; reorg. Nov. 19, 1924. Capital stock: com., no par value, auth. 5,000 shares, issued 1,659 shares; prior pref. 7% cum. auth. \$175,000, issued \$157,770; pref. auth. \$350,000, issued \$331,750; bonds \$350,000.

C. W. Sherman, P.; F. W. Sherman, V. P. & G. M.; C. A. Davis, Sec. & T.

Works at Watervliet: blt. 1920; f. o. July 13, 1920; 1 A. O. H. fur. (20-ton) fuel, oil; 1 Moore electric fur. (3-ton). First O. H. steel Oct., 1921 (basic); fur. changed to acid lining in 1923.

Product: steel castings for sale, annual cap., 21,000 tons (15,000 A. O. H., 6,000 electric). Alloy steel castings (nickel, chrome, vanadium).

ADRIAN FURNACE CO., Dubois, Pa.

Inc. Oct. 27, 1904, in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$600,000.

L. W. Robinson, P.; B. M. Clark, V. P.; at Indiana, Pa. F. G. St. Clair, Sec., G. M. & P. A.; C. H. Emerick, G. S. M.; at Dubois, Pa.

Brand: Adrian (foundry pig iron).

Adrian Furnace, Dubois, Pa.: 1 stack, 80' x 19' 6"; blt. 1902-03; f. o. Aug. 10, 1903; relined, Nov., 1924; 4 Julian Kennedy stoves 80' x 22'; 3 steam blowing eng. (22,000 cfm.); 10 B. & W. water-tube boilers, 2,500 H. P.; 1 slag gran. pit, annual cap., 109,500 tons. Reynoldsville coke; Lake ore.

Product: foundry pig iron, annual cap., 75,000 tons.

Ætna Iron & Steel Corporation, Ætna, Ind. Projected sheet mill (8-mill) plant. After some construction work had been done The Peoples Trust Co., Muncie, Ind., was appointed receiver in September, 1920, and the project was abandoned.

Ætna Nut Co. (The), Southington, Conn. Plant damaged by fire Feb., 1923. Later in same year, stockholders voted to sell assets and liquidate. Plant sold to Ætna Steel & Iron Co., July 2, 1924.

ÆTNA STEEL & IRON CO., Inc., High St., Southington, Conn.

Inc. Nov. 8, 1923, in Connecticut. Capital stock: com., no par value, auth. and issued 4,000 shares; pref. 8% cum. auth. \$150,000, issued \$51,000; bonds \$35,000.

Seth L. Martin, P. & G. M., at 50 Congress St., Boston, Mass. Joseph Maddocks, 1 V. P., at 1582 Chapel St., New Haven, Conn. Charles A. Haines, 2 V. P., at Melrose, Mass. Paul B. Kennedy, Sec. & T., at Southington, Conn.

Works at 67 High St., Southington; blt. 1872-73; 3 busheling fur.; 1 Burden squeezer; 8 heat. fur. (two 1-d., two 2-d., four 3-d.); 18" 2-h. 2-st. billet, 10" 3-h. 5-st. and 8" 3-h. 5-st. merchant mills. Fuel, coal. Two 5-ton toe calk presses. (Ætna Nut Co. to July 2, 1924.)

Product; billets, merchant bars, horseshoe toe and heel calks; annual cap., 2,000 tons billets, 15,000 tons merchant bars.

Ætna Steel Casting Co. (The), Cleveland, Ohio. Company in bankruptcy in 1921. Works at 2284 Scranton Road, Cleveland, Ohio, sold to The Ohio Steel Castings Co. in Sept., 1921. Works at 28th St. and Globe Ave., Lorain, Ohio, sold to The Lorain Steel Foundry Co., Dec. 15, 1921.

Alabama Company (The), Birmingham, Ala. with blast furnaces at Gadsden, Ala. (Etowah Furnaces, 2 stacks) and Ironaton, Ala. (Clifton Furnaces, 2 stacks) together with iron ore, coal and limestone holdings was sold on Dec. 1, 1924 to Sloss-Sheffield Steel & Iron Co., which company took over The Alabama Co. under the terms of sale as of October 1, 1924.

ALAN WOOD IRON & STEEL CO., Widener Bldg., Philadelphia, Pa.

Inc. 1911 in Pennsylvania. Capital stock: auth. \$9,000,000; com., par value \$100, issued \$6,285,000; pref. 8% cum. issued \$675,700; bonds \$3,450,000.

Howard Wood, Jr., P.; Ledyard Heckscher, V. P.; Alan D. Wood, V. P., T. & P. A.; John W. Logan, Sec.; Charles O. Hadly, G. S. M.; at Widener Bldg., Philadelphia. J. H. Woodhead, C.; D. P. Bailey, A.; H. C. Thomas, G. M.; at Conshohocken, Pa.

Sales offices:

Boston, Mass., 141 Milk St.

Dallas, Texas, Santa Fe Bldg.

Los Angeles, Calif., San Fernando Bldg.

New York, N. Y., 50 Church St.

San Francisco, Calif., 444 Market St.

Seattle, Wash., Dexter-Horton Bldg.

Brands: Swede (pig iron), A. W. (billets, plates, sheets).

Product: basic and foundry pig iron; steel ingots, alloy steel ingots (nickel, chrome, vanadium); billets, blooms and slabs, forging billets, sheared plates; rolled steel floor plates; blue annealed sheets.

Swede Furnaces, Swedeland, Pa.: 3 stacks, No. 1, 81' x 17' 6", blt. 1850, last rebt. 1905, relined 1922; No. 2, 85' x 20' 6 1/2", blt. 1912, relined 1920; No. 3, 85' 5" x 22' 7 1/4", blt. 1917-18, relined 1922; 12 stoves (3 Roberts 80' x 20', 1 Kennedy 90' x 20', 4 Roberts 100' x 21', 4 Kennedy 110' x 24'); 5 steam blowing eng. and 2 turbo blowers, 220,000 cfm., 14 to 30 lbs. pressure; 27 water-tube boilers, 10,800 H. P. furnish electric power also to Ivy Rock and Schuylkill Iron Works; 2 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust and fine ore, annual cap., 125,000 tons. By-product coke: foreign and Lake ores. Own one-half interest in Rainey-Wood Coke Co.; 110 Koppers coke ovens at Swedeland, by-product recovery and Koppers benzol plant, annual cap., 550,000 net tons coke, 2,900,000 gals. light oil. Foundry for pig moulds, annual cap., 400 tons.

Product: basic and foundry pig iron, annual cap., 530,700 tons.

Ivy Rock Plant, Ivy Rock, Pa.: blt. 1902-03; 12 B. O. H. fur. (nine 75-ton, three 85-ton) fuel, prod. gas, coke oven gas and tar, 42 gas prod. (6 Morgan, 36 Swindell); one 300-ton metal mixer; six 4-hole soaking pits, fuel prod. gas and coke oven gas; six 4-d. regen. heat fur., fuel coke oven gas; 35" 2-h. 1-st. blooming, 30" x 84" 3-h

roughing and 30" x 84" 3-h. finishing tandem sheared plate mills. Roll sheared plates, 1" to 12 gauge to 76" wide and 480" long. Product: ingots, annual cap., 529,000 tons; slabs, blooms and billets, 300,000 tons; sheared plates, 125,000 tons.

Schuylkill Iron Works, Conshohocken, Pa. (includes former J. Wood Dept. blt. 1832): blt. 1857; five 2-d. heat. fur. coal-fired, eight 3-d. heat. fur. pulv. coal-fired; 1 gas-fired cont. heat. fur.; 7 jobbing plate mills with 2-h. breakdown and 3-h. finishing stands (one 24" x 48", two 24" x 54", two 26" x 60", two 26" x 72"); 1 train of 2 stands cold rolls 22" x 42" and 24" x 48"; 2 box annealing fur.; 11 blue annealing fur.; 1 Mesta pickling mach. Roll blue annealed sheets 3-16" to 16 gauge, to 66" wide and 192" long.

Product: blue annealed sheets, annual cap., 111,250 tons.

ALASKA TREADWELL GOLD MINING CO., Mills Bldg., San Francisco, Calif.

Works at Treadwell, Alaska: one 2-ton Heroult electric fur.

Product: steel castings and gray iron castings for own use, annual cap., 300 tons steel castings, 300 tons gray iron castings.

ALGOMA STEEL CORPORATION, Sault Ste. Marie, Canada.

Inc. April, 1912, in Ontario, Canada. Capital stock: com. \$15,000,000; pref. 7% cum. auth. \$15,000,000, issued \$10,000,000; bonds \$21,259,373. The entire capital stock is owned by Lake Superior Corp.

W. C. Franz, P.; James Hawson, V. P. (Finance); J. D. Jones, V. P. & G. M. (Operations); Ernest W. Shell, T.; E. Carey, C.; James W. Gemmell, A.; J. D. Gray, G. S. M.; S. V. McLeod, P. A.; at Sault Ste. Marie. Alex Taylor, Sec.; at 1428 Bank of Hamilton Bldg., Toronto.

Sales offices:

Montreal, G. A. Irwin, 606 McGill Bldg.

Toronto, Rex E. Nicholson, 1428 Bank of Hamilton Bldg.

Brand: "Algoma."

Product: bessemer, basic, malleable and foundry pig iron; ingots, slabs, blooms, billets; rails, structural shapes up to 15" beams and channels, splice bars, tie plates, merchant bars; iron castings; brass, bronze and copper castings; coke and sulphate of ammonia.

Algoma Steel Works, Sault Ste. Marie:

Blast Furnaces: 4 stacks: No. 1, blt. 1901-03, f. o. Mar. 6, 1905, 70' x 17'; No. 2, blt. 1901-03, f. o. Oct. 17, 1904, 80' x 17'; No. 3, blt. 1909-11, f. o. April 13, 1911, 90' x 22' 6"; No. 4, blt. 1917-18, f. o. Mar. 23, 1918, 85' x 18' 6"; seven 2-pass stoves, 70' x 18', 4 Kennedy stoves, 90' x 22', 1 Roberts & 3 McKee stoves 90' x 18'; nine 2,200 H. P. 4 cylinder twin tandem gas engines, 5 with blowing tubs, 4 direct-connected to 1,500 K. W. generators for furnishing power to docks and mills; 4 steam blowing engines;

two 1,500 H. P. turbo-blowers; 3 double-strand casting machines. Molten metal to mixers. By-product coke: Michipicoten and Lake ore. Product: bessemer, basic, malleable and foundry pig iron, annual cap., 500,000 tons.

By-product coke plant: 110 Koppers by-product ovens, 50 Wilputte by-product ovens, annual cap., 625,000 net tons of coke. By-product recovery plant and sulphuric acid plant, annual cap., 30,000 tons tar, 8,000 tons sulphate of ammonia.

Open Hearth dept.: 11 stationary B. O. H. fur. (eight 50-ton, three 75-ton); mixer (300-ton); first O. H. steel made May 3, 1907. Annual cap., 420,000 tons ingots.

Duplex Dept.: One bessemer converter (20-ton); 4 cupolas; mixer (200-ton); one 150-ton tilting fur. Annual cap., 180,000 tons ingots.

Rolling Mill Dept.: six 4-hole soaking pits; 3 gas-fired regen. reheat. fur.; 2 cont. heat. fur.; 35" 2-h. 1-st. reversing blooming; 32" 2-h. 1-st. reversing blooming and billet; rail and structural mill with 23" 3-h. 1-st. roughing, 23" 3-h. 1-st. intermediate, 28" 3-h. 1-st. finishing; 18" 3-h. 4-st. and 12" 3-h. 5-st. merchant mills. Rail finishing shop. Rail fastening dept. for finishing tie plates, splice bars and continuous joints. Annual cap.; 445,000 tons of rails and structural shapes, 55,000 tons merchant bars, angles, rail fastenings, etc.

Auxiliary Depts.: Machine shop, foundry, forge, boiler shop, frog and switch shop, pattern shop, electrical shop, car repair shop. Yard railways with 34 miles track, 15 standard and 8 narrow gauge locomotives, 14 locomotive cranes.

Iron ore properties: The company owns the Helen and the Magpie iron mines on the Michipicoten Range located about 11 miles north of Michipicoten Harbor where the company owns an ore dock. Ore roasting plant at the Magpie mine. The company owns several other undeveloped iron ore deposits.

Limestone properties: the company owns valuable limestone properties on the Canadian Islands, east of Sault Ste. Marie, and also owns the entire capital stock of the Fiborn Limestone Co., which owns and operates quarries at Fiborn and Ozark in upper Michigan.

Coal properties: The company owns the entire capital stock of the Cannelton Coal and Coke Co., which controls 5,000 acres of coal in Kanawha Co., W. Va., with four mines producing 4,500 tons per day. The company also owns the Lake Superior Coal Co., which controls 2,000 acres of Pocohontas coal in McDowell County, W. Va., with present daily production of about 1,500 tons.

ALLEGHANY ORE & IRON CO., Buena Vista, Va.

Inc. Mar. 4, 1902 in Virginia. Capital stock (all owned by Lukens Steel Co.): com., par value \$100, auth. \$2,000,000, issued \$1,225,000; pref. 7% non-cum. auth. \$1,000,000, issued \$875,000.

H. B. Spackman, P.; C. F. Humpton, Sec.; at Coatesville, Pa.
R. S. Lackey, T. & G. S. M.; F. F. Musgrove, P. A.; at Buena Vista, Va.

Sales agents: Sell through brokers.

Brand: Alleghany (pig iron).

Product: foundry and special car wheel pig iron; total annual cap., 120,000 tons.

Iron Gate Furnace, Iron Gate, Va.: 1 stack, 65' x 13' 11", blt. 1891-2, rebt. 1900; 4 stoves (1 Foote 65' x 16', 3 Hartman 70' x 16'); 2 steam blowing eng. (1 Weimer, 1 Todd), 24,000 cfm., 9 lbs. rated press.; 7 boilers (1 water-tube, 2 tubular, 4 flue) 1,050 H. P. New River coke: Oriskany brown ore. Product: foundry pig iron; annual cap., 30,000 tons.

Buena Vista Furnace, Buena Vista, Va.: 1 stack, 70' x 16', blt. 1889-90, rebt. 1903, 1922; 4 stoves (1 Foote 65' x 18', 3 Whitwell 80' x 18' remod. 1922); 3 steam blowing eng. (2 Southwark, 1 Mackintosh-Hemphill), 30,000 cfm., 10 lbs. rated press.; 7 water-tube boilers, 1,800 H. P. Slag brick plant (type, Sutcliffe, Speakman); annual cap., 15,000 tons. New River and Pocahontas coke: Oriskany brown ore. Product: foundry and special car wheel pig iron; annual cap., 90,000 tons.

The company owns and operates Oriskany brown limonite ore mines at Oriskany, Va.; annual cap., 100,000 tons. Part owner of Liberty Lime & Stone Co., Rocky Point, Va., with limestone quarry at Rocky Point.

ALLEGHENY STEEL CO., Brackenridge, Pa.

Inc. May 11, 1905 in Pennsylvania.

Harry E. Sheldon, P.; R. D. Campbell, V. P. & T.; James O. Carr, V. P.; C. C. Henderson, V. P.; L. W. Hicks, V. P.; F. H. Stephens, Sec. & A.; W. F. Detwiler, G. M.; O. B. Lindquist, C. E.; P. F. Voight, Jr., G. S. M.; E. L. McGraw, P. A.

Sales offices:

Chicago, Ill., R. M. Allen, Peoples Gas Bldg.

Detroit, Mich., J. Allan Armstrong, General Motors Bldg.

New York, N. Y., Chandler & Floyd, Inc., 501 Fifth Ave.

Allegheny Steel Works, Brackenridge, Pa.: blt. 1900-01; 8 B. O. H. fur. (one 90-ton, four 80-ton, one 65-ton, one 55-ton, one 45-ton); 1 A. O. H. fur. (30-ton); fuel in O. H. nat. gas; 3 electric melting fur., 1 Induction (6-ton), 2 Heroult (one 6-ton, one 1-ton); four 4-hole soaking pits; fuel, prod. gas; 2 Wellman-Seaver-Morgan gas prod.; 34" 2-h. 1-st. reversing blooming; 28" 3-h. 1-st. sheet bar; 28" 3-h. 1-st. skelp; 12" 3-h. 4-st. and 12" 2-h. 1-st. merchant mill; 30" x 84" 3-h. jobbing plate mill; 21 sheet mills (27" x 36", 27" x 40", 27" x 44", 30" x 44", 30" x 52", 30" x 60"); 2 trains cold rolls 5 stands and 10 stands (26" x 50" to 26" x 66"); box annealing fur.; pickling machines; galvanizing pot; 2 lap-weld fur.; 2" O. D.

to 6" O. D. boiler tubes; forging presses. Gray iron foundry for own use; annual cap., 18,000 tons.

Product: steel ingots and castings for own use and for sale, alloy steel ingots and castings (nickel, chrome, tungsten); sheet and tin-plate bars, sheared plates, blue annealed sheets, black sheets, electrical sheets, hot and cold stampings, boiler tubes, annual cap., 222,000 tons ingots (210,000 basic, 12,000 acid), 10,000 tons A. O. H. castings (50-lbs. to 30-tons), 150,000 tons sheet bars, 120,000 net tons black sheets, 36,000 tons blue annealed sheets, 36,000 tons skelp, 12,000 tons boiler tubes, 8,000 tons pressed steel and hot and cold stampings.

Allentown Iron Mfg. Co., Allentown, Pa. The 2 charcoal blast furnaces of this company built 1909-10 at Allentown were dismantled in May, 1923.

Alliance Steel Co., 20 West Jackson Blvd., Chicago, Ill., leased with option to purchase, the rolling mill owned by Central Steel Co., situated at Ottawa, Ill. Plant was never put in operation by Alliance Steel Co., and option to purchase was not exercised. Plant reverted to Central Steel Co., Fisher Bldg., Chicago, Ill.

Allied Steel Castings Co., 12,000 South Racine Ave., Chicago, Ill., subsidiary company of Chicago Malleable Castings Co., see under Chicago Malleable Castings Co.

ALLIS-CHALMERS MANUFACTURING CO., Milwaukee, Wis.

Otto H. Falk, P.; Max W. Babb, V. P.; W. A. Thompson, Sec. & C.; R. Dill, T.; William Watson, Works M.; A. E. Bateson, P. A.

Sales offices in all principal cities.

Company operates plants at West Allis, Wis., and Norwood, Ohio, for the manufacture of engines, steam and water turbines, cement mill, flour mill, saw mill, crushing, hoisting, mining and metallurgical, power transmission, pumping, timber treating and preserving machinery, etc.; electrical apparatus, generators, motors, transformers, mill drives, switchboards, etc.; tractors, air compressors; condensers, forgings. Operates gray iron foundry at West Allis Works, annual cap., 25,000 tons of gray iron, 5,000 tons air furnace, 1,000 tons brass and bronze castings. Also steel foundry, described below, at Norwood Works.

Norwood Works, Norwood (near Cincinnati), Ohio; steel foundry blt. 1920, f. o. Sept., 1920; 1 Moore electric fur. (3-ton). Gray iron and brass foundry for own use.

Product: steel castings for own use only, annual cap., 2,000 tons.

ALLOY STEEL & METALS CO., P. O. Box 840 Arcade Station, Los Angeles, Calif.

Inc. Nov., 1919 in California. Capital stock: com., par value \$100, auth. \$250,000, issued \$113,050.

A. J. Morse, P.; A. W. Warr, Sec.; B. J. Quinn, T. & G. M.; V. Harrell, A.

Works at 55th & Alameda Sts., Los Angeles: blt. 1923, f. o. July, 1923; 2 electric fur. (3-ton); annealing and heat treating fur.

Product: steel castings for sale, annual cap., 1,800 tons; alloy steel castings (chrome, manganese); castings for oil well tools, rock crushers, etc.

Alloy Steel Works, Ltd., Toronto, Canada, went into liquidation in 1919. The electric furnace at its plant, 400 Front St. East, Toronto, was sold and removed in 1920 to the plant of Carbon & Alloy Steels Co., Ltd., Niagara Falls, Ont., Canada, and used for experimental purposes.

ALTOONA IRON CO. (The), 9th Ave. & 30th St., Altoona, Pa.

Inc. July 10, 1873 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$150,000.

Joseph D. Findley, P.; Russell McCauley, Sec.; T. G. M., G. S. M. & P. A.; William W. Grove, G. S.

Brand: Altoona.

Works at 9th Ave. & 30th St., Altoona: f. o. Apr., 1873; 11 double and 6 single puddling fur.; 1 rotary squeezer; five 2-d. coal-fired heat. fur.; 18" 3-h. 1-st. muck; 16" 3-h. 3-st. bar; two 8" 3-h. 4-st. guide mills; 1 steam hammer (3-ton). Fuel, bit. coal.

Product: muck bar, annual cap., 24,000 tons; refined bar iron, 24,000 tons; staybolt iron, tie checks, brake shoe key iron, brake lever and switch plate iron.

AMERICAN BRIDGE CO., Frick Bldg., Pittsburgh, Pa.

Inc. April 14, 1900 in New Jersey. Subsidiary of United States Steel Corporation.

August Ziesing, P.; Richmond F. Ball, Sec.; F. E. Wiley, T.; Frank B. Thompson, A.; W. G. A. Millar, P. A.; at Pittsburgh. Joshua A. Hatfield, V. P.; at 71 Broadway, New York.

Sales offices:

Baltimore, H. A. Warren, Continental Bldg.

Boston, S. P. Waldron, 120 Franklin St.

Chicago, F. J. Llewellyn, 208 South La Salle St.

Cincinnati, H. M. Knapp, Union Trust Bldg.

Cleveland, F. D. Rideout, Rockefeller Bldg.

Detroit, J. C. Munn, Buhl Bldg.

Duluth, W. G. Zimmermann, Wolvin Bldg.

Denver, Elmo V. Smith, First National Bank Bldg.

Minneapolis, Floyd E. Cates, 7th Ave. & 2nd St., S. E.

New York, A. L. Davis, 71 Broadway.

Philadelphia, Charles Rieder, Jr., Widener Bldg.

Pittsburgh, L. J. Affelder, Frick Bldg.

Salt Lake City, Elmo V. Smith, Walker Bank Bldg.

St. Louis, E. E. Green, Liberty Central Trust Bldg.

Selling agents: United States Steel Products Co. for all export business, 30 Church St., New York; for Pacific Coast business, Rialto Bldg., San Francisco.

Brand: "Pencoyd" (structural shapes).

Product: manufacture and erect railroad and highway bridges, steel buildings, barges, turntables, electric furnaces, etc.; steel ingots and castings; channel bars, deck beams, tees, angles, flats, rounds, bar and bridge steel, shafting, steel blooms, eye-bars, general forgings, iron castings, etc.; bolts, nuts, rivets, washers, spikes, etc.

Ambridge Plant, Ambridge, Pa. Bridge works for steel bridges, buildings and other structures, and yard for building steel barges and steamboat hulls (162,000 net tons). Forge shops for the production of forged steel eye-bars, 2" to 16" wide (18,000 net tons) and other forgings (1,200 net tons). Steel foundry: blt. 1904-05, f. o. May 16, 1905; one 15-ton A. O. H. fur. Fuel, prod. gas. Product: steel castings, annual cap., 8,600 tons. Gray iron foundry (5,400 tons); brass foundry (50 tons). Bolt, nut and rivet shop (10,000 net tons).

American Plant, 40th St. & Stewart Ave., Chicago.

Bridge Works (27,600 net tons); forge shop (2,400 net tons).

Canton Plant, Dueber Ave. & Bridge St., Canton, Ohio.

Bridge Works (9,600 net tons).

Detroit Plant, Beecher Ave. & M. C. R.R., Detroit, dismantled 1925.

Edge Moor Plant, Edge Moor, Del., dismantled 1925.

Elmira Plant, Elmira, N. Y.

Bridge Works (48,000 net tons).

Gary Plant, Gary, Ind.

Bridge Works (123,600 net tons).

Lassig Plant, Clybourn & Wrightwood Aves., Chicago.

Bridge Works (36,000 net tons).

Minneapolis Plant, 7th Ave. & 2nd St., S. E., Minneapolis.

Bridge Works (12,000 net tons).

Pencoyd Plant, Pencoyd, Pa.: rolling mill, blt. 1852; steel works, blt. 1887; 11 B. O. H. fur. (seven 30-ton, four 35-ton); four 2-hole soaking pits; 2 cont. heat. fur.; 3 reheat. fur. (one 7-d., one 6-d., one 5-d.); 36" 2-h. 1-st. blooming, 28" 2-h. 1-st. roughing; 23" 3-h. 2-st. finishing; 23" 3-h. 1-st. roughing and 23" 3-h. 2-st. finishing; 12" 3-h. 4-st. and 12" 2-h. 1-st. finishing; 5 steam ham. (500 to 2,500-lb.); 3 hydraulic forging presses (one 75-ton, two 300-ton). Fuel, prod. gas and coal. Bridge Works (93,000 net tons). Gray iron, steel and brass foundry. Product: 240,000 tons steel ingots,

3,200 tons steel castings, 2,700 tons gray iron castings, 80 tons brass castings, 222,000 tons structural shapes.

St. Louis Plant, 1014 So. Vandeventer Ave., St. Louis.

Bridge Works (9,600 net tons).

Shiffler Plant, 48th St. & Allegheny Valley Ry., Pittsburgh, abandoned 1925, to be dismantled.

Shiffler Tower Plant, 51st St. & Allegheny Valley Ry., Pittsburgh.

Makes plain and galvanized steel towers and poles for electrical transmission (25,000 net tons).

Toledo Plant, East Broadway & L. S. & M. S. Ry., Toledo, Ohio.

Bridge Works (31,200 net tons).

Trenton Plant, foot of Warren St., Trenton, N. J.

Bridge Works and yard for building steel barges (60,000 net tons).

Total annual capacity: 240,000 tons basic open hearth steel ingots, 11,800 tons open hearth steel castings (8,600 acid, 3,200 basic); 8,100 tons gray iron castings, 130 tons brass castings; 222,000 tons structural shapes (190,000 tons heavy, 32,000 tons light shapes); 669,200 net tons of fabricated structural work and forgings.

AMERICAN CAR & FOUNDRY CO., 165 Broadway, New York, N. Y.

Inc. Feb. 20, 1899 in New Jersey. Capital stock: com., no par value, auth. and issued 600,000 shares; pref. 7% non cum. auth. and issued \$30,000,000.

W. H. Woodin, P.; W. M. Hager, A. P.; W. C. Dickerman, V. P.; J. M. Buick, V. P.; W. F. Kingston, V. P.; G. R. Scanland, V. P.; H. C. Wick, Sec.; S. A. Mallette, T.; E. S. Block, A.; W. J. Harris, P. A.; at 165 Broadway, New York. H. W. Wolff, V. P.; at Chicago, Ill. N. A. Doyle, V. P.; at St. Louis, Mo.

Sales offices: at New York, Buffalo, Chicago, Pittsburgh, St. Louis, St. Paul, and all company plants.

Product: all kinds of wooden, steel-underframe and all-steel freight and passenger cars; chilled cast iron wheels for locomotives and cars; mine car wheels; gray iron, malleable and brass castings; rolled and hammered iron and steel car axles; all kinds of railroad and machinery forgings; bolts, nuts and rivets; merchant bars, axles, shafts, links and pins.

The company operates carbuilding works at Berwick, Bloomsburg and Milton, Pa.; Buffalo and Depew, N. Y.; Detroit, Mich.; Chicago and Madison, Ill.; Huntington, W. Va.; Indianapolis, Jeffersonville and Terre Haute, Ind.; Memphis, Tenn.; St. Charles and St. Louis, Mo.; and Wilmington, Del. Two rolling mills are operated at Berwick, Pa. and St. Louis, Mo. Rolling mill formerly operated at Detroit was dismantled in 1923, and rolling mill at Madison, Ill. was destroyed by fire in Dec. 1920 and abandoned.

Berwick Plant, Berwick, Pa.; blt. 1872; 4 single and 4 double puddling fur.; 2 rotary squeezers; 7 coal-fired heat. fur. (two

3-d., five 4-d.); 18" 3-h. 2-st. muck; 18" 3-h. 4-st. bar; 12" 3-h. 5-st. guide; 9" 3-h. 5-st. guide. Product: muck bar, annual cap., 24,000 tons; merchant bars, 48,000 tons.

St. Louis Rolling Mill, 133 West Barton St., St. Louis, Mo.; blt. 1858; 1 double puddling fur.; 2 sand-bottom busheling fur.; 1 rotary squeezer; six 4-d. coal-fired reverb. heat. fur.; 18" 3-h. 2-st. muck; 18" 3-h. 3-st. bar; 10" 3-h. 5-st. guide; one 2-d. heat. fur. for forge; 1 single frame (300 lb.) and 1 double frame (3,000-lb.) steam hammers. Fuel, bit. coal. Product: muck and scrap bar, annual cap., 45,000 tons; merchant bars, 40,000 tons.

American Chain Co., Bridgeport, Conn. Hayden Rolling Mill, Columbus, Ohio, acquired from Standard Chain Co. Jan. 1, 1917, was dismantled in 1920. American Chain Co. owns controlling interest in Highland Iron & Steel Co., Page Steel & Wire Co. and Reading Steel Casting Co.

American Clay Machinery Co., Bucyrus, Ohio, with works at Bucyrus and Willoughby, Ohio, for manufacture of clay-working and sand lime brick machinery, including a steel foundry at Bucyrus Works, was acquired in May, 1920 by the Hadfield-Penfield Steel Co.

American Electrical Works, Phillipsdale, R. I.

Works at Phillipsdale: equipped to roll copper rods, etc., and manufacture copper wire; occasionally roll iron or steel wire rods and hoops.

AMERICAN FOUNDRY & MACHINE CO., 870 South 4th St., West, Salt Lake City, Utah.

Inc. 1913 in Utah. Capital stock: com. \$200,000; bonds \$84,000. Simon Rosenblatt, P.; Morris Rosenblatt, V. P.; J. M. Margetts, Sec.; P. A. Mattingly, G. M.

Works at 870 South 4th St., West, Salt Lake City: 1 Rennerfelt electric fur. (3-ton); f. o. Dec., 1916. Gray iron (3,000 tons) and brass (50 tons) foundry.

Product: steel castings for sale; annual cap., 2,500 tons. Castings for railroads, mines, mills and smelters, alloy steel castings (chrome, nickel).

AMERICAN HOIST & DERRICK CO., St. Paul, Minn.

W. O. Washburn and F. J. Johnson, Managing Partners.

Sales offices:

Birmingham, Ala., 1505 North 31st St.

Chicago, Ill., 1113 Fisher Bldg.

New Orleans, La., 712 Union St.

New York, N. Y., 50 Church St.

Pittsburgh, Pa., 1423 Farmers Bank Bldg.

Seattle, Wash., 1301 L. C. Smith Bldg.

Works at St. Paul: 2-ton Tropenas steel converter, blt. 1900, f.o. July 1, 1900. Fuel, coke. Machine shop for own use.

Product: steel castings for own use; annual cap., 2,500 tons. Gray iron castings; annual cap., 5,000 tons.

AMERICAN HORSESHOE CO., Phillipsburg, N. J.

Inc. April, 1895. Capital stock: \$500,000.

E. R. Yarnelle, P.; C. H. Holton, V. P.; Charles G. Shirer, V. P. & G. M.; Thomas F. Tighe, Sec. & A. T.; H. J. Morrison, G. S.

Brand: letter "A" in circle.

Works at Phillipsburg, N. J.; telegraph address, Easton, Pa.: blt. 1865; 17 heat. fur. (twelve 3-d. and five 4-d. coal-fired); three 9" 3-h. 3-st., one 18" 3-h. 1-st. bar mills. Fuel, coal.

Product: horseshoe bars for own use; horseshoes and toe-calks. Annual cap., 10,000 tons of iron and steel bars.

AMERICAN LOCOMOTIVE CO., 30 Church St., New York, N. Y.

Inc. June 10, 1901 in New York. Capital stock: com., no par value, auth. and issued 500,000 shares; pref. 7% cum. auth. and issued \$25,000,000; bonds \$432,000.

William H. Woodin, P.; Joseph Davis, V. P. & C.; Joseph B. Ennis, V. P. (engineering); Duncan W. Fraser, V. P. (manufacture & sales); Lester S. Carroll, V. P. (purchases); W. Spencer Robertson, Sec.; J. Oakley Hobby, Jr., T.

Sales offices:

Chicago, Ill., McCormick Bldg.

Dallas, Texas, Praetorian Bldg.

Montreal, P. Q., Canada.

Richmond, Va.

St. Louis, Mo., Syndicate Trust Bldg.

San Francisco, Calif., Rialto Bldg.

The company operates plants at Schenectady and Dunkirk, N. Y.; Richmond, Va.; Paterson, N. J., and Montreal, Canada, for the manufacture of all kinds of locomotives and repair parts; also steel foundry at Chester, Pa.

Chester Works, Chester, Pa.: blt. 1900, f. o. Dec. 29, 1900; 3 B. O. H. fur. (25-ton); fuel, oil.

Product: steel castings for own use and for sale, annual cap., 36,000 tons; locomotive castings.

American Machine & Mfg. Co., Atlanta, Ga. Steel foundry at Atlanta, Georgia with 5-ton A. O. H. fur. was dismantled in Nov., 1923 and the foundry sold.

American McKenna Process Co., Milwaukee, Wis., see McKenna Process Co.

American Manganese Mfg. Co., Philadelphia, Pa., with 2 blast furnaces at Dunbar, Pa., was placed in hands of receiver, Nov. 28, 1922. Properties were sold at receiver's sale April 28, 1924 and purchased by the bondholders. Dunbar Corporation was incorporated Nov. 1, 1924 to take over the properties and acquired same Nov. 28, 1924.

AMERICAN MANGANESE STEEL CO., 332 South Michigan Ave., Chicago, Ill.

Inc. May, 1910 in Maine. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,931,700; pref. 7% non-cum. auth. \$3,000,000, issued \$2,593,700.

R. Ortmann, Ch. at Hudson Terminal Bldg., 30 Church St., New York, N. Y. W. G. Nichols, P.; S. T. McCall, V. P., Sec. & T.; George C. Hunt, P. A.; at Chicago. W. Brinton, V. P.; at New Castle, Del. James S. Thompson, V. P., at 30 Church St., New York, N. Y. Charles Fahlstrom, V. P.; H. F. Rickhoff, A. Sec. & A. T.; C. J. Marcuson, A.; A. W. Daniels, G. S. M.; at 389 East 14th St., Chicago Heights, Ill.

Sales offices:

Chicago, Ill., 1850 McCormick Bldg.
Denver, Col., 4th and Wazee Sts.
Los Angeles, Calif., R. R. No. 2, Box 260.
New Castle, Del.
New York, N. Y., 30 Church St.
Oakland, Calif., Oakland Pier.
St. Louis, Mo., 6500 Ridge Ave.

Sales agents:

Boston, Mass., Harrington & Robinson Co.
Denver, Col., A. T. Herr Supply Co.
Detroit, Mich., Moses & Dennett.
Easton, Pa., L. W. Van Buskirk.
Mulberry, Fla., Mine & Mill Supply Co.
St. Louis, Mo., Southern Manganese Steel Co., 6,500 Ridge Ave.
Seattle, Wash., J. D. Hull.

Brands: AMSCO (manganese steel castings): FAHRALLOY (heat and corrosion resisting alloys).

Product: manganese steel castings for sale for railway frogs, crossings, switches, machinery, etc.; heat resisting and corrosion resisting alloys. Total annual cap., 24,800 tons.

Plant "A," Chicago Heights, Ill.: blt. 1899-1900; 3 Heroult electric fur. (two 3-ton, one 6-ton); f. o. May, 1921; Tropenas converters and special hearth fur. dismantled. **Product:** manganese steel castings, heat and corrosion resisting alloys (chrome, nickel); annual cap., 12,000 tons.

Plant "B," New Castle, Del.: blt. 1908-09; f. o. Mar. 25, 1909; 1 Tropenas converter (2-net ton); 2 cupolas (1 for pig iron, 1 for

manganese); 1 Moore electric fur. (1½-ton) installed 1925, f. o. May, 1925. Product: manganese steel castings; annual cap., 3,600 tons (1,800 tons converter, 1,800 tons electric).

Plant "C," Denver, Col.: blt. 1891; 2 Moore electric fur. (1½-ton); Whiting converter dismantled in 1924. Gray iron foundry; annual cap., 3,500 tons. (Queen City Foundry Co. to 1923.)

Product: carbon and alloy steel castings (manganese and chrome), annual cap., 4,500 tons.

Plant "F," Oakland, Calif.: blt. 1918; f. o. Aug., 1919; 1 Heroult electric fur. (3-ton). Product: manganese steel castings, annual cap., 3,500 tons.

Plant "L," Los Angeles, Calif.: blt. 1924-25; 1 Moore electric fur. (1½-ton), installed 1925, f. o. May, 1925.

Product: manganese steel castings; annual cap., 1,200 tons.

Company also owns subsidiary company, Southern Manganese Steel Co., with plant at St. Louis, see Southern Manganese Steel Co. Former Plant C, New Castle, Del. was sold to S. S. Deemer in March, 1924.

American Metallurgical Corporation, Philadelphia, Pa. Receiver appointed in October, 1920. Works at Conshohocken, Pa. were owned and operated by Philadelphia Electric Steel Corporation which went into hands of receiver in March, 1920. Receiver sold the works June 22, 1920 to E. C. Hummel who operated the plant under the name of Hummel Electric Steel Foundry. Hummel Steel Foundry Co. was organized and took over the property, Sept. 1, 1922. Hummel Steel Foundry Co. was liquidated in 1924-25. The plant was acquired by E. P. Wilbur Trust Co., Bethlehem, Pa., and is held by Lenor Realty Corporation for resale or lease.

AMERICAN PUDDLED IRON CO. (The), North Mahoning Ave., Warren, Ohio.

Inc. June 17, 1923 in Ohio. Capital stock: com., par value \$100, auth. \$3,500,000, issued \$2,915,400.

R. C. Steese, P. & T.; John Stambaugh, V. P.; at 513 Stambaugh Bldg., Youngstown, Ohio. J. Paul Suter, Sec.; T. M. Phillips, G. M.; F. G. Walker, G. S.; H. Z. Bixler, P. A.; at Warren.

Works at Warren: blt. 1922-24, f. o. April 1, 1924; 4 mechanical puddling fur.; 1 hydraulic press; 2 oil-fired heat. fur. (one 3-d., one cont.); 29" 3-h. 1-st. roughing, 24" 3-h. 1-st. finishing.

Product: muck bar, annual cap., 30,000 tons; blooms and billets, 30,000 tons.

AMERICAN RADIATOR CO., 40 West 40th St., New York, N. Y.

Inc. Feb. 10, 1899 in New Jersey. Capital stock: com., par value \$25, auth. \$47,000,000, issued \$31,064,025; pref. 7% cum. auth. and issued \$3,000,000.

Clarence M. Woolley, Ch.; Charles M. Parker, P.; Charles H. Hodges, 1 V. P.; Clarence Carpenter, 2 V. P.; Charles K. Foster, Exec. V. P. & T.; Henry S. Downe, V. P.; W. E. Kugeman, V. P.; Wetmore Hodges, V. P. & Sec.; Andre Mertzoff, V. P.; R. B. Flershem, V. P. & G. M. S.; Stanley B. DeLong, V. P. & G. M. Manufacture; Seth Barham, A. T.; Frank J. Mullany, A. Sec.

Sales offices in all principal cities.

American Radiator Co. has a number of plants for the manufacture of radiators and boilers. At Buffalo there is a plant for the manufacture of steel castings (see description below) and a plant for the manufacture of malleable castings; annual cap., 30,000 tons.

American Radiator also owns Tonawanda Iron Corporation with blast furnace, ore docks, etc., at North Tonawanda, see Tonawanda Iron Corp.

Electric Steel Plant, Buffalo, N. Y.: f. o. Sept., 1918; 3 Greaves-Etchells electric fur. (two 6-ton, one 1-ton); 1 Moore electric fur. (3-ton).

Product: steel castings for own use and for sale; annual cap., 6,000 tons.

AMERICAN ROLLING MILL CO. (The), 703 Curtis St., Middletown, Ohio.

Inc. 1899; reinc. June 29, 1917 in Ohio. Capital stock: com., par value \$25, auth. \$30,000,000, issued \$21,000,000; pref. 7% cum. auth. \$20,000,000, issued \$11,817,200; bonds \$7,039,099.

George M. Verity, P.; J. H. Frantz, 1 V. P.; Charles R. Hook, V. P. & G. M.; S. E. Eldridge, A. V. P. & A. G. M.; W. W. Sebbald, A. V. P.; R. C. Phillips, Sec.; C. W. Verity, T.; C. W. Davis, A. T.; E. H. Weyman, C.; G. F. Ahlbrandt, G. M. S.; R. C. Todd, A. G. M. S.; H. O. Miller, Director of Purchases.

Sales offices:

Chicago, Ill., F. B. Milhoan, 1318 Peoples Gas Bldg.

Cincinnati, Ohio, A. P. Preyer, 1403 Union Trust Bldg.

Cleveland, Ohio, H. M. Richards, 1408 B. F. Keith Bldg.

Detroit, Mich., N. L. Pierson, General Motors Bldg.

Houston, Texas, C. C. Lynd, 407 First Natl. Bank Bldg.

London, England, The Armco International Corp., Pinners Hall.

New York, N. Y., C. M. Spear, 50 Church St.

Philadelphia, Pa., W. S. Stephenson, 1301 Franklin Trust Bldg.

Pittsburgh, Pa., H. A. Lord, 432 Oliver Bldg.

St. Louis, Mo., D. E. Foley, 1135 Boatmans' Bank Bldg.

San Francisco, Calif., H. O. Stevens, 10th & Bryant Sts.

Brands: Buckeye (pig iron); ARMCO (American ingot iron).

Products: basic and malleable pig iron; steel ingots; slabs, sheet bars, billets; black, blue annealed and galvanized Armco ingot iron and steel sheets; automobile, electrical, armature, enameling stock and highly finished sheets of all kinds. Roll black sheets 10 to

26 gauge, 24" to 48" wide, 120" to 168" long; blue annealed sheets ½" to 16 gauge, 36" to 60" wide, 120" to 240" long.

Total annual capacity: 464,000 tons pig iron; 837,000 tons ingots; 6,000 tons steel castings; 321,275 tons black sheets including blue annealed sheets to 80,835 tons; 95,000 tons galvanized sheets.

Columbus Works, Columbus, Ohio: 2 blast furnaces, blt. 1900-01; East Furnace, 74' 10" x 18', remod. 1920; West Furnace, 74' 10" x 18', remod. Jan., 1925; 8 two-pass side-comb. stoves, 89' 3" x 18' 10"; 5 steam blowing eng., 77,000 cfm., 20 lbs. rated pressure; 7 Rust water-tube boilers, 3,600 H. P.; 2 Pittsburgh Coal Washer Co., single-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 36,000 tons; 2 slag granulating pits, annual cap., 100,000 tons. By-product coke: Lake ore. Product: basic and malleable pig iron, annual cap., 264,000 tons.

Middletown Division:

Central Works, Middletown, Ohio: blt. 1899, f. o. Feb. 7, 1900; 4 B. O. H. fur. (three 50-ton, one 25-ton), fuel, nat. gas and oil; 1 Moore electric fur. (6-ton) added 1924, f. o. Aug. 25, 1924; 4 sheet and 4 pair fur.; 4 hot black sheet mills, 30" x 34" to 44"; 2 single stands cold rolls, 26" x 48" and 26" x 56"; 11 box annealing fur. (5 double, 1 single). Steel foundry and foundry for ingot iron castings for galvanizing equipment, flue boxes, gears, etc., for own use and for sale. Product: steel ingots, annual cap., 107,000 tons (106,000 tons B. O. H., 1,000 tons electric); steel castings for own use and for sale, 6,000 tons (5,000 tons B. O. H., 1,000 tons electric), rolling mill castings; black sheets, 21,860 tons.

East Side Works, Middletown, Ohio: blt. 1911; f. o. Sept. 10, 1911; 8 B. O. H. fur. (four 65-ton, four 85-ton), fuel, prod. gas; 24 Hughes gas producers; six 4-hole soaking pits, fuel, prod. gas and nat. gas; 40" 2-h. 1-st. blooming; 24" 3-h. 2-st. and 24" 2-h. 1-st. bar mill; 4 jobbing mill heat. fur. (one 3-d., three 4-d.), fuel, prod. gas; three 2-h. jobbing plate mills (one 30" x 40", one 30" x 48", one 30" x 68"); 17 sheet and 17 pair fur.; 17 hot black sheet mills (30" x 34" to 56"); 21 stands cold rolls (26" x 48" to 66"); 2 cont. and 28 single annealing fur.; 3 open annealing fur.; 3 Mesta 4-arm pickling mach.; 4 galvanizing pots. Product: steel ingots, annual cap., 400,000 tons; billets, slabs, sheet bars; blue annealed sheets, 48,500 tons; black sheets, 92,900 tons; galvanized sheets, 47,500 tons.

Zanesville Works, Zanesville, Ohio; blt. 1900-01, f. o. Oct. 16, 1901; 13 sheet and 13 pair fur.; 13 hot black sheet mills (five 30" x 34", five 30" x 38", one 30" x 40", one 30" x 44", one 30" x 48"); 8 stands cold rolls (27" x 40" to 70"); 24 box annealing fur.; 1 Mesta 4-arm pickling mach. Product: black sheets, annual cap., 71,035 tons.

Ashland Division (Ashland Iron & Mining Co. to Dec. 31, 1921):

Ashland Furnaces, Ashland, Ky.: 2 stacks, No. 1, 76" x 17' 3", blt. 1869, rebt. 1905, relined 1922; No. 2, 75" x 17', blt. 1888, rebt.

1905, relined 1922; 8 stoves (3 Massicks & Crooke, 75' x 18'; 1 Foote 2-pass, 75' x 16'; 1 Whitwell, 85' x 18'; 2 Whitwell, 73' x 18'; 1 P. J. Brown, 90' x 20'); 4 steam blowing eng., 120,000 cfm., 15 lbs. rated pressure; 8 water-tube boilers (6 Sterling, 2 Wheeler) 2,900 H. P.; 1 Pittsburgh Coal Washer Co. single-strand pig casting mach.; Pittsburgh Metallurgical Co. sintering plant for flue dust, annual cap., 15,000 tons. By-product coke: Lake ore. Product: basic and malleable pig iron, annual cap., 200,000 tons.

West Works, Ashland, Ky. (formerly called Steel Plant, Ashland Iron & Mining Co.): blt. 1916-17, f. o. Feb. 17, 1917; 6 B. O. H. fur. (80-ton), fuel, nat. gas; five 4-hole soaking pits, fuel, nat. gas and coke oven gas; 36" 2-h. 1-st. blooming; 31" 2-h. 7-st. bar mill; 2 comb. sheet and pair fur.; two 2-h. jobbing plate mills (30" x 48"); 6 sheet and 6 pair fur.; 6 hot black sheet mills (30" x 48"); 14 stands 26" x 56" cold rolls (2 trains of 4 tandem, 1 train 2 tandem, 4 single); 2 cont. box annealing fur.; 2 Mesta 4-arm pickling mach.; 4 galvanizing pots. Product: steel ingots, annual cap., 330,000 tons; blooms, billets, sheet bars; blue annealed sheets, 32,335 tons; black sheets, 32,785 tons; galvanized sheets, 47,500 tons.

Twenty-Third Street Plant (formerly called Ashland Sheet Mill): blt. 1900, f. o. 1901; 6 sheet and 6 pair fur.; 4 hot black sheet mills (30" x 34" to 44"); 2 stands cold rolls (one 48", one 56"); 8 box annealing fur. Product: black sheets, annual cap., 21,860 tons.

The company owns interests in iron ore mining properties in the Gogebic and Mesabi Ranges; coal mining properties at Marting and Nellis, West Virginia and Rush, Kentucky; annual capacity, 400,000 tons; joint interest in Portsmouth By-Product Coke Co., Portsmouth, Ohio.

AMERICAN SHEET & TIN PLATE CO., Frick Bldg., Pittsburgh, Pa.

Inc. Mar. 28, 1900 in New Jersey. Subsidiary of United States Steel Corporation.

E. W. Pargny, P.; C. W. Bennett, V. P.; W. A. Irvin, V. P.; H. B. Wheeler, Sec. & T.; Roland J. Hadly, A.; J. I. Andrews, G. S. M.; M. S. Dennis, P. A.

Sales offices:

Chicago, Ill., W. H. Eaton, Cont. & Com. Natl. Bank Bldg.

Cincinnati, Ohio, W. T. Shannon, Union Trust Bldg.

Denver, Colo., E. M. Sparhawk, First Natl. Bank Bldg.

Detroit, Mich., J. A. Smith, Jr., Dime Bank Bldg.

New Orleans, La., Dennis Crowley, Jr., Maison Blanche.

New York, N. Y., E. E. Winckler, Empire Bldg.

Philadelphia, Pa., T. W. Simpers, Widener Bldg.

Pittsburgh, Pa., J. R. Bates, Frick Bldg.

St. Louis, Mo., O. J. Willis, Liberty Central Trust Bldg.

Sales representatives: for export, United States Steel Products Co.,

30 Church St., New York, N. Y.; for Pacific Coast business, United States Steel Products Co., San Francisco, Calif.

Brands: Keystone (copper-bearing sheets), Apollo Best Bloom (galvanized sheets), Apollo Keystone (galvanized copper-bearing sheets), Wellsville Polished (highly finished blued sheets): American Cokes, American Charcoals (tin plates), American Ternes (terne plate for roofing).

Product: black sheets, blue annealed sheets, galvanized sheets, flat and formed; painted and formed roofing, siding, etc.; cold rolled blued, polished and automobile sheets; black plate for forming, stamping, enameling, etc.; black plate specialties; black plate for tinning; coke and charcoal tinplates, terne plates and long terne plates.

SHEET MILLS

Aetna-Standard Works, Bridgeport, Ohio: blt. 1872, three 4-d. prod. gas-fired heat. fur.; 30" x 72" 3-h. 2-st. sheared plate mill; 28" x 60" 2-h. 2-st. jobbing plate mill; 2 blue annealing fur. Roll sheared plates 3 to 12 gauge, 36" to 60" wide, 120" to 240" long; black sheets 13 to 16 gauge, 30" to 54" wide, 84" to 168" long. Product: light plates, black sheets, blue annealed sheets, annual cap., 46,800 tons.

Dover Works, Dover, Ohio: blt. 1865-66; 7 sheet and 5 pair fur.; 5 comb. sheet and pair fur.; 11 hot black sheet mills (two 28" x 34", six 28" x 38", one 28" x 42", two 28" x 48"); 6 stands cold rolls (2 st. 24" x 48" and 24" x 52" on hot mill train; 4 st. 24" x 48" on cold mill train); 14 box annealing fur.; 4 Vandergrift pickling mach.; 3 galvanizing pots. Roll black sheets 10 to 30 gauge; 24" to 72" wide, 72" to 144" long. Product: black sheets, annual cap., 59,400 tons; galvanized sheets, 49,200 tons; painted and formed roofing, siding, etc.; cold rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

Gary Sheet Mill, Gary, Ind.: blt. 1910-11, f. o. June 1, 1911; 14 prod. gas-fired heat. fur. (six 5-d. plate mill, four 4-d. job mill, four 2-d. job mill reheating); two 32" x 84" 3-h. sheared plate mills; four 3-h. jobbing plate mills (one 32" x 44", two 32" x 56", one 32" x 66"); 8 sheet and 8 pair fur.; 8 comb. sheet and pair fur.; 16 hot black sheet mills (five 32" x 40", nine 32" x 44", one 32" x 48", one 32" x 56"); 15 stands cold rolls (No. 1 train with one 26" x 56", one 26" x 66", two 26" x 56" tandem, two 26" x 66" tandem; No. 2 train with one 26" x 40", four 26" x 44", one 26" x 56", three 26" x 66"); 34 box annealing fur.; 6 blue annealing fur.; 20 Vandergrift pickling mach.; 10 galvanizing pots. Roll sheared plates 3 to 12 gauge, 36" to 72" wide, 156" to 312" long; job mill sheets 13 to 18 gauge, 30" to 60" wide, 96" to 192" long; black sheets, 18 to 30 gauge, 24" to 48" wide, 72" to 144" long. Product: finished hot rolled products, annual cap., 340,800 tons, including 120,000 tons sheared

plates and 220,800 tons black sheets; galvanized sheets, 168,400 tons; blue annealed sheets; painted and formed roofing, siding, etc.; cold rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

Guernsey Works, Cambridge, Ohio: blt. 1889-90, f. o. July, 1890; 4 sheet and 4 pair fur.; 7 comb. sheet and pair fur.; 11 hot black sheet mills (one 28" x 34", two 28" x 38", six 28" x 44", two 28" x 48"); 6 stands cold rolls on hot mill train (four 24" x 48", two 26" x 48"); 10 box annealing fur.; 8 Vandergrift pickling mach.; 5 galvanizing pots. Roll black sheets 14 to 30 gauge, 24" x 38" wide, 72" x 144" long. Product: black sheets, annual cap., 56,300 tons; galvanized sheets, 67,200 tons; formed roofing, siding, etc.

Hyde Park Works, Hyde Park, Pa.: blt. 1895, f. o. Sept. 1, 1895; abandoned 1925, to be dismantled.

Leechburg Works, Leechburg, Pa.: blt. 1872; 11 comb. sheet and pair fur.; 11 hot black sheet mills (two 24½" x 39", three 26" x 42", four 28" x 42", two 28" x 46"); 5 stands cold rolls on hot mill train (two 26" x 45", one 26" x 50", two 26" x 53"); 7 box annealing fur. Roll black sheets 12 to 30 gauge, 24" to 40" wide, 72" to 144" long. Product: black sheets, annual cap., 50,600 tons.

Mercer Works, Farrell, Pa. (leased from Union Steel Co.): blt. 1901-3; 12 sheet and 12 pair fur.; 12 hot black sheet mills (three 28" x 38", three 28" x 44", one 28" x 48", five 28" x 54"); 11 stands cold rolls (3 st. on hot mill train, one 24" x 44", two 24" x 54"; 8 st. on cold mill train, two 24" x 48", six 24" x 54"); 14 box annealing fur.; 4 Mesta pickling mach., 2 hand pickling tanks. Roll black sheets, 12 to 30 gauge, 24" to 52" wide, 72" to 144" long. Product: black sheets, annual cap., 73,000 tons; cold rolled, blued and automobile sheets, sheets for stamping, enameling, etc.

New Philadelphia Works, New Philadelphia, Ohio: two 4-d. prod. gas-fired heat. fur.; 3 pair fur.; 7 comb. sheet and pair fur.; two 2-h. jobbing mills (one 30" x 60", one 30" x 68"); 10 hot black sheet mills (five 28" x 42", three 30" x 48", two 30" x 54"); 8 stands cold rolls (No. 1 train with one 24" x 44", two 24" x 28", one 26" x 40"; No. 2 train with three 24" x 44", one 26" x 40"); 9 box annealing fur.; 2 blue annealing fur.; 3 pickling mach. (2 Vandergrift, 1 Mesta); 2 hand pickling tanks. Roll jobbing plates and sheets, 3 to 16 gauge, 30" x 60" wide, 90" to 180" long; black sheets, 18 to 30 gauge, 24" to 48" wide, 72" to 144" long. Product: black sheets and light plates, annual cap., 85,200 tons; blue annealed sheets, cold rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

Old Meadow Works, Scottdale, Pa.: blt. 1898; 8 sheet and 8 pair fur.; 8 hot black sheet mills (one 26" x 38", four 26" x 44", two 28" x 44", one 28" x 50"); 2 stands cold rolls on hot mill train (one 26" x 44", one 26" x 50"); 7 box annealing fur.; 2 hand pickling tanks. Roll black sheets, 11 to 30 gauge, 24" to 44" wide, 72" to 144" long.

Product: black sheets, annual cap., 44,800 tons; cold rolled, blued and automobile sheets.

Scottdale Works, Scottdale, Pa.: blt. 1873; 4 sheet, 3 pair, 6 comb. sheet and pair fur.; 9 hot black sheet mills (two 23" x 36", three 26" x 42", four 26" x 44"); 5 stands cold rolls on hot mill train (one 24" x 44", four 24" x 50"); 6 box annealing fur.; 6 Vandergrift pickling mach.; 7 galvanizing pots. Roll black sheets, 14 to 30 gauge, 24" to 40" wide, 72" to 144" long. Product: black sheets, annual cap., 47,500 tons; galvanized sheets, 119,600 tons; formed roofing, siding, etc.; cold-rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

Vandergrift Works, Vandergrift, Pa.: blt. 1895-96, f. o. Oct., 1895; 10 B. O. H. fur. (50-ton); 2 A. O. H. fur. (50-ton) fuel, nat. gas and tar; four 4-hole soaking pits; 34" 2-h. 1-st. blooming; two 16" 2-h. 3-st. sheet bar; 6 single and 6 double sheet, 8 pair fur.; 24 comb. sheet and pair fur.; 30 single and 3 double hot black sheet mills (seven 28" x 36", ten 28" x 40", one 28" x 44", four 30" x 42", five 32" x 44", two 32" x 53", one 32" x 60"; one 32" x 41" double, two 32" x 44" double); 13 stands cold rolls on hot mill train (three 26" x 48", two 28" x 48", five 28" x 54", three 28" x 64"); 49 box annealing fur.; 22 Vandergrift pickling mach.; 9 galvanizing pots; long terne department. Roll black sheets, 3 to 30 gauge, 24" to 54" wide, 72" to 144" long. Product: steel ingots, annual cap., 324,000 tons (266,000 tons B. O. H., 58,000 tons A. O. H.); alloy steel ingots (copper, nickel, silicon); steel castings for own use only; sheet bars, 272,000 tons; black sheets, 226,000 tons; galvanized sheets, 165,600 tons; long terne plates, 40,000 tons; formed roofing, siding, etc.; cold rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

Wellsville Works, Wellsville, Ohio: blt. 1873; 9 single and one double sheet, and 9 pair fur.; 10 hot black sheet mills (four 28" x 34", two 28" x 40", one 28" x 42", two 28" x 44", one 28" x 54"); 11 stands cold rolls on cold mill train (seven 24" x 38"; four in 2 sets of 2 tandem 26" x 48"); 29 box annealing fur.; 1 Mesta pickling mach.; 8 hand pickling tanks. Roll black sheets, 10 to 30 gauge, 24" to 48" wide, 72" to 144" long. Product: black sheets, annual cap., 52,800 tons; black sheets for polished sheets; cold rolled, blued and automobile sheets.

Wood Works, McKeesport, Pa.: blt. 1851; 3 nat. gas-fired heat. fur. (two 4-d., one 5-d.); 12 sheet and 14 pair fur.; 24" x 56" 3-h. sheared plate mill; 13 hot black sheet mills (eight 22" x 40", one 24" x 40", four 24" x 48"); eight stands cold rolls in 3 cold trains (No. 1, four 24" x 42"; No. 2, two 24" x 42"; No. 3, two 20" x 40"); 20 box annealing fur.; one blue annealing fur.; 2 Mesta pickling mach.; charcoal bloomery was dismantled in 1921. Sheet bar mill dismantled in 1925. Roll sheared plates 3 to 14 gauge, 36" to 48" wide, 72" to 144" long: black sheets, 18 to 30 gauge, 24" to 36" wide,

72" to 144" long. Product: finished hot rolled products, annual cap., 82,800 tons, including 25,600 tons sheared plates and 57,200 tons black sheets; blue annealed sheets; cold rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

TIN MILLS

American Works, Elwood, Ind.: blt. 1891-92, f. o. June, 1892; 20 sheet and 20 pair fur.; 2 single and 9 double hot black plate (tin) mills (one 28" x 34" and one 28" x 42" single; two 28" x 34", four 28" x 36", three 28" x 42" double); 19 stands cold rolls in 2 trains (No. 1 train in sets of 3 stands tandem, nine 22" x 34", three 22" x 43", three 22" x 52"; No. 2 train, one 22" x 34", three 22" x 43"); 5 box annealing fur.; 6 Grey pickling mach.; 20 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 32" wide, 36" to 96" long. Product: black plate for tinning, annual cap., 79,800 tons; tinplates, 1,820,000 base boxes.

Cambridge Works, Cambridge, Ohio: blt. 1894; f. o. Dec. 26, 1894; 8 sheet and 8 pair fur.; 8 hot black plate (tin) mills (three 26" x 32", two 28" x 32", three 28" x 38"); 10 stands cold rolls (3 st. on hot mill train, one 22" x 40", two 22" x 48"; 7 st. on cold mill train, four 22" x 36" in 2 sets 2 tandem, one 22" x 36", two 22" x 40"); 8 box annealing fur.; 2 Mesta pickling mach. Roll black plate 16 to 38 gauge, 16" to 32" wide, 36" x 96" long. Product: black plate specialties, annual cap., 34,200 tons.

Chester Works, Chester, W. Va.: blt. 1899-00, f. o. Dec., 1901; 8 sheet and 8 pair fur.; 8 hot black plate (tin) mills (two 28" x 30", three 28" x 32", three 28" x 36"); 11 stands cold rolls on cold mill train (six st. in 2 sets of 3 tandem 22" x 40", two tandem 22" x 40", two tandem 22" x 52", one 26" x 52"); 4 box annealing fur.; 1 Mesta pickling mach.; tinning dept. dismantled in 1920. Roll black plate, 16 to 38 gauge, 16" x 32" wide, 36" to 96" long. Product: black plate specialties, annual cap., 34,600 tons.

Crescent Works, Cleveland, Ohio: blt. 1894-95, f. o. June 1, 1895; 6 sheet and 6 pair fur.; 6 hot black plate (tin) mills (two 27" x 30", three 28" x 34", one 28" x 36"); 8 stands cold rolls on cold mill train in sets of 2 tandem (two 22" x 34", four 22" x 36", two 22" x 40"); 2 box annealing fur.; 2 Mesta pickling mach.; 11 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 32" wide, 36" to 50" long. Product: black plate for tinning, annual cap., 25,400 tons; tinplates, 569,000 base boxes.

Farrell Works, Farrell, Pa. (owned by Sharon Tin Plate Co.): blt. 1900-01, f. o. May 16, 1901; 30 sheet and 30 pair fur.; 22 single and 4 double hot black plate (tin) mills (six 27" x 30", fourteen 28" x 34", two 28" x 42" single; four 28" x 42" double); 27 stands cold rolls on cold mill train in sets of 3 tandem (twenty-one 22" x 36", three 22" x 42", three 22" x 44"); 14 box annealing fur.; 4 Mesta

pickling mach.; 28 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 32" wide, 36" to 96" long. Product: black plate for tinning, annual cap., 116,500 tons; tinplates, 2,594,000 base boxes.

Gary Tin Mill, Gary, Ind.: blt. 1916, f. o. Dec., 1916; 48 sheet and 48 pair fur.; 24 double hot black plate mills (one 28" x 30", twenty 28" x 34", one 28" x 42", two 28" x 44"); 42 stands cold rolls on cold mill train in sets of 3 tandem (twelve 24" x 36", thirty 24" x 44"); 17 box annealing fur.; 6 Grey pickling mach.; 48 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 32" wide, 36" to 76" long. Product: black plate for tinning, annual cap., 192,000 tons; tinplates, 4,438,000 base boxes.

La Belle Works, Wheeling, W. Va.: blt. 1893, f. o. April, 1894; 10 sheet and 10 pair fur.; 10 hot black plate (tin) mills (four 26" x 34", five 28" x 34", one 28" x 36"); 10 stands cold rolls on cold mill train in sets of 2 tandem (four 22" x 40", one 22" x 44", five 24" x 40"); 4 box annealing fur.; 2 Mesta pickling mach.; 9 tinning sets for coke tinplates. Roll black plate 16 to 38 gauge, 16" to 30" wide, 36" to 50" long. Product: black plate for tinning, annual cap., 41,600 tons; tinplates, 925,000 base boxes.

Laughlin Works, Martins Ferry, Ohio: blt. 1895, f. o. Aug., 1895; 23 sheet and 23 pair fur.; 23 hot black plate (tin) mills (seven 26" x 32", fourteen 28" x 34", two 28" x 36"); 24 stands cold rolls on cold mill train in sets of 2 tandem (twenty-two 24" x 40", two 24" x 48"); 7 box annealing fur.; 4 Mesta pickling mach.; 28 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 30" wide, 36" to 96" long. Product: black plate for tinning, annual cap., 90,200 tons; tinplates, 2,008,000 base boxes.

National Works, Monessen, Pa.: blt. 1897-98, f. o. Jan., 1898; 25 sheet and 25 pair fur.; 25 hot black plate (tin) mills (one 26" x 32", fourteen 28" x 32", nine 28" x 34", one 28" x 36"); 18 stands cold rolls on cold mill train in sets of 2 tandem (eight 22" x 40", ten 23" x 34"); 11 box annealing fur.; 4 Mesta pickling mach.; 24 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 30" wide, 36" to 45" long. Product: black plate for tinning, annual cap., 96,000 tons; tinplates, 2,144,000 base boxes.

New Castle Works, New Castle, Pa.: blt. 1892-93, f. o. Oct., 1893; 22 sheet and 20 pair fur.; 20 hot black plate (tin) mills (six 28" x 30", twelve 28" x 34", two 28" x 36"); 30 stands cold rolls on cold mill train in sets of 3 tandem (twelve 22" x 36", twelve 22" x 40", three 22" x 44", three 22" x 46"); 9 box annealing fur.; 4 Mesta pickling mach.; 20 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 32" wide, 36" to 84" long. Product: black plate for tinning, annual cap., 78,400 tons; tinplates, 1,773,000 base boxes.

Pennsylvania Works, New Kensington, Pa.: blt. 1894, f. o. 1895; 8 sheet and 8 pair fur.; 8 hot black plate (tin) mills (five 26" x 30",

two 28" x 34", one 28" x 42"), 13 stands cold rolls in sets 3 tandem and one single (one 22" x 44" single, six 24" x 40", six 24" x 44"); six box annealing fur.; 2 Mesta pickling mach.; 13 tinning sets, 5 for coke, 8 for charcoal tinplates. Roll black plate, 16 to 38 gauge 16" to 32" wide, 36" to 84" long. Product: black plate for tinning and black plate specialties, annual cap., 32,600 tons; tinplates, 485,000 base boxes (249,000 cokes, 236,000 charcoals).

Pittsburgh Works, New Kensington, Pa.: blt. 1894, f. o. Dec., 1894; 8 sheet and 8 pair fur.; 8 hot black plate (tin) mills (two 26" x 30", five 28" x 34", one 28" x 36"); 8 stands cold rolls (28" x 40") in sets of 2 tandem on cold mill train; 2 box annealing fur.; 2 Mesta pickling mach.; 12 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 32" wide, 36" to 50" long. Product: black plate for tinning, annual cap., 30,100 tons; tinplates, 654,000 base boxes.

Sabraton Works, Morgantown, W. Va.: blt. 1902-03; 10 sheet and 10 pair fur.; 2 single and 4 double hot black plate mills (two 26" x 30" single; one 26" x 30" and three 28" x 34" double); 11 stands cold rolls, 9 in sets of 3 tandem and 2 single (two 22" x 34", three 22" x 34", six 22" x 44"); 5 box annealing fur.; 3 Mesta pickling mach.; 4 tinning sets for coke tinplates, 19 tinning sets for terne plates. Roll black plate, 16 to 38 gauge, 16" to 30" wide, 36" to 56" long. Product: black plate for tinning and for terne plate, annual cap., 41,800 tons; tinplates, 848,000 base boxes (165,000 base boxes cokes, 683,000 base boxes ternes).

Shenango Works, New Castle, Pa.: blt. 1897-98, f. o. April, 1899; 40 sheet and 40 pair fur.; 30 single and 5 double hot black plate (tin) mills (eleven 28" x 30", fourteen 28" x 34", three 28" x 36", two 28" x 42", single; five 28" x 36" double); 33 stands cold rolls on cold mill train in sets of 3 tandem (fifteen 22" x 36", two 22" x 44", four 22" x 46", nine 24" x 36", one 24" x 44", two 24" x 46"); 16 box annealing fur.; 7 pickling mach. (6 Mesta, 1 Grey); 33 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 32" wide, 36" to 72" long. Product: black plate for tinning, annual cap., 154,000 tons; tinplates, 3,492,000 base boxes.

Total annual capacity: 324,000 tons ingots; 272,000 tons sheet bars; 179,200 tons sheared plates, 986,800 tons black sheets; blue annealed sheets to 293,200 tons, included in plate and black sheet capacity; 570,000 tons galvanized sheets; 1,047,200 tons black plate for tinning and black plate specialties; 21,750,000 base boxes tinplates including 20,831,000 base boxes coke tinplates, 236,000 base boxes charcoal tinplates, 683,000 base boxes terne plates; 40,000 tons long terne plates.

AMERICAN STEEL CO., Park Bldg., Pittsburgh, Pa.

Inc. Mar. 25, 1904 in Pennsylvania. Capital stock: com., par

value \$100, auth. \$1,500,000, issued \$790,000; pref. 7% cum. auth. \$1,500,000, issued \$882,800.

M. B. Kelly, P., G. M. & G. S. A.; James P. Kelly, V. P., T. & P. A.; G. H. Illig, Sec.; F. C. McKee, A.; at Pittsburgh. H. J. Scanlon, G. M.; at Ellwood City, Pa.

The company owns a rolling mill and tinplate works at Waynesburg, Pa.; and wire mill, wire nail plant and cotter pin plant at Ellwood City, Pa.

Waynesburg Works, Waynesburg, Pa.: blt. 1900, f. o. Oct. 16, 1900; 5 sheet and 5 pair fur.; 5 tin mills (28" x 36"); 2 trains cold rolls, 2 st. per train, 24" x 48"; 1 pickling mach.; 4 box annealing fur.; 8 tinning pots for coke tinplates. Product: black plate for tinning and tinplates; annual cap., 18,000 tons black plate, 400,000 base boxes tinplates.

Ellwood City Works, Ellwood City, Pa.: 151 wire drawing blocks; 65 wire nail mach.; cold rolled flat wire equipment; 1 cont. annealing fur., 30 4-slide cotter pin mach. (American Cotter Pin Co. merged in American Steel Co.). Product: wire from ½" to 30 gauge, flat wire, wire nails and cotter pins; annual cap., 36,000 net tons plain wire, 600 tons flat wire, 200,000 kegs (100-lbs) wire nails, 6,000 tons cotter pins.

American Steel & Tube Co., Lorain, Ohio. Sheet bar and jobbing sheet or plate mill is reported idle and abandoned. Company out of business.

AMERICAN STEEL & WIRE CO. (The), Rockefeller Bldg., Cleveland, Ohio.

Inc. Jan. 13, 1899 in New Jersey. Subsidiary of United States Steel Corporation.

William P. Palmer, P.; William Thompson, A. P.; A. F. Allen, Sec. & A. T.; A. H. Garry, A.; E. E. Stone, G. P. A.; H. G. Baldwin, S. (Order and Warehouse Dept.); H. A. Barren, G. S.; Jay Waldeck, A. G. S.; at Cleveland. J. S. Keefe, V. P.; Frank Baackes, V. P. & G. S. A.; J. R. Thomas, T.; at Chicago. R. R. Hampton, A. T.; at New York.

Sales offices:

Baltimore, Md., W. H. Jennings, 32 South Charles St.

Birmingham, Ala., J. J. Gilmore, Brown-Marx Bldg.

Boston, Mass., C. W. Whiting, 185 Franklin St.

Buffalo, N. Y., C. J. McGregor, 670 Ellicott St.

Chicago, Ill., Frank Baackes, G. S. A., D. A. Merriman, A. G. S. A.;

C. F. Rummel, A. G. S. A.; 208 South La Salle St.

Cincinnati, Ohio, S. A. Felix, Union Trust Bldg.

Cleveland, Ohio, A. T. Merriman, Rockefeller Bldg.

Dallas, Texas, J. L. Osborne, Praetorian Bldg.

Denver, Colo., P. B. Garoutte, First Natl. Bank Bldg.

Detroit, Mich., M. Floto, foot of First St.

Kansas City, Mo., J. M. Holloway and E. G. Jacques, 417 Grand Ave.

Memphis, Tenn., G. D. Kirkham, Union & Planters Bank Bldg.

New York, N. Y., R. L. Foster, A. G. S. A., 30 Church St.

Philadelphia, Pa., Henry Rose, Widener Bldg.

Pittsburgh, Pa., E. A. Niven, Frick Bldg.

Oklahoma City, Okla., J. W. Beattie, First Natl. Bank Bldg.

St. Louis, Mo., O. B. Barrows, Liberty Central Trust Bldg.

St. Paul, Minn., E. E. Aldous, Merchants Natl. Bank Bldg.

Salt Lake City, Utah, W. A. La Pierre, Walker Bank Bldg.

Worcester, Mass., F. O. Howard, 94 Grove St.

Product: bessemer and basic pig iron; bessemer and open-hearth steel ingots; blooms, billets and slabs; wire rods; wire (plain, galvanized, tinned, coppered, etc.), wire nails, spikes and pole steps; turned and cold drawn shafting and machine screw stock; cold rolled flat steel; barbed wire, woven fencing and netting, wire rope and strand; springs. Plain copper wire, insulated wire and cables. Chilled iron dies, and iron and steel castings for own use. Sulphate of iron. By-product coke; tar and benzol products. Spelter; sulphuric and muriatic acids.

Total annual capacity: 1,115,000 tons pig iron; 1,700,000 tons steel ingots (720,000 tons bessemer, 890,000 B. O. H., 90,000 A. O. H.); 1,300 tons steel castings for own use (740 tons B. O. H., 560 tons A. O. H.); semi-finished hot rolled products, 1,507,000 tons blooms, billets and slabs; finished hot rolled products, 1,978,000 tons, including 1,819,000 tons wire rods, 155,000 tons hot rolled strip and 4,000 tons merchant bars; plain wire, 2,151,000 net tons; galvanized wire, 849,300 net tons; barbed wire, 444,300 net tons; wire fencing, 431,400 net tons; wire nails, 12,200,000 kegs; cold rolled strip and wire, 152,800 net tons.

Allentown Works, Allentown, Pa.: blt. 1886, 2 cont. prod. gas-fired billet heat. fur.; Garrett rod mill with 16" 3-h. 1-st., 14" 2-h. 5-st., 10" 2-h. 8-st.; 253 wire drawing blocks for wire 000 to 20 gauge; 208 wire nail mach.; 148 barbed wire mach.; 3 galv. pans. Product: wire rods, annual cap., 110,000 tons; plain wire, 132,000 net tons; galvanized wire, 66,000 net tons; barbed wire, 81,000 net tons; wire nails, 800,000 kegs.

American Works, Cleveland, Ohio: blt. 1886; 3 cont. pulv. coal-fired billet heat. fur.; Garrett rod mill with 16" 3-h. 2-st., 12" 2-h. 3-st., 9" 2-h. 8-st.; Morgan continuous rod mill with 13" 2-h. 5-st., 10" 2-h. 10-st., 9" 2-h. 6-st.; 8,563 wire drawing blocks for wire, $\frac{7}{8}$ " to 40 gauge; 8 galvanizing pans; 2 cold rolling mach. (one 10", one 6"). Product: wire rods, annual cap., 125,000 tons; plain wire, 75,000 net tons; galvanized wire, 1,200 tons; cold rolled wire, 3,300 net tons; tinned wire.

Anderson Works, Anderson, Ind.: blt. 1889; 3 cont. prod. gas-fired billet heat. fur.; Garrett rod mill with 18" 3-h. 1-st., 18" 2-h. 1-st., 12" 2-h. 3-st., 10" 2-h. 8-st.; 119 wire drawing blocks, for wire $\frac{3}{8}$ " to 18 gauge; 155 wire nail mach.; 53 barbed wire mach.; 6 wire fence mach.; 2 galv. pans. Product: wire rods, annual cap., 110,000 tons; plain wire, 75,000 net tons; galvanized wire, 37,000 net tons; barbed wire, 30,000 net tons; wire fencing, 17,000 net tons; wire nails, 800,000 kegs.

Anthony Works, Tecumseh, Mich.: equipment removed and plant closed in 1925.

Bluff Street Works, Joliet, Ill.: idle.

Braddock Works, Braddock, Pa.: blt. 1891; 2 cont. prod. gas-fired billet heat. fur.; Garrett rod mill with 18" 3-h. 1-st., 18" 2-h. 2-st., 16" 2-h. 2-st., 12" 2-h. 7-st., 10" 2-h. 4-st.; 292 wire drawing blocks for wire $\frac{3}{4}$ " to 20 gauge. Product: wire rods, annual cap., 90,000 tons; plain wire, 100,000 net tons.

Central Furnaces, Cleveland, Ohio: 4 stacks, A, 97' 2" x 23' 6", blt. 1900-01, f. o. Jan. 17, 1901, rebt. 1924; B, 90' x 22' 6", blt. 1881-82, rebt. 1921; C, 90' x 22' 6", blt. 1887, rebt. 1924; D, 92' 6" x 24', blt. 1910-11, rebt. 1925; 16 two-pass stoves (fifteen 100' x 22', one 100' x 21'); 7 vertical cross comp. steam blowing eng., 2 horiz. twin tandem gas blowing eng. (200,000 cfm.) 18 lbs. (steam) and 30 lbs. (gas) rated pressure; 32 water-tube boilers (16 Cahall, 16 Sterling) 8,928 H. P. serve also mill electric power plants; 2 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 90,000 tons. By-product coke: Lake ore. Gray iron foundry (2,100 tons capacity) for own use. Product: bessemer and basic pig iron, annual cap., 770,000 tons.

Emma Furnace (Cleveland E), Cleveland, Ohio, dismantled in 1925.

Coke Works, Cleveland, Ohio: 180 Koppers by-product coke ovens, by-product recovery plant and Carl Still benzol plant, annual cap., 818,000 net tons coke, 2,803,000 gals. light oil.

Central Works, Worcester, Mass.: 1,750 wire drawing blocks for wire .253" to .0162"; 67 wire nail mach.; 10 galv. pans. Product: plain wire, annual cap., 27,000 net tons; galvanized wire, 17,000 net tons; tinned wire; wire nails, 140,000 kegs.

Consolidated Works, Cleveland, Ohio: blt. 1890-91; 2 cont. prod. gas-fired billet heat. fur.; Garrett rod mill with 16" 3-h. 3-st., 12" 2-h. 5-st., 10" 2-h. 2-st., 9" 2-h. 4-st.; 167 wire drawing blocks for wire $\frac{1}{2}$ " to 16 gauge; 255 wire nail mach.; 64 barbed wire mach.; 11 wire fence mach.; 3 galv. pans. Product: wire rods, annual cap., 110,000 tons; plain wire, 95,000 net tons; galvanized wire, 50,000 net tons; barbed wire, 34,000 net tons; wire fencing, 26,000 net tons; wire nails, 1,120,000 kegs.

Cuyahoga Works, Cleveland, Ohio: blt. 1907-08, f. o. Nov. 3, 1908; 8 cont. heat. fur. (6 billet, 2 bar), fuel, nat. gas, coke oven gas, and prod. gas; 17" 2-h. 8-st. cont. small billet mill; cont. rod mill with

12" 2-h. 6-st., 10" 2-h. 10-st.; comb. cont. and double-duo strip mill with 16" 2-h. 6-st. cont., 14" 3-st. double duo, 14" 2-h. 3-st.; comb. reversing and cont. strip mill with 26" 2-h. 1-st. reversing universal, 20" 2-h. 3-st., 18" 1-st. edging, 18" 2-h. 3-st. cont.; comb. cont. and single Belgian strip mill with 12" 2-h. 11-st. cont., 11" 2-h. 4-st. Belgian; 112 cold rolling mach. (eleven 24", twenty-three 18", two 12", thirty-nine 10", ten 8¼", twenty-seven 8"); 44 wire drawing blocks for wire ½" to 20 gauge, 3 galv. pans. Product: finished hot rolled products, annual cap., 228,000 tons, including 95,000 tons wire rods, and 133,000 tons hot rolled strip; cold rolled strip, 100,000 net tons; plain wire, 110,000 net tons; galvanized wire, 37,000 net tons; tinned wire.

DeKalb East and West Works, DeKalb, Ill.: 320 wire drawing blocks for wire 2 to 20 gauge; 162 wire nail mach.; 114 barbed wire mach.; 21 wire fence mach.; 5 galv. pans. Product: plain wire, annual cap., 115,000 net tons; galvanized wire, 65,000 net tons; barbed wire, 55,000 net tons; wire fencing, 28,000 net tons; wire nails, 1,080,000 kegs.

DeKalb North and South Works, DeKalb, Ill.: 16 wire fence mach. Product: wire fencing, annual cap., 20,000 net tons; fence posts, poultry netting and concrete reinforcement.

Donora Steel Works, Donora, Pa. (leased; owned by Union Steel Co.): Donora Furnaces: 2 stacks; No. 1, 85' 4½" x 22', blt. 1902-04, f. o. Jan. 3, 1905, relined 1924; No. 2, 85' 4½" x 22', blt. 1902-04, f. o. Feb. 7, 1905, relined 1924; 8 Kennedy 2-pass stoves, 100' x 24'; 5 vertical cross comp. steam blowing eng. (115,000 cfm.) 18 lbs. rated max. pressure; 16 Sterling water-tube boilers, 8,000 H. P. serve also service water pumping system and electric power house furnishing power to steel works, zinc works and part of Donora Wire Works; 2 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 90,000 tons; 2 slag granulating pits (idle). Conn. beehive and Clairton by-product coke: Lake ore. Product: basic pig iron, annual cap., 345,000 tons. Open-Hearth Dept.: blt. 1902-03, f. o. Feb. 7, 1905; 2 bessemer converters for duplexing and 2 cupolas, idle for several years and considered as dormant capacity; 13 B. O. H. fur. (60-ton) fuel, tar, oil and nat. gas; one mixer (1,300-ton). Steel foundry (600 tons) for own use. Product: steel ingots, annual cap., 550,000 tons. Rolling Mills: six 4-hole soaking pits, fuel, nat. and prod. gas; 40" 2-h. 1-st. blooming; 30" 3-h. 1-st. billet. Product: blooms, billets and slabs, annual cap., 480,000 tons.

Donora Wire Works, Donora, Pa. (leased; owned by Union Steel Co.): blt. 1900-01, f. o. Sept., 1901; 7 cont. prod. gas-fired billet heat. fur.; 16" 2-h. 7-st. cont. roughing; 2 Garrett finishing rod mills each with 12" 2-h. 9-st., 10" 2-h. 2-st.; Garrett rod mill with 18" 3-h. 1-st., 16" 2-h. 2-st., 14" 2-h. 5-st., 10" 2-h. 4-st.; 526 wire drawing blocks for wire 17/32" to 18 gauge; 370 wire nail mach.;

- 120 barbed wire mach.; 32 wire fence mach.; 5 galv. pans. Product: wire rods, annual cap., 310,000 tons; plain wire, 224,000 net tons; galvanized wire, 93,000 net tons; barbed wire, 66,000 net tons; wire fencing 55,000 net tons; wire nails, 1,540,000 kegs.
- Donora Zinc Works, Donora, Pa. (owned by Donora Zinc Co.; operated by American Steel & Wire Co.): blt. 1915, f. o. Oct. 20, 1915. Product: spelter, annual cap., 48,000 tons; sulphuric acid, 140,000 tons; muriatic acid, 15,000 tons.
- Fairfield Works, Fairfield, Ala. (leased; owned by American Steel & Wire Co. of Alabama): blt. 1910-14, f. o. Feb. 12, 1914; 2 cont. prod. gas-fired billet heat. fur.; double Belgian rod mill with 17" 2-h. 10-st. cont., 14" 2-h. 4-st., 12" 2-h. 8-st. double Belgian; 288 wire drawing blocks for wire 2 to 18 gauge; 215 wire nail mach.; 59 barbed wire mach.; 42 wire fence mach.; 4 galv. pots. Product: wire rods, annual cap., 110,000 tons; plain wire, 110,000 net tons; galvanized wire, 67,000 net tons; barbed wire, 32,000 net tons; wire fencing, 72,100 net tons; wire nails, 1,020,000 kegs.
- Farrell Works, Farrell, Pa. (leased; owned by Union Steel Co.): blt. 1900-01, f. o. May, 1901; 2 cont. prod. gas-fired heat. fur.; 2 Morgan continuous rod mills (one 10" 2-h. 16-st., one 10" 2-h. 14-st.); 270 wire drawing blocks for wire 0000 to 20 gauge; 303 wire nail mach.; 39 barbed wire mach.; 21 wire fence mach.; 4 galv. pots. Product: wire rods, annual cap., 150,000 tons; plain wire, 110,000 net tons; galvanized wire, 67,000 net tons; barbed wire, 20,000 net tons; wire fencing, 33,000 net tons; wire nails, 1,040,000 kegs; fence posts.
- H. P. Works, Cleveland, Ohio: blt. 1880; three 6-d. billet heat. fur., fuel tar or oil; Garrett rod mill with 16" 3-h. 2-st., 12" 2-h. 3-st., 10" 2-h. 1-st., 9" 2-h. 7-st.; 188 wire drawing blocks for wire $\frac{3}{4}$ " to 22 gauge; 813 wire nail mach. Product: finished hot rolled products, annual cap., 30,000 tons, including 23,000 tons wire rods and 7,000 tons hot rolled strip; plain wire, 60,000 net tons; wire nails, 1,260,000 kegs; spikes and pole steps, 100,000 kegs (200-lb.).
- Hamilton Works, Hamilton, Ont., Canada: 6 barbed wire mach.; 13 wire fence mach. Product: barbed wire, annual cap., 3,300 net tons; wire fencing, 20,000 net tons; staples, bale ties and fence posts.
- New Haven Works, New Haven, Conn.: blt. 1899; 885 wire drawing blocks for wire .281" to .008"; 5 galv. pans. Product: plain wire, annual cap., 30,000 net tons; galvanized wire, 5,000 net tons; wire rope and strand.
- Newburgh Steel Works, Cleveland, Ohio: blt. 1867-68; 2 bessemer converters (15-ton): 7 B. O. H. fur. (60-ton) fuel, tar, oil and nat. gas; 2 mixers (250-ton): 4 cupolas. Brass foundry (250 tons) for own use. Rolling mills: 2 cont. billet heat. fur., fuel, coke oven gas and prod. gas; 11 soaking pits (three 4-hole, one 8-hole, seven 1-hole), fuel, coke oven gas and prod. gas; 38" 2-h. 1-st. blooming;

23" 3-h. 1-st. blooming; 35" 2-h. 1-st. blooming; Garrett rod mill with 18" 3-h. 1-st., 18" 2-h. 1-st., 12" 2-h. 3-st., 10" 2-h. 8-st. Product: steel ingots, annual cap., 970,000 tons (720,000 tons bessemer, 250,000 tons B. O. H.); blooms, billets and slabs, 870,000 tons; wire rods, 105,000 tons.

Newburgh Wire Works, Cleveland, Ohio: 70 cold rolling mach. (thirty-two 10", six 9", eleven 8", one 7", twenty 6" and smaller), 3,487 wire drawing blocks for wire 1" to 36 gauge; 12 galv. pans. Product: plain wire, annual cap., 112,000 net tons; galvanized wire, 37,000 net tons; tinned wire; cold rolled strips and wire, 18,000 net tons; shafting.

North Works, Worcester, Mass.: 224 cold rolling mach. (seventy-three 10", sixty-seven 9", fourteen 8", two 6 $\frac{3}{8}$ ", sixty-eight 6" and smaller); 3,720 wire drawing blocks for wire 1 $\frac{1}{8}$ " to .0025"; 20 galv. pans (13 hot, 7 electro). Product: plain wire, annual cap., 66,000 net tons; galvanized wire, 21,000 net tons; tinned wire; cold rolled strips and wire, 29,000 net tons.

Pacific Works, San Francisco, Calif.: 4 wire fence mach. Product: wire fencing, annual cap., 8,400 net tons; netting, wire rope, springs, bale ties and staples.

Rankin Works, Rankin, Pa.: blt. 1885-86; 2 cont. prod. gas-fired billet heat. fur.; Garrett rod mill with 18" 3-h. 1-st., 16" 2-h. 2-st., 14" 2-h. 2-st., 10" 2-h. 5-st., 12" 2-h. 4-st.; 254 wire drawing blocks for wire 2 to 18 gauge; 235 wire nail mach.; 89 barbed wire mach.; 20 wire fence mach.; 4 galv. pans. Product: wire rods, annual cap., 120,000 tons; plain wire, 140,000 net tons; galvanized wire, 67,000 net tons; barbed wire, 52,000 net tons; wire fencing, 46,000 net tons; wire nails, 1,360,000 kegs.

Rockdale Works, Joliet, Ill.: 429 wire drawing blocks for wire $\frac{3}{8}$ " to 21 gauge; 9 wire nail mach.; 52 barbed wire mach.; 29 wire fence mach.; 6 galv. pans. Product: plain wire, 130,000 net tons; galvanized wire, 95,000 net tons; barbed wire, 33,000 net tons; wire fencing, 65,400 net tons; wire nails, 60,000 kegs.

Salem Works, Salem, Ohio: 70 wire drawing blocks for wire 2 to 17 $\frac{1}{2}$ gauge; 287 wire nail mach. Product: plain wire, annual cap., 29,000 net tons; wire nails, 580,000 kegs.

Scott Street Works, Joliet, Ill.: 205 wire drawing blocks for wire 0 to 18 gauge; 234 wire nail mach.; 50 barbed wire mach.; 4 wire fence mach.; 3 galv. pans. Product: plain wire, annual cap., 115,000 net tons; galvanized wire, 50,000 net tons; barbed wire, 28,000 net tons; wire fencing, 13,500 net tons; wire nails, 1,300,000 kegs.

Shoenberger Works, Pittsburgh, Pa.: dismantled July 1, 1925.

South Works, Worcester, Mass.: blt. 1846; 3 B. O. H. fur. (50-ton); 4 A. O. H. fur. (one 50-ton, two 24-ton, one 20-ton), fuel in O. H. oil; steel (700 tons) and brass (75 tons) foundry for own use; six 1-hole soaking pits, fuel prod. gas; 8 oil-fired cont. heat. fur.; 34" 2-h. 1-st. blooming; 16" 2-h. 8-st. cont. billet; merchant mill with

20" 2-h. 2-st., 16" 3-h. 3-st., 16" 2-h. 1-st.; 10" 2-h. 16-st. cont. rod; 12" to 10" 2-h. 15-st. comb. cont. (11 st.) and single Belgian (4-st.); 12" 2-h. 15-st. comb. cont. (10-st.) and single Belgian (5-st.); 28 cold rolling mach. (one 10", eleven 8", sixteen 6"): 560 wire drawing blocks for wire $\frac{7}{8}$ " to 40 gauge. Product: steel ingots, annual cap., 180,000 tons (90,000 tons B. O. H., 90,000 tons A. O. H.); steel castings for own use only, 700 tons (140 tons B. O. H.; 560 tons A. O. H.); blooms and billets, 157,000 tons; finished hot rolled products, 155,000 tons, including 136,000 tons wire rods, 4,000 tons merchant bars, 15,000 tons hot rolled strip; plain wire, 84,000 net tons (60,000 tons steel, 24,000 tons copper); tinned wire; cold rolled copper wire, 2,500 net tons; springs; wire rope and strand.

Trenton Works, Trenton, N. J.: blt. 1845; 549 wire drawing blocks for wire .145" to .012"; 1 galv. pan. Product: plain wire, annual cap., 22,000 net tons; galvanized wire, 1,100 net tons; tinned wire, wire rope and strand.

Waukegan Works, Waukegan, Ill.: 4 cont. prod. gas-fired billet heat. fur.; 15" 2-h. 8-st. cont. roughing rod; 12" 2-h. 12-st. cont. finishing rod; 12" to 9" 2-h. 12-st. Garrett finishing rod; 9" 2-h. 16-st. double Belgian finishing rod; 3,165 wire drawing blocks for wire 1" to 36 gauge; 17 wire nail mach.; 18 barbed wire mach.; 9 wire fence mach.; 12 galv. pans. Product: wire rods, annual cap., 225,000 tons; plain wire, 190,000 net tons; galvanized wire, 73,000 net tons; tinned wire; barbed wire, 10,000 net tons; wire fencing, 27,000 net tons; wire nails, 100,000 kegs; springs.

AMERICAN STEEL FOUNDRIES, 410 North Michigan Ave., Chicago, Ill.

Inc. June 26, 1902 in New Jersey. Capital stock: com., par value \$33.33 $\frac{1}{3}$, auth. \$25,000,000, issued \$24,073,200; pref. 7% cum. auth. \$25,000,000, issued \$8,951,300.

R. P. Lamont, P.; G. E. Scott, 1 V. P.; R. H. Ripley, 2 V. P.; J. C. Davis, 4 V. P.; F. E. Patterson, Sec. & T.; William Epple, A. Sec. & T.; C. C. Jarchow, C.; T. E. Moritz, P. A.; at Chicago. W. J. Lynch, 3 V. P.; at 30 Church St., New York, N. Y.

Sales offices:

Cleveland, Ohio, 202 Society for Savings Bldg.
 Denver, Col., 306-7 Barth Bldg., F. S. McNamara.
 Havana, Cuba, 114 Edificio Calle Obropia y Oficios.
 Mexico City, Mexico, P. M. Armendariz.
 New York, N. Y., 30 Church St.
 Philadelphia, Pa., 1600 Walnut St.
 Richmond, Va., 1235 Mutual Bldg.
 St. Louis, Mo., Frisco Bldg.
 St. Paul, Minn., 6th & Jackson Sts.
 Washington, D. C., 824 Munsey Bldg.

Product: steel castings for sale for locomotives and railway cars, bolsters, couplers, side frames, draft arms, truck frames, steel car wheels, machinery castings, rolling mill rolls, castings for ships; total annual cap., 283,700 tons.

Alliance Works, Alliance, Ohio: blt. 1883; 6 B. O. H. fur. (five 20-ton, one 40-ton); 10 gas prod. (8 Riter-Conley, 2 Morgan Const. Co.). Fuel, prod. gas. Product: bolsters, draft arms, couplers and car castings; annual cap., 68,570 tons.

East St. Louis Works, East St. Louis, Ill.: blt. 1900; f. o. June 14, 1900; 5 B. O. H. fur. (25-ton). Fuel, oil. Product: bolsters, side frames, and draft arms for railroad cars; annual cap., 48,213 tons.

Franklin Works, Franklin, Pa.: blt. 1895; f. o. Dec. 1895; 2 A. O. H. fur. (one 15-ton, one 20-ton). Fuel, oil. Product: railway car, locomotive and miscellaneous steel castings; annual cap., 12,640 tons.

Granite City Works, Granite City, Ill.: blt. 1894; f. o. Nov., 1894; 6 B. O. H. fur. (25-ton). Fuel, oil. Product: steel wheels, side frames, bolsters, draft arms, etc., for railroad cars; annual cap., 68,570 tons.

Indiana Harbor Works, Indiana Harbor, Ind.: blt. 1903-04; f. o. June 29, 1904; 4 A. O. H. fur. (two 20-ton, two 5-ton). Fuel, oil. Heroult electric fur. installed 1915, dismantled in 1924. Product: railway, locomotive and miscellaneous steel castings; annual cap., 25,713 tons.

Pittsburgh Works, 36th St. & A. V. Ry., Pittsburgh, Pa.: blt. 1889; O. H. added 1895; 2 A. O. H. fur. (10-ton). Fuel, natural gas. Product: rolling mill and miscellaneous castings; annual cap., 6,428 tons.

Sharon Works, Sharon, Pa.: blt. 1887; f. o. Aug. 26, 1887; 4 B. O. H. fur. (25-ton). Fuel, pulv. coal. Product: bolsters and side frames for railroad cars; annual cap., 32,142 tons.

ThurLOW Works, Chester, Pa.: blt. 1883-84; f. o. May, 1884; 3 A. O. H. fur. (25-ton). Fuel, oil. Product: railway car, locomotive, ship and miscellaneous steel castings; annual cap., 21,428 tons.

AMERICAN SWEDO IRON CO. (The), Harrison Bldg., Philadelphia, Pa.

Inc. Aug. 22, 1913 in Pennsylvania. Capital stock: com., par value \$100, auth. \$100,000, issued \$75,000.

Frank Samuel, P.; Snowden Samuel, Sec. & T.; at Harrison Bldg., Philadelphia. Edward F. Price, V. P. & G. M.; at Danville, Pa.

Brand: SWEDO (low phosphorus melting bars).

Works at Danville, Pa.: blt. 1913-14; f. o. Feb. 10, 1914; 9 double puddling fur.; 1 coffee mill squeezer; 19" 3-h. 1-st. muck mill.

Product: low-phosphorus muck bar; annual cap., 10,000 tons.

AMERICAN TUBE & STAMPING CO. (The), 471 Hancock Ave., Bridgeport, Conn.

Inc. 1899 in Connecticut. Capital stock: com., par value \$100, issued \$1,626,400; pref. 7% cum. issued \$1,626,400; bonds \$460,000. F. Kingsbury Curtis, Ch.; A. B. Field, Jr., Sec.; at 30 Broad St., New York, N. Y. E. M. Johnston, P. & T.; W. R. Webster, V. P.; S. L. McCormick, V. P. & Works M.; C. G. Sanford, A. T.; E. L. French, A. T.; F. G. Taylor, A. Sec.; E. M. Hayes, G. S. M.; H. E. Pape, P. A.; at Bridgeport.

Sales offices:

Detroit, Mich., C. C. Limbocker Co., 1411 Central Ave.

New York, N. Y., G. L. Anderson, The Shelton.

Worcester, Mass., J. Adam Snyder, 316 Park Bldg.

Brand: ATASCO (steel billets; hot and cold rolled strip, bands and stampings).

Company operates works at Bridgeport as follows (Steel Works, Stratford Ave., Hot mill and Cold mills, Howard Ave., Cold mills, Hancock Ave., Pressed Metal Division, Hancock Ave.) for the manufacture of steel billets, bands, hot and cold rolled strip, flat wire, stampings, etc.

Works at Bridgeport: 4 B. O. H. fur. (one 75-ton, three 50-ton) fuel oil; producer gas as reserve, 13 gas producers; three 4-hole soaking pits: 4 (1 idle) cont. heat. fur.; 34" 3-h. 1-st. blooming mill; 22" to 18" 2-h. 6-st. continuous billet mill; 16" 2-h. and 3-h. 8-st. semi-continuous; 16" 3-h. 2-st., 14" 3-h. 3-st. and 12" 3-h. 5-st. strip mill; 12" to 10" 2-h. and 3-h. 12-st. semi-continuous narrow strip mill; Cold rolling dept. with 6-st. 16", 2-st. 14", 7-st. 7" and 14", 5-st. 12", 1-st. 6", 8-st. 3" comb.; 10 annealing fur.; 29 pickling tanks. Fuel: prod. gas and oil.

Product: steel ingots, annual cap., 125,000 tons; blooms and billets, 110,000 tons; hot rolled products, 100,000 tons; cold rolled products, 50,000 tons; stampings and deep drawn work, 2,500 tons.

AMERICAN WELL & PROSPECTING CO., P. O. Box 620, Corsicana, Texas.

Inc. Apr., 1910 in Oklahoma. Capital stock: com., par value \$100, auth. and issued \$100,000.

H. G. Johnston, P.; J. E. Rittersbacher, V. P. & G. M.; Edgar Rittersbacher, T.; H. E. Redden, G. S.; M. J. W. Baker, P. A.; at Corsicana. Etta Rittersbacher, Sec.; at Los Angeles, Calif.

Sales office: 1620 East 16th St., Los Angeles, Calif.

Brand: Gumbo Buster (oil well supplies).

Works at Corsicana: blt. 1901, first steel made Nov., 1916; 1 Pittsburgh Moore electric fur. (1,500-lb.); 2 cupolas; gray iron foundry, annual cap., 1,000 tons gray iron, 3,000 tons semi-steel castings for own use.

Product: steel castings for own use, annual cap., 400 tons.

AMES (W.) & CO., 417 Communipaw Ave., Jersey City, N. J.

Est. 1859; Inc. July, 1908 in New Jersey. Capital stock: com. \$100,000; pref. 5% cum. \$200,000.

James W. Ames, P.; A. S. Ames, Sec., T. & G. S. M.; W. J. Onderdonk, P. A.

Works at Jersey City: blt. 1909-10; 2 heat. fur. (4-d. gas and 4-d. oil); 2 gas producers; Belgian train (13" 3-h. 1-st. roughing, 10" 3-h. 4-st. finishing); 16 heat. fur. (twelve 1-d., four 2-d. oil-fired) for heating spike iron. Fuel, prod. gas and oil.

Product and annual capacity: merchant and concrete bars (8,000 tons); spike, bolt, nut, and splice bar rods (12,000 tons); railway spikes; boat and dock spikes, track bolts and machine bolts, also rail splice bars, tie rods (round and flat), hot pressed nuts and washers.

AMES SHOVEL & TOOL CO., 90 Ames Bldg., Boston, Mass.

Inc. Aug. 16, 1901 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$2,000,000; pref. 7% cum. auth. and issued \$3,000,000.

Alfred C. Howell, P.; Oliver Ames, V. P.; Samuel S. Early, Sec.

The company owns or controls the following companies:

Oliver Ames & Sons Corpn., North Easton, Mass.

T. Rowland's Sons, Inc., Cheltenham, Pa.

The H. M. Myers Co., Beaver Falls, Pa.

Wright Shovel Co., Anderson, Ind.

St. Louis Shovel Co. Plant, St. Louis, Mo.

Product: shovels, spades, scoops and drainage tools; annual cap., 480,000 dozen.

Elwood Plant, Elwood, Ind.; blt. 1892; 4 heat. fur.; 4 gas prod.; 4 trains (22" bar, 22" sheet, 16" sheet, 16" shovel). Product: shovel plate for own use, annual cap., 6,000 tons.

The H. M. Myers Co. Plant, Beaver Falls, Pa.; blt. 1883; 8 heat. fur.; four 16" trains. Product: rolled shovel blanks for own use only, annual cap., 2,000 tons. (This plant was removed to Anderson, Ind., in 1925-26.)

The company also operates handle plants at Paris, Texas; Oakland and Cumberland Mills, Me.; New Albany, Ind.; and Martinsville, Ind.

Anaconda Copper Mining Co., Anaconda, Montana.

Electric furnaces for production of ferro-manganese at Great Falls Reduction Department, Great Falls, Mont., blt. 1918, last operated in 1920, have been nearly all dismantled (Aug., 1925); manufacture of ferro-manganese abandoned and little likelihood that company will resume.

ANCHOR IRON & STEEL CO., 45 South 20th St., Pittsburgh, Pa.

Inc. in Pennsylvania in 1920 to take over rolling mill at Hays Station, Allegheny Co., Pa., purchased by J. P. & W. B. Eichleay, Pittsburgh, Pa. in 1919 from Monongahela Iron & Steel Co., a subsidiary of Carter Iron Co.

Works at Hays Station, Pa.; blt. and f. o. 1891; 16 double puddling fur.; four 3-d. heat. fur.; 20" 3-h. 2-st. muck mill; 18" 3-h. 2-st. and 10" 3-h. 4-st. bar mills. Idle since 1919.

Product: muck bar, merchant bar iron, annual cap., 15,000 tons.

ANDREWS STEEL CO. (The), 9th and Lowell Sts., Newport, Ky.

Inc. 1906 in Ky.; reinc. 1921 in Delaware.

Joseph B. Andrews, P.; A. K. Andrews, V. P.; Frank M. Andrews, Sec.; Joseph Gaff Andrews, T.; H. W. Boal, A.; Charles H. Sloan, G. S.; A. W. Hubbard, G. S. M.; R. K. Boggs, P. A.

Brands: ASCO (forging billets, tool steel, and alloy steels).

Works at Newport: blt. 1906-08, f. o. Apr. 1908; 8 B. O. H. fur. (two 105-ton, two 90-ton, one 85-ton, three 75-ton), fuel, prod. gas; 36" 2-h. 1-st. blooming; 24" 2-h. 1-st. and 24" 3-h. 1-st. sheet bar mill; 12 soaking pits; 29 gas producers.

Product: ingots, annual cap., 300,000 tons; rerolling and forging billets, slabs, sheet and tinplate bars, annual cap., 250,000 tons. Nickel and other alloy steels.

Anglo-Canadian Malleable Steel Mfg. Co., Ltd., 179 St. James St., Montreal, P. Q., Canada.

G. S. Currie, Liquidator, at 179 St. James St., Montreal.

Works at Rawdon, P. Q., Canada: four 8-pot crucible fur.; 1 cupola; malleable iron foundry. Plant idle and for sale.

Product: steel castings for sale, annual cap., 220 tons.

ANNISTON ELECTRIC STEEL CORPORATION, West 10th St., Anniston, Ala.

Inc. Apr. 1, 1921 in Alabama. Capital stock: com. auth. and issued \$100,000; bonds \$400,000.

Col. R. A. Mitchell, P.; C. A. Bingham, V. P.; at Birmingham, Ala. James M. MacLetchie, Sec. & T.; John N. Huger, G. M.; at Anniston.

Brand: ANELEC (steel castings).

Works at Anniston: blt. 1884; 4 Heroult electric fur. (6-ton), (Anniston Steel Co. to April 1, 1921).

Product: electric steel castings for sale, annual cap., 25,000 tons.

Anniston Steel Co., Anniston, Ala. was acquired April 1, 1921 by Anniston Electric Steel Corporation.

ANTRIM IRON CO., 904 Michigan Trust Bldg., Grand Rapids, Mich.

Inc. 1886 in Michigan, Capital stock: com., par value \$100, issued \$1,400,000.

J. C. Holt, P. & T.; T. J. O'Brien, V. P.; H. J. Bennett, Sec.; Elizabeth C. Hart, A. Sec.; at Grand Rapids. R. W. Durrett, Manager; at Mancelona, Mich.

Sales office: Superior Charcoal Iron Co., Grand Rapids, Mich.

Brand: Antrim.

Furnace at Mancelona, Mich.: blt. 1887-88; reblt. 1912; relined 1920; 1 stack, 60' x 11'; 2 Durham iron pipe stoves; 2 vertical steam blowing eng. (15,000 cfm.); 8 vertical water-tube boilers, 1,300 H. P. Charcoal; Lake ore. Iron foundry for own use. Twenty charcoal retorts; annual cap., 2,500,000 bushels and plant for recovery of by-products.

Product: warm blast charcoal pig iron, car wheel and malleable; annual cap., 25,000 tons.

APOLLO STEEL CO., Warren Ave., Apollo, Pa.

Inc. Apr. 16, 1912 in Pennsylvania. Capital stock; com. auth. \$1,800,000, issued \$1,050,000.

A. M. Oppenheimer, P. & G. M.; M. M. Crawford, A.; H. C. Shroyer, G. S.; D. O. Wolf, G. S. M.; George T. McCarthy, P. A.; at Apollo, Pa. W. J. Guthrie, V. P.; O. W. Oppenheimer, Sec. & T.; at Pittsburgh, Pa.

Sales agents:

Boston, Mass., H. W. Hayes, 40 Court St.

Chicago, Ill., Theo. Geissmann & Co., 624 South Michigan Blvd.

Cleveland, Ohio, John T. AuWerter, 1655 Union Trust Bldg.

Cincinnati, Ohio, Maynard French Steel Co., 1020 Union Trust Bldg.

Detroit, Mich., I. L. AuWerter, 2034 Dime Bank Bldg.

Lynchburg, Va., W. P. Clark, 701 Krise Bldg.

Memphis, Tenn., Levi Joy & Co., 646 Randolph Bldg.

New Orleans, La., Jobbers Sales Corp., 411 S. Peters St.

New York, J. H. Bryan, 1372 Hudson Terminal Bldg.

Philadelphia, Pa., Ray P. Farrington Co., 607 Otis Bldg.

San Francisco, Calif., Judge & Dow, Call Bldg.

Works at Apollo: blt. 1912-13; f. o. June 16, 1913; 4 sheet, 4 pair and 8 comb. sheet and pair fur.; two 2-h. jobbing mills (32" x 54" and 32" x 66"); 12 sheet mills (two 28" x 36", seven 28" x 40", one 28" x 46", one 32" x 44", one 32" x 54"); 5 stands cold rolls, 26" x 44" to 66"; 6 box annealing fur.; 2 blue annealing fur.; 4 pickling tanks; 6 galvanizing pots.

Steel Works: 2 B. O. H. fur. (100-ton, 40-ton) idle since 1918.

Product: blue annealed, black and galvanized sheets. Black sheets to 60" wide, 7 to 30 gauge. Total annual cap., 108,000 tons. Jobbing mill products 24,000 tons, black sheets 84,000 tons (in-

cluding 30,000 tons blue annealed sheets); galvanized sheets, 60,000 tons.

Armstrong (G. W.) & Co., Inc., Ft. Worth, Texas. Rolling mill of this company known as Sand Springs Works at Sand Springs, Oklahoma, last operated in Sept. 1918, was dismantled in 1920-21. Some of the machinery was removed to Fort Worth Works of the company for installation or storage and the remainder was scrapped. In Jan., 1923, G. W. Armstrong & Co., Inc., was acquired by Texas Steel Co., Fort Worth, Texas.

Armstrong Steel Castings Co., Huntington, Ind.

W. W. Hawley, Receiver (appointed Oct. 16, 1923).

Capital stock: com. \$150,000; pref. 7% cum. \$145,900.

Works at Huntington, Ind.: blt. 1916, f. o. June 21, 1916; two 2-ton Whiting converters; 2 cupolas; 1 Gronwall-Dixon electric fur. (4½-ton) first electric steel, May, 1918. (Huntington Steel Foundry Co. to August 16, 1920). For sale.

Product: steel castings for sale, annual cap., 12,000 tons (6,000 tons converter, 6,000 tons electric); small steel castings for automobiles, trucks and railway cars.

Armstrong, Whitworth of Canada, Ltd., Montreal, Canada. Works at Longueuil, P. Q., Canada (steel works and rolling mill) were acquired Jan. 8, 1923, by Charles Walmsley & Co. (Canada), Ltd., Drummond Bldg., Montreal. The new owners reorganized the plant for the manufacture of paper-making machinery; the steel works and rolling mill were abandoned and dismantled. Company operates gray iron foundry only.

ARNESON FOUNDRY CO., Kenosha, Wis.

Ole A. Arneson, Owner and general manager.

Works at Kenosha: blt. 1914; f. o. Nov., 1914; 1 Whiting converter (2,400-lb.); 2 cupolas. Gray iron foundry.

Product: steel castings for sale, annual cap., 3,000 tons; gray iron castings, 9,000 tons.

Ashland Iron & Mining Co., Ashland, Ky. Entire assets of the company were purchased Dec. 21, 1921 by The American Rolling Mill Co. Operation of the plants was taken over on Jan. 1, 1922.

ASHLAND STEEL CO., Ashland, Kentucky.

Inc. 1922 in Kentucky. Capital stock: com., par value \$100, auth. \$1,100,000.

Thomas M. Adams, P.; George F. Parks, Sec. & T.; at Ashland, Ky. I. P. Blanton, V. P. & G. M.; at Ironton, Ohio.

Works at Ashland: blt. 1891; 2 bessemer converters (5½-ton); 4 cupolas; 2 Laughlin gas-fired cont. heat. fur.; two 3-hole gas-fired

soaking pits; 32" 2-h. 1-st. blooming; 16" 2-h. 7-st. continuous rod mill; 12" 3-h. 5-st. Belgian and 10" 3-h. 6-st. Belgian rod mills. Product: steel ingots, annual cap., 190,000 tons; slabs and billets, 180,000 tons; wire rods, 100,000 tons.

Ashtabula Steel Co. (The), Ashtabula, Ohio, built sheet mill plant at Ashtabula, construction was begun May 15, 1920 and mills were first operated Aug. 17, 1922. In August, 1923 the stockholders voted to dispose of the property and it was acquired as of Sept. 1, 1923 by The Ashtabula Steel Sheet Co.

ASHTABULA STEEL SHEET CO. (The), Mansfield, Ohio.

Inc. Aug. 28, 1923 in Ohio. Capital stock: com., no par value, auth. and issued 25,000 shares; pref. A. auth. and issued \$200,000, pref. B. auth. \$625,000, issued \$525,000; bonds \$650,000.

W. H. Davey, P.; Samuel Davey, 1 V. P. & G. M.; A. I. Davey, Sec., T. & P. A.; W. R. Jenkins, A.; F. W. Beach, G. S. M.; at Mansfield Sheet & Tin Plate Co., Mansfield, Ohio. E. M. Jones, 2 V. P.; at Ashtabula, Ohio.

Sales offices:

Chicago, Ill., 1372 Wrigley Bldg.

Cincinnati, Ohio, 720 First National Bank Bldg.

Cleveland, Ohio, 2002 Union Trust Bldg.

Detroit, Mich., 851-855 Book Bldg.

Indianapolis, Ind., 1403 Merchants Bank Bldg.

Los Angeles, Calif., 509 Wilcox Bldg.

New York, N. Y., 1106 National City Bldg.

Philadelphia, Pa., 1504 West Venango St.

St. Paul, Minn., 640 Endicott Bldg.

San Francisco, Calif., 237 Rialto Bldg.

Seattle, Wash., 1426 L. C. Smith Bldg.

Works at Ashtabula, Ohio: blt. 1920-22, f. o. Aug. 17, 1922; 7 comb. sheet and pair fur.; one 2-h. jobbing mill 28" x 56"; 6 sheet mills (two 28" x 38", two 28" x 44", two 28" x 48"); 6 stands cold rolls, 26" x 60"; 1 cont. 6-box annealing fur.; two 2-box annealing fur.; 2 blue annealing fur.; 2 pickling mach. (1 Plunge, 1 Mesta). (Formerly Ashtabula Steel Co., acquired by The Ashtabula Steel Sheet Co., Sept. 1, 1923).

Product: black sheets up to 44" wide, 10 to 30 gauge; annual cap., 60,000 net tons. Blue annealed sheets, 20,000 net tons. Sheets for galvanizing, stamping, japanning and automobile sheets.

Assets Distribution Corpn., Care Buffalo Trust Co., Buffalo, N. Y.

Reported as having acquired from The Atlas Steel Corporation, Dunkirk, N. Y., in January, 1925, the Charleroi Works of that company at Charleroi, Pa., and as holding same for resale. This plant is abandoned and probably partially dismantled.

ATCHISON, TOPEKA & SANTA FE RAILWAY, Corwith, Chicago, Ill.

R. K. Graham, Supt.

Corwith Shops, Corwith, Chicago: rolling mill blt. 1924-25, installation completed Feb. 15, 1925, f. o. Feb. 20, 1925; 22" 3-h. 2-st. bar mill.

Product: rounds and flats for own use, annual cap., 4,800 tons.

Atikokan Iron Co., Ltd., Port Arthur, Ont., Canada. Blast furnace at Port Arthur, long idle, was reported sold in July, 1921 to Palatine Iron & Steel Co. The blast furnace may be regarded as abandoned.

Atlantic Coast Line Railroad Co., Wilmington, N. C. Rolling mill at South Rocky Mount Shops, South Rocky Mount, N. C., blt. 1911, last active 1923, was dismantled in 1925.

ATLANTIC FOUNDRY CO. (The), 182 Beaver St., Akron, Ohio.

Inc. June 22, 1905 in Ohio. Capital stock: com., no par value, outstanding 4,726 $\frac{1}{4}$ shares.

Charles Reymann, P., T. & P. A.; Philip Willenbacher, 1 V. P.; Evald Erikson, 2 V. P.; Harry C. Huff, G. M. & A. Sec.; Ernest Knecht, A.

Works at Akron: steel foundry, blt. 1918, f. o. Sept. 28, 1918; 1 Snyder electric fur. (4-ton). Company operates gray iron and semi-steel foundries at Akron and Cuyahoga Falls, Ohio, annual cap., 27,000 tons.

Product: steel castings for sale, annual cap., 9,000 tons.

ATLANTIC STEEL CO., P. O. Box 1714, Atlanta, Georgia.

Inc. Dec., 1915 in Delaware. Capital stock: com., par value \$100, auth. and issued \$1,000,000; pref. 7% cum. auth. and issued \$700,000; bonds \$791,000.

Robert Gregg, P. & T.; Charles F. Stone, V. P. & G. S. M.; N. C. Harrison, V. P. & G. S.; G. Arthur Howell, Sec.; G. W. Ramey, P. A.

Brand: "DIXISTEEL" (all finished products).

Works at Atlanta: blt. 1901; f. o. June, 1901; first steel, May 10, 1906; three 60-ton B. O. H. fur., fuel prod. gas and pulv. coal; 6 stationary Hughes gas prod.; three 1-d. heat. fur., fuel, prod. gas and coal; eight 1-hole soaking pits, fuel pulv. coal; 25" 2-h. 1-st. blooming, 14" 2-h. 6-st. Morgan cont. billet; 10" 2-h. 14-st. Morgan semi-cont. rod and bar; 10" 2-h. and 3-h. 5-st. hoop, 8" 2-h. and 3-h. 5-st. cotton tie; 54 wire drawing blocks; 52 wire nail mach.; 20 barbed wire mach.; 10 wire fence mach.; 1 galv. pan.

Product: ingots, billets, wire rods, hoops, bands, cotton ties, light

structural shapes, merchant bars, plain wire to 18 ga., galvanized wire, wire nails, barbed wire, wire fence. Annual cap., 100,000 tons ingots, 90,000 tons billets, 80,000 tons finished rolled products, including 30,000 tons wire rods, 27,000 tons hoops, bands and cotton ties, 20,000 tons merchant bars, 3,000 tons light structural shapes. Wire products, 30,000 net tons plain wire, 12,000 net tons galv. wire, 10,000 net tons barbed wire, 9,000 net tons wire fencing, 300,000 kegs (100 lbs.) wire nails.

ATLANTIC STEEL CASTINGS CO. (The), 6th & Lloyd Sts., Chester, Pa.

Inc. Nov. 3, 1923 in Delaware. Capital stock: com., no par value, auth. and issued 35,000 shares; bonds \$20,250.

William A. Faison, P.; T. J. Sproul, V. P. & T.; R. S. Munson, V. P., G. M. & G. S.; Paul J. Mauer, Sec.; E. B. Powell, G. S. M.; J. W. Cuddy, P. A.

Works at Chester: blt. 1907; f. o. July, 1907; 1 A. O. H. fur. (12-ton); fuel, oil.

Product: steel castings for sale; annual cap. 7,000 tons. Steel castings for railroads, road machinery, electrical machinery, etc.

ATLAS ALLOY STEEL CORPORATION, Dunkirk, N. Y.

Inc. Jan. 6, 1925 in New York. Capital stock: Prior preference stock, par value \$100, auth. \$1,000,000, issued \$300,000; pref., no par value, auth. and issued 15,000 shares; com., no par value, auth. and issued 30,000 shares; bonds \$1,634,500.

A. F. Dohn, P.; H. E. Nichols, 1 V. P. & T.; F. B. Lounsberry, 2 V. P.; W. D. Myres, Sec.; Walter Bould, A. T.; L. H. Matteson, A.; C. W. Spittal, G. S.

Sales offices:

Boston, Mass., 102 Purchase St.

Chicago, Ill., 1242 West Washington Blvd.

Cleveland, Ohio, Hanna Bldg.

Detroit, Mich., 1437 Franklin St.

New York, N. Y., Canadian Pacific Bldg.

Philadelphia, Pa., Pennsylvania Bldg.

Pittsburgh, Pa., Union Trust Bldg.

Brands (Tool Steel): LXX and Panther Special High Speed, Atlas Hot Die, Chrome Die, Deward Oil Hardening, N. N. Die, Falcon, Denine, Atlas XXX, Python, Atlas XX, Condor Stainless.

Works at Dunkirk, N. Y.: blt. 1907-08; f. o. steel Jan. 27, 1908, hammered products, Feb., 1908, rolled products, Aug., 1913; 3 Heroult electric fur. (two 6-ton, one 3-ton); 3 crucible fur. (30 pots), 6 Swindell gas prod.; 19 coal-fired heating fur. (18 3-d. 1 4-d.); 20' 3-h. 2-st. blooming, 14' 3-h. 5-st., 10' 3-h. 7-st. and 10' 3-h. 6-st. bar mills; 5 hammers (1,500 to 12,000-lb.); 8 hand pickling tanks; 13 box annealing fur.; 26 wire drawing blocks

(wire .013 to .500 inch). Fuel, coal and prod. gas. (Formerly Atlas Crucible Steel Co.)

Product: steel ingots, alloy steel ingots; hammered and rolled bars, squares, rounds, flats, octagons, hexagons, etc. for tools, drills, lathe tools, punches, dies, etc. Annual cap., 20,250 tons steel ingots (4,050 tons crucible, 16,200 tons electric), 15,500 tons rolled and hammered tool steel bars, 3,000 tons tool steel wire.

Atlas Crucible Steel Co., Dunkirk, N. Y., was merged with The Electric Alloy Steel Co. in 1922, see The Atlas Steel Corporation.

ATLAS STEEL CASTING CO., 1963 Elmwood Ave., Buffalo, N. Y.

Inc. Mar. 13, 1911 in New York. Capital stock: com., par value \$100., auth. \$375,000, issued \$360,300; pref. 7% cum. auth. \$25,000, issued \$10,000.

G. H. Chisholm, P.; E. C. Strong, V. P. & G. M.; H. L. Chisholm, Sec. & P. A.; C. R. Wyckoff, T. & G. S. M.; W. J. Tourville, G. S.

Sales office: 200 Fifth Ave., New York, N. Y.

Works at Buffalo: blt. 1911-12; f. o. Feb. 19, 1912: 2 A. O. H. fur. (one 15-ton, one 20-ton). Fuel, oil.

Product: steel castings for sale; annual cap., 12,000 tons. Specialty, railroad and machinery castings.

Atlas Steel Corporation (The), Dunkirk, N. Y. was incorporated in New York, Sept. 6, 1922, and as of Oct. 2, 1922 acquired Atlas Crucible Steel Co. and The Electric Alloy Steel Co. The plant of Atlas Crucible Steel Co. at Dunkirk, N. Y. became Dunkirk Works, and plant of The Electric Alloy Steel Co. at Charleroi, Pa. became Charleroi Works of the new corporation. Canadian Atlas Crucible Steel Co. a subsidiary of Atlas Crucible Steel Co. with plant at Welland, Ont., Canada was included in the merger. On Jan. 21, 1924 The Atlas Steel Corporation was placed in the hands of receivers who operated the company during 1924 and sold the properties at public sale in Jan., 1925. F. R. Collins, acting for reorganization committee of creditors purchased the properties for \$250,000 subject to mortgages and secured and unsecured claims. Atlas Alloy Steel Corporation was incorporated to take over and operate the Dunkirk Works. The Charleroi Works and other properties were taken over by Assets Distribution Corporation, Bankers Trust Co., Buffalo.

Atlas Steel Products Co., Vancouver, B. C., Canada, was organized to take over from the assignee, by purchase, the assets of Hyatt Steel Products, Ltd. It operated Port Moody Works for a short time in 1920 in order to finish partly manufactured products and then surrendered the lease. See Port Moody Steel Works.

Aurora Foundry Co., Seattle, Wash., went into hands of receiver in 1921 and was sold at receiver's sale to Tennent Steel Casting Co., Nov. 5, 1921; now known as Seattle Works, Tennent Steel Casting Co.

Avery Company, Peoria, Ill.

John W. McDowell, Trustee in Bankruptcy.

Company operated plants at Peoria, Ill., and Milwaukee, Wis., for manufacture of farm machinery, tractors, cultivators, plows and threshing machines. Operated a steel foundry for own use only at Peoria. Filed voluntary petition in bankruptcy in April, 1924. Works at Peoria: steel foundry, f. o. 1917; 2 Booth-Hall electric fur. (1-ton). Gray iron and semi-steel foundry. Idle and for sale. Product: steel castings, annual cap., 2,400 tons.

BABCOCK & WILCOX TUBE CO. (The), Beaver Falls, Pa.

Inc. Aug. 15, 1901 in Pennsylvania as Pittsburgh Seamless Tube Co.; corporate title changed to The Babcock & Wilcox Tube Co., Jan. 1, 1923. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$1,200,000.

A. G. Pratt, P.; I. Harter, V. P.; at 85 Liberty St., New York.
F. J. Cluley, Sec., T. & P. A.; H. H. Murray, S.; at Beaver Falls.

Sales offices:

Boston, Mass.

New Orleans, La.

Chicago, Ill.

New York, N. Y.

Cincinnati, Ohio.

Philadelphia, Pa.

Cleveland, Ohio.

Pittsburgh, Pa.

Works at Morado Station, Pa.: blt. 1899, f. o. Dec. 20, 1899; 2 billet heat. fur., 2 piercing mills, 2 trains (22" 2-h. 1-st.).

Product: hot finished and cold drawn seamless steel tubes, annual cap., 2,000 tons blanks for cold drawn, and 23,000,000 feet hot finished seamless tubes.

Baker, Robert E., 2422 Euclid Ave., Cleveland, Ohio.

Owner of plant formerly operated by Wayne Steel Co. at East Lake Road, Erie, Pa., purchased Sept., 1924.

Works at East Lake Road, Erie, Pa.: blt. 1918-20, f. o. May 29, 1920; 2 B. O. H. fur. (30-ton). Idle since 1920, for sale or lease.

Product: steel ingots, annual cap., 40,000 tons.

BALDWIN LOCOMOTIVE WORKS (The), 500 North Broad St., Philadelphia, Pa.

Inc. June 7, 1911 in Pennsylvania. Capital stock: com. \$20,000,000; pref. 7% cum. \$20,000,000; bonds, \$10,000,000.

Samuel M. Vauclain, P.; John P. Sykes, 1 V. P. (plants and manufacture); William de Krafft, V. P. (finance) & T.; Grafton Greenough, V. P. (domestic sales); F. de St. Phalle, V. P. (foreign sales); James McNaughton, V. P.; Charles A. Bourgeois, V. P. (manufacture); Jacques L. Vauclain, V. P. (plant); Harry Glaenzer, V. P. (engineering); William A. Russell, V. P. (purchases); Henry V. Wille, V. P.; Arthur L. Church, Sec. & A. T.; A. B. Ehst, C.

Representatives and agents:

Boston, Mass., Henry Bartlett, 185 Devonshire St.

Chicago, Ill., Charles Riddell, 627 Railway Exchange.

Houston, Texas, Russell A. Hey, 1108 Second Natl. Bank Bldg.

Los Angeles, Calif., Williams, Dimond & Co., 407 Transportation Bldg.

New York, N. Y., James McNaughton, V. P., 120 Broadway.

Pittsburgh, Pa., Charles E. Hale, 375 Union Trust Bldg.
 Portland, Ore., A. J. Beuter, 313 Northwestern Bank Bldg.
 Richmond, Va., G. F. Jones, 512 Richmond Trust Bldg.
 St. Louis, Mo., A. S. Goble, 1210 Boatmens Bank Bldg.
 St. Paul, Minn., Henry Blanchard, 908 Merchants Natl. Bank Bldg.

San Francisco, Calif., Williams, Dimond & Co., 310 Sansome St.
 and agents in many foreign countries.

Company operates plants at Eddystone and Philadelphia, Pa., for the manufacture of locomotives (steam, compressed air, electric and gasoline), electric motor and trailer trucks. Operates rolling mill, forge shop and foundry at Eddystone Plant.

Eddystone Plant, Eddystone, Pa.: blt. 1906; two 2-d. heat. fur.; 10" 3-h. 3-st. guide mill; 53 steam hammers (600-lb. to 7,500-lb.); 17 forging presses (300-ton to 790-ton). Fuel, bit. coal and oil. Gray iron foundry, annual cap., 60,000 tons.

Product: merchant bars for own use, annual cap., 5,500 tons; locomotive forgings, 40,000 tons.

BALDWINS CANADIAN STEEL CORPN., LTD., 77 Commissioners St., Toronto, Ont., Canada.

Inc. 1919 in Dominion of Canada. Capital stock: com., no par value, auth. and issued 100,000 shares.

Sir Hugh E. Poynter, Bart. P.; R. S. Smith, Sec.

Sales office: Hugh Russel & Sons, Ltd., Excelsior Life Bldg., Toronto.

Works at 77 Commissioners St. (Ashbridges Bay): blt. 1917; f. o.

June 15, 1917; electric fur. steel plant dismantled in 1925; 3 double sheet fur. and 2 comb. sheet and pair fur.; 4 sheet mills (two 24" x 36", two 24" x 44"); 4 tin mills (two 24" x 28", two 24" x 36"); 6 pair cold rolls, single stands, 2 for black sheets, 4 for tinplates; 1 four-arm pickling mach., 1 hand pickling tank; 1 box annealing fur., 1 blue annealing fur.; 2 galvanizing pots; 4 tinning pots (2 for coke, 2 for charcoal tinplates).

Product: black sheets (to 36" x 120", 18 to 29 gauge), black plates (28" x 20", 26 to 30 gauge); annual cap., 48,000 tons: galvanized sheets, 6,000 tons; tinplates, 240,000 base boxes (120,000 coke, 120,000 charcoal).

BALTIMORE & OHIO RAILROAD CO. (The), Baltimore, Md.

Works at Front & Williams Sts., Cumberland, Md.: blt. 1920-21; 2 bit. coal-fired 3-d. heat. fur.; 12" 5-st. bar mill. Scrap reclaiming plant.

Product: merchant bars for own use, annual cap., 10,000 tons.

Baltimore and Ohio Railroad Co. (The), Baltimore, Md. Mount Clare rolling mill plant was dismantled in 1922.

BALTIMORE ELECTRO ALLOYS CO. (The), 1611 Lexington Bldg., Baltimore, Md.

Inc. May 11, 1915 in Maryland. Capital stock: com. auth. \$750,000, issued \$517,000.

Charles E. F. Clarke, P.; at 42 Wall St., New York. J. A. Walls, V. P.; James L. Rintoul, Sec., T. & A.; M. Harman, G. M.; J. E. O'Connor, P. A.; at Baltimore.

Works at Highlandtown, Md.: blt. 1915, f. o. Dec. 23, 1915; two 3-phase open-top electric fur. Hydro-electric power from Pennsylvania Water & Power Co., Baltimore.

Product: ferro-silicon, ferro-silicon-aluminum, ferro-chrome, and other ferro-alloys, annual cap., 10,000 tons.

BALTIMORE MALLEABLE IRON & STEEL CASTING CO., Charles & Wells Sts., Baltimore, Md.

Inc. 1908; re-inc. Jan. 6, 1920 in Maryland. Owned by The Kennedy Corporation, Baltimore, Md.

Joseph P. Kennedy, P., T. & G. M.; Francis Kennedy, V. P.; K. M. Kaltenbach, Sec.; Francis J. Flynn, P. A.

Works at Charles & Wells Sts., Baltimore: 2 A. O. H. fur. (12-ton, 15-ton) for melting stock for malleable foundry; annual cap., 10,000 tons malleable castings. These fur. are also used in part for steel castings.

Product: steel castings for sale; annual cap., 5,000 tons.

BANCROFT & MARTIN ROLLING MILLS CO., South Portland, Maine.

Inc. June 1, 1912 in Maine. Capital stock: com., par value \$100, auth. \$250,000, issued \$240,000; bonds \$60,000.

William E. Clark, P.; at 120 Milk St., Boston, Mass. Kenneth T. Burr, T. & G. M.; at Portland. John B. Connor, G. S.; at South Portland.

Sales office: Everett, Mass.

Works at South Portland, Me.: blt. 1866, rebt. 1903; 4 oil-fired heating fur. (three 3-d., one 4-d.); 18" 3-h. 5-st. bar mill; 16" 3-h. 1-st. and 10" 3-h. 4-st. Belgian guide mill. Fuel, oil.

Product: merchant bars, concrete reinforcing bars, bolt iron and shafting; annual cap., 15,000 tons finished rolled iron and steel, including 12,000 tons merchant bars and concrete bars, 3,000 tons bolt rods, etc.

Bass Foundry and Machine Co. (The), Rock Run, Ala. sold Rock Run Furnace properties on July 1, 1920 to the Rock Run Iron Co., Rock Run, Ala.

BATE (WM. T.) & SON, Inc., Elm & Harry Sts., Conshohocken, Pa.

Inc. May 1, 1925 in Pennsylvania. Capital stock: com., par value \$100, auth. \$100,000, issued \$30,000.

E. Lewis Gibbs, P. & T.; T. Holland Nelson, V. P. & Sec.; A. E. Maskrey, G. M.

Brand: Durite (alloy steel castings).

Works at Elm & Harry Sts., Conshohocken; 1 Rennerfelt electric fur. (1-ton); 1 cupola; gray iron foundry, annual cap., 1,200 tons gray iron castings for sale.

Product: steel castings for sale, annual cap., 1,200 tons; alloy steel castings (nickel, chrome); rust, heat and corrosion-resistant alloy steel castings.

Bayonne Steel Casting Co., Bayonne, N. J. was acquired by Eastern Steel Castings, Inc. in 1923. Works at Bayonne were dismantled in 1923 and the land sold. The converters were scrapped and some of the open-hearth furnace equipment removed to Eastern Steel Castings plant at Newark.

BAY VIEW FOUNDRY CO. (The), Sandusky, Ohio.

Inc. Oct. 1, 1904 in Ohio. Capital stock: com., par value \$100, auth. \$225,000, issued \$176,200; pref. 6% cum.*auth. \$75,000, issued \$50,000.

E. L. Marsh, P. & T.; A. J. Wentworth, V. P.; C. C. Teasel, Sec. Works at Sandusky, Ohio: one 1-ton Tropenas converter; f. o. July, 1918, idle since 1918. Gray iron foundry; annual cap., 10,000 tons. Brass and aluminum castings, wood and metal patterns and machine work.

Product: steel castings; annual cap., 1,800 tons.

BEAUCHEMIN ET FILS, Ltd., 2 Limoges St., Sorel, P. Q., Canada.

Est. 1855; inc. Apr. 21, 1902 in Province of Quebec. Capital stock: com., par value \$100, auth. and issued \$299,900.

Alfred Beauchemin, P.; V. E. Beauchemin, V. P. & G. M.; L. P. Tremblay, Sec., T., G. S. M. & P. A.

Steel foundry, 2 Limoges St., Sorel: 2 modified 3,000-lb. converters (1 Stoughton, 1 Baillot); first steel, Mar. 5, 1909; 2 cupolas; 1 tilting furnace for melting ferro alloys; 2 annealing fur. Gray iron foundry, annual cap., 1,000 tons. Machine shop for jobbing and own use.

Product: carbon and alloy (manganese, chrome, nickel) steel castings for own use and for sale; annual cap., 2,000 tons. Castings for railway cars, locomotives, ships, dredges, machinery and general castings from ½-lb. to 18,000 lb.; steel anchors, 40 to 8,000-lb., steel car wheels. Company makes agricultural machinery; concrete pipes for bridges, culverts and sewers; ship repairs, fitting out and electric welding.

BEAUMONT IRON WORKS CO., Beaumont, Texas.

Inc. Mar. 1910 in Texas. Capital stock: com., par value \$100, auth. \$700,000; bonds \$150,000.

L. J. Black, P. & G. M.; Charles B. Sheeks, Sec. & T.; N. P. Erwin, G. S. M. & P. A.; at Beaumont. J. E. Swindler, V. P.; at Tulsa, Oklahoma.

Sales offices:

New York, N. Y., Petroleum Apparatus Co., 82 Beaver St.

Pittsburgh, Pa., Frick-Reid Supply Co.

Tulsa, Okla., Frick-Reid Supply Co.

Brand: Dreadnought (Rotary drilling equipment, pipe line and refinery supplies).

Works at Beaumont, Texas: one 1½-ton single phase electric fur. installed 1918; f. o. Mar., 1918; one cupola; 2 hammers (2,500 and 3,500-lb.); 1 hydraulic press (500-ton); 1 bulldozer. Gray iron, semi-steel and brass foundry; annual cap., 2,500 tons for own use and for sale.

Product: electric steel castings for own use and for sale; annual cap., 2,000 tons. Alloy steel castings (manganese, nickel, chrome, and vanadium). Make some special alloy ingots for own use in Forge Shop.

Beaver Valley Alloy Foundry Co., Monaca, Pa., built small crucible steel fur. at Monaca for experimental purposes. Never operated commercially; furnace abandoned in 1920.

BECKER STEEL CO. OF AMERICA, 154 Nassau St., New York, N. Y.

Inc. Mar. 19, 1915 in West Virginia. Capital stock: com., par value \$100, auth. \$750,000, issued \$28,000; bonds \$350,000.

William Peters, P.; A. J. Becker, 1 V. P. & T.; A. B. Manning, Sec.; at 154 Nassau St., New York. C. A. Carr, 2 V. P.; at 705 Ford Bldg., Detroit, Mich. F. H. Schoenfuss, G. S.; at Charleston, W. Va.

Works at Charleston, W. Va.: blt. 1906-07; 2 crucible fur. (one 24-pot, one 30-pot); 2 bar mills (10" and 14") with 3 heat. fur.; 10 annealing fur.; 7 hammers (500-lb. to 3-ton) with 7 heat. fur.; one hand pickling tank.

Product: steel ingots, annual cap., 1,000 tons; rolled and hammered tool steel, 6,000 tons; high speed steel.

Belfont Iron Works Co., Ironton, Ohio. Name of Company changed to Belfont Steel and Wire Co. January 1, 1924.

BELFONT STEEL & WIRE CO., Ironton, Ohio.

Inc. Jan. 23, 1863, in Ohio as Belfont Iron Works Co., name changed to Belfont Steel & Wire Co., Jan. 1, 1924. Capital stock: com., par value \$100, auth. \$4,000,000, issued \$3,074,300; pref.

8% cum. auth. \$1,000,000, issued \$822,300. Purchased The Kelly Nail & Iron Co., Feb. 7, 1924.

I. P. Blanton, P. & G. M.; S. G. Gilfillan, V. P.; T. J. Hayes, Sec. & P. A.; John C. Brown, T.; J. R. Donovan, A.; I. A. Ryan, Mill Supt.; Leon Ehrman, Furnace Supt.; J. R. Gilfillan, G. S. M.

Brand: Belfont.

Belfont Furnace, Ironton: 1 stack, 75' x 18' 5", blt. 1868, rebld. 1919-20, blown in Sept. 1, 1920; 3 stoves (2 Freyn-Brassert, 75' x 20', 1 Hossman, 75' x 18'); 1 G. E. turbo-blower (30,000 cfm.); 7 Sterling water-tube boilers, 1,800 H. P.; 1 Heyl & Patterson single-strand pig casting mach.; 1 slag granulating pit. By-product coke: Old Range ore. Product: foundry and malleable pig iron; annual cap., 96,000 tons.

Sarah Furnace, Ironton: 1 stack, 60' x 15', blt. 1877, remod. 1910, relined 1922; 4 two-pass stoves (2 Whitwell, 2 Amsler); 1 G. E. turbo-blower (30,000 cfm.); 4 water-tube boilers (3 Meehan, 1 Ironton) 1,000 H. P.; 1 single-strand pig casting mach.; 1 slag granulating pit. By-product coke: Old Range ore. (Kelly Nail & Iron Co. to Feb., 1924.) Product: bessemer pig iron; annual cap., 72,000 tons.

Wire mills, Kelly Nail Works and Belfont Wire Mill: 109 wire drawing blocks for wire to 22 gauge, 141 wire nail mach., 24 barbed wire mach; 1 galv. pan. Cut nail mach. idle. Nail plate train dismantled in 1919. Product: plain wire, galvanized wire, wire nails and barbed wire. Annual cap., 50,000 net tons plain wire, 7,500 net tons galvanized wire, 600,000 kegs (100-lb.) wire nails, 10,500 net tons barbed wire.

Berger Manufacturing Co., Canton, Ohio, was acquired by the United Alloy Steel Corporation, April 15, 1921. Works are now known as Berger Division, United Alloy Steel Corporation.

BERKELEY STEEL FOUNDRY CO., 1328 Second St., Berkeley, Calif.
Not incorporated.

Works at 1328 Second St., Berkeley (leased from A. E. Greene): 1 Greene electric fur. (500-lb.) installed in 1921; f. o. Jan. 1, 1922. Product: electric steel castings for sale; annual cap., 300 tons. Small steel castings up to 150-lb.

Bernhard Boiler Co., Lima, Ohio, purchased plant of The Lima Steel Casting Co. at Lima, Apr. 19, 1923. Company will not make steel castings and have abandoned the Whiting converter (1½-ton) and A. O. H. fur. (5-ton). This equipment is still in the plant and for sale.

BERRY IRON & STEEL CO., 5th & Oak Sts., St. Joseph, Missouri.
Inc. Nov. 5, 1914, in Missouri. Capital stock: com., par value \$100, auth. \$80,000, issued \$70,000.

G. D. Berry, P. & T.; A. R. Berry, V. P.; F. W. Taylor, Sec.; H. L. Brooks, A.; J. E. Porter, G. M.; C. C. McDonald, G. S. M. & P. A.

Sales office: S. R. Toucey, 424 Board of Trade Bldg., Kansas City, Mo.

Works at St. Joseph, Mo. (leased, Berry Realty & Investment Co. owner); one 4-ton Moore Lectromelt electric fur.; f. o. Aug. 17, 1922; 2 cupolas; one electric fur. for melting ferro-alloys; gray iron and semi-steel foundry (6,000 tons).

Product: electric steel castings for sale; annual cap., 7,200 tons. Railway car and locomotive castings.

BESSIE FURNACE CO. (The), 230 North 4th St., Columbus, Ohio.

Inc. 1913 in Ohio. Capital stock: com., par value \$100, auth. and issued \$300,000.

Caleb L. McKee, P. & T.; at Columbus. Charles B. Donahue, V. P. & Sec.; at Logan, Ohio.

Brand: Bessie (pig iron).

Bessie Furnace, New Straitsville, Ohio: 1 stack, 75' x 14', blt. 1878, rebt. 1914; 3 Amsler stoves, 75' x 18'. Coke: Lake ore. (Operated by M. A. Hanna Co. Apr. 1, 1920 to July 1, 1923. Idle since).

Product: 9 to 13 per cent bessemer ferro-silicon and silvery iron; annual cap., 24,000 tons.

BEST STEEL CASTING CO., Foot of 105th Ave., Station G, Oakland, Calif.

Inc. Aug. 1913 in California. Capital stock: com., auth. \$250,000, issued \$240,000.

H. H. Whiting, P. & G. M.; John Tuohy, V. P. & G. S.; Violet Purcell, Sec.; at Oakland. George A. Gunn, T. & G. S. M.; at 1404 Hobart Bldg., San Francisco, Calif.

Sales office: 1404 Hobart Bldg., San Francisco.

Works at Foot of 105th Ave., Oakland: blt. 1910, f. o. Feb. 21, 1911; two 2-ton converters (1 Whiting, 1 Stoughton); 2 cupolas; 2 electric fur. (one 6-ton Heroult, one 1,500-lb. Rennerfelt) f. o. Jan. 1920. Gray iron foundry, annual cap., 12,000 tons.

Product: steel castings for sale (1-lb. to 6-ton), annual cap., 12,000 tons (6,000 tons converter, 6,000 tons electric). Alloy steel castings (chrome, nickel, manganese).

BETHLEHEM STEEL CORPORATION, Cunard Bldg., 25 Broadway, New York, N. Y.

Inc. Dec. 10, 1904 in New Jersey. Capital stock (Dec. 31, 1924): com., par value \$100, auth. \$270,000,000, outstanding \$180,151,900; pref. 8% cum. auth. \$30,000,000, outstanding \$14,288,600 (remainder converted into 7% pref.); pref. 7% cum. auth., \$77,000,000, outstanding \$45,143,910; bonds (Dec. 31, 1924) \$75,568,025; bonds of subsidiary companies, \$161,574,240.

Charles M. Schwab, Ch.; James H. Ward, V. P.; at 25 Broadway, New York. Eugene G. Grace, P.; H. E. Lewis, V. P.; W. F. Hartman, V. P. & T.; R. E. McMath, Sec.; F. A. Schick, C.; at 701 East Third St., Bethlehem, Pa.

Bethlehem Steel Corporation owns the following subsidiary companies of which Bethlehem Steel Corporation of Pennsylvania, described below in detail is the chief operating subsidiary company:

Bethlehem Chile Iron Mines Company.
Bethlehem-Cuba Iron Mines Company.
Bethlehem Iron and Steel Corporation.
Bethlehem Land and Improvement Corporation.
Bethlehem Mines Corporation.
Bethlehem Securities Company.
Bethlehem Shipbuilding Corporation, Ltd.
Bethlehem Steel Company (Pennsylvania).
Bethlehem Steel Company (Delaware).
Bethlehem Steel Company of Brazil.
Bethlehem Steel Export Corporation.
Bethlehem Steel Products Company (holding lease for 999 years of properties of Cambria Iron Co.).
Bethlehem Steel Realty Corporation.
Bethlehem Transportation Company.
Beth-Mary Steel Corporation.
Brotherton Iron Mining Company.
Buena Vista Iron Company.
Buffington Water Company.
Cambria Inclined Plane Company.
Citizens Realty Company of Bethlehem.
Compania de Minas de Fierro "Las Truchas S. A."
Conemaugh & Black Lick Railroad Company.
Cornwall Railroad Company.
Dundalk Company (The).
Dundalk Sewerage Company (The).
Dundalk Water Company (The).
East Wheatfield Water Company.
Fore River Railroad Corporation.
Fore River Shipbuilding Corporation.
Franklin Iron Company (The).
Juniata Limestone Company (The), Limited.
Juragua Iron Company.
Lake Erie Company.
Lebanon Consolidated Water Company.
Lebanon County Light, Heat & Fuel Company (The).
Manufacturers Water Company (The).
Midvale Steel Company (The).
Northampton County Water Company.
Ore Steamship Corporation.

Patapsco & Back Rivers Railroad Company.
 Penn Iron Mining Company.
 Penn Iron Mining Company of Wisconsin.
 Penn Store Company.
 Philadelphia, Bethlehem & New England Railroad Company.
 Pine Township Water Company.
 Possum Glory Water Company.
 Redington Standard Fittings Company.
 Service Stores Corporation.
 South Buffalo Railroad Company.
 Sparrows Point Store Company.
 Steelton & Highspire Railroad Company.
 Sunday Lake Iron Company (The).
 Union Iron Works Company.
 Union Iron Works Dry Dock Company.

BETHLEHEM STEEL COMPANY, 701 East Third St., Bethlehem, Pa.

Inc. April 17, 1899 in Pennsylvania. Capital stock: com., par value \$100, issued \$65,000,000.

Eugene G. Grace, P.; C. A. Buck, V. P.; H. E. Lewis, V. P.;
 Quincy Bent, V. P.; R. E. McMath, Sec.; W. F. Hartman, T.;
 F. A. Shick, C.; E. S. Knisely, G. S. A.; G. H. Blakely, M. (structural and plate sales); G. W. Struble, M. (car, ordnance and machinery sales); C. R. Holton, P. A.

Sales offices:

Atlanta, Ga., C. P. King, Healy Bldg.
 Baltimore, Md., J. A. Davis, Continental Bldg.
 Boston, Mass., R. E. Belknap, Atlantic Bank Bldg.
 Buffalo, N. Y., E. S. Illeg, Marine Trust Company Bldg.
 Chicago, Ill., J. F. Hennessy, Peoples Gas Bldg.
 Cincinnati, Ohio, John H. Richards, Union Trust Bldg.
 Cleveland, Ohio, J. C. Chandler, Union Trust Bldg.
 Detroit, Mich., J. S. Hegeman, Penobscot Bldg.
 Los Angeles, Calif., H. E. Gray, Washington Bldg.
 New York, N. Y., J. M. Ellis, Cunard Bldg.
 Philadelphia, Pa., W. B. Kennedy, Widener Bldg.
 Pittsburgh, Pa., J. E. McLain, Oliver Bldg.
 St. Louis, Mo., Wm. Chapman, Chemical Bldg.
 San Francisco, Calif., E. E. Goodwill, Manager of Sales, West Coast, Maston Bldg.
 San Francisco, Calif., H. H. Hines, Maston Bldg.
 Seattle, Wash., W. C. Scott, Jr., L. C. Smith Bldg.
 Washington, D. C., E. R. Leonard, Wilkins Bldg.

Export sales:

Bethlehem Steel Export Corp., Cunard Bldg., 25 Broadway, N. Y.

Foreign offices:

Havana, Cuba, Royal Bank Bldg.
Honolulu, Hawaii, Young Bldg.
Mexico City, Mexico.
Montreal, Canada, 263 St. James St.
San Juan, Porto Rico.
Tokio, Japan, Nippon Yusen Kaisha Bldg.
Toronto, Canada, Royal Bank Bldg.

Products: pig iron, ferro-manganese, spiegeleisen; blooms, slabs, billets, sheet and tin bars; Bethlehem structural shapes, standard structural shapes; universal and sheared plates, skelp, sheet and plate piling, flanged and pressed plate products; commercial steel bars, muck bars, iron bars, concrete bars, agricultural shapes, special and alloy steel bars, cold drawn steel, spring steel, electric and crucible tool steel, staybolt iron; standard, light, high and special tee, girder and guard rails, rail joints, rail braces, rail anchors, splice bars, tie plates, frogs, switches, crossings, special track work, switch stands; tinplate, black plate; black, blue annealed and galvanized sheets; forging ingots, fluid compressed ingots, pressed and hammered forgings, hollow forgings, drop forgings, shafting; steel, iron and brass castings, steel rolls, chilled and sand cast iron rolls, tunnel segments, ingot moulds; armor plate; guns, gun forgings, gun carriages, mounts, caissons and limbers, range finders, sights, shell forgings, complete ammunition, turret mechanism; large gas engines, Bethlehem oil engines, heavy machinery, machine tools, pumps, hydraulic presses; steel bridges, viaducts and buildings, pier caissons, turntables; cutting and punching tools; nuts, rivets, spikes, track bolts, washers, tie rods, toe calks; wire rods, wire nails, barbed wire, woven wire fence; steel freight, tank, mine and special dump cars, forged and pressed car parts, car underframes and trucks, car axles, rolled car wheels; rolled fly wheels, rolled gear blanks, agricultural implement parts, liner wedges, car and bridge knuckle and cotter pins, clevises, annular rolled sections; lap welded iron and steel boiler tubes; coke, gas, tar, ammonia liquor, ammonium sulphate, light oil, benzol, motor fuel, toluol, solvent naphtha, naphthalene, etc.

Total annual capacity: 6,850,000 tons pig iron, 7,600,000 tons ingots, 4,696,000 tons finished hot rolled products.

Properties:

Bethlehem Plant, Bethlehem, Pa.:

Lehigh Division: blast furnaces, steel works, and rolling mills.

Saucon Division: steel works and rolling mills.

Steelton Plant, Steelton, Pa.: blast furnaces, steel works, and rolling mills.

Lebanon Plant, Lebanon & Reading, Pa.:

Blast Furnace Division: blast furnaces at Lebanon and Cornwall, Pa.

Bolt & Nut Division, Lebanon, Pa.: rolling mills, bolt, nut, rivet and spike factories. Reading, Pa.: rolling mills, bolt, nut, rivet and spike factories.

Maryland Plant, Sparrows Point, Md.: (Operated under lease from Beth-Mary Steel Corporation): blast furnaces, steel works, rolling mills and tinplate works.

Rod, wire and nail department under construction.

Lackawanna Plant, Lackawanna, N. Y.: (Operated under lease from Bethlehem Iron & Steel Corporation): blast furnaces, steel works, rolling mills.

Cambria Plant, Johnstown, Pa.: (Operated under lease from Bethlehem Steel Products Company): blast furnaces, steel works, rolling mills.

Coatesville Plant, Coatesville, Pa.: blast furnaces, steel works and rolling mills.

Detrick & Harvey Plant, Baltimore, Md.: machine tools and special machinery.

Bethlehem Plant, Bethlehem, Pa.:

Lehigh Division:

Blast Furnaces: 7 stacks: A, 90' x 22', blt. 1866, last rebt. 1914, relined 1922; B, 90' x 22', blt. 1874-75, last rebt. 1916, relined 1922-23; C, 80' x 18', blt. 1874-75, rebt. 1922; D, 90' x 21', blt. 1881, rebt. 1909, relined 1923; E, 90' x 23', blt. 1906, rebt. 1920-21, relined 1925; F, 90' x 20' 6", blt. 1910, relined 1923; G, 90' x 22', blt. 1910-11, relined 1922: 36 stoves (6 Roberts 80' x 18' for C; 30 McClure 100' x 22', 5 each for A, B, D, E, F, G); 16 blowing engines (3 Southwark vertical steam; 13 Bethlehem horizontal gas) 391,000 cfm., 18 lbs. rated pressure; 29 water-tube boilers (B. & W., Sterling, Rust) 20,000 H. P. furnish power also to armor plate dept., rolling mills, forge and shops; 2 double-strand pig casting mach. (1 Uehling, 1 Heyl & Patterson). By-product coke: Lake, Chile, Cornwall sinter, Cuban and New York ores. Product: basic, bessemer and foundry pig iron, annual cap., 1,098,000 tons.

By-Product Coke Plant: 424 Koppers by-product ovens, by-product recovery plant and Koppers benzol plant, annual cap., 1,792,000 net tons coke, 4,620,000 gals. light oil.

Steel Depts.: first acid steel Aug. 11, 1888, first basic steel Jan. 3, 1893; 3 A. O. H. fur. (one 10-ton, one 40-ton, one 50-ton); 8 B. O. H. fur. (two 40-ton, one 50-ton, five 60-ton); fuel in O. H. prod. gas, tar and oil, 40 Morgan gas producers; 2 electric fur. (one 3-ton Heroult, one 10-ton Girod); 2 mixers (400-ton); 6 cupolas. Iron foundry for iron castings (10,000 tons), iron rolls (5,000 tons), and ingot moulds (96,000 tons); brass foundry (1,500 tons).

Rolling Mills: four 4-hole soaking pits; 11 heat. fur. (seven 4-d., four cont.) fuel prod. gas and coke oven gas; 35" 2-h. 1-st. bloom-

ing; 18" 2-h. 6-st. billet; 22" 3-h. 3-st. and 22" 2-h. 1-st. bar; 16" 3-h. 1-st., 12" 3-h. 5-st. and 12" 2-h. 1-st. bar; 16" 3-h. 2-st., 12" 3-h. 5-st. and 12" 2-h. 1-st. bar; 10" 3-h. 5-st. and 10" 2-h. 1-st. bar; 12" 3-h. 1-st., 9" 3-h. 5-st. and 9" 2-h. 1-st. bar; 12" 3-h. 1-st., 8" 3-h. 5-st. and 8" 2-h. 1-st. bar; 31 steam and board hammers (400-lb. to 8,500-lb.); 11 forging presses (200-ton to 14,000-ton). Armor plate dept., machine shops for general work, rough machining and finishing forgings, and for heavy ordnance (16" and 18"); drop forge dept.

Saucon Division (blt. 1906-07; first steel Aug. 12, 1907, first rails, Aug. 31, 1907, first structural shapes, June 8, 1908);

Steel Depts.: 18 B. O. H. fur. (ten 50-ton, six 75-ton stationary; two 200-ton tilting); 3 bessemer converters (25-ton) for duplexing; 4 mixers (one 250-ton, one 400-ton, one 1,000-ton, one 1,300-ton). Rolling Mills: fifteen 4-hole soaking pits; 7 cont. heat. fur.; fuel prod. gas and coke oven gas; 46" 2-h. 2-st. blooming; 48" 2-h. 2-st. intermediate and 48" 2-h. 2-st. finishing Bethlehem special structural mill; 40" 2-h. 1-st. blooming; 42" 2-h. 2-st. intermediate, 42" 2-h. 2-st. finishing Bethlehem special structural; 40" 2-h. 1-st. blooming; 30" 3-h. 1-st. billet; 28" 3-h. 3-st. standard structural; 18" 3-h. 3-st. structural; 12" 2-h. 10-st. semi-cont. structural; 3 steam hammers (300-lb., 1,500-lb., 3,000-lb.). Structural fabricating shops (2), machine shop and roll shop.

Product (Bethlehem Plant, including both Divisions): pig iron, annual cap., 1,098,000 tons; steel ingots, 1,512,000 tons (1,500,000 tons O. H., 12,000 tons electric); steel castings for own use and for sale (18,000 tons); alloy steel ingots and castings (nickel, chrome, vanadium, molybdenum, silicon, tungsten); blooms, slabs and billets, 1,550,000 tons; hot rolled products, 1,085,000 tons including 960,000 tons structural shapes and 125,000 tons special bars; press and hammer forgings, 20,000 tons; drop forgings, 7,500 tons; fabricated structural steel, 72,000 tons; machinery and ordnance, 10,000 tons.

Steelton Plant, Steelton, Pa.:

Blast Furnaces: 5 stacks; A, 88' x 22', blt. 1917-18, relined 1921-22; B, 88' x 21' 6", blt. 1916-17, relined 1924-25; C, 85' 3" x 20', blt. 1883-84, rebt. 1906, relined 1917; D, 80' 7" x 18', blt. 1883-84, rebt. 1908, relined 1917; E, 88' x 21' 6", blt. 1914-15, relined 1925; 18 side comb. 2-pass stoves (twelve 100' x 24', two 100' x 22', four 100' x 20'); 2 twin, cross compound steam blowing eng. and 9 horizontal gas blowing engines, 286,600 cfm., 20 to 30-lb. rated pressure; 31 water-tube boilers (B. & W.), 12,400 H. P. serve also rolling mills, foundry and maintenance depts.; 2 Heyl & Patterson double-strand pig casting mach. By-product coke: Lake, Chile, Cornwall sinter, and Cuban ores. Product: basic, bessemer, malleable and low phosphorus pig iron, annual cap., 702,000 tons.

By-Product Coke Plant: 180 by-product ovens (60 Koppers, 120 Semet-Solvay), by-product recovery plant and Semet-Solvay modified and Karl Still benzol plants, annual cap., 672,000 net tons coke, 2,000,000 gals. light oil.

Steel Depts.: 3 bessemer converters (20-ton) for duplexing; 9 B. O. H. fur. (three 200-ton tilting, six 75-ton stationary); 2 A. O. H. fur. (one 20-ton, one 25-ton) fuel in O. H. prod. gas, oil and tar, 24 Hughes gas producers; 1 Heroult electric fur. (6-ton); 2 mixers (one 300-ton, one 800-ton); 1 cupola for spiegel. Gray iron foundry (6,000 tons).

Rolling mills: 11 soaking pits (five 4-hole, six 1-hole) fuel prod. gas; 6 heat. fur. (four 8-d. prod. gas; 2 non-regen. cont., fuel coke oven gas, oil and tar); 44" 2-h. 1-st. blooming; 35" 2-h. 1-st. roughing, 28" 3-h. 2-st., 28" 2-h. 1-st. rail and structural mill; 20" 3-h. 3-st. bar mill; 2 steam hammers (2,500-lb., 5,000-lb.); 6 steam hydraulic presses (300-ton to 2,000-ton). Fabricating shop; frog and switch dept. Product: steel ingots, 776,000 tons (720,000 B. O. H., 48,000 tons A. O. H., 8,000 tons electric); steel castings for own use and for sale, 18,000 tons; alloy steel ingots (nickel); alloy steel castings (manganese); blooms, 660,000 tons; finished hot rolled products, 530,000 tons including 400,000 tons rails, 10,000 tons merchant bars, 120,000 tons splice bars and tie plate bars; smooth and rough-turned forgings, 15,000 tons; frogs, switches, crossings, special track work, 50,000 tons; fabricated steel, 60,000 tons.

Lebanon Plant:

Blast Furnace Division, Lebanon and Cornwall, Pa.: 3 stacks (A and B, formerly known as Lebanon Furnaces, Lebanon, Pa.: G, formerly known as North Cornwall Furnace, Cornwall, Pa.): A, 80' 6" x 18', blt. 1845, last rebt. 1918; B, 91' 3" x 21' 4", blt. 1872-73, last rebt. 1924-25: G, 81' x 18' 6" blt. 1872, rebt. 1898, remod. 1923; 11 stoves (4 Massicks & Crooke 90' x 20', 1 Roberts 90' x 20' and 3 Roberts 60' x 20' at A. & B.; 3 Roberts 60' x 20' at G); 6 vertical steam blowing eng. (93,700 cfm.), 20 lbs. rated pressure; 26 water-tube boilers (B. & W., Heine, Sterling) 5,664 H. P.; 2 Uehling double-strand pig casting mach.; Greenawalt sintering plant (12-pan) for Cornwall concentrates, annual cap., 850,000 tons; rotary kiln nodulizing plant (not operating). By-product coke: Cornwall ore. Product: basic, bessemer and low-phosphorus, and foundry pig iron, annual cap., 240,000 tons.

Colbrook Furnaces, Lebanon, Pa.: (2 stacks) were dismantled in 1923. Bird Coleman Furnaces (2 stacks) Cornwall, Pa., were dismantled in 1922.

By-Product Coke Plant, Lebanon, Pa.: 90 Semet-Solvay by-product coke ovens, by-product recovery plant and Semet-Solvay

benzol plant, annual cap., 268,800 net tons coke, 460,000 gals. light oil.

Bolt and Nut Division (2 plants), Lebanon and Reading, Pa.; 21 double puddling fur.; 2 squeezers; 11 heat. fur. (two 3-d., four 4-d., four 5-d., pulv. coal; 1 cont. prod. gas); two 20" 3-h. 2-st. muck bar; 12" 3-h. 2-st. and 10" 3-h. 5-st. bar; 12" 3-h. 1-st. and 8" 3-h. 5-st. bar; 16" 3-h. 4-st. bar; 12" 3-h. 5-st. bar; under construction to be completed early in 1926, 16" 2-h. 6-st., 14" 2-h. 2-st., 12" 2-h. 2-st., 10" 2-h. 2-st. semi-cont. bar mill; 2 galvanizing kettles; 3 steam hammers (two 1,500-lb., one 3,000-lb.). Three bolt, nut, rivet and spike depts. (2 at Lebanon, 1 at Reading); iron (1,500 tons) and brass (100 tons) foundries; factory warehouse. Product: muck bar, annual cap., 24,000 tons; iron bars, 24,000 tons; drop forgings, 1,500 tons; bolts, nuts, rivets, spikes, washers, turnbuckles, etc. of all kinds, 97,500 tons.

Maryland Plant, Sparrows Point, Maryland (operated under lease from Beth-Mary Steel Corporation):

Blast Furnaces: 6 stacks; A, 84' 6" x 21' 6", blt. 1889, rebt. 1911, relined 1924; B, 84' 6" x 21' 6", blt. 1890, rebt. 1912, relined 1924; C, 84' 6" x 21' 6", blt. 1891, rebt. 1914, relined 1925; D, 84' 6" x 22', blt. 1893, rebt. 1915, relined 1924; E, 95' x 22', blt. 1919-20, relined 1924; F, 95' x 22', blt. 1919-20, relined 1925; twenty-four 2-pass stoves (seventeen 100' x 22', seven 90' x 22'); 4 steam blowing eng., 12 Bethlehem horizontal gas blowing eng. (450,000 cfm.) 25 lbs. rated pressure; 42 B. & W. water-tube boilers, 12,582 H. P. furnish power also to coke plant, rolling mills and service depts.; 1 Heyl & Patterson double-strand pig casting mach.; 1 Uehling double-strand pig casting mach. under construction; Greenawalt sintering plant (7-pan) for flue dust and fine ore, annual cap., 100,000 tons; 2 slag granulating pits, annual cap., 180,000 tons. By-product coke: Cuban, Chile and foreign ore. Product: basic and foundry pig iron, annual cap., 990,000 tons; ferro-manganese.

By-Product Coke Plant: 300 Koppers by-product coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 1,512,000 net tons coke, 4,000,000 gals. light oil.

Steel Dept.: 3 bessemer converters (25-ton) for duplexing; 14 B. O. H. fur. (five 75-ton stationary, four 100-ton stationary, five 200-ton tilting); fuel, oil; 12 Morgan gas producers; 3 mixers (250-ton, 1,000-ton, 1,300-ton); 3 B. O. H. fur. (100-ton stationary) under construction. Foundry for gray iron castings (6,000 tons), ingot stools (18,000 tons) and brass castings (700 tons) for own use and for sale.

Rolling Mills: eleven 4-hole soaking pits (8 in operation, 3 under construction) fuel, prod. gas: 14 heat. fur. (twelve 4-d. oil; two cont. coke oven gas); 40" 2-h. 1-st. blooming and slabbing; 24" 2-h. 6-st. billet; 18" 2-h. 6-st. billet and sheet bar; 26" 3-h. 3-st.

rail mill; 36" x 114" 3-h. sheared plate mill; 36" x 60" 2-h. universal plate; 2 jobbing plate mills (one 30" x 60" 2-h., one 30" x 72" 2-h.); 8 comb. sheet and pair fur.; 8 double sheet mills (30" x 38" to 56"); 36 comb. sheet and pair fur.; 36 hot black plate (tin) mills (28" x 30" to 34"); 1 train of 4 stands cold rolls for sheet mills; 10 trains of 3 stands 24" x 26" to 48" for tin mills; 15 box annealing fur.; 2 blue annealing fur.; 6 pickling mach. (3 Mesta 3-arm, 3 Mesta 4-arm); 3 galvanizing pots for sheets; 36 tinning sets for coke tinplates. Roll sheared plates 3/16" to 2" thick, 72" to 96" wide; universal plates 1/4" to 2" thick, 10" to 48" wide.

Under construction: 46" 2-h. 1-st. blooming; continuous wire rod mill with 17 stands; wire mill with 96 wire drawing blocks for wire 14 to 18 gauge; 134 wire nail mach.; 16 barbed wire mach.; 1 galvanizing pan.

Product (Maryland Plant): pig iron, annual cap., 990,000 tons; steel ingots, 1,020,000 tons; semi-finished hot rolled products, 1,380,000 tons; finished hot rolled products, 600,000 tons including 120,000 tons rails, 228,000 tons sheared and universal plates, 162,000 tons black plate for tinning, 90,000 tons black and blue annealed sheets; 3,200,000 base boxes tinplates.

Lackawanna Plant, Lackawanna, N. Y. (Lackawanna Steel Co. to Oct. 11, 1922: operated under lease from Bethlehem Iron and Steel Corporation):

Blast Furnaces: 9 stacks, A, 94' x 23', blt. 1917-18, f. o. July 28, 1918, relined 1925; B, 94' x 23', blt. 1917-18, f. o. Mar. 27, 1918, relined 1923; C, 94' x 21' 6", blt. 1906-07, f. o. Feb. 12, 1907, relined 1924; D, 87' x 16', blt. 1901-02, f. o. Feb. 11, 1903, relined 1924; E, 87' x 16', blt. 1901-02, f. o. May 2, 1903, relined 1917; F, 94' x 22', blt. 1902-04, f. o. June 9, 1904, relined 1924; G, 94' x 22', blt. 1902-05, f. o. Jan. 21, 1905, relined 1925; H, 94' x 22', blt. 1902-05, f. o. Sept. 3, 1905, relined 1923; J, 94' x 22', blt. 1902-06, f. o. May 1, 1906, relined 1924; 36 stoves (19 side-combustion of which three 133' x 22', eight 110' x 22', four 105' x 22', four 83' x 18'; 17 center-comb. of which nine 133' x 22', four 109' x 22', four 83' x 18'); 6 vertical steam and 21 gas (5 Bethlehem, 5 Mesta, 11 Koerting) blowing eng. (643,600 cfm.) 15 to 25 lbs. rated pressure; 138 (Cahall, Sterling) water-tube boilers, 36,000 H. P. serve also steel works and rolling mills; 2 Heyl & Patterson double-strand pig casting mach. By-product coke: Lake ore. Product: bessemer and basic pig iron, annual cap., 1,612,000 tons. By-product Coke Plant: 409 by-product coke ovens (114 Koppers, 60 Semet-Solvay, 235 Rothberg); by-product recovery plant and Koppers benzol plant, annual cap., 1,276,800 net tons coke, 3,000,000 gals. light oil.

Steel Depts.: first bessemer steel, Oct. 13, 1903, first O. H. steel, Sept. 26, 1904; 4 bessemer converters (10-ton) used direct or for duplexing; 24 B. O. H. fur. (twenty-two 100-ton stationary; two

200-ton tilting); fuel in O. H. prod. and coke oven gas and tar; 65 gas producers (Morgan, Laughlin); 3 mixers (250-ton, 300-ton, 600-ton); 7 cupolas for pig iron (not operating); 4 cupolas for spiegel. Foundry for gray iron (7,000 tons) castings, ingot moulds (60,000 tons) and brass (600 tons) castings.

Rolling Mills: 20 soaking pits (nineteen 4-hole, one 1-hole); 20 heat. fur. (six 4-d., four 5-d., ten cont.) fuel coke oven and prod. gas; 36" 2-h. 3-st. blooming; 32" 2-h. 3-st. rail; 40" 2-h. 1-st. blooming; 33" 2-h. 1-st. slabbing; 18" 2-h. 10-st. cont. billet and sheet bar; 24" 3-h. 2-st. and 16" 2-h. 1-st. bar and structural; 26" 3-h. 2-st. bar and structural; 16" 3-h. 1-st., 12" 3-h. 1-st., 12" 2-h. 3-st. bar; 12" 2-h. 6-st. and 10" 2-h. 4-st. bar; 12" 2-h. 4-st., 10" 2-h. 4-st. and 8" 2-h. 6-st. bar; 48" 2-h. universal and sheared plate mill; 2 hand pickling tanks. Roll sheared plates, 3/16" to 1 1/2" thick, 36" to 78" wide; universal plates 3/16" to 2" thick, 6 3/4" to 36" wide. Bolt, nut, rivet and spike dept. (track bolts 5/8" to 1 1/16", spikes 3/8" to 5/8"). Bridge and fabricating shop (35,000 tons). New construction: 35" 2-h. 1-st., 28" 3-h. 3-st. structural mill, blt. 1925, f. o. Dec. 14, 1925; 18" 2-h. 5-st. and 14" 2-h. 4-st. structural mill to be completed 1926.

