





DIRECTORY
OF THE
IRON AND STEEL
WORKS

OF THE
UNITED STATES AND
CANADA

TWENTY-FIRST EDITION

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LETTER OF TRANSMITTAL

CHARLES M. SCHWAB, 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 twentieth edition published by the American Iron and Steel Institute in 1926 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 (including ferro-alloys and kindred products), 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 manu-

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Control - Adult

facturing leading rolled products, galvanized sheets, 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.

The work of compilation of the data contained in this edition has been ably done by Mr. Robert Hain.

HOWARD H. COOK,
Assistant Secretary.

NEW YORK, MARCH 15, 1930.

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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 15% ferro-silicon as a by-product.

Product: ferro-silicon, annual cap., 250 tons.

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

Inc. 1880 in Illinois as Acme Steel Goods Co., name changed to Acme Steel Co. in 1925. Capital stock: com., par value \$25, auth. \$7,500,000, issued \$6,860,925; bonds, \$1,337,000.

R. H. Norton, P. & G. S.; F. C. Gifford, V. P. & G. S. M.; Donald MacMurray, V. P.; C. M. MacCheesney, Sec.; C. S. Traer, T.; T. W. Lux, A. & C.; H. H. Onstott, P. A.

Sales offices:

Atlanta, Ga., 101 Stewart Ave.

Boston, Mass., 146 Summer St.

Detroit, Mich., 234 General Motors Bldg.

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 Cambre St.

Winnipeg, Man., McArthur Bldg.

Riverdale Plant, Riverdale, Ill.; blt. 1918-19, f. o. June 1, 1919; 2 cont. billet heat. fur. and 3 cont. slab 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; 16" 2-h. 14-st. and 10½" 2-h. 14-st. cont. strip mills; 70 stands cold rolls comprising 16 four-stand trains (one 16", one 12", thirteen 10", and one 8½" x 24" 4-h.) and 6 single stands (one 16", three 12", one 10", one 5" x 20" 4-h.); 4 cont. and 4 tub pickling mach.; 16 box annealing fur. coal-fired.

Product: hoops, bands and hot rolled strip, annual cap., 450,000 tons; cold rolled strip, 130,000 tons.

The company also owns and operates a plant at Archer Ave., Chicago, Ill., with punch press and specialty manufacturing departments.

ACME STEEL CO., Glassmere, Pa.

Inc. 1922 in Delaware. Capital stock: com., no par value, auth. and issued 5,000 shares; pref. 7% cum. auth. and issued \$400,000.

S. M. Hazlett, P.; F. N. Christy, V. P.; James A. Nixon, Sec. & T.; F. V. Flynn, G. M.; R. S. Flynn, G. S.

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

Product: steel castings (10-lb. to 10,000-lb.) for sale, annual cap., 6,000 tons. Specialty, flanged fittings for high temperature and high pressure service.

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

Inc. Dec., 1907 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$229,300.

Russell B. Koontz, P. & G. M.; Carl L. Fenn, Sec. & T.; George S. Whitney, G. S.; W. B. Koontz, P. A.; at Akron. C. F. Adamson, V. P.; at East Palestine, Ohio.

Brand: "Adamson."

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) abandoned; 1 A. O. H. fur. (10-ton) added 1917, f. o. Nov. 20, 1917; fuel, oil. Gray iron foundry; 3 cupolas; gray iron castings for own use and for sale, annual cap., 3,000 tons.

Product: steel castings for own use and for sale, annual cap., 4,000 tons acid open-hearth castings. Machinery 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 4,915 shares; prior pref. 7% cum. auth. \$175,000, issued \$155,860; pref. auth. \$350,000, issued \$331,750.

C. W. Sherman, P.; F. W. Sherman, V. P., Sec. & G. M.; C. A. Davis, V. P. & T.; William Compson, G. S.; Thomas D. Potts, G. S. M.; Willard T. Jones, P. A.; at Watervliet. C. E. Smith, A.; at Albany, N. Y.

Works at Watervliet: blt. 1920, f. o. July 13, 1920; 1 A. O. H. fur. (18-ton) fuel, oil; 1 Moore electric fur. (4½-ton).

Product: steel castings for sale, annual cap., 22,800 tons (16,400 A. O. H., 6,400 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.

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

Sales agents:

Carson, Marshall & Co., Inc., Franklin Trust Bldg., Philadelphia, Pa.

Hickman, Williams & Co., Inc., Oliver Bldg., Pittsburgh, Pa.
Phillips Isham, 30 Church St., New York, N. Y.

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; blown in, Aug. 20, 1928; 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 Brown pig breaking mach. Ernest beehive coke; Lake ore.

Product: foundry pig iron, annual cap., 85,000 tons.

Aetna Steel & Iron Co., Inc., Southington, Conn. Rolling mill at 67 High St., Southington, blt. 1872-73, last active 1926. Equipment is still in the plant and manufacture of billets and merchant bars has been abandoned.

Ajax Electrothermic Corp., Trenton, N. J., subsidiary of Ajax Metal Co. Works at Ajax Park, Trenton, N. J.: 3 electric high frequency induction furnaces used for experimental purposes.

Alan Wood Iron & Steel Co., Philadelphia, Pa., was reorganized on March 1, 1929 as Alan Wood Steel Co. and the executive offices were subsequently moved from the Widener Bldg., Philadelphia, Pa., to Ivy Rock (Post Office, Conshohocken), Pa.

ALAN WOOD STEEL CO., Conshohocken, Pa.

Inc. 1929 in Pennsylvania. Capital stock: com., no par value, auth. and issued 200,000 shares; pref. 7% cum., auth. \$7,200,000, issued \$7,186,133; bonds \$2,879,000.

W. F. Rust, P.; S. T. Brown, A. T.; John D. Shaner, A. Sec.; at Pittsburgh, Pa. H. C. Thomas, V. P.; John W. Logan, Sec. & T.; C. L. Jones, A. T. & A.; D. Bailey, A. Sec.; Ira L. Couch, A. Sec.; E. E. Long, A. Sec.; R. S. Poister, G. S.; W. S. Haring, G. S. M.; A. L. Meyer, A. G. S. M.; J. P. Platt, P. A.; at Conshohocken.

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.
Philadelphia, Pa., Widener Bldg.
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, molybdenum); billets, blooms and slabs, forging billets, sheared plates; rolled steel floor plates; blue annealed sheets.

Swede Furnaces, Swedeland, Pa.: 2 stacks, No. 1, 81' x 17' 6", blt. 1850, dismantled in 1929; No. 2, 85' x 19' 7", blt. 1912, rebt. 1925, relined 1929; No. 3, 85' 5" x 22' 7½", blt. 1917-18, relined

1927; 8 stoves (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., 675,000 tons. By-product coke: foreign, New Jersey and Lake ores. Own Rainey-Wood Coke Co.; 110 Koppers and 41 Becker coke ovens at Swedeland, by-product recovery and Koppers benzol plant, annual cap., 755,000 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., 430,000 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, prod. gas and 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: steel ingots, annual cap., 600,000 tons; slabs, blooms and billets, 370,000 tons; sheared plates, 125,000 tons.

Schuylkill Iron Works, Conshohocken, Pa.: blt. 1857; four 3-d. and two 4-d. pulv. coal-fired heat. fur.; three Hagen gas and stoker-fired cont. heat. fur.; 4 jobbing plate mills with 2-h. breakdown, 2-h. and 3-h. finishing stands (one 26" x 48", one 28" x 56", one 28" x 72", one 32" x 60"); 1 train of 2 stands cold rolls 22" x 42" and 24" x 48"; 7 blue annealing fur.; 1 Mesta pickling meh.; 2 hand pickling tanks. Roll blue annealed sheets 3/16" to 16 gauge, to 66" wide and 240" long. Product: blue annealed sheets, annual cap., 100,000 tons.

J. Wood Dept., Conshohocken, Pa.: blt. 1832, was dismantled in 1927.

ALASKA JUNEAU GOLD MINING CO., Crocker Bldg., San Francisco, Calif.

Inc. Feb. 1897 in West Virginia. Capital stock: com., par value \$10, auth. \$15,000,000, issued \$14,460,000; bonds \$2,005,590.26.

F. W. Bradley, P.; C. D. Sullivan, 1 V. P.; D. J. Murphy, 2 V. P.; J. W. Crosby, Sec. & T.; F. A. Hammersmith, P. A.

Company has purchased properties of Alaska-Treadwell Gold Mining Company and is engaged in gold mining. Company operates steel foundry for manufacture of steel castings for own use only.

Works at Juneau, Alaska: one 2-ton Heroult electric fur. Gray iron and brass foundry; annual cap., 300 tons gray iron, 5 tons brass castings for own use. (Alaska Treadwell Gold Mining Co. to 1926.)

Product: electric steel castings for own use, annual cap., 1,000 tons.

Alaska Treadwell Gold Mining Co., San Francisco, Calif. Works at Juneau, Alaska, for manufacture of steel, gray iron and brass castings for own use, were leased to Alaska Juneau Gold Mining Co. in 1926 and purchased by the latter company July, 1928.

Alberta Steel Co., Ltd., Alberta, Canada, purchased the rolling mill at Medicine Hat, Alberta, from Canadian Western Steel Corp., Ltd., in 1926 and sold it to Manitoba Rolling Mill Co., Ltd., in April, 1928. The plant was subsequently dismantled and part of machinery removed to Calgary works of Manitoba Rolling Mill Co., Ltd., remainder removed to Selkirk, Manitoba, for storage.

ALGOMA STEEL CORPORATION, Sault Ste. Marie, Ontario, Canada.

Inc. April, 1912, in Ontario, Canada. Capital stock: com., par value \$100, auth. and issued \$15,000,000; pref. 7% cum. auth. \$15,000,000, issued \$10,000,000; bonds \$21,003,826.67. The entire capital stock is owned by Lake Superior Corp.

W. C. Franz, P.; J. W. Gemmell, V. P. (Finance); J. D. Jones, V. P. & G. M. (Operations); Ernest W. Shell, T.; E. Carey, C.; J. W. Wilson, G. S.; S. V. McLeod, P. A.; at Sault Ste. Marie. Alex Taylor, Sec.; at 1416 Royal Bank Bldg., Montreal. J. D. Gray, G. S. M.; at Canada Cement Bldg., Montreal.

Sales office: Toronto, R. E. Nicholson, Northern Ontario 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; gray iron castings; brass, bronze, aluminum 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, 71' x 17' 3½"; No. 2, blt. 1901-03, f. o. Oct. 17, 1904, 80' x 17' 3½"; No. 3, blt. 1909-11, f. o. April 13, 1911, 90' x 21' 6"; No. 4, blt. 1917-18, f. o. Mar. 23, 1918, 90' x 19' 6"; seven 2-pass stoves, 70' x 18', 4 Kennedy stoves, 90' x 22', 1 Roberts & 3 McKee stoves 90' x 18'; 11 blowing engines (4 Mesta Machine Co. vertical steam, two 1,500 H. P. turbo, 5 Allis Chalmers twin tandem gas) 170,000 cfm., 18 lbs. rated pressure; 20 boilers (6 Babcock & Wilcox water tube 2,150 H. P., 12 Cahall tubular 3,000 H. P., 2 Babcock & Wilcox cylindrical 1,000 H. P.), furnish power also to rolling mill dept.; 3 Uehling double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 42,000 tons. Molten metal to mixers. By-product coke: Lake ore. Product: bessemer, basic, malleable and foundry pig iron, annual cap., 547,500 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, 10,000 tons sulphate of ammonia. Wilputte benzol plant, annual cap., 2,400,000 gals. benzol, 3,000,000 gals. light oils.

Open-hearth dept.: 11 stationary B. O. H. fur. (eight 60-ton, three 85-ton); fuel, prod. and coke oven gas; 42 gas producers; 2 mixers (300-ton, 200-ton); first O. H. steel made May 3, 1907. Annual cap., 540,000 tons ingots; alloy steel ingots (nickel, chrome, vanadium, manganese, molybdenum).

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 6-d coke oven 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. merchant mill; merchant mill with 18" 2-h. 1-st. roughing, 12" 3-h. 4-st. and 9" 3-h. 1-st. finishing. Rail finishing shop. Rail fastening dept. for finishing tie plates, splice bars and continuous joints. Annual cap. 480,000 tons, including 350,000 tons of rails and structural shapes, 130,000 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 40 miles standard and 5 miles narrow gauge track, 12 standard and 6 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. The company also owns several other undeveloped iron ore deposits.

Limestone properties: the company owns valuable limestone properties on the Canadian Islands, east of the 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. Fiborn quarry, annual cap., 300,000 net tons limestone; Ozark quarry, 60,000 net tons dolomite.

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. \$100,000, issued \$100,000.

H. B. Spackman, P.; J. Stewart Huston, V. P.; J. Warren Herman, Sec.; at Coatesville, Pa. F. F. Musgrove, T. & G. M.; at Buena Vista, Va.

Sales agents: Sell through brokers.

Brand: Buena Vista (pig iron).

Iron Gate Furnace, Iron Gate, Va.: 1 stack, dismantled in 1927 and sold as scrap.

Buena Vista Furnace, Buena Vista, Va.: 1 stack, 70' x 16', blt. 1889-90, rebld. 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.; 6 water-tube boilers (5 Babcock & Wilcox 2,000 H. P.; 1 Sterling 300 H. P.). Slag brick plant (type, Sutcliffe, Speakman); annual cap., 15,000 tons. West Va. and Kentucky coke: Oriskany brown ore. Product: foundry, high manganese, low-phosphorus and basic pig iron; annual cap., 55,000 tons.

The company owns and operates Oriskany brown limonite ore mines at Oriskany, Va.; annual cap., 150,000 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. Capital stock: com., no par value, auth. 629,504 shares, issued 610,026 shares; pref. 7% cum., auth. and issued \$3,342,600. Harry E. Sheldon, P.; Charles C. Henderson, V. P. & T.; James O. Carr, V. P.; F. H. Stephens, Sec. & C.; W. L. Dankmyer, A.; W. F. Detwiler, G. M.; P. F. Voigt, Jr., G. S. M.; Earl L. McGraw, P. A.; at Brackenridge. R. D. Campbell, V. P.; L. W. Hicks, V. P.; at Pittsburgh, Pa.

Sales offices:

Buffalo, N. Y., Room 807, Iroquois Gas Bldg.

Chicago, Ill., 419 Peoples Gas Bldg.

Cleveland, Ohio, 1677 Union Trust Bldg.

Detroit, Mich., 4-134 General Motors Bldg.

Los Angeles, Calif., Room 653, Roosevelt Bldg.

New York, N. Y., 501 Fifth Ave.

St. Louis, Mo., 501 Shell Bldg.

Allegheny Steel Co. absorbed the West Penn Steel Co., Brackenridge, Pa., in May, 1929 and its plant is included in description of Brackenridge Works, given below. Allegheny Steel Co. also owns the Delaware Seamless Tube Co. which it acquired Aug. 17, 1927, see Delaware Seamless Tube Co.

Works at Brackenridge: blt. 1900-01; 10 B. O. H. fur. (two 100-ton, five 80-ton, one 75-ton, one 60-ton, one 50-ton); 1 A. O. H. fur. (30-ton); fuel in O. H. nat gas; 8 electric melting fur., 5 arc (6-ton to 10-ton), 1 arc (500-lb.), 2 Induction (6-ton); 9 soaking pits (three 4-hole nat. gas-fired, five 4-hole and one

3-hole prod. gas-fired); 4 Wellman-Seaver-Morgan gas prod.; 8 heat. fur. (two 1-d., one 2-d. billet, one 3-d. billet, two 5-d. billet and slab, two cont. slab) fuel, nat. gas and coal dust; 34" 2-h. 1-st. reversing blooming; 31" 3-h. 1-st. and 30" 3-h. 1-st. sheet bar; 24" 1-st. lap-weld tube mill; rod mill with 12" 3-h. 5-st. and 12" 2-h. 1-st.; 34 sheet and 34 pair fur.; 30" x 110" 3-h. sheared plate mill; 34 hot black sheet mills (four 27", six 29", twenty-four 30"); 4 trains with 32 stands cold rolls (1 train 26" rolls with 5-st. on end of hot train and 1-st. opposite end; 1 train 26" rolls with 9-st. cold rolls and 1-st. on end of hot train; 1 train with 4-st. 26" and 8-st. 24"; 1 train with 4 single stand 4-h. 12" x 30" x 40" x 50"); 1 annealing pit; 15 annealing fur. (1 car bottom, 2 Tate Jones, 12 stationary); 28 double and 3 single box annealing fur.; 4 normalizing fur. (2 horizontal, 2 vertical); 13 pickling mach. (four 3-arm Mesta, three 4-arm Mesta, six 2-tank Plunger); 11 pickling tanks. Roll sheared plates 3/16" to 2", up to 96" x 240"; black sheets, 8 to 30 gauge, up to 70" x 120". Tube mill: 2 lap-weld fur.; 2" O. D. to 6" O. D. boiler tubes. Gray iron foundry with 2 cupolas; annual cap., 18,000 tons gray iron and 145 tons brass castings for own use.

Product: steel ingots and castings for own use and for sale, alloy steel ingots and castings (nickel, chrome; etc.); blooms, billets, sheet and tinplate bars, sheared plates, black sheets, special finished black sheets, automobile body, metallic furniture, electric, alloy sheets, etc.; tank, ship and boiler plates; black pipe, boiler tubes; annual cap., 338,000 tons ingots (286,000 tons B. O. H., 12,000 tons A. O. H., 40,000 tons electric), 7,000 tons A. O. H. castings; 300,000 tons blooms and billets, 220,000 tons sheet and tinplate bars; finished hot rolled products, 268,500 tons, including 80,000 tons sheared plates, 180,000 tons black sheets, 8,500 tons miscellaneous rolled products; 12,000 tons black pipe, 12,000 tons boiler tubes.

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.

Inc. March 15, 1913 in Delaware. Capital stock (Dec. 31, 1928): com., par value \$100, auth. and issued \$26,000,000. Stock converted into shares of no par value, Oct. 1, 1929, issued 1,144,000 shares; bonds \$15,000,000.

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

Sales offices in all principal cities.

Company operates plants at West Allis, Wis., Norwood, Ohio, Springfield, Illinois, and Pittsburgh, Pa., 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.; surface and underground power shovels, tractors, air compressors; condensers, forgings. Operates gray iron foundry and forge shop at West Allis Works, annual cap., 38,000 tons of gray iron, 5,000 tons air furnace, 1,200 tons brass and bronze castings; steel forgings 5,000 tons. 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. (4-ton). Gray iron, brass and bronze foundry for own use, annual cap., 2,000 tons gray iron, 100 tons brass and bronze castings.

Product: steel castings for own use only, annual cap., 2,500 tons.

ALLOY CAST STEEL CO. (The), Marion, Ohio.

Inc. June, 1926, in Ohio.

C. A. Owens, P.; F. D. Glosser, V. P.; M. C. McNeil, Sec. & T. Works at Marion: steel foundry, blt. 1919, f. o. May, 1919; 1 Heroult electric fur. (3-ton); 1 A. O. H. fur. (5-ton) added 1928. (The Fairbanks Steam Shovel Co. to May 18, 1926.)

Product: steel castings for sale, annual cap., 3,000 tons (1,000 tons electric, 2,000 tons A. O. H.). Alloy steel castings (nickel, chrome, manganese, vanadium, molybdenum).

ALLOY STEEL & METALS CO., Inc., 1862 East 55th St., Los Angeles, Calif.

Inc. Oct. 6, 1919 in California. Capital stock: com., par value \$100, auth. \$250,000, issued \$226,800.

A. J. Morse, P.; B. A. Quinn, V. P.; N. K. Anderson, Sec.; B. J. Quinn, T.; V. Harrell, A.

Sales agents:

Los Angeles, Calif., Brown Bevis Co.

Portland, Ore., Clyde Equipment Co.

Salt Lake City, Utah, Construction Equipment Co.

San Francisco, Calif., Garfield & Company.

Brands: Roller-Bear, Rock Crusher.

Works at 55th & Alameda Sts., Los Angeles: blt. 1923, f. o. July, 1923; 3 electric fur. (two 3-ton, one $\frac{1}{2}$ -ton); annealing and heat treating fur.; 1 4000-lb. steam hammer. Forge shop.

Product: steel castings for own use and for sale, annual cap., 3,750 tons; alloy steel castings (chrome, nickel, vanadium, manganese); castings for oil well tools, rock crushers, etc. Forged oil well tools and miscellaneous forgings.

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, enginebolt iron, chain iron and jail
bar iron.

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

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

Joshua A. Hatfield, P.; A. L. Davis, G. S. M.; at 71 Broadway,
New York, N. Y. Frank B. Thompson, V. P. & A.; L. A. Pad-
dock, V. P.; Richmond F. Ball, Sec.; F. E. Wiley, T.; W. G. A.
Millar, P. A.; at Pittsburgh.

Sales offices:

Baltimore, H. A. Brainerd, Continental Bldg.

Boston, S. P. Waldron, Statler Bldg.

Chicago, E. H. Heald, 208 South La Salle St.

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

Cleveland, F. D. Rideout, Rockefeller Bldg.

Detroit, J. C. Munn, Buhl Bldg.

Duluth, George Bryan, Jr., Wolvin Bldg.

Denver, C. P. Griffith, First National Bank Bldg.

Minneapolis, Floyd E. Cates, 629 Second St., S. E.

New York, E. B. Stearns, 71 Broadway.

Philadelphia, Charles Rieder, Jr., Widener Bldg.

Pittsburgh, L. J. Affelder, Frick Bldg.

Salt Lake City, C. P. Griffith, First National 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,
Russ Bldg., San Francisco.

Brand: "Pencoyd" (structural shapes).

Product: manufacture and erect railroad and highway bridges,
steel buildings, oil storage tanks, hangars, transmission towers
and poles, barges, turntables, electric furnaces, etc.; steel ingots
and castings; steel blooms, channel bars, deck beams, tees, angles,
flats, rounds, bar and bridge steel, shafting, eye-bars, gen-
eral 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 (216,000 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). Bolt, nut and rivet shop (10,800 net tons). Steel foundry was dismantled in 1927.

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

Bridge Works (27,600 net tons); forge shop (3,000 net tons).

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

Bridge Works (9,600 net tons).

Elmira Plant, Elmira, N. Y.

Bridge Works (48,000 net tons).

Gary Plant, Gary, Ind.

Bridge Works (144,000 net tons).

Lassig Plant, Clybourn & Wrightwood Aves., Chicago, was sold in May, 1929.

Minneapolis Plant, 7th Ave. & 2d 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. (two 60-ton, eight 45-ton, one 40-ton) fuel, oil; 11 Hughes gas producers not in use; 2 cupolas not in use; four 1-hole soaking pits; 2 cont. oil-fired reheate. fur.; 3 prod. gas-fired heat. 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, coal and oil. Bridge Works (93,000 net tons). Brass (80 tons) foundry. Product: steel ingots, annual cap. 240,000 tons; steel castings, 3,200 tons; blooms and billets, 209,000 tons; finished hot rolled products, 222,000 tons including 190,000 tons heavy and 8,000 tons light structural shapes, 24,000 tons merchant and concrete bars.

St. Louis Plant, 1014 So. Vandeventer Ave., St. Louis, sold in 1928.

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

Makes plain and galvanized steel towers and poles for electrical transmission (21,600 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 (54,000 net tons).

Total annual capacity: basic open-hearth steel ingots, 240,000 tons; basic open-hearth steel castings, 3,200 tons; brass castings, 80 tons; blooms and billets, 209,000 tons; finished hot rolled products, 222,000 tons including 190,000 tons heavy and 8,000 tons light structural shapes, 24,000 tons merchant and concrete bars; fabricated structural work and forgings, 690,000 net tons.

AMERICAN CAR & FOUNDRY CO., 30 Church St., 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.; H. W. Wolff, V. P.; G. R. Scanland, V. P.; W. E. Hedgcock, V. P.; F. A. Stevenson, V. P.; H. C. Wick, Sec.; S. A. Mallette, T.; E. S. Block, A.; W. J. Harris, P. A.; at 30 Church St., New York. C. D. Terrell, 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.; St. Charles and St. Louis, Mo.; and Wilmington, Del. Two rolling mills are operated at Berwick, Pa., and St. Louis, Mo.

Berwick Plant, Berwick, Pa.; blt. 1872; 4 single and 4 double puddling fur.; 2 rotary squeezers; 6 coal-fired heat. fur. (two 3-d., four 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. Owns controlling interest in Highland Iron & Steel Co., Page Steel & Wire Co. and Reading Steel Casting Co.

American Electrical Works, Phillipsdale, R. I., subsidiary of Washburn Wire Co. Works at Phillipsdale for rolling copper rods and manufacture of copper wire. Rolling of iron and steel products has been discontinued.

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

Inc. 1913 in Utah. Capital stock: com., par value \$1, auth. \$200,000, issued \$101,000; bonds \$45,000.

Simon Rosenblatt, P.; P. A. Mattingly, Sec., G. M. & G. S. M.; M. S. Rosenblatt, T.; F. A. Robinson, G. S.; R. E. Winn, P. A.

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

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

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

J. F. Johnson, P.; Frederic Corsby, V. P.; H. S. Johnson, V. P.

Sales offices in the principal cities of the United States and Canada.

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

Product: steel castings for own use, annual cap., 4,000 tons. Gray iron castings for own use, annual cap., 5,000 tons.

American Horseshoe Co., Phillipsburg, N. J. Rolling mill at Phillipsburg: blt. 1865 for manufacture of horseshoe bars, horseshoes and toe-calks, last operated Dec. 1928. Some of the machinery and inventories was sold to Phoenix Horse Shoe Co. Dec. 28, 1928, and the remainder was scrapped. Company out of business.

American Industrial Corp., Atlanta, Georgia, see Savannah Steel Corporation.

American Locomotive Co., 30 Church St., New York, N. Y., owns Railway Steel-Spring Co. which it acquired May 14, 1926, see Railway Steel-Spring Co. The Chester Works, Chester, Pa., formerly owned and operated by American Locomotive Co. for manufacture of steel castings, was acquired by General Steel Castings Corp., Dec. 31, 1929. Works are now known as Seaboard Works, General Steel Castings Corp.

AMERICAN MANGANESE STEEL CO., 333 North Michigan Ave., Chicago, Ill.

Inc. May, 1910 in Maine. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,928,700; pref. 7% non-cum. auth. \$3,000,000 issued \$2,587,300.

W. G. Nichols, P.; S. T. McCall, V. P., Sec. & T.; A. W. Daniels, G. S. M.; at Chicago. C. Fahlstrom, V. P.; H. F. Rikhoff, A. Sec. & A. T.; C. J. Marcuson, A.; at 389 East 114th St., Chicago Heights, Ill. C. H. McGrath, P. A.; at 230 Park Ave., New York, N. Y.

Sales offices:

Chicago, Ill., 333 North Michigan Ave.
 Cleveland, Ohio.
 Denver, Col., 4th & Wazee Sts.
 Los Angeles, Calif.
 New Castle, Del.
 New York, N. Y., 230 Park Ave.
 Oakland, Calif., Oakland Pier.
 Pittsburgh, Pa.
 St. Louis, Mo., 6600 Ridge Ave.

Sales agents:

Boston, Mass., Harrington & Robinson Co.
 Denver, Col., A. T. Herr, U. S. Nat'l Bank Bldg.
 Easton, Pa., L. W. Van Buskirk.
 Lakeland, Fla., Mine & Mill Supply Co.
 Montreal, P. Q., Canada, Economy Railway Appliance Co.
 San Juan, Porto Rico, Carlos D. Rossi.
 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., 27,600 tons.

Plant "A," Chicago Heights, Ill.: blt. 1899-1900; 4 electric fur. (two 3-ton and one 6-ton Heroult, one $\frac{1}{2}$ -ton Moore); f. o. May, 1921. Product: manganese steel castings, heat and corrosion resisting alloys (chrome, nickel); annual cap., 11,000 tons.

Plant "B," New Castle, Del.: blt. 1908-09; f. o. Mar. 25, 1909; 1 Tropenas converter (2-net ton) dismantled in 1926; 1 Moore electric fur. ($1\frac{1}{2}$ -ton) installed 1925, f. o. May, 1925. Product: manganese steel castings; annual cap., 3,600 tons.

Plant "C," Denver, Col.: blt. 1891; 2 Moore electric fur. ($1\frac{1}{2}$ -ton). Product: carbon and alloy steel castings (manganese and chrome), annual cap., 5,400 tons.

Plant "D," Burnside, Chicago, Ill.: blt. 1916; 1 Moore electric fur. ($1\frac{1}{2}$ -ton) installed 1928, f. o. Feb., 1928. (American Brake Shoe & Foundry Co. to Jan. 1, 1928). Product: manganese steel castings; annual cap., 3,600 tons.

Plant "F," Oakland, Calif.: blt. 1918; f. o. Aug., 1919; 1 Heroult electric fur. (3-ton). Product: manganese steel castings, annual cap., 2,500 tons.

Plant "L," Los Angeles, Calif.: blt. 1924-25; 1 Moore electric fur. ($1\frac{1}{2}$ -ton), installed 1925, f. o. May, 1925. Product: manganese steel castings, annual cap., 1,500 tons.

Company also owns subsidiary company, Southern Manganese Steel Co., with plant at St. Louis, see Southern Manganese Steel Co.

AMERICAN PUDDLED IRON CO. (The), 513 Stambaugh Bldg., Youngstown, Ohio.

Inc. June 27, 1923 in Ohio. Capital stock: com., no par value, auth. 35,000 shares, issued 29,154 shares.

R. C. Steese, P. & T.; John W. Ford, V. P.; J. Paul Suter, Sec.; T. M. Phillips, G. M.

Works at North Mahoning Ave., Warren, Ohio: blt. 1922-24, f. o. April 1, 1924; 2 side-blown bessemer converters (2-ton); 1 cupola; 20-ton O. H. fur. for melting slag; 2 oil-fired heat. fur. (one 3-d., one cont.); 29" 3-h. 1-st. roughing; 24" 3-h. 1-st. finishing; 1 hydraulic press. (Operated under lease by A. M. Byers Co., Nov. 1, 1926, to Jan. 1, 1930, when it reverted to owner.)

Product: iron blooms, billets and sheet bars, annual capacity, 60,000 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 \$33,065,500; pref. 7% cum. auth. and issued \$3,000,000.

Clarence M. Woolley, Ch.; Theodore Ahrens, P.; Charles H. Hodges, 1st V. P.; Charles K. Foster, 2nd V. P.; Rolland J. Hamilton, V. P. & Sec.; D. M. Forgan, V. P. & T.; Martin J. Beirn, V. P. & G. M. S.; Henry S. Downe, V. P. (administrative board); Frederick Shearer, V. P. (European subsidiaries); William E. Kugeman, V. P. (European subsidiaries); William M. Scudder, V. P. (sales); Wallace M. Cosgrove, V. P. (sales); David E. Kennedy, V. P. (sales); Adam E. Geddes, V. P. (manufacture); Henry L. Weimer, A. T.; J. E. King, A. T.

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., 21,000 tons.

American Radiator Co. 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; 1 Moore electric fur. (3-ton); 3 Greaves-Etchells electric fur. (two 6-ton, one 1-ton) dismantled in 1925.

Product: steel castings for own use and for sale; annual cap., 2,700 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. \$50,000,000, issued \$35,733,380; pref. 6% cum. auth. and issued \$88,400; bonds \$25,000,000

George M. Verity, Ch.; J. H. Frantz, V. Ch.; Charles R. Hook, P. & G. M.; C. W. Verity, V. P. & A. G. M.; W. W. Sebald, V. P. (distribution); S. R. Rectanus, V. P. (production); W. S. Horner, V. P.; J. C. Miller, V. P.; D. Eppelsheimer, V. P.; J. B. Tytus, V. P.; Bennett Chapple, V. P.; M. E. Danford, A. V. P.; W. J. Beck, A. G. M.; C. W. Davis, T.; W. D. Vorhis, Sec.; C. L. Kingsbury, C.; G. F. Ahlbrandt, G. S. M.; R. C. Todd, A. G. S. M.; N. Ebersole, P. A.; H. O. Miller, Director of Raw Material Supply.

Sales offices:

Chicago, Ill., F. B. Milhoan, 310 South Michigan Blvd.
Cincinnati, Ohio, G. C. Wilson, 1007 Chamber of Commerce Bldg.
Cleveland, Ohio, H. M. Richards, 1516-18 Keith Bldg., Euclid Ave. & East 17th St.
Detroit, Mich., R. L. Shugg, 5-261 General Motors Bldg.
New York, N. Y., C. M. Spear, 50 Church St.
Philadelphia, Pa., W. S. Stephensen, 1213 Franklin Trust Bldg.
Pittsburgh, Pa., H. A. Lord, 1632 Henry W. Oliver Bldg.
St. Louis, Mo., N. L. Pierson, 1724 Ambassador Bldg.
San Francisco, Calif., H. O. Stevens, 540 Tenth St.

Brands: Buckeye (pig iron); ARMC0 (American ingot iron and steel).

Products: basic, foundry and malleable pig iron; steel ingots; slabs, blooms, billets and sheet bars; black, blue annealed and galvanized Armco ingot iron and steel sheets; automobile, electrical, armature, enameling stock and highly finished sheets of all kinds; long terne plates; forged steel wheels.

Total annual capacity: 581,400 tons pig iron; 1,666,705 tons ingots; 8,590 tons steel castings; 923,000 tons black sheets; 123,000 tons galvanized sheets; long terne plates, 27,000 tons; forged steel wheels, 200,000 wheels.

Columbus Works, Columbus, Ohio: 2 blast furnaces, blt. 1900-01; East Furnace, 75' x 18', remod. 1920, relined 1926; West Furnace, 75' x 18', remod. Jan., 1925; 8 two-pass side comb. stoves, 96' x 18'; 5 steam blowing eng., 73,500 cfm., 15 lbs. rated pressure; 7 Rust water-tube boilers, 3,600 H. P.; 2 Heyl & Patterson single-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 36,000 tons; 2 slag granulating pits, annual cap., 150,000 tons. By-product coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 300,000 tons.

Middletown Division:

Central Works, Middletown, Ohio: blt. 1899, f. o. Feb. 7, 1900; 1 B. O. H. fur. (25-ton), fuel, oil; 1 Moore electric fur. (6-ton) added 1924, f. o. Aug. 25, 1924; Rolling Mill Dept. abandoned in 1929. Steel foundry and foundry for ingot iron castings for annealing and galvanizing equipment, flue boxes, gears, etc., for

own use and for sale. Product: steel ingots, annual cap., 8,705 tons (8,625 tons B. O. H., 80 tons electric); steel castings for own use and for sale, 8,590 tons (6,375 tons B. O. H., 2,215 tons electric), rolling mill castings.

East Side Works, Middletown, Ohio: blt. 1911; f. o. Sept. 10, 1911; 8 B. O. H. fur. (three 70-ton, five 100-ton), fuel, oil and gas; 24 Hughes gas producers; seven 4-hole soaking pits, fuel, prod. gas; 3 cont. prod. gas-fired heat. fur.; 36" 2-h. 1st. blooming; continuous hot strip mill with 18" x 40" x 72" 2h. 4-st., 18" x 40" x 72" 4-h. 3-st. and 18" x 40" x 58" 4-h. 4-st.; 17 stands 2-h. cold rolls; 14 hot black sheet finishing mills (30" x 34" to 90"); 2 cont. and 30 single annealing fur.; 7 blue annealing fur.; 6 pickling mach. (2 Cook, 1 Mesta, 3 Armco); 4 galvanizing pot; 3 tinning sets for long terne plates. Product: steel ingots, annual cap., 500,000 tons; billets, slabs, sheet bars; black sheets, 266,000 tons; galvanized sheets, 54,000 tons; blue annealed sheets; long terne plates, 27,000 tons.

Zanesville Works, Zanesville, Ohio: blt. 1900-01, f. o. Oct. 16, 1901; 13 sheet and 13 pair fur.; 13 hot black sheet mills (30" x 32" to 48"); 7 stands cold rolls (25½" x 52" to 62"); 36 box annealing fur.; 2 Mesta pickling mach. Product: black sheets, annual cap., 67,000 tons.

Ashland Division:

Ashland Furnaces, Ashland, Ky.: 1 stack, No. 1, 75' x 17' 3", blt. 1869, rebt. 1905, relined 1929; No. 2, dismantled in 1926; 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. (3 Todd, 1 Allis-Chalmers) 60,000 cfm., 12 lbs. rated pressure; 6 Sterling water-tube boilers, 3,300 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, malleable and foundry pig iron, annual cap., 137,400 tons.

West Works, Ashland, Ky.: blt. 1916-17, f. o. Feb. 17, 1917; 8 B. O. H. fur. (115-ton), fuel, nat. and coke oven gas; one 600-ton mixer; six 4-hole soaking pits, fuel, nat. gas and coke oven gas; 36" 2-h. 1-st. blooming; 30" x 58" 2-h. 11-st. cont. plate mill; 21 stands cold rolls (six 30" x 72", fifteen 30" x 58"); jobbing plate mill with 30" x 58" 2-h. 3-st. and 30" x 58" 3-h. 4-st.; one 3-h. hot black sheet mill with 5 stands in tandem; 1 train cold rolls 34" x 58" 4-h. 5-st.; 4 cont. box annealing fur.; 5 blue annealing fur.; 7 pickling mach.; 3 galvanizing pots. Product: steel ingots, annual cap., 588,000 tons; blooms, billets, sheet bars; black sheets, 360,000 tons; galvanized sheets, 69,000 tons; blue annealed sheets.

Twenty-Third Street Plant was abandoned in 1929.

Norton Iron Works, Ashland, Ky. (Norton Iron Works to Oct. 1, 1928): Norton Furnace; 1 stack, 82' 6" x 18' 2", blt. 1873, last remod. 1927, relined 1929; 5 stoves (four Freyn & Brassert 80' x 18', one 80' x 20'); 3 steam blowing eng. (2 Weimer, 1 Allis-Chalmers) 45,000 cfm., 14 lbs. rated pressure; 7 Babcock & Wilcox water-tube boilers 2,700 H. P. By-product coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 144,000 tons.

Rolling Mill and Wire Mill, Ashland, Ky. (Norton Iron Works to Oct. 1, 1928) were abandoned in 1929.

Steel Works and Rolling Mill, Ashland, Ky. (formerly owned and operated by Ashland Steel Co. to July 1, 1928) were abandoned as of Dec. 31, 1929.

Columbia Division:

Butler Works, Butler, Pa. (Forged Steel Wheel Co. to Aug. 1, 1927): blt. 1909-10; first steel made Oct. 12, 1910, first slabs rolled Oct. 12, 1910; 10 B. O. H. fur. (100-ton) fuel, nat. gas; 20 Wellman-Seaver-Morgan gas producers; five 4-hole soaking pits, fuel, prod. gas; 27" x 36" 2-h. 1-st. universal mill; continuous hot strip mill with 16½" x 38" x 48" 4-h. 3-st. and 16½" x 32½" x 42" 4-h. 1-st., 14 stands of 2-h. cold rolls 26" x 58" (2 trains of 3-st., 2 trains of 2-st., 4 single stands); 3 stands of 4-h. cold rolls 14½" x 32½" x 42" (1 train of 2-st., 1 single stand); 19 stands of 4-h. cold rolls 14½" x 30½" x 42" (4 trains of 4-st. each, 1 train of 2-st., 1 single stand); 2 cont. annealing fur.; 3 blue annealing fur.; 3 cont. pickling mach., 1 pickling tank; 2 forging presses. Product: steel ingots, annual cap., 570,000 tons; alloy steel ingots (manganese); hot and cold rolled strip sheets, 230,000 tons; forged steel wheels, 200,000 wheels.

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.; J. I. Andrews, V. P. & G. S. M.; H. B. Wheeler, Sec. & T.; Roland J. Hadly, A.; M. S. Dennis, P. A.

Sales offices:

Chicago, Ill., W. H. Eaton, Cont. & Com. Bank Bldg.
Cincinnati, Ohio, L. K. Slaback, 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., A. J. Thomas, Empire Bldg.
Philadelphia, Pa., T. W. Simpérs, Widener Bldg.
Pittsburgh, Pa., J. R. Bates, Frick Bldg.
St. Louis, Mo., O. J. Willis, Liberty Central Trust Co. 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: American (Apollo Best Bloom galvanized sheets, all grades of black sheets); American Keystone (Apollo Best Bloom galvanized copper bearing sheets, all grades of black copper bearing sheets); American Cokes (coke tin plates); American Charcoals (charcoal tin plates); American Ternes (terne plate for roofing).

Product: hot rolled strip steel; 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 tin-plates, terne plates and long terne plates; chilled rolls, sand rolls and iron castings.

Canton Roll and Machine Works, Canton, Ohio:

Product: chilled rolls, sand rolls and iron castings; annual cap., 18,600 tons rolls and 3,600 tons iron castings.

SHEET MILLS

Aetna-Standard Works, Bridgeport, Ohio: blt. 1872, 4 prod. gas-fired heat. fur. (one 2-d., three 4-d.); 30" x 72" 3-h. 2-st. sheared plate mill; 30" x 72" 2-h. 2-st. jobbing plate mill; 2 blue annealing fur. Roll sheared plates 3 to 12 gauge, 36" to 66" wide, 120" to 240" long; black sheets 13 to 16 gauge, 30" to 60" wide, 84" to 168" long. Product: light plates, black sheets, blue annealed sheets, annual cap., 46,400 tons, including sheared plates, 33,600 tons and black sheets, 12,800 tons.

Dover Works, Dover, Ohio: blt. 1865-66; 5 sheet and 5 pair fur.; 6 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; 2-st. 24" x 48" and 2-st. 24" x 52" on cold mill train); 7 box annealing fur.; 4 Vandergrift pickling mach.; 3 galvanizing pots. Roll black sheets 10 to 30 gauge, 24" to 42" wide, 72" to 144" long. Product: black sheets, annual cap., 63,800 tons; galvanized sheets, 50,400 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; four 2-d. prod. gas-fired rehear. fur.; 10 prod. gas-fired heat. fur. (three 4-d., six 5-d., one cont.); two 3-h. sheared plate mills (one 34" x 84", one 32" x 96"); four 2-h. jobbing plate mills (one 32" x 44", one 32" x 50", one 32" x 56", one 32" x 84"); 8 sheet and 8 pair fur.; 8 comb. sheet and pair fur.; 16 hot black sheet mills (three 32" x 40", eight 32" x 44", one

32" x 50", three 32" x 56", one 32" x 60"): 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 five 26" x 44", one 26" x 56", three 26" x 66"); 21 box annealing fur.; 6 blue annealing fur.; 21 pickling mach. (20 Vandergrift, 1 Mesta); 10 galvanizing pots. Roll sheared plates 3 to 12 gauge, 36" to 84" wide, 156" to 312" long; job mill sheets 13 to 18 gauge, 30" to 72" 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., 345,600 tons, including 121,600 tons sheared plates and 224,000 tons black sheets; galvanized sheets, 176,000 tons; blue annealed sheets 198,400 tons; 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 (five 24" x 48", one 26" x 48"); 8 box annealing fur.; 8 Vandergrift pickling mach.; 5 galvanizing pots. Roll black sheets 14 to 30 gauge, 24" to 42" wide, 72" x 144" long. Product: black sheets, annual cap., 59,000 tons; galvanized sheets, 68,400 tons; formed roofing, siding, etc.

Leechburg Works, Leechburg, Pa.: blt. 1872; 11 comb. sheet and pair fur.; 11 hot black sheet mills (two 24½" x 39", one 26" x 42", seven 28" x 42", one 28" x 46"); 5 stands cold rolls on hot mill train (two 26" x 45", three 26" x 52"); 7 box annealing fur. Roll black sheets 12 to 30 gauge, 24" to 40" wide, 72" to 144" long. Product: black sheets, annual cap., 55,000 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 44", three 28" x 54", five 28" x 60", one 28" x 64"); 11 stands cold rolls (2 st. on hot mill train, one 24" x 54", one 26" x 60"; 9 st. on cold mill train, one 24" x 48", four 24" x 54" four 26" x 60"); 9 box annealing fur.; 5 pickling mach. (4 Mesta, 1 Horz.-Mech.). Roll black sheets, 12 to 30 gauge, 24" to 52" wide, 72" to 144" long. Product: black sheets, annual cap., 78,700 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.; 2 sheet and 2 pair fur.; 8 comb. sheet and pair fur.; two 2-h. jobbing mills (one 30" x 68", one 30" x 72"); 10 hot black sheet mills (one 28" x 38", three 30" x 44", four 30" x 48", two 30" x 56"); 8 stands cold rolls (No. 1 cold train with one 24" x 44", two 24" x 48", one 26" x 60"; No. 2 cold train with one 24" x 44", one 24" x 48", one 26" x 60", one 26" x 68"); 9 box annealing fur.; 3 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, annual cap., 86,400 tons; blue annealed sheets, 26,400 tons; cold rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

Old Meadow Works, Scottdale, Pa. were dismantled in 1928.