Product (Lackawanna Plant): pig iron, annual cap., 1,612,000 tons; steel ingots, 1,824,000 tons (180,000 tons bessemer, 1,644,000 tons B. O. H. including 240,000 tons duplex); steel castings for own use, 2,500 tons; blooms and slabs, 1,625,000 tons; billets and sheet bars, 300,000 tons; finished hot rolled products, 1,090,000 tons including 400,000 tons rails, 150,000 tons structural shapes, 100,000 tons sheared and universal plates, 350,000 tons merchant and concrete bars, 90,000 tons splice bars and tie plate bars; track bolts, nuts and spikes, 20,000 tons; fabricated structural material, 35,000 tons.

Cambria Plant, Johnston, Pa. (Midvale Steel & Ordnance Co. to April 1, 1923: operated under lease from Bethlehem Steel Products Co.).

Blast Furnaces, Lower Division (formerly called Cambria Plant): 4 stacks; B, 91' 6" x 21' 2", blt. 1853-54, last rebt. 1924; D, 90' x 22' 4", blt. 1853-54, last rebt. 1924; E, 92' x 24', blt. 1873-76, last rebt. 1925; F, 86' 9" x 22', blt. 1879, last rebt. 1925. Franklin Division (formerly called Franklin Plant): 5 stacks; G, 85' 9" x 22', blt. 1903-06, rebt. 1914, relined 1924; H, 85' 9" x 22', blt. 1906-07, rebt. 1914, relined 1922; J, 90' x 22', blt. 1916, relined 1921; K, 89' x 22' 6", blt. 1916-17, relined 1924; L, 89' x 22' 6", blt. 1917, relined 1924; 35 stoves (4 center-comb. 99' 6" x 20' at B: 23 side-comb. 100' x 24' of which 4 each at D, F, J, K, and L and 3 at E: 8 center-comb. 100' x 24' of which 4 each at G and H): 18 blowing engines (6 horizontal steam, 6 vertical steam, 5 turbo blowers, 1 gas) 594,000 cfm.; 112 water-tube boilers, 38,780 H. P. furnish power also to Steel Depts. and

rolling mills; 5 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd (2 strand) sintering plant for flue dust, annual cap., 150,000 tons. By-product coke; Lake ore. Product: bessemer, basic and foundry pig iron, and ferro-manganese, annual cap., 1,740,000 tons. By-product Coke Dept.: Lower Division, Rosedale, 208 by-product coke ovens (120 Cambria improved, 88 Semet-Solvay); Franklin Division, 282 by-product coke ovens (92 Koppers, 190 Cambria); by-product recovery plants and Semet-Solvay benzol plant; annual cap., (490 ovens) 1,848,000 net tons coke; 7,500,000 gals. light oil.

Steel Dept.: Lower Division, blt. 1853, first bessemer steel July 10, 1871, first O. H. steel 1879; 4 bessemer converters (12½-ton); 7 B. O. H. fur. (four 40-ton, three 50-ton); 1 A. O. H. fur. (50-ton); Franklin Division, blt. 1900-01, 21 B. O. H. fur. (sixteen 75-ton, five 100-ton); fuel in O. H. producer gas and tar, 89 gas producers (Morgan, Taylor, Hughes); 5 mixers (one 1,300-ton, one 300-ton, three 250-ton); 5 cupolas for pig iron, 2 cupolas for spiegel. Foundry for gray-iron castings (4,000 tons), ingot stools (14,000 tons) and brass castings (700 tons) for own use and for sale.

Rolling Mill Depts.

Lower Division: eight 1-hole soaking pits; 16-heat. fur.; 48" 2-h. 1-st. blooming; 40" 2-h. 1-st. blooming; 22" 2-h. 4-st. and 18" 2-h. 8-st. cont. sheet bar and billet; 30" 3-h. 4-st. structural; 22" 3-h. 3-st. structural; 28" 3-h. 3-st. rail; 22" 2-h. 1-st. axle; axle forge dept.

Franklin Division: 15 soaking pits (nine 1-hole, six 4-hole); 15 heat. fur.; 40" 2-h. 1-st. blooming; 34" 2-h. 2-st. universal slabbing; 32" 2-h. 1-st. blooming; 34" 2-h. 1-st. billet; 36" x 134" 3-h. sheared plate mill; rolled steel wheel dept.; steel freight car dept.; bolt, nut and rivet dept.

Gautier Division: 19 heat. fur.; 28" 3-h. 1-st. and 22" 2-h. 1-st. bar; 20" 3-h. 1-st. and 20" 2-h. 1-st. bar; 18" 3-h. 2-st., 14" 3-h. 5-st. and 14" 2-h. 1-st. bar; 13" 3-h. 3-st. bar; 12" 3-h. 4-st. and 12" 2-h. 1-st. (No. 1, 12" bar); 16" 2-h. 6-st. and 12" 2-h. 2-st. (No. 2, 12" bar); 18" 3-h. 1-st., 10" 3-h. 6-st. and 10" 2-h. 1-st. bar; 9" 3-h. 4-st. and 9" 2-h. 2-st. (No. 1, 9" bar); 9" 2-h. 3-st. cont., 9" 3-h. 1-st., and 9" 2-h. 3-st. (No. 3, 9" bar); 12" 3-h. 1-st., 8" 3-h. 3-st. and 8" 2-h. 2-st. (No. 1, 8" bar); 12" 3-h. 1-st., 8" 3-h. 3-st. and 8" 2-h. 2-st. (No. 2, 8" bar); 10" 2-h. 6-st. and 8" 2-h. 3-st. (No. 3, 8" bar); 24" x 67" universal plate mill; agricultural implement dept.; frog and switch dept.; splice bar shop; rail anchor shop; shear shop.

Under construction, to be completed early in 1926: 18" 2-h. 5-st. roughing, 14" 2-h. 5-st. finishing bar mill; 18" 2-h. 5-st. roughing, 13" 2-h. 5-st. finishing bar mill; 12" 2-h. 4-st. cont. roughing, 10" 2-h. 4-st. looping, 8" 2-h. 2-st. finishing bar; 12" 2-h. 4-st. cont. roughing, 9" 2-h. 4-st. looping bar. On completion of these mills

No. 1 8" bar, 10" bar, 13" bar and 14" bar mills will be dismantled and No. 2 12" bar mill will be removed to Lebanon plant as part of merchant mill under construction at that plant.

Wire Mills: blt. 1910-11, f. o. Feb. 15, 1911; 1 cont. heat. fur.; 12" 2-h. 6-st. and 10" 2-h. 10-st. wire rod mill; 226 wire drawing blocks; 120 wire nail mach.; 30 barbed wire mach.; 11 wire fence mach.; 3 galvanizing pans.

Product: (Cambria Plant): pig iron, annual cap., 1,740,000 tons; steel ingots, 1,928,000 tons (420,000 tons bessemer, 1,508,000 tons O. H.); steel castings, 2,000 tons; blooms and slabs, 1,700,000 tons; billet and sheet bars, 950,000 tons; finished hot rolled products, 1,005,000 tons including 30,000 tons rails, 170,000 tons structural shapes, 220,000 tons sheared and universal plates, 150,000 tons wire rods, 315,000 tons merchant and concrete bars, 120,000 tons misc. products.

Coatesville Plant, Coatesville, Pa. (Midvale Steel & Ordnance Co. to April 1, 1923).

Blast Furnaces: 3 stacks; A, 85' x 21', blt. 1908-10, remodeled 1917, relined top 1922; B, 85' x 21', blt. 1909-11, relined 1920; C, 93' 7" x 23', blt. 1916-17, relined 1923; 12 stoves (eight 3-pass 90' x 22', four 2-pass 100' x 22'): 6 long crosshead steam blowing eng. and 4 Bethlehem horizontal gas blowing eng. (197,000 cfm.) 18 to 30 lbs. rated pressure; 14 water-tube boilers (Rust, B. & W.) 7,000 H. P. serve also rolling mills and service depts.; 2 Uehling double-strand pig casting mach. By-product coke; Lake, Cuban, Cornwall sinter and foreign ores. Product: basic, bessemer, foundry and low-phosphorus pig iron, annual cap., 468,000 tons.

Brandywine Division:

Steel Dept.: blt. 1895-96, first steel June, 1896; 18 B. O. H. fur. (ten 50-ton, eight 70-ton) fuel, prod. gas and oil; 90 Talbot gas producers; 1 mixer (400-ton).

Rolling Mill Dept.: blt. 1881; 14 soaking pits (twelve 4-hole, two 1-hole) fuel, prod. gas; 8 heat. fur.; 4 sheared plate mills (one 30" x 72" 2-h., one 38" x 114" 3-h., one 42" x 132" 3-h., one 42" x 152" 3-h.); flanging and dishing dept. (9,000 tons). Roll sheared plates 2" to 12 gauge, 24" to 140" wide.

Viaduct Division: blt. 1838; 5 heat. fur.; 18" 3-h. 1-st. muck bar; 22" 3-h. 1-st. roughing, 22" 2-h. 1-st. planishing, 22" 2-h. 1-st. scarfing, skelp mill. Tube mill: 6 lap-weld fur. for tubes 1½" to 6". Charcoal forge: 26 forge fires; 3 steam hammers (5,000-lb.).

Product (Coatesville Plant): pig iron, annual cap., 468,000 tons; steel ingots, 540,000 tons; charcoal blooms from scrap, 24,000 tons; sheared plates, 342,000 tons; skelp, 20,000 tons; steel and charcoal iron tubes, 16,000 tons; flanged and dished plates, 9,000 tons.

SHIPBUILDING AND SHIP REPAIR PLANTS

Fore River Plant, Quincy, Mass.

Baltimore Plant, Sparrows Point & Baltimore, Md.

Harlan Plant, Wilmington, Del.

Moore Plant, Elizabethport, N. J.

Union Plant, Alameda and San Francisco, Cal.

Union Plant (San Pedro Works), Los Angeles, Cal.

Simpson Dry Docks Plant, Boston, Mass.

Products: Vessels of all types and sizes, including passenger ships, combination passenger and cargo ships, oil tankers, freighters, refrigerating ships, car floats, ferry boats, yachts, tugs, barges, dredges; also naval vessels, including battleships, battle cruisers, scout cruisers, destroyers, submarines, etc.; marine engines, Curtis turbines, Bethlehem oil engines (large and small type), Scotch and Yarrow boilers, Andyco fire extinguishing apparatus, condensers, forgings, marine auxiliaries, Weir pumps, Dahl fuel oil burners, valves and fittings, paraffine wax machinery, mining machinery, general and special machinery, brass and iron castings; steel and wood sleeping, dining, private, passenger, baggage and mail cars.

Ship Repairs: Plants located in the harbors of Boston, Wilmington, Baltimore, Sparrows Point, San Francisco and Los Angeles are equipped to repair vessels of all types and sizes.

IRON ORE PROPERTIES

Two-thirds interest in Corsica Iron Company, two-thirds interest in Hobart Iron Company, one-half interest in Mahoning Ore and Steel Company (held under Cambria Iron Company lease), nine-twentieths in Hoyt Mining Company, two-ninths interest in Bennett Mining Company and one-fifth interest in Hanna Ore Mining Company, which operate under lease properties in the Mesabi Range.

Full ownership of Sunday Lake Iron Company, two-fifths interest in Plymouth Mining Company, and eleven-fortieths interest in Odanah Iron Company, which operate under lease properties in the Gogebic Range.

One-half interest in The Negaunee Mine Company, which operates under lease properties in the Marquette Range.

Full ownership of Penn Iron Mining Company (held under Cambria Iron Company lease) and one-half interest in Verona Mining Company, which operate under lease properties in the Menominee Range.

One-fourth interest in Vermillion Mining Company, which operates under lease properties in the Vermillion Range.

Three-fifths interest in Lehigh Ore Company and three-fifths interest in Cuyuna Mining Company, both of which have interest in mining

companies which operate under lease properties in the Cuyuna Range.

The share interest in the above mentioned properties makes available approximately 4,604,000 tons of iron ore per annum.

Ore mines located in Cornwall Township near Lebanon, Pa., and concentrating plant in Lebanon, Pa., equipped to produce 850,000 tons sintered ore per annum.

One-third interest in Witherbee, Sherman & Company, which owns and operates iron ore properties and two blast furnaces in Northern New York.

Tofo Iron Ore Mines located near Cruz Grande in Province of Coquimbo, Chile, operated under long term lease and equipped to produce 1,500,000 tons of iron ore per annum.

Full ownership in Compania de Minas de Fierro "Las Truchas," S. A., which owns undeveloped iron ore property located in Mexico.

Property located near Santiago on south coast of Cuba equipped to produce 480,000 tons of iron ore per annum.

Property and mineral rights located near Nipe Bay, on north coast of Cuba, consisting of 156,720 acres of surface land and mineral rights in 122,540 acres of land, equipped to produce 500,000 tons of nodules per annum.

The iron ore properties referred to (excluding those on the north coast of Cuba, and in Mexico and Northern New York, and excluding interest of others in properties not owned outright) are estimated to contain 179,986,000 tons of iron ore.

Coal Properties: Developed coal properties in the vicinity of Ellsworth, Heilwood, Johnstown, Slickville, Marianna and Wehrum, Pennsylvania; Morgantown and Fairmont, West Virginia; also 2,199 seventy-ton and 1,767 fifty-ton standard gauge cars for transporting coal from mines to the steel plants. These properties are estimated to contain 848,529,000 tons of coal and are equipped to produce 10,000,000 tons per annum.

Limestone Properties: Quarries located at Bethlehem, Steelton, Lebanon, Hanover, York and Naginey, Pennsylvania; McAfee, New Jersey, and undeveloped properties in Blair and Center Counties, Pennsylvania, and Pekin, New York. These properties are estimated to contain 155,318,000 tons of calcite and dolomite limestone and equipped to produce 2,000,000 tons per annum for consumption at the steel plants and 335,000 tons for building and road purposes.

Railroads: Seven railroad companies operating in the vicinity of plants located at Bethlehem, Steelton, Lebanon and Johnstown, Pennsylvania; Sparrows Point, Maryland; Lackawanna, New York, and Quincy, Massachusetts.

These railroads own and operate 143 standard gauge steam locomotives, 1 electric locomotive and approximately 369 miles of

main line, yard tracks and sidings, connecting with other common carrier railroads.

In addition to the above, 14 standard gauge locomotives and 89 miles of main line, yard track and sidings are owned and operated in conjunction with the steel plants at Johnstown and Coatesville.

Ocean Transportation: Three ore and oil carrying vessels of 20,000 D. W. T. capacity each; two ore and coal carrying vessels of 20,000 D. W. T. capacity each; four ore carrying vessels of 11,600 D. W. T. capacity each, and one ore and coal vessel of 6,000 D. W. T. capacity.

Lake Transportation: Eight vessels with a total carrying capacity of 84,800 gross tons, and one-half interest in five additional vessels with a total carrying capacity 52,040 gross tons. These vessels have a total carrying capacity per season of approximately 2,438,000 gross tons of iron ore, and are also suitable for carrying coal and grain.

BETTENDORF CO. (The), Bettendorf, Iowa.

Inc. Jan. 1, 1913 in Iowa. Capital stock: com. \$5,000,000; pref. 7% cum. \$2,500,000; bonds \$214,000.

J. W. Bettendorf, P. & T.; J. H. Bendixen, V. P. & G. S. M.; E. J. Bettendorf, Sec.; P. Bendixen, G. S.; F. M. Goddard, P. A.

Works at Bettendorf: blt. 1909; seven 25-ton B. O. H. fur., f. o. April 19, 1910. Fuel, crude oil.

Product: steel castings for own use and for sale; annual cap., 72,000 tons. Manufacturer of steel and wooden cars, trucks, underframes, bolsters and car specialties.

Bilrowe Alloys Co., Tacoma, Wash. Receiver appointed Dec. 8, 1921 and sold works to Tennent Steel Casting Co. in April, 1923.

Bird-Archer Co., New York, N. Y., built plant for manufacture of high-speed tool steels at Watervliet, N. Y., with 1 Greaves-Etchells electric fur. ($\frac{1}{2}$ -ton). Construction was begun in Mar. 1920, first steel made July 15, 1920. Plant was operated for short time only in 1920 and sold in 1921 to Troy Tool & Castings Co. who operated the plant during portion of 1921. Plant abandoned in 1923 and Troy Tool & Castings Co. out of business.

BIRDSBORO STEEL FOUNDRY & MACHINE CO., Birdsboro, Pa.

Inc. Nov., 1894 in Pennsylvania. Capital stock: com., par value \$100, auth. \$500,000, issued \$460,000; pref. 5% cum. auth. \$500,000 issued \$460,000.

Robert E. Brooke, P.; George Brooke, 1 V. P.; John E. McCauley, 2 V. P., G. M. & G. S. M.; D. Owen Brooke, Sec. & T.; George Brooke, 3rd, A. T.; George Alston, C.; Marshall Post, Works M.; John K. Klink, P. A.

Works at Birdsboro, Pa.: blt. 1901-03; steel plant; 1 B. O. H. fur. (30-ton); 3 A. O. H. fur. (one 7-ton, two 35-ton). Fuel, oil. Iron foundry; 3 cupolas, 1 air furnace; annual cap., 8,000 tons castings, 25,000 tons ingot moulds. Roll foundry; 2 air fur., 1 cupola; annual cap., 5,000 tons rolls.

Product: steel ingots, steel castings for locomotives, bolsters, side frames, car castings, rolling mills, blast furnaces, hydraulic machinery, rubber machinery, etc. for sale; annual cap., 53,000 tons (35,000 tons ingots, 15,000 basic and 20,000 acid; 18,000 tons castings, 3,000 basic and 15,000 tons acid). Alloy steel (vanadium, chrome, nickel) ingots. Gray iron castings for general machinery, ingot moulds, sand, chilled steel and alloy rolls.

BIRMINGHAM-TRUSSVILLE IRON CO., Birmingham, Ala.

Trussville Furnace, Trussville, Ala.: 1 stack, 80' x 17' 6", blt. 1887-89, last rebt. 1917; 5 Whitwell stoves. Alabama coke: local ore. Company owns 300 beehive coke ovens on furnace property, also coal and iron ore properties. Blast furnace idle since 1919.

Product: foundry pig iron, annual cap., 70,000 tons.

BLACK STEEL & WIRE CO., 212 Mainstreet Bldg., Kansas City, Mo.

Inc. Mar. 13, 1917 in Maine. Capital stock: com., par value \$100, auth. \$600,000, issued \$371,600; pref. 8% cum. auth. \$300,000, issued \$296,000; bonds \$418,000.

Harry W. Black, P., G. M., & G. S. M.; H. W. Ryan, Sec., T. & A.; W. C. McCarthy, P. A.; at 213 Mainstreet Bldg., Kansas City. Frank L. Moore, V. P.; at Tulsa, Okla. W. C. Cato, G. S.; at 21st & Manchester Ave., Kansas City.

Sales offices:

Los Angeles, Calif., 1118 Santa Fe Ave.

Portland, Ore., 61-67 Fourth St.

San Francisco, Calif., 539 Mission St.

Seattle, Wash., 1047 Sixth Ave. South.

Tulsa, Okla., 909 Petroleum Bldg.

Works at 21st and Manchester Ave., Kansas City, Mo.: steel plant added to wire mill 1919; 1 A. O. H. fur. (15-ton) fuel, oil; 2 cont. oil-fired heat. fur.; 18" 3-h. 1-st. roughing; 14" 2-h. 4-st. intermediate; 12" 2-h. 8-st. finishing; wire mill with 150 wire drawing blocks for wire $\frac{3}{8}$ " to .017".

Product: steel ingots, annual cap., 15,000 tons; wire rods, 32,000 tons; plain wire, 10,000 net tons.

BLACKWOOD ELECTRIC STEEL CORPN., South Side, Parkersburg, W. Va.

Inc. Dec., 1923 in West Virginia. Capital stock: com., no par value, auth. 1,500 shares, issued 1,373 shares; pref. 7% cum. auth. \$100,000, issued \$9,500; bonds \$50,000.

E. A. Brast, P.; B. W. Miller, V. P.; C. H. Kibby, Sec., T. & P. A.;
H. S. Oldfield, G. S.

Sales offices:

Cincinnati, Ohio, Stolle Steel & Iron Co., 207 Main St.

Detroit, Mich., Harr Sales Co., 3513 Woodward Ave.

Pittsburgh, Pa., J. B. Kent, Suite C, Arrott Bldg.

Works at Parkersburg, W. Va.: blt. 1922-23, f. o. July 1, 1923; 1
Moore Lectromelt electric fur. (3-ton).

Product: small steel castings for sale, annual cap., 3,000 tons.

BLANDON ROLLING MILL, Inc., Blandon, Pa.

Inc. Mar. 13, 1917 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$150,000.

Harry A. Smink, P.; William Seyfert, V. P.; Samuel R. Seyfert, T., G. M. & P. A.; at Reading, Pa. S. E. Pflum, Sec. & G. S.; at Blandon, Pa.

Works at Blandon, Pa.: blt. 1867; 1 single, 6 double puddling fur.; 1 rotary squeezer; four 3-d. coal-fired heat. fur.; 18" 2-h. 2-st. muck, 11" 3-h. 2-st. and 8" 3-h. 3-st. skelp mills.

Product: muck and scrap bar, annual cap., 8,500 tons; skelp, flue and pipe iron; annual cap., 20,000 tons.

Blue Ridge Iron Co., Rock Run, Ala., owner of Blue Ridge Furnace, Tallapoosa, Georgia, was acquired on July 1, 1920 by The Rock Run Iron Co. Blue Ridge Furnace was called Tallapoosa Furnace after July 1, 1920. It was abandoned in latter half of 1923.

BON AIR CHEMICAL CO., 620 Stahlman Bldg., Nashville, Tenn.

Inc. Mar. 19, 1923 in Tennessee. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$749,000; pref. 7% non cum. auth. \$5,000,000, issued \$750,000; bonds \$547,000.

James R. Offield, P.; at Wrigley Bldg., Chicago, Ill. William J. Cummins, V. P. & G. M.; P. E. Griffith, Sec.; J. Alvin Foster, A.; Frederic Leake, G. S. M.; John D. Cummins, P. A.; at Nashville, Tenn. John McE. Bowman, T.; at Biltmore Hotel, New York, N. Y.

Brand: Wrigley (semi-cold blast charcoal pig iron).

Wrigley Furnace (formerly Warner Furnace), Wrigley, P. O. Lyles, Tenn.; 1 stack, 72' x 18', reblt. 1918-19, blown in Apr. 17, 1920; 2 iron pipe stoves; 2 steam blowing eng. (18,691 cfm.); 4 water-tube boilers, 1,600 H. P. Charcoal: local ores. (Bon Air Coal & Iron Corp'n. to Jan. 1, 1924).

Product: charcoal pig iron, annual cap., 24,000 tons.

BON AIR COAL & IRON CORPN., 620 Stahlman Bldg., Nashville, Tenn.

Inc. June, 1917 in Tennessee.

R. J. Immerfall, P. & G. M.; William J. Cummins, V. P.; Frederic

Leake, Sec. & G. S. M.; A. Foster, T.; John W. Long, A.; E. V. Rawn, G. S.; John D. Cummins, P. A.

Sales agents: Rogers Brown & Crocker Brothers, Inc.; Hickman, Williams & Co.; Walter-Wallingford & Co.; Pilling & Co.; Domhoff & Joyce Co.

Brands: Mannie, Standard (pig iron).

Mannie Furnaces, Ruppertown, Tenn.: 2 stacks, No. 1, 60' x 12' 6", blt. 1892-93, f. o. Apr., 1893; No. 2, 60' x 12' 6", blt. 1892-93, f. o. 1893, abandoned 1924 but still standing; 6 stoves (five 3-pass 60' x 16', one 4-pass 70' x 16'); 3 steam blowing eng. (2 Weimer, 1 Gordon) 50,000 cfm., 10 lbs. rated pressure; 5 water-tube boilers (3 Rust, 2 Wicks) 1,800 H. P. Tenn. and Ala. coke; local limonite ore. Product: foundry pig iron up to 8% silicon, annual cap., 31,000 tons.

Standard Furnace, Goodrich, Tenn.: 1 stack, 62' x 12', blt. 1885, rebt. 1891; iron pipe stove, twenty-eight 8" U pipes; 2 steam blowing eng. (1 Gordon, 1 Mackintosh-Hemphill) 10 lbs. rated pressure; 6 boilers (2 tubular, 4 flue) 475 H. P. Va., Tenn. and Ala. coke; local brown ore. Product: foundry pig iron, annual cap., 25,000 tons.

Company owns coal mines at Bon Air, Ravenscroft, Eastland and Clifty, Tenn.; iron ore mines at Aetna, Nunnely, Riverside and Ruppertown, Tenn.; annual cap., 75,000 tons; limestone quarry at Lyles, Tenn., annual cap., 50,000 tons.

BONNE TERRE FOUNDRY CO., Bonne Terre, Mo.

Inc. 1919 in Missouri. Capital stock: com., no par value, 40 shares; pref. \$8,000.

P. A. Benham, P.; George Bangers, V. P.; P. L. Benham, Sec. & A.; Steven Gedhy, T.; S. E. Thaumie, G. S.

Works at Bonne Terre, Mo.: steel foundry added 1924; 1 Whiting converter (1-ton).

Product: steel castings for sale, annual cap., 160 tons.

BONNEY-FLOYD CO. (The), Columbus, Ohio.

Inc. 1906 in Ohio.

John L. V. Bonney, P. & T.; Walter B. Floyd, V. P., G. M. & Sec. Works at South Columbus on New York Central R. R.: blt. 1907, f. o. Sept. 16, 1907; 1 B. O. H. fur. (18-ton); 2 electric fur. (one 3-ton Ludlum, one 3-ton Moore): converters (three 3-ton) were dismantled in 1922. Fuel, nat. gas or oil.

Product: steel castings, annual cap. 20,000 tons (12,000 tons B. O. H., 8,000 tons electric); alloy steel castings; castings from less than 1-lb. to 10 tons weight.

BOURNE-FULLER CO. (The), 1600 Hanna Bldg., Cleveland, Ohio.

Inc. Jan. 29, 1896 in Ohio. Capital stock: com., par value \$100,

auth. \$25,000,000, issued \$18,975,500. The Upson Nut Co. and The Union Rolling Mill Co. were merged in The Bourne-Fuller Co., October 1, 1920.

R. S. Hall, P.; L. H. Elliott, V. P. & T.; F. K. Moore, V. P.; J. E. Kreps, V. P.; M. L. Hopkins, Sec.; F. H. Ulmer, A.; A. H. Preston, P. A.

Sales offices:

Chicago, Ill., Straus Bldg.

Cincinnati, Ohio, Union Trust Bldg.

Detroit, Mich., Dime Bank Bldg.

New York, N. Y., Grand Central Terminal Bldg.

San Francisco, Calif., Monadnock Bldg.

Brand: Upson (bolts and nuts); Climax (rivets).

Products: steel ingots, blooms, billets, merchant and concrete bars, shapes; track bolts; machine, carriage and plow bolts, hot and cold pressed nuts; rivets; lag bolts.

Upson Works, 1912 Scranton Road, Cleveland, Ohio (The Upson Nut Co. to Oct. 1, 1920): Upson Furnace: 1 stack, 65' x 16' 9", last rebld. 1924; 4 Foote stoves, 75' x 19'; 3 steam blowing eng. (30,000 cfm.); 7 water-tube boilers, 20,500 H. P.; one Heyl & Patterson single-strand pig casting mach.; slag granulating pit. Conn. coke: Lake ore. Product: basic pig iron for own use, annual cap., 130,000 tons.

Steel Works: blt. 1910-11; f. o. Apr. 10, 1911; 5 B. O. H. fur. (80-ton); two 12-ingot and nine 6-ingot soaking pits with 10 gas producers; 2 pulv. coal-fired Morgan cont. heat. fur.; 34" 2-h. 1-st. blooming; semi-continuous mill with 14" 2-h. 8-st. cont., 11" 3-st. and 8" 2-st. looping. Product: steel ingots, annual capacity 240,000 tons; blooms and billets, 200,000 tons, finished hot rolled products, 150,000 tons.

Union Mills, East 82nd & Aetna Road, Cleveland: blt. 1866-67; 6 heat. fur. (three 4-d. reverb., 3 cont.); 3 gas producers; 21" 3-h. 4-st. bar and structural; 18" 3-h. 3-st. bar; 14" 3-h. 1-st. Belgian roughing with 9" 3-h. 4-st. guide; 8" 3-h. 5-st. guide. (The Union Rolling Mill Co. to October 1, 1920). Product: merchant steel bars and shapes; bolt, nut and rivet rods, annual cap., 180,000 tons.

Bolt and Nut Works (2 plants situated at Upson Works, Cleveland, Ohio, and Unionville, Conn.). Product: bolts and nuts, annual cap., 120,000 tons.

BOWMANVILLE FOUNDRY CO., Ltd., Bowmanville, Ontario, Canada.

Inc. 1901 and reinc. Dec., 1923 in Dominion of Canada. Capital stock: pref. 10% cum. auth. \$100,000, issued \$60,000.

C. Rehder, P. & G. M.; C. E. Rehder, V. P. & P. A.; George L. Hall, Sec. & T.; John Stark, G. S.

Sales office: George N. Jackson & Son, Winnipeg, Manitoba.

Works at Bowmanville, Ontario: blt. 1921; one $\frac{1}{2}$ -ton Gronwall-Dixon electric fur.; 1 cupola; gray iron foundry; annual cap. 600 tons for own use and for sale.

Product: steel castings for own use and for sale; annual cap., 1,000 tons. Gray iron castings, 600 tons.

BRAEBURN ALLOY STEEL CORPORATION, Braeburn, Pa.

Inc. Feb. 19, 1924 in Pennsylvania. Capital stock: com., par value \$100, auth. \$500,000; pref. 8% cum. auth. \$500,000.

D. T. Sipe, P. & G. M.; G. H. Neilson, 2 V. P.; Samuel Clark, Works M.; at Braeburn. F. E. Pratt, 1 V. P.; at New Kensington, Pa. H. Oliver Williams, V. P. (sales) at 803 First Natl. Bank Bldg., Pittsburgh, Pa. C. F. Simmons, 3 V. P.; at 292 Madison Ave., New York, N. Y. A. J. Barnett, Sec.; N. G. Graham, P. A.; at Braeburn, Pa. D. W. Yealy, T.; at Blairsville, Pa.

Sales offices:

Atlanta, Ga., Bailey-Burrus Mfg. Co., Lee & Lawton Sts.

Bellevue, Ky., 271 Ward Ave.

Boston, Mass., McMinn & Quigley Steel Co., Park Sq. Bldg.

Cleveland, Ohio, 310 Union Mortgage Bldg.

Detroit, Mich., 1348 West Lafayette Blvd.

Works at Braeburn: blt. 1897; crucible steel fur. f. o. Nov. 1897, last operated 1920, were abandoned in 1924; 2 Heroult electric fur. (6-ton) f. o. 1916; 8 coal-fired heat. fur. (two 1-d., four 3-d., two 4-d.); 14" 3-h. 5-st. and 10" 3-h. 5-st. merchant mills; 4 box annealing fur.; 6 steam hammers (1,000-lb. to 6,000-lb.); 4 cold drawing benches. Fuel, natural gas and coal. (Braeburn Steel Co. to Jan. 16, 1924).

Product: steel ingots, annual cap., 12,000 tons; alloy steel ingots (chrome, tungsten, vanadium); rolled and hammered tool steel bars, 16,000 tons.

Braeburn Steel Co., Braeburn, Pa., sold works at Braeburn, Jan. 16, 1924, and Braeburn Alloy Steel Corporation was formed to take over and operate the works.

Brebner (D. A.), Ltd., Hamilton, Ont., Canada. Electric furnace plant for manufacture of ferro-silicon was taken over by Coralox, Ltd. Both of the above named companies were liquidated and the plant sold in October, 1919 to The Abrasive Co. of Canada.

Brennan Steel Castings Co., Cleveland, Ohio. Thomas M. Brennan built plant at 2324 Denison Ave., Cleveland, in 1920 with 1 Greaves-Etchells electric furnace (500-lb.), and operated it under name of Brennan Steel Castings Co., 1920-1923. Reported out of business.

Brier Hill Steel Co. (The), Youngstown, Ohio. Plants and properties were sold early in 1923 to The Youngstown Sheet and Tube Company who took over the plants on March 1, 1923. The Youngstown Sheet and Tube Co. sold the Empire Works at Niles, Ohio, on Feb. 20, 1924 to Waddell Steel Co.; also sold Thomas Works, Niles, Ohio on March 1, 1924 to Thomas Sheet Steel Co.

Briggs & Turivas, 110 South Dearborn St., Chicago, Ill. purchased, Nov. 29, 1922 the rolling mill formerly owned and operated by Frederick Cowin & Co., Inc., at Joliet, Ill. Sold 12" and 16" merchant mills to American Metal Products Co., June 24, 1924 to be used for rolling bronze and brass. Sold 22" 3-h. 2-st. muck mill in Dec. 1924 to Atchison, Topeka & Santa Fe Railway who removed same to Corwith, Chicago, Ill. Remainder of works comprising 12" to 8" 3-h. 5-st. Belgian mill was leased May, 1924 to Illinois Rolling Mill Co. who operated the mill for about three months (Sept.-Nov. 1924). Lease expired July, 1925. and 12" to 8" mill was leased to The Joseph Schonthal Co., Columbus, Ohio.

BRITISH EMPIRE STEEL CORPN., Ltd., Sydney, N. S., Canada.

Inc. May 22, 1920 in Nova Scotia. Capital stock: com., par value \$100, auth. \$75,000,000, outstanding \$21,305,400; First pref. Series A, 8% cum. auth. \$60,000,000, none issued; First pref. Series B, 7% cum. auth. \$40,000,000, outstanding \$8,032,100; Second pref. 7% cum. auth. \$75,000,000, outstanding \$49,958,575; preferred stocks of constituent companies, \$11,756,300; bonds, \$37,682,294.64.

R. M. Wolvin, P.; C. S. Cameron, Sec. & T.; at Canada Cement Bldg., Montreal, Canada. Major Gen. Sir Newton J. Moore, K. C. M. G., V. P., at London, England. J. E. McLurg, V. P. (in charge operations); M. A. Doak, C.; W. G. Stanfield, P. A.; at Sydney, N. S.

Sales offices: Canada Cement Bldg., Montreal, Canada; 2 Rector St., New York, N. Y.; 110 St. Martin's Lane, London, W. C. 2, England.

British Empire Steel Corporation owns the following operating companies:

Dominion Steel Corporation, Ltd.

Dominion Iron & Steel Co., Ltd.

Dominion Coal Co., Ltd.

Cumberland Railway & Coal Co.

Dominion Shipping Co., Ltd.

James Pender & Co., Ltd.

Sydney Lumber Co., Ltd.

Nova Scotia Steel & Coal Co., Ltd.

Acadia Coal Co., Ltd.

Eastern Car Co., Ltd.

Nova Scotia Land Co., Ltd.

Wasis Steamship Co., Ltd.

Halifax Shipyards, Ltd.

Dominion Iron & Steel Co., Ltd.

Brands: Dominion (rolled products); Besco (pig iron).

Works at Sydney, N. S., Canada.

Blast Furnaces: 6 stacks (one 89' x 21' 6", five 85' x 20'); construction begun 1899; No. 1, f. o. Feb. 4, 1901, rebld. 1918, relined 1924; No. 2, f. o. May 9, 1901; No. 3, f. o. Oct. 21, 1901; No. 4, f. o. Jan. 18, 1902, remod. Aug. 1923; No. 7, f. o. May 22, 1913, remod. Apr. 1921; No. 8, f. o. Sept. 15, 1912, remod. Sept. 1920; 24 Cowper-Kennedy stoves (four 95' x 21', twenty 85' x 21'); 8 steam blowing eng. (5 cross-compound, 3 turbo-blowers), 295,000 cfm., 15 to 18 lbs. rated pressure; 44 B & W water-tube boilers, 12,400 H. P., serve also unloading and shipping piers and electric power house; 1 Heyl & Patterson double-strand pig casting mach. By-product coke: Wabana, Moroccan and Algerian ore. Molten metal to O. H. Dept. Product: basic and foundry pig iron, annual cap., 550,000 tons.

Steel Works and Rolling Mills: orig. blt. 1900-01; 12 B. O. H. fur. f. o. Dec. 31, 1901 (ten 50-ton, two 100-ton) fuel, prod. gas, 57 Duff gas prod.; three 15-ton side-blow basic bessemer converters for duplexing, blt. 1907, f. o. May, 1907, idle since May 5, 1919; one 300-ton mixer (the two 100-ton O. H. fur. can also be used as 350-ton mixers); five 4-hole soaking pits; 5 cont. heat. fur. (2 Morgan for rod and bar mills, 3 own design for blooming, rail and 16" merchant) fuel, prod. gas, coke oven gas and coal; 35" 2-h. 1-st. reversing blooming mill, first blooms rolled Feb., 1902; 16" 2-h. 6-st. Morgan cont. billet mill, first billets rolled May, 1904; 12" 2-h. 6-st. roughing and 10" 2-h. 8-st. finishing, Morgan cont. rod mill, first rods rolled May, 1904; Morgan semi-cont. bar and rod mill with 12" 2-h. 6-st. roughing and 3 trains of 2 stands each 10½" and 9½" finishing, first bars rolled Mar., 1913; 28" rail mill consisting of 3-h. roughing, 3-h. intermediate and 2-h. finishing, first rails rolled July, 1905; 16" merchant, with 3-h. roughing, 3-h. intermediate, and 2-h. finishing, first bars rolled Sept., 1915; 110" 3-h. sheared plate mill (top and bottom rolls 36", middle roll 24"). Gray iron foundry, annual cap., 5,000 tons; brass foundry and machine shop for own use. Fuel, prod. gas, coke oven gas, bit. coal, and tar. Product: open hearth steel ingots; blooms, billets, slabs; steel rails, bars, angles, channels, I beams, flats, squares, rounds, angle bars, sheared plates and wire rods. Annual cap., 400,000 tons ingots; 375,000 tons blooms, billets and slabs; 200,000 tons rails, 50,000 tons sheared plates; 50,000 tons wire rods and merchant bars. Wire and Nail Department: added 1911-12, f. o. May, 1912; 3 double frames of twenty-four 26" blocks each, 1 single frame of eleven 26" blocks; 1 single frame of twenty-four 16" and 20" blocks; 91 nail machines;

2 staple machines, 50 barbed wire machines; pot annealing and galvanizing department, 2 galv. pans; cooperage shop. Product: nails, all styles and sizes, plain, polished, blued and hot galvanized; wire from $\frac{1}{2}$ " to 22 gage, galvanized, black or pot annealed; barbed wire; staples, black or galvanized; wire hoops, etc. Annual cap., 60,000 net tons plain wire, 500,000 kegs wire nails; 30,000 net tons barbed wire; 30,000 net tons galvanized wire.

Company owns Wabana iron ore mines on Bell Island, Conception Bay, Newfoundland, with an annual cap. of 850,000 tons.

By-product coke plant at Sydney, consisting of 120 Otto-Hoffman by-product ovens with an annual cap. of 200,000 net tons of coke; 180 Koppers by-product ovens, annual cap., 600,000 net tons. Coal washing plant. By-product recovery plant, 7,500 tons sulphate of ammonia. Sulphuric acid plant, 13,400 tons 50° sulphuric acid. Benzol plant; product, benzol, toluol, naphtha, and naphthaline; annual cap., 2,000,000 gals. light oils. Also plant operated by the Dominion Tar & Chemical Co. for the manufacture of creosote and other oils, carbolic acid and pitch.

The company owns limestone quarries as follows: Port au Port quarry at Aguathunia, Port au Port Bay, Newfoundland, annual cap., 300,000 tons; Georges River quarry at Georges River, Cape Breton Co., Nova Scotia, annual cap., 30,000 tons. Total annual cap., 330,000 tons limestone.

Nova Scotia Steel & Coal Co., Ltd.

Scotia Furnace, Sydney Mines, N. S.: 2 stacks (alternate); No. 1, 85' x 18' 10", blt. 1902-04, f. o. Aug. 30, 1904, relined, 1914; No. 2, 80' x 18' 10", blt. 1916-18; 4 Roberts stoves, 85' x 18'; 2 steam blowing eng. (30,000 cfm.); 6 Sterling water-tube boilers, 1,860 H. P.; 1 Uehling single-strand casting machine. By-product coke: Wabana ore. Molten metal to Sydney Mines Steel Works. Product: basic and foundry pig iron for own use, annual cap., 90,000 tons.

By-Product Coke Plant, Sydney Mines: 30 Bauer and 160 Bernard ovens, annual cap., 110,000 net tons. Surplus gas used under boilers; by-products not recovered. Boiler plant with 17 boilers (8 water-tube, 9 fire-tube) 3,676 H. P.

Sydney Mines Steel Works, Sydney Mines: blt. 1904-05; 5 B. O. H. fur. (two 50-ton, three 40-ton); one 200-ton mixer; ingots shipped to New Glasgow and rolled or forged into finished forms. Product: steel ingots, annual cap., 130,000 tons.

New Glasgow Works, New Glasgow, N. S.: blt. 1872; rolling mill blt. 1883, f. o. Aug. 1883; 42 heating fur. (21 two-door, 5 three-door, 16 cont.); 20 gas producers; 28" 2-h. 1-st. blooming; 18" 3-h. 2-st. roughing with 9" 3-h. 6-st. finishing; 9" 3-h. 7-st. guide; 9" 3-h. 6-st. guide; 20" x 48" 3-h. plate mill; 5 double-frame steam ham. (10-cwt. to 5-ton); 3 vertical hydraulic forging presses (two

500-ton, one 4,600-ton). Spike, bolt and rivet factory. Machine shop and structural shops, etc.

Product: mining and tram rails from 12-lb. to 40-lb.; fish plates, tie plates, angle bars; machinery, car, spring and agricultural implement steel; tank and boiler plates; heavy and light structural shapes; merchant bars, twisted concrete bars, spike, bolt, nut and rivet rods; locomotive axles, marine shafting, crank shafting, cold rolled shafting, rudder stalks, rudders and miscellaneous heavy forgings. Annual cap.: 95,000 tons of blooms and billets, 30,000 tons slabs; 22,300 tons tank and boiler plate; 47,000 tons other finished rolled products; 7,500 tons railway spikes, 5,000 tons machine and carriage bolts and nuts, 3,000 tons rivets; 15,000 tons railway, marine, and engine forgings.

The company also owns the Eastern Car Co. at New Glasgow, which builds steel and wooden cars, etc.

The company owns and operates coal mines at Sydney Mines, annual cap., 500,000 tons; Wabana red hematite ore mines at Bell Island, Conception Bay, Newfoundland, annual cap., 390,000 tons; limestone quarry at Point Edward, Nova Scotia, annual cap., 80,000 tons.

BROOKE (The E. & G.) IRON CO., Birdsboro, Pa.

Edward Brooke, P.; George Brooke, Sec.; Robert E. Brooke, T. & G. M.; F. Ward Coburn, Supt. Blast Furnace.

Selling Agents: Pilling & Co., Inc., Franklin Trust Bldg., Philadelphia.

Brand: Brooke (pig iron).

Brooke Furnace, Birdsboro, Pa.: 1 stack, 75' x 17' 1", blt. 1872, rebt. 1910, relined 1923; 4 stoves (2 Roberts 90' x 17', 1 Roberts 90' x 18', 1 Whitwell 55' x 17'); 1 G. E. turbo-blower, 25,000 cfm., 30 lbs. rated pressure; 1 MacBeth steam blowing eng. used as spare only; 5 water-tube boilers (2 Rust, 3 Sterling) 2,612 H. P.; 1 American Casting Mach. Co. single-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust and French Creek ore, annual cap., 120,000 tons. Conn. coke: French Creek and eastern magnetite and Lake ore. Company owns and operates French Creek Mine, St. Peters, Chester Co., Pa., annual cap., 100,000 tons magnetite iron ore.

Product: foundry, malleable, forge and basic pig iron, annual cap., 100,000 tons.

Brown & Co., Inc., Pittsburgh, Pa. Company went out of business in 1924 and sold plant for dismantling in August, 1924.

BRYDEN-NEVERSLIP CO., New Brunswick, N. J.

Inc. May 29, 1917 in New Jersey as Manufacturers Iron & Steel Co., corporate title changed in 1923 to Bryden-Neverslip Co.

Capital stock: com., no par value, auth. 50,000 shares, issued 36,000 shares; pref. 7% cum. auth. and issued \$2,000,000.

James W. Johnson, P.; Robert C. Nicholas, V. P.; Ross R. Harrison, Sec. & G. M.; L. C. Brown, A.; F. M. Joiner, G. S. M.; at New Brunswick. H. Morley Holton, T. & Plant Manager; Christian Wilson, Jr., G. S.; Christopher Lennon, P. A.; at Catasauqua, Pa.

Brands: Boss (iron horse and mule shoes); Banner (steel horse and mule shoes); Red Tip Neverslip (adjustable horse shoe calks).

Works at Catasauqua, Pa.: est. 1882; rolling mill blt. 1889-90; f. o. Apr., 1890; 2 regenerative 4-d. heat. fur., fuel, producer gas; 20" 3-h. 1-st. breakdown, 10" 3-h. 6-st. bar mill; 8 drop hammers, 1,200 and 1,400-lb.

Product: merchant bars, horse shoe bars; horseshoes, calks and small commercial forgings. Annual cap., rolled products, 10,000 tons (4,000 tons merchant bars, 6,000 tons horseshoe bars) and 4,000 tons forged products.

Buckeye Casting Co., Lima, Ohio, added steel foundry to their grey iron foundry at Kibby St., Lima, on leased ground. Installation of 1 Whiting converter (1-ton) was begun in Jan., 1923. Completed and operated for short time in 1923. Company went into bankruptcy in 1923 and converter was sold and removed early in 1924.

BUCKEYE ROLLING MILL CO. (The), Steubenville, Ohio.

Inc. Aug. 5, 1909 in Ohio. Capital stock: com., par value \$100, auth. and issued \$500,000.

Isaac M. Scott, P.; at Wheeling, W. Va. J. T. Sarratt, V. P., T. & G. M.; C. H. Dossett, V. P., Sec. & A.; at Steubenville. Leo Hiler, S.; at Newark, Ohio.

Sales offices:

Birmingham, Ala., A. A. Culp, Brown-Marx Bldg.

Chattanooga, Tenn., Egbert Hancock Co., James Bldg.

Chicago, Ill., W. W. Baker, 140 South Dearborn St.

Clarksburg, W. Va., West Virginia Mine Supply Co.

Brands: Buckeye (light steel rails).

Newark Rolling Mills, Newark, Ohio: blt. 1897, rebld. 1907; first rail rolled Aug. 22, 1907; 1 cont. coal-fired reverberatory heat. fur.; 18" 3-h. rail train with 1-st. roughing and 1-st. finishing rolls.

Product: light steel rails; annual cap., 36,000 tons.

BUCKEYE STEEL CASTINGS CO. (The), Columbus, Ohio.

Inc. Nov. 19, 1894 in Ohio. Capital stock: com., par value \$100, auth. \$6,000,000, issued \$5,951,400; pref. 6% non-cum. auth. and issued \$1,000,000.

S. P. Bush, P. & G. M.; John G. Deshler, V. P.; J. C. Whitridge,

V. P. & G. S. M.; A. H. Thomas, V. P. & G. S.; Arno Eberlein, Sec. & T.; W. J. Bennett, A.; T. B. Taylor, P. A.

Sales offices:

Chicago, Ill., F. J. Cooledge, 619 Railway Exchange Bldg.

Louisville, Ky., Malcolm S. Simpson, 1401 Starks Bldg.

New York, N. Y., J. G. Bower, 50 Church St.

Richmond, Va., C. M. Hannaford, American Natl. Bank Bldg.

St. Paul, Minn., G. A. Macpherson, 817 Merchants Bank Bldg.

London, England, Davis & Lloyd, 26 Victoria St.

Works at South Columbus: blt. 1900-02, f. o. Nov., 1902; 6 B. O. H. fur. (21-ton), fuel, prod. gas and oil; 6 Morgan gas producers; 1 Heroult electric fur. (6-ton).

Product: steel castings; annual cap., 123,000 tons (113,400 tons B. O. H., 9,600 tons electric). Car couplers, truck and body bolsters, truck side frames, draft yokes, castings for railroad cars, auto trucks and tractors.

BUCKEYE TRACTION DITCHER CO. (The), Crystal Ave., Findlay, Ohio.

Inc. Feb. 16, 1906 in Ohio. Capital stock: com., par value \$100, auth. and issued \$1,000,000.

W. F. Hosler, P.; C. L. Casterline, V. P.; C. D. Hayward, Sec. & T.; E. R. Mellott, A. & A. Sec.; C. F. Yocum, G. S.; D. C. Royce, G. S. M.; L. C. Jackson, P. A.

Sales offices:

Detroit, Mich., 9980 Van Dyke Ave.

Los Angeles, Calif., Brown-Bevis Co., 470 East Third St.

Mason City, Iowa, 406 South Federal St.

Toronto, Ontario, Canada, 4 North Place.

Brands: Buckeye (trenching machines); Alligator (crawlers).

Company manufactures digging, ditching, pulling and clearing machines and tractors and operates steel foundry in connection therewith.

Works at Findlay: steel foundry added 1918, f. o. Oct. 1, 1918; 1 Moore Lectromelt electric fur. (1½-ton); 1 cupola. Gray iron (1,000 tons) and brass foundry (16 tons) for own use.

Product: steel castings for own use only, annual cap., 1,200 tons.

BUCYRUS COMPANY, South Milwaukee, Wis.

Inc. Nov. 1, 1911 in Wisconsin. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$4,000,000; pref. 7% cum. auth. \$5,000,000, issued \$4,000,000.

W. W. Coleman, P.; E. K. Swigart, V. P.; G. A. Morison, 2 V. P. & Sec.; D. P. Eells, 2 V. P. & T.; W. M. Bager, 2 V. P.; P. Knoll, A. P.; J. G. Miller, A. Sec.; W. M. Myers, Works Mgr.; C. A. Kelly, P. A.

Sales offices:

Birmingham, Ala., C. N. Ballentine, 2212 Age-Herald Bldg.

Chicago, Ill., M. J. Woodhull, 134 South La Salle St.

New York, N. Y., E. G. Lewis, 50 Church St.

Pittsburgh, Pa., A. R. Hance, 461 Union Trust Bldg.

San Francisco, Calif., P. H. Birkhead, 433 California St.

Works at South Milwaukee, Wis., and Evansville, Ind. for the manufacture of steam and other power shovels, excavators, dredges, railway cranes and spreader and ballast plows.

Steel foundry at South Milwaukee: blt. 1892; 2 B. O. H. fur. (10-ton); 1 Moore electric fur. (1½-ton); first electric steel, Aug. 30, 1922; O. H. fuel, prod. gas, 4 Forter-Miller gas prod. Gray iron and brass foundry; 1 cupola; 2 coke-fired brass fur. (250-lb.); annual cap., 4,200 tons gray iron, 360 tons brass castings.

Product: carbon and alloy (nickel, chrome, molybdenum) steel castings for own use; annual cap., 12,000 tons (8,000 tons B. O. H., 4,000 tons electric).

BUFFALO BOLT CO., North Tonawanda, N. Y.

Inc. 1897 in New York. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$750,000; pref. 7% cum. auth. and issued \$1,000,000; bonds \$700,000.

Ralph Plumb, P. & G. M.; G. A. Mitchell, V. P.; R. K. Albright, Sec. & T.; George F. Blasier, G. S.; W. F. McKenzie, G. S. M.; D. F. Cullinan, P. A.

Sales offices:

Chicago, Ill., W. J. Phalen, 1326 Monadnock Bldg.

Detroit, Mich., Montgomery Whaling, General Motors Bldg.

New York, N. Y., Topping Bros., 159 Varick St.

New York, N. Y., W. J. Kingsland, 21 State St. (Export).

St. Louis, Mo., A. M. Jones, 1107 Chemical Bldg.

Brand: B in circle.

Works at North Tonawanda: blt. 1896; rolling mill added 1915; 2 cont. heat. fur., fuel, gas and oil; 16" 2-h. 2-st. and 12" 2-h. 7-st. continuous, 10" 3-h. 5-st., 8" 2-h. 2-st. bar mills; 7 hand pickling tanks; 10 wire drawing blocks for wire 3/16" to 5/8". Bolt, nut and rivet plant. Bolts 1/8" to 2"; nuts 1/8" to 2"; rivets 1/8" to 1" inc.

Product: bolt and nut rods, rivet stock, wire rods, wire, bolts, nuts and rivets; annual cap., rolled products 60,000 tons (including 38,000 tons bolt, nut and rivet rods, 22,000 tons wire rods); 24,000 net tons plain wire, 350,000 kegs (200-lb.) bolts, nuts and rivets.

BUFFALO STEEL CO., Fillmore Ave., Tonawanda, N. Y.

Inc. 1900 in New York. Capital stock: com., par value \$100, auth. and issued \$600,000.

Jacob G. Joseph, P., T. & P. A.; William J. Kibler, Sec. & G. S. M.; Michael C. Niland, G. S.; at Tonawanda. L. E. Block, V. P.; at Chicago, Ill.

Sales offices:

Atlanta, Ga., J. M. Van Harlingen, Candler Bldg.

Boston, Mass., George W. Denyven, 141 Milk St.

Cleveland, Ohio, Frank H. Grace & Co., 602 Hunkin-Conkey Bldg.

New York, N. Y., 30 Church St.

Philadelphia, Pa., W. H. S. Bateman & Co., 822 Commercial Trust Bldg.

Works at Tonawanda, N. Y.; blt. 1900, f. o. Aug. 1, 1900; 1 cont. pulv. coal-fired heat. fur.; 18" 2-h. 1-st. slitting; 14" 3-h. 8-st. merchant mill.

Product: merchant and concrete bars, annual cap., 40,000 tons.

Buffalo Union Furnace Co., Buffalo, N. Y. owns blast furnace plant at Buffalo (3 stacks) leased to The Hanna Furnace Co., Cleveland, Ohio, July 1, 1920.

BUHL MALLEABLE CO., Wight and Adair Sts., Detroit, Mich.

Inc. Aug. 11, 1900 in Michigan. Capital stock: com. \$690,000.

A. H. Buhl, P.; L. D. Buhl, V. P.; P. J. McManus, 2 V. P. & G.

M.; S. A. Commons, Sec. & T.; James Wignall, P. A.

Works at Wight and Adair Sts., Detroit: blt. 1899; first O. H. steel made May, 1913; one 5-ton A. O. H. fur.; 1 cupola; one 5-ton malleable steel fur.; 3 malleable iron fur.

Product: acid open hearth steel, malleable steel and malleable iron castings for sale; gray iron castings for own use only; castings for automobiles, motor trucks, pneumatic tools and railway and agricultural castings. Annual cap., 2,000 tons of steel castings, 1,000 tons of malleable steel castings and 12,000 tons of malleable iron castings. Steel department especially equipped for small castings.

BURDEN IRON CO. (The), Troy, N. Y.

Inc. June 30, 1881 in New York. Capital stock: com., par value \$1,000, auth. and issued \$2,000,000; pref. 8% cum. auth. \$1,500,000, issued \$700,000.

James A. Burden, P.; Williams Burden, V. P.; Robert Forrest, Sec. & T.; William E. Millhouse, M.; O. A. Van Denburgh, Jr., A. M.; Charles Downs, A. Sec.; at Troy. John F. Forrest, A. T. at New York, N. Y.

Branch office: 52 Vanderbilt Ave., New York, N. Y.

Brands: Burden Best, H. B. & S. (merchant bars); Burden (staybolt iron, engine bolt iron, hollow drilled staybolts, iron boiler rivets).

Burden Iron Works, Troy; est. 1813; 36 double puddling fur.; 4 squeezers; 12 heat. fur. (five 2-d., three 3-d., four 4-d.), fuel, pulv. coal; three 20" 2-h. 3-st. muck mills; 20" 2-h. 3-st., 14" 3-h. 5-st., 10" 3-h. 4-st. and 9" 3-h. 4-st. finishing mills. Rivet Works and horse shoe factory.

Product: merchant bars, staybolt iron, engine bolt iron, chain iron; hollow drilled staybolts; iron boiler rivets and horseshoes; annual cap., 47,000 tons merchant bars, etc.; 100,000 kegs (100-lb.) of iron rivets $\frac{1}{2}$ " to $1\frac{1}{4}$ " dia.

Burden Furnace, Troy, N. Y. was sold July 31, 1924 to Hudson Valley Coke and Products Corporation.

BURLINGTON STEEL CO., Ltd., Sherman Ave. North, Hamilton, Ont., Canada.

Inc. 1910 in Ontario. Capital stock: com., par value \$100, auth. and issued \$1,500,000; pref. 7% cum. auth. and issued \$600,000.

Frank P. Wood, P.; W. D. Ross, 1 V. P.; George A. Morrow, 2 V. P.; at Toronto, Canada. H. V. Hamilton, Managing Director; P. H. Brooks, Sec.; W. P. Acheson, T. & P. A.; A. Oram, G. S.; H. J. Stambaugh, Jr., G. S. M.; at Hamilton.

Sales offices:

Montreal, P. Q., C. G. Porter, New Birk's Bldg.

New York, N. Y., Dodwell & Co.

Vancouver, B. C., W. Leith Murray.

Winnipeg, Man., W. Bruce Campbell, 628 Union Bank Bldg.

Works at Hamilton: blt. 1910; f. o. May 1, 1911; 1 cont. rail heat. fur., fuel, pulv. coal; 16" 3-h. 3-st. rail slitting mill; 12" 3-h. 7-st. bar mill.

Product: merchant and concrete bars; annual cap. 50,000 tons. Steel rounds, squares, flats, angles, channels, agricultural shapes, special sections, twisted squares for reinforcing concrete; steel fence posts.

BURNSIDE STEEL CO., 1300 East 92d St., Chicago, Ill.

Inc. Sept., 1916 in Illinois. Capital stock: com., par value \$100, auth. and issued \$300,000.

H. F. Wardwell, P.; George L. Pollock, V. P. & T.; W. A. Spuehler, Sec. & P. A.; L. M. Bassini, G. M.

Works at 1300 East 92nd St., Chicago: blt. 1916, f. o. Apr. 1, 1917; Tropenas converter ($2\frac{1}{2}$ -ton) will probably not be used, may be dismantled in 1925; Tropenas converter (1-ton) dismantled in 1924; 1 William Swindell & Brothers electric fur. (3-ton) installed 1924-25. Power from Commonwealth Edison Co.

Product: electric steel castings for sale; annual cap. 6,000 tons. Steel castings for automobiles, trucks, tractors and machinery. Alloy steel castings (manganese, chrome).

BYERS (A. M.) COMPANY, 235 Water St., Pittsburgh, Pa.

Est. 1864; inc. July 9, 1903 in Pennsylvania; reorg. Feb. 5, 1925. Capital stock; com., no par value, auth. and issued 150,000 shares; pref. 7% cum. auth. and issued \$4,500,000; bonds \$5,000,000.

E. M. Byers, Ch.; A. H. Beale, P.; J. Frederic Byers, V. P.; L. M. Johnston, V. P.; Frank G. Love, Sec. & T.; H. H. Bryant,

A. Sec. & A. T.; C. G. Jensen, C.; T. L. Lewis, G. S. M.; J. E. Stauffer, P. A.; at Pittsburgh, Pa. E. L. Ives, V. P.; at 310 South Michigan Ave., Chicago, Ill.

Sales offices:

Boston, Mass., 11 Sleeper St.
 Chicago, Ill., 1426 Conway Bldg.
 Cincinnati, Ohio, 404 Gwynne Bldg.
 Cleveland, Ohio, 30 Euclid Arcade.
 Houston, Texas, 1614 Second National Bank Bldg.
 Jacksonville, Fla., 607 Bisbee Bldg.
 Kansas City, Mo., 702-B Pioneer Trust Bldg.
 Los Angeles, Calif., 1006 Financial Center Bldg.
 New York, N. Y., Room 917, 110 East 42nd St.
 Philadelphia, Pa., 1411 Morris Bldg.
 Rochester, N. Y., 132 Millbank St.
 St. Louis, Mo., 1606 Chemical Bldg.
 Tulsa, Okla., 220 Mid-Continent Bldg.

Brand: Byers (genuine wrought iron pipe); Girard Chilled (pig iron).
 Product: pig iron, muck bar, skelp, genuine wrought iron pipe and oil country tubular goods.

South Side Plant, 6th & Bingham Sts., Pittsburgh: orig. blt. 1862-63; 29 single puddling fur.; 1 squeezer; 3 pulv. coal-fired heat. fur. (one 3-d., two 4-d.); 21" 3-h. 1-st. muck mill; 17" 2-h. 3-st. skelp mill. Pipe mill: 1 butt-weld and 2 lap-weld fur.; 1 galv. pot. Make butt-weld pipe $\frac{1}{4}$ " to $1\frac{1}{2}$ " and lap-weld pipe $1\frac{1}{4}$ " to $12\frac{1}{2}$ ". Product: muck bar, annual cap., 22,000 tons; skelp, 34,000 tons; black pipe, 65,000 net tons; galvanized pipe, 25,000 net tons.

Mattie Furnace, Girard, Ohio: 1 stack, 87' x 19' 6", blt. 1866, last remod. 1918, relined 1923; four 2-pass stoves, 95' x 20'; 3 vertical long cross head steam blowing eng. (2 Southwark, 1 Tod), 49,000 cfm., 20-lbs. rated pressure; 10 Rust water-tube boilers, 3 tubular boilers, 4,036 H. P.; 1 Uehling single-strand pig casting mach.; hard slag pit, annual cap., 95,000 tons. Coke: Lake ore. Product: gray forge and foundry pig iron, annual cap., 146,000 tons.

Rolling Mill, Girard, Ohio: blt. 1909, f. o. Jan. 26, 1909; 88 single puddling fur.; 2 squeezers; four 4-d. regen. heat. fur., fuel prod. gas, 3 gas prod.; two 21" 3-h. 1-st. muck mills; Belgian skelp mill with 16" 3-h. 1-st. roughing, 12" 3-h. 1-st. strand, 12" 2-h. 2-st. planishing and finishing rolls; sheared plate mill used for rolling skelp with 28" x 76" 2-h. roughing stand and 26" x 76" 3-h. finishing stand. Roll plate 12" to 49" wide, .156" to .532" thick. Product: muck bar, annual cap., 55,000 tons; skelp, 70,000 tons (35,000 tons on Belgian, 35,000 tons plate mill).

BY-PRODUCTS COKE CORPN., 332 South Michigan Ave., Chicago, Ill.

Inc. June 23, 1905 in New York. Capital stock: com., par value

\$100, auth. \$10,000,000, issued \$9,494,900; pref. 9% cum. auth. \$5,000,000, issued \$1,522,200; bonds \$6,315,900.

C. D. Caldwell, P.; G. P. Wheeler, V. P.; David L. Ward, V. P. & G. M.; Seymour Wheeler, Sec.; D. S. Boynton, T.; C. P. Fitzgerald, A. T.; B. L. Lynch, A.; at 332 S. Michigan Ave., Chicago. W. McKee, G. M. (Federal Furnaces); at 108th St. and Calumet River, Chicago. C. L. Waggoner, G. S.; W. A. Boynton, P. A.; at 11233 Torrence Ave., Chicago.

Sales agents: Pickands, Brown & Co., 322 South Michigan Ave., Chicago, Ill.

Federal Furnaces, 108th and Calumet River, Chicago: 2 stacks; A, 80' x 19' 6", blt. 1905-06, f. o. Feb. 1, 1907, relined 1924; B, 80' x 21' 1", blt. 1907-09, f. o. Aug. 20, 1909, relined 1924; 8 side-comb. stoves, 80' x 20'; 6 Southwark vertical steam blowing eng. 114,000 cfm., 30 lbs. rated pressure; 16 Sterling water-tube boilers, 5,520 H. P.; 1 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for ore and flue dust, annual cap., 73,000 tons. By-product coke; Lake ore. Iron foundry (900 tons). Product: basic, malleable and foundry pig iron, annual cap., 300,000 tons.

Coke Oven Plant, 112th St. and Torrence Ave., Chicago: 120 Solvay recuperative and 110 Koppers-Becker by-product coke ovens, annual cap., 1,460,000 net tons coke; by-product recovery plant and Solvay benzol plant, annual cap., 4,000,000 gals. light oil.

CALUMET & HECLA CONSOLIDATED COPPER COMPANY, Calumet, Mich.

Inc. 1923 in Michigan. Formerly Calumet & Hecla Mining Co.; name changed to Calumet & Hecla Consolidated Copper Co. in 1923.

R. L. Agassiz, P.; at Boston, Mass. James MacNaughton, V. P. & G. M.; at Calumet.

Company is engaged in mining and smelting of copper ore. Operates a small steel casting plant for own use only.

Foundry at Calumet, Mich.: blt. 1907; 3 single pot crucible fur. no longer used for steel castings; 2 cupolas; one 3-ton Gronwall-Dixon electric fur. (first steel castings Feb. 16, 1920) also used for desulphurizing molten iron from cupolas. Fuel, oil and coke. Gray iron and brass foundry.

Product: steel, brass, bronze and aluminum castings, and gray iron, chilled iron and semi-steel castings for own use only.

Calumet & Hecla Mining Co., Calumet, Mich., was reorganized in 1923 as Calumet & Hecla Consolidated Copper Co.

CALUMET STEEL CO., 208 South La Salle St., Chicago, Ill.

Inc. Mar. 27, 1907 in Illinois. Capital stock: com., par value \$100, auth. \$400,000, issued \$346,900.

J. H. Porter, P.; A. S. Hook, V. P. & T.; S. S. Porter, V. P.; F. G. Carrel, Sec.; at Chicago. F. N. Prime, A.; L. H. Hook, G. S.; at Chicago Heights.

Works at Chicago Heights: blt. 1907-08; f. o. Feb. 28, 1908; 2 heat. fur. (one 4-d. and one cont.); 20" 3-h. 1-st. bar; two 14" 3-h. 7-st. and 8" 3-h. 5-st. guide mills. Fuel, pulv. coal.

Product: rail steel bars, angles, channels, tees, cultivator bars, structural tubing and Ankorite steel fence posts; annual cap., 50,000 tons.

Cambria Steel Co., Philadelphia, Pa., a subsidiary of Midvale Steel & Ordnance Co. since Feb., 1916 was acquired with other properties of Midvale Steel & Ordnance Co. by Bethlehem Steel Corporation, April 1, 1923.

Cambridge Steel Co. (The), Cambridge, Ohio was acquired by Cambridge Steel Products Co., March, 1923.

CAMBRIDGE STEEL PRODUCTS CO. (The), Cambridge, Ohio.

Inc. Nov. 29, 1919 in Ohio. Capital stock: com. auth. and issued \$300,000; pref. 8% cum. auth. and issued \$200,000.

T. W. Scott, P.; H. A. Forsythe, V. P.; W. M. Verner, Sec., T.
G. S. M. & P. A.; O. O. Bell, G. M.; J. C. Nichols, G. S.
Sales agents: Ferro-Concrete Products Co., Monadnock Bldg.,
Chicago, Ill.; J. E. Rawson, Rose Bldg., Cleveland, Ohio.

Works at Cambridge: blt. 1920, f. o. Nov. 1, 1920; 1 cont. coal-
fired reheat. fur.; two 16" 2-h. 1-st. slitting, 16" 3-h. 2-st. rough-
ing; three 14" 3-h. 2-st. merchant mills.

Product: hot rolled products, annual cap., 48,000 tons, including
32,000 tons merchant and concrete bars, and 16,000 tons light
structural shapes for bedsteads, agricultural implements, etc.

Canada Cement Co., Montreal, Canada sold steel works at Kilbourn
Siding, Montreal in April, 1920 to Canadian Electric Steel Co.,
Ltd., Montreal, Canada.

CANADA ELECTRIC CASTINGS CO., Ltd., Orillia, Ont., Canada.

Inc. Feb. 17, 1920 in Ontario. Capital stock: com., par value
\$100, auth. \$40,000, issued \$30,000.

James B. Tudhope, P.; W. H. R. Burrows, V. P., G. M. & G.
S. M.; Hugh R. Tudhope, Sec. & T.; John Smith, G. S.; J. J.
Murphy, P. A.

Brand: Duroid (grinding balls and mill linings).

Works at Barrie Road, Orillia: blt. 1919-20, f. o. April, 1920, de-
stroyed by fire Dec. 4, 1920, rebld. 1922; 2 Heroult electric fur-
naces (2,000-lb.). Gray iron and brass foundry, annual cap.,
500 tons gray iron, 1,500 tons white iron, 300 tons brass and bronze
castings for sale.

Product: steel ingots and castings for sale, annual cap., 3,600 tons
(1,800 tons ingots, 1,800 tons castings); alloy steel castings (man-
ganese, nickel, chrome); grinding balls, ball and tube mill linings,
stamp dies.

Canadian Atlas Crucible Steel Co., Ltd., Welland, Ont., Canada,
corporate title changed August 12, 1925 to Canadian Atlas
Steels, Ltd.

CANADIAN ATLAS STEELS, Ltd., Welland, Ont., Canada.

Inc. May 2, 1918 in Ontario as Dillon Crucible Alloys, Ltd.,
corporate title changed Sept. 4, 1920 to Canadian Atlas Crucible
Steel Co., Ltd., corporate title changed August 12, 1925 to Cana-
dian Atlas Steels, Ltd. Capital stock: com., no par value, auth.
10,000 shares, issued 3,116.5 shares; pref. 7% cum., auth. \$1,000,-
000, issued, \$482,600.

D. W. Lathrop, P. & G. M.; A. R. Hubbard, T. & P. A.; F. A.
Schulze, G. S.; at Welland. H. E. Nichols, V. P.; W. D. Myres,
Sec.; at Dunkirk, N. Y.

Sales offices at Toronto, Montreal and Winnipeg; sales agents as follows:

Cobalt, Ont., The George Taylor Hardware, Ltd.

Timmins, Ont., The George Taylor Hardware, Ltd.

Toronto, Ont., Keystone Products, Ltd., 133 Eastern Ave.

Vancouver, B. C., E. G. Prior & Co., Ltd.

Victoria, B. C., E. G. Prior & Co., Ltd.

Works at Welland: blt. 1918; f. o. Dec. 24, 1918; crucible steel fur. (30 pots); fuel prod. gas, 2 gas producers; 5 coal-fired heat. fur. (four 2-d., one 4-d.); 10" 3-h. 5-st. bar mill; 5 hammers (600-lb. to 4,000-lb.). (Dillon Crucible Alloys, Ltd. to Sept. 4, 1920).

Product: crucible steel ingots, alloy steel ingots; carbon, alloy and high speed tool steels, hollow and solid mining drill steels, overcoat axe bit steel, blocks, discs and rings; annual cap., 1,500 tons ingots, 3,000 tons rolled and 1,000 tons forged products.

Canadian Brakeshoe Co., Ltd., see Canadian Brake Shoe & Foundry Co., Ltd.

CANADIAN BRAKE SHOE & FOUNDRY CO., Ltd., 350 St. James St., Montreal, P. Q., Canada.

Inc. Oct., 1912 in Dominion of Canada with title Canadian Brake-shoe Co., Ltd.; corporate title changed to Canadian Brake Shoe & Foundry Co., Ltd., Feb. 8, 1922.

N. J. Holden, P.; A. Allan, V. P.; V. G. R. Vickers, V. P.; G. C. Palmer, Sec. & T.

Works at Sherbrooke, Quebec: blt. 1912-13, f. o. Nov. 1913; 3 electric fur. (2-ton). Gray iron and brass foundry.

Product: steel castings for sale, annual cap., 3,600 tons; manganese steel castings.

CANADIAN CAR & FOUNDRY CO., Ltd., 307 Craig St. West, Montreal, P. Q., Canada.

Inc. Oct. 29, 1909 in Dominion of Canada. Capital stock; com., par value \$100, auth. \$5,000,000, issued \$4,975,000; pref. 7% cum. auth. and issued \$7,500,000; bonds \$3,889,726.

W. W. Butler, P.; W. F. Angus, V. P.; W. S. Atwood, V. P.; A. Whyte, V. P. & T.; A. D. Neale, V. P.; A. C. Bourne, Sec.; L. A. Peto, C.; R. J. Younge, G. S. M.; D. A. Loucks, P. A.

Sales offices: Montreal; and Royal Bank Bldg., Toronto, Ont.

The Canadian Car & Foundry Co., Ltd. has plants at Amherst, N. S. (includes rolling mill described below), Fort William, Ont., and Turcot Works and Dominion Works at Montreal, P. Q., for the manufacture of steel, steel-underframe and wooden freight and passenger cars of all types. The company also owns the capital stock of Canadian Steel Foundries, Ltd. and The Pratt & Letchworth Co., Ltd., Brantford, Ont.

Amherst Works, Amherst, N. S.; blt. 1893; rolling mill blt. 1906-07; 2 busheling fur.; hammer for squeezer; four 3-d. coal-fired heat. fur.; 18" 3-h. 4-st. bar, 16" 3-h. 2-st. rod; 9" 3-h. 2-st. and 9" 2-h. 2-st. rod mill; 1 steam hammer (6,500-lb.) idle.

Product: scrap bar, annual cap., 15,000 tons; iron and steel merchant bars, concrete bars, bolt, nut and rivet rods, etc., 30,000 tons.

CANADIAN CARBORUNDUM CO., Ltd., Niagara Falls, N. Y.

Inc. Apr. 12, 1916 in Province of Ontario, Canada. Capital stock: com., par value \$100, \$1,500,000.

F. J. Tone, P.; George R. Rayner, V. P. & Sec.; F. H. Manley, T.; at Niagara Falls, N. Y. H. C. Neeld, G. S.; at Shawinigan Falls, P. Q., Canada.

Works at Shawinigan Falls, P. Q.: one three-phase arc electric fur.; f. o. 1918. Power from the Shawinigan Water & Power Co.

Product: 90% ferro-silicon; annual cap., 2,125 tons.

Canadian Electric Steel, Ltd., Montreal, Canada.

Purchased in April, 1920 plant formerly owned by Canada Cement Co. and continued operation to Oct. 31, 1921, when works were closed down. Possibility of resuming is remote.

Works at Kilbourne Siding, Montreal: O. H. fur. (2 B. O. H. fur., 15-ton) installed 1915, f. o. July, 1916, dismantled Oct., 1920; 4 special electric fur. (7-ton); first electric steel Apr., 1916.

Product: steel ingots and castings, annual cap., 14,000 tons (12,000 tons ingots, 2,000 tons castings).

Canadian Ferro Alloys, Ltd., New York, N. Y.

Electric furnace plant at Shawinigan Falls, P. Q., Canada, for manufacture of ferro-silicon, last operated in 1919 was dismantled in 1925.

CANADIAN FURNACE CO., Ltd., Port Colborne, Ont., Canada.

Inc. Mar. 18, 1912 in Ontario. Capital stock: com., par value \$100, auth. \$1,500,000, issued \$500,000.

Frank B. Baird, P.; Harry Yates, 1 V. P. & T.; C. A. Collins, 2 V. P.; F. C. Slee, Sec.; W. D. Skillicorn, A.; at Buffalo, N. Y. D. J. Higgon, G. S.; at Port Colborne.

Sales agents: M. A. Hanna Co., C. H. Mosedale, 904 Canadian Pacific R. R. Bldg., Toronto, Ont.

Brand: Victoria (pig iron).

Victoria Furnace, Port Colborne: 1 stack, 82' 2½" x 19' 6", blt. 1912-13, relined 1922; 4 two-pass stoves 80' x 20'; 3 Allis Chalmers long cross head steam blowing eng., 51,300 cfm., 18 lbs. rated pressure; 8 Wicks water-tube boilers, 2,400 H. P.; 1 Slag Rock Machine Co. single-strand pig casting mach.; slag granulating pit, annual cap., 60,000 tons. Conn. coke: Lake ore.

Product: foundry, scotch, bessemer and malleable pig iron, annual cap., 125,000 tons.

CANADIAN HORSE SHOE CO., Ltd., Biggar Ave., Hamilton, Ont., Canada.

Inc. Mar., 1915 in Ontario. Capital stock: com. \$300,000; pref. \$200,000.

R. C. McElroy, P. & T.; Sir John Gibson, V. P.; H. M. Marsh, Sec. Works at Hamilton: blt. 1915-16; 3 heat. fur. (two 3-d., one 4-d.); 9" 3-h. 5-st. merchant mill. Fuel, coal.

Product: merchant and horseshoe bars; annual cap., 5,000 tons.

CANADIAN NATIONAL RAILWAYS, Montreal, P. Q., Canada.

J. C. Garden, Gen'l. Supt., Motive Power and Car Equipment Dept.

Works at Point St. Charles, Montreal: blt. 1891-92; f. o. May 9, 1892; two 3-d. coal-fired heat. fur.; 12" 3-h. 4-st. bar mill. Foundry with annual cap. of 5,950 tons gray iron castings. Forge shop for locomotive forgings; 15 steam hammers (600-lb. to 6,000-lb.). Fuel, bit. coal. (Grand Trunk Railway System to Mar. 1, 1923).

Product: merchant bar for own use; annual cap., 7,000 tons.

Canadian Rolling Mills, Ltd., Montreal, Canada, was acquired in August, 1920 by Canadian Tube and Steel Products, Ltd., Montreal, Canada.

CANADIAN STEEL CORPORATION, Ltd., Ojibway, Ontario, Canada.

Inc. 1913 in Dominion of Canada. Subsidiary of United States Steel Corporation.

E. H. Gary, P.; W. J. Filbert, Sec. & A.; Fred M. Waterman, T.; at 71 Broadway, New York. Ward B. Perley, V. P.; Frank Parrish, P. A.; at Ojibway.

Works at Ojibway, Essex Co., Ontario, under construction.

CANADIAN STEEL FOUNDRIES, Ltd., 307 Craig St. West, Montreal, P. Q., Canada.

Inc. Dec. 27, 1910 in Dominion of Canada. Capital stock; com., par value \$100, auth. and issued \$3,000,000; pref. 7% cum. auth. \$2,000,000, issued \$1,400,000; bonds (incl. Montreal Steel Works) \$2,111,030. Subsidiary of Canadian Car & Foundry Co., Ltd.

W. W. Butler, P.; W. F. Angus, V. P.; W. S. Atwood, V. P.; A. Whyte, V. P. & T.; A. D. Neale, V. P.; A. C. Bourne, Sec.; L. A. Peto, C.; W. C. Fletcher, Works M.; W. W. Horwood, S. M.; D. A. Loucks, P. A.

Branch sales office: Royal Bank Bldg., Toronto, Ont., Canada.

Brand: C. S. F. in circle.

Welland Works, Welland, Ont.; blt. 1906-07; 4 B. O. H. fur. (20-ton) fuel, oil; 2 cont. oil-fired heat. fur.; 22" 3-h. 4-st. and 2-h. 1-st. bar; 18" 3-h. 2-st. bar; 12" 3-h. 4-st. and 2-h. 1-st. rod mill.

Product: steel ingots and castings, annual cap., 47,500 (25,000 tons ingots, 22,500 tons castings); 75,000 tons merchant and concrete bars, angles, channels and bolt and nut rods: couplers, side frames, bolsters and general car and locomotive castings.

Longue Pointe Works, Montreal, P. Q.: blt. 1910-12; 3 B. O. H. fur. (20-ton) fuel, oil; 1 Heroult electric fur. (3-ton).

Product: steel ingots and castings for own use and for sale, annual cap., 41,100 tons (12,500 tons B. O. H. ingots; 25,000 tons B. O. H. castings, 3,600 tons electric castings). Alloy steel castings (nickel, chrome, vanadium, manganese). Couplers, side frames, bolsters, general car and locomotive castings and miscellaneous castings.

Pointe St. Charles Works, Montreal; manufacture of steel castings given up and equipment removed to Longue Pointe in 1922.

CANADIAN TUBE & STEEL PRODUCTS, Ltd., 107 Hamilton St., Montreal, P. Q., Canada.

Inc. Aug., 1920, in Dominion of Canada. Capital stock: com., par value \$100, auth. and issued \$1,600,000; pref. 7% cum. auth. and issued \$1,500,000; bonds \$316,500.

J. L. Waldie, P. & G. M.; A. H. Hough, V. P. & G. S. M.; H. Worrall, Sec.; P. B. Nash, T.; C. M. Thompson, G. S.; W. E. Williams, P. A.

Sales offices; Halifax, St. John, Toronto, Vancouver, Victoria and Winnipeg, Canada; St. Johns, Newfoundland; and Melbourne, Australia.

Brand: Red Diamond. CT in diamond (pipe).

Company owns the following operating subsidiaries:

Canadian Rolling Mills Co., Ltd.

Canadian Tube & Iron Co., Ltd.

Colonial Wire Mfg. Co.

Rolling Mill at Lachine Canal, Montreal (operated by Canadian Rolling Mills Co., Ltd.): blt. 1913; f. o. Mar. 9, 1914; 18" 3-h. 3-st. muck and bar mill; 16" 3-h. 2-st. roughing; two 10" 3-h. 2-st. bar mills; 2 steam hammers (500-lb., 3-ton). Product: scrap bar, annual cap., 6,000 tons; merchant and concrete bars from old rails and billets, 30,000 tons; spike, bolt, nut and rivet rods; ship and railway spikes, 3,000 kegs (200-lb.).

Wrought Pipe Plant, Montreal (operated by Canadian Tube & Iron Co.): 1 butt weld fur. for pipe $\frac{1}{4}$ " to 4" inclusive; 1 galvanizing pot. Bolt, nut and rivet works, annual cap., 10,000 tons. Product: black pipe, annual cap., 18,000 tons; galvanized pipe, 16,000 tons; bolts, nuts and rivets, 10,000 tons.

Wire Mills, Montreal (operated by Colonial Wire Mfg. Co.): equipped to manufacture all kinds of fine wire, wire nails and wood screws, annual cap., 10,000 tons.

CANADIAN WESTERN STEEL CORPN., Ltd., Calgary, Alberta, Canada.

Company in process of liquidation; G. T. Clarkson, Liquidator, Wellington St., Toronto, Ont., Canada.

Collingwood Works, Collingwood, Ont., acquired from The Wm. Kennedy & Sons, Ltd., May 1, 1919, was sold in March, 1920 to Baldwins Canadian Steel Corporation, Ltd. and subsequently dismantled. Redcliff Works, Redcliff, Alberta, was acquired in 1924 by the bondholders, represented by Laidlaw & Blanchard, solicitors, Medicine Hat, Alberta, see Redcliff Rolling Mills. Company still holds Medicine Hat Works, Medicine Hat, Alberta, idle since 1920 and for sale.

Medicine Hat Works, Medicine Hat, Alberta: blt. 1911, f. o. Dec. 1, 1911; three 3-d. heat. fur.: 18' 3-h. 2-st. and 9' 3-h. 5-st. bar mill. Bolt and nut factory.

Product: merchant bars, annual cap., 12,000 tons.

CANONSBURG STEEL & IRON WORKS, Canonsburg, Pa.

Inc. Sept. 2, 1902 in Pennsylvania. Capital stock: com. auth. \$250,000, issued \$210,000.

E. W. Edwards, P.; J. M. Watson, 1 V. P., G. M., G. S. M. & P. A.; H. W. Edwards, 2 V. P.; O. S. Larkby, Sec.; G. D. Myers, T.

Works at Canonsburg: blt. 1882; 9 sheet and 7 pair fur.; 7 black sheet mills (26' x 32' to 28' x 44'); 5 single stands cold rolls (one 22' x 32', one 22' x 40', two 22' x 46', one 22' x 48'); 10 box annealing fur.; 3 pickling mach. (1 Mesta 2-arm, 1 Mesta 3-arm, 1 plunger); 2 galvanizing pots. Roll black sheets to 36' wide and 144' long according to gauge; blue annealed sheets in 14 and 16 gauge only.

Product: black sheets for galvanizing, stamping, japanning, flat and corrugated; blue annealed sheets, 14 and 16 gauge; galvanized sheets: annual cap., 40,000 black sheets, 16,000 tons galvanized sheets.

Canton Sheet Steel Co. (The), Canton, Ohio, was acquired by United Alloy Steel Corporation in June, 1922. Works now known as South Works, United Alloy Steel Corpn.

Canton Steel Foundry Co. (The), Canton, Ohio. Steel foundry at Canton (three 40-ton A. O. H. fur.) has been idle for several years.

Capital City Iron & Steel Co., Harrisburg, Pa. Works at Harrisburg were leased July 1, 1921 to Harrisburg Bar Mill Co. Lease taken over by Harrisburg Pipe & Pipe Bending Co. Nov. 1, 1922.

CARBON FURNACE CO., Parryville, Carbon County, Pa.

Inc. Sept., 1917 in Pennsylvania. Capital stock; com., par value \$100. auth. and issued \$350,000.

———, P.; J. L. Kemmerer, Sec. & T.; James Duane, Jr., G. M., G. S. M. & P. A.

Brand: Carbon (Special scotch and foundry); Parry (bessemer); Viking (low phos.)

Carbon Furnace, Parryville: 1 stack, 65' x 15'; blt. 1869; last rebt. 1898; relined 1918; 3 Foote stoves, 70' x 21'; one vertical reciprocating steam blowing eng., 14,700 cfm., 8-lbs. rated pressure; 7 boilers (1 water-tube, 6 flue), 1,350 H. P. Conn. coke and anth. coal: N. Y. magnetite and Lake ore. (Idle since Aug. 1923).

Product: special scotch, foundry, bessemer and low phosphorus pig iron; annual cap., 40,000 tons.

Carbon Steel Co., Pittsburgh, Pa. Directors voted Jan. 23, 1923 to dissolve the company and liquidate its assets. Works at Pittsburgh were gradually dismantled and buildings and machinery sold in 1923 and 1924.

Carborundum Co. (The), Niagara Falls, N. Y. has discontinued the manufacture of ferro-silicon at its plant at Niagara Falls, N. Y.

Carnahan Tin Plate & Sheet Co. (The), Canton, Ohio was acquired January 7, 1922 by The Falcon Tin Plate Co.

CARNEGIE STEEL COMPANY, Carnegie Building, Pittsburgh, Pa. Inc. Feb. 24, 1899 (amended Mar. 26, 1903), in New Jersey. Subsidiary of United States Steel Corporation.

W. G. Clyde, P.; A. N. Diehl, V. P.; I. Lamont Hughes, V. P.; W. W. Blackburn, V. P. & Sec.; W. C. McCausland, T.; James J. Campbell, A. & A. Sec.; C. L. Wood, G. M. S.; Charles R. Miller, Jr., P. A.

Sales offices:

Birmingham, Willard Wilson, Brown-Marx Bldg.

Boston, Wilbur S. Locke, 120 Franklin St.

Buffalo, Fred C. Deming, Marine National Bank Bldg.

Chicago, Edwin S. Mills and D. T. Buffington, 208 South LaSalle St.

Cincinnati, G. H. Vant, Union Trust Bldg.

Cleveland, James R. Mills, Rockefeller Bldg.

Denver, E. M. Sparhawk, First National Bank Bldg.

Detroit, W. B. Weston, 2130 Buhl Bldg.

New Orleans, Dennis Crowley, Jr., Maison Blanche.

New York, Charles C. Cluff, 71 Broadway.

Philadelphia, James B. Bonner, Widener Bldg.

Pittsburgh, Albert M. Harper, 227 Carnegie Bldg.

St. Louis, Stillman W. Wheelock, Third National Bank Bldg.

St. Paul, W. J. Totten, 1115 Pioneer Bldg.

Washington, James B. Bonner, Wilkins Bldg.

Sales representatives: for export, United States Steel Products Co., 30 Church St., New York; for Pacific Coast business, United States Steel Products Co., at Los Angeles, Portland, San Francisco, and Seattle.

Product: pig iron, spiegeleisen, ferro-manganese, ferro-silicon; bessemer, open hearth and electric steel ingots; chrome, nickel and vanadium steels; blooms, billets, slabs, sheet and tinplate bars; forging blooms and forging billets; standard steel rails; light rails, mine rails, splice bars, steel cross ties, Braddock and Duquesne rail joints; structural shapes, beams, channels, angles, tees, zees; steel mine timbers, steel sheet piling; universal and sheared plates, boiler, ship, tank and bridge plates; skelp; hoops, bands, cotton ties, tire steel, box and scroll steel, slack barrel hoops; merchant bars, squares, rounds, flats, hexagons, ovals, special shapes, concrete reinforcement bars; forged and heat-treated axles; forged and rolled wheels and gear blanks, forged and rolled locomotive pistons; bolts, rivets, etc. Iron, steel and brass castings, ingot molds and stools for own use.

Bellaire Works, Bellaire, Ohio; Blast Furnaces; 2 stacks; No. 1, 90' x 20', blt. 1873, last rebt. 1915-16, relined 1924; No. 2, 83' 9" x 18', blt. 1894-95, remod. 1917; 8 Massicks & Crooke stoves (four 100' x 20', four 65' x 18'); 6 steam blowing eng. (70,000 cfm.) 15 lbs. rated pressure; 19 water-tube boilers (6 Wicks, 4 Cahall, 9 B. & W.) 6,410 H. P., serve also all Depts. of Plant; 1 Uehling double-strand pig casting mach. Conn. beehive and Clairton by-product coke; Lake ore.

Product: bessemer pig iron, annual cap., 276,000 tons.

Steel Works: blt. 1883-84, rebt. 1897; 2 bessemer converters (10-ton); 3 cupolas; 250-ton mixer; five 1-hole soaking pits; 32" 2-h. 1-st. blooming, 24" 3-h. 2 st., and 24" 2-h. 1-st. sheet bar mill. Gray iron and brass foundry (1,500 tons iron, 50 tons brass castings) for own use. Product: steel ingots, annual cap. 420,000 tons; alloy steel ingots (copper); sheet and tinplate bars, 364,000 tons.

Carrie Furnaces, Rankin, Pa.: 7 stacks; No. 1, 94' 9½" x 21' 6", blt. 1883, rebt. 1919; No. 2, 92' 9½" x 24', blt. 1888-89, rebt. 1925; No. 3, 97' x 22' 6", blt. 1899-1901, relined 1920; No. 4, 97' x 22' 6", blt. 1899-01, relined 1920; No. 5, 95' x 21' 6", blt. 1902-03, relined 1922; No. 6, 94' x 22', blt. 1906-07, relined 1920; No. 7, 94' x 22', blt. 1906-07, relined 1920; 28 Massicks & Crooke stoves (eighteen 90' x 21', eight 100' x 21', two 90' x 22'); 6 blowing eng. (2 steam, 4 gas) and 6 steam turbo-blowers, 508,520 cfm. (engines 178,520 cfm. 30 lbs. rated pressure; turbos 330,000 cfm. 18 lbs. rated pressure); 25 water-tube boilers, 15,300 H. P., gas fired; 3 water-tube boilers, 2504 H. P. coke breeze fired; 6 water-tube boilers, 6672 H. P. coal-fired (under construction); 5 Heyl & Patterson double-strand pig casting mach.; 2 slag

granulating pits, annual cap., 88,000 tons. Conn. beehive and Clairton by-product coke; Lake ore. Molten metal to Homestead Steel Works. Product; basic pig iron, annual cap., 1,207,500 tons.

Clairton Steel Works and Furnaces, Clairton, Pa. (leased; owned by Clairton Steel Co.):

Blast Furnaces: 3 stacks; No. 1, 82' 1½" x 21' 8", blt. 1901-03, relined 1924; No. 2, 82' 1½" x 21' 8", blt. 1901-03, relined 1922; No. 3, 82' 1½" x 21' 8", blt. 1901-03, relined 1919; 12 Massicks & Crooke 3-pass stoves (95' x 21'); 7 steam blowing eng. (170,000 cfm.); 30 lbs. rated pressure; 20 Sterling water-tube boilers, 15,580 H. P.; 2 Heyl & Patterson double-strand pig casting mach.; 2 slag granulating pits, annual cap. 220,000 tons. Clairton by-product coke; Lake ore. Product: basic pig iron, annual cap. 510,000 tons. Steel Works: blt. 1901-02; 16 B. O. H. fur. (60-ton), fuel, coke oven gas; one 1,300-ton mixer; seven 4-hole soaking pits; 10 heat. fur. (7 cont., three 5-d.), coke oven gas fired; 40" 2-h. 1-st. reversing blooming; 28" 3-h. 1st. billet; two 22" structural with 22" 3-h. 2-st. and 22" 2-h. 1-st.; 18" 3-h. 3-st. and 18" 2-h. 1st. bar; 14" structural with 14" 3-h. 2-st. and 14" 2-h. 5-st. Product: steel ingots, annual cap., 636,000 tons; blooms, billets and slabs, 600,000 tons; finished hot rolled products, 504,000 tons including 132,000 tons merchant bars, and 372,000 tons structural shapes (264,000 tons heavy, 108,000 tons light shapes).

Clairton By-Product Coke Works, Clairton, Pa. (leased; owned by Clairton By-product Coke Co.): 768 Koppers and 366 Koppers-Becker by-product coke ovens, annual cap. 5,009,500 net tons coke; by-product recovery plant and Koppers benzol plant, annual cap., 26,098,000 gals. light oil.

Clark Mills, 35th Street, Pittsburgh, Pa. were abandoned in 1925, to be dismantled.

Columbus Steel Works and Furnaces, Columbus, Ohio, were abandoned in 1925.

Duquesne Steel Works and Furnaces, Duquesne, Pa.:

Blast Furnaces: 6 stacks; No. 1, 100' x 22', f. o. June 8, 1896, rebld. 1924; No. 2, 100' x 22' 6", f. o. Oct. 7, 1896, rebld. 1925; No. 3, 100' x 22', f. o. May 7, 1897, rebld. 1922; No. 4, 100' x 22', f. o. June 21, 1897, rebld. 1917, relined 1925; No. 5, 94' x 22', f. o. Mar. 16, 1909, rebld. 1920, relined 1924; No. 6, 94' x 22', f. o. Aug. 10, 1909, relined 1920; 24 hot blast stoves (eight 3-pass Massicks & Crooke 100' x 22', sixteen 2-pass central-draft Diehl 96' x 21'); 12 blowing eng. (8 Corliss compound steam, 4 twin-tandem gas) 420,000 cfm., 25 lbs. rated pressure; 2 old steam blowing eng. as spares; 65 water-tube boilers (61 B. & W., 4 Rust) 22,050 H. P. serve also 15,000 K. W. turbo-generator and excess to general steel plant steam system; 4 Uehling double-strand pig casting mach.; 2 slag granulating pits, annual cap., 263,000 tons,

Gray iron foundry for own use (1,000 tons). Conn. beehive and Clairton by-product coke; Lake ore. Product: basic pig iron, annual cap., 1,041,600 tons. Steel Works: blt. 1886-88, f. o. Feb., 1889; 32 B. O. H. fur. (fourteen 50-ton, six 60-ton, twelve 75-ton); one Heroult electric fur. (20-ton); 3 mixers (one 200-ton, two 300-ton); twelve 4-hole soaking pits; 10 heat. fur. (one 5-d. billet, 6 cont. billet, three 6-d. bloom) fuel, coke oven gas; 40' 2-h. 1-st. blooming; 38' 2-h. 1-st. blooming; 29' 3-h. 1-st. roughing and two 21' 3-h. 3-st. billet, splice shape and sheet bar; 14' 2-h. 10-st. cont. billet; 14' 2-h. 8-st. cont. billet; 28' 3-h. 1-st. roughing and 22' 2-h. 1-st. reversing bar; two 12' 2-h. 4-st. roughing and 10' 2-h. 6-st. finishing cont. bar; 13' 2-h. 10-st. cont. bar; 10' 2-h. and 3-h. guide mill with 12' 1-st. roughing, 10' 5-st. finishing; 8' 2-h. and 3-h. guide with 12' 1-st. roughing, 8' 5-st. finishing; 18' 2-h. 4-st. roughing, 14' 2-h. 3-st. and 12' 2-h. 3-st. finishing bar. Steel foundry for own use. Product: steel ingots, annual cap., 1,388,800 tons (1,353,800 tons B. O. H., 35,000 tons electric); steel castings, 1,200 tons; alloy steel ingots (nickel, chrome, vanadium); blooms and billets, 959,500 tons; sheet and tinplate bars, 100,000 tons; splice bar shapes, 70,000 tons; merchant bars, 734,000 tons; twisted bars, 15,000 tons, turned bars, 3,500 tons.

Edgar Thomson Steel Works and Furnaces, Braddock, Pa.

Blast Furnaces: 11 stacks; A, 88' 4" x 22', f. o. Jan. 15, 1880, relined 1920; B, 82' 11" x 21' 6", f. o. Apr. 2, 1880, relined 1924; C, 82' 11" x 21', f. o. Nov. 6, 1880, relined 1924; D, 88' 4 3/8" x 22', f. o. Apr. 19, 1882, relined 1924; E, 93' 1" x 23', f. o. June 22, 1882, relined 1924; F, 93' 1" x 23', f. o. Oct. 17, 1886, relined 1924; G, 93' 1" x 22', f. o. June 20, 1887, relined 1923; H, 93' 1" x 22', f. o. Feb. 27, 1890, relined 1923; I, 93' 1" x 22', f. o. Aug. 14, 1890, relined 1922; J, 88' 4" x 22', f. o. Feb. 16, 1903, relined 1924; K, 88' 4" x 22', f. o. Dec. 5, 1902, relined 1924; 44 two-pass side comb. stoves (fourteen, 91' 5" x 21', fourteen 100' x 22', eight 98' 4" x 21', eight 101' x 21'); 43 blowing eng. (41 steam, 2 twin-tandem gas) 470,000 cfm., 30 lbs. rated pressure; 161 water-tube boilers (12 B. & W., 26 Rust, 122 Cahall, 1 waste heat), 44,946 H. P. serve also steel works and rolling mills; building to be completed Nov. 1, 1925, eight twin Sterling boilers, 18,000 H. P. to replace 12 B. & W. and 58 Cahall water-tube boilers of 17,200 H. P.; 7 Uehling double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 500,000 tons. Conn. beehive and Clairton by-product coke; Lake ore. Product: bessemer and basic pig iron, annual cap., 1,940,000 tons.

Steel Works: blt. 1873, f. o. Aug. 26, 1875; 4 bessemer converters (15-ton); 16 B. O. H. fur. (90-ton); 3 mixers (one 150-ton, one 1,000-ton, one 600-ton); 7 cupolas for spiegel; eight 3-hole soaking pits; 8 bloom heat. fur., 2 cont. billet heat. fur., 3 cont. splice heat. fur., fuel, coke oven gas; 48' 2-h. 2-st. and 40' 3-h. 1-st.

blooming; 28" 3-h. 2-st. and 25½" 2-h. 1-st. rail; 32" 3-h. 3-st. and 32" 2-h. 1-st. rail; 24" 3-h. 3-st. sheet bar; 19" 3-h. 3-st. and 19" 2-h. 1-st. rail; splice bar shop, mine tie shop, gray iron and brass foundry for own use. Product: steel ingots, annual cap., 1,462,000 tons (987,000 tons B. O. H., 475,000 tons bessemer; bessemer capacity can be expanded to 1,010,000 tons if demand requires); alloy steel ingots (copper); blooms, 1,005,000 tons; sheet bars, 230,000 tons; splice bar shapes 30,000 tons; rails, 992,000 tons; splice bars, 85,000 tons; mine ties, 12,000 tons; castings for own use (180,000 tons ingot moulds and stools, 13,300 tons iron castings and rolls, 1,600 tons brass castings, 57 tons babbitt metal).

Edith Furnace, North Side, Pittsburgh (leased; owned by American Steel & Wire Co.): 1 stack, 97' 8½" x 20', blt. 1898, relined 1919; 3 McClure stoves (two 100' x 22', one 85' x 21'); 5 steam blowing eng. (80,000 cfm.) 15 lbs. rated pressure; 9 water-tube boilers, 2,296 H. P.; 1 Heyl & Patterson double-strand pig casting mach.; 1 slag granulating pit, annual cap., 147,800 tons. Conn. coke; Lake ore. Product: bessemer pig iron, annual cap., 141,500 tons.

Farrell Steel Works and Furnaces, Farrell, Pa. (leased; owned by Union Steel Co.):

Blast Furnaces: 3 stacks: No. 1, 98' x 21', blt. 1900-01, f. o. Dec. 8, 1901, relined 1917; No. 2, 93' 5½" x 22', blt. 1902-04, f. o. September 9, 1904, rebt. 1920-21; No. 3, 93' 5½" x 22', blt. 1902-04, f. o. Nov. 27, 1904, rebt. 1918-19; 12 Cowper-Kennedy stoves (111' x 22'), 8 steam blowing eng. (152,237 cfm.) 16 lbs. rated pressure; 49 water-tube boilers, 17,650 H. P., serve also steel works and rolling mills; 2 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap. 110,000 tons. By-product and beehive coke: Lake ore. Gray iron foundry, 2,200 tons heavy castings. Product: basic pig iron, annual cap. 501,400 tons.

Steel Works: blt. 1900-01, f. o. Apr. 30, 1901; 15 B. O. H. fur. (twelve 60-ton, three 75-ton) fuel, tar; 48 gas producers not in use; one 250-ton mixer; five 4-hole soaking pits; 6 regen. 4-d. heat. fur.; 35" 2-h. 1-st. blooming; 18" 2-h. 8-st. billet and sheet bar; 48" 2-h. universal plate mill, horizontal rolls 30" x 88". Roll universal plates ½" to 5" thick, 18" to 43½" wide, to 60' long. Product: steel ingots, annual cap., 624,000 tons; alloy steel ingots (copper); blooms and billets, 201,000 tons; sheet and tinplate bars, 171,000 tons; universal plates or skelp, 134,000 tons.

Farrell By-Product Coke Plant, Farrell, Pa. (leased; owned by Sharon Coke Co.); 212 Otto Hoffman by-product coke ovens. Discontinued. Dismantling in progress.

Greenville Mills, Greenville, Pa.: Dismantled 1923.

Homestead Steel Works, Munhall, Pa.: blt. 1880-81; 65 B. O. H. fur. (one 15-ton, twenty-two 42-ton, four 55-ton, twenty-four

63-ton, fourteen 79-ton) fuel, natural and coke oven gas, and tar; one cupola; 3 mixers (200-ton, 250-ton, 1,300-ton); 37 soaking pits (five 3-hole, twenty 4-hole, twelve 5-hole); 51 heat. fur. (three 3-d., forty 4-d., three 5-d., two 6-d., three 9-d.); 25 heat. treating fur.; 32' 2-h. 1-st. universal slabbing; 30' 2-h. 1-st. universal slabbing; 28' 2-h. 1-st. blooming; 38' 2-h. 1-st. blooming; 33' 3-h. 1-st. cogging; 23' 3-h. 3-st. structural; 33' 3-h. 2-st. structural; 40' 2-h. 1-st. cogging and 35' 3-h. 4-st. structural (will be replaced by 44' 2-h. 1-st. blooming 36' 2-h. 1-st. roughing, and 32' to 28' 3-h. 3-st. structural under construction in 1925); 5 sheared plate mills (30' x 72' 3-h., 32½' x 84' 3-h., 36' x 110' 3-h., 35' x 128' 3-h., 38' x 140' 3-h.); 2 universal plate mills (42' 2-h. with rolls 26½' x 72', and 48' 2-h. with rolls 31' x 88'); 5 steam ham. (1,100-lb. to 6,000-lb.); 3 forging presses (2,000-ton to 12,000). Roll sheared plates, ¾' thick to 90' wide x 270' long; ¼' thick to 114' x 175'; ⅜' thick to 128' x 220' and to 2¼' thick to 128' x 150'; universal plates ¼' to 2' to 48' wide. Beam fitting shop; gray iron and steel foundry for own use. Armor plate, protective deck plate, heavy forgings and rivets and bolts departments discontinued. Product: steel ingots, annual cap., 2,548,500 tons; alloy steel ingots (nickel, chrome, copper, silicon); steel castings for own use, 2,500 tons; gray iron castings for own use, 2,500 tons; slabs, blooms and billets, 2,063,000 tons; finished hot rolled products, 1,677,000 tons including 448,000 tons heavy structural shapes, 891,000 tons sheared plates; and 338,000 tons universal plates.

Howard Axle Works, West Homestead, Pa.: blt. 1899-00; f. o. Apr. 1900; 3 cont. heat. fur.; 3 heat. treating fur.; 24' 2-h. 2-st. cont. blooming; 12 steam ham. (7,000-lb. and 7,500-lb.). Fuel, natural and coke oven gas, and oil. Product: blooms and billets for axles, annual cap., 202,000 tons; finished car and locomotive axles, 165,000 tons.

Isabella Furnaces, Etna, Pa.: 3 stacks; No. 1, 94' 3' x 21' 6", blt. 1872, rebld. 1902 and relined 1924; No. 2, 90' 3' x 19' 6", blt. 1872, rebld. 1911 and relined 1924; No. 3, 94' 3' x 21' 6", blt. 1887, rebld. 1902, relined 1923; 12 stoves, 90' x 21' (eleven 2-pass center-comb., one 2-pass side-comb.); 10 steam blowing eng. (130,000 cfm.) 25 lbs. rated pressure; 24 water-tube boilers (12 B. & W. horizontal, 12 Cahall vertical) 6,000 H. P.; two Uehling double-strand pig casting mach.; 1 roll press briquetting plant—under construction for briquetting flue dust, annual cap., 52,000 tons; 2 slag granulating pits, annual cap., 180,000 tons. Conn. coke: Lake ore, and foreign and domestic manganese ore. Gray iron foundry, 1,100 tons. Product: bessemer, special bessemer and basic pig iron; ferro-manganese, spiegeleisen and ferro-silicon; annual cap., 72,000 tons bessemer and basic pig iron, 132,000 ferro-alloys.

Lucy Furnaces, 51st St. and A. V. R.R., Pittsburgh, Pa.: 2 stacks; No. 1, 87' 8" x 19' 6", blt. 1872, last rebt. 1908, relined 1924; No. 2, 87' 7 $\frac{3}{8}$ " x 21', blt. 1877, last rebt. 1898, relined 1916; 9 two-pass side-comb. stoves (four 86' x 20', five 86' x 21'); 7 steam blowing eng. (80,000 cfm.) 15 lbs. rated pressure; 20 water-tube boilers (11 B. & W. horiz. 9 Cahall vert.), 5,300 H. P.; 1 Uehling double-strand pig casting mach.; 1 slag granulating pit, annual cap. 130,000 tons. Conn. beehive and Clairton by-product coke: Lake ore, and foreign and domestic manganese ore. Product: spiegeleisen, ferro-manganese and ferro-silicon, annual cap. 100,200 tons.

McCutcheon Mills, North Side, Pittsburgh, Pa.: blt. 1862; 7 coal fired heat. fur. (two 4-d., two 5-d., three cont.); 16" 3-h. 2-st. and 16" 2-h. 1-st. structural, bar and band; 10" 3-h. 2-st. and 10" 2-h. 2-st. hoop, band and light rail; two 8" 3-h. 2-st. and 8" 2-h. 3-st. hoop and band; 8" 2-h. 9-st. cont. hoop; 8" 2-h. 8-st. cont. hoop. Slack barrel hoop factory. Product: hot rolled products, annual cap., 132,800 tons, including 23,900 tons merchant bars; 44,800 tons hoops and bands; 45,000 tons skelp; 3,000 tons heavy structural shapes; 16,100 tons mine tie shapes: Slack barrel hoops, 36,000 tons.

McDonald Mills, McDonald, Ohio: blt. 1916-20, f. o. Jan. 3, 1918; 7 cont. heat. fur., fuel pulv. coal and tar; two 10" 3-h. 6-st., 8" 3-h. 3-st., 8" 2-h. 2-st. semi-cont. hoop; 12" 2-h. 5-st., 10" 3-h. 3-st., 10" 2-h. 2-st. semi-cont. hoop; 20" 2-h. 3-st., 18" 3-h. 2-st., 18" 2-h. 3-st. band mill; 12" 2-h. 5-st., 10" 3-h. 2-st., 10" 2-h. 2-st. merchant bar; 10" 2-h. 6-st., 18" 3-h. 3-st., 8" 2-h. 2-st. merchant bar. Under construction: 12" 2-h. 6-st., 10" 3-h. 3-st., 10" 2-h. 3-st. semi-cont. shape mill with 1 cont. heat fur. to be ready for operation about Oct. 1, 1925, annual cap., 78,000 tons merchant bars and shapes: 18" 2-h. 5-st., 14" 3-h. 1-st., 14" 2-h. 5-st. cross-country bar mill with 2 cont. heat fur. to be ready for operation about Feb. 1, 1926, annual cap., 144,000 tons merchant bars and shapes.

Projected: 16" 2-h. 4-st., 14" 2-h. 4-st., 2 vert. edgers, and 12" 2-h. 3-st. cont. strip mill with 1 cont. heat. fur. to be ready for operation about June 1, 1926, annual cap., 108,000 tons strips and bands.

Product: finished hot rolled products, 480,000 tons (building and projected mills not included) including 211,000 tons merchant bars; 120,000 tons hoops and bands; 9,000 tons light structural shapes; 140,000 tons skelp. Capacity of mills building and projected, 330,000 tons.

Mingo Steel Works and Furnaces, Mingo Junction, Ohio:

Blast Furnaces; 3 stacks, No. 1, 75' x 17', blt. 1872, rebt. 1900-01, partially dismantled; No. 2, 106' 7 $\frac{3}{4}$ " x 22' 6", blt. 1900-01, f. o. Sept. 24, 1901, blown out February 28th, 1925, to be rebuilt;

No. 3, 106' 1 $\frac{3}{4}$ " x 22', blt. 1900-01, f. o. Apr. 1901, relined 1919; No. 4, 89' 7 $\frac{1}{2}$ " x 22', blt. 1905-06, f. o. Jan. 20, 1906, relined 1924; 11 Massicks & Crooke stoves (three central comb. 2-pass 110' x 22', four 85' x 21', four 100' x 21'); four stoves at No. 2, 85' x 19' 6" to be dismantled; 7 steam blowing eng. (220,000 cfm.) 20 lbs. rated pressure; 25 Sterling water-tube boilers, 10,150 H. P. serves also entire plant; 3 Heyl & Patterson double-strand pig casting mach.; one Dwight & Lloyd sintering plant for flue dust, annual cap. 130,000 tons. Conn. beehive and Clairton by-product coke: Lake ore. Product: bessemer pig iron, annual cap. 523,000 tons.

Steel Works: blt. 1882, 1885-86; two 10-ton bessemer converters; under construction: 7 B. O. H. furnaces; probably 1927 before ready to operate; 3 cupolas; 250-ton mixer; four 4-hole soaking pits; 2 cont. heat. fur. prod. gas fired; 36" 2-h. 1-st. reversing blooming; 32" 2-h. 1-st. reversing blooming; 24" 2-h. 1-st., 18" 2-h. 6-st. cont. sheet bar; 10" 2-h. 10-st. and 10" 3-h. 4-st. cont. bar and skelp mill. Fuel coal and producer gas. Product: steel ingots, annual cap., 600,000 tons; alloy steel ingots (copper); sheet and tinplate bars, 412,000 tons; merchant bars or skelp, 65,000 tons.

Monessen Mills, Monessen, Pa., were abandoned in 1925, to be dismantled.

Neville Furnace, Neville Island, Allegheny County, Pa. (leased; owned by American Steel and Wire Co.): 1 stack, 100' 10 $\frac{1}{2}$ " x 21', blt. 1900-01, f. o. July 3, 1901, relined 1925; 4 two-pass side-comb. stoves, 100' x 22'; 3 steam blowing eng. (80,000 cfm.) 18 lbs. rated pressure; 14 Cahall water-tube boilers, 3,500 H. P.; one Uehling double-strand pig casting mach. Conn. coke: Lake ore and foreign and domestic manganese ore. Product: basic pig iron, annual cap., 179,400 tons.

New Castle Steel Works and Furnaces, New Castle, Pa.:

Blast Furnaces: 4 stacks, No. 1, 97' 8" x 20', blt. 1872, rebld. 1897, relined 1924; No. 2, 94' 6" x 22' 6", last rebld. 1903-04, relined 1924; No. 3, 94' 6" x 22' 6", last rebld. 1903-04, relined 1924; No. 4, 106' 6" x 21', blt. 1900-01, relined 1922; 16 hot blast stoves including 8 Massicks & Crooke stoves (seven 85' x 21'; one 85' x 19' 6"), eight 2-pass, side comb. (one 91' 9" x 20'; one 92' x 21'; three 100' x 22'; three 110' x 22'); 5 Massicks & Crooke stoves used as spares (one 85' x 21', four 85' x 18'); 10 steam blowing eng. (216,000 cfm.) 18 lbs. rated pressure; 52 vertical water-tube boilers, 13,000 H. P., serve also steel works and rolling mill; installing 6 Sterling boilers (7,176 H. P.) which are expected to be operating by 1926 and will displace all but 12 of the vertical water-tube boilers; 2 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap. 110,000 tons; 4 slag granulating pits, annual cap. 352,800 tons. Conn.

beehive and Clairton by-product coke; Lake ore. Product: bessemer pig iron, annual cap., 630,000 tons.

Steel Works: blt. 1892, f. o. Nov. 2, 1892; 2 bessemer converters (12 ton); 3 cupolas; 2 mixers (one 1,000-ton, one 1,100-ton); five 4-hole soaking pits, fuel prod. gas; 36" 2-h. 1-st. reversing blooming; 2 continuous sheet bar mills each with 28" 2-h. 2-st., 26" 2-h. 2-st., 24" 2-h. 5-st. Product: steel ingots, annual cap., 770,000 tons; alloy steel ingots (copper); sheet and tinplate bars, 682,000 tons.

Niles Furnace, Niles, Ohio, was abandoned in 1925, to be dismantled. Ohio Steel Works and Furnaces, Youngstown, Ohio:

Blast Furnaces: 6 stacks; No. 1, 105' 0" x 24' 6", blt. 1899-00, rebt. 1924; No. 2, 104' 0" x 23' 6", blt. 1899-00, relined 1921, No. 3, 105' x 24' 6", blt. 1900-01, rebt. 1925; No. 4, 87' 6" x 23', blt. 1903-04, relined 1920; No. 5, 92' 6" x 23', blt. 1907-09, relined 1919; No. 6, 92' 6" x 23', blt. 1907-09, relined 1920; 24 stoves (4 Massicks & Crooke, 118' 3" x 21'; 20 Cowper-Kennedy, 118' x 21'); 11 blowing eng. (7 steam, 4 twin-tandem gas) 460,000 cfm., 30 lbs. rated pressure; 52 water-tube boilers (4 Connelly, 48 Sterling) 21,398 H. P. serve also steel works and rolling mills; 3 Heyl & Patterson double-strand pig casting mach.; slag crushing plant at McDonald, annual cap., 400,000 tons concrete aggregate and road ballast. Conn. and by-product coke: Lake ore. Product: bessemer and basic pig iron, annual cap., 1,100,000 tons.

Steel Works: blt. 1893-94; 2 bessemer converters (10-ton); 15 B. O. H. fur. (65-ton), fuel prod. gas and tar; 60 gas producers; 5 cupolas; 3 mixers (250-ton); sixteen 4-hole soaking pits, fuel prod. gas; 43" 3-h. 1-st. blooming; 40" 2-h. 1-st. blooming; 23" 2-h. 11-st. cont. billet and sheet bar mill; 15" 2-h. 8-st. cont. billet mill.

Product: steel ingots, annual cap., 1,480,000 tons (720,000 tons bessemer, 760,000 tons B. O. H.); alloy steel ingots (copper); semi-finished rolled products 1,188,000 tons, including 150,000 tons slabs, 632,400 tons blooms and billets, and 405,600 tons sheet and tinplate bars.

Painter Mills, West Carson St., Pittsburgh, Pa. were abandoned in 1925, to be dismantled.

Schoen Steel Wheel Works, McKees Rocks, Pa.: blt. 1903, f. o. Nov., 1903; 22 heat. fur. (three 4-d., nineteen 5-d.) fuel, prod. gas; 3 special mills for rolling steel car wheels; 2 steam ham. (2,500-lb. and 1,500-lb.); 18 hydraulic forging presses (200-ton to 10,000-ton). Product: rolled and pressed steel car wheels, annual cap., 132,000 tons; steel forgings, 11,720 tons.

Sharon Furnace, Sharon, Pa., was abandoned in 1925, to be dismantled.

Steel Works dismantled in June, 1923.

Steubenville Furnace, Steubenville, Ohio, was abandoned in 1925, to be dismantled.

Upper and Lower Union Mills, Pittsburgh, Pa.:

Upper Union Mills, 33rd St., Pittsburgh, Pa.; blt. 1863-64; 20 tar fired heat. fur. (two 2-d., two 3-d., five 4-d., 11 special); 20" 3-h. 3-st. structural; 18" 3-h. 3-st. structural; 17" 3-h. 2-st. and 17" 2-h. 1-st. structural; 12" 3-h. 3-st. structural; 8" 3-h. 3-st. and 8" 2-h. 2-st. bar; 2 universal plate mills (one 24" with rolls 18½" x 83", one 36" with rolls 23" x 123"). Fabricating shop. Bolt and Rivet Dep't. makes bolts and rivets for own use. Product: finished hot rolled products, annual cap., 251,900 tons, including 165,900 tons structural shapes (121,400 heavy, 44,500 light shapes) and 86,000 tons universal plates; 10,800 tons fabricated work including mine ties; 200 tons (2,000 kegs) bolts and rivets.

Lower Union Mills, 29th St., Pittsburgh, Pa.; blt. 1861-62; dismantled February, 1924.

Upper and Lower Union Mills, Youngstown, Ohio:

Upper Union Mills, Youngstown, Ohio: blt. 1871; 7 cont. prod. gas fired heat. fur.; 10" to 7" semi-cont. hoop with 4-st. 3-h. and 8-st. 2-h.; 10" to 8" semi-cont. hoop with 3-st. 3-h. and 8-st. 2-h.; 8" 3-h. 3-st. and 8" 2-h. 2-st. guide; 10" 3-h. 1-st. and 10" 2-h. 6-st. semi-cont. hoop; 10" 2-h. 9-st. cont.; 12" 3-h. 3-st. and 12" 2-h. 2-st. guide; 10" 3-h. 1-st. and 10" 2-h. 7-st. cross country bar. Product: finished hot rolled products, annual cap., 270,000 tons, including, 104,000 tons merchant bars, 85,700 tons hoops, bands and cotton ties, 6,200 tons skelp and 74,100 tons light structural and other shapes.

Lower Union Mills, Youngstown, Ohio: blt. 1863; 6 heat. fur. (three 5-d. coal fired, 3 cont. coal and prod. gas fired); 10" to 8" semi-cont. with 3-st. 3-h. and 6-st. 2-h.; 10" to 8" semi-cont. with 3-st. 3-h. and 7-st. 2-h.; 16" guide with 3-st. 3-h. and 1-st. 2-h.; 10" guide with 2-st. 3-h. and 2-st. 2-h.; 7" guide with 3-st. 3-h. and 2-st. 2-h. Product: finished hot rolled products, annual cap., 171,000 tons, including 158,400 tons merchant bars, 800 tons heavy structural shapes, 7,800 tons light structural shapes and 4,000 tons bands.

Zanesville Furnace, Zanesville, Ohio; blt. 1870-71; 1 stack. Dismantled November 1st, 1924.

Total annual capacity of the 52 blast furnaces, 8,354,600 tons pig iron and ferro-alloys; of the 16 steel works and rolling mills, 9,929,300 tons steel ingots (2,985,000 tons bessemer, 6,909,300 tons basic open hearth, 35,000 tons electric); 8,293,600 tons semi-finished rolled products (5,812,900 tons blooms, billets and slabs, 2,364,600 tons sheet and tinplate bars, 100,000 tons splice bar shapes and 16,100 tons mine tie shapes); 5,654,820 tons finished hot rolled products, including 992,000 tons rails, 837,200 tons heavy and 243,400 tons light structural shapes, 558,000 tons universal and 891,000 tons sheared plates, 1,381,800 tons merchant bars, concrete bars and special shapes, 254,500 tons hoops, bands

and cotton ties, 256,200 tons skelp, 143,720 tons steel wheels and miscellaneous rolled products; 165,000 tons forged axles; 85,000 tons splice bars; 200 tons bolts and rivets; 36,000 tons slack barrel hoops.

The Carnegie Steel Company (of N. J.) has established warehouses where large stocks of merchant bars, structural shapes, plates, etc. (see stock lists published monthly) are carried to supply urgent demands of customers for quick delivery. These warehouses are equipped for light punching, cutting and riveting structural angles, beams and channels, etc.

The warehouses are located as follows:

Waverly Warehouses, Waverly, Newark, N. J.

New England Warehouse, Allston, Boston, Mass.

Baltimore Warehouse, Bush and Wicomico Streets, Baltimore, Md.

Cleveland Warehouse, 1394 East 39th Street, Cleveland, Ohio.

Pittsburgh Warehouse, 11th Street, Pittsburgh, Pa.

CARPENTER STEEL CO. (The), 43 Exeter St., Reading, Pa.

Inc. Nov. 1, 1904 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$6,000,000.

F. A. Bigelow, P. & G. S. M.; J. H. Parker, V. P.; Joseph S. Pendleton, Sec. & T.; E. J. Poole, G. S.; C. W. Gaul, P. A.

Sales offices:

Chicago, Ill., 1101 West Lake St.

Cleveland, Ohio, 1515 Hamilton Ave.

Detroit, Mich., 520 Congress St. West.

Hartford, Conn., 410 New Park Ave.

Indianapolis, Ind., 633 Fulton St.

New York, N. Y., 100 Broadway.

Philadelphia, Pa., 618 Bulletin Bldg.

Carpenter Steel Works, Reading, Pa.: blt. 1889-90, rebt. 1892; 2 crucible fur. (42 pots each), fuel, prod. gas, 4 gas producers; 3 B. O. H. fur. (10-ton), fuel, prod. gas, 6 gas prod.; crucible and open-hearth fur. not operating at present; 3 Heroult electric fur. (6-ton); 18 heat. fur. (six 2-d., two 3-d., three 4-d., seven cont.), fuel, coal; one 4-d. fur. oil-fired; 22" 3-h. 2-st. cogging and finishing; 16" 3-h. 6-st. cogging and finishing; Belgian mill with 18" 3-h. 2-st., 10" 3-h. 5-st., and 10" 3-h. 4-st.; 12" 3-h. 3-st.; 10" 3-h. 7-st.; 9" 3-h. 6 st.; 26 cold rolling mach. (six 10", fourteen 8", six 6"); 26 box annealing fur.; 15 wooden hand pickling tanks; 8 steam hammers (600-lb. to 12,000-lb.); 22 cold drawing blocks for wire and bars .013" to 2½".

Product: steel ingots, annual cap., 21,428 tons electric (idle ingot capacity 24,700 tons, including 22,320 tons B. O. H. and 2,380 tons crucible); alloy steel ingots; hot rolled products, 20,000 tons; forged products, 5,000 tons; cold rolled products, 2,700 tons; plain wire, 5,000 net tons; rolled and hammered carbon and

alloy tool steels; high speed tool steel; stainless, rustless and corrosion-resisting steels; special steels for cutlery, dies, files, etc.; cold rolled strip and flat wire; cold drawn bars, drill rods and wire specialties; forged discs, rings and trunnion balls.

Carr (W. R.) & Co., Spartanburg, S. C. Charcoal blast furnace at Phelps, Wisconsin idle since 1916 was abandoned in 1921.

Cedartown Iron Co., Anniston, Ala. Cherokee Furnace, a charcoal stack blt. 1874-75 and last active in 1910 was dismantled in 1921.

CENTRAL FURNACE CO. (The), Massillon, Ohio.

Inc. Aug. 1, 1923, in Ohio. Capital stock; com., no par value, auth. 100,000 shares, issued 100 shares.

Frederick J. Griffiths, P. & G. M.; C. E. Stuart, 1 V. P. & T.; B. F. Fairless, V. P. & G. S.; J. M. Schlendorf, V. P.; Charles C. Chase, Jr., Sec.; G. H. Freeborn, A.; G. D. Evans, P. A.

Blast Furnace, Massillon, Ohio: 1 stack, 93' x 22' 6" building, construction begun Mar. 9, 1925, to be completed about June 1, 1926; 4 Freyn hot blast stoves, 103' x 23'; 2 turbo-blowers, 60,000 cfm., 30 lbs. rated pressure; 6 Sterling water-tube boilers, 900 H. P.; 1 Heyl & Patterson double-strand pig casting machine. By-product coke: Lake ore. By-product coke plant projected.

Product: basic and malleable pig iron, annual cap., 250,000 tons.

CENTRAL IRON & COAL CO., 41 East 42nd St., New York, N. Y.

Inc. Mar. 2, 1901 in New Jersey. Capital stock: com., par value \$100, issued \$1,000,000; bonds \$1,550,000.

Robert R. Rust, P.; E. McElheaney, Sec.; Frank Haber, T.; at New York. J. L. Brierton, V. P. & G. M.; C. E. Morris, A.; W. M. Joyner, P. A.; at Holt, Ala.

Sales agent: Rogers, Brown & Crocker Bros., Inc., Cincinnati, Ohio. Brands: Tuscaloosa, Warrior (pig iron); Holt (coke).

Tuscaloosa Furnace, Holt, Ala.: 1 stack, 87' x 19' 6"; blt. 1901-03; rebld. 1911-12; relined 1922 and blown in Aug. 21, 1922; 4 Foote 2-pass stoves, 80' x 20'; 4 vertical steam blowing eng., 77,000 cfm., 20-lb. rated pressure; 11 vertical water-tube boilers, 2,700 H. P.; nodulizing plant for pyrites cinder (two 8' x 100' rotary kilns); annual cap., 72,000 tons. By-product coke; red and brown hematite from own mines. Company owns red ore mines at Valley View, Ala., annual cap., 125,000 tons; and brown ore mines at Giles, Ala., annual cap., 60,000 tons; also coal mine at Kellerman, Ala., annual cap., 360,000 tons. At Holt, 60 Semet-Solvay by-product coke ovens; annual cap., 180,000 tons, and 164 beehive ovens, long idle.

Product: foundry and forge pig iron for sale: annual cap., 120,000 tons.

Central Iron & Metal Co., 3650 South Rockwell St., Chicago, Ill.

Purchased and hold for resale the rolling mill at Vincennes, Ind., formerly owned and operated by National Rolling Mill Co.

Works at Vincennes, Ind.: blt. 1903-04, f. o. Feb. 15, 1904; 5 oil-fired single scrap fur.; 1 squeezer; four 4-d. oil-fired heat. fur.; 10" 3-h. 4-st. and 8" 3-h. 4-st. bar mills. Idle and for sale.

Product: merchant bar iron and steel, annual cap., 20,000 tons.

CENTRAL IRON & STEEL CO., Front & Dock Sts., Harrisburg, Pa.

Inc. Apr. 19, 1897 in Pennsylvania. Capital stock; com., par value \$100, auth. \$5,000,000, issued \$2,245,400.

Robert H. Irons, P.; Donald McCormick, Sec. & T.; Basil M. Graham, C.; H. S. Evans, G. S.; L. F. Nagle, G. S. M.; W. H. Drinkwater, P. A.

Sales offices:

Baltimore, Md., Continental Bldg.

Boston, Mass., Board of Trade Bldg.

Charleston, S. C., Cameron & Barkley Co.

Chicago, Ill., Theo. Geissmann & Co., 624 So. Michigan Blvd.

Cleveland, Ohio, J. C. Wicks & Co., 1350 Hanna Bldg.

El Paso, Texas, Francis Wagner, 602 Martin Bldg.

Fort Worth, Texas, C. A. Fischer, 1918 W. T. Waggoner Bldg.

Los Angeles, Calif., C. W. Pike Co., 1305 Washington Bldg.

Montreal, Canada, J. W. Pyke & Co., Ltd., 232 St. James St.

New Orleans, La., Cahn Bros. & Ryder, 1046 Tchoupitoulas St.

New York, N. Y., 2 Rector St.

Philadelphia, Pa., Stock Exchange Bldg.

Pittsburgh, Pa., R. C. Barton, Commonwealth Bldg.

San Francisco, Calif., C. W. Pike Co., 22 Battery St.

Seattle, Wash., Hilton-Pike Co., L. C. Smith Bldg.

Syracuse, N. Y., Seitz Bldg.

Product: pig iron; sheared and universal plates and sheets; boiler plates, marine and locomotive steel, ship plates, tank plates, bridge and structural plates, flanged and dished heads; blue annealed sheets; steel floor plates; steel stampings. Annual cap., 200,000 tons.

Works at Harrisburg, Pa.:

Paxton Furnaces: 2 stacks: No. 1, 75' x 14', blt. 1855, rebt. 1886; No. 2, 80' x 18', blt. 1872, remod. 1917, relined 1919; 6 Whitwell stoves (four 60' x 18', two 50' x 18'); 3 Weimer steam blowing eng., 45,000 cfm., 25 lbs. rated pressure; 8 water-tube boilers (4 Wheeler, 4 B & W), 2,600 H. P.; 2 slag granulating pits, annual cap., 120,000 tons. Coke: Lake ore. Product: basic, foundry, forge, bessemer and malleable pig iron, annual cap., 85,000 tons. Lochiel Furnace: 1 stack, 75' x 13' 6", blt. 1872, f. o. Apr. 1873, remod. 1886 and 1917; 4 Whitwell stoves, 60' x 20'; 2 steam blowing eng. (18,500 cfm.); 5 water-tube boilers, 1,250 H. P.; 1

slag granulating pit, annual cap., 35,000 tons. Coke: foreign and domestic ore. (Leased to E. E. Marshall to 1924.) Product: pig iron, annual cap., 50,000 tons, or ferro-manganese, 18,000 tons. Open-hearth Steel Works: blt. 1903-04, enl. 1917-18, f. o. June 9, 1904; 6 B. O. H. fur. (five 90-ton, one 60-ton); fuel, prod. gas; 29 gas producers. Product: steel ingots, annual cap., 240,000 tons. Paxton Rolling Mills: orig. blt. 1869; six 3-d. heat. fur. (fuel, pulv. coal); 34" x 126" 3-h. sheared plate mill. Roll sheared plates 2" to 8 gauge to 120" wide and 60' long. Flanging Shop. Gray iron foundry for works castings and ingot moulds for own use, 1,000 tons. Product: sheared plates, annual cap., 78,000 tons.

Central Iron Works: orig. blt. 1853; four 3-d. prod. gas-fired heat. fur.; 28" x 42" 2-h. universal plate mill. Roll universal plates 4" to 8 gauge, 7" to 40" wide, to 100' long. Five heat. fur. (two 3-d., one 5-d., two cont., coal-fired); 28" x 89" 3-h. sheared plate mill; 26" x 72" jobbing plate mill with 2-h. roughing and 3-h. Lauth finishing stand; blue annealing fur. Roll sheared plates 1" to 16 gauge to 76" wide and 35' long. Product: sheared plates, annual cap., 24,000 tons; universal plates, 72,000 tons; blue annealed sheets, 12,000 tons; "Central Pattern" floor plates, 14,000 tons; hot and cold stampings and pressed parts, 5,000 tons.

CENTRAL OF GEORGIA RAILWAY CO., Savannah, Ga.

C. P. Dickert, Superintendent of Motive Power.

Macon Shops, Macon, Ga.: Ajax 3-h. reclaiming rolls added 1910, f. o. July 10, 1910, idle since 1920.

Product: merchant rounds, annual cap., 360 tons.

CENTRAL STEEL CO., Oberlin Road, Massillon, Ohio.

Inc. June 14, 1914 in Ohio. Capital stock: com., no par value, auth. 300,000 shares, issued 244,771 shares; pref. 8% cum. auth. \$10,000,000, issued \$6,189,300; bonds, \$4,539,500.

Frederick J. Griffiths, Ch.; C. E. Stuart, P. & T.; B. F. Fairless, V. P. & G. M.; J. M. Schlendorf, V. P. (Sales); Charles C. Chase, Jr., Sec.; G. H. Freeborn, A.; G. D. Evans, P. A.

Sales offices:

Chicago, Ill., 1370 Peoples Gas Bldg.

Cleveland, Ohio, 904 Sweetland Bldg.

Detroit, Mich., 1054 Book Bldg.

New York, N. Y., 1418 Aeolian Bldg., 33 West 42nd St.

Philadelphia, Pa., 603 Widener Bldg.

Syracuse, N. Y., 621 University Block.

Brand: Agathon (steel billets, slabs and bars).

Works at Massillon, Ohio:

Central Division, Columbia Heights, Ohio: blt. 1914-15, f. o. June 8, 1915: 9 B. O. H. fur. (two 90-ton, seven 70-ton) fuel, oil; five 4-hole soaking pits, fuel prod. gas; 9 heat. fur. (one cont.

oil-fired, two 5-d. oil-fired, four 5-d. prod. gas, two 6-d. prod. gas); 34" 2-h. 1-st. blooming; 24" 3-h. 2-st. billet and bar; 24" 3-h. 2-st. and 24" 2-h. 1-st. sheet bar; 24" 3-h. 1-st. and 18" 3-h. 5-st. bar; 16" 3-h. 1-st. and 12" 3-h. 5-st. bar. Product: steel ingots, annual cap., 400,000 tons; alloy steel ingots (nickel, chrome, vanadium, molybdenum); billets, blooms and slabs, 320,000 tons; merchant bars, 240,000 tons; hot rolled, cold drawn and heat-treated bars in alloy steels.

National Division, Massillon (The National Pressed Steel Co. to Aug. 18, 1921): blt. 1916-17, f. o. Dec., 1917; 1 cont. oil-fired heat. fur.; 24" x 38" 2-h. universal plate mill and 18" 2-h. 3-st. strip finishing mill; 6 box annealing fur.; 1 open annealing fur.; 1 pickling mach. Product: hot rolled strip steel, annual cap., 125,000 tons.

Sheet Mill Division, Massillon (The Massillon Rolling Mill Co. to Aug. 18, 1921): blt. 1908-09, f. o. Mar. 23, 1909; 14 sheet and 14 pair fur.; 14 hot black sheet mills (28" x 30" to 56"); 14 stands cold rolls in 2 trains of 7 stands each (24" x 52" and 60"); 2 Mesta pickling mach.; 7 hand pickling tanks; 12 box annealing fur. Product: black sheets, annual cap., 90,000 tons; automobile and electric sheets.

Company owns The Central Furnace Co. which is building blast furnace plant (1 stack) at Massillon.

Central Steel Co., 343 South Dearborn St., Chicago, Ill.

Inc. 1910 in Illinois. Capital stock: com. \$10,000.

Eugene M. Staat, P.; George Staat, V. P.; George S. Wood, Sec. & T.

Works at Ottawa, Ill.: blt. 1910-12; one 4-d. oil-fired heat. fur.; 9" 3-h. 4-st. bar. Idle and for sale. Product: merchant bars, annual cap., 15,000 tons.

Century Steel Co. of America, Poughkeepsie, N. Y. went into bankruptcy in 1922 and was liquidated. Machinery and equipment of works at Poughkeepsie were sold at auction Sept. 14, 1923 for removal in 15 days. Plant completely dismantled.

Champion Horse Shoe Co., Pawtucket, R. I. went out of business in 1922. Plant sold and dismantled.

CHAPMAN PRICE STEEL CO., Indianapolis, Ind.

Inc. June 20, 1910 in Indiana. Capital stock: com., par value \$100, auth. \$1,200,000, issued \$535,506; pref. 7% cum. auth. \$500,000, outstanding \$440,000.

Niles Chapman, P.; George C. Haerle, V. P.; B. B. McCandliss, Sec. & T.

Works at Indianapolis: blt. 1920-21; f. o. Mar. 21, 1921; 6 comb. sheet and pair fur.; 2 roughing sheet mills (28" x 38" and 28" x

44"); 6 finishing sheet mills (four 28" x 38", two 28" x 44"); 2 cold roll stands (24" x 48") in hot mill train; 4 box annealing fur.; 2 plunger pickling mach.; 4 galvanizing pots.

Product: black sheets to 38" wide and 144" long, 14 to 30 gauge, one pass cold rolled and box annealed for galvanizing, galvanized sheets; annual cap., 33,000 tons black sheets, 38,000 tons galvanized sheets.

CHAPMAN VALVE MFG. CO. (The), Indian Orchard, Mass.

Company manufactures valves and fittings and operates a steel foundry for own use only.

Works at Indian Orchard, Mass.: steel foundry blt. 1921, f. o. Jan. 17, 1922; 1 Moore Lectromelt electric fur. (2½-ton).

Product: steel castings for own use only, annual cap., 2,500 tons; alloy steel castings (chrome, nickel).

CHARCOAL IRON CO. OF AMERICA, Marquette, Mich.

Inc. May 13, 1915 in Michigan. Capital stock: com., par value \$10, auth. and issued \$2,839,350; pref. 6% cum. auth. and issued \$5,217,250; bonds \$3,398,500.

A. H. Green, Jr., P. & G. M.; Fred T. Moran, V. P.; at Detroit, Mich. C. H. Havill, V. P., Sec. & T.; J. B. Carlin, Jr., A.; A. E. Labonte, G. S. M.; H. J. Frei, P. A.; at Marquette. Herman Kunert, V. P.; at Newberry, Mich.

Sales agents: Rogers, Brown & Crocker Bros., Inc., Cincinnati, Ohio (pig iron); Wm. S. Gray & Co., New York, N. Y. (acetate); Wood Products Co., Buffalo, N. Y. (alcohol).

Brands: Hinkle, Pine Lake, Champion, Michigan (pig iron).

Product: charcoal foundry, car-wheel and malleable pig iron; total annual cap., 139,000 tons.

Ashland Plant, Ashland, Wis.: 1 stack, 60' x 15'; blt. 1887-88; remod. 1897; relined 1919; 3 stoves 60' x 18'; 1 vertical steam blowing eng., 6,000 to 8,000 cfm., 5 to 8-lb. rated pressure; 7 boilers (5 water-tube, 2 horizontal return tube), 775 H. P. Charcoal; Lake ore. Charcoal plant; 84 kilns; annual cap., 3,800,000 bu. and by-product recovery plant. Product: warm blast charcoal pig iron; annual cap., 45,000 tons.

Boyne City Plant, Boyne City, Mich.: 1 stack, 60' 8" x 12'; blt. 1903-04; relined 1922; 2 stoves 60' x 18'; 1 horizontal steam blowing eng., 5,000 cfm., 5 to 8-lbs. rated pressure; 2 water-tube boilers, 300 H. P. Charcoal; Lake ore. Charcoal purchased. Product: warm blast charcoal iron; annual cap., 29,000 tons.

Manistique Plant, Manistique, Mich.: 1 stack, 58' 8" x 13'; blt. 1890-91; relined 1922; 2 stoves 60' x 18'; 1 horizontal steam blowing eng., 5,000 cfm., 5 to 8-lbs. rated pressure; power from by-product plant; no separate boilers for furnace. Charcoal; Lake ore. Charcoal plant; 90 kilns; annual cap., 3,150,000 bu.

and by-product recovery plant. Product: warm blast charcoal pig iron; annual cap., 36,000 tons.

Newberry Plant, Newberry, Mich.: 1 stack, 60' x 12'; blt. 1882-83; last rebt. 1903; 2 stoves 60' x 18'; 1 horizontal steam blowing eng., 5,000 to 8,000 cfm., 5 to 8-lbs. rated pressure; no separate boilers for furnace, power from by-product plant. Charcoal; Lake ore. Charcoal plant; 24 retorts; annual cap., 3,000,000 bu. and by-product recovery plant. Product: warm blast charcoal pig iron; annual cap., 29,000 tons.

Charcoal Iron Co. of America owns a large acreage of timber lands in Michigan and Wisconsin. It operates the Yale Mine in the Gogebic Range, Gogebic Co., Mich.; annual cap., about 500,000 tons of iron ore.

Charcoal Iron Products Co., P. O. Box 489, Washington, Pa.

Inc. May 22, 1922 in Pennsylvania. Capital stock: com., par value \$100, auth. \$500,000, issued \$273,000.

John Slater, P.; John B. Murphy, V. P.; E. T. McNulty, Sec. & G. M.; W. G. Zelt, T.; E. T. Slater, A.

Brand: CIPCO (charcoal blooms, sheets).

Works at Washington, Pa.: blt. 1902, f. o. Oct., 1902; first black plates Jan., 1903; first black sheets, Mar., 1903; 8 knobbling fires; 6,000-lb. steam hammer; 2 heat. fur. (one 3-d., one 4-d.); 24" 2-h. sheet bar; one 26" x 44" black sheet mill; one 26" x 32" black plate (tin) mill; 2 cold mills (22" x 34", 22" x 40"); 2 box annealing fur.; 1 Mesta pickling mach.; 3 tinning pots for terne plate. (Griffiths Charcoal Iron Mills to April 1, 1922). Idle, for sale or for lease.

Product: charcoal blooms from scrap for own use and for sale, annual cap., 7,500 tons; black and long terne sheets, 3,500 tons; black plate for tinning, 2,500 tons; terne roofing plates, 60,000 boxes.

CHATEAUGAY ORE & IRON CO., Lyon Mountain, N. Y.

Subsidiary of Delaware & Hudson Co.

W. H. Williams, Senior V. P.; at 26 Liberty St., New York, N. Y.

J. R. Linney, M.; at Lyon Mountain. C. W. Carpenter, P. A. at Scranton, Pa.

Selling agents: Pilling & Co., Franklin Trust Bldg., Philadelphia, Pa., and 11 Broadway, New York, N. Y.

Brand: Chateaugay.

Standish Furnace at Standish, N. Y.: 1 stack, 78' 6" x 17'; blt. 1886; remod. 1921-22, relined 1924; 4 Foote stoves 71' x 16'; 2 vertical reciprocating blowing eng. (1 Allis-Chalmers, 1 Southwark), 1 Ingersoll-Rand turbo-blower, 30,000 cfm.; 7 water-tube boilers (6 Sterling, 1 Erie City) 1,700 H. P.; 1 single-strand pig casting mach.; Dwight & Lloyd sintering plant for Chateaugay low-phos. concentrates, annual cap., 216,000 tons. Conn. coke: sintered

local ore. (Formerly leased and operated by Northern Iron Co.) Chateaugay Ore and Iron Co. owns and operates iron ore mine at Lyon Mountain, annual cap., 500,000 tons crude ore, 200,000 tons concentrates.

Product: low phosphorus pig iron, annual cap., 109,500 tons.

Chattanooga Electro Metals Co., Chattanooga, Tenn. liquidated in August, 1922 and sold its plant to Southern Ferro Alloys Co.

CHATTANOOGA IRON & COAL CORPN., Chattanooga, Tenn.

Inc. Nov. 23, 1912 in Tennessee. Capital stock: com., par value \$100, auth. and issued \$1,000,000; pref. auth. and issued \$3,500,000; bonds \$350,000.

Robert R. Rust, P.; B. A. Schutz, V. P.; B. L. Flynn, A. Sec.; Frank Haber, T.; Louis B. Ledoux, A.; at 41 East 42nd St., New York, N. Y.

Brand: Chattanooga (pig iron).

Chattanooga Furnace, Chattanooga: 1 stack, 75' x 16', blt. 1905-06, relined 1919-20; 4 Whitwell 4-pass stoves 60' x 18'; 4 steam blowing eng., 30,000 cfm., 20-lbs. rated pressure; 10 water-tube boilers, 2,900 H. P. Beehive and by-product coke: red and brown ores from Georgia and Alabama. Company owns red ore mines at Estelle, Ga., annual cap., 100,000 tons; also 268 beehive coke ovens at Dunlap, Tenn., annual cap., 125,000 net tons coke.

Product: foundry pig iron, annual cap., 60,000 tons.

Chemung Valley Steel Co., Elmira Heights, Elmira, N. Y. built rolling mill at Elmira Heights in 1920, f. o. Sept. 1920. Plant was acquired by Valley Rolling Mills in October, 1923.

CHESTER STEEL CASTINGS CO., 407 Sansom St., Philadelphia, Pa.

Inc. June 30, 1871 in Pennsylvania. Capital stock: com. \$10,000.

E. W. Dwight, P. & T.; J. D. Wetzler, Sec. & P. A.; at 407 Sansom St., Philadelphia. H. M. Bonawitz, A. Sec.; at Chester, Pa.

Works at Chester, Pa.: blt. 1871; 2 A. O. H. fur. (30-ton); 8 McHaffie cementation fur.; 3 gas prod. Fuel, oil and coal.

Product: steel castings for sale, annual cap., 8,800 tons (8,000 tons open-hearth, 800 tons cementation).

Chicago Electric Steel Co., Chicago, Ill. Plant at 447 Kensington Ave., Chicago was taken over in July, 1920 by Chicago Rolling Mills, Inc. Projected extensions by latter company were not carried out and the plant remained idle. It was acquired in 1923 by P. W. Chapman who sold the Steel Department, April 1, 1924 to Inland Engineering Co. Rolling mill was sold in August, 1924 and removed to Savannah Steel Corporation, Savannah, Ga.

CHICAGO MALLEABLE CASTINGS CO., 12000 South Racine Ave., Chicago, Ill.

Inc. 1899 in Illinois. Capital stock: com., par value \$100, auth. and issued \$1,000,000; pref. 7% cum. auth. and issued \$1,000,000. S. J. Llewellyn, P.; Paul Llewellyn, T.; at 104 South Michigan Ave., Chicago. J. T. Llewellyn, V. P.; J. S. Llewellyn, Sec.; W. H. Herbst, A.; W. L. Beaudway, G. M.; H. D. Menke, P. A.; at 12000 South Racine Ave., Chicago. J. H. Slawson, G. S. M.; at 435 Railway Exchange Bldg., Chicago.

Sales offices:

Chicago, Ill.	Philadelphia, Pa.	St. Louis, Mo.
Detroit, Mich.	Richmond, Va.	Washington, D. C.
New York, N. Y.		

Brands: Chicago Brake Beams, Certified Malleable Castings.

Works at 12000 Racine Ave. for manufacture of malleable and steel castings, annual cap. 25,000 tons malleable iron castings.

Steel Foundry, West Harvey, Ill. (operated by Allied Steel Castings Co.): blt. 1914, for converter castings, converter dismantled 1920: O. H. added 1918, f. o. June, 1918; 2 A. O. H. fur. (12-ton). Fuel, oil.

Product: steel castings for sale, annual cap., 10,000 tons; railroad car and misc. castings; steel ingots for sale.

Chicago Rolling Mills, Inc., see Chicago Electric Steel Co.

CHICAGO STEEL FOUNDRY CO., 3720 South Kedzie Ave., Chicago, Ill.

Inc. Oct. 16, 1906 in Maine. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$379,000.

David Evans, P. & T.; Arthur I. Gilbert, Sec. & P. A.; A. Dapogny, G. S.; S. J. Moore, G. S. M.

Works at 3720 South Kedzie Ave., Chicago: blt. 1912; f. o. Aug. 13, 1912; 2 Tropenas converters (1-ton, 2-ton); one 3½-ton Heroult electric fur.; 2 cupolas. Crucible fur. dismantled. Converters (6,000 tons annual cap.) operated only as spares; 2-ton converter for sale.

Product: steel castings for sale; annual cap. 6,000 tons electric steel castings. Alloy steel castings (nickel, chrome, vanadium). Steel castings for trucks, tractors and road machinery.

CHROME STEEL WORKS, Carteret, New Jersey.

Est. 1874, inc. Jan., 1903 in New Jersey.

F. M. Canda, P.; Abeel Canda, V. P.; Alphonse Kloh, Sec.; H. C. Gayley, T.; C. J. Herbert, A. T. & P. A.; E. L. Garihan, S. M.; at Carteret.

Sales offices:

Denver, Colo., Arthur R. Allen, United States Natl. Bank Bldg.
San Francisco, Calif., S. C. Myers, Kohl Bldg.

Brand: Adamantine.

Works at Carteret: blt. 1902-04; f. o. Mar. 19, 1904; 4 A. O. H. fur. (two 25-ton, two 20-ton); 1 B. O. H. fur. (25-ton); fuel, oil and prod. gas.; 14 gas prod. (7 Duff, 3 Smythe, 4 Bradley); crucible fur. abandoned Feb., 1923; heating fur. 20 oil-fired (twelve 2-d., four 3-d., two 4-d., two cont.) and 5 coal-fired (two 1-d., one 5-d., two 6-d.); 5 annealing fur. (coal); 4 core ovens (oil); 34" x 112" 3-h. sheared plate mill; 21" x 54" 3-h. 3-st. for rounds and squares, 18" x 52" 3-h. 3-st. and 12" x 38" 3-h. 3-st. for rounds, angles, flats and special shapes; 2 hydraulic forging presses (1,200-ton, 5,000-ton); 11 steam hammers (1,100-lb. to 8,000-lb.); 2 tire mills.

Product: alloy steel ingots and castings: steel burglar-proof plates, angles and bars for safes, vaults and jails; rolled, forged and cast wearing parts for grinding mills in the metal mining and cement industries; forged grinding balls, $\frac{3}{8}$ " to 15" dia.; liners for ball and tube mills; forged shoes and dies, cams, tappets and bossheads for stamp mills; forged and rolled roll shells, and roller mill tires, ring dies and bull rings; steel castings for grinding mills; annual cap., 45,000 tons steel ingots (30,000 tons A. O. H., 15,000 tons B. O. H.), 15,000 tons A. O. H. steel castings; 30,000 tons rolled products, 20,000 tons forged products.

Cincinnati Horse Shoe & Iron Co. (The), Cleves, Ohio, has been acquired by Phoenix Horse Shoe Co. Former plant at Cleves, Ohio is now known as Cleves Works, Phoenix Horse Shoe Co.

CINCINNATI STEEL CASTINGS CO. (The), 1220 Queen City Ave., Cincinnati, Ohio.

Inc. Jan. 4, 1909 in Ohio. Capital stock: com., par value \$100, auth. and issued \$200,000.

William Gilbert, P.; J. D. Leary, 1 V. P.; Eugene A. Leary, Sec., T. & G. M.; I. M. Wurzelbacher, A. & P. A.; Leonard Geiser, G. S.; P. B. Kennedy, G. S. M.

Works at 1220 Queen City Ave., Cincinnati: blt. 1909; f. o. Apr. 26, 1909; 2 electric fur. (one 2-ton Booth, one 2½-ton Moore Lectromelt) first electric steel, Oct. 1, 1920; Whiting converter dismantled in March, 1924.

Product: electric steel castings for sale; annual cap., 4,000 tons. Alloy steel castings (nickel and chrome).

Claire Furnace Co., Pittsburgh, Pa., owning and operating Claire Furnace, Sharpsville, Pa., was acquired by Reliance Coke & Furnace Co., April 1, 1922.

CLARK EQUIPMENT CO., Buchanan, Mich.

Inc. Dec. 26, 1916 in Michigan. Capital stock: com., par value

\$100, auth. \$3,000,000, issued \$2,431,400; pref. 7% cum. auth. \$2,000,000, issued \$1,214,900; bonds \$675,000.

Eugene B. Clark, P.; M. L. Hanlin, V. P.; E. B. Ross, V. P. & G. S. M.; A. S. Bonner, Sec. & T.; E. C. Mogford, G. S.; Frank Habicht, P. A.

Sales offices:

Boston, Mass., 259 Franklin St.

Chicago, Ill., 549 West Washington Blvd.

Detroit, Mich., 5756 Cass Ave.

New York, N. Y., 103 Lafayette St.

Pittsburgh, Pa., 339 Second St.

Brand: Celfor (high speed drills).

Company has 3 plants at Buchanan, drill plant, axle plant and steel foundry, known as Wheel Dept.; axle works at Berrien Springs, Mich.; axle works at Battle Creek, Mich.

Wheel Dept., Buchanan: blt. 1911-12; f. o. Feb., 1912; 2 Heroult electric fur. (2-ton, 4½-ton). Wheel shop for finishing steel wheels; annual cap., 24,000 wheels.

Product: electric steel castings; annual cap., 8,000 tons; steel wheels for motor trucks; high speed drills, motor truck axles, 36,000 rear axles.

Cleveland Brass Mfg. Co., 4606-4700 Hamilton Ave., N. E., Cleveland, Ohio installed in 1917 one 500-lb. Gronwall-Dixon electric fur. for manufacture of alloy steel castings for heat-treating boxes. Steel castings first made Sept., 1917, manufacture discontinued in 1920 and permanently given up in 1923.

CLEVELAND-CLIFFS IRON CO. (The), 1460 Union Trust Bldg., Cleveland, Ohio.

Inc. May 8, 1891; reinc. Dec. 7, 1920 in Ohio. Capital stock: com., no par value, auth. and issued 400,000 shares; bonds \$875,000 William G. Mather, P.; S. L. Mather, Sec.; Charles G. Heer, T.; C. D. Mason, A.; at Cleveland. M. M. Duncan, V. P.; A. J. Yungbluth, P. A.; at Ishpeming, Mich.

Sales offices: 1460 Union Trust Bldg., Cleveland, Ohio; Superior Charcoal Iron Co., Grand Rapids, Mich. (charcoal pig iron).

The Cleveland-Cliffs Iron Co., primarily an iron ore mining company, also owns the charcoal blast furnace described below.

Marquette Furnace, Marquette, Mich.: 1 stack, 70' x 12', blt. 1901-03, relined 1919; 3 Cowper-Roberts stoves, 70' x 17'; 1 Southwark steam blowing eng., 12,000 cfm.; 16 Sterling water-tube boilers, 3,500 H. P. serve also chemical plant, wood retorts and sawmill. Charcoal: Lake ore. Charcoal plant with 22 retorts, annual cap., 3,860,000 bushels charcoal; and by-product recovery plant.

Product: scotch, foundry and chilling grades of hot blast charcoal pig iron, annual cap., 42,000 tons.

Gladstone Furnace, Gladstone, Mich. was abandoned in 1925.

The Company owns the Cliff Shaft and Holmes Mines, Ishpeming, Mich.; Princeton Mine, Gwinn, Mich.; Republic Mine, Republic, Mich.; Maas and South Jackson Mines, Negaunee, Mich. It leases the Austin, Gardner-Mackinaw, Gwinn and Stephenson Mines, Gwinn, Mich.; Spies-Virgil Mine, Iron River, Mich.; Barnes-Hecker and Morris-Lloyd Mines, Ishpeming, Mich. It controls or operates the Athens and Negaunee Mines, Negaunee, Mich., Webster Mine (idle), Michigamme, Mich.; Wade-Helmer Mine, Kinney, Minn.; Boeing Mine, Hibbing, Minn.; Hill-Trumbull Mine, Marble, Minn. These mines have an annual cap. of approximately 4,500,000 tons of iron ore. The company owns coal mines at Ethel, Logan Co., West Va., annual cap., 350,000 tons; and Mather, Pa., 300,000 tons.

CLEVELAND HARDWARE CO. (The), 4518 Lakeside Ave., Cleveland, Ohio.

Inc. 1881 in Ohio. Capital stock: com. auth. \$5,000,000, issued \$2,834,000.

Charles E. Adams, P. & G. M.; Thomas P. Robbins, 1 V. P. & T.; William F. Gibbons, 2 V. P.; Edgar E. Adams, 3 V. P. & G. S.; Alva A. Gay, Sec. & G. S. M.; William R. Lorenz, A.; M. H. Chase, A. T.; William D. Lewis, P. A.

Brand: Cleveland.

The company operates 2 forging plants: No. 1 Plant, 4518 Lakeside Ave., and No. 2 Plant, 3270 East 79th St., Cleveland.

Rolling Mill, No. 1 Plant, 4518 Lakeside Ave.: blt. 1879; rebld. 1891; 3 heat. fur. (one 3-d., one 4-d., one regenerative); 10" 3-h. 7-st. guide mill. Crucible steel foundry abandoned in 1923.

Product: rolled shapes for own use for forgings and hardware; annual cap., 12,000 tons rolled products, 40,000 tons forgings.

CLEVELAND STEEL CO. (The), 801 Rockefeller Bldg., Cleveland, Ohio.

Inc. Dec. 8, 1893 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$337,300.

James C. Jones, P. & G. M.; W. S. Bowler, V. P.; F. W. Throssell, T.; A. C. Baker, A. Sec. & A. T.; J. H. Rear, A.; C. H. Kaufman, G. S.; A. E. Quere, G. S. M.; L. J. Smith, P. A.; at Cleveland. J. V. Cowling, Sec. at Chicago.

Sales offices:

Chicago, Ill., J. V. Cowling, 332 South Michigan Ave.

Detroit, Mich., F. Walter Guibert, Ford Bldg.

Los Angeles, Calif., J. B. Lape, Douglas Bldg.

St. Louis, Mo., H. C. Beckwith, Chemical Bldg.

St. Paul, Minn., Rank & Goodell, Merchants Bank Bldg.

Works, Foot of East 38th St., Cleveland,: blt. 1853; 4 cont. oil-fired

heat. fur.; sheared plate mill with 25" x 72" 3-h. roughing and 30" x 72" 3-h. finishing stands. Fuel, oil and coal.

Product: sheared plates, No. 12 and heavier, up to 64" wide and 300" long; annual cap., 60,000 tons. Tank plates, stamping sheets, special analysis plates and sheets.

CLEVELAND STEEL CASTING CO., East 69th St. & Hubbard Ave., Cleveland, Ohio.

Partnership: George W. Balkwill and Stephen Balkwill, Proprietors.

Works at 69th St. & Hubbard Ave., Cleveland: blt. 1893, f. o. Jan. 9, 1895; 2 A. O. H. fur. (one 20-ton, one 25-ton), fuel, oil.

Product: steel castings for sale, annual cap., 10,718 tons; alloy steel castings; steel castings from 1-lb. to 20-ton for rolling mills and general purposes.

CLINTON IRON AND STEEL CO., P. O. Box 287, Pittsburgh, Pa.

Inc. July 9, 1889 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$300,000.

F. N. Hoffstot, P.; at 55 Broad St., New York, N. Y. C. W. Friend, V. P., G. M. & P. A.; T. W. Friend, Sec., T. & G. S. M.; E. J. Pearson, G. S.; at Pittsburgh.

Sales office: 350 Broadway, New York, E. C. Saunier, Manager.

Brands: "Clinton," "Hector."

Clinton Furnace, Pittsburgh: 1 stack, 76' x 18'; blt. 1851, last rebt. 1914; 4 Foote hot-blast stoves (three 60' x 18', one 80' x 20'); 3 steam blowing eng. (50,000 cfm.) 18-lb. rated pressure; 7 water-tube boilers (3,000 H. P.); 1 Heyl and Patterson single-strand pig casting machine; one slag granulating pit (80,000 tons). Conn. coke; Lake ore.

Product: basic, malleable, car-wheel and foundry pig iron; annual cap., 110,000 tons.

Clinton-Wright Wire Co., Worcester, Mass. was acquired by Wickwire-Spencer Steel Corporation.

COES WRENCH CO., 1 Coes Square, Worcester, Mass.

Inc. Mar. 18, 1888 in Massachusetts. Capital stock: com. \$150,000.

Frank L. Coes, P., T., G. S. M. & P. A.; Charles Rose, Sec.; Fred Searle, S.

Selling agent: W. E. Robbins, 23-25 East 26th St., New York.

Works at Worcester: orig. blt. 1846; two 2-d. billet reheat. fur.; 10" 2-h. 2-st. and 9" 2-h. 1-st. bar; 6 forge fires; 4 ham. (200-lb. to 600-lb.). Fuel, anthracite coal and oil. Power, steam and electricity.

Product: welded materials for knife and die work for own use in making machine knives and die stock for cutting dies. Annual cap., 600 to 700 tons knife stock, 200 tons die stock.

COHOES ROLLING MILL CO., Canvass & Courtland Sts., Cohoes, N. Y.

Est. 1854; inc. 1901 in New York. Capital stock: com. \$750,000. W. W. Near, P.; H. C. Scholfield, 1 V. P.; H. Rooke, T.; at 100 Church St., Toronto, Canada. D. H. Friedman, 2 V. P.; at Albany, N. Y. A. Macfadyen, Sec. & G. M.; H. L. Nelson and J. Ackenbrack, G. S.; Charles Lee, P. A.; at Cohoes, N. Y. William Mittleman, G. S. A.; at 819 Woolworth Bldg., New York.

Sales offices:

Baltimore, Md., Lawrence-Criddle Co., 1228 Munsey Bldg.
New York, N. Y., W. M. Mittleman, 819 Woolworth Bldg.
St. Paul, Minn., W. A. Collier, 739 Pillsbury Ave.

Brand: Cohoes (genuine wrought iron pipe).

Works at Canvass & Courtland Sts., Cohoes: blt. 1854, rebt. 1883; 16 double puddling fur.; 1 rotary squeezer; three 4-d. gas-fired heat. fur.; 1 coal-fired heat. fur.; 22" 3-h. 2-st. muck; 16" 3-h. 3-st. skelp; 10" 3-h. 3-st. skelp; 2 Bradley hammers 40-lb. and 60-lb.; 1 butt-weld fur. for pipe $\frac{1}{4}$ " to 2"; 2 galv. pots.

Product: muck bar, annual cap., 30,000 tons; skelp, 30,000 tons; black pipe, 30,000 tons; galvanized pipe, 12,000 tons.

COLLINS COMPANY (The), Collinsville, Conn.

Charles L. Taylor, P.; Charles H. Clark, V. P.; F. Spencer Goodwin, Sec.; M. H. Whaples, T.; at Hartford, Conn. Albert E. Newton, V. P. & G. M.; F. J. Hough, G. S.; Henry P. Jones, P. A.; at Collinsville.

Sales office: 35 South William St., New York, N. Y.

Works at Collinsville: two 2-d. scrap and four 2-d. heat. fur.; 18" 2-h. 3-st. and 10" 2-h. 3-st. bar mills; 2 steam hammers. Cementation furnaces dismantled. Steel dept. leased March 1, 1924 to Dycast Steel Co.

Product: bar steel for own use in manufacture of tools, plows, etc., annual cap., 3,000 tons.

COLONIAL IRON CO., Riddlesburg, Pa.

Inc. May 22, 1899 in Pennsylvania. Capital stock: com., par value \$50., auth. and issued \$1,000,000.

Henry H. Adams, P.; F. G. Gottsch, Sec.; Col. John R. Roberts, T.; William D. Norman, A. T. & P. A.; at 149 Broadway, New York, N. Y. Hon. John M. Reynolds, V. P.; at Bedford, Pa. E. P. Ross, G. M.; at Riddlesburg, Pa.

Sales office: Henry H. Adams & Co., Inc., 149 Broadway, New York.

Brand: Norway (pig iron).

Colonial Furnace, Riddlesburg: 1 stack, 75' x 17', blt. 1911, f. o. Dec. 7, 1911, relined 1924; 3 McClure 3-pass stoves, 75' x 18'; 2 vertical steam blowing eng., 20,000 cfm., 10-lbs. rated pressure; 7 water-tube boilers (4 Rust, 3 B. & W.) 1,950 H. P.; 1 Pittsburgh

Coal Washer single-strand pig casting mach. Beehive coke: New York, New Jersey, Lake and foreign ores. Company owns Broad Top coal mine at Riddlesburg, annual cap., 300,000 tons and 216 beehive coke ovens, annual cap., 100,000 net tons coke. Product: low phosphorus, foundry, bessemer and basic pig iron, annual cap., 72,000 tons.

COLONIAL STEEL CO., 324 Fourth Ave., Pittsburgh, Pa.

Inc. June 3, 1901 in Pennsylvania. Capital stock: com., par value \$100, auth. \$4,250,000, issued \$1,224,100; pref. 7% cum. auth. and issued \$750,000.

Charles M. Brown, P.; W. H. Nimick, V. P.; George P. Rhodes, V. P.; Horace Sisler, Sec. & A.; T. H. Childs, T.; J. Trautman, Jr., G. S. M.; B. M. Trautman, P. A.; at Pittsburgh. H. C. Poole, Works M. at Colona, Pa. (P. O. address, Monaca, Pa.).

Sales offices:

Branch offices and warehouses:

Boston, Mass., D. & Fargo Sts.
Chicago, Ill., 1440-42 Bryan Place.
Cincinnati, Ohio, 414 Walnut St.
Cleveland, Ohio, 2121 St. Clair Ave.
Denver, Colo., 1700 Fifteenth St.
Detroit, Mich., 5-253 General Motors Bldg.
New Haven, Conn., 145-147 Water St.
New York, N. Y., 149 Varick St.
Philadelphia, Pa., 308-12 North 15th St.
St. Louis, Mo., 928 North Main St.
Salt Lake City, Utah, 308 Kearns Bldg.

Sales Representatives:

Birmingham, Ala., The Young & Vann Supply Co.
Buffalo, N. Y., Beals, McCarthy & Rogers.
Dayton, Ohio, Miami Iron & Steel Co.
Erie, Pa., Erie Mfg. & Supply Co.
Newark, N. J., Kienzle & Hahn.
Phoenix, Ariz., Pratt-Gilbert Co.
Rochester, N. Y., Homer Strong & Co., Inc.
Trenton, N. J., Barbour Brothers.
Waterbury, Conn., Hotchkiss Co.

Brands: Colonial, Red Star, Anchor, Beaver, Co Co, No. 7, The Bit with the Groove, Alto, Colona, Nikro (tool steels).

Works at Colona, Beaver Co., Pa. (freight station Monaca, Pa., P. & L. E. R.R.); blt. 1901-02, f. o. Mar. 1902; 3 B. O. H. fur. (two 35-ton, one 25-ton) fuel prod. gas, 5 gas producers; 1 Heroult electric fur. (3-ton); 4 crucible steel fur. (two 24-pot, two 36-pot) fuel prod. gas; puddling fur. and muck bar mill dismantled in 1925; 35 coal and prod. gas-fired heat. fur. (fourteen 1-d., one 2-d., eight 3-d., nine 4-d., three 5-d.); one 6-hole soaking pit; 28"

2-h. 1-st. blooming; 16" 3-h. 5-st. bar; 12" 3-h. 6-st. bar; 9" 3-h. 6-st. bar; 22" 2-h. 4-st. plow; 28" x 80" 3-h. 2-st. sheared plate and saw plate; 20" x 36" 2-h. 2-st. sheet mill; 20" x 36" 2-h. 3-st. sheet mill; 2 box, 6 pipe and 6 other annealing fur.; 8 wooden pickling tanks; 9 steam ham. (600-lb. to 8-ton).

Product: steel ingots, annual cap., 57,600 tons (45,000 tons B. O. H., 3,600 tons electric, 9,000 tons crucible); alloy steel ingots; slabs, blooms and billets, 36,000 tons; hot rolled products, 19,000 tons; forged products, 15,000 tons; high speed and carbon tool steel, agricultural plates, plow steel, saw blanks, alloy and special steels, copper-clad steel bars; spring, cutlery, section, and alloy and high-speed steel sheets; forged die blocks, rings, bars and shapes.

COLORADO FUEL & IRON CO. (The), P. O. Box 1920, Denver, Colo.

Inc. Oct. 21, 1892 in Colorado. Capital stock: com., par value \$100, auth. \$44,200,000, issued \$34,235,500; pref. 8% cum. auth. and issued \$2,000,000; bonds \$36,912,000.

J. F. Welborn, P.; S. G. Pierson, V. P. & T.; A. H. Lichty, V. P.; J. B. Marks, V. P. & A. P.; Wendell Stephens, Sec.; A. W. Sampson, A.; Thomas Aurelius, G. S. M. (steel); Douglas Millard, G. S. M. (fuel); at Denver, Colo. E. H. Weitzel, V. P. & G. M. at Pueblo, Colo. Arthur Woods, V. P.; at New York, N. Y.

Sales offices:

Amarillo, Texas, W. B. Knight, 320 Blackburn Bldg.
 El Paso, Texas, J. C. Durham, 508 Mills Bldg.
 Fort Worth, Texas, I. I. Paddock, 2101 F. & M. Natl. Bank Bldg.
 Grand Junction, Colo., Cloyd Harmon, 533 Main St.
 Grand Island, Neb., E. L. Chilberg, Hedde Bldg.
 Kansas City, Mo., W. E. Hoget, 404 R. A. Long Bldg.
 Lincoln, Neb., F. C. Bennett, 812 First Nat'l Bank Bldg.
 Los Angeles, Calif., J. R. Lemist, 407 A. C. Bartlett Bldg.
 Oklahoma City, Okla., F. S. Jones, 706 Colcord Bldg.
 Portland, Ore., W. E. Madden, 512 Lewis Bldg.
 Pueblo, Colo., E. E. Fisher, 2210 Greenwood Ave.
 Salina, Kan., R. J. Copeland, 1009 West Ash St.
 Salt Lake City, Utah, J. J. Fitzgerald, 408 Walker Bldg.
 San Francisco, Calif., H. E. Stuard, 614 Balboa Bldg.
 Spokane, Wash., F. P. Dillinger, 906 Paulsen Bldg.
 Wichita, Kan., J. S. Besser, 919 Beacon Bldg.

Product: pig iron, steel rails, mine rails, splice bars, structural and other shapes, merchant bars, wire rods; bright, annealed and galvanized wire; wire nails and staples; barbed wire, field fence, poultry netting, bale ties, etc.; railroad and boat spikes, track bolts, pipe bands, machine and other bolts, nuts and rivets; cast iron gas and water pipe.

Minnequa Works at Pueblo, Colo.: comprise blast furnaces, bessemer and open-hearth steel works, rolling mills, wire mills, spike factory and bolt and nut factory; cast iron pipe and other foundries, auxiliary shops, etc. Minnequa Furnaces: 5 stacks: A, 95' 4" x 21' 3¼", blt. 1900-01, f. o. Sept. 4, 1901, rebt. Dec. 1924; B, 75' x 17' 9", blt. 1890-91, f. o. Nov. 25, 1892, rebt. 1919; C, dismantled in 1920; D, 95' x 21', blt. 1901-02, f. o. Nov. 20, 1902, rebt. 1918; E, 90' 4" x 22', blt. 1901-02, f. o. May 30, 1903, rebt. Mar. 1925; F, 85' x 21' 6", blt. 1902, f. o. May, 2, 1907, rebt. July, 1924; 20 stoves (eight 106' x 21' at A and D; one 93' x 21' and three 70' x 18' at B; four 100' x 21' at E; four 102' x 21' at F); 11 vertical steam blowing eng., 362,450 cfm.; 36 water-tube boilers, 13,600 H. P., serve also converters, rail mill, pipe foundry, etc.; 2 double-strand pig casting mach. (1 Uehling, 1 Heyl & Patterson); Dwight & Lloyd sintering plant for flue dust and concentrates, annual cap., 100,000 tons. By-product coke: hematite ore from Wyoming, magnetite from New Mexico, manganese ore from Colorado and New Mexico. Product: basic, bessemer, high manganese (6%) and foundry pig iron, annual cap., 584,000 tons.