Scottdale Works, Scottdale, Pa.: blt. 1873; 4 sheet, 4 pair, 4 comb. sheet and pair fur.; 8 hot black sheet mills (three 26" x 44", five 28" x 44"); 4 stands cold rolls on hot mill train (one 24" x 44", three 24" x 50"); 6 box annealing fur.; 6 Vandergrift pickling mach.; 4 galvanizing pots. Roll black sheets, 14 to 30 gauge, 24" to 40" wide, 72" to 144" long. Product: black sheets, annual cap., 60,800 tons; galvanized sheets, 78,400 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; 12 B. 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 and 8 pair fur.; 24 comb. sheet and pair fur.; 29 single and 3 double hot black sheet mills (two 28" x 36", five 28" x 40", ten 30" x 44", two 32" x 44", one 32" x 48", two 32" x 54", four 32" x 60"; one 32" x 66", two 32" x 82", three 32" x 44" double); 13 stands cold rolls on hot mill train (three 26" x 48", three 28" x 48", six 28" x 54", one 28" x 80"); 30 box annealing fur.; 21 pickling mach. (20 Vandergrift, 1 Cook); 8 galvanizing pots; long terne department. Roll black sheets, 3 to 30 gauge, 24" to 66" wide, 72" to 144" long. Product: steel ingots, annual cap., 336,000 tons; alloy steel ingots (copper, nickel, silicon); steel castings for own use only; sheet bars, 272,000 tons; black sheets, 226,000 tons; galvanized sheets 147,200 tons; long terne plates, 57,600 tons; ? formed roofing, siding, etc., cold rolled, blued and automobile sheets; sheets for stamping, enameling, etc.

Wellsville Works, Wellsville, Ohio: blt. 1873; 8 sheet and 8 pair fur.; 2 comb. sheet and pair fur.; 10 hot black sheet mills (two 28" x 36", one 28" x 40", four 28" x 44", one 28" x 48", two 28" x 56"); 16 stands cold rolls on cold mill train (four 24" x 38"; four in 2 sets of 2 tandem 26" 48", six 26" x 56", two 26" x 60"); 20 box annealing fur.; 3 pickling mach. (2 Mesta, 1 Horiz-Mech.); 8 hand pickling tanks. Roll black sheets, 10 to 30 gauge, 24" to 48" wide, 72" to 144" long. Product: black sheets, annual cap., 52,000 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); 13 sheet and 13 pair fur.; 24" x 56", 3-h. sheared plate mill; 13 hot black sheet mills (three 22" x 40",

one 23" x 36", four 23" x 44", two 24" x 48", one 24" x 50", two 26" x 54"); ten stands cold rolls in 2 cold trains (No. 1, two 24" x 48", two 24" x 50"; No. 2, one 24" x 42", one 24" x 48", one 34" x 55" 4-h., three 26" x 60" tandem); 19 box annealing fur.; one blue annealing fur.; 2 Mesta pickling mach. Roll sheared plates 3 to 14 gauge, 36" to 48" wide, 72" to 144" long: black sheets, 18 to 20 gauge, 24" to 42" wide, 72" to 144" long. Product: finished hot rolled products, annual cap., 97,600 tons, including 24,800 tons sheared plates and 72,800 tons black sheets; blue annealed sheets 24,800 tons; 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; three 28" x 34", one 28" x 36", five 28" x 42" double); 18 stands cold rolls in sets of 3 tandem (nine 22" x 34", six 22" x 43", three 22" x 52"); 5 box annealing fur.; 5 Gray pickling mach.; 14 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 36" wide, 36" to 96" long. Product: black plate for tinning, annual cap., 81,200 tons; tinplates, 1,860,000 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 28" x 32", three 28" x 38", two 28" x 42"); 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, two 22" x 36", one 22" x 40"); 6 box annealing fur.; 3 pickling mach. (2 Mesta, 1 Horiz. Mech.). Roll black plate 16 to 38 gauge, 16" to 36" wide, 36" x 96" long. Product: black plate specialties, annual cap., 35,800 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 (three 28" x 30", two 28" x 34", three 28" x 42"); 10 stands cold rolls on cold mill train (six st. in 3 sets of 2 tandem, two 22" x 40", two 24" x 52", two 22" x 52" and 24" x 40"; three tandem 22" x 40"; one 26" x 52"); 4 box annealing fur.; 1 Mesta pickling mach. Roll black plate, 16 to 38 gauge, 16" x 36" wide, 36" to 96" long. Product: black plate specialties, annual cap., 35,200 tons.
- Crescent Works, Cleveland, Ohio, were dismantled in 1927.
- 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 34", fourteen 28" x 36", two 28" x 42" single; four 28" x 42" double); 27 stands cold rolls on cold mill train in sets of 3 tandem

(twelve 22" x 36", three 22" x 40", three 22" x 42", six 22" x 44", three 24" x 36"); 11 box annealing fur.; 5 Mesta pickling mach.; 17 tinning sets for coke tinplates. Roll black plate, 16" to 38" gauge, 16" to 36" wide, 36" to 96" long. Product: black plate for tinning, annual cap., 121,300 tons; tinplates, 2,320,000 base boxes.

Gary Tin Mill, Gary, Ind.: blt. 1916, f. o. Dec., 1916; 3 cont. prod. gas-fired heat. fur.; continuous roughing mill with 26" x 42" 2-h. 4-st. and 32" x 42" 4-h. 6-st.; 24 sheet and 24 pair fur.; 24 cont. pack heat. fur.; 24 single and 12 double hot black plate (tin) mills (four 28" x 30", eighteen 28" x 34", two 28" x 42" single; ten 28" x 34", two 28" x 38" double); 63 stands cold rolls on cold mill train in sets of 3 tandem (twelve 24" x 36", twenty-one 24" x 40", thirty 24" x 44"); 9 box annealing fur.; 1 single and 2 double Dressler annealing fur.; 7 Gray pickling mach.; 42 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 36" wide, 36" to 76" long. Product: hot rolled strip steel, annual cap., 360,000 tons; black plate for tinning, 276,500 tons; tinplates, 6,346,000 base boxes.

La Belle Works, Wheeling, W. Va., were dismantled in 1927.

Laughlin Works, Martins Ferry, Ohio: blt. 1895, f. o. Aug., 1895; 23 sheet and 23 pair fur.; 23 hot black plate (tin) mills (five 28" x 32", fourteen 28" x 34", four 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"); 8 box annealing fur.; 4 Mesta pickling mach.; 16 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., 92,000 tons; tinplates, 2,053,000 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 (ten 28" x 32", thirteen 28" x 34", two 28" x 36"); 18 stands cold rolls on cold mill train in sets of 2 tandem (ten 22" x 34", eight 22" x 40"); 13 box annealing fur.; 3 Mesta pickling mach.; 20 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., 102,000 tons; tinplates, 2,240,000 base boxes.

New Castle Works, New Castle, Pa.: blt. 1892-93, f. o. Oct., 1893; 20 sheet and 20 pair fur.; 20 hot black plate (tin) mills (two 28" x 32", fourteen 28" x 34", two 28" x 36", two 28" x 42"); 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"); 12 box annealing fur.; 4 Mesta pickling mach.; 13 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 36" wide, 36" to 84" long. Product: black plate for tinning, annual cap., 83,200 tons; tinplates, 1,875,000 base boxes.

Pennsylvania Works, New Kensington, Pa.: blt. 1894, f. o. 1895; 8 sheet and 8 pair fur.; 8 hot black plate (tin) mills (one 26" x 30", four 28" x 30", one 28" x 34", one 28" x 36", one 28" x 42"), 13 stands cold rolls in sets 3 tandem and one single (one 22" x 44" single, six 22" x 40", six 24" x 44"); 5 box annealing fur.; 2 Mesta pickling mach.; 12 tinning sets, 8 for coke, 4 for charcoal tinplates. Roll black plate, 18 to 38 gauge 16" to 36" wide, 36" to 84" long. Product: black plate for tinning and black plate specialties, annual cap., 33,900 tons; tinplates, 542,000 base boxes (398,000 cokes, 144,000 charcoals).

Pittsburgh Works, New Kensington, Pa., were dismantled in 1928.

Sabraton Works, Morgantown, W. Va.: blt. 1902-03; 10 sheet and 10 pair fur.; 2 single and 4 double hot black plate (tin) mills (two 26" x 30" single; four 28" x 34" double); 12 stands cold rolls in sets of 3 tandem on cold mill train (three 22" x 34", nine 22" x 44"); 4 box annealing fur.; 3 Mesta pickling mach.; 6 tinning sets for coke tinplates, 9 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., 39,800 tons; tinplates, 844,000 base boxes (404,000 base boxes cokes, 440,000 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 (twelve 28" x 32", twelve 28" x 34", one 28" x 36", five 28" x 42" single; one 28" x 34", four 28" x 42" double); 33 stands cold rolls on cold mill train in sets of 3 tandem (twenty-one 24" x 36", three 24" x 44", nine 24" x 46"); 12 box annealing fur.; 1 Dressler annealing fur.; 7 pickling mach. (6 Mesta, 1 Grey); 32 tinning sets for coke tinplates. Roll black plate, 16 to 38 gauge, 16" to 36" wide, 36" to 72" long. Product: black plate for tinning, annual cap., 162,400 tons; tinplates, 3,690,000 base boxes.

Total annual capacity: 336,000 tons ingots; 272,000 tons sheet bars; hot rolled strip steel, 360,000 tons; 180,000 tons sheared plates, 991,300 tons black sheets; blue annealed sheets to 296,000 tons, included in plate and black sheets capacity; 520,400 tons galvanized sheets; 1,063,300 tons black plate for tinning and black plate specialties; 21,770,000 base boxes tinplates, including 21,186,000 base boxes coke tinplates, 144,000 base boxes charcoal tinplates, 440,000 base boxes terne plates; 57,600 tons long terne plates.

American Steel Co., Park Bldg., Pittsburgh, Pa. Rolling mill and tinplate works at Waynesburg, Pa., last operated 1921, dismantled 1927-28. Wire mill and wire nail plant of the Ellwood City Works were sold to Black Hardware Co. and moved to Galveston, Texas; cotter pin plant of latter works sold to American Cotter Pin Co.

American Steel Co. of Indiana, Inc., Terre Haute, Ind., acquired in Oct., 1926, Mid-States Steel & Iron Corp'n. with plant of former Hoosier Rolling Mill Co. at Terre Haute. The rolling mill was operated for a short time in 1927 and abandoned. Construction of one 15-ton B. O. H. fur. begun Dec. 1, 1926, was subsequently suspended. Company out of business.

**AMERICAN STEEL & WIRE CO. OF NEW JERSEY (The),
Rockefeller Bldg., Cleveland, Ohio.**

Inc. Jan. 13, 1899 in New Jersey. Subsidiary of United States Steel Corporation. J. S. Keefe, P.; L. J. Gray, A. P.; William Thompson, A. P.; A. F. Allen, Sec. & T.; J. G. Nelson, A. Sec. & A. T.; A. H. Garry, A.; S. Dunlap, A. A.; H. L. Cary, A. A.; C. F. Blackmer, G. S.; J. C. Hopkins, G. S. (blast furnaces and steel works); E. E. Stone, G. P. A.; H. G. Baldwin, S. (Order and Warehouse Dept.); at Cleveland. F. Baackes, V. P.; D. A. Merriman, V. P. & G. S. M.; C. S. Cawthorne, A. Sec. & A. T.; at Chicago, Ill. R. S. White, A. Sec. & A. T.; at New York, N. Y.

Sales offices:

Atlanta, Ga., J. W. Patterson, 101 Marietta St.
Baltimore, Md., W. H. Jennings, 32 South Charles St.
Birmingham, Ala., J. J. Gilmore, Brown-Marx Bldg.
Boston, Mass., C. W. Whiting, Statler Bldg.
Buffalo, N. Y., F. O. Howard, 670 Ellicott St.
Chicago, Ill., Frank Baackes, V. P.; D. A. Merriman, V. P. & G. S. M.; H. A. Squibbs, A. G. S. M.; 208 South La Salle St.
Cincinnati, Ohio, F. Baackes, Jr., 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., E. J. English, Union & Planters Bank Bldg.
Milwaukee, Wis., A. L. Merriman, Bankers Bldg., 84 Wisconsin St.
New York, N. Y., R. L. Foster, A. G. S. M., 30 Church St.
Philadelphia, Pa., W. W. Deal, 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., D. R. Waterman, Merchants Natl. Bank Bldg.
Salt Lake City, Utah, W. A. LaPierre, Walker Bank Bldg.
Wilkes-Barre, Pa., B. W. Bennett, Miners Bank Bldg.
Worcester, Mass., F. K. Sawyer, 94 Grove St.

Product: bessemer and basic pig iron; bessemer and open-hearth steel ingots; blooms, billets and slabs; wire rods; hot rolled

strip; wire (plain, galvanized, tinned, coppered, etc.), wire nails and tacks; spikes and pole steps; cold finished bars; machine screw stock; flat bright cold rolled strip steel, barbed wire, woven fencing and netting; wire rope and strand; springs. Concrete reinforcement; fence staples; wire hoops, wire bale ties; fence posts. Plain copper wire; insulated wire and cables; rail and signal bonds. Chilled iron dies, and iron, steel and brass castings for own use. Sulphate of iron. By-product coke; tar and benzol products. Zinc; sulphuric acid.

Total annual capacity: 1,208,000 tons pig iron; 1,617,000 tons steel ingots (500,000 tons bessemer, 1,027,000 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, 1,374,000 tons blooms, billets and slabs; finished hot rolled products, 1,901,000 tons, including 1,740,000 tons wire rods, 156,000 tons hot rolled strip and 5,000 tons merchant bars; plain wire, 1,917,000 net tons; galvanized wire, 733,000 net tons; barbed wire, 257,000 net tons; woven wire fence, 375,000 net tons; wire nails, 10,500,000 kegs; flat bright cold rolled strip steel, 160,000 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; 213 wire nail mach.; 152 barbed wire mach.; 3 galv. pans. Product: wire rods, annual cap., 105,000 tons; plain wire, 115,000 net tons; galvanized wire, 66,000 net tons; barbed wire, 77,000 net tons; wire nails, 800,000 kegs; fence staples, wire hoops.

American Works, Cleveland, Ohio: blt. 1886; 3 cont. tar-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 12" 2-h. 5-st., 10" 2-h. 10-st., 9" 2-h. 6-st.; 1,353 wire drawing blocks and 416 cont. mach. for wire $\frac{3}{8}$ " to 41 gauge; 8 galvanizing pans; 3 cold rolling mach. (one 10", two 6"). Product: wire rods, annual cap., 120,000 tons; plain wire, 70,000 net tons; galvanized wire, 1,500 tons; cold rolled wire, 2,300 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.; 107 wire drawing blocks, for wire $\frac{3}{8}$ " to 18 gauge; 126 wire nail mach.; 12 barbed wire mach.; 14 wire fence mach.; 2 galv. pans. Product: wire rods, annual cap., 105,000 tons; plain wire, 75,000 net tons; galvanized wire, 33,000 net tons; barbed wire, 6,500 net tons; wire fencing, 25,000 net tons; wire nails, 800,000 kegs; concrete reinforcement; fence staples.

Bluff Street Works, Joliet, Ill.; idle.

- Braddock Works, Braddock, Pa.: blt. 1891; Garrett rod mill dismantled in 1928; 207 wire drawing blocks for wire $\frac{3}{4}$ " to 20 gauge. Product: plain wire, annual cap., 95,000 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, relined 1926; C, 90' x 22' 6", blt. 1887, rebt. 1924; D, 92' 6" x 24', blt. 1910-11, rebt. 1926; 16 two-pass stoves (fourteen 100' x 22', one 99' 8 $\frac{1}{2}$ " x 21', one 120' x 22'); 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; 5 vertical water-tube boilers, 6,000 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., 828,000 tons.
- Coke Works, Cleveland, Ohio: 180 Koppers by-product coke ovens, by-product recovery plant and Carl Still benzol plant, annual cap., 965,000 net tons coke, 3,343,000 gals. light oil.
- Central Works, Worcester, Mass.: 520 wire drawing blocks for wire 5 gauge to .018"; 43 wire nail mach.; 8 galv. pans. Product: plain wire, annual cap., 25,000 net tons; galvanized wire, 10,000 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. 1-st., 16" 2-h. 2-st., 12" 2-h. 5-st., 10" 2-h. 2-st., 9" 2-h. 4-st.; 160 wire drawing blocks for wire 3 $\frac{1}{2}$ to 20 gauge; 166 wire nail mach.; 22 barbed wire mach.; 11 wire fence mach.; 3 galv. pans. Product: wire rods, annual cap., 105,000 tons; plain wire, 90,000 net tons; galvanized wire, 50,000 net tons; barbed wire, 12,000 net tons; wire fencing, 26,000 net tons; wire nails, 880,000 kegs; fence staples.
- Cuyahoga Works, Cleveland, Ohio: blt. 1907-08, f. o. Nov. 3, 1908; 10 cont. heat. fur. (7 billet, 3 bar reheat.), fuel, 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 single Belgian rod mill with 12" 2-h. 12-st. cont., 11" 2-h. 2-st. Belgian; comb. cont. and double-duo strip mill with 16" 2-h. 7-st. cont., 14" 3-st. double duo, 14" 2-h. 3-st. finishing; comb. reversing and cont. strip mill with 26" 2-h. 1-st. reversing universal, 20" 2-h. 3-st., 20" 1-st. vertical edging, 18" 2-h. 1-st. edging, 18" 2-h. 3-st. finishing; cont. strip mill with 14" 2-h. 4-st. cont., 12" 2-h. 4-st. cont., 12" 2-h. 1-st. horizontal edging, 10" 2-h. 5-st. cont., 10" 1-st. vertical edging; 116 cold rolling mach. (one 18", three 16", twelve 12 $\frac{1}{2}$ ", sixty-eight 10", twenty-nine 8", two 7", one 4"); 462 wire drawing blocks for wire $\frac{3}{4}$ " to 20 gauge, 3 galv. pans. Product: finished hot rolled products,

annual cap., 294,000 tons, including 150,000 tons wire rods, and 144,000 tons hot rolled strip; cold rolled strip, 105,000 net tons; plain wire, 105,000 net tons; galvanized wire, 33,000 net tons; bale ties, tinned flats, strand.

DeKalb Works, Dekalb, Ill.: 254 wire drawing blocks for wire 2 to 20 gauge; 186 wire nail mach.; 49 barbed wire mach.; 31 wire fence mach.; 5 galv. pans. Product: plain wire, annual cap., 100,000 net tons; galvanized wire, 68,000 net tons; barbed wire, 25,000 net tons; wire fencing, 43,000 net tons; wire nails, 900,000 kegs; 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 1928; No. 2, 85' 4½" x 22', blt. 1902-04, f. o. Feb. 7, 1905, relined 1927; 8 Kennedy 2-pass stoves, 100' x 24'; 5 vertical cross comp. steam blowing eng. (96,000 cfm.) 30 lbs. rated 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. Clairton by-product coke: Lake ore. Product: basic pig iron, annual cap., 380,000 tons. Iron foundry (1,800 tons capacity) for own use. Open-hearth dept.: blt. 1902-03, f. o. Feb. 7, 1905; 2 bessemer converters for duplexing, idle for number of years, were transferred to National Tube Co.; 13 B. O. H. fur. (five 70-ton, eight 60-ton) fuel, tar and nat. gas; one mixer (1,300 tons); 2 cupolas (idle). Steel foundry (600 tons) for own use. Product: steel ingots, annual cap., 627,000 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., 523,000 tons.

Donora Wire Works, Donora, Pa., (leased; owned by Union Steel Co.): blt. 1900-01, f. o. Sept., 1901; 7 cont. nat. gas-fired billet heat. fur.; 16" 2-h. 8-st. cont. roughing rod; 2 Garrett finishing rod mills each with 12" 2-h. 4-st., 10" 2-h. 6-st.; Garrett rod mill with 18" 3-h. 1-st., 16" 2-h. 1-st., 14" 2-h. 1-st., 12" 2-h. 5-st., 10" 2-h. 4-st.; 505 wire drawing blocks for wire ¼" to 18 gauge; 349 wire nail mach.; 40 barbed wire mach.; 23 wire fence mach.; 4 galv. pans. Product: wire rods, annual cap., 310,000 tons; plain wire, 215,000 net tons; galvanized wire, 67,000 net tons; barbed wire, 21,000 net tons; wire fencing, 41,000 net tons; wire nails, 1,360,000 kegs; concrete reinforcement and fence staples.

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., 61,500 net tons; sulphuric acid, 150,000 net 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. cont., 12" 2-h. 8-st. double Belgian; 288 wire drawing blocks for wire 2 to 18 gauge; 234 wire nail mach.; 56 barbed wire mach.; 44 wire fence mach.; 4 galv. pans. Product: wire rods, annual cap., 110,000 tons; plain wire, 102,000 net tons; galvanized wire, 60,000 net tons; barbed wire, 28,000 net tons; wire fencing, 68,000 net tons; wire nails, 1,020,000 kegs; netting, fence staples, bale ties and strand.

Farrell Works, Farrell, Pa. (leased; owned by Union Steel Co.): blt. 1900-01, f. o. May, 1901; 2 cont. prod. gas-fired billet heat. fur.; 2 Morgan continuous rod mills (one 10" 2-h. 16-st., one 10" 2-h. 14-st.); 240 wire drawing blocks for wire 0000 to 20 gauge; 285 wire nail mach.; 30 barbed wire mach.; 32 wire fence mach.; 4 galv. pans. Product: wire rods, annual cap., 150,000 tons; plain wire, 160,000 net tons; galvanized wire, 67,000 net tons; barbed wire, 16,500 net tons; wire fencing, 34,000 net tons; wire nails, 1,040,000 kegs; concrete reinforcement, netting, fence staples and wire hoops.

H. P. Works, Cleveland, Ohio: blt. 1880; three 6-d. billet heat. fur., fuel tar or oil; Garrett rod mill abandoned as of Dec. 31, 1929; wire mill dismantled in 1928; 696 wire nail and tack mach. Track spikes 5" x $\frac{1}{2}$ " max.; boat spikes 14" x $\frac{5}{8}$ " max. Product: wire nails, annual cap., 1,160,000 kegs; track spikes and boat spikes, 100,000 kegs.

Hamilton Works, Hamilton, Ont., Canada, were dismantled and equipment moved to Ojibway, Ont., where same will be operated by the Canadian Steel Corporation, Ltd.

New Haven Works, New Haven, Conn.: blt. 1899; 879 wire drawing blocks for wire .015" to .296"; 5 galv. pans. Product: plain wire, annual cap., 27,000 net tons; galvanized wire 5,500 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 coke oven gas; 11 gas producers (6 water-seal, 5 mechanical); 2 mixers (250-ton): 3 cupolas. Brass foundry (400 tons) for own use. Rolling mills: 11 soaking pits (three 4-hole, one 8-hole, seven 1-hole), fuel, coke oven gas and prod. gas; 2 cont. billet heat. fur., fuel coke oven gas; blooming mill with 38" 2-h. 1st. and 23" 3-h. 1-st.; 35" 2-h. 1-st. blooming; Garrett rod mill with 18" 2-h. roughing, 12" intermediate, 9" intermediate and 9" finishing. Product: steel ingots, annual cap., 800,000 tons (500,-

000 tons bessemer, 300,000 tons B. O. H.); blooms, billets and slabs, 692,000 tons, wire rods, 84,000 tons.

Newburgh Wire Works, Cleveland, Ohio: 67 cold rolling mach. (thirty-one 10", seven 9", nine 8", twenty 6" and smaller), 1,196 wire drawing blocks for wire 1" to 30 gauge; 5 galv. pans. Product: plain wire, annual cap., 100,000 net tons; galvanized wire, 18,000 net tons; tinned wire; cold rolled strips and wire, 18,000 net tons; cold finished bars.

North Works, Worcester, Mass.: 221 cold rolling mach. (two 10", sixty-five 9", eighty 8", seventy-four 6" and smaller); 2,315 wire drawing blocks for wire 1½" to .004"; 9 galv. pans (2 hot, 7 electro). Gray iron (2,000 tons) foundry for own use. Product: plain wire, annual cap., 68,000 net tons; galvanized wire, 21,000 net tons; tinned wire; cold rolled strips and wire, 33,000 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. 6-st., 12" 2-h. 3-st.; 254 wire drawing blocks for wire 2 to 17 gauge; 233 wire nail mach.; 61 barbed wire mach.; 20 wire fence mach.; 4 galv. pans. Product: wire rods, annual cap., 115,000 tons; plain wire, 120,000 net tons; galvanized wire, 67,000 net tons; barbed wire, 33,000 net tons; wire fencing, 43,000 net tons; wire nails, 1,200,000 kegs; fence staples.

Rockdale Works, Joliet, Ill.: 315 wire drawing blocks for wire 0000 to 21 gauge; 34 barbed wire mach.; 34 wire fence mach.; 5 galv. pans. Product: plain wire, 110,000 net tons; galvanized wire, 71,000 net tons; barbed wire, 18,000 net tons; wire fencing, 71,000 net tons; netting and fence staples.

Salem Works, Salem, Ohio, last operated Mar. 1, 1929, were dismantled in that year.

Scott Street Works, Joliet, Ill.: 137 wire drawing blocks for wire 0 to 18 gauge; 255 wire nail mach.; 32 barbed wire mach.; 5 wire fence mach.; 2 galv. pans. Product: plain wire, annual cap., 105,000 net tons; galvanized wire, 33,000 net tons; barbed wire, 17,500 tons; wire fencing, 15,500 net tons; wire nails, 1,100,000 kegs; fence staples and wire hoops.

South Works, Worcester, Mass.: blt. 1846; 3 B. O. H. fur. (two 60-ton, one 55-ton); 4 A. O. H. fur. (one 50-ton, two 25-ton, one 20-ton), fuel in O. H. oil; 4 mechanical gas producers; steel (700 tons) and brass (125 tons) foundry for own use; six 1-hole soaking pits, fuel prod. gas; 4 cont. billet heat. fur. (2 prod. gas-fired, one oil-fired, one coal-fired); 34" 2-h. 1-st. reversing blooming; 18" 2-h. 6-st. Morgan cont. small billet; Morgan cont. rod with

12" 2-h. 8-st., 10" 2-h. 6-st., 9" 2-h. 6-st.; comb. cont. and Belgian rod with 12" 2-h. 4-st., 10" 2-h. 10-st., 11" 2-h. 4-st. Belgian; 4 cold rolling mach. (two 10", two 6"): 449 wire drawing blocks for wire $\frac{3}{8}$ " to 40 gauge. Product: steel ingots, annual cap., 190,000 tons (100,000 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, 159,000 tons; finished hot rolled products, 177,500 tons, including 160,500 tons steel and copper wire rods, 5,000 tons merchant bars, 12,000 tons hot rolled strip; plain wire, 87,000 net tons; tinned wire; cold rolled copper wire, 2,500 net tons; springs; wire rope and strand, insulated wire and cable, rail and signal bonds.

Trenton Works, Trenton, N. J.: blt. 1845; 543 wire drawing blocks for wire .250" to .0145"; 1 galv. pan. Product: plain wire, annual cap., 26,000 net tons; galvanized wire, 2,000 net tons; 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; 5 cold rolling mach.; 977 wire drawing blocks and 87 cont. mach. for wire 1" to 36 gauge; 17 wire nail mach.; 5 barbed wire mach.; 8 galv. pans. Product: wire rods, annual cap., 225,000 tons; plain wire, 181,500 net tons; galvanized wire, 60,000 net tons; barbed wire, 2,750 net tons; wire nails, 100,000 kegs; high and low carbon cold rolled flat steel rolled from round wire, 2,500 net tons; tinned wire, strand, bale ties and springs.

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

Inc. June 26, 1902 in New Jersey. Capital stock: com., no par value, auth. 1,000,000 shares, issued 993,020 shares: pref. 7% cum., auth. \$22,633,200, issued, \$6,500,000.

G. E. Scott, P.; R. H. Ripley, V. P.; J. C. Davis, V. P. (operations); F. B. Ernst, V. P.; A. Walcher, V. P.; G. F. Slaughter, V. P.; H. D. Hammond, V. P.; Thomas Drever, Sec. & T.; William Epple, A. Sec. & A. T.; O. E. Mount, A. T.; C. C. Jarchow, C.; C. F. Schlundt, A. C.; T. E. Moritz, P. A.; at Chicago. W. J. Lynch, V. P.; at 30 Church St., New York, N. Y.

Sales offices:

Cleveland, Ohio, 202 Society for Savings Bldg.

Dever, Col., 306-7 Barth Bldg., F. S. McNamara.

Havana, Cuba, Apartado 2107.

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, steel car wheels and miscellaneous castings; total annual cap., 309,640 tons. Malleable castings; fabricated brake beams, springs and bolsters.

Alliance Works, Alliance, Ohio: blt. 1883; 5 B. O. H. fur. (25-ton); 4 Morgan Const. Co., gas prod. Fuel, prod. gas. Product: bolsters, couplers and side frames for railroad cars; annual cap., 69,000 tons. Alloy steel castings (manganese).

East St. Louis Works, East St. Louis, Ill.: blt. 1900; f. o. June 14, 1900; 4 B. O. H. fur. (25-ton). Fuel, oil. Product; bolsters, side frames, and draft arms for railroad cars and miscellaneous steel castings; annual cap., 50,000 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. Idle since 1920.

Granite City Works, Granite City, Ill.: blt. 1894; f. o. Nov., 1894; 4 B. O. H. fur. (25-ton). Fuel, oil. Product: steel wheels, side frames, and bolsters for railroad cars; annual cap., 69,000 tons. Alloy steel castings (manganese).

Indiana Harbor Works, Indiana Harbor, Ind.: blt. 1903-04; f. o. June 29, 1904; 2 A. O. H. fur. (25-ton), fuel, oil: 1 Heroult electric fur. (4½-ton) added 1928; f. o. Aug. 21, 1928. Product: railway car, locomotive and miscellaneous steel castings; annual cap., 27,500 tons (19,000 A. O. H., 8,500 electric). Alloy steel castings (chrome, nickel, vanadium, manganese).

Pittsburgh Works, 36th St. & A. V. Ry., Pittsburgh, Pa.: blt. 1889; O. H. added 1895; 1 A. O. H. fur. (10-ton). Fuel, natural gas. Product: miscellaneous steel castings; annual cap., 6,500 tons. Alloy steel castings (chrome, nickel, vanadium, manganese).

Sharon Works, Sharon, Pa.: blt. 1887; f. o. Aug. 26, 1887; 4 B. O. H. fur. (25-ton). Fuel, oil. Product: bolsters and side frames for railroad cars; annual cap., 42,000 tons. Idle since 1918.

ThurLOW Works, Chester, Pa. were sold Dec. 31, 1929 to General Steel Castings Corp'n.

Verona Works, Verona, Pa.: blt. 1904-06, f. o. Apr. 4, 1905; 3 B. O. H. fur. (20-ton). Fuel, nat. gas and oil. (Verona Steel Castings Co. to Nov. 21, 1926). Product: steel castings for railroad cars, annual cap., 33,000 tons.

Company operates works at Hammond, Ind. and Cleveland, Ohio, for fabricating cast steel and rolled steel products, and at Galesburg, Ill., for manufacture of malleable iron castings.

AMERICAN-SWEDO IRON CO. (The), 200 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. Walter S. Lovett, G. M. & G. S.; 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; fuel, coal.

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

American Tube & Stamping Co. (The), Bridgeport, Conn. was acquired by The Stanley Works, June 2, 1926.

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.

Brand: Gumbo Buster (rotary well drilling machinery).

Works at Corsicana: blt. 1901, first steel made Nov., 1916; 1 Pittsburgh Moore electric fur. ($\frac{1}{2}$ -ton); 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., 1,000 tons. Alloy steel castings (nickel, chrome).

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

Est. 1859: inc. July, 1908 in New Jersey. Capital stock: com., par value \$100, \$100,000; pref. 5% cum. \$200,000, all issued.

James W. Ames, P.; A. S. Ames, Sec., T. & G. S. M.; G. H. Helmsdorfer, A. T.; 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 (12,000 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., Boston, Mass. Rolling mill at Elwood Plant, Elwood, Ind., for rolling shovel plate has been dismantled and rolling mill at H. M. Myers Co. Plant, Beaver Falls, Pa.,

for rolling shovel blanks was removed early in 1926 to Anderson, Ind., where it is operated in connection with Wright Shovel Co., a subsidiary of Ames Shovel & Tool Co.

Anchor Iron & Steel Co., Pittsburgh, Pa. Part of rolling mill equipment at Hays Station, Pa., was purchased by Monongahela Iron & Steel Co. in 1923 and removed to Paden City Works of the latter company. Remainder of equipment abandoned.

ANDREWS STEEL CO. (The), 9th and Lowell Sts., Newport, Ky. Inc. 1906 in Kentucky; reinc. 1921 in Delaware.

Joseph B. Andrews, P.; Albert K. Andrews, V. P.; A. W. Hubbard, V. P. (sales); Frank M. Andrews, Sec.; Joseph Gaff Andrews, T.; H. W. Boal, A.; Charles H. Sloan, G. S.; 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 95-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 mills; soaking pits (3 rows 4-holes ea., one row 2 large holes); 29 gas producers.

Product: ingots, annual cap., 360,000 tons; open-hearth iron, re-rolling and forging billets, slabs, sheet and tinplate bars, annual cap., 300,000 tons. Nickel, chrome, vanadium and other alloy steels.

Anglo-Canadian Malleable Steel Mfg. Co., Ltd., Montreal, P. Q., Canada. Works at Rawdon, P. Q., Canada, for the manufacture of steel castings, were destroyed by fire in the spring of 1926. Company out of business.

Anniston Electric Steel Corpn., Anniston, Ala. Electric steel casting plant at Anniston was dismantled in 1927-28 and equipment sold.

ANNISTON STEEL CASTING CO., Anniston, Ala.

Inc. Dec. 12, 1927 in Alabama. Capital stock: com., no par value, auth. 500 shares, issued 380 shares.

J. N. Huger, P.; L. O. Treadway, Sec., T. & P. A.

Works at Anniston: blt. 1928, f. o. March 1, 1928; 1 Heroult electric furnace (2-ton).

Product: electric steel castings for sale, annual cap., 1,200 tons.

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. L. S. Baldwin, Manager; at Mancelona, Mich.

Brand: Antrim (charcoal pig iron).

Furnace at Mancelona, Mich.: blt. 1887-88; rebt. 1912, relined 1920; 1 stack, 60' x 11'; 2 Durham iron pipe stoves; 2 vertical steam blowing eng. (15,000 cfm.); 8 Wickes water-tube boilers, 1,300 H. P. serve also chemical plant about 500 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: hot to 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., par value \$50, auth. \$1,800,000, issued \$1,050,000.

A. M. Oppenheimer, P. & G. M.; W. J. Guthrie, V. P.; O. W. Oppenheimer, Sec. & T.; at Pittsburgh, Pa. M. M. Crawford, A.; H. H. Holloway, G. S.; D. O. Wolf, G. S. M.; John Wanamaker, P. A.; at Apollo.

Sales agents:

Boston, Mass., C. G. Fallon, Park Square Bldg.

Buffalo, N. Y., Brace, Mueller & Huntley, Inc., Marine Trust Bldg.

Chicago, Ill., Theo. Geissmann & Co., Lake Michigan Bldg.

Cincinnati, Ohio, Adams Steel Co., 1002 American Bldg.

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

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

Indianapolis, Ind., Manufacturers Sales Service Co., 846 Illinois Bldg.

Lynchburg, Va., W. P. Clark, 612 Krise Bldg.

Nashville, Tenn., Cavert & Lipscomb, Nashville Trust Bldg.

New Orleans, La., Jobbers Sales Corp., 437 Decatur St.

New York, N. Y., J. H. Bryan, Room 1372, 50 Church St.

Philadelphia, Pa., W. W. Keefer, 607 Otis Bldg.

Pittsburgh, Pa., 2244 Oliver Bldg.

St. Louis, Mo., Hubbell & Sharp, 2817 Laclede Street.

San Francisco, Calif., J. W. Judge Co., Hunter Dulin Bldg.

Syracuse, N. Y., Brace, Mueller, Huntley, Inc., 1202 Hills Bldg.

Brands: Apolloy Metal (copper steel); Highway Metal (pure iron culvert stock).

Works at Apollo: blt. 1912-13; f. o. June 16, 1913; 26 heat. fur. (11 sheet, 13 pair, 2 comb. sheet and pair); one 2-h. jobbing mill (32" x 68"); thirteen sheet mills (eleven 29", two 32"); 8 stands 26" cold rolls; box annealing fur.; blue annealing fur.; normalizing fur.; 4 Cook & Aetna Standard pickling mach.; 6 galvanizing pots.

Steel Works: 2 B. O. H. fur. (100-ton, 40-ton) dismantled 1929.

Product: blue annealed, black and galvanized sheets. Black sheets to 72" wide, 10 to 30 gauge. Total annual cap., 160,000 tons, includes jobbing mill products 20,000 tons, black sheets 140,000 tons (including 20,000 tons blue annealed sheets); galvanized sheets, 60,000 tons.

APPLETON STEEL TUBE CO., Appleton, Wis.

Works at Appleton: blt. 1924-25, f. o. Dec., 1925. (Seamless Tube Co. of Wisconsin to Dec., 1927). Product: cold drawn seamless tubes.

Armstrong Steel Castings Co., Huntington, Ind.

Guilford Morrow, Receiver (W. W. Hawley, Receiver to April, 1929).

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. (Idle since 1923). 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.

ARNESON FOUNDRY CO., Kenosha, Wis.

Ole A. Arneson, Owner and General Manager.

Works at Kenosha: blt. 1914; f. o. Nov., 1914; 1 Whiting converter (1-ton) idle, retained as auxiliary spare; 1 Pittsburgh electric fur. (1-ton) added 1928, f. o. June 5, 1928; 2 cupolas. Gray iron-foundry, annual cap., 9,000 tons gray iron castings for sale.

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

Ashland Steel Co., Ashland, Kentucky went into hands of receivers in May, 1928. Plant at Ashland for manufacture of steel ingots, slabs, billets and wire rods, was sold at public auction on June 7, 1928 to John Russell, Ashland, Ky. The plant was acquired by The American Rolling Mill Co. July 1, 1928 and abandoned by the latter company as of Dec. 31, 1929.

Ashtabula Steel Sheet Co. (The), Mansfield, Ohio, was merged March 1, 1928 with The Empire Steel Co., The Falcon Steel Co., The Mansfield Sheet & Tin Plate Co., The Thomas Sheet Steel Co. and The Waddell Steel Co. in the Empire Steel Corporation.

Assets Distribution Co., Buffalo, N. Y. Plant at Charleroi, Pa. sold October 1, 1926 to Charleroi Steel and Foundries Co., Charleroi, Pa.

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

R. H. Graham, Supt.

Santa Fe Rolling Mill, Corwith, Chicago: blt. 1924-25, f. o. Feb. 20, 1925; four 5-d. oil-fired heat. fur.; comb. 12" 3-h. 2-st. and 9" 3-h. 4-st. rod mill; 22" 3-h. 3-st. bar mill.

Product: hot rolled products for own use, annual cap., 11,670 tons; including 4,580 tons merchant bars, 3,830 tons bolt rods and 3,260 tons track material.

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

Inc. June 22, 1905 in Ohio. Capital stock: com., no par value, auth. 10,000 shares, outstanding 4,656½ shares.

Charles Reymann, P., T., G. S., & P. A.; Philip Willenbacher, 1 V. P.; Evald Erikson, 2 V. P.; E. R. Knecht, Sec.; N. D. Daub, G. M.

Works at Akron: steel foundry, blt. 1918, f. o. Sept. 28, 1918; 1 Snyder electric fur. (4-ton); 2 cupolas. Gray iron foundry at Akron. Gray iron and semi-steel foundry at Cuyahoga Falls, Ohio, has been sold.

Product: steel castings for sale, annual cap., 3,600 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. \$750,000, issued \$700,000; bonds \$654,000.

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

Brand: DIXISTEEL.

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; 4 Morgan-Chapman gas prod.; eight 1-hole soaking pits, fuel, pulv. coal; three 1-d. heat. fur. (2 hand-fired, 1 gas-fired), fuel prod. gas and coal; 25" 2-h. 1-st. blooming, 14" 2-h. 6-st. Morgan cont. billet; 12" 3-h. 4-st., 12" to 8" 2-h. 14-st. (6-st. cont., 8-st. single) 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; 118 wire drawing blocks for wire ½" to 18 gauge; 62 wire nail mach; 20 barbed wire mach.; 8 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, 95,000 tons billets, 84,500 tons finished rolled products, including 18,000 tons wire rods, 30,000 tons hoops, bands and cotton ties, 33,000 tons merchant bars, 3,500 tons

light structural shapes. Wire products, 20,000 net tons plain wire, 7,000 net tons galv. wire, 2,000 net tons barbed wire, 4,000 net tons wire fencing, 225,000 kegs (100-lb.) 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.

William A. Faison, P.; T. J. Sproul, V. P. & T.; R. S. Munson, V. P. & G. M.; E. B. Powell, V. P. & S. M.; Paul J. Mauer, Sec.; 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. Chrome, nickel, and high-manganese alloy steel castings. Miscellaneous steel castings for railroads and machinery.

Atlas Alloy Steel Corporation, Dunkirk, N. Y. was acquired by Ludlum Steel Co. Jan. 1, 1929.

ATLAS FOUNDRY & MACHINE CO., P. O. Box 1254, Tacoma, Wash.

Inc. 1903 in Washington. Capital stock: com. par value \$10, auth. and issued \$82,500.

G. C. Dupea, P.; J. Bamford, V. P.; William Herzog, Sec., T. & P. A.

Brand: ATLAS (iron and electric steel castings).

Works at Tacoma, Wash.: 1 Greene electric fur. (4-ton); gray iron foundry, annual cap., 4,500 tons gray iron, 500 tons semi-steel castings for sale.

Product: steel castings for sale, annual cap., 1,500 tons; railroad, saw mill, marine and miscellaneous castings.

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 \$7,000.

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

Sales office: 30 East 42nd St., New York, N. Y.

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

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

Atlas Steel Supply Co. (The), 4401 Trumbull Ave., Cleveland, Ohio, purchased in July, 1929 from McKeefrey Iron Co. the blast

furnace plant at Leetonia (1 stack) idle since 1923. Furnace standing will probably be dismantled.

Ayrmont Properties, Ltd., Room 84, 388 St. James St., Montreal, P. Q., Canada.

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. (The Thomas Davidson Mfg. Co., Ltd. to Dec., 1927). Idle and for sale or lease.

Product: electric steel ingots and castings; annual cap., 45,000 tons (30,000 tons ingots, 15,000 tons castings).

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.; W. W. Eaton, S. M.; at 85 Liberty St., New York. F. J. Cluley, Sec. & T.; H. H. Murray, S.; T. M. Pechstein, P. A.; at Beaver Falls.

Sales offices:

Atlanta, Ga.

Boston, Mass.

Chicago, Ill.

Cincinnati, Ohio.

Cleveland, Ohio.

New York, N. Y.

Philadelphia, Pa.

Pittsburgh, Pa.

Works at Morado Station, Pa.: blt. 1899, f. o. Dec. 20, 1899; electric induction furnaces installed in 1926 (two 400-lb. and two 1,000-lb.), f. o. Jan. 1927; 2 billet heat. fur., 2 piercing mills, 2 trains (22" 2-h. 1-st.).

Product: alloy steel castings for own use and for sale, annual cap., 300 tons; corrosion, heat and abrasion resisting castings: hot finished and cold drawn seamless steel tubes, annual cap., 50,000 tons hot finished (2" to 5½") and 5,000 tons cold drawn seamless steel tubes (¾" to 5½").

Baker, Robert E., Cleveland, Ohio. Steel works at Erie, Pa.: 2 B. O. H. fur. (30-ton), last operated 1920, dismantled 1926.

Baldwin Locomotive Works (The), 123 South Broad St., Philadelphia, Pa. Rolling mill at Eddystone Plant, Eddystone, Pa. for manufacture of merchant bars was dismantled in 1928. Plant is still equipped with heating furnaces, steam hammers and forging presses for manufacture of locomotive forgings, also gray iron foundry.

Baldwins Canadian Steel Corp., Ltd., Toronto, Ont., Canada. Rolling mill at Ashbridges Bay, Toronto, for manufacture of plates and sheets, partly dismantled in 1927 and property sold to McColl-Frontenac Oil Co., Ltd., and diverted to other uses.

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

Works at Front & Williams Sts., Cumberland, Md.: blt. 1920-21; 2 bit. coal-fired 4-d. heat. fur.; 12" 3-h. 5-st. bar mill. Scrap reclaiming plant.

Product: merchant bars for own use; annual cap., 4,000 tons scrap bar, 10,000 tons finished rolled products, including 4,000 tons merchant bars, 6,000 tons bolt, nut and rivet rods.

Cumberland Rolling Mill, Cumberland, Md.: 2 cont. coal-fired heat. fur.; two 24" 3-h. 2-st. rail mills. Fuel, bit. coal. (leased by United States Rail Co. to Jan. 4, 1926). Idle since 1924.

Product: rerolled rails, 12-lb. to 40-lb. sections inclusive, annual cap., 60,000 tons.

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

Works at 162 N. Haven St., Baltimore: blt. 1915, f. o. Dec. 23, 1915; two 3-phase open-top electric fur. Hydro-electric power from Pennsylvania Water & Power Co., Baltimore. Plant idle since 1920.

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.; Francis J. Flynn, Sec.

Works at Charles & Wells Sts., Baltimore: 2 B. O. H. fur. (10-ton, 20-ton) for melting stock for malleable foundry; 2 cupolas; annual cap., 5,000 tons malleable castings. These furnaces are also used in part for steel castings. Gray iron foundry, annual cap., 5,000 tons.