By-product Coke Plant: 120 Koppers ovens, by-product recovery plant and Koppers benzol plant, annual cap., 550,000 net tons coke, 2,500,000 gals. light oil.

Bessemer Dept.: orig. blt. 1881-82, f. o. Apr. 11, 1882; rebt. 1901-02; 2 bessemer converters (15-ton); 2 mixers (250-ton); 4 cupolas for pig iron; 1 cupola for spiegel. Product: steel ingots, annual cap., 600,000 tons.

Open-Hearth Dept.: blt. 1902-03, f. o. June 29, 1903; 15 B. O. H. fur. (60-ton); 2 mixers (one 250-ton, one 125-ton); 2 cupolas for spiegel. Fuel prod. gas, coke oven gas and tar; 54 gas prod. (48 Duffy, 6 Hughes). Product: steel ingots and steel castings for own use. annual cap., 540,000 tons (538,000 tons ingots, 2,000 tons castings).

Rolling Mills: orig. blt. 1881-82, f. o. Apr. 17, 1882; thirteen 4-hole soaking pits; one 8-hole warming pit; 9 heat. fur. (7 cont., two 1-d.) fuel, prod. gas and coke oven gas; 40" 2-h. 1-st. blooming; rail mill with 36" 2-h. 1-st. blooming, 28" 3-h. 1-st. roughing, 26" 3-h. 1-st. and 26" 2-h. 1-st. finishing; 16" 2-h. 6-st. and 14" 2-h. 2-st. continuous roughing mill; 10" 2-h. 10-st. and 10" 2-h. 7-st. Garrett rod mills; Garrett mill for merchant bars with 14" 2-h. 1-st. and 10" 2-h. 6-st. continuous bar mill with 14" 2-h. 4-st., 14" 3-h. 2-st., and 12" 2-h. 5-st.; 20" 3-h. 3-st. and 20" 2-h. 2-st. merchant mill; 12" 3-h. 3-st. and 12" 2-h. 2-st. merchant mill. Product: blooms and billets, annual cap., 350,000 tons; rails, 360,000 tons; wire rods, 120,000 tons; merchant and concrete bars, 300,000 tons.

Wire Mill: blt. 1902-03: 444 wire drawing blocks for wire ½" to 36 gauge; 244 nail mach.; 65 barbed wire mach.; 16 wire fence

mach.; 5 galv. pans; 7 staple mach.; 21 bale tie mach. Product: plain wire, annual cap., 300,000 net tons; galvanized wire, 90,000 net tons; barbed wire, 58,500 net tons; wire fence, 21,000 net tons; staples, 6,000 net tons; bale ties, 12,000 net tons; wire nails, 2,500,000 kegs (100-lb.).

Spike, Bolt, Nut and Rivet Dept. for track spikes $2\frac{1}{2}" \times \frac{5}{8}"$ to $6" \times \frac{5}{8}"$, boat spikes $2\frac{1}{4}" \times \frac{1}{4}"$ to $12" \times \frac{3}{4}"$, track bolts, machine bolts, nuts, rivets, etc. Annual cap., 400,000 kegs spikes, 100,000 kegs bolts, nuts and rivets.

Forge Shop with 5 steam hammers (500-lb. to 2,000-lb.) for own use only.

Cast Iron Pipe Foundry: blt. 1890, f. o. Dec. 1890; annual cap., 18,000 net tons cast iron gas and water pipe and specials, 4" to 24" dia. Gray iron and ingot mould foundry, annual cap., 14,000 tons ingot moulds and 6,600 tons gray iron castings, 1,000 tons air furnace rolls.

Iron Ore, Coal, Coke and Railroad Properties:

The Colorado Fuel & Iron Co. owns the Sunrise and Chicago Mines in Laramie Co., Wyoming, and the Orient Mine in Saguache Co., Colo.; annual cap., 500,000 tons. It also owns and leases iron ore properties in Colorado, Wyoming, Utah and New Mexico.

The Company owns approximately 300,000 acres of coal lands at Sopris, Engle, Berwind, Rouse, Cameron, Ideal, Walsen, Robinson, Pictou, Primero, Frederick, Starkville, Coal Creek, Fremont, Rockvale, Brookside, Canon, Crested Butte, Elk Mountain, Toller, Tabasco, Hezron, Morley and other points in Colorado. The annual capacity of these mines is about 6,000,000 tons. The company owns and operates 800 beehive coke ovens at Segundo, annual cap., 450,000 net tons coke. It also operates limestone and dolomite quarries at Lime, Canon City and Calcite, Colo., annual cap., 486,000 tons.

The Company owns Crystal River R.R. Co. with 20.6 miles standard gauge track in Garfield and Pitkin Counties, Colo. connecting with the Rio Grande R.R. at Carbondale, Colo. It also owns Colorado & Wyoming R.R. with Northern Division 13.92 miles standard gauge track in Platte Co., Wyoming, extending from Guernsey to Sunrise and connecting with Colorado & Southern Ry. and Burlington Ry. at Guernsey. Middle Division, 80.81 miles track in and around Minnequa Works connecting with all railroads entering Pueblo: Southern Division, 63.22 miles standard gauge track in Las Animas Co., Colo., extending from Jansen to Terico, Colo., and connecting with Atchison, Topeka & Santa Fe Ry. at Trinidad and Jansen, with Colorado & Southern Ry. at Sopris, and Denver & Rio Grande Ry. at Jansen.

Columbia Steel Co., San Francisco, Calif. was acquired Nov. 22, 1922 by Columbia Steel Corporation.

COLUMBIA STEEL CORPN., Matson Bldg., San Francisco, Calif.

Inc. Nov. 22, 1922 in Delaware. Capital stock: com., no par value, auth. 1,500,000 shares, issued 837,547 shares; pref. 7% cum. auth. \$10,000,000, issued \$9,481,900; bonds \$5,000,000.

The Columbia Steel Co. and Utah Coal & Coke Co. were merged Nov. 22, 1922, in Columbia Steel Corporation, which in turn on April, 1, 1923 acquired the Torrance Plant of Llewellyn Iron Works. W. E. Creed, P.; Joseph D. Grant, V. P.; Joseph Sloss, V. P. & T.; D. H. Botchford, V. P. & G. M.; J. D. Fenstermacher, Sec. & G. S. M.; E. V. Wilmar, A.; L. S. Jones, P. A.; at San Francisco. L. F. Rains, V. P.; at Salt Lake City, Utah.

Sales offices:

Los Angeles, Calif., Pacific Electric Bldg.

Phoenix, Ariz., Luhrs Bldg.

Portland, Ore., 10th and Johnson Sts.

Salt Lake City, Utah, Clift Bldg.

San Francisco, Calif., 351 California St.

Seattle, Wash., L. C. Smith Bldg.

Brand: Columbia (pig iron).

Product: foundry and basic pig iron, iron ore, coal, coke, coke by-products; steel ingots, alloy steel ingots; billets, sheet bars; merchant and concrete bars, light structural shapes, wire rods; plain and galvanized wire, barbed wire, wire nails; black sheets, barrel stock, steam blue, flat and corrugated galvanized sheets and culvert stock; carbon and alloy steel castings.

Iron-ton Plant, Provo, Utah: 1 stack 83' x 19', blt. 1923-24, construction commenced Apr. 6, 1923, blown in Apr. 30, 1924; four 2-pass side comb. stoves 85' x 20'; 2 Ingersoll-Rand turbo-blowers, 50,000 cfm., 25 lbs. rated pressure; 5 Heine water-tube boilers, 617 H. P.; 1 Heyl & Patterson double-strand pig casting mach. By-product coke; hematite ore from own mine at Iron Springs. By-product coke plant with 33 Koppers-Becker ovens, by-product recovery plant and Koppers benzol plant, annual cap., 182,500 net tons coke, 1,277,500 gals. light oil. Company owns coal mines at Columbia, Utah, annual cap., 340,500 tons; also iron ore mine at Iron Springs, Utah, annual cap., 365,000 tons. **Product:** foundry and basic pig iron, annual cap., 130,000 tons.

Pittsburg Works, Pittsburg, Calif.: blt. 1909-10, first steel made Nov. 15, 1910; rolling mill added 1919-20, f. o. Mar. 29, 1920; rod mill added 1923; sheet mill added 1923-24, f. o. Mar. 17, 1924; 4 B. O. H. fur. (two 54-ton, two 27-ton) fuel, oil; 1 A. O. H. fur. (5-ton) idle; 2 cont. oil-fired heat. fur. (one for ingots, one for billets); 18" 3-h. 2-st. cogging for billets and sheet bars; 18" 3-h. 1-st. and 12" 3-h. 5-st. Belgian merchant bar mill; 13" 3-h. 1-st. and 9" 3-h.

11-st. rod mill with Belgian train; 4 sheet and 4 pair fur.; 4 hot black sheet mills (30" x 38" to 30" x 48"); 2 stands cold rolls connected at end of each mill (26" x 44" and 26" x 60"); 6 box annealing fur.; 1 plunger pickling mach.; 2 galv. pots. Roll black sheets 14 to 30 gauge to 36" wide and 144" long. Wire mill: blt. 1923, f. o. Nov., 1923; 84 wire drawing blocks for wire $\frac{3}{8}$ " to 26 gauge; 54 wire nail mach.; 2 barbed wire mach.; 1 galv. pan. Product: steel ingots for own use and steel castings for own use and for sale, annual cap., 113,000 tons (102,600 tons B. O. H. ingots, 5,400 tons B. O. H. castings, 5,000 tons A. O. H. castings); alloy steel castings (nickel, chrome); billets, 80,000 tons; sheet bars 29,700 tons; finished hot rolled products, 99,840 tons (including 26,700 tons black sheets, 35,640 tons wire rods, 37,500 tons merchant bars); 17,200 tons galvanized sheets; 36,000 net tons plain wire, 6,000 net tons galvanized wire, 1,200 net tons barbed wire, 396,000 kegs wire nails.

Portland Works, 10th & Johnson Sts., Portland, Ore.; blt. 1903, f. o. May 1, 1903: 1 Tropenas converter (3-ton); 1 Greene electric fur. (3-ton); 2 cupolas (one 36" for pig iron, one 28" for ferro-alloys). Product: steel castings for sale, annual cap., 2,400 tons (1,200 tons converter, 1,200 tons electric); carbon and alloy (nickel, chrome, manganese) steel castings of all kinds.

Llewellyn Mills, Torrance, Calif.; blt. 1916, f. o. Oct. 1, 1916; 2 B. O. H. fur. (45-ton) fuel, oil; 1 Heroult electric fur. (5-ton); 3 cont. oil-fired heat. fur.; 22" 3-h. 5-st. billet and bar mill; 16" 3-h. 1-st. roughing and 12" 3-h. 5-st. bar mill. Product: steel ingots and steel castings for own use and for sale, annual cap., 88,200 tons (75,000 tons B. O. H. ingots, 7,200 tons electric ingots, total ingot cap., 82,200 tons; 3,000 tons B. O. H. castings, 3,000 tons electric castings); billets, 69,000 tons; hot rolled products, 65,000 tons, including 15,000 tons light structural shapes and 50,000 tons merchant and concrete bars.

COLUMBIA TOOL STEEL CO., 14th and State Sts., Chicago Heights, Ill.

Inc. 1904 in Illinois.

Arthur T. Clarage, P.; A. R. Waters, V. P.; Alexander B. Peterson, Sec.; A. J. Scheid, T.

Sales offices:

Chicago, Ill., 552-554 West Lake St.

Cincinnati, Ohio, 112 West Second St.

Cleveland, Ohio, 1231 West 9th St.

Detroit, Mich., 144 East Woodbridge St.

Milwaukee, Wis., 137 Sycamore St.

Brands: Clarite, Maxite, Double Special, Oildie, Buster Brand.

Columbia Special, Columbia Extra.

Works at Chicago Heights: blt. 1904-05; f. o. May, 1905; 3 crucible

fur., 90 pots; 6 Siemens gas prod.; 9 coal-fired 3-d. heat. fur.; 2 Belgian trains (14" 3-h. 3-st. and 2-h. 1-st., 9" 4-h. 3-st. and 2-h. 2-st.); 5 steam hammers, 500 to 6,000-lb.; 4 electric heat treating and annealing fur.

Product: crucible steel ingots, rolled and hammered carbon and alloy tool steels; annual cap., 6,435 tons ingots, 6,000 tons tool steels.

COMMERCIAL STEEL CASTING CO. (The), Marion, Ohio.

Inc. 1917 in Ohio. Capital stock; com. par value \$100, auth. \$100,000, issued \$93,800; pref. 7% cum. auth. \$75,000, issued \$26,000.

John D. Owens, P.; H. J. Barnhart, 1 V. P.; D. W. Evans, 2 V. P.; Frank D. Glosser, Sec. & M.; M. C. McNeil, T.; W. A. Dorsey, S.; W. A. Griffith, P. A.

Sales offices:

Cincinnati, Ohio, W. W. Pettis Co., First Natl. Bank Bldg.

Cleveland, Ohio, W. R. McDonough & Co., 620 National Bldg.

Works at Marion, Ohio; blt. 1918; f. o. Sept. 1, 1918; 1 A. O. H. fur. (10-ton) fuel, oil.

Product: steel castings for sale, annual cap., 6,000 tons.

COMMONWEALTH STEEL CO., Pierce Bldg., St. Louis, Mo.

Inc. July, 1902 in New Jersey. Capital stock: com., par value \$100, auth. \$10,000,000, issued \$7,200,000.

Clarence H. Howard, P.; Harry M. Pflager, Senior V. P.; George E. Howard, V. P. & S. M.; R. V. H. Johnson, V. P. & S. A.; H. C. Belleville, V. P. & Pub. Dir.; Frank L. Morey, Sec. & T.; Harrison Hoblitzelle, M. Purchases and Supplies; A. W. Carten, P. A.; at St. Louis. C. R. Pillsbury, A.; Arthur T. Morey, G. M.; C. F. Frede, M. Production; at Granite City.

Brand: Commonwealth (railway castings).

Works at Granite City, Ill.; blt. 1902, f. o. Sept. 8, 1902; 6 B. O. H. fur. (three 27-ton, three 35-ton) fuel, oil.

Product: patented cast steel specialties for locomotives and railway cars for sale, annual cap., 80,000 tons.

Connecticut Electric Steel Co. (The), Hartford, Conn. ended its corporate existence by voluntary dissolution in 1922. The plant was acquired by Hartford Electric Light Co.

Connellsville Electric Steel Co., Connellsville, Pa. acquired in March, 1920 the plant of United States Electric Steel Co. at Connellsville and sold the property Aug., 1920 to Witherow Steel Co.

CONNELLVILLE FOUNDRY, MACHINE & STEEL CASTING CO., Connellsville, Pa.

E. C. Higbee and S. Ray Shelby, Receivers (appointed Feb., 1924).

Works at Gibson Ave., Connellsville, Pa.: blt. 1906; 1 Tropenas converter (4,000-lb.) installed 1918, f. o. Sept., 1918; 1 cupola.
Gray iron, brass and bronze foundry.
Product: steel castings for sale, annual cap., 1,200 tons.

CONNOLLY STEEL CASTING CO., Clark Ave., Chelsea, Mass.

Inc. Oct. 17, 1910 in Massachusetts. Capital stock: com., par value \$100, auth. \$5,000, issued \$2,100.

Julia Connolly, P.; James Connolly, T., G.M., G. S. M. & P. A.; Archibald Munro, Sec.

Works at Clark Ave., Chelsea: blt. 1900; 2 crucible fur., 12 pots; f. o. Oct. 29, 1910. Fuel, oil. Works leased, owned by J. M. Mason Estate, 77 Webster Ave.

Product: crucible steel castings for sale; annual cap., 160 tons.
Small steel castings, 1 oz. to 500-lb. for tools and machinery.

Connors Steel Co., Inc., Birmingham, Ala., an Alabama corporation, was acquired July 1, 1920 by Connors Steel Company, a Delaware corporation.

CONNORS STEEL CO., Inc., Birmingham, Ala.

Inc. Apr., 1920 in Delaware. Capital stock: com., par value \$100, auth. \$600,000.

G. W. Connors, P. & G. M.; W. M. Hoke, V. P., T. & P. A.; George W. Connors, Jr., Sec.; at Birmingham.

Works at Woodlawn, Birmingham, Ala.: 2 cont. coal-fired heat. fur.; 2 hoop and cotton tie mills, one with 12" 3-h. roughing and 8" 3-h. finishing stands; one with 4-st. cont. roughing, 4-st. cont. strand, 1-st. planishing, 1-st. finishing.

Product: hoops, light bands and cotton ties; annual cap., 50,000 tons.
Works at Helena, Ala., formerly owned and operated by Connors-Weyman Steel Co. and acquired by Connors Steel Co., July 1, 1920 were dismantled in 1923.

Connors-Weyman Steel Co., Birmingham, Ala. was acquired July 1, 1920 by Connors Steel Co.

Consolidated Steel Corporation, New York, N. Y., incorporated Jan. 2, 1919 in Delaware and organized under the Webb Act to conduct export sales of its member companies ceased operations about October 1, 1922 and went into voluntary dissolution.

Consolidated Steel & Iron Corpn., Terre Haute, Ind.

Inc. Sept. 14, 1917 in Delaware as Missouri Iron & Steel Corpn., name changed to Consolidated Steel & Iron Corpn. Sept. 14, 1921.

In 1917 company purchased blast furnace of Jefferson Iron Co. at Jefferson, Marion County, Texas and removed and reerected

the furnace at Haigart, now called Stuart, Howell County, Missouri. The furnace has not been put in operation. In June, 1922 Consolidated Steel & Iron Corporation acquired The Hoosier Rolling Mill Company, Terre Haute, Ind. with rolling mill at Terre Haute, Ind. built 1917 (12" 3-h. 5-st. bar mill) and a partly completed plant at Steelton, Ind. construction begun 1920 and subsequently suspended. These properties were acquired March 20, 1925 by Mid-States Steel & Iron Corpn., Terre Haute, Ind. and subsequently were placed in the hands of the Citizens Trust Co., Terre Haute, Ind. and Frank J. Wolfe as co-receivers, Mid-States Steel & Iron Corpn.

Continental Axle Co., see Highway Trailer Co.

COOK (A. D.), Inc., Lawrenceburg, Ind.

Est. 1875; inc. Mar. 15, 1921 in Indiana. Capital stock: com., par value \$100, auth. and issued \$225,000.

Cornelius O'Brien, P.

Company manufactures tube well supplies, pumps, pump rods, working barrels and well tools.

Works at Lawrenceburg, Ind.: small crucible steel fur.; 2 stands of 2 high rolls. (Formerly owned and operated by A. D. Cook, acquired by A. D. Cook, Inc. March 15, 1921.)

Product: crucible steel castings for own use, annual cap., 50 tons; iron pump rods for own use, 200 tons.

COPLAN STEEL CORPORATION, Inc., P. O. Box 296, Ogdensburg, N. Y.

Inc. 1924 in New York. Capital stock: com., no par value, auth. and issued 7,500 shares; pref. 7% auth. \$250,000, issued \$150,000; bonds \$75,000.

A. H. Coplan, P.; O. Pullan, Sec. & T.; F. Palen, P. A.; at Hull, P. Q., Canada. T. A. Beament, V. P.; at 75 Sparks St., Ottawa, Canada. Goodwin Shenton, G. M.; A. Baillet, Sr., G. S.; T. G. Beament, G. S. M.; at Ogdensburg, N. Y.

Sales offices:

New York, N. Y., Jules Burwell, Grand Central Terminal.

Norfolk, Va., Thomas Moore.

Works at Riverside Drive, Ogdensburg, N. Y.: blt. 1924-25; 2 bessemer converters (3-ton); 2 cupolas; 1 electric fur. for melting ferro-alloys; 2 hammers.

Product: steel castings for sale, annual cap., 6,000 tons; alloy steel castings (manganese, chrome, nickel); forged chrome steel balls, chromite heat resisting steel grate bars.

Copper Clad Steel Co., Rankin, Pa., corporate title changed to Copperweld Steel Co.

COPPERWELD STEEL CO., Braddock P. O., Rankin, Pa.

Inc. May, 1914 in Pennsylvania. Capital stock: com., par value \$100, auth. \$600,000, issued \$530,500; pref. 7% cum. auth. \$150,000, issued \$136,200.

J. M. Roth, P.; S. E. Bramer, V. P. & G. M.; A. E. Strasser, C.; W. M. Page, G. S. M.; M. M. Siegel, P. A.; at Rankin. I. A. Simon, V. P.; F. R. S. Kaplan, Sec.; at Pittsburgh.

Sales offices:

Chicago, Ill., 129 South Jefferson St.

New York, N. Y., 30 Church St.

New York, N. Y., Railroad Accessories Corp., 50 Church St.

New York, N. Y., Wonham, Bates & Goode Trading Corp.,
44 Whitehall St. (export).

San Francisco, Calif., C. E. Ingalls, Rialto Bldg.

Trade Name: Aristos Copperweld (wire).

Works at Rankin: blt. 1915; f. o. 1915; 20", 12" and 10" mills for rolling copperweld rods. Wire mill.

Product: copperweld rods and wire; annual cap., 6,000 tons.

Coralox, Ltd., see D. A. Brebner.

Cordova Mines, Ltd., Sun Life Bldg., Toronto, Ont., Canada.

Wm. H. Price, K. C., P.; G. C. Price, V. P.; E. E. Garbutt, Sec.

Works at Cordova Mines, Ont.: blt. 1919; 1 three-phase electric fur. Hydroelectric power from own power plant. Built to make ferro-chrome. Plant idle; future product not decided.

Cowin (Frederick) & Co., Chicago, sold works at Joliet, Ill., Nov. 29, 1922 to Briggs & Turivas, Chicago. Some of the machinery was sold and removed and the plant was then leased in May, 1924 to Illinois Rolling Mill Co.

CRANBERRY FURNACE CO. (The), Johnson City, Tenn.

Inc. Sept. 6, 1901 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$100,000.

Ario Pardee, P.; at 1600 Walnut St., Philadelphia, Pa. Hammond Prosser, V. P., T. & G. M.; J. E. Vance, Sec.; at Johnson City. S. H. Odom, Mine Supt. at Cranberry, N. C.

Sales agents: Rogers, Brown & Crocker Bros., Inc., 21 East 40th St., New York, N. Y.

Brand: Cranberry (copper free standard low-phosphorus pig iron).

Cranberry Furnace, Johnson City: 1 stack, 75' 9" x 17'; f. o. Jan. 2, 1899; relined 1919; 4 Whitwell stoves, 69' x 18'; 3 steam blowing eng. (21,000 cfm.); 12 horizontal flue boilers, 850 H. P. Wise Co. coke: Cranberry magnetite ore from company's mines at Cranberry, N. C.; annual cap., 70,000 tons. Company owns limestone quarry at Milligan College, Tenn.; annual cap., 40,000 tons.

Product: low phosphorus pig iron; annual cap., 43,800 tons.

CRANE CO., 836 South Michigan Ave., Chicago, Ill.

Est. 1855; inc. 1865 in Illinois. Capital stock: com., par value \$25, auth. \$50,000,000, issued \$48,675,075; pref. 7% cum. auth. \$15,000,000, issued \$13,795,100.

R. T. Crane, Jr., P.; John B. Berryman, 1 V. P.; C. A. G. Wayman, V. P.; W. J. Clark, V. P.; P. T. Kelly, V. P.; C. D. Little, V. P.; R. B. Stiles, V. P.; H. P. Bishop, Sec.; W. Evensen, T.; V. E. Flodin, G. S.; H. W. Seymour, G. S. M.; D. G. Park, P. A.

Company operates plants at Chicago, Bridgeport, Birmingham, Chattanooga, Trenton and Montreal for manufacture of valves and fittings, and plumbing materials.

Chicago Works, Steel Foundry: blt. 1906-07; f. o. Jan. 2, 1907; 2 Zenzen converters (3-ton); 1 Heroult electric fur. (6-ton) f. o. May 15, 1919. Gray iron, malleable iron, semi-steel and brass foundry. Product: carbon and alloy steel castings for own use; annual cap., 6,000 tons electric steel castings.

Bridgeport Works, Steel Foundry, Bridgeport, Conn.: blt. 1919; f.o. Mar., 1919; 1 Zenzen converter (2-ton). Product: steel castings for own use; annual cap., 540 tons.

Crane Iron Works, Catasauqua, Pa., see Replogle Steel Co., and Empire Steel & Iron Co.

Cromwell Steel Co. (The), Cleveland, Ohio was placed in hands of receiver, Jan. 20, 1922. Plant at Lorain, Ohio was sold at foreclosure sale Nov. 22, 1922 and purchased by Bondholders Committee. The Midland Seamless Tube & Steel Co. was organized to act as holding company pending resale of the property. Plant was dismantled in 1925.

Crowley Co. (John A.) New York, N. Y. Works at Detroit, Mich. sold and dismantled in 1923.

CRUCIBLE STEEL CO. OF AMERICA, 17 East 42nd St., New York, N. Y.

Inc. July 21, 1900 in New Jersey. Capital stock: com., par value \$100, auth. \$75,000,000, issued \$55,000,000; pref. 7% cum. auth. and issued \$25,000,000.

H. S. Wilkinson, Ch.; E. C. Collins, P.; F. B. Hufnagel, V. P.; J. M. McComb, V. P.; John A. Mathews, V. P.; George E. Shaw, Sec. & T.; H. L. Gellinger, A.; A. T. Galbraith, G. S. M.; R. H. Filsinger, P. A.

Sales offices:

Baltimore, Md., 8 South Frederick St.

Barcelona, Spain.

Basle, Switzerland.

Boston, Mass., 381 Congress St.

Buffalo, N. Y., 69 Carroll St.

Cambridge, Mass., Wetherell Brothers Co.

Chattanooga, Tenn., 19 West Main St.
 Chicago, Ill., 650 West Washington Blvd.
 Cincinnati, Ohio, 209 West Third St.
 Cleveland, Ohio, 721 Lakeside Ave., N. W.
 Copenhagen, Denmark.
 Denver, Colo., 1225 Wazee St.
 Detroit, Mich., 1723 Lafayette Blvd. West.
 Hartford, Conn., 194 Ann St.
 Indianapolis, Ind., 437 South Illinois St.
 London, England, 31 Borough Road, S. E.
 Milwaukee, Wis., 110 Clybourn St.
 Montreal, Canada, 131 St. Peter St.
 New Haven, Conn., 131 Park St.
 New York, N. Y., 420 Canal St.
 Philadelphia, Pa., 1224 Callowhill St.
 Pittsburgh, Pa., Oliver Bldg.
 Providence, R. I., 116 Clifford St.
 St. Louis, Mo., 1518 North Ninth St.
 San Francisco, Calif., 536 Folsom St.
 Seattle, Wash., 2914 First Ave., South.
 Springfield, Mass., 118 Liberty St.
 Syracuse, N. Y., Fayette & Magnolia Sts.
 Tokio, Japan, 540 Tokyo-Kaijo Bldg.
 Toronto, Canada, 163 West Richmond St.

Crucible Steel Company of America owns the entire capital stock of Pittsburgh Crucible Steel Company, Halcomb Steel Company and Crucible Fuel Company. Halcomb Steel Company and Pittsburgh Crucible Steel Company are separately described in this Directory, see under those heads in alphabetic list.

Anderson-DuPuy Spring Works, McKees Rocks, Pa. Product: heavy coil and flat springs for railroad and government service, annual cap., 20,000 tons.

Atha Works, Harrison, N. J.: blt. 1888-89; 1 B. O. H. fur. (50-ton); 1 A. O. H. fur. (40-ton); fuel in O. H., gas and oil; 4 Heroult electric fur. (three 6-ton, one 3-ton); 4 crucible steel fur. (164 pots total), fuel, gas; 64 heat. fur. (five 1-d., eleven 2-d., twenty-five 3-d., eighteen 4-d., five other), fuel, coal and oil; three 21" 2-h. 2-st. tapering; 16" 3-h. 6-st. bar; 12" 3-h. 5-st. bar; 10" 3-h. 8-st. bar; 9" 3-h. 4-st. bar; 9" 3-h. 11-st. rod; 8" 3-h. 5-st. bar; 12-car annealing fur.; 8 hand pickling tanks; 22 steel hammers (800-lb. to 20,000-lb.); 5 steam hydraulic presses (500-ton to 2,000-ton). Product: steel ingots, annual cap., 82,850 tons (23,400 tons B. O. H., 23,400 tons A. O. H., 26,050 tons electric, 10,000 tons crucible); alloy steel ingots; hot rolled products, 32,000 tons; forged products, 45,000 tons; stainless steels; tool, die, spring and cutlery steel, merchant bars, wire rods, and forgings.

Black Diamond (Park) Works, 30th St., Pittsburgh, Pa.: blt. 1862; 5 B. O. H. fur. (four 45-ton, one 30-ton); 1 A. O. H. fur. (30-ton); fuel in O. H., oil or gas; 2 Heroult electric fur. (6-ton); 7 crucible steel fur. (300 pots total), fuel, prod. and nat. gas, 3 Morgan gas prod.; 46 heat. fur. (eight 2-d., sixteen 3-d., sixteen 4-d., two 5-d., four 6-d.), fuel, coal, oil and nat. gas.; 15 coal-fired hammer fires: 27¼" 2-h. 1-st. blooming; 18" 3-h. 1-st. and 16" 3-h. 1-st. bar cogging; 21" 3-h. 3-st., 18" 2-h. 2-st., 14" 3-h. 5-st., 14" 3-h. 5-st., 12" 3-h. 5-st., 10" 3-h. 6-st., 10" 3-h. 4-st., 10" 3-h. 5-st. and 9" 3-h. 5-st. bar finishing mills; 2 sheared plate mills (one 32" x 115" 3-h., one 26" x 86" 2-h., roll sheared plates to 106" wide x ½" thick, 48" wide x 2"; 12 sheet fur.; 4 hot sheet mills (one 20" x 36" 3-h., two 20" x 36" 2-h., one 22" x 36" 2-h.); 5 box annealing fur.; 7 hand pickling tanks; 22 steam hammers (750-lb. to 5-ton). Product: steel ingots, annual cap., 160,500 tons (104,400 B. O. H., 21,600 A. O. H., 13,500 electric, 21,000 crucible); alloy steel ingots (nickel, chrome, tungsten, vanadium, molybdenum); hot rolled products, 104,340 tons, including 70,190 tons bars, 23,650 tons sheared plates, 10,500 tons high grade sheets; forged products, 7,000 tons; carbon, alloy and high speed tool steels, spring steel, safe steel, high grade plates, saw plates, reaper, guard and shovel plate, die blocks and forgings.

Cayuga Works, Auburn, N. Y.: blt. 1917, f. o. Oct. 1, 1917; 9 coal-fired heat. fur. (one 1-d., two 2-d., six 3-d.); 14" 3-h. merchant bar mill; 3 box annealing fur.; 4 steam hammers (600-lb. to 10,000-lb.) Product: hammered and rolled carbon and alloy tool steel in rounds, squares and rectangular bars; discs, die blocks, ring forgings; annual cap., 300 tons hot rolled products, 2,400 tons forged products.

Crescent Works, 51st St. & A. V. R.R., Pittsburgh, Pa.: blt. 1865; 3 B. O. H. fur. (25-ton), fuel, nat. gas and oil; 5 crucible steel fur. (204 pots total), fuel, prod. gas; 20 Swindell gas producers; 53 reheat. fur. (twenty-three 1-d., nine 2-d., ten 3-d., eight 4-d., three other); 18" 2-h. 3-st. and 16" 2-h. 3-st. sheet; 16" 3-h. 4-st. band; 14" 3-h. 5-st., 12" 3-h. 4-st., 12" 3-h. 6-st., 9" 3-h. 4-st., 9" 3-h. 5-st., 8" 3-h. 5-st. bar mills; 10" cold mill with 4-st.; 1 box annealing fur., 6 annealing fur. for bars; 5 pickling tanks; 20 steam hammers (500-lb. to 12,000-lb.). Reduction works for reducing tungsten and vanadium ore, annual cap., 1,070 tons. Product: steel ingots, annual cap., 56,000 tons (40,000 B. O. H., 16,000 tons crucible); alloy steel ingots (chrome, tungsten, vanadium, molybdenum); hot rolled products, 10,000 tons; forged products, 7,500 tons; hammered and rolled tool steels for tools, drills and machinery.

La Belle Works, Ridge Ave. & Rebecca St., North Side, Pittsburgh: blt. 1863; 2 A. O. H. fur. (15-ton) fuel gas and oil; 3 crucible steel fur. (126 pots total), fuel, gas, 2 gas producers; 34 heat. fur. (ten 1-d., seven 2-d., fourteen 3-d., three 4-d.), fuel, gas and coal; 24"

2-h. 4-st., 20" 2-h. 4-st., and 20" 2-h. 4-st. bar or plate mills; 16" 2-h. 4-st. bar; 14" 3-h. 5-st., 10" 3-h. 6-st., 10" 3-h. 4-st., and 9" 3-h. 4-st. guide mills; 4 box annealing fur.; 2 hand pickling tanks; 8 steam hammers (800-lb. to 7-ton). Product: steel ingots, annual cap., 23,000 tons (15,000 tons A. O. H., 8,000 tons crucible); alloy steel ingots of all kinds; hot rolled products, 33,000 tons; forged products, 1,500 tons; merchant steel, tool and machinery steel, cutlery steel, alloy steels for automobiles and aeroplanes, harrow discs, die blocks, forgings.

Norwalk Works, Norwalk, Ohio (leased): blt. 1902-03; 2 B. O. H. fur. (20-ton), fuel, oil and gas; four 4-d. gas-fired heat. fur.; 12" 3-h. 5-st. bar mill; one 24" x 42" 2-h. plate mill; 3 steam hammers (750-lb. to 10,000-lb.). Product: steel ingots, annual cap., 15,000 tons; hot rolled products, 18,000 tons including 7,500 tons tool steel bars and 10,500 tons agricultural implement shapes and bars; machinery, spring and plow steel; die blocks and discs.

Sanderson Works, Syracuse, N. Y.: blt. 1876; 2 Heroult electric fur. (3-ton): 4 crucible steel fur. (96 pots total), fuel, prod. gas, 1 cont. self-feed prod.; 16 coal-fired heat. fur. (two 1-d., nine 2-d., four 3-d., one 4-d.); 12" 3-h. 5-st. cogging and finishing; 10" 2-h. 8-st. and 9" 3-h. 7-st. finishing bar mills; 7 box annealing fur.; 9 steam hammers (700-lb. to 4-ton): 96 wire drawing blocks for wire $\frac{3}{8}$ " to .013". Product: steel ingots, annual cap., 16,400 tons (10,000 tons electric, 6,400 tons crucible): alloy steel ingots (tungsten, chrome, molybdenum, vanadium); hot rolled products, 8,000 tons; forged products, 2,700 tons; wire and drawn products, 1,800 net tons; hammered and rolled tool steels, drill rods, etc. in carbon, alloy and high speed steels.

Singer-Nimick Works, West Carson St., Pittsburgh, Pa. (idle).

Spaulding & Jennings Works, Jersey City, N. J.: blt. 1880; three 4-d. coal-fired reverb. heat. fur.; 18" 2-h. 4-st. bar mill; 3 steam hammers (800-lb. to 1,800-lb.): 95 cold rolling mills (eight 4", four 5", twenty-eight 6", six 6½", twenty-nine 8", one 9", sixteen 10", three 12"); 5 annealing fur.; pickling tanks; 96 wire drawing blocks for wire from .030" to 11/16". Product: flat and round wire rods, annual cap., 4,500 tons; bright drawn steel, flat wire, cold rolled flat wire; cold rolled special spring, tool and alloy steels, 8,000 tons; plain wire, 3,600 net tons.

Total annual capacity: steel ingots, 353,750 tons (182,800 tons B. O. H., 60,000 tons A. O. H., 49,550 tons electric, 61,400 tons crucible); hot rolled products, 210,140 tons; forgings, 66,100 tons.

CRUCIBLE STEEL CASTING CO. (The), West 84th St. & Almira Ave., Cleveland, Ohio.

Inc. 1911 in Ohio. Capital stock: com., par value \$100, auth. \$250,000, issued \$150,000.

W. H. Shepard, P.; M. G. Tielke, V. P. & T.; H. F. Tielke, Sec.; H. L. Aiken, G. M.; George J. Kerka, P. A.

Works at West 84th St. and Almira Ave., Cleveland: blt. 1921-22; f. o. Jan. 8, 1923; 1 Heroult electric fur. (1-ton).

Product: electric steel castings for sale; annual cap., 2,000 tons. Alloy steel castings (nickel, chrome, vanadium). Specialty, rolling mill plugs, piercing points and mill guides for seamless tube mills.

Former works at 800 Canal Road, Cleveland, were abandoned in Dec., 1922.

CRUCIBLE STEEL CASTING CO., Lansdowne, Pa.

Inc. 1905 in Pennsylvania. Capital stock: com., par value \$50, auth. \$400,000, issued \$350,000.

C. R. H. Cunningham, P.; H. Bloodsworth, 1 V. P. & T.; C. R. Hoopes, 2 V. P.; H. C. Cunningham, Sec.; H. K. Pollard, G. S. M. Works at Lansdowne: blt. 1905; f. o. July 25, 1905; first electric steel, Jan. 1, 1921; 1 Heroult electric fur. (2-ton). Tropenas converters abandoned in Jan., 1921.

Product: electric steel castings for sale; annual cap., 3,300 tons. Alloy steel castings (vanadium, chrome, nickel). Carbon and alloy steel castings from 1-lb. to 1,000-lb.

CRUCIBLE STEEL CASTING CO., 612 Clinton St., Milwaukee, Wis.

Inc. Sept. 24, 1898 in Wisconsin. Capital stock: com., par value \$100, auth. and issued \$2,000.

Albert C. Lange, P., Sec. & G. M.; Walter W. Lange, V. P.; Elmer O. Lange, T.; Oscar F. Patzke, G. S. M.

Works at 612 Clinton St., Milwaukee, Wis.: blt. 1898, f. o. Dec. 1898; electric fur. added 1913 replaced by 1 Moore Lectromelt electric fur. (2-ton) in 1923.

Product: small and medium sized steel castings for sale, annual cap., 3,500 tons.

Building new plant at 11th Ave., Milwaukee.

Cumberland Coal & Iron Co., 149 Broadway, New York, N. Y., acquired properties of Dayton Coal, Iron & Railway Co., Dayton, Tenn. August 1, 1922. Company operates the coal mines. Blast furnaces at Dayton, see description in 1920 Directory, are not operated.

CUMMING (J. W.) MANUFACTURING CO., Ltd., Glasgow St., New Glasgow, N. S., Canada.

Capital stock: com., par value \$100, auth. \$350,000, issued \$250,000; pref. 8% cum. auth. \$350,000, issued \$282,000.

James T. Cumming, P. & G. M.; H. Scott Cameron, V. P. & G. S.; A. S. Fraser, Sec. & T.

Works at Glasgow St., New Glasgow: steel foundry; 1 acid electric fur. (3¾-ton). Gray iron and semi-steel (750 tons) and brass (300 tons) foundry. Machine shop, pattern shop; drop and heavy forge dept.

Product: steel castings for sale, annual cap., 3,600 tons; railway and car builders' castings, mine car wheels, anchors, and misc. castings; mining tools and equipment.

CURTIN FORGE CO., Curtin, Pa.

Partnership organized 1897.

H. L. Curtin, P.; at Curtin, Pa. J. M. Curtin, V. P.; at Pittsburgh, Pa. John Curtin, T.; at Bellefonte, Pa.

Works at Curtin (leased; owned by H. L. Curtin): blt. 1809, remodel. 1901; 12 knobbling fires; one 6-ton hammer; 2 bit. coal fired 3-d. heat. fur.; 14" 3-h. 2-st. skelp mill installed 1918. Water power. Fuel, charcoal. Idle since 1921.

Product: charcoal blooms from scrap for own use and for sale, annual cap., 3,000 tons; charcoal iron skelp, 3,000 tons.

Cutler Steel Co., Pittsburgh, Pa. was acquired in Dec., 1925 by the Duraloy Company.

CYCLOPS STEEL CO., Titusville, Pa.

C. S. Newhall and D. J. McLaughlin, Receivers.

Sales offices:

Chicago, Ill., 1234 West Washington Boulevard.

Cleveland, Ohio, 825 Guarantee Title Bldg.

Detroit, Mich., 620 East Hancock Ave.

Elmira, N. Y., 959 West Water St.

Philadelphia, Pa., 516 Packard Bldg.

Washington, D. C., 1830 K St., N. W.

Brands: B-6 (high speed), K (stainless), No. 17 (non-corrosive); Extra Carbon; Alloy A; Wando (oil hardening).

Works at Titusville: blt. 1879, rebt. 1884; 4 crucible fur. (114 pots total), fuel, prod. gas, 4 Swindell gas producers; 1 Moore Lectromelt electric fur. (1,000-lb.), f. o. Dec. 28, 1923; 16 heat. fur. (three 1-d., ten 2-d., three 3-d.); 12" 3-h. 6-st. bar; 10" 3-h. 6-st. bar; 4 box annealing fur.; 4 hand pickling tanks; 10 steam hammers (500-lb. to 10,000-lb.).

Product: steel ingots, annual cap., 9,800 tons (9,000 tons crucible, 800 tons electric); carbon, alloy and high speed tool steels, annual cap., 4,000 tons rolled products, 1,500 tons forged products; steel castings for sale.

Damascus Crucible Steel Casting Co., New Brighton, Pa., operating as a partnership was incorporated Sept. 28, 1923 with the corporate title, Damascus Steel Casting Co.

DAMASCUS STEEL CASTING CO., P. O. Box 253, New Brighton, Pa.
Inc. Sept. 28, 1923 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$300,000.

Charles Capper, P.; C. A. Capper, Sec. & T.; W. F. Quivey, A.; I. C. Anderson, G. S.; T. G. Bateman, S.; E. J. Stauffer, S.

Product: manganese steel castings for sale; annual cap., 2,600 tons. Works at New Brighton, Pa.: blt. 1900-01; f. o. Feb. 5, 1901; first electric steel Feb., 1917; 1 Heroult electric fur. (2-ton). Whiting converter purchased 1920 not installed. Product: manganese steel castings; annual cap., 1,300 tons.

Works at Hammond, Ind.: blt. 1922-24; f. o. Feb. 27, 1925; 1 Heroult electric fur. (2-ton). Product: manganese steel castings; annual cap., 1,300 tons.

Danville Iron & Steel Co., Danville, Pa. changed corporate title in December, 1919 to Danville Iron & Steel Corporation.

Danville Iron & Steel Corporation, Danville, Pa.

J. E. Kennedy, P.; F. O. Reedy, V. P.; Irvin Vannan, T.; Frank M. Irving, Sec.

Company dismantled its works at Punxsutawney, Pa. in Spring of 1920 and removed the machinery to Danville, Pa. Began installation of this machinery on site former plant Danville Bessemer Co. in April, 1920. Construction not completed to Mar. 11, 1925, date of completion uncertain.

DANVILLE STRUCTURAL TUBING CO., Danville, Pa.

Inc. Nov. 1, 1915 in Pennsylvania. Capital stock: com., par value \$100, auth. \$600,000, issued \$160,000; bonds \$200,000.

C. S. Wagner, P., Sec. & G. M.; S. C. Rebman, V. P. & T.

Works at Danville: orig. blt. 1847; 5 heat fur. (2-d.); 18" 3-h. 2-st. billet mill; two 16" 3-h. 3-st. skelp, equipped with patent tube-making machines; 1 hand pickling tank. Fuel, coal.

Product: structural tubing (round unwelded tubing from $\frac{3}{4}$ " to 2 $\frac{3}{8}$ " O. D.) and shapes for agricultural implements, bedsteads, brake beams, trolley bracket arms, railings, fence posts, etc.; annual cap., 12,000 tons.

DAVIDSON MFG. CO., Ltd. (The Thomas), 187 Delisle St., Montreal, P. Q., Canada.

Inc. July 6, 1911 in Quebec. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$1,514,500; bonds \$232,100.

James Davidson, P. & G. M.; T. C. Davidson, V. P.; Edward Goodwill, V. P.; T. R. Davidson, V. P.; B. A. Hamilton, Sec.; A. H. Brodie, Factory Supt.; J. H. Flack, G. S. M.; W. J. Lewis, P. A.

Sales offices:

Calgary, Alberta, 305 Tenth Ave., East.

Saskatoon, Sask., 8-10 East 23rd St.

Toronto, Ont., 120 Duke St.

Vancouver, B. C., 123 Powell St.

Winnipeg, Man., 25 May St.

Works at Turcot (Lachine Canal), P. Q.; blt. 1915-16; f. o. 1916; 6 electric fur. (1 Snyder 1½-ton, one 2-ton and four 7-ton own design); gray iron and brass foundry; annual cap., 5,000 tons castings for own use and for sale.

Product: electric steel ingots and castings for sale and for own use; annual cap., 45,000 tons (30,000 tons ingots, 15,000 tons castings). Alloy steel ingots and castings (manganese, nickel, chrome). Forging ingots to any specification. Railroad, ship and general castings.

Davidson Tool Manufacturing Corpn. (The), New York. Works at 58-62 North 6th St., Brooklyn, New York, blt. 1918 for manufacture of crucible and electric tool steels and high speed steel was abandoned in 1924 and the equipment sold at auction and dismantled.

DAVIS BROTHERS, Inc., 4250 Wissahickon Ave., Philadelphia, Pa.

Est. 1890; inc. July, 1921 in Pennsylvania. Capital stock: com., no par value, auth. 500 shares, issued 400 shares; pref. 7% non-cum. auth. \$200,000, issued \$100,000.

Edward L. Davis, P. & T.; Joseph Wayne, Jr., V. P.; William G. Boggs, Sec. & P. A.; H. M. Hessenbruch, G. S.; Herbert E. Calves, G. S. M.

Works at 4250 Wissahickon Ave., Philadelphia: blt. 1900; f. o. June, 1900; two 2-d. faggot heat. fur., fuel, coal or oil; 18" 3-h. 2-st. mill and 9" 3-h. 5-st. Belgian finishing mill; 3 hammers; spike machines.

Product: spike rods for own use, merchant and concrete bars; annual cap., 10,000 tons. Railroad, mine, boat, wharf, deck and special spikes.

Davis Brothers Rolling Mill & Spike Works, Philadelphia, Pa. was incorporated in July, 1921 with the title, Davis Brothers, Inc.

Dayton Coal Iron & Railway Co., Dayton, Tenn. Properties were sold at foreclosure sale in January and were acquired Aug. 1, 1922 by Cumberland Coal & Iron Co.

Dayton Malleable Iron Co. (The), 1307 West Third St., Dayton, Ohio. Inc. 1866 in Ohio. Capital stock: com., par value \$100, auth. and issued \$3,000,000; pref. 7% cum., auth. \$3,000,000, issued \$1,948,300.

John C. Haswell, P. & G. M.; H. D. Hunter, 2 V. P. & S. M.; Adolph Heinz, Sec. & T.; C. E. Swank, A.; W. B. Runyan, G. S.; R. M. Robinson, P. A.; at Dayton. M. F. Gartland, 1 V. P.; at Indianapolis, Ind.

Company operates plants at Dayton, Canton and Ironton, Ohio for manufacture of malleable iron and gray iron castings. Electric furnace (2½-ton) for steel castings was added to Dayton plant in 1918, f. o. Aug. 1, 1918, for war work and manufacture of steel castings was discontinued after the armistice: electric fur. still in the plant. Company acquired Feb. 1, 1922, malleable iron and steel foundry formerly owned and operated by The Timken-Detroit Axle Co. at Waynesburg Road, Canton, Ohio. Steel foundry at this plant (one 2-ton Heroult electric fur.) has not been operated for manufacture of steel castings since its acquisition.

DAYTON STEEL FOUNDRY CO. (The), Dayton, Ohio.

Inc. Sept. 30, 1909 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$443,700; pref. auth. \$250,000, none issued.

George Walther, P. & G. S. M.; Jacob Walther, V. P. & G. M.; W. A. Pierce, Sec. & T.; J. H. Borghardt, G. S.; J. A. Graham, P. A.

Sales office: W. W. Pettis Co., First National Bank Bldg., Cincinnati, Ohio.

Brand: Dayton (steel wheels).

Works at Dayton: blt. 1905, f. o. Nov., 1905; 1 side-blow converter (4,000-lb.); 2 electric fur. (one 3-ton Snyder, one 3-ton Moore).

Product: steel motor truck wheels and light miscellaneous steel castings for sale; annual cap., 7,500 tons (2,000 tons converter, 5,500 tons electric).

Deemer, S. S., New Castle, Delaware.

S. S. Deemer purchased at auction, March 14, 1924 works known as Plant C of American Manganese Steel Co. at New Castle, Delaware, and offers the property for sale.

Works at New Castle, Del.: blt. 1903-04, f. o. Sept. 22, 1904; 4 Tropenas converters (3-ton): 3 cupolas (2 for pig iron, 1 for ferromanganese). Product: steel castings, annual cap., 6,000 tons.

DEEMER STEEL CASTING CO., New Castle, Delaware.

Inc. Aug. 5, 1907 in Delaware. Capital stock: com., par value \$100, auth. \$250,000, issued \$229,460.

Newlin T. Booth, P.; Arthur H. Jameson, S. M.; J. H. Speicher, A. T.; at New Castle, Del. Charles F. Jenkins, V. P. & T.; at 232 S. 7th St., Phila., Pa. George B. Harvey, Sec.; at Chester, Pa. Sales office: 141 Broadway, New York, N. Y.

Works at New Castle: blt. 1909; 2 side-blow converters (3-ton); one cupola; f. o. Jan. 17, 1910. Fuel, coal, coke and oil.

Product: railroad and machinery castings of every description for sale; alloy steel castings; annual cap., 3,000 tons; valves and fittings.

DELAWARE AND HUDSON CO. (The), Albany, N. Y.

G. S. Edmonds, S. Motive Power.

Works at Colonie: post office and telegraph address, Watervliet, N. Y.; blt. 1912-13; one 2-ton Whiting converter, installed 1912, f. o. Dec. 1, 1912; 1 cupola. Fuel, coke and oil.

Product: steel castings for own use, annual cap., 300 tons; gray iron castings, 2,000 tons; brass castings, 175 net tons.

DELAWARE, LACKAWANNA & WESTERN RAILROAD CO., Scranton, Pa.

Charles J. Scudder, Supt. Motive Power and Equipment Dept.

Keyser Valley Shops, Scranton: rolling mill installed June, 1913, f. o. June 13, 1913; 1 double oil-fired heat. fur.; 1 set of scrap reclaiming rolls.

Product: rounds and flats for own use, annual cap., 800 tons.

DELAWARE RIVER STEEL CO., Chester, Pa.

Inc. Nov., 1909 in Pennsylvania. Capital stock: com., par value \$100, auth. \$500,000, issued \$491,200; pref. 8% cum. auth. and issued \$600,000.

Charles Hart, P.; R. H. McCurdy, Sec. & T.; at Chester. Myron A. Wick, V. P.; at Cleveland, Ohio.

Sales agents: F. W. Marshall & Co., Philadelphia, Pa. (for foundry and malleable grades).

Brand: Delaware.

Delaware Furnace, Chester: 1 stack, 85' x 17' 9", f. o. 1881; rebt. 1922 and 1925; 4 stoves (3 Foote, 65' x 16' 6"; 1 McClure, 80' x 20'); 1 turbo-blower, 2 steam blowing eng. (40,000 cfm.) 15-lb. rated pressure; 8 water-tube boilers (3 Sterling, 3 Rust, 2 B & W), 2,500 H. P.; 1 Uehling pig casting mach. single-strand; one slag granulating pit. By-product coke: foreign ores. By-product coke from adjoining plant of Philadelphia Suburban Gas & Electric Co.

Product: all grades of coke pig iron; annual cap., 120,000 tons.

DELAWARE SEAMLESS TUBE CO., Auburn, Pa.

Inc. Jan. 3, 1903 in Delaware. Capital stock: com., par value \$100, auth. \$200,000, issued \$150,000.

L. M. Driscoll, P.; M. D. Vernon, Sec.; S. B. Vernon, T. & G. M.;
R. E. Brock, G. S.

Sales offices:

Detroit, Mich., L. D. Rockwell Co., Book Bldg.

New York, N. Y., L. D. Rockwell Co., 17 East 42nd St.

Philadelphia, Pa., Rupp Moore Co., 1418 Walnut St.

Works at Auburn: rolling mill added 1897; rebld. 1902; 2 cont. billet heat. fur., fuel, bit. coal; 10" 3-h. 2-st. billet; 14" 1-st. Mannesmann piercing mill, 14" 1-st. swaging mill; 2 annealing fur., fuel, anth. coal. Installing automatic feed swaging mill, which will double present capacity.

Product: cold drawn seamless steel tubes, 2,500 tons.

DELTA CHEMICAL & IRON CO., Wells, Delta Co., Mich.

Inc. Jan. 1, 1923 in Michigan. Capital stock: com., auth. \$800,000, issued \$678,000.

M. J. Corbett, P.; at Binghamton, N. Y. J. E. Morgan, V. P.; at Oshkosh, Wis. G. N. Harder, Sec.; G. C. Craver, T.; R. W. Roberts, G. S.; at Wells.

Brand: Schaffer Lake Superior.

Furnace, Wells, Mich.: 1 stack, 60' x 10', bld. 1911-12, relined 1923; 1 double Durham hot blast stove; 2 steam blowing eng. (700 cfm.); 6 tubular boilers, 800 H. P. Charcoal: Lake ore. (Stephenson Charcoal Iron Co. to Jan. 1, 1923.)

Product: charcoal pig iron, annual cap., 24,000 tons.

Dempsey, M. J., New York, N. Y. Standard Rolling Mill, 40th St. and 11th Ave., New York, was dismantled in 1922.

DENVER ROCK DRILL MFG. CO. (The), 39th & Williams Sts., Denver, Colo.

Inc. Apr. 1, 1913 in Delaware. Capital stock: com., no par value, auth. 100,000 shares, outstanding 56,925 shares; pref. 7% cum. auth. and issued, \$550,000.

W. H. Leonard, P. & G. M.; A. H. Skaer, 1 V. P. & G. S.; Charles N. Bell, 2 V. P.; E. C. T. Pelham, 3 V. P.; H. E. Fiske, T.; R. A. Scott, G. S. M.; H. K. Duvall, P. A.; at Denver. D. E. Strout, Sec.; at 30 Church St., New York, N. Y.

Works at 39th and Williams Sts., Denver: bld. 1910; 1 Snyder 3-phase electric fur. (1-ton); first electric steel May 31, 1919; semi-steel and brass castings for own use and for sale.

Product: electric steel castings for own use in manufacture of rock drilling machinery; annual cap., 500 tons. Alloy steel castings (chrome, nickel).

DE SOTO FOUNDRY & MACHINE CO., Ltd., Mansfield, La.

Inc. 1906 in Louisiana. Capital stock: com., par value \$50, auth. and issued \$150,000.

Charles R. Law, P. & G. M.; Ben Johnson, V. P.; D. W. Derrick, Sec. & T.; H. G. Pearson, A.

Brand: De SOTO, Diamond D (castings).

Works at Mansfield: blt. 1906; 2 converters (one Tropenas 2,500 lb., one modified 4,000 lb.); f. o. Sept. 1, 1910; 1 cupola. Gray iron foundry, gray iron and semi-steel castings for sale; annual cap., 300 tons. One oil-fired reverb. 1-d. heat. fur.; one 1,500 lb. Massillon steam ham.; annual cap., 150 tons forgings.

Product: steel castings for sale; annual cap., 1,800 tons: truck axles, car, oil field, sawmill and general forgings.

Detroit Iron & Steel Co., Detroit, Mich., was acquired by The Hanna Furnace Co., Nov. 1, 1920.

DETROIT SEAMLESS STEEL TUBES CO., Grand River Station, Detroit, Mich.

Inc. May 7, 1900 in Michigan. Capital stock: com., par value \$10, auth. and issued \$1,000,000; pref. 7% cum. auth. and issued \$1,000,000.

John W. Hubbard, Ch.; C. H. Hobbs, P. & G. M.; S. J. Cameron, Sec. & T.; F. W. Conat, A. Sec. & A. T.; W. R. Crossett, C.; C. E. Cook, Works M.; R. Matthews, S.

Sales offices:

Chicago, Ill., 332 South Michigan Ave.

Cincinnati, Ohio, Joseph T. Ryerson & Son.

Cleveland, Ohio, 1206 Guardian Bldg.

Los Angeles, Calif., C. W. Pike Co.

Montreal, Canada, Lyman Tube & Supply Co.

New York, N. Y., 342 Madison Ave.

San Francisco, Calif., C. W. Pike Co.

Seattle, Wash., C. W. Pike Co.

Toronto, Canada, Lyman Tube & Supply Co.

Brand: Detroit (locomotive flues, boiler tubes, automobile and mechanical tubing).

Works at Warren Ave. (West) and Wyoming Ave., Springwells, Mich.: blt. 1919-20, f. o. June 17, 1920; 2 heat. fur. (one 1-d. billet heat., one 2-d. billet reheat.) fuel, pulv. coal; 1 piercing mill, 1 rolling mill, 2 reelers, 1 sizing mill; 5 hand pickling tanks; 6 annealing fur.

Product: blanks for seamless tubes, annual cap., 30,000 tons; hot rolled and cold drawn seamless steel tubes; locomotive flues, boiler tubes, automobile and mechanical tubing.

Former Works at 841 Jefferson Ave. West were dismantled in Nov. and Dec. 1920.

DETROIT STEEL CASTING CO. (The), 4069 Michigan Ave., Detroit, Mich.

Inc. Feb. 7, 1902 in Michigan. Capital stock, par value \$10, auth.

\$1,000,000, issued \$900,000; pref. 7% cum. auth. and issued \$300,000.

John S. Newberry, P.; S. W. Utley, V. P. & G. M.; W. S. Allen, Sec.; J. P. Warren, T.; James R. Burgess, A.; E. W. Pike, G. S.; J. M. Duncan, G. S. M.; G. O. Smith, P. A.

Sales offices:

Chicago, Ill., J. C. Carry, Railway Exchange Bldg.

Minneapolis, Minn., H. V. Fleck & Co., Lumber Exch. Bldg.

New York, N. Y., J. J. Murray, 227 Fulton St.

Roanoke, Va., Thomas Spratt, 301 Boxley Bldg.

Works at Detroit: blt. 1889, rebt. 1905; 1 side blown converter (2,000-lb.); 1 cupola; 2 A. O. H. fur. (20-ton), fuel, oil; 1 Pittsburgh electric fur. (1½-ton) installed 1925.

Product: steel castings for sale, annual cap., 15,000 tons (12,000 tons A. O. H., 3,000 tons electric or converter); alloy steel castings (vanadium, special alloy for cyanide and lead pots); castings for locomotives, cars, engines, shipbuilding, automobiles, motor trucks and trailers: annealing pots and boxes.

DIBERT, BANCROFT & ROSS CO., Ltd., New Orleans, La.

Works at Tulane Ave. & Jefferson Davis Parkway: 1 Moore Electro-melt electric fur. (3-ton) f. o. Jan. 20, 1923; 3 cupolas. Tropenas converters dismantled in 1923. Gray iron (6,000 tons) and brass (75-ton) foundry.

Product: steel castings for sale, annual cap., 3,500 tons.

Dillon Crucible Alloys, Ltd., Welland, Ont., Canada. Corporate title changed to Canadian Atlas Crucible Steel Co., Sept. 4, 1920.

DILWORTH, PORTER & CO., Inc., 4th & Bingham Sts., Pittsburgh, Pa.

Inc. Aug. 21, 1916 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$2,000,000.

F. C. Stoeltzing, P. & T.; W. F. Schleiter, V. P. & G. S. M.; Joseph Dilworth, Sec.; W. S. Bowser, A.; John C. Dilworth, Mill Mgr.; Peter A. Fröhlich, Mill Supt.; G. M. Pott, P. A.

Sales offices:

Atlanta, Ga., H. G. Chapman, Candler Bldg.

Birmingham, Ala., Moore-Handley Hardware Co.

Chicago, Ill., W. W. Baker, Marquette Bldg.

Cincinnati, Ohio, J. C. Kirby Co., Union Central Bldg.

Detroit, Mich., Kelly & Murphy, McKerchey Bldg.

Louisville, Ky., T. C. Coleman, Starks Bldg.

New York, N. Y., G. A. Prendergast, 2 Rector St.

Philadelphia, Pa., Maurice Joy & Co., Finance Bldg.

St. Louis, Mo., Joseph G. Miller, Security Bldg.

St. Paul, Minn., H. C. McNair Co., Endicott Bldg.

San Francisco, Calif., Latham McMullin, Claus Spreckles Bldg.
 Washington, D. C., W. Newton Jeffress, Inc., 1319 F St., N. W.
 Glendon Rolling Mill, Pittsburgh: blt. 1857, rebt. 1902; 22 heat.
 fur. (6 cont. billet and slab, 16 2-d. rod) fuel pulv. coal; 18" 3-h.
 3-st. and 18" 3-h. 2-st. bar mills; three 10" 2-h. 5-st. cont. rod
 mills; 15 automatic spike mach.; 8 hand spike mach.

Product: spike rods and tie plate bars, annual cap., 130,000 tons
 (45,000 tons spike rods, 85,000 tons tie plate bars). Standard
 railroad spikes, $5\frac{1}{2}" \times 9/16"$ to $6\frac{21}{32}" \times 5/8"$, 168,700 kegs,
 (200-lb.): small railroad (mine) spikes, $2\frac{1}{2}" \times 5/16"$ to $5" \times 1/2"$,
 37,500 kegs; boat and barge spikes, $4\frac{1}{2}" \times 5/16"$ to $24" \times 3/4"$,
 12,500 kegs; hand machine railroad spikes, up to $9" \times 5/8"$, 40,000
 kegs.

DISSTON (HENRY) & SONS, Inc., Tacony, Philadelphia, Pa.

Est. 1840; inc. Dec. 1886 in Pennsylvania. Capital stock: com.,
 par value \$100, auth. \$6,000,000, issued \$5,659,500.

Frank Disston, P.; Henry Disston, 1 V. P.; George Satterthwaite,
 2 V. P. & G. M.; William D. Disston, V. P. (Purchasing); S.
 Horace Disston, V. P. (Sales); William S. Armstrong, Sec.; Jacob
 S. Disston, Jr., T.; R. T. Nalle, Factory M.; A. H. Disston, G. S.;
 D. W. Jenkins, G. S. M.

Sales offices:

Atlanta, Ga., 130-132 Marietta St.

Bangor, Me., R. B. McKim Co., Inc., 120-122 Exchange St.

Boston, Mass., R. B. McKim Co., Inc., 116-118 Pearl St.

Chicago, Ill., 111-115 North Jefferson St.

Cincinnati, Ohio, 6th & Baymiller Sts.

London, England, 35-37 Upper Thames St.

Memphis, Tenn., The Riechman-Crosby Co., 223-35 So. Front St.

New Orleans, La., C. T. Patterson Co., Ltd.

New York, N. Y., 120 Broadway (export sales).

Portland, Ore., 91 First St.

San Francisco, Calif., 144 Second St.

Seattle, Wash., 1555-65 Fourth Ave., South.

Sydney, N. S. W., Australia, 80 Sussex St.

Toronto, Ont., Canada, 2-20 Fraser Ave.

Vancouver, B. C., Canada.

Brands: Disston, Keystone, Gold Medal, Kutkwick, Eltun, Mansil,
 Enduro.

Works at Tacony, Philadelphia make circular, cross cut, hand and
 other saws, saw fitting tools, plumbs, levels, bevells, squares, screw
 drivers, trowels, machine knives, etc. The company acts as
 selling agent for Henry Disston & Sons Iron & Steel Works and
 Henry Disston & Sons File Co.

Henry Disston and Sons File Co. owns and operates works at
 Tacony for the manufacture of files, grass and hedge shears, vine

and tree pruners, etc. Org. 1877; inc. July 1, 1903 in Pennsylvania. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$900,000. Same officers as above. G. L. Rogers, G. S.; D. W. Jenkins, G. S. M.

Henry Disston and Sons Iron and Steel Works, Tacony, Philadelphia. Inc. Dec. 1886 in Pennsylvania. Capital stock: com., par value \$100, auth. \$3,500,000, issued \$3,000,000. Same officers as above. C. H. Williams, G. S.; H. A. Baxter, G. S. M.

Keystone Works, Tacony, Philadelphia: manufacture of saws begun 1840; steel, 1854; 5 crucible steel fur. (four 30-pot, one 36-pot, total 156 pots) fuel prod. gas, 6 Wood gas prod.; 2 Heroult electric fur. (one 3-ton, one 6-ton); 24 heat. fur. (twelve 1-d., six 2-d., 6 cont.) fuel coal and oil; 18" 3-h. 5-st. bar, 12" 3-h. 7-st. bar, 9" 3-h. 5-st. guide, 9" 3-h. 7-st. guide; 28" x 84" 2-h. sheared plate mill; 4 hot black sheet mills (two 18" x 30", one 20" x 28", one 24" x 34"); 20 stands cold rolls (two 20", five 10", thirteen 8"); 8 box annealing fur.; 1 Mesta pickling mach.; 21 hand pickling tanks; 4 wire drawing blocks; 5 steam hammers (750-lb. to 4,500-lb.). Roll sheared plates to 76" x 76" x $\frac{3}{8}$ "; black sheets to 18" x 72" x .025 (23 gauge). Product: steel ingots, annual cap., 22,000 tons (12,000 tons electric, 10,000 tons crucible); alloy steel ingots; hot rolled products, 34,500 tons including 20,000 tons bars, 5,000 tons sheared plates, 9,500 tons sheets; high carbon and alloy sheets and plates; cold rolled high carbon and alloy steels, 700 tons; forged products, 1,000 tons; plain wire, 150 tons; saw steel plates, tool steel sheets, high carbon and alloy tool steel bars and special shapes, high speed steel, cold rolled bands, flat wire, etc.

DODGE STEEL CO., 6501 Tacony St., Philadelphia, Pa.

Inc. Aug. 6, 1919 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$200,000; pref. 7% cum. auth. and issued \$100,000. Link-Belt Co. acquired controlling interest by purchase of common stock, March 1, 1921.

Charles Piez, Ch.; Staunton B. Peck, P.; care Link-Belt Co., Philadelphia. C. Tolan, Jr., V. P., G. M. & G. S. M.; Chester S. Roberts, Sec., T. & G. S.; Morris H. Kutz, P. A.

Sales offices:

New York, N. Y., T. L. Keeler, care Link-Belt Co., 2676 Woolworth Bldg.

Springfield, Mass., Safety Wrench & Appliance Co., 172 Chestnut St.

Works at 6501 Tacony St., Phila.: blt. 1919-20, f. o. Mar. 12, 1920; 1 modified Greaves-Etchell electric fur. (2-ton).

Product: electric steel castings for sale, annual cap., 2,000 tons. Chrome alloy steel castings.

DOMINION ALLOY STEEL CORPORATION, Sarnia, Ont., Canada.

William B. Boyd, P.; Toronto office: 405 Dominion Bank Bldg., Toronto.

Works at Sarnia, Ont.: construction begun March 26, 1924; installing sheet mill, annual cap. 30,000 tons, about 75% completed (Nov., 1925); galvanizing dept., annual cap., 12,000 tons, installed and first operated May 26, 1925. Plans include future construction of open-hearth steel works, and rolling mill with billet mill and bar mills.

DOMINION FOUNDRIES & STEEL, Ltd., Depew St., Hamilton, Ont., Canada.

Inc. May, 1917 in Dominion of Canada. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$3,000,000; pref. 8% cum., auth. \$1,000,000, issued \$720,000; bonds \$130,000.

C. W. Sherman, P.; A. G. Wright, Sec. & T.; F. A. Sherman, G. M.; F. A. Loosley, G. S.; G. H. Gordon, G. S. M.; William Davies, P. A.; at Hamilton. W. J. Verity, V. P.; at Brantford, Ont.

Works at Hamilton: blt. 1912; f. o. Nov. 19, 1912; 4 B. O. H. fur. (two 35-ton, two 20-ton); 2 A. O. H. fur. (20-ton); fuel in O. H., oil; 2 Heroult electric fur. (6-ton); rolling mill blt. 1916; 7 oil-fired heat. fur. (one 1-d., one 2-d., two 3-d., 3 cont.); 22" 3-h. 2-st. bar mill; 26" x 36" 2-h. jobbing plate; 27" x 72" 2-h. universal plate installed 1920; 1 box annealing fur.; 2 hand pickling tanks; 1 steam hammer, 1,500-lb.; 3 forging presses (1 steam hydr. 1,000-ton, 2 hydr. 500-ton). Roll sheared plates from $\frac{1}{8}$ ", up to 66" wide; universal plates from $\frac{1}{8}$ ", up to 42" wide.

Product: steel ingots, annual cap., 120,000 tons (85,000 tons B. O. H., 35,000 tons A. O. H.); steel castings for own use and for sale, 18,000 tons (12,000 B. O. H., 6,000 electric); alloy steel ingots and castings (nickel, chrome, vanadium); railroad castings, car and locomotive castings, couplers, bolsters, side-frames; heavy rotor castings for electric generators; tank, car and bridge plates, universal plates, 120,000 tons, sheared plates, 15,000 tons; forged car axles, 10,000 tons.

Dominion Iron & Steel Co., Ltd., Sydney, Nova Scotia, Canada, see British Empire Steel Corporation.

DONNER STEEL CO., Inc., 475 Abbott Road, Buffalo, N. Y.

Inc. Dec. 9, 1915 in New York. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$4,522,500; pref. auth. and issued \$9,000,000 (First pref. 8% cum. \$3,000,000; pref. Series A. 7% cum., \$1,000,000; pref. Series B, 7% cum., \$5,000,000); bonds, \$7,382,000.

William H. Donner, P.; Floyd K. Smith, V. P. & T.; Robert Donner, V. P.; Frank R. Huston, V. P. (Operations); William

F. Vosmer, V. P. (Sales); W. Wayne Hancock, Sec.; Pearce F. Boyer, A.; James A. Buell, G. S.; John N. Allen, P. A.

Sales offices:

Cleveland, Ohio, H. C. Richardson, Union Trust Bldg.
Detroit, Mich., E. D. Pumphrey, Penobscot Bldg.
Milwaukee, Wis., L. E. Meidinger, First National Bank Bldg.
New York, N. Y., P. M. Guba, 120 Broadway.
Philadelphia, Pa., H. G. Uphouse, Morris Bldg.
San Francisco, Calif., Judge & Dow, Call Bldg. (agents).

Brands: Niagara, Donner (pig iron).

Works at 475 Abbott Road, Buffalo:

Blast Furnaces: 2 stacks; No. 1, 91' 6" x 21' 6", blt. 1916-17, relined 1924, blown in Aug. 26, 1924; No. 2, 85' 6" x 21', blt. 1906-09, rebt. 1918, relined 1920, blown in Mar. 7, 1920; 8 center comb. stoves (four 3-pass 104' x 21', four 3-pass 111' 6" x 21'); 4 steam blowing eng. (3 Southwark vertical, 1 U. E. & F. Co.) 175,000 cfm., rated pressure 30lb.; 13 Sterling water-tube boilers, 6,475 H. P.; 1 double-strand Pittsburgh Coal Washer Co. pig casting mach. By-product coke; Lake ore. Coke from Donner-Hanna Coke Corp., see below. Product: basic, foundry and malleable pig iron for own use and for sale, annual cap, 360,000 tons.

Steel Works: blt. 1905-07, f. o. Apr. 18, 1907; 10 B. O. H. fur. (three 100-ton, seven 80-ton), 1 mixer (600-ton); fuel in O. H. tar, fuel oil and coke oven gas; five 4-hole soaking pits, fuel coke oven gas; 3 cont. heat. fur.; 36" 2-h. 1-st. blooming; 18" 2-h. 8-st. cont. billet; 14" 2-h. and 3-h. 7-st. merchant; 10" 2-h. and 3-h. 10-st. cont. bar; 8" 2-h. and 3-h. 13-st. merchant; sheared plate mill dismantled in 1920. Fuel, coke oven gas, coal tar and fuel oil.

Product: basic, malleable and foundry pig iron, annual cap., 360,000 tons; steel ingots, 540,000 tons; alloy steel ingots (nickel, chrome, vanadium, molybdenum); billets, 450,000 tons; merchant and concrete bars, light structural shapes and bands, 410,000 tons.

Donner Steel Co. owns the entire capital stock of Donner Mining Co. operating Alexandria Mine on the Mesabi Range, annual cap., 360,000 tons iron ore. Donner Steel Co. also owns one-half interest in Donner-Hanna Coke Corp. with 150 Koppers by-product coke ovens at Buffalo, annual cap., 700,000 net tons coke, and benzol plant, annual cap., 3,300,000 gals. light oil. Donner Steel Co. also owns controlling interest in capital stock Donner Steamship Co. operating 10,000 ton ore vessel, the "H. F. Black."

DOVER IRON CO., Route 2, Tennessee Ridge, Tenn.

Inc. Sept., 1925 in Tennessee. Capital stock: com., par value \$100, auth. and issued \$40,000.

H. L. Williams, P.; at 1429 Dearborn St., Chicago, Ill. John C.

Ralls, V. P. & G. M.; at Tennessee Ridge, Tenn. H. N. Leach, Sec.; at Clarksville, Tenn.

Sales agents: Hickman, Williams & Co., McCormick Bldg., Chicago, Ill.

Brand: Dover (cold blast charcoal pig iron).

Dover Furnace, Carlisle, Tenn.: 1 stack, 35' 6" x 9' 6", blt. 1828, last rebt. 1902-3, relined 1925; cold blast; 1 horizontal steam blowing eng.; 3 cylindrical boilers, 100 H. P. Charcoal: local brown hematite ore. Charcoal from open pits on company's wood lands; company owns iron ore mines at Bear Spring, Tenn., annual cap., 10,000 tons; limestone quarry at furnace.

Product: cold blast charcoal pig iron, annual cap., 4,800 tons.

Drain Steel Co., Moore, Pa. Company dissolved; plant for sale. Works at Moore, Pa.; blt. 1919-20, f. o. Apr. 13, 1920; 2 B. O. H. fur. (65-ton) annual cap., 65,000 tons ingots. Idle since 1921.

Driscoll-Reese Steel Co., Hamburg, Pa. Works at Hamburg, Pa. sold in October, 1922 to the Pennsylvania Electric Steel Casting Co.

DRIVER-HARRIS CO., Middlesex St., Harrison, N. J.

Inc. 1899 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$1,000,000; pref. 7% cum. auth. \$3,000,000, issued \$743,100; bonds, \$1,165,000.

Frank L. Driver, Jr., P.; William P. Martin, 1 V. P.; H. D. McKinney, 2 V. P. & G. S. M.; M. C. Harris, Sec.; Stanley M. Tracy, T.; A. N. Knapp, A.; J. Hoza, G. S.; E. A. Harleman, P. A.

Sales offices:

Chicago, Ill., 562-574 West Randolph St.

Detroit, Mich., General Motors Bldg.

Gassicourt, France, Etablissements Driver-Harris.

Harrison, N. J., Middlesex St.

Manchester, England, British Driver-Harris Co.

Turin, Italy, S. A. Italiana Driver-Harris.

Brands: Nichrome (wire, strip, sheets and castings); Climax, Advance, S. M. L. Alloy, 193 Alloy (wire and strip); Cimet (castings).

Works at Harrison, N. J.: crucible fur. (10-pots) fuel, oil; 2 electric fur. (one 2-ton Heroult, one 1,000-lb. Greaves-Etchells); 4 non-regen. oil-fired 2-d. heat. fur.; hot rolls added 1921-22, f. o. Sept., 1922; 20" 3-h. 2-st. bar mill; 9" 3-h. 9-st. bar and rod mill; 47 stands cold rolls for cold rolled strip; 9 annealing fur.; 3 pickling tanks; 2 steam hammers (1,500-lb., 4,000-lb.); 268 wire drawing blocks (wire .001" to 1/2").

Product: special analysis alloy ingots and castings, annual cap., 1,550 tons (500 tons electric ingots, 1,000 tons electric and 50 tons crucible castings). Hot rolled products, annual cap., 3,000 tons; including 600 tons wire rods, 1,500 tons bars, 300 tons hoops and

bands, 600 tons hot rolled strip. Cold rolled strip steel, annual cap., 2,000 tons. Ferrous and non-ferrous resistance wire, ribbon, heater cords, fine brass and bronze wire, annual cap., 3,000 tons.

DROLET (LA COMPAGNIE F. X.), 206 Bridge St., Quebec, P. Q., Canada.

Gaudiose Drolet, P. & G. M.; Emile Drolet, V. P.; J. Hector Hamel, Sec.; Arthur Drolet, T.

Works at 206 Bridge St., Quebec: 1 Baillot converter (2,000-lb.); 2 cupolas; gray iron, semi-steel, brass and aluminum foundry.

Product: steel castings for own use and for sale, annual cap., 300 tons.

DUNBAR CORPORATION, Dunbar, Pa.

Inc. Nov. 1, 1924 in Pennsylvania. Capital stock: com., no par value, auth. 10,000 shares, issued 6,922 shares; pref. auth. \$500,000, issued \$346,100; bonds \$125,000.

William P. Gest, P.; William E. Arnold, Sec. & T.; at 325 Chestnut St., Philadelphia, Pa. R. M. Marshall, V. P. & G. M.; O. E. Santmyer, A.; J. S. Dowds, C.; R. Palmer, P. A.; at Dunbar, Pa. Sales office: Pittsburgh, Pa., Kerchner & Marshall, 942 Oliver Bldg. Brand: Dunbar (pig iron); Dunbar Sand.

Dunbar Furnaces, Dunbar, Pa.; 2 stacks; Furnace No. 1, 80' x 17' 6", blt. 1790, last rebt. 1920; Furnace No. 2, 82' x 17' 6", blt. 1880, last rebt. 1919; 8 two-pass side comb. stoves (six 80' x 18', one 65' x 22', one 75' x 18'); 4 steam blowing eng. (3 vertical, 1 horizontal) 64,000 cfm., 20-lb. rated pressure; 12 upright water-tube boilers, 3,600 H. P.; 1 Heyl & Patterson single-strand pig casting mach. By-product coke: Old Range ore. By-product coke plant; 110 Semet-Solvay coke ovens, annual cap., 200,000 net tons. Coal mine at Dunbar, annual cap., 300,000 tons. Small gray iron foundry for own use. (American Manganese Mfg. Co. to Nov. 28, 1924).

Product: foundry and forge pig iron, annual cap., 180,000 tons; or spiegel and ferro-manganese (100,000 tons).

Duplex Metallic Co., Philadelphia, Pa. built rolling mill at Conshohocken, Pa. with 16" to 10" 5-st. Belgian mill and wire drawing blocks for production of bars and copper clad rods and wire. Mill idle since 1921 and equipment sold at auction, September 14, 1925 and removed.

DUQUESNE STEEL FOUNDRY CO., Union Bank Bldg., Pittsburgh, Pa.

Inc. Dec. 13, 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. \$1,200,000, issued \$780,000.

D. C. Bakewell, P.; C. A. Young, V. P. & G. S. M.; E. S. Eggers, T.; A. W. Remensnyder, A.; at Pittsburgh. W. E. Troutman,

2 V. P. & G. S.; B. P. Bakewell, Sec. & P. A.; at Coraopolis, Pa.
Sales office: 1203 Union Bank Bldg., Pittsburgh, Pa.

Brands: "Duquesne Special," "Molybdenite" (alloy rolls, pinions, and steel castings); Circle D (steel castings).

Works at Kendall Station, P. & L. E. R. R., Moon Township, Allegheny Co., Pa.: 3 A. O. H. fur. (25-ton) fuel, oil and nat. gas.

Product: steel castings for sale, annual cap., 30,000 tons. Alloy steel castings (nickel, chrome, molybdenum). Steel castings for railway cars, locomotives, electric motors, rolling mills, rolling mill rolls and annealing equipment.

DURALOY CO. (The), 47 Terminal Way, Pittsburgh, Pa.

Inc. April, 1924 in Delaware. Capital stock: com., no par value, auth. and issued 1,000 shares; pref. 7% cum. auth. \$50,000, issued, \$15,400.

Thomas R. Heyward, Jr., P.; C. C. Bailey, Sec. & T.; at Pittsburgh. Walter F. Furman, V. P. at 136 Liberty St., New York. O. K. Carpenter, G. S. at New Cumberland, W. Va.

Sales offices: Chicago, Cleveland, Detroit, Hartford, New York, Wilkes-Barre.

Works at New Cumberland, W. Va.: blt. 1916; 1 A. O. H. fur. (20-ton): 1 Moore Lectromelt electric fur. (1,000-lb.) added 1923, f. o. Feb. 27, 1923. (Thomas R. Heyward, Jr. to October, 1922; Cutler Steel Co. to Dec., 1925.)

Product: steel castings, annual cap., 7,800 tons (6,000 tons A. O. H., 1,800 tons electric).

DYCAST STEEL CO., Collinsville, Conn.

Partnership. Leased steel plant of The Collins Co. in April, 1924. Arthur C. Davidson, G. M.; Hubert W. Henke, T.

Works at Collinsville, Conn. (leased; owned by The Collins Co.): 2 Siemens gas crucible fur. (48 pots), fuel, prod. gas; 2 Siemens gas producers.

Product: steel ingots and castings for sale, annual cap., 970 tons (650 tons ingots, 320 tons castings); alloy steel ingots and castings (chrome, nickel, vanadium, tungsten); high speed steels.

EAGAN-JOHNSON STEEL & IRON CO., Chester Pike, Crum Lynne, Pa.

Inc. Feb. 26, 1912 in Pennsylvania as Eagan-Rogers Steel & Iron Co.; name changed to Eagan-Johnson Steel & Iron Co. in 1925. Capital stock: com. auth. \$500,000, issued \$156,300.

Daniel C. Eagan, P. & G. M.; Allen A. Johnson, Sec., T. & G. S. M.; G. F. Ebeling, P. A.; at Crum Lynne. Richard G. Park, Jr., V. P.; at 802 F. St., N. W., Washington, D. C.

Works at Crum Lynne: blt. 1912, f. o. July 29, 1912; 1 Stoughton converter (2-ton).

Product: steel castings, annual cap., 4,000 tons.

Eagan-Rogers Steel & Iron Co., Crum Lynne, Pa., name changed in 1925 to Eagan-Johnson Steel & Iron Co.

Eagle Furnace Co., Chattanooga, Tenn. owned Attalla Furnace at Attalla, Ala. The furnace, a charcoal stack, was leased by Gulf States Steel Co., Dec., 1916 to April, 1919 and operated with coke as fuel. Idle since 1918 and abandoned in 1920.

Eagle Iron Co., Curtin, Pa. operated Eagle Furnace at Curtin, Pa. leased from H. L. Curtin, owner. The furnace, also known as Curtin Furnace, made cold blast charcoal pig iron. It was destroyed by fire May 1, 1921 and has not been rebuilt.

EAST END PUDDLE MILL (W. B. Godcharles, Owner), Milton, Pa.

Works at Milton: blt. 1875; rebt. 1899; 5 single and 9 double puddling fur.; 1 rotary squeezer; 20" 3-h. 1-st. muck mill. Fuel, coal. For sale or for lease.

Product: muck bar; annual cap., 15,000 tons.

EAST JORDAN FURNACE CO., East Jordan, Mich.

Inc. Nov. 24, 1909 in Michigan. Capital stock: com. auth. and issued \$225,000.

W. S. Shaw, P.; at Boyne City, Mich. C. G. Saunders, V. P.; at Petoskey, Mich. A. Cameron, T. & G. M.; at 616 South Michigan Ave., Chicago, Ill. Walter Cook, Sec. & P. A.; at East Jordan, Mich.

Sales agent: Superior Charcoal Iron Co., Grand Rapids, Mich.

Brand: Jordan (charcoal pig iron).

East Jordan Furnace, East Jordan: 1 stack, 60' x 10', blt. 1907-09, f. o. Jan. 17, 1910; 2 fire brick stoves, 60' x 14'; 2 steam blowing eng. (10,950 cfm.); 6 water-tube boilers, 1,500 H. P. Charcoal: Lake ore.

Product: warm blast charcoal pig iron (AA Scotch to No. 6), annual cap., 20,000 tons.

EASTERN ROLLING MILL CO. (The), P. O. Box 1113, Baltimore, Md.

Inc. June 26, 1919 in Maryland. Capital stock: com., no par value, auth. 60,000 shares, issued 30,000 shares; pref. 8% cum. auth. \$5,000,000, issued \$3,000,000.

J. M. Jones, P. & G. M.; L. J. Jones, Sec. & P. A.; J. A. Downey, T.; C. A. Pennock, M.; J. E. Cook, A. M.; A. J. Hazlett, S. M.; at Baltimore. C. E. F. Clarke, V. P.; at 40 Wall St., New York, N. Y. Works at Baltimore St. and Rolling Mill Ave., Baltimore: blt. 1919-20, f. o. May 17, 1920; 12 sheet and 12 pair fur.; 12 hot black sheet mills (30" dia. by 34" to 64"); 20 stands cold rolls (26" x 52" to 66") 4 stands on hot mill train, 16 stands on cold mill train; 16 double box annealing fur.; 4 Mesta pickling mach.

Product: black sheets to 52" wide, 10 to 26 gauge; automobile sheets, enameling stock; annual cap., 60,000 tons.

EASTERN STEEL CO. (The), 458 Peacock St., Pottsville, Pa.

Edward L. Herndon, Receiver.

Inc. Jan. 8, 1903 in Pennsylvania. Capital stock: com., par value \$100, auth. \$4,700,000, issued \$4,000,000; pref. 7% cum. auth. \$4,700,000, issued \$2,200,000; bonds, \$1,869,000.

James A. Burden, 1 V. P.; August Heckscher, 2 V. P.; W. H. A. Austin, Sec.; at 50 East 42nd St., New York, N. Y. Edward L. Herndon, T.; Guy N. Jones, A.; J. A. Hilton, Supt. Steel Plant; at Pottsville, Pa.

Sales offices:

New York, N. Y., W. H. A. Austin, 50 East 42nd St.

Philadelphia, Pa., Frank W. Jones, Pennsylvania Bldg.

Brand: Warwick (pig iron).

Warwick Furnaces, Pottstown, Pa. (leased; owned by Warwick Iron & Steel Co.): 2 stacks; No. 1 (formerly "A" Furnace) blt. 1910, rebt. 1919-20, relined 1925, 100' x 20' 5"; No. 2, blt. 1900-01, rebt. 1917, relined Sept. 1919, blown in Oct. 2, 1919, 100' x 22'; old No. 1 Furnace, blt. 1875 was abandoned and dismantled in April, 1919; 8 stoves (4 Roberts 3-pass 70' x 20', 4 Cowper-Roberts 2-pass 100' x 22'; 3 Allis Chalmers, steeple type, cross compound steam blowing eng. (67,800 cfm.) 16 to 25 lb. rated pressure; 15 Sterling and Rust water-tube boilers, 4,600 H. P.; 3 Heyl & Patterson pig casting mach. (2 double-strand, 1 single-strand); 1 Dwight & Lloyd sintering plant for residuum, annual cap., 75,000 tons. Conn. coke: various ores. Gray iron foundry for own use. Product: basic and foundry pig iron, annual cap., 346,750 tons. Furnaces returned to owner, Feb. 6, 1926, see Appendix.

Eastern Steel Co. Plant, Pottsville: blt. 1852, last rebt. 1902; O. H.

added 1890, rebld. 1902-04; 6 B. O. H. fur. (two 80-ton, four 50-ton); O. H. fuel, pulv. coal and oil; four 1-hole soaking pits, fuel prod. gas; 5 heat. fur. (3 cont., pulv. coal-fired; two 6-d. regenerative, prod. gas-fired); 44" 2-h. 1-st. blooming, 28" 3-h. 4-st. structural, 19" 3-h. 3-st. and 12" 3-h. 3-st. merchant mills. Product: ingots, billets and structural shapes, annual cap., 200,000 tons ingots, 125,000 tons blooms and billets, 180,000 tons structural shapes.

EASTERN STEEL CASTING CO., 30 Kemble St., Boston, Mass.

Org. Aug., 1905, not incorporated.

John W. Johnson, Proprietor and Manager.

Works at 30 Kemble St., Boston: blt. 1910; three 8-pot crucible fur. Fuel, crude oil.

Product: steel castings for sale, annual cap., 600 tons. Alloy steel castings (nickel, chrome).

EASTERN STEEL CASTINGS, Avenue L & Edward St., Newark, N. J.

Inc. Nov. 21, 1922 in New Jersey. Capital stock: com., no par value, auth. 30,000 shares, issued 29,991 shares; pref. 7% cum. auth. \$150,000, issued \$144,400; bonds, \$500,000.

Wm. D. Sargent, P. & T.; E. F. Miltenberger, V. P.; J. J. O'Brien, Sec. & A. T.

Works at Ave. L & Edward St., Newark: blt. 1923; 1 A. O. H. fur. (7-ton); f. o. July 10, 1923; 1 Moore electric fur. (4,000-lb); f. o. May 17, 1923. Fuel in O. H., oil. Electric power purchased.

Product: steel castings for sale, annual cap., 10,000 tons (5,000 tons A. O. H., 5,000 tons electric). Steel pressure castings.

ECKELS-NYE STEEL CO., Syracuse, N. Y.

Inc. Mar., 1899 in New York. Capital stock: com., par value \$100, auth. and issued \$150,000.

Philip Eckel, P., G. M. & P. A.; Frank Eckel, V. P.; Jacob E. Eckel, G. S.; Frank M. Sears, Sec., T., & G. S. M.

Sales offices: John W. Moon, 1420 Chestnut St., Philadelphia, Pa.; M. A. Dowling, 112 Canal St., Boston, Mass.; and main office, Syracuse, N. Y.

Works at Syracuse: blt. and f. o. 1899: two 4-d. bit. coal-fired heat. fur.; 12" 3-h. 4-st. rerolling and rail splitting mill.

Product: merchant bars and light bedstead angles from rail stock, annual cap., 12,000 tons.

EDDYSTONE STEEL CO., Crum Lynne, Pa.

Inc. Apr. 11, 1916 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$200,000.

John E. Sullivan, P. & G. M.; John B. Mosbrook, Sec., T. & P. A.

Works at Crum Lynne: blt. 1887-88, rebld. 1901; 1 B. O. H. (15-ton)

added 1916, f. o. Dec. 1, 1916, not operated at present, annual cap. 10,000 tons; 4 coal-fired heat. fur. (three 2-d., one 3-d.); 22" 2-h. 3-st. bar mill; 2 hot black sheet mills (one 24" x 60" 3-h., one 24" x 60" 2-h.); 1 cont. blue annealing fur.

Product: blue annealed sheets, annual cap., 30,000 tons.

EDGAR ZINC CO., 910 Boatmen's Bank Bldg., 314 North Broadway, St. Louis, Mo.

Inc. July 9, 1898, in Missouri. Subsidiary of United States Steel Corporation.

A: S. McMillan, P.; John Davis, Sec. & T.; L. B. Schneider, A.; at St. Louis. J. S. Keefe, V. P.; at 208 South La Salle St., Chicago, Ill. G. W. Whipple, G. S.; at Cherryvale, Kansas.

Brand: Edgar (spelter).

Cherryvale Works, Cherryvale, Kansas: 4,920 retorts.

Product: spelter (slab zinc), annual cap., 27,000 net tons.

EDGEWATER STEEL CO., Pittsburgh, Pa.

Inc. Oct. 1, 1916 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$2,357,500.

Frank B. Bell, P.; at Pittsburgh. W. V. D. Wright, V. P. at Chicago, Ill. J. H. Baily, Sec.; John Henderson, T.; M. A. Smith, G. M.; R. C. Boak, G. S.; W. A. McKean, P. A.; at Oakmont, Pa.

Sales offices:

Atlanta, Ga., E. A. Thornwell, 1513 Candler Bldg.

Baltimore, Md., M. A. Carlton, 1414 Munsey Bldg.

Boston, Mass., Sherburne & Co., 53 Oliver St.

Chicago, Ill., A. J. Couse, 1335 Peoples Gas Bldg.

Louisville, Ky., M. S. Simpson, 1401 Starks Bldg.

New York, N. Y., Scott Donahue, Grand Central Terminal Bldg.

Philadelphia, Pa., J. H. Perry, Jr., 320 Liberty Bldg.

Portland, Ore., Hickok & Hickok, 609 Upshur St.

St. Louis, Mo., H. J. Tierney, F-19 Railway Exchange Bldg.

St. Paul, Minn., Rank & Goodell, 906 Merchants Bank Bldg.

San Francisco, Calif., Hickok & Hickok, 489 Bryant St.

Seattle, Wash., Hickok & Hickok, 910 First Ave. South.

Washington, D. C., L. O. Cameron, 732 Munsey Bldg.

Trade Mark: E in circle.

Works at Oakmont, Pa.: blt. 1915, f. o. Dec. 1, 1915; 2 B. O. H. fur. (75-ton); 2 A. O. H. fur. (one 35-ton, one 25-ton); fuel in O. H. prod. gas, 4 R. D. Wood gas prod.; 6 heat. fur. oil-fired (three 4-d., one 5-d. heating, 2 preheating); 2 special mills for rolling steel wheels and locomotive tires; 4 hyd. forging presses (3,000-ton and 6,000-ton, for tires and wheels; 1,000-ton and 2,000-ton for general forgings). Steel Casting Dept., not operating.

Product: steel ingots; locomotive tires, rolled steel wheels, steel tired wheels, rolled steel rings for mining and crushing machinery.

Annual cap., 118,000 tons ingots (85,000 tons B. O. H., 33,000 tons A. O. H.); 45,000 tons tires, steel wheels and forged products.

EDWARDS, E. T., 666 Locust St., Columbia, Pa.

East End Mill, Columbia: blt. 1893-94, f. o. Sept., 1894; three 3-d. coal-fired heat. fur.; 18" 2-h. 2-st. breakdown, 12" 3-h. 5-st. finishing mill. Product: merchant bars, annual cap., 12,000 tons. Union St. Mill, Columbia: f. o. July 13, 1886, rebt. 1917; 14 double puddling fur.; 1 squeezer; two 4-d. coal-fired heat. fur.; 18" 3-h. 2-st. puddle; 16" 3-h. 1-st. roughing, 9" 3-h. 6-st. finishing mill. Product: muck bar, merchant and concrete bars, annual cap., 15,000 tons muck bar, 20,000 tons merchant bars, etc.

Eichleay, J. P. & W. B., Pittsburgh, Pa., purchased in 1919 the rolling mill at Hays Station, Allegheny Co., Pa. formerly owned by Monongahela Iron & Steel Co. which was controlled by Carter Iron Co. Anchor Iron & Steel Co. was formed to take over this property. The mill has been idle since its purchase in 1919.

Electric Alloy Steel Co. (The), Youngstown, Ohio acquired June 15, 1920 the Charleroi Works, Charleroi, Pa. of Universal Steel Co. Construction of a second plant at Niles, Ohio was planned in 1920 but the project was abandoned. On October 2, 1922 The Electric Alloy Steel Co. was merged with Atlas Crucible Steel Co. in a new company known as The Atlas Steel Corporation, Dunkirk, N. Y.

Electric Foundry & Engineering Co., Tacony & Bleigh Sts., Holmesburg, Philadelphia, Pa. installed in 1922 one Heroult electric furnace (1-ton) for manufacture of steel castings. Steel castings were first made Dec. 26, 1922 and the plant was operated until July, 1923 when operation ceased. Company out of business, furnace sold, electric equipment still intact in plant.

Electric Manganese Steel Co., Frush Valley, Reading, Pa., corporate title changed May 20, 1925 to Empire Steel Casting Co.

Electric Reduction Co., Ltd., Buckingham, P. Q., Canada. Company manufactures chemicals by electrolytic and electrothermic processes and produces ferro-phosphorus as a by-product.

Electric Steel Co., Chicago, Ill. Name changed to Nugent Steel Castings Co. April, 1923.

Electric Steel Co. of Indiana, Indianapolis, Ind. was acquired by Electric Steel Castings Co., Indianapolis, Ind., June 1, 1922.

Electric Steel & Forge Co., Cleveland, Ohio. Receiver appointed Mar. 17, 1922. Works at 6800 Grant Ave., Cleveland were sold Dec. 1, 1922 to The Hunter Crucible Steel Co.

Electric Steel & Metals Co. (The), Ltd., Welland, Ont., Canada, built plant at Welland in 1913-14, f. o. Dec., 1914 for manufacture of steel castings and forging ingots. Equipment consisted of two Heroult electric fur. (6-ton). Plant was sold in April, 1922, to The Welland Alloy Steel Corporation but by reason of default on part of purchasers reverted to The Electric Steel & Metals Co., Ltd., which company is now being liquidated by Chartered Trust & Executor Co., 46 King St. West, Toronto, Ont., Canada.

ELECTRIC STEEL CASTINGS CO., P. O. Box 1096, Indianapolis, Ind.

Inc. Nov. 30, 1920 in Indiana. Capital stock: com., par value \$100, auth. \$50,000, issued \$43,400.

Hugh M. Love, P.; P. J. McNamara, V. P.; T. A. Elder, Sec. & P. A.; Hugh McK. Landon, T.; M. S. Spencer, G. M.; K. Smith, G. S. M.

Sales office: W. W. Pettis Co., 1st Natl. Bank Bldg., Cincinnati, Ohio.

Works at Speedway, Indianapolis, Ind.: blt. 1914-15, f. o. May, 1915, 1 Heroult electric fur. (3-ton). (Electric Steel Co. of Indiana, to June 1, 1922).

Product: small steel castings for sale, annual cap., 2,500 tons.

ELECTRIC STEEL CASTINGS CO., Turners Falls, Mass.

Olaf Hoff, Jr., P. & T.

Works at Turners Falls, Mass. (leased; owned by Electric Steel Products Co.): blt. 1921, f. o. Feb. 25, 1921; 1 Greaves Etchells electric fur. (1-ton).

Product: steel castings for sale, annual cap., 1,000 tons.

ELECTRIC STEEL FOUNDRY, 24th & York Sts., Portland, Ore.

Inc. Sept., 1913, in Oregon.

C. F. Swigert, P.; C. F. Swigert, Jr., V. P.; George F. Schott, Sec.; Newman Ward, G. S.; E. G. Swigert, G. S. M.; Herman Cohn, P. A.

Sales offices:

Salt Lake City, Utah, National Equipment Co.

Seattle, Wash.

Spokane, Wash., Union Iron Works.

Wallace, Idaho, Coeur d'Alene Hardware & Fdy. Co.

Brand: Elxteel (castings).

Works at 24th & York Sts., Portland: blt. 1907, electric fur. added and f. o. Mar. 5, 1914; 2 electric fur. (one 3-ton Moore, one 2-ton own type).

Product: steel castings for sale, annual cap., 6,000 tons. Alloy steel castings (manganese, chrome, nickel).

Electric Steel Products Co., Turners Falls, Mass., built steel foundry in 1921 at Turners Falls and leased same in Jan., 1924 to Electric Steel Castings Co., Turners Falls.

Electro Foundries, Ltd., Orillia, Ont., Canada. Plant destroyed by fire Dec. 4, 1920 and not rebuilt. Company no longer in existence.

ELECTRO METALLURGICAL CO., 30 East 42nd St., New York, N. Y.

Inc. Aug. 29, 1906 in West Virginia.

Benjamin O'Shea, P.; F. M. Becket, V. P.; W. J. Knapp, V. P.; E. S. Whitney, Sec.; C. T. Ayres, T. & G. M.

Brand: ELECTROMET (ferro alloys and other electro-metallurgical products). Company manufactures high and low carbon ferro-chrome, ferro-silicon in several grades, other ferro-alloys and non-ferrous alloys.

Niagara Works, Niagara Falls, N. Y.: ferro-alloys first made 1906; special design electric furnaces. Hydro-electric power from Niagara Falls Power Co. Product: high and low carbon ferro-chrome, ferro-silicon, and other ferrous and non-ferrous alloys.

Kanawha Works, Glen Ferris, W. Va.: ferro-alloys first made 1907; special design electric furnaces. Hydro-electric power from own plant. Product: high carbon ferro-chrome.

Virginia Works, Holcomb Rock, Va.: ferro-alloys first made 1912; special design electric furnaces. Hydro-electric power from own plant. Product: high carbon ferro-chrome.

ELECTRO METALLURGICAL CO. OF CANADA, Ltd., Canada Life Bldg., Toronto, Ont., Canada.

Inc. Dec. 7, 1922 in Dominion of Canada.

Benjamin O'Shea, P.; A. C. Cornell, Sec.; C. T. Ayres, T. & G. M.; at 30 East 42nd St., New York, N. Y. Leighton McCarthy, V. P. at Canada Life Bldg., Toronto, Ont. Walter Gaston, V. P. at Welland, Ont.

Welland Works, Welland, Ont.; blt. 1907, f. o. Nov. 1907; special design electric furnaces. Hydro-electric power from Hydro Electric Power Commission.

Product: ferro-silicon (15% and 50%); ferro-manganese; carbon electrodes.

Electro Metals, Ltd., Welland, Ont., Canada was acquired in January, 1923 by Electro Metallurgical Company of Canada, Ltd.

ELECTRO STEEL CO., Inc. (The), Jones Bldg., Pittsburgh, Pa.

Inc. 1910 in New Jersey.

Charles R. Bryson, P. & G. M.; F. E. Bryson, Sec. & T.

Trade mark "Gysinge Electro Steel."

Works at Pittsburgh: blt. 1904; f. o. 1904; Kjellen electric fur.

Product: steel ingots, castings and high speed steel; annual cap., 1,500 tons.

Ella Furnace Co. (The), Pittsburgh, Pa., owning and operating Ella Furnace, West Middlesex, Pa., was acquired by Reliance Coke & Furnace Co., April 1, 1922.

EL PASO FOUNDRY & MACHINE CO., 1800 East San Antonio St., El Paso, Texas.

Inc. 1890 in Texas. Capital stock: com. auth. \$300,000, issued \$288,500; bonds \$40,000.

W. N. Small, P. & G. M.; W. D. Small, V. P. & T.; R. H. Carrington, Sec. & P. A.; W. C. Beatty, G. S.

Works at El Paso: blt. 1907, f. o. Oct. 23, 1907: 2 side-blown converters (3-ton); 2 cupolas. Gray iron and semi-steel foundry, annual cap., 9,000 tons. Fuel, coke and oil. Forge shop: 2 hammers (1,000 and 3,000-lb.). Structural and plate shop.

Product: steel castings for sale and own use, annual cap., 500 tons; railroad and machinery castings; structural steel, tanks and mining machinery.

ELYRIA IRON & STEEL CO. (The), 232 East 131st St., Cleveland, Ohio.

Inc. Aug., 1902 in Ohio. Capital stock: com. auth. \$1,000,000, issued \$999,900; pref. 7% cum. auth. \$500,000, outstanding \$399,900; bonds \$30,000.

Hugh B. Wick, P.; Myron A. Wick, V. P.; George F. White, Sec. & T.; C. D. Marshall, A.; W. T. Bentz, G. S. M.; E. Falk, P. A.; at Cleveland. William West, G. S.; at Elyria, Ohio.

Works at Elyria, Ohio: blt. 1902-03, f. o. 1903; rolling mills, machine shop, cold rolling mills, annealing, pickling and galvanizing depts. Product: tie plates, light structural shapes, skelp, hot and cold rolled strip, annual cap., 50,000 tons.

Works at 232 East 131st St., Cleveland: blt. 1915. Product: electrically welded tubing.

Emery Steel Castings Co., Baltimore, Md. Works at 210 North Garrison Lane, Baltimore, were operated until July 1, 1920, when the lease was given up. The crucible steel furnaces were dismantled in 1921. A new plant was built in 1920 at South Charles St. and B. & O. R.R., Baltimore with 1 Moore electric furnace (1½-ton). Company went into hands of receiver in Nov. 1921. The electric furnace was sold and removed to St. Louis in 1922.

Empire Rolling Mill Co. (The), Cleveland, Ohio was acquired in Sept., 1925 by the Empire Steel Co.

EMPIRE STEEL CO. (The), Bessemer Ave. at Penna. R.R., Cleveland, Ohio.

Inc. Sept., 1925 in Ohio. Capital stock: com., no par value,

auth. 6,000 shares; pref. 7% cum. auth. \$500,000; bonds \$300,000. A. W. Wheatley, P. & T. at Lima, Ohio. B. B. Jack, V. P. & G. M.; J. E. Anderson, Sec. & A.; William L. Howard, G. S.; Glen D. East, S. M.; J. R. Gaub, P. A.; at Cleveland.

Works at Bessemer Ave. and Penna. R.R., Cleveland: blt. 1900, f. o. Dec. 15, 1900; puddle mill and bar mill dismantled in 1924; 4 sheet, 4 pair and 2 comb. sheet and pair fur.; 6 hot black sheet mills (28" x 32" to 48"); 4 stands cold rolls (2 trains, 2-st. on each train) 26" x 48" and 56"; 2 double box annealing fur.; 1 plunger pickling mach.; 2 galvanizing pots. Limits of size and gauge of black sheets rolled: 14 and 16 Ga. 20" to 40" x 120", 17 and 20 Ga. 24" to 36" x 144" and 24" to 40" x 120", 21 to 28 Ga. 20" to 36" x 144", 20 to 30 Ga. to 30" x 144".

Product: black sheets, galvanized sheets, flat and corrugated, blue annealed sheets; annual cap., 36,000 tons black sheets; 15,000 tons galvanized sheets, 10,000 tons blue annealed sheets. Japanizing sheets, single and full pickled tack plate.

Empire Steel & Iron Co., Catasauqua. A controlling interest in this company was acquired in April, 1922 by Replogle Steel Co. Its plants are described under Replogle Steel Co. Crane Furnace, Catasauqua, formerly owned and operated by Crane Iron Works, a subsidiary, and Oxford Furnace, Oxford, N. J., owned and operated directly, are now operated by Replogle Steel Co. Old No. 1 Furnace at Crane Iron Works, Catasauqua was sold in Dec., 1922 to H. Sofranscy Co. and dismantled. Macungie Furnace, Macungie, Pa., was sold Dec. 27, 1922 to East Penn Foundry Co., Macungie, and dismantled. Topton Furnace, Topton, Pa., was sold Nov. 30, 1922 to H. Sofranscy Co. See under that head.

EMPIRE STEEL CASTING CO., Frush Valley, Reading, Pa.

Inc. Aug. 17, 1921 in Pennsylvania. Capital stock: com. auth. \$150,000, issued \$100,000.

R. A. Houck, P.; S. McClure, V. P.; K. R. Beidler, Sec.; Fred Hodges, Jr., T.; Alvin Schmehl, G. M.

Works at Frush Valley, Temple, Pa.: blt. 1921, f. o. Dec. 1921; 1 Lectromelt electric fur. (1½-ton).

Product: steel castings, annual cap., 1,200 tons.

EMPORIUM IRON CO., Emporium, Pa.

Inc. 1912 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$100,000; bonds \$539,000.

A. Brady, P.; E. F. Brady, V. P.; E. D. White, Sec.; W. G. Bair, T. Sales agents: Rogers Brown & Crocker Brothers, Inc., 21 East 40th St., New York, N. Y.

Brand: Emporium—branded EMPICO (foundry pig iron).

Emporium Furnace, Emporium, Pa.: 1 stack, 75' x 17', blt. 1887-88, rebt. 1921-22 and blown in Dec. 4, 1922; 3 Siemens-Cowper stoves, 70' x 18'; 2 steam blowing eng. (Reading Iron, vertical) 20,000 cfm., 12 lbs. rated pressure; 6 water-tube boilers (4 Heine, 2 Keeler) 1,500 H. P.; 1 Heyl & Patterson single-strand pig casting mach. Conn. coke: Lake ore. Iron foundry for own use (300 tons annual capacity). *

Product: foundry pig iron, annual cap., 60,000 tons.

ENTERPRISE FOUNDRY CO., 2902 19th St., San Francisco, Calif.

Inc. Dec. 8, 1908 in California. Capital stock: com., par value \$100, auth. \$850,000, issued \$586,200.

Charles Hoehn, P. & G. M.; A. J. Martens, V. P., T. & P. A.; J. W. Heaney, Sec.

Company has plants at 2902 19th St., San Francisco; 320 Fremont St., San Francisco; South San Francisco and Richmond, Calif. Make gray iron and brass castings for own use and for sale, annual cap., 5,000 tons gray iron, 1,000 tons semi-steel, 500 tons brass castings. Steel foundry at South San Francisco.

Works at South San Francisco: blt. 1909, f. o. June 2, 1909; 1 B. O. H. fur. (15-ton) fuel, oil, 2 single-phase electric fur. (1-ton).

Product: forging ingots, annual cap., 5,000 tons (B. O. H.); steel castings for own use and for sale, annual cap., 6,000 tons (5,000 tons B. O. H., 1,000 tons electric); heat-resisting metal for ceramic and heat treating furnaces.

Erie Crucible Steel Co., Erie, Pa. Company in bankruptcy in 1921, ceased operations and went out of business. Crucible steel furnaces were dismantled in Jan., 1923. Four hammers (600, 800, 1,500 and 3,000-lb.) are still in the plant and are for sale.

ERIE FORGE COMPANY, Erie, Pa.

Inc. May 1, 1903 in Pennsylvania. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$642,000; bonds \$526,000.

R. F. Devine, P. & G. M.; H. E. Fish, V. P.; H. C. McLaughlin, Sec.; G. W. J. Stout, T. & G. S.; W. J. Franklin, A.; E. H. Lang, G. S. M.; J. F. Roehl, Acting P. A.

Sales offices:

Buffalo, N. Y., V. B. Schupp, 1010 Ellicott Sq. Bldg.
Cincinnati, Ohio, J. L. Adams, 1020 Union Trust Bldg.
Cleveland, Ohio, E. Francis, 974 Rockefeller Bldg.
Detroit, Mich., Sidney Norwood, 4-129 General Motors Bldg.
Milwaukee, Wis., Williams, Cole & Wolff, 610 Sycamore St.
New York, N. Y., J. E. McKee, Room 260, 50 Church St.
New York, N. Y., P. P. Williams, Room 260, 50 Church St.
Pittsburgh, Pa., Frank Ryman, 1301 Commonwealth Bldg.
St. Louis, Mo., O. A. Schilling, 1626 Chemical Bldg.
San Francisco, Calif., Edwin Forrest, 75 Fremont St.

Works at Erie, Pa.: blt. and f. o. 1873, first steel May 17, 1909; 1 B. O. H. fur. (50-ton); 2 A. O. H. fur. (20-ton); fuel, oil; 6 Bradley gas prod.; 2 modified Bessemer converters (2-ton); 1 cupola.

Product: carbon and alloy steel ingots for own use and for sale, annual cap., 30,000 tons (B. O. H.); steel castings for sale, 29,500 tons (27,500 A. O. H., 2,000 converter); alloy steel castings.

ERIE FORGE & STEEL CO., Erie, Pa.

Inc. Aug. 22, 1912 in Pennsylvania. Subsidiary of Erie Forge Co. Capital stock: com., par value \$100, issued \$10,000.

R. F. Devine, P. & G. M.; G. W. J. Stout, V. P. & G. S.; R. F. Devine, Jr., Sec. & T.; Wm. J. Franklin, A.; E. H. Lang, G. S. M.; J. F. Roehl, Acting P. A.

Works at Erie, Pa.: blt. 1917-18; 2 B. O. H. fur. (60-ton) fuel, oil; 1 steam hammer (12,000-lb.); 2 steam hydr. presses (1,500 and 2,000-ton).

Product: steel ingots, annual cap., 75,000 tons; alloy steel ingots (nickel, chrome, vanadium); steel forgings of all kinds, 40,000 tons.

Evansville Tool Works, Evansville, Ind. have discontinued manufacture of steel castings and dismantled the steel foundry in 1920.

Everett Steel Co., Everett, Wash. sold plant at Everett, January 31, 1925 to Tennent Steel Casting Co.

EVERETT-SAXTON CO., Everett, Bedford Co., Pa.

Banks Hudson, G. M.

Sales office: Franklin Trust Bldg., Philadelphia, Pa.

Brands: Everett-Saxton (pig iron); Ashcom (limestone).

Earlston Furnace, Everett, Pa.; 1 stack, 82' x 20', blt. 1883-84, rebld. 1909-10, relined 1922; 4 two-pass stoves (three 85' x 18' 6", one 70' x 15'); 2 turbo-blowers, 70,000 cfm., 22 lbs. rated pressure; 7 water-tube boilers (4 Sterling, 3 Wheeler) and 4 Keller return tubular boilers, 5,200 H. P. furnish power also to sintering plant; 1 Pittsburgh Coal Washer Co. single-strand pig casting mach.; Greenawalt sintering plant for flue dust and pyrites residuum, annual cap., 36,000 tons. Beehive coke: New York and New Jersey magnetites, Lake and foreign ore. (Joseph E. Thropp and Joseph E. Thropp Co., Inc. to May, 1925.)

Product: foundry, forge, basic and low-phosphorus pig iron, annual cap., 90,000 tons.

Company owns coal mines at Kearney, Gordon, Melrose, Miller and Saxmont, Pa., annual cap., 360,000 tons, also 440 beehive coke ovens at Kearney (170), Saxton (180) and Melrose (90) and 90 Mitchell ovens (80% completed) at Gordon; limestone quarry at Ashcom, Pa., annual cap., 150,000 tons.

EWALD IRON CO., 231 West Main St., Louisville, Ky.

Inc. 1915 in Delaware. Capital stock: com., par value \$100, auth. and issued \$1,500,000; pref. 7% cum. auth. \$100,000, issued \$58,000.

R. Baylor Hickman, P.; G. O. Boomer, V. P. & T.; S. E. Frazee, V. P. & Sec.; B. O. Hickman, V. P.; C. A. Borts, G. S.; at Louisville.

Sales offices:

Chicago, Ill., Railway Exchange Bldg.

New York, N. Y., 33 West 42nd St.

St. Paul, Minn., Pioneer Press Bldg.

Brands: Tennessee Charcoal Bloom (staybolt iron); Laurel (engine bolt iron); Hammered Tennessee Charcoal Bloom (iron billets).

Works at 231 West Main St., Louisville; blt. 1869; 14 single puddling fur.; 1 rotary squeezer; 6 coal-fired heat. fur. (five 2-d., one 3-d.); 18" 2-h. 2-st. muck, 16" 2-h. 2-st. bar, 16" 2-h. 1-st. universal, 8" 3-h. 4-st. guide. Charcoal forge; 8 knobbling, 8 forge and 8 run-out fires; 2 steam hammers (one 5-ton, one 10-ton). Fuel, charcoal.

Product: engine bolt iron, staybolt iron, annual cap., 15,000 tons; charcoal blooms, billets and hammered bars for sale, annual cap., 1,000 tons.

Exolon Company (The), Thorold, Ont., Canada.

Works at Thorold, Ont.: f. o. 1915; electric furnaces for manufacture of ferro-silicon. Electric power from Toronto Power Co. No production of ferro-silicon since 1921.

Product: ferro-silicon (by-product in manufacture of abrasives), annual cap., 2,000 tons.

Fahnestock Manufacturing Co. (The), Avonmore, Pa.

Plant sold by referee in bankruptcy in April, 1923 to The National Roll & Foundry Co., Avonmore, Pa. Sale confirmed by court and last named company took possession Sept. 18, 1923. Plant now known as Steel Casting Dept., The National Roll & Foundry Co.

FAIR (S.) & SON, Inc., Hamilton and Madison Sts., Saginaw, Mich.

Inc. Dec., 1909 in Michigan. Capital stock: com., par value \$10, auth. and issued \$75,000.

Louis G. Fair, P., T., G. M. & P. A.; Ernest A. Snow, V. P. & Sec.; A. M. Zoeller, A. Sec.; Lave Milbaugh, G. S.; Arthur A. Floyd, G. S. M.

Sales office: Detroit, Mich., Lloyd N. Allen, 604 Lincoln Bldg.

Works at Hamilton St., Saginaw: blt. 1909; f. o. Mar., 1909; 2 Snyder electric fur. (1,500-lb.); first electric steel, Sept. 10, 1915.

Product: electric steel castings for sale; annual cap., 3,500 tons.

Steel castings for automobiles and trucks, annealing pots and general castings.

FAIRBANKS STEAM SHOVEL CO. (The), Marion, Ohio.

Works at Marion: steel foundry, installed 1919, f. o. May, 1919; 1 electric fur. (3-ton).

Product: steel castings for own use, annual cap., 2,000 tons.

FALCON STEEL CO. (The), Warren Ave. Extension, Niles, Ohio.

Inc. June 7, 1919 in Ohio. Capital stock: com., par value \$100, auth. \$1,500,000, issued \$1,356,300; pref. 7% cum. auth. and issued \$1,000,000.

Lloyd Booth, P. & T.; Paul Wick, V. P. & Sec.; Charles W. Morse, A.; W. W. Lewis, G. M.; W. T. Brangham, G. S. M.; E. L. McNamara, P. A.

Sales offices:

Boston, Mass., 723 Little Bldg., 80 Boylston St.

Buffalo, N. Y., Brace-Mueller-Huntley Co., Marine Trust Bldg.

Chicago, Ill., 140 South Dearborn St.

Cleveland, Ohio, Frank H. Grace & Co., 602 Hunkin-Conkey Bldg.

Detroit, Mich., 2306 Dime Bank Bldg.

New York, N. Y., 52 Vanderbilt Ave.

Philadelphia, Pa., S. W. Sargent & Co., 1600 Walnut St.

St. Louis, Mo., Smith & Edwards, 411 Olive St.

St. Paul, Minn., Endicott Bldg.

San Francisco, Calif., 421 Call Bldg.

Brand: Falcon.

Works at Niles, Ohio: blt. 1919; f. o. Mar. 1, 1920; 7 sheet and 8 pair fur.; one 30" x 60" 2-h. jobbing plate mill; 7 hot black sheet mills (29" x 36", four 29" x 44", two 29" x 48"); 5 stands cold rolls (36" to 54"); 4 box annealing fur.; 2 blue annealing fur.; 2 plunger pickling mach.; galv. dept. dismantled in 1923.

Product: black sheets, blue annealed sheets, full finished sheets, annual cap., 50,000 tons black sheets, 15,000 tons blue annealed sheets.

FALCON TIN PLATE CO. (The), Niles, Ohio.

Inc. Dec. 16, 1921 in Ohio. Capital stock: com., no par value, auth. and issued 10,000 shares; pref. 8% cum. auth. \$1,000,000, issued \$847,800; bonds \$658,300.

Lloyd Booth, P. & T.; Paul Wick, V. P. & Sec.; W. T. Brangham, G. S. M.; E. L. McNamara, P. A.; at Niles, Ohio. J. F. Buchman, Jr., A.; Charles A. Streb, G. S.; at Canton, Ohio.

Sales offices:

Boston, Mass., John S. Pendleton, 80 Boylston St.

Buffalo, N. Y., Brace, Mueller & Huntley, Inc., 733 Marine Trust Bldg.

Chicago, Ill., F. E. Ernst, 140 South Dearborn St.

Cleveland, Ohio, F. H. Grace & Co., 602 Hunkin-Conkey Bldg.

Detroit, Mich., Paul A. Billings, 2306 Dime Bank Bldg.

New York, N. Y., John S. Pendleton, 52 Vanderbilt Ave.

Philadelphia, Pa., S. W. Sargent & Co., 1600 Walnut St.

St. Louis, Mo., Smith & Edwards, 411 Olive St.

St. Paul, Minn., H. C. McNair Co., Endicott Bldg.

San Francisco, Calif., William Best, Jr., 421 Call Bldg.

Syracuse, N. Y., Brace, Mueller & Huntley, Inc., 502 Keith Bldg.

Brand: Falcon (sheets and tinplates).

Works at Belden Ave., N. E. and Penna. R.R., Canton, Ohio: blt. 1900-01, f. o. 1902; 10 sheet and 9 pair fur.; 9 hot black plate (tin) mills (two 27" x 29", four 27" x 32", three 28" x 36"); 8 stands cold rolls (five 24" x 42", two 24" x 48", one 24" x 54"); 8 box annealing fur.; 2 Mesta pickling mach.; 12 tinning pots for coke tinplates. Roll black plate 14 to 38 gauge, to 30" x 96" (Carnahan Tin Plate & Sheet Co. to January 7, 1922.)

Product: black plate for tinning, annual cap., 32,000 tons; black plate specialties in tin mill sizes; coke tin plates, 720,000 base boxes.

Falk Company (The), Milwaukee, Wis. Name changed to The Falk Corporation in May, 1921.

FALK CORPORATION (The), Foot of 30th St., Milwaukee, Wis.

Inc. 1895 in Wisconsin as The Falk Co., name changed to The Falk Corporation in May, 1921. Capital stock: com., par value

\$100, auth. \$3,500,000, issued \$3,243,450; pref. 7% cum. auth. \$2,500,000, issued \$2,316,750.

Herman W. Falk, P.; Otto H. Falk, 1 V. P.; Harold S. Falk, 2 V. P. & G. M.; Clarence R. Falk, Sec. & T.; Arthur Simonson, G. Foundry Mgr.; Edward P. Connell, P. A.

Sales offices:

Birmingham, Ala., General Machinery Co.

Denver, Colo., Mine & Smelter Supply Co.

Detroit, Mich., C. C. Walsh.

Montreal, Canada, Engineering Equipment Co.

New York, N. Y., M. P. Fillingham, 50 Church St.

Pittsburgh, Pa., Walter O. Beyer.

San Francisco, Calif., C. E. Meyers.

Works at Foot of 30th St., Milwaukee; blt. 1900, f. o. Apr. 7, 1900; 3 A. O. H. fur. (26½-ton) fuel, oil. Brass foundry (2 pots) for own use only.

Product: steel castings for own use and for sale, 1-lb. to 100,000-lb., annual cap., 25,000 tons. Alloy steel castings for own use. Herringbone reduction gears, Falk-Bibby flexible couplings, heavy duty oil engines, contract machine work.

FALLS HOLLOW STAYBOLT CO., Cuyahoga Falls, Ohio.

Not incorporated.

C. M. Walsh, G. M.; G. H. Mansfield, G. S. M.; H. I. Dyke, P. A.

Sales offices:

Chicago, G. A. Murphy Co., Railway Exchange.

Denver, Colo., Hugh U. Mudge.

Minneapolis, Minn., W. F. Klingel, Metropolitan Life Bldg.

New Orleans, La., Woodward, Wight & Co.

New York, N. Y., Chas. Hubbard & Co., 17 Battery Place.

St. Louis, Mo., W. Harding Davis, 214 North 6th St.

Works at 21 E. Portage St., Cuyahoga Falls: blt. 1865; rebt. 1884; remod. 1903; 4 oil heat. fur. (three 2-d., one 3-d.); 22" 2-h. 1-st. Belgian; 16" 3-h. 4-st. skelp, 10" 2-h. 6-st. bar. Fuel, oil.

Product: hollow and solid staybolt iron bars; annual cap., 3,000 tons.

FARRELL-CHEEK STEEL FOUNDRY CO. (The), P. O. Box 371, Sandusky, Ohio.

Inc. May 1910 in Ohio. Capital stock; com., no par value, auth., 10,000 shares, issue 9,000 shares.

Herbert Farrell, P. & G. M.; John E. Sweet, Sec. & P. A.; R. C. Farrell, T.; H. B. Castleman, A.; T. A. Martin, G. S.; F. F. Pickslay, G. S. M.; at Sandusky. J. O. Cheek, V. P.; at Nashville, Tenn.

Works at Sandusky; blt. 1910, f. o. Oct. 17, 1910; 2 Tropenas converters (1-ton); 1 Moore electric fur. (3-ton); 2 cupolas. Fuel, coke and natural gas.

Product: steel castings for sale, annual cap., 6,000 tons (3,000 tons converter, 3,000 tons electric). Alloy steel castings (nickel, chrome, vanadium). Steel castings for automobile parts, machine tool parts, rolling mill, electrical and general machinery castings. Case hardening, carbonizing and annealing boxes.

FEDERAL ALLOY STEEL CORPORATION, Eddystone, Pa.

Inc. Oct. 16, 1922 in Delaware. Capital stock: com., no par value, auth. 120,000 shares, issued 87,219 shares; bonds \$282,000. R. J. Beatty, Ch. & T.; John A. Drain, P.; William G. O'Malley, V. P. & G. S.; George Sutherland, Sec. & P. A.

Sales office: Philadelphia, Pa., Redmond Engineering Co., Drexel Bldg.

Brand: FASCO (bars).

Works at Eddystone: blt. 1918, f. o. Sept., 1918; 1 B. O. H. fur. (50-ton) fuel, oil. Rolling mill added in 1923-24; 20 heat.fur. oil-fired (twelve 2-d., five 3-d., three 4-d.); 18" 3-h. 5-st., 16" 3-h. 1-st., 10" 3-h. 4-st. merchant mills; 1 box annealing fur.; 6 steam hammers (1,500-lb. to 6-ton); 1 forging press (1,500-ton). (Tindel-Morris Co. to Oct. 17, 1922.)

Product: steel ingots, annual cap., 35,000 tons. Alloy steel ingots. Merchant and deformed reinforcing bars, special carbon and alloy bars, annual cap., 60,000 tons. Forged large rounds, blooms, billets, and slabs, annual cap., 30,000 tons.

FEDERAL STEEL FOUNDRY CO., Foot of Reaney St., Chester, Pa.

Inc. June 13, 1906 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$250,000; pref. 6% non-cum. auth. \$250,000, issued \$212,000.

J. Harry Mull, P.; H. B. Taylor, V. P.; George D. Martin, Sec. & T.; Edward C. Geehr, P. A.; at Richmond and Norris Sts., Philadelphia. F. C. Hamilton, G. M.; Alfred G. Rennie, G. S.; Wallace G. Smith, G. S. M.; at Chester.

Sales office: New York, N. Y., William D. Ward, The William Cramp and Sons Ship & Engine Building Co., 100 Broadway.

Works at Chester: blt. 1903-04, f. o. June 27, 1904; 2 B. O. H. fur. (30-ton), fuel, oil. Use low phos. melting stock.

Product: general miscellaneous steel castings for sale up to 50,000-lb., annual cap., 7,500 tons.

FERRO ALLOY CO. (The), 603-608 Symes Bldg., Denver, Colo.

Inc. Sept. 23, 1916 in Colorado. Capital stock: com. auth. \$150,000, issued \$100,000.

Nelson Franklin, V. P.; George A. Stahl, Sec.; Adolph F. Zang, T.

Works at Utah Junction, Colo.: blt. 1916-17; f. o. Mar., 1917; 4 electric fur.; hydro-electric power from the Colorado Power Co., Denver. Idle since early in 1921.

Product: ferro-chrome, ferro-tungsten and ferro-silicon; annual cap., 3,000 tons.

FIRTH-STERLING STEEL CO., Demmler Station, McKeesport, Pa.

Inc. July 11, 1889 in Pennsylvania. Capital stock: com., par value \$100, auth. \$2,500,000, issued \$2,000,000; pref. 7% cum. auth. and issued \$500,000.

Lewis J. Firth, P. & G. M.; Eben B. Clarke, V. P.; at Oliver Bldg., Pittsburgh, Pa. E. D. Gray, Sec.; D. E. Jackman, T. & G. S. M.; L. Gerald Firth, Works M.; H. R. Huemme, P. A.; at McKeesport.

Sales offices:

Boston, D. G. Clark, Mgr., 85 West First St.

Chicago, E. S. Jackman & Co., 710 West Lake St.

Cleveland, E. S. Jackman & Co., 1424 East 25th St.

Detroit, E. S. Jackman & Co., 704 Book Bldg.

Hartford, D. G. Clark, Mgr., 1213 American Industrial Bldg.

Los Angeles, E. S. Jackman & Co., 2154 Santa Fe Ave.

New York, D. G. Clark, Mgr., 312 Hudson St.

Philadelphia, MacFarland & Little, 721 Arch St.

Pittsburgh, 1541 Oliver Bldg.

San Francisco, 163 First St.

Brands: Firth Sterling, S-Less, Blue Chip, Firth-Sterling Special, C. Y. W.

Demmler Works, Demmler Station, McKeesport: est. 1875; three 30-pot crucible fur.; 2 Heroult electric fur. (2½-ton); 1 B. O. H. fur. (5-ton); fuel for crucible fur., prod. gas., 3 Swindell gas prod.; for O. H., oil or gas; 19 heat. fur. coal-fired (three 1-d., seven 2-d., five 3-d., three 4-d., one 5-d.); 12" 3-h. 6-st., 10" 3-h. 7-st., 10" 3-h. 5-st. and 8" 3-h. 5-st. bar mills; 4 box annealing fur.; 5 pipe annealing fur.; 2 electric annealing fur.; 2 hand pickling tanks; 8 steam hammers (1,000 to 12,000-lb.); 2 tilt hammers.

Product: steel ingots, alloy steel ingots (chrome, tungsten, vanadium); annual cap., 12,600 tons (4,200 tons crucible, 5,400 tons electric, 3,000 tons B. O. H.); tool, die and cutlery steels, annual cap., 6,000 tons rolled, 3,000 tons forged products.

FLORIDA MACHINE & FOUNDRY CO., P. O. Box 2541, Jacksonville, Fla.

Inc. July, 1924 in Florida. Capital stock: com., par value \$100, auth. \$500,000, issued \$236,000.

F. G. Russell, P.; F. G. Russell, Jr., V. P., T., G. M. & P. A.; O. M. Smith, Sec.; G. W. Peacock, G. S.; J. R. Hardee, G. S. M.

Company manufactures "Big Jim" locomotives, "Crawford" log skidders, "Crawford" marine attachments.

Works at Jacksonville: blt. 1924, f. o. July, 1924; 1 Moore Lectro-melt electric fur. (1-ton); 1 cupola. Gray iron foundry, annual cap., 2,000 tons. Machine shop.

Product: steel castings for sale, annual cap., 1,500 tons.

Fluid Compressed Steel Co., Keokuk, Iowa. Works at Keokuk, blt. 1919, f. o. Dec. 2, 1919 were sold April 16, 1921 to Keokuk Steel Casting Co.

Foley Steel Co., Slatington, Pa. leased Slatington Rolling Mill from Robert Grant Jan. 1, 1922. Went into bankruptcy in July, 1923. Lease was canceled Oct. 1, 1923 and property sold. Works reverted to owner, Robert Grant.

FOLLANSBEE BROTHERS CO., 3rd & Liberty Aves., Pittsburgh, Pa. Inc. Sept. 6, 1894 in Pennsylvania. Capital stock: com., par value \$100, auth. \$10,000,000, issued \$7,306,500; bonds \$3,800,000. B. G. Follansbee, Ch.; William U. Follansbee, P.; John Follansbee, V. P. & G. M. S.; R. C. Kirk, V. P. & T.; William D. Reid, Sec. & A.; Edgar Masters, A. A.; Charles A. Wilson, A. P.

Sales offices:

Buffalo, N. Y., Edward Harper.

Chicago, Ill., Marcus A. Follansbee, 208 South La Salle St.

Detroit, Mich., H. C. Pletscher, 684 Amsterdam Ave.

Indianapolis, Ind., E. C. Folkening, 321 South Missouri St.

Louisville, Ky., E. G. Campbell, 14th & Broadway.

Memphis, Tenn., Edward Schrader, P. O. Box 2411 De Soto Sta.

Milwaukee, Wis., H. H. Wherry, 31st & Cherry Sts.

Nashville, Tenn., L. K. Notgrass, 110 Second Ave., North.

New York, N. Y., Albert Mathews, 1373 Hudson Terminal Bldg.

Rochester, N. Y., W. B. Slifer, 21 South Ford St.

Brand: Follansbee Forge (steel sheets, tin and terne plates).

Works at Follansbee, W. Va.: blt. 1902-04, f. o. Sept. 6, 1904; 4 B. O. H. fur. (35-ton) fuel, oil; four 3-d. oil-fired ingot heat. fur.; one 8-ton hammer for cogging ingots; 30" 2-h. 1-st. sheet bar mill; 13 comb. sheet and pair fur.; 7 hot black sheet mills (two 28" x 38", one 30" x 38", three 30" x 44", one 30" x 48"); 6 hot black plate (tin) mills (three 28" x 32", three 28" x 36"); 15 stands cold rolls (1 sheet train 5-st. 28" x 60", 1 sheet train 4-st. 24" x 50", 1 tin train 6-st. 24" x 42"); 13 double box annealing fur.; 1 Gray pickling mach.; 2 pickling tanks. Roll black sheets 11 to 30 gauge to 42" x 144"; black plate 14 to 36 gauge, to 32" x 84". Tin and Terne Plate Dept.: blt. 1903-04, f. o. Sept., 1904; 14 tinning sets, 8 for charcoal tinplate, 4 for terne plates, 2 for long ternes. Product: steel ingots, annual cap., 84,000 tons; sheet and tinplate bars, 75,600 tons; hot rolled products, 57,900 tons including 36,200 tons black sheets, 21,700 tons black plate for tinning; sheets for stamping, japaning, etc., polished, planished, automobile and electric sheets; charcoal tinplates, 175,000 base boxes; terne plates, 125,000 base boxes; long terne plates, 11,150 tons.

Works at Toronto, Ohio: blt. 1919-22, first rolled products, Jan. 24, 1922, first steel Sept. 7, 1922; 4 B. O. H. fur. (40-ton) fuel, oil;

four 3-d. oil-fired ingot heat. fur.; one 1,000-ton forging press; 30" 2-h. 1-st. sheet bar mill; 10 sheet and 10 pair fur.; 10 hot black sheet mills (30" x 44"); 10 stands cold rolls; 2 cont. box annealing fur.; 4 Erie pickling mach. Roll black sheets 12 to 30 gauge, to 43" x 144". Product: steel ingots, annual cap., 92,400 tons; sheet bars, 67,000 tons; black sheets, 53,600 tons; sheets for stamping, japanning, etc., automobile and electric sheets.

FORD MOTOR CO., Detroit, Mich.

Inc. 1903 in Michigan; reinc. July 9, 1919 in Delaware.

Edsel B. Ford, P. & T.; P. E. Martin, 1 V. P.; Ernest C. Kanzler, 2 V. P.; B. J. Craig, Sec.; C. E. Sorenson, G. S. Rouge Plant; D. J. Hutchins, Mgr. Sales By-Products; F. H. Diehl, P. A.

Rouge Plant, Springwells, Mich. (P. O. Dearborn, Mich.): 2 stacks, const. begun Feb. 1917; Henry 92' x 22' 9" f. o. May 17, 1920; Benson, 92' x 22' 9", f. o. Oct. 11, 1922; 8 side comb. 2-pass stoves, 110' x 24'; 3 G. E. turbo-blowers, 40,000 cfm. 17 lbs. rated pressure; 1 Heyl & Patterson double-strand pig casting mach.; Greenawalt sintering plant for flue dust and borings, annual cap., 60,000 tons; slag granulating plant, annual cap., 60,000 tons. By-product coke: Lake ores. By-product coke plant, 120 Semet-Solvay coke ovens, annual cap., 600,000 net tons coke. By-product recovery and benzol plant, annual cap., 2,000,000 gals. light oil. Company owns Fordson Coal Co., with coal mines at Stone, Ky.

Product: foundry, malleable and basic pig iron, annual cap., 300,000 tons.

Steel Works & Foundry: 5 Greaves-Etchells electric fur. (one 50-ton, two 10-ton, one 3-ton, one 500-lb.): 4 B. O. H. fur. (100-ton tilting), fuel, coke oven gas, tar and fuel oil and one 600-ton mixer under construction; 31 cupolas; gray iron (375,000 tons annual capacity) and aluminum (500 tons) foundry. Product: steel ingots, annual capacity, 50,000 tons electric steel ingots (250,000 tons B. O. H. under construction): electric steel castings for own use, 5,000 tons.

Rolling Mills, constr. begun in spring, 1925; f. o. Dec., 1925; four 4-hole soaking pits, fuel, oil or coke oven gas; 2 cont. reheating fur., fuel, oil or coke oven gas; 42" 2-h. 4-st. and 32" 2-h. 4-st. continuous blooming and billet mill, to be completed about March, 1926; 14" 2-h. 6-st. roughing and 14" 2-h. 4-st. finishing merchant bar mill completed in December, 1925. Product: merchant bars, annual cap., 210,000 tons.

FORGED STEEL WHEEL CO., Frick Bldg., Pittsburgh, Pa.

Inc. June 20, 1906. Capital stock: com. \$1,000,000; pref. 6% cum. \$750,000.

J. M. Hansen, Ch.; J. F. Drake, P.; C. G. Bacon, V. P.; William Bierman, Sec.

Sales offices:

Baltimore, Md., Continental Bldg.; Chicago, Ill., Fisher Bldg.; New York, N. Y., 120 Broadway.

Works at Butler, Pa.: blt. 1909-10; first steel made Oct. 12, 1910, first slabs rolled Oct. 12, 1910; 10 B. O. H. fur. (60-ton); 34" slabbing mill; 18" bar mill; plate mill. Fuel, natural and producer gas. Machine shop for own use.

Product: steel ingots, annual cap., 360,000 tons; blooms, billets and slabs, 220,000 tons; merchant bars, 100,000 tons; structural shapes, 21,500 tons; universal and sheared plates, 10,000 tons; all for own use. Forged steel car wheels, annual cap., 50,000 tons forgings.

Fort Dodge Culvert & Iron Mills Co., Fort Dodge, Iowa. Name changed in 1921 to Fort Dodge Culvert & Steel Co.

FORT DODGE CULVERT & STEEL CO., Fort Dodge, Iowa.

Inc. 1906 in Iowa. Capital stock: com., par value \$100, auth. \$400,000, issued \$284,000; pref. 7% cum. auth. \$200,000, issued \$74,000; bonds, \$89,000. Formerly Fort Dodge Culvert & Iron Mills Co., name changed in 1921.

C. L. Carter, P. & G. M.; E. M. Flaherty, Sec.; C. W. Gadd, T.; B. S. Smith, A.; E. W. Matthew, G. S.; W. G. Warner, G. S. M. & P. A.; at Fort Dodge, Iowa. C. E. Kitchen, V. P.; at East Chicago, Ind.

Sales office: East 4th St., Sioux City, Iowa.

Works at Fort Dodge: 1 B. O. H. fur. (15-ton) idle since 1919; one 4-d. oil-fired heat. fur.; 16" to 10" 3-h. 5-st. bar mill; first rolled products, Mar. 1, 1919.

Product: merchant and concrete bars, annual cap., 10,000 tons.

FORT PITT STEEL CASTING CO., McKeesport, Pa.

Inc. 1905 in Pennsylvania. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$300,000; pref. 7% cum. auth. and issued \$200,000.

C. S. Koch, P. & G. M.; Albert Curry, V. P. & T.; H. J. Koch, Sec. & G. S. M.; H. H. Nicholson, A. & P. A.

Works at Houghton Ave. and B. & O. R. R., McKeesport: blt. 1905-06, f. o. June 15, 1906; 1 Stoughton converter (4,000-lb.), 1 cupola, not in use, held as reserve unit, annual cap., 6,000 tons; 1 Heroult electric fur. (5-ton).

Product: light steel castings (under 300-lb.) for sale; annual cap., 6,000 tons electric steel castings.

Fort Smith Iron & Steel Mills, Fort Smith, Ark. Works at Arkoma, Oklahoma, were dismantled in November, 1924. Bar mill will be removed and reerected at Oklahoma City.

FORT WAYNE ROLLING MILL CORPORATION (The), Fort Wayne, Ind.

Inc. Jan. 1, 1915 in Indiana. Capital stock: com. auth. \$300,000, issued \$210,000; pref. 7% cum. auth. \$100,000, issued \$50,000.

E. F. Yarnell, P.; H. C. Rockhill, V. P., T. & G. M.; Ira W. Langford, Sec. & A.; J. S. Baldwin, G. S.

Brand: "Wayne Special."

Works at 1st & Graeter Sts., Fort Wayne: blt. 1903; f. o. Dec. 23, 1903; 3 double puddling fur., 5 single busheling fur., one 3-d. pile fur.; four 4-d. heat. fur.; one 6-d. heat. fur.; 20" 3-h. muck, 18" 3-h. bar, 9" 3-h. guide, and 8" 3-h. guide. Fuel, prod. gas and pulverized coal.

Product: merchant bars, bands, etc.; annual cap., 55,000 tons.

FRANKLIN STEEL WORKS, Franklin, Pa.

Owned by the Chicago Railway Equipment Co.

Edward E. Hughes, V. P.; C. F. Mackey, G. M.; at Franklin, Pa.

Sales offices:

Boston, 80 Boylston St.

Cleveland, 1679 Union Trust Bldg.

Detroit, 10 Warren Ave. W. at Woodward.

New York, 52 Vanderbilt Ave.

Works at Franklin: orig. blt. 1902-03; f. o. Aug., 1903; rebilt. after fire, 1914; 3 heat. fur. (one 4-d., 2 cont.); 18" 3-h. 2-st. and 18" 2-h. 1-st. bar; 1 comb. 18" and 12" Belgian with 18" 3-h. 1-st., 12" 3-h. 6-st., and 12" 2-h. 2-st.; 9" 3-h. 3-st. and 9" 2-h. 1-st. bar. Fuel, coke. Brake beam shop; machine shop for own use.

Product: steel bars for reinforced concrete; rounds, squares, small angles, channels, tees, "U" bars, deck sections, shapes for agricultural implements, etc., annual cap., 67,500 tons.

FRICK (H. C.) COKE CO., Carnegie Bldg., Pittsburgh, Pa.

Incorporated March 31, 1903, in Pennsylvania. Subsidiary of United States Steel Corporation.

W. H. Clingerman, P.; William Gates, Sec.; Philip Keller, T.; C. P. Parker, A.; T. S. Duncan, P. A.; at Pittsburgh. Clay F. Lynch, V. P. & G. S.; at Scottsdale, Pa.

The H. C. Frick Coke Co., together with other coal and coke companies allied with it but owned or controlled by United States Steel Corporation, operates or controls coal and coke properties as follows:

The H. C. Frick Coke Co. owns and controls about 112,000 acres of coal and 22,500 acres of surface lands in Western Pennsylvania. It operates 22 coke plants having 9,230 beehive ovens in Fayette County, and 11 coke plants with 3,991 beehive ovens in Westmoreland County. The company owns and operates plants producing coal at Colonials 1-3-4, Edenborn, Lambert, Leckrone,

Gates, Palmer, Ralph, Sarah and Maxwell mines in Fayette County, the Chambers, Alverton, Brinkerton, Central, Continental 3, Dorothy, Lemont and Shoaf mines in Westmoreland County, Pa., and the Dilworth mine in Greene County, Pa. At Everson, Fayette County, Pa., it has extensive shops for repairing mine cars and other equipment.

Other companies (all owned or controlled by United States Steel Corporation), allied with the H. C. Frick Coke Co. and operated under its management, but not included above, together with the properties they own, are as follows:

Republic-Connellsville Coke Co. owns 3,478 acres of coal and 675 acres of surface lands in Fayette County, Pa.; also coal plant at Bridgeport, Pa., and a coal plant at Fairbank, Pa.

Sharon Coke Company owns 939 acres of coal and 286 acres of surface lands in Fayette County, Pa.; also coal plant at Ronco, Pa.

Sharon Coal & Limestone Co. holds under lease approximately 2,800 acres of steam coal and limestone property in Butler, Mercer and Lawrence Counties, Pa.; also operates 2 coal mines.

United States Coal & Coke Co. holds under lease about 61,000 acres of coal lands in McDowell County and Wyoming County, W. Va., and Tazewell County, Va. It has 11 mines and 2,137 beehive coke ovens. The company owns about 75,000 acres of coal and 32,000 acres of surface in Letcher and Harlan Counties, Kentucky, and operates one mine. It owns about 61,500 acres of coal and 32,000 acres of surface in Mingo and Logan Counties, W. Va. It owns 10,254 acres of coal and 107 acres of surface in Barbour County, W. Va., and operates one mine.

National Mining Co. and Mingo Coal Co. own about 19,500 acres of steam coal in Allegheny and Washington Counties, Pa., and operate 4 producing mines.

The United States Fuel Company owns 74,242 acres of coal lands and 5,025 acres of surface lands, situated in Vermilion (Westville and Georgetown field) and Franklin and Williamson Counties (Southern Illinois field), Illinois; and in Vermilion and Vigo Counties (Clinton field) and Sullivan County (Linton field), Indiana. On these properties are located five mines producing coal for steam, gas, and coke making purposes. In connection with the mine in Franklin County, Illinois, there has been erected a modernly equipped coal washing plant of 4,000 tons daily capacity. Incidental to the washing plant a large and ample water supply has been installed.

FROG, SWITCH & MANUFACTURING CO. (The), Carlisle, Pa.

Est. 1881; inc. June 20, 1898 in Pennsylvania. Capital stock: com., par value \$50, auth. and issued \$750,000.

R. S. Hays, Ch. & G. M.; W. H. Dotter, P.; W. L. Jackson, 1 V.

P.; L. E. Weidman, 2 V. P.; Charles C. Weidner, Sec. & T.; at Carlisle. A. Gordon Jones, 3 V. P.; at Washington, D. C.

Works at Carlisle, Pa.; foundry blt. 1913, f. o. July, 1913; 2 Tropenas converters (5,000-lb.); 2 cupolas (1 for pig iron, 1 for spiegel).

Product: manganese steel castings for sale, annual cap., 3,500 tons; frogs, crossings, switches; castings for crushing, mining and cement mill machinery.

GARY TUBE CO., Frick Bldg., Pittsburgh, Pa.

Inc. May 12, 1916 in Indiana. Subsidiary of United States Steel Corporation.

William B. Schiller, P.; Taylor Allderdice, V. P.; J. H. Nicholson, V. P.; B. C. Moise, Sec. & A.; H. J. Hirshman, T.; G. G. Goe, P. A.

Sales agent: National Tube Co., Frick Bldg., Pittsburgh, Pa.

Gary Works, Gary, Ind.: blt. 1916-25, f. o. Jan., 1925; 14 prod. gas-fired heat. fur. (8 cont. recuperative, six 4-d. regenerative); 42" 3-h. 1-st. universal; 16" 2-h. 10-st. cont. skelp; 14" 2-h. 12-st. cont. skelp; 5 butt-weld fur. for pipe $\frac{3}{8}$ " to 3"; 4 lap-weld fur. for pipe 2" to 20"; 1 seamless fur. for seamless tubes $4\frac{1}{2}$ " to 13"; 1 galvanizing pot.

Product: skelp, annual cap., 323,000 tons; black pipe, 348,000 tons; galvanized pipe, 60,000 tons.

GENERAL ELECTRIC CO., 1 River Road, Schenectady, N. Y.

Inc. Apr. 15, 1892 in New York. Capital stock: com., par value \$100, auth. \$185,000,000, issued \$180,287,046; special, par value \$10, auth. \$55,000,000, issued \$26,706,675.

Owen D. Young, Ch.; Anson W. Burchard, Vice-Ch.; Gerard Swope, P.; J. G. Barry, V. P.; H. W. Darling, V. P.; A. G. Davis, V. P.; A. H. Jackson, V. P.; J. R. Lovejoy, V. P.; G. F. Morrison, V. P.; C. E. Patterson, V. P.; F. C. Pratt, V. P.; F. S. Terry, V. P.; George P. Baldwin, V. P.; Samuel L. Whitestone, C.; Robert S. Murray, T.; Myron F. Westover, Sec.

Sales offices in large cities.

Company manufactures electrical machinery of all sorts (motors, generators, transformers, meters, electric locomotives, railway motors and equipment, turbines, turbo-blowers, compressors, etc.), and operates steel foundries at some of its plants largely for own use.

Everett Works, Everett, Mass.: blt. 1900, f. o. Dec. 20, 1900; 3 A. O. H. fur. (17-ton) fuel, oil. Gray iron foundry (2,500 tons). Product: steel castings for own use, annual cap., 12,500 tons.

River Works, Lynn, Mass.: blt. 1892, f. o. Mar. 4, 1893; 2 A. O. H. fur. (one 20-ton, one 25-ton) fuel, oil; 1 Heroult electric fur. (6-ton). Forge with 17 board drop ham. (500-lb. to 3,000-lb.), 3 steam drop ham. (1,000-lb. to 2,000-lb.), 1 air ham. (165-lb.), 8 steam ham. (600-lb. to 6,000-lb.). Gray iron (7,500 tons) and brass and aluminum (2,000 tons) foundries for own use. Product: steel ingots and steel castings mainly for own use; annual cap., 20,000 tons (10,000 tons A. O. H. castings, 5,000 tons A. O. H. ingots, 5,000 tons electric ingots).

Pittsfield Works, Pittsfield, Mass.: 1 Heroult electric fur. (1-ton) mainly used to melt ferro-alloys and non-ferrous metals; 1 General Electric induction fur. (2-ton); 2 cupolas. Gray iron (15,000 tons) and brass (500 tons) foundries for own use. Product: steel ingots and castings for own use, annual cap., 1,850 tons (1,600 tons ingots, 250 tons castings).

Schenectady Works, Schenectady, N. Y.: 4 electric fur. (one 6-ton, one 5-ton, one $\frac{3}{4}$ -ton Heroult; one 3-ton Swindell); forge with 4 air ham. (300-lb.), 21 board drop ham. (200-lb. to 2,500-lb.), 18 steam ham. (600-lb. to 7,000-lb.). Gray iron (9,720 tons) and brass, copper and aluminum (1,150 tons) foundries for own use. Product: steel ingots and castings for own use, annual cap., 3,500 tons castings and 890 tons alloy steel ingots (nickel, chrome, etc.) for high speed steel for tools.

Erie Works, Erie, Pa.: manufacture of steel castings was discontinued at these works and the electric fur. (5-ton Heroult) was removed to Schenectady Works in 1923. Gray iron foundry (25,000 tons), malleable iron foundry (10,000 tons) and brass foundry (2,000 tons) for own use only.

GENERAL STEEL COMPANY, 215 Sycamore St., Milwaukee, Wis.

Inc. July 17, 1917 in Delaware. Capital stock: com. 16,000 shares, no par value; pref. 7% non-cum. \$650,000.

James D. Mortimer, Ch.; Edwin Gruhl, V. P.; James F. Fogerty, A. Sec. & A. T.; Robert Sealy, T.; F. H. Fiske, A. Sec.; at 30 Broad St., New York. S. B. Way, V. P.; Frank J. Boehm, A. Sec. & A. T.; at Milwaukee.

Sales office: Milwaukee, Wis., 215 Sycamore St.

Works at St. Francis, Wis.: blt. 1917-18; first steel made Jan., 1918; 3 Pittsburgh electric fur. (two 12-ton and one $1\frac{1}{2}$ -ton); 3 steam hammers (500-lb. to 4,000-lb.); 1 forging press (500-ton). Fuel, coal.

Product: steel ingots and castings for own use and for sale; alloy steel ingots and castings; die blocks, blooms, car axles, piston rods, rounds, slabs, etc.; annual cap., ingots and castings, 24,500 tons; forged products, 6,000 tons.

General Trust of Canada, Montmagny, P. Q., Canada.

Montmagny Works, Montmagny: blt. 1913, f. o. Nov. 28, 1913; 1 Baillou steel converter (1-ton); 2 B. O. H. fur. (20-ton) changed from acid to basic in 1920; first basic steel, Aug., 1920; 20" 3-h. 1-st., 12" 3-h. 1-st., 9" 3-h. 1-st. merchant mill. Gray iron, semi-steel, aluminum and brass foundry. Steel Dept. idle since 1920; rolling mill operated for short time in 1920, idle since. (National Farming Machinery, Ltd. to Feb. 4, 1925). Product: steel ingots, annual cap., 30,000 tons; steel castings, 3,500 tons (converter); merchant bars, angles, and shapes, 40,000 tons.

GERLINGER ELECTRIC STEEL CASTING CO., 60th and National Ave., West Allis, Wis.

Inc. Mar. 2, 1902 in Wisconsin. Capital stock: com., par value \$100, auth. \$500,000, issued \$324,000; bonds \$188,000.

W. E. Gerlinger, P.; Walter Gerlinger, V. P. & G. M.; Harry A. Ducat, Sec.; George P. Gerlinger, T.; Glen C. Riegel, Works M.; Al Weis, S.; D. E. Deuster, G. S. M.; O. A. Meyer, P. A.

Sales offices: Berkeley, Calif.; Butte, Mont.; Marquette, Mich.; Omaha, Neb.; Richmond, Va.; St. Paul, Minn.

Brands: Gerlinger (carbon steels); Gerlinger HARD-WEAR (alloy steels).

Works at 60th St., West Allis: blt. 1902-03; first electric steel, Nov., 1915; 1 Moore electric fur. (3-ton).

Product: electric steel castings for sale, annual cap., 5,000 tons. Alloy steel castings. Special alloy castings for road machinery and crushing machinery. Railroad, truck, tractor, saw mill and general machinery castings.

Gerlinger Electric Steel Foundry Co., West Allis, Wis. was absorbed by Gerlinger Steel Casting Co., June 1, 1920.

Gerlinger Steel Casting Co., West Allis, Wis. absorbed the Gerlinger Electric Steel Foundry Co., June 1, 1920 and at same time changed its corporate title to Gerlinger Electric Steel Casting Co.

Georgia Minerals Co., see Joel Hurt, Atlanta, Ga.

Gerson Rolling Mill, M. J. Gerson, owner, Birmingham, Ala. was acquired May 12, 1922 by Southern Steel and Rolling Mill, Inc.

GLASGOW IRON CO., Pottstown, Pa.

Inc. Sept. 17, 1875 in Pennsylvania. Capital stock: com., par value \$100, auth. \$500,000, issued \$360,000.

Comly B. Shoemaker, 2nd., P. & G. M.; at 603 Harrison Bldg., Philadelphia, Pa. Oliver E. Shuler, T.; Harry W. Prizer, Sec.; A. Coleman Smith, A. Sec. & A. T.; Comly B. Shoemaker, Jr., G. S.; at Pottstown.

Sales offices:

Boston, Mass., Harrington, Robinson & Co., 110 High St.

New York, N. Y., A. B. Murray & Co., Inc., 88 Washington St.
Philadelphia, Pa., 603 Harrison Bldg.

Brands: Glasgow (iron plates, pressed steel pipe flanges, hot blast valves and valve seats); Roe (pressed steel manhead and manhole saddles for boilers and tanks, pressed steel boiler lugs).

Glasgow Iron & Steel Works, Ninth Ward, Pottstown, Pa.: blt. 1874; 8 double puddling fur.; 1 rotary squeezer; 22" 2-h. 1-st. muck mill; 1 steam hammer 5,000-lb.; 2 hydr. presses (65-ton and 500-ton). Flanging and dishing plant and dept. for buckling

plates. Plate mill: three 1-d. coal-fired heat. fur.; 30" x 96" 2-h. sheared plate mill. Roll sheared plates 10 B. W. G. to 1" thick, up to 84" wide. (Plate mill sold to Nagle Steel Co., Dec. 31, 1917 was repurchased in 1922). Product: muck bar, annual cap., 10,000 tons; iron and steel sheared plates and skelp, annual cap., 12,000 tons; forged and pressed manheads, manhole saddles, pipe flanges, furnace valves and seats, and misc. flanged and pressed work.

Lower Works, Pottstown (leased from Pottstown Iron Co.): blt. 1861, enl. 1867; 21 double puddling fur.; 2 rotary squeezers; ten 3-d. Siemens heat. fur., fuel prod. gas; 23" 2-h. 2-st. and 18" 2-h. 1-st. muck mills; 32" x 112" 3-h. sheared plate mill; 36" universal plate mill. Roll sheared plates 10 B. W. G. to 1" thick, up to 104" wide; universal plates $\frac{1}{4}$ " to 6" thick, to 35 $\frac{1}{2}$ " wide. Product: muck bar, annual cap., 30,000 tons; iron and steel plates and skelp, annual cap., 35,000 tons sheared, and 35,000 tons universal plates.

Anvil Furnace, Pottstown, Pa. was dismantled in 1923.

GLOBE IRON CO., Jackson, Ohio.

Inc. 1872 in Ohio. Capital stock: com. \$120,000.

John E. Jones, P., T., G. M. & G. S. M.; Moses Morgan, V. P.; Charles P. Chapman, Sec.; George F. Bertsch, Blast Furnace S.; Edwin A. Jones, P. A.

Sales agents: Rogers, Brown & Crocker Bros., Inc., Cincinnati and elsewhere; Walter-Wallingford & Co., Cincinnati and Chicago.

Brands: Globe (silvery iron, bessemer ferro-silicon), Tubal Pencost (high silicon 12-18%).

Globe Furnace, Jackson, Ohio: 1 stack, 76' x 17' 6", blt. 1900-01, rebt. 1912-13, relined 1924; six 2-pass stoves, 75' x 18'; 3 Weimer steam blowing eng., 50,000 cfm., 20 lbs. rated pressure; 13 horizontal tubular boilers, 1,650 H. P. Coke and raw coal: Lake ore. Owns and operates coal mine, annual cap., 60,000 tons.

Product: bessemer ferro-silicon, high silicon silvery and foundry pig iron, annual cap., 60,000 tons high silicon or 100,000 tons foundry.

Globe Seamless Steel Tubes Co., Milwaukee, Wis., was acquired August 9, 1922 by Globe Steel Tubes Co.

GLOBE STEEL TUBES CO., 1345 Burnham St., Milwaukee, Wis.

Inc. July 26, 1922 in Delaware. Capital stock: com., no par value, auth. 100,000 shares, issued 55,052 shares; pref. auth. \$500,000, none issued; bonds \$1,050,000.

P. J. Kalman, Ch.; at St. Paul, Minn. F. J. O'Brien, P.; G. O. Ross, Sec. & T.; K. A. Nygren, G. S.; A. Korsan, P. A.; at Milwaukee. J. W. Floto, V. P. & G. S. M.; at 400 North Michigan Ave., Chicago.

Sales offices:

Chicago, Ill., 400 North Michigan Ave.

Detroit, Mich., 5-169 General Motors Bldg.

New York, N. Y., 110 East 42nd St.

Portland, Ore., Woodbury & Wheeler.

St. Louis, Mo., 444 Frisco Bldg.

St. Paul, Minn., B. W. Parsons Co.

Works at 1345 Burnham St., Milwaukee: blt. 1910, f. o. Feb. 1911; two 2-d. billet heat. fur., seven 2-d. annealing fur., two 2-d. reheat. fur., oil-fired; 27" 2-h. 1-st. piercing mill; 20" 2-h. 1-st. automatic rolling mill. (Globe Seamless Steel Tubes Co. to Aug. 9, 1922).

Product: seamless steel tubes (hot rolled to 5½" O. D.; cold drawn ½" to 5¼" O. D.), annual cap., 36,000 tons.

GLOVER MACHINE WORKS, Inc., Marietta, Ga.

Works at Marietta, Ga.: 1 Gronwall-Dixon electric fur. (2½-ton) installed 1918.

Product: steel castings for own use, annual cap., 2,000 tons.

GOSHEN FURNACE CORPORATION, Goshen, Va.

Inc. May 17, 1920 in Virginia. Capital stock: com., no par value, 10,000 shares; pref. 8% cum. \$500,000.

George P. Tweed, P.; at 307 Lonsdale Bldg., Duluth, Minn.

Dexter A. Tutein, Sec.; E. Arthur Tutein, T.; at Real Estate Trust Bldg., Philadelphia, Pa. J. E. Rotthaus, A.; at Hoken-dauqua, Pa.

Selling agents: E. Arthur Tutein, Inc., 200 Devonshire St., Boston, Mass.; 52 Vanderbilt Ave., New York, N. Y.; Real Estate Trust Bldg., Philadelphia, Pa.

Victoria Furnace, Goshen, Va.: 1 stack, 74' 6" x 11' 8", blt. 1882-83, last rebt. 1902, remod. 1917; 5 stoves (one 70' x 18', three 63' x 25', one 59' x 18'); 3 steam blowing eng. (36,000 cfm.); 6 water-tube boilers, 2,400 H. P. New River coke: foreign, local and Lake ores. Own limestone quarry at Bells Valley, Va.; annual cap., 75,000 tons. (Southeastern Iron Corporation to May 1, 1920).

Product: foundry pig iron, annual cap., 70,000 tons.

GOULD COUPLER CO. (The), 250 Park Ave., New York, N. Y.

Inc. 1925 in Maryland. Capital stock: com., no par value, 350,000 shares; Class "A", no par value, 175,000 shares.

William S. Gould, P.; J. A. Sauer, V. P.; P. P. Meade, T.; Eugene Gray, Sec.; W. A. J. Barrington, A. T.; at New York. A. H. Gardner, A. T.; B. H. Eden, S.; A. R. McHenry, P. A.; at Depew, N. Y.

Sales offices at New York and Chicago.

Works at Depew, N. Y.: blt. 1902, f. o. Nov. 30, 1903; 4 B. O. H. fur. (25-ton); 4 annealing fur. Fuel, oil and prod. gas. Malleable iron foundry, annual cap., 15,000 tons.

Product: steel castings for own use and for sale, annual cap., 50,000 tons; couplers, side frames, bolsters, end sills, and miscellaneous car castings; electric lighting equipment for passenger cars.

GRAHAM FURNACE, Bluefield, Va.

Judge W. C. Taylor and George B. Williams, Owners, Winchester, Ky.

Graham Furnace, Bluefield (formerly Graham), Va.; 1 stack, 70' x 15', blt. 1890; 3 Whitwell stoves 60' x 18'; 3 steam blowing eng. (38,000 cfm.); 20 tubular boilers, 2,500 H. P. Pocahontas coke: local and Lake ores. (Roanoke Consolidated Iron Corpn. to Nov. 26, 1922; Graham Furnace Corporation).

Product: foundry pig iron, annual cap., 40,000 tons.

Graham Furnace Co., Philadelphia, Pa. leased Graham Furnace, Graham, Va. and operated same through E. E. Marshall, Agent in 1920-21. Furnace was blown out early in 1921, idle since.

Graham Furnace Corporation, see Kyva Ferro-Manganese Corpn.

Grand Trunk Railway System, Montreal, Canada, see Canadian National Railways.

GRANT, ROBERT, 53 Park Place, New York, N. Y.

Sole owner Slatington Rolling Mills, Slatington, Pa., idle since July, 1923.

Slatington Rolling Mills, Slatington, Pa.: blt. 1890; 6 single puddling fur.; 1 squeezer; three 3-d. coal-fired heat. fur.; 20' 3-h. 1-st. muck; 16' 2-h. 2-st. and 10' 3-h. 5-st. finishing mills. (Formerly owned by Slatington Iron & Steel Co., acquired by Robert Grant, Feb. 1, 1921; leased to Foley Steel Co., Jan. 1, 1922 to Oct. 1, 1923).

Product: muck bar, annual cap., 600 tons; iron and steel merchant bars, 10,000 tons; light structural shapes, bolt, nut and rivet rods.

Gray, J. J., Jr., Rockdale, Tenn.

J. J. Gray, Jr. owns and operates Rockdale Furnace, Rockdale, Tenn. This furnace was torn down in spring of 1925 and is being rebuilt with height of 70' with 2 additional blowing eng. and additional boilers. Also acquired April 17, 1923, from Red River Furnace Company, Helen Furnace at Clarksville, Tenn. Furnace was renamed Clarksville Furnace and was operated by J. J. Gray, Jr. in 1923 and dismantled in 1924-25.

GREAT NORTHERN RAILWAY CO., St. Paul, Minn.

C. O. Jenks, Vice-President.

Works at St. Cloud, Minn.: rolling mill, f. o. 1912; two 4-d. oil-fired heat. fur.; 12' 3-h. 3-st. bar mill.

Product: merchant bars for own use, annual cap., 6,800 tons.

Greene-Schaw Co., Berkeley, Calif. built a steel foundry at its works 1330 Second St., Berkeley in 1921 consisting of 1 Greene electric

fur. (500-lb.) f. o. Jan. 1, 1922. The steel foundry was subsequently incorporated as Greene Steel Castings Co. In 1924 A. E. Greene, Owner, leased the foundry to Berkeley Steel Foundry Co.

Greene Steel Castings Co., Berkeley, Calif., see Greene-Schaw Co.

Griffiths Charcoal Iron Mills, Washington, Pa. was acquired April 1, 1922 by Charcoal Iron Products Co.

GULF STATES STEEL CO., Brown-Marx Bldg., Birmingham, Ala.

Inc. Nov. 1, 1913 in Delaware. Capital stock: com., par value \$100, auth. and issued \$12,500,000; pref. 7% cum. auth. \$3,000,000, issued \$2,000,000.

C. A. Moffett, P.; H. Sanborn Smith, V. P.; A. R. Forsyth, V. P. & T.; P. R. Owens, Sec. & A.; L. E. Geohegan, G. M.; C. C. Brown, G. S. M.; B. F. Tyler, P. A.; at Birmingham. Calvert Brewer, A. Sec. & A. T.; at 55 Cedar St., New York, N. Y. F. R. Thompson, A. G. M.; at Alabama City, Ala.

Sales offices:

Dallas, Texas, Gulf States Steel Co., 1301 Magnolia Bldg.

El Paso, Texas, Owsley Sales Co., 902 Mills Bldg.

Jacksonville, Fla., Lloyd A. Gray & Co., P. O. Box 325.

Los Angeles, Calif., C. W. Pike Co., Washington Bldg.

Memphis, Tenn., Levi Joy & Co., 646 Randolph Bldg.

New York, N. Y., Gulf States Steel Co., Room 1372, 50 Church St.

St. Louis, Mo., S. J. Waterman, 517 Pierce Bldg.

San Francisco, Calif., C. W. Pike Co., 22 Battery St.

Seattle, Wash., Hilton-Pike Co., L. C. Smith Bldg.

Brands: Coosa, Gulf Perfect, Alabama Special, Cactus, Cherokee (barb wire); Southern (fence); Agate (bed spring wire); Gulf (deformed reinforcing bars).

Alabama City Works, Alabama City, Ala.:

Alabama City Furnace: 1 stack, 90' x 19' 6", blt. 1902-03, remod. 1905-06, relined Feb. 1922 and Oct. 1923; four 2-pass hot blast stoves, 100' x 20'; 4 Southwark vertical steam blowing eng. 50,000 cfm.; 11 Sterling water-tube boilers, 4,125 H. P.; 1 Heyl & Patterson single-strand pig casting mach. By-product coke: Alabama red ore. Product: basic pig iron, annual cap., 116,000 tons.

By-product Coke Plant: blt. 1916-17, f. o. Apr. 1917; 37 Koppers by-product coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 197,000 net tons coke, 582,000 gals. light oil.

Steel Works: blt. 1903-04, f. o. June 24, 1904; 6 B. O. H. fur. (50-ton); fuel prod. gas, 30 Forter-Miller gas producers; one (125-ton) Treadwell hot metal car (Pugh type); four 4-hole soaking pits; 8 heat. fur. (four 4-d. coal-fired, 1 cont. coal-fired, 3 cont. coke oven gas-fired); 36" 2-h. 1-st. blooming; Garrett-Cromwell

rod mill with 18-st. 2-h.; 20" 3-h. 3-st. bar; 12" 3-h. 4-st. bar; 320 wire drawing blocks for wire 0000 to 19 gauge; 185 wire nail mach.; 70 barbed wire mach.; 13 wire fence mach.; 3 galvanizing pans. Product: steel ingots, annual cap., 288,000 tons, steel castings for own use, 500 tons; blooms and billets, 250,000 tons; finished hot rolled products, 158,000 tons including 108,000 tons wire rods and 50,000 tons steel merchant and concrete bars; 150,000 net tons plain wire, 48,000 net tons galvanized wire, 36,000 net tons barbed wire, 20,000 net tons wire fence, 1,584,000 kegs wire nails; staples and bale ties.

The company owns iron ore mine at Shannon, Ala., annual capacity, 300,000 tons red iron ore; also coal mines at Altoona, Ala., Sayre, Ala. and Virginia, Ala., annual cap. 600,000 net tons coal; 150 beehive coke ovens at Sayre and 300 beehive coke ovens at Virginia, annual cap., 225,000 net tons coke.

Guy Steel Casting Co., Elmwood, Conn. built crucible steel fur. (9-pots) at Elmwood in 1922. Operated for a short time in July, 1922. Company dissolved in 1923, works dismantled.

HADFIELD-PENFIELD STEEL CO. (The), Bucyrus, Ohio.

E. H. Haslam, P. & G. M.; E. A. Baker, T.; Arthur Whitcraft, G. M. (Steel Dept.); V. M. Virtue, P. A.; at Bucyrus, Ohio. L. W. Penfield, V. P.; at Willoughby, Ohio. Major H. A. Gillis, V. P.; at 210 Albee Bldg., Washington, D. C.

Company operates works at Bucyrus and Willoughby, Ohio, for the manufacture of clay-working, sand-lime brick and cement machinery. In May, 1920, it acquired the business, plant and good will of American Clay Machinery Co. Manganese and special alloy steel castings are made at Bucyrus Works; gray iron castings, chiefly for own use (annual cap., 1,800 tons), at Willoughby Works.

Sales office: 1619 Conway Bldg., Chicago, Ill.

Brand: ERA (manganese steel).

Bucyrus Works, Bucyrus, Ohio: 2 Whiting converters (4,000-lb.) added in 1918, f. o. Jan., 1919; 1 Greaves-Etchells electric fur. (2-ton) installed 1924, f. o. Aug., 1924; installing second electric fur. 1925: 2 cupolas; 1 fur. for melting alloys. (American Clay Machinery Co. to May, 1920.)

Product: steel ingots and steel castings for own use and for sale, annual cap., 9,600 tons (1,200 tons electric manganese steel ingots; 6,000 tons converter and 2,400 tons electric steel castings); alloy steel ingots (manganese) and castings (manganese and special alloy).

HALCOMB STEEL CO., 17 East 42nd St., New York, N. Y.

Inc. Jan. 6, 1905 in New York. Subsidiary of Crucible Steel Company of America.

Sales offices:

Boston, Mass., Hawkrige Brothers Co., 303 Congress St.

Boston, Mass., H. D. Evans Steel Co., 133 Oliver St.

Chicago, Ill., 608 West Adams St.

Cleveland, Ohio, 1274 Ontario St.

Detroit, Mich., 542 East Fort St.

New York, N. Y., 401 Canal St.

Philadelphia, Pa., 1224 Callowhill St.

Halcomb Works, Syracuse, N. Y.: blt. 1905-06, f. o. 1906; 1 B. O. H. fur. (20-ton) used for melting stock for electric fur.; 6 electric steel fur. (4 Heroult, one 4-ton, three 6-ton; 2 Greaves-Etchells, 3-ton); four 24-pot crucible fur.; 3 gas prod.; 35 heat. fur. (two 1-d., eighteen 2-d., seven 3-d., one 4-d. coal-fired; four 3-d., three 4-d. oil-fired); 24" 2-h. 1-st. billet; 14" 3-h. 5-st. merchant; 12" 3-h. 8-st. merchant; 12" 3-h. 6-st. merchant; 12" 3-h. 1-st. and

9" 3-h. 7-st. Belgian; 18" 2-h. and 3-h. with 1-st. 18" and 11-st. 10"; 6-st. cold rolls (one 10" x 15", one 10" x 6", two 8" x 6", one 8" x 4½", one 6" x 6"); 6 sheet fur. (two 2-d., four 1-d.); 4 hot black sheet mills, 18" x 26" to 36"; roll carbon and alloy tool steel sheets .020" to .375" in thickness; 20 annealing fur. (11 bar, 9 wire); 13 pickling vats, 13 hand-pickling tanks; 96 wire drawing blocks (92 coil, 4 bar) for wire from .013" to 3" bars; 8 steam hammers (600-lb. to 6-ton); 1 hydraulic forging press (650-ton).

Product: steel ingots, annual cap., 46,400 tons (40,000 electric, 6,400 crucible); alloy steel ingots (nickel, chrome, vanadium, high speed); steel billets, 25,000 tons; hot rolled products, 20,500 tons including 16,500 tons rods and bars and 4,000 tons sheets; forged products, 3,500 tons; wire products, 6,000 net tons; carbon, alloy and high speed tool steels, hammered and rolled bars, sheets, forgings; fine wire, drill rods, drawn shapes, cold rolled bars and strip; spring, cutlery and hack saw steels.

HAMILTON FURNACE CO., 1401 Alworth Bldg., Duluth, Minn.

Inc. Aug. 13, 1923 in Delaware, succeeding company of same name inc. 1917 in Ohio. Capital stock: com., no par value, auth. and issued 50,000 shares.

John A. Savage, P.; H. S. Munro, Sec.; A. S. Trux, T.; at Duluth, Minn. Joseph Savage, V. P.; at Cincinnati, Ohio. R. W. Stuck, M.; C. H. Henneberger, P. A.; at Hamilton, Ohio.

Sales office: Dixie Bldg., Cincinnati, Ohio.

Hamilton Furnace, Hamilton, Ohio: 1 stack, No. 1, 85' x 20', blt. 1907-08, remod. 1918; 4 Kennedy stoves (three 90' x 20', one 103' 4" x 20'); 2 steam blowing eng., 105,000 cfm., 15 lbs. rated pressure; 5 water-tube boilers, 2,500 H. P.; 1 Uehling double-strand pig casting mach. Coke: Lake ore. No. 2, work started 1918, foundations begun in Dec., 1920 not completed. By-Product Coke Plant; under construction 45 Koppers coke ovens, annual cap., 200,000 net tons coke.

Product: basic, malleable, foundry and high manganese pig iron, annual cap., 175,000 tons.

Hammond Steel Co., Syracuse, N. Y. went into hands of receiver Oct. 6, 1921. Sold by order of the court April 28, 1922 and was merged with Sizer Forge Co. in Sizer Steel Corporation and became the Hammond Plant of that company.

HANFORD IRON WORKS, 119 South Arrowhead Ave., San Bernardino, Calif.

Inc. May, 1918 in California. Capital stock: com. auth. and issued \$100,000.

W. J. Hanford, P.; S. E. Bagley, V. P.; James Cunnison, Sec. & T.

Works at 119 South Arrowhead Ave., San Bernardino: Steel foundry, blt. 1920, f. o. Jan. 17, 1921; 1 Greene electric fur. (3-ton). Gray iron foundry (1,000 tons); pattern shop and machine shop.

Product: steel castings for own use and for sale, annual cap., 1,800 tons.

HANGING ROCK IRON CO. (The), Hanging Rock, Ohio.

Inc. 1900 in Ohio. Capital stock: com. \$450,000.

D. B. Meacham, P.; J. K. Pollock, V. P.; H. C. Lammers, T.; at Carew Bldg., Cincinnati, Ohio. H. E. Frazier, Sec.; W. M. Jefferys, G. S.; at Hanging Rock.

Hamilton Furnace, Hanging Rock: 1 stack, 65' x 16', blt. 1883, f. o. Mar., 1886, relined 1918; 4 Foote stoves (two 85' x 18', two 75' x 18'); 3 blowing eng. (40,000 cfm.); 5 water-tube boilers, 1,750 H. P. By-product coke: Lake ore. Last active 1923 and will not resume operations.

Product: foundry, malleable and basic pig iron, annual cap., 60,000 tons.

HANNA FURNACE CO. (The), 1300 Leader-News Bldg., Cleveland, Ohio.

Inc. Oct. 1, 1920 in Delaware. Capital stock: com., par value \$10, auth. \$2,000,000, issued \$1,895,000; pref. 8% cum. auth. and issued \$750,000.

F. B. Richards, Ch.; C. A. Collins, P.; R. F. Grant, V. P.; G. M. Humphrey, V. P.; R. E. McMahon, V. P.; C. N. Osborne, Sec. & T.; L. R. Close, A.; P. J. Moran, G. M.; at Cleveland. For Buffalo Plant: B. Marron, G. M.; at 51 Hamburg St., Buffalo, N.Y.

Sales made by The M. A. Hanna Co. with offices, as follows:

Buffalo, N. Y., 51 Hamburg St.

Cincinnati, Ohio, 807 Dixie Terminal Bldg.

Cleveland, Ohio, 1300 Leader-News Bldg.

Detroit, Mich., 1430 First National Bank Bldg.

Pittsburgh, Pa., 1918 Oliver Building.

Toronto, Canada, 904 C. P. R. Bldg.

Brands: Detroit, Buffalo, Dover, Cherry Valley, Fannie.

Product: foundry, malleable and basic pig iron, combined annual cap. of 5 plants, 1,025,000 tons.

Detroit Plant, Zug Is., River Rouge, Wayne Co., Mich.: 2 stacks; "A", 78' 6" x 18' 9", blt. 1903, rebt. 1911, last relined 1925; "B", 80' x 20', blt. 1909-10, rebt. 1914, relined 1923; 8 side-comb. 2-pass stoves (four 83' x 20', four 85' x 20'); 6 steam blowing eng. (5 long crosshead discon. compound, 1 Ingersoll-Rand turbo-blower) 108,000 cfm.; 15 water-tube boilers (9 B. & W., 6 Wickes) 4,776 H. P.; 1 Heyl & Patterson double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 10,000 tons. By-product coke: Lake ore. (Detroit Iron & Steel Co. to Nov.

1, 1920.) Product: foundry and malleable pig iron, annual cap., 250,000 tons.

Buffalo Plant, Buffalo, N. Y. (leased from Buffalo Union Furnace Co. July 1, 1920): 3 stacks, Furnace A, 80' 6" x 19' 3", blt. 1892, relined and blown in Jan. 17, 1925; 4 stoves (one 2-pass centre-comb. 80' x 18', one 2-pass side comb. 80' x 18', two 2-pass side comb. 90' x 22', new Mar., 1925) and 2 stoves abandoned 2-pass side-comb. 80' x 18'; Furnace B, 82' x 19', blt. 1897-98, rebt. 1914, relined and blown in Mar. 15, 1924, 4 stoves 2-pass side-comb. 80' x 20'; Furnace C, 82' x 19', blt. 1899-00, rebt. 1917, relined and blown in Oct. 3, 1924, 3 McClure 3-pass centre-comb. stoves 75' x 18'; 2 Allis-Chalmers vertical steam blowing eng. for A, 2 G. E. turbo-blowers for B and C, 105,000 cfm., 15-lbs. rated pressure; 5 vertical steam blowing eng. serving as spares; 26 boilers of which 24 water-tube (5 Sterling, 7 Wickes, 5 Cahall, 6 B. & W, 1 Wheeler) and 2 tubular (Manning) 7,430 H. P.; 1 Pittsburgh Coal Washer double-strand pig casting mach.; General Briquetting Co. briquetting plant for flue dust, etc., annual cap., 85,000 tons; 3 slag granulating pits, annual cap., 160,000 tons. By-Product and Conn. coke: Lake ore. By-Product coke from Donner-Hanna Coke Corp., see Donner Steel Co. Product: foundry, malleable and basic pig iron; annual cap., 350,000 tons.

Dover Plant, Dover, Ohio: 1 stack; Dover Furnace, 85' x 20' 10"; blt. 1854, remod. 1917, relined 1924; 3 side-comb. stoves, 100' x 22'; 3 steam blowing eng. (1 long crosshead, 2 discon. comp.) 45,000 cfm.; 7 water-tube boilers (5 Wickes, 2 B. & W.) 2,800 H. P.; 1 Pittsburgh Coal Washer single-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 42,000 tons. Conn. coke: Lake ore. (The Penn Iron & Coal Co. to Nov. 1, 1920.) Product: foundry, malleable and basic pig iron, annual cap., 150,000 tons.

Cherry Valley Plant, Leetonia, Ohio: 1 stack; Cherry Valley Furnace, rebt. 1924, 80' 6" x 20' 7" blown in Dec. 20, 1924; 4 McClure 3-pass stoves, 85' x 21'; 3 steam blowing eng., long cross head discon. comp. (55,000 cfm.); 6 Wickes water-tube boilers, 2,400 H. P.; 1 Pittsburgh Coal Washer single-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 20,000 tons. Coke plant, 203 beehive coke ovens at the furnace, annual cap., 150,000 net tons. Beehive coke: Lake ore. (United Iron & Steel Co. to Nov. 1, 1920). Product: foundry and malleable pig iron, annual cap., 140,000 tons.

Fannie Plant, West Middlesex, Pa.: 1 stack, Fannie Furnace, last rebt. 1918, relined 1920, 80' x 18' 8"; 4 McClure 3-pass stoves, 70' x 21'; 2 steam blowing eng., long cross head discon. comp. (40,000 cfm.); 8 water-tube boilers (6 Rust, 2 Erie City) 2,900 H. P.; 1 Pittsburgh Coal Washer single-strand pig casting mach. Conn. coke: Lake ore. (United Iron & Steel Co. to Nov. 1, 1920.) Product: malleable and basic pig iron, annual cap., 135,000 tons.

HARNISCHFEGER CORPORATION, 38th & National Aves., Milwaukee, Wis.

Inc. Jan. 7, 1910 in Wisconsin. Capital stock: com., par value \$100, auth. \$4,000,000, issued \$3,500,000; pref. 7% cum. auth. \$2,000,000, issued \$1,000,000.

H. Harnischfeger, P.; A. G. Hendricks, 1 V. P. & G. M.; W. Harnischfeger, 2 V. P.; R. v. Schleinitz, Sec. & T.; R. Binkowski, A. Sec. & C.

Sales offices in all principal cities. Company manufactures cranes, excavating machinery, hoists, derricks, machine tools and other machinery.

Brand: P & H Quality-Service: Corduroy (excavators).

Main plant at 38th and National Aves., Milwaukee; Steel Foundry at Robinson Ave., Milwaukee.

Steel Foundry, 871-891 Robinson Ave., Milwaukee; blt. 1918-19, f. o. Feb. 1, 1919; one Vom Baur electric fur. (6-ton); 1 cupola; gray iron foundry, annual cap., 3,000 tons for own use (Hercules Steel Casting Co. to March, 1924).

Product: steel castings for own use, annual cap., 4,500 tons.

Harrisburg Bar Mill Co., Harrisburg, Pa. leased the rolling mill at Harrisburg owned by Capital City Iron & Steel Co. on July 1, 1921. Leasehold taken over by Harrisburg Pipe & Pipe Bending Co. as of Nov. 1, 1922.

HARRISBURG PIPE & PIPE BENDING CO., Harrisburg, Pa.

Inc. Dec. 28, 1899 in Pennsylvania. Capital stock: com., par value \$50, auth. \$1,000,000, issued \$911,500.

Christian W. Lynch, P.; Edward C. Smith, V. P.; N. W. Cassel, Sec. & P. A.; E. C. Frey, T. & G. M.; William Foster, C.; F. D. Andrews, G. S.; H. W. Bishop, Jr., G. S. M.

Brand: Harrisburg.

Works at Harrisburg: blt. 1900; steel plant and rolling mill added 1902-03; 3 B. O. H. fur. (40-ton) fuel, oil; 7 Hughes gas prod.; two 4-hole soaking pits, fuel, prod. gas; 2 cont. coal-fired billet and slab heat. fur.; 14 oil-fired non-regen. heat. fur.; 32" 2-h. 1-st. blooming; universal plate mill with 20" 3-h. 1-st. roughing, 21" 3-h. 1-st. finishing for universal plates 4" to 18" wide down to 16 gauge; 1 box annealing fur.; 2 hand pickling tanks; 6 steam hammers, 500 to 2,000-lb., 5 steam drop forge hammers, 2,000 to 5,000-lb.; 6 hydraulic forging presses 50 to 300-ton. Washer dept. Shop for manufacture of iron, brass and copper pipe coils, feed-water heaters, and freezing plates.

Product: steel ingots, annual cap., 85,000 tons; alloy steel ingots (nickel, chrome, vanadium, molybdenum, silico-manganese); blooms, billets and slabs, 75,000 tons; finished hot rolled products, 40,000 tons of skelp and hot rolled strip for deep drawing and stamping; 40,000 tons forgings, seamless steel cylinders, pipe coup-

lings, pump liners, bull plugs, swedge nipples, tool joints, disc wheel hubs, etc.; standard wrought washers, $\frac{3}{8}$ " to 2", 12,600 kegs (200-lb.).

Works at Harrisburg (Plant No. 2): leased from Capital City Iron and Steel Co., Nov. 1, 1922; blt. 1919-20, f. o. Oct., 1920; one coal-fired billet heat. fur.; 12" 3-h. 4-st. and 9" 3-h. 5-st. bar mills. Product: carbon and alloy steel bars, annual cap., 20,000 tons.

Harrison Real Estate Corp., 15 West Eagle St., Buffalo, N. Y. acquired in May, 1925, plant formerly operated by Westerman & Co. and hold same for sale or for lease.

Works at Lockport: blt. 1870; 3 heat. fur. (two 2-d., one 3-d.); 16" 3-h. 3-st. bar mill; 9" 3-h. 3-st. guide mill. Annual capacity 9,000 tons merchant bars.

HARROW SPRING CO., Stambaugh Bldg., Youngstown, Ohio.

Inc. June 20, 1910 in Michigan. Capital stock: com., par value \$10, auth. \$600,000, issued \$560,050. Subsidiary of The Youngstown Sheet & Tube Co., Youngstown, Ohio, since July 1, 1923. James A. Campbell, P.; C. S. Robinson, V. P.; W. E. Meub, Sec.; W. J. Morris, T.; W. N. McDonald, C.; C. H. Rose, A.; W. E. Watson, G. S. M.; C. T. Moke, P. A.; at Youngstown. W. T. Lory, G. M.; at Kalamazoo, Mich.

Works at Kalamazoo, Mich.: blt. 1900-01, f. o. Jan. 30, 1901; 1 Heroult electric fur. (6-ton); 5 coal-fired 4-d. special ingot and billet reheate. fur.; 1 cont. oil-fired heat. fur.; 24" 3-h. 2-st. billet and bar; 16" 3-h. 3-st. bar; 9" 3-h. 5-st. bar; 1 forging press (500-ton).

Product: steel ingots, annual cap., 7,200 tons; alloy steel ingots (nickel, chrome, tungsten, molybdenum, vanadium); steel billets, 60,000 tons; hot rolled products, 24,000 tons; forged products, 6,000 tons; merchant bars, springs and agricultural implement parts.

Hartford Electric Light Co., Hartford, Conn. owns plant formerly owned and operated by Connecticut Electric Steel Co. at Hartford and holds same for sale.

Works at Hartford, Conn.: blt. 1916, f. o. Feb. 19, 1917; 2 Heroult electric fur. (2-ton). Product: steel ingots and castings, annual cap., 2,800 tons.

Hartford Electric Steel Corp. (The), Rocky Hill, Conn. Plant sold in Sept. 1923 to Belamose Corp., New York, as a site for artificial silk factory. Company dissolved and out of business.

Hart-Parr Co., Charles City, Iowa. Steel foundry added to Works at Charles City in 1909-11, f. o. April 6, 1911 was dismantled in 1924. Manufacture of steel castings was discontinued in 1921.

HELGERSON FOUNDRY CO., 1148 Main St., Green Bay, Wis.

Inc. July 22, 1919 in Wisconsin. Capital stock: com., no par value, auth. 1,525 shares, issued 768½ shares; pref. 8% cum. auth. \$25,000, issued \$15,000; bonds \$40,818.

E. A. Meyer, P.; A. Helgersen, V. P. & G. M.; Norman Helgersen, Sec.; A. L. Cannard, T.

Works at 1148 Main St., Green Bay: blt. 1919-20, f. o. Apr. 6, 1920; 1 Whiting converter (1-ton); 2 cupolas.

Product: steel castings for sale, annual cap., 1,200 tons.

HELLER BROTHERS CO., 865 Mt. Prospect Ave., Newark, N. J.

Est. 1836; inc. 1899 in New Jersey. Capital stock: com., par value \$100, auth. \$500,000, issued \$498,000; pref. 7% cum. auth. \$200,000, issued \$194,700; bonds \$500,000.

Frederick Baker, P. & G. M.; Ernest A. Geoffroy, T.; C. L. Moll, A. & A. T.; Charles W. TenEyck, A. Sec.; Edward A. Davies, G. S.; Fred H. Stout, G. S. M.; at Newark. Alfred L. Heller, Sec.; at Newcomerstown, Ohio.

Brands: Heller, Blue Label, Yellow Label, Green Label (tool steels).

Works at 865 Mt. Prospect Ave., Newark: steel wks. blt. 1882; 1 crucible fur. (30-pot) fuel, prod. gas, 2 gas prod.; 12 heat fur. coal and oil-fired (two 1-d., eight 2-d., two 3-d.); 16" 3-h. 1-st. cogging and 10" 3-h. 7-st. finishing merchant mill; 2 box annealing fur.; 1 pickling tank; 5 steam hammers (700 to 4,500-lb.). Fuel, bit. coal, oil and prod. gas.

Product: steel ingots, alloy steel ingots (nickel, chrome, tungsten), annual cap., 1,500 tons; rolled bars for own use, annual cap., 5,000 tons; rough forgings, annual cap., 1,000 tons. Files (500,000 doz.), rasps (100,000 doz.), blacksmiths' tools, carpenters' and machinists' hammers, special tools, high speed steel, hammer lay steel, hollow drill steel.

HEMPFIELD FOUNDRIES CO., 35th & Charlotte Sts., Pittsburgh, Pa.

Inc. July 20, 1907 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$150,000.

H. M. Meixner, P.; Karl F. Tiegel, V. P. & P. A.; Charles R. Rall, T.; M. S. Andres, A.; Robert Whyte, G. S. M.; at Pittsburgh. R. L. Brinkley, Sec.; at Greensburg, Pa.

Sales offices:

Chicago, Berford Brittain, 1249 Peoples Gas Bldg.

Cleveland, A. T. Brodie, 602 Ulmer Bldg.

Indianapolis, George W. Smith, Traction Terminal Bldg.

New York, D. G. Sinclair, 602 St. Paul Bldg.

San Francisco, Oliver B. Lyman, Call Bldg.

Works at Greensburg: blt. 1913; 1 Whiting converter (4,000-lb.); f. o. 1917. Gray iron and semi-steel foundry for pipe fittings, flanges, valves, sheaves, etc., annual cap., 4,500 tons.

Product: steel castings for sale, annual cap., 800 tons; valves, pipe fittings, flanges, gray iron and semi-steel flanged pipe fittings, flanges, mine castings, wheels, sheaves, wood-lined pipe, etc.

HENDERSON IRON WORKS & SUPPLY CO. (The W. K.), Ltd., Shreveport, La.

Inc. Jan. 30, 1903 in Louisiana. Capital stock: com., par value \$100, auth. and issued \$1,000,000.

W. K. Henderson, P. & G. M.; Ward Delaney, V. P.; W. P. Fort, V. P.; W. P. Leonard, A. P.; A. B. Boazman, Sec.; J. C. Henderson, T.

Works at Spring, Caddo & Commerce Sts., Shreveport: 2 electric fur. (1 Snyder $\frac{1}{2}$ -ton, 1 Industrial 2-ton). Gray iron foundry, 2 cupolas; annual cap., 2,000 tons.

Product: steel castings for own use and for sale, annual cap., 2,500 tons. Steel castings for high pressure fittings (1,500-tons), oil field, refinery, saw mill and general machinery castings.

HEPPENSTALL FORGE & KNIFE CO., 4260 Hatfield St., Pittsburgh, Pa.

Inc. Mar. 19, 1920 in Pennsylvania. Capital stock: com., par value \$50, auth. \$300,000, issued \$244,900.

C. W. Heppenstall, P., T. & G. M.; S. B. Heppenstall, V. P.; Floyd Rose, Sec. & G. S. M.; F. G. Riethmiller, A.; B. B. Weinberg, G. S.; V. I. Cox, P. A.

Sales offices:

Cleveland, Ohio, George I. Allen, 606 Rockefeller Bldg.

Detroit, Mich., Frank C. Moyer, P. O. Box 81, West Fort St. Sta.

Fort Worth, Texas, C. A. Fischer, 1918 W. T. Waggoner Bldg.

Indianapolis, Ind., G. O. Desautels, 335 Postal Sta. Bldg.

Los Angeles, Calif., R. C. Lea, 303 W. P. Story Bldg.

Milwaukee, Wis., Mielke & Bemm, 608 Caswell Block.

Philadelphia, Pa., A. L. Wurster, 1020 Drexel Bldg.

Rochester, N. Y., E. O. Jenkins, 1117 Lake Ave.

St. Louis, Mo., J. E. Donally, 601 Federal Reserve Bldg.

Company operates forge at Pittsburgh and through subsidiaries a forge at Bridgeport, Conn. (Heppenstall Forge Co.) and warehouse at Detroit (Heppenstall Steel Co.).

Works at 47th St. & A. V. R. R., Pittsburgh: electric fur. (two 6-ton Heroult) added 1917, operation discontinued May 1, 1920, one fur. dismantled in 1920, other abandoned; 2 A. O. H. fur. (one 20-ton, one 14-ton) added 1920, first O. H. steel 1920; 3 steam hammers (two 2,000-lb., one 4,000-lb.); 3 forging presses (two 1,000-ton, one 1,500-ton).

Product: forgings, die blocks, bit and jar steel, shear knives, annual cap., forged products, 20,000; ingot cap., 25,000 tons.

HERCULES MANUFACTURING CO., Centerville, Iowa.

Inc. June, 1912. Capital stock: com. auth. \$200,000, issued \$125,000.

B. A. Fuller, P., T. & G. M.; Miles Bateman, V. P.; C. D. Cook, Sec.

Works at Centerville: blt. 1912, f. o. Mar. 16, 1912; side blown converter (1-ton).

Product: steel castings for sale, annual cap., 1,600 tons.

Hercules Steel Casting Co., Milwaukee, Wis. Went into hands receiver in June, 1923. Works at 871-891 Robinson Ave., Milwaukee sold in March, 1924 to Harnischfeger Corporation, Milwaukee.

Hess Steel Corporation (The), Baltimore, Md. went in hands receivers July 14, 1920. The bondholders protective committee subsequently purchased the plant from the receivers as a step toward liquidation.

Works at Baltimore: blt. 1916; 6 Heroult electric fur.; 20" 3-h. 3-st. bar; 9" 3-h. 6-st. bar. For sale, Bondholders Protective Committee, care Baltimore Trust Co.

Hewitt Steel Corporation, Newark, N. J., formerly operated leased works at foot of Chapel St., Newark, owned by The Titan Co. This lease was acquired by Titan Steel Corporation in April, 1920 and the latter company, exercising an option acquired with Hewitt Steel Corporation lease took title to the property on July 1, 1920.

Heyward, Thomas R. Jr., Pittsburgh, Pa. purchased in Aug., 1919 the steel foundry formerly owned by National Steel Casting Co., New Cumberland, W. Va. In Oct., 1922 the plant was sold to Cutler Steel Co. and in Dec., 1925 was acquired by The Duraloy Co.

HIGHLAND IRON & STEEL CO. (The), Terre Haute, Ind.

Inc. Feb. 26, 1901 in Indiana. Subsidiary of The American Chain Co., Bridgeport, Conn.

Walter B. Lashar, P.; William T. Morris, 1 V. P.; Wilmot F. Wheeler, T.; at Bridgeport, Conn. Walter C. Ely, 2 V. P.; Nathan B. Marple, Sec. & G. M.; John B. Schlossberg, Works M.; at Terre Haute. William C. Wolfe, G. S. M.; at 208 South La Salle St., Chicago, Ill.

Sales offices:

Chicago, Ill., Wm. C. Wolfe, G. S. M., 208 S. La Salle St.

St. Paul, Minn., Rank & Goodell, 906 Merchants Bank Bldg.

Product: muck bar, scrap bar; iron and steel merchant bar, engine bolt and staybolt iron.

Terre Haute Works, Terre Haute, Ind.: blt. 1901, f. o. Nov. 25, 1901; 4 mechanical busheling and 4 mechanical puddling fur.; 1 squeezer; 5 oil-fired heat. fur. (4-d.); 20" 3-h. 2-st. puddle; 20"

bar mill with 3-h. roughing and strand rolls and 2-h. finishing; guide mill with 12" 3-h. 1-st. roughing, 10" 3-h. 2-st. pony roughing and strand, 10" 2-h. 2-st. edging and finishing. Product: muck bar and scrap bar, annual cap., 30,000 tons; iron and steel merchant bars, engine bolt and staybolt iron, annual cap., 50,000 tons rolled products (40,000 tons merchant bars, 10,000 tons engine bolt and staybolt iron).

West Pullman Works, 123rd St. & Ashland Ave., Chicago, Ill.: blt. 1909, f. o. Sept. 11, 1909; 2 double puddling fur., 2 busheling fur., 2 pile on board fur.; 4 heat. fur. oil-fired (4-d.); 1 vertical squeezer; 20" puddle mill with 20" 3-h. 2-st. and 20" 2-h. 1-st.; 18" 3-h. 2-st. bar mill; 10" guide mill with 18" 3-h. 1-st. roughing, 10" 3-h. 2-st. pony and strand, 10" 2-h. 2-st. edging and finishing. Product: muck bar and scrap bar, annual cap., 20,000 tons; iron and steel merchant bars, 30,000 tons.

HIGHWAY TRAILER CO., Edgerton, Wis.

Sales agents: Edgerton Electric Steel Foundry Co., Edgerton, Wis.

Works at Edgerton: steel foundry added 1924-25; 1 Booth-Hall electric fur. (1½-ton); annealing and heat treating equipment; pattern shop.

Product: steel castings for own use and for sale, annual cap., 1,000 tons.

Hirsch Rolling Mill Co., St. Louis, Mo. Plant acquired by Missouri Rolling Mill Co. in 1920.

HOOPES & TOWNSEND CORPORATION (The), Broad & Buttonwood Sts., Philadelphia, Pa.

Justin C. Burns and Charles F. Lynch, Receivers.

In August, 1925, Hoopes & Townsend Corporation acquired Hoopes & Townsend Co., and American Bolt Corporation, the latter company being a merger in Jan., 1923 of Bayonne Bolt & Nut Works, Bayonne, N. J.; Standard Bolt & Nut Works, Columbus, Ohio; Michigan Bolt & Nut Works, Detroit, Mich.; and Boss Bolt & Nut Works, Chicago, Ill.

Fort Washington Plant, Fort Washington, Pa.: 3 puddling fur. (2 double, 1 single); busheling fur.; 1 squeezer; four 3-d. heat. fur.; 20" 3-h. 2-st. muck bar mill; 12" 3-h. 5-st. and 9" 3-h. 5-st. finishing mills. (Hoopes & Townsend Co. to August, 1925.)

Product: muck bar and scrap bar, annual cap., 7,200 tons; merchant bars, 10,000 tons; bolt, nut and rivet rods for own use.

Hoosier Rolling Mill Co., Terre Haute, Ind., was acquired by Consolidated Steel & Iron Corporation in June, 1922.

Hub Electric Steel Casting Co., Boston, Mass., blt. plant at South Boston in 1919, f. o. Nov. 24, 1919, with one 2-ton Heroult electric furnace. Company went out of business in May, 1922. Plant sold to General Alloys Co., makers of nickel alloys, Jan. 1, 1923.

Hubbard, John W. (Owner), Granite Bldg., Pittsburgh, Pa.
West End Furnace, Roanoke, Va.: 1 stack, 82' x 16', blt. 1890, f. o. Dec. 1, 1890; 4 Massicks & Crooke stoves; 2 steam blowing eng. (23,000 cfm.); 14 flue boilers, 700 H. P. Pocahontas coke: local brown hematite ore. Limestone quarries near Buchanan, Va. For sale or lease.

Product: foundry pig iron, annual cap., 48,000 tons.

HUBBARD & CO., 6301 Butler St., Pittsburgh, Pa.

Inc. May 13, 1896 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$500,000.

John W. Hubbard, P.; William J. Price, Sec. & T.; at Granite Bldg., Pittsburgh, Pa.

Sales offices:

Chicago, Ill., 5401 Roosevelt Road.
Emeryville, Oakland, Calif., 1250 45th St.
Kansas City, Mo., 1105 Waldheim Bldg.
New York, N. Y., 30 Church St.

Works at 62nd & Butler Sts., Pittsburgh (operated by The Russell Shovel Co.): blt. 1922 with machinery removed from Aliquippa Plant, Aliquippa, Pa.; heat. fur. and 1 train rolls.

Product: shovel blanks for own use, annual cap., 1,700 tons.

HUBBARD STEEL FOUNDRY CO., 144th & Railroad Ave., East Chicago, Ind.

Inc. Nov. 29, 1918 in Delaware. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$963,400.

Albert Pack, P.; J. T. Osler, V. P. & G. M.; James McShane, Sec.; G. T. Flynn, A.; R. W. Freeland, G. S.; B. A. Mick, M. Roll Sales; E. D. Leonard, M. Misc. Sales; H. F. Feigenschuh, P. A.; at East Chicago, Ind. C. C. Upham, T.; at Canton, Ohio.

Sales offices:

Chicago, Ill., 1547 McCormick Bldg.
Chicago, Ill., G. H. McCammon, Railway Exchange Bldg.
Cleveland, Ohio, W. R. McDonough, National Bldg.
Milwaukee, Wis., First National Bank Bldg.
Pittsburgh, Pa., 2147 Oliver Bldg.

Works at East Chicago, Ind.: blt. 1910, f. o. Aug. 26, 1910; 3 A. O. H. fur. (two 25-ton, one 6½-ton), fuel, oil. Snyder electric fur. (3-ton) idle since 1922 and abandoned. Roll foundry, annual cap., 16,000 tons chill and sand cast iron rolls.

Product: steel castings for sale, annual cap., 30,000 tons. Steel and iron rolls.

Hudson Reduction Co., Latrobe, Pa. sold its works at Latrobe in 1923 to Vulcan Mold & Iron Co., manufacturers of ingot molds.

Hudson Sheet & Tinplate Co., Marietta, Ohio. Plant at Marietta sold September 1, 1923 to W. F. Robertson Steel & Iron Co., Cincinnati, Ohio.

HUDSON VALLEY COKE & PRODUCTS CORPN., 52 Vanderbilt Ave., New York, N. Y.

Inc. Mar. 28, 1924 in New York. Capital stock: com., no par value, auth. and issued 150,000 shares; pref. 8% cum. auth. \$5,000,000, issued \$4,000,000; bonds \$2,150,000.

James A. Burden, Ch.; John W. Doty, V. P.; L. Leigh Willard, Mgr.; Alexander Murray, A. Sec.; at New York. Henry Oliver, P. at Pittsburgh, Pa. William E. Millhouse, V. P., Sec. & T.; at Troy, N. Y.

Sales agent: E. Arthur Tutein, 200 Devonshire St., Boston, Mass.

Company was incorporated Mar. 28, 1924 with title Troy Coke & Iron Corporation, name changed to Hudson Valley Coke & Products Corporation, July 7, 1924. Acquired Burden Furnace, Troy, N. Y. from Burden Iron Co., July 7, 1924. Plans to rebuild Burden Furnace, the remodelled stack to have an annual capacity of 165,000 tons of foundry pig iron; also building by-product coke oven plant with 55 ovens and by-product recovery plant.

HUGHES & PATTERSON, 1701 N. Delaware Ave., Philadelphia, Pa.

Robert J. Hughes and William H. Hughes (partners).

Brand: "H. & P. Best," "H. & P. Best-best," "H. & P. Staybolt." Delaware Rolling Mill at Delaware Ave. and Susquehanna Ave. blt. 1870; 10 single puddling fur.; 2 rotary squeezers; 6 heat. fur. (three 2-d. and three 3-d.); 18" 3-h. 2-st. muck; 18" 3-h. 1-st. muck; two 10" 3-h. 4-st. and one 8" 3-h. 4-st. finishing. Fuel, bit. coal.

Product: bar iron specialties, bands, hoops and rods; annual cap., 15,000 tons.

HUGHES TOOL CO., Houston, Texas.

Inc. 1915 in Texas. Capital stock: com. \$2,000,000.

H. R. Hughes, P.; Frank Andrews, V. P.; C. S. Johnson, Sec. & T.; R. C. Kuldell, G. M.; S. P. Brown, G. S. M.; G. O. Schulenberg, P. A.

Sales offices:

Los Angeles, Calif., Santa Fe & Enterprise Sts.

New York, N. Y., 3912 Woolworth Bldg.

Oklahoma City, Okla.

Works at Houston, Texas: foundry blt. 1924, f. o. June, 1924; 2 electric fur. (one 3-ton, one ½-ton).

Product: steel castings for own use, annual cap., 7,000 tons; alloy steel castings (nickel, chrome).

HULL IRON & STEEL FOUNDRIES, Ltd., Hull, P. Q., Canada.

Inc. Oct. 13, 1913 in Quebec. Capital stock: com. auth. \$190,000, issued \$154,500; pref. 7% cum. auth. \$60,000, issued \$57,700.

A. H. Coplan, P. & G. M.; O. Pullan, Sec. & T.; A. Baillot, G. S.; F. Palen, P. A.

Company owns Coplan Steel Corpn., Inc., Ogdensburg, N. Y.

Brand: HISCO.

Works at Hull: blt. 1913-14, f. o. April 22, 1914; 2 side-blow converters (4,000-lb.); 1 A. O. H. fur. (16-ton) idle; 1 Hull electric fur. (6-ton). Forge shop.

Product: steel castings for sale, annual cap., 13,500 tons (6,000 tons converter, 7,500 tons electric); alloy steel castings (nickel, chrome, manganese); railroad car and locomotive castings, cement mill and mining machinery parts; forged steel grinding balls; stamp mill dies.

Hummel Electric Steel Foundry, see American Metallurgical Corporation and Hummel Steel Foundry Company.

Hummel Steel Foundry Co., see under American Metallurgical Corporation and Lenor Realty Corporation.

Hunter Crucible Steel Co., Cleveland, Ohio, acquired Dec. 1, 1922 the plant of Electric Steel & Forge Co., at 6800 Grant Ave., Cleveland, Ohio. Company went into bankruptcy in 1924 and plant was sold at bankruptcy sale and bid in by bondholders, who formed Western Reserve Steel Co. to hold the property pending resale.

Huntington Steel Foundry Co., Huntington, Ind., was placed in hands of receiver June 28, 1920. Plant was acquired Aug. 16, 1920 by Armstrong Steel Castings Co.

Hurt (Joel), Atlanta, Georgia acquired in Sept., 1918 Rising Fawn Furnace, Rising Fawn, Ga. (1 coke stack, blt. 1873-75, annual cap., 72,000 tons) together with iron ore lands. This property was held in name of Georgia Minerals Co. and was sold in Sept., 1923 to B. W. Newsom, Chattanooga, Tenn. The blast furnace was dismantled in 1925; the mineral properties (7,000 acres) are for sale.

Hyatt Steel Products, Ltd., Vancouver, B. C., Canada, leased the plant at Port Moody, B. C. owned by Port Moody Steel Works, Ltd., April 1, 1919, and operated the plant for a short time only. In

March, 1919, Hyatt Steel Products, Ltd., acquired the capital stock of Tudhope Electro Metals, Ltd., with electric furnace installed 1918 for manufacture of pig iron at Vancouver on land of Canadian Pacific Railway leased for the purpose, and operated the furnace for a short time beginning April, 1919, for manufacture of steel. Due to financial difficulties the properties of Hyatt Steel Products, Ltd., were sold to Mr. Kindall, Bellingham, Wash., and taken over by Atlas Steel Products, Ltd. Atlas Steel Products, Ltd., operated Port Moody Works for a short time to use up materials on hand and then surrendered the lease. The electric furnace plant at Vancouver was sold in September, 1919, to Lowox Steel Co., which operated for a short time only and deeded the buildings and equipment to Prof. E. Odum, Vancouver, who held a mortgage on the property. Electric furnace was sold for scrap and removed in 1923.

ILLINGWORTH STEEL CO. (The John), Tacony & Lewis Sts, Frankford, Philadelphia, Pa.

Inc. 1916 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$600,000.

Clarence Illingworth, P.; William H. Illingworth, Sec.; at Frankford, Philadelphia. Charles P. Soden, V. P. & T.; at 217 Broadway, New York.

Sales office: 217 Broadway, New York, N. Y.

Brands: Argo (high speed steel); Frankford (machinery steel).

Works at Frankford: 1 crucible steel fur. (36-pot), fuel, prod. gas; 2 Herrick gas producers; 14 heat. fur. (four 1-d., four 2-d., three 3-d., three sheet mill), fuel, coal and oil; 16" 3-h. 1-st. roughing; 14" 2-h. 4-st., 12" 3-h. 5-st., and 9" 3-h. 5-st. bar mills; 18" 2-h. 4-st. sheet; 2 box annealing fur.; 4 steam hammers (1,200-lb. to 6,000-lb.).

Product: steel ingots, annual cap., 3,000 tons; alloy steel ingots (nickel, chrome, vanadium, tungsten); hot rolled products, 25,000 tons; forged products, 5,000 tons; rolled and hammered carbon and alloy tool steel bars and sheets; high speed steel; saw, file, die, drill, spring, cutlery and machinery steel; die blocks

Illinois Rolling Mill Company see under Briggs & Turivas.

ILLINOIS STEEL CO., 208 South La Salle St., Chicago, Ill.

Inc. May 2, 1889 in Illinois. Subsidiary of United States Steel Corporation.

E. J. Buffington, P.; T. W. Robinson, V. P.; G. G. Thorp, V. P.; E. B. Harkness, Sec.; A. W. Carlisle, T.; H. Morrison, A.; E. S. Mills, G. S. M.; C. H. Rhodes, P. A.

Sales offices:

Birmingham, Ala., Willard Wilson, Brown-Marx Bldg.

Boston, Mass., W. S. Locke, 120 Franklin St.

Buffalo, N. Y., F. C. Deming, Marine Natl. Bank Bldg.

Chicago, Ill., D. T. Buffington, 208 South La Salle St.

Cincinnati, Ohio, G. H. Vant, Union Trust Bldg.

Cleveland, Ohio, J. R. Mills, Rockefeller Bldg.

Denver, Colo., E. M. Sparhawk, First Natl. Bank Bldg.

Detroit, Mich., W. B. Weston, Buhl Bldg., 535 Griswold St.

New Orleans, La., Denis Crowley, Jr., Maison Blanche.

New York, N. Y., C. C. Cluff, Empire Bldg., 71 Broadway.

Philadelphia, Pa., J. B. Bonner, Widener Bldg.

Pittsburgh, Pa., A. M. Harper, Carnegie Bldg.

St. Louis, Mo., S. W. Wheelock, Third Natl. Bank Bldg.

St. Paul, Minn., W. J. Totten, Merchants Natl. Bank Bldg.

Product: bessemer, basic, foundry and malleable pig iron, spiegel-eisen, ferro-manganese and ferro-silicon; bessemer, basic open-hearth and electric steel ingots; alloy steel ingots; slabs, blooms, billets, sheet and tinplate bars; rails, light rails and small billets; structural shapes, beams, angles, channels, tees, zeos, etc.; universal and sheared plates; angle bars, rail joints and splices; tie plates, base plates, etc.; spikes, screw spikes, bolts and nuts; merchant bars, rounds, squares, flats, bands and special shapes; wire rods; railway car and locomotive axles; steel railway car wheels; steel, gray iron and brass castings, rolls, ingot moulds and stools for own use.

Total annual cap.: pig iron (29 blast furnaces) 5,364,700 tons; steel ingots, 6,720,000 tons; semi-finished hot rolled products, 5,290,800 tons; finished hot rolled products, 4,688,700 tons.

Gary Works, Gary, Ind. (leased from Indiana Steel Co., owner): Blast Furnaces: 12 stacks: No. 1, 93' x 23', f. o. Mar. 14, 1918, rebld. 1923; No. 2, 93' x 23', f. o. Mar. 4, 1917, rebld. 1922; No. 3, 93' x 22' 6", f. o. July 4, 1917, rebld. 1921; No. 4, 92' 6" x 23', f. o. April 14, 1917, rebld. 1924; No. 5, 92' 6" x 24', f. o. Mar. 16, 1911, rebld. 1924; No. 6, 87' 8" x 23', f. o. Mar. 16, 1910, rebld. 1921 and 1924; No. 7, 87' x 24', f. o. Dec. 4, 1909, rebld. 1924; No. 8, 87' 8" x 22' 6", f. o. Nov. 23, 1909, rebld. 1921; No. 9, 87' 8" x 22' 6", f. o. June 11, 1909, rebld. 1922; No. 10, 87' 8" x 22' 6", f. o. Jan. 26, 1909, rebld. 1921; No. 11, 87' x 24', f. o. Dec. 29, 1908, rebld. 1924; No. 12, 87' 8" x 22' 6", f. o. Dec. 21, 1908, rebld. 1920; 46 stoves (32 Massicks & Crooke 3-pass, 100' x 22'; 14 center-comb. 2-pass, 110' x 22'); 2 Todd horiz. cross comp. steam blowing eng. and 23 Allis-Chalmers gas blowing eng. (750,000 cfm.) 18 lbs. rated pressure; 32 water-tube boilers (16 Sterling, 16 Rust) 12,800 H. P. serves also converters, hydraulic pumps and tube generators; 6 Uehling double-strand pig casting mach.; rotary kiln sintering plant for flue dust, annual cap., 165,000 tons; 5 slag granulating pits, annual cap., 900,000 tons. By-product coke; Lake ore. Product: basic pig iron, annual cap., 2,380,500 tons.

By-Product Coke Plant: 700 Koppers by-product coke ovens, annual cap., 3,450,000 net tons coke and under construction 138 Koppers-Becker coke ovens, annual cap., 841,600 net tons coke; by-product recovery plant and Carl Still benzol plant, annual cap., 9,900,000 gals. light oil with additional capacity under construction of 2,370,000 gals.

Steel Works and Foundry: 45 B. O. H. fur. (twenty-eight 90-ton, fourteen 100-ton, three 200-ton); 2 A. O. H. fur. (one 10-ton, one 25-ton); fuel in O. H. prod. gas, tar and coke oven gas, 182 Morgan gas producers; 2 bessemer converters (25-ton) used exclusively for duplexing; 6 mixers (three 300-ton, two 400-ton, one 1,300-ton). Steel, gray iron (7,500 tons) and bronze (400 tons) foundry for

own use. Product: steel ingots, annual cap., 3,240,000 tons (all B. O. H.); steel castings for own use, 15,000 tons (A. O. H.).

Rolling Mills: const. begun 1908; 35 soaking pits, fuel, coke oven gas and prod. gas (8 with four 4-ingot holes, 24 with four 6-ingot holes, 3 with four 8-ingot holes); 30 heat. fur. (17 cont., 13 regen. reversing) coke oven gas and prod. gas fired; rail mill, blt. 1908-09, f. o. Feb. 17, 1909, 40" 3-h. 2-st. blooming, 28" 2-h. 10-st. finishing; blooming mill, blt. 1916-18, f. o. Mar. 23, 1918, 40" 2-h. 1-st. reversing; billet mill, blt. 1908-09, f. o. Aug. 16, 1909, 40" 2-h. 4-st. blooming, 32" 2-h. 5-st. blooming, 24" 2-h. 6-st. cont. billet, 18" 2-h. 6-st. cont. billet, 18" 2-h. 8-st. cont. sheet bar; slabbing mill, blt. 1913-14, f. o. June 29, 1914, 36" 2-h. 1-st. reversing; axle mill, blt. 1909-10, f. o. July 29, 1910, 26" 2-h. 4-st.; 20" merchant mill, blt. 1916-18, f. o. Oct. 18, 1918, 24" 2-h. 4-st., 20" 2-h. 5-st., 20" 3-h. 2-st.; 18" merchant mill, blt. 1909-11, 18" 2-h. 5-st., 18" 3-h. 2-st.; 14" merchant mill, blt. 1909-11, 14" 2-h. 5-st., 14" 3-h. 2-st.; 12" merchant mill, blt. 1909-11, 14" 2-h. 4-st., 12" 2-h. 2-st., 12" 3-h. 2-st.; 12" merchant mill, blt. 1909-11, 14" 2-h. 5-st., 12" 2-h. 4-st.; 10" merchant mill, blt. 1909-11, 12" 2-h. 6-st., 10" 2-h. 6-st.; 10" merchant mill, blt. 1916-19, f. o. Mar. 10, 1919, 13" 2-h. 6-st., 12" 2-h. 1-st., roughing with two finishing mills each 12" 2-h. 1-st., 10" 2-h. 2-st., 9" 2-h. 2-st.; 10" merchant mill, blt. 1920, f. o. June 19, 1920, 12" to 10" 2-h. and 3-h. 4-st.; 20" strip mill, blt. 1920-22, f. o. Jan., 1922, 24" to 20" 2-h. 10-st.; 12" strip blt. 1920-22, f. o. Mar., 1922, 14" to 12" 2-h. 12-st.; sheared plate mill, blt. 1916-17, f. o. Oct. 22, 1917, 44" x 160" 3-h. 1-st., middle roll 24" x 160"; universal plate mill, blt. 1911, f. o. Nov. 14, 1911, 60" 3-h. 1-st., top and bottom rolls, 36" x 84"; 6 steam hammers (7,500-lb.); 4 hydraulic presses (600-ton, 1,000-ton, 2,000-ton, 10,000-ton). Roll sheared plates, $\frac{1}{4}$ " to $2\frac{1}{4}$ " thick, to 152" wide; universal plates $\frac{1}{4}$ " to $1\frac{1}{2}$ " thick, 20" to 60" wide.

Product: semi-finished hot rolled products, annual cap., 2,340,000 tons, including 720,000 tons slabs, 1,520,000 tons blooms and billets, 100,000 tons sheet bars; finished hot rolled products, 2,820,000 tons, including 960,000 tons rails, 168,500 tons heavy structural shapes, 240,000 tons sheared plates, 240,000 tons universal plates, 732,900 tons merchant and concrete bars, 178,600 tons long tie plate bars, 300,000 tons hot rolled strip; axles, 120,000 tons; steel wheels, 60,000 tons.

Joliet Works, Joliet, Ill.:

Blast Furnaces: 4 stacks, No. 1, 78' 5" x 19' 6", blt. 1873, f. o. June 9, 1880, relined 1922; No. 2, 78' 5" x 19' 6", blt. 1873, f. o. Feb. 8, 1882, relined 1920; No. 3, 89' 6 $\frac{3}{4}$ " x 22' 6", blt. 1903, f. o. Jan., 1904, rebld. 1923; No. 4, 90' 1" x 22', blt. 1906, f. o. Sept. 2, 1906, relined 1922; 16 stoves (four 2-pass side comb. 110' x 22'; four 2-pass center-comb., 110' x 22'; four 4-pass, 100' x 25'; four 3-pass McClure, 101' 9" x 22'); 7 horiz. cross comp. steam blowing

eng. (200,000 cfm.) 30 lbs. maximum pressure; 32 water-tube boilers, 10,739 H. P. serve also converters and rod mills; 2 Heyl & Patterson double-strand pig casting mach. By-product coke: Lake ore. Product: bessemer pig iron, annual cap., 631,350 tons. By-product Coke Plant: 280 Koppers by-product coke ovens, by-product recovery plant and Carl Still benzol plant, annual cap., 1,215,450 net tons coke, 3,120,000 gals. light oil.

Steel Works: blt. 1870; 3 bessemer converters (two 10-ton, one 12-ton); 6 cupolas; Heroult electric fur. ($\frac{1}{4}$ -ton) for melting ferro-alloys (idle); 2 mixers (250-ton); 18 Duff gas producers; foundry for gray iron (2,400 tons), air furnace (4,000 tons) and brass (125 net tons) castings for own use only. Product: steel ingots, annual cap., 708,000 tons; steel castings for own use.

Rolling Mills: 10 heat. fur. (three 4-d., one 5-d., one 6-d., five cont.) fuel, coke oven gas; 36" 3-h. 1-st. blooming; 25" 3-h. 1-st. roughing, 24" 3-h. 1-st. finishing; 18" 2-h. 6-st. cont. rod; 16" 2-h. 1-st., 12" 2-h. 3-st., 10" 2-h. 4-st., 9" 2-h. 4-st. Garrett rod; 16" 2-h. 1-st., 14" 2-h. 3-st., 11" 2-h. 4-st., 10" 2-h. 4-st. Garrett rod; 11 $\frac{1}{2}$ " 2-h. 2-st., 10" 2-h. 2-st. Morgan cont. rod; 18" 3-h. 2-st., 18" 2-h. 1-st., 12" 3-h. 5-st., 12" 2-h. 2-st. merchant mill. Splice bar and rail joint shop. Spike, bolt and nut dept. Product: semi-finished hot rolled products, annual cap., 624,000 tons billets and slabs; finished hot rolled products, 408,700 tons, including 252,000 tons wire rods, 141,700 tons spike, bolt and nut rods, 15,000 tons small billets for joints; standard spikes, 716,800 kegs; screw spikes, 38,080 kegs; track bolts and nuts, 336,000 kegs.

Milwaukee Works, Milwaukee, Wis.:

Blast Furnaces: 2 stacks; No. 1, 66' x 16', blt. 1870, f. o. April 1870, relined 1922; No. 2, 66' x 16', blt. 1870-71, f. o. April, 1871; 6 Massicks & Crooke 3-pass stoves, 60' x 18'; 5 steam blowing eng. (4 Cuyahoga, 1 Allis) 53,000 cfm., 7 lbs. rated pressure; 4 Sterling water-tube and 4 tubular boilers, 2,200 H. P. By-product coke: Lake ore. Product: foundry and malleable bessemer pig iron, annual cap., 113,800 tons.

Rolling Mills: orig. blt. 1868; 10 cont. prod. gas fired heat. fur. (3 regen. 7 recup.); 22" 3-h. 2-st. and 22" 2-h. 1-st. bar; 21" 3-h. 4-st. and 21" 2-h. 1-st. bar; 16" 3-h. 2-st., 12" 3-h. 1-st., and 12" 2-h. 3-st. merchant; 12" 3-h. 2-st. and 9" 2-h. 5-st. merchant; 14" 3-h. 2-st. and 9" 2-h. 5-st. merchant; 12" 2-h. 5-st. and 8" 2-h. 6-st. merchant; 4 box annealing fur.; 3 hand pickling tanks. Product: finished hot rolled products, annual cap., 242,800 tons, including 1,000 tons light rails, 237,900 tons merchant and concrete bars, and 3,900 tons splice bar shapes.

South Works, South Chicago, Ill.:

Blast Furnaces: 11 stacks; No. 1, 90' x 23' 6", blt. 1880-81, f. o. June, 1881, rebt. 1920; No. 2, 90' x 23' 6", blt. 1880-81, f. o. June, 1881, rebt. 1919; No. 3, 90' x 22' 9", blt. 1880-81, f. o. 1882,

reblt. 1919, relined 1924; No. 4, 90' x 23' 6", blt. 1880-81, f. o. 1882; rebt. 1921; E, 90' x 23' 6", blt. 1905-06, f. o. June 21, 1906, rebt. 1922; No. 5, 92' x 24' 3", blt. 1890-91, f. o. May, 1891, rebt. 1924; No. 6, 92' x 24' 3", blt. 1890-91, f. o. May, 1891, rebt. 1924; No. 7, 94' x 22', blt. 1890-91, f. o. July, 1891, rebt. 1922; No. 8, 92' x 22', blt. 1890-91, f. o. Jan., 1892, rebt. 1919, relined 1923; No. 9, 99' 3" x 22' 6", blt. 1900-01, f. o. July 3, 1901, rebt. 1918, relined 1924; No. 10, 95' x 22", blt. 1900-01, f. o. Dec. 3, 1901, rebt. 1917, relined 1921; 43 hot blast stoves and 1 obsolete stove (21 Cowper 2-pass stoves of which twelve 107' 11 $\frac{3}{4}$ " x 21', three 90' x 21', four 90' x 25', two 100' x 25'; 16 Massicks & Crooke 3-pass stoves, 96' 6" x 21' 11"; 6 Whitwell 4-pass stoves, 100' x 25'); 18 steam blowing eng. (5 Mesta, 5 Allis-Chalmers, 8 Southwark) and 9 gas blowing eng. (5 Allis-Chalmers, 2 Snow, 2 Bethlehem) 931,000 cfm., 15 to 16 lbs. rated pressure; 84 water-tube boilers (50 Sterling, 10 Rust, 24 Wheeler) 29,560 H. P. (and 6 obsolete water-tube boilers) serve also No. 1 open-hearth, duplex plant, slab, rail and plate mills, power station and foundry; 6 Heyl & Patterson double-strand pig casting mach.; rotary kiln (62' x 7') sintering plant for flue dust, annual cap., 58,000 tons, 3 slag granulating pits, annual cap., 600,000 tons and 1 slag granulating pit building, annual cap., 350,000 tons. By-product coke: Lake ore. Product: bessemer, basic and foundry pig iron, spiegeleisen, ferro-manganese and ferro-silicon, annual cap., 2,239,050 tons.

Steel Works: 3 bessemer converters (25-ton) used also for duplexing with B. O. H. and blown metal to electric fur.; 29 B. O. H. fur. (fourteen 75-ton, six 65-ton, six 55-ton, three 200-ton) fuel in O. H. prod. gas, tar and oil; 130 gas producers; 4 Heroult electric fur. (three 25-ton, one 15-ton); 6 mixers (one 150-ton, one 250-ton, three 300-ton, one 1,300-ton); foundry with 2 small cupolas for gray iron (150,000 tons ingot moulds, 4,200 gray iron castings) and brass (420 tons) castings for own use. Product: steel ingots, annual cap., 2,772,000 tons (540,000 tons bessemer, 2,082,000 tons B. O. H., 150,000 tons electric); steel castings for own use, 6,000 tons (electric); alloy steel ingots and castings (nickel, chrome, vanadium, molybdenum, manganese).

Rolling Mills: 40 soaking pits (thirty 1-hole, ten 4-hole) fuel, prod. gas; 17 heat. fur. (thirteen 5-d., 4 cont.) fuel, prod. gas and blast furnace gas; 40" 2-h. 1-st. slabbing; 40" 2-h. 1-st. blooming; 35" 2-h. 1-st. blooming; structural mill with 32" 2-h. 1-st. roughing 30" or 28" 3-h. 2-st. and 30" or 28" 2-h. 1-st. finishing; structural mill with 24" 2-h. 4-st., 24" 3-h. 1-st., 21" 2-h. 2-st. and 21" 3-h. 1-st.; rail mill with 40" 3-h. 1-st. blooming (to be replaced by 40" 2-h. 1-st. reversing, under construction and to be ready for operation in 1926), 28" 3-h. 3-st. roughing and finishing, 28" 2-h. 1-st. dummy; 24" 3-h. 3-st. light rail mill; 3 sheared plate mills

(two 36" x 90" 3-h., one 38" x 132" 3-h.); 30" 2-h. universal plate with rolls 24" x 67"; 2 hand pickling tanks; 4 hammers (3 steam 1,100-lb. to 4,000-lb.; 1 electric drive air hammer 500-lb.); one 1,500-ton steam hydraulic press. Roll sheared plates 30" to 72" x $\frac{3}{8}$ "; 30" to 110" x $\frac{1}{4}$ "; 30" to 115" x $\frac{5}{8}$ " to 2"; circles 18" to 75" dia. x $\frac{3}{8}$ "; 18" to 115" dia. x $\frac{1}{4}$ " to 2"; universal plates 6 $\frac{1}{4}$ " to 24" x $\frac{3}{8}$ "; 6 $\frac{1}{8}$ " to 30" x $\frac{1}{4}$ " to 2". Product: semi-finished hot rolled products, annual cap., 2,326,800 tons, including 796,700 tons slabs, 1,127,300 tons blooms and billets, 102,800 tons unfinished shapes, 300,000 tons sheet bars; finished hot rolled products, 1,217,200 tons, including 60,000 tons rails, 461,200 tons structural shapes, 480,000 tons sheared plates, 156,000 tons universal plates, 60,000 tons merchant and concrete bars; forged blooms and billets, 48,000 tons.

Steel supply plants and storage warehouses.

Illinois Steel Warehouse Co.:

North Works, Chicago, Ill. (leased from Illinois Steel Co.); plant for cutting to size and distributing steel from warehouses, annual cap., 121,000 tons. Warehouse with storage capacity of 35,000 tons.

St. Louis Warehouse, 21st St. & Gratiot St., St. Louis; plant for cutting to size and distributing, annual cap., 28,000 tons. Warehouses have storage capacity of 8,000 tons.

St. Paul Warehouse, Twin City Plant, University Ave. & Eustis St., St. Paul, Minn.; plant for cutting to size and distributing, annual cap., 33,000 tons. Warehouses have storage capacity of 13,000 tons.

INDIANA ROLLING MILL CO. (The), New Castle, Ind.

Inc. 1902 in Indiana. Capital stock: com. \$400,000; pref. 7% non cum. \$150,000.

S. A. Ingersoll, P.; R. C. Ingersoll, V. P.; at Galesburg, Ill. A. P. Zetterberg, Sec.; H. G. Ingersoll, T.; E. J. Runyan, A.; S. L. Ingersoll, Production Mgr.; H. D. Warfield, P. A.; at New Castle, Ind.

Works at New Castle: blt. 1902-03, f. o. June 1, 1903; 2 cont. slab heat. fur. (one coal-fired, one oil-fired); 5 coal-fired sheet fur.; two 2-h. jobbing plate mills (one 24" x 48", one 28" x 44"); 4 hot black sheet mills (22" x 36"); 1 box annealing fur. Shovel works connected with the plant.

Product: high carbon steel sheets for discs, sections, coulters, shovels, annual cap., 10,000 tons black sheets; jobbing mill products, 40,000 tons; spades, shovels and scoops.

INDIANAPOLIS STEEL PRODUCTS CO., New Palestine, Ind.

Inc. Nov., 1920 in Indiana. Capital stock: com. \$100,000.

Walter Bludsoe, P.; W. N. Cox, V. P.; W. M. Lewis, Sec. & T.; at Terre Haute, Ind.

Works at New Palestine, Ind.: construction begun Nov., 1920, work suspended; 1 cont. oil-fired heat. fur.; 10" 3-h. 5-st. guide mill.

Product to be merchant bars, concrete bars and hoops, annual cap., 24,000 tons.

INDUSTRIAL STEEL CASTING CO. (The), 2237 Water Works Drive, Toledo, Ohio.

Inc. Feb. 3, 1917 in Ohio. Capital stock: com., par value \$100, auth. \$150,000, issued \$100,000; pref. 8% cum. auth. \$50,000, issued \$24,100.

Joseph L. Tillman, Sr., P. & G. M.; William E. Wine, 1 V. P.; Joseph L. Tillman, Jr., 2 V. P. & G. S.; Ralph F. Tillman, Sec., A. & G. S. M.; L. J. Tillman, T. & P. A.

Works at Millard Ave. & Front St., Toledo: 1 Industrial electric fur. (2½-ton) f. o. Oct. 1, 1919.

Product: electric steel castings for sale, annual cap., 4,200 tons. Alloy steel castings (vanadium).

INDUSTRIAL WORKS, Bay City, Mich.

Est. 1873; inc. 1904, reinc. Nov. 1, 1924 in Michigan. Capital stock: com., par value \$10, auth. and issued \$1,000; com., no par value, auth. and issued 50,000 shares; bonds \$2,000,000.

E. B. Perry, P.; J. G. White, V. P.; G. M. Hubbard, V. P.; S. R. Small, V. P.; M. D. Platt, Sec. & T.; H. H. Perry, M.; W. B. Perry, G. S.; N. R. Crawford, Director of Sales; A. J. Copeland, P. A.

Sales offices in all principal cities.

Brand: Industrial (cranes and pile drivers).

Company manufactures wrecking, locomotive and freight cranes, pile drivers, transfer tables, rail saws, clamshell buckets and steam pile hammers. It operates an iron and steel foundry in connection with this manufacture.

Works at Bay City: blt. 1873; steel foundry added 1911-12, f. o. Mar., 1912; 2 Tropenas converters (6,000-lb.); gray iron and brass foundry; 3 cupolas; annual cap., 4,000 tons gray iron, 1,000 tons semi-steel, 400 tons brass castings for own use.

Product: steel castings for own use, annual cap., 3,000 tons. Alloy steel castings (vanadium).

Inland Engineering Co., 505 Kensington Ave., Chicago, Ill., purchased April 1, 1924 the Steel Department of the plant of Chicago Electric Steel Co. Rolling Mill Dept. (10" 3-h. 5-st. bar mill) was dismantled in August, 1924 and the bar mill was sold and removed to Savannah Steel Corporation, Savannah, Ga.

Works at 447 Kensington Ave., Chicago: f. o. Mar., 1919; 2 electric fur. (one 3-ton Booth-Hall, one 1-ton Rennerfelt).

INLAND STEEL CO., 38 South Dearborn St., Chicago, Ill.

Inc. Feb. 7, 1917 in Delaware. Capital stock: com., no par value, auth. 1,200,000 shares, issued 1,182,799 shares; pref. 7% cum. auth. \$30,000,000, issued \$10,000,000; bonds \$568,000.

L. E. Block, Ch.; P. D. Block, P.; E. M. Adams, 1 V. P. & G. S. M.; E. J. Block, V. P.; W. C. Carroll, V. P.; C. R. Robinson, V. P.; J. W. Lees, V. P.; W. D. Truesdale, Sec. & T.; J. H. Morris, A.; D. P. Thompson, A. P.; at Chicago. W. A. Maxwell, Jr., G. S.; J. E. Stafford, P. A.; at Indiana Harbor, Ind. E. G. Jones, G. S.; at Milwaukee, Wis.

Sales offices:

Dallas, Texas, American Exchange Bldg.

Kansas City, Mo., Commerce Trust Bldg.

Los Angeles, Calif., Washington Bldg.

Milwaukee, Wis., Majestic Bldg.

New Orleans, La., United Fruit Co. Bldg.

St. Louis, Mo., Bank of Commerce Bldg.

St. Paul, Minn., Pioneer Press Bldg.

Salt Lake City, Utah, Dooly Bldg.

San Francisco, Calif., 22 Battery St.

Seattle, Wash., L. C. Smith Bldg.

Brand: Inland Extra Soft Open Hearth, Inland Copper Alloy.

Product: basic, malleable and foundry pig iron; coke by-products; steel ingots; slabs, blooms, billets and sheet bars; rails, heavy and light structural shapes, angles, tees, beams, channels, agricultural shapes, merchant and concrete bars, spike, bolt, nut and rivet rods; universal plates; sheared plates, firebox, ship, tank and boiler plates; black sheets, galvanized sheets, flat and corrugated, sheets for stamping and japanning; railroad spikes, track bolts and nuts, rivets, silo rods, etc.

Indiana Harbor Works, Indiana Harbor, Ind.:

Inland Furnaces: 3 stacks and fourth furnace under construction; No. 1, 85' x 20' 9", blt. 1906-07, f. o. Aug. 30, 1907, relined Dec. 1924; No. 2, 90' x 22', blt. 1911-12, f. o. Apr. 3, 1912, relined Mar. 1922; No. 3, 90' x 22', blt. 1916-17, f. o. Apr. 24, 1917, relined Aug. 1922; No. 4, 94' x 23' 6" under construction; 12 two-pass stoves (4 central comb. 93' x 22', 8 side comb. 93' x 24') and 4 stoves building for No. 4 furnace, 2-pass side comb. 105' x 25'; 10 vertical compound reciprocating steam blowing eng., 165,000 cfm., 25-lbs. rated pressure; 22 water-tube boilers (20 Sterling, 2 Heine) 12,400 H. P., furnish steam also for generation of power for general mill use; under construction 4 Heine boilers (6,000 H. P.) and 5 Ingersoll-Rand turbo-blowers, 300,000 cfm., 30 lbs. pressure; 2 double-strand pig casting mach. (1 Uehling, 1 Pittsburgh Coal Washer Co.); Greenawalt sintering plant for flue dust, annual cap., 35,000 tons; slag granulating pit, annual cap., 650,000 tons. By-product coke: Lake ores. Iron foundr

(2,700 tons). Product: basic, malleable and foundry pig iron, annual cap., 650,000 tons.

By-Product Coke Plant: 130 Koppers coke ovens, by-product recovery plant and Koppers benzol plant; annual cap., 540,000 net tons coke, 2,000,000 gals. light oil. Under construction 74 Koppers by-product coke ovens and added by-product recovery capacity, annual cap., 360,000 net tons coke, 1,000,000 gals. light oil. Steel Works: blt. 1901-02, first steel July 21, 1902, first rolled products, Nov. 1, 1902: 26 B. O. H. fur. (four 100-ton, ten 85-ton, twelve 60-ton) fuel in O. H. oil and tar; one 600-ton mixer; 9 four-hole soaking pits, fuel prod. gas; 15 cont. heat. fur. (2 oil fired, 8 gas-fired, 5 pulv. coal-fired); 40" 2-h. 1-st. blooming; 36" 2-h. 1-st. blooming; 32" 2-h. 1-st. blooming; 28" 3-h. 3-st. rail and structural mill; 24" 3-h. 3-st. billet and sheet bar mill; 24" 2-h. 4-st. jobbing shape mill; 24" 2-h. 6-st. Morgan cont. billet and slab mill; 11" to 8" 2-h. 14-st. Morgan cont. bar mill; 14" 2-h. 10-st. duo type finishing mill with 18" 2-h. 6-st. cont. roughing and 14" 2-h. 4-st. staggered duo; 32" x 100" 3-h. 1-st. sheared plate mill; universal plates are rolled on 24" structural mill; 2 jobbing mills (one 28" x 44" to 56", one 30" x 60" to 72"); 16 sheet and 16 pair fur.; 16 hot black sheet mills (28" x 32" to 44"); 8 stands cold rolls (1 train of 7 stands, and 1 st. with independent drive) rolls 24" x 48" to 56"; 19 box annealing fur.; 8 plunger, 1 Mesta pickling mach.; 8 galv. pots. Roll sheared plates 3-16" to 1½" to 90" wide and 600" long; black sheets 17 to 30 gauge, 18" to 48" wide, lengths vary with width and gauge.

Spike, Bolt and Rivet Dept.: railroad spikes 9-16" and ⅝" x 5" to 6½" long; track bolts ⅝" to 1½-16" x 1¼" to 7" long; track nuts to fit; rivets ½" to 1½" x ¾" to 8" long; silo rods ½" to ¾" x 5' long and longer.

Product: steel ingots, annual cap., 1,600,000 tons; semi-finished, 1,416,000 tons (slabs, 275,000 tons; billets and blooms, 908,000 tons; sheet bars, 233,000 tons); hot rolled products, 1,225,000 tons including 200,000 tons rails, 200,000 tons heavy structural shapes, 132,000 tons light structural shapes, 40,000 tons universal plates, 160,000 tons sheared plates, 185,000 tons merchant and concrete bars, 28,000 tons spike, bolt, nut and rivet rods, 42,000 tons blue annealed sheets, 98,000 tons black sheets; 60,000 tons galvanized sheets; 133,000 kegs railroad spikes, 36,000 kegs track bolts, 20,000 kegs track nuts, 33,000 kegs rivets; 2,200 tons silo rods.

Chicago Heights Works, Chicago Heights, Ill.: blt. 1893-94, f. o. Jan. 1894; 1 cont. pulv. coal-fired heat. fur.; 14" 3-h. 8-st. rail slitting bar mill. Product: merchant and concrete bars, angles, tees, channels and agricultural shapes, annual cap., 45,000 tons. Milwaukee Works, Milwaukee, Wis.: blt. 1920-21, f. o. Apr., 1921; 10 comb. sheet and pair fur.; 10 hot black sheet mills (28" x 38"

to 56"); 5 stands cold rolls (four 24" x 48", one 24" x 54"); 4 double box annealing fur.; 2 pickling mach.; 4 galvanizing pots. (Milwaukee Rolling Mill Co. to Jan. 5, 1924, on which date it was acquired by Inland Steel Co. of Wisconsin).

Product: black sheets, annual cap., 50,000 tons; galvanized sheets. 35,000 tons.

INTERMONT COAL & IRON CORPN., Big Stone Gap, Va.

Inc. June 29, 1916 in Virginia. Capital stock: com., par value \$100, auth. and issued \$500,000; pref. 7% cum. auth. and issued \$50,000; bonds \$650,000.

R. Tate Irvine, P.; J. H. Mathews, Sec. & T.; O. M. Stull, G. M.; at Big Stone Gap. L. M. Williams, V. P.; at Richmond, Va.

Sales agents: Rogers, Brown & Crocker Bros., Inc.; Walter-Wallingford & Co., and Ranson & Orr, Cincinnati, Ohio; The Gauley Mountain Coal Co., Richmond, Va.; Volunteer Fuel & Iron Co., La Follette Co., Tenn.

Brands: Big Stone Gap (pig iron); Josephine (coke).

Union Furnace, Big Stone Gap: 1 stack, 75' x 16', blt. 1890-92, last rebt. 1917; 4 hot blast stoves, 4-pass, (three 60' x 20', one 45' x 20'); 4 steam blowing eng. 20,000 cfm. 8-lbs. rated pressure; 7 water-tube boilers (4 Cahall, 3 Wickes) 1,450 H. P. Josephine coke: local red and western N. C. brown ores, nodulized pyrites cinder.

Product: foundry pig iron, annual cap., 35,000 tons.

The company owns Josephine Coal and Coke operation at Dooley, Va. with coal mine, annual cap., 125,000 tons and 100 beehive coke ovens, annual cap., 48,000 net tons, at Josephine, Va. Also limestone quarry at Big Stone Gap, annual cap., 50,000 tons. Company owns and operates iron ore mines at Irondale and Harvey, Va., and Lavine and Noes mines at Ben Hurr, Va., annual cap., 50,000 tons.

INTERNATIONAL HARVESTER CO., 606 South Michigan Ave., Chicago, Ill.

Inc. Sept. 19, 1918 in New Jersey.

Cyrus H. McCormick, Ch.; Harold F. McCormick, Ch. Ex. Com.; Alexander Legge, P.; H. F. Perkins, 1 V. P.; A. E. McKinstry, V. P.; H. B. Utley, V. P.; George A. Ranney, V. P. & T.; Cyrus McCormick, Jr., V. P.; William M. Reay, C.; William M. Gale, Sec.; George E. Rose, G. S. Steel Works; B. W. Batchelder, G. S. Ore and Coal Mines.

Sales are handled by Wisconsin Steel Co. (a subsidiary), C. F. Biggert, V. P. & S. M. at 606 South Michigan Ave., Chicago.

Wisconsin Steel Works, South Chicago, Ill.:

Blast Furnaces: 3 stacks; Furnace A, 78' x 16', blt. 1880, last rebt. 1906; Furnace No. 1, 90' 6" x 21' 6", blt. 1902-03, rebt. 1914; Furnace No. 2, 90' x 21' 6", blt. 1906-8; 13 two-pass stoves

(four 75' x 20', four 82' x 22' five 90' x 22'); 9 steam blowing eng. (160,000 cfm.); 35 water-tube boilers, 12,322 H. P., furnish power to rolling mills also; 1 Uehling double-strand pig casting machine. Molten metal to mixers. By-product and Kentucky beehive coke: Lake ore. Product: basic, bessemer, malleable and foundry pig iron, annual cap., 500,000 tons.

By-product Coke Plant: 88 Wilputte by-product coke ovens, by-product recovery plant and Wilputte benzol plant, annual cap., 360,000 net tons coke, 2,500,000 gallons light oil.

Steel Works: blt. 1902-03, f. o. Mar. 31, 1903, first steel Sept. 3, 1903: 2 metal mixers (250-ton): 2 bessemer converters (10-ton); 5 B. O. H. fur. (100-ton); first O. H. steel Mar. 20, 1924; fuel in O. H. oil and coke oven gas; 20 soaking pits; 5 cont. heat. fur.; 40" 2-h. 1-st. blooming added in 1925, 35" 2-h. 1-st. blooming; Morgan cont. bar mill with 14" 2-h. 8-st. roughing, 11" 2-h. 4-st. and 8" 2-h. 2-st. finishing; Morgan cont. bar mill with 16" 2-h. 8-st. roughing and 14" 2-h. 3-st. finishing; bar mill with 16" 3-h. 1-st., 16" 2-h. 1-st., and 14" 2-h. 4-st. roughing, 12" 2-h. 5-st. and 8" 2-h. 2-st. finishing; Cold drawing dept., 3 drawing benches, 21" 1-st. cold rolling mill, one 1,000-ton shear, 10 straightening presses, 7 straightening mach., 2 automatic straighteners, one 4-drum wire bench, 10 hand pickling tanks. Product: steel ingots, annual cap., 700,000 tons (300,000 B. O. H., 400,000 bessemer); blooms and billets, 330,000 tons; finished rolled products, 300,000 tons; cold drawn shafting, 35,000 tons.

Deering Works Rolling Mill, 2201 Oakdale Ave., Chicago, Ill.: blt. 1901, f. o. Oct. 10, 1901; 3 hand-fired 2-d. heat. fur.; 13" 3-h. 5-st. bar mill. Product: merchant bars, flats, rounds, angles, channels, ovals, rolled from old steel rails and billets, annual cap., 26,800 tons.

The company owns iron ore mines as follows: Agnew Mine, Hibbing, Minn.; Hawkins Mine, Nashwauk, Minn.; Sargent Mine, Nashwauk, Minn.; Bruce Mine, Chisholm, Minn. Wisconsin Steel Co. owns about 6,500 acres of coal lands in Harlan Co., Kentucky with coal mine and 408 beehive coke ovens at Benham, Kentucky, annual cap., 175,000 net tons coke.

INTERNATIONAL HIGH SPEED STEEL CO., Rockaway, N. J.

Edward Maxson, Receiver (appointed Jan. 10, 1924), 165 Broadway, New York, N. Y.

Works at Rockaway: blt. 1915-18, f. o. Aug., 1915; four 2-d. billet heat. fur.; 12" 3-h. 5-st. and 10" 3-h. 6-st. bar mills, 1 box annealing fur.; 6 steam hammers (200-lb. to 2½-ton).

Product: rolled and hammered carbon and alloy tool steel, annual cap., 15,000 tons rolled products, 1,000 tons forgings.

International Molybdenum Co., Ltd., Orillia, Ont., Canada. Company liquidated and entirely out of business: plant at Orillia sold in

1920 to Canada Electric Castings Co., Ltd., Orillia, Ont. and rebuilt as steel foundry.

International Paper Co., New York, N. Y. discontinued manufacture of ferro-silicon in 1922 and dismantled electric furnace plant at Niagara Falls, N. Y. used for that purpose.

INTERSTATE FOUNDRIES, Inc., 3161 East 61st St., Cleveland, Ohio.

James F. Miller, P.; C. G. Heer, Sec.; L. A. Murfey, T.; C. G. Reule, G. M.

Works at West 66th St., Chicago, Ill. (Clearing Plant): blt. 1917-18, f. o. Mar. 18, 1918; 2 Snyder electric fur. (5-ton). Wheel factory. (Standard Steel Castings Co. to July 1, 1920; The Interstate Foundry Co. to May, 1924.)

Product: steel castings for sale, annual cap., 18,000 tons; steel motor truck wheels.

Interstate Foundry Co. (The), Cleveland; Ohio, acquired July 1, 1920 the steel foundries formerly owned and operated by Standard Steel Castings Co. located at 3311 West 73rd St., Cleveland, Ohio, and at 5939 West 66th St., Clearing, Chicago, Ill. Company went into hands of receiver Feb. 21, 1924 and plants were acquired in May, 1924 by Interstate Foundries, Inc., 61st St. & Roland Ave., Cleveland, Ohio. Cleveland Plant was leased Sept. 11, 1924 to Mathews Steel Castings Co., Cleveland, Ohio.

INTERSTATE IRON & STEEL CO., 104 South Michigan Ave., Chicago, Ill.

Inc. Mar. 30, 1905 in Illinois. Capital stock: com., par value \$100, auth. and issued \$4,000,000; pref. 7% cum. auth. \$3,000,000, issued \$2,060,200; bonds \$3,716,000.

Paul Llewellyn, P. & G. M.; George F. Davie, V. P. & T.; H. S. Schroeder, V. P. (sales); Justin E. Russell, Sec.; George F. Eggert, A.; Burton L. Verner, P. A.

Sales offices:

Cleveland, Ohio, John A. Guyer, Union Trust Bldg.

Detroit, Mich., 1908 Washington Blvd. Bldg.

Kansas City, Mo., L. F. Newton, Reliance Bldg.

Milwaukee, Wis., N. E. Nelson, First Wisconsin Natl. Bank Bldg.

New York, N. Y., F. C. Giebel, 52 Vanderbilt Ave.

St. Louis, Mo., L. F. Newton, International Life Bldg.

St. Paul, Minn., R. W. Wentworth, Merchants Natl. Bank Bldg.

East Chicago Works, East Chicago, Ind.: blt. 1900, f. o. July, 1900; 10 single busheling fur.; 1 squeezer; 8 oil and coal-fired heat. fur. (one 4-d., seven 5-d.): 22" 3-h. 2-st. and 22" 2-h. 1-st. bar; 16" 3-h. 3-st. bar; 18" 3-h. 2-st. muck; 16" 3-h. 2-st. and 16" 2-h. 1-st. bar; 9" Belgian with 14" roughing, 4-st. 3-h. and 1-st. 2-h.; 8"

Belgian with 12" roughing, 4-st. 3-h. and 1-st. 2-h. Fuel, coal and oil. Product: scrap bar, annual cap., 60,000 tons; hot rolled products, 150,000 tons; bar iron, iron and steel tie plates, soft steel bars and shapes, alloy steel bars (chrome, vanadium, nickel), deformed and twisted squares.

118th St. Works, South Chicago, Ill.: blt. 1902-03; f. o. July, 1903; 6 B. O. H. fur. (four 75-ton, two 50-ton) fuel, oil; 35" 2-h. 1-st. blooming; Morgan continuous bar mill with 16" 2-h. 6-st. roughing, 14" 2-h. 2-st. and 12" 2-h. 4-st. duo finishing. Product: steel ingots, annual cap., 250,000 tons; alloy steel ingots (nickel, chrome, vanadium, molybdenum, silico-manganese); blooms and billets, 225,000 tons; merchant and concrete bars, 150,000 tons.

Grand Crossing Works, Chicago, Ill.: wire mill, rod mill added 1899-00, f. o. Feb. 1, 1900; 1 Morgan cont. heat. fur. prod. gas-fired; Morgan cont. rod mill with 14-st.; 92 wire drawing blocks for wire $\frac{5}{8}$ " to 16 gauge; 85 wire nail mach.; 6 barbed wire mach.; one galv. pan; rivet dept. Product: wire rods, annual cap., 50,000 tons; plain wire, 42,000 net tons; galvanized wire, 20,000 net tons; barbed wire, 7,500 net tons; wire nails, 250,000 kegs (100-lb.); rivets, 27,000 kegs (200-lb.).

Ivanhoe Furnace Corporation, Ivanhoe, Va., was acquired in 1920 by Ivanhoe Mining & Smelting Corporation, Pittsburgh, Pa.

IVANHOE MINING & SMELTING CORPN., 223 Fourth Ave., Pittsburgh, Pa.

Inc. 1920 in Delaware. Capital stock: com., par value \$25, auth. \$2,000,000, issued \$1,000.

A. F. Holliday, P.; A. L. Dally, V. P.; W. F. Rupp, Sec. & T. Ivanhoe Furnace, Ivanhoe, Va.: 1 stack, 70' x 12', blt. 1881-82, last rebt. 1906; 3 stoves (65' x 16'); 2 steam blowing eng. (2,600 cfm.); 1 tubular, 6 water-tube boilers (1,900 H. P.). Pocahontas coke: local ores. Idle since 1913. (Ivanhoe Furnace Corpn. to 1920).

Product: foundry pig iron, annual cap., 25,000 tons.

IVINS' (ELLWOOD) TUBE WORKS, Oak Lane Station, Philadelphia, Pa.

Ellwood Ivins, Proprietor; Martin Hey, G. M. & G. S.; J. B. Cording, G. S. M. & P. A.; H. S. Kircher, Production M.

Works at Oak Lane (grounds leased; plant owned): blt. 1893, f. o. 1894; hot train dismantled.

Product: cold drawn seamless steel tubes; tool steel tubes; annual cap., 500 tons.

Jackson, J. G., Chatham, Ont., Canada.

Not incorporated.

Works at Chatham, Ont.: blt. 1920, f. o. 1920; 1 Heroult electric furnace (1,000-lb.). (Hydro-Electric Commission, Chatham to Jan., 1923.) Plant sold and dismantled, 1925-26.

Product: alloy steel castings, annual cap., 750 tons; semi-steel castings, cast welding rods.

JACKSON IRON & STEEL CO. (The), Jackson, Ohio.

Inc. Aug. 13, 1906 in Ohio. Capital stock: com., par value \$100, auth. and issued \$1,000,000.

Simon Labold, P.; at Portsmouth, Ohio. D. D. Davis, V. P.; at Oak Hill, Ohio. J. W. Potter, Sec. & A.; J. S. Morgan, T.; G. S. M. & P. A.; H. R. Shick, G. S.; at Jackson.

Sales agents:

Hickman, Williams & Co., at Cincinnati, Chicago, Pittsburgh and St. Louis.

Pickands, Mather & Co., Cleveland, Ohio.

Pickands, Brown & Co., Chicago, Ill.

A. P. McClure, Detroit, Mich.

Brand: JISCO (silvery iron, bessemer ferro-silicon, spiegel).

Jisco Furnace, Jackson: 1 stack, 75' x 16' 6", blt. 1906-08; relined 1923; 5 Amsler hot blast stoves, 75' x 18'; 3 vertical steam blowing eng. (43,200 cfm.) 15-lbs. rated pressure; 6 water-tube boilers (5 Rust, 1 Sterling) 2,400 H. P. West Va. coke and raw coal: Lake ore. Company owns coal mine at Jackson, annual cap., 36,000 tons.

Product: silvery pig iron, annual cap., 54,000 tons; or bessemer ferro-silicon and spiegeleisen (45,000 tons).

JANSON STEEL & IRON CO., Columbia, Pa.

Inc. Jan. 30, 1914 in Pennsylvania. Capital stock: com., par value \$100, auth. \$100,000, issued \$59,000.

———, P. & T.; Frank V. Kasel, Sec. & G. M.; William C. Kasel, G. S.

Works at Columbia, Pa.: blt. 1905-06, f. o. Oct., 1906; 4 bit. coal-fired heat. fur. (three 3-d. heating, one 3-d. reheating); 22" 3-h. 2-st. billet; 12" 3-h. 5-st. finishing bar mill.

Product: iron and steel merchant bars, annual cap., 15,000 tons; concrete bars, hoops and bands, bolt, nut and rivet rods.

JENIFER IRON CO., Jenifer, Ala.

Inc. 1919 in Delaware. Capital stock: com. \$1,000,000.

W. Aubrey Thomas, P. & G. M.; at Jenifer. John M. Thomas, V. P.; at Milwaukee.

Brand: "Jenifer."

Jenifer Furnace, Jenifer, Ala.: 1 stack, 75' x 15', blt. 1901; f. o. Sept. 26, 1901; rebt. 1918; 4 stoves (two 45' x 16', one 60' x 16', one 75' x 20'); 3 steam blowing eng. (30,000 cfm.); 6 water-tube boilers, 2,400 H. P. Beehive coke: local brown hematite ore. Company owns iron ore mines at Jenifer, annual cap., 100,000 tons; limestone quarries at Wewoke, Ala; and 100 beehive coke ovens at Aubrey, Ala., annual cap. 35,000 net tons. Idle since Nov., 1920.

Product: foundry pig iron; annual cap., 50,000 tons.

JESSOP STEEL CO., Washington, Pa.

Inc. 1901 in Pennsylvania.

S. A. Grayson, P. & G. M.; F. T. H. Youngman, Sec.

Sales offices:

Birmingham, Ala., Smith-Meadows Supply Co., 1711 2nd Ave.

Cambridge, Mass., Industrial Steels, Inc., 292 Main St.

Chicago, Ill., 609-613 Fulton St.

Cincinnati, Ohio, 13 East Second St.

Cleveland, Ohio, 1277 West Ninth St.

Detroit, Mich., 2208 Fort St., West.

New York, N. Y., Room 1107, 165 Broadway.

Toronto, Canada, Queen & Abel Sts.

Brands: Washington, Utilitas, Lion, Chippaway (carbon tool steel); Supremus, Supremus Extra Special, Jessco (high speed); Truform (oil hardening); Non-Shrinkable, B B Hot Die, J J Hot Work.

Works at Washington, Pa.: blt. 1901-02, f. o. Nov. 13, 1902; two 36-pot crucible steel fur., fuel prod. and nat. gas, 3 Swindell gas prod.; 1 Gronwall-Dixon electric steel fur. (3-ton); 18 coal-fired heat. fur. (eight 1-d., six 2-d., four 3-d.); 26" 2-h. 1-st. blooming; 22" 2-h. 2-st. sheet, 20" 2-h. 1-st. band; 12" 3-h. and 2-h. 6-st. bar; 10" 3-h. 5-st. bar; one 24" x 66" 2-h. sheared plate mill; one 26" x 34" 2-h. jobbing mill; 5 box annealing fur., 3 hand pickling tanks; 4 steam hammers, 700-lb. to 10,000-lb.

Product: steel ingots, alloy steel ingots of all kinds, annual cap., 5,200 tons (3,000 crucible, 2,200 electric); carbon and alloy steel plates and sheets for saws, springs, cutlery, etc., annual cap., 10,000 tons; tool steel bars and shapes, 5,000 tons; forged rounds, squares, rings, discs, and die blocks, 3,000 tons.

Johnson, Aurie, Buffalo, New York, see Sizer Steel Corporation.

Johnson (Isaac G.) & Co., Spuyten Duyvil, New York, N. Y. Plant site was taken under condemnation proceedings by State of New York for purpose of widening channel of Harlem River, July 1.

1923. Plant equipment sold at public auction by Superintendent of Public Works, State of New York, Dec. 5, 1923, and plant dismantled. Company decided to go out of business.

Joliette Castings & Forgings, Ltd., Joliette, P. Q., Canada, was acquired in 1922 by Joliette Steel Products, Ltd.

JOLIETTE STEEL, Ltd., Joliette, P. Q., Canada.

Inc. 1925 in Dominion of Canada. Capital stock: com., no par value, 20,000 shares; pref. \$125,000.

Kennedy Stinson, P.; at 230 Dorchester St., Montreal. P. H. Desrosiers, G. M.; at Joliette, P. Q.

Works at Joliette: blt. 1916, f. o. June 15, 1916; 1 Greaves-Etchells electric fur. (1-ton); first electric steel Jan., 1921; side blown converter abandoned. (See Joliette Steel Co.).

Product: steel castings for sale, annual cap., 2,000 tons; alloy steel castings (nickel, chrome, manganese).

Joliette Steel Co., Ltd., Joliette, P. Q., Canada, was acquired July 1, 1920 by Joliette Castings & Forgings, Ltd.

Joliette Steel Products, Ltd., Joliette, P. Q., Canada was acquired in Sept., 1925 by Joliette Steel, Ltd.

Jones & Laughlin Steel Co., inc. in Pennsylvania in 1902, was taken over by Jones & Laughlin Steel Corporation in 1922.

JONES & LAUGHLIN STEEL CORPN., Third Ave. & Ross St., Pittsburgh, Pa.

Inc. 1922 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$60,000,000; pref. 7% cum. auth. and issued \$60,000,000; bonds \$18,357,000.

B. F. Jones, Jr., Ch.; William Larimer Jones, P.; Willis L. King, V. P.; G. M. Laughlin, Jr., V. P.; W. C. Moreland, V. P.; Charles A. Fisher, V. P.; S. E. Hackett, V. P.; T. M. Girdler, V. P. (operations); B. F. Jones, 3rd, Sec.; J. C. Watson, T.; W. J. Creighton, C.; J. A. Doyle, A.; C. S. Bradley, G. M. S.; F. W. Ochsenhirt, Jr., P. A.

Sales offices:

Boston, Mass., A. B. Marble, 131 State St.

Buffalo, N. Y., Ledlie I. Laughlin, White Bldg.

Chicago, Ill., Ralph J. Stayman, Lake & Canal Sts. (warehouse).

Cincinnati, Ohio, A. W. Herron, Jr., Union Trust Bldg.

Cleveland, Ohio, E. A. France, Union Trust Bldg.

Denver, Colo., H. H. Galbraith, 1122 First Natl. Bank Bldg.

Detroit, Mich., F. D. Heath, Penobscot Bldg.

Los Angeles, Calif., T. W. Bell, 506 Spring Arcade Bldg.

Memphis, Tenn., C. C. Noel, 1 Auction St. (warehouse).

Milwaukee, Wis., Roy H. Atwood, 513 First Natl. Bank Bldg.

Minneapolis, Minn., Fred T. Roberts, 711 Plymouth Bldg.

New York, N. Y., R. M. Kilgore, 165 Broadway.

Philadelphia, Pa., Thomas C. Ham, Commercial Trust Bldg.

Pittsburgh, Pa., A. C. Pollock, Jones & Laughlin Bldg.

Pittsburgh, Pa., J. M. Hilbish, 26th & Jane Sts. (warehouse).

St. Louis, Mo., H. L. Miller, Boatmens Bank Bldg.

San Francisco, Calif., C. P. Hensley, 628 Standard Oil Bldg.

Seattle, Wash., Jesse K. Barker, 1612 L. C. Smith Bldg.

Washington, D. C., T. G. Roberts, Woodward Bldg.

Product: bessemer and basic pig iron; steel ingots; blooms, slabs, billets, sheet bars; skelp, plates, beams, channels, angles, tees, zeos, sheet piling; merchant bars, concrete bars, rounds, squares, flats, ovals, hexagons, hoops, bands; special shapes, agricultural shapes, tie plates, steel mine ties, light rails and connections; structural work; wire, wire nails and wire products; tinplates and black sheets in tin mill sizes; railroad spikes; cold rolled shafting, axles, shapes and finger bars; cold drawn hexagons, flats, squares, and rounds; black and galvanized pipe; forgings. Total annual capacity: 2,400,000 tons pig iron; 3,000,000 tons steel ingots; 2,430,000 tons finished hot rolled products.

Pittsburgh Works, Pittsburgh, Pa.:

Blast Furnaces: 7 stacks; Eliza No. 1, 95' x 22', blt. 1888-89, relined 1918; No. 2, 95' x 22' 6", blt. 1898-99, relined 1922; No. 3, 95' x 24', blt. 1900, relined 1924; No. 4, 95' x 22' 6", blt. 1899-00, relined 1920; No. 5, 92' 7½" x 22', blt. 1903, relined 1917; No. 6, 92' x 22' 6", blt. 1917, relined 1924; Soho No. 1, 85' x 19', blt. 1872, relined 1918; 28 two-pass stoves (eight 104' x 21', nine 108' x 22', ten 100' x 22', one 118' x 22'); 17 steam blowing eng. (5 simple, 12 cross comp.) 498,000 cfm., 15 lbs. rated pressure; 87 water-tube boilers 28,050 H. P.; 3 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 90,000 tons; 7 slag granulating pits. Beehive and by-product coke; Lake ore. Ingot mould foundry, annual cap., 50,000 tons. Product; bessemer and basic pig iron, annual cap., 1,375,000 tons.

Coke Oven Plant: 720 beehive coke ovens, annual cap., 550,000 net tons coke; 300 Koppers by-product ovens, by-product recovery plant and Koppers benzol plant, annual cap., 1,300,000 net tons coke, 6,000,000 gals. light oil; total coke capacity, 1,850,000 net tons.

Steel Works and Rolling Mill: steel plant blt. 1886, f. o. Aug. 19, 1886; rolling mill blt. 1852; 4 bessemer converters (10-ton); 25 B. O. H. fur. (four 30-ton, two 40-ton, ten 50-ton, five 200-ton, four 250-ton); 2 A. O. H. fur. (25-ton); fuel in open-hearth, natural, coke oven and prod. gas and tar, 30 gas producers (27 Hughes, 3 Morgan); 3 mixers (two 250-ton, one 1,300-ton); 4 cupolas; iron (10,000 tons) and brass (800 tons) foundry for own use; 21 soaking pits (one 1-hole, four 2-hole, four 5-hole, six

6-hole, six 7-hole), fuel, nat. and coke oven gas; 32 heat. fur. (six 4-d. prod. and coke oven gas; 26 cont. of which 7 coal fired, 5 prod. gas fired, 14 coke oven gas and tar fired); 44" 2-h. 1-st. blooming; 34" 2-h. 1-st. blooming; 40" 3-h. 1-st. blooming; 28" 3-h. 1-st. billet; 16" 2-h. 8-st. cont. billet; 30" 3-h. 4-st. structural with 29" x 49" universal mill attached; 28" 3-h. 4-st. structural; 16" 3-h. 3-st. structural; 22" 3-h. 2-st. bar; 16" 3-h. 3-st. bar; merchant mill with 14" 2-h. 5-st. roughing, 13" 2-h. 4-st. finishing; merchant mill with 14" 2-h. 5-st. roughing, 13" 2-h. 6-st. finishing; merchant mill with 11" 2-h. 4-st. roughing, 10" 2-h. 6-st. finishing; merchant mill with 14" 2-h. 5-st. roughing, 10" 2-h. 4-st. finishing; two 13" 3-h. 4-st., 10" 3-h. 4-st., 9" 3-h. 4-st., 8" 3-h. 5-st., three 8" 3-h. 4-st. merchant mills; 78" 3-h. sheared plate mill, rolls 28" x 79", middle roll 20" x 79"; 128" 3-h. sheared plate mill, rolls 34" x 128", middle roll 20½" x 128"; 32" x 45" 2-h. universal plate mill used also for skelp; 29" x 49" 3-h. universal plate attached to structural mill, see above; 3 trains cold rolls, 1-st. to each train; 3 steam hammers (two 1,200-lb., one 5-ton). Spike dept. for railroad spikes 2½ x 5/16" to 6" x 5/8". Roll sheared plates 12 gauge to 2" up to 110" wide and 40' long, lengths vary with gauge and width; universal plates ¼" to 3" thick, 9" to 36" wide, lengths vary with gauge and width. Product: steel ingots, 1,860,000 tons (350,000 tons bessemer, based on trade requirements with surplus converter capacity used for duplexing; 1,490,000 tons B. O. H., 20,000 tons A. O. H.); steel castings for own use, 10,000 tons A. O. H.; slabs, blooms and billets, 1,650,000 tons; finished hot rolled products, 1,550,000 tons, including 36,000 tons light rails (40-lb. and under), 435,000 tons structural shapes (385,000 tons heavy, 50,000 tons light), 184,000 tons sheared plates, 70,000 tons universal plates, 450,000 tons merchant and concrete bars, 15,000 tons hoops and bands, 150,000 tons skelp, 150,000 tons spike, bolt, nut and rivet rods, 60,000 tons tie plates; cold finished rounds, flats, hexagons, etc. 240,000 tons; 480,000 kegs railroad spikes.

Aliquippa Works, Woodlawn, Beaver Co., Pa.:

Blast Furnaces: 5 stacks; No. 1, 90' x 22', blt. 1907-09, relined 1923; No. 2, 90' x 24' 4", blt. 1907-10, relined 1924; No. 3, 90' x 22' 6", blt. 1907-10, relined 1924; No. 4, 90' x 22', blt. 1907-11, relined 1922; No. 5, 90' x 22', blt. 1919; 19 hot blast stoves 100' x 22'; 10 Allis-Chalmers vertical steam blowing eng. (360,000 cfm.) 17 to 19 lbs. rated pressure; 52 water-tube boilers (24 Sterling, 28 Erie City) 19,960 H. P. furnish power also to steel works and rolling mills; 3 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 300,000 tons. Beehive and by-product coke; Lake ore. Iron foundry (4,000 tons). Product: bessemer and basic pig iron, annual cap., 1,025,000 tons.

Coke Oven Plant: 488 rectangular beehive ovens, annual cap., 500,000 net tons coke; 122 Koppers by-product ovens (under construction), by-product recovery plant and Koppers benzol plant, annual cap., 650,000 net tons coke, 3,000,000 gals. light oil. Steel Works and Rolling Mill; steel plant const. begun June, 1909, f. o. Jan. 8, 1912; rolling mill const. begun July, 1909, f. o. May 16, 1910; 3 bessemer converters (20-ton); 4 B. O. H. fur. (250-ton Talbot) fuel in open-hearth prod. gas, 18 gas producers (15 Chapman, 3 Sheldon); 2 mixers (one 400-ton, one 600-ton); 2 cupolas; eight 4-hole soaking pits; 4 cont. prod. gas fired heat. fur.; 40" 2-h. 1-st. blooming; 21" 2-h. 6-st. and 18" 2-h. 6-st. cont. billet and bar; 21" 2-h. 4-st. and 18" 2-h. 8-st. cont. sheet bar and skelp; 10" 2-h. cont. skelp with 8-st. horizontal and 3 vertical; 12" to 9" 2-h. 16-st. cont. wire rod mill; 16" to 14" 2-h. 12-st. cont. merchant mill; 37 sheet and 32 pair fur.; 32 hot black plate (tin) mills (six 28" x 28", nineteen 28" x 32", seven 28" x 36"); 10 trains cold rolls (24") 3-st. to each train; 12 box annealing fur.; 5 Mesta pickling mach.; 51 sets for coke tinplates. Roll black plate 14 to 38 gauge, 16" to 32" wide, 28" to 96" long.

Wire Mill: 358 wire drawing blocks for wire $\frac{5}{8}$ " to 18 gauge; 227 wire nail mach.; 4 staple mach.; 125 barbed wire mach., 8 wire fence mach.; 6 galvanizing pans.

Tube Mill: 2 butt-weld fur. for pipe $\frac{1}{8}$ " to 3"; 3 lap-weld fur. for pipe 2" to 16"; 1 galv. pot.

Product: steel ingots, annual cap., 1,140,000 tons (400,000 tons bessemer, based on trade requirements with surplus converter capacity used for duplexing: 740,000 tons B. O. H.); semi-finished hot rolled products, 980,000 tons, including 800,000 tons slabs, blooms and billets, and 180,000 tons sheet and tinplate bars; finished hot rolled products, 880,000 tons, including 90,000 tons structural shapes (40,000 tons heavy, 50,000 tons light), 140,000 tons black plate for tinning, 260,000 tons wire rods, 90,000 tons merchant and concrete bars, and hoops and bands; 300,000 tons skelp; tinplates, 2,700,000 base boxes; plain wire, 180,000 net tons; galvanized wire, 80,000 net tons; barbed wire, 50,000 net tons; wire fence, 15,000 net tons; wire nails, 1,300,000 kegs; black pipe, 300,000 tons; galvanized pipe, 40,000 tons.

Jones and Laughlin Steel Corporation owns iron ore mines on Mesabi, Marquette, Gogebic and Menominee Ranges, annual cap., 3,500,000 tons; coal properties in Washington County, Pa., annual cap., 5,000,000 tons; limestone quarries at Blairfour, Pa. and Martinsburg, W. Va., annual cap., 600,000 tons.

JONES (The D. F.) MFG. CO., Ltd., Gananoque, Ont., Canada.

Subsidiary company of Ontario Steel Products Co., Ltd.

W. Wallace Jones, P.; at Toronto, Canada. W. T. Sampson, V.

P. & G. M.; Ford Petch, Sec. & T.; C. S. MacKenzie, G. S.; G. G. Hood, G. S. M.; at Gananoque.

Sales offices:

Montreal, P. Q., F. Bacon & Co., Ltd., 131 St. Paul St., West.

St. John, N. B., H. G. Rogers, Ltd., P. O. Box 1046.

Vancouver, B. C., A. T. Chambers, 714 Dominion Bldg.

Winnipeg, Man., Stanley Brock, Ltd., 145 Market Ave. East.

Works at Gananoque: hot rolls for rolling shovel blanks from bars.

Product: shovel blanks for own use only. Shovels, spades, scoops, draining tools, etc.

JOPLIN ELECTRIC STEEL CO., Joplin, Mo.

Works at Third & Railroad Sts., Joplin (leased; owned by Joplin Steel & Malleable Co.): 1 Greene electric fur. (3-ton) installed 1920, f. o. Aug. 10, 1920. (Joplin Steel & Malleable Co. to April, 1923).

Product: steel castings for sale, annual cap., 5,000 tons.

Joplin Steel & Malleable Co., Joplin, Mo., installed in 1920 at its plant, situated at Third and Railroad Sts., Joplin, one Greene electric steel fur. (3-ton), f. o. Aug. 10, 1920, for manufacture of steel castings. Company leased the plant in April, 1923 to J. M. Lininger and J. B. Lininger and Joplin Electric Steel Co. was subsequently incorporated to operate the works.

Joyce-Cridland Co. (The), Dayton, Ohio, discontinued the manufacture of steel castings in 1920. Electric furnace sold in 1924 and foundry dismantled.

JUDSON MANUFACTURING CO., 604 Mission St., San Francisco, Calif.

Inc. July 3, 1882 in California. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,966,500; pref. 7% cum. auth. and issued \$500,000.

Carlos J. Maas, P. & G. M.; Edmunds Lyman, V. P.; Theodore A. Maas, T.; Paul F. Gillespie, G. S. M.; at San Francisco. Robert B. Girdwood, Sec.; Fred D. Parsons, G. S.; at Emeryville, Calif.

Works at Emeryville, Oakland, Calif.; est. 1882; 3 B. O. H. fur. (30-ton); blt. 1916-18; cont. oil-fired heat. fur.; 19" 3-h. billet mill, 16" 3-h. bar mill, two 10" 3-h. bar mills.

Product: merchant steel bars, reinforcing bars; light structural angles; bolts, rivets; iron and steel castings; fabricated structural material. Annual cap., 72,000 tons ingots, 60,000 tons rolled products; 20,000 tons bridge and structural work.

Juniata Furnace & Foundry Co., Philadelphia, Pa. dismantled Marshall Furnace at Newport, Pa. in 1923.

Kansas City Bolt & Nut Co., Kansas City, Mo. was reincorporated as Sheffield Steel Corporation in October, 1925.

Kansas City Southern Railway Co. (The), Kansas City, Mo. have at their shops at Pittsburg, Kansas, 10" Ajax scrap reclaiming rolls idle since 1912 and offered for sale.

KANSAS CITY STEEL & WIRE CO., Kansas City, Kansas.

Company acquired on April 24, 1925 the rolling mill formerly operated by American McKenna Process Co., at Kansas City.

Rolling mill, Kansas City, Kansas: blt. 1898, f. o. Aug. 16, 1898; two 5-d. heat. fur.; 24" 2-h. 1-st. roughing and 24" 2-h. 1-st. finishing. Former product; rerolled rails.

KAY-BRUNNER STEEL CASTING CO., 2721 Elm St., Los Angeles, Calif.

Inc. April 17, 1922 in California.

L. D. Kay, P., G. M. & P. A.; G. B. Montgomery, V. P. & G. S.; J. F. Brunner, Sec., T. & G. S. M.; R. G. Scherer, A.

Works at 2721 Elm St., Los Angeles: blt. 1921, f. o. Oct. 24, 1921: 2 three-phase electric steel fur. (2-ton).

Product: small steel castings for sale, annual cap., 2,400 tons.

Keith, John L., Trustee, Beaumont, Texas.

Sam Lanham Furnace, Rusk, Texas: 1 stack, 65' 6" x 12', blt. 1883; 3 stoves, 60' x 16'; 2 steam blowing eng.; 8 boilers (2 Sterling water-tube, 6 return tubular). Cast iron pipe foundry. Coke: local hematite ore. Idle since 1919 and for sale.

Product: foundry and forge pig iron, annual cap., 36,000 tons.

Kelly & Jones Co. (The), Pittsburgh, Pa. Works at Greensburg, Pa. were sold October 15, 1925 to Walworth Company and will be known as Kelly & Jones Division, Walworth Co.

Kelly Nail and Iron Co. (The), Ironton, Ohio, was merged in Belfont Steel and Wire Co., Ironton, Ohio, February 7, 1924.

KENNEDY & SONS (The William), Ltd., 1114 First Ave. West Owen Sound, Ontario, Canada.

Inc. May 6, 1896 in Province of Ontario. Capital stock: com., par value \$100, auth. \$95,000, issued \$88,200.

Matthew Kennedy, Sr., P.; D. J. Kennedy, 1 V. P.; Matthew Kennedy, Jr., 2 V. P.; T. D. Kennedy, Sec., T. & G. S. M.; R. E. Trout, P. A.

Sales offices:

Cobalt, Ont., M. B. Saunders, 8 Silver St.

Halifax, N. S., C. A. Fowler, Tramway Bldg.

Montreal, P. Q., H. C. Kennedy, 232 St. James St.

Toronto, Ont., H. H. Todd, 105 Bond St.

Vancouver, B. C., Mill, Mine & Machinery Supply Co., 1103 Dominion Bldg.

Winnipeg, Man., Mumford-Medland, Ltd., 103 Princess St.

Works at Owen Sound: blt. 1899-1900, f. o. May, 1900; 1 Tropenas converter (2-ton): 3 cupolas. Gray iron foundry and machine shop.

Product: steel castings for sale, annual cap., 2,000 tons.

Kentucky Iron & Steel Co., Inc., Louisville, Ky., took over in June, 1920 from Louisville Trust Co. the rolling mill at Louisville formerly owned and operated by Louisville Steel & Iron Co. and operated the works from Aug. 6 to Dec. 17, 1920. Company went into bankruptcy in January, 1921. Plant was sold in bankruptcy court in May, 1921 and bid in by Louisville Trust Co. for Louisville Steel & Iron Co.

KEOKUK ELECTRO-METALS CO., Keokuk, Iowa.

Inc. Sept. 1915 in Iowa. Capital stock: com., par value \$100, \$226,000.

G. E. Weissenburger, P., G. M. & P. A.; M. H. Christopherson, V. P.; John Dillon, Sec., T. & G. S. M.; L. E. Othner, G. S.

Sales agents: Walter-Wallingford & Co. at Chicago, Cincinnati and Pittsburgh; Richard Jensen Co. at Los Angeles.

Works at Keokuk: blt. 1916, f. o. Apr., 1916; 2 special arc electric fur.; one double-strand pig casting mach. Hydro-electric power from Mississippi River Power Co.

Product: ferro-silicon, bessemer ferro-silicon and silvery pig iron. Annual cap., 8,000 tons 50% ferro-silicon or 24,000 tons silvery iron and bessemer ferro-silicon.

KEOKUK STEEL CASTING CO., Keokuk, Iowa.

Inc. June 10, 1918 in Iowa. Capital stock: com., par value \$20, auth. and issued \$40,000; pref. 7% cum. auth. and issued \$125,000.

Owsley Brown, P.; Logan Hay, V. P.; at Springfield, Ill. J. Carl Bode, Sec., G. M. & G. S. M.; R. O. Mackie, T., G. S. & P. A.; at Keokuk.

Works at Keokuk: blt. 1919, f. o. Dec. 2, 1919; 2 electric fur. (one 2-ton Snyder, one 1½-ton Moore); electric annealing oven and core oven. (Fluid Compressed Steel Co. to Apr. 16, 1921.)

Product: electric steel castings for sale, annual cap., 3,000 tons; alloy steel castings (nickel, chrome and other on request). Castings for boiler headers, pipe fittings, etc.

KEYSTONE DRILLER CO., Beaver Falls, Pa.

Inc. 1887 in Pennsylvania. Capital stock: com., auth. \$1,750,000, issued \$1,674,050; pref. 7% cum. auth. and issued \$225,000.

J. D. McAnlis, P.; John Warren, V. P.; Rex Downie, Sec. & G. M.; Charles T. Smith, T.; James Bowser, A.; D. W. Merri-
man, G. S.; J. Vale Downie, G. S. M.; J. H. McCoy, P. A.

Sales offices:

Beaver Falls, Pa., Beaver Falls Works.

Chicago, Ill., Monadnock Block.

Jacksonville, Fla., Z. T. Darrow, 919 West Bay St.

Joplin, Mo., Keystone Driller Co.

Los Angeles, Calif., Harron, Rickard & McHone.

New York, N. Y., Keystone Driller Co., 170 Broadway.

Philadelphia, Pa., Inter-State Machinery Co.

Richmond, Va., Earnest Brothers.

San Francisco, Calif., Harron, Rickard & McHone.

Company operates plants at Beaver Falls, Pa., Arlington, N. J. and Joplin, Mo. for the manufacture of well drills, excavators and well pumps. Operates a steel foundry in connection with Beaver Falls Works.

Beaver Falls Works, Beaver Falls, Pa.: blt. 1888, steel foundry added 1921, f. o. June, 1921; 1 Moore electric fur. (2-ton); 2 cupolas; gray iron (2,000 tons) and brass (75 tons) foundry.

Product: steel castings for own use and for sale, annual cap., 600 tons.

KEYSTONE IRON & STEEL WORKS, Inc., 2931-3641 Santa Fe Ave., Los Angeles, Calif.

Inc. Dec. 31, 1923 in Delaware. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$300,000; pref. auth. \$2,000,000, issued \$350,000; bonds \$600,000.

H. L. Griswold, P. & G. M.; M. M. Miles, V. P.; W. E. Lindblom, Sec. & T.; L. S. Miltimore, A.; R. V. Reverdy, G. S.; Mano Zan, G. S. M.; E. Q. Hoffman, P. A.

Brand: Keystone.

Works at Santa Fe Ave., Los Angeles: blt. 1920, f. o. Nov., 1921; 1 electric fur. Gray iron foundry, 2 cupolas, annual cap., 6,000 tons.

Product: steel castings for own use and for sale, annual cap., 1,200 tons. Fire hydrant bodies, lamp posts, electroliers, manhole rings and covers, condenser bodies, etc.

KEYSTONE STEEL & WIRE CO., South Bartonville, Peoria, Ill.

Inc. July 20, 1907 in Illinois. Capital stock: com., par value \$100, auth. \$3,500,000, issued \$3,371,400; pref. 7% cum. auth. \$3,500,000, issued \$1,526,400; bonds, \$2,475,000; debentures, \$150,000.

B. L. Sommer, P., T. & G. M.; W. H. Sommer, V. P. & G. S.;

John Sommer, V. P.; B. L. Sommer, T.; Henry G. Sommer, A. Sec.; J. B. Thomas, A.; F. J. Schlatter, C.; W. G. Hume, S. M.; E. P. Kastien, P. A.

Works at South Bartonville, Peoria: blt. 1901; steel plant added 1917, f. o. May 20, 1917; first rolled products, June 15, 1917; 3 B. O. H. fur. (90-ton), fuel, oil; 3 four-hole soaking pits, oil-fired; 1 cont. heat. fur. Morgan type, fuel, prod. gas; 35" 2-h. 1-st. blooming; 10" Morgan double-strand continuous rod mill with 16 stands; 183 wire drawing blocks for wire 000 to 20 gauge; 99 wire nail mach.; 45 barbed wire mach.; 38 wire fence mach.; 6 galvanizing pans.

Product: steel ingots, billets, wire rods and wire: annual cap., 140,000 tons ingots, 130,000 tons billets, 120,000 tons wire rods, 125,000 net tons plain wire, 90,000 net tons galvanized wire, 600,000 kegs (100-lb.) wire nails, 60,000 net tons woven wire fence, 25,000 net tons barbed wire.

Kiefhaber, P. W., Philadelphia, Pa., owner of Leesport Furnace Co. holding Leesport Furnace, Leesport, Pa., sold furnace about April 1, 1920 to Leesport Iron Co. Inc.

KILBY CAR & FOUNDRY CO., Anniston, Ala.

Inc. 1898 in Alabama. Capital stock: com., par value \$100, auth. and issued \$200,000.

Thomas E. Kilby, P.; Whitfield Clark, V. P.; Thomas E. Kilby, Jr., Sec. & G. S. M.; Oscar M. Kilby, T.; J. T. Rasberry, A.; J. E. Tesseyman, G. S.; H. L. Cater, P. A.

Sales offices:

Jacksonville, Fla., Bisbee Bldg.

New Orleans, La., Godchaux Bldg.

New York, N. Y., 2038 Grand Central Terminal Bldg.

Works at Anniston, Ala.: blt. 1908, rolling mill added 1916-17, f. o. Feb. 23, 1917; four 3-d. scrap heat. fur.; 1 squeezer; 10" 3-h. 4-st. bar mill; 5 steam hammers (one 1,000-lb., one 3,000-lb., three 5,000-lb.).

Product: iron and steel merchant bars, annual cap., 12,000 tons; car forgings, 5,000 tons; car axles, 3,000 tons.

KINITE COMPANY, 1338 St. Paul Ave., Milwaukee, Wis.

Inc. July, 1918 in Wisconsin. Capital stock: com., par value \$100, auth. and issued \$25,000.

B. L. Worden, P.; F. L. Pierce, V. P.; H. F. Vogt, Sec. & T.; T. A. Moormann, S.; E. J. Mohr, S. M.; L. L. Tatum, P. A.

Sales offices:

Detroit, Mich., H. F. Kluender, 506 Hoffman Bldg.

New York, N. Y., J. H. Jerome, 8 West 40th St.

Pittsburgh, Pa., W. C. Eakin, 950 Century Bldg.

Brands: Kinite (alloy tool steels); Kompite (tool steels with Kinite cutting edge, mild steel back).

Works at 1338 St. Paul Ave., Milwaukee (leased from The Cutler-Hammer Mfg. Co.): blt. 1918, f. o. Oct. 15, 1918; one 1-pot gas-fired crucible steel fur.; 2 electric steel fur. (one 300-lb. Snyder single-phase; one 500-lb. Moore Lectromelt).

Product: alloy tool steel castings (high chrome) for forming, blanking and drawing dies, circular cutters, etc., annual cap., 500 tons.

KITTANNING IRON & STEEL MFG. CO., 1214 Bessemer Bldg., Pittsburgh, Pa.

Inc. July, 1894 in Pennsylvania.

J. B. Orr, P.; Frank C. Neale, T.; at Pittsburgh, Pa. H. B. Dougherty, G. S.; at Kittanning, Pa.

Brands: Rebecca (pig iron); Kittanning (muck bar).

Rebecca Furnace, Kittanning, Pa.: 1 stack, 80' x 18', blt. 1906-08, f. o. Aug. 12, 1912; 5 McClure stoves (one 100' x 22', one 80' x 20', one 80' x 18', two 65' x 18'); 3 steam blowing eng. (65,000 cfm.); 6 Wheeler water-tube boilers, 3,000 H. P.; 1 Heyl & Patterson single-strand pig casting mach. Conn. coke: Lake ore.

Product: basic and foundry pig iron, annual cap., 100,000 tons.

Kittanning Rolling Mill, Kittanning, Pa.: blt. 1848, rebt. 1880; 31 single puddling fur.; 1 squeezer; 22" 3-h. 1-st. muck mill.

Product: muck bar, annual cap., 20,000 tons.

KNOXVILLE IRON CO., Knoxville, Tenn.

Inc. 1868 in Tennessee. Capital stock: com., par value \$100, auth. and issued \$1,000,000.

Morrow Chamberlain, P.; at Chattanooga, Tenn. W. H. Van Benschoten, V. P.; at West Park, N. Y. W. O. Schaad, Sec. & A. T.; H. W. Van Benschoten, T., G. M., & P. A.; E. P. Favor, G. S.; F. H. Sparks, G. S. M.; at Knoxville.

Works at Lonsdale, Knoxville, Tenn.: blt. 1902-03, f. o. Mar., 1903; 1 double and 10 single puddling fur.; 14 cinder bottom busheling fur.; 1 squeezer; six 4-d. heat. fur., fuel pulv. coal; 20" 3-h. 2-st. muck; 16" 3-h. 1-st. bar; 9" 3-h. 2-st. Belgian with 16" roughing, 9" finishing; 12" 3-h. 1-st. roughing, 8" 3-h. 2-st. guide mill.

Product: muck and scrap bar, annual cap., 12,000 tons; hot rolled products, 50,000 tons including 45,000 tons iron and steel merchant bars and concrete bars, and 5,000 tons light structural shapes.

KOKEN, W. T., Trustee, Care Banner Iron Works, 4560 Shaw Ave., St. Louis, Mo.

Trustee for owners of property formerly owned and operated by Warren Steel Casting Co., holding same for sale or for lease.

Works at 3400 Maury Ave., St. Louis: blt. 1916, f. o. Oct. 14, 1916; 2 Heroult electric fur. (one 4-ton, one 1½-ton); 1 A. O. H. fur. (5-ton) first open-hearth steel June 25, 1918.

Product: steel castings, annual cap., 6,500 tons (3,000 tons electric, 3,500 tons A. O. H.).

KOKOMO STEEL & WIRE CO., Citizens National Bank Bldg., Kokomo, Ind.

Inc. 1901 in Indiana. Capital stock: com., \$2,000,000; bonds \$550,000.

A. A. Charles, P.; A. V. Conradt, V. P.; J. E. Frederick, Sec. & G. M.; G. W. Charles, T.; Charles L. Hummell, A.; Ralph Clifford, S.; S. S. Shambaugh, G. S. M.; G. L. Rathel, P. A.

Works at Kokomo, Ind.: blt. 1900; 3 B. O. H. fur. (80-ton), fuel, oil; blt. 1913-14; f. o. Feb. 6, 1914; three 4-hole soaking pits; 1 cont. oil-fired reheat. fur.; 34" 2-h. 1-st. reversing blooming mill; Garrett rod mill; 2 box annealing fur.; 6 hand-pickling tanks; 200 wire drawing blocks for wire 0 to 20 gauge; 148 wire nail mach.; 56 barbed wire mach.; 29 wire fence mach.; 4 galvanizing pans.

Product: ingots, blooms and billets, wire rods, plain wire, wire nails, barbed wire, wire fence, galvanized wire; annual cap., 120,000 tons steel ingots, 120,000 tons blooms and billets, 115,000 tons wire rods, 120,000 net tons plain wire, 45,000 net tons galvanized wire, 1,000,000 kegs wire nails, 18,000 net tons barbed wire, 25,000 net tons wire fencing.

Kuebler Foundries, Inc. (The), Easton, Pa. added to works at Easton, Pa. one A. O. H. fur. (5-ton) blt. 1919, f. o. July 20, 1919. Operation of open-hearth fur. discontinued in 1920 and manufacture of steel castings given up.

Kyva Ferro-Manganese Corpn., Winchester, Ky. inc. 1919 in Virginia with purpose of developing manganese ore holdings in Smythe County, Virginia. In 1921 company leased plant of Tennessee Manganese Co. at Cleveland, Tenn. and operated it in 1921 and 1922. November 26, 1922 changed corporate title to Graham Furnace Corporation and acquired Graham Furnace, Graham, Va., from Roanoke Consolidated Iron Corpn. Subsequently Graham Furnace was acquired by Judge W. C. Taylor and George B. Williams, Winchester, Ky.

La Belle Iron Works, Steubenville, Ohio, was acquired in July, 1920 by Wheeling Steel Corporation, but continued to operate under own name to May 1, 1923, when operation was taken over by Wheeling Steel Corporation.

Lackawanna Steel Co., Lackawanna, N. Y., was acquired October 11, 1922 by Bethlehem Steel Corporation.

LACLEDE STEEL CO., Arcade Bldg., 8th & Olive Sts., St. Louis, Mo. Inc. June 3, 1911 in Missouri. Capital stock: com., par value \$100, auth. and issued \$2,750,000. Thomas R. Akin, P. & T.; W. W. Scott, Jr., V. P. & G. M. S.; S. R. Tyler, V. P. & Sec.; Fred A. Eisele, A.; S. W. Manss, P. A.; at St. Louis. Lafayette Young, G. S.; at Alton, Ill.

Sales offices:

Chicago, Ill., Continental-Commercial Bank Bldg.

Kansas City, Mo., Scarritt Bldg.

Madison Works, Madison, Ill.: blt. 1911-12, f. o. Apr., 1912; 1 cont. oil-fired heat. fur.; two 16" 2-h. 2-st. slitting or roughing; 12" 3-h. 5-st., 12" 2-h. 1-st. finishing; 10" 3-h. 3-st., 10" 2-h. 1-st. finishing. Product: merchant and concrete bars, and shapes, annual cap., 60,000 tons; rounds, squares, flats, angles, shapes and concrete bars.

Alton Works, Alton, Ill.: blt. 1913, first steel, Oct. 28, 1913, first rolled products, Aug. 14, 1913; 3 B. O. H. fur. (two 80-ton, one 55-ton), fuel, oil; 1 Swindell gas-fired 2-d. heat. fur.; 1 Morgan cont. gas-fired heat. fur.; four 4-hole soaking pits; 32" 2-h. 1-st. blooming; 18" 3-h. 2-st. billet; 12" 2-h. 5-st. Morgan cont.; 10" 3-h. 5-st. strip; 8" 3-h. 5-st. strip; 6 cold rolling stands 12" 4-st. tandem, 12" single, 8" single; 4 box annealing fur.; 5 hand pickling tanks. Product: steel ingots, annual cap., 150,000 tons; blooms and billets, 135,000 tons; finished hot rolled products, 90,000 tons including 18,000 tons merchant and concrete bars, 18,000 tons hoops and bands, 49,500 tons hot rolled strip, 4,500 tons angles, channels and misc. shapes; cold rolled strip steel, 8,000 tons.

Valley Works, East St. Louis, a forge plant formerly leased from St. Louis Steam Forge & Iron Works, has been given up and the works were sold Jan. 2, 1925 to St. Louis Forgings Co., Chicago, Ill.

LA FOLLETTE COAL & IRON CO., La Follette, Tenn.

Inc. Dec. 10, 1915 in Massachusetts. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$991,800; bonds, \$230,000.

L. H. Atkinson, V. P.; at New York, N. Y. S. S. Pratt, V. P. & G. S. M.; W. D. Barton, T. & P. A.; W. M. Cox, A. T.; at La Follette. E. W. Leighton, Clerk at Boston, Mass.

Sales agents: Rogers, Brown & Crocker Bros., Inc., New York, N. Y.; Volunteer Fuel & Iron Co., La Follette, Tenn.

Brands: La Follette (pig iron); Rex, Gem (coal).

La Follette Furnace, La Follette, Tenn.; 1 stack, 81' x 21' 6", blt. 1901-02, rebt. 1921; four 2-pass stoves, 85' x 22'; 3 W. M. Todd steam blowing eng., 15,000 cfm., 16-lbs. rated pressure; 8 water-tube boilers (6 Kennedy, 2 Oil City) 2,200 H. P.; 1 single-strand Pittsburgh Coal Washer pig casting mach. La Follette coke: local red ore and brown ore from North Carolina and Georgia. Company owns 295 beehive coke ovens at La Follette, annual cap., 100,000 net tons coke. Also coal mines at La Follette and Peabody, Tenn., annual cap., 500,000 tons; and limestone quarry at La Follette, annual cap., 50,000 tons.

Product: foundry pig iron, annual cap., 72,000 tons.

La Fonderie D'Acier des Trois Rivieres, Ltd., Three Rivers, P. Q., Canada. Company out of business. Plant now owned by Corporation of the City of Three Rivers.

LAKE ERIE BOLT & NUT CO. (The), Cleveland, Ohio.

Inc. Mar. 1922 in Ohio. Capital stock: com., no par value, auth. 70,000 shares, issued 60,000 shares.

Norris J. Clarke, P. & G. M.; Chester C. Bolton, V. P.; Harvey E. Volmar, Sec. & T.; Clifford W. Colvin, A.; I. A. Park, G. S. Rolling Mill Dept.; C. J. Ellmers, P. A.

Sales offices:

Atlanta, Ga., Hurt Bldg.

Detroit, Mich., McKerchey Bldg.

New York, N. Y., 2 Rector St.

Philadelphia, Pa., Bankers Trust Bldg.

Salt Lake City, Utah, Scott Bldg.

San Francisco, Calif., Call Bldg.

Brand: Lebanco (bolt and nut products, export only).

Works at Cleveland, Ohio (leased; owned by Lake Erie Iron Co.): rolling mill blt. 1899-00, f. o. Sept. 28, 1900; four 4-d. heat. fur., fuel, coal or gas; 12" 3-h. 4-st. and 10" 3-h. 5-st. bar mills; 4 pickling tanks. Bolt and nut factory.

Product: merchant bars, bolt and nut rods, annual cap., 50,000 tons. Bolts ($\frac{3}{8}$ " to 2 $\frac{1}{2}$ " dia.) and nuts ($\frac{3}{8}$ " to 3") hot and cold made, annual cap., 360,000 kegs (200-lb.).

LALANCE & GROSJEAN MFG. CO., 299 Broadway, New York, N. Y.

Company manufactures enameled ware (Agate Nickel-Steel ware) and operates factory at Woodhaven, N. Y., rolling mills and tinplate works at Harrisburg, Pa., and Branch Office, Chicago, Ill.

J. H. Walbridge, P.; J. H. Stevenson, 1 V. P.; A. J. Cardier, 2 V. P.; L. E. Campbell, Sec.; B. C. Thompson, T.; W. F. Singer, G. M.; James W. Warren, Works Mgr.

Works at Harrisburg, Pa.: blt. 1892-93, f. o. Feb. 22, 1893; 10 heat. fur.; 5 hot mills; 3 stands 30" cold rolls; 5 box annealing fur.; 8 sets for tin plates, first tinplates July, 1895. Fuel, bit. coal and prod. gas.

Product: black sheets and black plate for tinning, annual cap., 20,000 tons; tinplates for own use.

LAMB MACHINE CO., Hoquiam, Wash.

Inc. Mar. 4, 1912 in Washington. Common stock: com., par value \$100, auth. \$100,000, issued \$67,400; non voting com. auth. 25,000 shares, issued 11.47; pref. 7% cum. auth. \$125,000, issued \$108,000; bonds \$60,000.

Frank H. Lamb, P.; George E. Lamb, V. P. & S.; Laurence R. Leveen, Sec. & S. M.; Alice E. Lamb, T.

Sales offices:

Seattle, Wash., 536 First Ave. South.

Portland, Ore., 54 First St.

Vancouver, B. C., Marshall-Wells, Ltd.

Brands: Lam Steel A (sheaves and wear resisting castings); Lam Steel B (alloy castings); Lam Steel C (forging hook steel).

Works at Hoquiam: 1 Greene electric fur. (1½ ton) f. o. May, 1919; 1 cupola; gray iron, brass and bronze foundry, annual cap., 1,200 tons gray iron (cupola melted) 600 tons gray iron (electric fur. melted), 350 tons brass and bronze castings for own use and for sale. Forge shop and machine shop for the manufacture of lumber equipment and jobbing work.

Product: steel ingots and castings for own use and for sale, annual cap., 3,500 tons (1,000 tons ingots, 2,500 tons castings). Alloy steel ingots and castings (nickel, chrome, vanadium, manganese). Castings for logging and lumbering machinery, railroads and power transmission.

LATROBE ELECTRIC STEEL CO., Latrobe, Pa.

Inc. Mar. 10, 1913 in Pennsylvania. Capital stock: com., par value \$100, auth. \$2,500,000, issued \$1,500,000.

M. W. Saxman, P.; E. T. Edwards, V. P. & G. M.; M. W. Saxman, Jr., Sec.; A. B. Baker, T. & A.; H. N. Syster, P. A.; at Latrobe. C. W. Guttzeit, V. P. & G. S. M.; at 8 West 40th St., New York, N. Y.

Sales offices:

Chicago, Ill., 400 North Sangamon St.

Cincinnati, Ohio, 2802 Union Central Bldg.

Cleveland, Ohio, 1280 Ontario St.

Detroit, Mich., 1930 Rivard St.

New York, N. Y., C. W. Gutzzeit, G. S. M., 8 West 40th St.
 Pittsburgh, Pa., First National Bank Bldg.
 Toledo, Ohio, 248 Water St.

Works at Latrobe: blt. 1913, f. o. Dec. 1, 1913; 4 Heroult electric fur. (two 6-ton, one 3-ton, one 1500-lb.); 19 coal-fired heat. fur. (two 1-d., seven 2-d., ten 3-d.); 16" 3-h. 4-st.; 12" 3-h. 5-st.; 10" 3-h. 5-st. and 9" 3-h. 7-st. bar mills; one 8" Precision cold rolling mill; 10 box annealing fur.; 2 hand pickling tanks; 6 steam hammers, 750-lb. to 4-ton. Under construction 10" 3-h. 6-st. bar. Product: steel ingots, annual cap., 18,000 tons; alloy steel ingots; rolled and forged tool steel bars, annual cap., 12,000 tons rolled products, 100 tons cold rolled steels, 3,500 tons forged steels.

LAVINO FURNACE CO., 672 Bullitt Bldg., Philadelphia, Pa.

Inc. Jan. 22, 1918 in Delaware. Capital stock: com., no par value, auth. and issued 50,000 shares.

E. J. Lavino, P.; E. M. Lavino, V. P.; H. C. Du Bois, V. P.; John J. Howard, V. P. & G. M.; H. F. Lavino, Sec.; P. B. Mossman, T.

Brand: Reusens (pig iron).

Lebanon Furnace, Lebanon, Pa.: 1 stack, 63' 1½" x 14', blt. 1867, rebt. 1904, relined 1918; 4 stoves (two 4-pass 60' x 18', two 2-pass 78' 6" x 20'); 3 steam blowing eng. 25,245 cfm.; 8 boilers (4 water-tube, 4 cylindrical) 1,200 H. P.; 1 slag granulating pit. Conn. and by-product coke. Product: ferro-manganese and spegeleisen, annual cap., 15,000 tons ferro-manganese.

Marietta Furnace, Marietta, Pa.: 1 stack, 74' 7½" x 16', rebt. 1917; 5 stoves (four 2-pass 60' x 18', one 2-pass 70' x 18'); 2 steam blowing eng., 18,472 cfm.; 6 water-tube boilers, 1,414 H. P. Conn. and by-product coke. Product: ferro-manganese and spiegeleisen, annual cap., 25,000 tons ferro-manganese.

Sheridan Furnace, Sheridan, Pa.: 1 stack, 78' 6" x 16' 6", blt. 1874-75, last rebt. 1918; 5 stoves (two 64' x 20', two 80' x 20', one 90' x 20'); 2 steam blowing eng. 19,000 cfm.; 5 water-tube boilers, 1,900 H. P. Conn. and by-product coke. Product: ferro-manganese and spiegeleisen, annual cap., 27,000 tons ferro-manganese.

Oriskany Furnace, Reusens, Campbell Co., Va.: 1 stack, 80' 6" x 16' 6", blt. 1912-13, rebt. 1918: four 2-pass stoves, 70' x 18'; 3 steam blowing eng., 24,620 cfm.; 5 water-tube boilers, 1,482 H. P.; Dwight & Lloyd sintering plant, annual cap., 7,800 tons; rotary kiln nodulizing plant, annual cap., 60,000 tons. Va. and West Va. coke: local brown and magnetite ores. Company owns iron ore mine at Pittsville, Va., annual cap., 30,000 tons. Product: foundry pig iron and ferro-manganese, annual cap., 60,000 tons foundry or 27,000 tons ferro-manganese.

Total annual cap., (4 furnaces) 94,000 tons ferro-manganese.

Leaside Engineering Co., Ltd., Leaside, Ont., Canada. Works at Beaupre, P. Q., Canada (3 three-phase electric fur. for manufacture of ferro-silicon) idle since 1918.

LEBANON IRON CO., Lebanon, Pa.

Inc. July, 1920 in Pennsylvania. Capital stock: com., no par value, auth. 100,000 shares, issued 82,039 shares; bonds \$379,205. Howard Longstreth, P.; H. W. Pratt, V. P., Sec., T. & G. S. M.; V. F. Ache, C.; J. C. Baney, P. A.

Sales offices:

Boston, Mass., 141 Milk St.

New York, N. Y., 40 Rector St.

Philadelphia, Pa., Bankers Trust Bldg.

Richmond, Va., 923 Mutual Bldg.

Lebanon Valley Works, Lebanon, Pa.: blt. 1902-03, f. o. Jan. 12, 1903; 10 double puddling fur.; 8 Ely mechanical puddling fur.; 2 vertical squeezers; nine 3-d. coal and oil-fired heat. fur.; 22' 3-h. 2-st. puddle; 20' 3-h. 2-st. puddle; 16' 3-h. 3-st., 10' 3-h. 4-st., 9' 3-h. 4-st. and 8' 3-h. 4-st. bar mills. Bolt, Nut and Spike Dept.: machine bolts $\frac{1}{4}$ " x $\frac{1}{2}$ " to 2" x any length, carriage bolts $\frac{1}{4}$ " x $\frac{1}{2}$ " to $\frac{3}{8}$ " x any length; track bolts $\frac{3}{8}$ " x 3" to $1\frac{1}{4}$ " x any; lags $\frac{1}{4}$ " x $\frac{1}{2}$ " to $1\frac{1}{4}$ " x any; spikes $\frac{3}{8}$ " x 3" to $\frac{3}{8}$ " x 7. (Lebanon Valley Iron & Steel Co. to Aug. 1, 1920).

Product: muck bar and scrap bar, annual cap., 35,000 tons; hot rolled products, 100,000 tons including 50,000 tons merchant bars, 25,000 tons bolt and spike rods, 25,000 tons staybolt and engine bolt iron; machine bolts 60,000 kegs, carriage bolts 12,000 kegs, track bolts, 24,000 kegs, lags 12,000 kegs, spikes 150,000 kegs.

Duncannon Iron Works, Duncannon, Pa.: blt. 1836; 12 single puddling fur.; four 3-d. heat. fur.; 20' 3-h. 2-st. puddle; 12' 3-h. 5-st. bar; 9' 3-h. 4-st. bar. (Lebanon Valley Iron & Steel Co. to Aug. 1, 1920).

Product: muck bar, annual cap., 10,000 tons; merchant bar iron, 35,000 tons.

LEBANON STEEL FOUNDRY, Lebanon, Pa.

Inc. Dec. 11, 1911 in Pennsylvania. Capital stock: com., par value \$50, auth. and issued \$300,000.

W. H. Worrilow, P.; H. H. Light, Sec.; T. S. Quinn, T.; R. A. Nichols, Jr., C.; K. V. Wheeler, G. M.; J. R. Adams, G. S.; T. V. Blodgett, Sales Eng.; S. M. Gingrich, P. A.

Sales office: A. J. McDonald, D. S. M., Bellevue Court Bldg., Philadelphia, Pa.

Works at Lebanon: blt. 1911, first steel Feb. 1, 1912; 2 Heroult electric fur. (2-ton).

Product: steel castings for sale, annual cap., 4,800 tons. Alloy steel castings (nickel, chrome, vanadium). Small railroad car

and locomotive castings; castings for automobile trucks, machine tools, high pressure fittings and special design castings.

Lebanon Valley Iron & Steel Co., Lebanon, Pa., corporate name changed August 1, 1920 to Lebanon Iron Co.

Leesport Furnace Co., see P. W. Kiefhaber and Leesport Furnace & Foundry Co.

LEESPORT FURNACE & FOUNDRY CO., 534 Real Estate Trust Bldg., Philadelphia, Pa.

Leesport Furnace, Leesport, Pa.: 1 stack, 70' x 16', blt. 1852, f. o. 1853, rebilt. 1900, relined 1918; two 3-pass side-comb. stoves (60' x 18'); 1 steam blowing eng.; 14 cylindrical boilers, 1,400 H. P. Conn. coke: Lake ore, cinder. (P. W. Kiefhaber, Leesport Furnace Co. to April 1, 1920; Leesport Iron Co. to 1922).

Product: foundry and forge pig iron, annual cap., 22,500 tons.

Leesport Iron Co., Inc., Philadelphia, Pa. acquired Leesport Furnace, Leesport, Pa. from Leesport Furnace Co. about April 1, 1920. In 1922 the furnace property was transferred to Leesport Furnace & Foundry Co.

LE MOYNE STEEL CO., 906 Park Bldg., Pittsburgh, Pa.

H. A. Kuhn, P.; W. H. Morris, G. M.

Brand: Le Moyne (tool steels).

Works at New Eagle, Monongahela, Pa.: blt. 1918, f. o. July 11, 1918; 1 Heroult electric furnace (2-ton); two 2-d. Swindell coal-fired heat. fur.; 10" 3-h. 5-st. guide mill; 3 annealing fur.; 4 steam hammers (1 tilt, one 1,500-lb. one 3,000-lb., one 6,500-lb.).

Product: steel ingots, annual cap., 1,600 tons; alloy steel ingots (tungsten, chrome, vanadium); rolled and hammered tool sheets, annual cap., 2,000 tons.

LENOIR CAR WORKS, Lenoir City, Tenn.

Works at Lenoir City, Tenn.: 1 A. O. H. fur. (8-ton).

Product: steel castings for own use, annual cap., 4,300 tons.

Lenor Realty Corporation, care E. P. Wilbur Trust Co., Bethlehem, Pa.

Company owns plant formerly operated by Hummel Steel Foundry Co. at Conshohocken, Pa. and holds same for sale or for lease.

Works at Conshohocken, Pa.: 1 Rennerfelt electric fur. (3,000-lb.).

Product: steel castings, annual cap., 1,000 tons.

LEWIS FOUNDRY & MACHINE CO., 1512 Farmers Bank Bldg., Pittsburgh, Pa.

Inc. 1894 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$500,000; pref. 8% cum. auth. \$500,000, issued \$312,500.

W. A. Herron, P.; J. W. Davies, Sec.; W. C. Young, T.; W. W. Holsinger, A.; John Lucas, Works M.; E. M. Fitzgerald, P. A. Works at Groveton, Pa.: blt. 1901; 1 A. O. H. fur. (25-ton) added 1919-20 but not operated. Foundry for gray iron castings and chilled rolls, annual cap., 3,000 net tons gray iron castings for own use in manufacture of rolling mill machinery, 9,000 net tons chilled rolls for sale.

Liberty Steel Co., Morristown, N. J. built works at Morristown for manufacture of high speed steel (one 1,000-lb. Rennerfelt electric fur. installed 1919, f. o. Aug., 1919). Plant acquired by Morristown Electric Steel Foundry, Aug. 1922.

Lifchitz (Herman) Foundries & Machine Works, Indianapolis, Ind. installed in 1919-20 at works situated Division St. and Vandalia R.R., Indianapolis, one 600-lb. Snyder electric fur. for manufacture of steel castings, f. o. June 1, 1920. Plant operated only short time and was dismantled early in 1922.

Lima Steel Casting Co. (The), Lima, Ohio, ceased operations in 1920. Plant was sold by receiver and acquired by Bernard Boiler Company, April 19, 1923.

LINK BELT CO., 910 South Michigan Ave., Chicago, Ill.

Inc. Nov. 15, 1880 in Illinois. Capital stock: com., par value \$50, auth. \$7,000,000, issued \$6,783,700; pref. 6% cum., auth. and issued \$750,000.

Charles Piez, Ch.; Richard W. Yerkes, Sec. & T.; at 910 So. Michigan Ave., Chicago. Alfred Kauffmann, P.; at Indianapolis, Ind. Staunton B. Peck, V. P.; at Philadelphia. Arthur C. Johnston, V. P.; at 300 West Pershing Road, Chicago. Humphrey J. Kiely, V. P.; at New York.

Sales offices in all principal cities.

Company manufactures elevating, conveying and power transmission machinery. It operates plants as follows: Chicago Plant, 300 West Pershing Road (steel and gray iron foundries, machine shops and structural shops); Caldwell Plant, Chicago, 1700 South Western Ave. (gray iron foundry, 3,600 tons); Philadelphia Plant, 2045 Hunting Park Ave., Nicetown (machine and structural shops); Olney Foundry, Philadelphia, 180 West Duncannon Ave. (gray iron foundry, 7,200 tons); Dodge Plant, Indianapolis, 501 North Holmes Ave. (steel chains); Ewart Plant and Belmont Foundry, Indianapolis, 200 South Belmont Ave. (machine shop, chain assembly shop, malleable iron foundry, 17,000 tons); San Francisco Plant, 19th & Harrison Sts. (gray iron foundry). The Company also owns Dodge Steel Co., Philadelphia; see Dodge Steel Co.

Steel Foundry, Chicago Plant, 300 West Pershing Road (formerly 329 West 39th St.); one 2,500-lb. side blow converter; 2 cupolas; blt. 1907, f. o. July 20, 1907; gray iron foundry, 7,200 tons.
Product: steel castings for own use, annual cap., 1,200 tons.

Llewellyn Iron Works, Los Angeles, Calif. sold Torrance Plant at Torrance, Calif., April 1, 1923 to Columbia Steel Corporation, now known as Llewellyn Mills of that company.

Lobdell Car Wheel Co., Wilmington, Del.

Works at Wilmington: 2 A. O. H. fur. (10-ton, 3½-ton). Manufacture of steel castings discontinued in 1923.

LOCKHART IRON & STEEL CO., P. O. Box 1243, Pittsburgh, Pa.
Inc. Mar. 18, 1890 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$3,000,000.

J. M. Lockhart, Ch.; T. J. Gillespie, P. & G. M.; J. H. Lockhart, V. P.; J. M. Gillespie, V. P.; T. J. Gillespie, Jr., Sec. & T.; C. W. Shuman, A.; Samuel Poster, G. S.

Brands: Vulcan, Vulcan Special, Vulcan XX, Vulcan Bloom (bar iron).

Vulcan Forge & Iron Works, McKees Rocks, Pa.: forge blt. 1877; rolling mill blt. 1882; 52 single puddling fur.; 2 rotary squeezers; 7 coal-fired heat. fur. (two 3-d., five 4-d.); two 23" 3-h. 2-st. muck mills; 16" 3-h. 2-st. bar; 16" 2-h. 1-st. universal; 16" 3-h. 2-st. bar; 12" 3-h. 5-st. bar; 9" 3-h. 5-st. guide; 1 steam hammer (5-ton).

Product: muck bar, annual cap., 35,000 tons; rolled iron bars and bands, staybolt and engine bolt iron, hexagon iron, grooved and angle iron and steel, soft steel bars, annual cap. rolled products, 70,000 tons.

Sligo Works, Connellsville, Pa. acquired Feb. 28, 1922 were destroyed by fire April 3, 1924.

LOGAN IRON & STEEL CO., 1218 Stephen Girard Bldg., Philadelphia, Pa.

Inc. Jan. 16, 1871 in Pennsylvania; reinc. 1921. Capital stock: com., par value \$100, auth. and issued \$240,000.

Frank G. Kennedy, Jr., P.; William M. Measey, V. P.; Frank G. Jones, Sec.; Robert K. Jones, T.; at Philadelphia. Thomas Jameson, Manager; at Burnham, Mifflin Co., Pa.

Sales agents:

Baltimore, Md., John T. Hill, 1318 Continental Bldg.

Boston, Mass., A. E. Hunt Steel Co., 80 Boylston St.

St. Louis, Mo., W. R. Maxwell, 915 Olive St.

St. Paul, Minn., George M. Kenyon Co., 116 East Fourth St.

Brands: Logan, sLb (staybolt iron); LICO (engine bolt iron); LISCO (refined iron).

Works at Burnham, Mifflin Co., Pa.; blt. 1869; rebt. 1894; 11 double puddling fur.; 1 rotary squeezer; six 4-d. heat. fur., fuel bit. coal; 18" 3-h. 1-st. puddle; 18" 3-h. 2-st. and 2-h. 1-st. bar; 12" 3-h. 5-st. guide; 10" 3-h. 1-st. roughing, 8" 3-h. 5-st. finishing guide.

Product: muck bar, annual cap., 12,000 tons; refined bar iron, staybolt, enginebolt, chain, forging, fender and boat irons; flats, rounds, squares, ovals, hexagons, half ovals and small shapes, annual cap., 45,000 tons.

LONDON ROLLING MILL CO., Ltd., London, Ont., Canada.

Inc. 1902 in Province of Ontario. Capital stock: com., par value \$100, authorized \$500,000.

John White, P.; Sir Adam Beck, V. P.; Charles H. White, G. M.; J. Frank White, G. S.

Selling agents:

Bissett & Webb, Ltd., Winnipeg, Man.

Works at London: blt. 1902-03, f. o. Mar. 1903; 4 single puddling fur.; 1 rotary squeezer; three 4-d. heat. fur., fuel, pulv. coal; 18" 3-h. 4-st. comb. muck and bar mill; 14" 3-h. 1-st. roughing, 10" 3-h. 4-st. finishing Belgian train.

Product: merchant bar iron and steel, annual cap., 25,000 tons.

Londonderry Iron & Mining Co. (The), Ltd., Montreal, Canada.

Works at Londonderry, Nova Scotia consisting of Londonderry furnace and a steel foundry were dismantled in 1920.

LORAIN STEEL CO. (THE), 545 Central Ave., Johnstown, Pa.

Inc. April 13, 1893, in Pennsylvania. Subsidiary of United States Steel Corporation.

Carroll Burton, P. & G. S.; P. M. Boyd, Sec. & T.; H. M. Davies, A.; C. F. Brandler, P. A.

Sales agents:

Atlanta, Ga., W. W. Kingston, Equitable Bldg.

Chicago, Ill., S. P. McGough, 208 South La Salle St.

Cleveland, Ohio, Otto Fischer, Rockefeller Bldg.

New York, N. Y., A. L. Verner, 71 Broadway.

Philadelphia, Pa., S. J. Cotsworth, Widener Bldg.

Pittsburgh, Pa., H. L. Gleeson, Frick Bldg.

San Francisco, Calif., United States Steel Products Co., Rialto Bldg.

Johnstown Works, Johnstown, Pa.; blt. 1887-88; f. o. May 13, 1888; 2 A. O. H. fur. (one 15-ton, one 20-ton) fuel, oil; 2 electric fur. (one 3-ton acid, one 3-ton basic); iron foundry with 1 cupola. Frog and switch shops, and mine car dept.

Product: steel castings for own use and for sale, annual cap., 15,500 tons (8,500 tons A. O. H., 7,000 tons electric); alloy steel castings (chrome, nickel, manganese); semi-steel (4,800 tons) and brass

(25 tons) castings for own use and for sale; switches, mates, curve crosses, frogs, split switches, girder crossings, drop forgings, curves, track and machine bolts, and all kinds of special work for steam railroads and street railways, 40,000 tons; mine and industrial cars, 3,600 cars.

Lorain Steel Foundry Co. (The), Lorain, Ohio, acquired Dec. 15, 1921 from Aetna Steel Casting Co. steel foundry at 28th St. and Globe Ave., Lorain, Ohio. The Lorain Steel Foundry Co. sold the plant in 1924 to The National Tube Co., Lorain, Ohio. The ground will be used for other purposes and the steel foundry is abandoned and will be dismantled.

LOS ANGELES FOUNDRY CO., 2444 South Alameda St., Los Angeles, Calif.

Inc. April 3, 1902 in California. Capital stock: com., auth. and issued \$50,000.

Lee Chamberlain, P.; Henry Chamberlain, V. P.; S. M. Salisbury, Sec.; E. S. Atkins, A.; C. B. Tibbetts, G. M.; Walter Williams, G. S.; at Los Angeles. Mellen Chamberlain, T.; at Los Angeles, Calif.

Brands: Electro Cast (steel): Duraloid (white iron castings).

Works at 2444 South Alameda St., Los Angeles; blt. 1910; 1 Greene electric fur. (3,000-lb.) f. o. 1921; 2 cupolas; foundry for white iron castings, annual cap., 4,000 tons.

Product: steel castings for sale, annual cap., 2,000 tons. Alloy steel castings (chrome, nickel, vanadium).

Louisville Steel & Iron Co., Jeffersonville, Ind.

George H. Holzbog, President.

Works at Louisville, Ky.: blt. 1900-01, rebt. 1902 after fire; 6 single puddling fur.; 2 scrap fur.; squeezer; 2 heat. fur.; 20" 3-h. 2-st. muck bar; 12" 3-h. 1-st. roughing, 8" 3-h. 5-st. finishing. Idle and for sale or lease.

Product: muck bar, annual cap., 6,000 tons; merchant bar, 12,000 tons.

Louisville Trust Co., Louisville, Ky., see Kentucky Iron & Steel Co. and Louisville Steel & Iron Co.

LOW MOOR IRON CO. OF VIRGINIA (The), Low Moor, Va.

Inc. 1873 in Virginia. Capital stock: com., par value \$100. auth. \$1,500,000, issued \$1,050,000; pref. 7% cum. auth. \$500,000, issued \$417,400.

Frank Lyman, P.; Guy DuVal, Sec.; H. A. Dalton, T.; at 14 Wall St., New York, N. Y. F. U. Humbert, G. M.; G. W. Lipscomb, P. A.; at Low Moor.

Sales agents: Phillips Isham, 30 Church St., New York, N. Y.

Walter-Wallingford & Co., Traction Bldg., Cincinnati, Ohio.

Brand: Lowmoor (pig iron).

Furnaces A and B, Low Moor, Va.; 2 stacks (alternate); Furnace A, 80' x 19', blt. 1880, rebt. 1917, relined 1924; Furnace B, 85' x 19', blt. 1887, rebt. 1902-03, relined 1920; 9 stoves (3 Whitwell 60' x 18', 3 Foote 95' x 18', 3 Pollock 90' x 18'); 3 Allis-Chalmers steam blowing eng., 36,000 cfm., 20 lbs. rated pressure; 7 B & W water-tube boilers, 2,000 H. P.; Dwight & Lloyd sintering plant for flue dust, scale, local lean ores and pyrites cinder, annual cap., 54,000 tons. Local, New River and Pocahontas coke: local brown hematite ore. Product: foundry pig iron, annual cap., 60,000 tons.

Furnace C, Covington, Va.; 1 stack, 75' x 18', blt. 1891-93, rebt. 1919; 3 Gordon-Whitwell-Cowper stoves, 65' x 18'; 4 steam blowing eng. (1 Allis-Chalmers, 3 Weimer), 36,000 cfm., 20-lbs. rated pressure; 5 water-tube boilers (4 B & W., 1 Heinz) 1,500 H. P. Local New River and Pocahontas coke: local brown hematite ore. Product: foundry pig iron, annual cap., 50,000 tons.

Company owns 175 beehive coke ovens; 124 at Low Moor, annual cap., 75,000 net tons; and 51 at Covington, annual cap., 25,000 net tons; total annual cap., 100,000 net tons. Company also owns iron ore mines at Low Moor, annual cap., 40,000 tons, and at Barbours Creek, Va., annual cap., 60,000 tons; total annual cap., iron ore mines, 100,000 tons; limestone quarries at Low Moor, annual cap., 60,000 tons, and at Panther Gap, Va., annual cap., 30,000 tons.

Lowox Steel Co., Vancouver, B. C., Canada, see under Hyatt Steel Products, Ltd.

LUDLUM STEEL CO., Watervliet, N. Y.

Org. 1854; inc. Mar. 11, 1898 in New Jersey. Capital stock: com., no par value, auth. 200,000 shares, issued 120,000 shares; bonds \$1,194,000.

Edwin Corning, P. & G. M.; Parker Corning, V. P. & T.; Hiland G. Batcheller, V. P. & G. S. M.; E. Palmer Gavit, Sec.; William B. Davis, A.; W. H. Tuck, C.; A. K. Martin, G. S.; Frank S. Quick, P. A.

Sales offices:

Boston, Mass., 1004 Little Bldg., 80 Boylston St.

Chicago, Ill., 1238 West Washington Blvd.

Cleveland, Ohio, 614 B. F. Keith Bldg.

Detroit, Mich., 1637 East Grand Blvd.

Houston, Texas.

Los Angeles, Calif., 724 Kohler St.

New York, N. Y., 33 West 42nd St.

Philadelphia, Pa., 1214 Real Estate Trust Bldg.

San Francisco, Calif., 80 Tehama St.

Brands: Mohawk Extra, Mohawk HiVan (high speed); Pompton Special, Pompton, Elba, Salish (carbon tool steels); Seminole, Utica, Huron, Purple Cut, Seneca, Iroquois Special, Otsego Special, Neva-Stain, Delhi Hard, Delhi Tough, Silchrome, Teton, Atsina, Yuma, Pequot, Albany, Algonquin (alloy steels).

Works at Watervliet, N. Y.: blt. 1906-07, f. o. Sept., 1907; 5 Ludlum electric fur. (one 10-ton, three 9-ton, one 5-ton): 10 heat. fur. (two 3-d., three 5-d., two 6-d., three 7-d.): 18" 3-h. 5-st. roughing and finishing; 14" 3-h. 3-st. roughing and finishing, 10" 3-h. 8-st. bar; two 9" 3-h. 6-st. bar; 6 annealing fur.; 5 hand pickling tanks; Wire Dept.: 6 wire drawing blocks; 2 wire drawing benches; 4 annealing fur., 2 swagers, 2 automatic coil straighteners; Hammer Shop: 7 heat. fur.; 5 steam hammers ($\frac{1}{2}$ -ton to 6-ton); 7 straightening mach. (2 for flats, 5 for rounds). Fuel, bit. coal and oil.

Product: steel ingots, annual cap., 22,000 tons: alloy steel ingots (chrome, tungsten, vanadium); hot rolled products, 16,000 tons including 11,500 tons tool steel bars, and 4,500 tons wire rods; rounds, flats, squares, octagons, hexagons and tapers in carbon and alloy tool steels; hammered products, 1,500 tons including bars, die blocks, discs and rings.

LUKENS STEEL COMPANY, Coatesville, Pa.

Inc. Jan. 17, 1917 in Pennsylvania. Capital stock; com., par value \$50, auth. \$23,000,000, outstanding \$15,898,800; bonds \$5,112,800.

A. F. Huston, Ch.; R. W. Wolcott, P.; Charles L. Huston, 1 V. P.; H. B. Spackman, 2 V. P. & P. A.; Charles F. Humpton, Sec. & T.; W. J. Bassett, C.; P. Roberts Baker, G. S.; F. H. Gordon, G. S. M.

Sales offices:

Baltimore, Md., W. H. Crampton, Continental Trust Bldg.

Boston, Mass., H. G. Porch, 131 State St.

Chicago, Ill., A. M. Castle & Co., 1300 North Branch St.

Cincinnati, Ohio, J. F. Corlett & Co., 825 Union Trust Bldg.

Cleveland, Ohio, J. F. Corlett & Co., 1679 Union Trust Bldg.

Houston, Texas, C. E. Naylor, 610 Second Natl. Bank Bldg.

Los Angeles, Calif., A. M. Castle & Co., 2020 East 37th St.

Montreal, Canada, Drummond, McCall & Co., 160 Wellington St.

New Orleans, La., R. W. Ferguson, Miro & Japonica Sts.

New York, N. Y., W. H. Edgerley, 17 Battery Place.

Philadelphia, Pa., G. T. Shants, Commercial Trust Bldg.

Pittsburgh, Pa., McKee-Oliver, Inc., Henry W. Oliver Bldg.

Portland, Ore., A. M. Castle & Co. of Wash., 717 Corbett Bldg.

San Francisco, Calif., A. M. Castle & Co., 400 Mission St.

Seattle, Wash., A. M. Castle & Co. of Wash., 32 West Connecticut St.

Toronto, Canada, Drummond, McCall & Co., 373 Front St. East. Product: steel ingots, slabs, billets, forging blanks; steel boiler, ship and tank plates, universal plates; flanging work of all kinds, pressed steel plates, manholes and handholes and their fittings, saddleplates, boiler braces.

The company owns the capital stock of the Alleghany Ore & Iron Co. with 2 blast furnaces and iron mines in Virginia.

Works at Coatesville: est. 1810; steel works added 1892, first steel made 1892; 21 B. O. H. fur. (eight 100-ton, ten 50-ton, three 35-ton) and 3 A. O. H. fur. (35-ton); 13 soaking pits (ten 4-hole, three 3-hole) fuel, prod. gas; 11 heat. fur. (three 1-d. coal-fired, three 3-d. prod. gas-fired, four 4-d. prod. gas-fired, 1 cont. oil-fired): 34" 2-h. universal slabbing mill, blt. 1901, f. o. Dec. 23, 1901; 84" 2-h. and 3-h. sheared plate mill 30" x 84", middle roll 16" x 84", blt. 1870; 112" 3-h. sheared plate mill, 36" x 112", middle roll 20" x 112", blt. 1890 as 120", enlarged 1894 to 134", cut down 1904 to 112"; 140" 3-h. sheared plate mill, 38" x 140", middle roll 22" x 140", blt. 1903; 206" 4-h. sheared plate, 50" x 206", middle rolls 34" x 206", blt. 1916; 48" 3-h. universal plate mill, 28" x 66" and 21" x 66", vertical rolls 17 1/4" x 25 1/2" and 15 3/4" x 24 1/2", blt. 1900. Flanging Dept. with flanging machines and hydraulic presses for special work. Also equipped with punches, drills, facing machines, etc., for making and finishing flue holes, manholes, saddle plates, manhole and handhole covers, etc. Boiler Brace Dept. for all sizes of weldless hydraulic pressed boiler braces (Huston patent). Repair shops for mechanical and electrical work. Brass foundry for own use. Roll sheared plates 10 B. W. G. to 2", 24" to 186" wide, lengths vary with width and gauge; circles 66" to 195" dia.; universal plates, 1/4" to 2", to 48" wide in plates 3/8" and thicker.

Product: steel ingots, annual cap., 686,480 tons (624,080 basic, 62,400 acid open hearth); slabs, 300,000 tons; sheared plates, 376,800 tons; universal plates, 83,400 tons.

Lundin Steel Casting Co. (The), Neponset, Mass. Company out of business; plant dismantled in 1923.

LUNKENHEIMER COMPANY (The), P. O. Box 876, Cincinnati, Ohio.

Org. 1862; inc. 1889 in Ohio. Capital stock: com., no par value, auth. and issued 50,000 shares; pref. 6% cum. auth. and issued \$1,000,000.

Eshelby F. Lunken, P.; David C. Jones, 1 V. P. & G. M.; H. F. Schaefer, 2 V. P.; Alfred J. Jupp, 3 V. P.; Charles A. Brown, Sec.; L. J. Bradford, T.; C. C. Isekeit, A.; George A. Seyler, G. S.

Sales offices:

Boston, Mass., 63 Pearl St.

Chicago, Ill., 568 West Washington Blvd.

New York, N. Y., 129-135 Lafayette St.

Works at Cincinnati, Ohio: blt. 1901, steel foundry added 1905, f. o. Dec., 1905; 2 electric fur. (one 2¼-ton Heroult, one 2.3-ton Lectromelt) first electric steel 1917; 2 cupolas. Gray iron foundry for iron valve castings (6,000 tons).

Product: steel castings largely for own use, annual cap., 8,000 tons; iron and steel valves, lubricators, oil and grease cups, etc.

McCONWAY & TORLEY CO. (The), 48th St. & A. V. Ry., Pittsburgh, Pa.

Capital stock: com., \$1,000,000; pref. auth. \$250,000, none issued.
 William McConway, Jr., P.; Isaac H. Milliken, V. P.; G. W. McCandless, Sec. & T.

Selling agents:

Chicago, Hughes & Graul, 1313 Peoples Gas Bldg.
 St. Louis, O'Fallon Railroad Supply Co., 794 Arcade Bldg.
 Richmond, Va., Stewart H. Ford, 617 Mutual Bldg.
 San Francisco, Latham McMullin, Claus Spreckels Bldg.

Works at 48th St. & A. V. Ry., Pittsburgh: blt. 1901-02, f. o. Jan. 25, 1902; 3 A. O. H. fur. (two 20-ton, one 25-ton). Fuel, nat. gas and fuel oil.

Product: steel car couplers and miscellaneous car and locomotive castings; annual cap., 30,000 tons steel castings for own use and for sale.

McCORD & CO., 1911 Peoples Gas Bldg., Chicago, Ill.

Inc. Dec., 1916 in New York. Subsidiary of McCord Manufacturing Co., Inc., Detroit, Mich. Capital stock: com., no par value, auth. and issued 125,000 shares; pref. 7% cum. auth. and issued \$1,325,000.

A. C. McCord, P.; D. W. McCord, 1 V. P.; Morrill Dunn, V. P.; at Chicago. C. R. Hammer, V. P. & T.; L. M. Hamlin, Sec.; Walter Gleich, A.; at Detroit, Mich. Judson A. Lamon, G. M.; J. B. Emory, Works M.; D. C. Lewis, P. A.; at West Pullman, Chicago, Ill.

Works at West Pullman, Ill.: 2 Tropenas converters (3-ton) idle since 1918; 2 Ludlum electric (5-ton), first electric steel May 12, 1918; 2 cupolas; gray iron foundry.

Product: steel castings for own use and for sale, annual cap., 9,600 tons electric steel castings; annual capacity of idle converters, 7,000 tons.

McCoy & Linn., Milesburg, Pa.

Hecla Furnace, Milesburg: 1 stack, 36' x 8' 6", blt. 1864; cold blast; water power, open top. Charcoal: local ore. (Formerly leased and operated by McCoy-Linn Iron Co.). Idle since 1919.
 Product: charcoal pig iron, annual cap., 1,800 tons.

McCoy-Linn Iron Co., Milesburg, Pa. The lease under which this company operated Hecla Furnace at Milesburg expired November 30, 1922 and the furnace reverted to the owners, McCoy and Linn, Milesburg, Pa.

McCullough Iron Co., Wilmington, Del. Plant sold and completely dismantled in latter part of 1922 and early in 1923. Site now used for other purposes.

McDOUGALL-DULUTH SHIPBUILDING CO., Riverside, Duluth, Minn.

Inc. Dec., 1919 in Minnesota. Capital stock: com., \$250,000.

Julius H. Barnes, P.; at 42 Broadway, New York, N. Y. Ward Ames, Jr., 1 V. P.; P. H. Ginder, 2 V. P.; H. K. Pratt, Sec., T. & A.; C. L. Heimbaugh, G. M.; at Duluth.

Works at 53rd Ave. West and Polk St., Duluth; 1 A. O. H. fur. (5-ton), f. o. Feb. 25, 1920; 2 cupolas; pattern shop. Gray iron foundry, annual cap., 1,000 tons semi-steel, 3,000 tons gray iron castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 4,000 tons.

McINNES STEEL CO., Ltd., Corry, Erie Co., Pa.

Inc. 1901 in Pennsylvania. Limited partnership.

J. J. McInnes, P.; H. B. Smith, Sec. & T.; J. H. McInnes, G. M. Brand: Cello Vanadium, Vanadium Crucible.

Works at Corry: one 30-pot crucible steel fur., fuel gas; 10 heat. fur. (three 1-d. gas seven 2-d. coal and coke); 12" 2-h. 1-st. bar mill used only on special work; 6 steam hammers, 500 to 2,500-lb.

Product: crucible steel ingots, annual cap., 1,000 tons; alloy steel ingots; carbon and alloy crucible tool steel, high speed steels, oil hardening steels, tool steel and special forgings.

McKEEFREY IRON CO., Main & Washington Sts., Leetonia, Ohio.

Inc. July 16, 1915 in Delaware. Capital stock: com., \$100,000; pref. 7% cum. \$100,000.

F. F. Brooks, P.; L. E. Sands, V. P.; H. K. Holmes, Sec. & T.

Brands: "McKeefrey," "Seneca," "Grafton."

McKeefrey Furnace at Leetonia: 1 stack, 76' x 18', blt. 1866, rebt. 1894, relined 1918; 4 Cowper-Kennedy stoves (three 90' x 20', one 75' x 20'); 4 steam blowing eng. (88,000 cfm.); 12 water-tube boilers, 3,380 H. P.; 1 Uehling single-strand casting mach.; slag granulating pit (annual cap., 100,000 tons). Conn. coke: Lake ore.

Product: bessemer, basic, malleable, foundry and forge pig iron; annual cap., 120,000 tons.

McKEESPORT TIN PLATE CO., McKeesport, Pa.

Inc. May 7, 1901 in Pennsylvania. Capital stock: com., par value \$100, auth. \$10,000,000, issued \$9,794,200; bonds \$1,007,000.

E. R. Crawford, P.; G. V. Parkins, V. P.; H. H. Frey, Sec. & T.; H. E. Houser, A., A. Sec. & A. T.; R. W. Stuler, G. S.; R. E. Willhide, P. A.

Sales office: 256 Broadway, New York, N. Y., Charles Brechemin, M.
 Port Vue Mills, McKeesport: blt. 1902-03, f. o. Mar., 1903; 44 sheet
 and 44 pair fur.; 44 hot black plate mills (28" x 32" to 36") plates
 38 to 14 gauge; 42 cold mills (25" x 36" and 26" x 44", arranged
 tandem in 3 sets each); 4 Mesta 4-arm pickling mach.; 14 box
 annealing fur. Tin House: 80 tinning pots for coke tin plates,
 fuel prod. gas.

Product: black plates for tinning, annual cap., 180,000 tons; tin-
 plates, 4,000,000 base boxes.

McKENNA PROCESS CO., Joliet, Ill.

Joliet Works, Joliet, Ill.: blt. 1897, f. o. Aug. 11, 1897; two 4-d.
 coal-fired heat. fur.; 24" 2-h. 1-st. roughing and 24" 2-h. 1-st.
 finishing rail mill. Angle bar dept. added 1925 for pressing and
 restoring worn angle bars for rail joints.

Product: renewed rails from old rails, annual cap., 100,000 tons.

McKINNEY STEEL CO. (The), 3100 East 45th St., Cleveland, Ohio. Inc. May 6, 1901 in Ohio.

James W. Corrigan, P.; H. T. Harrison, V. P. & G. M. Manufacture;
 H. W. Haggerty, V. P. & G. S. M.; Donald B. Gillies, V. P. &
 G. M. Mining; J. E. Ferris, V. P. & T.; John H. Watson, Jr., Sec.;
 Alfred Tozer, A.; P. H. Owen, P. A.

River Blast Furnaces and Steel Plant, Cleveland, Ohio:

River Furnaces: 4 stacks; No. 1, 90' x 22', blt. 1909-10, rebt.
 1924; No. 2, 90' x 22', blt. 1910-11, rebt. 1925; No. 3, 90' x 22',
 blt. 1915-16, relined 1925; No. 4, 90' x 22', blt. 1915-16, relined
 1923; 16 McClure 3-pass center comb. stoves, 95' x 22'; 9 steam
 blowing eng. (3 Mesta, 3 Tod, 3 Wisconsin), 218,000 cfm., 18 lbs.
 rated pressure; 24 Sterling water-tube boilers, 16,872 H. P. serve
 also electric power plant for coke ovens, steel works and rolling
 mill; 2 Uehling double-strand pig casting mach.; Dwight & Lloyd
 sintering plant for flue dust, annual cap., 100,000 tons. By-product
 coke: Lake ore. Product: basic, malleable and foundry pig iron,
 annual cap., 1,000,000 tons.

By-Product Coke Plant: 204 Koppers by-product coke ovens, by-
 product recovery plant and Koppers benzol plant, annual cap.,
 1,200,000 net tons coke, 475,000 gallons light oil.

Steel Works: blt. 1913-16, f. o. Jan. 20, 1916; 14 B. O. H. fur.
 (100-ton); fuel, tar or coke oven gas; 30 Hughes gas producers;
 one 1,000-ton hot metal mixer; seven 4-hole soaking pits; 40" 2-h.
 1-st. reversing blooming mill; 21" 2-h. 6-st. continuous billet mill;
 18" 2-h. 8-st. continuous bar and billet mill (6-st. vert., 2-st. horiz.).
 Under construction 10" Morgan cont. merchant bar mill and 12"
 Morgan merchant bar mill, to be ready for operation in 1926.
 Product: steel ingots, annual cap., 1,000,000 tons, steel castings
 for own use, 1,700 tons; semi-finished rolled products 795,000 tons;
 245,000 tons slabs, 50,000 tons billets, 500,000 tons sheet bars.

Genesee Furnace, Charlotte, N. Y.: 1 stack, 75' x 18' 3", blt. 1868, last rebt. 1908, partly relined 1923; 5 stoves (3 Foote 2-pass side comb. 75' x 19', 1 Baughman 2-pass side comb. 85' x 21', 1 McClure 3-pass center comb. 85' x 19'); 3 Macbeth vertical steam blowing eng. (32,700 cfm.) 10-lbs. rated pressure; 6 Sterling water-tube boilers, 3,018 H. P. By-product and beehive coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 110,000 tons.

Josephine Furnaces, Josephine, Pa.: 2 stacks; No. 1, 80' 3" x 20', blt. 1906-07, relined 1918; No. 2, 79' 9" x 20' 3", blt. 1907-12, relined 1921; 8 stoves (4 Baughman 2-pass-side-comb. 85' x 21' for No. 1; 4 McClure 3-pass center comb. 90' x 21' for No. 2); 5 steam blowing eng. (1 Macbeth, 4 Tod) 67,700 cfm., 10.5 lbs. rated pressure; 12 Sterling water-tube boilers, 6,036 H. P. serve also Town of Josephine water works system; 1 Uehling double-strand pig casting mach. Conn. coke: Lake ore. Product: bessemer, basic, malleable, foundry and forge pig iron, annual cap., 240,000 tons.