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

BANCROFT & MARTIN ROLLING MILLS CO., 7 Main St., South Portland, Maine.

Inc. June 1, 1912 in Maine. Capital stock: com., par value \$100, auth. \$300,000, issued \$240,000; bonds \$40,000.

William E. Clark, P.; at 120 Milk St., Boston, Mass. W. S. Linnell, Sec.; at 188 Middle St., Portland. Kenneth T. Burr, T. & G. M.; John B. Connor, G. S.; W. S. Anderson, G. S. M.; J. H. Anderson, P. A.; at 7 Main St., 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. 2-st. and 10" 3-h. 6-st. Belgian guide mill. Fuel, oil.

Product: merchant bars, concrete reinforcing bars, bolt iron and shafting; annual cap., 18,000 tons finished rolled iron and steel, including 15,000 tons merchant bars and concrete bars, 3,000 tons bolt rods, etc.

Barton Steel Co., Chicago, Ill. (Barton Spider-Web System, Inc. to 1928), installed in 1928 at works situated 3426 South Kedzie Ave., Chicago, duplex oil-fired heat. fur.; 10' 3-h. 6-st. bar mill, for manufacture of merchant bars and structural shapes. Rolling mill operated from Nov., 1928, to April, 1929, and company went into voluntary receivership. Receivers liquidated Barton Steel Co., sold equipment and ground lease of real estate Dec. 12, 1929, to Scott-Weiss Steel Co. Scott-Weiss Steel Co. sold the property and equipment in Jan., 1930, to R. Lavin & Sons. Equipment being dismantled and removed. Site will be used for other purposes.

Bate (Wm. T.) & Son, Inc., Conshohocken, Pa. Plant at Elm and Harry Sts., Conshohocken was sold May 5, 1926, to T. H. Nelson and Co., and Chrome Alloy Products, Inc., was formed in 1927 to take over the property. The outstanding capital stock of Chrome Alloy Products, Inc., was acquired Oct. 21, 1929, by The Midvale Company.

BAY CITY ELECTRIC STEEL CASTING CO., Foot of Trumbull St., Bay City, Mich.

Partnership organized May, 1922.

Samuel S. Fair, P.; E. M. Mills, T.

Works at Bay City: blt. 1922, f. o. Sept., 1922; destroyed by fire Aug. 19, 1928; rebld. 1929; f. o. Apr. 1, 1929; 1 Pittsburgh electric fur. (2½-ton).

Product: electric steel castings for sale, annual cap., 1,600 tons.

Bay View Foundry Co. (The), Sandusky, Ohio. Works at Sandusky for manufacture of steel, gray iron, brass and aluminum castings, idle since 1918, have been abandoned. Company out of business.

BEANS (The James H.) FOUNDRY CO., First & Locust Sts., Martin's Ferry, Ohio.

Inc. 1923 in Ohio. Capital stock: com., par value \$100, auth. \$100,000, issued \$50,400.

George E. Beans, P. & G. M.; Robert U. Beans, V. P.; E. D. Clark, Sec. & T.; Glen E. Clark, G. S.

Sales office: 1114 Union Bank Bldg., Pittsburgh, Pa.

Works at Martin's Ferry: blt. 1928, f. o. Jan. 10, 1928; 1 Whiting converter (1-ton); 1 cupola. Gray iron foundry, annual cap., 1,500 tons.

Product: steel castings for sale, annual cap., 500 tons.

BEAUCHEMIN ET FILS, Ltd., Sorel, P. Q., Canada.

Est. 1855; inc. Apr. 21, 1902, in Province of Quebec. Capital stock: com., par value \$100, auth. and issued \$299,000.

Joseph Simard, P.; P. A. Lavallée, G. M.

Steel foundry, 2 Limoges St., Sorel: 1 Baillet converter (3,000-lb.); 1 Stoughton converter (3,000-lb.) dismantled 1926; 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 sale; annual cap., 1,800 tons. Castings for railway cars, locomotives, ships, dredges, machinery and general castings from $\frac{1}{2}$ -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 \$40,000.

A. I. Brainard, P. & G. M.; Charles Paggi, V. P.; Charles B. Sheeks, Sec. & T.; N. G. Nuttall, Sales dept.; E. J. Roach, Plant Supt.

Sales offices:

Pittsburgh, Pa., Frick-Reid Supply Corp.

Tulsa, Okla., Frick-Reid Supply Corp.

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

Works at Beaumont, Texas: one $1\frac{1}{2}$ -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 and semi-steel foundry; annual cap., 2,500 tons for own use and for sale.

Product: electric steel castings for own use and for sale; annual cap., 3,000 tons. Alloy steel castings (manganese, nickel, chrome, vanadium). Make some special alloy ingots for own use in Forge Shop.

BEAVER FALLS STEEL CO., 1424 Seventh Ave., Beaver Falls, Pa.

Inc. Sept. 21, 1927, in Pennsylvania. Capital stock: com., par value \$100, auth. \$180,000, issued \$60,000.

R. S. Blackwood, P.; Cullen Armstrong, V. P. & P. A.; Veo R. Blackwood, Sec. & T.; Fred Dewhirst, G. S.; at Beaver Falls. C. H. Curfman, A.; at Oakmont, Pa.

Works at 100 Sixth St., Beaver Falls: blt. 1927, f. o. Jan. 1, 1928; 1 Moore Rapid Melt electric fur. (1,000-lb.).

Product: electric steel castings for sale; annual cap., 1,000 tons; alloy steel castings (nickel, chrome); guide shoes and piercer points for seamless tubing.

Becker Steel Co. of America, New York, N. Y. Works at Charleston, W. Va., for manufacture of steel ingots, rolled and hammered tool steel, etc., sold to Goldberg Iron & Steel Co. in 1928 and dismantled.

BELFONT STEEL & WIRE CO., Ironton, Ohio.

Inc. Jan. 23, 1863, in Ohio. Capital stock: com., par value \$100, auth. \$4,000,000, issued \$3,074,300; pref. 8% cum. auth. \$1,000,000, issued \$822,300.

D. T. Croxton and I. P. Blanton, Receivers (appointed Nov. 25, 1929). I. P. Blanton, P. & G. M.; S. G. Gilfillan, V. P.; T. J. Hayes, Sec. & P. A.; John C. Brown, T.; C. C. Crane, A.; I. A. Ryan, Mill Supt.

Brand: Belfont.

Belfont Furnace, Ironton: 1 stack, 75' x 18' 5", blt. 1868, rebt. 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. Product: bessemer pig iron; annual cap., 72,000 tons.

Wire mills, Kelly Nail Works and Belmont 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. 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.

Berkeley Steel Foundry Co., Berkeley, Calif., with works at 1328 Second St., Berkeley (leased from A. E. Greene), was acquired July 7, 1926, by the Electric Steel Foundry Co., Inc.

Bernhard Boiler Co., Lima, Ohio. Plant of the former Lima Steel Casting Co. at Lima, was acquired by The Old National City Bank, Lima, Ohio, at bankruptcy sale in 1926, to protect a loan made by the bank to Lima Steel Casting Co. and was subsequently taken over by The Old National City Co., Lima, Ohio.

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.; J. E. Porter, V. P. & G. M.; H. L. Brooks, Sec. & A.

Works at St. Joseph, Mo.; 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). (Formerly leased from Berry Realty & Investment Co., acquired by Berry Iron & Steel Co., June 1, 1926).

Product: electric steel castings for sale; annual cap., 7,500 tons. Railway car and locomotive castings. Alloy steel castings (nickel, chrome, zirconium).

Bessie Furnace Co. (The), Columbus, Ohio. Bessie Furnace at New Straitsville, Ohio, (1 stack) was sold in Oct., 1928, to United Iron & Metal Co. and subsequently dismantled.

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

Inc. Aug., 1913, in California. Capital stock: com., par value \$100, auth. and issued \$480,000. Consolidated Foundries, San Francisco, Calif., acquired entire capital stock, April 1, 1929. H. H. Whiting, P. & G. M.; William H. Lauten, V. P.; Violet Purcell, Sec.; J. D. Genger, G. S.; V. L. Marchal, G. S.; W. W. Silva, P. A.; at Oakland. G. A. Gunn, T. & G. S. M.; M. Carl, A.; at 485 California St., San Francisco, Calif.

Sales office: 485 California St., San Francisco.

Works at Foot of 105th Ave., Oakland; blt. 1910, f. o. Feb. 21, 1911; two 2-ton converters (1 Whiting, 1 Stoughton); 3 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).

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

Inc. Dec. 10, 1904, in New Jersey. Capital stock (Dec. 31, 1928): com., par value \$100, auth. \$270,000,000, outstanding \$180,000,000; pref. 7% cum. auth. and outstanding \$100,000,000; bonds (Dec. 31, 1928) \$84,295,025; bonds of subsidiary companies, \$115,126,147.

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

Bethlehem Steel Corporation owns the following subsidiary companies of which Bethlehem Steel Company of Pennsylvania, de-

scribed 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 Corporation.
 Beth-Mary Steel Corporation.
 Buena Vista Iron Company.
 Buffington Water Company.
 Calmar Steamship Corporation.
 Cambria Inclined Plane Company.
 Citizens Realty Company of Bethlehem.
 Compania de Minas de Fierro "Las Truchas" S. A.
 Conemaugh and Black Lick Railroad Company.
 Cornwall Railroad Company.
 Dundalk Company (The).
 Dundalk Sewerage Company (The).
 Dundalk Water Company (The).
 East Wheatfield Water Company.
 Ellsworth Collieries Company.
 Fore River Railroad Corporation.
 Fore River Shipbuilding Corporation.
 Franklin Iron Company (The).
 Jaragua Iron Company.
 Lebanon Consolidated Water Company.
 Lebanon County Light, Heat and Fuel Company (The).
 Manufacturers Water Company (The).
 Midvale Steel Company (The).
 Northampton County Water Company.
 Ore Steamship Corporation.
 *Pacific Coast Steel Corporation.
 Patapsco & Back Rivers Railroad Company.
 Penn Iron Mining Company.
 Penn Iron Mining Company of Wisconsin.

*Formerly Redington Standard Fittings Co., name changed to Pacific Coast Steel Corp., see under Pacific Coast Steel Corpn.

Penn Store Company.
Philadelphia, Bethlehem & New England Railroad Company.
Pine Township Water Company.
Possum Glory Water Company.
Service Stores Corporation.
South Buffalo Railway 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.; Q. Bent, V. P.; Paul Mackall, V. P.; G. W. Struble, V. P.; G. H. Blakeley, V. P.; J. M. Gross, V. P.; R. E. McMath, V. P. & Sec.; J. P. Bender, T.; F. A. Shick, C.; C. R. Holton, P. A.

Sales offices:

Atlanta, Ga., Healy Bldg.
Baltimore, Md., Continental Bldg.
Boston, Mass., Atlantic Bank Bldg.
Buffalo, N. Y., Marine Trust Bldg.
Chicago, Ill., Peoples Gas Bldg.
Cincinnati, Ohio, Union Trust Bldg.
Cleveland, Ohio, Terminal Tower Bldg.
Detroit, Mich., Penobscot Bldg.
Honolulu, Hawaii, Castle & Cook Bldg.
Los Angeles, Calif., Pacific Finance Bldg.
New York, N. Y., Cunard Bldg.
Philadelphia, Pa., Widener Bldg.
Pittsburgh, Pa., Oliver Bldg.
Portland, Ore., American Bank Bldg.
San Francisco, Calif., Matson Bldg.
St. Louis, Mo., Arcade Bldg.
Seattle, Wash., L. C. Smith Bldg.
The Hague, Holland (European agency).
Washington, D. C., Wilkins Bldg.

Export sales:

Bethlehem Steel Export Corp., Cunard Bldg., 25 Broadway, New York.

Foreign offices:

Mexico City, Mexico, Calle San Juan de Letran 16.
Montreal, Canada, 437 St. James Place.
Tokio, Japan, Nippon Yusen Kaisha Bldg.
Toronto, Canada, Royal Bank Bldg.

Foreign agencies:

Buenos Aires, Argentine, Edificio Banco de Boston.
 Caracas, Venezuela.
 Guayaquil, Ecuador, Casilla 15.
 Havana, Cuba, Royal Bank of Canada Bldg.
 Lima, Peru.
 Manila, Philippine Islands, Peoples Bank Bldg.
 Medellin, Colombia, Apartado 139.
 Merida, Yucatan, Mexico, Apartado 143.
 Rio de Janeiro, Brazil, Rua de Alfandega No. 48.
 Rome, Italy, 16 Via Cagliari.
 St. Johns, Newfoundland.
 San Jose, Costa Rica.
 San Juan, Porto Rico, Calle Cruz, No. 1 (Altos).
 Santo Domingo, Dominican Republic, Calle Luperon 16.
 Sydney, Australia, 352 Kent Street.
 Sydney, N. S., Canada, P. O. Box 189.
 Vancouver, British Columbia, 712 Standard Bank Bldg.

Products: pig iron, ferro-manganese, spiegeleisen; blooms, slabs, billets, sheet and tin plate 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, Bethlehem high speed tool steel, chain, staybolt, horseshoe and enginebolt iron; standard, light, high and special tee, girder and guard rails, steel ties, splice bars, rail joints, tie plates, frogs, switches, crossings, special track work, switch stands; tin plate, black plate; black, blue annealed and galvanized sheets; forging ingots, pressed and hammered forgings, hollow forgings, drop forgings, shafting; steel, iron, brass and bronze castings, carbon and alloy steel castings; steel rolls, chilled and sand cast iron rolls, tunnel segments, ingot moulds; armor plate, guns, gun and shell forgings; steam and gas engines, Bethlehem oil engines, heavy machinery, machine tools, pumps, hydraulic presses; steel bridges, viaducts and buildings; pier caissons, Bethlehem railroad turntables; cutting and punching tools; nuts, rivets, spikes, track bolts; 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 and motor truck wheels; rolled fly wheels, rolled gear blanks, agricultural implement parts; butt and lap welded steel pipe, lap welded iron and steel boiler tubes; coke, gas, tar, ammonium sulphate, crude naphthalene and benzol and its homologues, copper pyrites, etc.

Total annual capacity: 7,200,000 tons pig iron, 8,230,000 tons ingots, 5,745,500 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.

Danville Division, rolling mills.

Lebanon Plant, Lebanon, Pa.: sintering plant, 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, sheet and tinplate works, wire and nail works, etc.

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

Cambria Plant, Johnstown, Pa.: (Operated under lease from Bethlehem Steel Products Company): blast furnaces, steel works, rolling mills, wire and nail works, wheel and axle works, car works, etc.

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

Harlan Division, Wilmington, Del.: passenger-train car plant.

Bethlehem Plant, Bethlehem, Pa.:

Lehigh Division:

Blast Furnaces: 6 stacks: A, 90' x 22' 6", blt. 1866, last rebt. 1914; relined 1929; B, 90' x 22' 6", blt. 1876, last rebt. 1916, relined 1929; D, 89' x 22' 6", blt. 1881, last rebt. 1926, relined 1928; E, 89' x 22' 6", blt. 1906, last rebt. 1921, relined 1927; F, 89' x 20' 6", blt. 1910, relined 1928; G, 90' x 22', blt. 1911, relined 1928; C, 80' x 18', blt. 1874-75, abandoned 1926; 30 McClure three-pass stoves 100' x 22' (5 for each furnace); 20 blowing engines (3 Southwark vertical steam; 17 Bethlehem horizontal gas, 13 single, 2 twin) 1 additional twin under construction, 341,000 cfm., 25 lbs. rated pressure; 30 water-tube boilers (B. & W., Sterling, Rust) 11,600 H. P. furnish power also to forges, machine shops and rolling mills; 2 double-strand pig casting mach. (1 Uehling, 1 Heyl & Patterson); Dwight-Lloyd 2-strand sintering plant under construction, annual cap., 500,000 tons. By-product coke: Lake, Chile, Cornwall sinter, Cuban, New York and New Jersey ores. Product: basic, bessemer and foundry pig iron, annual cap., 1,285,200 tons.

By-Product Coke Plant: 424 Koppers by-product ovens, by-product recovery plant and Koppers benzol plant, annual cap., 1,788,000 net tons coke, 4,620,000 gals. light oil.

Steel Dept.: first acid steel Aug. 11, 1888, first basic steel Jan. 3, 1893; 5 A. O. H. fur. (one 12-ton, two 35-ton, two 40-ton); 8 B. O. H. fur. (two 40-ton, one 50-ton, three 75-ton, two 85-ton); fuel in O. H. oil, coke oven gas, blast fur. gas; 40 Morgan gas prod.; 6 electric fur. (one 6-ton Moore, one 3-ton Heroult, four 500-lb. Ajax); 2 mixers (400-ton); 6 cupolas; 2 air fur. Iron foundry for iron castings (10,000 tons), iron rolls (5,000 tons), and ingot moulds (120,000 tons); brass foundry (1,500 tons).

Rolling Mills: four 4-hole soaking pits; 15 heat. fur. (four 4-d., eleven cont.) fuel prod. gas and coke oven gas; 35" 2-h. 1-st. blooming; 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. 1-st., 12" 3-h. 5-st. and 12" 2-h. 1-st. bar; 16" 3-h. 1-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 (800-lb. to 8,000-lb.); 13 forging presses (200-ton to 14,000 ton). Armor plate dept., machine shops for general work, rough machining and finishing forgings and castings, and for heavy ordnance, etc.; 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 Dept.: 18 B. O. H. fur. (sixteen 80-ton stationary, two 200-ton tilting); 3 bessemer converters (25-ton) for duplexing, dismantled 1929; 3 mixers (one 450-ton, one 1,000-ton, one 1,300-ton).

Rolling Mills: fifteen 4-hole soaking pits; 6 cont. heat. fur., fuel coke oven and blast furnace gas mixed; 46" 2-h. 1-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 mill; 40" 2-h. 1-st. blooming 30" 2-h. 1-st. billet; 28" 3-h. 3-st. standard structural; 18" 3-h. 3-st. standard structural; 16" 2-h. 6-st. and 12" 2-h. 4-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., 1,285,200 tons; steel ingots, 1,681,000 tons (1,582,080 tons basic O. H., 84,520 tons acid O. H., 14,400 tons electric); steel castings for own use and for sale (18,000 tons); alloy steel ingots and castings (nickel, chrome, vanadium, molybdenum, tungsten, silicon); blooms, slabs and billets, 1,570,000 tons; finished hot rolled products, 1,275,000 tons including 1,100,000 tons structural shapes, 135,000 tons special carbon and alloy bars, 5,000 tons electric tool steel bars and 35,000 tons forging blooms and billets; press and hammer forgings, 20,000 tons;

drop forgings, 7,500 tons; fabricated structural steel, 108,000 tons; heavy machinery and ordnance, 12,000 tons; small tools, 400 tons.

Steelton Plant, Steelton, Pa.:

Blast Furnaces: 3 stacks; A, 87' x 22' 6", blt. 1918, relined 1929; B, 100' x 26' 3", last rebld. 1928-29, relined 1929; E, 87' x 20' 10½", blt. 1915-16, relined 1927; C, 85' 3" x 20', blt. 1883-84, abandoned 1927; D, 80' 7" x 18', blt. 1883-84, dismantled 1927; 15 side comb. 2-pass stoves, 4 for A, 6 for B, 5 for E (twelve 100' x 24', two 100' x 22', one 100' x 20'); 2 twin, cross compound vertical steam blowing eng. and 8 horizontal gas blowing eng., 215,000 cfm., 20 lbs. rated pressure; 18 water-tube boilers (B. & W.), 7,500 H. P. serve also open-hearth, rolling mills, forges and shops; 2 Heyl & Patterson single-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., 626,400 tons.

By-Product Coke Plant: 100 by-product ovens (60 Koppers, 40 Semet-Solvay), by-product recovery plant, annual cap., 393,000 net tons coke.

Steel Dept.: 3 bessemer converters (20-ton) for duplexing, dismantled 1929; 9 B. O. H. fur. (six 85-ton stationary, three 200-ton tilting); 2 A. O. H. fur. (one 25-ton, one 30-ton tilting) fuel in O. H. prod. and coke oven gas, tar and oil, 19 Hughes gas producers; 1 Heroult electric fur. (6-ton); 2 mixers (one 500-ton, one 800-ton); 2 cupolas for pig iron and spiegel. Gray iron foundry (6,000 tons).

Rolling Mills: 8 soaking pits (five 4-hole, three 2-hole) fuel prod. gas; 26 heat. fur. (three 1-d., ten 2-d., seven 3-d., four 4-d., two cont.) fuel prod. gas, tar and oil; 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.); 5 steam hydraulic presses (500-ton to 2,000-ton). Structural fabricating shop; frog and switch dept. Product: steel ingots, 660,000 tons (623,700 B. O. H., 36,300 A. O. H.); 8,400 tons electric steel for castings; steel castings for own use and for sale, 18,000 tons; alloy steel ingots (nickel); alloy steel castings (manganese); blooms, 600,000 tons; finished hot rolled products, 475,500 tons including 360,000 tons rails, 100,000 tons splice bars and tie plate bars, 7,500 tons merchant bars, 8,000 tons forging blooms; smooth and rough turned forgings, 15,000 tons; structural fabricated material, 65,000 tons; frogs, switches, crossings, special track work, 48,000 tons.

Danville Division (formerly Danville Structural Tubing Co. and Pennsylvania Brake Beam Co. to Mar. 31, 1927; Danville Structural Steel Co. to Feb. 1, 1930), Danville, Pa.: orig. blt. 1847; 2 cont. bit. coal-fired heat. fur.; 16" 3-h. 2-st. skelp mill with

patent tube mach.; 16" 3-h. 4-st. bar; 8" 3-h. 4-st. bar; 16" 2-h. 1-st. slitler; 16" 3-h. 3-st. bar, including slitler; 12" 3-h. 7-st. bar. Product: finished hot rolled products, 24,000 tons, including 14,400 tons merchant and concrete bars, 9,600 tons tubular shapes.

Lebanon Plant, Lebanon, Pa.:

Lebanon Furnaces, Lebanon, Pa. (2 stacks), and Cornwall Furnace, Cornwall, Pa. (1 stack), abandoned in 1926.

Bolt and Nut Division, Reading, Pa.: dismantled in 1925-26 and equipment moved to Lebanon, Pa.

Rolling Mills: 11 double puddling fur.; 1 squeezer; 7 non-regen. heat. fur. (six 4-d., one cont.) fuel, pulv. coal; 20" 3-h. 2-st muck bar; 12" 3-h. 1-st. and 8" 3-h. 5-st. bar; 12" 3-h. 5-st. bar; 16" 3-h. 4-st. bar; 16" 2-h. 6-st., 14" 2-h. 2-st., 12" 2-h. 2-st. and 10" 2-h. 2-st., semi-cont. bar; 6 galvanizing pots for galvanizing pole line material; 2 steam hammers (1,500-lb. and 3,000-lb.). Bolt, nut, rivet and spike dept.; iron foundry (1,500 tons); brass foundry (100 tons); factory warehouses. Product: muck bar, annual cap., 12,000 tons; finished hot rolled products, 140,000 tons, including 135,000 tons merchant bars and 5,000 tons iron bars; 1,500 tons drop forgings; bolts, nuts, rivets, spikes, washers, turnbuckles, pole line material, 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, 99' x 26', blt. 1889, rebt. 1927-28; B, 99' 8" x 26', blt. 1890, rebt. 1928-29; C, 95' x 27' blt. 1891, now rebldg.; D, 84' 7" x 22', blt. 1893, rebt. 1915, relined 1928; E, 94' 8" x 23', blt. 1920, relined 1926; F, 94' 8" x 23', blt. 1920, relined 1928; twenty-four 2-pass stoves (twenty-three 100' x 22', one 125' x 22'); 16 blowing eng. (4 Southwark steam, 2 Brown-Boveri turbo, 12 Bethlehem horizontal gas, 2 Bethlehem horizontal gas under construction) 464,000 cfm., 18 to 20 lbs. rated pressure; 27 water-tube boilers (23 B. & W., 2 C. E. steam generators, 2 W. & W.) 14,873 H. P. furnish power also to open-hearth, rolling mills, shops, etc.; 1 Heyl & Patterson double-strand pig casting mach.; 1 slag granulating pit, annual cap., 90,000 tons. By-product coke: Cuban, Chile, Lake and foreign ores. Product: basic, bessemer, foundry and "Mayari" pig iron; annual cap., 1,479,600 tons.

By-Product Coke Plant: 360 Koppers by-product coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 1,747,000 net tons coke, 4,000,000 gals. light oil.

Steel Dept.: 3 bessemer converters (25-ton); 17 B. O. H. fur. (nine 130-ton stationary, six 150-ton stationary, two 250-ton tilting); fuel, oil and prod. gas; 15 Morgan gas producers; 4 mixers (250-ton, 650-ton, 1,000-ton, 1,300-ton). Foundry for

gray iron castings (6,000 tons), ingot stools (9,000 tons) and brass castings (700 tons) for own use.

Rolling Mills: fourteen 4-hole soaking pits, fuel, prod. gas, coke oven gas and blast furnace gas mixed; 15 heat. fur. (twelve 4-d. regen., three cont. recuperative), fuel, oil, coke oven, blast furnace and prod. gas; 40" 2-h. 1-st. blooming and slabbing; 46" 2-h. 1-st. blooming and slabbing; 24" 2-h. 6-st. billet; 18" 2-h. 6-st. sheet bar and billet; 27" 2-h. 2-st. billet; 24" 2-h. 2-st. billet; 21" 2-h. 7-st. sheet bar and skelp; 12" 2-h. 8-st. skelp; 26" 3-h. 3-st. rail; 36" x 114" 3-h. sheared plate; 36" x 60" 2-h. universal plate; 2 jobbing plate mills 2-h. (each 31" x 60" to 78" roughing, 30" x 44" to 72" finishing); 2 jobbing mill fur.; 13 comb. sheet and pair fur.; 12 double sheet mills 2-h. (31" x 44" to 56" roughing, 30" x 30" to 56" finishing); 52 comb. sheet and pair fur.; 48 hot black plate (tin) mills 2-h. (28" x 30" to 42"); 36 tinning pots; train of 6 single-stand cold rolls for sheet mills; 18 trains (fifteen 3-st., three 1-st.) 24" x 26" to 48" cold rolls for tin mills; 18 box annealing fur.; 2 blue annealing fur.; 9 pickling mach. (7 Mesta, 1 plunger, 1 Cook); 4 galvanizing pots for sheets.

Wire Mills: 1 cont. heat. fur., fuel, prod. gas; continuous wire rod mill with 12" 2-h. 7-st. roughing, 10" 2-h. 10-st. finishing; 116 wire drawing blocks drawing wire from 20 gauge to 14/32"; 146 wire nail mach.; 16 barbed wire mach.; 4 bale tie mach.; 1 galvanizing pan.

Tube Mills: 2 butt-weld fur. for pipe $\frac{3}{8}$ " to 3"; 2 lap-weld fur. for pipe 2" to 8" and 6" to 16"; 1 galvanizing pot.

Product (Maryland Plant): pig iron, annual cap., 1,479,600 tons; steel ingots, 1,749,000 tons (1,449,000 tons B. O. H., 300,000 tons Bess.); steel castings for own use, 4,800 tons; semi-finished hot rolled products, 2,815,000 tons; finished hot rolled products, 1,101,000 tons including 180,000 tons rails, 125,000 tons sheared plates, 110,000 tons universal plates, 125,000 tons wire rods, 230,000 tons skelp, 87,000 tons black sheets, 204,000 tons black plate for tinning, 40,000 tons blue annealed sheets; 4,500,000 base boxes tinplates; 48,000 tons galvanized sheets; 80,500 net tons plain wire, 5,600 net tons barbed wire, 13,500 net tons galvanized wire; 560,000 kegs (100-lb.) nails; 150,000 gross tons black pipe; 40,000 gross tons galvanized pipe; 5,500 kegs (200-lb.) washers; 18,000 tons fabricated structural material.

Lackawanna Plant, Lackawanna, N. Y. (operated under lease from Bethlehem Iron and Steel Corporation):

Blast Furnaces: 7 stacks, A, 92' 5½" x 23', blt. 1918, relined 1925; B, 92' 5½" x 23', blt. 1918, relined 1927; C, 92' 9¼" x 21' 6", blt. 1907, relined 1926; F, 94' 6" x 26' 11", blt. 1904, now rebldg.; G, 92' 8¼" x 24', blt. 1905, relined 1925; H, 92' 7¼" x

24' 10", blt. 1905, rebt. 1927; J, 92' 8½" x 24' 10", blt. 1906, rebt. 1928; D, 87' x 16', blt. 1901-02, and E, 87' x 16', blt. 1901-02, abandoned 1928, to be dismantled; 28 stoves (20 side combustion of which eight 110' x 22', four 105' x 22', eight 113' x 22'; 8 center combustion of which four 109' x 22', four 133' x 22'); 6 vertical steam and 15 horizontal gas (5 Mesta, 10 Bethlehem) blowing eng. (529,000 cfm.) 15 to 25 lbs. rated pressure; 5 additional Bethlehem horizontal gas blowing eng. under construction; 112 (Cahall, Sterling) water-tube boilers, 32,000 H. P. serve also steel works and rolling mills; 2 Heyl & Patterson double-strand pig casting mach. By-product coke: Lake and New York State ores. Product: basic, bessemer and foundry pig iron, annual cap., 1,620,000 tons.

By-Product Coke Plant: 231 by-product coke ovens (60 Semet-Solvay, 171 Koppers-Becker); by-product recovery plant and Koppers benzol plant, annual cap., 1,344,000 net tons coke, 5,700,000 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. (fourteen 100-ton stationary; eight 110-ton stationary, two 200-ton tilting); fuel in O. H. prod. and coke oven gas and tar; 49 gas producers (Hughes-Morgan); 3 mixers (250-ton, 300-ton, 600-ton). Foundry for gray iron (7,000 tons) castings, ingot moulds (60,000 tons) and brass (600 tons) castings.

Rolling Mills: 26 soaking pits (25 four-hole, 1 one-hole), fuel, coke oven gas; 20 heat. fur. (six 4-d. regen., five 5-d. regen., nine cont.), fuel, coke oven gas; 44" 2-h. 1-st. blooming; rail mill with 36" 2-h. 1-st. roughing and 32" 2-h. 2-st. finishing; 40" 2-h. 1-st. blooming; 32" 2-h. 1-st. slabbing; 18" 2-h. 10-st. cont. billet and sheet bar; 24" 3-h. 2-st. roughing and 16" 2-h. 1-st. bar and structural; 16" 3-h. 1-st., 12" 3-h. 1-st. and 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. 4-st. bar; 35" 2-h. 1-st. and 28" 3-h. 3-st. standard structural; 18" 2-h. 5-st. and 14" 2-h. 5-st. standard structural; 54" 2-h. 1-st. blooming and 48" 2-h. 4-st. finishing Bethlehem special structural; 48" 2-h. universal and sheared plate mill; 30" 2-h. 6-st. roughing, 21" 2-h. 6-st. finishing billet and sheet bar mill under construction to replace 18" billet and sheet bar mill. Roll sheared plates 3/16" to 1½" thick, 36" to 78" wide; universal plates 3/16" to 2" thick, 6¼" to 36" wide. Structural fabricating shop.

Product: (Lackawanna Plant): pig iron, annual cap., 1,620,000 tons; B. O. H. steel ingots 1,980,000 tons including 270,000 tons duplex; steel castings for own use, 4,800 tons; blooms and slabs, 1,700,000 tons; billets and sheet bars, 550,000 tons; finished hot rolled products, 1,320,000 tons including 275,000 tons rails,

520,000 tons structural shapes, 95,000 tons universal and sheared plates, 300,000 tons merchant bars, 60,000 tons sheet piling, 70,000 tons splice bars and tie plate bars: fabricated structural material 30,000 tons.

Cambria Plant, Johnstown, Pa. (operated under lease from Bethlehem Steel Products Co.).

Blast Furnaces: 9 stacks; B, 88' 10 $\frac{1}{4}$ " x 21' 2 $\frac{1}{2}$ ", blt. 1854, rebt. 1924, relined 1927; D, 88' 10 $\frac{1}{4}$ " x 22' 4", blt. 1854, rebt. 1924, relined 1928; E, 92' x 24', blt. 1876, rebt. 1926, relined 1926; F, 84' 9 $\frac{3}{4}$ " x 22', blt. 1879, last rebt. 1925; relined 1926; G, 93' x 25', blt. 1906, now being rebt.; H, 83' 10" x 22', blt. 1907, rebt. 1914, relined 1928-29; J, 87' 7" x 22' 6", blt. 1916, relined 1926; K, 87' 6" x 22' 6", blt. 1917, relined 1929; L, 87' 6" x 22' 6", blt. 1917, relined 1928; 36 stoves (8 center-comb. 100' x 24', 23 side-comb. 100' x 24', 5 side-comb. 90' x 20'); 18 blowing engines (7 horizontal steam, 6 vertical steam, 5 turbo-blowers) 594,000 cfm., 15-30 lbs. rated pressure; 112 water-tube boilers, 38,780 H. P. furnish power also to Steel Depts., rolling mills and shops; 3 Pittsburgh Coal Washer Co. 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: basic, bessemer and foundry pig iron and ferro-manganese; annual cap., 1,512,000 tons pig iron, 153,600 tons ferro-manganese.

By-Product Coke Plant: 385 by-product coke ovens (170 Cambria improved, 88 Semet-Solvay, 127 Koppers), 2 by-product recovery plants and Semet-Solvay benzol plant, annual cap., 1,798,000 net tons coke, 8,220,000 gals. light oil; one battery, 77 Koppers-Becker ovens under construction.

Steel Depts.: blt. 1853; first bessemer steel July 10, 1871, first O. H. steel 1879; 4 bessemer converters (12 $\frac{1}{2}$ -ton); 28 stationary B. O. H. fur. (three 50-ton, four 60-ton, sixteen 95-ton, five 110-ton); 1 stationary A. O. H. fur. (50-ton); fuel in O. H. coke oven gas, prod. gas and tar; 56 gas producers (51 Morgan, 3 Wood, 2 Hughes); 5 mixers (one 1,300-ton, four 250-ton); 5 cupolas for melting pig iron, 2 cupolas for spiegel. Foundry for gray iron castings (8,000 tons), ingot stools (6,000 tons), brass castings (700 tons) for own use.

Rolling Mills: 24 soaking pits (7 four-hole, 17 one hole), fuel, coke oven gas; 49 heat. fur. (six 3-d. non-regen., two 4-d. regen., thirty-three cont. non-regen., seven cont. regen., one cont. recuperative), fuel, coke oven and producer gas; 48" 2-h. 1-st. blooming; 18" 2-h. 12-st. cont. billet; 22" 3-h. 3-st. merchant bar; 22" 2-h. 2-st. axle; 12" 2-h. 6-st. roughing and 10" 2-h. 10-st. finishing cont. rod; 40" 2-h. 1-st. blooming; 32" 2-h. 1-st. wheel blank; 34" 2-h. 2-st. slabbing; 34" 2-h. 1-st. billet; 22" 2-h. 3-st. bar; 22" 3-h. 1-st. and 20" 2-h. 1-st. bar; 18" 2-h. 5-st. and 14" 2-h. 5-st. bar; 18" 2-h. 5-st. and 13" 2-h. 5-st. bar; 12"

3-h. 5-st. bar; 12" 2-h. 2-st. and 10" 2-h. 8-st. bar; 9" 3-h. 4-st. and 9" 2-h. 2-st. (No. 1, 9" bar); 9" 2-h. 7-st. and 9" 3-h. 2-st. (No. 2, 9" bar); 10" 2-h. 4-st. and 9" 2-h. 4-st. (No. 3, 9" bar); 12" 2-h. 1-st. and 8" 3-h. 5-st. (No. 1, 8" bar); 12" 2-h. 1-st. and 8" 3-h. 5-st. (No. 2, 8" bar); 12" 2-h. 6-st., 10" 2-h. 1-st. and 8" 3-h. 4-st. (No. 3, 8" bar); 36" x 134" 3-h. sheared plate mill; 24" x 48" universal plate mill; 2 steam hammers (10,000-lb.); 25 forging presses (250 lbs. to 12,000 tons); axle forge dept.; rolled steel wheel dept.; steel freight and mine car dept.; frog and switch dept.; agricultural implement dept.; light splice bar and rail joint dept.; shear shop; bolt, nut and rivet dept.

Wire Mills: blt. 1910-11, f. o. Feb. 15, 1911; 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.; 4 bale tie mach.; 3 galvanizing pans.

Product (Cambria Plant): pig iron, annual cap., 1,512,000 tons; ferro-manganese 153,600 tons; steel ingots, 1,824,000 tons (300,000 tons bessemer, 1,492,500 tons B. O. H., 31,500 tons A. O. H.); steel castings, 1,600 tons; blooms and slabs, 1,750,000 tons; billets, 1,080,000 tons; finished hot rolled products, 1,164,000 tons, including 90,000 tons universal plates, 150,000 tons sheared plates, 610,000 tons merchant and special section bars, 165,000 tons wire rods, 5,000 tons light structural shapes, 12,000 tons light rails, 12,000 tons rolled mine ties, frogs, switches, etc., 30,000 tons forging blooms and billets, 60,000 tons rolled car wheels, 30,000 tons rolled axles; agricultural parts, 10,000 tons; plain wire, 100,000 net tons; barbed wire, 5,600 net tons; woven wire fencing, 13,500 net tons; galvanized wire, 36,000 net tons; wire nails, 560,000 kegs (100-lb.); mine cars and parts, 7,500 tons; freight cars and parts, 140,000 tons.

Coatesville Plant, Coatesville, Pa., and Wilmington, Del.

Coatesville Division, Coatesville, Pa.

Blast Furnaces: 2 staoks; A, 84' 8½" x 23', blt. 1908-10, rebt. 1917, relined 1927; C, 93' 7" x 26', blt. 1916-17, rebt. 1928; B, 85' x 21', blt. 1909-11, abandoned 1928; 12 stoves (eight 90' x 22' center comb., four 100' x 22' side comb.); 10 blowing engines (6 Allis-Chalmers steam, 4 Bethlehem horizontal gas), 176,000 cfm., 18 lbs. rated pressure; 14 Sterling and Rust water-tube boilers, 7,000 H. P. serve also rolling mills, flanging and service depts.; 2 Heyl & Patterson double-strand pig casting mach. By-product and beehive coke: Chile, New York State and foreign ores. Product: basic, bessemer, and foundry pig iron, annual cap., 523,200 tons.

Steel Dept.: blt. 1895-96, first steel June 1896; 10 O. H. fur. (eight 75-ton and one 50-ton basic, one 50-ton acid), fuel, oil; 8 B. O. H. fur. (50-ton) dismantled 1929; 131 Talbot gas producers; 1 mixer (400-ton).

Rolling Mills: blt. 1881; 9 soaking pits (seven 4-hole, two 1-hole) fuel, prod. gas and oil; 13 heat. fur. (three 1-d., four 3-d., two 4-d., four cont. welding) fuel, prod. gas and oil; 22" x 68½" 3-h. muck bar; 22" 3-h. 1-st. roughing, 22" 2-h. 1-st planishing, 22" 2-h. 1-st. scarfing skelp mill; 3 sheared plate mills (one 30" x 72" 2-h., one 42" x 120" 3-h., one 42" x 152" 3-h.); flanging and dishing dept. Roll sheared plates ¼" to 12 gauge, 24" to 140" wide. Tube mill: 4 lap-weld fur. for tubes 1½" to 5½". Charcoal forge: 26 forge fires; 3 steam hammers (two 6,000-lb., one 5,000-lb.).

Product (Coatesville Plant): pig iron, annual cap., 523,200 tons; steel ingots, 336,000 tons; charcoal blooms from scrap, 20,000 tons; skelp, 30,000 tons; sheared plates, 216,000 tons; steel and charcoal iron tubes, 24,000 tons; flanged and dished plates, 15,000 tons.

Harlan Division, Wilmington, Del.

Product: passenger train cars (steel or wood); passenger, baggage, mail, combination passenger and baggage, baggage and mail, and other combinations, private and special cars.

SHIPBUILDING AND SHIP REPAIR PLANTS

Baltimore Plant, Sparrows Point and Baltimore, Md.

Fore River Plant, Quincy, Mass.

Boston Plant, Boston, Mass.

Union Plant, Alameda and San Francisco, Calif.

Union Plant, San Pedro Works, Los Angeles, Calif.

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; steam, gas, Bethlehem large unit type and Bethlehem-Trout oil engines for marine and land service, Bethlehem Curtis type geared marine turbines, Bethlehem marine, Scotch and Yarrow type boilers, auxiliary power plant equipment for marine service, ship deck machinery, etc., brass and iron castings.

Vessel repairs: repairing, reconditioning, converting and dry docking 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 interest in Hoyt Mining Company, and two-

ninths interest in Bennett Mining Company, which operate under lease properties in the Mesaba Range.

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

One-half interest in the Negaunee Mine Company, and fifty-one one-hundredths interest in Palmer Mining Company, which operate 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 the 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 Cuyuna Ore Company, which operates properties under lease and three-fifths interest in Lehigh Ore Company which has an interest in mining company operating properties under lease in the Cuyuna Range.

The share interest in the above mentioned properties makes available approximately 7,200,000 tons of iron ore per annum.

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

Tofo 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.

Undeveloped property located in the State of Michoacan, Republic of Mexico.

Property located near Santiago on south coast of Cuba equipped to produce 315,000 tons of iron ore per annum.

Property and mineral rights located near Nipe Bay, on North coast of Cuba, 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 excluding interest of others in properties not owned outright) are estimated to contain 176,588,000 tons of iron ore.

Coal Properties: Developed coal properties in the vicinity of Ellsworth, Heilwood, Johnstown, Marianna, Slickville and Wehrum, Pennsylvania; Fairmont and Morgantown, West Virginia. These properties are estimated to contain 754,154,000 tons of coal and are equipped to produce 12,720,000 tons per annum.

Limestone Properties: Quarries located at Bethlehem, Bridgeport, Hanover, Lebanon, Naginey, Steelton and York, Pennsylvania; McAfee, New Jersey; Felton, Cuba; and undeveloped properties in Blair and Center counties, Pennsylvania and Pekin, New

York. The developed properties are estimated to contain 199,-279,000 tons of calcite and dolomite limestone and are equipped to produce 2,255,000 tons per annum for consumption at the steel plants and 425,000 tons for building and road purposes.

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

These railroads own and operate 139 standard gauge steam locomotives, 1 electric locomotive, 175 seventy-ton standard gauge cars and approximately 384 miles of main line, yards tracks and sidings, connecting with other common carrier railroads. In addition to the above, 14 standard gauge locomotives and 96 miles of main line, yard track and sidings are owned and operated in conjunction with the steel plants.

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; three ore carrying vessels 11,600 d. w. t. capacity each, one ore and coal vessel of 6,000 d. w. t. capacity, and seven general cargo carrying vessels of 64,585 total d. w. t. capacity; and under charter two ore and coal carrying vessels of 20,000 d. w. t. capacity each.

Lake Transportation: Eight vessels with a total carrying capacity per trip of 77,385 gross tons, and one-half interest in five additional vessels with a total carrying capacity per trip of 48,200 gross tons, and under charter one vessel with a carrying capacity per trip of 13,000 gross tons. These vessels have a total carrying capacity per season of approximately 3,325,000 gross tons of iron ore, and are also suitable for carrying coal, limestone and grain; also under charter two vessels with a total carrying capacity per season of 135,000 gross tons of steel and iron products and are also suitable for carrying return cargoes of scrap.

BETTENDORF CO. (The), Bettendorf, Iowa.

Inc. Jan. 1, 1913 in Iowa. Capital stock: com., par value \$100, auth. and issued \$5,000,000; pref. 7% cum., auth. and issued \$2,500,000.

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

Sales offices:

Chicago, Ill., K. M. Hamilton, McCormick Bldg.

New York, N. Y., F. K. Shults, Grand Central Terminal Bldg.

St. Paul, Minn., W. C. Motter.

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

Product: steel castings for own use and for sale; annual cap., 90,000 tons. Manufacturer of steel and wooden railroad freight cars, trucks, frames, side-frames, bolsters and car specialties. Miscellaneous railroad castings.

BINGHAM & TAYLOR CORPN., 575-601 Howard St., Buffalo, N. Y.

Inc. July 1, 1928 in New York. Capital stock: com., no par value, auth. and issued 1,500 shares; pref. 7% cum. auth. and issued \$150,000; bonds \$35,000.

James W. Gibney, P.; William J. Gibney, V. P.; Joe H. Gardner, Sec., T., G. S. & G. S. M.; D. Murray, A.; Edward Bieswanger, G. M.

Sales office: 50 Church Street, New York, N. Y.

Works at 575-601 Howard St., Buffalo: (W. P. Taylor Co. to July 1, 1928); blt. 1894; 2 Heroult electric fur. (3-ton, 1½-ton); 3 cupolas; stock converter (½-ton) abandoned. Gray iron foundry.

Product: electric steel castings for sale, annual cap., 1,500 to 2,000 tons. Steel railroad pedestals, special steel journal boxes.

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

Inc. Nov., 1894 in Pennsylvania. Capital stock: com., par value \$50, auth. \$750,000, issued \$495,000; pref. 6% cum. auth. \$750,000 issued \$596,300.

Robert E. Brooke, P.; J. E. McCauley, V. P. & G. M.; Marshall Post, V. P. & W. M.; R. A. Cannon, V. P. & S. M.; George Brooke, 3rd, Sec. & T.; Robert F. Rentschler, C.; John K. Klink, P. A.