Scottdale Furnace, Scottdale, Pa. (leased from United States Cast Iron Pipe & Foundry Co.); 1 stack, 75' 3" x 18' 9", blt. 1872-73, last rebt. 1911, relined 1921; 4 stoves (3 Foote 2-pass side comb. 75' x 19', 1 Baughman 2-pass side comb. 85' x 21'); 4 Macbeth vertical steam blowing eng., 43,600 cfm., 14.5 lbs. rated pressure; 6 Sterling water-tube boilers, 3,018 H. P. Conn. coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 120,000 tons.

Total pig iron capacity (8 furnaces) 1,470,000 tons.

Company owns and leases iron ore mines on Gogebic, Mesabi and Menominee Ranges, annual cap., 2,500,000 tons: Josephine limestone quarries at Williamsburg, Pa., annual cap., 165,000 tons; coal mines at Wolf Pit and Greasy Creek, Ky., annual cap., 780,000 tons.

MACHINED STEEL CASTING CO. (The), 1450 South Mahoning Ave., Alliance, Ohio.

Inc. June, 1919 in Ohio. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$670,000.

W. H. Purcell, P.; W. E. Trump, 1 V. P. & G. M.; F. R. Donaldson, 2 V. P. & G. S. M.; H. Y. Stuckey, Sec.; J. B. Freer, T. & P. A.; R. H. Donaldson, G. S.

Works at Alliance: blt. 1919, f. o. Dec. 24, 1919; 2 A. O. H. fur. (25-ton) fuel, oil. Cap. limited by foundry equipment.

Product: steel castings for own use and for sale, annual cap., 10,800 tons.

MACKINTOSH-HEMPHILL CO., Pittsburgh, Pa.

Est. 1803; inc. Feb. 13, 1893 in Pennsylvania. Capital stock: com. \$3,034,600; pref. \$2,787,700; bonds \$2,754,000. On July 1,

1922 Mackintosh Hemphill Company (formerly known as Mackintosh, Hemphill & Co.) acquired the business and properties of A. Garrison Foundry Co., Pittsburgh Iron & Steel Foundries Co., and The Woodward Machine Co.

J. Ramsey Speer, P.; Joseph E. Fawell, V. P. (sales and engineering); Donald H. Baum, Sec. & A. T.; James C. McFee, A. Sec. & A. P.; C. V. Wilt, A. P. (operations); C. H. Paul, A.; Fred K. Acker, P. A.; E. C. B. Gould, A. S. M.; S. R. Willock, A. S. M.; H. A. Lomax (roll sales); J. R. Patterson, (misc. Adamite sales); Samuel McMillen, G. S. (Pittsburgh plants).

Company manufactures all kinds of rolling mill machinery, iron and steel works equipment, rolling mills for iron, steel and non-ferrous metals, tube and pipe mill equipment, gears and drives; Adamite, Manganite, steel, chilled and sand iron, rolls and special rolls for non-ferrous metals; Adamite heavy duty castings; general machinery, gear cutting, etc.

Fort Pitt Works, 12th & Etna Sts., Pittsburgh, Pa.: steel foundry added 1882 (3 A. O. H. fur., one 30-ton, two 15-ton) not operating; machine and erection shops. Product: rolling mill and misc. mill machinery, and general machinery.

Garrison Works, 9th & Bingham Sts., South Side, Pittsburgh, Pa.: 4 air fur.; 1 cupola; gray iron and chilled roll foundries; roll finishing and machine shops. Product: chilled and sand iron rolls, and iron castings (19,000 tons); rolling mill and misc. machinery, machining and roll turning.

Midland Plant, Midland, Pa.: blt. 1907; 2 A. O. H. fur. (one 20-ton, one 30-ton), fuel, nat. gas and oil; first steel, June 27, 1912; 1 air fur. (5-ton); 3 cupolas; Adamite, steel and iron foundries; roll finishing shops. Product: Adamite and steel castings, annual cap. 23,000 tons; alloy steel castings; Adamite, steel and alloy rolls.

Wooster Plant, Wooster, Ohio: est. 1916; iron (14,000 tons) and brass (750 tons) foundries; gear cutting and machine shops. Product: iron and brass castings, gear cutting, rolling mill and misc. machinery.

Mackintosh, Hemphill & Co., Pittsburgh was merged July 1, 1922, together with Pittsburgh Iron and Steel Foundries Co., A. Garrison Foundry Co., and Woodward Machine Co., in Mackintosh-Hemphill Co. The Fort Pitt Foundry is now known as Fort Pitt Plant, Mackintosh-Hemphill Co.

MAHONING VALLEY STEEL CO. (The), Niles, Ohio.

Inc. July 5, 1916 in Ohio. Capital stock: com., par value \$100, auth. and issued \$400,000; pref. 7% cum. auth. and issued \$200,000. W. Aubrey Thomas, P.; at Jenifer, Ala. John M. Thomas, Sec.;

at Milwaukee, Wis. John P. Hosack, V. P. & T.; Charles A. Thomas, G. S. M.; Paul O. Cline, A.; Harry C. Davis, G. S.; Robert W. Wilson, P. A.; at Niles, Ohio.

Sales offices:

Chicago, H. D. Jenkins, 10 South La Salle St.

Cleveland, D. W. Glanzer & Co., 840 Rockefeller Bldg.

Detroit, W. J. Clarke, 4829 Woodward Ave.

New York, G. M. Jeffrey, 149 Broadway.

Philadelphia, W. H. S. Bateman & Co., 822 Commercial Trust Bldg.

St. Louis, S. J. Waterman, 557 Pierce Bldg.

Works at Niles: blt. 1916-17, f. o. May 28, 1917; 8 comb. sheet and pair fur.; 8 hot black sheet mills (three 28" x 32", four 28" x 42", one 28" x 48"); 6 cold mills, 26" x 50"; 4 plunger pickling mach.; 8 box annealing fur. Black sheets to 42" wide and 144" long, 12 to 30 gauge.

Product: black sheets, cold rolled and polished sheets for forming, stamping, enameling, etc., annual cap., 60,000 tons.

MAINE POWER SALES CO., 25 Broad St., New York, N. Y.

William H. Pouch, P.; Dudley Harde, T. & G. S. A.

Works at Rumford, Maine: electric furnace plant for manufacture of ferro-silicon, f. o. June, 1918. Product: ferro-silicon, bessemer ferro-silicon; annual cap., 7,000 tons.

MALCOLM FOUNDRY CO., 67-69 Polk St., Newark, N. J.

Inc. in New Jersey. Capital stock: com., \$13,500.

Thomas Malcolm, P., T. & G. S. M.; H. T. Malcolm, Sec.; John Williams, V. P.; Myrtle F. Malcolm, P. A.

Works at Polk St., Newark (leased from Flockhart Foundry Co.); blt. 1923, f. o. June, 1923; two 10-pot crucible steel fur.

Product: small steel castings (1-oz. to 200-lb.), annual cap., 300 tons; alloy steel castings (nickel, chrome).

MALLEABLE IRON FITTINGS CO., Branford, Conn.

Inc. Apr. 12, 1864 in Connecticut. Capital stock; com., par value \$25, auth. and issued \$125,000.

Alfred E. Hammer, P., T. & G. M.; L. J. Nichols, Sec.; V. T. Hammer, G. S.; A. E. Rowe, G. S. M.; H. E. Thatcher, P. A.

Brand: M. I. F. in diamond (pipe fittings); Branford (hardware and foundry specialties).

Works at Branford: 2 converters (4,000-lb.) 1 Stoughton, 1 Tropenas; 1 A. O. H. fur. (5-ton) oil fuel; 4 cupolas (3 for pig iron, 1 for spiegel). Semi-steel and malleable iron foundry, annual cap. 2,000 tons semi-steel, 12,000 tons malleable castings. Machine shop for pipe fittings and general jobbing.

Product: steel castings for own use and for sale, annual cap., 10,000 tons (5,000 tons converter, 5,000 tons A. O. H.); alloy steel castings (nickel, chrome, vanadium); castings for high - pressure pipe fittings, valves, ship work, general machinery, etc.

Malleable Steel & Iron Co., Seattle, Wash. sold steel foundry at 1163 Minneapolis St., Tacoma, Wash., in July, 1920 to Tennent Steel Casting Co. The latter company operated the plant from July, 1920 to 1922 and abandoned it in 1923 following the purchase of another plant at Tacoma.

MANGANESE & STEEL FOUNDRY, Ltd., Sherbrooke, P. Q., Canada.

Works at Water St., Sherbrooke: steel foundry blt. 1922, f. o. Aug. 1, 1922; 1 electric fur. (Formerly Sherbrooke Iron Works).

Product: steel castings for sale, annual cap., 180 tons; alloy steel castings (manganese).

MANITOBA ROLLING MILL CO. (The), Ltd., 875 Logan Ave., Winnipeg, Man., Canada.

Capital stock: com., par value \$100, auth. \$500,000, issued \$300,000; bonds, \$165,000.

H. B. Lyall, P.; T. R. Deacon, V. P.; P. J. Smith, V. P. & M.; E. J. Burleigh, Sec. & T.; W. Stuart, G. S. M.; at Winnipeg. Robert Smith, G. S.; at Selkirk, Man.

Works at Selkirk, Manitoba: blt. 1914; steel plant added 1920, f. o. Sept. 15, 1920; 1 B. O. H. fur. (20-ton); 2 busheling fur.; 1 squeezer; 4 heat. fur. (two 3-d., two 4-d.); 16" 3-h. 3-st. bar mill; 12" 3-h. 1-st. and 9" 3-h. 5-st. Belgian. Fuel, pulverized coal.

Product: steel ingots, annual cap. 18,000 tons; merchant bars, 30,000 tons.

MANITOBA STEEL FOUNDRIES, Ltd., Selkirk, Man., Canada.

Inc. 1915 in Dominion of Canada. Capital stock: com., auth. \$300,000, issued \$140,000.

Thomas Arnold, P.; at Montreal. C. C. Balfour, V. P.; at Winnipeg. F. J. Manning, Sec., T., & G. M.; A. Knight, G. S.; at Selkirk, Man., Canada.

Sales offices: 907 Transportation Bldg., Montreal; Taylor & Arnold Engineering Co., Ltd., 703 McArthur Bldg., Winnipeg, Man.; W. J. Yeo & Co., 609 Maclean Block, Calgary, Alberta.

Works at Selkirk, Manitoba: blt. 1916, f. o. 1917; 2 Snyder electric fur. (2-ton).

Product: steel castings for sale, annual cap., 6,000 tons. Alloy steel castings (vanadium, chrome, nickel).

MANSFIELD SHEET & TIN PLATE CO. (The), Mansfield, Ohio.

Inc. Nov., 1914 in Ohio. Capital stock: com., no par value, auth. and issued 50,000 shares; pref. 8% cum., auth. \$3,000,000, issued \$2,000,000; bonds, \$3,000,000.

W. H. Davey, P. & T.; A. I. Davey, V. P. & P. A.; Samuel Davey, 2 V. P. & G. M.; W. R. Jenkins, Sec. & A.; F. W. Beach, G. S. M.

Sales offices:

Chicago, Ill., 1372 Wrigley Bldg.
Cincinnati, Ohio, 720 First National Bank Bldg.
Cleveland, Ohio, 2002 Union Trust Bldg.
Detroit, Mich., General Motors Bldg.
Indianapolis, Ind., 1403 Merchants Bank Bldg.
Los Angeles, Calif., 509 Wilcox Bldg.
New York, N. Y., 1106 National City Bldg.
Philadelphia, Pa., 1504 West Venango St.
San Francisco, Calif., 237 Rialto Bldg.
St. Paul, Minn., 640 Endicott Bldg.
Seattle, Wash., 1426 L. C. Smith Bldg.

Brands: Mansfield (sheets); Wabik Metal (special porcelain enameling sheets).

Works at Mansfield: blt. 1908-09, f. o. June, 1909; steel plant added 1920-22, f. o. Apr. 1922; 4 B. O. H. fur. (75-ton) fuel, oil; 2 Chapman gas prod.; four 4-h. soaking pits, fuel, prod. gas.; 32" 3-h. 1-st. blooming, 24" 3-h. 1-st. and 24" 2-h. 1-st. sheet bar mill; 12 sheet and 12 pair fur; 12 hot black sheet mills (30" x 36" to 30" x 54"); 7 hot black plate mills; 2 trains of cold rolls, 1 of 6 stands, 1 of 12 stands (6-st. 25" x 56", 12-st. 25" x 60"); 6 Mesta pickling mach.; 32 single box annealing fur. Roll black sheets, 10 to 30 gauge, up to 44" wide; black plate 16 to 31 gauge in tin mill sizes.

Product: steel ingots, sheet and tinplate bars, annual cap. 185,000 tons ingots, 165,000 tons bars; black sheets and black plate, 100,000 net tons; black sheets for galvanizing, stamping, japanning, enameling, special porcelain enameling, polished blue, automobile and electric sheets.

Manufacturers Iron & Steel Co., New Brunswick, N. J., disposed of its works at New Brunswick, N. J., in 1923 and moved machinery to Bryden Horse Shoe Works, Catasauqua, Pa. Name of company changed to Bryden-Neverslip Co.

MARION STEAM SHOVEL CO. (The), 617 West Center St., Marion, Ohio.

Inc. Aug. 9, 1884 in Ohio. Capital stock: com., par value \$100, auth. \$1,500,000, issued \$1,346,700.

Frank A. Huber, P. & T.; Charles B. King, V. P. & G. M.; Harry T. Bell, A.; Ray R. King, G. S.; Arthur F. King, Director of Sales.

Sales offices:

Atlanta, Ga., 307 Candler Bldg.
Billings, Mont., F. B. Connelly Co.
Chicago, Ill., 1442 Monadnock Block.

Dallas, Texas, Fred B. Wright, 1125 Busch Bldg.
 Denver, Colo., H. W. Moore Equipment Co., 6th & Acoma Sts.
 Detroit, Mich., 424 Book Bldg.
 Los Angeles, Calif., 322 East Third St.
 Montreal, Canada, F. H. Hopkins & Co., Ltd.
 New York, N. Y., 50 Church St.
 Philadelphia, Pa., H. L. Cox, 1109 Colonial Trust Bldg.
 Pittsburgh, Pa., John W. Patterson, 324 Fourth Ave.
 Portland, Ore., H. J. Armstrong Co., 270 Pine St.
 San Francisco, Calif., 571 Howard St.
 Seattle, Wash., H. J. Armstrong Co., 1018 Fourth Ave. South.
 Toronto, Canada, F. H. Hopkins & Co., Ltd.
 Vancouver, Canada, Vancouver Mach. Depot, Ltd.

Company manufactures steam, electric and gasoline-electric shovels, railroad ditchers, and ballast unloaders.

Works at Marion: Steel Dept. blt. 1900-01, f. o. Feb. 1901; 1 B. O. H. fur. (30-ton) fuel, oil; 1 Moore Lectromelt electric fur. (3-ton). Gray iron foundry, 5,000 tons cap.

Product: steel castings for own use, annual cap., 13,000 tons (10,000 tons B. O. H., 3,000 tons electric). Alloy steel castings (vanadium, chrome, molybdenum). Manganese steel castings.

Marshall, E. E., Bullitt Bldg., Philadelphia.

Lochiel Furnace, Harrisburg, Pa. operated to 1924, see Central Iron & Steel Co. Graham Furnace lease given up, see Graham Furnace Company.

MARTING IRON & STEEL CO. (The), Vine St., Ironton, Ohio.

Inc. Feb. 15, 1899 in Ohio. Capital stock: com. auth. \$2,000,000, issued \$1,877,865.

A. R. Johnson, P.; Mrs. Nellie M. Lowry, V. P.; Margaret Reif, Sec.; W. P. Lewis, T.; C. B. Fowler, G. S.

Sales office:

M. A. Hanna & Co., Dixie Terminal Bldg., Cincinnati.

Brand: Nellie (pig iron).

Ironton Plant, 3rd & Lorain Sts., Ironton: 1 stack, 75' x 18' 6"; blt. 1907-08, relined 1919; 4 Foote stoves, 80' x 22'; 4 steam blowing eng. (2 Weimer, 1 Todd, 1 Ironton); 2 water-tube and 12 flue boilers, 2,380 H. P.; 1 Heyl & Patterson single-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., about 36,000 tons. By-product coke: Lake ore. Product: basic, foundry and malleable pig iron, annual cap., 125,000 tons.

Marting (or Etna) Plant, Front & Vine Sts., Ironton: 1 stack, formerly called Alice Furnace, 87' x 19' 6", blt. 1875, rebld. 1899, relined 1916; 3 stoves (1 Foote 75' x 22', 2 McKee 100' x 21'); 4 steam blowing eng. (3 Todd, 1 Cuyahoga); 8 water-tube boilers (4 Rust, 2 Erie City, 2 B & W) 2,500 H. P.; 1 Heyl & Patterson

single-strand pig casting machine. By-product coke: Lake ore. Product: basic, foundry and malleable pig iron, annual cap., 150,000 tons.

Total annual cap., 2 furnaces, 275,000 tons pig iron.

Lawrence Furnace, Culbertson, Ohio was dismantled in 1923.

Massachusetts Iron & Steel Co., Danvers, Mass. Rolling mill at 128 Water St., Danversport, Mass., acquired April 1, 1920, was sold to be removed Nov. 10, 1925. Company in process of voluntary liquidation.

Massillon Rolling Mill Co. (The), Massillon, Ohio, was acquired Aug. 18, 1921, by The Central Steel Co.

MASSILLON STEEL CASTING CO. (The), Massillon, Ohio.

Inc. July 10, 1917 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$270,800.

Clifford E. Pierce, P.; at Betz-Pierce Co., Cleveland, Ohio. A. H. Anthony, V. P., G. M. & P. A.; F. O. Humberger, Jr., Sec.; Isaac M. Taggart, T.; C. E. Nordfeldt, G. S.; William R. Beck, G. S. M.; at Massillon.

Works at Massillon: blt. 1917-18, f. o. Feb. 8, 1918; 1 Stoughton converter (4,000-lb.); 1 cupola.

Product: steel castings for sale, annual cap., 3,000 tons; alloy steel castings (nickel, vanadium, molybdenum); small steel castings.

MATHEWS STEEL CASTINGS CO., 3311 West 73rd St., Cleveland, Ohio.

Inc. Sept. 11, 1924 in Ohio. Capital stock: com. \$100,000.

J. Mathews, P., T. & G. M.; J. A. Logan, V. P.; H. T. Mullenix, Sec. & P. A.; A. J. Mathews, G. S.

Works at 3311 West 73rd St., Cleveland (leased from Interstate Foundries, Inc.): 1 Tropenas converter (2,000-lb.); 2 cupolas; 1 electric furnace (3-ton).

Product: steel castings for sale, annual cap., 3,400 tons (2,400 tons electric, 1,000 tons converter); motor truck and tractor castings, and misc. small castings.

Matthews Iron & Steel Co., Rome, Ga. went into bankruptcy in 1920. Silver Creek Furnace was sold at foreclosure sale Feb. 1, 1921 to First National Bank, Chattanooga, Tenn. The furnace is abandoned and the property for sale.

May (Frank L.) & Co., Inc., New York, N. Y. discontinued manufacture of ferro-alloys at its works at Perth Amboy, N. J. and Yalesville, Conn. in 1919. Company has permanently given up manufacture of ferro-alloys

MAYNARD ELECTRIC STEEL CASTING CO., 22nd Ave., & Kilbourn Road, Milwaukee, Wis.

Inc. 1917 in Wisconsin. Capital stock: com., par value \$100, auth. and issued \$250,000.

S. J. Wabiszewski, P. & T.; J. K. Fons, V. P.; Frank Wabiszewski, Sec. & G. M.; O. H. Schildknecht, A., G. S. M. & P. A.

Sales offices: Chicago, Ill., 1001 McCormick Bldg.; Detroit, Mich., 410 Donovan Bldg.; St. Louis, Mo., 5630 Pershing Ave.

Works at 22nd Ave. & Kilbourn Road, Milwaukee: blt. 1918; 2 Moore electric fur. (3-ton) one inst. 1918, one in 1925.

Product: steel castings for sale, annual cap., 10,000 tons.

MAYVILLE IRON CO. (The), Stambaugh Bldg., Youngstown, Ohio.

Inc. Mar., 1923 in Ohio. Capital stock: com., no par value, auth. and issued 500 shares; bonds \$1,610,000. Subsidiary of The Youngstown Sheet & Tube Co.

James A. Campbell, P.; C. S. Robinson, V. P.; W. E. Meub, Sec.; W. J. Morris, T.; W. N. McDonald, C.; C. H. Rose, A.; W. E. Watson, G. S. M.; C. T. Moke, P. A.; at Youngstown. J. H. Means, G. M.; at Mayville, Wis.

Brands: Mayville, Sydney (pig iron).

Mayville Works: 2 blast furnaces, "A" 79' 9 $\frac{3}{8}$ " x 17' 8", blt. 1848, last rebt. 1922, rebuilding 1925 adding McKee top; "B", 82' x 18', blt. 1905-07, rebuilt, 1919; 9 stoves (5 for "A" all 77' x 20' including 2 Foote side-comb., 1 Kennedy center-comb., 1 side-comb. relining, 1 McKee center comb.); 4 Kennedy center-comb. 95' x 20' for "B"; 5 Allis-Chalmers vertical steam blowing eng. (80,000 cfm.), 15 to 30 lbs. rated pressure; 12 Sterling water-tube boilers, 4,872 H. P. furnish power also to electric power house for public service; 2 Pittsburgh Coal Washer Co. pig casting mach. (1 double-strand, 1 single-strand); Greenawalt sintering plant (2 pans) for fine ore and flue dust, annual cap., 22,000 tons; rotary kiln (10' x, 150') nodulizing plant for ore and ore and flue dust, annual cap., 75,000 tons; Grondal briquetting plant for ore, annual cap., 50,000 tons. By-product coke: Lake and Mayville ore. By-product Coke Plant (not operating); 108 Otto-Hoffman coke ovens, by-product recovery plant and modified Barrett benzol plant, annual cap., 300,000 net tons furnace coke, 1,300,000 gallons light oil. (Formerly owned by Steel & Tube Co. of America, acquired by The Mayville Iron Co., July 1, 1923).

Product: high phosphorus foundry pig iron, annual cap., 275,000 gross tons.

The Mayville Iron Co. owns the Mayville iron ore mine, Dodge County, Wisconsin, annual cap., 365,000 tons; it also owns and operates a limestone quarry situated 5 $\frac{1}{2}$ miles south of Mayville, annual cap., 72,000 tons.

MEMPHIS IRON & STEEL CO., 1106 North Dunlap St., Memphis, Tenn.

Inc. June 5, 1920 in Tennessee. Capital stock: com., par value \$100, auth. \$300,000, issued \$110,000.

B. L. Mallory, P.; J. E. Conley, V. P.; E. H. Baumgarten, Sec. & T.

Works at Memphis: blt. 1920, f. o. Oct. 25, 1920; two 4-d. coal-fired heat. fur.; 16" 2-h. 3-st. bar mill.

Product: merchant bars, annual cap., 25,000 tons.

Merchant & Evans Co., Philadelphia, Pa., formerly operated tinplate plant with 7 tinning sets for charcoal tinplates and terne plates at Wheeling, W. Va. Operation of the plant was discontinued in 1925.

MESTA MACHINE CO., P. O. Box 1124, Pittsburgh, Pa.

Inc. Nov. 21, 1898 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$2,000,000.

H. F. Wahr, P.; J. O. Horning, V. P. & T.; L. Iverson, V. P. & Works M.; G. E. Townsend, Sec.; A. G. Forster, A.; W. W. Powell, G. S. M.; J. R. Berg, G. S.; J. B. Connelly, P. A.

Sales agents: Shook & Fletcher Supply Co., Brown-Marx Bldg., Birmingham, Ala.

Company manufactures gas and steam engines, una-flow type steam engines; heavy rolling mill machinery; hydraulic, steam hydraulic and large power presses; condensers and vacuum pumps; pickling machines; heavy forgings: steel, alloy, sand and chilled iron rolls; steel ingots; steel and iron castings.

Works at Mesta Station, P. R. R., West Homestead, Pa.; blt. 1899, first steel made Nov. 21, 1899; 4 A. O. H. fur. (two 50-ton, two 35-ton) fuel natural gas or oil; 3 steam ham. (600-lb. to 1,500-lb.); 2 steam hydraulic presses (800-ton, 2,000-ton). Gray iron and roll foundry; 8 air fur. (three 30-ton, five 15-ton), annual cap., 15,000 tons gray iron castings, 25,000 tons chilled and sand iron rolls, 300 tons brass castings for own use and for sale.

Product: steel ingots and steel castings for own use and for sale, annual cap., 100,000 tons (75,000 tons ingots, 25,000 tons castings); alloy steel ingots and castings (nickel, chrome, vanadium, molybdenum, tungsten).

METAL ALLOYS, Inc., Watervliet, N. Y.

Inc. Mar. 7, 1918 in New York. Capital stock: com. auth. \$500,000, issued \$285,000.

Edwin Corning, P.; H. G. Batcheller, 1 V. P.; E. Palmer Gavit, 2 V. P.; I. J. Morris, Sec.; Parker Corning, T.

Works at Watervliet: f. o. 1918; 9 electric fur. Electric power from Adirondack Electric Power Co.

Product: ferro-tungsten, ferro-vanadium, ferro-chrome; annual cap., 600 tons.

METAL & THERMIT CORPN., 120 Broadway, New York, N. Y.

Inc. 1908 in New Jersey. Capital stock: com., no par value, auth. 47,000 shares, issued 45,437 shares; pref. 7% cum. auth. \$1,500,000, issued \$774,000.

W. T. Graham, Ch.; F. H. Hirschland, P. & G. M.; Hubert E. Rogers, V. P. & Sec.; E. Becher, T.; Benjamin Anderson, A. T.; J. Strayer, Jr., A.; Fred W. Cohen, A. G. M.; W. R. Hulbert, S. M. (Thermit Dept.); A. F. Braid, S. M. (Metal Alloy Dept.); E. A. Leaverty, P. A.

Company operates plants at Carteret, N. J., East Chicago, Ind. and South San Francisco, Calif. for detinning tinplate scrap and recovering pig tin, tin tetrachloride, etc.; operates plant at Jersey City, N. J. for manufacture of welding compound ("Thermit") and semi-rare metals and alloys; also operates repair shops for welding at Pittsburgh, Pa., Chicago, Ill., and Toronto, Ont., Canada. See also Pacific Sheet Steel Corpn.

Product: ferro-titanium, ferro-chrome, ferro-vanadium, ferro-tungsten, ferro-zirconium; pure metals (chromium, manganese, tungsten powder, cobalt, titanium): special alloys (manganese-titanium, manganese-boron, manganese-aluminum, manganese-copper, cobalt-copper, chromium-copper, nickel-copper, titanium-copper): Thermit, tetrachloride of tin, tin oxide, sodium antimonate.

MICHIGAN STEEL CORPORATION, Ecorse, Detroit, Mich.

Inc. Sept. 22, 1922, in New Jersey.

J. B. Lovejoy, Ch.; George R. Fink, P. & T.; F. H. Jones, 1 V. P.; H. M. Steele, 2 V. P.; E. R. Milburn, Sec.; L. S. Brown, A.; W. F. Cox, G. S.; E. L. Wetstein, G. S. M.; G. R. Walker, P. A.

Works at Ecorse: blt. 1923, f. o. July 7, 1923; 8 comb. sheet and pair fur.; 8 hot black sheet mills (four 28" x 40", four 28" x 46"); 4 stands cold rolls 26" x 52" and 58"; 6 double box annealing fur.; 2 Mesta pickling mach. Roll black sheets to 48" wide and 144" long, 10 to 26 gauge.

Product: black sheets, annual cap., 50,000 tons. Stamping, automobile, and electric sheets.

MICHIGAN STEEL CASTING CO., 1966 Guoin St., Detroit, Mich.

Inc. Mar., 1907 in Michigan. Capital stock: com., par value \$100, auth. \$400,000, issued \$315,000; pref. 7% cum. auth. \$100,000, issued \$81,100.

R. F. Flintermann, P. & G. M.; C. H. L. Flintermann, V. P.; J. F. Monfils, Sec. & S. M.; Hobart B. Hoyt, T.; F. J. Stanley, S.; Lee Curtin, P. A.

Sales offices:

Buffalo, N. Y., Marvine Gorham, 422 Prudential Bldg.

Cleveland, Ohio, E. C. Prior, 8200 Carnegie Ave.

Grand Rapids, Mich., O. H. Streett, Murray Bldg.

Philadelphia, Pa., J. Charles Redmond, Drexel Bldg.

Brand: MISCO (heat resisting alloy metal).

Works at Detroit: blt. 1907, first steel Jan., 1910; 2 Heroult electric fur. (one 3-ton, one 1-ton), first electric steel Oct. 21, 1915.

Product: small steel castings (under 1,500-lb.) for sale, annual cap., 7,500 tons; alloy steel castings (nickel, chrome, vanadium, etc.); castings for automobiles, trucks, and general machinery; special heat resisting alloys, boxes and pots.

Mid-Continent Iron Co., Midco, Mo.

Company out of business. Plant idle and for sale, see description in 1920 Directory (charcoal blast furnace, annual capacity 36,000 tons). Address, S. L. Fogel, Manager, Midco, Mo.

MIDLAND COKE & IRON CORPN., 208 S. La Salle St., Chicago, Ill.

Leonard A. Busby, Ch.; W. G. Maguire, P.; P. B. Nelson, Sec.; A. J. Mann, T.; W. H. Underwood, G. S. M.; F. R. Johnson, P. A.; at 208 South La Salle St., Chicago, Ill.; M. D. Curran, V. P. & G. M.; at Planters Bldg., St. Louis, Mo.

Sales offices: 208 South La Salle St., Chicago, Ill.; Planters Bldg., St. Louis, Mo.

Brands: Granite City (pig iron); Roberts (coke).

Frances "A" Furnace, Granite City, Ill.: 1 stack, 86' x 20' 6", blt. 1919-20, f. o. Feb. 7, 1921, rebld. 1924; 4 side comb. stoves, 100' x 20'; 2 Ingersoll-Rand turbo-blowers, 40,000 cfm., 30 lbs. rated pressure; 7 Heine water-tube boilers, 5,621 H. P. serve also coke ovens, by-product recovery and benzol plants; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach.; 1 small slag granulating pit. By-product coke: Lake, Baraboo and Missouri ore. Gray iron foundry for own use only.

By-product Coke Plant: 80 Roberts by-product coke ovens, by-product recovery plant and American Coke & Chemical Co. benzol plant; annual cap., 690,000 net tons coke; 2,000,000 gals. light oil (St. Louis Coke & Chemical Co. to May 1, 1923; St. Louis Coke & Iron Co. to Nov., 1925).

Product: basic, malleable and foundry pig iron, annual cap., 180,000 tons.

Midland Iron & Steel Co., Ltd., Midland, Ont., Canada. Blast furnace at Midland was sold for scrap and dismantled in 1923.

Midland Seamless Tube & Steel Co., care Guardian Savings & Trust Co., Cleveland, Ohio, see The Cromwell Steel Co.

Mid-States Steel & Iron Corp., Terre Haute, Ind. see under Consolidated Steel & Iron Corporation, Terre Haute, Ind.

MIDVALE COMPANY (The), Nicetown, Philadelphia, Pa.

Inc. Mar. 28, 1923 in Delaware. Capital stock: com., no par value, auth. and issued 260,000 shares.

Alva C. Dinkey, P.; Harry L. Frevert, V. P. (operations); Stuart Hazlewood, V. P. (sales); James M. Milliken, Sec. & T.; Francis Bradley, G. S.; Henry H. Ziesing, A. G. S. M.; Joseph P. Coonan, P. A.

Sales offices:

Chicago, Ill., 316-17 McCormick Bldg.

Cleveland, Ohio, 1610-11 Union Trust Bldg.

New York, N. Y., 165 Broadway.

Philadelphia, Pa., The Midvale Co., Nicetown.

Pittsburgh, Pa., 914 Union Trust Bldg.

San Francisco, Calif., 459-65 Monadnock Bldg.

Washington, D. C., 1121-22 Woodward Bldg.

Brand: Midvale.

Product: steel ingots and castings; naval and army guns and gun forgings, projectiles, armor plates, steel billets; bar steel, carbon, alloy and high speed tool steels, drill steels, solid and hollow alloy steel bars, stainless steel; locomotive and car wheel tires, roll shells and grinding rings, weldless flanges, rings for cut gears, built up car wheels; forgings, heat-treated, rough or machine finished; turbine, generator and heavy shafting; turbine bucket wheels, high-pressure cylinders and containers, hardened and ground steel rolls, crank shafts, locomotive forgings.

Company operates steel works at Nicetown described below and through Midvale-Philadelphia Co., a subsidiary, maintains warehouses at Philadelphia, Cleveland, Chicago and San Francisco.

Nicotown Works, Nicetown, Philadelphia, Pa.: 4 B. O. H. fur. (50-ton); 5 A. O. H. fur. (three 50-ton, two 30-ton); fuel in O. H. oil; 1 Heroult electric fur. (7-ton); 2 crucible steel fur. (60-pots total) idle since 1920, fuel prod. gas; 41 Hughes and Duff gas prod.; 2 cupolas; steel and gray iron foundry; 15" 3-h. 2-st. bar; 12" 3-h. 5-st. bar; 8" 3-h. 6-st. bar; 2 roughing and 2 finishing tire mills; 14 steam hammers (1,000-lb. to 24,000-lb.); 8 hydraulic and steam hydr. presses (500-ton to 9,000-ton). Armor Plate Dept. (Midvale Steel & Ordnance Co. to March 28, 1923).

Annual cap. 222,540 tons ingots (102,875 tons B. O. H., 107,965 tons A. O. H., 7,200 tons electric, 4,500 tons crucible); alloy steel ingots and castings (nickel, chrome, tungsten, vanadium, molybdenum); steel and gray iron castings, 21,750 tons; billets, 21,500 tons; bar steel, 15,000 tons; tires and weldless rings, 60,000 tons; forgings, 87,000 tons.

Midvale Steel & Ordnance Co., New York, was acquired by Bethlehem Steel Corporation April 1, 1923, with the exception of the Nicetown Plant of the Midvale Steel & Ordnance Co., formerly owned and operated by the Midvale Steel Co. A new company, known as The Midvale Company, was formed to take over the Nicetown property coincidentally with the taking over of the other plants by Bethlehem Steel Corporation.

Miles, W. A., Copake Falls, N. Y.

Brand: "Copake."

Copake Iron Works: 1 stack, 32' x 9', blt. 1872; cold and warm blast; open top; iron stoves; 1 steam blowing eng. Charcoal: Columbia County ore. Last active in 1903.

Product: charcoal pig iron; annual cap., 5,000 tons. Gray iron foundry (annual cap., 500 tons) and chilled plow works are connected with the furnace.

Milford Electrolytic Iron Co., New York, built a plant at Milford, Conn., in 1922-23 for demonstration of process for making pure iron tubes and plates from iron ore by an electrolytic process. Produced small quantities experimentally, not on commercial scale. Plant was dismantled in 1924.

MILLBURY STEEL FOUNDRY CO., Millbury, Mass.

Inc. Sept. 1908 in Massachusetts. Capital stock: com., par value \$100, auth. and issued \$50,000; pref. 8% cum. auth. \$50,000, issued \$48,800.

William W. Brierly, P. & G. M.; William F. Chase, Sec.; Fred W. Moore, T.

Works at Millbury: blt. 1902, f. o. 1902; 1 Heroult electric furnace (2-ton) f. o. Nov., 1917.

Product: steel castings for sale, annual cap., 900 tons.

MILTON IRON CO. (The), Wellston, Ohio.

Inc. July 14, 1916 in Ohio. Capital stock: com., par value \$100, auth. and issued \$200,000.

H. S. Willard, Jr., P., T. & G. M.; G. C. Sellers, V. P.; D. E. Pany, Sec.

Brand: Milton (pig iron).

Milton Furnace, Wellston: 1 stack, 65' x 13', blt. 1873-74, last rebt. 1912; two 2-pass side comb. stoves (one 75' x 18', one 85' x 18'); 3 steam blowing eng. (25,000 cfm.); 4 return tubular boilers, 500 H. P. Coke and raw coal: Lake ore.

Product: silvery pig iron and bessemer ferro-silicon, annual cap., 18,000 tons.

MILTON MANUFACTURING CO. (The), Milton, Pa.

Est. 1886; inc. 1893 in Pennsylvania. Capital stock: com., par

value \$100, auth. \$2,000,000, issued \$1,500,000; pref. 8% cum. auth. \$1,550,000, issued \$425,000; bonds \$1,012,500.

George S. Shimer, P.; R. W. Krise, V. P.; O. H. Reinhart, Sec.; O. S. Stamm, T.

Sales office: 30 Church St., New York, N. Y.

Brand: M in hexagon.

Works at Milton, Pa.: blt. 1886-87, f. o. Feb., 1889; 2 Heroult electric fur. (one 6-ton, one 3-ton) first electric steel Aug. 19, 1920; 5 double puddling fur.; 1 rotary squeezer; 7 bit. coal-fired 4-d. heat. fur.; 20" 3-h. 2-st. bar; two 16" 3-h. 2-st. bar; three 10" 3-h. and 2-h. 5-st. guide; 8" 3-h. 2-st. guide; 3 hydraulic presses (400-ton) for large nuts. Bolt, nut and rivet departments.

Product: steel ingots, annual cap., 30,000 tons; muck bar and scrap bar, 30,000 tons; finished hot rolled products, 96,000 tons; iron and steel merchant bars, spike, bolt, nut and rivet rods.

Milwaukee Rolling Mill Co., Milwaukee, Wis., was acquired by Inland Steel Co. of Wisconsin, a subsidiary of Inland Steel Co., January 5, 1924.

MILWAUKEE STEEL FOUNDRY CO., 101-131 South Water St., Milwaukee, Wis.

Inc. Nov. 16, 1903 in Wisconsin. Capital stock: com., par value \$100, auth. and issued \$150,000; pref. 8% cum. auth. \$100,000, issued \$27,300; bonds \$32,500.

Burton C. Wait, P. & G. M.; F. A. Weiss, V. P.; Dr. A. Gropper, Sec.; A. G. Eissler, T.; John Gessner, A.; A. T. Baumer, G. S.; G. P. Skinner, G. S. M.; I. A. McIntyre, P. A.

Sales office: W. O. Tate, 532 McCormick Bldg., Chicago, Ill.

Brands: Milwasteel (special carbon castings); Milwaloy (alloy steel castings).

Works at 101-131 South Water St., Milwaukee: blt. 1903-04, f. o. Mar. 15, 1904; 1 Heroult electric fur. (3-ton); Tropenas converters discontinued 1921 and since dismantled.

Product: steel castings for sale, annual cap., 6,000 tons. Alloy steel castings (nickel, chrome, molybdenum).

MINNEAPOLIS ELECTRIC STEEL CASTINGS CO., 38th Ave. N. E. & 5th St., Minneapolis, Minn.

Inc. May 1, 1917 in Minnesota. Capital stock: com., par value \$100, auth. \$100,000, issued \$88,237.50; pref. 7% cum. auth. \$50,000, issued \$2,100.

S. V. Wood, P. & G. M.; G. L. Fort, V. P. & T.; R. A. Wood, Sec., G. S. M. & P. A.; B. P. Haller, G. S.

Works at 38th Ave. & 5th St., Minneapolis: first electric steel May 1, 1917; 1 Industrial electric fur. (2,000-lb.).

Product: steel castings for sale, annual cap., 1,200 tons.

MINNESOTA STEEL CO., Morgan Park, Duluth, Minn.

Inc. June 10, 1907 in Minnesota. Subsidiary of United States Steel Corporation.

E. H. Gary, P.; W. J. Filbert, Sec.; F. M. Waterman, T.; at 71 Broadway, New York, N. Y. S. B. Sheldon, V. P. & G. M.; B. F. Burch, A.; L. C. Reis, G. S.; at Morgan Park, Duluth. Edwin S. Mills and Frank Baackes, G. S. M.; C. H. Rhodes, P. A.; at 208 South La Salle St., Chicago, Ill.

Works at Morgan Park, Duluth, Minn.:

Blast Furnaces: 2 stacks, No. 1, 95' x 20' 5", blt. 1910-15, f. o. Nov. 29, 1915, rebt. 1924; No. 2, 95' x 29' 5", blt. 1910-16, f. o. Feb. 19, 1916, rebt. 1924-25; 10 McClure 3-pass stoves, 105' x 22' 6"; 5 single tandem gas blowing engines 100,000 cfm., 15 lbs. rated pressure; 1 chain conveyor type double-strand pig casting mach.; 4 slag granulating pits, annual cap., 150,000 tons. By-product coke: Lake ore. Product: basic pig iron, annual cap., 327,500 tons.

By-product Coke Plant: 90 Koppers by-product ovens, by-product recovery plant and Carl Still benzol plant, annual cap., 375,000 net tons coke, 1,092,000 gals. light oil.

Steel Works: blt. 1911-15, first steel, Dec. 11, 1915, first rolled products Dec. 13, 1915; 10 B. O. H. fur. (75-ton); fuel, tar, oil and prod. gas; 28 Hughes gas producers; 1 mixer (600-ton); five 4-hole soaking pits, fuel, gas, coal and coke oven gas; 4 cont. heat. fur., gas, tar and oil fired; 40" 2-h. 1-st. blooming; 28" 2-h. 6-st. and 28" 3-h. 2-st. comb. bar and billet mill; continuous merchant mill with 16" 2-h. 9-st., 14" and 12" 2-h. 3-st., 10" 2-h. 2-st. and 8" 2-h. 2-st.; continuous rod mill with 12" 2-h. 6-st. roughing and 10" 2-h. 10-st. finishing. Wire Mill: added 1922; 224 wire drawing blocks for wire, .480" to 20 gauge; 183 wire nail mach.; 50 barbed wire mach.; 12 wire fence mach.; 4 galv. pans. Product: steel ingots, annual cap., 540,000 tons; semi-finished rolled products, 470,500 tons, including 38,000 tons slabs, 349,000 tons blooms and billets, and 83,500 tons sheet bars; finished hot rolled products 220,000 tons including 100,000 tons wire rods, 120,000 tons merchant and concrete bars; plain wire, 97,600 net tons; galvanized wire, 54,200 net tons; barbed wire, 25,000 net tons; wire fence, 25,000 net tons; wire nails, 625,000 kegs (includes 65,000 kegs staples and rivets).

MISSISSIPPI VALLEY IRON CO., 6500 South Broadway, St. Louis, Mo.

Inc. Jan. 16, 1916 in Delaware. Capital stock: com., par value \$100, auth. and issued \$4,000,000; pref. 7% cum. auth. \$2,000,000, issued \$640,000; bonds \$1,250,000.

Edward F. Goltra, P.; T. S. Moffitt, V. P.; R. A. Bagnell, Sec.; E. O. J. Wallace, T. & P. A.; E. F. Goltra, Jr., Works Mgr.

Brand: Goltra (pig iron).

Furnace at 6500 South Broadway, St. Louis, Mo.: 1 stack, 75' x 17' blt. 1869, last rebt. 1920, relined 1923; 4 two-pass stoves, 90' x 21'; 2 Bruce-Macbeth vertical steam blowing eng., 32,000 cfm.; 4 Erie City water-tube boilers, 2,000 H. P.; 1 Heyl & Patterson single-strand pig casting mach. Coke: Lake and Missouri ores. Company owns iron mines at Waukon, Iowa and Puxico, Mo., annual cap., 75,000 tons; 155 beehive coke ovens at Ealington, Ky., annual cap., 140,000 net tons coke.

Product: foundry and basic pig iron, annual cap., 125,000 tons.

Missouri Iron & Steel Corp., St. Louis, Mo. Stockholders voted Sept. 14, 1921 to amend the charter and change the name of the corporation to Consolidated Steel and Iron Corporation.

MISSOURI ROLLING MILL CORPN., St. Louis, Mo.

Inc. 1924 in Missouri. Capital stock: com., no par value, auth. 25,000 shares; pref. \$300,000.

L. E. Fischer, P.; P. E. Irvine, V. P.; George W. Burton, Sec.; Carl Bauer, T.

Works at Ecoff Ave. and Missouri Pacific R. R., St. Louis: blt. 1900, f. o. July 5, 1900; 4 heat. fur., oil-fired; two 14" 3-h. 4-st. bar; 9" 3-h. 4-st. bar. (Hirsch Rolling Mill Co. to 1920).

Product: concrete bars and shapes from old rails, annual cap., 50,000 tons.

MITCHELL-DIGGINS IRON CO., 10th St., Cadillac, Mich.

Inc. Feb. 21, 1905 in Michigan. Capital stock: com., par value \$25, auth. and issued \$200,000.

Charles T. Mitchell, P.; William L. Saunders, V. P.; George G. Brown, Sec.; Joseph C. Ford, T., G. M. & G. S. M.

Brand: Cadillac (charcoal pig iron).

Cadillac Furnace, Cadillac: 1 stack, 60' x 12' 6", blt. 1905-06, relined 1922 and blown in Nov. 5, 1922; 3 Kennedy stoves; 1 vertical steam blowing eng., 35,000 cfm., 6-lbs. rated pressure; 3 Cahall water-tube boilers, 264 H. P. Charcoal: Lake ore. Charcoal Plant: 42 retorts at Cadillac and Sault Ste. Marie, Mich., annual cap., 3,500,000 bu. charcoal and by-product recovery plants. Malleable iron foundry, annual cap., 4,500 tons.

Product: warm blast charcoal pig iron (foundry, malleable and special irons) annual cap., 40,000 tons.

MOBILE STOVE & PULLEY MFG. CO., Ann & Tennessee Sts., Mobile, Ala.

Inc. 1904 in Alabama.

A. J. Parsons, P. & T.; J. S. Wardle, V. P.; H. B. Tonsmeire, Sec. & S.

Sales offices:

Mobile Pulley & Machine Works, Birmingham, Ala., P. O. Box 1549.

Transmission Machinery Co., 1146 Tchauptoulas St., New Orleans, La.

Mobile Pulley & Machine Works, Ann & Tennessee Sts., Mobile: 1 Heroult electric fur. (1-ton) installed 1922, f. o. Nov. 23, 1922. Gray iron foundry: 1 cupola (36") for gray iron and semi-steel castings (10,000 tons).

Product: steel castings for sale, annual cap., 1,500 tons.

Modern Steel Casting Co., Milwaukee, Wis. Reported as having discontinued business in August, 1922. Equipment sold later in same year.

Mohawk Improvement Co., Fort Plain, N. Y. Works at Fort Plain for manufacture of ferro-silicon, last operated in June, 1919 are permanently closed down. Manufacture of ferro-alloys abandoned.

MOLYBDENUM CORPORATION OF AMERICA, 1006 Empire Bldg., Pittsburgh, Pa.

Inc. June 1, 1920 in Delaware. Capital stock: com., par value \$10, auth. \$5,000,000, outstanding \$4,022,000.

George Wm. Sargent, Ch.; J. W. Weitzenkorn, P.; William B. Kuntz, A. T.; Clifton Taylor, S. M.; at 1006 Empire Bldg., Pittsburgh. James S. Crawford, Sec. & T.; at 1712 Oliver Bldg., Pittsburgh. Max Hirsch, V. P.; at 50 East 41st St., New York, N. Y. E. A. Lucas, Works M.; at Washington, Pa. J. B. Carman, Mine S.; at Red River, N. M.

Company operates mine and concentrating plant at Red River, New Mexico and reduction works at Washington, Pa.

Reduction Works, Washington, Pa.: blt. 1915, f. o. Nov., 1915; 13 electric fur. (12 stationary, 1 tilting); 24 electrolytic cells. Electric power from West Penn Power Co. (Electric Reduction Co. to July 1, 1920).

Product: ferro-molybdenum, ferro-tungsten, ferro-cerium, annual cap., 1,000 tons; cerium deoxidizers and special magnesium-aluminum alloys; nickel, aluminum and magnesium metal.

MONARCH FOUNDRY CO., Sacramento & Oak Sts., Stockton, Calif.

Inc. June 11, 1907 in California. Capital stock: com., par value \$1, auth. \$25,000, issued \$20,425.

E. H. Noack, P., G. M., G. S. M. & P. A.; R. E. Noack, Sec. & T.; G. A. Damon, G. S.; at Stockton. F. A. Meyer, V. P.; at San Andreas, Calif.

Works at Sacramento, Union & Oak Sts., Stockton: first electric steel June 15, 1916; 1 Lectromelt electric fur. (1½-ton) added in 1925 replacing a Heroult fur.; 2 cupolas; gray iron, semi-steel,

brass and bronze foundry; 1 Detroit electric fur. for melting brass and bronze.

Product: electric steel castings for own use and for sale, annual cap., 5,760 tons. Alloy steel castings (nickel, chrome). Centrifugal pumping machinery.

Monarch Steel Castings Co., Detroit, Mich. Idle since 1920. Receiver appointed and plant sold Feb. 26, 1923 to James McMillan Estate. Plant and equipment for sale. E. L. Nelson, care Columbia Castings Co., Detroit, Mich. in charge.

MONONGAHELA IRON & STEEL CO., First National Bank Bldg., Pittsburgh, Pa.

Inc. May 12, 1917 in West Virginia. Capital stock: com. auth. \$900,000, issued \$300,000.

W. B. Eichleay, P.; J. H. Hillman, Jr., V. P.; A. B. Sheets, V. P.; Thomas Watson, Sec.; J. K. Scott, T.

Works at Paden City, W. Va.: blt. 1903-05, f. o. 1906; 24 double puddling fur.; 1 squeezer; one 2-d. heat. fur.; 20" 3-h. 1-st. muck mill; 18" bar mill, 10" guide mill; 4 hot black sheet mills (one 26" x 44" roughing; one 26" x 44", two 26" x 38" finishing); one cold mill (22" x 44"). Fuel, nat. gas and pulv. coal.

Product: muck bar, melting bar, annual cap., 20,000 tons: black sheets, 6,000 tons.

MONROE STEEL CASTINGS CO., Monroe, Mich.

Inc. Jan. 12, 1912 in Michigan. Capital stock: com., par value \$10, auth. \$300,000, issued \$132,500.

Carl F. Clarke, P.; Paul Geigenmueller, P. A.; at Monroe. Bruce H. Wark, V. P.; E. B. Busby, Sec. & T.; at 2315 Dime Bank Bldg., Detroit, Mich.

Works at Monroe: blt. 1910-11, f. o. Feb. 21, 1911; 1 Booth-Hall electric fur. (1½-ton) first electric steel Oct. 1, 1916.

Product: steel castings for sale, annual cap., 2,200 tons.

Moorhead, Brother & Co., Sharpsburg, Pa. Buildings and equipment, but not the site, of the plant at Sharpsburg known as Vesuvius Iron and Nail Works were sold Feb. 15, 1924. Plant dismantled.

MORELAND MOTOR TRUCK CO., P. O. Box 317, Los Angeles, Calif.

Inc. July 31, 1911 in California. Capital stock: com., par value \$10, auth. \$4,000,000, issued \$1,612,135; pref. 7% cum., auth. \$1,000,000, issued \$491,840; bonds \$112,000.

C. J. Kubach, P.; Morris Cohen, 1 V. P.; at Los Angeles. Watt L. Moreland, 2 V. P. & G. M.; C. W. Creighton, Sec. & T.; John Wiggers, C. E.; P. H. Mallory, G. S. M.; F. H. Whatley, P. A.

Sales offices at Bakersfield, El Centro, Fresno, Los Angeles, Oakland, Sacramento, San Diego, San Francisco, Santa Ana, and Stockton, Calif.; Salt Lake City, Utah; Portland, Ore.; and Spokane, Wash. Company has plant for construction of Moreland motor trucks at Los Angeles and steel foundry at Burbank, Calif.

Burbank Works, Burbank, Calif.: 2 electric fur. (one $\frac{3}{4}$ -ton Rennerfelt, one $1\frac{1}{2}$ -ton Vom Baur). Gray iron, semi-steel, brass, bronze and aluminum foundry.

Product: steel castings for own use and for sale, annual cap., 3,600 tons.

Morristown Electric Steel Foundry, 106 Water St., Morristown, N. J. acquired steel plant, formerly owned and operated by Liberty Steel Co., in August, 1922 and operated the plant (one 1,000-lb. Rennerfelt electric fur.) for manufacture of steel castings from Sept. 1922 to Oct. 1923. Plant idle since that time and for sale. Land and buildings owned by C. E. Shelley. Foundry equipment owned by Morristown Electric Steel Foundry, now out of business.

Morton Steel Casting Co., Morton, Pa., in bankruptcy in 1920. Plant was sold in March, 1921 to Ralph P. Barnard and Charles Selden, Jr., Washington, D. C., who resold on Dec. 31, 1923 to Edgar S. McKaig, Philadelphia, Pa. Dismantled and site used for other purposes.

Muirkirk Iron Co., Inc., Baltimore, Md. Company out of business. Blast furnace at Muirkirk, Md., was torn down in 1923.

MYSTIC IRON WORKS, 111 Devonshire St., Boston, Mass.

Inc. July 6, 1923 in Massachusetts.

William E. McKay, P.; Edward Page, 2 V. P.; Henry S. Lyons, Sec.; Edgar N. Wrightington, T.; Ernest C. Melville, A.; John A. Roche, P. A.; at 111 Devonshire St., Boston, Thomas W. Kennedy, 1 V. P. & G. M.; at 1 Federal St., Boston, Mass.

Brand: Mystic (pig iron).

Mystic Furnace, Everett, Mass. (under construction): 1 stack, 87' x 20' 6", ground broken Sept. 15, 1924; 3 stoves, 105' x 21'.

Product: foundry pig iron; annual cap., 146,000 tons.

Nagle Steel Company, Pottstown, Pa. was incorporated as Nagle Steel Company, Inc. in 1921 and was adjudged bankrupt May 15, 1922, C. Henry Stinson, Referee in Bankruptcy. Rahway Works, Rahway, N. J. was sold in 1922 to National Iron Bank, Pottstown, Pa., who later, after works were destroyed by fire, resold to Manor Real Estate and Trust Co., Philadelphia, to be used for railroad purposes. Glasgow Works, Pottstown, Pa., acquired Dec. 31, 1917 from Glasgow Iron Co., was sold back to Glasgow Iron Co. in Sept., 1922. Pottstown Works, Pottstown, Pa. and Seyfert Works, Seyfert Station, Pa. were sold in September, 1922 to George H. Heck and associates, Philadelphia, who organized The Nagle Steel Co., a new corporation to take over and operate the properties.

NAGLE STEEL CO. (The), Pottstown, Pa.

Inc. in 1922 in Delaware. Capital stock: \$300,000.

Pottstown Works, Pottstown, Pa.: blt. 1846; heat. fur.; 25' x 72" 2-h. sheared plate mill; 25' x 54" 3-h. sheared plate mill; 1 double annealing fur. Roll sheared plates 12 gauge to 1" thick to 65" wide. (Nagle Steel Co., Inc., to 1922.) Product: sheared plates, annual cap., 20,000 tons.

Seyfert Works, Seyfert Station, Pa.: blt. 1880-81: seven 1-d. heat. fur.; 2 sheared plate mills (24' x 66" 3-h. and 23' x 66" 2-h.). Roll sheared plates 14 gauge to 1" thick, to 60" wide. (Nagle Steel Co., Inc. to 1922). Product: sheared plates, annual cap., 20,000 tons.

NAPIER IRON WORKS, 611-613 Fourth and First National Bank Bldg., Nashville, Tenn.

Inc. 1890 in Tennessee. Capital stock: com., par value \$100, auth. \$300,000, issued \$260,400; bonds \$243,000.

W. R. Cole, Ch.; William H. Lindsey, P. & G. M.; Dempsey Weaver, V. P.; R. M. Davis, Sec. & T.; at Nashville. J. W. England, G. S.; at Napier, Tenn.

Sales agents: Rogers, Brown & Crocker Bros., Inc., Cincinnati, Ohio. Brand: Napier (foundry pig iron).

Napier Furnace, Napier, Tenn.; 1 stack, 60' x 12' 6", blt. 1891, remod. 1897, relined 1920; four 2-pass stoves, 55' x 16'; 2 steam blowing eng., 20,000 cfm.; 5 water-tube boilers, 1,150 H. P. By-product coke: local brown ore. Company owns mines at Napier, Tenn., annual cap., 90,000 tons brown iron ore.

Product: foundry pig iron, annual cap., 36,500 tons.

National Abrasive Co., Boston, Mass. Electric furnace plant at Niagara Falls, Ont., Canada for manufacture of ferro-silicon, last active in 1923, was dismantled in June, 1925. The company is being liquidated.

National Alloy Co., Philadelphia, Pa. Manufacture of ferro-alloys discontinued.

NATIONAL CAR COUPLER CO., Attica, Ind.

Inc. Jan., 1913 in Illinois.

J. W. Harrison, P.; R. J. Harrison, V. P.; G. W. Harrison, Sec., T. & G. S. M.; Jessie Coen, A.; W. G. Kirkman, G. S.; W. E. Albert, P. A.

Sales office: 914 McCormick Bldg., Chicago, Ill.

Works at Attica, Ind. (owned): blt. 1906-07, f. o. May 18, 1907; 2 A. O. H. fur. (20-ton) fuel, oil.

Product: steel castings for sale, annual cap., 21,080 tons; car couplers, railroad and misc. castings.

Works at Murphysboro, Ill.: blt. 1917-18, f. o. May 31, 1918; 1 A. O. H. fur. (20-ton); fuel, oil. Idle since 1921.

Product: steel castings for sale, annual cap., 10,540 tons; railroad and misc. castings.

NATIONAL CASTINGS, Ltd., Belleville, Ont., Canada.

Inc. Sept. 28, 1920 in Canada. Capital stock: com., par value \$1, auth. and issued \$30,000; pref. 8% cum. auth. and issued \$20,000.

N. L. Turner, P. & G. M.; F. A. Daniels, V. P. & G. S.; H. Terrill, Sec. & T.; H. W. Ackerman, A.

Works at Belleville, Ont.: steel foundry added 1923, f. o. May 10, 1923; 1 acid-lined electric fur. (1,000-lb.).

Product: small steel castings for sale, annual cap., 600 tons; alloy steel castings (manganese).

NATIONAL ENAMELING & STAMPING CO., First Wisconsin

National Bank Bldg., Milwaukee, Wis.

Inc. Jan. 21, 1899 in New Jersey. Capital stock: com., par value \$100, auth. \$20,000,000, issued \$15,591,800; pref. 7% cum. auth. and issued \$10,000,000; bonds \$1,199,000.

George W. Niedringhaus, Ch.; Hayward Niedringhaus, Sec. & G. M.; W. W. Hanlon, G. S.; L. F. Miller, G. S. M.; J. W. Hargate, P. A.; at Granite City, Ill. A. J. Kieckhefer, P.; Robert Miller, T.; at Milwaukee, Wis.

Sales offices in principal cities.

Brand: Nesco (Royal Ware, oil cook stoves, oil heaters).

Company operates plants for manufacture of steel sheets and plates, and enameled, japanned, tinned and galvanized stamped ware.

Granite City Steel Works, Granite City, Ill.: blt. 1895, f. o. Aug.

31, 1895; 10 B. O. H. fur. (60-ton) fuel, oil; 12 four-hole soaking pits, fuel prod. gas or coke oven gas; 1 cont. oil-fired slab heat. fur.; sheared plate mill with 30' x 100' 2-h. roughing and 34' x 100' 3-h. finishing, middle roll 22' x 100'; 26' x 72' 2-h. universal mill; 30' x 54' to 72' 2-h. jobbing plate mill; 10 hot black sheet mills (four 28' x 32' to 54', six 30' x 32' to 58'); 20 hot black plate (tin) mills (28' x 28' to 38'); 16 stands cold rolls, 4 trains of 3-st. tandem 22' x 40' and 2 single stands 22' x 56'; one single 26' x 56', one single 26' x 72'; box annealing fur.; 3 blue annealing fur.; 6 pickling mach. (4 Mesta, 2 United); 3 galvanizing pots; 22 tinning sets for coke tinplates. Roll sheared plates $\frac{3}{8}$ " to $\frac{7}{8}$ " to 88' wide and 50' long; universal plates $\frac{3}{8}$ " to $\frac{5}{8}$ ", 10' to 36' wide, to 42' long. Product: steel ingots, annual cap., 360,000 tons; slabs and sheet bars, 273,000 tons; finished hot rolled products, 230,000 tons including 95,000 tons sheared plates, 68,000 tons black sheets, 67,000 tons black plate for tinning; blue annealed sheets; galvanized sheets, 26,800 tons; tinplates, 1,000,000 base boxes.

Granite Iron Rolling Mills, St. Louis: blt. 1879; 5 sheet and 5 pair fur.; 5 hot black sheet mills (four 28' x 36', one 28' x 44'); 2 stands cold rolls on hot mill train 22' x 56'; 4 double annealing fur.; 1 blue annealing fur.; 2 pickling mach. (1 plunger, 1 Mesta 3-arm); 3 galvanizing pots. Roll black sheets 14 to 30 gauge, to 36' wide. Product: black sheets, annual cap., 18,000 tons; blue annealed sheets; galvanized sheets, 25,000 tons.

National Farming Machinery (The), Ltd., Montmagny, P. Q., Canada. Company failed and properties were purchased by General Trust of Canada, Feb. 4, 1925.

NATIONAL FOUNDRY CO., Erie, Pa.

Inc. July 11, 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. \$600,000; bonds \$450,000.

E. W. Sheldon, P. & G. M.; A. W. Reichert, Sec. & G. S. M.; A. H. Willis, T. & G. S.; P. L. Lemmon, A.; C. J. E. Burghart, P. A.

Works at Erie: 2 A. O. H. fur. (21-ton) fuel, oil; first steel made Mar. 4, 1907.

Product: steel ingots and steel castings for sale, annual cap., 20,000 tons (7,500 tons ingots; 12,500 tons castings). Alloy steel castings (nickel). Light and heavy steel castings for steam shovels, gears and general machinery.

NATIONAL LOCK WASHER CO. (The), 40 Hermon St., Newark, N. J.

Inc. Jan. 12, 1886 in New Jersey. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$500,000.

Cyrus H. Loutrel, P.; Robert D. Reynolds, V. P.; James D. Cowan, Sec. & T.; Robert F. Golden, Factory S.; J. Howard Horn, G. S. M.

Fred E. Dodd, P. A.; at Newark. F. B. Archibald, V. P.; at 50 Church St., New York, N. Y.

Sales offices:

Chicago, R. L. Cairncross, 1103 Straus Bldg.
Cleveland, S. H. Smith, 570 Rockefeller Bldg.
Denver, Duncan Bond & Co., 1410 16th St.
Detroit, A. T. Thompson, 650 Baltimore Ave. West.
Glasgow, Scotland, A. P. Newall & Co., 50 Wellington St.
Havana, Cuba, George E. Knight, 203 Edificio Calle.
Montreal, Canada, Railway & Power Eng. Co., 326 Craig St. West.
Nashville, Tenn., J. J. Crawford, Stahlman Bldg.
New York, F. B. Archibald, V. P., 50 Church St.
New York, A. R. Rawlins, 50 Church St.
Portland, Ore., W. F. McKenney, 421 Stark St.
St. Louis, Railway Equipment Co., 1169 Arcade Bldg.
St. Louis, Grayson Railway Supply Co., 600 La Salle Bldg.
St. Paul, Rank & Goodell, 906 Merchants Natl. Bank Bldg.
San Francisco, F. F. Bodler, 903 Monadnock Bldg.

Brands: Hipower (high pressure railroad spring washers); National (spring and lock washers; and car window fittings).

Product: spring and lock washers, car window equipments, drop forgings, spring steels, screw machine products, drop forgings.

Riverside Works, Riverside, N. J.: blt. 1911, rebt. 1917; cont. coal-fired heat. fur.; 14" 3-h. 1-st. roughing, 9" 3-h. 6-st. finishing.

Product: merchant bars, annual cap., 10,000 tons.

Newark Works, 40 Hermon St., Newark: 6 drop hammers (400-lb. to 2,000-lb.) annual cap., 2,500 tons misc. drop forgings. Plant for lock washers, screw machine products, car window equipments.

National Malleable Castings Co. (The), Cleveland, Ohio was taken over January 1, 1924 by National Malleable & Steel Castings Co.

NATIONAL MALLEABLE & STEEL CASTINGS CO., 10600 Quincy Ave., S. E., Cleveland, Ohio.

Inc. Dec. 1, 1923 in Ohio. Capital stock: com., par value \$50, auth. \$30,000,000, issued \$23,923,850.

E. L. Whittemore, Ch.; Henry F. Pope, P.; S. L. Smith, V. P.; William G. Kranz, V. P.; O. W. Loomis, V. P.; N. S. Lewis, Sec. & T.; H. J. Ward, A.

Sales offices:

Cleveland, Ohio, 10600 Quincy Ave., S. E.
Chicago, Ill., 501 Railway Exchange Bldg.
Chicago, Ill., 2610 West 25th Place.
Detroit, Mich., 1501 Stroh Bldg.
Indianapolis, Ind., 546 North Holmes Ave.
New York, N. Y., 1104 National City Bldg., 17 East 42nd St.
Philadelphia, Pa., 1203 Liberty Bldg.
St. Louis, Mo., 1850 Railway Exchange Bldg.

San Francisco, Calif., 603 Monadnock Bldg.

Sharon, Pa., South Dock St.

Toledo, Ohio, 2115 Front St.

Washington, D. C., 518 Munsey Bldg.

Product: steel castings, automatic car couplers, friction draft gears;

Naco cast steel anchor chain; all kinds of malleable iron castings.

Company owns and operates 9 plants, 5 of which make malleable castings, 2 make malleable iron and electric steel castings, and 2 steel castings and automatic car couplers. The steel castings plants are described in detail below.

Woodhill Road Works, Cleveland, Ohio: blt. 1917-18, f. o. steel Aug., 1918: 2 Heroult electric fur. (15-ton). Electric furnaces used both for melting stock for malleable castings and for steel castings. Product: electric steel castings and malleable iron castings for sale, annual cap., 21,000 tons.

Grant Works, 52nd Ave., Cicero, Ill.: 3 Heroult electric fur. (6-ton) used both for melting stock for malleable castings and for electric steel castings. Product: electric steel castings, friction draft gears, malleable iron castings, annual cap., 30,000 tons.

Melrose Park Works, Melrose Park, Ill.: blt. 1884-85, f. o. Feb., 1885; 4 B. O. H. fur. (30-ton) fuel, oil. Product: steel castings for sale, annual cap., 40,000 tons; automatic car couplers.

Sharon Works, Sharon, Pa.: blt. 1889-91; 4 B. O. H. fur. (30-ton) fuel, pulverized coal; 2 Heroult electric fur. (6-ton). Anchor chain plant. Product: steel castings for sale, annual cap., 60,000 tons (40,000 tons B. O. H., 20,000 tons electric); automatic car couplers, friction draft gears, Naco cast steel anchor chain.

National Pressed Steel Co. (The), Massillon, Ohio was acquired August 18, 1921 by The Central Steel Co.

NATIONAL ROLL & FOUNDRY CO. (The), Avonmore, Pa.

Inc. July 15, 1909 in Ohio. Capital stock: com., par value \$100, auth. and issued \$250,000; pref. 7% cum. auth. and issued \$250,000.

William Goudy, P., T. & G. M.; D. H. Slonaker, 1 V. P., Sec. & P. A.; Mrs. Mary E. Baird, 2 V. P.; W. H. Melany, G. S. M.

Works at Avonmore, Pa.: blt. 1905-06; 1 A. O. H. fur. (20-ton), fuel, natural gas and oil. (The Fahnestock Manufacturing Co. to Sept. 18, 1923). Idle.

Product: steel ingots and steel castings for own use and for sale, annual cap., 3,600 tons castings.

National Rolling Mill Co., Vincennes, Ind. Company went into bankruptcy Nov. 9, 1923 and plant at Vincennes (last active in October, 1923) was sold to Central Iron & Metal Co., 3650 South Rockwell St., Chicago, Ill. Purchaser holds the property for resale.

NATIONAL STEEL CASTING CO., Montpelier, Indiana.

Inc. 1897 in Indiana. Capital stock: com., par value \$50, auth. and issued \$400,000; pref. auth. \$100,000, none issued.

G. Max Hofmann, P. & G. M.; J. M. Landenberger, 1 V. P.; R. P. Hofmann, 2 V. P.; F. E. W. Scheimann, T. & A.; at 1118 Calhoun St., Fort Wayne, Ind. Glenn Ayers, Sec., Works M. & P. A.; R. D. George, G. S. M.; at Montpelier.

Works at Montpelier: blt. and f. o. 1896; 2 A. O. H. fur. (15-ton) one operated, one as spare, fuel, oil and natural gas; four 8-pot crucible fur., fuel, oil.

Product: steel castings for sale ($\frac{1}{2}$ -lb. to 20,000-lb.), annual cap., 6,350 tons (5,000 tons A. O. H., 1,350 tons crucible). Alloy steel castings. High grade machinery and miscellaneous castings.

NATIONAL STEEL FOUNDRIES, Milwaukee, Wisconsin.

Inc. Jan. 6, 1914 in Wisconsin. Subsidiary of National Brake & Electric Co., Milwaukee, Wis.

R. P. Tell, P.; W. L. Berghoefer, V. P. & G. S. M.; W. K. Boyle, Sec.; J. E. Hubel, T.; E. H. Hinkens, Works M.; F. E. McIntyre, G. S.; R. E. Wilson, P. A.

Works at Milwaukee: blt. 1899-1900; 2 A. O. H. fur. (25-ton) fuel, oil; 2 Swindell gas prod.; 2 cupolas. Gray iron foundry, annual cap., 6,000 tons gray iron and semi-steel castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 10,000 tons. Alloy steel castings. Steel castings for electrical and general machinery, railroad, marine, ship and miscellaneous castings.

National Steel Products Co., Bessemer, Ala. Works at 12th St. and First Ave., Bessemer (built 1918-19, f. o. July 1, 1920) were destroyed by fire September 10, 1920 and have not been rebuilt.

National Steel Rolling Co. (The), New York went out of business in 1923. Works at Schuylkill Haven, Pa. were acquired by Bondholders Committee and sold June 18, 1925 to H. Sofranscy Co. who dismantled the plant in 1925.

NATIONAL TRANSIT PUMP & MACHINE CO., 206 Seneca St. Oil City, Pa.

Inc. Nov. 26, 1915 in Pennsylvania. Capital stock: com., par value \$25, auth. and issued \$2,545,000; pref. 7% non cum. auth. and issued \$636,250.

F. D. Williams, P. & G. M.; C. C. Baker, V. P.; F. G. Zimmerman, Sec.; L. C. Longaker, T.; H. C. Baker, A.; J. P. Coffman, G. S.; N. A. Newton, G. S. M.; C. M. Holbrook, P. A.

Sales offices:

Beaumont, Texas, E. L. Wilson Hardware Co.
Casper, Wyo., Frick-Reid Supply Co.
Charlotte, N. C., Thomas B. Whitted, Realty Bldg.
Cleveland, Ohio, C. A. Roberts, Park Bldg.
Denver, Colo., William Francis, 519 Foster Bldg.
Houston, Texas, W. H. Gaither, 823 Mason Bldg.
New Orleans, La., Globe Supply & Machinery Co.
New York, N. Y., E. F. Walker, 320 Hudson Terminal Bldg.
Philadelphia, Pa., W. P. Valentine, 260 South Broad St.
Pittsburgh, Pa., George Kroto, 1421 Farmers Bank Bldg.
St. Louis, Mo., Reeves & Skinner Mach. Co., 2211 Olive St.
Tulsa, Okla., W. C. McLeod, 1024 Kennedy Bldg.
Tulsa, Okla., Frick-Reid Supply Co.

Brand: Transit (all products).

Works at Oil City, Pa.: one Tropenas steel converter (5-ton) f. o. 1900; 4 cupolas (3 for pig iron, 1 for spiegel); 2 crucible fur. for melting brass; 4-ton reverberatory fur.; 4 tilting brass fur.; 5 hammers (700 to 2,500-lb.); 300-ton hydraulic forging press; 1½" and 3" Acme headers. Gray iron (3,000 tons), semi-steel and brass (200 tons) castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 5,000 tons.

NATIONAL TUBE CO., Frick Bldg., Pittsburgh, Pa.

Inc. Feb. 16, 1899 in New Jersey. Subsidiary of United States Steel Corporation.

William B. Schiller, P.; Taylor Allderdice, V. P.; J. H. Nicholson, V. P.; B. C. Moise, Sec. & A.; H. J. Hirshman, T.; J. J. Kennedy, G. S. M.; G. G. Goe, P. A.

Sales offices:

Atlanta, Ga., H. P. Nelson, Candler Bldg.
Boston, Mass., Clifton Wharton, Jr., Massachusetts Trust Bldg.
Chicago, Ill., H. S. Raymond, Continental & Commercial Bank Bldg.
Denver, Colo., F. O. Young, First Natl. Bank Bldg.
Detroit, Mich., A. M. Lally, Empire Bldg.
New Orleans, La., Hugo Weidmann, Maison Blanche Bldg.
New York, N. Y., Clifton Wharton, Jr., Empire Bldg.
Philadelphia, Pa., Clifton Wharton, Jr., Widener Bldg.
Pittsburgh, Pa., A. M. Lally, Frick Bldg.
St. Louis, Mo., Edward Worcester, Jr., Liberty Central Trust Bldg.
St. Paul, Minn., H. S. Raymond, Merchants Natl. Bank Bldg.
Salt Lake City, Utah, F. O. Young, Walker Bldg.

National Tube Co. sells production of The National Tube Co. and Gary Tube Co.

National Works, McKeesport, Pa.:

Blast Furnaces: 4 stacks; No. 1, 90' x 23', blt. 1907, rebt. 1924; No. 2, 90' x 22' 6", blt. 1903-05, relined 1922; No. 3, 90' x 22', blt. 1889-90, rebt. 1920; No. 4, 90' x 22', blt. 1890, rebt. 1919; 15 stoves (8 Massicks & Crooke, 96' 6" x 22'; seven 2-pass 120' 4½" x 22'); 9 vertical cross comp. steam blowing eng. (310,092 cfm.); 33 water-tube boilers, 11,600 H. P. furnish power also to steel works, blooming and slabbing mills; 1 Uehling four-strand pig casting mach.; 4 slag granulating pits, annual cap., 278,000 tons. Conn. coke; Lake ore. Product: bessemer pig iron, annual cap., 683,000 tons.

Steel Works: blt. 1892-93, f. o. Dec. 14, 1893; 3 bessemer converters (8.8-ton); one 200-ton mixer; 3 cupolas; gray iron, brass and bronze foundry for own use; eight 4-hole soaking pits; 18 heat. fur. (ten 4-d. regen. prod. gas-fired; 8 cont. coal-fired); 40" 2-h. 1-st. blooming; 40" 2-h. 1-st. slabbing; 16" 2-h. 10-st. cont. skelp; 13" 2-h. 10-st. cont. skelp; 34" x 110" 3-h. 1-st. sheared plate for skelp; 42" 3-h. 1-st. universal plate for skelp; 6 butt-weld fur. for pipe ½" to 3"; 11 lap-weld fur. for pipe 2" to 24".

Galvanizing Dept., Versailles, Pa.: 2 galvanizing pots; 9 steam hammers (400-lb. to 3,000-lb.); 1 steam hydr. press (500-ton) for forgings for own use only. Product: steel ingots, annual cap., 674,000 tons; semi-finished hot rolled products, 667,000 tons (609,000 tons slabs, 58,000 tons billets); skelp, 705,000 tons; black pipe 350,000 tons; galvanized pipe, 67,000 tons; boiler tubes, 28,000 tons; forgings for own use for repairs, 500 tons; castings for own use (gray iron, 8,200 tons; rolls, 400 tons; stools, 1,600 tons; brass and bronze castings, 450 tons).

Christy Park Works, McKeesport, Pa.: 14 regen. prod. gas-fired heat. fur.; 10 steam hammers (100-lb. to 2,000-lb.); 11 hydraulic presses 180-ton to 2,000-ton). Product: flasks, cylinders, coupling blanks and job work products, annual cap., 39,500 tons; hammer weld pipe, 16,000 tons.

Ellwood Works, Ellwood City, Pa.: blt. 1895, f. o. June, 1895; 18 heat. fur. prod. gas-fired (one 2-d., one 3-d., three 4-d., three 5-d., 3 cont. regen., 7 cont. reverb.); 1 cont. reverb. oil-fired heat. fur.; 22" 2-h. 5-st. bar; six 20" 2-h. 1-st. tube mills; one 14" 2-h. 1-st. tube mill; 12 hammers (7 steam, 5 air) 150-lb. to 2,000-lb.; 4 hydr. presses (48-ton to 150-ton); 1 steam hydr. press (150-ton); iron foundry for own use only, annual cap., 1,500 tons. Product: seamless tube blanks, annual cap., 225,500 tons; seamless tubes (1¼" to 8¼") hot finished and cold drawn, 190,500 tons.

Pittsburgh Works (include 3 plants Continental Dept., Pennsylvania Dept. and Republic Dept., separately described below).

Continental Department, Second Ave., Pittsburgh: blt. 1862; 32 single puddling fur.; 1 rotary squeezer; four 4-d. prod. gas-fired regen. heat. fur.; 20" 2-h. 2-st. muck; 18" 3-h. 3-st. skelp; 10" 3-h

4-st. skelp; 2 butt-weld fur. for pipe $\frac{1}{4}$ " to 2"; 1 lap-weld fur. for pipe 2" to 8". Product: muck bar, annual cap., 8,000 tons; hot rolled products, 64,200 tons including 53,300 tons skelp and 10,900 tons socket iron; black pipe, 92,000 tons.

Pennsylvania Dept., Second Ave., Pittsburgh: 6 lap-weld fur. for pipe 2" to 12". Product: black pipe, annual cap., 300,000 tons.

Republic Dept., 24th St., South Side, Pittsburgh: blt. 1863; puddling fur., rolling mill and pipe mills dismantled and works changed to a coupling finishing shop with capacity for threading and electro-galvanizing 12,700 tons of seamless couplings per annum.

Riverside Works, Benwood, W. Va.:

Blast Furnaces: 2 stacks; No. 1, 73' $5\frac{3}{4}$ " x 17' 2", blt. 1871-72, rebt. 1903, relined 1919; No. 2, 89' $7\frac{1}{4}$ " x 21', blt. 1901-03, rebt. 1925; 8 Massicks & Crooke stoves (four 86' x 21', three 60' x 19' 6", one 60' x 19'); 2 cross comp. steam blowing eng. and 1 L. P. turbo-blower, 64,540 cfm.; 3 steam blowing eng. as spares, 43,460 cfm.; 16 vertical water-tube boilers, 5,384 H. P. serve also steel works, skelp mill, pipe mill and pumping station; 1 Uehling double-strand pig casting mach.; 2 slag granulating pits, annual cap., 115,000 tons. Conn. beehive and by-product coke; Lake ore. Product: bessemer pig iron, annual cap., 243,000 tons.

By-product Coke Plant: 120 Semet-Solvay coke ovens and by-product recovery plant, annual cap., 200,000 net tons coke.

Steel Works: blt. 1883-84, f. o. June 11, 1884; 2 bessemer converters (6 $\frac{1}{2}$ -ton); one 250-ton mixer; 3 cupolas; iron foundry for own use only; 2 soaking pits (one 4-hole, one 3-hole); 10 regen. 3-d. prod. gas heat. fur.; 32" 2-h. 1-st. blooming; five 22" 3-h. 3-st. skelp; 5 butt-weld fur. for pipe $\frac{1}{8}$ " to 3"; 2 lap-weld fur. for pipe 2" to 6"; 2 galvanizing pots. Product: steel ingots, annual cap., 228,000 tons; semi-finished hot rolled products 206,000 tons including 138,000 tons slabs, 68,000 tons billets; skelp, 178,000 tons; black pipe, 128,000 tons; galvanized pipe, 29,000 tons; castings for own use only (steel castings, 250 tons; gray iron, 1,400 tons; rolls 50 tons; stools and covers, 370 tons).

Syracuse Works, Syracuse, N. Y., was dismantled in 1925.

Total annual capacity: pig iron, 926,000 tons; steel ingots, 902,000; 8,000 tons muck bar; slabs, blooms and billets, 873,000 tons; skelp, 936,300 tons; seamless tube blanks, 225,500 tons; socket iron, 10,900 tons; black pipe, 870,000 tons; galvanized pipe, 96,000 tons; boiler tubes, 28,000 tons; seamless tubes, 190,500 tons; flasks, cylinders, etc., 39,500 tons; hammer weld pipe, 16,000 tons.

NATIONAL TUBE CO. (The), Frick Bldg., Pittsburgh, Pa.

Inc. April 2, 1898 in Ohio. Subsidiary of United States Steel Corporation.

William B. Schiller, P.; Taylor Allderdice, V. P.; J. H. Nicholson, V. P.; B. C. Moise, Sec. & A.; H. J. Hirshman, T.

Works at Lorain, Ohio, are operated by National Tube Co.

Lorain Works, Lorain, Ohio:

Blast furnaces: 5 stacks; No. 1, 92' 6" x 22' 6", blt. 1898-99, rebt. 1907, relined 1922; No. 2, 92' 6" x 22' 6", blt. 1898-99, rebt. 1924; No. 3, 86' 6" x 23' 6", blt. 1903-04, rebt. 1924; No. 4, 90' 6" x 23' 6", blt. 1903-05, rebt. 1922; No. 5, 91' 6" x 24', blt. 1907, rebt. 1925; 22 stoves (18 Cowper of which four 100' x 21', eight 120' x 21', three 100' x 22', three 120' x 23'); 4 Massicks & Crooke 101' x 22'; 10 horizontal cross comp. steam blowing eng. 417,000 cfm.; 6 vertical water-tube boilers, 11,700 H. P.; 2 Heyl & Patterson double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 175,000 tons. By-product coke: Lake ore. Product: bessemer and basic pig iron, annual cap., 993,000 tons.

By-product coke plant: 208 Koppers coke ovens, by-product recovery plant and Carl Still benzol plant, annual cap., 943,000 net tons coke, 4,162,000 gals. light oil.

Steel Works: orig. blt. 1894-95, first bessemer steel, April 1, 1895, first O. H. steel Jan. 26, 1909; 2 bessemer converters (12-ton); 12 B. O. H. fur. (80-ton) fuel, tar and coke oven gas; 3 mixers (one 500-ton, two 250-ton); 4 cupolas; foundry for ingot moulds, rolls, iron and brass castings for own use; 12 soaking pits (four 3-hole, four 4-hole, four 6-hole); 21 heat. fur. (twelve 4-d., four cont., five special) fuel, coal, prod. gas and coke oven gas; 40" 2-h. 1-st. blooming; two 38" 2-h. 1-st. blooming; 28" 2-h. 3-st. rail; 28" 2-h. 4-st. skelp; 14" 2-h. 12-st. cont. skelp; 13" 2-h. 14-st. cont. skelp; 34" x 90" 3-h. 1-st. skelp; 48" 2-h. 2-st. universal; 6 butt-weld fur. for pipe $\frac{1}{8}$ " to 3"; 7 lap-weld fur. for pipe 2" to 20"; 2 galv. pots; 10 steam hammers (800-lb. to 6,000-lb.): 1 forging press (1,000-ton). Product: steel ingots, annual cap., 1,365,000 tons (630,000 tons bessemer, 735,000 tons B. O. H.); alloy steel ingots (copper, rephosphorus); semi-finished rolled products, 1,242,000 tons including 745,000 tons slabs, 497,000 tons blooms and billets; 886,000 tons finished hot rolled products including 207,000 tons rails, 9,000 tons splice bars, and 670,000 tons skelp; black pipe, 432,000 tons; galvanized pipe, 78,000 tons; forgings for own use only; castings for own use (ingot moulds, 25,000 tons; rolls, 150 tons; iron castings, 10,800 tons; brass castings, 475 tons).

New Brunswick Rolling Mills, Ltd., St. John, N. B., Canada, acquired plant formerly operated by Portland Rolling Mills, Ltd., in April, 1920 and operated the mill in 1920 and 1921. Board of Trade reports property taken over by Bank of Nova Scotia in 1924. Machinery sold and removed during 1924 and plant completely dismantled.

New England Steel Castings Co., East Longmeadow, Mass. Plant destroyed by fire in 1921 and not rebuilt.

NEW JERSEY ZINC CO. of Pa. (The), 160 Front St., New York, N. Y.

Inc. Aug. 1, 1898 in Pennsylvania. Capital stock: com. \$600,000.

Subsidiary of The New Jersey Zinc Co., of New Jersey.

Edgar Palmer, P.; A. P. Cobb, V. P.; J. E. Hayes, V. P.; A. B. Schultz, Sec.; H. S. Wardner, T.; G. F. Wolff, C.; E. V. Peters, G. S. M.; W. J. Lee, G. P. A.; at New York. W. M. Kelsey, G. S.; at Palmerton, Pa.

Sales office: New York, 160 Front St.

Palmerton Furnaces, Palmerton, Pa.: 2 stacks; No. 1, 75' x 17', blt. 1901-03, f. o. Apr. 5, 1904, reblt. 1917; No. 2, 70' 6" x 14' 10", blt. 1905-06, f. o. Sept. 3, 1906, relined June, 1918; 9 two-pass fire-brick stoves, 82' x 20'; 3 steam blowing eng. (60,000 cfm.); 14 water-tube boilers, 10,000 H. P., serve also zinc oxide, spelter works, etc.; 4 slag granulating pits, annual cap., 100,000 tons. Conn. coke: zinc residuum for ore. Company owns and operates limestone quarry at East Allentown, Pa., annual cap., 70,000 tons.

Product: spiegeleisen, annual cap., 85,000 tons.

NEW LONDON SHIP & ENGINE CO. (The), Groton, Conn.

Inc. Sept. 27, 1910 in Connecticut. Capital stock: com., par value \$100, auth. and issued \$1,500,000; pref. 8% non cum. auth. \$2,000,000, issued \$860,400.

Lawrence Y. Spear, P.; Frank T. Cable, 1 V. P. & G. M.; Henry R. Bond, Jr., Sec. & T.; Elmer H. Schumacher, A.; Charles D. Young, P. A.; at Groton. Henry R. Sutphen, 2 V. P.; at 11 Pine St., New York, N. Y.

Trade Name: NELSECO (Diesel engines and other products).

Sales offices:

Boston, Mass., Harry C. Smith, 30 Kilby St.

New York, N. Y., Preston L. Sutphen, 107 East 46th St.

Company operates plant at Groton, Conn., including large machine shop, iron and steel foundry, forge shop, fabricating shop, ship-building ways and marine railway for the building and repair of ships and construction of Diesel engines for marine and commercial service and general machinery, high grade forgings and crankshafts.

Groton Works, Groton, Conn.: steel foundry added 1917-18, f. o. 1918; one Snyder electric fur. (1½-ton); one cupola for pig iron; 2 furnaces for ferro-alloys. Gray iron (2,600 tons) and bronze (150 tons) foundry for castings for own use and for sale.

Product: steel castings up to 1,500-lb. for own use and for sale, annual cap., 300 tons.

New Process Iron & Steel Co., Noblesville, Ind. began construction of rolling mill at Noblesville in September, 1920. Mill not completed (February, 1926); expect to operate about April 1, 1926.

New York Central Railroad Co. (The), New York.

Rolling mill at East Buffalo Shops, East Buffalo, N. Y. last active in 1923 was dismantled in 1925.

**NEWPORT NEWS SHIPBUILDING AND DRY DOCK CO.,
Newport News, Va.**

Inc. 1890 in Virginia. Capital stock: com., par value \$100, issued \$10,000,000; bonds \$13,600,000.

H. L. Ferguson, P. & G. M.; S. L. Wood, V. P.; J. E. McMurran, A.; E. I. Cornbrooks, S. M.; at Newport News. F. P. Palen, V. P.; E. A. Adams, Sec.; C. E. Graham, T.; James Plummer, P. A.; at 233 Broadway, New York, N. Y.

Company builds and repairs vessels, engines, boilers, etc., and operates steel foundry in connection therewith.

Works at Newport News: 1 Tropenas converter (2-ton) use temporarily discontinued; 1 Heroult electric fur. (6-ton). Gray iron and brass foundry, annual cap., 1,300 tons gray iron and 250 tons brass castings.

Product: steel ingots and steel castings for own use and for sale, annual cap., 4,450 tons (3,000 tons electric ingots; 950 tons electric castings; 500 tons converter castings—idle). Alloy steel ingots and castings (chrome, vanadium). Castings for ship construction, and for railway cars and locomotives.

**NEWPORT ROLLING MILL CO. (The), 9th & Lowell Sts., New-
port, Ky.**

Inc. 1891; reinc. 1922 in Delaware. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$3,450,000.

Albert K. Andrews, P.; Joseph B. Andrews, V. P.; Frank M. Andrews, Sec.; Joseph Gaff Andrews, T.; Herbert W. Boal, C.; Howard M. Davis, G. S.; Frank A. Moeschl, G. S. M.; Rud K. Boggs, P. A.

Sales offices:

Cleveland, Ohio, Frank A. Michell Co., 428 Bulkley Bldg.

Detroit, Mich., G. C. Davies, 449 Book Bldg.

Kansas City, Mo., C. A. Rollert, 1827 E. Houston Ave.

Little Rock, Ark., L. E. Hinton, 520 West 2nd St.

Los Angeles, Calif., Lippincott, Beall & Co., 1302 Washington Bldg.

New Orleans, La., Waldo M. Pitkin, 722 Canal St.

New York, N. Y.

St. Louis, Mo., R. J. Nies, 519 Madison Ave.

San Antonio, Texas, Johnson Griffith, 306 Gibbs Bldg.

San Francisco, Calif., Lippincott, Beall & Co., Sheldon Bldg.

Seattle, Wash., Lippincott, Beall & Co., L. C. Smith Bldg.

Shreveport, La., Robert M. Spurlock, P. O. Box 312.

Waco, Texas, W. H. Torian Sales Co., P. O. Box 1011.

Washington, D. C., Collingwood Sanborn, Colorado Bldg.

Brand: Globe, Genuine Open-Hearth Iron, Kentucky Copper Bearing Steel (black and galvanized sheets and formed products).

Works at Newport: blt. 1857; 19 sheet and 21 pair fur.; 16 hot black sheet mills (30" x 38" and 30" x 44"); 1 jobbing plate mill, 30" x 72"; 3 hot black plate mills, 30" x 38"; 1 cold roll train of 6 stands; 6 Erie and 1 Mesta pickling mach.; 12 box annealing fur., 1 blue annealing fur.; 8 galvanizing pots, annual cap., 50,000 tons. Roll black sheets to 48" wide and 144" long, 3 to 30 gauge.

Product: black sheets, annual cap., 131,000 tons (including 20,000 tons blue annealed, 95,000 tons black sheets, 16,000 tons black plate). Blue annealed, galvanized, flat and corrugated, stamping, japanning, automobile and electric sheets.

Newsom, B. W., Chattanooga, Tenn., see Joel Hurt.

NEWTON STEEL CO. (The), First National Bank Bldg., Youngstown, Ohio.

Inc. June, 1919 in Ohio. Capital stock: com., no par value, auth. and issued, 100,000 shares; pref. 7% cum. auth. \$2,000,000, issued \$1,200,000; bonds \$600,000.

Edward F. Clark, P. & T.; J. H. Fitch, Jr., V. P. & G. M. S.; W. V. Eaton, Sec. & A. T.; J. P. Lewis, A. Sec. & A.; H. E. Robinson, A. G. M. S.; F. J. Laskey, P. A.; at Youngstown. F. P. McIllyar, G. M.; at Newton Falls, Ohio.

Sales offices:

Buffalo, N. Y., Genessee Bldg.

Chicago, Ill., Peoples Gas Bldg.

Cleveland, Ohio, Union Trust Bldg.

Detroit, Mich., Dime Bank Bldg.

New York, N. Y., Liggett Bldg.

Brand: NEWSTEEL.

Works at Newton Falls, Ohio: blt. 1919-20, f. o. Apr. 12, 1920; 20 sheet and 20 pair fur.; 20 hot black sheet mills (28"); 4 trains of 26" cold rolls, 5 stands in each train; 6 Mesta pickling mach.; 44 box annealing fur.; 1 blue annealing fur. Roll black sheets to 54" wide and 144" long, 8 to 30 gauge.

Product: black sheets, annual cap., 125,000 tons; automobile sheets.

Niagara Electric Furnace Co., Inc., Niagara Falls, N. Y. gave up manufacture of ferro-silicon and dismantled its plant at 2nd & Walnut Sts., Niagara Falls in 1921.

Niagara Electric Steel Corp., North Tonawanda, N. Y.

Works at North Tonawanda (leased; owned by Herschell-Spillman Co.); 1 Snyder electric fur. (1½-ton) installed 1915, f. o. July 1, 1915. See Appendix under Niagara Steel Foundry Co.

Product: steel castings for sale, annual cap., 400 tons.

NIAGARA ELECTROLYTIC IRON CO., Inc., 40 West 40th St., New York, N. Y.

Inc. Aug. 7, 1924 in New York. Capital stock: com., no par value, auth. and issued 48,000 shares; pref. 7% cum. auth. \$1,500,000, issued \$900,000.

Charles Page Perin, P.; Theodore L. Frothingham, V. P.; D. J. Ogilvie, Sec. & T.; at New York. G. Prescott Fuller, G. S.; at Niagara Falls, N. Y.

Works at Niagara Falls, N. Y.: 432 electrolytic cells for manufacture of electrolytic iron by Boucher and Eustis-Perin patents. (Formerly owned and operated by National Electrolytic Co. for manufacture of chemicals, acquired by Niagara Electrolytic Iron Co., Oct. 1, 1924.)

Product: electrolytic iron in form of tubes for deep stampings, electrical uses and for special alloys; annual cap., 5,735 tons.

NICETOWN PLATE WASHER CO., Inc., 1824 West Juniata St., Philadelphia, Pa.

Inc. July 2, 1918 in Pennsylvania. Capital stock: com. \$195,000.

E. J. Renshaw, P., T. & G. M.; Wheeler Lord, V. P.

Works at Nicetown, Philadelphia: blt. 1900; two 3-d. coal-fired scrap heat. fur.; 10" 3-h. 5-st. guide mill. Washer dept. for washers ¾" to 12", standards and specials.

Product: iron and steel merchant bars, rounds, flats and squares, annual cap., 12,000 tons. Wrought washers, standard and special, annual cap., 12,000 kegs (200-lb.).

Nickel-Alloys Co., Pittsburgh, Pa. was placed in hands of receiver in Dec., 1920. Plant was sold in December, 1921 to American Nickel Corporation. Rolling mill now used for rolling pure nickel sheets and rods.

Noble Electric Steel Co., 384 Mills Bldg., San Francisco, Calif. Went into hands of receiver Feb. 28, 1919. Works not operating, see description in 1920 Directory, W. H. French, Receiver.

NORFOLK & WESTERN RAILWAY CO., Roanoke, Va.

Roanoke Foundry, Roanoke, Va.: 1 Gronwall-Dixon electric fur. (3-ton) added 1918, f. o. Mar., 1918; gray iron (10,000 tons) and brass (3,000 tons) foundry for locomotive and car castings for own use.

Product: steel castings for own use, annual cap., 2,500 tons.

North Carolina Steel & Iron Co., Salisbury, N. C. Works at Salisbury dismantled in 1920-21.

Northern Iron Co., Philadelphia, Pa. Lease of Standish Furnace, Standish, N. Y. given up as of June 1, 1921. Furnace reverted to owners, the Chateaugay Ore and Iron Co., a subsidiary of Delaware & Hudson Co.

Northern Ore Co., Philadelphia, Pa. sold Keystone Furnace, Island Park, Easton, Pa., April 1, 1923 and furnace was dismantled in that year.

NORTHWESTERN STEEL & IRON CORPN., 2907 Fourth St., S. E., Minneapolis, Minn.

Inc. April, 1910 in Minnesota. Capital stock: com., par value \$10, auth. \$300,000, issued \$154,200; bonds \$150,000.

G. E. Petters, P.; W. J. Miller, V. P., G. M. & G. S. M.; C. L. Rotzel, Sec.; E. E. Herrick, A. T. & P. A.; Walter Parham, G. S. Works at 2907-2943 Fourth St., S. E., Minneapolis: blt. 1910, steel foundry added 1916, f. o. Aug. 1, 1916; 2 A. O. H. fur. (5-ton), fuel, oil. Gray iron, brass and aluminum foundry.

Product: steel castings for sale, annual cap., 5,000 tons.

Norton Company, Worcester, Mass. occasionally makes small quantities of low-grade ferro-silicon for sale at its plants at Niagara Falls, N. Y. and Chippawa, Ont., Canada, as a by-product in manufacture of abrasives.

NORTON IRON WORKS, Front & 22nd Sts., Ashland, Ky.

Inc. 1872 in Kentucky. Capital stock: com., par value \$100, auth. and issued \$1,860,000.

T. M. Adams, P. & G. M.; N. G. Calvert, V. P.; G. W. McNeilly, Sec. & P. A.

Brand: Norton.

Furnace at Ashland: 1 stack, 75' x 18' 4", blt. 1873, last remod. 1920; 4 stoves (3 Cowper-Kennedy 70' x 18', 1 Freyn & Brassert 77' x 18'); 2 Weimer horizontal steam blowing eng., 24,000 cfm.; 10 B. & W. water-tube boilers, 3,200 H. P.; 1 slag granulating pit. Coke: Lake ore. Product: bessemer, foundry and malleable pig iron, annual cap., 120,000 tons.

Works at Ashland: f. o. Mar., 1874, rebld. 1883; 14" 2-h. nail plate mill; 70 cut nail mach. Wire mill; 90 wire drawing blocks for wire 0 to 21 gauge; 75 wire nail mach.; 20 barbed wire mach.; 1 galvanizing pan.

Product: nail plate, tack plate; cut nails; wire, wire nails and barbed wire. Annual cap., 350,000 kegs (100-lb.) cut nails; 30,000 net tons wire, 25,000 net tons galvanized wire, 450,000 kegs (100-lb.) wire nails, 25,000 net tons barbed wire.

Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N. S., Canada.
See under British Empire Steel Corporation.

NUGENT STEEL CASTINGS CO., 3100 South Wood St., Chicago, Ill.

Inc. Nov., 1915 in Illinois as Electric Steel Co., corporate title changed to Nugent Steel Castings Co., April, 1923. Capital stock: com., par value \$50, auth. and issued \$400,000.

W. J. Nugent, P.; P. L. Coonley, V. P. & T.; C. A. McDonald, Sec.; J. A. Marr, G. S.; H. C. Osman, G. S. M.; J. Shepherd, P. A.

Works at 3100 South Wood St., Chicago: blt. 1915-16, f. o. Mar. 15, 1916; 2 electric fur. (one 3-ton Moore, one 1-ton Snyder).

Product: steel castings for sale, annual cap., 5,000 tons; alloy steel castings (nickel, chrome); high pressure, agricultural and railroad castings.

Odlum, Prof. E., Vancouver, B. C., Canada, see under Hyatt Steel Products, Ltd.

OHIO FALLS IRON CO., New Albany, Indiana.

Inc. 1899 in Indiana. Capital stock: com., par value \$100, auth. and issued \$100,000.

George M. Clark, P. & P. A.; James T. Clark, V. P. & G. S. M.; Clifford E. Clark, Sec. & T.; George W. Weston, A.; Thomas P. Corcoran, G. S.

Brand: Ohio Falls.

Works at New Albany: orig. blt. 1866; 2 single and 1 double puddling fur.; 1 rotary squeezer; 7 coal-fired heat. fur. (five 3-d., two 4-d.); 20" 3-h. 2-st. muck; 16" 2-h. 3-st. bar; 12" 2-h. 1-st. roughing, 10" 3-h. 4-st. finishing guide; 10" 3-h. 4-st. guide; 8" 3-h. 5-st. guide.

Product: muck bar and scrap bar, annual cap., 30,000 tons; iron and steel merchant bars, annual cap., 60,000 tons; concrete bars, wide flats to 12" wide, light structural shapes, iron square root angles for safes.

OHIO SEAMLESS TUBE CO. (The), West Main St., Shelby, Ohio.

Inc. Jan. 2, 1917 in Ohio. Capital stock: com., no par value, auth. 90,000 shares, issued 77,490 shares; pref. 7% cum. auth. \$3,000,000, issued \$1,705,100.

A. C. Morse, P. & G. M.; R. C. Skiles, V. P.; G. L. Reichert, Sec. & T.; B. C. Endslow, A. Sec. & A. T.; B. B. Brown, G. S.; C. H. Wood, G. S. M.; M. E. Nimmons, P. A.

Sales offices:

Chicago, Ill., 1150 Peoples Gas Bldg.

Cleveland, Ohio, 1328 Union Mortgage Bldg.

Detroit, Mich., 11-269 General Motors Bldg.

New York, N. Y., 100 East 45th St.

Works at Shelby, Ohio: blt. 1908-09, f. o. Feb., 1909; 2 heat. fur.; 3 reheat. fur.; 1 misc. heat. fur.; 2 piercing mills; 20" 2-h. 4-st. and 20" 2-h. 1-st. hot mills; 35 annealing fur.; 6 gas prod.; 10 pickling tubs; 12 hammers (250-lb. to 800-lb.); 16 single and 6 double cold drawing benches. Make hot finished and cold drawn tubes 6" dia. and smaller.

Product: hot rolled blanks for seamless tubes for own use and for sale, annual cap., 15,000 tons; hot finished seamless tubes, 2,000 tons; cold drawn seamless tubes, 13,500 tons.

OHIO STEEL CASTINGS CO. (The), 2284 Scranton Road, Cleveland, Ohio.

Inc. Sept., 1920 in Ohio. Capital stock: com., no par value, auth. 2,000 shares, issued 1,195 shares; pref. 8% auth. \$100,000, issued \$19,500; bonds \$34,500.

H. E. Gresham, P.; C. S. Fenton, V. P.; C. J. Boldt, Sec.; D. K. Gresham, T.; George Martin, G. M.; J. P. Fenton, P. A.

Works at 2284 Scranton Road, Cleveland: blt. 1912-13; 1 Calumet converter (4,000-lb); 1 cupola. (Aetna Steel Castings Co., to Sept. 1921).

Product: steel castings for sale, annual cap., 2,400 tons.

OHIO STEEL FOUNDRY CO. (The), Lima, Ohio.

Inc. Feb. 17, 1907 in Ohio. Capital stock: com., par value \$100, auth. and issued \$1,000,000; pref. 7% cum. auth. \$500,000, issued \$459,200.

John W. Kaufman, Ch.; at Columbus, Ohio. J. E. Galvin, P.; F. G. Wright, V. P.; George S. Vail, V. P. & G. S. M.; J. R. Hastings, Sec.; D. R. Carpenter, T.; W. J. Gilmore, Works M.; at Lima, Ohio. T. H. Harvey, V. P.; at Springfield, Ohio.

Sales offices:

Chicago, Ill., Hughes & Graul, 1313 Peoples Gas Bldg.

New York, N. Y., E. R. Knapp & Co., 50 Church St.

Philadelphia, Pa., Rice & Malone, 22 South 15th St.

Brands: Ohioloy (special alloy castings); Fahrite (heat resisting alloy castings).

Lima Works, Lima, Ohio: blt. 1907, f. o. Sept. 21, 1907; 1 B. O. H. fur. (25-ton); 1 A. O. H. fur. (25-ton); fuel, oil. Product: steel castings for sale, annual cap., 36,000 tons (18,000 tons acid; 18,000 tons basic).

Bucyrus Works, Bucyrus, Ohio: blt. 1906-07, f. o. Mar. 1907; 1 A. O. H. fur. (15-ton) fuel, oil. Product: steel castings for sale, annual cap., 15,000 tons.

Springfield Works, Springfield, Ohio: blt. 1916, f. o. Sept. 1, 1916; 2 electric fur. (one 4-ton Moore acid, one 1-ton Swindell basic). Bessemer converters (two 2-ton) dismantled in 1920. Product: steel castings for sale, annual cap., 7,000 tons.

Total annual cap., (3 plants) 58,000 tons steel castings. Locomotive, car and general machinery castings. Alloy steel castings (nickel, chrome, vanadium, special heat resisting).

OIL WELL SUPPLY CO., 215 Water St., P. O. Box 91, Pittsburgh, Pa.

Est. 1862; inc. Mar. 19, 1891 in Pennsylvania.

Louis Brown, P.; D. J. Brown, V. P. & G. M.; Thomas Fleming, Jr., 2 V. P.; S. C. Reed, 3 V. P.; J. F. Hunter, Sec.; H. C. Burns, T.; H. H. Boschert, A. & A. T.; W. B. Glover, G. S. M.; H. S. Charnell, P. A.

District sales offices: Bremen, Ohio; Fort Worth, Texas; London, Eng.; Los Angeles, Calif.; New York, N. Y.; Oil City, Pa.; Shreveport, La.; Tampico, Mexico; Tulsa, Okla.; and branches in all oil fields.

Brand: Oilwell.

Company manufactures oil well supplies, boilers, engines, pumps, fittings, drilling tools, etc.; it operates plants at Oil City, Pa.; Pittsburgh, Pa.; Oswego, N. Y.; Bradford, Pa.; Parkersburg, W. Va.; Poplar Bluff, Mo.; Tulsa, Okla.; and Los Angeles, Calif. Steel foundry at Oil City Plant.

Imperial Works, Oil City, Pa.: steel foundry added 1919, f. o. April, 1919; 2 electric fur. (one $\frac{1}{2}$ -ton Snyder, one 2-ton Heroult). Gray iron (10,000 tons), malleable iron (1,500 tons) and brass (180 tons) foundry.

Product: steel castings for own use only, annual cap., 1,500 tons.

OKLAHOMA IRON WORKS, P. O. Box 463, Tulsa, Okla.

Inc. 1907 in Indian Territory. Capital stock: com., par value \$25, auth. and issued \$3,000,000.

J. W. Sloan, P. & G. M.; P. M. Iverson, 1 V. P.; S. E. Savage, 2 V. P.; A. F. Bourne, Sec., T. & P. A.; P. F. Corgiat, A.; William Wright, G. S.

Sales office: International Supply Co., Tulsa, Okla.

Company manufactures oil well supplies; operates gray iron and steel foundry for own use.

Works at East Archer St., Tulsa: steel foundry blt. 1917, f. o. Dec., 1917; 1 Rennerfelt electric fur. (1-ton). Gray iron foundry, 2 cupolas. Electric fur. idle since 1920.

Product: steel castings for own use, annual cap., 600 tons.

OKLAHOMA STEEL CASTINGS CO., 1200 North Peoria St., Tulsa, Okla.

Inc. Jan. 26, 1920 in Oklahoma. Capital stock: com., par value \$100, auth. \$125,000, issued \$123,300.

Ernest H. Cornelius, P., G. M. & G. S. M.; J. R. Johnston, V. P.; L. C. Baston, Sec. & T.; W. P. Brown, Plant S.; L. S. Allen, Sales Rep.; Lee J. Moses, P. A.

Works at Tulsa: blt. 1922, f. o. Aug. 8, 1922; 1 electric fur. (1 $\frac{1}{2}$ -ton, 3 phase).

Product: steel castings, annual cap., 3,000 tons. Railroad, tank car, oil field and general miscellaneous steel castings.

OLD DOMINION IRON & STEEL CORPN., Belle Isle, Richmond, Va.

Inc. 1836 in Virginia. Capital stock: com., par value \$3, auth. and issued \$360,000; bonds \$360,000.

Thomas S. Wheelwright, P.; H. R. Wayt, V. P. & G. M.; G. B. Williams, Sec.; Warner W. Smith, T.; C. H. Kadie, G. S. M.

Brand: Old Dominion.

Works at Belle Isle, Richmond: 2 Webb electric fur. (one 3-ton, one 4-ton) installed 1916, f. o. June 23, 1916; 10 double puddling fur.; 1 squeezer; 5 coal-fired heat. fur. (three 3-d., two 4-d.); 20" 2-h. 2-st. muck; 18" 3-h. 3-st. bar; 12" 3-h. 1-st. and 10" 3-h. 4-st. Belgian; 9" 3-h. 4-st. horseshoe bar.

Product: steel ingots and castings, annual cap. 6,000 tons; alloy steel ingots and castings; muck bar, 10,000 tons; merchant bars, 10,000 tons; specification iron, 5,000 tons; engine bolt and staybolt iron and electric steel; horse and mule shoes.

OLIVER CHILLED PLOW WORKS, 533 Chapin St., South Bend, Indiana.

Inc. Oct. 14, 1901 in Indiana. Capital stock: com., par value \$100, auth. and issued \$500,000.

Joseph D. Oliver, P.; James Oliver, 2nd, V. P.; C. F. Cunningham, Sec.; Joseph D. Oliver, Jr., T.; T. A. Freeman, C.; W. A. Weed, G. M.; C. A. Portman, G. S.; Marshall Collins, G. S. M.; A. A. Frederick, P. A.

Brand: Oliver.

Works at South Bend, Ind.: one 2-ton Whiting converter; 1 cupola; f. o. Mar. 1, 1913. Fuel, coke. Gray iron foundry; 4 cupolas, annual cap., 80,000 tons. Malleable iron foundry; 4 air fur., 15,000 tons.

Product: steel castings for own use, annual cap., 3,000 tons.

Oliver Iron & Steel Co., Pittsburgh, Pa., and Morris & Bailey Steel Co., were merged in a new corporation, Oliver Iron & Steel Corpn., Dec. 21, 1922.

OLIVER IRON & STEEL CORPN., South 10th & Muriel Sts., Pittsburgh, Pa.

The Oliver Iron & Steel Co., Pittsburgh, Pa. and Morris & Bailey Steel Co., Wilson Station, Pa. were merged to form Oliver Iron & Steel Corporation, December 21, 1922.

Capital stock: com., par value \$100, auth. \$6,000,000, issued \$4,560,800; pref. 7% cum. auth. \$2,000,000, issued \$1,595,900; bonds \$1,930,900.

Henry Oliver, P.; Henry Oliver Rea, V. P.; Charles Oliver, V. P.; James C. Rea, V. P. & Factory M.; H. F. Devens, V. P.; Charles E. Black, Sec. & P. A.; Ralph Theophilus, T.; J. F. Johnston, A.; Thomas J. Jones, Mill M.; Charles Fassinger, Factory S.; John C. Smith, G. S. M.

Sales offices:

New York, N. Y., H. L. Usher, 50 Church St.

San Francisco, Calif., Franklin Wharton, Monadnock Bldg.

Oliver Works, Pittsburgh, Pa.: blt. 1863; 7 pulv. coal-fired heat. fur. (four 3-d., 1 Swindell cont., 2 Morgan cont.); 16" 3-h. 4-st. bar; 11" comb. cont. mill with 12-st. 2-h. cont. and 4-st. 2-h.

finishing; 10" 3-h. 6-st. bar; 8" 3-h. 4-st. guide; 10 hand pickling tanks; 2 galvanizing pots; 12 steam and drop hammers (600-lb. to 2,000-lb.). Bolt, nut, rivet and washer factory.

Product: finished hot rolled products, annual cap., 120,000 tons of bars and special shapes for own use; machine, carriage, track and misc. bolts ($\frac{1}{4}$ " to $3\frac{1}{2}$ "); rivets, square and hexagon nuts ($\frac{1}{4}$ " to $2\frac{1}{2}$ "), 820,000 kegs; picks, mattocks, crow bars, wedges and drop forgings, 1,100 tons.

Morris & Bailey Division, Wilson Station, Pa.: works for the manufacture of cold rolled strip steel.

OLIVER IRON MINING CO., Wolvin Bldg., Duluth, Minn.

Subsidiary of United States Steel Corporation.

W. J. Olcott, P.; Pentecost Mitchell, V. P.; George D. Swift, Sec. & T.; W. W. Watson, Jr., A. Sec.; J. T. Melvin, A. T.; John L. Mullin, A.; W. J. O'Connor, A. A.; J. H. McLean, G. M.; J. H. Hearing, A. G. M.; R. G. Mace, P. A.; R. W. Marshall, A. P. A.; at Duluth. J. M. Sias, 2 A. Sec.; at 71 Broadway, New York.

The company holds in fee or by lease iron ore properties in the Vermilion, Missabe, Gogebic, Marquette and Menominee Ranges in the Lake Superior region.

The Oliver Iron Mining Company operates under agreement the active mining properties of the Minnesota Iron Company, the Lake Superior Consolidated Iron Mines, the American Mining Company, the Chapin Mining Company and other subsidiary mining companies of the United States Steel Corporation.

The mines of the Oliver Iron Mining Company and other subsidiaries of the United States Steel Corporation in the Lake Superior region are as follows:

Gogebic Range: Davis, Geneva, West Davis, Norrie-Aurora Group (North Norrie, East Norrie, Pabst, North Pabst, Aurora, North Aurora, North Ashland and Vaughn), Puritan, North Puritan, Royal and Tilden mines.

Marquette Range: Champion, Goodrich, Lake Superior Group (Section 16, Section 21, Hard Ore and Hematite), Moore Group (Moore and Richards), Platt, and Winthrop mines.

Menominee Range: Aragon, Chapin Group (Chapin and Millie), Cuff, Iron Ridge, Riverton Group (Dober, Isabella and Duff) and Pewabic ($\frac{1}{2}$) mines.

Vermilion Range: Pioneer, Sibley and Soudan Mines.

Baraboo District: Iroquois Mine.

Missabe Range:

Virginia District: Higgins-MacEwen, Mountain Iron Group (Mountain Iron and Aetna), Prindle, Sauntry, Stephens, Union ($\frac{1}{2}$), Virginia Group (Lone Jack, Missabe Mountain and Ohio), Shaw, Sharon, Wanless, Minnewas, Rouchleau and Culver mines.

Eveleth District: Adams Group (Adams, Hull, Nelson and Leonidas), Auburn, Biwabik ($\frac{1}{4}$), Canton, Duluth, Fayal, Genoa, Gilbert Group (Gilbert and Elba), McKinley, Spruce Group (Spruce, Cloquet and Fayal No. 4) mines.

Hibbing District: Burt-Pool-Day, Carson Lake, Donora, Hull-Rust, Kerr, South Kerr, Mahoning ($\frac{1}{2}$), Morris Group (Morris, Day, Winifred and Burt), Penobscot, Philbin, Sellers and Little & Prindle mines.

Chisholm District: Chisholm, Clark, Duncan, Hartley Group (Hartley and Burt), d'Autremont, Humphreys, Leonard Group (Burt and Glen), Monroe-Tener, Myers, Pillsbury, St. Clair, Fraser and Wellington mines.

Canisteo District: Arcturus, Canisteo Group (Canisteo and Walker), Holman Group (Holman, Brown No. 1, Brown No. 2 and Diamond), Delaware, Judd, South Judd and Morrison mines.

In addition to the foregoing mines the subsidiary companies own in fee or hold under long term leases, in the regions named, extensive acreages of mineral and timber lands containing large quantities of ore yet unopened and substantial tracts of standing timber held for future use in mining operations.

OLYMPIC STEEL WORKS, 151 Horton St., Seattle, Wash.

Inc. Aug. 15, 1915 in Washington. Capital stock: com. auth. and issued \$60,000.

C. W. Kucher, P.; E. R. Hinton, Sec., G. M. & P. A.; John Chapman, G. S.; at Seattle. Robert Welles, V. P. & T.; at Altadena, Calif.

Works at 151 Horton St., Seattle: first steel, Nov. 5, 1915; 2 Greene electric fur. (one $2\frac{1}{2}$ -ton, one 1-ton).

Product: steel castings for sale, annual cap., 3,000 tons. Alloy steel castings (chrome, vanadium). General machinery and miscellaneous castings.

OMAHA STEEL WORKS, 48th & Leavenworth Sts., Omaha, Neb.

Inc. 1906 in Nebraska. Capital stock: com., par value \$100, auth. \$500,000, issued \$467,500; pref. 7% cum. auth. \$250,000, issued \$195,600.

John W. Towle, P.; R. A. Leussler, 1 V. P.; K. E. Vogel, 2 V. P. & G. M.; John C. Martin, Sec.; F. H. Bucholz, T.; Fred H. Johnson, A.; John C. Wickman, G. S.; G. C. Caywood, G. S. M.; R. R. Root, P. A.

Brand: OMSTEEL Products in diamond.

Company operates fabricating plant (annual cap. 12,000 tons) at 48th and Leavenworth Sts., Omaha, for fabrication of structural and ornamental iron work for buildings, steel bridges, tanks, water towers and stand pipes and in connection therewith a steel foundry.

Works at 48th and Leavenworth Sts., Omaha: steel foundry, f.o. Sept. 5, 1919; 1 Ludlum electric fur. (3-ton).

Product: electric steel castings for own use and for sale, annual cap., 3,000 tons.

ONONDAGA STEEL CO., Inc., James St. & Thompson Road, P. O. Box 5, Eastwood Branch, Syracuse, N. Y.

Inc. May 15, 1916 in New York. Capital stock: com., par value \$100, auth. \$500,000, issued \$92,600; pref. 7% cum. auth. \$500,000, issued \$96,300; bonds \$51,500.

S. S. Buckley, P.; A. J. Briggs, 1 V. P.; M. D. Whitford, 2 V. P.; C. H. Canfield, Sec.; E. D. Newkirk, T. & G. M.

Brands: On High Speed Steel, On Plus High Speed Steel, On Top High Speed Steel.

Works at James St. & Thompson Road, Dewitt, N. Y.: blt. 1916-17; f. o. March, 1917; first electric steel, April, 1918; one 3-phase arc electric fur. (1½-ton); crucible fur. dismantled in 1923; three 3-d. oil-fired heat. fur.; 18" 2-h. 1-st., 10" 3-h. 7-st. bar mill, f. o. May, 1917; one 3,000-lb. steam hammer.

Product: steel ingots, annual cap., 360 tons; alloy steel ingots (chrome, tungsten, vanadium); rolled and hammered high speed tool steel bars, 1,000 tons.

Ontario Electric Steel Co., Poughkeepsie, N. Y. Steel works and rolling mill sold and dismantled in 1922. Plant sold March 1, 1923 to Iroquois Steel Co., Inc., and operated by Iroquois Steel & Forge Corp., Fulton, N. Y., making forgings only.

Opsal Steel Co., Ltd., Vancouver, B. C., Canada. Steel foundry idle since 1921 and manufacture of steel castings abandoned. Electric furnace (2-ton) is for sale. Company makes logging equipment.

OTIS ELEVATOR CO., 260 Eleventh Ave., New York, N. Y.

Inc. Nov. 28, 1898, in New Jersey. Capital stock: com., par value \$50, auth. \$25,000,000, issued \$16,967,950; pref. 6% non-cum., auth. and issued \$6,500,000.

W. D. Baldwin, Ch.; J. H. Van Alstyne, P.; A. G. Mills, V. P.; J. C. Knapp, V. P.; A. J. McComb, V. P.; E. A. Fitch, V. P.; T. M. Logan, Sec.; R. H. Pepper, T.; C. K. Kirkbride, A.; G. H. Heilman, P. A.; at 260 Eleventh Ave., New York. G. R. Rebmann, V. P.; at 112 South 16th St., Philadelphia. C. G. Comstock, V. P.; at 1375 East 6th St., Cleveland, Ohio.

Sales offices in all principal cities.

Company manufactures elevators, hoisting machinery, electric motors and controllers, high speed elevator machinery. It operates plants at Yonkers, N. Y.; Buffalo, N. Y.; Harrison, N. J.; and Quincy, Ill. Connected with the Buffalo Works is the steel foundry described below.

Buffalo Works, Northland Ave. & Grider St., Buffalo, N. Y.: first electric steel, Mar. 16, 1914; 1 Moore Lectromelt electric fur. (6-ton); 1 cupola; gray iron foundry, 1,500 tons.

Product: steel castings for own use and for sale, annual cap., 5,000 tons. Alloy steel castings.

Company also has foundry at Yonkers Works; annual cap., 10,000 tons gray iron and semi-steel, 700 tons bronze and brass castings; and foundry at Quincy Works annual cap., 6,000 tons gray iron and semi-steel, 50 tons bronze and brass castings for own use only

OTIS STEEL COMPANY (The), Cleveland, Ohio.

Est. 1873: inc. Oct. 1, 1919 in Ohio. Capital stock: com., no par value, auth. 1,000,000 shares, issued 741,002 shares; pref. 7% cum. auth. \$15,000,000, issued \$8,830,600; bonds \$9,050,500. William G. Mather, Ch.; George Bartol, Ch., Ex. Com. & V. P.; E. J. Kulas, P.; R. H. Clarke, 1 V. P.; Parker F. Wilson, 2 V. P.; F. G. Oviatt, Sec.; L. Kemper, T.; J. G. Carruthers, G. S. M.; L. C. Parrott, P. A.

Sales offices:

Chicago, Ill., W. H. Meyst Co., Bell Bldg.

Detroit, Mich., General Motors Bldg.

Milwaukee, Wis., Gibbs Steel Co., First Wisconsin Bldg.

Minneapolis, Minn., H. G. Thompson, 944 Security Bldg.

New York, N. Y., E. A. Steif, 30 Church St.

Brand: Cleveland (pig iron).

Product: basic, bessemer, malleable and foundry pig iron; steel ingots, steel castings for own use and for sale, carbon and alloy steel rolls and pinions; slabs, blooms, billets and sheet bars; sheared plates to 144" wide, ship, tank, boiler, bridge, firebox and still bottom plates; blue annealed sheets; black sheets for all purposes, automobile and furniture sheets; hot rolled and cold rolled strip steel.

Riverside Works, 3341 Jennings Road, Cleveland:

Cleveland Furnaces: 2 stacks, No. 1, 87' x 22' 6", blt. 1902-03, f. o. Aug. 21, 1903, rebt. 1919; No. 2, 90' x 21' 4", blt. 1907-08, f. o. Sept. 18, 1909, rebt. 1918; 8 Kennedy 2-pass stoves 90' x 22'; 7 vertical steam blowing eng., 150,000 cfm., 20 lbs. rated pressure; 14 Sterling water-tube boilers, 7,300 H. P. serve coke ovens also; 1 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 100,000 tons. By-product coke: Lake ore. Product: basic, bessemer, foundry and malleable pig iron, annual cap., 400,000 tons.

By-product Coke Plant: 100 Semet-Solvay coke ovens and by-product recovery plant, annual cap., 360,000 net tons coke.

Steel Works and Rolling Mill: rolling mill blt. 1913-14, f. o. Sept. 1914; sheet mill added 1920-21, f. o. May 31, 1921; O. H. plant added 1922-23, f. o. Jan. 25, 1924; 4 B. O. H. fur. (100-ton) fuel oil and coke oven gas; six 1-hole soaking pits; 2 cont. oil-fired heat. fur.; ten 4-d. prod. gas-fired heat. fur.; 40' 2-h. 1-st. blooming; 24' 3-h. 2-st. and 24' 2-h. 1-st. sheet bar mill; 20' 2-h.

13-st. hot strip mill; 20 cold strip mills (five 20", five 16", five 12", five 10"; 1 train of 4-st. and 1 single st. in each size); 30" x 84" 3-h. sheared plate mill; 4 jobbing plate mills (two 30" x 44", one 30" x 54", one 30" x 72"); 8 sheet and 8 pair fur.; 8 hot black sheet mills (two 30" x 38", two 30" x 44", two 30" x 48", two 30" x 54"); 9 cold mills (28") in one train of 2-st. and one train of 7-st.; 18 box annealing fur.; 3 blue annealing fur.; 9 pickling mach.; galvanizing equipment dismantled in 1923. Product: steel ingots, annual cap., 276,000 tons; semi-finished rolled products, 372,000 tons including 200,000 tons slabs, 87,000 tons blooms and billets, 85,000 tons sheet bars; finished hot rolled products 447,000 tons, including 170,000 tons sheared plates, 73,000 tons blue annealed sheets, 54,000 tons black sheets, 150,000 tons hot rolled strip; cold rolled strip, 42,000 tons.

Lakeside Works, 3131 Lakeside Ave., Cleveland: blt. 1873-74, f. o. 1874; 5 B. O. H. fur. (35-ton); 3 A. O. H. fur. (one 15-ton, two 20-ton) fuel in O. H., oil; 1 Tropenas converter (2-ton); 6 prod. gas-fired heat. fur. (five 4-d., one 5-d.); 31" x 112" 3-h. sheared plate mill; 42" x 152" 3-h. sheared plate mill. Product: steel ingots and steel castings for own use and for sale, annual cap. 176,300 tons including 145,000 tons ingots (140,000 tons B. O. H., 5,000 tons A. O. H.) and 31,300 tons castings (500 tons B. O. H., 28,000 A. O. H., and 2,800 tons converter); sheared plates to 144" wide, annual cap., 85,000 tons.

Total ingot capacity, 421,000 tons; finished hot rolled products, 532,000 tons.

Pacific Alloy & Steel Co., Bay Point, Calif. Works at Bay Point acquired from Pacific Electro Metals Co. Aug. 1, 1919. Electric furnaces for manufacture of ferro-alloys were dismantled in 1921.

Pacific Brass & Steel Foundry, Portland, Ore. Steel Foundry at East 7th and Salmon Sts., Portland was dismantled in 1921.

PACIFIC CAR & FOUNDRY CO., Alaska Bldg., Seattle, Wash.

Inc. April 11, 1924 in Washington. Capital stock: com., no par value, auth. and issued 36,000 shares; pref. 6% and 7% cum. auth. and issued \$2,200,000.

L. T. Carroll, P.; H. N. Curd, V. P. & G. M.; F. W. Chriswell, G. S. M.; at Alaska Bldg., Seattle. Horace Hager, V. P.; at 165 Broadway, New York. James F. Twohy, V. P.; at Multnomah Bldg., Portland, Ore. W. S. Bassage, Sec. & T.; J. Browne, A.; D. A. Herzog, G. S.; G. M. McBride, P. A.; at Renton, Wash.

Sales offices:

Portland, Ore., Multnomah Bldg.

San Francisco, Calif., A. M. McKillop.

Seattle, Wash., Alaska Bldg.

Vancouver, B. C., Vancouver Equipment Co., Ltd., Standard Bank Bldg.

Company operates plants at Portland, Ore. and Renton, Wash., for manufacture of standard railway equipment, logging cars, trucks and trailers, contractors' equipment, iron and steel castings and forgings. Steel foundry at Renton.

Works at Renton, Wash.: steel foundry. blt. 1918, f. o. Apr., 1918; 2 Greene electric fur. (1½-ton). Gray iron foundry.

Product: steel castings for own use and for sale, annual cap., 5,500 tons.

PACIFIC COAST STEEL CO., 510 Rialto Bldg., San Francisco, Calif.

Inc. May 13, 1909 in California. Capital stock: com., par value \$100, auth. \$3,000,000, issued \$2,212,200; pref. 6% non cum. auth. \$3,000,000, issued \$2,212,200; bonds \$616,000.

E. M. Wilson, P., T. & G. M.; D. E. McLaughlin, 2 V. P. & M. San Francisco Plant; H. C. Jones, C.; W. P. Mullane, G. S. San Francisco Plant; E. S. Houdlette, Director of Sales; L. W. O'Donnell, P. A.; at San Francisco. William Piggott, 1 V. P.; W. S. Burt, Sec.; T. S. Clingan, M. Seattle Plant; J. P. English, G. S. Seattle Plant; William Piggott, Jr., P. A.; at Seattle, Wash.

Sales offices:

Los Angeles, Calif., B. N. Folling, 1005 A. G. Bartlett Bldg.

Portland, Ore., C. A. Beattie, Gasco Bldg.

San Francisco, Calif., A. J. Gray, 510 Rialto Bldg.

Seattle, Wash., P. W. Cotton, Alaska Bldg.

Product: steel ingots, steel castings for own use; billets, sheet bars; heavy and light structural shapes; universal plates; merchant and concrete bars, hoops and bands, spike, bolt, nut and rivet rods, etc. Total annual cap. (2 plants) 250,000 tons ingots; 175,000 tons finished hot rolled products.

San Francisco Plant, South San Francisco, Calif.: blt. 1910-11, f. o.

Jan. 2, 1912; 6 B. O. H. fur. (one 50-ton, two 40-ton, one 35-ton, two 30-ton) fuel, oil; 4 cont. oil-fired heat. fur. (3 for ingots or billets, 1 for billets only); 24" 3-h. 2-st. billet mill; 18" 3-h. 2-st. merchant; 16" 3-h. 3-st. and 12" 2-h. 5-st. merchant; 12" 3-h. 2-st. Belgian roughing, 9" 2-h. 5-st. finishing merchant. Product: steel ingots, annual cap., 150,000 tons; steel castings for own use only; semi-finished hot rolled products, 90,000 tons (45,000 tons billets, 45,000 tons sheet bars); finished hot rolled products, 90,000 tons, including 20,000 tons heavy, and 10,000 tons light structural shapes, 30,000 tons merchant and concrete bars, 10,000 tons hoops and bands, 10,000 tons bolt, nut, and rivet rods, 10,000 tons misc. products.

Seattle Plant, Youngstown, Seattle, Wash.: blt. 1904-05, f. o.

May 6, 1905, first O. H. steel, Sept. 30, 1915; 4 B. O. H. fur. (40-ton) fuel, oil; 4 oil-fired heat. fur. (one 4-d., three cont.); 22" 3-h. 4-st. billet, structural and bar mill with interchangeable universal plate mill housing; 16" combination merchant mill with 16" 3-h. 3-st., 12" 2-h. 5-st. and 8" 2-h. 2-st.; 9" 3-h. 4-st. and 9" 2-h. 1-st. merchant mill. Roll universal plates, $\frac{1}{4}$ " to 2", 9" to 22" wide. Product: steel ingots, annual cap., 100,000 tons; finished hot rolled products, 85,000 tons including 15,000 tons heavy structural shapes, 10,000 tons light structural shapes, 5,000 tons universal plates, 30,000 tons merchant and concrete bars, 5,000 tons hoops and bands, 10,000 tons bolt, nut and rivet rods, 10,000 tons misc. products.

Portland Plant, Willbridge, Ore.: construction begun Nov., 1918 on B. O. H. steel plant and rolling mill. Work subsequently suspended.

Works at 16th St., San Francisco acquired from West Coast Iron Co., Dec., 1918, was abandoned in 1919. Oswego Furnace, Oswego, Ore., long idle, has been abandoned.

PACIFIC SHEET STEEL CORPN., South San Francisco, Calif.

Inc. Jan. 11, 1924 in Delaware. Capital stock: com., no par value, auth. and issued 10,000 shares. Subsidiary of Metal and Thermit Corporation, New York.

F. H. Hirschland, P. & G. M.; E. Becher, T.; Benjamin Anderson, A.; Fred W. Cohen, A. Sec.; at 120 Broadway, New York. Hubert

E. Rogers, V. P. & Sec.; at 60 Wall St., New York. J. H. Wilson, Works M.; George F. Squier, G. S. M.; E. E. Anderson, P. A.; at South San Francisco.

Brand: Pacific (sheets).

Works at South San Francisco (leased; owned by Metal & Thermit Corp.): blt. 1923-24, f. o. Apr. 14, 1924; 6 sheet and 6 pair fur., oil-fired; 6 hot black sheet mills (30" x 34" to 56"); 2 stands cold rolls (26" x 44") on hot mill train; 4 double box annealing fur.; 1 plunger pickling mach.; 2 galvanizing pots. Roll black sheets 16 to 20 gauge to 48" x 120", 22 to 26 gauge to 42" x 120", 24 gauge and lighter to 36" x 144".

Product: black sheets, annual cap., 30,000 tons; galvanized sheets, flat and corrugated, annual cap., 18,000 tons. Sheets for stamping. Blue annealed sheets, annual cap., 6,000 tons.

PAGE STEEL & WIRE CO., 929 Connecticut Ave., Bridgeport, Conn.

Est. 1883; inc. Dec. 11, 1901 in New Jersey. Capital stock: com., par value \$20, auth. \$1,000,000, issued \$999,700; 1st pref. 6% non. cum. auth. \$1,200,000, issued \$786,000; 2nd pref. 7% non cum. auth. \$1,000,000, issued \$729,700. Controlling interest in capital stock was acquired by American Chain Co. in Feb., 1920. W. B. Lashar, P.; W. T. Morris, V. P.; W. M. Wheeler, Sec.; W. F. Wheeler, T. & G. M.; William C. Ettershank, A.; D. L. Billings, C.; W. T. Kyle, G. S. M.; C. G. Williams, P. A.; at Bridgeport, Conn. A. W. Taylor, G. S.; at Monessen, Pa.

Sales offices:

Chicago, Ill., 208 South La Salle St.

New York, N. Y., Grand Central Terminal Bldg.

Pittsburgh, Pa., 644 Union Trust Co. Bldg.

San Francisco, Calif., 837 Pacific Bldg.

Company has exclusive right to sell ARMCO products of American Rolling Mill Co.

Company operates plants at Monessen, Pa., Adrian, Mich., and York, Pa. Plant at Adrian, Mich. produces automobile bumpers, bead rings for tires, and wire fence specialties. Steel Works, rolling mill, wire mill and fence factory at Monessen are described below.

Monessen Plant, Monessen, Pa.: blt. 1889-1900, f. o. May 31, 1900; 2 B. O. H. fur. (30-ton); 2 cont. oil-fired heat. fur.; 24" 3-h. 1-st. blooming; semi-continuous rod mill with 14" 2-h. 2-st. separate, 14" 2-h. 4-st. cont., 12" 2-h. 5-st. cont., 13" 2-h. 1-st. looping, 10" 2-h. 8-st. cont. and looping; 242 wire drawing blocks for wire 15/32" to .025"; 2 wire nail mach.; 45 wire fence mach.; 5 galv. pans. Product: steel ingots, annual cap., 65,000 tons (idle since 1921); wire rods and chain rods, 90,000 tons; plain wire, 90,000 net tons; galvanized wire, 25,000 net tons; wire fencing, 25,000 net tons; wire nails, 9,000 kegs.

PANAMA CANAL (The Mechanical Division of the), Balboa Heights, C. Z., Panama.

Col. M. L. Walker, U. S. A., Governor; Elwyn Greene, A.; at Balboa Heights. A. L. Flint, P. A.; Washington, D. C.

Works at Balboa: 1 Tropenas converter (2-ton); one 2-d. oil-fired heat. fur.; 1 Ajax reclaiming roll (12") installed 1919-20, f. o. Jan. 15, 1920; 1 hydraulic forging press (500-ton); 10 steam hammers up to 2,700-lb. Gray iron and brass foundry, annual cap., 7,800 tons gray iron and semi-steel, 1,092 tons brass castings.

Product: steel castings for own use and for sale, annual cap., 3,600 tons; iron and steel bars for own use and for sale, annual cap., 1,200 tons.

PARDEE STEEL CORPN., Market & Herbert Sts., Perth Amboy, N. J.

Inc. Sept. 10, 1919 in Delaware. Capital stock: com., no par value, auth. 20,000 shares, issued 17,000 shares; pref. 7% cum. auth. \$2,000,000, issued \$510,000.

W. L. Clause, P.; at 1618 Frick Bldg., Pittsburgh, Pa. G. Graham Bell, V. P. & G. M.; Francis J. Schwegler, Sec. & T.; at Perth Amboy.

Works at Market & Herbert Sts., Perth Amboy: blt. 1900, f. o. Dec. 1, 1900; 4 B. O. H. fur. (two 50-ton, two 30-ton) fuel, prod. gas; 10 single-hole soaking pits; 4 coal-fired heat. fur. (1 cont., three 4-d.); 34" 2-h. 1-st. blooming; 20" 3-h. 1-st. billet; 14" 3-h. 1-st. roughing; 12" 3-h. 5-st. finishing; 9" 3-h. 5-st. finishing; 10 pickling tanks. Two shafting plants producing turned, polished, and also cold drawn shafting and finished shapes in squares, hexagons and flats. (C. Pardee Works, Inc., to Apr. 13, 1920.)

Product: steel ingots, annual cap., 50,000 tons; billets, 45,000 tons; merchant bars, 35,000 tons; cold finished steel shafting and shapes, 50,000 tons.

Pardee Works (The C.), Inc., Perth Amboy, N. J., was acquired Apr. 13, 1920, by Pardee Steel Corporation.

PARKERSBURG IRON & STEEL CO. (The), Parkersburg, W. Va.

Inc. 1901 in West Virginia. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$800,000.

C. F. Niemann, P. & T.; A. E. Niemann, V. P.; A. E. Succop, V. P.; James H. Gray, Sec.; at Pittsburgh, Pa. A. A. Merritt, A.; F. F. Flaig, G. S.; E. J. Hayman, G. S. M. & P. A.; V. T. Renner, A. S. M.; at Parkersburg.

Sales office: Citizens Savings Bank Bldg., Pittsburgh, Pa.

Works at Parkersburg: blt. 1901, f. o. Dec., 1901; four 3-d. billet heat. fur., fuel, nat. gas; 20" 3-h. 1-st. sheet bar mill and 1-st. bull heads; 6 sheet and 6 pair fur.; 6 hot black sheet mills (26" x 28" to 42"); 5 stands cold rolls (1 train of 4-st. 24" x 40" and 24" x 48", 1 single stand 24" x 40"); 8 box annealing fur.; 1 plunger pickling

mach.; 2 galvanizing pots. Roll black sheets 16 to 30 gauge to 36" x 120" or 30" x 144".

Product: sheet bars, annual cap., 20,000 tons; black sheets, 25,000 tons; galvanized sheets, 24,000 tons.

PARKESBURG IRON CO., Parkesburg, Chester Co., Pa.

Est. 1872; inc. Jan. 16, 1882 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$250,000.

Horace A. Beale, Jr., P.; E. H. Brodhead, 1 V. P. & G. M.; George Thomas, 3rd, 2 V. P., T. & G. S. M.; H. B. Wiese, Sec.; J. R. Humpton, S.; J. H. Cooper, S.; W. A. Miller, P. A.

Sales offices:

Boston, Mass., G. W. Denyven, 141 Milk St.

Chicago, Ill., L. P. Mercer, 713 Fisher Bldg.

Cleveland, Ohio, D. W. Glanzer, 840 Rockefeller Bldg.

New York, N. Y., R. J. Sheridan, 30 Church St.

Norfolk, Va., Eagleston-Parke, Inc.

Philadelphia, Pa., W. H. S. Bateman, 822 Commercial Trust Bldg.

St. Louis, Mo., J. G. Miller, Security Bldg.

St. Paul, Minn., Rank & Goodell, 906 Merchants Bank Bldg.

San Francisco, Calif., J. A. Kinkead, 232 Rialto Bldg.

Brand: Parkesburg (charcoal iron boiler tubes).

Parkesburg Iron Works, Parkesburg, Pa.; fifteen 1-d. coal-fired reverberatory heat. fur.; two 20" 3-h. 1-st. muck mills; four 2-h. sheared plate mills (three 23" x 56", one 23" x 60") used for rolling skelp. Charcoal Forge: 26 knobbling fires; 3 steam hammers, each 3-ton. Product: charcoal blooms from iron and carbon steel scrap, annual cap., 22,000 tons for own use and for sale.

Tube Mill: 1 skelp bending fur.; 3 lapweld fur.; fuel, prod. gas; 7 gas producers; lapweld tubes 1½" to 6" dia.

Product: charcoal iron boiler tube skelp, annual cap., 22,000 tons; charcoal iron boiler tubes, annual cap., 15,000 tons.

Spring City Dept., Spring City, Pa.; charcoal forge, blt. 1884, rebt. 1907; 8 knobbling fires; one 3-ton hammer.

Product: charcoal blooms from iron and carbon steel scrap for own use and for sale, annual cap., 7,000 tons.

PARRY SOUND IRON CO., Ltd., Parry Sound, Ont., Canada.

Parry Sound Furnace, Parry Sound: 1 stack, 60' x 12', blt. 1912-13, remod. 1918; 2 Durham stoves 30' x 26'; 1 turbo-blower (12,000 cfm.); 3 tubular boilers, 200 H. P. Conn. coke; Lake ore. Idle since 1919.

Product: foundry pig iron, annual cap., 30,000 tons.

PARSONS COMPANY (The), Newton, Iowa.

Inc. 1906 in Iowa. Capital stock: com., par value \$100, auth. \$500,000, issued \$400,000.

W. C. Bergman, P.; F. H. Bergman, V. P.; James McElroy,

V. P.; H. C. McCardell, Sec. & G. M.; O. F. Ecklund, T.; M. S. Vincent, G. S.; W. N. Keiser, G. S. M.; H. J. Lammers, P. A.

Sales offices in Chicago, New York and Los Angeles.

Company manufactures trench excavating machinery and operates steel foundry for own use and for jobbing.

Works at Newton: blt. 1909, f. o. Aug. 18, 1909; 1 Rennerfelt electric fur. (2,500-lb.)

Product: electric steel castings for own use and for sale, annual cap., 3,000 tons.

PECK ROLLING MILLS, Ltd. (The), 63 Mill St., Montreal, P. Q., Canada.

Inc. Jan. 1, 1903 in Quebec. Capital stock: com. auth. \$579,000, issued \$549,000.

J. B. Peck, P.; C. B. Lang, V. P. & G. M.; L. S. Peck, Sec.; G. C. Broadbent, T.; A. H. Pepper, A. S. & G. S. M.; F. Whimby, P. A.

Sales offices:

Amherst, N. S., W. D. Murdock.

Ottawa, Ont., F. W. White, Sussex St.

Quebec, P. Q., E. L. Denoncourt, 25 Conroy St.

St. John, N. B., R. N. M. Robertson.

Toronto, Ont., Harvard Turnbull, Excelsior Life Bldg.

Winnipeg, Man., A. E. Hanna, 410 Montreal Trust Bldg.

Brand: PECK.

Works at 63 Mill St., Montreal: est. 1831; 4 oil-fired heat. fur. (three 1-d., one cont.); 5 coal-fired heat. fur. (one 2-d., four 4-d.); 16" 3-h. 6-st. bar; 14" 3-h. 6-st. bar; 9" 2-h. 4-st. bar; 16 cut nail mach.; 6 wire drawing blocks for wire $\frac{3}{8}$ " to 18 gauge; 23 wire nail mach. Spike dept.

Product: merchant bar iron and steel, concrete bars; shovel plate; railroad, pressed and wharf spikes; cut nails, wire, wire nails, tacks, iron and steel horse shoes, washers, etc.

Peerless Drawn Steel Co. (The), Massillon, Ohio was merged September 1, 1925 with Union Drawn Steel Co.

Pelton Steel Co., Milwaukee, Wis. sold the land and buildings at its plant, 672 Kinnickinnic Ave., Milwaukee, in July, 1921 to Milwaukee Electric Railway & Light Co. On August 15, 1921, The Stowell Co., South Milwaukee, Wis. acquired the capital stock of Pelton Steel Co. and removed the materials, equipment and machinery at 672 Kinnickinnic Ave. to Plant No. 2 of The Stowell Co., Chicago Road & Elliot Place, Milwaukee.

Penn Electric Smelting Corp., New York, N. Y. Works at 19th St. and Washington Ave., Philadelphia, blt. 1916, ceased operations Feb. 15, 1919. Manufacture of ferro-alloys permanently given up; plant abandoned in 1920.

Penn Iron & Coal Co. (The), Cleveland, Ohio, owning and operating Dover Furnace, Dover, Ohio was acquired Nov. 1, 1920 by The Hanna Furnace Co.

PENN IRON & STEEL CO., Creighton, Pa.

Inc. May, 1916 in Pennsylvania. Capital stock: com. \$150,000. Lewis W. Hicks, P.; W. A. Hicks, V. P. (operation); S. N. Hicks, V. P.; C. J. Nieman, Sec., T., G. S. M. & P. A.; John W. Davis, G. S.

Sales agents: Joseph T. Ryerson & Son, Inc., Chicago, Ill., and 30 Church St., New York, N. Y.

Brand: Lewis (special staybolt and enginebolt iron).

Works at Creighton: blt. 1916-17, f. o. 1917; 18 single puddling fur.; 1 rotary squeezer; four 3-d. coal-fired heat. fur.; 20" 3-h. 2-st. muck; 18" 3-h. 3-st. bar; 14" and 10" 3-h. 5-st. guide mill. Drilling Dept. for hollow staybolts; 2 cut-off mach., 62 drilling spindles; 5 threading spindles; 1 cold heading press, annual cap., 1,000,000 drilled bolts, 500,000 threaded bolts.

Product: low phosphorus melting bar, refined iron, special staybolt and enginebolt iron, U. S. Navy chain iron. Annual cap., 10,000 tons muck bar, 12,000 tons finished rolled products.

PENN SEABOARD STEEL CORPN., New Castle, Delaware.

Inc. Dec., 1915 in New York. Capital stock: com., no par value, auth. and issued 2,000,000 shares.

J. B. Warren, P. & G. M.; at 1417 Sansom St., Philadelphia. C. F. Jemison, V. P. & T.; M. S. Hager, Sec. & A. T.; J. S. Kerwin, A. G. M.; W. C. Prendergast, G. S. M.; G. A. Pedrick, P. A.; W. D. Bradford, G. S.; at New Castle, Del.

Sales offices:

Boston, Mass., A. E. Hunt Steel Co., 80 Boylston St.

Chicago, Ill., ZIV Steel & Wire Co., 4413 West Kinzie St.

Cleveland, Ohio, M. V. Wellman, 1277 West 9th St.

Detroit, Mich., R. K. Greaves, 2208 West Fort St.

New York, N. Y., W. C. Prendergast, 2 Rector St.

Philadelphia, Pa., 1417 Sansom St.

San Francisco, Calif., H. L. Van Winkle, 160 Beale St.

Tulsa, Okla., H. F. Vogel, Continental Supply Co.

New Castle Plant, New Castle, Del. (formerly called Baldt Works):

blt. 1903-04, f. o. Apr. 22, 1905; 3 B. O. H. fur. (two 60-ton, one 30-ton); 2 A. O. H. fur. (30-ton); fuel in O. H. oil; 2 gas producers; 4 soaking pits (two 2-hole and two 4-hole), fuel, gas and oil; 34" 2-h. 1-st. blooming. Product: steel ingots, annual cap., 160,000 tons (100,000 tons B. O. H., 60,000 A. O. H.); alloy steel ingots (nickel, chrome, vanadium, molybdenum, tungsten, silicon, manganese); carbon and alloy blooms, slabs and billets for own use and for sale, 250,000 tons.

Tacony Plant, Tacony, Philadelphia, Pa. (Tacony Steel Co.): rolling mill blt. 1898, steel plant added 1917-18, f. o. May, 1918; 2 A. O. H. fur. (40-ton), fuel, oil; heat, and annealing fur.; 13" 3-h. 6-st., 12" 3-h. 6-st. and 10" 3-h. 7-st. bar mills; 5 steam hammers (1½-ton to 10-ton); 2 steam hydraulic presses (one 1,000-ton, one 2,000-ton). Product: steel ingots, annual cap., 50,000 tons; alloy steel ingots (as at New Castle Plant); hot rolled products, 60,000 tons, carbon and alloy steel bars and special shapes; forged products, 20,000 tons; forgings of every description.

Penn Works, Chester, Pa., was sold to Penn Steel Castings Co., in July, 1924.

New Haven Works, New Haven, Conn., was sold to American Steel & Wire Co. in Apr., 1921, and open-hearth plant dismantled.

Penn Steel & Iron Corp., Lancaster, Pa. Company placed in hands of receivers, Jan. 7, 1921. Receivership set aside in February and Trustee in Bankruptcy appointed to liquidate the company. Works at Lancaster, Pa., were sold July 11-12, 1921, and were dismantled in 1922.

PENN STEEL CASTINGS CO., Front & Penn Sts., Chester, Pa.

Inc. Nov. 24, 1923 in Delaware. Capital stock: com., no par value, auth. and issued 10,000 shares; pref. 7% cum. auth. and issued \$500,000; bonds \$1,077,200.

S. E. Sproul, P. & P. A.; W. S. Haney, V. P. & G. S. M.; A. M. Andorn, T.; F. Briner, G. S.

Sales office: 100 Broadway, New York, N. Y.

Works at Front & Penn Sts., Chester: blt. 1892, f. o. Sept. 25, 1892; 5 A. O. H. fur. (three 25-ton, two 5-ton) fuel, oil. (Penn-Seaboard Steel Corporation to July, 1924).

Product: steel castings for sale, annual cap., 20,000 tons.

Pennsylvania Brake Beam Co., Danville, Pa.

J. W. Trenchard, P.; E. M. Applebaugh, V. P. & G. M.

Works at Danville: 1 coal-fired cont. heat. fur.; 24" 3-h. 2-st. structural mill. Idle since 1920.

Product: structural shapes or rails, annual cap., 15,000 tons.

PENNSYLVANIA ELECTRIC STEEL CASTING CO., Hamburg, Pa.

Inc. Sept. 1, 1922 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$50,000.

E. R. Shollenberger, P.; E. M. Schumo, V. P. & G. M.; F. P. Renno, T.; at Hamburg, Pa. W. H. McAtee, Sec.; at Port Clinton, Pa.

Works at Hamburg, Pa.: blt. 1917, f. o. May, 1918; 1 Heroult electric furnace (1-ton). (Driscoll-Reese Steel Co. to Oct., 1922).

Product: steel castings for sale, annual cap., 1,200 tons; alloy steel

castings (nickel, chrome, vanadium); small and medium castings for automobiles, trucks and tractors.

Pennsylvania Forge Co., Bridesburg, Philadelphia, Pa. Built open-hearth steel works (one 10-ton A. O. H. fur.) and rolling mill (22" 3-h. 5-st. merchant mill) at Ash and Bath Sts., Bridesburg in 1919-20, first steel Mar. 28, 1919, first rolled products Aug. 26, 1920. Operation of the plant was discontinued in 1923 and the plant was dismantled in 1924. Company continues operation of Forge Plant at Wakeling and Stiles Sts., Bridesburg.

PERRY IRON CO., Union Trust Bldg., Cleveland, Ohio.

Inc. June 23, 1920 in Delaware. Capital stock: com., par value \$2, auth. and issued \$100,000; pref. auth. \$15,000,000, issued Class B 8% non-cum. \$4,880,400; bonds \$175,000.

H. G. Dalton, P.; H. S. Pickands, V. P.; J. B. Putnam, Sec.; S. E. Bool, T.; N. B. Prentice, P. A.; at Cleveland. H. C. Kikstadt, G. S.; at Erie, Pa.

Sales offices: Pickands, Mather & Co., Union Trust Bldg., Cleveland, Ohio; Perry Iron Co., 408 Marine Natl. Bank Bldg., Erie, Pa.

Brand: Perry (pig iron).

Perry Furnace, Erie, Pa.: 1 stack, 85' x 18' 6", blt. 1906-07, rebld. 1924 and blown in Sept. 8, 1924; 4 stoves (3 McClure 70' x 21', 1 McKee 70' x 22'); 2 vertical steam blowing eng., 36,000 cfm.; 6 Rust water-tube boilers, 2,400 H. P.; 1 Uehling single-strand pig casting mach. Beehive and by-product coke: Lake ore.

Product: foundry, malleable and basic pig iron, annual cap., 127,750 tons.

PETTIBONE MULLIKEN CO., 725 Marquette Bldg., Chicago, Ill.

Inc. June 21, 1912 in New York. Capital stock: com., auth. \$7,000,000, outstanding \$6,570,200; pref. 7% cum. auth. \$3,000,000, outstanding \$786,200.

A. H. Mulliken, P.; C. H. Eib, V. P.; J. H. Mulliken, V. P. & T.; H. R. Prest, Sec.; A. M. Cornell, Works M.

Works at Cicero Ave. & Division St., Chicago: blt. 1908, f. o. Feb., 1909; first electric steel Mar. 17, 1919; 3 Heroult electric fur. (one 2-ton, two 3-ton); 1 cupola. Gray iron (750 tons) and brass (50 tons) castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 12,000 tons; alloy steel castings (nickel, chrome, manganese); frogs, crossings, switches, switch stands, guard rails, rail braces, etc., annual cap., 45,000 tons.

Philadelphia Electric Steel Corporation see American Metallurgical Corporation.

Philadelphia Roll & Machine Co. see Taylor-Wharton Iron & Steel Co.

PHOENIX HORSE SHOE CO., 347 Madison Ave., New York, N. Y.
Inc. 1892 in Illinois.

John W. Kiser, P.; L. M. Kirk, T.; at 347 Madison Ave., New York.
Thomas F. Hotchkiss, V. P. & P. A.; at Joliet, Ill. A. W. Sexsmith, V. P.; John E. Baker, Sec.; at Rookery Bldg., Chicago, Ill.
A. E. Gorton, V. P.; at Poughkeepsie, N. Y. A. J. Barron, V. P.; at Cleves, Ohio.

Sales offices:

Chicago, Ill., A. W. Sexsmith, Western Sales Agt., Rookery Bldg.
New York, N. Y., M. F. O'Connor, Eastern Sales Agt. & Export
Mgr., 347 Madison Ave.

Brands: Phoenix (horse and mule shoes); Bull Dog (toe calks);
Juniata (horse and mule shoes, and toe calks).

The company operates 3 plants for manufacture of horse and mule shoes and toe calks. A rolling mill for manufacture of horse shoe bars is connected with each of these works, with total annual cap. of 56,000 tons.

Joliet Works, Joliet, Ill.: blt. and f. o. 1893; 27 coal-fired heat. fur.; 6 trains of rolls (one 20", one 10", four 9"). Product: horse shoe bars, annual cap., 24,000 tons.

Poughkeepsie Works, Poughkeepsie, N. Y.: blt. 1873; 24 coal-fired heat. fur.; 5 trains of rolls (one 18", four 9"). Product: horse shoe bars, annual cap., 20,000 tons.

Cleves Works, Cleves, Ohio: blt. 1906, f. o. Sept. 26, 1906; ten 4-d. coal-fired heat. fur.; 16" 3-h. 1-st. scrap bar; two 9" 3-h. 5-st. bar mills (formerly The Cincinnati Horse Shoe & Iron Co.). Product: horse shoe bars, annual cap., 12,000 tons.

PHOENIX IRON CO. (The), 22 South 15th St., Philadelphia, Pa.

Inc. April 27, 1855 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$700,000; pref. 7% cum. auth. and issued \$800,000; bonds \$1,200,000.

W. H. Reeves, Ch. at Phoenixville, Pa. Samuel J. Reeves, P.; George C. Carson, Jr., V. P. & T.; George Gerry White, Sec.; George H. Lange, P. A.; at Philadelphia. F. P. Norris, G. M.; at Phoenixville.

Sales offices:

Albany, N. Y., S. G. Case, City Savings Bank Bldg.

Boston, Mass., W. H. Allen, 110 State St.

New York, N. Y., J. H. Rowland, 30 Church St.

Washington, D. C., W. E. Sturges, Jr., Munsey Bldg.

Phoenix Iron Works, Phoenixville, Pa.: est. 1790, steel works blt. 1888-89, f. o. Feb. 1889; 6 B. O. H. fur. (three 150-ton, three 125-ton) fuel prod. gas; 11 Morgan gas producers; 5 soaking pits (four 4-hole, one 3-hole); 4 oil-fired heat. fur. (1 cont., three 6-d. reversing); 24" 3-h. 4-st. and 22" 3-h. 3-st. structural mills; 7 steam ham. (600-lb. to 12,000-lb.). Bridge Works, eye-bar plant.

foundry for steel and gray iron castings for own use and for sale, annual cap., 1,200 tons B. O. H. steel and 6,000 tons gray iron castings. The fabrication of all structural steel work is contracted for by Phoenix Bridge Co. a subsidiary; annual cap. 75,000 tons fabricated steel.

Product: steel ingots, annual cap., 225,000 tons; blooms and billets, 200,000 tons; heavy and light structural shapes, 150,000 tons.

Pilling (W. S.) Company, Earlston, Pa., see Joseph E. Thropp.

PINE IRON WORKS CO., Pine Forge, Berks Co., Pa.

Inc. 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$75,000.

James B. Bailey, P.; J. E. Dougherty, G. M. & A. T.; J. A. Whitacre, G. S.; at Pine Forge. F. R. Smith, Sec. & T.; at Harrisburg, Pa.

Pine Iron Works, Pine Forge, Pa.: blt. 1881; two 3-d. coal-fired heat. fur.; 26" x 84" 2-h. sheared plate and 26" x 72" 3-h. jobbing plate mills. Roll plates to 72" wide, 10 gauge to $\frac{3}{4}$ ". Product: iron and steel boiler, ship, tank and floor plates, annual cap., 12,000 tons.

Steel Works, Newberry, Williamsport, Pa. (leased from Sweets Steel Co.): blt. 1903-04, rebt. 1917; 3 B. O. H. fur. (25-ton); 5 gas producers. Product: steel ingots, annual cap., 36,000 tons.

Lucknow Forge, Lucknow, Pa. (leased from John W. Reilly): blt. 1883; 10 forge fires, 1 run-out fire; 1 heat. fur.; 1 steam hammer. Steam power. Charcoal fuel. Product: charcoal blooms from scrap and pig iron for sale, annual cap., 6,500 tons.

PITTSBURGH CRUCIBLE STEEL CO., 17 East 42nd St., New York, N. Y.

Inc. Feb. 20, 1911 in Pennsylvania. Subsidiary of Crucible Steel Company of America.

Sales offices:

Cambridge, Mass., Wetherell Brothers Co.

Chicago, Ill., 650 West Washington Blvd.

Cleveland, Ohio, 542 Coal & Iron Bldg.

Detroit, Mich., 4-155 General Motors Bldg.

New York, N. Y., 17 East 42nd St.

Philadelphia, Pa., 1224 Callowhill St.

Pittsburgh, Pa., Oliver Bldg.

Midland Works, Midland, Pa.:

Midland Furnaces: 2 stacks, No. 2 (formerly No. 1), 85' x 21' 6", blt. 1905-06, rebt. 1914, relined 1922; No. 3 (formerly No. 2), 92' x 22' 6", blt. 1918-20, f. o. Oct. 9, 1920; 8 stoves (5 McClure 3-pass, 100' x 21' 2", at No. 2; 3 two-pass side comb., 105' x 23', at No. 3); 3 steam blowing eng. (2 Southwark, 1 Mesta) 75,000 cfm., 18-lbs. rated pressure; 21 water-tube boilers (14 Rust, 7

Sterling) 11,693 H. P. serve also coke plant and steel works; one Uehling double-strand pig casting mach.; one slag granulating pit, annual cap., 90,000 tons. By-product coke: Lake ore. Gray iron foundry for own use. Limestone quarry at Walford, Pa., annual cap., 85,000 tons.

Product: basic pig iron, annual cap., 383,250 tons.

By-product Coke Plant: 100 Koppers coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 420,000 net tons coke, 2,600,000 gals. light oil.

Steel Works: blt. 1911-12, f. o. Aug. 4, 1913: 12 B. O. H. fur. (90-ton) fuel prod. gas, coke oven gas, tar and oil; 20 Hughes gas producers; one 500-ton mixer; seven 4-hole soaking pits; 5 heat. fur. (two 6-d. prod. gas, two cont. prod. gas, one cont. coke oven gas); 40" 2-h. 1-st. blooming; 28" 3-h. 1-st. billet; 24" 2-h. 3-st. bar; 18" 2-h. 2-st., 14" 2-h. 10-st., 12" 3-h. 4-st. and 8" 2-h. 2-st. merchant mill; 2 box annealing fur.; 18 hand pickling tanks.

Product: steel ingots, annual cap., 600,000 tons; alloy steel ingots (nickel, chrome, molybdenum, vanadium, manganese); blooms, billets and slabs, 480,000 tons; merchant and concrete bars, 264,000 tons.

PITTSBURGH FORGE & IRON CO., 1306 Chamber of Commerce Bldg., Pittsburgh, Pa.

Inc. 1867; reinc. 1919 in Pennsylvania. Capital stock: com. auth. \$600,000, issued \$600,000.

F. E. Richardson, P.; Ben. G. Wells, V. P.; W. I. Miller, Sec. & T.; John H. Baer, G. S.; Charles Clark, P. A.

Sales office: Chicago, R. A. Dugan, Railway Exchange Bldg.

Brands: "Atlas," "Atlas Special" for rolled products.

Works at North Side, Pittsburgh, Pa.: blt. 1864; 27 single puddling fur.; 1 squeezer; six 4-d. heat. fur.; 8 gas prod.; 20" 3-h. 2-st. muck; 16" 3-h. 3-st. bar; 9" 3-h. 5-st. guide; 3 steam ham. (5-ton); 2 hydraulic forging presses (500-ton, 1,000 ton). Bolt and spike department.

Product and annual cap.: muck and scrap bar (25,000 tons); merchant bars (11,000 tons), skelp, flue and pipe iron (3,000 tons), spike and bolt rods (6,000 tons); track bolts and screw spikes (2,000 kegs); heavy marine and machine forgings, railway car axles, driving axles, crank pins and piston rods (25,000 tons).

Pittsburgh Iron & Steel Foundries Co., Pittsburgh, Pa. was acquired by Mackintosh-Hemphill Co., July 1, 1922. Works now known as Midland Plant, Mackintosh-Hemphill Co.

PITTSBURGH METALLURGICAL CO., Inc., Niagara Falls, N. Y.

Inc. June, 1913 in Delaware. Capital stock: com., par value \$100, auth. \$250,000.

A. F. Plock, P. & G. M.; James Thompson, G. S.; C. P. Salmon,

G. S. M. & P. A.; at Niagara Falls, N. Y. Clark White, V. P.; at Ashland, Ky. Kenneth Seaver, Sec. & T.; J. W. McVicker, A.; at Farmers Bank Bldg., Pittsburgh, Pa.

Sales agents: Rogers, Brown & Crocker Bros., Inc., Cincinnati, Ohio; Phillips Isham, 30 Church St., New York, N. Y.

Brand: Pittsburgh (ferro-silicon).

Works at Niagara Falls, N. Y.: blt. 1920, f. o. June 1, 1920; 3 electric fur. of ferro-alloy type. Hydro-electric power (15,000 H. P.) from The Niagara Falls Power Co.

Product: ferro-silicon, all grades, annual cap., from 30,000 to 50,000 tons according to grade made.

Pittsburgh Radium Co., Pittsburgh, Pa., was acquired in January, 1925 by Utah Vanadium Corporation.

PITTSBURGH ROLLS CORPORATION, 41st and Willow Sts., Pittsburgh, Pa.

Inc. July 24, 1917 in Virginia. Capital stock: com., par value \$100, auth. \$2,500,000, issued \$1,500,000; pref. 7% cum. auth. and issued \$500,000.

David L. Eynon, P. & G. M.; Q. S. Snyder, V. P. & T.; P. M. Fleming, Sec. & C.; R. S. Hull, A.; W. H. Nichols, G. S.; A. J. Ramsay, G. S. M.; H. P. Bork, P. A.

Sales offices: Chicago, Ill.; San Francisco, Calif., Harry Meckley, Sales Representative.

Brand: Phoenix Metal, Phoenix A. & B. (alloy rolls).

Phoenix Roll Works, 41st & Willow Sts., Pittsburgh: 2 A. O. H. fur. (one 20-ton, one 15-ton), fuel, oil; 2 cupolas; roll foundry for steel, chill and sand iron rolls.

Product: steel castings for own use and for sale, annual cap., 33,000 tons; alloy steel castings (nickel, chrome, vanadium, molybdenum); Phoenix metal patent semi-steel rolls; chill iron (11,000 tons) and sand iron (6,000 tons) rolls; steel, alloy and iron pinions.

Pittsburgh Seamless Tube Co., Beaver Falls, Pa., name changed to the Babcock & Wilcox Tube Company, January 1, 1923.

PITTSBURGH STEAMSHIP CO., 1600 Rockefeller Bldg., Cleveland, Ohio, and Wolvin Bldg., Duluth, Minn.

Inc. Nov. 10, 1899 in West Virginia. Subsidiary of United States Steel Corporation.

A. F. Harvey, P.; A. H. Ferbert, V. P.; A. L. Macgregor, Sec. & A. A.; J. A. Boyink, P. A.; at Rockefeller Bldg., Cleveland. J. H. McLean, V. P.; George D. Swift, T.; J. L. Mullin, A.; at Wolvin Bldg., Duluth, Minn. J. M. Sias, A. Sec.; at 71 Broadway, New York, N. Y.

Pittsburgh Steamship Company owns or operates on the Great Lakes in the transportation of iron ore, coal and limestone for

United States Steel Corporation interests, 78 steamships, 18 barges and 2 supply boats.

PITTSBURGH STEEL CO., 700 Union Trust Bldg., Pittsburgh, Pa.

Inc. July 7, 1901 in Pennsylvania. Capital stock: com., par value \$100, auth. \$19,500,000, issued \$17,500,000; pref. 7% cum. auth. and issued \$10,500,000.

Homer D. Williams, P.; Emil Winter, V. P.; Edward H. Bindley, V. P.; H. J. Miller, Sec.; William C. Reitz, T.; W. K. Given, A.; John F. Hazen, G. S. M.; Robert McMillan, P. A.; at Pittsburgh. W. C. Sutherland, G. S.; at Monessen.

Sales offices:

Chicago, Ill., D. F. Mann, McCormick Bldg.

Dallas, Texas, H. B. Webster, Central Bank Bldg.

Memphis, Tenn., E. W. Watson, Exchange Bldg.

New York, N. Y., M. E. Johnson, Equitable Bldg.

San Francisco, Calif., A. C. Rulofson Co., Monadnock Bldg.

Brand: Pittsburgh Perfect.

Product: pig iron, steel billets, rounds for seamless tubes, hoops, bands and cotton ties; wire rods, bright, annealed and galvanized wire, barbed wire, wire fence, wire nails, staples and wire fabric for reinforcing concrete.

The company owns and operates plants at Monessen and Glassport, Pa. It controls the following subsidiary companies:

Pittsburgh Steel Products Co.

Pittsburgh Perfect Fence Co., Ltd.

Pittsburg Steel Sales Co.

Pittsburgh Steel Ore Co.

National Steel Fabric Co.

Standard Land and Improvement Co.

Monessen Coal & Coke Co.

Monessen Southwestern Railway Co.

The company owns substantial interest in Bennett Mining Co., Mesaba Cliffs Iron Mining Co. and Plymouth Mining Co. It also owns and operates 400 Mitchell rectangular coke ovens at Alicia, Pa., annual cap., 350,000 net tons coke.

Monessen Works, Monessen, Pa.:

Blast Furnaces: 2 stacks, No. 1, 90' x 22' 6", blt. 1912-13, f. o. Aug. 5, 1913, relined 1924; No. 2, 90' x 21' 10 1/2", blt. 1912-13, f. o. Aug. 28, 1913, relined 1923-24; 8 McClure 3-pass stoves, 106' x 22'; 4 Southwark vertical cross comp. steam blowing eng. (106,000 cfm.), 15 to 18 lbs. rated pressure; 17 Sterling water-tube boilers, 8,500 H. P. serve also electric power plant; 1 Uehling triple-strand pig casting mach.; 3 Greenawalt sintering units for flue dust, annual cap., 36,000 tons; 2 slag granulating pits, annual cap., 300,000 tons. Conn. coke: Lake ore. Product: basic pig iron, annual cap., 480,000 tons.

Open-Hearth Dept.: 12 B. O. H. fur. (80-ton) fuel prod. gas; 36 Hughes gas producers; one 600-ton hot metal mixer. First steel made Aug. 3, 1908. Product: steel ingots, annual cap., 600,000 tons.

Rolling Mill Dept.: blt. 1901-02; six 5-hole soaking pits; 2 cont. heat. fur.; 46" 3-h. 1-st. blooming; 28" 3-h. 2-st. billet; 18" 2-h. 6-st. continuous bar; 16" to 10" 2-h. 18-st. Garrett rod mill; 12" to 10" 2-h. 16-st. Morgan continuous rod mill. Product: blooms, billets and slabs, annual cap., 525,000 tons; wire rods, 275,000 tons.

Wire Mill: 488 wire drawing blocks for wire 0 to 18 gauge, 368 wire nail mach., 53 barbed wire mach., 36 wire fence mach., 8 galvanizing pans. Product: plain wire, annual cap., 300,000 net tons; galvanized wire, 125,000 net tons; barbed wire, 60,000 net tons; wire fencing, 90,000 net tons; wire nails, 2,400,000 kegs (100-lbs.).

Glassport Works, Glassport, Pa.: blt. 1890-1900, f. o. Mar. 1900; 3 gas-fired heat. fur. (1 cont., 2 regen.); 2 trains (10" and 8" hoop and band mills); 1 hammer. Product: hoops, bands and cotton ties, annual cap., 36,000 tons.

PITTSBURGH STEEL FOUNDRY CO., 1115 Empire Bldg., Pittsburgh, Pa.

Works at Glassport, Pa.: blt. 1899, first steel Nov., 1899; 3 B. O. H. fur. (one 25-ton, two 20-ton); 1 A. O. H. fur. (20-ton); fuel, oil. Machine shop for own use and jobbing.

Product: steel castings for own use and for sale, annual cap., 30,000 tons (22,500 B. O. H., 7,500 A. O. H.); alloy steel castings (nickel, chrome); finished castings for rolling mill machinery, charging boxes, ingot cars; railroad bolsters, side frames, etc.; misc. car and machinery castings; annealing boxes.

PITTSBURGH STEEL PRODUCTS CO., Union Trust Bldg., Pittsburgh, Pa.

Inc. Feb. 9, 1909, in Pennsylvania. Capital stock, \$6,000,000. Subsidiary of Pittsburgh Steel Co.

D. P. Bennett, P.; Edward H. Bindley, V. P.; W. C. Reitz, V. P.; H. J. Miller, Sec.; Ray Maxwell, A. Sec.; Clayton Snyder, T.; C. E. Reichenbach, A. T.; W. K. Given, A.; Robert McMillan, G. P. A.; John T. Johnson, A. P.; W. C. Sutherland, G. S.; J. H. Dunbar, S. (Monessen Plant); R. B. Reeves, S. (Allenport Plant). Sales offices: Strauss Bldg., Chicago, Ill.; General Motors Bldg., Detroit, Mich.; Equitable Bldg., New York, N. Y.

Company operates two plants for the manufacture of seamless tubes, one at Monessen, Pa., and the other at Allenport, Pa. These plants are equipped with 6 billet piercing mills and 6 rolling mills and are provided with draw benches and other machinery for

finishing tubes. A specialty department is maintained for forming special shapes. Company produces tubes 6" dia. and less. Now erecting a mill to produce tubes to 12" dia. with an annual capacity of 72,000 tons.