Sales offices:

Chicago, Ill., C. E. Faust, 208 So. La Salle St.

Cleveland, Ohio, W. R. McDonough, National Bldg.

New York, N. Y., C. G. Buchanan Co., 90 West St.

Pittsburgh, Pa., Joseph E. Fawell, First National Bank Bldg.

Brands: Birdsboro (alloy steel); Grainloy, Sandloy, Chilloy, Durite (rolls).

Works at Birdsboro, Pa.: blt. 1901-03; steel plant; 2 A. O. H. fur. (30-ton). Fuel, oil. Roll foundry; 2 air fur., 1 cupola; annual cap., 6,000 net tons rolls. Machine shops and pattern shop.

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., 48,000 tons (24,000 tons ingots; 24,000 tons castings). Alloy steel (vanadium, chrome, nickel) castings. Sand and chilled iron rolls, steel rolls and alloy steel and iron rolls.

Birmingham-Trussville Iron Co., Birmingham, Ala.

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

Black Steel & Wire Co., Kansas City, Mo., name changed to Union Wire Rope Co. Nov. 1, 1927. Steel works and rolling mill were dismantled in 1927.

Blackwood Electric Steel Corp., Parkersburg, W. Va. with steel foundry at Parkersburg, was acquired March 18, 1929, by Mountain State Steel Foundries.

Blandon Rolling Mill, Inc., Blandon, Pa. Works at Blandon for the manufacture of muck and scrap bar, skelp, flue and pipe iron, last active in 1924. Equipment sold in 1929 and will be dismantled.

BLAW-KNOX COMPANY, Blawnox, Allegheny Co., Pa.

Inc. Mar. 6, 1906, in New Jersey. Capital stock: com., no par value, auth. 1,500,000 shares, issued 1,309,436 shares.

Albert C. Lehman, P.; Irvin F. Lehman, V. P.; F. M. Bowman, V. P.; Wayne Rawley, V. P. & G. S.; Frank Cordes, V. P.; Chester H. Lehman, Sec. & G. S. M.; Benjamin L. Hirshfield, T.; George L. Dumbauld, C.; William S. Boyd, P. A.

Sales offices:

Baltimore, Md., Bayard & Warner Sts.

Birmingham, Ala., Brown-Marx Bldg.

Boston, Mass., 605 Statler Bldg.

Buffalo, N. Y., 623 Genesee Bldg.

Chicago, Ill., Peoples Gas Bldg.

Cleveland, Ohio, 526 Union Bldg.

Detroit, Mich., 333 State St.

New York, N. Y., 342 Madison Ave.

Philadelphia, Pa., 906 Widener Bldg.

Brands: Electroforged (grating); Floorgard (steel mesh); Blawforms (heavy forms); Blawsteel (roof decking); Quixet (garages); Dreadnaught (buckets and road rails); Batchersplant (bins and batchers); Tracyfier (steam purifier).

The company operates plants at Blawnox, Pa., and Baltimore, Md., for manufacture of steel forms for concrete, steel transmission towers, poles and radio towers, water cooled furnace equipment, air preheaters, steel plate construction, forge and hammer welding, clamshell buckets, road building equipment. Ord road finishing machines, measuring equipment for concrete aggregates, Agitator truck body, steel bins, steel grating and flooring, floor and road armoring, tracy-fliers, etc. The Company owns A. W.

French & Co., Chicago, Ill., which it acquired Jan. 1, 1928. The Company also owns the following companies, all of which were acquired July 31, 1929.

*Lewis Foundry & Machine Co.

*National Alloy Steel Co.

*Pittsburgh Rolls Corp.

*Union Steel Casting Co.

*These subsidiaries are described in the alphabetic list under the title of the respective companies.

Bon Air Chemical Co., Nashville, Tenn., was acquired in Feb., 1926, by Bon Air Coal & Iron Corp. Name of the latter company was changed to Tennessee Products Corp.

Bon Air Coal & Iron Corp., Nashville, Tenn., acquired in Feb., 1926, the Bon Air Chemical Co., the Rockdale Furnace owned by J. J. Gray, Jr., and the plants and properties of the Chattanooga Coke & Gas Co. Name of Bon Air Coal & Iron Corp. was changed to Tennessee Products Corp.

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 Bangert, V. P.; Steve Gedley, Sec. & T.; A. E. Thomure, 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), Marion Road, South Columbus Station, Columbus, Ohio.

Inc. 1906 in Ohio.

John L. V. Bonney, P. & T.; Walter B. Floyd, V. P. & Sec.

Works at South Columbus on New York Central R. R.: blt. 1907, f. o. Sept. 16, 1907; 2 B. O. H. fur. (15-ton); 2 electric fur. (one 3-ton Ludlum, one 3-ton Moore). Fuel, nat. gas or oil.

Product: steel castings for sale, annual cap., 20,000 tons (12,000 tons B. O. H., 8,000 tons electric); alloy steel castings (chrome, nickel, molybdenum, manganese). Heat-treated castings.

BOTCHFORD STEEL COMPANY, Emeryville, Calif.

Inc. Oct., 1929, in Nevada.

D. H. Botchford, P.; H. C. Montgomery, V. P.; Carlos J. Maas, V. P.

Works at Emeryville, Oakland, Calif.: est. 1882; Equipment owned, land leased; 3 B. O. H. fur. (30-ton) blt. 1916-18; cont. oil-fired heat. fur.; 19" 3-h. 1-st. breakdown; 16" 3-h. 4-st., 10" 3-h. 5-st., and 10" 3-h. 5-st. bar mills. (Judson Manufacturing Co. to Dec. 1, 1929).

Product: steel ingots, annual cap., 60,000 tons; merchant and concrete bars and light structural shapes, 40,000 tons.

BOURNE-FULLER CO. (The), 1912 Scranton Road, Cleveland, Ohio.

Inc. 1896; reinc. July 1, 1920, in Ohio. Capital stock: com., par value \$100, auth. \$25,000,000, issued \$18,760,000.

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

Sales offices:

Chicago, Ill., 1808 Straus Bldg.

Detroit, Mich., 5-128 General Motors Bldg.

New York, N. Y., 1712 Grand Central Terminal Bldg.

San Francisco, Calif., 495-497 Monadnock Bldg.

Brand: Upson (bolts, nuts, rivets); Climax Alloy (staybolt steel); Searight (Connellsville coke).

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: Upson Furnace: 1 stack, 65' 7" x 16', relined 1926; 4 Foote stoves (one 90' x 19', one 90' x 20', two 75' x 19'); 1 turbo-blower, 33,000 cfm., 26-lb. rated pressure; 5 water-tube boilers (4 Connelly, 1 Stirling), 2,000 H. P. serve also open-hearth, blooming mill, finishing mill and power house; one Heyl & Patterson single-strand pig casting mach.; slag granulating pit, annual cap., 50,000 tons. Beehive and by-product coke: Lake ore. Product: basic pig iron for own use, annual cap., 120,000 tons.

Steel Works: blt. 1910-11; f. o. Apr. 10, 1911; 5 B. O. H. fur. (105-ton), fuel, oil; four 4-hole soaking pits with 7 gas producers; 2 oil-fired cont. heat. fur.; 34" 2-h. 1-st. blooming; merchant mill with 16" 2-h. 4-st., 14" 2-h. 4-st. roughing, 11" 3-h. 4-st. finishing; 1 Gantry Crane pickling mach.; 3 hand pickling tanks; 3 wire drawing blocks. Product: steel ingots, annual capacity 350,000 tons; alloy steel ingots (nickel, chrome, molybdenum, vanadium); blooms and billets, 325,000 tons; finished hot rolled products, 180,000 tons, including 156,000 tons merchant and concrete bars and 24,000 tons bolt, nut and rivet rods.

Union Mills, East 82d & Aetna Road, Cleveland: blt. 1866-67; 2 cont. heat. fur. (one gas-fired, one pulv. coal-fired); 3 gas producers; 21" 3-h. 4-st. bar and structural; bar and rod mill with 12" 2-h. 8-st. roughing, 10" 3-h. 2-st. and 10" 2-h. 2-st. finishing; 8" 2-h. 4-st. bar; 3 hand pickling tanks. Product: finished hot rolled products, annual cap., 150,000 tons, including 115,000 tons merchant steel bars and shapes, and 35,000 tons bolt, nut and rivet rods.

Bolt, Nut and Rivet Works (2 plants situated at Upson Works, Cleveland, Ohio, and Unionville, Conn.). Product: bolts, nuts and rivets (3/16" to 4" dia.), annual cap., 720,000 kegs (200-lb.).

Beehive Coke Plant, Menallen Township, Fayette Co., Pa.: 140 beehive ovens, annual cap., 96,000 net tons coke.

The company owns and operates coal mines at Menallen Township, Fayette Co., Pa., annual cap., 300,000 tons.

Bowmanville Foundry Co., Ltd., Bowmanville, Ontario, Canada.

Works at Bowmanville, Ontario: one $\frac{1}{2}$ -ton Gronwall-Dixon electric fur., dismantled in 1926. Company operates gray iron foundry only.

BRAEBURN ALLOY STEEL CORPORATION, Braeburn, Pa.

Inc. Feb. 19, 1924 in Pennsylvania. Capital stock: com., par value \$5, auth. and issued \$250,000; pref. 8% cum. auth. and issued \$500,000; bonds \$300,000.

T. H. McGraw, Jr., P. & G. S. M.; W. P. Lowdermilk, C.; N. I. Stotz, G. S.; C. R. Cline, P. A.; at Braeburn. A. J. Barnett, Sec.; at Latrobe, Pa. D. W. Yearly, T.; at Blairsville, Pa.

Sales offices:

Bellevue, Ky., E. W. Wingerter, 271 Ward Ave.

Boston, Mass., A. B. Day, 100 Milk St.

Chicago, Ill., A. C. Baum, 4455-7 Fullerton Ave.

Cleveland, Ohio, J. C. Huffman, 1842 East 40th St.

Detroit, Mich., G. J. Polhemus, 985 East Milwaukee Ave.

Lansing, Mich., E. A. Brophy, 326 West Maine St.

Philadelphia, Pa., W. Candlin, 1201 Pennsylvania Bldg.

Pittsburgh, Pa., D. H. Horne, 125 Charles St., Mount Oliver Station.

Rochester, N. Y., F. U. McGraw, 726 Harvard St.

Wilksburg, Pa., J. E. Gladden, 573 East End Ave.

Works at Braeburn: blt. 1897; 2 Heroult electric fur. (6-ton) f. o. 1916; 12 coal-fired heat. fur. (three 1-d., three 2-d., two 3-d., four 4-d.); 14" 3-h. 5-st. and 10" 3-h. 6-st. merchant mills; 3 box annealing fur.; 7 steam hammers (500-lb. to 5-ton).

Product: steel ingots, annual cap., 3,600 tons; alloy steel ingots; rolled and hammered tool steel bars, 3,000 tons.

BREWSTER CO., Inc. (The), Shreveport, La.

Inc. Nov. 1911 in Louisiana as Oil City Iron Works, Inc., corporate title changed to The Brewster Co., Inc., Jan. 1, 1929. Capital stock: com., par value \$100, auth. \$500,000, issued \$252,500.

H. C. Brewster, P. & G. M.; L. B. Brewster, V. P.; A. Olin Price, Sec., T. & S. M.; W. E. Boyd, G. S.; L. L. Hudson, P. A.

Sales offices:

El Dorado, Ark.

Houston, Texas.

Lake Charles, La.

Oklahoma City, Okla.

Brand: Brewster.

Shreveport Works, Shreveport, La.: 1 bessemer converter (1½-ton).

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

Briggs & Turivas, Chicago, Ill. Rolling mill at Joliet, Ill. formerly leased by The Joseph Schonthal Co. to May, 1926, was dismantled in 1928.

BRIGHTON ELECTRIC STEEL CASTING CO., Beaver Falls, Pa.
Inc. 1922 in Pennsylvania. Capital stock: com., par value \$100, issued \$37,500.

D. T. Sipe, P. & G. S. M.; at 1st National Bank Bldg., Pittsburgh, Pa.

W. F. Waxea Felter, Sec. & T.; Carl H. Sipe, G. S. & P. A.; at Beaver Falls.

Brand: Besco (steel castings).

Works at Beaver Falls: blt. 1922; steel castings first made in 1925; 1 Moore Lectromelt electric fur. (¼-ton) installed in 1925.

Product: electric steel castings for sale, annual cap., 370 tons; alloy steel castings (chrome, nickel); piercer points and guide shoes.

BRITISH EMPIRE STEEL CORPN., Ltd., Canada Cement Bldg., Montreal, P. Q., Canada.

Inc. May 22, 1920 in Nova Scotia. Capital stock: com. par value \$100, auth. \$75,000,000, outstanding \$24,450,000; 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 \$57,350,000; preferred stocks of constituent companies, \$11,756,300; bonds \$31,039,783.19.

C. B. McNaught, P.; J. E. McLurg, V. P.; C. S. Cameron, Sec. & T.; A. M. Irvine, G. S. M. (coal dept.); C. E. Gausden, G. S. M. (steel dept.); at Montreal. Major Gen. Sir Newton J. Moore, K. C. M. G., V. P.; at London, England. George F. Downs, V. P.; at New York, N. Y. M. W. McDonald, C.; H. J. Kelley, G. M.; D. S. Hines, P. A.; at Sydney, N. S., Canada.

Sales offices: Canada Cement Bldg., Montreal, Canada; 16 Northumberland Ave., London, W. C. 2, England; James Pender & Co., Ltd., St. John, N. B.

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.
 Peck Rolling Mills, Ltd.
 Sydney Lumber Co., Ltd.
 Nova Scotia Steel & Coal Co., Ltd.
 Arcadia Coal Co., Ltd.
 Eastern Car Co., Ltd.
 Nova Scotia Land Co., Ltd.
 Wasis Steamship Co., Ltd.
 Halifax Shipyards, Ltd.
 Dominion Iron & Steel Co., Ltd.
 Brand: Besco (pig iron and steel products).
 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, relined Aug. 1929; No. 8, f. o. Sept. 15, 1912, remod. Sept. 1920, relined Nov. 1929; 24 Cowper-Kennedy stoves (four 95' x 21', twenty 85' x 21'); 3 additional stoves under construction; 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, electric power house and open-hearth gas-producers; 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., 400,000 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, coke oven gas, prod. gas, 57 Duff gas prod.; three 15-ton side-blow basic bessemer converters for duplexing, blt. 1907, dismantled 1929; one 300-ton tilting mixer (the two 100-ton O. H. fur. can also be used as 350-ton mixers); five 4-hole soaking pits; 4 cont. heat. fur. (2 Morgan for rod and bar mills, 2 own design for rail and 16" merchant) fuel, coke oven gas; 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") partially dismantled. Gray iron foundry, annual

cap., 5,000 tons; brass foundry and machine shop for own use. Fuel, prod. gas, coke oven gas, and bit. coal. Product: open-hearth steel ingots; blooms, billets, slabs; steel rails, tie plates, bars and wire rods. Annual cap., 400,000 tons ingots; 375,000 tons blooms, billets and slabs; 300,000 tons finished rolled products, including 200,000 tons rails and tie plates; 100,000 tons wire rods and merchants 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; 3 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 gauge, 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 (100-lbs.) 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 1,500,000 tons.

By-product coke plant at Sydney: 180 Koppers by-product ovens, annual cap., 450,000 net tons of coke. Coal washing plant. By-product recovery plant, 8,000 tons sulphate of ammonia. Sulphuric acid plant, 13,400 tons 50° sulphuric acid. Benzol plant; product, benzol or motor fuel; annual cap., 2,000,000 gals. light oils.

The company owns limestone quarries as follows: Port au Port quarry at Aguathunia, Port au Port Bay, Newfoundland, and Georges River quarry at Georges River, Cape Breton Co., Nova Scotia, total annual cap., 360,000 net tons limestone.

Peck Rolling Mills, Ltd., 63 Mill St., Montreal: est. 1831; 1 alligator squeezer; five 4-d. coal-fired reheat. fur.; 14" 3-h. 4-st. bar; 9" 3-h. 5-st. bar and guide; 1 box annealing fur.; 1 blue annealing fur.; 1 open top hand pickling tank; 17 cut nail mach.; 10 wire drawing blocks for wire 7/16" to 20 gauge; 18 wire nail mach. Spike and washer dept. (acquired by British Empire Steel Corporation, Ltd., June 1, 1928). Product: merchant and concrete bars; light structural shapes; spike rods, nail and washer plate; cut nails, wire nails; spikes and washers. Annual cap., 36,000 tons finished hot rolled products including 26,866 tons merchant and concrete bars, 7,056 tons light structural shapes, 504 tons bands, 1,134 tons spike rods, 440 tons nail and washer plate; 12,000 kegs (100-lb.) cut nails; 13,600 kegs (100-lb.) wire nails; 1,980 net tons plain wire; 11,880 kegs (200-lb.) railway, shimming, ship and drift spikes (2" x 5/16" to 20" x 1"); 3,480 boxes (50-lb.) washers.

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. (Last operated Nov. 1920).

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. (Last operated Nov., 1920.)

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. (Last operated Nov., 1920.)

New Glasgow Works, New Glasgow, N. S.: blt. 1872; rolling mill blt. 1883, f. o. Aug., 1883; 41 heating fur. (thirteen 1-d. oil; twenty-three 2-d. coal; 5 cont. coal); 2 annealing and heat. treat. fur., coal and oil; 18" 3-h. 3-st. roughing with 9" 3-h. 5-st. finishing; 16" 3-h. 1-st. and 9" 3-h. 5-st. guide; 20" x 48" 3-h. plate mill; 4 double-frame steam ham. (two 3½-ton axle, two 500-lb. to 4-ton forging); 2 vertical hydraulic forging presses (500-ton and 3,600 ton). Spike, bolt and rivet factory. Machine shop and structural shops, etc.

Product: industrial rails from 12-lb. to 40-lb.; fish plates, tie plates, angle bars; machinery, car, spring and agricultural implement steel; tank and boiler plates; 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.: 69,300 tons finished hot rolled products, including 22,300 tons tank and boiler plate, 1,000 tons rails, 31,000 tons light structural shapes, 15,000 tons merchant and concrete bars; 8,700 tons railway and pitt spikes, 5,000 tons machine, carriage and track bolts, 3,000 tons rivets; 15,000 tons marine, engine, locomotive and railway axles.

The company also owns the Eastern Car Co. at New Glasgow, which builds steel and wooden cars, mine wagons, snow plows, 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.

The company owns nearly all of the capital stock of Acadia Coal Co. with coal mines at Stellarton, Nova Scotia, annual cap., 500,000 tons.

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

Edward Brooke, P.; George Brooke, Sec.; Robert E. Brooke, T.; F. Ward Coburn, G. M.; C. K. Manwiller, P. A.

Selling Agents: Pilling & Co., Inc., Franklin Trust Bldg., Philadelphia, Pa.

Brand: Brooke (pig iron).

Brooke Furnace, Birdsboro, Pa.: 1 stack, 82' x 17' 6", blt. 1872, last rebt. 1928; 4 stoves (2 Roberts 90' x 18', 1 Roberts 90' x 17', 1 Freyn 87' x 20' 6"); 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) 2,528 H. P.; 1 American Casting Mach. Co. single-strand pig casting mach.; Dwight & Lloyd sintering plant for ore and flue dust, annual cap., 120,000 tons. By-product coke: Eastern magnetite iron ore.

Product: foundry, malleable, forge and basic pig iron, annual cap., 130,000 tons.

Bryden-Neverslip Co., New Brunswick, N. J., sold plant and inventories Dec. 28, 1928, to Phoenix Manufacturing Co.

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.

Brand: Buckeye.

Newark Rolling Mills, Newark, Ohio: blt. 1897, rebt. 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, agricultural shapes, plow beams, rounds, squares and special shapes; annual cap., 60,000 tons.

BUCKEYE STEEL CASTINGS CO. (The), Columbus, Ohio.

Inc. Nov. 19, 1894, in Ohio. Capital stock: com., par value \$25, auth. \$6,000,000, issued \$5,951,400; pref. 6% non-cum. auth. and issued \$1,000,000.

J. C. Whitridge, P. & G. M.; A. H. Thomas, V. P. & G. S.; George T. Johnson, V. P. & G. S. M.; Arno Eberlein, Sec. & T.; W. J. Bennett, A.; T. V. Taylor, P. A.

Sales offices:

Chicago, Ill., F. J. Cooledge, 619 Railway Exchange Bldg.

Louisville, Ky., Malcolm S. Simpson, 1481 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.

Brand: letter "B" in circle.

Works at South Columbus: blt. 1900-02, f. o. Nov., 1902; 6 B. O. H. fur. (26-ton), fuel, prod. gas and oil; 6 Morgan gas producers; 1 Heroult electric fur. (6-ton).

Product: steel castings for own use and for sale; annual cap., 109,-800 tons (101,250 tons B. O. H., 8,550 tons electric). Car coup-
 lers, truck and body bolsters, truck side frames, draft yokes,
 castings for railroad cars, auto trucks and tractors.

BUCKEYE TRACTION DITCHER CO. (The), Findlay, Ohio.

Inc. Feb. 16, 1906, in Ohio. Company manufactures digging,
 ditching, pulling and clearing machines and tractors and oper-
 ates steel foundry in connection therewith.

Works at Findlay: steel foundry added 1918, f. o. Oct. 1, 1918; 1
 Moore Lectromelt electric fur. (2½-ton). Gray iron foundry
 (1,000 tons).

Product: steel castings for own use and for sale, annual cap., 2,250
 tons.

Bucyrus Company, South Milwaukee, Wis., was merged with the Erie
 Steam Shovel Co. and Bucyrus-Erie Company, inc., Nov. 3,
 1927, was formed to take over the properties of both companies,
 as of January 1, 1928.

BUCYRUS-ERIE COMPANY, South Milwaukee, Wis.

Inc. Nov. 3, 1927, in Delaware. Capital stock: com., par value
 \$10, auth. \$20,000,000, issued \$4,800,000; convertible pref., par
 value \$5, auth. \$2,500,000, issued \$2,095,560; pref. 7% cum.
 auth. \$10,000,000, issued \$6,830,000.

W. W. Coleman, P.; E. K. Swigart, V. P.; G. A. Morison, V. P. &
 T.; W. M. Bager, V. P. (charge of Eng. & Dom. Sales Dept.);
 D. P. Eells, V. P. (charge of Foreign & Export Dept.); N. A.
 McGrath, Sec. & C.; J. G. Miller, G. S. M. (domestic); C. A.
 Kelly, P. A.; at South Milwaukee. A. C. Vicary, V. P.; at
 Erie, Pa.

Sales offices:

Atlanta, Ga., Chester Coulter, 1021 Healey Bldg.

Birmingham, Ala., C. N. Ballentine, 2212 Comer Bldg.