Product: hot rolled seamless tube blanks; hot rolled and cold drawn seamless tubes, annual cap., 120,000 tons, to be increased to 192,000 tons on completion of new mill.

PITTSBURGH TIN PLATE & STEEL CORPN., Marietta, Ohio.

Inc. Jan. 23, 1919 in Delaware. Capital stock: com. auth. and issued \$1,630,000; pref. 8% cum. auth. and issued \$2,200,000.

Samuel L. Black, P.; at Columbus, Ohio. A. V. Somers, V. P., T. & G. M.; R. Steen, S.; at Marietta, Ohio. O. G. Toner, Sec.; at Edon, Ohio.

Works at Marietta, Ohio: blt. 1902-03, f. o. Apr. 15, 1903; 4 sheet and 4 pair fur.; 4 hot black plate (tin) mills; 4 stands cold rolls; 4 box annealing fur.; 1 Mesta pickling mach., 1 hand pickling tank; 10 tinning sets (8 for coke tinplates, 2 for terne plates).

Product: black plate for tinning and black plate specialties, annual cap., 20,000 tons; tinplates 115,000 base boxes; terne plates.

PITTSBURGH VALVE, FOUNDRY & CONSTRUCTION CO., 26th St. & A. V. R. R., Pittsburgh, Pa. (P. O. Box 1016).

Inc. Nov., 1900 in Pennsylvania. Capital stock: com., par value \$100, issued \$1,125,000.

C. A. Anderson, P.; J. Roy Tanner, V. P. & G. M.; S. G. Patterson, Sec. & T.; A. Roy Carson, A.; C. A. Anderson, Jr., G. S. M.; A. S. Carson, P. A.

Sales offices:

Boston, Mass., 185 Devonshire St.

Chicago, Ill., Railway Exchange Bldg.

Cleveland, Ohio, 858 Rockefeller Bldg.

Detroit, Mich., 11251 General Motors Bldg.

New York, N. Y., 30 Church St., Hudson Terminal Bldg.

Philadelphia, Pa., 10 South 18th St.

Brands: Atwood, Aiken, Tanner, Critchlow, Stuart (valves).

Company manufactures steam, water and hydraulic valves; iron, steel and brass fittings; power piping.

Works at 26th St. and A. V. R. R., Pittsburgh: steel foundry blt. 1916, f. o. Dec. 1916; 2 electric fur. (one 2-ton Moore Lectromelt, one 1½-ton Morrison). Gray iron and brass foundry, annual cap., 6,000 tons gray iron and semi-steel, 360 tons brass castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 1,800 tons. Alloy steel castings (chrome, nickel).

POLLAK STEEL CO. (The), P. O. Box 1461, Cincinnati, Ohio.

Inc. 1911 in Ohio. Capital stock: com., par value \$100, auth. and issued \$400,000.

Emil Pollak, Ch.; Maurice E. Pollak, P.; Julian A. Pollak, V. P.; Charles Judah, Sec. & T.; A. C. Weihl, G. M.; S. D. Hopkins, S. M. (Forging Dept.); C. G. Talbot, S. M. (Rolled Products); E. J. Paque, P. A.

Sales offices:

Atlanta, Ga., E. A. Thornwell, Candler Bldg.

Baltimore, Md., N. S. Kenney, 1117 Munsey Bldg.

Boston, Mass., George W. Denyven, 141 Milk St.

Chicago, Ill., R. G. Bright, 1305 Railway Exchange Bldg.

Cincinnati, Ohio, Isaac Joseph Iron Co., 525 Reading Road.

Denver, Col., Duncan Bond Co., 1410 16th St.

Detroit, Mich., John L. Bender, 910 Kresge Bldg.

Houston, Texas, G. F. Cotter Supply Co., Union Nat'l Bank.

Montreal, Canada, Drummond, McCall & Co., 28 Victoria Sq.

New York, N. Y., Scott Donahue, 2615 Grand Central Terminal Bldg.

Philadelphia, Pa., D. R. Warfield, Elrae Bldg., 226 South 15th St.

Philadelphia, Pa., W. J. Mulholland, Commercial Trust Bldg.

Portland, Ore., Hickok & Hickok, 609 Upshur St.

Richmond, Va., W. L. Jefferies, Jr., 1002 Mutual Bldg.

St. Louis, Mo., H. J. Tierney, Railway Exchange Bldg.

St. Paul, Minn., B. W. Parsons Co., 1010 Builders Exchange Bldg.

San Francisco, Calif., Hickok & Hickok, 489 Bryant St.

Seattle, Wash., International Steel Co., 910 First Ave. South.

Brands: Posco (reinforcing bars); Notch Back (steel fence post).

Company operates heavy and drop forge shops at Cincinnati, Ohio, and South Chicago, Ill.; and a rolling mill at Marion, Ohio.

Marion Works, Marion Ohio: blt. 1915-16; 1 cont. heat. fur.; 16" 2-h. 1-st. slitting mill; two 16" 3-h. 1-st. roughing; three 14" 3-h. 2-st. finishing mills. Fuel, coal. Product: steel rounds, squares, angles, flats, channel flats, U bars, concrete bars, steel fence posts, etc.; annual cap., 40,000 tons.

Cincinnati Plant, Carthage Station, B. & O. R. R., Cincinnati. Product: railway car and locomotive axles and forgings, forgings for automobiles, tractors, agricultural implements, and general industrial work; heavy forgings for marine work, engines and machinery; annual cap., 125,000 tons.

South Chicago Plant, 98th St. & Baltimore Ave., South Chicago. Product: railway car and locomotive axles and forgings; drop forgings for automobiles, tractors, agricultural implements, and industrial work; annual cap., 100,000 tons.

Portland Iron and Steel Co., Boston, Mass. Open-hearth furnace at Portland, Me. has been dismantled.

Portland Rolling Mills, Ltd., St. John, N. B., Canada, discontinued operation of their rolling mill at St. John on Feb. 28, 1920. Company went out of business and sold plant to New Brunswick Rolling Mills, Ltd., St. John.

Port Moody Steel Works, Ltd., Vancouver, B. C., Canada.

Montreal Trust Company, Vancouver, B. C., Trustee for bondholders. Works idle and for sale or lease.

Works at Port Moody, B. C.: 1 electric fur.; 1 reheat. fur.; 12" bar mill; 21" bar mill not installed. (Operated under lease by Hyatt Steel Products, Ltd. to 1920; and Atlas Steel Products Co. for a short time in 1920).

Product: steel ingots, annual cap., 1,000 tons; merchant bars, 2,000 tons.

Potts, William M., Wyebrooke, Chester Co., Pa. Isabella Furnace at Wyebrooke, a charcoal stack blt. 1835, last in operation in 1894 was abandoned in 1924.

PRATT & LETCHWORTH CO., 189 Tonawanda St., Buffalo, N. Y.

Inc. Jan. 1, 1896 in New York. Subsidiary of Dayton Malleable Iron Co.

John C. Bradley, Ch.; John H. Bradley, P.; John P. Williams; V. P.; Willis M. Edwards, Sec. & T.; August C. Christiansen, A.; Otto A. Dworak, P. A.

Works at 189 Tonawanda St., Buffalo: orig. blt. 1861, first steel 1876; 4 A. O. H. fur. (three 20-ton, one 10-ton). Fuel, oil. Malleable iron foundry, annual cap., 25,000 tons.

Product: steel castings for sale, annual cap., 19,300 tons.

PRESSED STEEL CAR CO., Pittsburgh, Pa.

Company operates plants for manufacture of railroad, street railroad, mine and industrial cars, tank cars, oil storage and refinery tanks. It operates under lease a steel and malleable iron foundry at McKees Rocks owned by Pennsylvania Malleable Co. Officers of latter company are as follows: F. D. Evans, P.; C. W. Wrenshall, V. P. & G. M.; H. E. Swartz, Sec. & T.; H. J. Gearhart, A.; W. A. Chamberlain, C.; W. H. Holt, G. S.; J. B. Tate, P. A.

Pennsylvania Malleable Works, McKees Rocks, Pa. (leased; owned by Pennsylvania Malleable Co.): blt. 1898, f. o. 1899; 4 A. O. H. fur. (one 10-ton, three 15-ton) fuel, oil. Malleable iron foundry, annual cap., 5,000 tons for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 25,000 tons; truck side frames, truck bolsters, general car castings and miscellaneous castings.

PRINCESS IRON CORPORATION, Glen Wilton, Va.

J. H. Drewry, Receiver (effective August 20, 1923).

Inc. Mar. 11, 1918 in Virginia. Capital stock: com., par value \$100, auth. and issued \$1,500,000; pref. 8% cum. auth. \$1,000,000, issued \$455,000; bonds \$403,000.

H. F. Hansell, Jr., P.; Charles Evans Loxley, V. P. & T.; Benjamin West Frazier, Sec.; at 1600 Walnut St., Philadelphia. John A. Ham., G. M. at Glen Wilton, Va.

Sales office: 1600 Walnut St., Philadelphia, Pa.

Brand: Princess (pig iron).

Princess Furnace, Glen Wilton: 1 stack, 65' x 14' 2", blt. 1883-84, rebt. 1912, relined 1923; one 3-pass Massicks & Crooke stove, 70' x 17'; 2 steam blowing eng., 13,000 cfm.; 6 boilers (5 water-tube, 1 tubular) 1,250 H. P.; rotary kiln nodulizing plant for foreign lump pyrites cinder, annual cap., 12,000 tons. Purchased coke: local brown, Lake and foreign ores and pyrites nodules. Idle since Oct. 11, 1921.

Product: foundry pig iron, annual cap., 36,000 tons.

Company owns Callie and Circle brown ore mines at Glen Wilton, Va., annual cap., 50,000 tons iron ore; also lease of limestone quarry at Craigsville, Va., annual cap., 24,000 tons.

PUGET SOUND IRON & STEEL WORKS (The), Canal St., Tacoma, Wash.

Inc. 1896 in Washington. Capital stock: com., \$30,000.

Ollie A. Roberts, P.; A. C. Marconnier, V. P.; W. E. Morris, Sec. & T.

Sales agent: National Machinery Co., Ltd., Vancouver, B. C.

Brand: Tacoma (logging engines).

Company fabricates structural steel and operates machine shop and foundry for jobbing and manufacture of logging engines, machinery, etc.

Works at Canal St., Tacoma: blt. 1895; 2 bessemer converters (2,240-lb.) f. o. Dec., 1910; 3 cupolas; foundry for gray iron, semi-steel and brass castings for own use and for sale (11,000 tons).

Product: steel castings for own use and for sale, annual cap., 4,800 tons; alloy steel castings (manganese, chrome).

PULASKI FOUNDRY & MFG. CORPN., 2422 Euclid Ave., Cleveland, Ohio.

Inc. Sept., 1916 in Virginia. Capital stock: com., par value \$100, auth. \$200,000, issued \$70,700; pref. 7% cum. auth. \$200,000, issued \$100,000.

Jay J. Seaver, P. & G. S. M.; Robert E. Baker, 1 V. P.; J. D. Williams, Sec., T. & A.; at Cleveland, Ohio. W. E. Ring, 2 V. P. & G. M.; R. F. Pierce, P. A.; at Pulaski, Va.

Sales office: 2422 Euclid Ave., Cleveland, Ohio.

Works at Pulaski, Va.; steel foundry blt. 1918, f. o. Dec. 1918; one 2-ton converter; 2 cupolas. Gray iron and brass foundry, annual cap., 1,200 tons gray iron, 75 tons brass castings for sale.

Wooden patterns and machine work.

Product: steel castings for own use and for sale, annual cap., 300 tons.

PULASKI IRON CO., Pulaski, Va.

Inc. Mar. 17, 1884 in Virginia. Capital stock: com., par value \$100, issued \$450,000.

Percival Johnson, P.; at 1008 Real Estate Trust Bldg., Philadelphia, Pa. Isaac T. Mann, Ch.; H. R. Hawthorne, Sec.; at 1 Broadway, New York, N. Y. James Ellwood Jones, V. P.; at Pocahontas, Va. M. E. Bowman, T.; at Pulaski, Va.

Sales office: 1008 Real Estate Trust Bldg., Philadelphia, Pa.

Brand: Pulaski (sand cast foundry pig iron).

Furnace at Pulaski: 1 stack, 80' x 17' 9", blt. 1887, last rebt. 1916, relined 1924 and blown in Nov. 19, 1924; 6 stoves (four 2-pass side comb. 90' x 70', two 2-pass side comb. 70' x 20'); 2 turbo-blowers (Ingersoll Rand, General Electric) 70,000 cfm., 15-lbs. rated pressure; 12 water-tube boilers, 3,710 H. P.; Brown pig breaker; Greenawalt sintering plant for flue dust and pyrites cinder, annual cap., 45,000 tons. Pocahontas coke: local brown, red and manganiferous ores, purchased Mundic clinker and Lake ore. Company owns iron ore mines at Buchanan, Vesuvius and Cripple Creek, Va., and Grady, Ga., annual cap., 75,000 tons; coal mine and 445 beehive coke ovens at Eckman, W. Va., annual cap., 350,000 gross tons coal, 115,000 net tons coke; limestone quarry at Cripple Creek, Va., annual cap., 40,000 tons.

Product: foundry, high-silicon and mill pig iron, annual cap., 90,000 tons.

Pullman Co. (The), Chicago, Ill. Rolling mill at Pullman, Ill. dismantled in 1925.

PUNXSUTAWNEY FURNACE CO., DuBois, Pa.

Inc. 1912 in Pennsylvania. Capital stock: com. \$300,000.

L. W. Robinson, P.; B. M. Clark, V. P.; at Indiana, Pa. F. G. St. Clair, Sec., T. & G. M.; C. H. Emerick, G. S. M.; at DuBois.

Punxy Furnace, Punxsutawney, Pa.: 1 stack, 72' x 19' 6", blt. 1896-97, rebt. 1919, relined Nov., 1924; 4 Kennedy 2-pass stoves, 80' x 20'; 3 steam blowing eng., 24,000 cfm.; 8 water-tube boilers (2 B. & W., 6 Sterling) 2,800 H. P.; pig breaking mach. Beehive coke; Lake ore.

Product: foundry pig iron, annual cap., 90,000 tons.

Queen City Foundry Co., Denver, Colo., sold works at Denver in 1923 to American Manganese Steel Co. Works now known as Plant C, American Manganese Steel Co.

QUINCY STEEL CASTING CO., 30 Fayette St., Atlantic, Mass.

Inc. April 20, 1917 in Massachusetts. Capital stock: com., par value \$25, auth. \$25,000, issued \$7,600.

Roy G. Lundin, P., T. & G. M.

Works at 30 Fayette St., Atlantic: blt. 1917, f. o. Aug. 4, 1917; two 8-pot crucible steel fur. Fuel, oil.

Product: crucible steel castings for sale, annual cap., 300 tons.

RACINE STEEL CASTINGS CO., 1442 Forest St., Racine, Wis.

Inc. Aug. 18, 1908 in Wisconsin. Subsidiary of Belle City Malleable Iron Co.

Judson F. Stone, P.; at 1212 Chicago Stock Exchange Bldg., Chicago, Ill. C. S. Anderson, Sec., T., & G. M.; S. Kitto, A.; M. J. Goepfert, G. S.; R. J. Swartout, P. A.; at Racine.

Works at Racine: blt. 1908, f. o. Oct. 8, 1908; 1 Heroult electric fur. (3-ton) f. o. June, 1916.

Product: electric steel castings for sale, annual cap., 3,000 tons. Alloy steel castings (vanadium). Castings for automobiles, motor trucks and tractors.

Radium Company of Colorado, Denver, Colo. acquired plant at 1045 Tejon St., Denver, first operated 1917, for manufacture of radium and chemical products of vanadium. In May, 1921 acquired plant of Tungsten Products Co. situated at 3rd & Pearl Sts., Boulder, Colo. Company in process of liquidation. Plants at Denver and Boulder dismantled in 1924; machinery and equipment sold.

RAIL JOINT CO. (The), 61 Broadway, New York, N. Y.

Inc. 1905 in New York. Capital stock: com. \$2,000,000; pref. \$2,000,000.

Victor C. Armstrong, P.; W. Paton Thomson, V. P.; E. A. Condit, Jr., V. P.; Benjamin Wolhaupter, Sec. & T.; Stuart E. MacKellar, A. Sec. & A. T.

Sales offices:

Boston, Mass., 84 State St.

Chicago, Ill., 80 East Jackson Boulevard.

Denver, Colo., 723 Seventeenth St.

Montreal, Canada, The Rail Joint Co. of Canada, Ltd., 211 McGill St.

Philadelphia, Pa., 1017 Pennsylvania Bldg.

San Francisco, Calif., 74 New Montgomery St.

St. Louis, Mo., 319 North Fourth St.

Troy, N. Y., Burden Ave.

Washington, D. C., 613 15th St. N. W.

Products: patented base supported and 100% rail joints for standard, girder and special rail sections; also patented insulated joints, step or compromise rail joints and patented joints for frogs and switches; track liners.

Troy Works, Troy, N. Y.: orig. blt. 1819; 2 cont. oil or coal fired billet heat. fur.; two 21" 3-h. 4-st. bar mills. Product: rail joints and bars for railroad equipment, annual cap., 60,000 tons.

In addition to its works at Troy, N. Y., the company has other

manufacturing and distributing points where its patented machinery and devices are used to produce rail joints and parts thereof under contract with other mills. Delivery points are: Joliet, Ill.; Pittsburgh and Steelton, Pa.; Buffalo and Troy, N. Y.; Sault Ste. Marie, Ont.; Columbus, Ohio; Indiana Harbor, Ind.; Fairfield, Ala.; and Minnequa, Colo.

RAILWAY STEEL-SPRING CO., 30 Church St., New York, N. Y.

Inc. Feb. 25, 1902 in New Jersey. Capital stock: com., auth. and issued \$13,500,000; pref. 7% cum. auth. and issued \$13,500,000. F. F. Fitzpatrick, P.; A. S. Henry, V. P.; E. McCormick, V. P.; F. J. Foley, V. P.; M. B. Parker, Sec.; H. S. Banghart, T.; H. C. Harrington, P. A.

Sales offices: Chicago, Ill.; Dallas, Tex.; Denver, Colo.; Detroit, Mich.; Louisville, Ky.; Norfolk, Va.; Pittsburgh, Pa.; St. Louis, Mo.; St. Paul, Minn.

Brands: "Latrobe" and "Inter-Ocean."

Product: carbon and alloy steel ingots, forging ingots and tool steel; locomotive and car wheel tires, roll shells, steel rings, pipe flanges, gear blanks; steel-tired wheels for locomotive and passenger equipment; helical and elliptical springs for locomotive, passenger and freight equipment, machinery springs and wire springs of every description; pressed steel journal box lids.

Latrobe Plant, Latrobe, Pa.: blt. 1888-89, f. o. Aug., 1889; 6 A. O. H. fur. (two 20-ton, one 30-ton, three 40-ton) fuel, nat. gas and oil; one 3-ton Heroult electric fur.; five 2-d., four cont. heat. fur.; 5 trains tire rolls; 4 steam ham. (4-ton to 20-ton). Machine shop for own use. Product: carbon and alloy steel ingots, forging ingots and tool steel; steel tires, steel-tired wheels, steel rings, flanges; helical and elliptical springs; pressed steel journal box lids. Annual cap., 100,000 tons open hearth, 2,500 tons electric steel ingots; 50,000 tons locomotive and car wheel tires, steel rings, etc.; 50,000 tons helical and elliptical springs.

Inter-Ocean Plant, Chicago Heights, Ill.: blt. 1909-10, f. o. April 20, 1910; three 50-ton B. O. H. fur.; fuel prod. gas and oil; 8 Hughes gas producers; one 2-d. and two cont. heat. fur.; 3 pit fur.; 3 tire mills; 1 hydraulic forging press. Machine shop for own use. Product: carbon and alloy steel ingots, locomotive and car wheel tires, steel-tired wheels, steel rings, etc. Annual cap., 80,000 tons ingots; 40,000 tons locomotive and car wheel tires, steel rings, etc.; 30,000 tons helical and elliptical springs.

Detroit Works, Detroit, Mich. sold.

The company operates spring works as follows: Chicago Works, Chicago Heights, Ill.; Latrobe-French Works, Latrobe, Pa.; St. Louis Works, East St. Louis, Ill. The company also operates the Canadian Steel-Tire & Wheel Company, Limited, located at Montreal East, P. Q., Canada.

READING IRON CO., Baer Bldg., Reading, Pa.

Inc. Aug. 12, 1889 in Pennsylvania. Capital stock: com., auth. and issued \$1,000,000.

L. E. Thomas, P.; J. M. Callen, V. P.; James P. Roe, G. S.; George W. Delany, Sec.; H. N. Yost, T.; R. J. Wenger, A. T.; H. F. Mattern, S. M.; F. M. English, A. S. M.; G. F. D. Hallman, P. A.; A. F. Hartranft, Adv. M.; J. Norman Sherer, G. S. (ore mines and blast furnaces).

Sales offices:

Baltimore, Md., W. J. White, 1104 Continental Bldg.

Boston, Mass., John G. Ross, 161 Devonshire St.

Chicago, Ill., R. A. Griffin, 449 Conway Bldg.

Cincinnati, Ohio, Charles Neblett, 527 Hulbert Block.

Dallas, Texas, R. J. Titley, 2002 Magnolia Bldg.

Los Angeles, Calif., 829 Van Nuys Bldg.

New York, N. Y., H. S. Carland, 99 John St.

Philadelphia, Pa., A. R. Kinsler, 962 Drexel Bldg.

Pittsburgh, Pa., Wyman Howells, 1302 First Natl. Bank Bldg.

St. Louis, Mo., F. W. Deppe, 2087 Railway Exchange Bldg.

San Francisco, Calif., John F. Heil, 16 California St.

Seattle, Wash., F. C. Neupert, 330 Central Bldg.

Products: pig iron; charcoal iron blooms, muck bar and skelp for own use; merchant bar iron, angles; wrought iron pipe, oil well casing, line pipe, charcoal iron boiler tubes; nail plate, cut nails; heavy castings; sugar mills, cotton presses, general machinery.

Keystone Furnace Dept., Reading, Pa.: 1 stack, 79' x 18', blt. 1898-99, rebt. 1912-13, relined Dec., 1923; 4 Massicks & Crooke stoves, 75' x 19' 6", 4 steam blowing eng. (58,000 cfm.); 1 Rust and 8 Cahall boilers, 2,500 H. P. Conn., W. Va., and by-product coke: Lake and Swedish ores, Adirondack and New Jersey magnetites and concentrates. Product: foundry, forge, basic and malleable pig iron, annual cap., 100,000 tons.

Crumwold Furnace Dept., Emaus, Pa.: 1 stack, 75' x 16', blt. 1872, rebt. 1909, relined 1920; 3 Roberts stoves, 80' x 20'; 2 steam blowing eng. (20,000 cfm.); 5 bat. water-tube boilers, 1,750 H. P. Conn., W. Va., and by-product coke; N. Y. and N. J. magnetites, Lake and Swedish ores. Product: foundry and forge pig iron, annual cap., 62,000 tons.

Montour Rolling Mills Dept., Danville, Pa.: blt. 1845, rebt. 1901-02; 21 double and 1 single puddling fur.; six 3-d. heat. fur.; 7 trains (four 20" 3-h. 1-st. muck, 20" 3-h. 3-st. bar and skelp, 18" 3-h. 2-st. bar, 12" 3-h. 5-st. bar). Fuel, bit. coal. Product: muck bar, annual cap., 30,000 tons; merchant bar iron, angles, tie plates, plain and angle splice bars, and grooved skelp, annual cap., 40,000 tons hot rolled products.

Danville Puddle Dept., Danville, Pa.: blt. 1883; 10 double puddling

fur.; 1 squeezer; 20" 3-h. 1-st. muck mill. Fuel, bit. coal. Product: muck bar, annual cap., 10,000 tons.

Ninth Street Mills Dept., Reading, Pa.: blt. 1868, last remod. 1902; 17 double puddling fur.; 2 squeezers; six 4-d. gas-fired heat. fur.; 3 trains (23½" 3-h. 2-st. muck, 14" 3-h. 3-st. skelp, and universal mill with 22" 1-st. roughing and 23" 1-st. finishing. Fuel, bit. coal. Product: muck bar, annual cap., 22,250 tons; skelp and socket iron, 70,000 tons.

Oley Street Mills Dept., Reading, Pa.: blt. 1896-97, enl. 1906; 34 double puddling fur.; four 3-d. gas-fired heat. fur.; 1 coal-fired fagot heat. fur.; 3 trains (two 20" 3-h. 2-st. muck, 22" 3-h. 1-st. universal). Fuel, bit. coal. Product: muck bar, annual cap., 50,000 tons; skelp, 42,000 tons.

Sheet Mill Dept., Reading, Pa.: blt. 1863; 12 double puddling fur.; four 1-d. heat. fur.; 2 trains (22" 2-h. 1-st. muck, 22" sheared plate mill with 1 roughing and 1 finishing stand). Fuel, bit. coal. Product: muck bar, annual cap., 15,000 tons; skelp, 10,000 tons.

Tube Works Dept., Reading, Pa.: blt. 1856; 8 pipe mills (3 butt-weld, 5 lap-weld); 2 galv. pots. Make butt-weld pipe ⅛" to 1½", lap-weld pipe, 1¼" to 20" dia. Product: wrought iron pipe; annual cap., 200,000 tons (155,000 tons black pipe, 25,000 tons galvanized pipe, 20,000 tons boiler tubes); oil well tubing and casing, poles, signal pipe, etc.

Scott Foundry Dept., Reading, Pa.: orig. blt. 1854; one Tropenas converter (2-ton) f. o. Oct. 18, 1910; 2 cupolas, 3 air fur. Foundry for gray iron, semi-steel and air furnace castings for rolling mills, cotton presses, sugar mills, general machinery; annual cap., 25,000 tons. Steel castings for own use, 2,500 tons.

Roe Puddling Plant, Reading, Pa.: 3 mechanical puddling machines; 1 3-motion hydraulic squeezer; 2 tilling cinder melting fur.; 23" 3-h. 1-st. muck bar mill. Fuel, gas, bit. coal and fuel oil. Product: blooms and muck bar, annual cap., 24,000 tons.

Forge Dept., Reading, Pa. was dismantled in 1924.

Charcoal Iron Plant, Reading, Pa.: blt. 1923; 20 knobbling fires, fuel charcoal; 2 hammers; 23" 2-h. bar mill; 18" 3-h. tandem grooved skelp mill; 6 heat. fur., fuel, bit. coal. Product: charcoal blooms and charcoal iron skelp for boiler tubes, wrought iron skelp for pipe; annual cap., 30,000 tons.

Birdsboro Dept., Birdsboro, Pa.: blt. 1848; 16 double puddling fur.; 4 heat. fur.; 20" 3-h. 1-st. muck mill; 24" skelp and nail plate mill; 75 cut nail mach. Electro plate galvanizing plant. Fuel, bit. coal. Product: muck bar, annual cap., 20,000 tons; nail plate and skelp, 18,000 tons; cut nails, plain, galvanized and hardened, 100,000 kegs.

Pottstown Dept., Pottstown, Pa.: blt. 1884-85, rebt. 1894; 14 double puddling fur.; 2 squeezers; 2 gas-fired heat. fur.; three 21" 2-h. 1-st. muck mills; 22" 3-h. 1-st. grooved nail plate mill; 105

cut nail mach. Fuel, bit. coal. Product: muck bar, annual cap., 15,000 tons; nail plate, 12,000 tons; cut nails, 200,000 kegs.

Columbia Mill, Columbia, Pa.: blt. 1854; 14 double puddling fur.; two 2-d. heat. fur.; 18" 3-h. 2-st. muck mill; 10" 3-h. 5-st. skelp mill. Product: muck bar, annual cap., 15,000 tons; skelp, 18,000 tons.

Susquehanna Mill, Columbia, Pa. was dismantled in 1923.

Reading Iron Co. owns the capital stock of Thomas Iron Co., see description under that head; also iron ore rights in Albemarle, Amherst and Nelson Counties, Va. aggregating 3,400 acres; Big Pond furnace lands in Cumberland County, Pa., 5,923 acres; and 6,780 acres coal lands at Kimmelfton, Somerset County, Pa. with producing mine, capacity 300 tons per day.

READING STEEL CASTING CO., 929 Connecticut Ave., Bridgeport, Conn.

Inc. June 18, 1920 in New York. Capital stock: com., no par value, auth. and issued 25,000 shares; pref. auth. \$2,500,000, issued \$150,000.

Walter B. Lashar, P.; W. T. Morris, V. P. & G. M.; W. M. Wheeler, Sec.; W. F. Wheeler, T.; William C. Ettershank, A.; D. L. Billings, C.; R. T. Hatch, G. S. M.; C. G. Williams, P. A.; at Bridgeport, Conn. W. N. Crafts, G. S.; at Reading, Pa. C. H. Blanchard, G. S. at Hartford, Conn.

Sales offices:

Boston, Mass., 35 Hartford St.
Chicago, Ill., 208 South La Salle St.
Cleveland, Ohio, 1597 St. Clair St.
Detroit, Mich., 252 Jefferson Ave., West.
Hartford, Conn., 556 Capitol Ave.
Houston, Texas, Union National Bank Bldg.
New York, N. Y., 63 Greene St.
Philadelphia, Pa., 147 North 7th St.
Pittsburgh, Pa., 3rd Ave. & Ross St.
Rochester, N. Y., 810 Wilder Bldg.
San Francisco, Calif., 198 Second St.
Tulsa, Okla., 8 North Cheyenne St.

Company has plants at Hartford, Conn., and Reading, Pa., for manufacture of valves, fittings and steel castings.

Works at Reading, Pa.: blt. 1901, f. o. May 1, 1901; 2 Tropenas converters (2-ton), abandoned 1925; 2 A. O. H. fur. (20-ton). Machine shop.

Product: steel castings for sale and for own use, annual cap., 24,000 tons; steel valves, fittings and kindred products.

Works at Hartford, Conn: brass and iron valves and kindred products.

Redcliff Rolling Mills & Bolt Co., Ltd., Medicine Hat, Alberta, Canada.
Laidlaw & Blanchard, Medicine Hat, Alberta, Canada, Solicitors,
hold for bondholders Redcliff Rolling Mills at Redcliff, for sale or
lease.

Redcliff Rolling Mills, Redcliff, Alberta: blt. 1912-13, f. o. Oct.,
1913, first steel Mar. 1, 1919; 1 B. O. H. fur. (20-ton); 3 single
puddling fur.; 1 squeezer; three 3-d. heat. fur.; 2 cont. heat. fur.;
18" 3-h. 1-st. muck; 14" 3-h. 1st. and 10" 3-h. 4st. Belgian mill.
(Idle).

Product: steel ingots, annual cap., 15,000 tons; merchant bars,
15,000 tons.

Red River Co., Clarksville, Tenn. formerly operated under lease
Helen Furnace, Clarksville, Tenn. owned by Red River Furnace
Co. Operation of furnace was discontinued in October, 1920.

Red River Furnace Co., Clarksville, Tenn. sold Helen Furnace, Clarks-
ville, April 17, 1923 to J. J. Gray, Jr. Furnace was renamed
Clarksville Furnace and operated by J. J. Gray, Jr. in 1923.
Dismantled in 1924.

REED FOUNDRY & MACHINE CO., Kalamazoo, Mich.

Works at Kalamazoo: 1 converter (1½-ton) installed 1914, f. o.
July, 1914. Fuel, coke. Machine shops.

Product: steel castings for sale and own use, annual cap., 1,250
tons; general machinery castings, machines, engines, etc.

REEVES MANUFACTURING CO. (The), Dover, Tuscarawas Co., Ohio.

Inc. Oct., 1900 in Ohio. Capital stock: com., par value \$100,
auth. \$1,000,000, issued \$791,900.

H. C. Greer, P.; at Pittsburgh, Pa. S. J. Reeves, V. P.; J. A.
Krantz, Sec. & P. A.; A. J. Krantz, T. & G. M.; R. C. Clemens,
A.; Clem Schamp, G. S.; R. G. Harrison, G. S. M.; at Dover.

Dover Rolling Mill, Dover: blt. 1903-04, f. o. Oct. 13, 1904; two
3-d. coal-fired heat. fur.; 1 rotary squeezer; 7" 3-h. 2-st. muck
bar; 20" 3-h. 2-st. skelp and 20" 2-h. 1-st. finishing; 8 comb. sheet
and pair fur.; 8 hot black sheet mills (28" x 34" to 28" x 44");
2 trains of cold rolls (4-mill train with 3-st. 24" x 44" and 1-st.
24" x 52", tandem 3-mill train 24" x 52"); 2 Mesta pickling mach.;
13 box annealing fur.; 5 galvanizing pots. Roll black sheets
14 to 32 gauge, 18" to 36" wide up to 144" long.

Charcoal Forge: blt. 1903-04, f. o. Oct. 19, 1904; 15 knobbling
fires; one 5,000-lb. steam hammer. Charcoal blooms from scrap
for own use and for sale, annual cap., 15,000 tons.

Product: charcoal iron blooms, skelp; black and galvanized iron
and steel sheets; annual cap., 15,000 tons blooms, 10,000 tons
skelp; 42,000 tons black sheets, 30,000 tons galvanized sheets.

RELIANCE COKE & FURNACE CO., Frick Bldg., Pittsburgh, Pa.

Inc. April 1, 1922 in Pennsylvania. Capital stock: com., no par value, auth. 12,000 shares; pref. 6% cum. auth. \$1,200,000.

E. W. Mudge, P.; C. B. Ferree, V. P. & T.; R. G. Campbell, Sec.; E. W. Pogue, A.; O. G. Leichter, G. M.

Brand: Claire (pig iron).

Reliance Coke & Furnace Co. acquired April 1, 1922, Claire Furnace Co., The Ella Furnace Co. and Reliance Coke Co.

Claire Furnace, Sharpsville, Pa.: 1 stack, 87' x 20' 9", blt. 1869, rebt. 1920-21 and blown in Nov. 20, 1922, relined 1925; three 2-pass side comb. stoves, 100' x 22'; 3 steam blowing engines (2 Mesta, 1 Weimer), 84,480 cfm., 30-lbs. rated pressure; 5 Erie City water-tube boilers, 2,390 H. P.; 1 Heyl & Patterson single-strand pig casting mach. Beehive coke from own ovens: Lake ore. (Claire Furnace Co. to April 1, 1922).

Product: bessemer, basic, foundry and malleable pig iron, annual cap., 150,000 tons.

Ella Furnace, West Middlesex, Pa. was abandoned in 1925.

Company owns approximately 1,000 acres coal lands at Denbo, Washington County, Pa., annual cap., 500,000 net tons coal; also 236 Belgian rectangular coke ovens at Denbo, annual cap., 250,000 net tons coke.

RELIANCE STEEL CASTING CO., 28th & Smallman Sts., Pittsburgh, Pa.

Inc. 1910 in Pennsylvania. Capital stock: com. \$200,000.

Joseph A. Kelly, P.; E. A. Blasdell, V. P., T. & G. M.; C. N. Snowdon, Sec.

Works at 28th and Smallman Sts., Pittsburgh: blt. 1910, f. o. Jan. 2, 1911; 1 A. O. H. fur. (20-ton) fuel, oil and gas. Machine shop.

Product: steel castings for own use and for sale, annual cap., 6,000 tons; alloy steel castings (nickel, chrome, manganese, zirconium, special H. D. vanadium); castings for blast furnace tops; crushing machinery, rolls and gear blanks.

REPLOGLE STEEL CO., Wharton, N. J.

Inc. Oct. 30, 1919 in Delaware. Capital stock: com., no par value, auth. and issued 500,000 shares.

Leonard Peckitt, P.; at 11 Broadway, New York. L. P. Ross, V. P.; S. H. Bell, Sec.; L. R. Dohm, T.; H. J. Briney, S.; L. H. McClellan, P. A.; at Wharton.

Replogle Steel Company acquired Wharton Steel Co. Nov. 6, 1919 and the company was merged in Replogle Steel Co. Mar. 1, 1922. In April, 1922, Replogle Steel Co. acquired a large interest in the capital stock of Empire Steel & Iron Co. In August, 1924, Replogle Steel Company acquired a controlling interest in the capital stock of Warren Foundry & Pipe Co. which owns the entire capital stock of Crane Iron Works.

Wharton Furnaces, Wharton, N. J.: 2 stacks, "A" (formerly No. 2), 90' x 21' 6", blt. 1900-01, rebt. 1920, relined 1925; "B" (formerly No. 3), 90' x 21' 6", blt. 1902-03, rebt. 1920, relined 1925; 8 Roberts stoves 100' x 20'; 6 Southwark steam blowing eng., 320,000 cfm., 30-lbs. rated pressure; 20 Sterling water-tube boilers, 7,000 H. P.; 2 Pittsburgh Coal Washer Co. double-strand pig casting mach.; Dwight & Lloyd sintering plant for magnetic concentrates and residuum, annual cap., 180,000 tons. Conn. coke: New Jersey magnetite concentrates and Lake ores. Product: foundry, basic, bessemer, malleable and forge pig iron, annual cap., 360,000 tons.

Crane Furnace, Crane Iron Works, Catasauqua, Pa.: 1 stack, 90' x 20' 5", blt. 1850, last rebt. 1920 (formerly known as No. 2; No. 1 was dismantled in Dec. 1922); 4 Roberts stoves (three 90' x 18', one 100' x 20'); 3 steam blowing eng. (2 Southwark, 1 Mesta), 50,000 cfm., 30-lbs. rated pressure; 6 water-tube boilers (2 Sterling, 4 B. & W.) 3,000 H. P.; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach. Conn. coke: New York and New Jersey magnetite and Lake ores. Product: foundry and basic pig iron, annual cap., 135,000 tons.

Oxford Furnace, Oxford, N. J.: 1 stack, 75' x 16', blt. 1871, last remod. 1908; 4 Roberts stoves, 85' x 18'; 2 General Electric turbo-blowers, 40,000 cfm., 20 lbs. rated pressure; 6 water-tube boilers (2 Sterling, 4 B. & W.) 3,000 H. P. Conn. coke: New York and New Jersey magnetite and Lake ores. Product: foundry and basic pig iron, annual cap., 80,000 tons.

Total annual cap. (4 furnaces), 575,000 tons pig iron.

Replogle Steel Co. owns directly or through subsidiaries the Replogle, Mt. Hope, Oxford and Hibernia iron ore mines in New Jersey, annual cap., 480,000 tons iron ore; also limestone quarry at Ogdensburg, N. J., annual cap., 180,000 tons.

REPUBLIC IRON & STEEL CO., Republic Bldg., Youngstown, Ohio.

Inc. May 3, 1899 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$30,000,000; pref. 7% cum. auth. and issued \$25,000,000; bonds \$21,338,500.

John A. Topping, Ch. at 17 Battery Place, New York, N. Y. Thomas J. Bray, P.; Harry L. Rownd, V. P.; J. Wilbert Deetrick, V. P.; Richard Jones, Jr., Sec.; Herman M. Hurd, T.; F. M. Cardwell, A.; P. J. Gordon, G. S.; Wilbur B. Topping, G. S. M.; S. H. Hedges, P. A.; at Youngstown.

Sales offices:

Birmingham, Ala., E. M. Barnes, Woodward Bldg.

Boston, Mass., Norman W. Foy, Massachusetts Trust Bldg.

Buffalo, N. Y., Allan Hills, White Bldg.

Chicago, Ill., H. W. Craig, McCormick Bldg.

Cincinnati, Ohio, M. E. McKee, First Natl. Bank Bldg.

Cleveland, Ohio, W. E. Collier, Hanna Bldg.
 Dallas, Texas, William Anderson, Wilson Bldg.
 Detroit, Mich., C. S. Powers, Buhl Bldg.
 New York, N. Y., W. H. Oliver, 17 Battery Place.
 Philadelphia, Pa., C. S. McKinley, Morris Bldg.
 Pittsburgh, Pa., C. T. Johnston, Oliver Bldg.
 St. Louis, Mo., Charles G. Schott, Federal Reserve Bank Bldg.
 San Francisco, Calif., A. G. Brown, Rialto Bldg.

Product: pig iron; blooms, billets, slabs and sheet bars; merchant bars, concrete bars, shapes, small I beams, channels, sheared plates, skelp, pipe; steel sheets and sheet metal products; turn-buckles, spikes, bolts, nuts, washers, etc.

Haselton Furnaces, Youngstown, Ohio: 5 stacks; No. 1, 74' 5 1/4" x 16' 9 3/4", blt. 1867, last rebt. 1913, relined 1922; No. 2, 85' 11 3/4" x 21', blt. 1905-06, rebt. 1919; No. 3, 90' 3" x 20' 6", blt. 1905-06, rebt. 1923; No. 4, 90' 4 1/2" x 21' 6", blt. 1910-11, rebt. 1914, relined 1924; No. 5, 95' x 22' 8", blt. 1916-17, relined 1924; 19 two-pass stoves (1 side-comb. 80' x 18' and 3 side-comb. 101' 10" x 22' at No. 1; 4 center-comb. 97' 10" x 22' at No. 2; 4 center-comb. 97' 10" x 22' at No. 3; 4 center-comb. 101' 10" x 22' at No. 4; 3 side-comb. 101' 10" x 22' at No. 5); 12 long crosshead steam blowing eng. and 3 turbo-blowers (318,500 cfm.) 18-lbs. rated pressure; 35 water-tube boilers (31 Sterling, 4 B. & W.) 22,090 H. P. serve also electric power house, water softening plant and part of open-hearth department; 2 Uehling double-strand pig casting mach.; 2 slag granulating pits for No. 1 and No. 5, slag from the other furnaces goes in ladles to pits of Standard Slag Company. By-product coke: Lake ore. Product: basic and bessemer pig iron, annual cap., 900,000 tons.

Hannah Furnace, Youngstown, Ohio was abandoned in 1925.

Atlantic Furnace, New Castle, Pa. was abandoned and dismantled in 1925.

Hall Furnace, Sharon, Pa. was dismantled in 1922-23.

Pioneer Furnaces, Thomas, Ala.; 3 stacks, No. 1, 85' x 20', blt. 1886-88, rebt. 1915, relined 1919; No. 2, 85' x 20', blt. 1889-90, rebt. 1916, relined 1921; No. 3, 85' x 20', blt. 1901-02, rebt. 1910, relined 1918; 12 Massicks & Crooke stoves 85' x 21'; 14 vertical steam blowing eng. (196,000 cfm.); 24 water-tube boilers, 10,600 H. P. provide also electric power for coal mines; 1 Uehling double-strand pig casting mach. By-product coke: local red and brown ores. Product: foundry pig iron, annual cap., 360,000 tons.

Total pig iron capacity (8 furnaces) 1,260,000 tons.

Open-Hearth Steel Works, Youngstown, Ohio: blt. 1910-13, first steel June 12, 1911; 15 B. O. H. fur. (80-ton), fuel, prod. gas, coke oven gas and tar, 28 Hughes gas producers; one 400-ton mixer; eight 4-hole soaking pits; 5 cont. heat. fur., fuel, prod. gas and coke oven gas; 40" 2-h. 1-st. blooming; 21" 2-h. 4-st. contin-

uous billet; 18" 2-h. 6-st. continuous; 16" 2-h. 8-st. and 14" 2-h. 3-st. continuous merchant; 32" and 22" x 90" 3-h. sheared plate mill. Product: steel ingots, annual cap., 900,000 tons; semi-finished rolled products, 730,000 tons; finished rolled products, 191,600 tons including 141,000 tons skelp or sheared plates and 50,600 tons merchant and concrete bars.

Bessemer Steel Works, Youngstown, Ohio: blt. 1900, f. o. Sept. 10, 1900; 2 bessemer converters (10-ton); 2 mixers (one 250-ton, one 800-ton); 5 cupolas; five 4-hole soaking pits; 40" 2-h. 1-st. blooming mill; 22½" 2-h. 4-st. horizontal and 18" 2-h. 1-st. vertical continuous roughing for sheet bars, billets and skelp; 19" 2-h. 6-st. horizontal, 16" 2-h. 2-st. vertical continuous finishing for sheet bars, billets and skelp. Product: steel ingots, annual cap., 400,000 tons; semi-finished hot rolled products, 325,000 tons.

Brown-Bonnell Works, Youngstown, Ohio: orig. blt. 1846; 9 cont. heat. fur. prod. gas-fired; 20" 3-h. 2-st. and 20" 2-h. 1-st. skelp; 12" 2-h. 2-st. horizontal, 12" 2-h. 3-st. vertical, 10" 2-h. 6-st. continuous skelp; 12" 3-h. 4-st. and 12" 2-h. 1-st. hand bar mill; 10" 2-h. 2-st. cont., 10" 3-h. 6-st. hand, 10" 2-h. 1-st. hand merchant; 10" 2-h. 4-st. cont., 10" 3-h. 3-st. hand, 10" 2-h. 1-st. hand merchant; 10" 2-h. 4-st. cont., 8" 3-h. 3-st. hand, 8" 2-h. 2-st. hand merchant; 10" 3-h. 1-st., 10" 2-h. 1-st., 8" 3-h. 5-st. hoop; 10" 2-h. 5-st. cont., 7" 3-h. 3-st. hand, 7" 2-h. 2-st. hand merchant. Spike and washer dept. Product: merchant and concrete bars, spike rods, skelp, annual cap., 535,000 tons; small railroad and boat spikes, 46,080 kegs; washers, 20,760 kegs.

Tube Works, Youngstown, Ohio: blt. 1909-10, f. o. Apr., 1910; 4 butt-weld fur.; 6 lap-weld fur. (3 bending, 3 welding); butt-weld pipe ½" to 3", lap-weld 2" to 16"; 2 galvanizing pots. Product: black pipe, annual cap., 270,000 tons; galvanized pipe, 43,000 tons.

Niles Works, Niles, Ohio: blt. 1909, f. o. Nov. 1, 1909; 9 sheet and 12 pair fur.; 8 comb. sheet and pair. fur.; 18 hot black sheet mills (ten 28" x 34" to 60", eight 30" x 38" to 64"); 11 stands cold rolls (1 train of 5-st. 26" x 48" and 1-st. 26" x 66"; 1 train of 4-st. 24" x 48" and 1-st. 24" x 66"); 11 box annealing fur.; 2 Mesta pickling mach.; 6 galvanizing pots. Product: black sheets, annual cap., 100,000 tons; galvanized sheets, 42,850 tons.

Sylvan Works, Moline, Ill.: blt. 1894; 1 cont. heat. fur. coal-fired; 12" merchant mill with 16" 3-h. 1-st. rail slitting and roughing, 12" 3-h. 6-st. and 12" 2-h. 1-st. finishing rail rerolling mill. Product: merchant bars, concrete bars, agricultural shapes, annual cap., 64,000 tons.

Indiana Bolt Works, Muncie, Ind. Product: bolts, nuts and washers, annual cap., 17,000 tons. Brazil wrought iron open hexagonal turnbuckles, annual cap., 1,200 tons.

Inland Works, East Chicago, Ind., were sold May 1, 1925 to Republic Rolling Mill Corporation.

In the Lake Superior Region, the Company operates the Cambria and Lillie mines on the Marquette Range and the Franklin, Pettit and Kinney mines on the Mesabi Range and the Plumer mine on the Gogebic Range. The Company owns the Minckler and Sherwood properties at Iron River, Michigan. The Company owns a one-half interest in the Union Ore Company, Mesabi Range, and the Townsite mine, Gogebic Range, and interests in the Mahoning Ore and Steel Company, Rugby Iron Company and Vermillion Mining Company operating mines on the Mesabi and Vermillion Ranges.

In Alabama, the Company has large holdings of red and brown iron ore lands and operates the following mines on this property: Alfretta (4 slopes), Raimund (3 slopes), Houston, Tannehill and Spaulding. The Company owns a one-half interest in the Potter Ore Company.

By-Product Coke Works, Youngstown, Ohio: 204 Koppers by-product coke ovens, annual capacity, 1,000,000 net tons coke. By-product recovery plant and Otto benzol plant, annual capacity, 3,600,000 gallons light oil.

The Company owns coking coal lands in Fayette County, Pa., and also owns 1,900 acres of coal lands in Washington County, Pa.

In Alabama, the Company owns and operates Warner, Sayreton, Thompson and Palos mines. The Company is building 57 Koppers by-product coke ovens and benzol plant at its blast furnaces at Thomas, Ala. The new plant will be placed in operation in October, 1925, annual capacity 360,000 net tons coke.

The Company owns an interest in the Lake Erie Limestone Company and the Union Limestone Company which operates quarries near Carbon, Pa.; also the Dale quarry at Dale, Ala., and Dolomite quarry at Thomas, Ala.

The Company owns an interest in the Cambria Steamship Company which is engaged in the ore carrying trade on the Great Lakes.

The Company also owns an interest in the Republic Supply Company and the General Water Company.

REPUBLIC ROLLING MILL CORPN., 110 South Dearborn St., Chicago, Ill.

Inc. May, 1925 in Illinois. Capital stock: com. auth. \$500,000, issued \$401,000.

William Wuthenow, P.; Earl J. Smith, V. P.; Richard G. Jones, Sec. & T.; Thomas Howe, G. S. M.; at Chicago. J. J. Lynch, A.; J. G. Bladholm, G. S.; at East Chicago.

Works at East Chicago, Ind.: blt. 1889; 13 double puddling fur; 1 squeezer; 6 oil-fired heat. fur. (5-d.); 21" 3-h. 2-st. muck bar; 18" 3-h. 2-st. and 18" 2-h. 1-st. bar; 14" 3-h. 2-st. roughing, 9" 3-h. 3-st. strand, 9" 2-h. 1-st. finishing bar; 12" 2-h. 1-st. roughing

8" 3-h. 3-st. strand, 8" 2-h. 1-st. finishing bar mill. (Republic Iron & Steel Co. to May, 1925).

Product: iron and steel merchant bars, concrete bars, annual cap., 70,000 tons.

RHODE ISLAND CRUCIBLE STEEL CO., 604 South Main St., Providence, R. I.

Org. 1910; inc. 1921 in Rhode Island. Capital stock: com., par value \$100, auth. \$100,000, issued \$86,000.

George C. Hagstrom, P., G. M. & P. A.; Fred. H. Webb, V. P. & Sec.; Carl W. Sverker, T.

Works at 604 South Main St., Providence: blt. 1919, f. o. Jan. 8, 1920; four 8-pot crucible fur. idle and capacity dormant; 1 Vom Baur electric fur. (2-ton).

Product: electric steel castings for sale, annual cap., 600 tons.

Richmond Iron Works, Richmond Furnace, Mass. Richmond Furnace, a charcoal stack, orig. blt. 1829, last active 1923 was abandoned in 1925. Furnace will be dismantled.

RIVERDALE ROLLING MILL CO., 136th St. & I. C. R. R., Riverdale, Chicago, Ill.

Inc. Aug. 30, 1917 in Illinois. Capital stock: com., par value \$100, auth. and issued \$60,000.

H. A. Lanman, P., G. M. & P. A.; W. P. Cooper, G. S.; F. D. Barber, G. S. M.; at Riverdale, Chicago. C. B. Lanman, Sec.; at Steubenville, Ohio. E. B. Lanman, T.; at East Chicago, Ind.

Works at 136th St. and I. C. R. R., Riverdale: two 4-d. oil-fired heat. fur.; 18" 3-h. 1-st. muck; 10" 3-h. 5-st. merchant bar mill.

Product: iron and steel merchant bars; annual cap., 400 tons scrap bar, 12,000 tons finished rolled products.

RIVERSIDE STEEL CASTING CO., Lincoln Highway & Passaic River, Newark, N. J.

Inc. Apr. 7, 1905 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$100,000; pref. 8% cum. auth. \$25,000, issued \$20,000.

John W. Ferguson, P.; at Paterson, N. J. J. Phillip Bird, V. P.; at 1 Exchange Place, Jersey City, N. J. J. Smylie Kinne, Sec. & T.; Carl Jernstrom, G. S.; A. E. Painter, G. S. M.; D. C. Guldner, P. A.; at Newark.

Works at South Kearny, N. J.; blt. 1911, f. o. Dec. 1911; 2 A. O. H. fur. (one 5-ton, one 10-ton) fuel, oil.

Product: steel castings for sale, annual cap., 2,400 tons.

ROANE IRON CO., Chattanooga, Tenn.

Inc. 1868 in Tennessee. Capital stock: com., par value \$100, auth. and issued \$1,000,000; bonds \$400,000.

E. O. Wells, P.; M. Chamberlain, Sec. & T.; Chas. T. Culbert, A.;

at Chattanooga. L. D. Tyson, V. P.; at Knoxville, Tenn. Howard Howie, G. S.; William Collum, P. A.; at Rockwood, Tenn.
Sales agents: Domhoff & Joyce Co. at Cincinnati, Chicago, Cleveland and St. Louis.

Brand: Rockwood (pig iron).

Rockwood Furnaces, Rockwood, Tenn.: 2 stacks, No. 1, 80' x 18', blt. 1893, rebt. 1901; No. 2, 80' x 18', blt. 1901; 9 hot blast stoves, 3-pass McClure type, 80' x 20'; 6 Macbeth steam blowing eng., 86,000 cfm.; 11 water-tube boilers (5 Woods, 3 Rust, 3 Wheeler) 3,750 H. P.; 1 Pittsburgh Coal Washer Co. single-strand pig casting mach. Rockwood coke: local red ore, brown ore from North Carolina and Georgia. Iron foundry (600 tons). Company owns coal mine and 190 beehive coke ovens at Rockwood, annual cap., 85,000 net tons coke; limestone quarry 2 miles south of furnace, annual cap., 30,000 tons; red iron ore mine at Rockwood (annual cap., 120,000 tons) and Chamberlain, Tenn. (annual cap., 40,000 tons).

Product: foundry pig iron, annual cap., 140,000 tons.

Roanoke Consolidated Iron Corporation, Roanoke, Va. sold Graham Furnace, Nov. 26, 1922 to Graham Furnace Corporation, Winchester, Ky.

ROBERTSON (W. F.) STEEL & IRON CO., Elm & Second Sts., Cincinnati, Ohio.

W. F. Robertson, sole owner.

Works at Marietta, Ohio: blt. 1918; 6 sheet and 6 pair fur.; 6 hot black plate mills (26" x 28" to 38"); 4 cold mills in 2 trains of 2 sets each (38"); 2 triple box annealing fur.; 1 Mesta pickling mach.; 10 tinning sets for coke tinplates. Fuel, nat. gas or oil. Roll black plate 14 to 40 gauge in full tin mill sizes. (Hudson Sheet & Tinplate Co. to Sept. 1, 1923).

Product: black plate for tinning, annual cap., 25,000 tons; tin mill blue and full finish tin mill black plate; tinplates, 500,000 base boxes.

ROBESONIA IRON CO., 19 South 12th St., Philadelphia, Pa.

Inc. Sept. 5, 1923 in Pennsylvania succeeding The Robeson Iron Co. Ltd., incorporated Apr. 1, 1885. Capital stock: com., no par value, auth. and issued 3,000 shares.

William C. Freeman, P.; Allen Butler, V. P.; Robert C. Lea, Sec. & T.; at Philadelphia. L. C. Crewe, V. P.; at Robeson, Pa.

Sales agents: Robert C. Lea & Co., 19 South 12th St., Philadelphia, Pa.

Brand: Robeson (pig iron).

Robeson Furnace, Robeson, Pa.: 1 stack, 80' x 18', blt. 1885, last rebt. 1915, relined 1923 and blown in Oct. 10, 1923; 4 stoves (2 McClure 85' x 18', 2 Roberts 90' x 18'); 3 Weimer steam blowing

eng. 34,000 cfm., 12-lbs. rated pressure; 7 water-tube boilers (6 B. & W., 1 Wheeler) 2,200 H. P.; 1 Pittsburgh Coal Washer single-strand pig casting mach.; Greenawalt sintering plant for Cornwall ore and flue dust, annual cap., 40,000 tons. Conn. coke: Cornwall ore. Company owns and operates iron ore mine at Miners Village near Cornwall, Pa.

Product: low-phosphorus, malleable and foundry pig iron, annual cap., 75,000 tons.

Robeson Iron Co., Ltd. (The) was taken over in October, 1923 by a new company known as Robeson Iron Co.

ROCKAWAY ROLLING MILL (The), Rockaway, N. J.

Inc. 1904 in New Jersey. Capital stock: com., par value \$100, auth. \$100,000, issued \$22,700.

Edward Ehlers, P.; F. K. Ehlers, Sec. & T.

Rockaway Rolling Mill: blt. 1900-01; three 3-d. coal-fired heat. fur.; 14" 3-h. 1-st. roughing, 10" 3-h. 4-st. guide mill. (Rockaway Rolling Mills Corpn. to Sept. 3, 1924).

Product: iron and steel merchant bars, reinforcing bars, angles, double refined iron, staybolt iron; annual cap., 15,000 tons.

Rockaway Rolling Mills Corporation, Rockaway, N. J. Plant acquired Sept. 3, 1924 by The Rockaway Rolling Mill.

ROCK RUN IRON CO. (The), Rock Run, Cherokee Co., Ala.

Inc. 1920 in Alabama. Capital stock: com., no par value, auth. and issued 6,000 shares.

G. M. Leslie, P. & T.; C. T. Strawbridge, V. P.; L. H. Link, Sec.; at Fort Wayne, Indiana. J. M. Garvin, V. P. & G. M. at Rock Run, Ala.

Sales agents: The Domhoff & Joyce Co., Cincinnati, Ohio; Rogers, Brown & Crocker Bros., Inc., 21 East 40th St., New York, N. Y.

Brand: Rock Run (pig iron).

Rock Run Furnace, Rock Run: 1 stack, 53' 6" x 10', blt. 1873-74, last rebt. 1907; one 32-pipe cast iron stove; 2 steam blowing engs, 15,000 cfm., 6 to 10-lbs. pressure; 6 flue boilers, 450 H. P. Charcoal: local brown and red ore. Brown iron ore mines at Langdon, Ala. (annual cap., 10,000 tons) and Cedartown, Ga. (annual cap., 15,000 tons); 37 charcoal kilns, annual cap., 1,200,000 bushels. (Bass Foundry & Mach. Co. to July 1, 1920).

Product: warm blast charcoal foundry pig iron, annual cap., 18,000 tons.

Blue Ridge or Tallapoosa Furnace, Tallapoosa, Ga., was abandoned in 1923.

ROEBLING'S (JOHN A.) SONS CO., 612 South Broad St., Trenton, N. J.

Inc. Jan. 1, 1876 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$34,500,000.

Washington A. Roebling, P.; F. W. Roebling, Jr., 1 V. P. & T.; Siegfried Roebling, 2 V. P.; Austin C. Cooley, Sec.; A. W. Brown, A.; W. A. Anderson, G. M.; Charles C. Cooley, G. S. M.; Joseph W. Gaskill, P. A.

Sales offices:

Atlanta, Ga., 85 Avon Ave., Oakland City.
 Boston, Mass., 93 Pearl St.
 Chicago, Ill., 165 West Lake St.
 Cleveland, Ohio, 701 St. Clair Ave., N. E.
 Los Angeles, Calif., 216 South Alameda St.
 New York, N. Y., 83 Liberty St.
 Philadelphia, Pa., 223 Arch St.
 Pittsburgh, Pa., Sandusky & Robinson Sts., N. S.
 Portland, Ore., 14th & Lovejoy Sts.
 San Francisco, Calif., 624 Folsom St.
 Seattle, Wash., 900 First Ave., South.

Product: iron, steel and copper rods and wire, wire strand and rope; flat wires, insulated wires and cables, wire cloth.

Kinkora Works, Roebling, N. J.: blt. 1905-06; 5 B. O. H. fur. (40-ton); 7 A. O. H. fur. (one 40-ton, six 30-ton); fuel in O. H., oil; 12 cont. heat. fur. (8 ingot, 4 billet) oil-fired; 35" 3-h. 1-st blooming; continuous rod mill with 18" and 16" 2-h. 9-st. cont., 14" to 11" 2-h. 11-st. looping; rod mill with 18" 3-h. 1-st. roughing, 18" 2-h. 1-st. bull, 14" to 11" 2-h. 11-st. looping. Wire mill: 50 cont. wire drawing mach.; 2,060 wire drawing blocks for wire .001" to .460"; 11 galvanizing pans, tempering and annealing shops. Wire cloth and netting shops. Product: steel ingots, annual cap., 150,000 tons (75,000 tons basic, 75,000 tons acid); blooms and billets, 128,000 tons; wire rods, 110,000 tons; hot rolled strip, 12,000 tons; plain wire, 90,000 net tons, galvanized wire, 35,000 net tons; wire cloth and netting.

Upper Works, Trenton, N. J.: est. 1848; rod mill abandoned in 1923; wire mill: 1,608 wire drawing blocks, 110 continuous wire drawing mach., tinning and heat treating depts.; cold rolling mills, 261 cold rolling mach. 4½" to 12" for flat strip; wire rope shops and insulating depts. Product: plain wire; wire rope, insulated wire and flat wire. High and low-carbon cold rolled flat strip, 30,000 tons.

Buckthorn Works, Trenton, N. J.: rebt. 1915; wire rope insulated wire and cable depts.

Total annual cap.; 150,000 tons ingots (75,000 tons B. O. H., 75,000 tons A. O. H.); 110,000 tons wire rods, 12,000 tons hot rolled strip, 30,000 tons cold rolled strip; 90,000 net tons plain wire, 35,000 net tons galvanized wire.

ROEHM STEEL ROLLING MILLS (The), 3289 Beaufait Ave., Detroit, Mich.

Inc. Jan., 1925 in Michigan.

Thomas F. Thornton, P. & G. M.; F. A. Whittman, V. P.; Laurence S. Roehm, Sec. & T.; P. W. Brown, G. S.

Works at Michigan and Hubbard Aves., Detroit, Mich.: f. o. May, 1882; four 5-d. coal-fired heat. fur.; 18" 3-h. 2-st. and 18" 2-h. 2-st. bar; 12" 3-h. 1-st. roughing and 9" 3-h. 2-st. and 9" 2-h. 2-st. bar; 1 hand pickling tank. (Railway Steel-Spring Co. to Jan. 12, 1925).

Product: merchant and concrete bar, hoops and bands, annual cap., 18,000 tons.

ROGERS BROWN IRON CO., 312 Erie County Bank Bldg., Buffalo, N. Y.

Inc. Dec. 27, 1909 in New York. Capital stock: com., par value \$100, auth. and issued \$5,000,000; pref. 7% cum. auth. \$3,000,000, issued \$2,550,000; bonds \$8,202,900.

William A. Rogers, Ch.; William S. Rogers, P.; J. C. Agnew, V. P.; C. R. Holzworth, V. P.; C. H. Byron, Sec. & P. A.; H. T. Clement, T.; Edward Cornelius, A. Sec. & A. T.; D. G. Williams, C.; William B. Murphy, G. S.

Sales agents: Rogers, Brown & Crocker Bros., Inc., Cincinnati, Ohio. Brand: Susquehanna (pig iron).

Furnaces at Buffalo, N. Y.: 4 stacks, 85' x 19' 6", No. 1 and No. 2 blt. 1902-04, No. 3 and No. 4 blt. 1910-12; 16 Kennedy centre comb. stoves, 101' 10" x 22'; 7 steam blowing eng. (4 Allis-Chalmers vertical, 3 Wm. Todd horizontal) 217,200 cfm., 15 to 23 lbs. rated pressure; 48 B & W water-tube boilers, 14,400 H. P.; 1 Uehling double-strand pig casting mach. Coke: Lake ore.

Product: foundry and malleable pig iron, annual cap., 500,000 tons. Company operates Hiawatha and Rogers Mines at Iron River, Mich., annual cap. 1,650,000 tons iron ore; also 800 coke ovens (600 beehive, 200 rectangular) at Sykesville and Tyler, Pa., annual cap., 400,000 net tons coke.

ROME IRON MILLS, Inc., 17 East 42nd St., New York, N. Y.

Inc. May 1, 1917 in New York. Capital stock: com., no par value, auth. 20,000 shares, issued 15,500 shares.

E. M. Zehnder, P.; at 1025 Electric St., Scranton, Pa. B. A. Clements, V. P. & G. S. M.; Lee Deutsch, Sec. & T.; F. N. Foote, C.; at 17 East 42nd St., New York. J. M. Strawbridge, G. S.; at Rome, N. Y.

Works at Rome, N. Y.: orig. blt. 1868; 14 double puddling fur.; one rotary squeezer; five 3-d. reverb. coal-fired heat. fur.; one 20" 3-h. 2-st. muck; 18" 3-h. 3-st. bar, 12" 3-h. 3-st. guide, 8" 3-h. 5-st. guide. Fuel, bit. coal. Machine shop.

Product: staybolt and engine bolt iron; annual cap., 23,000 tons muck bar; 20,000 tons staybolt and engine bolt iron.

ROSS-MEEHAN FOUNDRIES, Chattanooga, Tenn.

Inc. Jan. 1889 in Tennessee. Capital stock: com., par value \$100, auth. and issued \$1,260,000.

G. F. Meehan, P. & G. M.; Henry Bond, Sec. & T.; Frank M. Robbins, V. P. & G. M.; Carl White, Jr., M. S.; T. D. Buford, P. A.; at Chattanooga. James T. Healy, V. P.; at Chicago.

Sales offices: 325 West Bldg., Houston, Texas, and Chattanooga, Tenn.

Brands: Certified (malleable iron castings); Meehanite Metal (castings).

Works at Chattanooga: gray iron fdy. blt. 1889, malleable iron fdy. blt. 1892, steel fdy. blt. 1914: 1 Tropenas converter (2,200-lb.); 1 Moore Lectromelt electric fur. (3-ton) added 1924; electric annealing ovens. Gray iron foundry annual cap., 20,000 tons gray iron, 15,000 tons Meehanite metal and semi-steel, 5,000 tons white iron castings; malleable foundry, annual cap., 12,000 tons.

Product: steel castings for sale, annual cap., 8,000 tons (3,000 tons converter, 5,000 tons electric).

ROTHERT PROCESS STEEL CO., 551 Dexter Horton Bldg., Seattle, Wash.

Fred W. Hastings, Receiver.

Works at 622 Othello St., Seattle: 1 electric fur. (2-ton) for steel; 1 electric fur. (2-ton) for melting alloys.

Product: steel ingots, annual cap., 550 tons; alloy steel ingots; carbon and alloy tool steels.

ROXBURY STEEL CASTING CO., 53 Gerard St., Boston, Mass.

Inc. 1921 in Massachusetts. Capital stock: com., par value \$1, auth. and issued \$50,000; pref. 7% auth. \$25,000, none issued.

Isaac E. Sexton, P.; at Everett, Mass. P. C. Rogers, T. & G. M.; at 53 Gerard St., Boston, Mass.

Works at 53 Gerard St., Boston (leased from G. W. & F. Smith): 2 Tropenas converters (2,000-lb.); 1 A. O. H. fur. (15-ton) fuel, oil; 2 cupolas. (Union Steel Casting Co. to Sept. 12, 1921.)

Product: steel castings for sale, 1-lb. to 20,000-lb., annual cap., 9,500 tons (2,500 tons converter, 7,000 tons A. O. H.).

Russell Shovel Co., Aliquippa, Pa. Works at Aliquippa dismantled in 1922 and equipment transferred to 62nd and Butler Sts., Pittsburgh, Pa., adjoining plant of Hubbard & Co., where machinery was reerected and operated by Hubbard & Co. under name of The Russell Shovel Co.; see Hubbard & Co.

St. Louis Coke & Chemical Co., Granite City, Ill. was taken over in order to effect changes in capitalization, as of May 1, 1923, by St. Louis Coke & Iron Co.

St. Louis Coke & Iron Co., Granite City, Ill. was placed in hands of receiver in 1924, and taken over by Midland Coke & Iron Corporation in November, 1925.

St. Louis Frog & Switch Co., St. Louis, Mo., was acquired in 1923 by Southern Manganese Steel Co., a subsidiary of American Manganese Steel Co.

ST. LOUIS SCREW CO., 6900 North Broadway, St. Louis, Mo.

Est. 1887; inc. Apr. 15, 1911 in Missouri. Capital stock: com., auth. \$1,250,000, issued \$750,000; pref. 7% cum. auth., and issued \$750,000; bonds \$400,000.

E. J. Miller, P. & G. M.; Edward H. Miller, V. P.; George Gruenewald, Sec. & T.; A. E. Krug, G. S. M.; G. A. Renard, P. A.

Rolling Mill at St. Louis: blt. 1914-15, f. o. May, 1915; 4 heat. fur. (two 4-d., two 5-d.); 5 single and 1 double busheling fur.; 1 squeezer; 2 forge fires; 20" 3-h. 2-st. muck; 18" bar with 2-st. 3-h. and 1-st. 2-h.; 14" 3-h. 2-st. roughing, 9" finishing with 2-st. 3-h. and 2-st. 2-h.; one 500-lb. hammer. Fuel, pulverized coal.

Product: merchant bars, bolt and nut rods for own use and for sale, annual cap., 45,000 tons; rounds, squares $\frac{3}{8}$ " to 3", flats to 8" wide.

Bolt, Nut and Screw Plant. Product: bolts, nuts, screws and washers, annual cap., 20,000 tons.

ST. LOUIS STEEL CASTING CO., 100 Malt St., St. Louis, Mo.

Inc. Nov. 29, 1923 in Missouri. Capital stock: com., auth. and issued \$90,000.

Julius Walter, P.; J. J. Herklotz, V. P.; W. F. Exner, Sec. & G. M.; Fred G. Langbein, T. & P. A.

Works at 100 Malt St., St. Louis: blt. 1924, f. o. May 1, 1924; 1 bessemer converter ($3\frac{1}{2}$ -ton); 1 cupola.

Product: steel castings, annual cap., 3,000 tons; alloy steel castings (nickel); general commercial and special alloy castings.

St. Maurice Foundries, Ltd., Three Rivers, P. Q., Canada. Modified bessemer converter was not installed at this plant. Company makes gray iron and semi-steel castings, annual cap., 3,000 tons.

Salisbury Iron Corporation, Lime Rock, Conn. Company abandoned in 1925 Canaan Furnaces, East Canaan, Conn., consisting of 2 charcoal blast furnaces and a third blast furnace partly built.

Salt Lake Iron & Steel Co., Salt Lake City, Utah, abandoned its steel foundry in 1924; steel castings last made in 1922.

SAVANNAH STEEL CORPN., Savannah Bank & Trust Bldg., Savannah, Ga.

Inc. in Georgia. Capital stock: com., par value \$100, auth. and issued \$200,000.

G. Leonard Allen, P. & T.; W. F. Penniman, Sec.

Works at Port Wentworth, Savannah: building, construction begun Dec. 1924; one 4-d. oil-fired regen. heat. fur.; 16" 3-h. 3-st. and 10" 3-h. 5-st. merchant mills.

Product: merchant and concrete bars, annual cap., 30,000 tons.

SAWBROOK STEEL CASTINGS CO. (The), Lockland, Ohio.

Inc. Oct. 28, 1923 in Ohio. Capital stock: com., par value \$100, auth. \$300,000, issued \$210,000.

E. S. Sawtelle, P.; A. E. Anderson, V. P.; at Cincinnati, Ohio. E. L. Brooks, Sec. & T.; W. F. Wright, G. S.; T. H. Pyle, G. S. M.; A. A. Stoppel, A. Plant M.; at Lockland.

Works at Shepherd & McWhorter Sts., Lockland, Ohio: blt. 1924, f. o. Aug. 1, 1924; 1 Lectromelt electric fur. (1½-ton).

Product: steel castings for sale, annual cap., 1,800 tons; castings for gears and general miscellaneous castings.

SCHONTHAL CO. (The Joseph), Columbus, Ohio.

Works at Joliet, Ill. (leased; owned by Briggs & Turivas): blt. 1907, f. o. Aug. 27, 1908; two 4-d. heat. fur.; 12" 3-h. 1-st. and 8" 3-h. 4-st. bar mill. (Frederic Cowin & Co. to Nov. 29, 1922; then acquired by Briggs & Turivas and leased to Illinois Rolling Mill Co., 1924-25; leased to The Joseph Schonthal Co. July, 1925).

Product: merchant bars, annual cap., 12,000 tons.

SCRANTON BOLT & NUT CO., Scranton, Pa.

Inc. May 17, 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$750,000; bonds \$250,000.

E. M. Zehnder, P.; C. E. Brodhead, V. P. & G. S. M.; J. R. Lerch, Sec.; L. M. Horton, T.; J. E. Rushmore, G. S.

Sales offices:

Baltimore, Md., Twilley & Hoffa, Knickerbocker Bldg.

Boston, Mass., G. W. Denyven, 141 Milk St.

New York, N. Y., 393 Seventh Ave.

Philadelphia, Pa., Service Supply Corpn., 20th & Venango Sts.

Richmond, Va., Taylor Brothers, 616 East Main St.

Brand: Diamond Z.

Works at Scranton, Pa.: blt. 1899; 7 double puddling fur.; 1 squeezer; six 3-d. coal-fired heat. fur.; 20" 3-h. 1-st. muck; 18" 3-h. 2-st. bar; 12" 3-h. 5-st. bar; 14" 3-h. 1-st. and 10" 3-h. 5-st. bar; 16" 2-h. 1-st. universal mill for bars to 10" wide. Bolt and nut factory.

Product: muck bar, annual cap., 15,000 tons; iron and steel merchant bars, 40,000 tons; light rails; bolts and nuts 15,000 tons; spikes, 40,000 kegs.

Scranton Electric Steel Co., Scranton, Pa. acquired December 1, 1920 steel foundry formerly owned and operated by Spencer Heater Co. Plant was destroyed by fire Mar. 3, 1921. Company did not rebuild and went into liquidation.

SCULLIN STEEL CO., 6700 Manchester Ave., St. Louis, Mo.

Inc. July 7, 1899 in Missouri. Capital stock: com., no par value, auth. 100,000 shares, issued 60,000 shares; pref. 7% cum. auth. \$3,000,000, issued \$1,500,000.

Harry Scullin, P.; G. L. L. Davis, V. P.; V. C. Turner, V. P. & T.; E. F. Judge, Sec.; W. W. Leck, G. S. (rolling mill); H. E. Doerr, G. S. (foundry); H. M. Dryer, P. A.; at St. Louis. F. L. Norton, V. P.; at New York, N. Y.

Sales offices:

Chicago, Ill., E. S. Wortham, McCormick Bldg.

Houston, Texas, J. W. Cain & Co., 2nd Natl. Bank Bldg.

New York, N. Y., F. L. Norton, V. P., Grand Central Terminal.

Richmond, Va., W. L. Jefferies, Jr., Mutual Bldg.

St. Louis, Mo., G. L. L. Davis, V. P., Railway Exchange Bldg.

St. Paul, Minn., B. W. Parsons, Merchants Bank Bldg.

Works at 6700 Manchester Ave., St. Louis: 11 B. O. H. fur. (30-ton), fuel, oil; rolling mill added 1920; f. o. Aug. 31, 1920; 1 cont. oil-fired heat. fur.; 24" 2-h. 1-st. and 3-h. 4-st. structural; 16" 3-h. 1-st. and 12" 3-h. 4-st., 12" 2-h. 1-st. Belgian mill.

Product: steel ingots and steel castings for own use and for sale, annual cap., 175,000 tons (100,000 tons ingots, 75,000 tons castings); merchant bars and structural shapes, annual cap., 76,000 tons; squares and rounds to 6", beams and channels 4" to 9", angles to 6" x 6", flats to 12" wide; tie plates, 24,000 tons; steel castings for bolsters and side frames of freight cars, general miscellaneous castings.

Seaboard Steel & Manganese Corp., New York, N. Y. went into hands of receiver in 1919. Temple Furnace, Temple, Pa. was sold by order of court on March 14, 1921 to E. G. Tillotson, Chairman Noteholders Committee. The Temple Furnace Co. was incorporated to take over and operate the property and title was acquired in November, 1921.

Seamless Tube Co. of Wisconsin, Appleton, Wis.

Inc. July 17, 1923 in Wisconsin. Building plant for manufacture of cold drawn seamless tubes 3" dia. and smaller, 1924-25. Company being reorganized and recapitalized (Sept. 1, 1925).

Seattle Smelting Co., Seattle, Wash.

Works at Seattle: 1 electric fur. (3-phase, 450 K. W.) for ferro-alloys, f. o. 1918. Idle since 1918. Formerly made ferro-manganese. Works closed.

Seidel, J. A., Marysville, Pa.

Perry Forge, Marysville: blt. 1862; 7 forge fires; 1 hammer (2,000-lb.). Fuel, charcoal. Idle.

Product: charcoal blooms from scrap for sale, annual cap., 4,000 tons.

SELLERS MANUFACTURING CO., 4651 Pensacola Ave., Chicago, Ill.

Inc. Apr. 24, 1895 in Illinois. Capital stock: com., par value \$100, auth. \$400,000, issued \$300,000; pref. 6% non-cum. auth. \$400,000, issued \$150,000.

J. M. Sellers, P.; G. M. Hogan, 1 V. P. & Sec.; at 1927 Illinois Merchants Bank Bldg., Chicago. E. P. Waud, T.; at 410 North Michigan Ave., Chicago. R. A. Van Houten, V. P. & G. M.; W. H. Siegmund, A. T.; F. Knaus, G. S.; H. J. Stumpf, P. A.; at 4651 Pensacola Ave.

Sales office: 1927 Illinois Merchants Bank Bldg., Chicago.

Brand: Sellers Anchor Bottom (wrought iron tie plates).

Works at 4651 Pensacola Ave., Mayfair, Chicago: blt. 1907; 6 rotary busheling fur.; three 5-d. oil-fired reverb. heating fur.; 24' 3-h. 1-st. and 24' 3-h. 3-st. bar mills; 1 ham. 6,000-lb. Finishing Dept. for tie plates, angle bars, etc.

Product: scrap bar, annual cap., 50,000 tons; tie plate bars, 50,000 tons.

SENECA IRON & STEEL CO., P. O. Box 485, Buffalo, N. Y.

Inc. Oct. 18, 1906 in New York. Capital stock: com. auth. and issued \$3,000,000.

Hugh Kennedy, P.; James S. Paterson, V. P.; K. L. Griffith, V. P. & G. M.; T. W. Paterson, Sec.; Alex. Paterson, T.; Joseph Loesch, A.; M. B. Sunderland, G. S.; A. T. Hunt, G. S. M.; H. E. Mitchell, P. A.

Sales offices: 2-108 General Motors Bldg., Detroit, Mich.; 1572 Woolworth Bldg., New York, N. Y.

Brand: Seneca (sheets).

Works at Blasdel, Erie Co., N. Y.: blt. 1907, f. o. Oct. 7, 1907; 13 sheet and 13 pair fur., 5 comb. sheet and pair fur.; 18 hot black sheet mills, 29" x 52"; 16 stands cold rolls, 26" x 52"; 2 Mesta pickling mach., 8 plunger pickling tanks; 32 box annealing fur. Roll black sheets 10 to 30 gauge inc., to 48" wide and 144" long.

Product: black sheets, annual cap., 110,000 tons. Sheets for enameling, japanning, deep drawing, automobile and furniture stock.

Shapiro (Morris) and Roney (John D.), Baltimore, Md., acquired works at Baltimore and 8th Sts., Baltimore, formerly owned by Tungsten Products Co. of Maryland, Feb. 11, 1920 and dismantled the works in 1920.

SHARON FOUNDRY CO., P. O. Box 541, Sharon, Pa.

Inc. Mar. 2, 1902 in Pennsylvania. Capital stock: com., par value \$100, auth. \$500,000, issued \$492,000.

W. W. Shilling, P. & G. M.; Joseph H. Kennedy, Sec., T. & G. S.; C. J. Butler, G. S. M.; P. P. Allen, P. A.

Works at Wheatland, Pa.: blt. 1903, f. o. Dec. 18, 1905; 2 A. O. H. fur. (20-ton) fuel, oil.

Product: steel castings for sale, annual cap., 10,000 tons; castings for steel works and blast furnaces, general machinery castings.

SHARON STEEL HOOP CO., Sharon, Pa.

Inc. Oct. 8, 1900 in Pennsylvania. Capital stock: com., par value \$50, auth. \$15,000,000, issued \$14,297,000; pref. 8% cum. auth. \$1,500,000, issued \$999,700; bonds \$4,000,000.

Severn P. Ker, P.; H. T. Gilbert, V. P.; T. P. Draper, V. P. & G. S.; J. Reid Evans, Sec. & T.; G. R. Johnston, A.; B. E. Kibbee, G. S. M.; A. D. Troth, P. A.; at Sharon. L. W. Smith, V. P.; at Union Bank Bldg., Pittsburgh.

Sales offices:

Chicago, Ill., McCormick Bldg.

Cincinnati, Ohio, Union Trust Bldg.

Cleveland, Ohio, Union Trust Bldg.

Detroit, Mich., General Motors Bldg.

Kansas City, Kansas, 622 Reliance Bldg.

Minneapolis, Minn., H. G. Thompson, Security Bldg.

Montreal, Canada, Hugh Russell & Sons, Ltd., Royal Ins. Bldg.

New Orleans, La., Gay Sullivan & Co., 207 N. Peters St.

New York, N. Y., 342 Madison Ave.

Philadelphia, Pa., Packard Bldg.

St. Louis, Mo., E. R. Hensel Steel & Copper Co., Planters Bldg.

San Francisco, Calif., 807 Monadnock Bldg.

Toronto, Canada, Hugh Russell & Sons, Ltd., Excelsior Life Bldg.

Product: pig iron; steel ingots; slabs, blooms, billets and sheet bars; hoops, bands and strips; black sheets and blue annealed sheets.

Total annual cap., 135,000 tons pig iron, 360,000 tons ingots, 300,000 tons semi-finished; 200,000 tons hoops, bands and strips, and 90,000 tons black and blue annealed sheets.

Lowellville Works, Lowellville, Ohio:

Mary Furnace: 1 stack, 81' x 19', blt. 1845, last rebt. 1898, relined 1925; 5 Kennedy 2-pass side-comb. stoves (four 80' x 18', one 80' x 20'); 3 Tod high-pressure steam blowing eng., 40,000 cfm.; 8 water-tube boilers (4 Rust, 3 Wheeler, 1 Sterling) 3,750 H. P.;

1 Heyl & Patterson single-strand pig casting mach.; slag granulating pit and slag crushing plant, annual cap., 72,000 tons. Conn. coke: Mesabi ore. Gray iron foundry (1,200 tons). Product: basic pig iron, annual cap., 135,000 tons.

Steel Works: blt. 1914-15, f. o. Sept. 1, 1915; 6 B. O. H. fur. (75-ton) fuel prod. gas; 25 gas prod. (7 mechanical, 18 hand); four 4-hole soaking pits; 34" 2-h. 1-st. reversing blooming; 21" 2-h. 8-st. (5 flat, 3 edging) Morgan continuous sheet bar and billet mill. Product: steel ingots, annual cap., 360,000 tons; blooms, billets, slabs and sheet bars, 300,000 tons.

Sharon Works, Sharon, Pa.: blt. 1900-01, f. o. Mar. 15, 1901; 18" 2-h. 3-st. and 14" 3-h. 5-st. strip; 12" 3-h. 4-st. and 10" 3-h. 5-st. hoop; 12" 3-h. 4-st. and 9" 3-h. 5-st. hoop; 8" 3-h. 5-st. hoop; 2 overhead travelling pickling mach., 2 cont. hand pickling tanks; 2 galvanizing pots, annual cap., 5,000 tons galv. hoops. Product: hoops, bands and strips, annual cap., 200,000 tons.

Youngstown Works, Youngstown, Ohio: blt. 1901, f. o. Sept. 4, 1901; 3 pair and 6 comb. sheet and pair fur.; 3 jobbing mills (one 30" x 60", two 29" x 48"); 6 hot black sheet mills (two 29" x 32", two 29" x 36", two 29" x 42"); 6 sets cold rolls (2 sets 26" x 48" on hot mill train; and 4 sets, two 26" x 48", one 26" x 56", one 26" x 66"); 4 box annealing fur.; 3 blue annealing fur.; 1 plunger pickling mach., 2 hand pickling tanks. Galvanizing equipment dismantled in 1924. Product: black and blue annealed sheets, annual cap., 90,000 tons.

SHARPSVILLE FURNACE CO. (The), 2119 Oliver Bldg., Pittsburgh, Pa.

Sharpsville Furnace, Sharpsville, Pa.: 1 stack, blt. 1847, last rebt. 1922-23; 80' x 20'; 4 stoves; 3 steam blowing eng. (40,000 cfm.); 5 water-tube boilers, 2,100 H. P.; one Slag Rock Company single-strand pig casting mach. Coke: Lake ore.

Product: basic, bessemer, malleable and foundry pig iron, annual cap., 120,000 tons.

Shawinigan Foundries, Ltd., Shawinigan Falls, Quebec, Canada.

Electric furnace plant for production pig iron from scrap destroyed by fire in December, 1921 and not rebuilt. Company makes gray iron, brass and bronze castings.

Sheffield Iron Corporation, New York, N. Y. Company placed in hands of receivers in Dec., 1920. Blast furnace at Sheffield, Ala., iron ore properties at Russellville, Ala., and West Point, Tenn., and beehive coke oven plant at Jasper, Ala., were sold to Sloss-Sheffield Steel & Iron Co., April 30, 1923. Furnace is now known as Furnace No. 6.

SHEFFIELD STEEL CORPORATION, Sheffield Station, Kansas City, Mo.

Inc. Oct. 12, 1925 in Delaware. Successor to Kansas City Bolt & Nut Company. Capital stock: com., no par value, auth. 100,000 shares, issued 75,000 shares; pref. 7% cum. auth. \$2,500,000, issued \$1,250,000; bonds \$1,500,000.

W. L. Allen, P. & G. M.; R. L. Gray, V. P. & G. S.; L. L. Middleton, Sec. & P. A.; H. R. Warren, T.; W. M. Agin, A.; Ernest Baxter, G. S. M.

Sales offices:

Kansas City, Mo., 1114 Land Bank Bldg.

St. Louis, Mo., 2064 Railway Exchange Bldg.

Tulsa, Okla., 820 Mayo Bldg.

Works at Sheffield Station, Kansas City, Mo.: blt. 1887-88, f. o. Jan., 1889; steel plant added 1919-20, f. o. Nov., 1920; 2 B. O. H. fur. (60-ton), fuel, oil; 5 oil-fired heat. fur. (two 4 d., 3 cont.); 24" 3-h. 3-st. billet and sheet bar; merchant mill with 12" 2-h. 4-st. cont., 10" 3-h. 5-st. and 8" 2-h. 2-st.; bar iron and rail slitting mill with 16" 3-h. 3-st., 10" 3-h. 4-st. and 10" 3-h. 3-st.; 32" x 46" to 84" 2-h. jobbing plate mill; 1 blue annealing fur.; 2 hammers (800-lb. and 1,500-lb.). Bolt and nut factory.

Product: steel ingots, annual cap., 80,000 tons; semi-finished hot rolled products, 72,000 tons including 50,000 tons billets and 22,000 tons sheet bars; finished hot rolled products, 100,000 tons, including 60,000 tons merchant and concrete bars, 22,000 tons spike, bolt, nut and rivet rods, and 18,000 tons black and blue annealed sheets; spikes, 60,000 kegs; large machine bolts 60,000 kegs; large rivets, 10,000 kegs; nuts, 30,000 kegs; forged products, 4,000 tons.

SHELBY IRON CO., Shelby, Ala.

Inc. 1890 in New Jersey. Capital stock: com., par value \$100, issued \$1,000,000.

M. W. Bush, P.; Horace Hammond, V. P.; at Birmingham, Ala.

J. G. Hendrick, Sec., T. & G. M.; at Shelby, Ala.

Sales agent: Hammond Iron Co., Birmingham, Ala.

Brand: Shelby (warm blast charcoal pig iron).

Shelby Furnaces, Shelby, Ala.: 2 stacks, No. 1, 60' x 14', blt. 1863, rebt. 1899; No. 2, 60' x 14', blt. 1873; 6 iron pipe stoves, 18' x 12': 3 steam blowing eng. (30,000 cfm.); 5 water-tube boilers, 1,500 H. P. Charcoal: local brown ores.

Product: warm blast charcoal pig iron, annual cap., 50,000 tons.

The company owns brown ore mine at Shelby, Ala., annual cap., 60,000 tons; also 30 charcoal kilns at various points, annual cap., 1,000,000 bushels charcoal.

SHENANGO FURNACE CO. (The), 812 Oliver Bldg., Pittsburgh, Pa.

Inc. Jan. 23, 1906 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$5,000,000.

William P. Snyder, Jr., P.; C. D. Dyer, V. P.; George L. Collord, V. P. & G. M.; H. M. Wilson, Sec.; F. A. Demms, T.; at Pittsburgh. E. J. Maney, G. M. Ore Mines at Duluth, Minn. P. O. Menke, G. S. Blast Furnaces at Sharpsville, Pa. W. G. Srodes, G. S. Coal and Coke Works at Wilpen, Pa. C. J. Peck, M. of Steamships at Cleveland, Ohio.

Sales agents: W. P. Snyder & Co., Pittsburgh, Pa.

Brand: Shenango (pig iron, iron ore, coal and coke).

Shenango Furnaces, Sharpsville, Pa.: 2 stacks; No. 1, 87' 10" x 21', blt. 1906, rebt. 1914, relined 1919; No. 3, 94' x 23' 3", blt. 1895, last rebt. 1922: 8 McClure 3-pass stoves (four 85' x 21' at No. 1, four 85' x 19' 6" at No. 3); 7 vertical long crosshead steam blowing eng., 90,000 cfm., 25 lbs. rated pressure; 16 water-tube boilers (8 Wheeler, 7 Sterling, 1 B. & W.) 6,300 H. P.; 2 double-strand pig-casting mach. (1 Heyl & Patterson, 1 Slag Rock Mach.); slag crushing plant, annual cap., 260,000 tons hard slag. Coke: Lake ore. No. 4 Furnace dismantled in 1923.

Product: bessemer, basic, malleable and foundry pig iron, annual cap., 410,000 tons.

Iron ore properties: On the Mesabi Range owns lease of the Shenango, Webb, Whiteside and Virginia mines; annual cap., 2,000,000 tons; South Tener Mine as reserve. On the Cuyuna Range owns 680 acres undeveloped ore lands.

Steamship properties: Owns the steamers: Shenango (12,000 tons); Col. James M. Schoonmaker (14,000 tons); and William P. Snyder, Jr. (14,000 tons). Associated interests own the stock of the Shenango Steamship Co. with steamers; W. P. Snyder (10,000 tons) and Wilpen (11,000 tons).

Coal and coke properties: Owns 650 acres of coal lands at Wilpen, Westmoreland Co., Pa., annual cap., 400,000 tons. Also 100 beehive coke ovens at Wilpen, annual cap., 90,000 net tons coke.

Limestone properties: Owns interest in capital stock of Lake Erie Limestone Properties with large quarries at Lowellville, Ohio, annual cap., 250,000 tons.

SIMMONS CO., 110 East 42nd St., New York, N. Y.

Inc. Dec. 1915 in Delaware. Capital stock: com., no par value, auth. 1,000,000 shares, issued 984,529 shares; pref. 7% cum., auth. \$20,000,000, issued \$7,000,000, outstanding \$698,400; bonds \$428,000.

Z. G. Simmons, P.; A. H. Lance, Senior V. P.; G. H. Milne, V. P.; James F. Leahy, V. P.; Alfred Terrell, V. P.; J. H. Hirsch, V. P.; Milton H. Pettit, V. P.; Grant G. Simmons, Sec. & T.; Z. G.

Simmons, Jr., A. Sec. & A. T.; O. G. Pritchard, A.; G. L. Ahrens, C.

Sales offices in principal cities of United States and Canada.

The company and its subsidiaries operate plants at Kenosha, Wis., San Francisco, Calif., Atlanta, Ga., Elizabeth, N. J., Richmond, Va., and at Montreal, Toronto, Winnipeg, Vancouver and Calgary in Canada for the manufacture of metal beds, springs, cots, couches, mattresses and bedroom furniture. The company operates 2 rolling mills, described below, for the production of parts for its own use:

Kenosha Works, Kenosha, Wis.: rolling mill blt. 1916, f. o. Aug. 15, 1916; 1 cont. pulv. coal-fired rail reheating fur.; 16" 3-h. 1-st. rail slitting operated 2-h.; 12" 3-h. 4-st. and 12" 2-h. 2-st. rail rerolling mill; 9" 3-h. 2-st. and 9" 2-h. 2-st. rail rerolling mill. Product: rail steel bars, light angles and skelp for own use only, annual cap., 36,000 tons.

San Francisco Works, San Francisco: blt. 1900, rolling mill added 1906-07, f. o. Mar. 4, 1907; 1 oil-fired cont. heat. fur.; 12" 3-h. 7-st. bar mill. Product: rail steel bars, light angles and bands for own use only, annual cap., 7,000 tons.

Simonds Manufacturing Co., Fitchburg, Mass. was taken over Dec. 28, 1922 by a new corporation, Simonds Saw and Steel Co., which merged the Simonds Manufacturing Co. and the Simonds File Co.

SIMONDS SAW & STEEL CO., 470 Main St., Fitchburg, Mass.
Inc. 1868; reinc. Dec. 21, 1922 in Massachusetts. Capital stock: com., no par value, auth. and issued 51,000 shares; bonds \$800,000. Formerly Simonds Manufacturing Co.

Alvan T. Simonds, P.; Thomas F. Howarth, V. P.; Harlan K. Simonds, T.; Gifford K. Simonds, G. M.; John E. Kelley, G. S. M.; at Fitchburg. Henry A. Sargent, V. P.; at Portland, Ore.

Sales offices:

Boston, Mass., 1350 Columbia Road.
Chicago, Ill., 127 South Green St.
Detroit, Mich., Mt. Elliott & East Fort Sts.
Lockport, N. Y.
Memphis, Tenn., 239 Court Ave.
Montreal, P. Q., Canada, 95 St. Remi St.
New Orleans, La., 420 Canal St.
New York, N. Y., 109 Lafayette St.
Portland, Ore., 85 First St.
San Francisco, Calif., 10 Natoma St.
St. John, N. B., Canada, 55 Water St.
Seattle, Wash., 410 Occidental Ave.
Vancouver, B. C., Canada, 554 Beatty St.

Company manufactures saws, machine knives, files, high grade steel sheets and bars; manufacturing plants at Fitchburg, Mass.; Chicago, Ill.; Lockport, N. Y. (steel works); and Montreal, Canada. The steel plant at Lockport is described below.

Lockport Works, Lockport, N. Y.: blt. 1910-11; two 30-pot crucible steel fur., fuel prod. gas, 13 gas prod. (5 Morgan, 8 Swindell); 2 Heroult electric fur. (6-ton) f. o. Sept. 7, 1911; 19 heat. fur. (six 2-d., nine 3-d., three 4-d., one 6-d.), 5 reheat. fur. (three 2-d., one 3-d., one 4-d.), fuel prod. gas, oil, coal and coke; 16" 3-h. 4-st. and 2-h. 1-st. bar mill; 10" 3-h. 4-st. and 2-h. 1-st. bar mill; 24" x 54" 2-h. 3-st. sheet roughing mill; 24" x 72" 2-h. 1-st. circular saw finishing; 30" x 90" 2-h. 2-st. large circle mill; 26" x 30" 2-h. 2-st. sheet mill; 20" x 32" 2-h. 2-st. sheet mill; 18" x 34" 2-h. 2-st. cross cut mill; 15" x 22" 3-h. 2-st. and 2-h. 2-st. band mill; 2-box annealing fur.; 2 wooden pickling tanks; 4 steam hammers (1,000-lb. to 14,000-lb.). Roll plates for knives, etc. $\frac{3}{8}$ " to $1\frac{1}{8}$ " thick, 4" to 16" wide; hot rolled sheets for saws, knives, etc. to .025 minimum thickness, $3\frac{3}{4}$ " to 30" wide; circular saw plates, $\frac{1}{8}$ " to $\frac{3}{8}$ " thick, 6" to 88" diameter.

Product: steel ingots, annual cap., 11,100 tons (3,600 tons crucible, 7,500 tons electric); alloy steel ingots (nickel, chrome, tungsten, vanadium); saw plate, knife plate, etc., for own use; high grade carbon and alloy sheets and bars for sale; annual cap., 8,500 tons rolled products.

SINGER MANUFACTURING CO., Singer Bldg., New York, N. Y.

Musconetcong Furnace, Stanhope, N. J.: 1 stack, 80' x 17', blt. 1871, rebt. 1900; 3 stoves 79' x 19'; 2 steam blowing eng.; 1 water-tube, 12 tubular boilers, 970 H. P. Coke: N. J. magnetite, Cuban, Lake and other ores. Product: foundry pig iron for own use, annual cap., 50,000 tons.

Rolling Mill, Elizabethport, N. J.: blt. 1903; heat. fur.; hot and cold trains; annealing fur.; wire drawing blocks. Product: merchant bars, rounds, flats, etc. for own use only, annual cap., 15,000 tons.

SIVYER STEEL CASTING CO., Milwaukee, Wis.

Inc. Jan. 1909 in Wisconsin. Capital stock: com., par value \$100, auth. \$700,000, issued \$506,250; pref. non cum. auth. \$200,000, issued \$135,200.

F. L. Sivyver, P.; C. R. Messinger, V. P.; R. J. Doty, V. P.; L. S. Peregoy, V. P.; B. Fleeger, T. & G. S. M.

Brand: Sivyver Steel (castings).

Works at 37th Ave. and Mitchell St., Milwaukee: blt. 1910, f. o. Apr. 3, 1910; 2 electric fur. (one 3-ton Pittsburgh, one 1-ton Snyder) first electric steel Apr. 19, 1916; Tropenas converter (1-ton) abandoned.

Product: steel castings for sale, annual cap., 5,000 tons. Alloy

steel castings (nickel, chrome, vanadium). Steel castings for automobiles, auto trucks, tractors and general machinery.

Sizer Forge Co., Buffalo, N. Y. was merged in Sizer Steel Corporation, June 1, 1922, the plant at Solvay, N. Y. purchased from the Hammond Steel Co. was also taken over by the new company.

Sizer Steel Corporation, Buffalo, N. Y. Went into receivership July 3, 1923. Operated temporarily by the receivers J. T. Dillon, C. B. Porter and S. F. Hancock. Court ordered sale of properties at public auction and plants were sold Mar. 22, 1924 to John N. Pistell, agent for first mortgage bondholders committee, 700 Ellicott Sq., Buffalo.

Plant at Solvay, N. Y. acquired from Hammond Steel Co., April 28, 1922 and merged with Sizer Forge Co., in Sizer Steel Corporation, June 1, 1922 was included in above sale to bondholders committee, and was subsequently resold to Hurwitz Brothers, Syracuse, N. Y. and dismantled.

Works at 244 Larkin St., Buffalo still held for resale by bondholders committee. Reported sold to Aurie Johnson, Buffalo.

Works at 244 Larkin St., Buffalo: rebld. 1917-19; 2 Heroult electric fur. (10-ton); 2 hydraulic forging presses (1,000-ton, 1,500-ton); 5 steam hammers (2,500-lb. to 12,000-lb.); machine shop.

SKAGIT STEEL & IRON WORKS, Sedro-Woolley, Wash.

Inc. Nov. 1, 1914 in Washington. Capital stock: com., par value \$50, auth. and issued \$15,000; bonds \$50,000.

D. G. McIntyre, P. & G. M.; S. S. McIntyre, V. P.; W. E. Berry, Sec. & T.; E. B. Devener, P. A.

Sales agent (Canada): Vancouver Machinery Depot, Vancouver, B. C.

Brands: Skagit (steel castings); M. A. C. (gasoline power equipment).

Company manufacturers and repairs logging equipment, donkey hoists, locomotives, rail cars, etc.

Works at Sedro-Woolley: blt. 1913, f. o. June 14, 1913; 1 Greene electric fur. (2½-ton). Gray iron and brass foundry, annual cap., 600 tons gray iron and semi-steel castings largely for own use. Tropenas converter (1-ton) idle and for sale. Rennerfelt electric fur. (1,750-lb.) installed 1918 superceded by Greene fur. in 1920.

Product: electric steel castings for own use and for sale, annual cap., 1,200 tons. Castings for logging equipment.

Slatington Iron & Steel Co., New York, with works at Slatington, Pa., was acquired by Robert Grant, Feb. 1, 1921. As Robert Grant was sole stockholder of Slatington Iron & Steel Co. the transfer was nominal. The works at Slatington were leased Jan. 1, 1922 for a term of 5 years to Foley Steel Co. Operated by Foley Steel

Co. until Oct. 1, 1923, when lease was given up, company being in bankruptcy.

Sligo Furnace Co., St. Louis, Mo. Blast furnace at Sligo, Mo. sold in November, 1922 and was dismantled early in 1923.

Sligo Iron & Steel Co., New York, N. Y. was placed in hands of receiver in June, 1921 and filed involuntary petition in bankruptcy in Sept., 1921. By order of court Sligo Rolling Mills, Connellsville, Pa. was sold at public auction, Feb. 8, 1922. The plant was acquired Feb. 28, 1922 by Lockhart Iron & Steel Co., Pittsburgh and placed in operation Sept. 18, 1922. It was destroyed by fire April 3, 1924 and has not been rebuilt.

SLOSS-SHEFFIELD STEEL & IRON CO., American Trust Bldg., Birmingham, Ala.

Inc. Aug. 16, 1899 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$10,000,000; pref. 7% non-cum. auth. \$10,000,000, issued \$6,700,000.

Hugh Morrow, P.; F. W. Miller, V. P.; Russell Hunt, Sec., T. & Southern S. M.; Hugh Franklin, A.; W. B. Dowell, P. A.

Sales offices:

Chicago, Ill., David Evans, 3720 South Kedzie Ave.

Cincinnati, Ohio, Domhoff & Joyce Co.

New York, N. Y., Debevoise Anderson Co., 114 Liberty St.

St. Louis, Mo., C. A. Fitzgerald, C-21 Railway Exchange.

Brands: Sloss, Noala, Etowah (pig iron); Sunbeam (coke).

Product: foundry pig iron, total annual cap., 820,000 tons.

City Furnaces, Birmingham, Ala.: 2 stacks, No. 1, 86' 7½" x 17' 8", blt. 1881-82, last rebt. 1913-14, relined 1923; No. 2, 85' 9½" x 17' 8", blt. 1822, last rebt. 1906, relined 1923; twelve 4-pass stoves (four 85' x 20', eight 70' x 20'); 7 Allis-Chalmers vertical steam blowing eng. (70,000 cfm.) 14 to 18 lbs. rated pressure; 12 Rust water-tube boilers, 4,800 H. P. By-product coke; local red ore. Product: foundry pig iron, annual cap., 200,000 tons.

North Birmingham Furnaces, North Birmingham, Ala.: 2 stacks; No. 3, 82' 3" x 16' 9", blt. 1887-88, rebt. 1901, relined 1917; No. 4, 82' 3" x 16' 9", blt. 1887-89, rebt. 1919; 11 four-pass stoves (eight 85' x 20', three 70' x 20'); 7 Allis-Chalmers vertical steam blowing eng. (60,000 cfm.) 14 to 18 lbs. rated pressure; 15 Sterling and Rust water-tube boilers, 4,150 H. P. serve also electric power station for coal and ore mines. By-product coke: local red ore. Product: foundry pig iron, annual cap., 180,000 tons.

Sheffield Furnaces, Sheffield, Ala.: 2 stacks, No. 5, 81' x 18', (formerly Hattie Ensley No. 2), blt. 1916, relined 1923; No. 6, 78' x 18' (Sheffield Iron Corpn. to Apr. 30, 1923) blt. 1887-88, rebt. 1917-18, relined 1924; 6 four-pass stoves 75' x 20' at No. 5; 6 two-pass stoves 100' x 22' at No. 6; 4 steam blowing eng. (3 Allis

Chalmers, 1 Dixon) at No. 5; 3 steam blowing eng. (2 Allis-Chalmers, 1 Weimer) at No. 6; 9 water-tube boilers (3 Sterling, 4 Cahall, 2 Wickes) 2,580 H. P. at No. 5; 5 Sterling water-tube boilers, 2,500 H. P. at No. 6. By-product coke: Russellville brown ore. Product: foundry pig iron, annual cap., 180,000 tons. Furnace No. 7, formerly known as Hattie Ensley No. 1, Sheffield, Ala. was abandoned in 1925.

Furnace No. 8 (formerly Philadelphia Furnace), Florence, Ala.: 1 stack, 76' 6" x 17' 4", blt. 1887-91, rebt. 1906, relined 1922; 6 four-pass stoves, 75' x 20'; 4 vertical steam blowing eng. (2 Allis, 2 Witherow) 60,000 cfm., 14 to 18 lbs. rated pressure; 7 (Rust, Cahall, Sterling) water-tube boilers, 2,250 H. P. By-product coke: Russellville brown ore. Product: foundry pig iron, annual cap., 80,000 tons.

Furnaces Nos. 9 and 10 (formerly Etowah Furnaces, The Alabama Co. to Dec. 1, 1924), Gadsden, Ala.: 2 stacks; No. 9, 82' x 17', blt. 1905, f. o. June 7, 1907, relined 1924; No. 10, 85' x 17' blt. 1902-03, f. o. Aug. 22, 1903, rebt. 1918; 10 four-pass stoves 70' x 20'; 7 Todd vertical steam blowing eng. (60,800 cfm.) 14 to 18 lbs. rated pressure; 16 water-tube boilers (Rust, Wickes, Sterling) 5,600 H. P.; 1 Heyl & Patterson single-strand pig casting mach. By-product coke: local red and brown hematite ores. Product: foundry pig iron, annual cap., 180,000 tons.

Clifton Furnaces, Ironaton, Ala., acquired Dec. 1, 1924 from The Alabama Company were abandoned in 1925.

Company operates coal mines in Jefferson, Walker and Tuscaloosa Counties, Ala., annual cap., 2,500,000 tons. By-product Coke Plant at North Birmingham, Ala.: 120 Semet-Solvay by-product coke ovens, annual cap., 730,000 net tons coke. Company operates iron ore mines: Sloss Ore Mines, Bessemer, Ala., annual cap., 600,000 tons; Ruffner Ore Mines, Irondale, annual cap., 250,000 tons; brown ore mines, Russellville, Ala., annual cap., 450,000 tons; Attalla Ore Mines, Attalla, Ala., annual cap., 300,000 tons. Total ore cap., 1,600,000 tons. Also limestone quarries at North Birmingham and Glencoe, Ala., annual cap., 165,000 tons.

Smelters Steel Co., Seattle, Wash. Works at Commercial Waterway, Slip No. 7, Seattle, blt. 1919 for manufacture of pig iron from ore in electric furnace, was dismantled in 1921. Company out of business.

SMITH (GEORGE H.) STEEL CASTING CO., 500 Clinton St., Milwaukee, Wis.

Inc. Oct. 15, 1901 in Wisconsin. Capital stock: com., par value \$100, auth. and issued \$450,000; pref. auth. \$150,000, issued \$100,000.

E. P. Smith, P.; Charles Pfeiffer, V. P.; F. E. Hinners, Sec. & T.; at Milwaukee. J. B. Marshall, G. S. M.; at Chicago, Ill.

Sales office: J. B. Marshall, 549 West Washington Blvd., Chicago, Ill.

Works at 500 Clinton St., Milwaukee: blt. 1897; 1 Pittsburgh Moore electric fur. (3-ton) installed 1921, f. o. May 5, 1921. Tropenas converters (three 2-ton) dismantled, two in 1921, one in 1923; A. O. H. fur. (2-ton) dismantled in 1921.

Product: electric steel castings for sale, annual cap., 7,200 tons. Alloy steel castings (nickel, chrome, vanadium, titanium). Automobile, electrical and general machinery castings.

Sofranscy (H) Company, Allentown, Pa.

Not incorporated; A. Sofranscy, proprietor, operates as H. Sofranscy Co.

Topton Furnace, Topton, Pa.: 1 stack, 75' x 15', blt. 1873, rebt. 1892, repaired 1902; 3 stoves 75' x 15'; 2 steam blowing engines; 4 Sterling water-tube boilers, 1,000 H. P. Anth. coal and coke: local and Lake ores. Furnace idle at present and will probably be dismantled in 1926 (formerly owned by Empire Steel & Iron Co., acquired by H. Sofranscy Co., Nov. 30, 1922). Limestone quarry at Hinterbeiter, Pa.

Product: foundry pig iron, annual cap., 40,000 tons.

SOLAR-STURGES MANUFACTURING CO., Melrose Park, Ill.

Inc. 1901 in Illinois. Capital stock: com. A., par value \$100, auth. \$750,000, issued \$617,000; com. B, par value \$5, auth. and issued \$47,500; pref. 7% cum. auth. \$350,000, issued \$250,000.

Lee Sturges, P.; T. H. Owen, V. P. & G. S. M.; Frank Sturges, Sec.; George Wilson, A.; James Walker, G. S.; R. S. Robertson, P. A.

Sales office: 50 Church St., New York, N. Y.

Brands: Solar (milk cans), Ultra (ice cream cans), Self Closing (refuse receptacles).

Company operates plant at Bellwood, Ill. for manufacture of milk cans, creamery supplies, ice cream cans, refuse receptacles and sheet metal products. Makes charcoal tinplates at Bellwood Works from purchased black plate.

Works at Bellwood, P. O. Melrose Park, Ill.: blt. 1912, f. o. Jan. 1913; 1 Mesta pickling mach.; 8 hand pickling tanks; 2 automatic mach. for charcoal tinplates; 1 stack for terne coating hoops; 6 stacks for tinning stamped ware. (Sturges & Burn Mfg. Co. to March 1, 1921.)

Product: tinplates for own use, sheet metal products.

Southeastern Iron Corporation, Chicago, Ill. sold Victoria Furnace, Goshen, Va., May 1, 1920 to Goshen Furnace Corporation.

SOUTHERN CALIFORNIA EDISON CO., Edison Bldg., Los Angeles, Calif.

Steel Foundry, Auberry, Calif.: blt. 1925, f. o. Jan. 22, 1925; one Greene electric furnace (1,500-lb.).

Product: steel castings for own use, annual cap., 500 tons.

SOUTHERN CALIFORNIA IRON & STEEL CO., P. O. Box 257, Huntington Park, Calif.

Inc. Nov. 25, 1901 in California. Capital stock: com., par value \$100, auth. \$1,500,000, issued \$727,250; bonds \$800,000.

E. M. Wilson, P.; E. S. Houdlette, V. P. (sales); A. W. Grier, Sec.; T. K. McClelland, C.; R. K. Cheney, G. S.; A. Swenarton, P. A.; at Huntington Park. S. K. Rindge, T.; at 814 Trust and Savings Bldg., Los Angeles.

Works at Huntington Park: blt. 1919-23, f. o. June 18, 1920 (electric steel), Feb. 6, 1923 (O. H. steel) and Dec. 1, 1923 (rolled products); 3 B. O. H. fur. (35-ton) fuel, oil; 3 heat. fur. (1 cont., one 5-d., one 6-d.); 20" 3-h. 4-st. billet and bar mill; 16" 2-h. 2-st. breakdown, 12" 3-h. 5-st. bar mill; 1 hydraulic forging press (1,000-ton). One Heroult electric fur. (6-ton) installed 1920 was dismantled in 1923. Bolt and nut factory; bolts, nuts and rivets, $\frac{3}{8}$ " to 2 $\frac{1}{2}$ " in all lengths.

Product: steel ingots, annual cap., 40,000 tons; blooms and billets, 36,000 tons; merchant bars, 30,000 tons. Alloy steel ingots (nickel, chrome). Forging ingots, 2,500 tons and forged round, square and flat billets, 2,500 tons. Bolts, nuts and rivets, 4,000 tons; washers, 400 tons.

Former works at Fourth & Mateo Sts., Los Angeles, were dismantled in 1923; the rolling mills were removed to the new works at Huntington Park.

Southern Electro Steel Co., Inc., Lynchburg, Va., did not build steel foundry as projected in 1920. Company failed and went out of business.

SOUTHERN FERRO-ALLOYS CO., Chestnut & 21st Sts., Chattanooga, Tenn.

Inc. 1917 in Tennessee. Capital stock: com. auth. \$200,000, issued \$150,000; pref. 8% cum., auth. and issued \$90,000.

Paul J. Kruesi, P.; F. E. Kruesi, I. V. P. & T.; George L. Davison, 2 V. P.; J. L. Morrison, Sec.

Brand: Cemco (silvery iron and bessemer ferro-silicon).

Company owns plants at Chattanooga (2) for manufacture of ferro-silicon and silvery iron.

Works at Chattanooga: blt. 1917, f. o. 1917; 4 Fitzgerald electric fur. Electric power from Tennessee Electric Power Co. Includes works of Chattanooga Electro Metals Co., leased by Southern Ferro-Alloys Co., Mar. 28, 1922, which company has since been

absorbed by Southern Ferro-Alloys Co. Product: ferro-silicon in all grades.

Works at Cleveland, Tenn.: 1 Fitzgerald electric fur., formerly Tennessee Manganese Co., leased by Southern Ferro-Alloys Co., Apr. 1-Sept. 1, 1923, and purchased in 1925, was dismantled early in 1926; the principal equipment was removed to the main plant at Chattanooga.

Total annual cap., 9,000 tons 50% ferro-silicon or 30,000 tons silvery iron.

SOUTHERN MANGANESE CORPORATION, Anniston, Ala.

Inc. Mar., 1917 in Alabama. Capital stock: com., par value \$100, auth. and issued \$500,000.

Theodore Swann, P.; R. I. Ingalls, V. P.; Neil Neville, G. S. M.; at Birmingham, Ala. C. M. Jespersen, Sec. & T.; E. T. Hall, A. T.; R. R. Cole, Works M.; C. B. Wells, P. A.; at Anniston.

Sales offices: Birmingham, Ala.; Rogers, Brown & Crocker Bros., Inc., at Boston, Chicago, Cincinnati, Cleveland, New York, Philadelphia, Pittsburgh and St. Louis.

Works at Anniston: 4 rectangular, 3-phase, straight line electrode type electric fur.; first ferro alloys made, March, 1917. Electric power from Alabama Power Co.

Product: ferro-phosphorus (17-19% and 23-25%), annual cap., 20,000 tons.

SOUTHERN MANGANESE STEEL CO., 332 South Michigan Ave., Chicago, Ill.

Inc. Apr., 1923 in Delaware. Capital stock: com., no par value, auth. and issued 10,000 shares; pref. 7% cum. auth. and issued \$750,000. Subsidiary of American Manganese Steel Company.

W. G. Nichols, P.; S. T. McCall, V. P. & T.; G. C. Hunt, P. A.; at 332 South Michigan Ave., Chicago. H. F. Rikoff, Sec.; A. W. Daniels, G. S. M.; at 389 East 14th St., Chicago Heights, Ill. W. J. Hall, G. S.; at 6500 Easton Ave., St. Louis, Mo.

Sales offices: 1850 McCormick Bldg., Chicago, Ill.; 30 Church St., New York, N. Y.

Brand: AMSCO (castings).

Works at 6500 Easton Ave., St. Louis, Mo.: 2 Tropenas converters (6,000-lb.) f. o. Oct. 1914, abandoned 1925; 2 Moore electric fur. (1½-ton) installed 1925. Shops for railway track work, forgings and pressed steel work. (St. Louis Frog & Switch Co. to 1923.)

Product: steel castings for sale, annual cap., 5,000 tons, manganese steel castings for railroad track work, crushing machinery and safes. Carbon steel castings for general purposes.

Southern Metallurgical Co., Inc., Cave Spring, Ga. erected in 1924 experimental furnace for manufacture of pig iron and steel direct

from ore. Plant was built to demonstrate the process, not for commercial use.

SOUTHERN PACIFIC CO., 65 Market St., San Francisco, Calif.

George McCormick, General Superintendent Motive Power.

Southern Pacific Shops, Sacramento, Calif.: rolling mill blt. 1881; steel plant added 1920, f. o. Apr. 23, 1920; 1 Heroult electric fur. (6-ton); 21 oil-fired heat. fur. (nine 2-d., six 3-d., six other); two 18" 3-h. 3-st. bar mills; two 12" 3-h. 3-st. bar mills; 12 steam hammers (800-lb. to 5-ton); 1 steam hydr. press (300-ton). Foundry with 2 cupolas for steel, gray iron (10,710 tons) and brass castings (3,500 tons) for own use only. Bolt and Nut Dept.; machine bolts $\frac{1}{4}$ " to $2\frac{1}{4}$ ", track bolts $\frac{3}{4}$ " to $\frac{1}{8}$ ", nuts $\frac{3}{4}$ " to $1\frac{1}{4}$ ", rivets $\frac{3}{8}$ " to $1\frac{3}{8}$ ".

Product: steel ingots and steel castings for own use only; annual cap., 11,000 tons electric steel ingots, 920 tons electric steel castings; 15,000 tons scrap bar; 36,000 tons hot rolled products, including 28,000 tons iron and steel merchant bars and 8,000 tons bolt, nut and rivet rods; locomotive, freight and passenger car forgings, 2,600 tons; machine bolts, 42,750 kegs, track bolts, 2,000 kegs, nuts, 750 kegs, rivets, 3,500 kegs.

SOUTHERN STEEL & ROLLING MILL, Inc., P. O. Box 362, Birmingham, Ala.

Inc. Mar. 26, 1922 in Alabama. Capital stock: com., par value \$100, auth. \$200,000, issued \$120,500; bonds \$60,000.

M. J. Gerson, P. & G. S. M.; Frederick May, Sec. & T.; J. H. Alexander, A. & P. A.; W. L. Fyock, G. S.

Brand: Pol-Hex (Reinforcing bars).

Works at East Birmingham, Ala.: blt. 1904; two 2-d. scrap heat. fur.; 16" 3-h. 3-st. bar mill; 10" 2-h. 1-st. splitter, 8" 3-h. 4-st. bar mill. (Gerson Rolling Mill to May 12, 1922.)

Product: merchant bars, concrete reinforcing bars, light structural shapes, fence posts, light rails; annual cap., 18,000 tons.

SPANG, CHALFANT & CO., Inc., Union Bank Bldg., Pittsburgh, Pa.

Inc. July 3, 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. \$7,000,000, issued \$6,543,000.

Henry Chalfant, P.; George Matheson, Jr., V. P., T. & G. M.; C. F. Beachler, Sec.; J. S. Thomas, A. T.; C. F. Cruciger, G. S. M.; at Pittsburgh. W. J. Hampton, G. S.; J. A. Herman, P. A.; at Bridge St., Etna, Pa.

Sales offices:

Chicago, Ill., 1922 McCormick Bldg.

New York, N. Y., 5048 Grand Central Terminal Bldg.

St. Louis, Mo., 1606 Boatmen's Bank Bldg.

Brand: Etna (pipes and tubes).

Etna Iron & Tube Works, Etna, Pa.: blt. 1828; 4 trains 16" and 12" skelp mills (annual cap., 90,000 tons) idle since 1921; 3 butt-weld, 4 lap-weld fur.; 2 galvanizing pots. Pipe, butt-weld $\frac{1}{8}$ " to 3" inc.; lap-weld 2" to 24" inc.

Product: black and galvanized pipe, and boiler tubes; annual cap., 200,000 tons black pipe, 24,000 tons galvanized pipe, 7,000 tons boiler tubes.

Spencer Heater Co., Scranton, Pa. sold its steel foundry at Scranton, December 1, 1920 to Scranton Electric Steel Co.

SPRING VALLEY IRON & ORE CO., Decatur, Ill.

Inc. 1904 in Illinois. Capital stock: com., par value \$100, auth. and issued \$125,000.

William H. Foote, P. & T.; at 104 Summit Ave., Decatur, Ill. George C. Foote, V. P.; at Port Henry, N. Y. E. B. Foote, Sec.; at Champaign, Ill.

Spring Valley Furnace, Spring Valley, Wis.: 1 stack, 66' x 13' 6", blt. 1892-93, remod. 1905; 3 Siemens 2-pass stoves, 63' x 17'; 2 steam blowing eng. (1 Columbus, 1 Weimer, upright) 16,000 cfm.; 7 boilers (6 horizontal tubular, 1 vertical flue). Idle since 1910.

Product: coke pig iron, annual cap., 35,000 tons.

STANDARD BRAKE SHOE & FOUNDRY CO., Pine Bluff, Ark.

Inc. Apr. 1, 1924 in Arkansas. Capital stock: com., par value \$100, auth. \$500,000, issued \$360,000.

F. L. Dilley, P.; E. S. Dilley, 1 V. P. & G. M.; W. D. Lee, Sec.; S. F. Dilley, T.; W. M. Carty, G. S.; at Pine Bluff. W. J. Roehl, 2 V. P.; at 1948 Railway Exchange Bldg., St. Louis, Mo.

Sales office: 1948 Railway Exchange Bldg., St. Louis, Mo.

Works at Pine Bluff: 1 Greene electric fur. (2-ton) installed 1920, f. o. Aug. 10, 1920. Gray iron foundry, annual cap., 10,000 tons gray iron castings and brake shoes.

Product: steel castings for sale, annual cap., 3,000 tons. Alloy steel castings (nickel, chrome, vanadium). Castings for locomotives, cars and railway equipment.

STANDARD CHEMICAL CO., Flannery Building, Pittsburgh, Pa.

Inc. 1911 in Delaware. Capital stock: com. \$1,500,000.

A. R. Raymer, P.; T. J. Gearing, V. P.; Charles H. Viol, Sec.; H. A. Neeb, T.; G. V. Kappel, A.; E. T. Stevenson, P. A.; at Pittsburgh. T. J. Gearing, S. Works; at Canonsburg, Pa. John I. Mullen, S. Mines; at Naturita, Colo.

Sales agents: Radium Chemical Co. and Standard Alloys Co., Flannery Building, Pittsburgh.

Works at Canonsburg, Pa.: f. o. commercially in 1916.

Product: radium, ferro-uranium and ferro-vanadium, annual cap., 200 tons ferro-alloys.

STANDARD CRUCIBLE STEEL CASTING CO., 717 Thirtieth St., Milwaukee, Wis.

Inc. Aug. 10, 1910 in Wisconsin. Capital stock: com., par value \$100, \$50,000.

Frank P. Blumenfeld, P.; Henry M. Koosch, V. P. & T.; George F. Birkel, Sec., G. M. & P. A.

Works at 717-723 30th St., Milwaukee: blt. 1910, f. o. Aug. 12, 1910; one 5-ton A. O. H. fur.; first open hearth steel, Mar. 2, 1916. Fuel, crude oil.

Product: open hearth steel castings, 1 oz. to 4,000-lb., for sale, annual cap., 2,500 tons.

STANDARD HORSE SHOE CO., 131 State St., Boston, Mass.

Inc. 1890 in Massachusetts. Capital stock: com., par value \$100, auth. and issued \$100,000.

Roland H. Boutwell, P.; George S. Boutwell, Sec.; Roswell M. Boutwell, T.; at 131 State St., Boston. Roland H. Boutwell, 2nd V. P.; at Rutherford Ave., Charlestown, Mass. Roswell M. Boutwell, Jr., G. S.; at South Wareham, Mass.

Brand: Standard (horseshoes).

Works at South Wareham, Mass.; 3 heat. fur. (two 2-d., one 3-d.); 4 reheat. fur. (3-d.) fuel, bit. coal; 18" 2-h. 2-st. roughing, 9" 3-h. 4-st. finishing bar mill; 8 punching, 2 grubbing, and 4 bending machines, 4 presses.

Product: horseshoe bars for own use, annual cap., 5,000 tons billets, and 60,000 kegs finished horse and mule shoes.

Standard Iron Co., Ltd., Montreal, Canada. Deseronto Furnace, Deseronto, Ont., 1 stack blt. 1898, rebuilt 1912, last operated 1919, was dismantled in 1925.

Standard Process Steel Corporation, Phillipsburg, N. J. Assets and property sold July 25, 1921 to Committee of Creditors. Open-hearth furnace dismantled in 1921. Company out of business.

STANDARD SEAMLESS TUBE CO., 313 Sixth Ave., Pittsburgh, Pa.

Inc. Sept. 8, 1913 in Pennsylvania. Capital stock: com. \$2,000,000.

H. C. Fownes, P.; W. C. Fownes, V. P.; T. H. McGraw, Jr., Sec.; W. C. Fownes, Jr., T. & G. M.; W. E. Motheral, A. Sec. & P. A.; A. D. Lowdermilk, C.; T. L. Kirk, G. S. M.; at Pittsburgh. C. R. Barton, G. S.; at Ambridge, Pa.

Sales offices: 291 Broadway, New York, N. Y.; and 710 Mid-Continent Bldg., Tulsa, Okla.

Works at Ambridge, Pa.: 5-cont. billet heat. fur.; fuel, prod. gas, 4 gas prod.; 25" 3-h. 5 st. bar mill. Hot and cold units for seam'ess tubes. B. O. H. steel plant dismantled 1923.

Product: hot rolled and cold drawn seamless tubes, annual cap., 60,000 net tons.

Standard Steel Castings Co. (The), Cleveland, Ohio, was acquired in June, 1920 by The Interstate Foundry Co.

STANDARD STEEL WORKS, 500 North Broad St., Philadelphia, Pa.

Inc. Dec. 20, 1907 in Pennsylvania. Capital stock: \$6,000,000; bonds, \$1,600,000. The company is a subsidiary of The Baldwin Locomotive Works.

Samuel M. Vauclain, P.; John P. Sykes, 1 V. P. & G. M.; William de Krafft, V. P. & T.; A. A. Stevenson, V. P. (manufacture); Richard Sanderson, V. P. (sales); William A. Russell, V. P. (purchases); Henry V. Willie, Consulting V. P. (engineering and metallurgy); Arthur L. Church, Sec.; A. B. Ehst, C.

Sales offices:

Boston, Mass., 185 Devonshire St.

Chicago, Ill., Railway Exchange Bldg.

Houston, Texas, Second National Bank Bldg.

New York, N. Y., 120 Broadway.

Pittsburgh, Pa., Union Trust Bldg.

Portland, Ore., Northwestern Bank Bldg.

Richmond, Va., Richmond Trust Bldg.

St. Louis, Mo., Boatmen's Bank Bldg.

St. Paul, Minn., Merchants National Bank Bldg.

San Francisco, Calif., 310 Sansome St.

Works at Burnham, Pa.: 2 B. O. H. fur. (75-ton); 8 A. O. H. fur. (five 50-ton, three 25-ton); 71 ordinary type and 23 continuous heating fur.; 21 steam hammers (1-ton to 20-ton); 16 forging presses (600-ton to 10-000 ton); mills for rolling tires, steel wheels, rings, etc. Foundry for steel and malleable iron castings. Fuel, coal, pulv. coal and oil.

Product: steel ingots and castings; steel tires, steel tired wheels, pipe flanges and crusher rings, rolled steel wheels, forgings, railway and car springs, and malleable castings. Annual cap., 165,000 tons ingots (45,000 tons B. O. H., 120,000 tons A. O. H.); 35,000 tons A. O. H. castings; 53,000 tons tires and rings, 44,000 tons rolled steel wheels, 22,000 tons forgings, 5,000 tons springs, 800 tons malleable iron castings.

STANDARD STOKER CO., Erie, Pa.

Works at Erie, Pa.: one 2-ton Heroult electric fur. f. o. Nov. 26, 1919. Product: steel castings for own use, annual cap., 2,500 tons.

STANDARD TIN PLATE CO. (The), Canonsburg, Pa.

Inc. Sept. 9, 1902 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$500,000.

T. G. Cranwell, P.; C. C. Conway, V. P.; J. B. Jeffress, Jr., T.; G. J. W. Bos, A.; at 100 East 42nd St., New York, N. Y. W. J. Reese, Sec. & P. A.; A. D. O'Brien, M.; at Canonsburg, Pa.

Works at Canonsburg: blt. 1902-03, f. o. Mar., 1904; 24 sheet and 24 pair fur.; 24 hot tin mills (29" x 30" and 29" x 34"); 24 stands cold rolls, 8 st. on each train, 26" x 42"; 9 box annealing fur. (10 boxes each fur.); 3 Mesta 4-arm pickling mach. Roll black plate 28 to 38 gauge, 14" x 20" to 30" x 30" Tin House: 20 automatic feed tinning pots and 2 hand feed tinning pots for coke tin plates, fuel, washed gas.

Product: black plates for tinning, annual cap., 95,860 tons; tinplates, 2,316,300 base boxes.

STANLEY WORKS (The), 195 Lake St., New Britain, Conn.

Inc. 1901 in Connecticut. Capital stock: com. \$10,400,000; pref. \$3,872,700.

E. A. Moore, Ch.; C. F. Bennett, P.; W. H. Hart, V. P.; J. E. Cooper, V. P.; P. B. Stanley, V. P.; J. E. Stone, V. P.; M. Farmer, V. P.; E. W. Christ, V. P. & Sec.; P. F. King, A. Sec.; M. H. Pease, A. Sec.; L. W. Young, T.; J. B. Wilbur, Jr., A. T.; R. E. Pritchard, A. T.

Sales offices: E. R. Swift, M., 73 East Lake St., Chicago, Ill.; A. E. Duncan, M., 100 Lafayette St., New York, N. Y.

Product: bulders' hardware, cold rolled strip steel, wrought steel specialties, box strapping and fasteners for containers.

The company operates cold rolled strip mills and hardware plant at New Britain, Conn.; hardware plant at Niles, Ohio; hot rolling mill at Bridgewater, Mass.

New Britain Works, New Britain, Conn.: 2 B. O. H. fur. (25-ton) fuel, oil. (O. H. idle at present, annual cap., 34,000 tons ingots); 2 cont. heat. fur.; 4 gas prod.; 20" 3-h. 1-st. billet mill; hoop mill with 12" 2-h. 6-st. and 10" 3-h. 5-st.; 42 mills for cold rolled strip; 10 box annealing fur.; 5 pickling mach.; 11 pickling tanks. Washer Dept. for wrought steel punched washers up to 4½" to 2¼". Product: hot rolled strip, annual cap., 12,000 tons; cold rolled strip steel, 60,000 tons; washers, 37,000 kegs.

Bridgewater Works, Bridgewater, Mass.: est. 1785; 1 cont. prod. gas-fired heat. fur.; 1 charge and draw coal and coke-fired heat. fur.; 18" 3-h. 3-st. and 14" 3-h. 3-st. Belgian band mill; 14" 3-h. 3-st. tack mill. Product: bands and hot rolled strips, annual cap., 35,000 tons, for own use in New Britain Works.

STAR FURNACE CO., Jackson, Ohio.

Inc. Nov. 29, 1865 in Ohio. Capital stock: com., par value \$1,000, auth. and issued \$60,000; pref. 7% cum. auth. and issued \$100,000.

L. I. Brown, P.; at Athens, Ohio. H. E. Davis, Sec. & T.; at Jackson.

Sales agents: Rogers, Brown & Crocker Bros., Inc., Cincinnati, Ohio.
Brand: Star (pig iron).

Star Furnace, Jackson: 1 stack, 70' x 16', blt. 1866, last rebt. 1912-13; 4 Foote stoves (two 75' x 18', two 75' x 16'); 2 steam blowing eng., 30,000 cfm., 30-lbs. rated pressure; 12 return tubular boilers, 1,500 H. P. W. Va. and Ky. coke, and raw coal: Lake ore.

Product: silvery, high-silicon pig iron, bessemer ferro-silicon, annual cap., 30,000 tons.

STARR MANUFACTURING CO. (The), Ltd., Prince Albert Road, Dartmouth, N. S., Canada.

Inc. 1868 in Province of Nova Scotia. Capital stock: com., par value \$50, auth. \$500,000, issued \$398,000; pref. auth. \$500,000, issued \$398,000.

Lieut. Col. R. B. Simmonds, P.; Thomas Notting, K. C., V. P.; at Halifax, N. S. W. L. Davies, Sec. & G. M.; J. K. Urquhart, G. S.; at Dartmouth, N. S.

Sales office: 126 Wellington St. West, Toronto, Ont. (skates only).
Works at Dartmouth: blt. and f. o. 1896; three 3-d. heat. fur.; 1 busheling fur.; 18" 2-h. and 10" 3-h. bar mills; 1 hammer. Rolling mill closed down.

Product: merchant bars, annual cap., 2,500 tons; rounds, squares and flats.

Company operates plants at Dartmouth for manufacture of skates; and bolts, nuts, rivets, railway and ship spikes.

Stearns-Roger Manufacturing Co. (The), Denver, Colo. Steel foundry at Pueblo, Colo. was destroyed by flood June 4, 1921 and not rebuilt.

Steel & Tube Company of America, Chicago, Ill. was acquired July 1, 1923 by The Youngstown Sheet & Tube Co.

STEEL COMPANY OF CANADA (The), Ltd., Hamilton, Ont., Canada.

Inc. June 9, 1910 in Dominion of Canada. Capital stock: com., par value \$100, auth. \$15,000,000, issued \$11,500,000; pref. 7% cum., auth. \$10,000,000, issued \$6,496,300; bonds \$6,440,619.51. Charles S. Wilcox, Ch.; Robert Hobson, P.; H. H. Champ, Sec. & T.; H. S. Alexander, A. Sec. & A. T.; W. R. Cuthbert, C.; George Spence, G. S. M.; B. C. Ball, P. A.; at Hamilton, Ont. R. H. McMaster, V. P.; H. T. Diplock, G. S. M.; W. G. Henderson, P. A.; at Montreal, P. Q.

Sales offices at Halifax, Hamilton, London (England), Montreal, St. John, Toronto, Vancouver, Windsor and Winnipeg.

Product: pig iron, steel ingots, blooms and billets, sheet bars; scrap bar; iron and steel merchant bars, tie plates, fish plates, axles,

forgings, horseshoes; black sheets; black and galvanized wrought pipe; nail plate, cut nails; wire rods; plain, galvanized and tinned wire, wire nails, tacks, staples, etc.; barbed wire, wire fencing, wire goods; spikes, bolts, nuts, rivets and washers; wood and machine screws; drop forgings and carriage hardware. Coke: sulphate of ammonia.

Brands: Stelco (steel sheets); Dominion, Beaver (wood screws); Bay State (tire bolts); Bell, M. R. M. Co. (horseshoes); Invincible (wire fencing); Gromore (ammonium sulphate); Tiger (white lead). Hamilton Works, Hamilton, Ont.:

Blast Furnaces: 2 stacks; Furnace "A" 73' x 15' 8", blt. 1894-95, f. o. Dec. 30, 1895, relined 1920; Furnace "B" 90' x 20' 4", blt. 1906-07, f. o. Nov. 8, 1907, rebld. 1922; 8 stoves (3 McClure 3-pass, 55' x 19'; 5 2-pass side comb., one 75' x 19', four 90' x 21'); 5 steam blowing eng. (72,000 cfm.) 15-lbs. rated pressure; 12 water-tube boilers, 4,150 H. P. furnish power also to coke ovens; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach. By-product coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 290,000 tons.

By-Product coke plant: 80 Wilputte by-product ovens, annual cap., 365,000 net tons coke. By-product recovery plant. Benzol plant, annual cap., 2,190,000 gals. light oil.

Steel Works: blt. 1900; 11 B. O. H. fur. (two 25-ton, two 45-ton, three 50-ton, four 70-ton); one 100-ton mixer; fuel in O. H. coke oven gas, tar and prod. gas, 6 Morgan gas prod.; five 4-hole soaking pits; 2 cont. billet heat. fur.; 34" 2-h. 1-st. reversing blooming; cont. billet and sheet bar mill with 18" 2-h. 6-st. and two st. edging rolls; 12" to 10" 2-h. 17-st. cont. rod and bar mill; 14" 3-h. 3-st. and 10" 3-h. 6-st. hand bar mills; 1 sheet and 1 pair fur. and 2 comb. sheet and pair fur.; 3 sheet mills (two 28" x 36", one 28" x 44"); two cold mills 22" x 48"; 6 box annealing fur. Spike Shop: railway spikes $\frac{5}{8}$ " x 5 $\frac{1}{2}$ " and $\frac{5}{8}$ " x 6"

Product and annual cap.: 300,000 tons ingots; 260,000 tons blooms, billets and sheet bars; 150,000 tons hot rolled products including 90,000 tons wire rods, 45,000 tons merchant bars, bolt, nut and spike rods, light structural shapes, agricultural implement shapes, etc.; 15,000 tons black sheets for galvanizing, stamping, forming, etc., and tack plate; blue annealed sheets, 3,000 tons; 93,000 kegs railway spikes.

Ontario Works, Hamilton, Ont.: blt. 1861; 2 cont. billet heat. fur., coal-fired; 20" 3-h. 3-st. bar mill; 9" 3-h. 5-st. guide mill. Fish plate and tie plate shop. Product: merchant bars, tie plates and fish plates; annual cap., 70,000 tons rolled products.

Belleville Works, Belleville, Ont.: blt. 1899-00; 4 busheling and 1 scrap fur.; 2 heat. fur. for 9" mill; 18" 3-h. 1-st. muck mill; 12" 3-h. 4-st. bar mill (idle); 9" 3-h. 4-st. bar mill. Horseshoe Dept. and Spike Shop. Product: scrap bar, annual cap., 15,000

tons; merchant bars, 12,000 tons; horseshoes, 50,000 kegs; pressed, ship, railway and skimming spikes, 10,000 kegs.

Notre Dame Works, Montreal, P. Q.: blt. 1857; 1 busheling fur.; 1 hammer squeezer; 7 heat. fur. coal-fired (six 4-d., one 5-d.); 18" 3-h. 1-st. muck; 18" 3-h. 3-st. bar; 12" 3-h. 4-st. bar; 12" to 9" 3-h. 5-st. Belgian. Bolt and Nut Dept.; spikes $\frac{3}{8}$ " to $1\frac{1}{4}$ ", bolts and rivets to 3", nuts $\frac{5}{8}$ " to 3" bolt hole. Nail and Wire Works; 19 cut nail mach.; 150 wire drawing blocks for wire .500" to .0076"; 152 wire nail mach.; 3 galvanizing pans. Product: scrap bar, annual cap., 19,000 tons; iron and steel merchant bars, horseshoe bars, nail and hinge plate, bolt, nut and rivet rods, 40,000 tons; cut nails, 25,000 kegs; plain wire, 30,000 net tons, galvanized wire 7,000 net tons, wire nails, 350,000 kegs; spikes, bolts, rivets and nuts 200,000 kegs; horseshoes, 5,500 net tons; horse nails, tacks, toe caulks, staples, etc.; lead pipe, shot, putty and white lead.

St. Patrick Works, 104 St. Patrick St., Montreal, P. Q.: blt. 1859; four 4-d. scrap coal-fired heat. fur.; 1 alligator squeezer; 18" 3-h. 3-st. muck and bar mill; 12" to 9" 3-h. 5-st. Belgian mill. Spike dept. Product: iron and steel merchant bars, tack and washer plate, annual cap., 7,000 tons scrap bar, 18,000 tons rolled products (9,000 tons merchant bars, 8,000 tons spike and rivet rods, 1,000 tons tack and washer plate); pressed, drift and railway spikes, rivets, washers, etc., 4,500 net tons.

St. Henry Works, 172 St. Ambroise St., Montreal, P. Q.: rebld. 1906; 1 butt weld fur. for pipe $\frac{1}{4}$ " to 4", 4 gas prod.; 1 galv. pot. Product: iron and steel pipe, black and galvanized; conduit, fence and signal pipe; couplings and nipples; annual cap., 25,000 tons black pipe, 8,000 tons galvanized pipe.

Dominion Works, 75 St. Joseph St., Lachine: blt. 1885; 110 wire drawing blocks for wire .375" to .048"; 52 wire nail mach.; 25 barbed wire mach.; 6 wire fence mach.; 2 galv. pans. Product: plain wire, annual cap., 25,000 net tons; galvanized wire, 18,000 net tons; wire nails, 100,000 kegs (100-lb.); barbed wire, 5,000 net tons; wire fencing, 5,000 net tons; bale ties, wire cable, fence gates, screws, cotters, hooks, etc.; copper and brass wire.

Canada Works, Hamilton, Ont.: orig. blt. 1887; 138 wire drawing blocks for wire $\frac{5}{8}$ " to 34 gauge; 160 wire nail mach. Product: plain wire, annual cap., 32,000 net tons; wire nails, 300,000 (100-lb.) kegs; staples, tacks; cold rivets, bolts, wood and machine screws, 3,000 net tons; bright wire goods.

Western Wire & Nail Co. Works, London, Ont.: blt. 1897; 16 wire nail mach. Product: wire nails, annual cap., 36,000 kegs (100-lb.); staples, barbed wire, braided clothes line.

Brantford Works, Colbourne St. West, Brantford, Ont.: Product: machine, carriage, plow and tire bolts; hot and cold rivets; cold

square and hexagon nuts and specials, annual cap., 15,000 kegs (200-lb.).

Gananoque (Upper) Works, Gananoque, Ont.: 15 board drop hammers, 600-lb. to 2,000-lb. Product: automobile, carriage and other drop forgings, annual cap., 1,200 tons.

Gananoque (Lower) Works, Gananoque, Ont.: 5 hammers (4 Peck, 1 Bradley) 600-lb. to 1,000-lb. Product: carriage and carriage top hardware, bow sockets, etc.

Swansea Works, Postal Station C, Toronto, Ont. Product: machine, carriage, tire, sleigh-shoe, plow, automobile and other heavy bolts, track bolts; hot and cold square and hexagon nuts; bridge, boiler and cold rivets; annual cap., 15,000 tons. (72,500 kegs bolts and nuts, 60,000 kegs track bolts, 17,500 kegs rivets).

Stephenson Charcoal Iron Co., Wells, Mich. sold blast furnace at Wells, Jan. 1, 1923 to Delta Chemical & Iron Co.

STERLING STEEL FOUNDRY CO., 800 Washington Ave., Braddock, Pa.

Inc. May 9, 1902 in Pennsylvania. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$969,925; pref. 8% cum. auth. \$1,000,000, issued \$240,800.

George W. Smith, P. & G. M.; William Nease, V. P.; M. A. Quinn, Sec. & A.; H. G. Smith, T.; John Schwartz, G. S.; J. B. Eccleston, G. S. M.; D. B. Webb, P. A.

Sales office: Charles Hubbard & Co., 17 Battery Pl., New York. Brand: Sterling (castings).

Works at Braddock: blt. 1902, f. o. Oct., 1902; 2 A. O. H. fur. (20-ton), fuel, natural gas and oil.

Product: steel ingots and steel castings for sale, annual cap., 26,400 tons (12,000 tons ingots, 14,400 tons castings). Alloy steel ingots and castings (titanium, vanadium). Castings for locomotives, cars, blast furnaces, rolling mills, shipbuilding and miscellaneous castings.

STEWART FURNACE CO. (The), 1854 Union Trust Bldg., Cleveland, Ohio.

Org. 1877; inc. Dec. 18, 1920 in Ohio. Absorbed Stewart Iron Co., Ltd., Sharon, Pa. as of Dec. 31, 1920. Capital stock; com., no par value, auth. 50,000 shares, issued 42,108 shares; pref. 7% cum. auth. \$1,800,000, issued \$1,365,100.

Fayette Brown, P.; Harvey H. Brown, Jr., V. P.; George W. Nichols, Sec.; G. B. Houseman, T.; at Cleveland. S. M. Phillips, G. M.; W. W. Arbuckle, G. S.; J. S. Bycroft, P. A.; at Sharon, Pa.

Brand: Stewart (low phos. and bessemer pig iron).

Stewart Furnace, Sharon, Pa.: 1 stack, 75' x 17' 6", blt. 1872, last rebld. 1909, relined 1921; 4 stoves (3 Cowper-Kennedy 70' x 18', one Kennedy 70' x 18'); 2 Weimer steam blowing eng., 40,000

cfm., 20-lbs. rated pressure; 7 Wheeler vertical water-tube boilers, 2,650 H. P.; 1 Heyl & Patterson single-strand pig casting mach. Conn. coke: Lake and foreign ore.

Product: low phosphorus and bessemer pig iron, annual cap., 110,000 tons.

Stewart Iron Co., Ltd., Sharon, Pa. was succeeded by The Stewart Furnace Co., Cleveland, Ohio, Dec. 31, 1920. The entire property of Stewart Iron Co., Ltd., a Pennsylvania co-partnership association was taken over by the new Ohio corporation, officers and ownership were continued without change.

STOWELL COMPANY (The), South Milwaukee, Wis.

Inc. May 18, 1916 in Wisconsin. Capital stock: com., par value \$10, auth. \$300,000, issued \$200,000.

Fred W. Rogers, P.; R. A. Nourse, V. P.; T. E. Ward, Sec.; H. J. Van Beek, T.; C. J. McNamara, G. S.

Sales offices: E. B. Hansen, 628 McCormick Bldg., Chicago, Ill.; E. L. Larson, 2-220 General Motors Bldg., Detroit, Mich.

Company operates two plants: Plant No. 1 at South Milwaukee; gray iron, malleable iron and brass foundry. Plant No. 2 at Milwaukee; malleable iron and steel foundry (see below). Annual cap., both plants, malleable iron castings (12,000 tons), gray iron (6,000 tons) and brass castings (250 tons); steel castings 1,600 tons.

Steel Foundry, Plant No. 2, Milwaukee: 1 Moore electric fur. (2-ton) formerly in Plant No. 1 removed to plant No. 2 in 1921.

Product: electric steel castings for sale, annual cap., 1,600 tons.

STROH STEEL HARDENING PROCESS CO., Westinghouse Bldg., Pittsburgh, Pa.

Inc. June 11, 1911 in West Virginia. Capital stock: com., par value \$100, auth. and issued \$400,000.

W. Y. Stroh, P. & G. M.; J. L. Kendall, V. P.; C. W. Hays, Sec. & G. S. M.; S. M. Rose, T. & A.; C. B. Leiendecker, G. S.; J. L. Fuchs, P. A.

Sales offices:

Birmingham, Ala., H. M. Gassman, 513 21st St.

Denver, Colo., Fred Irvine, 609 Ideal Bldg.

Salt Lake City, Utah, C. H. Jones Co., 206 S. W. Temple St.

San Francisco, Calif., Hickok & Hickok, 489 Bryant St.

Sheffield, England, E. R. Davies.

Brand: Stroh Steel.

Lawrence Works, 32nd St. & A. V. R.R., Pittsburgh (leased from Carbon Steel Co.): 1 A. O. H. fur. (10-ton) fuel, oil and nat. gas.

Product: steel castings for sale, annual cap., 4,000 tons. Castings for shear knives, guides, bending boxes and miscellaneous castings.

Thompson Works, Pittsburgh: machine shop for machining castings.

STRONG STEEL FOUNDRY CO., 33 Norris St., Buffalo, N. Y.

Inc. 1908 in New York. Capital stock: com., par value \$100, auth. \$200,000, issued \$153,400.

O. H. P. Champlin, P. & T.; A. A. Berrick, V. P.; O. H. P. Champlin, Jr., Sec.; C. P. Champlin, G. M.; J. E. Sanger, P. A.

Works at 33 Norris St., Buffalo: blt. 1912-13, f. o. Feb., 1913; 1 A. O. H. fur. (20-ton).

Product: steel castings for sale and for own use, annual cap., 7,000 tons.

STRUTHERS FURNACE CO. (The), Struthers, Ohio.

H. W. Grant, Receiver, 1301 Wick Bldg., Youngstown, Ohio.

Inc. June 2, 1896 in Ohio. Capital stock: com., par value \$100, auth. and issued \$1,000,000; pref. 7% cum. auth. and issued \$1,250,000; bonds \$1,500,000.

W. C. Runyon, P.; at Scarsdale, N. Y. A. Grossman, Sec. & T.; at New York, N. Y. R. H. Domer, A.; at 1301 Wick Bldg., Youngstown. Jules G. Richards, G. S.; at Struthers.

Brand: Struthers (pig iron).

Anna Furnace, Struthers, Ohio: 1 stack, 83' x 20' 6", blt. 1869, last rebt. 1909; relined 1923; 5 stoves (four 70' x 18', one 100' x 22'); 4 vertical steam blowing eng. (60,000 cfm.) 30-lbs. rated pressure; 9 water-tube boilers, 3,462 H. P.; 1 Uehling double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 20,000 tons. Slag crushing plant with 2 cooling pits, annual cap., 180,000 tons. Coke: Lake ore.

Product: foundry and basic pig iron, annual cap., 180,000 tons.

Sturges & Burn Manufacturing Co., Chicago, Ill. was merged March 1, 1921 with Solar Metal Products Co. in Solar-Sturges Manufacturing Co.

SULLIVAN MACHINERY CO., 122 South Michigan Ave., Chicago, Ill.

Inc. Dec. 26, 1913 in Massachusetts. Capital stock: com., no par value, auth. 200,000 shares, issued 184,782 shares.

Frederick K. Copeland, P. & G. M.; Arthur E. Blackwood, 1 V. P.; Howard T. Walsh, 2 V. P. & G. S. M.; Frederick W. Copeland, 3 V. P.; E. A. Krevis, A.; at Chicago. Thomas W. Fry, Sec.; J. Duncan Upham, T.; George W. Bateman, P. A.; at Claremont, N. H.

Sales offices in all principal cities.

Company operates plants at Claremont, N. H. and Michigan City, Ind. for the manufacture of diamond drills, coal cutters, air compressors, air lift pumps, rock drills, hammer drills, drill bit sharpeners, drill steel furnaces, quarrying machinery, portable hoists, etc. Operates steel foundry at Claremont Works.

Claremont Works, Claremont, N. H.: steel foundry blt. 1920, f. o. June 24, 1920; 2 electric fur. (one 1½-ton Swindell, one 1-ton Greaves-Etchells). Gray iron foundry; 3 cupolas; annual cap., 1,275 tons gray iron, 200 tons brass castings for own use. Product: steel castings for own use, annual cap., 5,400 tons.

SUPERIOR SHEET STEEL CO. (The), Canton, Ohio.

Inc. Oct. 27, 1919 in Ohio. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,248,800; pref. 7% cum. auth. \$2,000,000, issued \$644,600.

W. W. Irwin, Ch.; H. A. Roemer, P.; D. A. Williams, V. P.; Urlin K. Becker, Sec.; P. L. Howenstine, T. & P. A.; H. H. Streiber, A.; H. A. Taubensee, G. M. S.

Sales offices:

Buffalo, N. Y., Waldo, Egbert & McClain, Marine Trust Bldg.
Canton, Ohio, H. B. Crile.

Chicago, Ill., H. A. Taubensee, 111 West Washington St.

Detroit, Mich., A. A. Griffiths, Dime Bank Bldg.

Fort Worth, Texas, E. G. Dugey, P. O. Box 604.

Los Angeles, Calif., C. W. Pike Co., 1305 Washington Bldg.

Memphis, Tenn., J. T. Everett, 113 Monroe Ave.

New York, N. Y., Barnard Eberlin, 50 Church St.

Philadelphia, Pa., J. G. Esslinger, Drexel Bldg.

San Francisco, Calif., C. W. Pike Co., 22 Battery St.

Works at Canton, Ohio: blt. 1919-20, f. o. Aug. 8, 1920; 9 sheet and 9 pair fur.; 9 hot black sheet mills (29" x 38" to 48"); 5 sets cold rolls on hot mill train; 2 plunger pickling mach.; 4 box annealing fur.; 5 galvanizing pots; 1 long terne pot. Roll black sheets 12 to 30 gauge, 24" to 40" wide, 96" to 144" long, lengths vary with gauge and width.

Product: black sheets, annual cap., 65,000 tons; galvanized sheets, flat and corrugated, 60,000 tons; long terne plate, 9,000 tons.

SUPERIOR STEEL CORPORATION, 520 Union Trust Bldg., Pittsburgh, Pa.

Inc. Dec., 1916 in Virginia. Capital stock: com., par value \$100, auth. \$11,500,000, issued \$10,000,000; bonds \$2,606,000.

James H. Hammond, Ch.; R. Edson Emery, P.; Frank R. Frost, V. P. & G. S. M.; J. Sidney Hammond, A. V. P.; C. D. Claney, Sec. & T.; Charles A. Lambie, C.; A. D. Feeman, P. A.; at Pittsburgh. Stephen Badlam, Works M.; William A. Smith, G. S.; at Carnegie, Pa.

Sales offices:

Chicago, Ill., Steel Sales Corp., Jefferson & Adams Sts.

Detroit, Mich., Earl S. Park, General Motors Bldg.

Hartford, Conn., George W. Seeton, Hartford-Conn. Trust Bldg.

New York, N. Y., W. H. Leonori & Co., 30 Howard St.

Philadelphia, Pa., John E. Wetzels, 734 Widener Bldg.

Brand: Superior (hot and cold rolled strip steel).

Works at Carnegie, Pa.: blt. 1892, f. o. Jan. 3, 1893; 9 gas-fired billet heating fur. (1 cont., five 4-d., three 5-d.); four hot strip mills (20" 2-h. 3-st. roughing, 3-st. vertical edging, 16" 2-h. 5-st. finishing; 20" 3-h. 1-st. roughing, 14" 2-h. 3-st. intermediate, 14" 2-h. 5-st. finishing; 20" 3-h. 1-st. roughing, 14" 3-h. 2-st. intermediate, 12" 2-h. 5-st. finishing; 20" 3-h. 1-st. roughing, 14" 3-h. 2-st. intermediate, 10" 2-h. 5-st. finishing); 12 trains cold rolls (one 20" 1-st., one 16" 4-st., one 14" 4-st., three 12" 16-st., two 10" 12-st., three 8" 12-st., one 6" 2-st.); 10 box annealing fur.; 17 pickling tanks.

Product: hot rolled strip steel, annual cap., 120,000 tons; cold rolled strip steel, 60,000 net tons.

SUPERIOR STEEL CASTINGS CO., Benton Harbor, Mich.

Inc. June, 1916 in Michigan. Capital stock: com. \$225,000.

S. E. Doster, P.; W. R. Gilmore, V. P. & G. M.; at Benton Harbor.

C. A. Pratt, Sec.; F. H. Johnston, T.; at 4834 Halstead St., Chicago, Ill.

Sales offices: Benton Harbor, Mich., and 322 South Michigan Ave., Chicago, Ill.

Works at Benton Harbor: blt. 1916, f. o. Nov., 1916; 2 A. O. H. fur. (15-ton) fuel, oil. Malleable iron foundry added 1920, annual cap., 9,000 tons.

Product: steel castings for sale, annual cap., 10,000 tons. Alloy steel castings (manganese, vanadium). Railroad and general machinery steel castings; malleable iron castings.

SUTTON, STEELE & STEELE, Inc., P. O. Box 1076, Dallas, Texas.

Inc. 1908 in Texas. Capital stock: com. auth. and issued \$50,000.

Walter L. Steele, P. & G. M.; Henry M. Sutton, V. P.; Edwin G.

Steele, Sec. & T.; R. E. Carter, A.; Oliver W. Steele, G. S.;

H. S. Howard, G. S. M.; T. J. Christian, P. A.

Company manufactures cleaning and separating machinery and operates gray iron and steel foundry for own use and for jobbing.

Works at Dallas: blt. 1888, steel foundry added 1923, f. o. Oct., 1923; 1 Moore Lectromelt electric fur. (1,500-lb.). Gray iron foundry. Machine shop.

Product: steel castings for own use and for sale, annual cap., 600 tons; general machinery castings.

SUWANEE IRON CO., Inc., 901 Stahlman Bldg., Nashville, Tenn.

Inc. Mar., 1917 in Kentucky. Capital stock: com., par value \$100, auth. \$500,000, issued \$159,188.88; bonds \$310,000.

Henry E. Colton, P.; Perry B. House, Sec. & T.; at Nashville, Tenn. Kent S. Clow, V. P.; at Chicago, Ill.

Brand: Suwanee (pig iron).

Grand Rivers Furnaces, Grand Rivers, Ky.: 2 stacks, blt. 1890-91; No. 1, 60' x 12' 6", No. 2, 60' x 13' 6"; 8 iron pipe stoves; 2 steam blowing eng.; 16 flue boilers, 800 H. P. Coke: local and Ala. brown ore. Company owns iron ore mine at Russellville, Ala., annual cap., 40,000 tons.

Product: foundry pig iron, annual cap., 50,000 tons.

SWEDISH CRUCIBLE STEEL CO., 8745 Conant Ave., Detroit, Mich.

Inc. 1910 in Michigan. Capital stock: com. \$60,000.

Nels L. Olson, P., T. & G. M.; A. J. W. Nixon, V. P. & Sec.; W. H. Stafford, V. P.

Sales offices: 3922 South Wabash Ave., Chicago, Ill.; Borden & Van Damm Sts., Long Island City, New York, N. Y.

Works at Butler St. and Grand Trunk R. R., Detroit: blt. 1911; 2 converters (one 1-ton, one 2-ton); four 6-pot crucible steel fur. (total 24-pots) fuel, oil; 2 cupolas.

Product: steel castings for sale and for own use, annual cap., 3,600 tons (3,000 tons converter, 600 tons crucible); alloy crucible steel castings (nickel); pots and boxes.

SWEDISH CRUCIBLE STEEL CO. OF CANADA, Ltd. (The), Windsor, Ont., Canada.

Inc. June, 1913 in Ontario. Capital stock: com. \$100,000; pref. \$100,000.

Windsor Works, Windsor: blt. 1913-14, f. o. April, 1914; 1 converter (2-ton); three 4-pot crucible fur. Idle.

Product: steel castings for sale, annual cap., 2,875 tons (2,500 tons converter, 375 tons crucible).

SWEET'S STEEL CO., Williamsport, Pa.

Inc. Aug. 5, 1903; reinc. Feb., 1920 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$450,000; bonds \$364,500.

Joseph Kaye, Ch.; Daniel F. Swartz, P. & G. M.; A. P. Perley, V. P.; Clarence L. Peaslee, Sec.; John E. Spotts, T.; Charles C. Steel, G. S. M.; at Williamsport. Maxwell Hayward, A.; at 2 Rector St., New York, N. Y.

Sales offices:

Chicago, Ill., A. A. Prausnitz, Peoples Gas Bldg.

New York, N. Y., 2 Rector St.

Philadelphia, Pa., L. E. Kipe, Land Title Bldg.

Pittsburgh, Pa., George M. Crawford, 817 Bessemer Bldg.

Wilkes-Barre, Pa., W. L. Richards, Miners Bank Bldg.

Works at Newberry, Williamsport, Pa.: blt. 1903-04, f. o. July 27, 1904; open-hearth plant discontinued, will be dismantled; 2 cont. coal-fired heat. fur.; 16" 3-h. 2-st. rail; 14" 3-h. 7-st. bar; 9" 3-h. 3-st. bar. Fuel, coal.

Product: light rails, 8 to 60-lb. sections, annual cap., 60,000 tons; merchant bars, 40,000 tons; concrete bars, light structural shapes, bedstead angles, fishplate bars, angle splice bars, steel mine ties; portable track, frogs and switches.

Syracuse Alloy Steel Co., Syracuse, N. Y. Works at West Towpath, Syracuse, were destroyed by fire in March, 1920. Work on new plant at Thompson Road, Syracuse, was discontinued. Company went into bankruptcy and properties were sold and dismantled.

Tacony Steel Co., 1417 Sansom St., Philadelphia, Pa.

Inc. 1899 in New Jersey. Subsidiary of Penn Seaboard Steel Corporation. For officers, sales offices and works, see Penn Seaboard Steel Corporation.

TAYLOR (N. & G.) CO., Inc., 300 Chestnut St., Philadelphia, Pa.

Est. 1810; inc. 1917 in Maryland. Capital stock: com. \$175,000; pref. 6% cum. \$625,000.

Hollinshead N. Taylor, P.; O. J. Geraughty, V. P.; W. N. Deere, V. P.; George N. Crispin, Sec. & T.; Alex. F. Taylor, G. M. S.; at Philadelphia. John M. Read, G. M.; at Cumberland, Md.

Sales office:

Chicago, C. H. Hallgath, 208 South La Salle St.

The company owns a controlling interest in the Taylor-Offutt Coal Co., which owns a coal mine at Oakland, Md.

Works at Cumberland, Md.: Steel Works blt. 1899; four 25-ton B. O. H. fur.; 1 cont. ingot heat. fur.; 24" 3-h. 2-st. billet and bar mill; twelve sheet and pair fur.; 6 hot black plate mills (26" x 30" and 26" x 32"); 3 pickling mach.; 6 cold mills (one train 2-st. 22" x 32" and 22" x 36"; one train 4-st. 22" x 32" and 22" x 36"); 6 box annealing fur. Fuel, coal, oil and nat. gas. Tinplate Plant: blt. 1912-13, f. o. Sept., 1913; 16 stacks (8 coke, 2 charcoal, 6 terne). Fuel, coal, oil and nat. gas. Gray iron and brass foundry; 1 cupola (annual cap., 1,000 tons).

Product and annual cap.: steel ingots (39,000 tons), steel billets, bars and sheet bars (35,000 tons); black sheets and black plates for tinning (20,000 tons); tinplates (350,000 boxes) and terne plates (150,000 boxes).

TAYLOR (W. P.) COMPANY, 218 Ellicott Sq., Buffalo, N. Y.

Inc. May 1, 1905 in New York. Capital stock: com. \$500,000.

W. P. Taylor, P.; C. D. Taylor, V. P.; P. J. Weigel, Sec. & T.

Works at 575 Howard St., Buffalo: blt. 1894; one 1½-ton Heroult electric fur.; Stock converter (½-ton) idle. Gray iron foundry (12,000 tons).

Product: electric steel castings for auto trucks and heavy machinery, annual cap., 1,000 tons.

TAYLOR-WHARTON IRON & STEEL CO., High Bridge, N. J.

Inc. Aug. 7, 1891 in New Jersey under name of Taylor Iron & Steel Co., name changed to Taylor-Wharton Iron & Steel Co. in 1912. Capital stock: com., no par value, auth. 40,000 shares, outstanding 15,870 shares; pref. 7% cum. auth. \$2,000,000, outstanding \$1,875,300; bonds, \$3,241,500.

Percival Chrystie, P.; Victor Angerer, V. P.; William A. Ingram, Sec. & T.; L. N. Aller, A. Sec. & A. T.

Sales offices: Chicago, Ill.; Denver, Colo.; Easton, Pa.; El Paso, Texas; High Bridge, N. J.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; San Francisco, Calif.; Scranton, Pa.

Product: manganese steel, special alloy, and heat treated castings; special track work (switches, frogs and crossings); rolls, rolling mills and rolling mill machinery; light and heavy, pressed and hammered, iron and steel forgings.

Taylor-Wharton Iron & Steel Co. owns the following subsidiary companies:

Wm. Wharton, Jr. & Co. Inc., Easton, Pa.

Philadelphia Roll & Machine Co., Philadelphia, Pa.

Tioga Steel & Iron Co., Philadelphia, Pa.

Manganese Steel Safe Co., High Bridge, N. J.

Hunterdon Electric & Power Co., High Bridge, N. J.

Jersey Electric Co., High Bridge, Clinton and Annandale, N. J.

High Bridge Works, High Bridge, N. J.: blt. 1892, f. o. Sept. 1892; 2 bessemer converters (3-ton); 1 Heroult electric fur. (3-ton); 2 cupolas (1 for pig iron, 1 for ferro-manganese, etc.). Gray iron foundry (400 tons). Machine shops for finishing castings. Product: manganese steel castings, annual cap., 18,000 tons (14,000 converter, 4,000 electric); small manganese steel ingots.

Easton Works, Easton, Pa. (owned and operated by Wm. Wharton, Jr. & Co., Inc.): blt. 1915, f. o. Mar., 1916; 2 Tropenas converters (2-ton); 1 Heroult electric fur. (6-ton); 3 cupolas (2 for pig iron, 1 for ferro); 9 steam hammers (250-lb. to 4,000-lb.); two 1,000-ton forging presses (1 hydraulic, 1 motor-driven). Gray iron and semi-steel foundry (6,000 tons). Product: steel castings for own use and for sale, annual cap., 10,000 tons (5,000 converter, 5,000 electric); alloy steel castings (manganese, nickel, chrome); special track work for railroads and electric railways; general carbon and alloy steel castings; forgings, annual cap., 5,000 tons, seamless steel gas cylinders and other special seamless drawn forgings, bolts, pins and track accessories.

Philadelphia Works, 52nd St. & Grays Ave., Philadelphia, Pa. (owned and operated by Tioga Steel & Iron Co., formerly called Tioga Works): 7 steam and drop hammers (1,500-lb. to 8,000-lb.); 3 hydraulic and steam hydraulic presses (200-ton to 500-ton); special heat treating plant. Gray iron foundry; 1 cupola, 3 air furnaces, annual cap., 5,000 tons gray iron and air furnace castings. Product: general forgings, annual cap., 18,000 tons, oil well and oil refining forgings, crusher balls, forged steel rolls, forged valves and ship forgings; cast rolls (sand and chilled); rolling mill machinery, special machinery.

Philadelphia Roll Works, 25th St. and Washington Ave., Philadelphia, has been abandoned. Converters were dismantled in 1920

and subsequently plant was completely dismantled and sold. Products formerly made are now manufactured at Philadelphia Works.

TEMPLE FURNACE CO. (The), Temple, Pa.

Paul Brooks, Receiver, appointed Dec., 1925.

Temple Furnace, Temple, Pa.: 2 stacks (alternate); No. 1, 75' x 16', rebld. 1875, remod. 1922-23; No. 2, 80' x 18', blt. 1917-18, f. o. July 25, 1918; 4 McClure 3-pass stoves (three 75' x 18', one 75' x 20'); 3 blowing eng.; 4 water-tube and 2 sets cylindrical boilers, 1,600 H. P. Conn. coke: Lake and Port Henry ore. (Seaboard Steel & Manganese Corpn. to Nov. 1921.)

Product: foundry pig iron, annual cap., 50,000 tons.

TENNENT STEEL CASTING CO., 1025 East F St., Tacoma, Wash.

Inc. Jan., 1921 in Washington. Capital stock: com., par value \$100, auth. \$100,000.

M. G. Tennent, P. & G. M.; J. E. Sinclair, V. P.; M. S. Alexander, V. P.; H. W. Pollock, V. P.; A. D. Stout, V. P.; W. G. Custis, Sec. & T.

Brand: Diamond T (castings and steel products).

Product: electric steel castings for own use and for sale, total annual cap. (5 plants), 10,800 tons. Alloy steel castings (nickel, chrome).

Steel castings for cars and miscellaneous steel castings.

Tacoma Works, 1025 East F St., Tacoma, Wash.: blt. 1915, f. o. 1916; 1 electric fur. (3-ton). (Bilrowe Alloys Co. to Apr., 1923.)

Product: steel castings, annual cap., 3,000 tons.

Tacoma Works No. 2: blt. 1925; machine shop; forge shop (2 steam hammers) riveting machine, small rolling mill.

Seattle Works, 3300 Occidental St., Seattle, Wash.: blt. 1917, f. o. Aug., 1917; 1 Greene electric fur. (2-ton). (Aurora Foundry Co. to Nov. 5, 1921.) Product: steel castings, annual cap., 3,000 tons.

Everett Works, 3010 Smith Ave., Everett, Wash.: blt. 1918, f. o. Aug. 15, 1918; 1 electric fur. (1-ton). (Everett Steel Co. to Jan. 31, 1925.) Product: steel castings, annual cap., 1,500 tons.

Vancouver Works, Vancouver, Wash.: blt. 1924, f. o. April, 1924; 1 electric fur. (3-ton). Product: steel castings, annual cap., 3,000 tons.

Portland Works, 719 Upshure St., Portland, Ore.: blt. 1925; 1 electric fur. (½-ton). Product: alloy steel castings, annual cap., 300 tons.

TENNESSEE CHARCOAL IRON CO., Collinwood, Tenn.

Arnold & McGugin, Receivers.

Anna Furnace, Collinwood, Tenn.: 1 stack, 62' 9" x 13', blt. 1918-20, f. o. July 28, 1920; 2 iron pipe stoves; 2 steam blowing eng. (20,000 cfm.); 5 tubular boilers, 750 H. P. Charcoal: local brown ore. Company owns brown ore mine at Hardwick, Wayne Co., Tenn.,

annual cap., 75,000 tons (Tennessee Valley Iron & Railroad Co. to June 20, 1920).

Product: hot blast charcoal pig iron, annual cap., 36,000 tons.

TENNESSEE COAL, IRON & RAILROAD CO., Brown-Marx Bldg., Birmingham, Ala.

Inc. March 24, 1860 in Tennessee. Subsidiary of United States Steel Corporation.

George G. Crawford, P.; H. C. Ryding, V. P.; L. T. Beecher, Sec. & T.; F. B. Winslow, A.; Willard Wilson, G. S. M.; LeRoy Holt, P. A.

Sales offices:

Boston, Mass., Wilbur S. Locke, 120 Franklin St.

Buffalo, N. Y., Fred C. Deming, 233-239 Main St.

Chicago, Ill., Edwin S. Mills, 208 South La Salle St.

Cincinnati, Ohio, George H. Vant, Fourth & Walnut Sts.

Cleveland, Ohio, James R. Mills, 704 Superior Ave., N. W.

Denver, Colo., Edwin M. Sparhawk, 17th & Stout Sts.

Detroit, Mich., W. B. Weston, 2124 Buhl Bldg.

New Orleans, La., Dennis Crowley, Jr., 921 Canal St.

New York, N. Y., Charles C. Cluff, 71 Broadway.

Philadelphia, Pa., James B. Bonner, Juniper & Chestnut Sts.

Pittsburgh, Pa., Albert M. Harper, 434 Fifth Ave.

St. Louis, Mo., S. W. Wheelock, 506 Olive St.

St. Paul, Minn., W. J. Totten, 1308 Merchants Natl. Bank Bldg.

Export representatives: United States Steel Products Co., 30 Church St., New York, N. Y.

Pacific Coast representatives: United States Steel Products Co.,

Pacific Coast Department, at

Los Angeles, Calif., 2080 East Slauson Ave.

Portland, Ore., Sixth & Alder Sts.

San Francisco, Calif., 116 New Montgomery St.

Seattle, Wash., Fourth Ave. South & Connecticut Ave.

Product: basic, foundry and forge pig iron; spiegeleisen and ferro-manganese; steel ingots; steel castings for own use and for sale; blooms, billets, slabs; standard rails, light rails; sheared and groove rolled plates; black and galvanized, flat and corrugated sheets; structural shapes, merchant bars, concrete bars, small shapes, agricultural shapes, bands, cotton ties; tool steel; angle bars, tie plates, standard track bolts and spikes; axles, forgings, steel pressings; freight cars of all types; coal, coke, coke by-products; duplex basic phosphate fertilizer.

Total annual capacity: 1,402,400 tons pig iron; 1,414,800 tons steel ingots; 18,000 tons steel castings; 1,180,800 tons blooms, billets and slabs; 130,000 tons sheet bars; 980,650 tons hot rolled products including 409,000 tons rails, 24,000 tons light rails, 198,000 tons sheared plates, 91,050 tons black and blue annealed sheets, 38,800

tons heavy structural shapes, 146,000 tons merchant bars, 73,800 tons long tie plate bars.

Alice Furnace, Birmingham, Ala.: 1 stack, 73' 1½" x 19' 7", blt. 1883, rebt. 1918, relined 1922; 6 stoves (3 Whitwell 70' x 19', 3 Gordon 60' x 19'); 5 steam blowing eng. (75,000 cfm.); 2 Wickes water-tube and 20 flue boilers, 2,000 H. P. By-product coke: local red and brown ores. Product: basic and foundry pig iron, annual cap., 117,300 tons.

Bessemer Furnaces, Bessemer, Ala.: 5 stacks; No. 1, 74' 10" x 18' 6", blt. 1886-87, f. o. 1888, relined 1924; No. 2, 74' 6" x 17' 9 13/16", blt. 1886-87, f. o. 1889, relined 1924; No. 3, 75' 3" x 19' 7¼", blt. 1889-90, relined 1923; No. 4, 75' 10¼" x 19', blt. 1889-90, relined 1925; No. 5, 61' 6" x 13' 1", blt. 1889-90, relined 1917; 19 Whitwell stoves (eight 60' x 20', one 67' x 20', seven 52' x 20', three 52' x 18'); 18 vertical long crosshead steam blowing eng. (210,000 cfm.); 34 water-tube boilers (17 Cahall, 10 Wickes, 7 Sterling) 10,926 H. P.; 1 slag granulating pit. By-product coke: local red and brown ore. Product: basic and foundry pig iron and ferromanganese, annual cap., 300,000 tons.

Bessemer Rolling Mills, Bessemer, Ala.: blt. 1887-88; 4 heat. fur. (one 4-d., one 6-d., two cont.) fuel prod. gas; 16" 3-h. 3-st. bar mill; 12" 3-h. 1-st. roughing and 8" 3-h. 5-st. finishing guide mill; sheared plate mill with 30" x 100" 2-h. roughing and 28" x 92" 3-h. finishing, middle roll 18" x 92". Roll sheared plates 3/16" to 1 1/8" thick, to 74" wide and 360" long. Product: hot rolled products, annual cap., 79,000 tons including 48,000 tons sheared plates, 5,000 tons heavy structural shapes, and 26,000 tons merchant and concrete bars and small shapes.

Ensley Works, Ensley, Ala.: 6 stacks, No. 1, 95' 3½" x 25' 6", blt. 1887-89, f. o. Mar. 19, 1889, rebt. 1922, relined 1925; No. 2, 90' x 22' 4", blt. 1887-88, f. o. Dec. 1, 1888, rebt. 1910, relined 1918; No. 3, 90' x 23', blt. 1887-88, f. o. June 5, 1888, rebt. 1909, relined 1920; No. 4, 88' 3" x 23' 2", blt. 1887-88, f. o. April 9, 1888, rebt. 1907, relined 1922; No. 5, 82' 10 7/16" x 22' 5", blt. 1903-05, f. o. Apr. 17, 1906, rebt. 1919, relined 1922; No. 6, 82' ⅞" x 20' 7⅝", blt. 1903-05, f. o. Apr. 28, 1905, relined 1921; 27 stoves (20 McClure 100' x 21', 4 Kennedy 93' 3⅜" x 21', 2 Roberts 110' x 22', 1 Roberts 110' x 25'); 22 Mesta vertical long crosshead steam blowing eng. and 4 turbo-blowers (3 Ingersoll-Rand, 1 General Electric), 585,000 cfm.; 64 water-tube boilers (22 Rust, 24 Wickes, 18 Sterling) 30,991 H. P. serve also electric power house and assist mill power system; 2 Heyl & Patterson double-strand pig casting mach.; 1 slag granulating pit. By-product coke: local red and brown ore. Product: basic pig iron, annual cap., 912,100 tons.

Steel Works: 3 bessemer converters (20-ton) for duplexing; 2 cupolas; 9 B. O. H. fur. (100-ton); fuel in O. H. tar, coke oven gas and prod. gas, 16 Hughes gas producers; 1 Heroult electric fur.

(6-ton) for melting ferro-manganese; 3 mixers (600-ton, 400-ton, 250-ton); gray iron (2,000 tons), ingot mould (20,800 tons) and brass (730 tons) foundry for own use. Product: steel ingots, annual cap., 1,128,000 tons; steel castings for own use and for sale.

Rolling Mills: 10 four-hole soaking pits, 1 one-hole preheater, fuel prod. gas; 1 cont. coke oven gas-fired heat. fur.; 44" 2-h. 1-st. blooming; 34" 2-h. 1-st. roughing; 28" 3-h. 3-st. finishing; 34" 2-h. 1-st. billet. Product: blooms, billets and slabs, annual cap., 700,800 tons; rails, 409,000 tons.

Fairfield Steel Works, Fairfield, Ala.: blt. 1917-18, first rolled products Jan. 13, 1919, first steel May 9, 1925; 4 B. O. H. fur. (110-ton) fuel, tar, oil and coke oven gas; 4 four-hole soaking pits, fuel coke oven gas; 9 coke oven gas-fired heat. fur. (eight 5-d. slab and bloom, 1 cont. billet); 45" 2-h. 1-st. blooming; 28" 3-h. 1-st., 26" 2-h. 3-st. and 24" 2-h. 2-st. comb. bar and structural; 16" to 11" 2-h. 14-st. continuous merchant; 21" 2-h. 5-st. sheet bar; 36" x 110" 3-h. sheared plate mill; 2 light gauge black plate mills with 32" x 48" 2-h. 1-st. roughing and 32" x 34" to 44" 2-h. 2-st. finishing; 2 jobbing plate mills 32" x 56" to 72" 2-h. 2-st. roughing, 32" x 38" to 72" 2-h. 2-st. finishing; 7 sheet and 7 pair fur.; 5 hot black sheet mills (32" x 48" to 56" 2-h. 5-st. roughing; 32" x 38" to 56" 2-h. 5-st. finishing); 4 trains cold rolls (three 26" x 60", one 26" x 44"); 12 box annealing fur.; 2 blue annealing fur.; 4 hand pickling tanks; 2 galvanizing pots. Roll sheared plates 3/16" to 1 1/8" to 96" wide and 600" long; black sheets 18 gauge and lighter, 24" to 48" wide to 96" and 144" long; black plate 24 gauge and lighter, 24" to 36" wide, to 96" long. Spike, bolt and nut shop; railroad spikes 4 1/2" x 1/2" to 6 1/2" x 3/4"; track bolts and nuts, 1/2" x 3" to 1 1/8" x 7". Splice bar shop. Product: steel ingots, annual cap., 274,800 tons; semi-finished hot rolled products, 610,000 tons including 480,000 tons slabs, and 130,000 tons sheet bars; finished hot rolled products, 492,650 tons including 24,000 tons light rails, 33,800 tons heavy structural shapes, 150,000 tons sheared plates, 91,050 tons black sheets of which blue annealed sheets to 42,000 tons; 120,000 tons merchant bars and 73,800 tons tie plate bars; galvanized sheets, 31,200 tons; railroad spikes, 134,400 kegs; track bolts and nuts, 105,100 kegs; finished splice bars, angle bars and patented joints, 24,000 tons.

Fairfield Car Works, Fairfield, Ala.: blt. 1922-23, first steel April 1, 1923; 2 B. O. H. fur. (25-ton) fuel, tar and coke oven gas; 4 steam hammers (1,500-lb. to 10,000-lb.); 1 steam hydraulic press (1,000-ton). Bolt and nut factory; bolts 3/8" to 1 1/2" dia., nuts 3/8" to 1 1/2", rivets 3/8" to 1 1/8" to 6" max. length. Car building and repair shop. Product: steel ingots, annual cap., 12,000 tons; steel car castings for own use and for sale, 18,000 tons; axles, car forgings and misc. light and heavy forgings, 18,400 tons (9,500 tons

axles, 3,200 tons heavy forgings, 5,700 tons light forgings); bolts, 32,480 kegs, nuts, 7,000 kegs, rivets, 20,160 kegs; new steel and composite cars (7,500 per annum); repairs and rebuilding (3,600 cars per annum).

Oxmoor Furnace, Oxmoor, Ala.: 2 stacks (alternate); 73' 6 $\frac{3}{4}$ " x 17' 10 $\frac{1}{2}$ ", blt. 1876-77, relined 1923; 7 Whitwell stoves (three 65' x 18', three 62' x 18', one 55' x 19'); 5 steam blowing eng. (4 Weimer, 1 Columbus) 60,000 cfm.; 10 water-tube boilers (8 Wickes, 2 Cahall) 2,500 H. P. By-product coke: local red and brown ore. Product: foundry and basic pig iron, annual cap., 73,000 tons.

Coal and Coke Properties: The company owns about 300,000 acres of coal lands. Located on the developed portions of this property are 9 coal mining plants, comprising 15 operating mines, producing coal for steam and gas purposes and for manufacture into coke. Connected with the mines are 7 operating coal washing plants and 4 coke plants with a total of 1,237 beehive coke ovens. At Fairfield, Ala. there are 434 Koppers by-product ovens, annual cap. 1,927,000 net tons coke. By-product recovery plant and Carl Still benzol plant (7,760,000 gals. light oil).

Iron Ore Properties: The company owns an extensive acreage of iron ore land in Alabama and Tennessee, upon which mines have been developed as follows: On the Red Mountain Range near Birmingham, Muscoda group (2 active mines), Wenonah group (4 active mines), Ishkooda group (3 active mines); at Greeley, Ala., Greeley Group (1 active mine).

Miscellaneous Properties: The company owns limestone and dolomite quarries, and timber and other lands. It owns the entire capital stock of the Birmingham Southern R. R. Co., The Tennessee Land Co., Chickasaw Shipbuilding & Car Co., Chickasaw Utilities Co., Chickasaw Land Co., and Fairfield Utilities Co., and a controlling interest in the Ensley Land Co.

Tennessee Manganese Co., Knoxville, Tenn. Works at Cleveland, Tenn. leased to Kyva Ferro Manganese Corp. in spring of 1921. Works at Cleveland, Tenn. leased to Southern Ferro-Alloys Co., Chattanooga, Tenn., April 1, 1923 and sold to Southern Ferro-Alloys Co. in 1925.

Tennessee Valley Iron & Railroad Co., Pittsburgh, Pa. went into hands of receiver and properties were sold June 22, 1920 to Tennessee Charcoal Iron Co.

Texas Steel Co., Beaumont, Texas was placed in hands of receivers. Sam Lanham Furnace at Rusk, Texas was sold at receivers' sale, Sept. 15, 1922 to John L. Keith, trustee, representing local syndicate.

TEXAS STEEL CO., Fort Worth, Texas.

Inc. May, 1923 in Delaware. Capital stock: com., no par value, auth. and issued 25,000 shares; pref. 7% cum. auth. \$2,500,000, issued \$800,000.

John H. Kirby, P.; at Houston, Texas. George W. Armstrong, V. P.; J. F. Foster, V. P. & G. M.; G. W. Link, Sec. & P. A.; Marcus Bright, T.; at Fort Worth, Texas. David R. Knapp, V. P.; at Philadelphia.

Works at Fort Worth, Texas: blt. 1904-05; 1 Moore electric fur. (5-ton) installed 1923 first electric steel 1923; 7 busheling fur.; 1 squeezer; 3 heat. fur. (two 6-d., one 4-d.); 20" 3-h. 2-st. muck bar; 16" 3-h. 2-st. bar; 10" 3-h. 4-st. guide; 15" 2-h. 1-st. rail splitter, 10" 3-h. 1-st. roughing, 8" 3-h. 4-st. finishing guide mill. (G. W. Armstrong & Co. to January, 1923.)

Product: steel ingots, annual cap., 15,000 tons; steel castings for own use and for sale; merchant and concrete bars, 25,000 tons.

THOMAS FURNACE CO. (The), 740 Kinnickinnic Ave., Milwaukee, Wis.

Inc. 1904 in Wisconsin. Capital stock: com., par value \$100, auth. \$150,000, issued \$126,000; pref. 7% cum., auth. \$750,000, issued \$565,200; bonds \$823,800.

John M. Thomas, P. & G. M.; Richard M. Jones, Sec. & T.; E. Z. Collier, A.; at Milwaukee. W. Aubrey Thomas, V. P.; at Jenifer, Ala.

Brand: Thomas (pig iron).

Thomas Furnace, Milwaukee, Wis.: 1 stack, 82' x 18', blt. 1908; 4 stoves (2 T. E. Thomas 90' x 18', 2 Massicks & Crooke 75' x 18'); 3 steam blowing eng., 48,000 cfm., 20 lbs. rated pressure; 6 water-tube boilers, 2,400 H. P.; 1 Pittsburgh Coal Washer single-strand pig casting mach.; slag granulating pit, annual cap., 110,000 tons. Coke: Lake ore.

Product: foundry, basic, bessemer, copper-free low-phosphorus, and malleable pig iron, annual cap., 120,000 tons.

THOMAS IRON CO. (The), Hokendauqua, Pa.

Inc. Apr. 4, 1854 in Pennsylvania. Capital stock: com., par value \$50, issued \$1,000,000. Subsidiary of Reading Iron Co.

L. E. Thomas, P.; J. M. Callen, V. P.; J. Norman Sherer, G. S.; Elbridge Walker, G. S. M.; G. F. D. Hallman, P. A.; at Baer Bldg., Reading Pa. Oliver T. Case, Sec. & T.; A. A. Osborne, S. Blast Furnaces; at Hokendauqua. W. B. Searing, S. Mine at Wharton, N. J.

Sales agents: Debevoise-Anderson Co. at 114 Liberty St., New York; Exchange Bldg., Boston; Stephen Girard Bldg., Philadelphia.

Brand: Thomas Vanadium (pig iron).

Hokendauqua Furnaces, Hokendauqua, Pa.: 2 stacks, Mary (formerly No. 3) 90' x 20' 6", blt. 1863, last reblt. 1922, relined 1925;

No. 1, 84' 8" x 18', blt. 1854, last rebt. 1918, 9 stoves (4 Taws & Hartman side-comb. 95' x 18', 2 Taws & Hartman center-comb. 80' x 18', 2 Taws & Hartman side-comb. 80' x 18', 1 McKee 2-pass 90' x 22'); 2 Allis-Chalmers steam blowing eng., 80,000 cfm., 20 lbs. rated pressure; 9 water-tube boilers (5 Connolly, 4 B. & W.) 3,620 H. P.; 1 Pittsburgh Coal Washer double-strand pig casting machine. By-product and beehive coke: New York, New Jersey and Swedish magnetite ores.

Product: foundry, forge, malleable and basic pig iron, annual cap., 175,000 tons.

Blast furnaces formerly known as Lock Ridge Furnaces (2 stacks), Alburtis, Pa., and Saucon Furnace (1 stack), Hellertown, Pa., were sold in 1924 and dismantled.

The company owns Richard Mine, Wharton, N. J., annual cap., 200,000 tons iron ore concentrates.

THOMAS SHEET STEEL CO. (The), Niles, Ohio.

Inc. June, 1924 in Ohio.

M. C. Summers, P.; Severn P. Ker, Jr., V. P. & G. S. M.; Frank Howell, Sec. & P. A.; C. R. Thomas, T.; T. C. Williams, G. S.

Works at Niles: blt. 1901, remod. 1924; 12 comb. sheet and pair fur.; 12 hot black sheet mills (28" x 36" to 48"); 6 cold mills (26" x 48" and 58"); 9 box annealing fur.; 6 pickling mach.; 4 galvanizing pots. (Brier Hill Steel Co. to March 1, 1923; Youngstown Sheet & Tube Co. to Mar. 1, 1924).

Product: black sheets, annual cap., 85,000 tons; sheets for galvanizing stamping, japanning, polished, automobile sheets; roofing and siding.

Three Rivers (Corporation of the City of), Three Rivers, P. Q., Canada.

Works at Three Rivers: 2 A. O. H. fur. (25-ton). Idle and for sale. (Formerly La Fonderie d'Acier des Trois Rivières, Ltd.)

Thropp, Joseph E., Everett, Bedford Co., Pa. owner of Earlston Furnace, Everett, Pa. (1 stack) and Saxton Furnaces, Saxton, Pa. (2 stacks) together with iron ore, limestone, coal and coke properties were acquired in April, 1923 by Joseph E. Thropp Company, Inc., a Delaware corporation. Company went hands of receiver in January, 1924. Properties were sold at receivers sale May 5-6, 1925 to W. S. Pilling Company, Everett, Pa. and subsequently taken over by Everett-Saxton Co.

Timken-Detroit Axle Co. (The), Detroit, Mich. sold steel foundry at Waynesburg Road, Canton, Ohio, February 1, 1922 to The Dayton Malleable Iron Co. Manufacture of steel castings discontinued at this plant.

TIMKEN ROLLER BEARING CO. (The), Canton, Ohio.

Inc. Dec. 16, 1904 in Ohio. Capital stock: com., no par value, auth. 1,250,000 shares, issued 1,200,882 shares.

H. H. Timken, P.; W. R. Timken, V. P.; H. J. Porter, V. P.; J. G. Obermier, V. P.; M. T. Lothrop, V. P.; T. V. Buckwalter, V. P.; J. T. Strough, Sec. & T.; A. J. Sanford, Director of Purchases.

Sales offices: Cleveland, Chicago, Detroit and New York.

Works at Canton: blt. 1901; 5 Heroult electric fur. (6-ton) first electric steel Oct. 5, 1916; three 2-hole soaking pits; 3 cont. heat. fur.; 35" 3-h. 1-st blooming; 22" 3-h. 4-st. bar; 16" 3-h. 3-st. roughing, 12" 3-h. 5-st. bar; 10" 3-h. 3-st. bar; hot and cold units for seamless tubes, f. o. Dec. 20, 1915. Cold drawing dept. for rods $\frac{3}{8}$ " to 6 $\frac{1}{4}$ ". Electric annealing equipment.

Product: steel ingots, annual cap., 70,000 tons; alloy steel ingots (nickel, molybdenum); rolled products, 60,000 tons, including piercing bars for own use and for sale, merchant bars, forging bars and billets; cold drawn seamless tubes, 35,000 net tons; cold drawn solids, 15,000 tons.

Tindel-Morris Co., Eddystone, Pa. was placed in hands of receivers Oct. 23, 1920. Works at Eddystone were sold Oct. 17, 1922 to Federal Alloy Steel Corporation, Eddystone, Pa.

Tioga Steel & Iron Co. see Taylor-Wharton Iron & Steel Co.

TISON, ALEXANDER, Trustee, 15 William St., New York, N. Y.

Talladega Furnace, Talladega, Ala.: 1 stack, 80' x 18', blt. 1889, remod. 1917-18; 3 hot blast stoves, 65' x 26'; 2 steam blowing eng.; 3 water-tube boilers. Coke: local brown and red ore. Owns 60 beehive coke ovens at Coal City, Ala., and 122 beehive coke ovens at Talladega.

Product: foundry pig iron, annual cap., 45,000 tons.

Titan Iron & Steel Co., Inc., see Titan Steel Corporation.

Titan Steel Corporation, Newark, N. J. acquired plant operated by Hewitt Steel Corporation from The Titan Co., owner July 1, 1920. Corporate title changed to Titan Iron & Steel Co., Inc., in April, 1922. Property transferred to Titan Terminal Co. in 1924.

TITAN TERMINAL CO. (The), 8 Lister Ave., Newark, N. J.

R. E. Jennings, 2nd, G. M.

Works at 8 Lister Ave., Newark: blt. 1901; 3 B. O. H. fur. (30-ton); 1 A. O. H. fur. (25-ton). Idle at present. (Hewitt Steel Corp'n. to Aug. 1920).

Product: steel castings for sale, annual cap., 50,000 tons (40,000 tons basic, 10,000 tons acid); steel ingots.

TITANIUM ALLOY MFG. CO. (The), Niagara Falls, N. Y.

Inc. June, 1916 in Maine.

William F. Meredith, P.; Joseph D. Meredith, Sec. & T.; Paul Haasis, A.; at 94 Fulton St., New York, N. Y. Andrew Thompson, V. P., G. M. & G. S. M.; Henry Armstrong, G. S.; Ralph S. Tabor, P. A.; at Niagara Falls.

Sales offices:

Chicago, Ill., 450 Peoples Gas Bldg.

New York, N. Y., 94 Fulton St.

Pittsburgh, Pa., 521 Oliver Bldg.

Sheffield, England, T. Rowlands & Co., Ltd.

Brand: Ferro Carbon Titanium in double triangle.

Works at Niagara Falls: blt. 1907, f. o. Aug. 17, 1907; 8 electric fur.

Hydro-electric power (4,000 H. P.) from Niagara Falls Power Co.

Product: ferro carbon-titanium, annual cap., 5,000 tons.

TIVANI ELECTRIC STEEL CO., Ltd., Belleville, Ontario, Canada.

Inc. 1911 in Province of Ontario. Capital stock: com., \$20,000.

J. W. Evans, P.; H. F. Ketchson, Sec. & T.; at Belleville. J. M. Wallace, G. M.; at Oakville, Ont.

Works at Belleville, Ontario: blt. 1912-13; f. o. June 13, 1913; 3 electric furnaces for manufacture of ferro-alloys (one of these in plant but not set up); ferro-alloys first made 1915; 1 one-ton electric fur. for manufacture of steel. Hydro-electric power.

Product: ferro-molybdenum, annual cap., 150 tons; low-phosphorus pig iron, annual cap., 1,800 tons; steel ingots, 1,000 tons.

TOLEDO FURNACE CO. (The), Union Trust Bldg., Cleveland, Ohio.

Inc. Feb. 3, 1902 in Ohio. Capital stock: com., no par value, auth. 200,000 shares, issued 132,000 shares.

Henry S. Pickands, P.; J. C. McLauchlan, V. P.; S. E. Bool, Sec. & A. T.; N. B. Prentice, P. A.; at Union Trust Bldg., Cleveland. J. S. Crowther, Jr., G. S.; at Toledo, Ohio.

Sales agents: Pickands, Mather & Co., Union Trust Bldg., Cleveland.

Brand: Toledo (pig iron).

Toledo Furnaces, Toledo, Ohio: 2 stacks; "A," 80' x 23', blt. 1902-03; "B," 95' x 24' 6", blt. 1906-07, rebld. 1924-25, blown in Jan. 16, 1925; 8 Kennedy stoves (four 109' x 22', four 90' x 22'); 5 vertical steam blowing eng. (520 cu. ft. air per revolution, each engine); 17 water-tube boilers (Sterling) 7,637 H. P. furnish power also to coke plant; 2 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 50,000 tons. By-product coke: Lake ore. By-product coke plant; 94 Koppers cross regenerative ovens, by-product recovery plant, Koppers benzol plant; annual cap. 350,000 net tons coke, 2,000,000 gals. light oil.

Product: foundry, malleable and basic pig iron, annual cap., 401,500 tons.

TOLEDO STEEL CASTING CO. (The), Bancroft St. & Smead Ave., Toledo, Ohio.

Inc. 1904 in Ohio. Capital stock: com., par value \$100, auth. and issued \$100,000.

J. B. Nordholt, P.; C. T. Johnson, V. P.; C. C. Smith, Sec., T., G. S. M. & P. A.; E. J. Kennelly, A.; G. A. Weihrauch, G. S.

Sales office: Detroit, Mich., H. S. Lee Corp., 6070 Woodward Ave.

Brand: Toledo Steel (castings).

Works at Bancroft St. & Smead Ave., Toledo: blt. 1890, first converter steel, June, 1905; 2 Tropenas converters (2-ton), 1 cupola.

Product: steel castings for sale, annual cap., 3,600 tons. Alloy steel castings (nickel, vanadium). Small carbon and alloy castings.

TONAWANDA IRON CORPN., 1807 Elmwood Ave., Buffalo, N. Y.

Inc. Mar. 27, 1923 in New York. Capital stock: com., par value \$100, auth. \$1,500,000, issued \$1,000,000. Subsidiary of American Radiator Co.

C. M. Wooley, P.; Charles M. Parker, 1 V. P.; Wetmore Hodges, Sec.; F. J. Mullany, A. Sec.; Seth Barham, T.; at 40 West 40th St., New York, N. Y. W. A. Van Arsdale, 2 V. P.; at Buffalo, N. Y. Robert McClurkin, G. S.; at North Tonawanda, N. Y.

Tonawanda Furnace, North Tonawanda, N. Y.: 1 stack, 85' 6" x 15' 6", blt. 1873, last remod. in 1924 and blown in Oct. 30, 1924; B Furnace has been abandoned; 5 stoves (four 2-pass center comb. 80' x 18', one 3-pass center comb. 80' x 18'); 4 Allis-Chalmers high-pressure condensing steam blowing eng. (67,600 cfm.) 15 lbs. rated pressure; 8 B. & W. water-tube boilers, 4,000 H. P.; 1 Uehling double-strand pig casting mach. Conn. coke: Lake ore. (Formerly owned by Tonawanda Iron & Steel Co. and leased to Donner Steel Co., Inc., acquired by present owners March 21, 1923.)

Product: foundry pig iron, annual cap., 162,000 tons.

Tonawanda Iron & Steel Co., Buffalo, N. Y. sold Tonawanda Furnaces, North Tonawanda, N. Y. (2 stacks) to American Radiator Co. March 21, 1923. American Radiator Co. organized Tonawanda Iron Corporation to take over and operate this property.

Transit Supply Co., Twin City Lines, St. Paul, Minn.

W. J. Smith, Master Mechanic.

Company has foundry for converter steel castings, for own use only.

Company refuses all information. Foundry probably idle.

TRANSUE & WILLIAMS STEEL FORGING CORPN., Alliance, Ohio.

Inc. Oct. 26, 1916 in New York. Capital stock: com., no par value, 100,000 shares.

F. E. Dussel, P.; F. W. Trabold, V. P. & T.; J. A. Bonner, G. S.

Sales offices:

Chicago, Ill., Dromgold & Glenn, 460 McCormick Bldg.

Detroit, Mich., H. Temple Barber, 426 Lexington Bldg.

Philadelphia, Pa., J. C. Redmond, Drexel Bldg.

Company operates drop forge plant and metal stamping plant for production of drop forgings of all kinds and metal stampings.

Works at Alliance, Ohio: blt. 1925; 3 rolling units with patented open-end rolls of special design, one 2-h. st. to each unit, for rolling rings 4" to 30" O. D., $\frac{1}{2}$ " to 5" wide, maximum weight 100-lb.

Product: weldless rolled rings for gear blanks, bearing and spinning rings, annual cap., 4,000 tons.

TREADWELL ENGINEERING CO., 25th & Lennox Sts., Easton, Pa.

Inc. 1910 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$450,000; bonds \$187,500.

J. H. Killinger, P.; at 140 Cedar St., New York, N. Y. A. A.

Neave, V. P. & G. M.; W. I. Gassert, Sec. & T.; G. R. Casey,

G. S. M.; R. W. Foltz, P. A.; at Easton, Pa.

Sales offices: 1101 Chestnut St., Philadelphia, Pa.; 601 Farmers Bank Bldg., Pittsburgh, Pa.

Works at Easton: blt. 1911; 1 Heroult electric fur. (2½-ton); 2 cupolas; gray iron foundry, annual cap., 15,000 tons.

Product: steel castings for own use and for sale, annual cap., 5,000 tons.

TREDEGAR CO. (The), P. O. Box 1398, Richmond, Va.

Inc. 1867 in Virginia. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,000,000; bonds \$133,000.

Archer Anderson, Jr., P.; J. R. A. Hobson, V. P. & G. M. S.;

J. R. J. Anderson, Sec. & T.; W. R. Trainham, A.; St. Geo. M.

Anderson, S. Foundry and Machine Shops; Paul E. Miller, S.

Rolling Mills and Horse Shoe Dept.; M. de G. Hobson, M. S.

(horse shoes).

Brands: Piedmont, IXL, Roadster, Cranberry, Prairie, Togo, Tredegar (horse shoes, etc.).

Works at Tredegar & Seventh Sts., Richmond: blt. 1836; 9 coal-fired heat. fur.; 5 gas-fired heat. fur. (4-d.); 10 coke-fired heat. fur. (four 3-d., six 4-d.); 18" 3-h. 3-st. bar; 18" 3-h. 1-st. bar; 10" 3-h. 3-st. guide; two 12" to 10" 3-h. 5-st. spike rod; 10" 3-h. 5-st. horse shoe bar; 1 trip hammer; 14 spike mach. Gray iron and brass foundry. Machine, blacksmith and boiler shops.

Product: merchant bar, iron and steel, annual cap., 55,000 tons; angle and fish plates, railroad and boat spikes, links and pins, horse and mule shoes; freight car wheels; semi-steel projectiles; gray iron castings.

TREMONT NAIL CO., West Wareham, Mass.

Inc. 1858 in Massachusetts. Capital stock: com. \$100,000.

E. P. Brown, P.; H. E. Abbey, T.; at Albany Bldg., Boston, Mass.
F. M. Larchar, G. M.; E. L. Bartholomew, G. S.; at West Wareham.

Sales office: Boston, Mass., 205 Lincoln St.

Works at West Wareham: orig. blt. 1820; three 30-ton B. O. H. fur.; 6 Stubblebine coal 3-d. heat. fur.; 30" 2-h. 1-st. blooming mill; 18" 3-h. 3-st. skelp mill; 100 cut nail machines. Gray iron and brass foundry for own use.

Product: ingots, slabs, billets, nail plate and cut nails. Annual cap., 25,000 tons ingots, 18,000 tons slabs and billets, 12,000 tons nail plate or skelp; 100,000 kegs cut nails.

TROJAN ELECTRIC STEEL CO., 3401 South Hoyne Ave., Chicago, Ill.

Inc. March, 1916 in Illinois. Capital stock: com., par value \$100, auth. \$75,000, issued \$72,600.

Eugene Guy Lilly, P. & T.; Charles J. Farwell, V. P.; H. C. Nellegar, Sec.; L. D. Jacobson, G. S.; Eli Amundson, P. A.

Sales office: 3401 South Hoyne Ave., Chicago.

Brand: Trojan (tool steel).

Works at 3401 South Hoyne Ave. (leased from H. H. Walker & Co., Chicago): blt. 1916-17, f. o. 1917; 1 Heroult electric furnace (1-ton); one 2,500-lb. air hammer; 1 annealing furnace.

Product: steel ingots for sale, annual cap., 2,400 tons; alloy steel ingots in all analyses; carbon and alloy tool steels.

Troy Coke & Iron Corporation, see Hudson Valley Coke & Products Corporation.

Troy Furnace Corporation, Buffalo, N. Y. leased Burden Furnace, Troy, N. Y. July 1, 1920 but did not operate. Lease was surrendered in 1924 and company dissolved.

Troy Tool & Castings Co., Watervliet, N. Y., see under Bird-Archer Company.

TRUMBULL-CLIFFS FURNACE CO. (The), 1460 Union Trust Bldg., Cleveland, Ohio.

Inc. May 15, 1920 in Ohio. Capital stock: com., no par value, auth. and issued 100,000 shares; pref. 6% cum. auth. and issued \$5,000,000; bonds \$3,000,000.

William G. Mather, P.; D. T. Croxton, V. P.; S. L. Mather, Sec.; C. G. Heer, T.; C. D. Mason, A.; at Cleveland. J. S. Fraser, Resident Manager; at Warren, Ohio.

Trumbull-Cliffs Furnace, Warren, Ohio: 1 stack, 91' x 22' 6", blt. 1920-21, f. o. Jan. 16, 1922, relined 1924; 3 Brassert side-comb. stoves 100' x 22'; 2 Ingersoll-Rand turbo-blowers, 45,000 cfm., 14.3 lbs. rated pressure; 6 Sterling water-tube boilers, 4,770 H. P. serve coke oven plant also; 1 Heyl & Patterson double-strand pig

casting mach.; Greenawalt sintering plant for flue dust, annual cap., 20,000 tons; 1 slag granulating pit, annual cap., 125,000 tons. By-product coke plant; 47 Koppers by-product coke ovens, by-product recovery plant and Koppers motor fuel plant, annual cap., 290,000 net tons coke, 1,500,000 gals. light oil. By-product coke: Lake ore.

Product: basic pig iron, annual cap., 240,000 tons.

TRUMBULL STEEL CO. (The), South Pine St., Warren, Ohio.

Inc. 1912 in Ohio. Capital stock: com., no par value, auth. 1,500,000 shares, issued 629,000 shares; pref. 7% cum. auth. \$15,000,000, issued \$10,000,000.

John T. Harrington, P.; Charles H. Elliott, V. P.; A. N. Flora, V. P.; J. U. Anderson, T.; D. S. Dennison, A. Sec. & A. T.; J. H. H. Farley, A. C.; W. B. Ohl, A.; F. H. Loomis, G. S. M.; L. G. Gorman, P. A.

Sales offices:

Chicago, Ill., 208 South La Salle St.

Cleveland, Ohio, Hanna Bldg.

Dallas, Texas, Busch Bldg.

Denver, Colo., Chamber of Commerce Bldg.

Detroit, Mich., Ford Bldg.

El Paso, Texas, Martin Bldg.

Los Angeles, Calif., Bradbury Bldg.

Memphis, Tenn., Randolph Bldg.

Nashville, Tenn., Stahlman Bldg.

New York, N. Y., 3846 Grand Central Terminal Bldg.

Philadelphia, Pa., Morris Bldg.

St. Louis, Mo., Chemical Bldg.

Salt Lake City, Utah, Dooly Bldg.

San Francisco, Calif., Monadnock Bldg.

Seattle, Wash., L. C. Smith Bldg.

Brand: Trumbull.

Product: hot and cold-rolled strip steel; blue annealed, black and galvanized sheets; auto body, electric and full finished sheets; long terne plates; black plate for tinning, tinplates.

Home Plant, Warren, Ohio: blt. 1912-13, f. o. July 31, 1913; 7 B. O. H. fur. (100-ton) fuel in O. H. prod. gas, coke oven gas, tar and oil, 14 Hughes gas prod.; six 4-hole soaking pits, 5 cont. heat. fur., fuel prod. gas; 36" 2-h. 1-st. blooming; 21" 2-h. 4-st. Morgan roughing, 20" to 16" 2-h. 6-st. Morgan sheet bar and billet; 20" to 16" 2-h. 12-st. cont. and Belgian strip; 14" 2-h. 10-st. cont. strip; 9" 2-h. 11-st. cont. and Belgian strip. Cold rolling dept. for cold rolled strip with 6 tandems, 4 stands each, 8" x 10" to 20" x 24"; 8 single mills, 8" x 10" to 12" x 18"; 4 combination mills 8" x 12" and 12" x 16". Sheet mill: 2 sheet and 2 pair fur.; 32 comb. sheet and pair fur.; 2 jobbing mills, 32" x 72"; 13 hot

black sheet mills, 28" x 36" and 28" x 44"; 19 hot black plate (tin) mills, 28" x 32" to 28" x 36"; 6 cold sheet mills 24" x 36" and 24" x 44"; 24 cold tin mills 24" x 30"; 30 double annealing fur.; 2 blue annealing fur.; 13 pickling mach. (9 plunger, 3 Mesta, 1 cont.); 8 galvanizing pots. Roll black sheets, 7 to 30 gauge, 24" to 66" wide, 60" to 180" long; black plate, 15 to 38 gauge, 14" to 36" wide, 14" to 84" long. Tin house: f. o. Aug. 30, 1913; 32 sets, 30 for coke tinplates, 2 for long terne plates; fuel coal. Product: steel ingots, annual cap., 500,000 tons; semi-finished, 500,000 tons including 125,000 tons slabs, 125,000 tons billets, 250,000 tons sheet and tinplate bars; finished hot-rolled products, 455,000 tons including 75,000 tons black sheets, 35,000 tons blue annealed sheets, 75,000 tons black plate for tinning, 270,000 tons hot-rolled strip, bands, etc.; cold-rolled strip, 55,000 tons; galvanized sheets, 60,000 tons; long terne plates 10,000 tons; tinplates, 1,500,000 base boxes.

Liberty Plant, Warren, Ohio: blt. 1917-18, f. o. May, 1918; 10 comb. sheet and pair fur.; 10 hot black plate (tin) mills, 28" x 34"; 8 stands cold rolls, 4 double sets, 24" x 36" and 24" x 40"; 12 box annealing fur.; 2 Mesta pickling mach.; 15 tinning sets for coke tinplates. Fuel, pulverized coal.

Product: black plate for tinning, annual cap., 45,000 tons; tin plates, 800,000 base boxes.

Tudhope Electro Metals, Ltd., Vancouver, B. C., Canada, see under Hyatt Steel Products, Ltd.

Tungsten Products Co., Boulder, Colo. Works at 3rd and Pearl Sts., Boulder, were acquired by The Radium Company of Colorado, in May, 1921.

Tungsten Steel Co. (The), Toledo, Ohio, was placed in hands of receiver March 18, 1921. Works at Toledo were sold at receiver's sale in 1921 and dismantled.

TURNBULL ELECTRO METALS, Ltd., Berryman Ave., St. Catharines, Ont., Canada.

Inc. May 1, 1917 in Dominion of Canada. Capital stock: com., par value \$100, auth. \$50,000, issued \$26,000.

Robert Turnbull, P.; at Niagara Falls, N. Y. James Turnbull, V. P.; at Port Colborne, Ont. Charles W. Sim, Sec., T., G. M. & P. A.; at St. Catharines, Ont.

Sales agents: A. C. Leslie & Co., Ltd., 560 St. Paul St., Montreal. Works at Berryman Ave., St. Catharines, Ont.: 1 stationary type 3-phase electric fur. (5-ton). Hydro-electric power 2,000 H. P. from Public Utilities Commission, St. Catharines.

Product: low phosphorus and silvery (15% Si.) pig iron, annual cap., 6,000 tons.

TUTTLE, CHARLES W., Auburn, N. Y.

Est. 1853. Charles W. Tuttle, Owner; Kirk Bowen, G. M. & P. A.

Brand: Auburn (hammered iron, hammered staybolt iron); Tuttle (horse shoe iron).

Auburn Iron Works, Auburn, N. Y.: blt. 1853; 2 oil-fired 2-d. heat. fur.; 10" 3-h. 4-st. bar mill; one 3,000-lb. steam helve hammer.

Product: double refined merchant bar, horse shoe bar, and staybolt iron, annual cap., 2,400 tons.

TWIN CITY FORGE & FOUNDRY CO., Stillwater, Minn.

Inc. Aug., 1917 in Minnesota. Capital stock: com. \$400,000; pref. \$82,500.

George H. Atwood, P. & T.; J. L. Record, V. P.; Edwin A. Merrill, Sec.; Fred F. Stroebe, A.; Melvin Ovestrud, W. M.; H. F. Landon, G. S. M.

Works at Stillwater: 1 Heroult electric fur. (6-ton) installed 1918, f. o. June, 1918. Drop forging plant: 12 hammers (to 12,000-lb.).

Product: steel ingots and steel castings for own use and for sale, annual cap., 4,000 tons; drop forgings.

TYLER TUBE & PIPE CO. (The), Washington, Pa.

Inc. 1890 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$1,500,000.

Louis F. Doyle, P.; at 111 Broadway, New York, N. Y. Charles A. Bumpus, V. P. & T.; E. Tyler Davis, Sec.; John H. Wallace, A.; at Washington, Pa.

Works at Washington: blt. 1890-91; five 3-d. heat. fur., coal-fired; 18" 2-h. 3-st. bar; 18" 3-h. 2-st. grooved skelp. Charcoal forge: 18 knobbling fires; 2 hammers (6,000-lb.). Three lap-weld fur. for boiler tubes 1½" to 6" O. D.

Product: charcoal iron blooms from scrap for own use, annual cap., 15,000 tons; charcoal iron bars, 5,000 tons; skelp, 27,000 tons; charcoal iron and steel boiler tubes, 15,000 tons; plain end pipe, 20,000 tons.

ULSTER IRON WORKS, 21 North Sussex St., Dover, N. J.

Inc. July 3, 1903 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$600,000.

John Mulligan, P.; Frank W. Hamilton, V. P. & G. M.; John D. B. Vreeland, Sec. & T.; Thomas H. Smith, G. S.; at Dover. Howard A. Gray, G. S. M.; at 122 South Michigan Ave., Chicago.

Sales offices:

Chicago, Ill., 122 South Michigan Ave.
Houston, Texas, 610 Second National Bank Bldg.
New Orleans, La., Japonica & North Miro Sts.
New York, N. Y., 52 Vanderbilt Ave.
St. Louis, Mo., 1941 Railway Exchange Bldg.
St. Paul, Minn., 906 Merchants Bank Bldg.
San Francisco, Calif., 582 Market St.

Brands: Ulster (engine bolt iron), Ulster Special (staybolt iron, seamless drilled hollow staybolts).

Works at Dover: 22 double puddling fur.; 4 squeezers (2 rotary, 2 jaw); 5 coal-fired heat. fur. (two 2-d., three 3-d.); 18" 2-h. 2-st. muck, 18" 3-h. 1-st. muck; 20" 3-h. 2-st. bar; 16" 3-h. 2-st. bar; 12" 3-h. 3-st. guide; 10" 3-h. 4-st. guide. Shop for drilled hollow staybolts $\frac{3}{4}$ " to 2" dia., $4\frac{1}{2}$ " to 24" long.

Product: muck bar, annual cap., 24,400 tons; staybolt and engine bolt iron, 24,000 tons; drilled hollow staybolts, 6,000 tons.

UNION DRAWN STEEL CO., 401 Seventh Ave., Beaver Falls, Pa.

Inc. May 6, 1889 in Pennsylvania. Capital stock: com., par value \$100, auth. \$20,000,000, issued \$10,000,000.

E. S. Hoopes, P.; E. H. Birney, V. P. & G. M.; C. H. Beegle, V. P.; George B. Mitchell, V. P. & G. S. M.; E. C. Rebeske, Sec. & T.; George W. Weitz, A.; J. A. Quav, P. A.

Sales offices:

Boston, Mass., 200 Devonshire St.
Buffalo, N. Y., 731 Marine Trust Bldg.
Chicago, Ill., Tribune Towers.
Cincinnati, Ohio, 2225 Bogen St.
Cleveland, Ohio, Rockefeller Bldg.
Detroit, Mich., 237 Joseph Campau Ave.
Greenville, S. C.
New York, N. Y., Washington, Watts and Canal Sts.
Philadelphia, Pa., Ninth & Willow Sts.
St. Louis, Mo., 314 North Broadway.
St. Paul, Minn., Pioneer Bldg.

Company operates three plants at Beaver Falls, Pa., and plants at Gary, Ind., Hartford, Conn., and Massillon, Ohio; also owns Union Drawn Steel Co., Ltd. with plant at Hamilton, Ont., Canada. It acquired as of Sept. 1, 1925 The Peerless Drawn Steel Co., Massillon, Ohio, with rolling mill and cold drawing plant at Massillon.

Product: cold drawn steel products; rounds, squares, flats, hexagons and special shapes; drill rods, crank shafts, connecting rods, elevator guides, racks, keys, taper pins: steel joist.

Peerless Plant, Massillon, Ohio: rolling mill, blt. 1920, f. o. Sept. 15, 1920; two 4-d. heat. fur.; 14" 3-h. 1-st. roughing, 10" 3-h. 2-st. and 10" 2-h. 1-st. finishing. Cold drawing plant.

Product: merchant bars, annual cap., 33,000 tons.

Union Electric Steel Co., Carnegie, Pa. was succeeded April 1, 1923 by Union Electric Steel Corporation.

UNION ELECTRIC STEEL CORPN., 504 Frick Bldg., Pittsburgh, Pa.

Inc. Apr. 6, 1923 in Pennsylvania. Capital stock: com., no par value, auth. and issued 6,250 shares; pref. 6% cum. auth. \$375,000, issued \$309,300; bonds \$500,000.

E. W. Mudge, Ch.; C. B. Ferree, P. & G. S. M.; O. G. Leichter, V. P. & G. M.; R. G. Campbell, Sec. & T.; E. W. Pogue, A.; R. Y. McCrum, G. S.; William Newbury, P. A.

Sales agent: R. J. Emery, Detroit, Mich.

Works at Carnegie, Pa.: blt. 1916-17, f. o. July, 1917; 2 Heroult electric fur. (6-ton); 3 hammers (500-lb., 1,700-lb., 5,000-lb.); 1 hydraulic press (1,000-ton); heat treating furnaces and machine shop.

Product: steel ingots, annual cap., 16,000 tons; alloy steel ingots (nickel, vanadium, molybdenum, etc.); die blocks, trimmer steels, piston rods, oil well forgings, special railroad forgings, forged steel rolls.

Union Furnace Co. (The), Cincinnati, Ohio sold Union Furnace, Iron-
ton, Ohio in 1923. Blast furnace and machinery dismantled and removed in 1923-24. Site will be used for other purposes.

UNION IRON WORKS, 215 Montgomery Ave., Spokane, Wash.

Inc. 1898 in Washington. Capital stock: com. \$100,000.

E. J. Roberts, P.; Austin Corbin, V. P.; J. M. Fitzpatrick, Sec. & T.; T. E. McDonald, P. A.

Works at Spokane: blt. 1889; first converter steel, April, 1912; one 3,000-lb. Tropenas converter. Gray iron (1,000 tons) and brass foundry.

Product: steel castings, annual cap., 1,000 tons.

Union Motor Truck Co., Bay City, Mich. did not complete installation of steel foundry begun in March, 1920 for manufacture of electric steel castings. Project was abandoned.

Union Rolling Mill Co. (The), Cleveland, Ohio was merged October 1, 1920 in The Bourne-Fuller Company.

UNION SPRING & MANUFACTURING CO., 300 Granite Bldg., Pittsburgh, Pa.

Inc. Sept. 8, 1902 in Pennsylvania.

Leonard G. Woods, P.; Albert Pancoast, V. P.; H. C. Bughman, Sec. & T.

Sales offices:

Baltimore, N. S. Kenney, 1014 Munsey Bldg.

Chicago, A. C. Woods, Fisher Bldg.

Louisville, J. W. Chandler, Todd Bldg.

New York, E. H. May, 50 Church St.

Philadelphia, D. R. Warfield, 226 South 15th St.

Richmond, W. L. Jeffries, Jr., Mutual Bldg.

Works at New Kensington, Pa.: blt. 1902; three 2-ton Tropenas converters; one 6-ton Heroult electric fur.; 1 cupola.

Product: steel castings for own use and for sale up to 2,000-lb.; manganese and nickel alloy steel castings; wire, coil and elliptic springs, journal boxes and journal box lids. Annual cap., 10,000 tons converter steel castings and 5,200 tons electric steel castings.

Union Steel Casting Co., Boston, Mass. Works at 53 Gerard St., Boston, formerly leased and operated by Union Steel Casting Co. were leased September 12, 1921 by Roxbury Steel Casting Co.

UNION STEEL CASTING CO., 62nd & Butler Sts., Pittsburgh, Pa.

Inc. Apr. 27, 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. \$10,000,000, issued \$1,954,600.

C. C. Smith, Ch.; J. P. Allen, P. & G. M.; S. H. Church, V. P.;

J. B. Henry, V. P. & G. S.; W. C. Eichenlaub, Sec. & G. S. M.;

G. W. Eisenbeis, T.; C. E. Gillespie, A.; H. C. Wickline, P. A.

Brand: Union (castings, annealing boxes).

Works at 61st., 62nd and Butler Sts., Pittsburgh; Plant 1, blt. 1899; Plant 2, blt. 1911; 5 A. O. H. fur. (25-ton), fuel, natural gas and fuel oil.

Product: steel ingots and steel castings for sale, annual cap., 55,000 tons (18,000 tons ingots, 37,000 tons castings). Alloy steel ingots and castings (vanadium, molybdenum). Locomotive and railroad castings, rolling mill castings, annealing boxes, general machinery castings.

UNION TOOL CO., P. O. Drawer 1028, Torrance, Calif.

Inc. May 8, 1908 in California.

D. S. Faulkner, P.; F. M. Berry, V. P.; Wilfred Teal, Sec. & T.;

R. R. Smith, Plant M.; J. J. Byrnes, P. A.; at Torrance. F. W. Black, V. P. & T.; at Los Angeles, Calif. J. A. Geismar, V. P.; at Toledo, Ohio.

Company operates plants at Torrance, Calif; Carnegie, Pa.; and West Chicago, Ill. Steel plant at Torrance, see below.

Works at Torrance, Calif: 2 Heroult electric fur. (one 3-ton, one 6-ton); B. O. H. fur. dismantled in 1922; 2 forging presses (one 500-ton, one 1,200-ton); 3 cupolas and gray iron foundry (22,500 tons) for own use and for sale.

Product: steel ingots and steel castings for own use and for sale, annual cap., 9,000 tons ingots, 5,000 tons steel castings; alloy steel ingots and castings (chrome, vanadium, manganese).

UNITED ALLOY STEEL CORPN., 8th St. Extension N. E., Canton, Ohio.

Inc. Oct. 1916 in New York. Capital stock: com., no par value, auth. 905,000 shares, issued 800,000 shares; pref. 7% cum., auth. \$10,000,000, issued \$3,300,000.

E. A. Langenbach, Ch.; George H. Charls, P.; Charles W. Krieg, V. P., Sec. & T.; L. G. Pritz, V. P. & G. M.; H. H. Pleasance, V. P. & G. S. M.; George B. Harlan, C.; C. A. Ilgenfritz, P. A.

District Sales Offices (United Alloy Steel Corpn.):

Chicago, Ill., 1440 Straus Bldg.

Cleveland, Ohio, 2004 Union Trust Bldg.

Detroit, Mich., 1411 Ford Bldg.

New York, N. Y., 1626 Pershing Square Bldg.

Portland, Ore., Hickok & Hickok, 309 Upshur St.

San Francisco, Calif., Hickok & Hickok, 489 Bryant St.

Syracuse, N. Y., 402 Keith Theatre Bldg.

Branch Sales Offices (Berger Manufacturing Co.):

Boston, Mass., 307-17 Dorchester Ave.

Chicago, Ill., 123 West Madison St.

Dallas, Texas, Corinth & Pearl Sts.

Jacksonville, Fla., Berger Mfg. Co.

Kansas City, Mo., 14th & Charlotte Sts.

Minneapolis, Minn., 1701-09 Broadway.

New York, N. Y., 516-24 West 25th St.

Philadelphia, Pa., 16th & Washington Sts.

Roanoke, Va., Berger Mfg. Co.

St. Louis, Mo., 3rd & Russell Aves.

San Francisco, Calif., 1120 Mission St.

Brands: Uloy (steels), Enduro (rustless iron bars and sheets), Toncan (sheets); United (pig iron), Berloy (fabricated products).

Products: pig iron; steel ingots, alloy steel ingots; forging ingots and billets, sheet bars; carbon and alloy steel bars, piston rods, pistons, shafting, heat-treated and cold drawn products; blue annealed

sheets, black and galvanized sheets, flat and corrugated; sheets for stamping, japanning, electric and automobile sheets; sheet metal products.

United Furnace Division, Canton, Ohio: 1 stack, 90' x 22', blt. 1915-16, remodel. and relined 1924; 3 Kennedy 2-pass hot blast stoves 110' x 24'; 2 Mesta steam blowing eng. (105,560 cfm.), 22-lbs. rated pressure; 11 B. & W. water-tube boilers, 8,448 H. P. serve also by-product coke plant and power house; 1 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 73,000 tons.

By-product coke plant; 47 Koppers by-product coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 180,000 net tons coke, 1,000,000 gals. light oil. By-product coke: Lake ore. (United Furnace Co. to April 15, 1921). Product: basic pig iron, annual cap., 230,000 tons.

Alloy Division, Canton, Ohio: blt. 1903-04, f. o. July, 1904; 13 B. O. H. fur. (ten 90-ton, three 85-ton) fuel prod. gas and oil, 37 Morgan gas producers; 1 Talbot tilting B. O. H. fur. (20-ton); 3 Heroult electric fur. (two 15-ton, one 6-ton); one 300-ton mixer; seven 4-h. soaking pits, fuel, prod. gas; 8 cont. heat. fur. fuel prod. and coke oven gas; 35" 2-h. 1-st. blooming; 34" 2-h. 1-st. blooming; 26" 2-h. 1-st. Lamberton breakdown and 20" 2-h. 4-st. bar; 18" 2-h. 6-st. Morgan continuous sheet bar and billet; 10" mill with 14" 3-h. 3-st. roughing and 10" 3-h. 4-st. bar; 9" mill with 14" 3-h. 1-st. and 9" 3-h. 4-st. bar; 12" Morgan continuous bar with 12" 2-h. 6-st. and 10" 2-h. 4-st.; 8" mill with 8" 2-h. 2st. and 7½" 2-h. 4-st.; 4 hammers (800-lb. to 3,000-lb.); 1 hydraulic press (500-ton). Product: steel ingots, annual cap., 750,000 tons (700,000 B. O. H., 50,000 electric); alloy steel ingots (nickel, chrome, vanadium, molybdenum); semi-finished hot rolled products 600,000 tons including 450,000 tons billets and 150,000 tons sheet bars; 540,000 tons hot rolled products, 1,200 tons forged products.

Berger Division, Canton, Ohio: blt. 1900-01, f. o. Oct. 1, 1901; enl. 1906-07; 15 sheet and 15 pair fur.; 12 comb. sheet and pair fur.; 56" 2-h. jobbing plate mill; 27 hot black sheet mills (34" to 48"); 13 stands cold rolls (24" x 48" and 52"); 30 box annealing fur.; 1 open annealing fur.; 10 plunger pickling mach.; 10 galvanizing pots (Berger Mfg. Co. to Apr. 15, 1921). Roll black sheets to 48" wide, 30 gauge and heavier. Product: black sheets, annual cap., 140,000 net tons, blue annealed sheets 14,000 net tons; galvanized sheets 160,000 net tons; roofing, siding, ceiling, eave troughs, spouting, ridge rolls, laths, bins and shelving; filing cases, lockers; metal lumber; culverts.

South Steel Division, Canton: blt. 1917, f. o. Nov. 26, 1917; 4 B. O. H. (80-ton) fuel, oil; four 4-hole soaking pits; 32" 3-h. 1-st., 20" 2-h. 1-st., 18" 3-h. 1-st., 18" 3-h. 1-st. sheet bar mill; sheet

mill blt. 1910, f. o. Jan. 2, 1911; 12 sheet and 14 pair fur.; 1 comb. sheet and pair fur.; 30" x 36" to 54" jobbing plate mill; 12 hot black sheet mills (28" x 26" to 60"); 8 stands cold rolls (26" x 30" to 60"); 15 box annealing fur.; 1 open annealing fur.; 2 Mesta 4-arm pickling mach.; 2 pickling tanks; galv. dept. dismantled. Roll black sheets 12 to 30 gauge. (The Canton Sheet Steel Co. to June, 1922). Product: steel ingots, annual cap., 250,000 tons; sheet bars 200,000 tons; black sheets, 80,000 tons; blue annealed sheets, 15,000 tons; sheets for galvanizing, stamping, japanning; auto body sheets, electrical sheets, metal furniture sheets.

UNITED ENGINEERING & FOUNDRY CO., Farmers Bank Bldg., Pittsburgh, Pa.

Inc. June 25, 1901 in Pennsylvania. Capital stock: com., par value \$100, auth. \$7,500,000, issued \$6,935,300; pref. 7% cum. auth. \$1,800,000, issued \$1,770,300.

Isaac W. Frank, Ch.; F. C. Biggert, Jr., P. & G. M.; G. G. Small, 1 V. P.; William Gardner, 2 V. P.; Charles E. Satler, Sec.; George H. Friesel, T. & A.; G. Walter Sanborn, P. A.

Sales offices: C. E. Foust, 208 South LaSalle St., Chicago, Ill.;

Richard S. Jensen Co., Union League Bldg., Los Angeles, Calif.

Trade names: High Speed Forging Presses (Davy patents); Adamite (rolls), United Special (steel rolls).

Company builds complete machinery equipment for iron and steel works and tube works; chilled and sand iron, and steel rolls for rolling mills; special and general machinery for rolling mills. It operates plants as follows:

American Roll & Foundry Dept., Canton, Ohio.

Lloyd Booth Co. Dept., Youngstown, Ohio.

Wm. Tod Co. Dept., Youngstown, Ohio.

Steel Foundry Dept., Vandergrift, Pa.

Frank-Kneeland Machine Co. Dept., Pittsburgh, Pa.

Lincoln Foundry Co. Dept., Pittsburgh, Pa.

McGill & Co. Dept., Pittsburgh, Pa.

Machine shops are operated at Pittsburgh, Pa., and Youngstown, Ohio.

Foundries are operated as follows: Youngstown, Ohio, gray iron foundry for rolling mill and machinery (6,000 tons); 54th St. & A. V. Ry., Pittsburgh, gray iron foundry for rolling mill machinery (3,600 tons); Canton, Ohio, foundry for chilled and sand iron rolls (30,000 tons); 60th & Butler Sts., Pittsburgh, foundry for chilled and sand iron rolls (12,000 tons). Steel foundry at Vandergrift, Pa.

Steel Foundry Dept., Vandergrift, Pa.: 3 A. O. H. fur. (two 35-ton, one 10-ton) fuel, natural gas.

Product: steel castings for own use and for sale, annual cap., 30,000 tons, including steel rolls, 10,000 tons, annealing boxes and

bottoms for sheet mills, 6,000 tons, rolling mill castings, 9,000 tons. Alloy steel castings (nickel, chrome, molybdenum).

United Furnace Co. (The), Cleveland, Ohio was acquired by United Alloy Steel Corporation, April 15, 1921.

United Iron & Steel Co., Cleveland, Ohio was acquired November 1, 1920 by The Hanna Furnace Co.

United States Electric Steel Co. discontinued operations in March, 1918 and went into hands of receiver later in the year. Plant was sold at auction in October, 1919 and bid in by a group of the original stockholders who subsequently organized the Connellsville Electric Steel Co. to hold the property pending resale. The plant was sold in August, 1920 to Witherow Steel Co.

United States Ferro-Alloys Corp., New York was acquired Dec. 20, 1924 by Vanadium Corporation of America.

UNITED STATES GOVERNMENT, Navy Department.

Navy Yard, Boston, Mass.: 1 Tropenas converter (2-ton) installed 1917, f. o. March 5, 1917; crucible fur. dismantled in 1920; 4 cupolas; gray iron foundry (15,600 tons) for own use. Product: steel castings for own use; annual cap., 1,200 tons.

Navy Yard, Charleston, S. C.: converter abandoned.

Navy Yard, Mare Island, Vallejo, Calif.: 1 Tropenas converter (4,000-lb.); 1 cupola; blt. 1908, f. o. May 20, 1908; 1 Greaves-Etchells electric fur. (6-ton) installed 1918-19, f. o. April 7, 1919. Gray iron (350 tons) and brass (225 tons) foundry for own use. Product: steel castings for own use, annual cap., 1,600 tons (800 tons converter, 800 tons electric).

Navy Yard, Norfolk, Va.: 1 Tropenas converter (4,000-lb.) installed 1913, f. o. Oct. 9, 1913; 2 Greaves-Etchells electric fur. (one 6-ton, one 3-ton) first electric steel Oct. 21, 1919; 4 cupolas. Gray iron (8,000 tons) and non-ferrous (1,500 tons) foundry for own use. Product: steel castings for own use, annual cap., 3,000 tons (800 tons converter, 2,100 tons electric); alloy steel castings (manganese).

Navy Yard, Philadelphia, Pa.: steel foundry added 1911-12, first crucible steel, Jan., 1912, crucible furnaces abandoned; 1 Greaves-Etchells electric fur. (3-ton) installed 1918-19, f. o. July 2, 1919; 4 cupolas, gray iron (180,000 tons) foundry installed July, 1918. Product: steel castings for own use, annual cap., 1,800 tons.

Navy Yard, Puget Sound, Bremerton, Wash.: 1 Greaves-Etchells electric fur. (6-ton) installed 1918, f. o. Aug. 24, 1918; 1 Whiting converter (1-ton) idle; 3 cupolas; gray iron (300 tons) and brass (375 tons) foundry for own use. Product: steel castings for own use, annual cap., 500 tons (electric).

Navy Yard, Washington, D. C. (Naval Gun Factory): 2 Tropenas converters (5,000-lb.) installed 1914; 1 A. O. H. fur. (40-ton); 1 Heroult electric fur. (6-ton); 4 cupolas; ferro melted in crucibles. Gray iron (12,000 tons) and non-ferrous (4,000 tons) foundry. Forge shop. Product: steel ingots, annual cap., 10,500 tons (7,500 tons A. O. H., 3,000 tons electric); steel castings, 17,400 tons (3,000 tons converter, 10,400 tons A. O. H., 4,000 tons electric).

Ordnance Plant, South Charleston, W. Va.: blt. 1918, f. o. June, 1918; 2 B. O. H. fur. (65-ton) for transfer metal to electric finishing fur.; 5 Heroult electric fur. (three 6-ton, two 30-ton); 2 cupolas; 2 hydraulic forging presses (500-ton, 3,000-ton); 14,000-ton press for armor plate. Idle since Feb., 1922. Product: steel ingots and steel castings for own use, annual cap., 20,000 tons electric ingots; electric steel castings, 4,000 tons.

UNITED STATES GOVERNMENT, War Department.

Ordnance Department, Watertown Arsenal, Watertown, Mass.:

3 A. O. H. fur. (one 15-ton, two 35-ton), fuel, oil; 3 Heroult electric fur. (one 2-ton, two 6-ton); Tropenas converter dismantled in 1924; 2 cupolas; gray iron and semi-steel (9,360 tons) and brass (735 tons in Detroit electric furnace; 1,542 tons in crucibles) foundry; 4 hammers (800-lb. to 5-ton); 4 hydraulic forging presses (one 800-ton, one 1,000-ton, two 2,000-ton).

Product: steel ingots and steel castings for own use only, annual cap., 55,800 tons (44,670 tons A. O. H. ingots; 11,130 tons electric steel castings); alloy steel ingots and castings; forgings for guns and gun carriages, 44,784 tons.

United States High Speed Steel & Tool Corp., New York went into bankruptcy March 31, 1923. Plant located at Green Island, Albany County, N. Y. was sold January 24, 1924 to Simmons Machine Tool Corp., Albany, N. Y. The steel furnaces were dismantled.

UNITED STATES HORSE SHOE CO., East Lake Road, Erie, Pa.

Inc. Oct. 3, 1924 in Pennsylvania. Capital stock: com., par value \$25, auth. and issued \$125,000; pref. 6% cum. auth. and issued \$300,000; bonds \$86,500.

L. A. McElroy, P., G. M. & P. A.; Burton S. Fletcher, V. P. & G. S. M.; B. J. Lechner, Sec. & A.; C. G. Hearn, T.

Brand: "U. S." (horse and mule shoes, toe and drive calks).

Works at East Lake Road, Erie: blt. 1904-05, f. o. Mar. 16, 1905; 4 pulv. coal-fired heat. fur. (two 3-d., two 4-d.); 6 small coal-fired rehear. fur.; 16" 3-h. 2-st. billet; 9" 3-h. 5-st. and 9" 3-h. 4-st. guide mills.

Product: billets and horse shoe bars, annual cap. 1,600 tons billets, 20,000 tons horse shoe bars; horse and mule shoes, 300,000 kegs; trotting, pacing and running plates, toe calks, drive calks and specialties.

UNITED STATES RAIL CO., Williams St. and B. & O. R. R., Cumberland, Md.

Inc. 1902 in Maryland. Capital stock: com., par value \$100, auth. and issued \$150,000.

Henry Shriver, P.; H. E. Weber, 1 V. P.; W. M. Roberts, 2 V. P.; T. F. Shannon, Sec., T. & P. A.; L. C. Milholland, G. M.

Cumberland Rolling Mill, Cumberland, Md. (leased from Baltimore & Ohio R. R.): 2 cont. coal-fired heat. fur.; two 24" 3-h. 2-st. rail mills. Fuel, bit. coal.

Product: rerolled rails, 12-lb. to 40-lb. sections inclusive, annual cap., 60,000 tons.

UNITED STATES STEEL CORPORATION, 71 Broadway, New York, N. Y.

Inc. Feb. 25, 1901. Capital stock: com. auth. \$550,000,000; issued \$508,302,500; pref. 7% cum. auth. \$550,000,000; outstanding \$360,281,100; bonds outstanding Dec. 31, 1924, \$361,346,000; subsidiary companies' bonds outstanding Dec. 31, 1924, \$149,246,400.

Elbert H. Gary, Ch.; James A. Farrell, P.; David G. Kerr, V. P.; John Reis, V. P.; Fred M. Waterman, T.; Geo. K. Leet, Sec.; William J. Filbert, C.; Nathan L. Miller, General Counsel.

Corporate offices in New Jersey: 51 Newark St., Hoboken, N. J.

The corporation does not operate directly any iron and steel works.

It controls directly, or indirectly through its subsidiaries, by ownership of the capital stock the following principal operating companies:

*Carnegie Steel Co. ⁶

*Illinois Steel Co. ⁷

*American Steel & Wire Co.

*American Sheet & Tin Plate Co. ⁸

*National Tube Co.

*The National Tube Co. of Ohio.

*Gary Tube Co.

*American Bridge Co.

*Minnesota Steel Co.

*The Lorain Steel Co.

*Tennessee Coal, Iron & Railroad Co.

*Canadian Steel Corporation, Ltd.

Federal Shipbuilding & Dry Dock Co.

Universal Portland Cement Co.

*Edgar Zinc Co.

- *United States Steel Products Co.
 - *H. C. Frick Coke Co.; also allied coal and coke companies.
 - *Oliver Iron Mining Co.
Duluth & Iron Range R.R.
Duluth, Missabe & Northern Ry.
Elgin, Joliet & Eastern Ry.
Chicago, Lake Shore & Eastern Ry.
Union R.R.
Bessemer & Lake Erie R.R.
 - *Pittsburgh Steamship Co.
- Various iron mining, coal, limestone, railway, land, natural gas, and dock companies.
- *These subsidiaries are described in the alphabetic list under the title of the respective companies.

UNITED STATES STEEL PRODUCTS COMPANY, 30 Church St., New York, N. Y.

Org. Nov. 10, 1898; inc. Oct. 6, 1903, as United States Steel Products Export Co.; corporate title changed Aug. 1, 1910. Subsidiary of United States Steel Corporation.

E. P. Thomas, P.; T. P. Alder, T. & Sec.; W. A. Sweet, A.; at 30 Church St., New York. A. T. DeForest, V. P.; at Rialto Bldg., San Francisco.

Sales offices:

Antwerp, Belgium, 25 Rue de Londres.
Birmingham, England, Lloyds Bank Chambers, New St.
Bombay, India, Queens Mansions, 56 Bastion Road.
Buenos Aires, Argentina, Edificio Houlder, Calle 25 de Mayo, 489.
Havana, Cuba, 419 Edificio del Banco Nacional de Cuba.
Honolulu, Hawaii, Castle and Cooke Building.
Lima, Peru, Edificio Wiese, Esquina Nunez y Filipinas.
London, England, Bilbao House, 36 New Broad St., E. C. 2.
Los Angeles, Calif., Central Ave. & Jackson St.
Mexico City, Mexico, Edificio de la Mutua.
Montreal, Canada, The Title Guarantee Building.
New Orleans, La., Maison Blanche Building.
Port Elizabeth, South Africa, 22 Strand St.
Portland, Ore., Selling Bldg.
Rio de Janeiro, Brazil, 20 General Camara.
San Francisco, Calif., Rialto Bldg.
Santiago, Chile, Edificio del Banco Anglo-Sudamericano.
Sao Paulo, Brazil, Rua Boa Vista, 18.
Seattle, Wash., Fourth Ave. South and Connecticut St.
Shanghai, China, Union Building, No. 1 Canton Road.
Soerabaya, Java, 65 Palmenlaan.
Sydney, New South Wales, 14 Martin Place.
The Hague, Holland, 18 Bezuidenhout.

Toronto, Ontario, Canada, Royal Bank Bldg.

Valparaiso, Chile, Calle Peat, 261.

Vancouver, Canada, Pacific Building, 744 Hastings St. West.

Winnipeg, Canada, Trust & Loan Bldg.

This company does not manufacture products of any kind, but sells for export and for shipment to Pacific Coast territory, the products of the following subsidiary companies of the United States Steel Corporation: Carnegie Steel Company, Illinois Steel Company, Lorain Steel Company, National Tube Company, Minnesota Steel Company, American Sheet and Tin Plate Company, American Steel and Wire Company, American Bridge Company, and the Tennessee Coal, Iron and Railroad Company.

LIST OF PRODUCTS EXPORTED.

The United States Steel Products Company exports coal, coke, pig iron, ferro-manganese, bessemer and basic open-hearth steel billets, slabs, sheet and tinplate bars, and skelp.

Steel rails, splice bars, bolts, nuts, spikes, and other accessories; crossings, frogs, switches, and other special work for steam and electric railways; also copper rail bonds and tubular poles.

Beams, channels, angles, tees, zees, and other structural shapes; steel plates for shipbuilding, tanks, boilers, etc.; flange and fire-box steel; black, galvanized, and painted steel sheets, flat and corrugated; electrical sheets; range steel, tack plate; locomotive jacket iron; and steel hoops and cotton ties.

Merchant bars, rounds, squares, flats, ovals, hexagons, and other bar shapes; special iron and steel for bolts, rivets, shafting and other purposes; cold drawn bars (rounds, squares, flats, hexagons, and other shapes) for screw making and other manufacturing purposes; forged axles for locomotives, railway and tramway cars; and forgings for machinery and special purposes; steel wheels for railway and tramway cars; oil well derricks, steel mine timbers, steel sheet piling.

Black and galvanized wrought merchant pipe for gas, water, steam and other purposes; mild steel and charcoal iron boiler tubes for stationary, locomotive, and marine work; casing, tubing, and drive pipe for oil and artesian wells; gas and oil line pipe; lap-welded and seamless cylinders for compressed air, carbonic acid gas, anhydrous ammonia, etc.; Matheson lead joint pipe for water and gas mains; seamless tubes.

Wire rods; cold rolled flat wire, drawn steel wire of every description; barb wire; plain, galvanized, and varnished fence wire; woven wire fencing; fence staples; netting and weaving wires; mattress, broom and bottling wires; galvanized telegraph and telephone wires; copper wires; and electrical wires. Fabric for reinforcing concrete.

Wire nails and wire tacks; wire bale-ties; wire hoops; wire rope, cables, and hawsers; wire sash cords and clothes lines; wire rope tramways and cable hoist conveyors.

Tinplates—coke, charcoal and terne; black plates for tinning, stamping, enameling, and other purposes.

Designs and estimates submitted for bridges and steel buildings, erected complete or prepared ready for erection.

UNITED STEEL CO., P. O. Box 720, Everett, Wash.

Inc. Oct. 20, 1917 in Washington. Capital stock: com., par value \$1, auth. \$300,000, issued \$250,000; pref. auth. \$200,000, issued \$199,999.

C. J. Whitney, P., G. M., G. S. M. & P. A.; Jacob Anthes, V. P. & Sec.; G. W. Mumaw, T.

Works at Lowell, Wash.: blt. 1920, f. o. May 1, 1923; one 4-d. scrap reheating fur., oil-fired; 12" 3-h. 5-st. merchant bar mill.

Product: merchant bars, concrete bars and special shapes, annual cap., 3,600 tons.

UNIVERSAL STEEL CO., Bridgeville, Pa.

Inc. April, 1908 in Pennsylvania. Capital stock: com., par value \$100, auth. \$3,000,000, issued \$1,639,200.

Walter H. Baker, P., T. & G. M.; N. R. Baker, V. P.; E. L. Stockdale, Sec. & G. S. M.; U. G. Miller, G. S.; Charles B. Nesbit, P. A.

Works at Kirwan Station, Bridgeville, Pa.: blt. 1908-09, first rolled products, March, 1909; 1 A. O. H. fur. (20-ton), fuel, oil; 2 Heroult electric fur. (6-ton); crucible fur. (one 30-pot) abandoned; 30 coal-fired heat. fur. (ten 1-d., thirteen 2-d., one 3-d., two 4-d., three 5-d., one cont.); 22" 3-h. 1-st. roughing; 16" 3-h. 1-st. roughing; 14" 3-h. 5-st., 10" 3-h. 5-st. and 8" 3-h. 3-st. finishing mills; jobbing plate mills 32" x 84" 2-h. 1-st., 26" x 32" 2-h. 2-st., and 30" x 84" 2-h. 1-st.; 9 hot black sheet mills (26" x 32" to 26" x 44"); 2 box annealing fur.; 9 hand pickling tanks; 1 forging press (1,000-ton). Roll black sheets, 7 to 28 gauge, 16" to 24" wide; black plates, 3/16" to 3/4", 16" to 60" wide.

Product: steel ingots, annual cap., 34,000 tons (18,000 tons A. O. H., 16,000 tons electric); alloy steel ingots (all alloys); finished hot rolled products, 26,000 tons, including 13,000 tons bars and 13,000 tons plates and sheets; high carbon and alloy steel plates and sheets; tool steel bars; saw, plow, spring and shovel steel.

Upson Nut Co. (The), Cleveland, Ohio was merged October 1, 1920 in The Bourne-Fuller Co.

UTAH STEEL CORPORATION, North Main St., Box K, Midvale, Utah.

James J. Burke, Receiver; C. Jones, G. S.; E. L. Perkes, G. S. M.

Sales offices:

Boise, Idaho, A. W. Smith.

Salt Lake City, Utah, 403 Kearns Bldg.

San Francisco, Calif., C. W. Pike Co.

Works at Midvale, Utah: blt. 1914-15, first steel Nov. 1, 1917; 2 B. O. H. fur. (40-ton) fuel, oil; 2 cont. oil-fired ingot and billet heat. fur.; 22" 3-h. 2-st. billet; 16" 3-h. 3-st. bar; 10" 3-h. 4-st. guide.

Product: merchant bars, concrete reinforcing bars, light structural shapes, bolt and rivet rods, and light rails, annual cap., 50,000 tons ingots, 40,000 tons finished rolled products.

UTAH VANADIUM CORPN., 100 East 42nd St., New York, N. Y.

Inc. Jan. 1925 in Delaware. Capital stock: com., par value \$100, auth. and issued \$1,000,000.

George M. Fowles, P.; James T. Cooley, T.; L. Geraghty, Sec.; at New York, N. Y. W. J. Stevenson, V. P., G. M., G. S. M. & P. A.; at 1201 Quivas St., Denver, Colo.

Company owns Pittsburgh Radium Co. with mines and mill at Thompsons and Cisco, Utah, and Radium Ores Co., mines and mill at Saucer Basin, Colo., and chemical plant at Denver, Colo.

Works at Denver, Colo.: 2 Wile electric fur., f. o. 1917. Power from Denver Gas & Electric Co. (Pittsburgh Radium Co. to Jan., 1925).

Product: vanadium oxide, annual cap., 300 tons.

VALLEY MOULD & IRON CORPN., Sharpsville, Pa.

Inc. Mar. 2, 1917 in New York. Capital stock: com., no par value, auth. 100,000 shares; pref. 7% cum. auth. and issued \$2,000,000; bonds \$750,000.

J. E. Perry, P.; William Haig Ramage, V. P.; J. W. Gault, Sec. & A.; William Roberts, G. S.; Ralph C. Velte, G. S. M.; W. P. Webb, P. A.; at Sharpsville, Pa. Henry Lockhart, Jr., V. P.; at 60 Broadway, New York, N. Y. Robert S. Crawford, T.; at Cleveland, Ohio.

Brand: Valley Mould.

Alice Furnace, Sharpsville: 1 stack, 75' x 15'; blt. 1868, last remod. 1897, relined 1918; 4 Pollock iron pipe stoves; 3 steam blowing eng. (41,000 cfm.); 6 water-tube boilers, 2,595 H. P.; slag granulating pit, annual cap., 103,000 tons. Conn. coke: Lake ore.

Product: basic pig iron, annual cap., 108,000 tons.

The company operates foundries as follows:

Sharpsville Foundry, Sharpsville, Pa. Product: ingot moulds, annual cap., 350,000 tons.

Josephine Works, Black Lick, Pa. Product: ingot moulds, annual cap., 180,000 tons. Sold, to be dismantled, in Dec., 1925.

VALLEY ROLLING MILLS, Inc., 56 Pine St., New York, N. Y.

Inc. July, 1923 in New York. Capital stock: com., par value \$10, auth. \$500,000, issued \$485,000; pref. 7% cum. auth. \$250,000, issued \$192,000.

E. F. Quirke, P.; M. K. Sessler, V. P. & T.

Works at Elmira Heights, Elmira, N. Y.: blt. 1920, f. o. Sept., 1920; one 4-d. oil-fired reverb. heat. fur.; 12" 3-h. 1-st. roughing; 8" 3-h. 5-st. finishing bar mill. (Chemung Valley Steel Co. to Oct., 1923).

Product: merchant and concrete bars, annual cap., 12,000 tons.

VAN ALLEN & CO., Northumberland, Pa.

Partnership, est. 1866, reorganized, Sept. 23, 1913.

Northumberland Iron & Nail Works, Northumberland, Pa.: blt. 1883; two 2-d. coal-fired heat. fur.; 20" 3-h. nail plate mill with roughing stand, bull heads and finishing stand; 43 cut nail mach.

Product: nail plate for own use; annual cap., 5,000 tons; cut nails, annual cap., 100,000 kegs (100-lb.).

VANADIUM-ALLOYS STEEL CO., Latrobe, Pa.

Inc. 1910 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$1,500,000.

Roy C. McKenna, P.; William S. Jones, V. P. & G. S. M.; E. L. Moberg, V. P. & P. A.; F. P. Underwood, Sec.; Joseph E. Barnett, T.; L. E. Moore, A.; C. R. Sipe, G. S.

Sales offices:

Buffalo, N. Y., H. D. Taylor Co.

Chicago, Ill., 1440 West Lake St.

Cincinnati, Ohio, Mercantile Library Bldg.

Cleveland, Ohio, Union Bldg.

Dayton, Ohio, 1314 Arbor Ave.

Detroit, Mich., 5219 Trumbull Ave.

Knoxville, Tenn., W. S. Murrian Co.

Los Angeles, Calif., Abegg & Reinhold Co.

New York, N. Y., 270 Madison Ave.

Philadelphia, Pa., Edgcomb Steel Co.

Pittsburgh, Pa., Oliver Bldg.

St. Louis, Mo., W. S. Dunlap, 2014 Thurman Blvd.

San Francisco, Calif., Peninsula Iron & Steel Co.

Springfield, Mass., 240 Plainfield St.

Brand: VASCO (tool steels), Red Cut (high speed steels).

Works at Latrobe, Pa.: 2 Heroult electric fur. (3-ton); crucible fur. dismantled in 1922; four 3-d. coal-fired heat. fur.; 12" 3-h. 5-st. bar mill; 10" 3-h. 6-st. bar mill; 3 annealing fur.; 4 steam hammers (3,000-lb. to 16,000-lb.) five 3-d. heat. fur.

Product: steel ingots, annual cap., 6,500 tons; alloy steel ingots (tungsten, chrome, vanadium, cobalt); carbon and alloy tool steels, high speed steels, annual cap., 4,550 tons.

VANADIUM CORPORATION OF AMERICA, 120 Broadway, New York, N. Y.

Inc. Sept. 6, 1919 in Delaware. Capital stock: com., no par value, auth. 500,000 shares, issued 373,334 shares, in escrow 33,333 $\frac{1}{3}$ shares.

A. A. Corey, Jr., P.; B. D. Saklatwalla, V. P.; L. K. Diffenderfer, Sec. & T.

Sales offices: 849 Book Bldg., Detroit, Mich.; and 120 Broadway, New York.

The company owns mining properties in Peru and Colorado and reduction plants at Bridgeville, Pa., and Niagara Falls, N. Y. On Dec. 20, 1924 it acquired the entire capital stock of the United States Ferro Alloy Corpn., and took over that company's properties and assets, including a reduction plant at Niagara Falls, N. Y., silica rock deposit at Lewiston, N. Y., and chrome ore deposits at Black Lake, P. Q., Canada.

Plant at Kirwan (Bridgeville), Pa.: ferro-alloys first made May, 1908; 2 special type electric fur.; alumino-thermic process also used. Fuel, coal and gas. Electric power from Duquesne Light Co., Pittsburgh, Pa.

Product: ferro-vanadium, alumino-vanadium, cupro-vanadium, ferro-tungsten, ferro-molybdenum, annual cap., 5,000 tons.

Plant at Niagara Falls, N. Y.: ferro-alloys first made 1919; 10 electric fur. (three 3-phase 3,600 K. W., 3 single-phase 2,000 K. W., 4 single-phase 1,600 K. W.). Power from Niagara Falls Power Co. (United States Ferro Alloy Corpn. to Dec. 20, 1924.)

Product: ferro-silicon, ferro-chrome, and silico-manganese.

Plant at Primos, Pa.: purchased from Primos Chemical Co., Jan. 1, 1920, was sold Mar. 29, 1921 and dismantled.

VANCOUVER ENGINEERING WORKS, Ltd., 519 Sixth Ave. West, Vancouver, B. C., Canada.

Inc. Apr. 1901 in British Columbia. Capital stock: com., par value \$5, auth. \$875,000, issued \$562,015; pref. 6% cum. auth. and issued \$125,000.

H. F. Fernie, P.; Charles Lancaster, 1 V. P.; Theodore M. Davies, 2 V. P.; at 14 Dale St., Liverpool, England. Eric Davies, Sec., T. & G. M.; W. G. Davidson, G. S.; at Vancouver.

Company manufactures boilers, engines, mining and sawmill machinery and equipment; operates steel and iron foundry.

Works at 519-659 Sixth Ave. West, Vancouver; 1 Whiting converter (2-ton); 1 Greaves-Etchells electric fur. (1-ton) installed and f. o. 1920; 1 cupola; gray iron and brass foundry annual cap., 1,200 to 1,500 tons gray iron and semi-steel castings; two small hammers.

Product: steel castings for sale, annual cap., 800 tons. Alloy steel castings (nickel, chrome, manganese).

Vancouver Rolling Mill Co., Ltd., Vancouver, B. C., Canada with Rolling Mill at Eburne, Vancouver. Open-hearth furnace dismantled in 1920; rolling mill destroyed by fire in 1922.

VAUGHAN MOTOR WORKS, 475 East Main St., Portland, Ore.

E. Vaughan, owner.

Works at 475 East Main St., Portland: steel foundry blt. 1921-22, f. o. spring, 1922: 1 Rennerfelt electric fur. (500-lb.).

Product: steel castings for own use, annual cap., 600 tons.

VERONA STEEL CASTINGS CO., Frick Bldg., Pittsburgh, Pa.

Inc. Nov. 13, 1911 in Pennsylvania. Subsidiary of Standard Steel Car Co.

Works at Verona, Pa.: blt. 1904-06, f. o. Apr. 4, 1905; 1 A. O. H. fur. (25-ton); 2 B. O. H. fur. (25-ton).

Product: steel castings for own use and for sale, annual cap., 25,000 tons; railroad car castings, bolsters, frames, yokes, etc.; machinery castings.

VIRGINIA IRON, COAL & COKE CO., Roanoke, Va.

Inc. Jan. 14, 1899 in Virginia. Capital stock: com., par value \$100, auth. and issued \$10,000,000; pref. 5% cum. auth. and issued \$5,000,000; bonds \$2,111,000.

John B. Newton, P.; D. D. Hull, Jr., V. P.; J. W. Cure, Sec. & T.; W. B. Bowles, A.; C. E. Bertie, A. P.; J. D. Martin, G. S. (Coal Mines); J. F. Hunter, G. S. A.; M. A. Shuff, P. A.; at Roanoke. James McNeil, A. Sec.; at 40 Wall St., New York, N. Y.

Sales office: Payne Bldg., Roanoke, Va.

Brands: Crozer, Dora, Max Meadows, Radford, Watts (pig iron).

Product: foundry pig iron, total annual cap. (6 furnaces), 348,000 tons.

Crozer Furnace, Roanoke, Va.: 1 stack, 69' 2" x 16', blt. 1889, shell rebt. 1907, relined 1923; 5 side comb. 2-pass stoves (four 60' x 18', one 89' x 18'); 1 Allis steam blowing eng. and 1 G. E. Curtis turbo-blower, 70,000 cfm., 15 to 17 lbs. rated pressure; 8 Cahall vertical water-tube boilers, 2,000 H. P. Beehive coke from own ovens: local and Lake ores, sinter or nodules. Product: foundry pig iron, annual cap., 60,000 tons.

Dora Furnace, Pulaski, Va.: 1 stack, 75' 6" x 18', blt. 1891-92, shell rebt. 1907, relined 1917; 4 side-comb. stoves (three 2-pass 77' x 20', one 4-pass 60' x 20'); 3 steam blowing eng. (1 Weimer, 2 Allis) 30,000 cfm., 15 lbs. rated pressure; 6 Cahall vertical water-tube boilers, 6 horizontal tubular boilers, 2,700 H. P. Beehive coke from own ovens: local and Lake ores, nodules or sinter. Gray iron foundry for own use, annual cap., 2,000 tons. Product: foundry pig iron, annual cap., 60,000 tons.

Max Meadows Furnace, Max Meadows, Va.: 1 stack, 75' 9" x 19', blt. 1890-91, relined 1918; 4 side-comb. stoves (three 4-pass 60' x 20', one 2-pass 70' x 20'); 3 Allis steam blowing eng., 30,000 cfm., 15 lbs. rated pressure; 2 Cahall vertical water-tube boilers, 14 Riter-Conley horizontal tubular boilers, 2,500 H. P. Beehive coke from own ovens: local and Lake ores, sinter or nodules. Product: foundry pig iron, annual cap., 60,000 tons.

Radford Furnace, Radford, Va.: 1 stack, 75' 8" x 19', blt. 1890-92, rebuilt 1920; 4 side comb. 2-pass stoves 80' x 19'; 3 Allis steam blowing eng. (2 high, 1 low pressure) 45,000 cfm., 20 lbs. rated pressure; 5 Cahall vertical water-tube boilers, 2 Sterling, and battery of 4 flue boilers, 3,250 H. P.; Dwight & Lloyd sintering plant for pyrites cinder, annual cap., 50,000 tons. Beehive coke from own ovens: local and Lake ores, sinter or nodules. Product: foundry pig iron, annual cap., 80,000 tons.

Watts Furnaces, Middlesboro, Ky.: 2 stacks, No. 1, 75' 6¾" x 17' 6", blt. 1889, relined 1918; No. 2, 74' 3" x 17', blt. 1891, relined 1921; 7 side-comb. 4-pass stoves 60' x 19'; 6 Witherow steam blowing eng., 60,000 cfm., 17 lbs. rated pressure; 6 Cahall vertical water-tube boilers, 24 Witherow horizontal tubular boilers, 3,900 H. P.; nodulizing plant with 2 rotary kilns 6' x 90' for pyrites cinder, annual cap., 50,000 tons. Beehive coke from own ovens: local and Lake ores, nodules. Product: foundry pig iron, annual cap., 88,000 tons.

Company owns iron ore mines in Bedford, Botetourt, Pulaski, Roanoke and Wythe counties, Virginia, and in Tennessee and Georgia; annual cap. of developed properties, 150,000 tons. Owns Sexton Quarry at Buchanan, Va., annual cap., 175,000 tons limestone. Owns coal mines; annual cap., 2,500,000 tons, as follows: Toms Creek Mines, Toms Creek, Va.; Inman, Linden and Laura Mines, Inman, Va.; Imperial Mine, Leona Mines, Va.; Marion Mines, Vicco, Va.; Virginia City Mines, Virginia City, Va.; Shannon Mines, Dwina, Va. Beehive coke ovens; 800 ovens at Toms Creek, Va., and 174 ovens at Inman, Va., total annual cap., 430,000 net tons coke.

VULCAN CRUCIBLE STEEL CO., Aliquippa, Pa.

Inc. Aug., 1901 in New Jersey; reinc. May 1, 1914 in Pennsylvania. S. G. Stafford, P. & G. M.; W. A. Campbell, Sec. & T.; R. M. Kelso, A. T. & S.; at Aliquippa. J. A. Kelly, V. P.; at Pittsburgh.

Sales offices: Boston, Chicago, Detroit, Philadelphia and St. Louis. Warehouses in Boston, Chicago, Detroit and Philadelphia.

Works at Aliquippa: blt. 1901-02, first steel Mar., 1902; two 3-ton Heroult electric fur.; 30-pot crucible steel fur.; 12" 3-h. 3-st. and 10" 3-h. 6-st. bar mills, first rolled products, April, 1903; 6 hammers (500-lb. to 8,000-lb.); 3 annealing fur.

Product: steel ingots, annual cap., 8,650 tons (7,200 tons electric, 1,450 tons crucible); carbon and alloy tool steels, high speed steels.

VULCAN IRON WORKS, South Main St., Wilkes-Barre, Pa.

Inc. Apr. 17, 1867 in Pennsylvania. Capital stock: com., par value \$50, auth. \$3,000,000, issued \$2,500,000.

Samuel T. Nicholson, P. & G. M.; George Nicholson, V. P.; Fred O. Smith, Sec. & M. Purchases; William E. Willingale, T.; George H. Brown, G. S. M.

Sales offices: Thomas MacLachlan, 50 Church St., New York, N. Y.; Harold Olsen, McCormick Bldg., Chicago, Ill.

Company operates plants for manufacture of electric hoists, hoisting engines, Corliss engines, mining, sugar and cement machinery, locomotives, steel and gray iron castings as follows:

South Wilkes-Barre Plant, Wilkes-Barre, Pa.

Locomotive Plant, Hazle Ave., Wilkes-Barre, Pa.

West Pittston Plant, West Pittston, Pa.

Steel Foundry, Buttonwood, Pa.

Steel Foundry, Buttonwood (near Wilkes-Barre), Pa.: 1 A. O. H. fur. (20-ton) fuel, oil; 5 cupolas; gray iron foundry, annual cap., 6,000 to 8,000 tons for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 10,000 tons.

VULCAN IRON WORKS (The), Ltd., Point Douglas & Maple Sts., Winnipeg, Man., Canada.

Est. 1874: inc. Mar. 23, 1903 in Manitoba. Capital stock: com. auth. \$500,000, issued \$484,000.

E. G. Barrett, P.; L. R. Barrett, V. P. & G. M.; J. D. McDonald, Sec., T. & P. A.; J. S. Mowat, G. S.; E. A. Parkin, G. S. M.

Brand: Vulcan.

Company manufactures boilers, tanks, hydrants, elevator machinery, wagon and sleigh dumps, etc., and operates steel and gray iron foundry.

Works at Point Douglas and Maple Sts., Winnipeg: blt. 1874, gray iron fdy; steel castings first made June 18, 1923; 1 Moore Lectro-melt electric fur. (4-ton); 2 cupolas; gray iron foundry, annual cap., 7,500 tons gray iron, 2,000 tons semi-steel, 300 tons brass castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 5,000 tons. Alloy steel castings (nickel, chrome, vanadium).

Vulcan Mfg. Co., Seattle, Wash. Works at Seattle last made steel castings in October, 1920. Works closed down. Company out of business.

WADDELL STEEL CO. (The), Niles, Ohio.

Inc. Mar., 1924 in Ohio. Capital stock: com., par value \$100, auth. \$300,000, issued \$271,700; pref. 7% cum. auth. \$300,000, issued \$125,000.

J. D. Waddell, P. & T.; R. L. McCorkle, V. P.; M. A. Jones, Sec. & P. A.; F. E. Richert, A.; D. R. Fithian, G. S.; C. B. Rettig, G. S. M.

Sales offices:

Chicago, Ill., 549 West Washington Blvd.

Cincinnati, Ohio, 58 Wiggins Block.

Cleveland, Ohio, Prospect, Fourth Bldg.

Indianapolis, Ind., 606 State Life Bldg.

New York, N. Y., 30 Church St.

Works at Niles, Ohio: blt. 1902, f. o. Oct. 1902; 7 sheet and 7 pair fur.; 7 hot black sheet mills; 5 roughing stands; and 3 cold stands. Roll black sheets 12 to 31 gauge, to 42" wide. (Brier Hill Steel Co. to Mar. 1, 1923; Youngstown Sheet & Tube Co. to Feb. 20, 1924).

Product: black sheets, annual cap., 50,000 tons. Sheets for galvanizing, flat and corrugated, stamping and electric sheets.

Walker (Hiram) & Sons Metal Products, Ltd., Walkersville, Ont., Canada have discontinued the manufacture of steel castings.

WALLACE FOUNDRY CO., Ltd., Industrial Island, Vancouver, B. C., Canada.

Inc. Sept. 27, 1917 in British Columbia. Capital stock: com. auth. and issued \$75,000.

A. Wallace, P.; C. Wallace, T.; S. B. N. Svendsen, M.; at North Vancouver.

Works at Industrial Island, Vancouver: blt. 1918; 1 Greene electric fur. (2-ton) installed Aug., 1923, f. o. Aug. 24, 1923; 2 cupolas; gray iron (4,000 tons), semi-steel (1,000 tons) and brass and bronze (280 tons) foundry.

Product: steel castings for sale, annual cap., 1,000 tons.

WALSH & MCGEE STEEL CO., 2 Rector St., New York, N. Y.

Inc. June, 1923 in New Jersey. Capital stock: com. Class A, no par value, auth. 2,200 shares, outstanding 1,000 shares; com. Class B, no par value, auth. and outstanding 10,000 shares; pref. 8% auth. and outstanding \$80,000.

Harry L. McGee, P.; Philip C. Walsh, 3rd, V. P.; James A. Sheeran, Sec. & T.

Works at Fort Wilson Ave., Newark Bay, Newark, N. J.: blt. 1923, f. o. Sept. 17, 1923; 1 semi-cont. oil-fired heat. fur.; 9" and 8" 3-h. 5-st. bar mill.

Product: hot rolled products, annual cap., 8,000 tons, including 4,000 tons light structural shapes (angles, channels, tees), 2,000 tons merchant and concrete bars, and 2,000 tons hoops and bands.

WALWORTH COMPANY, P. O. Box 26, 88 Pearl St., Boston, Mass.

Inc. Feb. 12, 1872 in Massachusetts as Walworth Manufacturing Company, corporate title changed to Walworth Company Sept. 29, 1925. Capital stock: com., no par value, auth. 500,000 shares, issued 300,000 shares; pref. 6% cum., auth. and issued \$1,000,000; bonds \$11,000,000.

Howard Coonley, P.; Wm. P. F. Ayer, V. P.; Theodore W. Little, V. P.; George A. Ricker, T.; James L. Crawshaw, A.; Ralph B. Currier, A. T.; Clyde I. Drake, A. T.; William A. Jackson, P. A.; at 88 Pearl St., Boston. Prentiss L. Coonley, V. P.; at 13 Park Row, New York. J. Stuart Coonley, Sec. & A. T.; at 79 West Munroe St., Chicago. William V. Lindblom, A. T.; George Cotton, G. S.; at Greensburg, Pa.

Sales offices:

Boston, Mass., 142 High St.

Buffalo, N. Y., 43 Carolina St.

Chicago, Ill., 2436 West 15th St.

Cincinnati, Ohio, 1008 Sycamore St.

Cleveland, Ohio, Walworth Ohio Co., 1614 East 40th St.

New York, N. Y., 448 Jackson Ave. and 19 Cliff St.

Philadelphia, Pa., 247 Arch St.

Pittsburgh, Pa., 137 Water St.

Portland, Ore., 12th and Everett Sts.

San Francisco, Calif., Rialto Bldg.

Seattle, Wash., 414 First Ave., South.

Export sales agent: Walworth International Co., 44 Whitehall St., New York, and branch offices in foreign countries.

Company acquired in 1925 The Kelly & Jones Co., Pittsburgh, Pa. with plant at Greensburg, Pa. Company operates plants at Kewanee, Ill.; Boston, Mass.; Attalla, Ala.; and Greensburg, Pa.; steel foundry at Greensburg plant.

Kelly & Jones Division, Greensburg, Pa.; steel foundry added 1916; first steel castings (converter) Sept. 2, 1916; 1 converter (1-ton) idle since 1922; 1 Swindell Duplex electric fur. (1½-ton) added 1923, f. o. May 1, 1923. Gray iron (14,000 tons), malleable iron (6,000 tons) and brass (1,500 tons) foundry.

Product: steel castings for own use and for sale, annual cap., 1,000 tons electric steel castings.

Walworth Manufacturing Co., Boston, Mass. Steel foundry at Kewanee Works, Kewanee, Ill. (one 1-ton Tropenas converter) was shut down in 1924. Converter still in plant but manufacture of converter steel castings has been discontinued. Corporate title changed to Walworth Company, Sept. 25, 1925. Company acquired in 1925 The Kelly & Jones Co., Pittsburgh, Pa.

Warmack, Mrs. William, Lamkin, Miss.

Ole Miss Furnace, Winborn, Miss.: 1 stack, 32' x 5', blt. 1913, f. o. Oct. 5, 1913; steam blowing eng.; 2 boilers, 60 H. P. Charcoal: local carbonate ore. Idle and for sale.

Product: cold blast charcoal pig iron, annual cap., 3,500 tons.

WARMAN STEEL CASTING CO., P. O. Box 639, Station C, Los Angeles, Calif.

Inc. July, 1911 in California. Capital stock: com., par value \$1, auth. \$50,000, issued \$43,845.

Charles J. Wild, P. & T.; F. D. Wild, V. P.; J. P. Arnoldy, Sec. & G. M.

Works at Boyle Ave. near Slauson Ave., Los Angeles: blt. 1917, f. o. May 20, 1917; 3 electric fur. (two 3-ton Heroult, one 3-ton Moore).

Product: electric steel castings for sale, annual cap., 6,000 tons; alloy steel castings.

WARNER IRON CO., Nashville, Tenn.

Org. May 13, 1899, not inc.

Joseph Warner, Sole Owner and Operator.

Selling agents: Hickman, Williams & Co., Rogers, Brown & Crocker Bros., Inc.

Brands: "Warner," "Cumberland," "Dickson."

Cumberland Furnace, Cumberland Furnace, P. O., Dickson Co., Tenn.: 1 stack, 60' x 13', blt. 1892-93; 4 stoves (two 55' x 16', two 60' x 18'); 3 steam blowing eng.; 3 water-tube, 3 flue boilers.

Wise Co. coke: local brown hematite ore. Company owns iron mine at Cumberland Furnace, annual cap., 15,000 tons; also limestone quarry, annual cap., 30,000 tons.

Product: high-silicon pig iron and ferro silicon, annual cap., 30,000 tons.

WARREN IRON & STEEL CO. (The), Warren, Ohio.

Inc. April, 1909 in Ohio. Capital stock: com. \$1,170,663; pref. 7% cum. \$638,200.

J. C. Manternach, Receiver (appointed Feb. 28, 1925).

Works at Warren: three 2-d. heat, fur.; 24" sheared plate mill. For sale.

Product: steel plates and sheets, annual cap., 12,000 tons.

Warren Steel Casting Co., St. Louis, Mo. Plant at 3400 Maury Ave., St. Louis was shut down Sept. 15, 1924 and sold Oct. 20, 1924 to The Chouteau Mortgage Co. of St. Louis, who resold to W. T. Koken, as trustee for former owners, see W. T. Koken, Trustee.

WASHBURN WIRE CO., Phillipsdale, R. I.

Inc. Dec., 1919 in Rhode Island. Capital stock: com., par value \$100, auth. and issued \$1,500,000.

Eugene R. Phillips, P.; F. C. Weidenmiller, V. P.; W. C. Ingerson, Sec. & P. A.; F. N. Phillips, T.; Thomas Wray, M.; O. W. Lundgren, S.; S. W. Wray, S. M.

Works at Phillipsdale: blt. 1901, f. o. May, 1901; 3 B. O. H. fur. (15-ton) fuel, oil; 4 Morgan gas prod.; 3 cont. oil-fired heat. fur.; 24" 3-h. 1-st. billet; Garrett rod mill with 16" 2-h. 2-st., 10" 2-h. 5-st. and 9" 2-h. 6-st.; 2 box annealing fur.; 1 Morgan pickling mach.; 84 wire drawing blocks for wire .042" to .500".

Product: steel ingots, annual cap., 39,000 tons; alloy steel ingots (chrome, vanadium, molybdenum); blooms and billets, 31,600 tons; wire rods, 22,800 tons; plain wire, 6,000 net tons.

WASHINGTON IRON WORKS, 1500 Sixth Ave. South, Seattle, Wash.

Inc. 1882 in Washington. Capital stock: com. auth. and issued \$500,000; bonds, \$442,000.

Gerald Frink, P.; Francis G. Frink, V. P.; Carman F. Bridge, T.

Sales offices:

Portland, Ore., Zimmerman-Wells-Brown Co.

San Francisco, Calif., W. H. Worden Co., Inc.

Vancouver, B. C., Vancouver Machinery Depot, Ltd.

Company builds logging and hoisting engines, boilers, tanks and marine machinery.

Works at 1500 Sixth Ave. South, Seattle: blt. 1882; 1 Heroult electric fur. (3-ton); 1 cupola; gray iron foundry, annual cap., 1,500 tons for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 2,000 tons. Alloy steel castings (chrome, vanadium, manganese).

Washington Steel & Ordnance Co., Washington, D. C. Stockholders voted to liquidate and dissolve the company in Dec., 1921. Plant closed and abandoned.

WASHINGTON TIN PLATE CO., Washington, Pa.

Inc. Aug. 7, 1907 in Pennsylvania. Capital stock: com., par value \$100, \$1,800,000.

G. W. Hannan, P.; John F. Kraft, V. P., Sec. & T.; T. P. McDonough, G. M.

Works at Washington: reblt. 1911-12, f. o. April 1, 1912; 6 comb. sheet and pair fur.; 6 hot black plate mills (27" x 34"); 6 cold mills (3 stands of 2 sets tandem) 22" x 36" roughing sets and 24" x 36" finishing sets; 4 box annealing fur.; 1 Mesta pickling mach. (3-arm); 11 tinning sets for coke tinplates. Fuel, coal and gas. Product: black plates for tinning, annual cap., 24,000 tons; tinplates, 600,000 base boxes.

Wayne Steel Co., Erie, Pa. built steel plant at East Lake Road, Erie, Pa., construction commenced in Dec., 1918; open-hearth furnaces 2 B. O. H. (30-ton) completed and put in operation May 29, 1920. Special billet making machinery never completed and project abandoned. Plant ran for short time in 1920, idle since that year, and was sold at foreclosure sale in Sept., 1924 to Robert E. Baker, 2422 Euclid Ave., Cleveland, Ohio.

Wayne Steel & Iron Co. (The), Pittsburgh, Pa. built electric steel works at Croghan, Lewis Co., New York, but never operated the plant commercially. Assets of the company in hands of the court in 1922. Company out of business.

WEATHERLY STEEL CASTINGS CO., Weatherly, Pa.

Inc. Sept., 1918 in Delaware. Capital stock: pref. 7% cum. \$50,000.

A. G. Isaacs, P.; H. A. Behrens, Sec.; at Wilkesbarre, Pa. C. H. Bliem, V. P., T. & G. M.; C. F. O'Donovan, P. A.; at Weatherly, Pa.

Sales office: E. L. Pemberton, 30 Church St., New York.

Works at Weatherly, Pa. (leased from Weatherly Iron and Steel Co.): 1 Tropenas converter (4,000-lb.); 1 cupola.

Product: steel castings for sale, annual cap., 600 tons.

WEHR STEEL CO., West Allis, Milwaukee, Wis.

Inc. 1910 in Wisconsin.

William E. Wehr, P.; E. R. Wehr, V. P., G. M. & P. A.; H. W. Wehr, V. P. & G. S. M.; C. F. Wehr, Sec., T. & G. S.

Works at 45th and Gordon Aves., West Allis: blt. 1910, first crucible steel made Sept. 10, 1910, crucible fur. dismantled in 1914; one Whiting converter (2-ton) blt. 1913, f. o. June 1, 1913, dismantled 1918; one 5-ton Moore electric furnace, blt. 1918, f. o. June 10, 1918.

Product: steel castings for sale, annual cap., 5,500 tons; general machinery castings.

WEIRTON STEEL CO., Weirton, West Virginia.

Inc. July 1, 1925 in Delaware. Capital stock: com., par value \$100, auth. \$30,000,000, issued \$23,457,000; bonds \$4,250,000.

E. T. Weir, P.; D. M. Weir, V. P.; H. D. Westfall, V. P.; J. C. Williams, V. P. & G. M.; J. J. Watson, Sec. & G. S. M.; R. J.

Hanna, T.; F. A. Hanlin, A. Sec.; F. M. Hesse, A. T.; W. A. Murphy, P. A.; at Weirton. W. H. Baldrige, V. P.; at 30 Church St., New York, N. Y.

Sales offices:

Baltimore, E. B. Mallory & Co., Knickerbocker Bldg.
 Boston, H. A. Weber, 514 Chamber of Commerce Bldg.
 Buenos Ayres, Argentine, H. C. Walton.
 Chattanooga, Tenn., Egbert-Hancock Co.
 Chicago, H. L. Gray, 208 South La Salle St.
 Dallas, Texas, Dewey Lumber Co., 2003 Magnolia Bldg.
 Denver, Colo., J. S. Worthington Co., 511 Mercantile Bldg.
 Detroit, August J. Bopp.
 El Paso, Tex., Owsley Sales Co., 902 Mills Bldg.
 Havana, Cuba, Coll Pardo & Rios Co.
 Houston, Texas, E. B. Corbett, Sawyer & Winter Sts.
 Kansas City, Mo., E. R. Hensel Steel & Copper Co., Reliance Bldg.
 London, Eng., Everett & Co.
 Los Angeles, Balfour, Guthrie & Co.
 Montreal, A. C. Leslie & Co., 560 St. Paul St.
 New Orleans, La., A. Campbell White, Queen & Crescent Bldg.
 New York, H. M. Easton, 30 Church St.
 Omaha, Neb., Kohn Bros. Brokerage Co., 219 So. 13th St.
 Philadelphia, Pa., L. P. Lane, 1102 Packard Bldg.
 Portland, Ore., Balfour, Guthrie & Co.
 Rio de Janeiro, Brazil, H. P. Belt.
 St. Louis, E. R. Hensel Steel & Copper Co., Planters Bldg.
 San Francisco, Balfour, Guthrie & Co.
 Seattle, Balfour, Guthrie & Co.
 Tacoma, Balfour, Guthrie & Co.
 Vancouver, Balfour, Guthrie & Co.

Product: basic pig iron; open hearth steel ingots, blooms, billets, slabs, sheet and tinplate bars; black plates for tinning; tinplates and terne plates; hot and cold rolled strip steel. Black, blue annealed and galvanized sheets; corrugated sheets; V crimp sheets, roll roofing. Nitration benzol, 90% benzol, nitration toluol, commercial xylol. By-product coke, sulphate of ammonia and tar.

Weirton Plant, Weirton, W. Va.:

Blast Furnace: 1 stack, 92' x 22' 6", const. begun July 21, 1918; blown in July 20, 1919; 3 two-pass side-comb. stoves, 100' x 22'; two steam blowing eng.; 8 water-tube boilers, 4,824 H. P.; one double-strand pig casting mach.; 1 slag granulating pit, annual cap., 110,000 tons. Coke: Lake Ore. Product: basic pig iron, annual cap., 240,000 tons.

By-Product Coke Plant: 37 Becker ovens, completed July 1, 1923. Annual cap., 240,000 net tons coke. By-product recovery plant. Building of 50 additional coke ovens projected.

Steel Works: const. begun June, 1919; 7 B. O. H. fur. (100-ton); one 1,300-ton mixer; six 4-hole soaking pits; 40" 2-h. 1-st. reversing blooming; 21" 2-h. 4-st. cont. roughing with 18" vertical edging stand; 18" 2-h. 6-st. and 15" 2-h. 2-st. vertical edging comb. sheet bar and billet mill. Product and annual cap.: 570,000 tons ingots, 265,000 tons sheet and tinplate bars, 14,500 tons blooms and billets, 75,000 tons slabs.

Tinplate Dept.: blt. 1909, f. o. Jan., 1910; 26 pair and 26 sheet fur.; 26 hot black plate (tin) mills; 13 cold mills; 4 Mesta pickling mach.; 10 box annealing fur.; 52 sets for tin and terne plates. Product: black plates for tinning, annual cap., 115,000 tons; tinplates, 2,300,000 base boxes.

Strip Steel Dept.: semi-cont. hoop and band mill with 20" 2-h. 6-st. and 16" 2-h. 5-st.; cold rolling trains; 8 box annealing fur.; 3 pickling machines. Product: hot rolled strip, hoops and bands, annual cap., 200,000 tons; cold rolled strip, annual cap., 65,000 tons.

Sheet Mill Dept.: blt. 1922-23, f. o. Oct. 1, 1923; 9 hot black sheet mills (30" x 38" to 56"); 4 cold mills (two 28" x 44", one 28" x 50", one 28" x 56"); 4 double box annealing fur.; 2 plunger pickling mach.; 4 galvanizing pots. Product: black, blue annealed and galvanized sheets, annual cap., 60,000 tons.

Clarksburg Plant, Clarksburg, W. Va.; blt. 1901-02, f. o. June, 1902; 12 pair and 12 sheet fur.; 12 hot black plate (tin) mills; 12 cold mills, 6 stands tandem of 2 each; 9 box annealing fur.; 2 pickling mach.; 28 sets for coke tinplates. Product: black plates for tinning, annual cap., 55,000 tons; coke tinplates, 1,100,000 base boxes.

Steubenville Plant, Steubenville, Ohio: blt. 1901-02, f. o. July, 1902; 12 pair and 12 sheet fur.; 12 hot black plate (tin) mills; 12 cold mills (6 stands of 2 tandem); 2 Mesta pickling mach.; 6 box annealing fur.; 20 sets for coke tinplates. Product: black plates for tinning, annual cap., 55,000 tons; coke tinplates, annual cap., 1,100,000 base boxes.

Weldless Rolled Ring Co., Cleveland, Ohio installed rolls for rolling weldless rings on leased quarters at 10022 Detroit Ave., Cleveland, Ohio. Company was acquired by Transue & Williams Steel Forging Corporation and the equipment removed to Alliance, Ohio, May 11, 1925.

WELDLESS TUBE CO. (The), Wooster, Ohio.

Inc. May 1, 1922 in Ohio. Capital stock: com. auth. \$1,000,000, issued \$556,000.

J. R. Speer, P.; at Pittsburgh, Pa. John C. Schultz, V. P.; H. B. Hatton, Sec. & A. T.; at Wooster, Ohio.

Works at Wooster, Ohio: blt. 1922: 1 piercing mill; 1 automatic rolling mill, 10 stands of tube reducing rolls; 1 cont. billet heat. fur., 1 intermediate reheat. fur., 3 swaging or pointing fur.; 1 double chamber car bottom annealing fur.; pickling and treating dept. for boiler tubes; forming dept.

Product: hot rolled seamless tubing, annual cap., 18,000 tons; locomotive and marine boiler tubes ($\frac{1}{2}$ " to $3\frac{1}{2}$ " dia.); cold drawn seamless tubing ($\frac{1}{2}$ " to $3\frac{1}{4}$ " dia.); all classes of mechanical tubing.

Welland Alloy Steel Corporation, see The Electric Steel & Metals Co., Ltd.

WELLAND STEEL CASTINGS, Ltd., Welland, Ont., Canada.

Inc. Nov. 30, 1923 in Ontario. Capital stock: com., auth. \$100,000, issued \$38,000.

H. D. Davison, P. & T.; E. S. Davison, V. P.; C. M. Carmichael, Sec. & G. M.

Works at Welland: blt. 1924, f. o. Feb. 18, 1924; 1 Heroult electric fur. (2-ton); 1 cupola. Gray iron foundry for own use.

Product: steel ingots and steel castings for sale, annual cap. 4,000 tons; alloy steel castings (manganese).

Wellman-Seaver-Morgan Co. (The), Cleveland, Ohio. Steel Foundry at Works situated 7000 Central Ave., Cleveland, was closed down late in 1920, and remained idle until 1924 when the open-hearth furnace (2-ton A. O. H.) was dismantled and the foundry building used for other purposes.

WELLSTON IRON FURNACE CO. (The), Jackson, Ohio.

Inc. June 16, 1916 in Ohio. Capital stock: com., no par value, auth. and issued 3,000 shares; pref. issued \$274,000; bonds \$591,000.

S. E. Stephenson, P.; S. A. Sternberger, T.; at Jackson, Ohio. Joseph McGhee, Sec.; at Columbus, Ohio. J. G. Harding, G. S.; at Superior, Ohio.

Brands: Wellston (pig iron); Superior (portland cement).

Wellston Furnaces, Wellston, Ohio: 2 stacks; No. 1, 63' x 12', blt. 1874-75, last rebt. 1908; No. 2, 70' x 15' 6", blt. 1874-75, last rebt. 1908; 5 side-comb. 2-pass stoves (two 80' x 20', three 75' x 18'); 5 steam blowing eng.; 6 water-tube boilers, 1,800 H. P. W. Va. and Ky. beehive coke; Lake ore.

Product: bessemer, low-phosphorus and malleable pig iron, annual cap., 127,000 tons.

Portland Cement Plant at Superior, Ohio.

WEST CHAPIN MINES CO., Iron Mountain, Mich.

Charles A. Lawrence, P.; at Caspian, Mich. J. T. Spencer, V. P.; at Iron Mountain.

Company is building charcoal blast furnace (1 stack, 65' x 13' 6") at Iron Mountain, Mich. Work on foundations started Oct., 1921, and completed in 1922. Further work suspended. Plan to complete erection of furnace stack in 1925, annual cap. to be about 30,000 tons charcoal pig iron.

WEST LEECHBURG STEEL CO., 803 Farmers Bank Bldg., Pittsburgh, Pa.

Inc. May 19, 1897 in Pennsylvania. Capital stock: com., par value \$100, auth. \$4,000,000, issued \$2,250,000.

J. W. Kirkpatrick, Ch.; James Lippincott, P. & G. M.; J. L. Kirkpatrick, 1 V. P.; D. M. Campbell, 2 V. P.; George W. Sheridan, Sec. & T.; Carl G. Rueppel, A.; Charles S. Todd and Malcolm W. Leech, A. P.; John E. Garrity, G. S. M.; A. S. Geiger, Pa.; at Pittsburgh. Noble Jones, Works Mgr.; at Leechburg, Pa.

Sales offices:

Chicago, Ill., 957 Peoples Gas Bldg.

Cincinnati, Ohio, The Dean Higgins Co., 921 Union Central Bldg.

Cleveland, Ohio, 11801 Lake Ave., Lakewood.

Detroit, Mich., 5-255 General Motors Bldg.

Hartford, Conn., 27 Ardmore Rd., West Hartford.

New York, N. Y., 50 Church St.

Toledo, Ohio, The Dean Higgins Co., 906 Ohio Bldg.

Philadelphia, Pa., The Edgcomb Steel Co., 11th & Cambria Sts.

Works at Leechburg, Pa.: blt. 1898; 16" 2-h. 12-st., 12" 3-h. 9st., and 9" 3-h. 5-st. hot strip mills; 30 stands of cold rolls for cold rolling strip; pickling, liming, oiling and annealing depts. Steel plant (2 B. O. H. fur.) was dismantled in 1922.

Product: hoops and bands, hot and cold rolled strip steel for blanking, stamping and drawing; annual cap., 180,000 net tons.

WEST MICHIGAN STEEL FOUNDRY CO., Muskegon, Mich.

Inc. Oct. 12, 1912 in Michigan. Capital stock: com., par value \$10, auth. \$400,000, issued \$246,180; pref. 7% cum. auth. \$200,000, issued \$136,000.

William E. Jeannot, P.; John W. McKeon, V. P. & G. M.; Charles A. Larnard, Sec.; John B. Jardine, T., A. & P. A.; James P. McKeon, G. S.

Sales office: O. M. Dennett, 14 East Jackson Blvd., Chicago, Ill.

Brands: Hi Tempo (heat resisting metal); Resisto (steel flask metal).

Works at Muskegon, Mich.: blt. 1911, f. o. Dec. 4, 1911; 1 Moore Lectromelt electric fur. (3½-ton). Converters dismantled in 1920.

Product: steel castings for sale, annual cap., 4,800 tons; alloy steel castings (vanadium). Heat resisting metal for carbonizing boxes, cyanide pots, lead pots. Resisto metal for foundry flasks.

WEST PENN STEEL CO., Brackenridge, Pa.

Inc. Dec. 11, 1916 in Pennsylvania. Capital stock: com., par value \$100, auth. \$5,350,000, issued \$1,050,000; pref. 7% cum. auth. and issued \$525,000.

Julian Burdick, P. & G. M.; Charles K. Nichols, V. P. & G. S.; J. E. Ober, T.; M. C. Bair, A.; F. L. Kennedy, G. S. M.; R. B. McKee, Jr., P. A.; at Brackenridge. William W. Ford, Sec.; at Union Arcade, Pittsburgh, Pa.

Sales offices:

Chicago, Ill., J. S. Curley, Peoples Gas Bldg.

Detroit, Mich., W. E. Loughman, Dime Bank Bldg.

New York, N. Y., L. P. Evens, 501 Fifth Ave.

Works at Brackenridge: blt. 1909, f. o. Oct. 1, 1909; 4 B. O. H. fur. (80-ton) fuel, natural gas; three 4-hole soaking pits; 30" 3-h. 1-st. sheet bar mill; 12 sheet and 12 pair fur.; 10 hot black sheet mills 26" and 28" x 34" to 64"; 12 single stands 24" cold rolls; 17 box annealing fur.; 4 pickling mach., 12 pickling tanks. Fuel, natural gas. Roll black sheets 18" to 54" wide, 60" to 144" long. Product: steel ingots, annual cap., 150,000 tons; sheet and tinplate bars, 100,000 tons; black sheets, 50,000 tons. Automobile and electric sheets.

WEST STEEL CASTING CO. (The), 805-851 East 70th St., Cleveland, Ohio.

Inc. Aug. 29, 1906 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$300,000.

R. H. West, P. & T.; D. P. Lansdowne, V. P. & Sec.; E. C. Pender, G. S.

Works at East 70th St., Cleveland: 3 converters (4,000-lb.), one Fisher, two Tropenas; f. o. Feb. 17, 1907; 1 Snyder electric fur. (4,500-lb.) f. o. Feb. 9, 1918; 2 cupolas; 4 Monarch fur. for melting recarbonizer. Foundry equipment limits capacity to 5,000 tons, electric fur. not operated at present.

Product: steel castings for sale, annual cap., 5,000 tons (3,600 tons converter, 2,400 tons electric); automobile castings, cast steel motor truck wheels.

WEST VIRGINIA RAIL CO. (The), Foot of 17th St., Huntington, W. Va.

Inc. Apr., 1907 in West Virginia. Capital stock: com., par value \$100, auth. and issued \$1,000,000.

Joseph Schonthal, P.; S. N. Summer, 2 V. P.; at Columbus, Ohio. H. A. Zeller, 1 V. P. & G. M.; D. C. Schonthal, Sec. & T.; L. H. Ohlinger, A.; H. H. Diehl, G. S.; C. C. Watters, A. Sec. & G. S. M.; A. A. Meyer, P. A.; at Huntington, W. Va.

Works at Huntington: 2 cont. heat. fur., fuel nat. gas; 21" 3-h. 2-st. with 1-st. pinions, 1,500 H. P. motor drive, rail mill (new mill blt.

1920 to replace old 20" mill); comb. 16" and 12" bar mill with 16" 3-h. 1-st. roughing, 1-st. pinions, 12" 3-h. 6-st. and 1-st. pinions, blt. 1918, steam driven. Fuel: coal and gas.

Product: steel rails (8-lb. to 50-lb. A. S. C. E. sections); rail steel bars, deformed reinforcing concrete bars, agricultural shapes, angles and splice bars, bedstead angles, steel mine ties, portable track, frogs and switches. Annual cap., 100,000 tons rolled products (75,000 tons rerolled rails, 25,000 tons bars and shapes).

Westerman & Co., Lockport, N. Y. was acquired March 1, 1921 by Westerman & Co., Inc. a New York corporation. Rolling mill closed down in Nov., 1923. Company has discontinued manufacturing and is going out of business. Plant sold in May, 1925 to Harrison Real Estate Corpn., Buffalo, N. Y.

WESTERN CRUCIBLE STEEL CASTING CO., 2833 Grand Ave., Minneapolis, Minn.

Inc. Nov. 15, 1906 in Minnesota. Capital stock: com., par value \$100, auth. \$400,000, issued \$54,100; pref. 7% non-cum. auth. \$100,000, issued \$82,100; bonds \$5,000.

G. T. Honstain, Ch.; V. G. Honstain, P.; W. J. Milne, Sec.; C. M. Heywood, T.; E. F. Junger, G. M.; George Ziemer, G. S.

Works at 2833 Grand Ave., Minneapolis: blt. 1906; 2 Snyder electric fur. (one 3,000-lb., one 6,000-lb.)

Product: steel castings for sale, annual cap., 5,600 tons.

Western Reduction Co., Portland, Ore. Works at 24th & Nicolai Sts., Portland, last operated in 1919 are closed down. Company has discontinued manufacture of pig iron and ferro-alloys, is selling out its property and will continue only as holding company for other projects.

Western Reserve Steel Co., care The Union Mortgage Co., Cleveland, Ohio.

Western Reserve Steel Co. was formed to hold title (pending resale) to former plant of Hunter Crucible Steel Co. which was bid in for the bondholders at bankruptcy sale in 1924.

Works at 6800 Grant Ave., Cleveland: blt. 1916-17; electric steel fur. added 1919, rolling mill added 1920-21; 2 Heroult electric fur. (one 6-ton, one ½-ton); one 30-pot crucible steel fur.; 1 gas producer; 10" 3-h. 6-st. bar mill; 4 box annealing fur.; 2 pickling tanks; 4 steam hammers (450-lb. to 6-ton); one 300-ton press.

Product: steel ingots, annual cap., 6,000 tons (5,000 tons electric, 1,000 tons crucible); carbon and alloy tool steel, 12,000 tons.

Western Rolling Mill Corporation, Seattle, Wash. abandoned plan to build steel works and rolling mill at Seattle.

WESTERN STEEL CAR & FOUNDRY CO., Farmers Bank Bldg., Pittsburgh, Pa.

Inc. May 6, 1902 in New Jersey. Capital stock: com., par value \$100, auth. and issued \$1,250,000; bonds \$1,073,000.

F. N. Hoffstot, P.; N. S. Reeder, 1 V. P.; J. F. McNulty, 2 V. P.; C. E. Church, Sec. & T.; at New York, N. Y. Henry P. Hoffstot, 3 V. P.; W. A. Chamberlain, C.; J. B. Tate, P. A.; at Pittsburgh. F. A. Harper, A.; C. C. Cochran, G. M.; F. Bock, G. S.; H. H. Gilbert, G. S. M.; at Chicago.

Company builds and repairs all-steel, wood and composite freight cars and parts. Operates foundry at Hegewisch for own use and for jobbing.

Works at Hegewisch, Ill.: two Snyder electric fur. (1½-ton) added in 1918; one Tropenas converter (3-ton) added 1919; 2 cupolas; foundry for gray iron (8,000 tons), malleable iron (8,000 tons) and brass (30 tons) castings for own use and for sale. Forge shop: 13 hammers (600-lb. to 5,000-lb.). Carbuilding plant.

Product: steel castings for own use and for sale, annual cap., 7,500 tons (5,000 tons converter, 2,500 tons electric); alloy steel castings; truck frames, bolsters, center plates, brake beams, stake pockets, stakes, etc.; hot and cold pressed parts, heavy blanking and punching; steel fabrication; drop forgings, forging machine work and steam hammer forgings, 5,000 tons.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO., East Pittsburgh, Pa.

Inc. 1886 in Pennsylvania. Capital stock: com., par value \$50, auth. \$196,000,000, issued \$114,504,450; pref. 7% cum. auth. \$4,000,000, issued \$3,998,700; bonds, \$36,242,000.

Guy E. Tripp, Ch.; E. M. Herr, P.; L. A. Osborne, V. P.; C. A. Terry, V. P.; Walter Cary, V. P.; J. C. Bennett, Sec. & C.; at 150 Broadway, New York. H. P. Davis, V. P.; H. D. Shute, V. P.; F. A. Merrick, V. P. & G. M.; E. D. Kilburn, V. P.; W. S. Rugg, V. P.; H. F. Baetz, T.; F. E. Craig, A.; at East Pittsburgh. H. T. Herr, V. P.; at South Philadelphia, Pa.

Company operates plants at East Pittsburgh, Homewood, Sharon, Derry, Trafford and South Philadelphia, Pa.; Cleveland, Ohio; Newark, N. J.; Attica, N. Y.; and East Springfield, Mass., for the manufacture of electrical machinery. It operates gray iron foundries at Trafford, Pa. (10,392 tons), Cleveland, Ohio (14,500 tons) and East Springfield, Mass. (1,600 tons); total annual cap., 26,492 tons gray iron and 2,010 tons brass castings. Steel castings made at Trafford.

Trafford Foundry, Trafford, Pa.: 1 Ludlum electric fur. (6-ton) f. o. Mar. 1, 1920.

Product: steel castings for own use only, annual cap., 2,000 tons.

Wharton Steel Co., see Replogle Steel Co.

Wharton (Wm.), Jr. & Co., Inc., see Taylor-Wharton Iron & Steel Co.

WHEELING MOLD & FOUNDRY CO., Wheeling, W. Va.

Inc. Sept. 30, 1919 in Delaware. Capital stock: com., no par value, auth. and issued 50,000 shares; pref. 7% cum. auth. and issued \$1,200,000; bonds \$1,110,000.

H. E. Field, P., G. M. & G. S. M.; D. A. Burt, V. P.; C. C. Woods, Sec. & T.; E. C. Rauschenberg, G. S.; E. L. Schafer, P. A.

Sales offices:

Chicago, Ill., A. K. Hamilton, 208 South La Salle St.

New York, N. Y., F. F. Vandervort, 17 West 42nd St. Philadelphia, Pa., Adair Day Corp., 1023 Widener Bldg.

Company operates plants at Wheeling and Warwood, W. Va., for the manufacture of steel rolls, chill and sand iron rolls, iron and steel castings, rolling mill and special machinery.

Works at Wheeling: 3 A. O. H. fur. (30-ton) fuel, oil; 2 cupolas; gray iron foundry (annual cap., 1,000 tons).

Product: steel castings for own use and for sale, annual cap., 30,000 tons. Alloy steel castings (nickel, chrome, molybdenum, vanadium).

Works at Warwood, W. Va.: 3 air fur. annual cap., 10,000 tons chilled iron rolls.

WHEELING STEEL CORPORATION, Wheeling, W. Va.

Inc. June 21, 1920 in Delaware. Capital stock: com., par value \$100, auth. \$70,000,000, issued \$39,428,800; pref. A. 8% cum. auth. \$5,000,000, issued \$4,933,000; pref. B. 10% cum. auth. \$25,000,000, issued \$22,559,800; bonds \$29,027,000.

Wheeling Steel Corporation acquired in July, 1920 the Wheeling Steel & Iron Co., Whitaker-Glessner Co. and La Belle Iron Works. These companies continued, as subsidiaries of Wheeling Steel Corp., to operate their respective plants until May 1, 1923, when operation of all plants was taken over by Wheeling Steel Corp.

Alexander Glass, Ch.; Isaac M. Scott, P.; W. H. Abbott, V. P.; Walter B. Higgins, V. P. (sales); George W. Moore, V. P. (operations); John D. Tucker, G. S. M.; C. J. Hunter, Sec.; W. H. Manning, T.; T. H. Jones, A.; E. D. Adams, P. A.

Sales offices:

Atlanta, Ga., Henry E. Smith, 819-20 Healey Bldg.

Boston, Mass., N. C. Reed, 459 Mass. Trust Bldg.

Chicago, Ill., J. M. Sullivan, 911-13 Peoples Gas Bldg.

Cincinnati, Ohio, A. F. Scherer, 709-10 Union Trust Bldg.

Cleveland, Ohio, H. O. Albrecht, 10608 Depont Ave.

Dallas, Texas, I. G. Thompson, 717 Kirby Bldg.

Detroit, Mich., James A. Henry, 524-6 Book Bldg.

Indianapolis, Ind., P. P. Barrett, Roosevelt Bldg.

Kansas City, Mo., E. B. Pentz, 412-14 Dwight Bldg.
Los Angeles, Calif., W. M. Hall, 607 Washington Bldg.
New Orleans, La., D. M. Montgomery, Whitney Central Bldg.
New York, N. Y., C. E. Scofield, Equitable Bldg.
Philadelphia, Pa., L. J. Lowe, Franklin Trust Bldg.
Pittsburgh, Pa., T. W. Oberhauser, 1719-21 Oliver Bldg.
St. Louis, Mo., Arthur Dufort, Boatmen's Bank Bldg.
San Francisco, Calif., W. A. Taylor, 905-9 Rialto Bldg.
Seattle, Wash., Lyman T. Banks, 1815-6 L. C. Smith Bldg.

Brands: Wheeling (steel products); Whitaker (range boilers).

Product: basic, bessemer and foundry pig iron; steel ingots and steel castings for own use; slabs, blooms, billets and sheet and tinplate bars; rod mill squares; sheared and universal plates; skelp; black and galvanized pipe; black, blue annealed, and galvanized sheets; black plate for tinning, tinplates, terne plates, long terne plates; wire rods; plain and galvanized wire; barbed wire, wire fencing, wire nails, etc.; nail plate, cut nails; gray iron and brass castings for own use; coke oven by-products.

Steubenville Works, Steubenville, Ohio (La Belle Iron Works to May 1, 1923):

Blast Furnaces: 2 stacks; No. 1, 88' 6" x 16' 6", blt. 1865, last rebt. 1901-03, remod. and relined 1921; No. 2, 90' x 16', blt. 1903-04, remod. and relined 1920; eight 3-pass McClure stoves, 85' x 21'; 3 Mesta steam blowing eng. (120,000 cfm.) 15 lbs. rated pressure; 29 water-tube boilers, 16,145 H. P. serve entire plant; 2 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 48,500 tons. By-product coke from own plant at Follansbee, W. Va.: Lake ore. Product: basic pig iron, annual cap., 328,500 tons. Steel Works and Rolling Mills: orig. blt. 1855; 11 B. O. H. fur. (80-ton) fuel prod. gas, coke oven gas and tar, 39 Swindell-Chapman gas prod.; one 250-ton mixer; seven 4-hole soaking pits; 16 heat. fur. (two 1-d. coke oven gas; eleven 4-d. and three 5-d. prod. gas-fired); 45" 2-h. 1-st. and 35" 2-h. 1-st. blooming; 19" 2-h. 6-st. Morgan continuous billet; two 3-h. sheared plate mills (one 32" x 86", one 30" x 78"); one 24" x 32" 3-h. universal plate mill; two jobbing plate mills (28" x 60" 2-h., 28" x 72" 3-h.); 4 sheet and 4 pair fur.; 4 comb. sheet and pair. fur.; 8 hot black sheet mills (four 28" x 36", three 28" x 44", one 28" x 54"); one train cold rolls with 7-st. 24" x 60"; 14 box annealing fur.; 4 open annealing fur.; 3 plunger pickling mach.; 6 hand pickling tanks; 4 galv. pots for sheets; roll sheared plates .135" to 1", black sheets 14 to 30 gauge; 2 butt weld fur. for pipe $\frac{1}{8}$ " to 3"; 2 lap weld fur. for pipe 2" to 12 $\frac{1}{2}$ "; 1 galv. pot. Gray iron (2,000 tons) and brass (100 tons) foundry for own use. Product: steel ingots, annual cap., 600,000 tons; semi-finished hot rolled products, 215,000 tons slabs, 480,000 tons sheet bars, 565,000 tons blooms and billets; finished hot rolled

- products, 502,000 tons including 100,000 tons sheared plates, 100,000 tons universal plates, 192,000 tons skelp, 60,000 tons blue annealed sheets, 50,000 tons black sheets; galvanized sheets, 48,000 tons; black pipe, 150,000 tons; galvanized pipe, 50,000 tons.
- Wheeling Steel By-Product Coke Dept., Follansbee, W. Va.: 94 Koppers by-product coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 450,000 net tons coke, 2,400,000 gals. light oil. Building 51 Koppers-Becker ovens.
- Beech Bottom Works, Beech Bottom, Brooke Co., W. Va.: blt. 1917-18, f. o. Feb., 1919; 8 double sheet and 8 double pair fur.; 8 hot black sheet mills (six 30" x 36", one 30" x 38", one 30" x 54"); 1 train cold rolls with 6-st. 26" x 58" to 60"; 6 double box annealing fur.; 2 Mesta pickling mach.; 3 pots for long terne plates. Roll black sheets 12 to 30 gauge, max. 40" x 144", min. 18" x 72". (Whitaker-Glessner Co. to May 1, 1923). Product: black sheets, annual cap., 48,000 tons; long terne plates, 15,000 tons.
- Top Furnace, Wheeling, W. Va.: 1 stack, 80' x 18', blt. 1873-74, relined 1918; 3 Massicks & Crooke stoves 70' x 19' 6"; 2 Allis-Chalmers steam blowing eng. (26,100 lb. per min.) 16 to 18 lbs. rated pressure; 6 B. & W. water-tube boilers, 1,500 H. P.; 1 Uehling single-strand pig casting mach.; 1 dry slag pit. Beehive and by-product coke: Lake ore. Zinc Dross Dept.: two 8-retort dross fur., fuel bit. coal, annual cap., 3,000 tons. (Wheeling Steel & Iron Co. to May 1, 1923.) Product: bessemer pig iron, annual cap., 100,000 tons.
- Martins Ferry Furnace, Martins Ferry, Ohio: 1 stack, 82' 6" x 18', blt. 1866, rebt. 1903-05, remod. 1922, relined Jan., 1925; 4 Massicks & Crooke stoves 75' x 20'; 3 Allis-Chalmers steam blowing eng. (35,328 cfm.) 15 lbs. rated pressure; 8 water tube boilers (4 Wicks, 3 Wheeler, 1 Sterling) 3,150 H. P.; 1 Uehling single-strand pig casting mach.; 2 dry slag pits. Conn. beehive and Follansbee by-product coke: Lake ore. (Wheeling Steel & Iron Co. to May 1, 1923.) Product: bessemer pig iron, annual cap., 140,000 tons.
- Benwood Works, Benwood, W. Va.: blt. 1885-86, f. o. Aug. 12, 1886; 2 bessemer converters (6½-ton); 4 cupolas; 3 gas prod.; two 4-hole soaking pits; 36" 2-h. 1-st. blooming mill; three 3-d. heat. fur.; skelp mill with 24" x 29" 3-h. roughing stand and 24" x 36" 2-h. finishing stand; 3 butt weld fur. for pipe ¾" to 3"; 2 lap-weld fur. for pipe 2" to 12½"; 1 galv. pot. (Wheeling Steel & Iron Co. to May 1, 1923.) Product: steel ingots, annual cap., 225,000 tons; slabs, blooms and billets, 200,000 tons; skelp, 40,000 tons.
- Belmont Furnace, Wheeling, W. Va. was abandoned in 1923.
- Belmont Works, Wheeling, W. Va.: blt. 1849; 5 heat. fur. (two 4-d., 3 cont., prod. gas-fired); 22" skelp with 22" 3-h. 1-st. roughing, 22" 2-h. 2-st. bull head and finishing; 22" 2-h. 2-st. skelp; 18"

skelp with 18" 3-h. 1-st. roughing, 12" 2-h. 2-st. strand and finishing. Fuel, prod. gas. (Wheeling Steel & Iron Co. to May 1, 1923.) Product: skelp, annual cap., 145,000 tons.

La Belle Works, Wheeling, W. Va.: four 4-d. heat. fur.; 22" 3-h. 3-st. nail plate, 21" 2-h. 3-st. nail plate; 151 cut nail mach. (Wheeling Works, La Belle Iron Works, to May 1, 1923.) Product: universal and sheared plates, annual cap., 60,000 tons; cut nails, 285,000 kegs (100-lb.).

Whitaker Works, Wheeling, W. Va.: 12 sheet and 12 pair fur.; 6 hot black sheet mills (four 28" x 36", one 28" x 38", one 29" x 44"); 6 hot black plate mills (five 28" x 36", one 29" x 44"); 8 stands cold rolls (1 train 2-st. 28" x 48", 1 train 4-st. 24" x 38" or 48", 1 train 2-st. 24" x 38" or 48"); 7 double box annealing fur. for sheets; 2 double box annealing fur. for black plate; 1 Mesta pickling mach. Tinning dept. removed to Yorkville Works in 1920. Roll black sheets 14 to 30 gauge, max. 36" x 144", min. 18" x 72"; black plate, 24 to 32 gauge, max. 36" x 120", min. 18" x 48". (Whitaker-Glessner Co. to May 1, 1923.) Product: black sheets, annual cap., 28,000 tons; black plate, 20,000 tons.

Martins Ferry Works, Martins Ferry, Ohio: 6 comb. sheet and pair fur.; 6 hot black sheet mills (five 28" x 36", one 28" x 38" to 44"; 4 stands cold rolls in 2 trains of 2-st. each, 24" x 48"; 6 double box annealing fur. Roll black sheets 14 to 31 gauge, max. 36" x 144", min. 18" x 72". (Whitaker-Glessner Co. to May 1, 1923.) Product: black sheets, annual cap., 30,000 tons.

Yorkville Works, Yorkville, Ohio: 24 sheet and 24 pair fur.; 24 hot black plate mills (28" x 28" to 36"); 30 stands 26" cold mills (9 sets of 3-st. tandem, 1 set 2-st. tandem, 1 set single); 9 double box annealing fur.; 3 Mesta pickling mach.; 41 tinning sets (39 for coke tinplates, 2 for terne plates). (Wheeling Steel & Iron Co. to May 1, 1923.) Product: black plates for tinning, annual cap., 100,000 tons; tinplates, 1,900,000 base boxes, terne plates, 100,000 base boxes.

Portsmouth Works, Portsmouth, Ohio:

Blast Furnace: 1 stack, 92' x 22', blt. 1917, f. o. Aug. 27, 1917, remod. 1921, relined 1924; 3 Kennedy 2-pass side-comb. stoves, 110' x 24'; 2 Ingersoll-Rand turbo-blowers, 50,000 lbs., 15 to 30 lbs. rated pressure; 8 Sterling water-tube boilers, 6,584 H. P.; 1 Heyl & Patterson double-strand pig casting mach. Coke: Lake ore. Product: basic and foundry pig iron, annual cap., 225,000 tons. Steel Works: 10 B. O. H. fur. (60-ton) fuel prod. gas, 20 Morgan gas producers; six 4-hole soaking pits; 5 heat. fur. (three 3-d. slab, one 4-d. billet, one cont. Morgan billet); 35" 2-h. 1-st. blooming; 24" 3-h. 2-st. and 24" 2-h. 1-st. bar mill; 18" 2-h. 6-st. Morgan continuous bar; 15 sheet, 16 pair and 3 comb. sheet and pair fur.; 2 jobbing plate mills (30" x 72" 3-h. and 30" x 38" to 60" 2-h.); 23 hot black sheet mills (30" x 38" to 48"); 20 cold

mills in 4 trains, 5 mills per train, 48" to 60"; 19 double box annealing fur.; 2 open annealing fur.; 8 pickling mach. (4 Mesta, 4 plunger); 8 galvanizing pots. Roll black sheets 14 to 30 gauge, max. 44" x 144", min. 20" x 60". Wire mill with 203 wire drawing blocks for wire $\frac{1}{8}$ " to 18 gauge; 2 galv. units; 159 wire nail mach.; 36 barbed wire mach.; 8 wire fence mach. Steel, gray iron and brass foundry, annual cap., 2,000 tons steel, 2,200 tons gray iron and 275 tons brass castings for own use only. (Whitaker-Glessner Co. to May 1, 1923.) Product: steel ingots, annual cap., 448,000 tons; steel castings, 2,000 tons; semi-finished hot rolled products, slabs 150,000 tons, blooms and billets 250,000 tons, sheet and tinplate bars 150,000 tons; rod mill billets and squares 150,000 tons; finished hot-rolled products, 312,000 tons including 120,000 tons wire rods, 120,000 tons black sheets, 72,000 tons blue annealed sheets; galvanized sheets, 80,000 tons; plain wire 120,000 net tons; galvanized wire 36,000 net tons; barbed wire 24,000 net tons, wire fence 24,000 net tons; wire nails 1,000,000 kegs (100-lb.).

Total annual cap.: 793,500 tons pig iron; 1,273,000 tons steel ingots; 1,285,000 tons finished hot-rolled products.

Wheeling Steel Corporation controls Pitt Iron Mining Co. which operates Miller and Wacootah Mines on Mesabi Range, annual cap., 350,000 tons.

Wheeling Steel & Iron Co., Wheeling, W. Va. was acquired in July, 1920 by Wheeling Steel Corporation, but continued to operate under own name to May 1, 1923, when operation was taken over by Wheeling Steel Corporation.

Wheeling Steel Casting Co., Wheeling, W. Va. sold steel foundry (1 A. O. H. fur. 20-ton) at Warwood, W. Va., Sept. 28, 1920 to Wheeling Mold & Foundry Co. The latter company converted the plant into works for manufacture of chilled iron rolls; the open-hearth furnace was dismantled in 1923.

Whitaker-Glessner Co., Wheeling, W. Va. was acquired in July, 1920 by Wheeling Steel Corporation, but continued to operate under own name to May 1, 1923, when operation of the manufacturing plants was taken over by Wheeling Steel Corporation.

WHITAKER IRON CO., Wheeling, West Virginia.

A. C. Whitaker, P.; George P. Whitaker, Sec. & T.; at Wheeling, W. Va. Joseph Coudon, V. P.; at Perryville, Md.

Works at Principio Furnace, Md.: charcoal forge blt. 1883-84; 12 knobbling fires; 3 hammers (2,500-lb., 3,500-lb., 6,000-lb.). Steam power. Idle at present. (Formerly operated under lease by Tyler Tube & Pipe Co.)

Product: charcoal blooms from scrap for sale, annual cap., 8,500 tons.

WHITING CORPORATION, Lathrop Ave. & 157th St., Harvey, Ill.

Inc. Mar., 1894 in Illinois. Capital stock: com., par value \$25, auth. \$3,000,000, issued \$2,152,800.

J. H. Whiting, Ch.; T. S. Hammond, P. & T.; R. H. Bourne, V. P. & S. M.; N. S. Lawrence, V. P. & A. S. M.; A. H. McDougall, V. P. & Con. Eng.; R. A. Pascoe, Sec. & A. T.; H. M. Rowlette, P. A.; at Harvey, Ill. J. R. Bates, V. P.; at 136 Liberty St., New York, N. Y.

Sales offices in principal cities of United States and Canada.

Company manufactures cranes, foundry equipment and railway specialties at Plant at Harvey, Ill., which includes steel foundry, described below, operated for own use only.

Works at Harvey: est. 1894; steel foundry added 1919, f. o. 1919; 1 Whiting converter (2,000-lb.); 3 cupolas; gray iron foundry annual cap. 5,000 tons gray iron, 100 tons brass castings for own use only.

Product: steel castings for own use only, annual cap., 1,000 tons.

WICKWIRE BROTHERS, 189 Main St., Cortland, N. Y.

Est. 1873; inc. 1892 in New York. Capital stock: com., par value \$100, auth. and issued \$3,000,000.

T. H. Wickwire, Ch.; C. C. Wickwire, P. & G. M.; A. F. Stilson, V. P. & G. S.; F. R. Wickwire, V. P., Sec. & P. A.; Edward Stilson, T.

Works at Cortland: first wire drawn 1879; rod mill blt. 1900, f. o. Feb. 1, 1901; steel plant blt. 1902, f. o. Feb. 1903; 3 B. O. H. fur. (30-ton) fuel, prod. gas, 9 Morgan gas prod.; 2 cont. heat. fur. (1 ingot, 1 billet) fuel, prod. gas.; 20" 3-h. 1-st. blooming; 10" 2-h. 14-st. Morgan double cont. rod mill; wire drawing blocks; wire nail mach.; 3 barbed wire mach.

Product: steel ingots, annual cap., 35,000 tons; billets, 35,000 tons; wire rods, 35,000 tons; plain wire, 22,000 net tons; wire nails 150,000 kegs (100-lb.).

WICKWIRE-SPENCER STEEL CO., 41 East 42d St., New York, N. Y.

Inc. 1925 in Delaware. Capital stock: com., no par value, auth. 1,815,000 shares, outstanding 958,750 shares; bonds \$15,770,500. Wickwire-Spencer Steel Co. took over on Feb. 19, 1925 the business of Wickwire-Spencer Steel Corporation, Inc. in Massachusetts in 1919.

D. F. Edwards, P.; E. C. Bowers, V. P.; L. E. Crandall, V. P.; George Endicott, Sec.; G. V. Pach, T.; F. C. Yeates, P. A.

Sales offices at Chicago, Ill.; Los Angeles, Calif.; Philadelphia, Pa.; San Francisco, Calif.; Worcester, Mass.

Wickwire-Spencer Steel Co. operates blast furnaces, steel works and wire plant at Buffalo, N. Y., and plants at Worcester, Mass.;

Palmer, Mass.; Clinton, Mass.; and Spencer, Mass., for the drawing and fabricating of wire. Company also owns capital stock of American Wire Fabrics Corpn. with weaving mills at Blue Island, Ill. and Mt. Wolf, Pa.; and stock interest in Hanna Ore Mining Co., Buffalo Iron Mining Co. and Wickwire Mining Co.; dolomite quarry at Gasport, N. Y.

Buffalo Works, Buffalo, N. Y. (Wickwire Steel Co. to Feb. 26, 1920): Harriet Furnaces: X, 80' x 20', blt. 1907-08, f. o. Oct. 16, 1908, remod. 1915, relined, 1925; Y, 85' x 21' 6", blt. 1909-10, f. o. Oct. 1, 1910, remod. 1919, relined, 1925; 8 stoves (4 Kennedy 80' x 20', 4 McKee 80' x 22'); 6 long cross head vertical steam blowing eng. (3 Mesta, 3 Allis) 90,000 cfm., 25 lbs. rated pressure; 20 Sterling water-tube boilers, 7,600 H. P. serve also steel works, wire mill and fabricating mill; 1 Heyl & Patterson double-strand pig casting machine; General Briquetting Co. briquetting plant for flue dust, annual cap., 60,000 tons. Conn. coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 346,750 tons. Steel Works: blt. 1915-16, f. o. Jan. 8, 1917; 4 B. O. H. fur. (60-ton) fuel prod. gas, 8 Morgan gas producers; 1 mixer (400-ton); 3 cont. gas-fired heat. fur.; 32" 2-h. 2-st. blooming; 18" 2-h. 6-st. billet; 10" 2-h. 16-st. cont. rod mill. Product: steel ingots, annual cap., 150,000 tons; blooms and billets, 130,000 tons; wire rods, 120,000 tons.

Wire Mill: blt. 1917-18, f. o. 1918; 370 wire drawing blocks for wire $\frac{5}{8}$ " to 20½ gauge; 54 wire nail mach.; 1 galv. pan. Product: plain wire, annual cap., 60,000 net tons; galvanized wire, 7,500 net tons; wire nails, 240,000 kegs.

Goddard Works, 80 Webster St., Worcester, Mass.: charcoal forge; blt. 1919, f. o. May 26, 1919; 2 forge fires; 1 run-out fire; one 10-ton hammer. Steam power. (Clinton-Wright Wire Co. to Feb. 26, 1920). Product: charcoal iron billets from scrap for own use, annual cap., 1,560 gross tons. Wire mill. Product: music wire, card wire, card clothing, buckles, tire wire, cold rolled flat wire, clock springs, round and shaped wire, fine wire.

Hammond Street Works, Worcester, Mass., and Union Street Works, Worcester, Mass., have been abandoned and equipment removed to Clinton Works.

Greendale Works, Worcester, Mass. Product: helical springs, clock springs, hot wound spring, wire formed goods.

Spencer Works, Spencer, Mass. Product: fine wire, core wire, tag wire, florist wire, car seal wire, grape vine wire.

Palmer Works, Palmer, Mass. Product: tire wire, music wire, steel wire rope, cables, staples, picture cord, clothes line.

Clinton Works, Clinton, Mass. Product: screen cloth, poultry netting, hardware cloth, heavy wire cloth; brass, bronze, copper cloth; elevator enclosures, chain link fence, ornamental iron fence,

grills, perforated steel, tree guards, wire lath, glass netting, kitchen goods, white enamel goods, riddles.

Wickwire Spencer Steel Corporation acquired Feb. 26, 1920, Wickwire Steel Co., Clinton Wire Cloth Co., Morgan Spring Co., Spencer Wire Co., Wright Wire Co. and National Manufacturing Co. Company was reorganized in 1925 and taken over by new corporation, Wickwire-Spencer Steel Company.

Wickwire Steel Co., Buffalo, N. Y. was acquired Feb. 26, 1920 by Wickwire-Spencer Steel Corporation.

WILKES ROLLING MILL CO., 20 Wilkes Pl., Sharon, Pa.

Inc. June 1, 1891 in Pennsylvania. Capital stock: com., par value \$100, auth. \$45,000, issued \$30,000.

J. C. Wilkes, P.; G. S. M. & P. A.; Samuel Wilkes, V. P.; B. F. Wilkes, Sec. & T.; W.B. Wilkes, G. M.

Works at 20 Wilkes Place, Sharon: blt. 1891, f. o. 1892; 4 double puddling fur.; 1 squeezer; one 3-d. coal-fired heat. fur.; 1 sheet and 1 pair fur.; 1 hot black sheet mill; 1 stand cold rolls, 22" x 42"; 1 Mesta 3-arm pickling mach.; 1 box annealing fur.; 1 blue annealing fur.; 1 set for terne plates. Roll black sheets, 14 to 30 gauge, to 30" wide and 120" long.

Product: muck bar, annual cap., 7,500 tons; black sheets, 5,000 tons; blue annealed sheets; sheets for galvanizing, stamping, corrugated, V crimped and painted for roofing, siding, etc.; terne plates, 30,000 base boxes.

WITHERBEE, SHERMAN & CO., Port Henry, N. Y.

Inc. 1900 in New York. Capital stock: com., par value \$100, auth. and issued \$3,000,000; Prior pref. 8% cum. auth. \$667,000, issued \$75,300; pref., auth. and issued \$333,000, bonds \$3,700,000. Lewis W. Francis, P.; M. L. Mozier, G. S. M.; at 30 Church St., New York. C. A. Buck, V. P.; at Bethlehem, Pa. George C. Foote, V. P. & G. M.; Ralph E. Rogers, Sec. & T.; A. E. Hodgkins, C. & P. A.; George L. Shook, G. S. (Blast Furnace Dept.); A. M. Cummings, G. S. (Mines Dept.); at Port Henry, N. Y.

Sales agent: Rogers, Brown & Crocker Bros., Inc., 21 East 40th St., New York, N. Y.

Brand: Champlain (pig iron).

The company operates iron ore mines at Mineville, N. Y., annual cap., 1,000,000 tons of magnetite ore and concentrates; blast furnace plant at Port Henry, N. Y.

Port Henry Furnaces, Port Henry, N. Y.: 2 stacks, No. 1, 80' x 17' 2", blt. 1872-73, last reblt. 1921; No. 2, 87' x 20' 6", blt. 1922-23, f. o. June 20, 1923, relined 1924; 9 stoves (2 McClure 95' x 20', 3 Foote 80' x 18', four 100' x 22'); 4 turbo-blowers (2 General Electric, 2 Ingersoll-Rand) 140,000 cfm., 25 lbs. rated pressure; 8 water-tube boilers (3 Rust, 5 Sterling) 4,054 H. P.; 1 Pittsburgh

Coal Washer & triple-strand pig casting mach.; Greenawalt sintering plant for iron ore and flue dust, annual cap. 400,000 tons. Conn. coke: local magnetite ore and concentrates.

Product: malleable foundry and low-phosphorus pig iron, annual cap., 250,000 tons.

WITHEROW STEEL CO., P. O. Box 1126, Pittsburgh, Pa.

Inc. Mar. 16, 1914 in Pennsylvania. Capital stock: \$2,891,000.

W. P. Witherow, P.; G. H. Flinn, V. P.; Joseph Dilworth, Sec.;

W. G. Watt, T. & A. Sec.; E. W. Herron, A. T.

Works at Neville Island: blt. 1916-17, f. o. Jan., 1917; cont. heat. fur. Special bar mills.

Product: rolled forgings and special shapes.

Company purchased former plants of Connellsville Electric Steel Co. and Keystone Tube Works at Connellsville neither of which is in operative condition.

Woodstock Iron & Steel Corporation, Anniston, Ala. see Woodstock Operating Corporation.

Woodstock Operating Corporation, Anniston, Ala. has given up lease, of Woodstock Furnace at Anniston. Furnace reverted to owner, The Woodstock Iron & Steel Corpn. Property for sale, furnace to be dismantled.

WOODWARD IRON CO., Woodward, Ala.

Inc. Nov., 1911 in Delaware. Capital stock: com. par value \$100, issued \$10,000,000; pref. Class A 7% cum. issued \$405,000, 6% cum. issued \$3,000,000; bonds \$14,000,000.

A. H. Woodward, Ch.; Frank H. Crockard, P.; D. E. Wilson, V. P. & T.; Herbert E. Smith, Sec.; Frank E. Curtis, A. Sec. & A. T.; F. E. Carlton, A.; J. A. Long, G. M.; J. H. Leonard, P. A.

Sales offices:

Birmingham, Ala., T. H. Benners & Co., American Trust Bldg.

Boston, Mass., J. O. Henshaw, 79 Milk St.

Chicago, Ill., Walter-Wallingford & Co., McCormick Bldg.

Cincinnati, Ohio, Walter-Wallingford & Co., Traction Bldg.

Louisville, Ky., Baylor Hickman & Co., 231 West Main St.

New York, N. Y., Phillips Isham, 30 Church St.

Philadelphia, Pa., J. J. Mohr & Son, Bullitt Bldg.

Pittsburgh, Pa., Walter-Wallingford & Co., Oliver Bldg.

Brand: Woodward (pig iron).

Product: basic, foundry and forge pig iron, total annual cap. (5 furnaces) 550,000 tons.

Vanderbilt Furnaces, East Birmingham, Ala.; 2 stacks, No. 1, 78' 2" x 15' 4", blt. 1890, last rebt. 1901; No. 2, 80' 4" x 18' 9", 1906-08, relined 1924; 8 stoves (four 4-pass 85' x 20', three 3-pass 57' 2" x 16' 6", one 4-pass 70' x 17'); 5 vertical steam blowing eng.,

80,000 cfm., 20 lbs. rated pressure; 10 Weyss water-tube boilers, 4,000 H. P. By-product coke: local red. Product: foundry, basic and forge pig iron, annual cap., 130,000 tons.

Woodward Furnaces, Woodward, Ala.: 3 stacks, No. 1, 90' 8" x 21' 6", blt. 1882-83, rebt. 1913, relined 1925; No. 2, 86' x 20' 9½", blt. 1886, rebt. 1907-08, relined 1921; No. 3, 85' 6" x 20' 4", blt. 1902-05, relined 1923; 15 two-pass stoves (five 110' x 22', five 90' x 20', five 80' x 20'); 10 steam blowing engines (4 horizontal, 6 vertical) 220,000 cfm., 20 lbs. rated pressure; 39 water-tube boilers 15,000 H. P. furnish power for coke plant, coal and ore mines also; 1 Ladd & Baker pig breaker. By-product coke: local red and brown ores. Product: basic, foundry and forge pig iron, annual cap., 420,000 tons.

By-Product Coke Plant at Woodward, consisting of 170 Koppers and 60 Wilputte coke ovens, annual cap., 1,014,000 net tons coke. By-product recovery plant. Edison benzol plant, annual cap., 3,000,000 gals. light oil. Beehive coke plant at Woodward (idle). Dolomite quarry near Woodward, annual cap., 90,000 tons.

WORTH STEEL CO., Claymont, Del.

Inc. 1916 in Delaware. Capital stock: com., par value \$100, auth. and issued \$2,500,000; pref. 7% cum. auth. and issued \$2,500,000.

E. H. Worth, P.; W. A. Worth, V. P. & T.; G. D. Spackman, Sec.; E. A. Hagerman, G. M.; P. M. King, G. S. M.; P. H. Leinheiser, P. A.

Sales offices:

Boston, Mass., George H. Lloyd, 131 State St.
Chicago, Ill., T. L. Dodd & Co., 80 East Jackson Blvd.
Chattanooga, Tenn., John C. Vance Iron & Steel Co.
Houston, Texas, Harrisburg Pipe & Pipe Bending Co.
Montreal, Canada, Drummond, McCall & Co., Ltd.
New York, N. Y., W. C. Dickey, 120 Broadway.
St. Louis, Mo., Hubbell & Sharp, 1216 Chemical Bldg.
San Francisco, Calif., Latham McMullin, Claus Spreckels Bldg.

Works at Claymont, Del.: blt. 1917-18, f. o. Sept., 1918; 6 B. O. H. fur. (100-ton), fuel, oil; 10 prod. gas-fired soaking pits (five 4-hole, five 1-hole); 2 sheared plate mills (one 44" x 160" 3-h., one 42" x 120" 3-h.); flanging dept. Roll sheared plates, 10 B. W. G. to 2½", up to 152" wide.

Product: steel ingots, annual cap., 360,000 tons; sheared plates, 225,000 tons; ship, tank, boiler, bridge, copper bearing, still bottom, locomotive firebox plates.

Worthington Pump & Machinery Corp., New York. Steel foundry at Snow Holly Works, Buffalo, N. Y. was dismantled in 1923.

WROUGHT WASHER MANUFACTURING CO., Milwaukee, Wis.
Inc. 1887.

Fred Doepke, P.; C. H. Disch, V. P. & P. A.; F. C. Doepke, Sec.;
Wm. F. Disch, T. & G. S. M.

Sales offices: Los Angeles and San Francisco, Calif.; Seattle, Wash.
Works at Milwaukee: 2 heat. fur. (one 3-d. coal, one 4-d. oil); 16"
2-h. 1-st. and 12" 3-h. 1-st. sheet mill.

Product: black sheets for own use only, annual cap., 2,500 tons;
washers, punched and sheared plate specialties.

Wurster (F. W.) & Co., Inc., Brooklyn, N. Y. discontinued manu-
facture of hot rolled products Feb. 28, 1924 at its rolling mill
375 Kent Ave., Brooklyn. The works are closed down and
abandoned.

WYOMING SHOVEL WORKS (The), Wyoming, Pa.

Est. 1873; inc. 1893 in Pennsylvania. Capital stock; com., par
value \$20, issued \$100,000; pref. 7% cum. issued \$500,000.

Nathaniel G. Robertson, P. & G. M., H. T. Potter, V. P. & G.
S. M.; W. D. Williams, A.; L. E. Webster, G. S.; J. W. Lewis,
P. A.; at Wyoming. G. d'A. Belin, Sec. & T.; at Scranton, Pa.

Sales offices:

Chicago, Ill., E. J. Ehret, 1503 Tower Bldg.

New York, N. Y., N. E. Brooks, 141-149 Centre St.

San Francisco, Calif., C. S. Jordan, 1201 Sixth Ave.

Works at Wyoming: two 2-d. heat. fur.; 3 hot black sheet mills,
22" x 36".

Product: shovel plate and spring steel sheets, annual cap., 5,000 tons.
Shovels, 100,000 dozen.

YALE & TOWNE MANUFACTURING CO., Stamford, Conn.

Capital stock: \$10,000,000. Company manufactures locks, hardware, etc., operates plants at Stamford, Conn.; St. Catharines, Ont., Canada; Altona, Hamburg, Germany. Operates steel foundry for own use in connection with Stamford Works.

Sales offices: 9 East 40th St., New York; 158 West Lake St., Chicago.

Works at Stamford, Conn.: steel foundry added 1921, f. o. May 24, 1921; 1 Booth electric fur. (1½-ton) used also for melting stock for malleable castings; 3 cupolas; gray iron and semi steel (2,000 tons), malleable iron (500 tons), brass and bronze (600 tons) foundry for own use only.

Product: steel castings for own use only, annual cap., 1,200 tons.

York Ferro-Alloys Co., York, Pa. was acquired in 1920 by York Metal & Alloys Co.

YORK METAL & ALLOYS CO., Sherman St. & P. R. R., York, Pa.

Inc. July 6, 1920 in Pennsylvania. Capital stock: com., no par value, auth. 3,500 shares; pref. 6% cum. auth. \$350,000, issued \$129,500; bonds \$69,500.

Van Rensselaer Lansingh, P. & G. M.; E. K. Jenckes, G. S. M.; at New York, N. Y. Donald H. Yost, Sec.; Harry D. Howe, T. & P. A.; William Y. Bleakley, G. S.; at York, Pa.

Sales office: 100 East 42nd St., New York, N. Y.

Brand: York (ferro-alloys).

Works at York, Pa.: blt. 1919, f. o. Jan. 26, 1920; 5 electric fur. for ferro-alloys and zinc oxide. Electric power from York Haven Water & Power Co. (Acquired from York Ferro-Alloys Co.)

Product: ferro-tungsten, ferro-molybdenum, ferro-vanadium, annual cap., 640 tons. Zinc oxide, molybdic acid, tungstic acid and sodium tungstate; boron deoxidizing reagents.

YOUNGSTOWN SHEET & TUBE CO. (The), Stambaugh Bldg., Youngstown, Ohio.

Inc. Nov., 1900 in Ohio. Capital stock: com., no par value, auth. 1,000,000 shares, issued 987,606 shares; pref. 7% cum. auth. \$15,000,000, issued \$14,241,100; bonds \$67,608,000.

The Youngstown Sheet & Tube Co. acquired The Brier Hill Steel Co., March 1, 1923 and The Steel & Tube Co. of America, June 29, 1923. Subsidiary companies known as The Mayville Iron Co. and Harrow Spring Co. are operated under their own names and will be found separately described in this alphabetic list.

James A. Campbell, P.; Frank Purnell, A. P.; H. G. Dalton, 1 V.

P.; C. S. Robinson, V. P.; W. C. Reilly, V. P.; W. J. Morris, V. P.; E. T. McCleary, V. P.; W. E. Watson, V. P. (sales); W. E. Meub, Sec. & T.; R. M. Welch, A. Sec. & A. T.; W. N. McDonald, C.; C. H. Rose, A.; C. T. Moke, P. A.; F. C. Farrell, Youngstown District Mgr.; at Youngstown. W. B. Gillies, Chicago District Mgr.; at East Chicago, Ind.

Sales offices:

Atlanta, Ga., W. W. Brown, Healey Bldg.
 Boston, Mass., Arthur Purnell, Mass. Trust Bldg.
 Chicago, Ill., B. T. Bechtel, Conway Bldg.
 Cincinnati, Ohio, E. S. Rooney, Union Trust Bldg.
 Cleveland, Ohio, G. G. Stuart, Union Trust Bldg.
 Dallas, Texas, C. E. Hutchinson, Magnolia Bldg.
 Denver, Colo., F. S. Rutherford, First Natl. Bank Bldg.
 Detroit, Mich., Lewis E. Wallace, First Natl. Bank Bldg.
 Kansas City, Mo., H. H. Richardson, Commerce Bldg.
 Minneapolis, Minn., P. M. Vilas, Andrus Bldg.
 New Orleans, La., W. H. Bruce, Audubon Bldg.
 New York, N. Y., W. B. Blowers, 30 Church St.
 Philadelphia, Pa., W. B. Blowers, Franklin Trust Bldg.
 Pittsburgh, Pa., G. W. Christopher, Oliver Bldg.
 St. Louis, Mo., H. H. Richardson, Missouri State Life Bldg.
 San Francisco, Calif., J. H. Gilhuly, Sharon Bldg.
 Savannah, Ga., W. W. Brown, Merchants & Miners Trans. Bldg.
 Seattle, Wash., A. G. Oakley, Central Bldg.

Products: iron ore, zinc ore, lead and zinc concentrates, coal and limestone; coke and coke oven by-products, sulphuric acid; basic, bessemer, malleable, foundry and forge pig iron, high phosphorus pig iron, low phosphorus pig iron and washed metal; steel ingots; blooms, slabs, billets, sheet bars, muck bar; skelp, socket iron; merchant bars, rounds, squares, flats, hexagons, ovals, half-rounds, rods, angles, concrete reinforcing bars, agricultural implement shapes, spring steel bars and springs; black and galvanized sheets, blue annealed sheets, automobile, furniture, full finished and special finished sheets, formed roofing and siding sheets; universal and sheared plates; wire rods, plain, galvanized and copper-coated wire; woven wire fence, concrete reinforcing fabric; wire nails, galvanized polished, blued and cement coated; wire staples, wire hoops, barbed wire, flexible steel armored electrical cable; steel pipe, black and galvanized, oil well casing, tubing, drive and line pipe; boiler tubes; rigid steel conduit, enameled and electro-galvanized; conduit elbows, couplings, unions; oil and water well tools and supplies.

Total annual cap.: pig iron (16 blast furnaces) 3,053,000 tons; steel ingots, 3,240,000 tons; semi-finished hot rolled products 2,620,000 tons; finished hot rolled products, 2,179,000 tons, including 1,154,000 tons skelp, 386,000 tons sheared plates, 250,000 tons

merchant bars, 219,000 tons sheets, 120,000 tons wire rods, 50,000 tons couplings; black pipe, 1,032,000 tons; wire 126,000 net tons. Hubbard Works, Hubbard, Ohio: 2 blast furnaces; No. 1, 80' x 19', blt. 1867, last rebt. 1910, relined 1918; No. 2, 80' x 20', blt. 1872, last rebt. 1915, relined, 1922; 9 Kennedy 2-pass center-comb. stoves, 82' x 22'; 3 steam blowing engines (100,000 cfm.), 15 to 25 lbs. rated pressure; 11 Sterling water-tube boilers, 5,600 H. P.; 1 Uehling double-strand pig casting mach. By-product and Conn. beehive coke: Lake ore. Product: foundry, basic and malleable pig iron, annual cap., 325,000 tons.

East Youngstown Works, East Youngstown, Ohio:

Blast Furnaces: 4 stacks; "A" 88' x 22', blt. 1907-08, relined 1922; "B" 88' x 22', blt. 1907-08, relined 1919; "C" 88' x 22' 6", blt. 1909-10, rebt. 1924; "D" 88' x 22' 6", blt. 1912-13, rebt. 1923; 16 Kennedy 2-pass center comb. stoves, 102' x 22'; 4 steam blowing eng. and 2 turbo-blowers (280,000 cfm.) 15 to 30 lbs. rated pressure; 34 Rust water-tube boilers, 17,068 H. P. furnish power also to Power House and Steel Works; 2 Uehling double-strand pig casting mach.; 4 slag granulating pits, annual cap., 450,000 tons. By-product coke: Lake ore. Product: bessemer, basic and foundry pig iron, annual cap., 900,000 tons.

By-Product Coke Plant: 306 Koppers by-product ovens, by-product recovery plant and Semet-Solvay benzol plant, annual cap., 1,500,000 net tons coke, 4,000,000 gals. light oil.

Steel Works: Bessemer Dept., blt. 1905-06, f. o. Aug. 22, 1906, 2 bessemer converters (12-ton): 5 cupolas. Open-Hearth Dept., blt. 1911-13, f. o. May 1, 1913; 12 B. O. H. fur. (100-ton) fuel prod. gas, 36 gas producers; 3 hot metal mixers (two 300-ton, one 1,300-ton). Product: steel ingots, annual cap., 1,620,000 tons (780,000 tons bessemer, 840,000 tons B. O. H.).

Rolling Mill Dept.: blt. 1901-02, 24 double puddling fur., 2 busheling fur.; 2 rotary squeezers; 16 four-hole soaking pits, fuel prod. gas; nine 4-d. slab heat. fur., fuel prod. gas; 5 cont. prod. gas and coke oven gas fired heat. fur. (4 Chapman-Stein, 1 Morgan); 49 gas producers for the heat. fur.; 44" 2-h. 1-st. blooming; 40" 2-h. 1-st. blooming; 18" 2-h. 10-st. continuous billet; 18" 2-h. 8-st. cont. sheet bar; 10" 2-h. 10-st. cont. skelp mill; skelp mill with 20" 3-h. 1-st. roughing, 16" 2-h. 3-st. finishing; skelp mill with 18" 3-h. 2-st. and 18" 2-h. 1-st.; two 20" 3-h. 2-st. merchant bar mills; 1 universal plate mill, 30" x 72" 2-h.; 1 sheet and one pair fur., 14 comb. sheet and pair fur.; 15 hot black sheet mills (one 26" x 32" to 44", fourteen 28" x 32" to 56"); 4 cold mills (one 24" x 48", two 24" x 44", one 24" x 60"); 8 double box annealing fur.; 4 plunger pickling mach.; 6 galv. pots. Roll black sheets 11 to 30 gauge. Universal plate mill use for skelp only. Tube mill with 6 butt-weld fur. for pipe 1/8" to 3"; 5 lap-weld fur. for pipe 2" to 20"; 4 galv. pots. Product: blooms, slabs, billets and sheet bars, annual cap.,

1,440,000 tons; muck bar, etc., 48,500 tons; finished hot rolled products, 938,400 tons; 800,000 tons skelp, 50,000 tons couplings, 88,400 tons black sheets; blue annealed sheets; galvanized sheets, 72,000 tons; black pipe, 600,000 tons; galvanized pipe, 110,000 tons.

Struthers Works, Struthers, Ohio: blt. 1902; 3 cont. heat. fur. (Morgan) fuel coke oven gas and oil; 10" 2-h. 16-st. wire rod mill; 12" 2-h. 9-st. bar; 9" 2-h. 12-st. bar. Wire mill with 206 wire drawing blocks for wire $\frac{3}{8}$ " to 20 gauge; 192 wire nail mach., 9 straightening and cutting mach.; 48 barbed wire mach., 17 wire fence mach., 13 wire hoop mach., 3 wire galvanizing pans, nail galvanizing equipment. Conduit Dept.: blt. 1912-13; 2 electro-galv. units for butt-weld $\frac{1}{2}$ " to 3", lap weld 2" to 6". Product: hot rolled products, annual cap. 370,000 tons including 120,000 tons wire rods and 250,000 tons merchant and concrete bars; plain wire, 126,000 net tons; galvanized wire, 70,000 net tons; barbed wire, 43,500 net tons; wire fence, 36,000 net tons; wire nails, 1,000,000 kegs; rigid conduit and Realflex cable, 40,000 tons; armored cable 30,000,000 feet.

Brier Hill Works, Youngstown, Ohio (Brier Hill Steel Co. to Mar. 1, 1923):

Blast Furnaces: 3 stacks; No. 1 (formerly Grace), 85' x 21', blt. 1890, rebt. 1908, relined 1920; No. 2 (formerly Jeanette), 87' x 23', blt. 1917-18, rebt. 1924, blown in Jan. 1925; No. 3 (formerly Tod), 79' 7 $\frac{1}{2}$ " x 20' 4 $\frac{1}{2}$ ", blt. 1889, rebt. 1913, relined 1919; 13 hot blast stoves (4 Massicks & Crooke 3-pass center-comb. 90' x 22' at No. 1; 4 Nelson 2-pass side comb. 103' x 23' at No. 2; 5 Massicks & Crooke 3-pass center comb. 74' 6 $\frac{3}{4}$ " x 16' 6" at No. 3); 2 steam blowing eng. and 2 turbo-blowers (180,000 cfm.) 15 to 25 lbs. rated pressure; 22 Sterling water-tube boilers, 9,900 H. P.; 1 Uehling double-strand pig casting mach.; 1 slag granulating pit, annual cap., 72,000 tons. By-product coke: Lake ore.

Product: basic pig iron, annual cap. 550,000 tons.

By-product Coke Plant: 84 Koppers ovens, by-product recovery plant and Koppers benzol plant, annual cap., 370,000 net tons coke, 1,000,000 gals. light oil.

Open-Hearth Dept.: blt. 1912-13, f. o. Nov. 1, 1913; 12 B. O. H. fur. (90-ton) fuel prod. gas, 48 Chapman & Duff gas producers; one mixer (600-ton). Gray iron foundry for own use, annual cap., 3,600 tons. Product, steel ingots, annual cap., 780,000 tons.

Rolling Mill Dept.: blt. 1912-13, f. o. Feb. 7, 1914; 6 cont. heat. fur. (3 Laughlin, 3 Chapman-Stein) fuel, oil and coke oven gas; 3 normalizing fur., fuel coke oven gas; eight 4-hole soaking pits, fuel prod. gas; 40" 2-h. 1-st. blooming; 24" 2-h. 6-st. continuous; 24" 2-h. 6-st. merchant; 32" x 84" sheared plate mill with 1 stand 2-h., 1-st. 3-h.; 40" x 110" 3-h. 1-st. sheared plate mill. Sheet mill: blt. 1924; 8 sheet and 8 pair fur.; 8 hot black sheet mills (two

29" x 38", two 29" x 44", two 29" x 48", two 29" x 54"); 2 trains cold rolls of 4 stands each (26" x 50" to 60"); 16 box annealing fur.; 4 pickling mach. (3 Mesta, 1 plunger). Roll sheared plates 12 gauge to 2", 600" to 110" in length; black sheets, 12 to 28 gauge. Product: slabs, blooms, billets and sheet bars, annual cap., 700,000 tons; sheared plates, 370,000 tons; black sheets, 60,000 tons; blue annealed sheets.

Western Reserve Works, Warren, Ohio (Brier Hill Steel Co. to Mar. 1, 1923): blt. 1914-15, f. o. Jan. 4, 1915; 2 pair fur.; 5 comb. sheet and pair fur.; two 2-h. jobbing mills with 1 roughing stand and 1 finishing stand each (one 30" x 66", one 30" x 54"); 5 hot black sheet mills (two 29" x 42", two 29" x 48", one 29" x 54" with 3 roughing stands, two 29" x 48", one 29" x 54"); 8 stands cold rolls 28" x 42" to 60"; 4 box annealing fur.; 4 blue annealing fur.; 1 Mesta pickling mach. Roll black sheets 10 to 26 gauge, to 60" wide and 156" long. Product: black sheets, annual cap., 70,600 tons; black sheets for galvanizing, stamping, japanning; automobile and blue annealed sheets.

Indiana Harbor Works, East Chicago, Ind. (The Steel & Tube Co. of America to June 29, 1923):

Blast Furnaces: 2 stacks: No. 1, 92' x 22' 6", blt. 1917-18, relined 1921; No. 2, 95' x 24', blt. 1924-25, blown in Mar. 24, 1925; 7 hot blast stoves 2-pass side comb. (three 100' x 22', four 103' x 24'); 3 Ingersoll-Rand turbo-blowers (170,000 cfm.) 15-lbs. rated pressure; 18 water-tube boilers (12 Sterling, 6 Casey-Hedges) 10,800 H. P. serve plant in general, 33% to blast fur.; 1 Pittsburgh Coal Washer double-strand pig casting mach.; 1 slag granulating pit, annual cap., 115,000 tons. By-product coke: Lake ore. Product: basic and bessemer pig iron, annual cap., 468,000 tons. By-product Coke Plant: 120 Semet-Solvay coke ovens, by-product recovery plant and Semet-Solvay benzol plant, annual cap., 648,000 net tons coke; 2,880,000 gals. light oil.

Steel Works: Bessemer Dept. blt. 1916-17, f. o. Jan. 1917; 2 bessemer converters (15-ton); Open-Hearth Dept. blt. 1917-18, f. o. July, 1918, 4 B. O. H. fur. (75-ton) fuel, oil and tar; one mixer (600-ton); 3 cupolas. Product: steel ingots, annual cap., 840,000 tons (600,000 tons bessemer, 240,000 tons B. O. H.).

Rolling Mill: blt. 1916-18; five 4-d. slab reheat. fur., fuel, coke oven gas; 1 Morgan cont. heat. fur., fuel, prod. gas; six 4-h. soaking pits, fuel prod. gas; 35" 2-h. 1-st. blooming; 28" 2-h. 1-st. billet; 10" 2-h. 11-st. Morgan cont. skelp mill; 30" x 88" 2-h. 1-st. sheared or universal plate mill used for skelp when operated as universal mill. Roll sheared plates 36" to 75", $\frac{3}{8}$ " to $1\frac{1}{4}$ "; universal plates 8" to $42\frac{3}{4}$ ", $\frac{3}{8}$ " to 2". Tube Mill: 2 butt-weld fur. for pipe $\frac{1}{8}$ " to 3", 3 lap-weld fur. for pipe 2" to 20"; 1 galv. pot. Product: semi-finished hot rolled products, annual cap., 480,000 tons (280,000 tons slabs, 200,000 tons billets); finished hot rolled

products, 370,000 tons; including 354,000 tons skelp and 16,000 ton car plates; black pipe, 240,000 tons, galvanized pipe, 30,000 tons. South Chicago Works, South Chicago, Ill. (The Steel & Tube Co. of America to June 29, 1923):

Blast Furnaces: 5 stacks; No. 1, 78' x 19' 6", blt. 1890-91, relined 1919; No. 2, 88' x 18' 6", blt. 1900-01, relined 1919; No. 3, 92' x 22' 6", blt. 1910-12, relined 1924; No. 4, 85' 4½" x 20', blt. 1910-12 remod. and enlarged 1924; No. 5, 92' x 22' 6", blt. 1917-18, relined 1924; 19 hot blast stoves all 2-pass (4 Kennedy center-comb. 85' x 18', 2 Kennedy side-comb. 93' 6" x 18'; 1 McKee side-comb. 93' 6" x 18', 1 McKee center-comb. 93' 6" x 18'; 8 Brassert center-comb. 96' 4½" x 22', 3 Brassert side-comb. 100' x 22'); 6 Allis-Chalmers steam blowing eng. and 4 turbo-blowers (3 General Electric, 1 Ingersoll-Rand) 263,800 cfm., 15-lbs. rated pressure; 30 water-tube boilers (15 Rust, 6 B. & W., 6 Sterling, 3 Erie City) 14,160 H. P.; 4 pig casting mach. (2 Heyl & Patterson, 2 Pittsburgh Coal Washer) of which 3 double-strand, one single strand; 1 slag granulating pit, annual cap., 60,000 tons. By-product coke: Lake ore. Product: foundry, malleable, bessemer and basic pig iron, annual cap., 810,000 tons.

Evanston Works, Evanston, Ill. (The Steel & Tube Co. of America to June 29, 1923): 2 butt-weld fur. for pipe ¼" to 3"; 1 galv. pot. Product: black pipe, annual cap., 72,000 tons; galvanized pipe, 30,000 tons.

Zanesville Works, Zanesville, Ohio (The Steel & Tube Co. of America to June 29, 1923): 2 butt-weld fur. for pipe ¼" to 3"; 2 lap-weld fur. for pipe 2" to 16"; 2 galv. pots (1 for pipe, 1 for sockets). Product: black pipe, annual cap., 120,000 tons; galvanized pipe 27,000 tons; roller welded couplings, 10,200 tons.

The Youngstown Sheet and Tube Company owns under lease, the Newport-Bonnie Mines on the Gogebic Range, Michigan, annual capacity 1,200,000 tons; the Palms-Anvil-Keweenaw group on the Gogebic Range, annual capacity approximately 1,000,000 tons; the Isabella Mine on the Marquette Range, Michigan, annual capacity 225,000 tons. It also has partial ownership in the following companies, operating on the various ranges in Minnesota and Wisconsin:—The Balkan Mining Company, Bennett Mining Company, The Biwabik Mining Company, Crete Mining Company, Hoyt Mining Company, Mahoning Ore and Steel Company, Orwell Iron Company, Plymouth Mining Company, Rogers-Brown Ore Company, Vermillion Iron Company and the Volunteer Ore Company. All of the above properties are operated by Pickands, Mather & Company. The Youngstown Sheet and Tube Company also owns and operates the Mayville Mine on the Iron Ridge Range, Wisconsin, and has partial ownership in The Brule Mining Company.

The Youngstown Sheet and Tube Company owns and operates under the name of the Buckeye Coal Company, the Brier Hill Mine, Fayette County, Pa., annual capacity approximately 400,000 tons; the Nemacolin Mine, Nemacolin, Greene County, Pa., annual capacity 1,500,000 tons; operates under the name of The Youngstown Sheet and Tube Company the Dehue Mine located at Dehue, Logan County, West Virginia, annual capacity approximately 500,000 tons; also the Redfield Coal Company located at Redfield, Perry County, Ohio; owns and operates under the name of The Christian Colliery Company, the Mahan Mine at Mahan, Fayette County, West Virginia, annual capacity about 125,000 tons.

The Youngstown Sheet and Tube Company has partial ownership in the Elkhorn Piney Coal Mining Company, operating one property in the Kanawha District, West Virginia, one in the New River District, West Virginia, and one in the Elkhorn District, Kentucky; also a partial ownership in the St. Clair Coal Mining Company, operating property in the Kanawha District, Fayette County, West Virginia.

The Youngstown Sheet and Tube Company owns and operates the Vinegar Hill Zinc Company with zinc and lead mines in the Illinois-Wisconsin and Kansas-Oklahoma fields; also the National Zinc Separating Company, operating zinc roasting and sulphuric acid plants at Cuba City, Wis.; also owns a controlling interest in The Century Zinc Company with zinc properties in Kansas and Oklahoma.

The Youngstown Sheet and Tube Company owns and operates through The Mayville Iron Company, limestone quarry at Mayville, Wisconsin, annual capacity about 125,000 tons; also has partial ownership in the Carbon Limestone Company, with quarry at Hillsville, Pa.

The Youngstown Sheet and Tube Company owns the entire stock of The Youngstown Steamship Company, operating iron ore carrier on the Great Lakes; also has partial ownership in the Cambria Steamship Company and the Mahoning Steamship Company, both operators of iron ore carriers on the Great Lakes.

ZENITH FURNACE CO., West Duluth, Minn.

Inc. May 15, 1902 in Minnesota. Capital stock: com., par value \$100, auth. \$3,000,000, issued \$2,250,000; bonds \$900,000.

W. B. Castle, P. & G. M.; C. W. Andrews, V. P. & T.; Oscar Mitchell, Sec.; A. E. Bennett, A. & P. A.; H. A. Brady, G. S.

Selling agents: Pickands, Brown & Co., Chicago, Ill.

Brand: Zenith (pig iron).

Zenith Furnace, Duluth: 1 stack, 77' x 16' 6", blt. 1889-90, last rebt. 1914, relined 1924; 4 side-comb. stoves, 80' x 20'; 4 steam blowing eng., 26,000 cfm., 12 lbs. rated pressure; 8 B & W water-tube boilers, 3,200 H. P.; 1 Slag Rock Machine Co. single-strand pig casting machine. Sintering plant, annual cap., 2,400 tons; slag granulating pit annual cap., 100,000 tons. By-product coke: Lake ore. By-product coke plant; 65 Otto United coke ovens; by-product recovery plant; Badger benzol plant; annual cap., 150,000 net tons coke, 400,000 gals. light oil.

Product: malleable and foundry pig iron, annual cap., 114,000 tons.

ZIMMERMAN STEEL CO. (The), Bettendorf, Iowa.

Inc. May, 1914 in Iowa. Capital stock: com., par value \$100, auth. \$400,000, issued \$342,500; pref. 6% cum., auth. \$250,000, issued \$223,232.50; bonds \$30,000.

J. W. Bettendorf, P.; Wm. C. F. Zimmerman, V. P.; H. V. McClusky, Sec., T. & P. A.; A. K. Reading, G. M. & G. S. M.; F. W. Zimmerman, G. S.

Sales offices:

Chicago, Ill., F. W. Graves, 1303 Railway Exchange Bldg.

New York, N. Y., Peter P. Beck, 165 Broadway, Room 1307.

St. Paul, Minn., Rank & Goodell, 906 Merchants Bank Bldg.

Brand: Monarch (stump pullers).

Company manufactures stump pullers and operates steel foundry in connection therewith.

Works at Bettendorf: steel foundry blt. 1915; 1 Snyder electric fur. (5-ton) blt. 1918, f. o. Aug. 1, 1918; 1 B. O. H. fur. (25-ton) blt. 1923, f. o. Feb. 13, 1924; fuel, oil. Converter dismantled in 1919.

Product: steel castings for own use and for sale, annual cap., 15,000 tons (3,000 tons electric, 12,000 tons B. O. H.). Railroad and miscellaneous castings.

Zirconium Co. of America, Baltimore, Md. built plant in 1921 at 11th and Monument Sts., Baltimore, for manufacture of ferro-zirconium, zirconium oxide and various zirconium alloys. Company was in bankruptcy in January, 1922, and assets were sold at trustees' sale Feb. 23, 1922. Plant abandoned for manufacture of ferro-alloys.

ADDENDA.

ATLAS FOUNDRY & MACHINE CO., P. O. Box 1198, Tacoma, Wash.
Inc. 1903 in Washington. Capital stock: com. par value \$10, auth. and issued \$82,500.

G. L. Dupea, P.; D. F. Olson, V. P.; John Hartman, Sec. & T.
Works at Tacoma, Wash.: 1 Greene electric fur. (3-ton); gray iron foundry, annual cap., 5,000 tons.

Product: steel castings for sale, annual cap., 1,500 tons; railroad and saw mill castings.

Avery Company, Peoria, Ill., was succeeded Nov. 16, 1925 by Avery Power Machinery Co., Peoria, Ill. Steel foundry closed and manufacture steel castings abandoned. Electric furnaces still in plant but not operated.

Cyclops Steel Co., Titusville, Pa.

Receivers leased plant at Titusville to Charles T. Evans, Feb. 1, 1926. Lessee will operate the plant.

Eastern Steel Co., Pottsville, Pa.

Edward L. Herndon, Receiver, Feb. 6, 1926, returned Warwick Furnaces, Pottstown, Pa., to the owner, Warwick Iron & Steel Company, see below under that title.

General Steel Foundries, Inc., 8 Lister Ave., Newark, N. J. Steel foundry at Newark destroyed by fire in Sept., 1925, now being rebuilt to be completed about June 1, 1926.

HURONIA STEEL CO., Ltd., Collingwood, Ontario, Canada.

Company acquired Dec. 15, 1925 site of former plant of The Wm. Kennedy & Sons, Ltd. at Collingwood, Ontario. This plant, acquired by Canadian Western Steel Corp., Ltd. in May, 1919, was sold to Baldwins Canadian Steel Corporation, Ltd. in March, 1920 and dismantled. Subsequently Electro Castings Company took over the site and rebuilt the electric furnace, making steel and gray iron castings for a short time, became financially involved and went out of business. Huronia Steel Co., Ltd. acquired the Collingwood plant together with the improvements made by Electro Castings Co.

LEHIGH VALLEY TRANSIT CO., 14th & Gordon Sts., Allentown, Pa.

Madison Street Shop, Allentown: 1 Moore Lectromelt electric fur. (500-lb.).

Product: steel castings for own use (street railway) annual cap., 300 tons.

LOCOMOTIVE FINISHED MATERIAL CO. (The), Third & Park Sts., Atchison, Kansas.

Inc. 1872; reinc. 1906 in Kansas. Capital stock: com. no par value, auth. 20,000 shares, issued 11,144 shares; pref. 8% cum. auth. \$550,000, issued \$549,960.

H. E. Muchnic, P. & G. M.; C. Hastings, V. P.; G. I. Bromley, Sec. & T.; H. H. Bayley, G. S.; H. J. Kaaz, P. A.; at Atchison, Kansas. R. L. McIntosh, V. P. & G. S. M. at Chicago, Ill.

Sales office:

400 Railway Exchange Bldg., Chicago, Ill.

Brands: Pakring Metal (semi-steel castings); Universal Section Packing Ring (patented locomotive cylinder packing); Universal Per. Highway Crossing (patented cast iron highway crossing).

Works at Atchison, Kansas: 1 Swindell electric fur. (2-ton); 2 cupolas; foundry for semi-steel castings, annual cap., 25,000 tons.

Product: steel castings for own use and for sale, annual cap., 6,000 tons; alloy steel castings (manganese); railway, oil field, cement plant and general industrial castings.

Jackson, J. G., Chatham, Ont., Canada.

Works at Chatham, Ontario were sold and dismantled in 1925.

MID-WESTERN STEEL CORPN., 5 East Garfield Blvd., Chicago, Ill.

Inc. Dec., 1925 in Illinois. Capital stock: com. par value \$100, auth. \$50,000.

L. R. Moser, P. & T.; B. Briedlove, V. P.; O. P. Tidd, Sec.

Mid-Western Steel Corporation acquired plant of Riverdale Rolling Mill Co., Riverdale, Ill., Jan. 15, 1926, under lease for one year, for description of works see Riverdale Rolling Mill Co., p. 305.

New London Ship & Engine Co. (The), Groton, Conn., have dismantled electric steel furnace and abandoned manufacture of steel castings.

Niagara Electric Steel Corporation, 5 Mechanic St., North Tonawanda, New York. Plant at North Tonawanda was acquired January 5, 1925 by Niagara Steel Foundry Co.

Niagara Steel Foundry Co., North Tonawanda, New York, sold plant at North Tonawanda, February 1, 1926, to Tonawanda Electric Steel Casting Company.

OIL CITY IRON WORKS, Inc., Shreveport, La.

Inc. Nov., 1912 in Louisiana. Capital stock: com. par value \$100, auth. \$500,000, issued \$252,000.

H. C. Brewster, P. & G. M.; Mrs. Lillie B. Brewster, V. P.; Mrs. Gean Brewster Ricou, Sec. & T.; W. E. Boyd, G. S.; A. Olin Price, G. S. M.; L. L. Hudson, P. A.

Sales offices:

El Dorado, Louann and Smackover, Ark.

Cotton Valley and Oil City, La.

Luling, Texas.

Brand: Caddo Special, C. S. Monogram.

Plants at Shreveport and Oil City; steel foundry at Oil City.

Oil City Works, Oil City, La.: 1 bessemer converter (1½-ton).

Product: steel castings for own use and for sale, annual cap., 1,000 tons.

Old Dominion Steel Corporation, Richmond, Va. sold plant at Richmond, Va., January 1, 1926 to Old Dominion Iron & Steel Works, Inc.

PELTON STEEL CASTING CO., Chicago Road & Elliott Place, Milwaukee, Wis.

Inc. Dec. 8, 1925 in Wisconsin. Capital stock: com. par value \$100, issued \$50,000.

Arthur J. Ehne, P. & T.; H. A. Leekley, V. P., G. M. & P. A.; T. E. Ward, V. P.; Allen M. Slichter, Sec. & G. S. M.

Works at Chicago Road & Elliott Place, Milwaukee (equipment owned, land and buildings leased from The Stowell Co.); 1 Moore electric fur. (2-ton).

Product: electric steel castings for sale, annual cap., 2,000 tons.

ST. LOUIS COKE & IRON CORPORATION, 208 South La Salle St., Chicago, Ill.

Inc. Jan. 15, 1926 in Delaware. Capital stock: com. par value \$5, auth. and issued \$260,000; pref. 6% cum. auth. and issued \$7,895,000.

W. G. Maguire, P.; P. B. Nelson, Sec.; A. J. Mann, T.; W. H. Underwood, G. S. M.; F. R. Johnson, P. A.; at Chicago. M. D. Curran, V. P.; at Planters Bldg., St. Louis, Mo. George E. Vosburg, G. S.; at Granite City, Ill.

Company, reorganized as Midland Coke & Iron Corporation, see page 239, changed its corporate title Jan. 15, 1926 to St. Louis Coke & Iron Corporation.

Spring Valley Iron & Ore Co., Decatur, Ill. Blast furnace at Spring Valley, Wisconsin, abandoned.

Stowell Co. (The), South Milwaukee, Wis., went into voluntary liquidation late in 1925 and leased the steel foundry at Plant No. 2, Milwaukee to Pelton Steel Casting Co., Chicago Road & Elliott Place, Milwaukee.

SYMINGTON COMPANY (The), 250 Park Ave., New York, N. Y.

Inc. Dec., 1925 in Maryland. Capital stock: com. no par value,

auth. 300,000 shares; pref., no par value, dividend \$2. per share cum., auth. 200,000 shares.

C. J. Symington, P.; J. A. Sauer, V. P. & G. S. M.; at 250 Park Ave., New York. Donald Symington, V. P.; at Baltimore, Md. D. S. Barrows, V. P.; P. P. Meade, Sec. & T.; D. M. Scott, Works M.; G. B. Pettingill, P. A.; at Rochester, N. Y.

Sales offices:

Straus Bldg., Chicago, Ill.

Maryland Trust Bldg., Baltimore, Md.

Brands: Farlow (draft attachments); Symington (journal boxes).

Works at Rochester, New York: 1 Heroult electric furnace ($\frac{1}{2}$ -ton).

Malleable iron (50,000 tons) and semi-steel (5,000 tons) foundry.

Product: steel castings for sale, annual cap., 1,600 tons; railway car specialties.

Tennessee Products Corporation, American Trust Bldg., Nashville, Tenn. Bon Air Coal & Iron Corp., Chattanooga Coke & Gas Co. and J. J. Gray, Jr., were merged in February, 1926 in Tennessee Products Corporation.

TONAWANDA ELECTRIC STEEL CASTING CO., 5 Mechanic St., North Tonawanda, N. Y.

Inc. Feb. 1, 1926 in New York. Capital stock: com. no par value, auth. 25,000 shares.

Lewis J. Fitzpatrick, P. & G. M.; Frederic J. Still, V. P. & G. S.; C. F. Towne, Sec., T., G. S. M. & P. A.

Works at North Tonawanda (equipment owned, buildings and real estate leased): 1 Snyder electric fur. ($1\frac{1}{2}$ -ton) blt. 1915, f. o. July 1, 1915.

Product: steel castings for sale, annual cap., 1,200 tons; alloy steel castings (nickel, chrome, tungsten).

WARWICK IRON & STEEL CO., West High St., Pottstown, Pa.

Inc. July 1, 1899 in Pennsylvania. Capital stock: com., par value \$10, auth. \$1,500,000, issued \$1,499,715.

W. S. Pilling, P.; at 1500 Chestnut St., Philadelphia, Pa. George E. Schlegelmilch, V. P.; at Stephen Girard Bldg., Philadelphia. H. F. Hallman, Sec. & T.; at Real Estate Trust Bldg., Philadelphia.

Company owns blast furnaces at Pottstown, Pa., formerly leased and operated by Eastern Steel Company, for description of furnaces see under Eastern Steel Company, p. 142. The blast furnace plant is for sale or for lease.

Weirton Steel Company, Weirton, W. Va.

Building blast furnace (800 tons daily capacity); construction begun Dec. 15, 1925, to be completed about Nov., 1926. Adding 3 B. O. H. fur., work started in Dec., 1925.

LIST OF BLAST FURNACES IN THE UNITED STATES
AND CANADA.

TABLE OF ABBREVIATIONS.

Kinds of pig iron made.	For sale.	For sale and for own use.	For own use only.
Foundry	A.	A.	a.
Basic	B.	B.	b.
Bessemer	C.	C.	c.
Low-phosphorus	D.	D.	d.
Malleable	E.	E.	e.
Forge	F.	F.	f.
Ferro-silicon	G.	G.	g.
Ferro-manganese	H.	H.	h.
Spiegeleisen	I.	I.	i.
Ferro-phosphorus	J.	J.	j.

Charcoal blast furnaces are designated by a * against number of stacks.

Blast furnaces operated alternately are designated by a † and the annual capacity given for such furnaces is based on such operation.

Blast furnace plants which have not been in operation since 1920 are designated by the insertion, in parentheses after the name of the company, of the year when last operated.

UNITED STATES.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
ALABAMA.			
Alabama City.			
Gulf States Steel Co.	1	116,000 ✓	a., b.
Bessemer.			
Tenn. C., I. & R. R. Co.	5	300,000 ✓	A., b., D., F., h.
Birmingham.			
Sloss-Sheffield Steel & Iron Co.			
(No. 1 and No. 2)	2	200,000 ✓	A.
Tenn. C., I. & R. R. Co. (Alice Furnace)	1	117,300 ✓	A., B.
East Birmingham.			
Woodward Iron Co. (Vanderbilt) .	2	130,000 ✓	A., B., F.
Ensley.			
Tenn. C., I. & R. R. Co.	6	912,100 ✓	A., B., F.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Florence.			
Sloss-Sheffield Steel & Iron Co. (No. 8)	1	80,000 ✓	A.
Gadsden.			
Sloss-Sheffield Steel & Iron Co. (No. 9 and No. 10)	2	180,000 ✓	A.
Holt.			
Central Iron & Coal Co.	1	120,000 ✓	A., F.
Jenifer.			
Jenifer Iron Co. (1920)	1	50,000	A.
North Birmingham.			
Sloss-Sheffield Steel & Iron Co. (No. 3 and No. 4)	2	180,000 ✓	A.
Oxmoor.			
Tenn. C., I. & R. R. Co.	2†	73,000 ✓	A., b., F.
Rock Run.			
The Rock Run Iron Co.	1*	18,000	A.
Sheffield.			
Sloss-Sheffield Steel & Iron Co. (Nos. 5 and 6)	2	180,000 ✓	A.
Shelby.			
Shelby Iron Co.	2*	50,000	A.
Talladega.			
Alexander Tison (trustee) (1918)	1	45,000	A.
Thomas.			
Republic Iron and Steel Co. (Pioneer Furnaces)	3	360,000 ✓	A.
Trussville.			
Birmingham-Trussville Iron Co. (1919)	1	70,000	A.
Woodward.			
Woodward Iron Co.	3	420,000 ✓	A., B., F.

COLORADO.

Pueblo.			
The Colorado Fuel & Iron Co.	5	584,000 ✓	A., b., c.

ILLINOIS.

Granite City.			
St. Louis Coke & Iron Corpn.	1	180,000	A., B., E.
Joliet.			
Illinois Steel Co.	4	631,350 ✓	c.
South Chicago.			
By-Products Coke Corpn.	2	300,000 ✓	A., B., E.
Illinois Steel Co.	11	2,239,050 ✓	A., B., C.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
International Harvester Co.	3	500,000 ✓	A., B., C., E.
The Youngstown Sheet & Tube Co.	5	810,000 ✓	A., B., C., E.
INDIANA.			
Gary.			
Illinois Steel Co.	12	2,380,500	b.
Indiana Harbor.			
Inland Steel Co.	4 ^(a)	650,000 ✓	A., B., E.
The Youngstown Sheet & Tube Co.	2	468,000 ✓	B., C.
KENTUCKY.			
Ashland.			
The American Rolling Mill Co.	2	200,000 ✓	b., e.
Norton Iron Works	1	120,000 ✓	A., C., E.
Grand Rivers.			
Suwanee Iron Co. (1920)	2	50,000 ✓	A.
Middlesboro.			
Virginia Iron, Coal & Coke Co. (1920)	2	88,000 ✓	A.
MARYLAND.			
Sparrow's Point.			
Bethlehem Steel Co.	6	990,000 ✓	A., b., c., H.
MASSACHUSETTS.			
Everett.			
Mystic Iron Works (building)	1	146,000 ✓	A.
MICHIGAN.			
Boyne City.			
Charcoal Iron Co. of America	1*	29,000 ✓	A., E.
Cadillac.			
Mitchell-Diggins Iron Co.	1*	40,000 ✓	A., E.
East Jordan.			
East Jordan Furnace Co.	1*	20,000	A.
Iron Mountain.			
West Chapin Mines Co. (building)	1*	30,000	A.
Mancelona.			
Antrim Iron Co.	1*	25,000 ✓	A., E.
Manistique.			
Charcoal Iron Co. of America	1*	36,000	A., E.

(*) Fourth stack building.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Marquette.			
The Cleveland-Cliffs Iron Co.	1*	42,000	A., E.
Newberry.			
Charcoal Iron Co. of America	1*	29,000 ✓	A., E.
River Rouge.			
The Hanna Furnace Co.	2	250,000 ✓	A., E.
Springwells.			
Ford Motor Co.	2	300,000 ✓	a., b., e.
Wells.			
Delta Chemical & Iron Co.	1*	24,000 ✓	A.

MINNESOTA.

Duluth.			
Minnesota Steel Co. (Morgan Park)	2	327,500 ✓	b., E.
Zenith Furnace Co.	1	114,000 ✓	A., E.

MISSISSIPPI.

Winborn.			
Mrs. William Warmack (1914)	1*	3,500 ✓	A.

MISSOURI.

Midco.			
Mid-Continent Iron Co. (1921)	1*	36,000 ✓	A.
St. Louis.			
Mississippi Valley Iron Co	1	125,000 ~	A., B., E.
Stuart.			
Mid-States Steel & Iron Corpn. (never put in operation)	1*	54,000 ✓	A.

NEW JERSEY.

Oxford.			
Replogle Steel Co.	1	80,000 ✓	A., B.
Stanhope.			
Singer Manufacturing Co.	1	50,000 ✓	a.
Wharton.			
Replogle Steel Co.	2	360,000 ✓	A., B., C., E., F.

NEW YORK.

Buffalo.			
Donner Steel Co., Inc.	2	360,000 ✓	A., B., E.
The Hanna Furnace Co.	3	350,000 ✓	A., B., E.
Rogers-Brown Iron Co.	4	500,000 ✓	A., E.
Wickwire-Spencer Steel Co.	2	346,750 ✓	A., B., E.
Charlotte.			
The McKinney Steel Co.	1	110,000 ✓	A., B., E.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Copake Falls.			
W. A. Miles (1903)	1*	5,000 ✓	A.
Lackawanna.			
Bethlehem Steel Co.	9	1,612,000 ✓	A., B., C.
North Tonawanda.			
Tonawanda Iron Corpn.	1	162,000 ✓	a.
Port Henry.			
Witherbee, Sherman & Co.	2	250,000 ✓	A., D., E.
Standish.			
Chateaugay Ore & Iron Co.	1	109,500 ✓	D.
Troy.			
Hudson Valley Coke & Products Corpn. (building)	1	165,000 ✓	A.
OHIO.			
Bellaire.			
Carnegie Steel Co.	2	276,000 ✓	c.
Canton.			
United Alloy Steel Corpn.	1	230,000 ✓	b., E.
Cleveland.			
The American Steel & Wire Co. (Central Furnaces)	4	770,000 ✓	b., c.
The Bourne-Fuller Co.	1	130,000 ✓	b.
The McKinney Steel Co.	4	1,000,000 ✓	A., B., E.
The Otis Steel Co.	2	400,000 ✓	A., B., C., E.
Columbus.			
The American Rolling Mill Co.	2	264,000 ✓	B., E.
Dover.			
The Hanna Furnace Co.	1	150,000 ✓	A., B., E.
Girard.			
A. M. Byers Co.	1	146,000 ✓	A., F.
Hamilton.			
The Hamilton Furnace Co.	1	175,000 ✓	A., B., E.
Hanging Rock.			
The Hanging Rock Iron Co.	1	60,000 ✓	A., B., E.
Hubbard.			
The Youngstown Sheet & Tube Co.	2	325,000 ✓	A., B., E.
Ironton.			
Belfont Steel & Wire Co. (Belfont Furnace)	1	96,000 ✓	A., E.
Belfont Steel & Wire Co. (Sarah Furnace)	1	72,000 ✓	C.
The Marting I. & S. Co. (Marting and Ironton Furnaces)	2	275,000 ✓	A., B., E.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Jackson.			
Globe Iron Co.	1	60,000 ✓	A., G.
The Jackson Iron & Steel Co.. . .	1	45,000 ✓	A., G.
Star Furnace Co.	1	30,000 ✓	A., G.
Leetonia.			
The Hanna Furnace Co.	1	140,000 ✓	A., E.
McKeefrey Iron Co.	1	120,000 ✓	A., B., C., E., F.
Lorain.			
The National Tube Co.	5	993,000 ✓	b., c.
Lowellville.			
Sharon Steel Hoop Co.	1	135,000 ✓	b.
Martins Ferry.			
Wheeling Steel Corporation . . .	1	140,000 ✓	c.
Massillon.			
The Central Furnace Co. (build- ing)	1	250,000 ✓	B., E.
Mingo Junction.			
Carnegie Steel Co.	3	523,000 ✓	c.
New Straitsville.			
The Bessie Furnace Co. (1920). . .	1	24,000 ~	G.
Portsmouth.			
Wheeling Steel Corporation . . .	1	225,000 ✓	a., b.
Steubenville.			
Wheeling Steel Corporation . . .	2	328,500 ✓	b.
Struthers.			
The Struthers Furnace Co. . . .	1	180,000 ✓	A., B.
Toledo.			
The Toledo Furnace Co.	2	401,500 ✓	A., B., E.
Warren.			
The Trumbull-Cliffs Furnace Co.	1	240,000 ✓	B.
Wellston.			
The Milton Iron Co.	1	18,000 ✓	G.
The Wellston Iron Furnace Co. . .	2	127,000 ✓	C., D., E.
Youngstown.			
Carnegie Steel Co. (Ohio Works). .	6	1,100,000 ✓	b., c.
Republic Iron & Steel Co. . . .	5	900,000 ✓	B., c.
The Youngstown Sheet & Tube Co.:			
East Youngstown Works	4	900,000 ✓	a., B., C.
Brier Hill Works	3	550,000 ✓	A., B.

PENNSYLVANIA.

Bethlehem.

Bethlehem Steel Co. (Lehigh Plant)	7	1,098,000 ✓	A., B., C.
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Location and Operating Company.	No. of stacks	Annual capacity. Gross tons.	Products.
Birdsboro.			
The E. & G. Brooke Iron Co.	1	100,000 ✓	A., B., E., F.
Catasauqua.			
Replogle Steel Co. (Crane Fur.)	1	135,000 ✓	A., B.
Chester.			
Delaware River Steel Co.	1	120,000 ✓	A., B., C., D., E.
Clairton.			
Carnegie Steel Co.	3	510,000	b
Coatesville.			
Bethlehem Steel Co.	3	468,000 ✓	A., B., C., D.
Cornwall.			
Bethlehem Steel Co. (North Corn- wall Furnace)	1	60,000 ✓	A., B., C., D.
Donora.			
The American Steel & Wire Co.	2	345,000	b.
Dubois.			
Adrian Furnace Co.	1	75,000 ✓	A.
Dunbar.			
Dunbar Corporation	2	180,000 ✓	A., F., H., I.
Duquesne.			
Carnegie Steel Co. (Duquesne Furnaces)	6	1,041,600	b.
Emaus.			
Reading Iron Co. (Crumwold Fur- nace) (1920)	1	62,000 ✓	A., f.
Emporium.			
Emporium Iron Co.	1	60,000 ✓	A.
Erie.			
Perry Iron Co.	1	127,750 ✓	A., B., E., F.
Etna.			
Carnegie Steel Co. (Isabella Fur- naces)	3	204,000 ✓	b., c., g., h., i.
Everett.			
Everett-Saxton Co.	1	90,000 ✓	A., B., D., F.
Farrell.			
Carnegie Steel Co.	3	501,400 ✓	b.
Harrisburg.			
Central Iron & Steel Co. (Paxton) (1919)	2	85,000 ✓	A., B., C., E., F.
Central Iron & Steel Co. (Lochiel Furnace)	1	50,000 ✓	A.
Hokendauqua.			
The Thomas Iron Co.	2	175,000 ✓	A., B., E., F.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Johnstown.			
Bethlehem Steel Co. (Cambria Plant)	9	1,740,000 ✓	A., B., C., H.
Josephine.			
The McKinney Steel Co.	2	240,000 ✓	A., B., C., E., F.
Kittanning.			
Kittanning I. & S. Mfg. Co.	1	100,000 ✓	A., B.
Lebanon (North Lebanon).			
Bethlehem Steel Co. (Lebanon Furnaces)	2	180,000 ✓	A., b., c., D.
Lavino Furnace Co. (Lebanon Furnace)	1	15,000 ✓	H., I.
Leesport.			
Leesport Furnace & Foundry Co. (1920)	1	22,500 ✓	A., F.
McKeesport.			
National Tube Co.	4	683,000 ✓	c.
Marietta.			
Lavino Furnace Co.	1	25,000 ✓	H., I.
Midland.			
Pittsburgh Crucible Steel Co.	2	383,250 ✓	B., C.
Milesburg.			
McCoy & Linn (1919)	1*	1,800 ✓	A., F.
Monessen.			
Pittsburgh Steel Co.	2	480,000 ✓	B.
New Castle.			
Carnegie Steel Co.	4	630,000 ✓	c.
North Braddock.			
Carnegie Steel Co. (Edgar Thomson Furnaces)	11	1,940,000	b., c.
Palmerton.			
The New Jersey Zinc Co. of Pa.	2	85,000	I.
Parryville.			
Carbon Furnace Co.	1	40,000 ✓	A., C., D.
Pittock (Neville Island).			
Carnegie Steel Co. (Neville Furnace)	1	179,400	b.
Pittsburgh.			
Carnegie Steel Co. (Edith and Lucy Furnaces)	3	241,700	b., c., H., i.
Clinton Iron & Steel Co.	1	110,000 ✓	A., B., E., F.
Jones & Laughlin Steel Corp.	7	1,375,000 ✓	b., c.
Pottstown.			
Warwick Iron & Steel Co.	2	346,750 ✓	A., B., F.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Punxsutawney.			
Punxsutawney Furnace Co.	1	90,000 ✓	A.
Rankin.			
Carnegie Steel Co. (Carrie Fur- naces)	7	1,207,500 ✓	b.
Reading.			
Reading Iron Co. (Keystone Fur- nace)	1	100,000 ✓	A., B., d., E., f.
Riddlesburg.			
Colonial Iron Co.	1	72,000 ✓	A., B., C., D.
Robesonia.			
Robesonia Iron Co.	1	75,000 ✓	A., D., E.
Scottdale.			
The McKinney Steel Co.	1	120,000 ✓	A., B., E.
Sharon.			
The Stewart Furnace Co.	1	110,000 ✓	C., D.
Sharpsville.			
Reliance Coke & Furnace Co.	1	150,000 ✓	A., B., C., E.
The Sharpsville Furnace Co.	1	120,000 ✓	A., B., C., E.
The Shenango Furnace Co.	2	410,000 ✓	A., B., C., E.
Valley Mould & Iron Corp'n. (1920)	1	108,000 ✓	B.
Sheridan.			
Lavino Furnace Co.	1	27,000	H., I.
Stelton.			
Bethlehem Steel Co.	5	702,000 ✓	A., B., C., D., E.
Swedeland.			
Alan Wood Iron & Steel Co.	3	530,700 ✓	A., B.
Temple.			
The Temple Furnace Co.	2	50,000† ✓	A.
Topton.			
H. Sofranscy Co. (1920)	1	40,000 ✓	A.
West Middlesex.			
The Hanna Furnace Co.	1	135,000 ✓	B., E.
Woodlawn.			
Jones & Laughlin Steel Corp'n. (Aliquippa Works)	5	1,025,000 ✓	b., c.

TENNESSEE.

Carlisle.			
Dover Iron Co.	1*	4,800 ✓	A.
Chattanooga.			
Chattanooga Iron & Coal Corp'n. (1920)	1	60,000 ✓	A.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Collinwood.			
Tennessee Charcoal Iron Company (1920)	1*	36,000 ✓	A.
Cumberland Furnace.			
Warner Iron Co.	1	30,000 ✓	A., G.
Dayton.			
Cumberland Coal & Iron Co. (1913)	2	125,000 ✓	A.
Goodrich.			
Bon Air Coal & Iron Corpn. (Standard Furnace)	1	25,000 ✓	A.
Johnson City.			
The Cranberry Furnace Co.	1	43,800	C., D.
La Follette.			
La Follette Coal & Iron Co.	1	72,000 ✓	A.
Napier.			
Napier Iron Works.	1	36,500 ✓	A.
Rockdale.			
Gray, J. J., Jr. (Rockdale Furnace)	1	16,000 ✓	J.
Rockwood.			
Roane Iron Co.	2	140,000 ✓	A.
Ruppertown.			
Bon Air Coal & Iron Corpn. (Man- nie Furnaces)	1	31,000	A., G.
Wrigley (P. O. Lyles).			
Bon Air Chemical Co.	1*	24,000 ✓	A.

TEXAS.

Rusk.			
John L. Keith (trustee) (1919).	1	36,000 ✓	A., F.

UTAH.

Provo.			
Columbia Steel Corporation	1	130,000 ✓	A., B.

VIRGINIA.

Big Stone Gap.			
Intermont Coal & Iron Corpn. (1920)	1	35,000 ✓	A.
Bluefield.			
Graham Furnace.	1	40,000 ✓	A.
Buena Vista.			
Alleghany Ore & Iron Co.	1	90,000 ✓	A.
Covington.			
The Low Moor Iron Co. of Va.	1	50,000 ✓	A.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Glen Wilton.			
Princess Iron Corporation	1	36,000 ✓	A.
Goshen.			
Goshen Furnace Corporation	1	70,000 ✓	A.
Iron Gate.			
Alleghany Ore & Iron Co.	1	30,000 ✓	A.
Ivanhoe.			
Ivanhoe Mining & Smelting Corp'n.			
(1913)	1	25,000 ✓	A.
Low Moor.			
The Low Moor Iron Co. of Va. . . .	2	60,000† ✓	A.
Max Meadows.			
Virginia Iron, Coal & Coke Co. . . .	1	60,000 ✓	A.
Pulaski.			
Pulaski Iron Co	1	90,000 ✓	A., F.
Virginia Iron, Coal & Coke Co.			
(Dora Furnace) (1920)	1	60,000 ✓	A.
Radford.			
Virginia Iron, Coal & Coke Co.			
(1919)	1	80,000	A.
Reusens.			
Lavino Furnace Co.	1	60,000	A., H., I.
Roanoke.			
Hubbard, John W. (West End Furnace) (1919)	1	48,000 ✓	A., I.
Virginia Iron, Coal & Coke Co.			
(Crozer Furnace)	1	60,000 ✓	A.

WEST VIRGINIA.

Benwood.			
National Tube Co. (Riverside) . . .	2	243,000 ✓	c.
Weirton.			
Weirton Steel Co.	1	240,000 ✓	b.
Wheeling.			
Wheeling Steel Corporation (Top Furnace)	1	100,000 ✓	c.

WISCONSIN.

Ashland.			
Charcoal Iron Co. of America . . .	1*	45,000 ✓	A., E.
Mayville.			
The Mayville Iron Co.	2	275,000 ✓	A.
Milwaukee.			
Illinois Steel Co.	2	113,800 ✓	A., E.
The Thomas Furnace Co.	1	120,000	A., B., C., D., E.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
CANADA.			
NOVA SCOTIA.			
Sydney.			
British Empire Steel Corpn. . . .	6	550,000	A., B.
Sydney Mines.			
British Empire Steel Corpn. (1920)	2†	90,000	a., b.
ONTARIO.			
Hamilton.			
The Steel Co. of Canada, Ltd. . . .	2	290,000	A., b., E.
Ojibway.			
Canadian Steel Corpn., Ltd. . . .	2 ^(a)	not stated	not stated
Parry Sound.			
Parry Sound Iron Co., Ltd. (1919)	1	30,000	A.
Port Colborne.			
Canadian Furnace Co., Ltd. . . .	1	125,000 ✓	A., C., E.
Sault Ste. Marie.			
Algoma Steel Corpn.	4	500,000 ✓	A., B., C., E

(*) Building.

MANUFACTURERS OF FERRO ALLOYS AND PIG IRON IN
ELECTRIC FURNACES, ETC., NOT INCLUDED
IN BLAST FURNACE LIST.

KINDS OF FERRO-ALLOYS MADE ARE INDICATED BY CHEMICAL SYMBOL.

UNITED STATES.

ALABAMA.

Southern Manganese Corporation, Anniston. P.

COLORADO.

Ferro Alloy Co. (The), Denver. (Works at Utah Junction). Cr.,
Wo., Si.

Utah Vanadium Corp., New York, N. Y. (Works at Denver). Va.
(oxide).

IOWA.

Keokuk Electro-Metals Co., Keokuk. Si., silvery pig.

MAINE.

Maine Power Sales Co., 25 Broad St., New York, N. Y. (Works at
Rumford; idle). Si.

MARYLAND.

Baltimore Electro-Alloys Co. (The), Baltimore. Works at Highland-
town). Si., Si-Al., Cr. and other.

NEW JERSEY.

Metal & Thermit Corp., 120 Broadway, New York, N. Y. (Works at
Jersey City). Ti., Cr., Va., Wo., Zr.

NEW YORK.

Electro Metallurgical Co., New York, N. Y. (Works at Niagara Falls).
Si., Cr. and other.

Metal Alloys, Inc., Watervliet. Wo., Va., Cr.

Norton Co., Worcester, Mass. (Works at Niagara Falls). Si.

Pittsburgh Metallurgical Co., Inc., Niagara Falls. Si.

Titanium Alloy Manufacturing Co. (The), Niagara Falls, N. Y. Ti.

Vanadium Corporation of America, New York, N. Y. (Works at
Niagara Falls). Si., Cr., Si-Mn.

PENNSYLVANIA.

Crucible Steel Co. of America, Pittsburgh. (Own use.) Wo., Va.
Molybdenum Corpn. of America, Pittsburgh, Pa. (Works at Wash-
ington, Pa.). Mb., Wo., Ce.
Standard Chemical Co., Pittsburgh. Va., U.
Vanadium Corporation of America, New York, N. Y. (Works at
Kirwan). Va., Wo., Mo.
York Metal & Alloys Co., York. Wo., Mo., Va.

TENNESSEE.

Southern Ferro-Alloys Co., Chattanooga. Si., silvery pig.

VIRGINIA.

Electro Metallurgical Co., New York, N. Y. (Works at Holcomb
Rock). Cr.

WASHINGTON.

Seattle Smelting Co., Seattle. (Idle since 1918). Mn.

WEST VIRGINIA.

Electro Metallurgical Co., New York, N. Y. (Works at Glen Ferris).
Cr.

CANADA.

ONTARIO.

Abrasive Company of Canada, Ltd., Hamilton. Si.
Electro Metallurgical Co. of Canada, Ltd., Welland. Si., Mn.
The Exolon Co., Ltd., Thorold. Si.
Norton Co., Worcester, Mass. (Works at Chippawa). Si.
Tivani Electric Steel Co., Ltd., Belleville. Mo., low phos. pig.
Turnbull Electro Metals, Ltd., St. Catherines. (Idle). Low phos.
and silvery pig.

QUEBEC.

Canadian Carborundum Co., Ltd., Niagara Falls, N. Y. (Works at
Shawinigan Falls). Si.
Electric Reduction Co., Buckingham, P. Q., Canada. P.
Leaside Engineering Co., Ltd., Leaside. (Works at Beaupre; idle
since 1918). Si.

LIST OF PLANTS MAKING STEEL INGOTS IN THE UNITED STATES AND CANADA.

TABLE OF ABBREVIATIONS.

Kinds of steel ingots made.	For sale.	For sale and for own use.	For own use only.
Acid open-hearth	A.	A.	a.
Basic open-hearth	B.	B.	b.
Bessemer	C.	C.	c.
Crucible	D.	D.	d.
Electric	E.	E.	e.
Miscellaneous	F.	F.	f.

UNITED STATES.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
ALABAMA.		
Alabama City.		
Gulf States Steel Co.	288,000	b.
Ensley.		
Tennessee Coal, Iron & R. R. Co. . .	1,128,000	b., c.*
Fairfield.		
Tennessee Coal, Iron & R. R. Co.		
(Steel Works)	274,800	b.
Tennessee Coal, Iron & R. R. Co.		
(Car Works)	12,000	b.
CALIFORNIA.		
Huntington Park.		
Southern California I. & S. Co. . .	40,000	b.
Oakland (Emeryville).		
Judson Manufacturing Co.	72,000	b.
Pittsburg.		
Columbia Steel Corp'n.	102,600	b.
Sacramento.		
Southern Pacific Co.	11,000	e.

* Bessemer converters used for duplexing only.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
South San Francisco.		
Enterprise Foundry Co.	5,000	B.
Pacific Coast Steel Co.	150,000	b.
Torrance.		
Columbia Steel Corpn.	82,200	b., e.
Union Tool Co.	9,000	E.
COLORADO.		
Pueblo.		
The Colorado Fuel & Iron Co. . .	1,138,000	b., c.
CONNECTICUT.		
Bridgeport.		
The American Tube & Stamping Co.	125,000	b.
Collinsville.		
Dycast Steel Co.	650	D.
Hartford.		
Hartford Electric Light Co. (idle) .	2,800	E.
New Britain.		
The Stanley Works (idle)	34,000	b.
DELAWARE.		
Claymont.		
Worth Steel Co.	360,000	b.
New Castle.		
Penn Seaboard Steel Corporation .	160,000	a., b.
DISTRICT OF COLUMBIA.		
Washington.		
United States Government, Navy Department, Naval Gun Factory.	10,500	a., e.
GEORGIA.		
Atlanta.		
Atlantic Steel Co.	100,000	b.
ILLINOIS.		
Alton.		
Laclede Steel Co.	150,000	b.
Chicago.		
Trojan Electric Steel Co.	2,400	E.
Chicago Heights.		
Columbia Tool Steel Co.	6,435	d.
Railway Steel-Spring Co.	80,000	b.
Granite City.		
National Enameling & Stamping Co.	360,000	b.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Joliet.		
Illinois Steel Co.	708,000	c.
Peoria (South Bartonville).		
Keystone Steel & Wire Co.	140,000	b.
South Chicago.		
Illinois Steel Co.	2,772,000	b., c.,* e.
International Harvester Co.	700,000	b., c.
Interstate Iron & Steel Co.	250,000	b.
West Harvey.		
Chicago Malleable Castings Co.	†	A.
INDIANA.		
Gary.		
Illinois Steel Co.	3,240,000	b., c.**
Indiana Harbor.		
Inland Steel Co.	1,600,000	b.
The Youngstown Sheet & Tube Co.	840,000	b., c.
Kokomo.		
Kokomo Steel & Wire Co.	120,000	b.
IOWA.		
Fort Dodge.		
Fort Dodge Culvert & Steel Co. (idle)	12,000	b.
KENTUCKY.		
Ashland.		
The American Rolling Mill Co. (West Works).	330,000	b.
Ashland Steel Co.	190,000	c.
Newport.		
The Andrews Steel Co.	300,000	b.
MARYLAND.		
Baltimore.		
Hess Steel Corporation (idle)	30,000	e.
Cumberland.		
N. & G. Taylor Co., Inc. (idle)	39,000	b.
Sparrows Point.		
Bethlehem Steel Co. (Maryland Plant)	1,020,000	b., c.**

* Bessemer converters also used for duplexing.

† Steel ingot capacity not stated; see list of steel casting plants.

** Bessemer converters used for duplexing only.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
MASSACHUSETTS.		
Lynn.		
General Electric Co.	10,000	A., E.
Pittsfield.		
General Electric Co.	1,600	e.
Watertown.		
United States Gov., War Department, Watertown Arsenal . . .	44,670	a.
West Wareham.		
Tremont Nail Co.	25,000	b.
Worcester.		
The American Steel & Wire Co. . .	180,000	a., b.
MICHIGAN.		
Kalamazoo.		
Harrow Spring Co.	7,200	e.
Springwells.		
Ford Motor Co.	50,000†	e.
MINNESOTA.		
Duluth (Morgan Park).		
Minnesota Steel Co.	540,000	b.
Stillwater.		
Twin City Forge & Foundry Co. .	*	E.
MISSOURI.		
Kansas City.		
Black Steel & Wire Co.	15,000	a.
Sheffield Steel Corporation . . .	80,000	b.
St. Louis.		
Scullin Steel Co.	100,000	b.
NEW JERSEY.		
Carteret.		
Chrome Steel Works	45,000	a., b.
Harrison.		
Crucible Steel Co. of America . .	82,850	a., b., d., e.
Driver-Harris Co.	500	e.
High Bridge.		
Taylor-Wharton Iron & Steel Co. .	*	c., E.
Newark.		
Heller Brothers Co.	1,500	d.
Perth Amboy.		
Pardee Steel Corp'n. (idle) . . .	50,000	b.

* Steel ingot capacity not stated: see list of steel casting plants.

† B. O. H. capacity under construction, 250,000 tons.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Roebling.		
John A. Roebling's Sons Co. . . .	150,000	a., b.
NEW YORK.		
Buffalo.		
Donner Steel Co., Inc.	540,000	b.
Aurie Johnson (idle)	24,000	e.
Wickwire Spencer Steel Company .	150,000	b.
Cortland.		
Wickwire Bros.	35,000	b.
Dunkirk.		
Atlas Alloy Steel Corpn.	20,250	d., e.
Lackawanna.		
Bethlehem Steel Co. (Lackawanna Plant)	1,824,000	b., c.*
Lockport.		
Simonds Saw & Steel Co.	11,100	d., e.
Schenectady.		
General Electric Co.	890	e.
Syracuse.		
Crucible Steel Co. of America. . .	16,400	d., e.
Halcomb Steel Co.	46,400	d., e.
Onondaga Steel Co.	360	e.
Watervliet.		
Ludlum Steel Co.	22,000	e.
OHIO.		
Bellaire.		
Carnegie Steel Co.	420,000	c.
Bucyrus.		
The Hadfield-Penfield Steel Co. . .	1,200	e.
Canton.		
The Timken Roller Bearing Co. . .	70,000	e.
United Alloy Steel Corpn. (2 plants)	1,000,000	b., e.
Cleveland.		
The American Steel & Wire Co. . .	970,000	b., c.
The Bourne-Fuller Co.	240,000	b.
The McKinney Steel Co.	1,000,000	b.
The Otis Steel Co. (2 plants) . . .	421,000	a., b.
Western Reserve Steel Co. (idle). .	6,000	d., e.
Columbia Heights (near Massillon).		
The Central Steel Co.	400,000	b.
Lorain.		
The National Tube Co.	1,365,000	b., c.

* Bessemer converters also used for duplexing.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Lowellville.		
Sharon Steel Hoop Co.	360,000 ✓	b.
Mansfield.		
The Mansfield Sheet & Tin Plate Co.	185,000	b.
Middletown.		
The American Rolling Mill Co. (2 plants)	507,000	b., e.
Mingo Junction.		
Carnegie Steel Co.	600,000	c.
Norwalk.		
Crucible Steel Co. of America . . .	15,000	b.
Portsmouth.		
Wheeling Steel Corp'n.	448,000	b.
Steubenville.		
Wheeling Steel Corp'n.	600,000	b.
Toronto.		
Follansbee Brothers Co.	92,400	b.
Warren.		
The Trumbull Steel Co.	500,000	b.
Youngstown.		
Carnegie Steel Co.	1,480,000	b., c.
Republic Iron & Steel Co.	1,300,000	b., c.
The Youngstown Sheet & Tube Co.	2,400,000	b., c.

PENNSYLVANIA.

Aliquippa.		
Vulcan Crucible Steel Co.	8,650 ✓	d., e.
Apollo.		
Apollo Steel Co. (idle)	40,000 ✓	b.
Avonmore.		
The National Roll & Foundry Co. .	*	A.
Bethlehem.		
Bethlehem Steel Co. (Bethlehem Plant)	1,512,000	a., b., c., † e.
Birdsboro.		
Birdsboro Steel Foundry & Machine Company	35,000	A., B.
Brackenridge		
Allegheny Steel Co.	222,000 ✓	A., B., E.
West Penn Steel Co.	150,000	b.
Braddock.		
Sterling Steel Foundry Co.	12,000 ✓	A.

* Steel ingot capacity not stated; see list of steel casting plants.

† Bessemer converters (Saucon Division) used for duplexing only.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Braeburn.		
Braeburn Alloy Steel Corpn. . . .	12,000 ✓	e.
Bridgeville.		
Universal Steel Co.	34,000	a., e.
Burnham.		
Standard Steel Works Co.	165,000	a., b.
Butler.		
Forged Steel Wheel Co.	360,000	b.
Carnegie.		
Union Electric Steel Corpn. . . .	16,000 ✓	e.
Charleroi.		
Assets Distribution Corpn. (idle) .	not stated	d., e.
Clairton.		
Carnegie Steel Co.	636,000 ✓	b.
Coatesville.		
Bethlehem Steel Co. (Coatesville Plant)	540,000	b.
Lukens Steel Co.	686,480	a., b.
Colona.		
Colonial Steel Co.	57,600	b., d., e.
Connellsville.		
Witherow Steel Co. (idle)	not stated	e.
Corry.		
McInnes Steel Co., Ltd.	1,000	d.
Crum Lynne.		
Eddystone Steel Co. (idle)	10,000	b.
Donora.		
The American Steel & Wire Co. . .	550,000 ✓	b., c.*
Duquesne.		
Carnegie Steel Co. (Duquesne Works)	1,388,800 ✓	b., e.
Eddystone.		
Federal Alloy Steel Corpn.	35,000	B.
Erie.		
Erie Forge Co.	30,000	B.
Erie Forge & Steel Co.	75,000	B.
National Foundry Co.	7,500	A.
Robert E. Baker (idle)	40,000	b.
Farrell.		
Carnegie Steel Co.	624,000 ✓	b.
Harrisburg.		
Central Iron & Steel Co.	240,000	b.
Harrisburg Pipe & Pipe Bending Co.	85,000	b.

* Bessemer converters for duplexing not in use at present.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Ivy Rock.		
Alan Wood Iron & Steel Co. . . .	529,000	b.
Johnstown.		
Bethlehem Steel Co. (Cambria Plant)	1,928,000 ✓	a., b., c.
Latrobe.		
Latrobe Electric Steel Co.	18,000	e.
Railway Steel-Spring Co.	102,500	a., e.
Vanadium Alloys Steel Co.	6,500 ✓	e.
McKeesport.		
Firth-Sterling Steel Co.	12,600	b., d., e.
National Tube Co.	674,000 ✓	c.
Midland.		
Pittsburgh Crucible Steel Co. . . .	600,000 ✓	b.
Milton.		
The Milton Manufacturing Co. . . .	30,000	e.
Monessen.		
Page Steel & Wire Co. (idle) . . .	65,000	b.
Pittsburgh Steel Co.	600,000	b.
Monongahela.		
Le Moyne Steel Co.	1,600 ✓	e.
Moore.		
The Drain Steel Co. (idle)	65,000	B.
Munhall.		
Carnegie Steel Co. (Homestead Works)	2,548,500 ✓	b.
New Castle.		
Carnegie Steel Co.	770,000	c.
North Braddock.		
Carnegie Steel Co. (Edgar Thomson)	1,462,000 ✓	b., c.
Oakmont.		
Edgewater Steel Co.	118,000	A., B.
Pencoyd.		
American Bridge Co.	240,000	b.
Philadelphia.		
Henry Disston & Sons Iron & Steel Works (Tacony)	22,000	d., e.
The John Illingworth Steel Company (Frankford)	3,000	d.
The Midvale Co. (Nicetown) . . .	222,540	a., b., d., e.
Penn Seaboard Steel Corp. (Tacony)	50,000	a.
Phoenixville.		
The Phoenix Iron Co.	225,000	b.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Pittsburgh.		
Crucible Steel Co. of America:		
Black Diamond Works	160,500	a., b., d., e.
Crescent Works	56,000	b., d.
La Belle Works	23,000	a., d.
The Electro Steel Co., Inc.	1,500	E.
Heppenstall Forge & Knife Co.	25,000	a.
Jones & Laughlin Steel Corpn. (Pittsburgh Works.)	1,860,000	a., b., c.*
Union Steel Casting Co.	18,000	A.
Pottsville.		
The Eastern Steel Co.	200,000	b.
Reading.		
The Carpenter Steel Co.	21,428	e.
Steelton.		
Bethlehem Steel Co. (Steelton Plant)	776,000	a., b., c., † e.
Titusville.		
Cyclops Steel Co., Inc.	9,800	d., e.
Vandergrift.		
American Sheet & Tin Plate Co.. . . .	324,000	a., b.
Washington.		
Jessop Steel Co.	5,200	d., e.
West Homestead (Mesta Station).		
Mesta Machine Co.	75,000	A.
Williamsport (Newberry).		
Pine Iron Works Co.	36,000	b.
Woodlawn.		
Jones & Laughlin Steel Corporation	1,140,000	b., c.*

RHODE ISLAND.

Phillipsdale.		
Washburn Wire Co.	39,000	b.

TEXAS.

Beaumont.		
Beaumont Iron Works Co.	not stated	e.
Fort Worth.		
Texas Steel Co.	15,000	e.

UTAH.

Midvale.		
Utah Steel Corporation.	50,000	b.

* Bessemer converters also used for duplexing.

† Bessemer converters used for duplexing only.

Location and Operating Company.	Annual capacity. Gross tons.	products.
VIRGINIA.		
Newport News.		
Newport News Shipbuilding & Dry Dock Co.	3,000	E.
Richmond.		
Old Dominion Iron & Steel Works, Inc.	6,000	e.
WASHINGTON.		
Hoquiam.		
Lamb Machine Co.	1,000	E.
Seattle.		
Rothert Process Steel Co.	550	E.
Youngstown.		
Pacific Coast Steel Co. (Seattle Plant)	100,000	b.
WEST VIRGINIA.		
Benwood.		
National Tube Co. (Riverside Wks.)	228,000	c.
Wheeling Steel Corpn.	225,000	c.
Charleston.		
Becker Steel Co. of America, Inc. .	1,000	d.
Follansbee.		
Follansbee Brothers Co.	84,000	b.
South Charleston.		
United States Gov., Navy Department, Ordnance Plant	20,000	e.
Weirton.		
Weirton Steel Co.	570,000	b.
WISCONSIN.		
St. Francis.		
General Steel Co. (idle).	24,500	E.
CANADA.		
ALBERTA.		
Redcliff.		
Redcliff Rolling Mills (idle)	15,000	b.
BRITISH COLUMBIA.		
Port Moody.		
Port Moody Steel Works (idle) . .	1,000	e.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
MANITOBA.		
Selkirk.		
The Manitoba Rolling Mill Co., Ltd.	18,000	b.
NOVA SCOTIA.		
Sydney.		
British Empire Steel Corpn., Ltd. .	400,000	b.
Sydney Mines.		
British Empire Steel Corpn., Ltd. .	130,000	b.
ONTARIO.		
Belleville.		
Tivani Electric Steel Co., Ltd. . .	1,000	E.
Hamilton.		
Dominion Foundries & Steel, Ltd. .	120,000	a., b.
The Steel Co. of Canada, Ltd. . .	300,000	b.
Orillia.		
Canada Electric Castings Co., Ltd.	1,800	E.
Sault Ste. Marie.		
Algoma Steel Corporation	600,000	b., c.*
Welland.		
Canadian Atlas Steels, Ltd. . . .	1,500	d.
Canadian Steel Foundries, Ltd. . .	25,000	B.
Welland Steel Castings, Ltd. . . .	†	E.
QUEBEC.		
Hull.		
The Hull Iron & Steel Foundries, Ltd.	†	C., E.
Longue Pointe (Montreal).		
Canadian Steel Foundries, Ltd. . .	12,500	B.
Montmagny.		
General Trust of Canada (idle) . .	30,000	b.
Montreal.		
Canadian Electric Steel, Ltd. (idle).	12,000	E.
The Thomas Davidson Manufactur- ing Co., Ltd.	30,000	E.

* Bessemer converters used for duplexing only.

† Steel ingot capacity not stated; see list of steel casting plants.

LIST OF PLANTS MAKING STEEL CASTINGS IN THE UNITED STATES AND CANADA.

TABLE OF ABBREVIATIONS.

Kinds of steel castings made.	For sale.	For sale and for own use.	For own use only.
Acid open-hearth	A.	A.	a.
Basic open-hearth	B.	B.	b.
Bessemer	C.	C.	c.
Crucible	D.	D.	d.
Electric	E.	E.	e.
Miscellaneous	F.	F.	f.

UNITED STATES.

Location and Operating Company,	Annual capacity. Gross tons.	Products.
ALABAMA.		
Alabama City.		
Gulf States Steel Co.	500	b.
Anniston.		
Anniston Electric Steel Corpn. . .	25,000	E.
Ensley.		
Tennessee Coal, Iron & Railroad Co.	*	B.
Fairfield.		
Tennessee Coal, Iron & Railroad Co. (Car Works)	18,000	B.
Mobile.		
Mobile Stove & Pulley Mfg. Co. . .	1,500	E.
ALASKA.		
Treadwell.		
Alaska Treadwell Gold Mining Co.	300	e.
ARKANSAS.		
Pine Bluff.		
Standard Brake Shoe & Foundry Co.	3,000	E.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity, Gross tons.	Products.
CALIFORNIA.		
Auberry.		
Southern California Edison Co. . .	500	e.
Berkeley.		
Berkeley Steel Foundry Co. . . .	300	E.
Burbank.		
Moreland Motor Truck Co.	3,600	E.
Los Angeles.		
Alloy Steel & Metals Co.	1,800	E.
American Manganese Steel Co. (Plant L)	1,200	E.
Kay-Brunner Steel Casting Co. . .	2,400	E.
Keystone Iron & Steel Works, Inc.	1,200	E.
Los Angeles Foundry Co.	2,000	E.
Warman Steel Casting Co.	6,000	E.
Mare Island.		
United States Gov., Navy Department, Mare Island Navy Yard	1,600	c., e.
Oakland.		
American Manganese Steel Co. (Plant F)	3,500	E.
Best Steel Casting Co.	12,000	C., E.
Judson Manufacturing Co.	not stated	B.
Pittsburg.		
Columbia Steel Corporation. . . .	10,400	A., B.
Sacramento.		
Southern Pacific Co.	920	e.
San Bernardino.		
Hanford Iron Works	1,800	E.
South San Francisco.		
Enterprise Foundry Co.	6,000	B., E.
Pacific Coast Steel Co.	*	b.
Stockton.		
Monarch Foundry Co.	5,760	E.
Torrance.		
Columbia Steel Corporation. . . .	6,000	B., E.
Union Tool Co.	5,000	E.
COLORADO.		
Denver.		
American Manganese Steel Co. (Plant C)	4,500	E.
The Denver Rock Drill Mfg. Co. .	500	e.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Pueblo.		
The Colorado Fuel & Iron Co.	2,000	b.
CONNECTICUT.		
Branford.		
Malleable Iron Fittings Co.	10,000	A., C.
Bridgeport.		
Crane Co.	540	c.
Collinsville.		
Dycast Steel Co.	320	D.
Hartford.		
Hartford Electric Light Co. (idle)	2,800	E.
Stamford.		
Yale & Towne Manufacturing Co.	1,200	e.
DELAWARE.		
New Castle.		
American Manganese Steel Co. (Plant B)	3,600	C., E.
S. S. Deemer (idle)	6,000	C.
Deemer Steel Casting Co.	3,000	C.
DISTRICT OF COLUMBIA.		
Washington.		
United States Gov., Navy Department, Naval Gun Factory	17,400	a., c., e.
FLORIDA.		
Jacksonville.		
Florida Machine & Foundry Co..	1,500	E.
GEORGIA.		
Marietta.		
Glover Machine Works, Inc.	2,000	e.
ILLINOIS.		
Chicago.		
Burnside Steel Co.	6,000	E.
Chicago Steel Foundry Co.	6,000	C., E.
Crane Co.	6,000	e.
Interstate Foundries, Inc.	18,000	E.
Link-Belt Co.	1,200	c.
The National Malleable & Steel Castings Co.	*	E.
Nugent Steel Castings Co.	5,000	E.
Pettibone Mulliken Co.	12,000	E.

* Electric furnaces used chiefly for malleable castings.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Chicago Heights.		
American Manganese Steel Co. (Plant A)	12,000	E.
East St. Louis.		
American Steel Foundries. . . .	48,213	B.
Granite City.		
American Steel Foundries. . . .	68,570	B.
Commonwealth Steel Co.	80,000	B.
Harvey.		
Whiting Corporation.	1,000	c.
Hegewisch.		
Western Steel Car & Foundry Co. .	7,500	c., E.
Joliet.		
Illinois Steel Co.	*	c.
Melrose Park.		
The National Malleable & Steel Castings Co.	40,000	B.
Murphysboro.		
National Car Coupler Co.	10,540	A.
Peoria.		
Avery Power Machinery Company (idle).	2,400	e.
South Chicago.		
Illinois Steel Co.	6,000	e.
West Harvey.		
Chicago Malleable Castings Co. . .	10,000	A.
West Pullman.		
McCord & Co.	9,600	E.
INDIANA.		
Attica.		
National Car Coupler Co.	21,080	A.
East Chicago.		
Hubbard Steel Foundry Co. . . .	30,000	A.
Gary.		
Illinois Steel Co.	15,000	a.
Hammond.		
Damascus Steel Casting Co. . . .	1,300	E.
Huntington.		
Armstrong Steel Castings Co. . . .	12,000	C., E.
Indiana Harbor.		
American Steel Foundries.	25,713	A.
Indianapolis.		
Electric Steel Castings Co.	2,500	E.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Lawrenceburg.		
A. D. Cook, Inc.	50	d.
Montpelier.		
National Steel Casting Co.	6,350	A., D.
South Bend.		
Oliver Chilled Plow Works	3,000	c.
IOWA.		
Bettendorf.		
The Bettendorf Co.	72,000	B.
The Zimmerman Steel Co.	15,000	B., E.
Centerville.		
Hercules Manufacturing Co. . . .	1,600	C.
Keokuk.		
Keokuk Steel Casting Co.	3,000	E.
Newton.		
The Parsons Co.	3,000	E.
KANSAS.		
Atchison.		
The Locomotive Finished Material Co.	6,000	E.
LOUISIANA.		
Mansfield.		
De Soto Foundry & Machine Com- pany, Ltd.	1,800	C.
New Orleans.		
Dibert, Bancroft & Ross Co., Ltd. .	3,500	E.
Oil City.		
Oil City Iron Works, Inc.	1,000	c.
Shreveport.		
The W. K. Henderson Iron Works & Supply Co., Ltd.	2,500	E.
MARYLAND.		
Baltimore.		
Baltimore Malleable Iron & Steel Casting Co.	5,000	A.
MASSACHUSETTS.		
Atlantic.		
Quincy Steel Casting Co.	300	D.
Boston.		
Eastern Steel Casting Co.	600	D.
Roxbury Steel Casting Co.	9,500	A., C.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Boston—(Continued)		
United States Government, Navy Dept., Boston Navy Yard . . .	1,200	c.
Chelsea.		
Connolly Steel Casting Co.	160	D.
Everett.		
General Electric Co.	12,500	a.
Indian Orchard.		
The Chapman Valve Mfg. Co. . .	2,500	e.
Lynn.		
General Electric Co.	10,000	A.
Millbury.		
Millbury Steel Foundry Co. . . .	900	E.
Pittsfield.		
General Electric Co.	250	e.
Turners Falls.		
Electric Steel Castings Co. . . .	1,000	E.
Watertown.		
United States Government, War Department	11,130	e.
Worcester.		
The American Steel & Wire Co. . .	700	a., b.
MICHIGAN.		
Bay City.		
Industrial Works	3,000	c.
Benton Harbor.		
Superior Steel Castings Co. . . .	10,000	A.
Buchanan.		
Clark Equipment Co.	8,000	E.
Calumet.		
Calumet & Hecla Consolidated Cop- per Co.	not stated	e.
Detroit.		
Buhl Malleable Co.	2,000	A.
The Detroit Steel Casting Co. . .	15,000	A., C., E.
Michigan Steel Casting Co. . . .	7,500	E.
Swedish Crucible Steel Co. . . .	3,600	c., D.
Kalamazoo.		
Reed Foundry & Machine Co. . .	1,250	c.
Monroe.		
Monroe Steel Castings Co.	2,200	E.
Muskegon.		
West Michigan Steel Foundry Co. .	4,800	E.
Saginaw.		
S. Fair & Son, Inc.	3,500	E.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Springswells.		
Ford Motor Co.	5,000	e.
MINNESOTA.		
Duluth.		
McDougall-Duluth Shipbuilding Co.	4,000	A.
Minneapolis.		
Minneapolis Electric Steel Castings Co.	1,200	E.
Northwestern Steel & Iron Corpn.	5,000	A.
Transit Supply Co.	not stated	c.
Western Crucible Steel Casting Co.	5,600	E.
St. Paul.		
American Hoist & Derrick Co.	2,500	c.
Stillwater.		
Twin City Forge & Foundry Co.. . . .	4,000	E.
MISSOURI.		
Bonne Terre.		
Bonne Terre Foundry Co.	160	C.
Joplin.		
Joplin Electric Steel Co.	5,000	E.
St. Joseph.		
Berry Iron & Steel Co.	7,200	E.
St. Louis.		
W. T. Koken, Trustee (idle)	6,500	A., E.
St. Louis Steel Casting Co.	3,000	C.
Scullin Steel Co.	75,000	B.
Southern Manganese Steel Co.	5,000	E.
NEBRASKA.		
Omaha.		
Omaha Steel Works.	3,000	E.
NEW HAMPSHIRE.		
Claremont.		
Sullivan Machinery Co.	5,400	e.
NEW JERSEY.		
Carteret.		
Chrome Steel Works.	15,000	A.
Harrison.		
Driver-Harris Co.	1,050	D., E.
High Bridge.		
Taylor-Wharton Iron & Steel Co.	18,000	C., E.
Kearny.		
Riverside Steel Casting Co.	2,400	A.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Newark.		
Eastern Steel Castings	10,000	A., E.
General Steel Foundries, Inc. (re- building)	not stated	A.
Malcolm Foundry Co.	300	D.
The Titan Terminal Co. (idle) . .	50,000	A., B.
NEW YORK.		
Buffalo.		
American Radiator Co..	6,000	E.
Atlas Steel Casting Co..	12,000	A.
Otis Elevator Co.	5,000	E.
Pratt & Letchworth Co.	19,300	A.
Strong Steel Foundry Co..	7,000	A.
W. P. Taylor Co.	1,000	E.
Colonie (P. O. Watervliet).		
The Delaware & Hudson Co. . . .	300	c.
Depew.		
Gould Coupler Co..	50,000	B.
Lackawanna.		
Bethlehem Steel Co.	2,500	b.
North Tonawanda.		
Tonawanda Electric Steel Casting Co.	1,200	E.
Ogdensburg.		
Coplan Steel Corp., Inc.	6,000	C.
Rochester.		
The Symington Company.	1,600	E.
Schenectady.		
General Electric Co.	3,500	e.
Watervliet.		
Adirondack Steel Foundries Corp.,	21,000	A., E.
OHIO.		
Akron.		
The Adamson Machine Co.	3,000	A.
The Atlantic Foundry Co.	9,000	E.
Alliance.		
American Steel Foundries.	68,570	B.
The Machined Steel Casting Co. .	10,800	A.
Bucyrus.		
The Hadfield-Penfield Steel Co. .	8,400	c., E.
The Ohio Steel Foundry Co. . . .	15,000	A.
Canton.		
The Canton Steel Foundry Co. (idle)	30,000	A.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Cincinnati.		
The Cincinnati Steel Castings Co. .	4,000	E.
The Lunkenheimer Co.	8,000	e.
Cleveland.		
The Cleveland Steel Casting Co. .	10,718	A.
The Crucible Steel Casting Co. . .	2,000	E.
The McKinney Steel Co.	1,700	b.
Mathews Steel Castings Co. . . .	3,400	C., E.
The National Malleable & Steel Castings Co.	*	E.
The Ohio Steel Castings Co. . . .	2,400	C.
The Otis Steel Co.	31,300	A., B., C.
The West Steel Casting Co. . . .	5,000*	C., E.
Dayton.		
The Dayton Steel Foundry Co. . .	7,500	C., E.
Findlay.		
The Buckeye Traction Ditcher Co. .	1,200	e.
Lima.		
The Ohio Steel Foundry Co. . . .	36,000	A., B.
Lockland.		
The Sawbrook Steel Castings Co. .	1,800	E.
Marion.		
The Commercial Steel Casting Co. .	6,000	A.
The Fairbanks Steam Shovel Co. .	2,000	e.
The Marion Steam Shovel Co. . .	13,000	b., e.
Massillon.		
The Massillon Steel Casting Co. . .	3,000	C.
Middletown.		
The American Rolling Mill Co. . .	6,000	B., E.
Norwood.		
Allis-Chalmers Mfg. Co.	2,000	e.
Portsmouth.		
Wheeling Steel Corporation . . .	2,000	b.
Sandusky.		
The Bay View Foundry Co.	1,800	C.
The Farrell-Cheek Steel Foundry Company	6,000	C., E.
South Columbus (Columbus P. O.).		
The Bonney-Floyd Co.	20,000	B., E.
The Buckeye Steel Castings Co. . .	123,000	B., E.
Springfield.		
The Ohio Steel Foundry Co. . . .	7,000	E.

* Electric furnaces used largely for malleable castings.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Toledo.		
The Industrial Steel Casting Co.	4,200	E.
The Toledo Steel Casting Co.	3,600	C.
OKLAHOMA.		
Tulsa.		
Oklahoma Iron Works	600	e.
Oklahoma Steel Castings Co.	3,000	E.
OREGON.		
Portland.		
Columbia Steel Corporation.	2,400	C., E.
Electric Steel Foundry	6,000	E.
Tennent Steel Casting Co.	300	E.
Vaughan Motor Works	600	e.
PANAMA, CANAL ZONE.		
Balboa.		
The Mechanical Division of the Panama Canal	3,600	C.
PENNSYLVANIA.		
Allentown.		
Lehigh Valley Transit Co.	300	e.
Ambridge.		
American Bridge Co.	8,600	A.
Avonmore.		
The National Roll & Foundry Co.	3,600	A.
Beaver Falls.		
Keystone Driller Co.	600	E.
Bethlehem.		
Bethlehem Steel Co.	18,000	B.
Birdsboro.		
Birdsboro Steel Foundry & Machine Co.	18,000	A., B.
Brackenridge.		
Allegheny Steel Co.	10,000	A.
Braddock.		
Sterling Steel Foundry Co.	14,400	A.
Burnham.		
Standard Steel Works Co.	35,000	A.
Buttonwood.		
Vulcan Iron Works	10,000	A.
Carlisle.		
The Frog, Switch & Mfg. Co.	3,500	C.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Chester.		
American Locomotive Co.	36,000	B.
American Steel Foundries (Thurlo Works)	21,428	A.
Atlantic Steel Castings Co.	7,000	A.
Chester Steel Castings Co.	8,800	A., F.
Federal Steel Foundry Co.	7,500	B.
Penn Steel Castings Co.	20,000	A.
Connellsville.		
Connellsville Foundry, Machine & Steel Casting Co.	1,200	C.
Conshohocken.		
Wm. T. Bate & Son, Inc.	1,200	E.
Lenor Realty Co. (idle)	1,000	E.
Crum Lynne.		
Eagan-Johnson Steel & Iron Co. . .	4,000	C.
Donora.		
The American Steel & Wire Co. . .	600	b.
Duquesne.		
Carnegie Steel Co.	1,200	b.
Easton.		
Taylor-Wharton Iron & Steel Co. .	10,000	C., E.
Treadwell Engineering Co.	5,000	E.
Erie.		
Erie Forge Co.	29,500	A., C.
National Foundry Co.	12,500	A.
Standard Stoker Co.	2,500	e.
Franklin.		
American Steel Foundries.	12,640	A.
Glassmere.		
Acme Steel Co.	750	E.
Glassport.		
Pittsburgh Steel Foundry Co. . . .	30,000	A., B.
Greensburg.		
Hempfield Foundries Co.	800	C.
Walworth Company	1,000	E.
Hamburg.		
Pennsylvania Electric Steel Casting Co.	1,200	E.
Johnstown.		
Bethlehem Steel Co.	2,000	a., b.
The Lorain Steel Co.	15,500	A., E.
Kendall Station (P. O. Corapolis).		
Duquesne Steel Foundry Co. . . .	30,000	A.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Lansdowne.		
Crucible Steel Casting Co.	3,300	E.
Lebanon.		
Lebanon Steel Foundry	4,800	E.
McKeesport.		
Fort Pitt Steel Casting Co.	6,000	E.
McKees Rocks.		
Pressed Steel Car Co.	25,000	A.
Midland.		
Mackintosh-Hemphill Co.	23,000	A.
Pittsburgh Crucible Steel Co.	*	a., b.
Munhall.		
Carnegie Steel Co.	2,500	b.
New Brighton.		
Damascus Steel Casting Co.	1,300	E.
New Kensington.		
Union Spring & Manufacturing Co.	15,200	c., E.
Oil City.		
National Transit Pump & Machine Co.	5,000	c.
Oil Well Supply Co.	1,500	e.
Pencoyd.		
American Bridge Co.	3,200	B.
Philadelphia.		
Dodge Steel Co. (Tacony)	2,000	E.
The Midvale Company.	*	A., B., E.
United States Gov., Navy Dept., Philadelphia Navy Yard	1,800	e.
Phoenixville.		
The Phoenix Iron Co.	1,200	B.
Pittsburgh.		
American Steel Foundries.	6,428	A.
The Electro Steel Co., Inc.	*	E.
Jones & Laughlin Steel Corpn.	10,000	a.
The McConway & Torley Co.	30,000	A.
Mackintosh-Hemphill Co. (idle)		
Pittsburgh Rolls Corporation	33,000	A.
Pittsburgh Valve, Foundry & Construction Co.	1,800	E.
Reliance Steel Casting Co.	6,000	A.
Stroh Steel Hardening Process Co.	4,000	A.
Union Steel Casting Co.	37,000	A.

* Steel casting capacity not stated: see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Reading.		
Reading Iron Co.	2,500	c.
Reading Steel Casting Co.	24,000	A.
Sharon.		
American Steel Foundries.	32,142	B.
The National Malleable & Steel Castings Co.	60,000	B., E.
Steelton.		
Bethlehem Steel Co.	18,000	B.
Temple.		
Empire Steel Casting Co.	1,200	E.
Trafford.		
Westinghouse Electric & Mfg. Co.	2,000	e.
Vandergrift.		
American Sheet & Tin Plate Co.	*	a., b.
United Engineering & Foundry Co.	30,000	A.
Verona.		
Verona Steel Castings Co.	25,000	A., B.
Weatherly.		
Weatherly Steel Castings Co.	600	C.
West Homestead (Mesta Station).		
Mesta Machine Co.	25,000	A.
Wheatland.		
Sharon Foundry Co.	10,000	A.
RHODE ISLAND.		
Providence.		
Rhode Island Crucible Steel Co.	600	E.
TENNESSEE.		
Chattanooga.		
Ross-Meehan Foundries	8,000	C., E.
Lenoir City.		
Lenoir Car Works	4,300	a.
TEXAS.		
Beaumont.		
Beaumont Iron Works Co.	2,000	E.
Corsicana.		
American Well & Prospecting Co.	400	e.
Dallas.		
Sutton, Steele & Steele, Inc.	600	E.
El Paso.		
El Paso Foundry & Machine Co.	500	C.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Fort Worth.		
Texas Steel Co.	*	E.
Houston.		
Hughes Tool Co.	7,000	e.
UTAH.		
Salt Lake City.		
American Foundry & Machine Co. .	2,500	E.
VIRGINIA.		
Newport News.		
Newport News Shipbuilding & Dry Dock Co.	1,450	c., E.
Portsmouth.		
United States Gov., Navy Depart- ment, Norfolk Navy Yard . . .	3,000	c., e.
Pulaski.		
Pulaski Foundry & Mfg. Co. . . .	300	c.
Richmond.		
Old Dominion Iron & Steel Works.	*	E.
Roanoke.		
Norfolk & Western Railway Co. .	2,500	e.
WASHINGTON.		
Bremerton.		
United States Gov., Navy Depart- ment, Puget Sound Navy Yard .	500	e.
Everett.		
Tennent Steel Casting Co.	1,500	E.
Hoquiam.		
Lamb Machine Co.	2,500	E.
Renton.		
Pacific Car & Foundry Co.	5,500	E.
Seattle.		
Olympic Steel Works.	3,000	E.
Tennent Steel Casting Co.	3,000	E.
Washington Iron Works	2,000	E.
Sedro-Woolley.		
Skagit Steel & Iron Works	1,200	E.
Spokane.		
Union Iron Works	1,000	C.
Tacoma.		
Atlas Foundry & Machine Co. . .	1,500	E.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Tacoma—(Continued)		
The Puget Sound Iron & Steel Works	4,800	C.
Tennent Steel Casting Co.	3,000	E.
Vancouver.		
Tennent Steel Casting Co.	3,000	E.
WEST VIRGINIA.		
Benwood.		
National Tube Co..	250	c.
New Cumberland.		
The Duraloy Co.	7,800	A., E.
Parkersburg.		
Blackwood Electric Steel Corpn. .	3,000	E.
South Charleston.		
United States Gov., Navy Department, Ordnance Plant	4,000	e.
Wheeling.		
Wheeling Mold & Foundry Co. . .	30,000	A.
WISCONSIN.		
Edgerton.		
Highway Trailer Co. (Edgerton Electric Steel Foundry Co.). . .	1,000	E.
Green Bay.		
Helgerson Foundry Co..	1,200	C.
Kenosha.		
Arneson Foundry Co.	3,000	C.
Milwaukee (see also West Allis).		
Crucible Steel Casting Co.	3,500	E.
The Falk Corporation	25,000	A.
Harnischfeger Corporation	4,500	e.
Kinite Co.	500	D., E.
Maynard Electric Steel Casting Co.	10,000	E.
Milwaukee Steel Foundry Co. . . .	6,000	E.
National Steel Foundries	10,000	A.
Pelton Steel Casting Co.	2,000	E.
Sivyer Steel Casting Co.	5,000	E.
George H. Smith Steel Casting Co. .	7,200	E.
Standard Crucible Steel Casting Co.	2,500	A.
Racine.		
Racine Steel Castings Co.	3,000	E.
St. Francis.		
General Steel Co. (idle).	*	E.
South Milwaukee.		
Bucyrus Co.	12,000	b., e.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
West Allis (Milwaukee).		
Gerlinger Electric Steel Casting Co.	5,000	E.
Wehr Steel Co.	5,500	E.

CANADA.

BRITISH COLUMBIA.

Vancouver.		
Vancouver Engineering Works, Ltd.	800.	C., E.
Wallace Foundry Co., Ltd.	1,000	E.

MANITOBA.

Selkirk.		
Manitoba Steel Foundries, Ltd. . .	6,000	E.
Winnipeg.		
The Vulcan Iron Works, Ltd. . . .	5,000	E.

NOVA SCOTIA.

New Glasgow.		
J. W. Cumming Manufacturing Co., Ltd.	3,600	E.

ONTARIO.

Belleville.		
National Castings, Ltd.	600	E.
Bowmanville.		
Bowmanville Foundry Co., Ltd. . .	1,000	E.
Collingwood.		
Huron Steel Co., Ltd.	not stated	E.
Hamilton.		
Dominion Foundries & Steel, Ltd. .	18,000	B., E.
Orillia.		
Canada Electric Castings Co., Ltd .	1,800	E.
Owen Sound.		
The William Kennedy & Sons, Ltd .	2,000	C.
Welland.		
Canadian Steel Foundries, Ltd. . .	22,500	B.
Welland Steel Castings, Ltd. . . .	4,000	E.
Windsor.		
The Swedish Crucible Steel Co. of Canada, Ltd.	2,875	C., D.

QUEBEC.

Hull.		
Hull Iron & Steel Foundries, Ltd. .	13,500	C., E.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Joliette.		
Joliette Steel, Ltd	2,000	E.
Longue Pointe (Montreal).		
Canadian Steel Foundries, Ltd. . .	28,600	B., E.
Montmagny.		
General Trust of Canada (idle) . .	3,500	C.
Montreal.		
Canadian Electric Steel, Ltd. . . .	2,000	E.
The Thos. Davidson Mfg. Co., Ltd.	15,000	E.
Quebec.		
La Compagnie F. X. Drolet. . . .	300	c.
Rawdon.		
Anglo-Canadian Malleable Steel Mfg. Co., Ltd. (idle)	220	D.
Sherbrooke.		
Canadian Brake Shoe & Foundry Co., Ltd.	3,600	E.
Manganese & Steel Foundry, Ltd. .	180	E.
Sorel.		
Beauchemin et Fils, Ltd.	2,000	c.
Three Rivers.		
Corporation of the City of Three Rivers (idle)		A

LIST OF ROLLING MILLS IN THE UNITED STATES
AND CANADA.

UNITED STATES.

ALABAMA.

Alabama City.
Gulf States Steel Co.
Anniston.
Kilby Car & Foundry Co.
Bessemer.
Tennessee Coal, Iron & R. R. Co.
Birmingham (Woodlawn).
Connors Steel Co., Inc.
East Birmingham.
Southern Steel & Rolling Mill, Inc.
Ensley.
Tennessee Coal, Iron & R. R. Co.
Fairfield.
The American Steel & Wire Co. (Fairfield Works).
Tennessee Coal, Iron & R. R. Co.

CALIFORNIA.

Huntington Park.
Southern California Iron & Steel Co.
Oakland (Emeryville).
Judson Manufacturing Co.
Pittsburg.
Columbia Steel Corporation.
Sacramento.
Southern Pacific Co.
San Francisco.
Simmons Co.
South San Francisco.
Pacific Coast Steel Co.
Pacific Sheet Steel Corporation.
Torrance.
Columbia Steel Corporation, Llewellyn Mills.

COLORADO.

Pueblo.
The Colorado Fuel & Iron Co. (Minnequa Works).

CONNECTICUT.

Bridgeport.

The American Tube & Stamping Co.

Collinsville.

The Collins Co.

New Britain.

The Stanley Works.

Southington.

Aetna Steel & Iron Co., Inc.

DELAWARE.

Claymont.

Worth Steel Co.

New Castle.

Penn Seaboard Steel Corporation.

GEORGIA.

Atlanta.

Atlantic Steel Co.

Macon.

Central of Georgia Railway Co.

Savannah (Port Wentworth).

Savannah Steel Corporation.

ILLINOIS.

Alton.

Laclede Steel Co.

Chicago.

The Highland Iron & Steel Co. (West Pullman Works).

International Harvester Co. (Deering Works).

Interstate Iron & Steel Co. (Grand Crossing Works).

Sellers Manufacturing Co. (Mayfair).

Chicago Heights.

Calumet Steel Co.

Columbia Tool Steel Co.

Inland Steel Co.

Railway Steel-Spring Co. (Inter-Ocean Plant).

Corwith.

Atchison, Topeka & Santa Fe Ry.

Granite City.

National Enameling & Stamping Co. (Granite City Steel Works).

Joliet.

Illinois Steel Co. (Joliet Works).

McKenna Process Co.

Phoenix Horse Shoe Co. (Joliet Works).

The Joseph Schonthal Co.

Madison.

Laclede Steel Co.

Moline.

Republic Iron & Steel Co. (Sylvan Works).

Ottawa.

Central Steel Co. (idle).

Peoria (South Bartonville).

Keystone Steel & Wire Co.

Riverdale.

Acme Steel Co.

Mid-Western Steel Corporation.

South Chicago.

Illinois Steel Co. (South Works).

International Harvester Co. (Wisconsin Steel Works).

Interstate Iron & Steel Co. (118th St. Steel Works).

Waukegan.

The American Steel & Wire Co. (Waukegan Works).

INDIANA.

Anderson.

The American Steel & Wire Co. (Anderson Works).

Ames Shovel & Tool Co.

East Chicago.

Interstate Iron & Steel Co.

Republic Rolling Mill Corporation.

Elwood.

American Sheet & Tin Plate Co. (American Works).

Ames Shovel & Tool Co.

Fort Wayne.

The Fort Wayne Rolling Mill Corporation.

Gary.

American Sheet & Tin Plate Co.:

Gary Sheet Mill.

Gary Tin Mill.

Gary Tube Co.

Illinois Steel Co. (Gary Works).

Indiana Harbor.

Inland Steel Co.

The Youngstown Sheet & Tube Co.

Indianapolis.

Chapman Price Steel Co.

Kokomo.

Kokomo Steel & Wire Co.

Lawrenceburg.

A. D. Cook, Inc.

New Albany.

Ohio Falls Iron Co.

New Castle.

The Indiana Rolling Mill Co.

New Palestine.

Indianapolis Steel Products Co. (building).

Noblesville.

New Process Iron & Steel Co. (building).

Terre Haute.

The Highland Iron & Steel Co. (Terre Haute Works).

Mid-States Steel & Iron Corp'n.

Vincennes.

Central Iron & Metal Co.

IOWA.

Fort Dodge.

Fort Dodge Culvert & Steel Co.

KANSAS.

Kansas City.

Kansas City Steel & Wire Co.

Pittsburg.

The Kansas City Southern Railway Co. (idle).

KENTUCKY.

Ashland.

The American Rolling Mill Co.:

Ashland Division, West Works.

Ashland Division, 23rd St. Works.

Ashland Steel Co.

Norton Iron Works.

Louisville.

Ewald Iron Co.

Louisville Steel & Iron Co. (idle).

Newport.

The Andrews Steel Co.

The Newport Rolling Mill Co.

MAINE.

South Portland.

Bancroft & Martin Rolling Mills Co.

MARYLAND.

Baltimore.

The Eastern Rolling Mill Co.

The Hess Steel Corporation (idle).

Cumberland.

The Baltimore & Ohio R. R. Co.

N. & G. Taylor Co., Inc.

United States Rail Co.

Sparrows Point.

Bethlehem Steel Co. (Maryland Plant).

MASSACHUSETTS.

Bridgewater.

The Stanley Works.

South Wareham.

Standard Horse Shoe Co.

West Wareham.

Tremont Nail Co.

Worcester.

The American Steel & Wire Co. (South Works).

Coes Wrench Co.

MICHIGAN.

Detroit.

The Roehm Steel Rolling Mills.

Ecorse.

Michigan Steel Corporation.

Kalamazoo.

Harrow Spring Co.

Springwells.

Detroit Seamless Steel Tubes Co.

Ford Motor Co.

MINNESOTA.

Duluth (Morgan Park).

Minnesota Steel Co.

St. Cloud.

Great Northern Railway Co.

MISSOURI.

Kansas City.

Black Steel & Wire Co.

Sheffield Steel Corporation.

St. Louis.

American Car & Foundry Co.

Missouri Rolling Mill Corporation.

National Enameling & Stamping Co. (Granite Iron Rolling Mills).

St. Louis Screw Co.

Scullin Steel Co.

NEW JERSEY.

Carteret.

Chrome Steel Works.

Dover.

Ulster Iron Works.

Elizabethport.

Singer Manufacturing Co.

Harrison.

Crucible Steel Co. of America (Atha Works).

Driver-Harris Co.

Jersey City.

W. Ames & Co.

Crucible Steel Co. of America (Spaulding-Jennings Works).

Newark.

Heller Brothers Co.

Walsh & McGee Steel Co.

Perth Amboy.

Pardee Steel Corporation (idle).

Phillipsburg.

American Horseshoe Co.

Riverside.

The National Lock Washer Co.

Rockaway.

International High Speed Steel Co.

The Rockaway Rolling Mill.

Roebbling.

John A. Roebbling's Sons Co. (Kinkora Works).

NEW YORK.

Auburn.

Crucible Steel Co. of America (Cayuga Works).

Charles W. Tuttle (Auburn Iron Works).

Blasdell.

Seneca Iron & Steel Co.

Buffalo.

Donner Steel Co., Inc.

Wickwire Spencer Steel Co.

Cohoes.

Cohoes Rolling Mill Co.

Cortland.

Wickwire Brothers.

Dunkirk.

Atlas Alloy Steel Corporation.

Elmira.

Valley Rolling Mills, Inc.

Lackawanna.

Bethlehem Steel Co. (Lackawanna Plant).

Lockport.

Harrison Real Estate Corporation (idle).

Simonds Saw & Steel Co.

North Tonawanda.

Buffalo Bolt Co.

Poughkeepsie.

Phoenix Horse Shoe Co. (Poughkeepsie Works).

Rome.

Rome Iron Mills, Inc.

Syracuse.

Crucible Steel Co. of America (Sanderson Works).
 Eckels-Nye Steel Co.
 Halcomb Steel Co.
 Onondaga Steel Co., Inc.

Tonawanda.

Buffalo Steel Co.

Troy.

The Burden Iron Co.
 The Rail Joint Co.

Watervliet.

Ludlum Steel Co.

OHIO.

Alliance.

Transue & Williams Steel Forging Corporation.

Ashtabula.

The Ashtabula Steel Sheet Co.

Bellaire.

Carnegie Steel Co. (Bellaire Works).

Bridgeport.

American Sheet & Tin Plate Co. (Aetna-Standard Works).

Cambridge.

American Sheet & Tin Plate Co.:
 Cambridge Works.
 Guernsey Works.
 The Cambridge Steel Products Co.

Canton.

The Falcon Tin Plate Co.
 The Superior Sheet Steel Co.
 The Timken Roller Bearing Co.
 United Alloy Steel Corporation:
 Alloy Division.
 Berger Division.
 South Steel Division.

Cleveland.

American Sheet & Tin Plate Co. (Crescent Works).
 The American Steel & Wire Co.:
 American Works.
 Consolidated Works.
 Cuyahoga Works.
 H. P. Works.
 Newburgh Steel Works.
 The Bourne Fuller Co.:
 Upson Works.
 Union Mills.
 The Cleveland Hardware Co.

Cleveland—(Continued)

The Cleveland Steel Co.
The Empire Steel Co.
The Lake Erie Bolt & Nut Co.
The McKinney Steel Co.
The Otis Steel Co.:
 Lakeside Works.
 Riverside Works.
Western Reserve Steel Co.

Cleves.

Phoenix Horse Shoe Co. (Cleves Works).

Cuyahoga Falls.

Falls Hollow Staybolt Co.

Dover.

American Sheet & Tin Plate Co. (Dover Works).
The Reeves Manufacturing Co.

Elyria.

The Elyria Iron & Steel Co.

Girard.

A. M. Byers Co.

Lorain.

The National Tube Co. (Lorain Works).

Lowellville.

Sharon Steel Hoop Co.

McDonald.

Carnegie Steel Co. (McDonald Mills).

Mansfield.

The Mansfield Sheet & Tin Plate Co.

Marietta.

Pittsburgh Tin Plate & Steel Corporation.
W. F. Robertson Steel & Iron Co.

Marion.

The Pollak Steel Co.

Martins Ferry.

American Sheet & Tin Plate Co. (Laughlin Works).
Wheeling Steel Corporation.

Massillon.

The Central Steel Co.:
 Central Division.
 National Division.
 Sheet Mill Division.
The Union Drawn Steel Co.

Middletown.

The American Rolling Mill Co.:
 Central Works.
 East Side Works.

Mingo Junction.

Carnegie Steel Co. (Mingo Steel Works).

Newark.

The Buckeye Rolling Mill Co.

New Philadelphia.

American Sheet & Tin Plate Co. (New Philadelphia Works).

Newton Falls.

The Newton Steel Co.

Niles.

The Falcon Steel Co.

The Mahoning Valley Steel Co.

Republic Iron & Steel Co. (Niles Works).

The Thomas Sheet Steel Co.

The Waddell Steel Co.

Norwalk.

Crucible Steel Co. of America.

Portsmouth.

Wheeling Steel Corporation.

Shelby.

The Ohio Seamless Tube Co.

Steubenville.

Weirton Steel Co.

Wheeling Steel Corporation.

Struthers.

The Youngstown Sheet & Tube Co.

Toronto.

Follansbee Brothers Co.

Warren.

The American Puddled Iron Co.

The Trumbull Steel Co.:

Home Plant.

Liberty Plant.

The Warren Iron & Steel Co. (idle).

The Youngstown Sheet & Tube Co. (Western Reserve Works).

Wellsville.

American Sheet & Tin Plate Co. (Wellsville Works).

Wooster.

The Weldless Tube Co.

Yorkville.

Wheeling Steel Corporation.

Youngstown.

Carnegie Steel Co.:

Ohio Steel Works.

Upper Union Mills.

Lower Union Mills.

Youngstown—(Continued)

Republic Iron & Steel Co.:

Open Hearth Steel Works.

Bessemer Steel Works.

Brown-Bonnell Works.

Sharon Steel Hoop Co.

The Youngstown Sheet & Tube Co.:

East Youngstown Works.

Brier Hill Works.

Zanesville.

The American Rolling Mill Co.

PANAMA, CANAL ZONE.

Balboa.

The Mechanical Division of the Panama Canal.

PENNSYLVANIA.

Aliquippa.

Vulcan Crucible Steel Co.

Allenport.

Pittsburgh Steel Products Co.

Allentown.

The American Steel & Wire Co. (Allentown Works).

Altoona.

The Altoona Iron Co.

Ambridge.

Standard Seamless Tube Co.

Apollo.

Apollo Steel Co.

Auburn.

Delaware Seamless Tube Co.

Beaver Falls.

The Babcock & Wilcox Tube Co.

Berwick.

American Car & Foundry Co.

Bethlehem.

Bethlehem Steel Co. (Bethlehem Plant).

Birdsboro.

Reading Iron Co. (Birdsboro Dept.).

Blandon.

Blandon Rolling Mill, Inc.

Brackenridge.

Allegheny Steel Co.

West Penn Steel Co.

Braddock.

The American Steel & Wire Co. (Braddock Works).

Braeburn.

Braeburn Alloy Steel Corporation.

Bridgeville.

Universal Steel Co.

Burnham.

Logan Iron & Steel Co.

Standard Steel Works Co.

Butler.

Forged Steel Wheel Co.

Canonsburg.

Canonsburg Steel & Iron Works.

The Standard Tin Plate Co.

Carnegie.

Superior Steel Corporation.

Catasauqua.

Bryden-Neverslip Co.

Clairton.

Carnegie Steel Co. (Clairton Steel Works).

Coatesville.

Bethlehem Steel Co. (Coatesville Plant):

Brandywine Division.

Viaduct Division.

Lukens Steel Co.

Colona.

Colonial Steel Co.

Columbia.

Edwards, E. T.:

East End Mill.

Union Street Mill.

Janson Steel & Iron Co.

Reading Iron Co. (Columbia Mill).

Conshohocken.

Alan Wood Iron & Steel Co.

Corry.

McInnes Steel Co., Ltd.

Creighton.

Penn Iron & Steel Co.

Crum Lynne.

Eddystone Steel Co.

Curtin.

Curtin Forge Co. (idle).

Danville.

The American-Swedo Iron Co.

Danville Iron & Steel Corpn. (building).

Danville Structural Tubing Co.

Pennsylvania Brake Beam Co. (idle).

Reading Iron Co.:

Danville Puddle Dept.

Montour Rolling Mills Dept.

Donora.

The American Steel & Wire Co.:

Donora Steel Works.

Donora Wire Works.

Duncannon.

Lebanon Iron Co. (Duncannon Works).

Duquesne.

Carnegie Steel Co. (Duquesne Steel Works).

Eddystone.

The Baldwin Locomotive Works.

Federal Alloy Steel Corporation.

Ellwood City.

National Tube Co. (Ellwood Works).

Erie.

United States Horse Shoe Co.

Farrell.

American Sheet & Tin Plate Co.:

Farrell Works.

Mercer Works.

The American Steel & Wire Co. (Farrell Works).

Carnegie Steel Co. (Farrell Steel Works).

Fort Washington.

The Hoopes & Townsend Corporation.

Franklin.

Franklin Steel Works.

Glassport.

Pittsburgh Steel Co.

Harrisburg.

Central Iron and Steel Co.:

Central Iron Works.

Paxton Rolling Mills.

Harrisburg Pipe & Pipe Bending Co. (Main Works and Plant No. 2).

Lalancé & Grosjean Manufacturing Co.

Hays Station (Allegheny County).

Anchor Iron & Steel Co. (idle).

Ivy Rock.

Alan Wood Iron & Steel Co.

Johnstown.

Bethlehem Steel Co. (Cambria Plant):

Lower Division.

Wheel Plant.

Franklin Division.

Wire Mills.

Gautier Division.

Kittanning.

Kittanning Iron & Steel Manufacturing Co.

Latrobe.

Latrobe Electric Steel Co.
 Railway Steel-Spring Co.
 Vanadium Alloys Steel Co.

Lebanon.

Bethlehem Steel Co. (Bolt and Nut Division).
 Lebanon Iron Co. (Lebanon Works).

Leechburg.

American Sheet & Tin Plate Co. (Leechburg Works).

McKeesport.

American Sheet & Tin Plate Co. (Wood Works).
 Firth-Stirling Steel Co.
 National Tube Co. (National Works).

McKees Rocks.

Carnegie Steel Co. (Schoen Steel Wheel Works).
 Lockhart Iron & Steel Co.

Midland.

Pittsburgh Crucible Steel Co.

Milton.

East End Puddle Mill (idle).
 The Milton Manufacturing Co.

Monessen.

American Sheet & Tin Plate Co. (National Works).
 Page Steel & Wire Co.
 Pittsburgh Steel Co.
 Pittsburgh Steel Products Co.

Munhall.

Carnegie Steel Co. (Homestead Steel Works).

Neville Island.

Witherow Steel Co.

New Castle.

American Sheet & Tin Plate Co.:
 New Castle Works.
 Shenango Works.
 Carnegie Steel Co. (New Castle Steel Works).

New Eagle.

Le Moyne Steel Co.

New Kensington.

American Sheet & Tin Plate Co.:
 Pennsylvania Works.
 Pittsburgh Works.

North Braddock.

Carnegie Steel Co. (Edgar Thomson Steel Works).

Northumberland.

Van Alen & Co. (Northumberland Iron & Nail Works).

Oakmont.

Edgewater Steel Co.

Parkesburg.

Parkesburg Iron Co.

Pencoyd.

American Bridge Co.

Philadelphia.

Davis Brothers, Inc.

Henry Disston & Sons Iron & Steel Works (Tacony).

Hughes & Patterson.

The John Illingworth Steel Co. (Frankford).

The Midvale Co. (Nicetown).

Nicetown Plate Washer Co., Inc. (Nicetown).

Penn-Seaboard Steel Corp., Tacony Steel Co. (Tacony).

Phoenixville.

The Phoenix Iron Co.

Pine Forge.

Pine Iron Works Co.

Pittsburgh.

A. M. Byers Co.

Carnegie Steel Co.:

McCutcheon Mills.

Upper Union Mills.

Crucible Steel Co. of America:

Black Diamond Works.

Crescent Works.

La Belle Works (North Side).

Dilworth, Porter & Co., Inc.

Hubbard & Co. (Russell Shovel Co.).

Jones & Laughlin Steel Corporation (Pittsburgh Works).

National Tube Co.:

Pittsburgh Works (Continental Dept.).

Oliver Iron & Steel Corporation.

Pittsburgh Forge & Iron Co. (North Side).

Port Vue.

McKeesport Tin Plate Co.

Pottstown.

Glasgow Iron Co.:

Glasgow Iron & Steel Works.

Pottstown Iron Works.

The Nagle Steel Co. (Pottstown Works).

Reading Iron Co. (Pottstown Dept.).

Pottsville.

The Eastern Steel Co.

Rankin.

The American Steel & Wire Co. (Rankin Works).

Copperweld Steel Co.

Reading.

Bethlehem Steel Co. (Bolt and Nut Division).

The Carpenter Steel Co.

Reading Iron Co.:

Charcoal Iron Plant.

Ninth Street Mills Dept.

Oley Street Mills Dept.

Roe Puddling Plant.

Sheet Mill Dept.

Scottdale.

American Sheet & Tin Plate Co.:

Old Meadow Works.

Scottdale Works.

Scranton.

The Delaware, Lackawanna & Western R. R. Co.

Scranton Bolt & Nut Co.

Seyfert Station.

The Nagle Steel Co. (Seyfert Works).

Sharon.

Sharon Steel Hoop Co.

Wilkes Rolling Mill Co.

Slatington.

Robert Grant (Slatington Rolling Mills.).

Steelton.

Bethlehem Steel Co.

Titusville.

Cyclops Steel Co., Inc.

Vandergrift.

American Sheet & Tin Plate Co. (Vandergrift Works).

Washington.

Charcoal Iron Products Co. (idle).

Jessop Steel Co.

The Tyler Tube & Pipe Co.

Washington Tin Plate Co.

Waynesburg.

American Steel Co.

West Homestead.

Carnegie Steel Co. (Howard Axle Works).

West Leechburg.

West Leechburg Steel Co.

Williamsport (Newberry).

Sweet's Steel Co.

Woodlawn.

Jones & Laughlin Steel Corporation (Aliquippa Works).

Wyoming.

The Wyoming Shovel Works.

RHODE ISLAND.

Phillipsdale.

American Electrical Works.

Washburn Wire Co.

TENNESSEE.

Knoxville (Lonsdale).

Knoxville Iron Co.

Memphis.

Memphis Iron & Steel Co.

TEXAS.

Fort Worth.

Texas Steel Co.

UTAH.

Midvale.

Utah Steel Corporation.

VIRGINIA.

Richmond.

Old Dominion Iron & Steel Works, Inc.

The Tredegar Co.

WASHINGTON.

Lowell.

United Steel Co.

Youngstown.

Pacific Coast Steel Co. (Seattle Plant).

WEST VIRGINIA.

Beech Bottom.

Wheeling Steel Corporation.

Benwood.

National Tube Co. (Riverside Works).

Wheeling Steel Corporation (Benwood Works).

Charleston.

Becker Steel Co. of America, Inc.

Chester.

American Sheet & Tin Plate Co. (Chester Works).

Clarksburg.

Weirton Steel Co.

Follansbee.

Follansbee Brothers Co.

Huntington.

The West Virginia Rail Co.

Morgantown.

American Sheet & Tin Plate Co. (Sabraton Works)

Paden City.

Monongahela Iron & Steel Co.

Parkersburg.

The Parkersburg Iron & Steel Co.

Weirton.

Weirton Steel Co.

Wheeling.

American Sheet & Tin Plate Co. (La Belle Works).

Wheeling Steel Corporation:

Belmont Works.

La Belle Works.

Whitaker Works.

WISCONSIN.

Appleton.

Seamless Tube Co. of Wisconsin (building).

Kenosha.

Simmons Co.

Milwaukee.

Globe Steel Tubes Co.

Illinois Steel Co. (Milwaukee Works).

Inland Steel Co.

Wrought Washer Mfg. Co.

CANADA.

ALBERTA.

Medicine Hat.

Canadian Western Steel Corporation, Ltd. (idle).

Redcliff.

Redcliff Rolling Mills & Bolt Co., Ltd. (idle).

BRITISH COLUMBIA.

Port Moody.

Port Moody Steel Works, Ltd.

MANITOBA.

Selkirk.

The Manitoba Rolling Mill Co., Ltd.

NOVA SCOTIA.

Amherst.

Canadian Car & Foundry Co., Ltd.

Dartmouth.

The Starr Manufacturing Co., Ltd.

New Glasgow.

British Empire Steel Corporation, Ltd.

Sydney.

British Empire Steel Corporation, Ltd.

ONTARIO.

Ashbridges Bay (Toronto).

Baldwins Canadian Steel Corporation, Ltd.

Belleville.

The Steel Co. of Canada, Ltd.

Gananoque.

The D. F. Jones Manufacturing Co., Ltd.

Hamilton.

Burlington Steel Co., Ltd.

Canadian Horse Shoe Co., Ltd.

Dominion Foundries & Steel, Ltd.

The Steel Co. of Canada, Ltd.:

Hamilton Works.

Ontario Works.

London.

London Rolling Mill Co., Ltd.

Sarnia.

Dominion Alloy Steel Corporation (building).

Sault Ste. Marie.

Algoma Steel Corporation.

Welland.

Canadian Atlas Steels, Ltd.

Canadian Steel Foundries, Ltd.

QUEBEC.

Montmagny.

General Trust of Canada.

Montreal.

Canadian National Railways (Point St. Charles).

Canadian Tube & Steel Products, Ltd. (Lachine Canal).

Peck Rolling Mills, Ltd. (Lachine Canal).

The Steel Co. of Canada, Ltd.:

Notre Dame Works.

St. Patrick Works.

MANUFACTURERS OF ROLLED STEEL BILLETS

(F=REPORT FORGING BILLETS ALSO).

- Alan Wood Iron & Steel Co., Philadelphia, Pa. (F.)
 Algoma Steel Corporation, Sault Ste. Marie, Ont., Canada. (F.)
 American Rolling Mill Co. (The), Middletown, Ohio. (F.)
 American Steel & Wire Co. (The), Cleveland, Ohio. (F.)
 American Tube & Stamping Co., Bridgeport, Conn.
 Andrews Steel Co. (The), Newport, Ky. (F.)
 Ashland Steel Co., Ashland, Ky.
 Atlantic Steel Co., Atlanta, Ga.
 Bethlehem Steel Co., Bethlehem, Pa. (F.)
 Black Steel & Wire Co., Kansas City, Mo.
 Bourne-Fuller Co. (The), Cleveland, Ohio.
 Braeburn Alloy Steel Corpn., Braeburn, Pa. (own use).
 British Empire Steel Corpn., Ltd., Sydney, N. S., Canada. (F.)
 Canadian Steel Foundries, Ltd., Montreal, P. Q., Canada. (F.)
 Carnegie Steel Co., Pittsburgh, Pa. (F.)
 Central Steel Co. (The), Massillon, Ohio. (F.)
 Colonial Steel Co., Pittsburgh, Pa. (F.)
 Colorado Fuel & Iron Co. (The), Denver, Col. (F.)
 Columbia Steel Corpn., San Francisco, Calif.
 Crucible Steel Co. of America, Pittsburgh, Pa. (F.)
 Dominion Foundries and Steel, Ltd., Hamilton, Ont., Canada. (F.)
 Donner Steel Co., Inc., Buffalo, N. Y. (F.)
 Eastern Steel Co. (The), Pottsville, Pa. (own use).
 Federal Alloy Steel Corporation, Eddystone, Pa.
 Ford Motor Co., Detroit, Mich. (building).
 Forged Steel Wheel Co., Pittsburgh, Pa. (F.; own use).
 Gulf States Steel Co., Birmingham, Ala.
 Halcomb Steel Co., Syracuse, N. Y. (F.)
 Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa. (F.)
 Harrow Spring Co., Kalamazoo, Mich. (F.)
 Illinois Steel Co., Chicago, Ill. (F.)
 Inland Steel Co., Chicago, Ill. (F.)
 International Harvester Co., Chicago, Ill.
 Interstate Iron & Steel Co., Chicago, Ill.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (F.)
 Judson Manufacturing Co. (The), San Francisco, Calif.
 Keystone Steel & Wire Co., South Bartonville, Peoria, Ill.
 Kokomo Steel & Wire Co., Kokomo, Ind. (F.)
 Laclede Steel Co., St. Louis, Mo. (F.)
 Lukens Steel Co. (The), Coatesville, Pa. (F.; forging blanks).
 McKinney Steel Co. (The), Cleveland, Ohio.

Midvale Company (The), Philadelphia, Pa. (F.)
Minnesota Steel Co., Duluth, Minn. (F.)
National Enameling & Stamping Co., Milwaukee, Wis.
National Tube Co., Pittsburgh, Pa. (F.)
Old Dominion Iron & Steel Works, Inc., Richmond, Va.
Otis Steel Co. (The), Cleveland, Ohio.
Pacific Coast Steel Co., San Francisco, Calif.
Penn Seaboard Steel Corp., New Castle, Del.
Phoenix Iron Co. (The), Philadelphia, Pa.
Pittsburgh Crucible Steel Co., New York, N. Y.
Pittsburgh Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, Ohio.
Roebbling's (John A.) Sons Co., Trenton, N. J. (own use).
Sharon Steel Hoop Co., Sharon, Pa.
Sheffield Steel Corporation, Kansas City, Mo.
Southern California Iron & Steel Co., Huntington Park, Calif.
Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada. (F.)
Taylor (N. & G.) Co., Inc., Philadelphia, Pa. (F.)
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (F.)
Timken Roller Bearing Co. (The), Canton, Ohio. (F.)
Tremont Nail Co., West Wareham, Mass.
United Alloy Steel Corporation, Canton, Ohio. (F.)
Utah Steel Corporation, Midvale, Utah.
Washburn Wire Co., Phillipsdale, R. I.
Weirton Steel Co., Weirton, W. Va.
Wheeling Steel Corporation, Wheeling, W. Va.
Wickwire Brothers, Cortland, N. Y. (own use).
Wickwire Spencer Steel Co., New York, N. Y.
Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF SHEET BARS AND TINPLATE BARS.

Allegheny Steel Co., Brackenridge, Pa.
American Rolling Mill Co. (The), Middletown, Ohio.
American Sheet & Tin Plate Co., Pittsburgh, Pa. (own use).
Andrews Steel Co. (The), Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Central Steel Co. (The), Massillon, Ohio.
Columbia Steel Corp., San Francisco, Calif.
Follansbee Brothers Co., Pittsburgh, Pa.
Illinois Steel Co., Chicago, Ill.
Inland Steel Co., Chicago, Ill.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
McKinney Steel Co. (The), Cleveland, Ohio.
Mansfield Sheet & Tin Plate Co. (The), Mansfield, Ohio.
Minnesota Steel Co., Duluth, Minn.

National Enameling & Stamping Co., Milwaukee, Wis. (own use).
 Otis Steel Co. (The), Cleveland, Ohio.
 Pacific Coast Steel Co., San Francisco, Calif.
 Parkersburg Iron & Steel Co. (The), Parkersburg, W. Va. (own use).
 Reeves Manufacturing Co., Dover, Ohio (own use).
 Republic Iron & Steel Co., Youngstown, Ohio.
 Sharon Steel Hoop Co., Sharon, Pa.
 Sheffield Steel Corporation, Kansas City, Mo.
 Steel Company of Canada, Ltd. (The), Hamilton, Ont., Canada.
 Taylor (N. & G.) Co., Inc., Philadelphia, Pa.
 Tennessee Coal, Iron & R.R. Co., Birmingham, Ala.
 Trumbull Steel Co. (The), Warren, Ohio.
 United Alloy Steel Corporation, Canton, Ohio.
 Weirton Steel Co., Weirton, W. Va.
 West Penn Steel Co., Brackenridge, Pa.
 Wheeling Steel Corporation, Wheeling, W. Va.
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF RAILS.

(H=HEAVY RAILS. L=LIGHT RAILS. G=GIRDER RAILS. R=RE-ROLLED RAILS.)

Algoma Steel Corporation, Sault Ste. Marie, Ont., Canada. (H., L.)
 Bethlehem Steel Co., Bethlehem, Pa. (H., L., G.)
 British Empire Steel Corp., Ltd., Sydney, N. S., Canada. (H., L.)
 Buckeye Rolling Mill Co. (The), Steubenville, Ohio. (R.)
 Carnegie Steel Co., Pittsburgh, Pa. (H., L.)
 Colorado Fuel & Iron Co. (The), Denver, Colo., (H., L.)
 Illinois Steel Co., Chicago, Ill. (H., L.)
 Inland Steel Co., Chicago, Ill. (H.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (L.)
 McKenna Process Co., Joliet, Ill. (R.)
 National Tube Co. (The), Pittsburgh, Pa. (H., G.)
 Pacific Coast Steel Co., San Francisco, Calif. (R.)
 Scranton Bolt & Nut Co., Scranton, Pa. (R.)
 Southern Steel & Rolling Mill, Inc., Birmingham, Ala. (L.)
 Sweet's Steel Co., Williamsport, Pa. (R.)
 Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (H., L.)
 United States Rail Co., Cumberland, Md. (R.)
 Utah Steel Corporation, Midvale, Utah. (L.)
 West Virginia Rail Co. (The), Huntington, W. Va. (R.)

MANUFACTURERS OF STRUCTURAL SHAPES.

(H=HEAVY STRUCTURAL SHAPES. L=LIGHT STRUCTURAL SHAPES.)

Algoma Steel Corporation, Sault Ste. Marie, Ont., Canada (H., L.)
 American Bridge Co., Pittsburgh, Pa. (H., L.)

American Car & Foundry Co., New York, N. Y. (L.)
Atlantic Steel Co., Atlanta, Ga. (L.)
Bethlehem Steel Co., Bethlehem, Pa. (H., L.)
Bourne-Fuller Co. (The), Cleveland, Ohio. (H., L.)
British Empire Steel Corp., Ltd., Sydney, N. S., Canada. (H., L.)
Buffalo Steel Co., Tonawanda, N. Y. (L.)
Burlington Steel Co., Ltd., Hamilton, Ont., Canada. (L.)
Calumet Steel Co., Chicago, Ill. (L.)
Cambridge Steel Products Co. (The), Cambridge, Ohio. (L.)
Canadian Steel Foundries, Ltd., Montreal, P. Q., Canada. (H., L.)
Carnegie Steel Co., Pittsburgh, Pa. (H., L.)
Chrome Steel Works, Chrome, N. J. (H., L.)
Colorado Fuel & Iron Co., (The), Denver, Colo. (H., L.)
Columbia Steel Corp., San Francisco, Calif. (H., L.)
Danville Structural Tubing Co., Danville, Pa. (L.)
Donner Steel Co., Inc., Buffalo, N. Y. (L.)
Eastern Steel Co. (The), Pottsville, Pa. (H., L.)
Eckels-Nye Steel Co., Syracuse, N. Y. (L.)
Elyria Iron & Steel Co. (The), Cleveland, Ohio. (L.)
Forged Steel Wheel Co., Pittsburgh, Pa. (H. L.; own use.)
Franklin Steel Works, Franklin, Pa. (L.)
Highland Iron & Steel Co. (The), Terre Haute, Ind. (L.)
Illinois Steel Co., Chicago, Ill. (H., L.)
Inland Steel Co., Chicago, Ill. (H., L.)
International Harvester Co., Chicago, Ill. (H., L.)
Interstate Iron & Steel Co., Chicago, Ill. (H., L.)
Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (H., L.)
Judson Manufacturing Co., San Francisco, Calif. (H., L.)
Knoxville Iron Co., Knoxville, Tenn. (L.)
Laclede Steel Co., St. Louis, Mo. (L.)
Lockhart Iron & Steel Co., Pittsburgh, Pa. (L.)
Logan Iron & Steel Co., Philadelphia, Pa. (L.)
Minnesota Steel Co., Duluth, Minn. (H., L.)
Missouri Rolling Mill Corp., St. Louis, Mo. (L.)
Ohio Falls Iron Co., New Albany, Ind. (L.)
Pacific Coast Steel Co., San Francisco, Calif. (H., L.)
Phoenix Iron Co. (The), Philadelphia, Pa. (H., L.)
Pittsburgh Forge & Iron Co., Pittsburgh, Pa. (L.)
Pollak Steel Co. (The), Cincinnati, Ohio. (H., L.)
Reading Iron Co., Reading, Pa. (L.)
Republic Iron & Steel Co., Youngstown, Ohio. (L.)
The Rockaway Rolling Mill, Rockaway, N. J. (L.)
Scullin Steel Co., St. Louis, Mo. (H., L.)
Simmons Co., New York, N. Y. (L.; own use.)
Southern Steel & Rolling Mill, Inc., Birmingham, Ala. (L.)
Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada. (L.)
Sweet's Steel Co., Williamsport, Pa. (L.)

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (H., L.)
 United Steel Co., Everett, Wash. (L.)
 Utah Steel Corporation, Midvale, Utah. (L.)
 Walsh & McGee Steel Co., New York, N. Y. (L.)
 West Virginia Rail Co. (The), Huntington, West Va. (L.)
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (L.)

MANUFACTURERS OF WIRE RODS.

American Steel & Wire Co. (The), Cleveland, Ohio.
 Ashland Steel Co., Ashland, Ky.
 Atlantic Steel Co., Atlanta, Ga.
 Bethlehem Steel Co., Bethlehem, Pa.
 Black Steel & Wire Co., Kansas City, Mo.
 British Empire Steel Corp., Sydney, N. S., Canada.
 Buffalo Bolt Co., North Tonawanda, N. Y.
 Carpenter Steel Co. (The), Reading, Pa.
 Colonial Steel Co., Pittsburgh, Pa. (coppered).
 Colorado Fuel & Iron Co. (The), Denver, Colo.
 Columbia Steel Corp., San Francisco, Calif.
 Copperweld Steel Co., Rankin, Pa. (coppered).
 Crucible Steel Co. of America, Pittsburgh, Pa. (for drill rods).
 Disston (Henry) & Sons Iron & Steel Works, Philadelphia, Pa.
 Driver Harris Co., Harrison, N. J.
 Gulf States Steel Co., Birmingham, Ala.
 Halcomb Steel Co., Syracuse, N. Y. (for drill rods).
 Illinois Steel Co., Chicago, Ill.
 Interstate Iron & Steel Co., Chicago, Ill.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
 Keystone Steel & Wire Co., South Bartonville, Peoria, Ill.
 Kokomo Steel & Wire Co., Kokomo, Ind.
 Ludlum Steel Co., Watervliet, N. Y.
 Minnesota Steel Co., Duluth, Minn.
 Page Steel & Wire Co., Bridgeport, Conn.
 Pittsburgh Steel Co., Pittsburgh, Pa.
 Roebling's (John A.) Sons Co., Trenton, N. J.
 Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
 Timken Roller Bearing Co. (The), Canton, Ohio.
 Washburn Wire Co., Phillipsdale, R. I.
 Wheeling Steel Corporation, Wheeling, W. Va.
 Wickwire Bros., Cortland, N. Y.
 Wickwire Spencer Steel Co., New York, N. Y.
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF UNIVERSAL AND SHEARED PLATES.

(U=UNIVERSAL PLATES, INCLUDING FLATS OVER 6 INCHES WIDE.
S=SHEARED PLATES).

- Alan Wood Iron & Steel Co., Philadelphia, Pa. (S.)
 Allegheny Steel Co., Brackenridge, Pa. (S.)
 American Bridge Co., Pittsburgh, Pa. (wide flats).
 American Sheet & Tin Plate Co., Pittsburgh, Pa. (S.)
 Bethlehem Steel Co., Bethlehem, Pa. (U., S.)
 British Empire Steel Corp., Sydney, N. S., Canada. (U., S.)
 Canadian Car & Fdy. Co., Ltd., Montreal, P. Q., Canada (wide flats).
 Carnegie Steel Co., Pittsburgh, Pa. (U., S.)
 Central Iron & Steel Co., Harrisburg, Pa. (U., S.)
 Chrome Steel Works, Chrome, N. J. (S.)
 Cleveland Steel Co. (The), Cleveland, Ohio. (S.)
 Colonial Steel Co., Pittsburgh, Pa. (S.)
 Colorado Fuel & Iron Co. (The), Denver, Colo. (wide flats).
 Crucible Steel Co. of America, Pittsburgh, Pa. (S.)
 Disston (Henry) & Sons Iron & Steel Works, Tacony, Phila., Pa. (S.)
 Dominion Foundries & Steel, Ltd., Hamilton, Ont., Canada. (U., S.)
 Forged Steel Wheel Co., Pittsburgh, Pa. (own use; U., S.)
 Glasgow Iron Co., Pottstown, Pa. (U., S.)
 Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa. (U.)
 Illinois Steel Co., Chicago, Ill. (U., S.)
 Indiana Rolling Mill Co., New Castle, Ind. (S.)
 Inland Steel Co., Chicago, Ill. (U., S.)
 Interstate Iron & Steel Co., Chicago, Ill. (wide flats).
 Jessop Steel Co., Washington, Pa. (S.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (U., S.)
 Lukens Steel Co. (The), Coatesville, Pa. (U., S.)
 Nagle Steel Co. (The), Pottstown, Pa. (S.)
 National Enameling & Stamping Co., Milwaukee, Wis. (U., S.)
 Ohio Falls Iron Co., New Albany, Ind. (wide flats).
 Otis Steel Co. (The), Cleveland, Ohio. (S.)
 Pacific Coast Steel Co., San Francisco, Calif. (U.)
 Pine Iron Works Co., Pine Forge, Pa. (S.)
 Republic Iron & Steel Co., Youngstown, Ohio. (S.)
 Scullin Steel Co., St. Louis, Mo. (wide flats to 12").
 Simonds Saw & Steel Co., Fitchburg, Mass. (own use; S. saw plates).
 Southern Pacific Co., San Francisco, Calif. (wide flats).
 Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (S.; wide flats).
 Universal Steel Co., Bridgeville, Pa. (S.)
 Wheeling Steel Corporation, Wheeling, W. Va. (U., S.)
 Worth Steel Co., Claymont, Del. (S.)
 Wrought Washer Co., Milwaukee, Wis. (own use; S.)
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (U., S.)

MANUFACTURERS OF BLACK SHEETS.

Alan Wood Iron & Steel Co., Philadelphia, Pa.
 Allegheny Steel Co., Brackenridge, Pa.
 American Rolling Mill Co. (The), Middletown, Ohio.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Ames Shovel & Tool Co., Boston, Mass. (own use).
 Apollo Steel Co., Apollo, Pa.
 Ashtabula Steel Sheet Co. (The), Mansfield, Ohio.
 Baldwin's Canadian Steel Corp., Ltd., Toronto, Ont., Canada.
 Bethlehem Steel Co., Bethlehem, Pa.
 Canonsburg Steel & Iron Works, Canonsburg, Pa.
 Central Iron & Steel Co., Harrisburg, Pa.
 Central Steel Co., Massillon, Ohio.
 Chapman Price Steel Co., Indianapolis, Ind.
 Cleveland Steel Co. (The), Cleveland, Ohio.
 Columbia Steel Corp., San Francisco, Calif.
 Crucible Steel Co. of America, Pittsburgh, Pa.
 Disston (Henry) & Sons Iron & Steel Works, Tacony, Philadelphia, Pa.
 Dominion Alloy Steel Corp., Sarnia, Ont., Canada. (building).
 Dominion Foundries & Steel, Ltd., Hamilton, Ont., Canada.
 Eastern Rolling Mill Co. (The), Baltimore, Md.
 Eddystone Steel Co., Crum Lynne, Pa.
 Empire Steel Co. (The), Cleveland, Ohio.
 Falcon Steel Co. (The), Niles, Ohio.
 Follansbee Brothers Co., Pittsburgh, Pa.
 Halcomb Steel Co., Syracuse, N. Y.
 Illingworth Steel Co. (The John), Frankford, Philadelphia, Pa.
 Indiana Rolling Mill Co., New Castle, Ind.
 Inland Steel Co., Chicago, Ill.
 Jessop Steel Co., Washington, Pa.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (tin mill sizes).
 Lalanc & Grosjean Manufacturing Co., New York, N. Y. (own use)
 Mahoning Valley Steel Co. (The), Niles, Ohio.
 Mansfield Sheet & Tin Plate Co. (The), Mansfield, Ohio.
 Michigan Steel Corporation, Detroit, Mich.
 Monongahela Iron & Steel Co., Pittsburgh, Pa. (idle).
 National Enameling & Stamping Co., Milwaukee, Wis.
 Newport Rolling Mill Co. (The), Newport, Ky.
 Newton Steel Co. (The), Youngstown, Ohio.
 Otis Steel Co. (The), Cleveland, Ohio.
 Pacific Sheet Steel Corp., South San Francisco, Calif.
 Parkersburg Iron & Steel Co. (The), Parkersburg, W. Va.
 Reeves Manufacturing Co. (The), Dover, Ohio.
 Republic Iron & Steel Co., Youngstown, Ohio.
 Seneca Iron & Steel Co., Buffalo, N. Y.
 Sharon Steel Hoop Co., Sharon, Pa.

Sheffield Steel Corporation, Kansas City, Mo.
Simonds Saw & Steel Co., Fitchburg, Mass.
Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
Superior Sheet Steel Co. (The), Canton, Ohio.
Taylor (N. & G.) Co., Inc., Philadelphia, Pa.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Thomas Sheet Steel Co. (The), Niles, Ohio.
Trumbull Steel Co. (The), Warren, Ohio.
United Alloy Steel Corp., Canton, Ohio.
Universal Steel Co., Bridgeville, Pa.
Waddell Steel Co. (The), Niles, Ohio.
Weirton Steel Co., Weirton, W. Va.
West Penn Steel Co., Brackenridge, Pa.
Wheeling Steel Corporation, Wheeling, W. Va.
Wilkes Rolling Mill Co., Sharon, Pa.
Wrought Washer Mfg. Co., Milwaukee, Wis. (own use).
Wyoming Shovel Works (The), Wyoming, Pa.
Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF GALVANIZED SHEETS.

(NOT INCLUDING MANUFACTURERS OF GALVANIZED SHEETS IN CANADA).

Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Rolling Mill Co. (The), Middletown, Ohio.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Apollo Steel Co., Apollo, Pa.
Baldwins Canadian Steel Corp., Ltd., Toronto, Ont., Canada.
Bethlehem Steel Co., Bethlehem, Pa.
Brown Stamping Co. (The), Toledo, Ohio.
Buffalo Galvanizing & Tinning Works, Buffalo, N. Y.
Canonsburg Steel & Iron Works, Canonsburg, Pa.
Chapman Price Steel Co., Indianapolis, Ind.
Columbia Steel Corp., San Francisco, Calif.
Delphos Manufacturing Co. (The), Delphos, Ohio.
Dominion Alloy Steel Corp., Sarnia, Ont., Canada.
Elliot Galvanizing Works, Jersey City, N. J.
Empire Steel Co. (The), Cleveland, Ohio.
Inland Steel Co., Chicago, Ill.
Klauer Manufacturing Co., Dubuque, Iowa.
Lamb & Ritchie Co., Cambridge, Mass.
Lefferts Galvanizing Works, New York, N. Y.
McVoy Sheet & Tin Plate Co., Chicago, Ill.
Meaker Galvanizing Co., Chicago, Ill.
National Enameling & Stamping Co., Milwaukee, Wis.
National Galvanizing Co. (The), Chicago, Ill.
Newport Rolling Mill Co. (The), Newport, Ky.

Northern Corrugating Co., Green Bay, Wis.
 Ohio Galvanizing & Manufacturing Co. (The), Niles, Ohio.
 Pacific Sheet Steel Corp., South San Francisco, Calif.
 Parkersburg Iron & Steel Co. (The), Parkersburg, W. Va.
 Reeves Manufacturing Co. (The), Dover, Ohio.
 Republic Iron & Steel Co., Youngstown, Ohio.
 Superior Sheet Steel Co. (The), Canton, Ohio.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Thomas Sheet Steel Co. (The), Niles, Ohio.
 Trumbull Steel Co. (The), Warren, Ohio.
 United Alloy Steel Corp., Canton, Ohio.
 Weirton Steel Co., Weirton, W. Va.
 Wheeling Metal & Manufacturing Co., Wheeling, W. Va.
 Wheeling Steel Corporation, Wheeling, W. Va.
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF BLUE ANNEALED SHEETS

Alan Wood Iron & Steel Co., Philadelphia, Pa.
 Allegheny Steel Co., Brackenridge, Pa.
 American Rolling Mill Co. (The), Middletown, Ohio.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Apollo Steel Co., Apollo, Pa.
 Ashtabula Steel Sheet Co. (The), Mansfield, Ohio.
 Bethlehem Steel Co., Bethlehem, Pa.
 Canonsburg Steel & Iron Works, Canonsburg, Pa.
 Central Iron & Steel Co., Harrisburg, Pa.
 Eddystone Steel Co., Crum Lynne, Pa.
 Empire Steel Co. (The), Cleveland, Ohio.
 Falcon Steel Co. (The), Niles, Ohio.
 Inland Steel Co., Chicago, Ill.
 National Enameling & Stamping Co., Milwaukee, Wis.
 Newport Rolling Mill Co. (The), Newport, Ky.
 Newton Steel Co. (The), Youngstown, Ohio.
 Otis Steel Co. (The), Cleveland, Ohio.
 Pacific Sheet Steel Corp., South San Francisco, Calif.
 Sharon Steel Hoop Co., Sharon, Pa.
 Sheffield Steel Corporation, Kansas City, Mo.
 Steel Company of Canada (The), Ltd., Hamilton, Ont., Canada.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Trumbull Steel Co. (The), Warren, Ohio.
 United Alloy Steel Corp., Canton, Ohio.
 Weirton Steel Co., Weirton, W. Va.
 Wheeling Steel Corporation, Wheeling, W. Va.
 Wilkes Rolling Mill Co., Sharon, Pa.
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF BLACK PLATES FOR TINNING.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
American Steel Co., Pittsburgh, Pa.
Baldwins Canadian Steel Corp., Ltd., Toronto, Ont., Canada.
Bethlehem Steel Co., Bethlehem, Pa.
Falcon Tin Plate Co. (The), Niles, Ohio.
Follansbee Brothers Co., Pittsburgh, Pa.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
Lalance & Grosjean Manufacturing Co., New York, N. Y. (own use).
McKeesport Tin Plate Co., McKeesport, Pa.
Mansfield Sheet & Tin Plate Co. (The), Mansfield, Ohio.
National Enameling & Stamping Co., Milwaukee, Wis.
Newport Rolling Mill Co. (The), Newport, Ky.
Pittsburgh Tin Plate & Steel Corporation, Marietta, Ohio.
Robertson (W. F.) Steel & Iron Co., Cincinnati, Ohio.
Standard Tin Plate Co. (The), Canonsburg, Pa.
Taylor (N. & G.) Co., Inc., Philadelphia, Pa.
Trumbull Steel Co. (The), Warren, Ohio.
Washington Tin Plate Co., Washington, Pa.
Weirton Steel Co., Weirton, W. Va.
Wheeling Steel Corporation, Wheeling, W. Va.

MANUFACTURERS OF TINPLATES AND TERNE PLATES.

American Rolling Mill Co. (The), Middletown, Ohio. (long ternes only).
American Sheet & Tin Plate Co., Pittsburgh, Pa. (long ternes also).
American Steel Co., Pittsburgh, Pa.
Baldwins Canadian Steel Corp., Ltd., Toronto, Ont., Canada.
Bethlehem Steel Co., Bethlehem, Pa.
Falcon Tin Plate Co. (The), Niles, Ohio.
Follansbee Brothers Co., Pittsburgh, Pa. (long ternes also).
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
Lalance & Grosjean Manufacturing Co., New York, N. Y. (own use).
McKeesport Tin Plate Co., McKeesport, Pa.
National Enameling & Stamping Co., Milwaukee, Wis.
Pittsburgh Tin Plate & Steel Corporation, Marietta, Ohio.
Robertson (W. F.) Steel & Iron Co., Cincinnati, Ohio.
Solar-Sturges Manufacturing Co., Melrose Park, Ill. (own use).
Standard Tin Plate Co. (The), Canonsburg, Pa.
Superior Sheet Steel Co. (The), Canton, Ohio. (long ternes only).
Taylor (N. & G.) Co., Inc., Philadelphia, Pa.
Trumbull Steel Co. (The), Warren, Ohio (long ternes also).
United Alloy Steel Corp., Canton, Ohio (long ternes only).
Washington Tin Plate Co., Washington, Pa.
Weirton Steel Co., Weirton, W. Va.
Wheeling Steel Corporation, Wheeling, W. Va. (long ternes also).
Wilkes Rolling Mill Co., Sharon, Pa. (terne plates only).

MANUFACTURERS OF MUCK BAR.

Altoona Iron Co. (The), Altoona, Pa.
 American Car and Foundry Co., New York, N. Y.
 American Puddled Iron Co. (The), Warren, Ohio.
 American-Swedo Iron Co. (The), Philadelphia, Pa.
 Bethlehem Steel Co., Bethlehem, Pa.
 Blandon Rolling Mill, Inc., Blandon, Pa.
 Burden Iron Co. (The), Troy, N. Y. (own use).
 Byers (A. M.) Co., Pittsburgh, Pa. (own use).
 Cohoes Rolling Mill Co., Cohoes, N. Y. (own use).
 East End Puddle Mill, Milton, Pa.
 Edwards, E. T., Columbia, Pa.
 Ewald Iron Co., Louisville, Ky. (own use).
 Fort Wayne Rolling Mill Corporation (The), Fort Wayne, Ind.
 Glasgow Iron Co., Pottstown, Pa.
 Grant, Robert (Slatington Rolling Mills), New York, N. Y.
 Highland Iron & Steel Co. (The), Terre Haute, Ind.
 Hoopes & Townsend Corporation (The), Philadelphia, Pa.
 Hughes & Patterson, Philadelphia, Pa.
 Kittanning Iron & Steel Manufacturing Co., Pittsburgh, Pa.
 Knoxville Iron Co., Knoxville, Tenn.
 Lebanon Iron Co., Lebanon, Pa.
 Lockhart Iron & Steel Co., Pittsburgh, Pa.
 Logan Iron & Steel Co., Philadelphia, Pa. (own use).
 London Rolling Mill Co., Ltd., London, Ont., Canada (own use).
 Milton Manufacturing Co. (The), Milton, Pa.
 Monongahela Iron & Steel Co., Pittsburgh, Pa.
 National Tube Co., Pittsburgh, Pa.
 Ohio Falls Iron Co., New Albany, Ind.
 Old Dominion Iron & Steel Works, Inc., Richmond, Va.
 Penn Iron & Steel Co., Creighton, Pa.
 Pittsburgh Forge & Iron Co., Pittsburgh, Pa.
 Reading Iron Co., Reading, Pa.
 Republic Rolling Mill Corp., Chicago, Ill.
 Rome Iron Mills, Inc., New York, N. Y. (own use).
 Scranton Bolt & Nut Co., Scranton, Pa. (own use).
 Ulster Iron Works, Dover, N. J.
 Wilkes Rolling Mill Co., Sharon, Pa.
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio (own use).

MANUFACTURERS OF MERCHANT BARS.

(I=IRON BARS. S=STEEL BARS. R=REINFORCING BARS).

(For special high-carbon and alloy steel bars, see Manufacturers of Tool Steel. See also Manufacturers of Horseshoe Bars and Horseshoes).

Aetna Steel & Iron Co., Inc., Southington, Conn. (I.)
 Algoma Steel Corporation, Sault Ste. Marie, Ont., Canada. (S.)

- Altoona Iron Co. (The), Altoona, Pa. (I.)
 American Bridge Co., Pittsburgh, Pa. (S.)
 American Car & Foundry Co., New York, N. Y. (I., S.)
 American Steel & Wire Co. (The), Cleveland, Ohio. (S.)
 Ames (W.) & Co., Jersey City, N. J. (I., R.)
 Atchison, Topeka & Santa Fe Ry., Chicago, Ill. (own use).
 Atlantic Steel Co., Atlanta, Ga. (S., R.)
 Baldwin Locomotive Works (The), Philadelphia, Pa. (own use; I., S.)
 Baltimore & Ohio Railroad Co. (The), Baltimore, Md. (own use; I., S.)
 Bancroft & Martin Rolling Mills Co., South Portland, Me. (I., S., R.)
 Bethlehem Steel Co., Bethlehem, Pa. (I., S., R.)
 Bourne-Fuller Co. (The), Cleveland, Ohio. (S., R.)
 British Empire Steel Corp., Ltd., Sydney, N. S., Canada. (S.)
 Bryden-Neverslip Co., New Brunswick, N. J. (I.)
 Buffalo Bolt Co., Buffalo, N. Y. (I., S.)
 Buffalo Steel Co., Tonawanda, N. Y. (S., R.)
 Burden Iron Co. (The), Troy, N. Y. (I.)
 Burlington Steel Co., Ltd., Hamilton, Ont., Canada. (S., R.)
 Calumet Steel Co., Chicago, Ill. (S., R.)
 Cambridge Steel Products Co. (The), Cambridge, Ohio (I., S., R.)
 Canadian Car & Foundry Co., Ltd., Montreal, P. Q., Canada. (I., S., R.)
 Canadian National Railways, Montreal, P. Q., Canada. (own use; I.)
 Canadian Steel Foundries, Ltd., Montreal, P. Q., Canada. (S., R.)
 Canadian Tube & Steel Products, Ltd., Montreal, P. Q., Canada. (I., S., R.)
 Carnegie Steel Co., Pittsburgh, Pa. (S., R.)
 Carpenter Steel Co. (The), Reading, Pa. (S.)
 Central of Georgia Railway Co., Savannah, Ga. (own use; I.)
 Central Steel Co. (The), Massillon, Ohio. (S.)
 Cleveland Hardware Co. (The), Cleveland, Ohio (own use; S.)
 Collins Co. (The), Collinsville, Conn. (own use; I., S.)
 Colorado Fuel & Iron Co. (The), Denver, Colo. (S., R.)
 Columbia Steel Corp., San Francisco, Calif. (S., R.)
 Crucible Steel Co. of America, Pittsburgh, Pa. (S.)
 Davis Brothers, Inc., Philadelphia, Pa. (I., S., R.)
 Del., Lack. & Western R R. Co. (The), Scranton, Pa. (own use; I.)
 Donner Steel Co., Inc., Buffalo, N. Y. (S., R.)
 Eckels-Nye Steel Co., Syracuse, N. Y. (S.)
 Edwards, E. T., Columbia, Pa. (I., S., R.)
 Ewald Iron Co., Louisville, Ky. (I.)
 Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio (staybolt iron bars).
 Federal Alloy Steel Corp., Eddystone, Pa. (S., R.)
 Ford Motor Co., Detroit, Mich. (S.)
 Forged Steel Wheel Co., Pittsburgh, Pa. (own use; S.)
 Fort Dodge Culvert & Steel Co., Fort Dodge, Iowa. (S., R.)
 Fort Wayne Rolling Mill Corp., (The), Fort Wayne, Ind. (I., S., R.)
 Franklin Steel Works, Franklin, Pa. (S., R.)

Glasgow Iron Co., Pottstown, Pa. (I., S.)
 Grant, Robert (Slatington Rolling Mills), New York, N. Y.
 Great Northern Railroad, St. Cloud, Minn. (own use; I.)
 Gulf States Steel Co., Birmingham, Ala. (S., R.)
 Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa. (S.)
 Harrow Spring Co., Milwaukee, Wis. (S.)
 Highland Iron & Steel Co. (The), Terre Haute, Ind. (I., S., R.)
 Hoopes & Townsend Corporation (The), Philadelphia, Pa. (I., S.)
 Hughes & Patterson, Philadelphia, Pa. (I.)
 Illinois Steel Co., Chicago, Ill. (S., R.)
 Inland Steel Co., Chicago, Ill. (S., R.)
 International Harvester Co., Chicago, Ill. (S., R.)
 Interstate Iron & Steel Co., Chicago, Ill. (I., S., R.)
 Janson Steel & Iron Co., Columbia, Pa. (I., S., R.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (S., R.)
 Judson Manufacturing Co., San Francisco, Calif. (I., S., R.)
 Kilby Car & Foundry Co., Anniston, Ala. (I., S., R.)
 Knoxville Iron Co., Knoxville, Tenn. (I., S., R.)
 Laclede Steel Co., St. Louis, Mo. (S., R.)
 Lake Erie Bolt & Nut Co. (The), Cleveland, Ohio.
 Lebanon Iron Co., Lebanon, Pa. (I.)
 Lockhart Iron & Steel Co., Pittsburgh, Pa. (I., S.)
 Logan Iron & Steel Co., Philadelphia, Pa. (I., S.)
 London Rolling Mill Co., Ltd., London, Ont., Canada. (I., S.)
 McKinney Steel Co. (The), Cleveland, Ohio (building) (S.)
 Manitoba Rolling Mill Co., Ltd., Winnipeg, Manitoba, Can. (I., S., R.)
 Memphis Iron & Steel Co., Memphis, Tenn. (I.)
 Mid-Western Steel Corp., Chicago, Ill. (I., S.)
 Milton Manufacturing Co. (The), Milton, Pa. (I., S., R.)
 Minnesota Steel Co., Duluth, Minn. (S., R.)
 Missouri Rolling Mill Corp., St. Louis, Mo. (S., R.)
 National Lock Washer Co. (The), Newark, N. J. (S.)
 New Process Iron & Steel Co., Noblesville, Ind. (building).
 Nicetown Plate Washer Co., Inc., Philadelphia, Pa. (I., S., R.)
 Ohio Falls Iron Co., New Albany, Ind. (I., S., R.)
 Old Dominion Iron & Steel Works, Inc., Richmond, Va. (I., S.)
 Oliver Iron & Steel Corp., Pittsburgh, Pa. (own use; S.)
 Pacific Coast Steel Co., San Francisco, Calif. (S., R.)
 Page Steel & Wire Co., Bridgeport, Conn. (S.; own use).
 Panama Canal (The), Balboa, Canal Zone, Panama. (I., S., R.)
 Peck Rolling Mills, Ltd., Montreal, P. Q., Canada. (I., S., R.)
 Penn Iron & Steel Co., Creighton, Pa. (I.)
 Penn Seaboard Steel Corp., New Castle, Del. (S.)
 Phoenix Iron Co. (The), Philadelphia, Pa. (S.)
 Pittsburgh Crucible Steel Co., Pittsburgh, Pa. (S., R.)
 Pittsburgh Forge & Iron Co., Pittsburgh, Pa. (I.)
 Pollak Steel Co. (The), Cincinnati, Ohio. (S., R.)

Reading Iron Co., Reading, Pa. (I.)
 Republic Iron & Steel Co., Youngstown, Ohio. (S., R.)
 Republic Rolling Mill Corp., Chicago, Ill. (I., S., R.)
 Rockaway Rolling Mill (The), Rockaway, N. J. (I., S., R.)
 Roehm Steel Rolling Mills (The), Detroit, Mich. (I., S., R.)
 Rome Iron Mills, Inc., New York, N. Y. (staybolt and engine bolt iron).
 St. Louis Screw Co., St. Louis, Mo. (I., S.)
 Savannah Steel Corp., Savannah, Ga. (S., R.)
 Schonthal Co. (The Joseph), Columbus, Ohio. (S.)
 Scranton Bolt & Nut Co., Scranton, Pa. (I., S.)
 Scullin Steel Co., St. Louis, Mo. (S., R.)
 Sheffield Steel Corp., Kansas City, Mo. (I., S., R.)
 Simmons Co., New York, N. Y. (own use; S.)
 Singer Manufacturing Co., New York, N. Y. (own use; S.)
 Southern California Iron & Steel Co., Huntington Park, Calif. (S., R.)
 Southern Pacific Co., San Francisco, Calif. (I., S.)
 Southern Steel & Rolling Mill, Inc., Birmingham, Ala. (S., R.)
 Starr Manufacturing Co., Ltd. (The), Dartmouth, N. S., Canada. (I.)
 Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada. (I., S., R.)
 Sweet's Steel Co., Williamsport, Pa. (S., R.)
 Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (S., R.)
 Texas Steel Co., Fort Worth, Texas. (S., R.)
 Timken Roller Bearing Co. (The), Canton, Ohio. (S.; also forging).
 Tredegar Co. (The), Richmond, Va. (I., S.)
 Tuttle, Charles W., Auburn, N. Y. (I.) (staybolt iron).
 Ulster Iron Works, Dover, N. J. (staybolt, engine bolt iron).
 Union Drawn Steel Co., Massillon, Ohio. (S.)
 United Alloy Steel Corporation, Canton, Ohio. (S.)
 United Steel Co., Everett, Wash. (I., S., R.)
 Utah Steel Corporation, Midvale, Utah. (I., S., R.)
 Valley Rolling Mills, Inc., New York, N. Y. (S., R.)
 Walsh & McGee Steel Co., New York, N. Y. (S., R.)
 West Virginia Rail Co. (The), Huntington, W. Va. (S., R.)
 Wheeling Steel Corporation, Wheeling, W. Va. (S.)
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (S., R.)

MANUFACTURERS OF TOOL AND HIGH SPEED STEEL

Atlas Alloy Steel Corporation, Dunkirk, N. Y.
 Becker Steel Co. of America, Inc., New York, N. Y.
 Bethlehem Steel Co., Bethlehem, Pa.
 Braeburn Alloy Steel Corporation, Braeburn, Pa.
 Canadian Atlas Steels, Ltd., Welland, Ont., Canada.
 Carpenter Steel Co. (The), Reading, Pa.
 Chrome Steel Works, Chrome, N. J.
 Coes Wrench Co., Worcester, Mass. (own use).

Collins Co. (The), Collinsville, Conn. (own use).
 Colonial Steel Co., Pittsburgh, Pa.
 Columbia Tool Steel Co., Chicago Heights, Ill.
 Crucible Steel Co. of America, New York, N. Y.
 Cyclops Steel Co., Titusville, Pa.
 Disston (Henry) & Sons Iron & Steel Works, Tacony, Philadelphia, Pa.
 Driver-Harris Co., Harrison, N. J.
 Electro Steel Co., Inc. (The), Pittsburgh, Pa.
 Firth-Sterling Steel Co., McKeesport, Pa.
 General Electric Co., Schenectady, N. Y.
 Halcomb Steel Co., Syracuse, N. Y.
 Heller Brothers Co., Newark, N. J. (own use).
 Illingworth Steel Co. (The John), Frankford, Philadelphia, Pa.
 International High Speed Steel Co., Rockaway, N. J.
 Jessop Steel Co., Washington, Pa.
 Latrobe Electric Steel Co., Latrobe, Pa.
 LeMoyne Steel Co., Pittsburgh, Pa.
 Ludlum Steel Co., Watervliet, N. Y.
 McInnes Steel Co., Ltd., Corry, Pa.
 Midvale Co. (The), Philadelphia, Pa.
 Onondaga Steel Co., Syracuse, N. Y.
 Railway Steel-Spring Co., New York, N. Y.
 Rothert Process Steel Co., Seattle, Wash.
 Simonds Saw & Steel Co., Fitchburg, Mass.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Trojan Electric Steel Co., Chicago, Ill.
 Union Tool Co., Torrance, Calif.
 Universal Steel Co., Bridgeville, Pa.
 Vanadium Alloys Steel Co., Latrobe, Pa.
 Vulcan Crucible Steel Co., Aliquippa, Pa.

MANUFACTURERS OF HORSESHOE BARS AND HORSESHOES.

American Horseshoe Co., Phillipsburg, N. J.
 Bryden-Neverslip Co., New Brunswick, N. J.
 Burden Iron Co. (The), Troy, N. Y.
 Canadian Horse Shoe Co., Ltd., Hamilton, Ont., Canada. (idle).
 Old Dominion Iron & Steel Works, Inc., Richmond, Va.
 Peck Rolling Mills, Ltd., Montreal, P. Q., Canada.
 Phoenix Horse Shoe Co., New York, N. Y.
 Standard Horseshoe Co., Boston, Mass.
 Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
 Tredegar Co. (The), Richmond, Va.
 Tuttle, Charles W. (Auburn Iron Works), Auburn, N. Y. (bars only).
 United States Horse Shoe Co., Erie, Pa.

**MANUFACTURERS OF ROLLED LONG ANGLE SPLICE BARS,
LONG TIE PLATE BARS, ETC.**

Algoma Steel Corporation, Sault Ste. Marie, Ont., Canada.
Ames (W.) & Co., Jersey City, N. J.
Bethlehem Steel Co., Bethlehem, Pa.
British Empire Steel Corpn., Ltd., Sydney, N. S., Canada.
Carnegie Steel Co., Pittsburgh, Pa.
Colorado Fuel & Iron Co. (The), Denver, Colo.
Dilworth, Porter & Co., Inc., Pittsburgh, Pa.
Elyria Iron & Steel Co. (The), Cleveland, Ohio.
Illinois Steel Co., Chicago, Ill.
Inland Steel Co., Chicago, Ill.
Interstate Iron & Steel Co., Chicago, Ill.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
Judson Manufacturing Co., San Francisco, Calif.
McKenna Process Co., Joliet, Ill.
National Tube Co. (The), Pittsburgh, Pa.
Pacific Coast Steel Co., San Francisco, Calif.
Rail Joint Co. (The), New York, N. Y.
Reading Iron Co., Reading, Pa.
Scullin Steel Co., St. Louis, Mo.
Sellers Manufacturing Co., Chicago, Ill.
Southern Pacific Co., San Francisco, Calif. (own use).
Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Tredegar Co. (The), Richmond, Va.
West Virginia Rail Co. (The), Huntington, W. Va.
Wheeling Steel Corporation, Wheeling, W. Va.

MANUFACTURERS OF HOOPS AND BANDS.

Acme Steel Co., Chicago, Ill.
American Tube & Stamping Co., Bridgeport, Conn.
Atlantic Steel Co., Atlanta, Ga.
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Connors Steel Co., Inc., Birmingham, Ala.
Donner Steel Co., Inc., Buffalo, N. Y.
Fort Wayne Rolling Mill Corporation (The), Fort Wayne, Ind.
Highland Iron & Steel Co., Terre Haute, Ind.
Hughes & Patterson, Philadelphia, Pa.
Illinois Steel Co., Chicago, Ill.
Interstate Iron & Steel Co., Chicago, Ill.

Janson Steel & Iron Co., Columbia, Pa.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
 Laclede Steel Co., St. Louis, Mo.
 Lockhart Iron & Steel Co., Pittsburgh, Pa.
 Pacific Coast Steel Co., San Francisco, Calif.
 Pittsburgh Steel Co., Pittsburgh, Pa.
 Republic Iron & Steel Co., Youngstown, Ohio.
 Roehm Steel Rolling Mills (The), Detroit, Mich.
 Sharon Steel Hoop Co., Sharon, Pa.
 Southern California Iron & Steel Co., Huntington Park, Calif.
 Stanley Works (The), New Britain, Conn.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Universal Steel Co., Bridgeville, Pa.
 Valley Rolling Mills, Inc., New York, N. Y.
 Walsh & McGee Steel Co., New York, N. Y.
 Weirton Steel Co., Weirton, W. Va.
 West Leechburg Steel Co., Pittsburgh, Pa.
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF HOT ROLLED STRIP STEEL, NOT
 INCLUDING THOSE WHO MAKE COLD
 ROLLED STRIPS ONLY.

(H=HOT ROLLED. C=COLD ROLLED.)

Acme Steel Co., Chicago, Ill. (H., C.)
 American Steel & Wire Co. (The), Cleveland, Ohio. (H., C.)
 American Tube & Stamping Co., Bridgeport, Conn. (H., C.)
 Carnegie Steel Co., Pittsburgh, Pa. (H.)
 Carpenter Steel Co. (The), Reading, Pa. (H., C.)
 Central Steel Co., Massillon, Ohio. (H.)
 Driver-Harris Co., Harrison, N. J. (H., C.)
 Elyria Iron & Steel Co. (The), Cleveland, Ohio (H., C.)
 Halcomb Steel Co., Syracuse, N. Y. (H., C.)
 Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa. (H.)
 Laclede Steel Co., St. Louis, Mo. (H., C.)
 Otis Steel Company (The), Cleveland, Ohio. (H., C.)
 Pittsburgh Steel Co., Pittsburgh, Pa. (H.)
 Roebling's (John A.) Sons Co., Trenton, N. J. (H., C.)
 Sharon Steel Hoop Co., Sharon, Pa. (H.)
 Stanley Works (The), New Britain, Conn. (H., C.)
 Superior Steel Corporation, Pittsburgh, Pa. (H., C.)
 Trumbull Steel Co. (The), Warren, Ohio. (H., C.)
 Weirton Steel Co., Weirton, W. Va. (H., C.)
 West Leechburg Steel Co., Pittsburgh, Pa. (H., C.)

MANUFACTURERS OF IRON AND STEEL SKELP.

(I=IRON SKELP. S=STEEL SKELP).

Allegheny Steel Co., Pittsburgh, Pa. (I., S.)
 Bethlehem Steel Co., Bethlehem, Pa. (I., S.)
 Blandon Rolling Mill, Inc., Blandon, Pa. (I.)
 Byers (A. M.) Co., Pittsburgh, Pa. (I.)
 Carnegie Steel Co., Pittsburgh, Pa. (S.)
 Cohoes Rolling Mill Co., Cohoes, N. Y. (own use; I., S.)
 Danville Structural Tubing Co., Danville, Pa. (S.)
 Elyria Iron & Steel Co. (The), Cleveland, Ohio. (S.)
 Gary Tube Co., Pittsburgh, Pa. (S.)
 Glasgow Iron Co., Pottstown, Pa. (I.)
 Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa. (S.)
 International Harvester Co., Chicago, Ill. (S.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (S.)
 Lockhart Iron & Steel Co., Pittsburgh, Pa. (I.)
 National Tube Co., Pittsburgh, Pa. (S.)
 Parkesburg Iron Co., Parkesburg, Pa. (I.)
 Pittsburgh Forge & Iron Co., Pittsburgh, Pa. (I.)
 Reading Iron Co., Reading, Pa. (own use; I., S.)
 Reeves Manufacturing Co., Dover, Ohio. (I., S.)
 Republic Iron & Steel Co., Youngstown, Ohio. (S.)
 Simmons Co., New York, N. Y. (own use; S.)
 Tremont Nail Co., West Wareham, Mass. (S.)
 Tyler Tube & Pipe Co. (The), Washington, Pa. (I., S.)
 Wheeling Steel Corporation, Wheeling, West Va. (S.)
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (S.)

MANUFACTURERS OF WROUGHT IRON AND STEEL PIPE
AND BOILER TUBES.

(I=IRON PIPE. S=STEEL PIPE. B T=BOILER TUBES.)

Allegheny Steel Co., Brackenridge, Pa. (S. B. T.)
 Bethlehem Steel Co., Bethlehem, Pa. (I. & S. B. T.)
 Byers (A. M.) Co., Pittsburgh, Pa. (I.)
 Canadian Tube & Steel Products, Ltd., Montreal, P. Q., Canada. (S.)
 Central Tube Co., Pittsburgh, Pa. (S.)
 Clayton Mark & Co., Chicago, Ill. (S.)
 Cohoes Rolling Mill Co., Cohoes, N. Y. (I., S.)
 Fritz Moon Tube Co., Butler, Pa. (S.)
 Gary Tube Co., Pittsburgh, Pa. (S.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (S.)
 Monongahela Tube Co., Pittsburgh, Pa. (I.; also I. & S. B. T.)
 National Tube Co., Pittsburgh, Pa. (S.; also S. B. T.)

Pacific Pipe Co., San Francisco, Calif. (S. & S. B. T.)
 Page-Hersey Tubes, Ltd., Toronto, Ont., Canada. (I., S.)
 Parkesburg Iron Co., Parkesburg, Pa. (Char. I. B. T.)
 Pittsburgh Tube Co., Pittsburgh, Pa. (S.)
 Reading Iron Co., Reading, Pa. (I.; also I. & S. B. T.)
 Republic Iron & Steel Co., Youngstown, Ohio. (S.)
 South Chester Tube Co., Chester, Pa. (I., S.)
 Spang, Chalfant & Co., Inc., Pittsburgh, Pa. (I., S.; also I. & S. B. T.)
 Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada. (S.)
 Tyler Tube & Pipe Co. (The), Washington, Pa. (I. & S. B. T.)
 Wheeling Steel Corporation, Wheeling, West Va. (S.)
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (S. & S. B. T.)

MANUFACTURERS OF SEAMLESS STEEL TUBES.

(H=HOT FINISHED.

C=COLD DRAWN).

Babcock & Wilcox Tube Co. (The), Beaver Falls, Pa. (H., C.)
 Bordentown Steel & Tube Corporation, Bordentown, N. J. (C.)
 Delaware Seamless Tube Co., Auburn, Pa. (H., C.)
 Detroit Seamless Steel Tubes Co., Detroit, Mich. (H., C.)
 Forged Seamless Tube Co., South Lyon, Mich. (C.)
 Globe Steel Tubes Co., Milwaukee, Wis. (H., C.)
 Ivins' (Ellwood) Tube Works, Philadelphia, Pa. (C.)
 National Tube Co., Pittsburgh, Pa. (H., C.)
 Ohio Seamless Tube Co. (The), Shelby, Ohio. (H., C.)
 Pittsburgh Steel Products Co., Pittsburgh, Pa. (H., C.)
 Plymouth Tube Co., Detroit, Mich. (C.)
 Seamless Tube Co. of Wisconsin, Appleton, Wis. (building).
 Standard Seamless Tube Co., Pittsburgh, Pa. (H., C.)
 Summerill Tubing Co., Bridgeport, Pa. (C.)
 Timken Roller Bearing Co. (The), Canton, Ohio. (H., C.)
 Weldless Tube Co. (The), Wooster, Ohio. (H., C.)
 Youngstown Sheet & Tube Co., Youngstown, Ohio. (building).

MANUFACTURERS OF WIRE NAILS.

American Steel & Wire Co. (The), Cleveland, Ohio.
 American Steel Co., Pittsburgh, Pa.
 Angell Nail & Chaplet Co. (The), Cleveland, Ohio.
 Atlantic Steel Co., Atlanta, Ga.
 Atlas Tack Corporation, Fairhaven, Mass.
 Badger Nail Co. (The), Milwaukee, Wis.
 Baker (Chas. F.) & Co., Inc., Boston, Mass.
 Belfont Steel & Wire Co., Ironton, Ohio.
 Bethlehem Steel Co., Bethlehem, Pa.

British Empire Steel Corpn., Ltd., Sydney, N. S., Canada.
Canada Metal Co., Ltd. (The), Toronto, Ont., Canada.
Canadian Tube & Steel Products, Ltd., Montreal, P. Q., Canada.
Cedarburg Wire & Wire Nail Co., Cedarburg, Wis.
Cleveland Tack Works (The), Cleveland, Ohio.
Colorado Fuel & Iron Co. (The), Denver, Colo.
Columbia Steel Corpn., San Francisco, Calif.
Crawfordsville Wire & Nail Co., Crawfordsville, Ind.
Eastern Hardware & Supply Co., Baltimore, Md.
Eastern Nail Co., Providence, R. I.
Ellwood Steel Corporation, Ellwood City, Pa.
Grammes (L. F.) & Sons, Inc., Allentown, Pa.
Gulf States Steel Co., Birmingham, Ala.
Hassall (John), Inc., Brooklyn, N. Y.
Igoe Brothers, Newark, N. J.
Illinois Nail Co. (The), Chicago, Ill.
Imperial Steel & Wire Co. (The), Collingwood, Ont., Canada.
Independent Nail & Packing Co., Bridgewater, Mass.
Indiana Steel & Wire Co., Muncie, Ind.
Interstate Iron & Steel Co., Chicago, Ill.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
Keystone Steel & Wire Co., South Bartonville, Peoria, Ill.
Kokomo Nail & Brad Co., Kokomo, Ind. (special; cement coated).
Kokomo Steel & Wire Co., Kokomo, Ind.
Laidlaw Bale-Tie Co., Ltd. (The), Hamilton, Ont., Canada.
Maritime Nail Co., Ltd., St. John, N. B., Canada.
Milwaukee Tack Co., Milwaukee, Wis.
Minnesota Steel Co., Duluth, Minn.
Morrison Steel & Wire Co., Ltd., Vancouver, B. C., Canada.
Northern Bolt, Screw & Wire Co., Ltd. (The), Owen Sound, Ont., Can.
Northwestern Barb Wire Co., Sterling, Ill.
Norton Iron Works, Ashland, Ky.
Page Steel & Wire Co., Bridgeport, Conn.
Peck Rolling Mills, Ltd., Montreal, P. Q., Canada.
Penn Hardware Co., Reading, Pa.
Plymouth Mills (The), Plymouth, Mass.
Pittsburgh Steel Co., Pittsburgh, Pa.
Robertson (P. L.) Manufacturing Co., Ltd., Milton, Ont., Canada.
Stanley (G. W.) Co. (The), Belleville, Ill.
Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
Townsend Company, New Brighton, Pa.
United Shoe Machinery Co. of Canada, Ltd., Montreal, P. Q., Canada.
Walton & Macke Nail Co., Kokomo, Ind.
Wachusett Nail Corpn., Hubbardston, Mass.
Western Wire & Nail Co., London, Ont., Canada.
Wheeling Steel Corporation, Wheeling, W. Va.
Wickwire Brothers, Cortland, N. Y.

Wickwire Spencer Steel Co., New York, N. Y.
Wilson Steel Products Co., Chicago, Ill. (cement coated).
Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF CUT NAILS.

Atlas Tack Corporation, Fairhaven, Mass. (small special nails).
Cleveland Tack Works (The), Cleveland, Ohio.
Dominion Tack & Nail Co., Ltd., Galt, Ontario, Canada.
Gurney (D. B.) Co., Whitman, Mass.
Interstate Iron & Steel Co., Chicago, Ill.
Milwaukee Tack Co., Milwaukee, Wis.
Norton Iron Works, Ashland, Ky.
Peck Rolling Mills, Ltd., Montreal, P. Q., Canada.
Pilgrim Nail Co., Cambridge, Mass.
Reading Iron Co., Reading, Pa.
Stanley (The G. W.) Co., Belleville, Ill.
Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
Tremont Nail Co., West Wareham, Mass.
United Shoe Machinery Co. of Canada, Ltd., Montreal, P. Q., Canada.
United Shoe Machinery Corp., Boston, Mass.
Van Alen & Co., Northumberland, Pa.
Wheeling Steel Corporation, Wheeling, W. Va.

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