Boston, Mass., J. C. Alexander, 240 N. Beacon St.

Buffalo, N. Y., J. W. Fawcett, 724 Genesee Bldg.

Chicago, Ill., W. K. Fawcett and A. R. Hance, 1312 Bankers
 Bldg.

Dallas, Texas, F. S. Romney, 1212 Magnolia Bldg.

Detroit, Mich., H. A. Titus, 956-7 Book Bldg.

New York, N. Y., E. G. Lewis, 50 Church St.

- Philadelphia, Pa., J. F. Tait, 813 Commercial Trust Bldg.
Pittsburgh, Pa., P. B. Heisey, 1502-03 Clark Bldg.
San Francisco, Calif., J. H. Sackett, 989 Folsom St.
St. Louis, Mo., H. H. Buchanan, 2647 Washington Blvd.
Company operates plants 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.
Company also operates plant at Erie, Pa. (Erie Steam Shovel Co. to Jan. 1, 1928), for the manufacture of steam, electric, gas, diesel, gas-air, diesel-air operated shovels, draglines and cranes. Gray iron foundry, annual cap., 9,600 tons gray iron castings for own use and for sale.
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, 2 hand operated gas prod. 2 oil-fired brass fur. (250-lb.); annual cap., 800 tons brass castings. (Bucyrus Co. to Jan. 1, 1928).
Product: carbon and alloy (nickel, chrome, molybdenum) steel castings for own use; annual cap., 14,000 tons (9,000 tons B. O. H., 5,000 tons electric).

BUFFALO BOLT CO., 101 East Ave., North Tonawanda, N. Y.

- Inc. 1897 in New York. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,313,900; pref. auth. \$1,000,000, none issued; bonds \$450,000.
Ralph Plumb, P. & G. M.; R. K. Albright, V. P. & T.; S. C. Wead, Sec.; George Blasier, G. S.; W. F. McKenzie, G. S. M.; D. F. Cullinan, P. A.
Sales offices:
Chicago, Ill., 1534-35 Monadnock Bldg.
Detroit, Mich., General Motors Bldg.
Holyoke, Mass., 159 Essex St.
Lakewood, Ohio, 2354 Northland Ave.
New York, N. Y., 21-24 State St.
Philadelphia, Pa., 6105 Washington Ave. .

Brand: B in circle.

- Works at North Tonawanda: blt. 1896; rolling mill added 1915; 1 cont. heat. fur., fuel, gas; 16" 2-h. 2-st. and 12" 2-h. 7-st. continuous, 10" 3-h. 5-st., 8" 2-h. 2-st. Belgian bar mills; 7 hand pickling tanks; 1 galv. pot; 10 wire drawing blocks for wire 3/16" to ¾". Bolt, nut and rivet plant. Standard and special sizes, 3/16" to 2" dia. inc.
Product: bolt and nut rods, rivet stock, wire rods, wire, bolts, nuts and rivets; annual cap., rolled products 60,000 tons (including 40,000 tons bolt, nut and rivet rods, 20,000 tons wire rods); 20,000 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, V. P., Sec. & G. S. M.; Michael C. Niland, G. S.; at Tonawanda. L. E. Block, V. P. at Chicago, Ill.

Sales offices:

Boston, Mass., Denyven-Linn Co., 250 Stuart St.

Detroit, Mich., Gabriel Steel Co., 2441 Bellevue Ave.

New York, N. Y., 30 Church St.

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, agricultural implement and concrete bars, annual cap., 60,000 tons.

BUFFALO UNION FURNACE CO., 1300 Leader Bldg., Cleveland, Ohio.

Inc. Nov. 2, 1900 in New York. Capital stock: com. par value \$100, auth. \$5,000,000, none issued; com., no par value, auth. 75,000 shares, issued 59,101 shares; pref., auth. \$2,500,000, none issued; bonds \$4,388,000. The Rogers Brown Iron Co. was acquired Sept. 29, 1927 by the Iron Corporation of Buffalo. The latter company was merged in Buffalo Union Furnace Co. Nov. 30, 1927.

C. A. Collins, P.; R. E. McMahon, V. P.; W. G. Sharp, V. P.; C. N. Osborne, Sec. & T.; W. H. Peter, A.; at Cleveland. B. Marron, Mgr.; at Buffalo, N. Y.

Sales agent: M. A. Hanna Co., Cleveland, Ohio.

Brands: Buffalo, Susquehanna (pig iron).

Susquehanna Plant, Buffalo, N. Y.: 4 stacks; No. 1, 85' x 20' 6", blt. 1902-04, relined 1928; No. 2, 85' x 20' 6", blt. 1902-04, relined 1929; No. 3, 85' x 19' 6", blt. 1910-12, relined 1928; No. 4, 85' x 24' 3", blt. 1910-12, rebld. 1928; 16 Kennedy centre-comb. stoves, 101' 10" x 22' 7"; 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, 12,000 H. P.; 2 double-strand pig casting mach.; 1 Greenawalt sintering plant for flue dust, annual cap., 46,000 tons. Conn. and by-product coke: Lake ore. (Rogers Brown Iron Co. to Sept. 29, 1927; Iron Corporation of Buffalo to Nov. 30, 1927). Product: basic, malleable and foundry pig iron, annual cap., 672,000 tons.

Hamburg Street Plant, Buffalo, N. Y.: 3 stacks; A, 80' 6" x 19' 3", blt. 1892, now rebuilding; B, 82' x 21', blt. 1897, rebld. 1926; C, 82' x 19', blt. 1899, now rebuilding; 11 stoves (one 2-pass centre-comb. 80' x 18', one 2-pass side-comb. 80' x 18' and two 2-pass side-comb. 90' x 22' at A; three 2-pass side-comb. 80' x

20' and one 2-pass side-comb. 90' x 22' at B; three McClure 3-pass centre-comb. 75' x 18' at C); 2 Allis-Chalmers vertical steam blowing eng. for A, 1 G. E. turbo-blower for B, 1 Allis-Chalmers and 1 Todd vertical steam blowing eng. for C, 105,000 cfm., 15 to 25 lbs. rated pressure; 24 water-tube boilers (5 Sterling, 8 Wicks, 5 Cahall, 6 B. & W.), 6,800 H. P.; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach.; General Briquetting Co. briquetting plant for flue dust, etc., annual cap., 85,000 tons. Conn. and by-product coke: Lake ore (leased by Hanna Furnace Co. to Nov. 30, 1927). Product: foundry, malleable and silvery pig iron and ferro-silicon; annual cap., 385,000 tons (285,000 tons foundry and malleable pig iron, 100,000 tons silvery pig iron and ferro-silicon).

Total annual cap. (7 stacks), 1,057,000 tons (957,000 tons pig iron, 100,000 tons silvery pig iron and ferro-silicon).

Buhl Malleable Co., Detroit, Mich. was acquired by McManus Steel & Iron Co. Jan. 7, 1929.

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.; William E. Millhouse, Sec., T. & M.; O. A. Van Denburgh, Jr., A. M.; Grace W. Foster, A. Sec.; David Thomas, G. S. M.; at Troy. John F. Forrest, A. T. at 52 Vanderbilt Ave., New York, N. Y.

Sales offices:

Chicago, Ill., 310 South Michigan Ave.

New York, N. Y., 52 Vanderbilt Ave.

Brands: Burden Best, H. B. & S. Iron (merchant bars); Burden (solid and hollow rolled staybolt iron, engine-bolt iron, chain iron, hollow drilled staybolts, rivet iron, iron boiler rivets, horse-shoes).

Burden Iron Works, Troy: est. 1813; 32 double puddling fur.; 4 Burden 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 three 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.

BURLINGTON STEEL CO., Ltd., Sherman Ave. North, Hamilton, Ont., Canada.

Inc. 1910 in Ontario. Capital stock: com., no par value, auth. 100,000 shares, issued 70,000 shares.

Frank P. Wood, P.; W. D. Ross, 1 V. P.; George A. Norrow, 2 V. P.; at Toronto, Canada. P. H. Brooks, Sec.; W. P. Acheson, T. & P. A.; J. B. Carswell, G. M.; 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., A. Leith Murray, Standard Bank Bldg.

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; forged grinding balls; annual cap. 2,000 tons.

Burnside Steel Co., Chicago, Ill., name changed March 10, 1926 to Burnside Steel Foundry Co.

BURNSIDE STEEL FOUNDRY CO., 1300 East 92d St., Chicago, Ill.

Inc. April, 1916 in Illinois as Burnside Steel Co., name changed to Burnside Steel Foundry Co. March 10, 1926. Capital stock: com., par value \$100, auth. and issued \$300,000.

H. F. Wardwell, P.; W. A. Spuehler, V. P. & T.; James K. Dickey, Sec.; Thomas N. Kelly, A.; W. E. Adams, G. S.; Joseph E. Egan, P. A.

Works at 1300 East 92nd St., Chicago: blt. 1916, f. o. Apr. 1, 1917; Tropenas converter (2½-ton) dismantled in 1926; 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, nickel).

BYERS (A. M.) COMPANY, P. O. Box 83, Pittsburgh, Pa.

Est. 1864; inc. July 9, 1903 in Pennsylvania; reorg. Feb. 5, 1925. Capital stock: com., no par value, auth. 325,000 shares, issued 266,635 shares; pref. 7% cum. auth. \$6,611,100, issued \$6,539,000.

E. M. Byers, Ch.; A. H. Beale, P.; J. Frederic Byers, V. P.; L. M. Johnston, V. P.; E. L. Ives, V. P.; Frank G. Love, Sec. & T.; C. G. Jensen, C.; T. L. Lewis, G. S. M.; J. E. Stauffer, P. A.

Sales offices:

Atlanta, Ga., 1122 Candler Bldg.

Boston, Mass., 518 Consolidated Bldg.

Chicago, Ill., 1957 Conway Bldg.

Houston, Texas, 506 Niels Esperson Bldg.

New York, N. Y., Room 1208, 110 East 42d St.

Philadelphia, Pa., 1411 Morris Bldg.

Pittsburgh, Pa., 1610 Clark Bldg.

San Francisco, Calif.

Tulsa, Okla., 220 Thompson Bldg.

Brands: Byers (genuine wrought iron pipe).

Product: muck bar, skelp, genuine wrought iron pipe and oil country tubular goods.

South Side Plant, 6th & Bingham Sts., Pittsburgh: orig. blt. 1862-63; 3 pulv. coal-fired heat. fur. (one 3-d., two 4-d.); 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 2" and lap-weld pipe $1\frac{1}{2}$ " to 14". Product: skelp, annual cap., 34,000 tons; black pipe, 90,000 net tons; galvanized pipe, 25,000 net tons.

Mattie Furnace, Girard, Ohio: 1 stack dismantled 1928-29.

Rolling Mill, Girard, Ohio: blt. 1909, f. o. Jan. 26, 1909; 88 single puddling fur.; 2 squeezers; five 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).

Byers Plant (The), Economy, Pa.: iron works under construction.

By-Products Coke Corp., Chicago, Ill., acquired on Jan. 1, 1930, the Perry Iron Co., The Toledo Furnace Co. and Zenith Furnace Co., and name was changed to Interlake Iron Corp.

Calumet & Hecla Consolidated Copper Company, Calumet, Mich., installed in 1920 one 3-ton Gronwall-Dixon electric fur. for manufacture of steel castings for own use and for desulphurizing molten iron from cupolas in connection with gray iron foundry. Steel castings first made Feb. 16, 1920, manufacture discontinued in same year.

CALUMET ELECTRIC CASTEEL CO., Summer Blvd. & King Ave., Hammond, Ind.

Inc. Mar. 8, 1930, in Indiana. Capital stock: com., no par value, auth. 2,000 shares, issued 1,200 shares.

Bohumil A. Zikmund, P.; George A. Krause, Sec.; at Hammond. Y. J. Fencil, T.; at Casco, Wis.

Brands: Casteel (steel castings).

Works at Hammond: blt. 1922-24, f. o. Feb. 27, 1925; 1 Heroult electric fur. (2-ton). (Damascus Steel Casting Co. to Feb. 19, 1930; Bohumil A. Zikmund owner to Mar. 8, 1930).

Product: small electric steel castings for sale, annual cap., 3,000 tons. Alloy steel castings (nickel, chrome).

CALUMET STEEL CO., 33 North La Salle St., Chicago, Ill.

Inc. Mar. 27, 1907, in Illinois. Capital stock: com., par value \$100, auth. \$400,000, issued \$355,400.

J. H. Porter, P.; S. S. Porter, V. P.; F. G. Carrel, Sec. & G. S. M.; J. P. Hook, T.; at Chicago. F. N. Prime, A.; L. E. Yentzer, W. M.; at Chicago Heights.

Brands: Rail Steel (bars and sections); Ankorite (steel fence posts).

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. bar 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.

Cambridge Steel Products Co. (The), Cambridge, Ohio. Rolling mill at Cambridge for manufacture of merchant and concrete bars, light structural shapes, etc., was acquired Sept. 9, 1929, by J. W. White, Springfield, Ohio.

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.; Hugh R. Tudhope, Sec. & T.; John Smith, G. S.; J. J. Murphy, P. A.

Works at Barrie Road, Orillia: blt. 1919-20, f. o. April, 1920, destroyed by fire Dec. 4, 1920, rebld. 1922; 3 Heroult electric furnaces (one 4,000-lb., one 1,200-lb., one 500-lb.). Gray iron foundry, annual cap., 1,200 tons gray iron and 1,500 tons white iron castings for sale.

Product: steel castings for sale, annual cap., 5,600 tons; alloy steel castings (manganese, nickel, chrome).

CANADIAN ATLAS STEELS, Ltd., Welland, Ont., Canada.

Inc. Aug. 11, 1925, in Ontario. Capital stock: com., no par value, auth. and issued 20,000 shares; pref. 7% cum., auth. and issued, \$425,000.

D. W. Lathrop, P., T. & G. S. M.; R. H. Davis, V. P. & G. M.; A. R. Hubbard, Sec. & P. A.

Sales agents at Toronto, Montreal and Winnipeg, Railway & Power Engineering Corpn.

Timmins, Ont., Vincent Woodbury.

Vancouver, B. C., Thomas Mannifield.

Brands: Atlas High Speed; Carbon and Alloy Tool Steels; Hy-Ten; S. P. S.; Alloy and Cutlery Steels.

Works at Welland: blt. 1918; f. o. Dec. 24, 1918; crucible steel fur. (30 pots) dismantled 1925; 11 heat. fur. (six 1-d. oil-fired, three 2-d., one 3-d., one 4-d. coal-fired); 10" 3-h. 5-st. bar mill; 14" 3-h. 1-st. cogging mill; 3 box annealing fur.; 5 hammers 600-lb. to 4,000-lb.).

Product: carbon, alloy and high speed tool and cutlery steels, shafting, blocks, discs and rings; annual cap., 8,000 tons rolled and 1,000 tons forged products.

CANADIAN BRAKE SHOE & FOUNDRY CO., Ltd., 736 St. James St., Montreal, P. Q., Canada.

Inc. Oct., 1912, in Dominion of Canada with title Canadian Brakeshoe 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 BRIDGE CO., Ltd. (The), Walkerville, Ont., Canada.

Inc. 1900 in Ontario. Subsidiary of United States Steel Corporation.

John W. Seens, P.; F. H. Kester, V. P.; Charles T. Miller, Sec. & T.; C. D. Henderson, P. A.; at Walkerville, Ont. Frank B. Thompson, A.; at Pittsburgh, Pa.

Sales office: New Birks Bldg., Montreal, P. Q., Canada.

Fabricating Plant at Walkerville, Ont., Canada.

Product: fabricated bridge and structural work, annual cap., 30,000 net tons; transmission towers, 13,000 net tons.

CANADIAN CAR & FOUNDRY CO., Ltd., 621 Craig St. West, Montreal, P. Q., Canada.

Inc. Oct. 29, 1909 in Dominion of Canada. Capital stock; com., no par value, auth. 400,000 shares, issued 368,500 shares; pref. 7% cum. auth. and issued \$7,500,000; bonds \$303,878, being retired.

W. W. Butler, P.; W. F. Angus, V. P.; W. S. Atwood, V. P.; A. D. Neale, V. P.; L. A. Peto, V. P. & C.; A. C. Bourne, Sec.; J. B. Brodie, T.; W. J. Boyle, G. S.; 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, foundry and forge shop 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; one shingling hammer; four 4-d. coal-fired heat. fur.; 18" 3-h. 3-st. bar, comb. 16" 3-h. 2-st. and 9" 3-h. 4-st. rod mill; 1 steam hammer (7,000-lb.) idle. Gray iron foundry.

Product: scrap bar, annual cap., 2,500 tons; iron and steel merchant bars, light structural shapes, concrete bars, bolt, nut and rivet rods, etc., 12,750 tons; truss rods and miscellaneous forgings, 500 tons.

Canadian Carborundum Co., Ltd., Niagara Falls, N. Y. has discontinued the manufacture of ferro-silicon at its plant at Shawinigan Falls, P. Q., Canada.

Canadian Electric Steel, Ltd., Montreal, Canada. Works at Kilbourne Siding, Montreal, for manufacture of steel ingots and castings, last operated Oct. 31, 1921, are abandoned.

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.; Frederick C. Slee, Sec.; Harry Yates, T.; Arthur Goodreds, A.; at Buffalo, N. Y. C. A. Collins, 1 V. P.; at Cleveland, Ohio. Richard C. Yates, 2 V. P.; D. J. Higgon, G. S.; C. T. Govier, P. A.; at Port Colborne. George A. Simpson, G. S. M.; at Hamilton, Ont., Canada.

Sales office: 305 Turner Bldg., Hamilton, Ont., Canada.

Brand: Victoria (pig iron).

Victoria Furnace, Port Colborne: 1 stack, 82' 2½" x 21', blt. 1912-13, rebuilt 1929; 4 two-pass side-comb. 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, malleable and basic pig iron, annual cap., 140,000 tons.

Canadian Horse Shoe Co., Ltd., Hamilton, Ont., Canada. Rolling mill at Hamilton, Ont., for manufacture of merchant and horse-shoe bars, abandoned. Last operated in 1927. Company out of business.

Canadian National Railways, Montreal, P. Q., Canada. Rolling mill at Point St. Charles Works, Montreal, for manufacture of merchant bars for own use, was dismantled in 1927.

CANADIAN STEEL CORPORATION, Ltd., Ojibway, Essex Co., Ont., Canada.

Inc. 1913 in Dominion of Canada. Subsidiary of United States Steel Corporation.

Ward B. Perley, P.; R. S. Rider, V. P.; G. T. Dunn, T.; R. G. Lutes, A.; L. E. Collins, P. A.; at Ojibway. W. J. Filbert, Sec.; at 71 Broadway, New York, N. Y.

Sales offices: Hamilton and Toronto, Ont., Montreal, P. Q., Winnipeg, Man., and Vancouver, B. C.

Brand: Ojibway Steel Products (wire and wire products).

Works at Ojibway, Ont.: 29 wire drawing blocks for wire from 1" to 20 gauge; 6 barbed wire mach.; 16 wire fence mach.; 1 galvanizing pan. Construction of tinplate and terne plate dept. begun Nov., 1929.

Product: plain wire, annual cap., 15,000 net tons, galvanized wire, 9,000 net tons, barbed wire, 1,800 net tons, wire fencing, 18,550 net tons.

CANADIAN STEEL FOUNDRIES, Ltd., 621 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) \$408,936, being retired. Subsidiary of Canadian Car & Foundry Co., Ltd.

W. W. Butler, P.; W. F. Angus, V. P.; W. S. Atwood, V. P.; A. D. Neale, V. P.; L. A. Peto, V. P. & C.; A. C. Bourne, Sec.; J. B. Brodie, T.; W. C. Fletcher, G. S.; 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; 3 B. O. H. fur. (25-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. Works idle, last active Dec. 1920. Product: steel castings, annual cap., 25,000 tons; 30,000 tons merchant and concrete bars, angles, channels and bolt and nut rods.

Longue Pointe Works, Montreal, P. Q.: blt. 1910-12; 3 B. O. H. fur. (22-ton) fuel, oil; 1 Volta electric fur. (3-ton). Product: steel castings for own use and for sale, annual cap., 40,000 tons (35,000 tons B. O. H., 5,000 tons electric). Alloy steel castings (nickel, chrome, vanadium, molybdenum). Couplers, side frames, bolsters, general car and locomotive castings and miscellaneous castings; carbon and alloy rolls.

Company also operates a forge shop at Pointe St. Charles, Montreal, for manufacture of frogs, switches and intersections, annual cap., 5,000 tons.

CANADIAN TUBE & STEEL PRODUCTS, Ltd., 5765 Hamilton St., Montreal, P. Q., Canada.

Inc. July 16, 1920, in Dominion of Canada. Capital stock: com., no par value, auth. 119,000 shares, issued 64,000 shares; 1st pref. 7% cum. auth. and issued \$1,500,000, 2nd pref. non-cum. auth. and issued \$1,500,000; bonds \$279,500.

James L. Waldie, P.; A. H. Hough, V. P.; H. Worrall, Sec.; P. B. Nash, T.; C. M. Thompson, G. S.

Sales offices:

Calgary, Alberta, Stanley Brock, Ltd.

London, E. C. 3, England, F. A. Welling & Co., Ltd., 10-11 Lime St.

Ottawa, Ont., W. S. Dickson, 412 Booth Bldg.

St. John, N. B., G. A. Maguire, 81 Germain St.

Toronto, Ont., F. Atkinson, 620 Dominion Bank Bldg.

Vancouver, B. C., Stanley Brock, Ltd.

Winnipeg, Man., Stanley Brock, Ltd.

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; rotary squeezer (steam); 4 heat. fur. (three 4-d. coal-fired, 1 cont. oil-fired); 18" 3-h. 3-st. muck and bar mill; 16" 3-h. 1-st. roughing, 10" 3-h. 2-st. Belgian guide. Product: scrap bar, annual cap., 5,000 tons; rolled products, 30,000 tons; including merchant and concrete bars from old rails and billets, 18,000 tons; light structural shapes, 5,000 tons; spike, bolt, nut and rivet rods, 7,000 tons.

Wrought Pipe Plant, Montreal (operated by Canadian Tube & Iron Co.): 1 butt weld fur. for pipe $\frac{3}{8}$ " to 4" inclusive; 2 galvanizing pots. Bolt, nut and rivet works. Products: black pipe, annual cap., 15,000 tons; galvanized pipe, 15,000 tons; bolt, nuts and rivets, 70,000 kegs (200-lb.).

Wire Mills, Montreal (operated by Colonial Wire Mfg. Co.): 294 wire drawing blocks (234 fine, 60 heavy) for wire $\frac{3}{8}$ " to 22 gauge; 15 wire nail mach. Product: heavy and fine wire, annual cap., 12,000 net tons; wire nails, 60,000 kegs (100-lb.)

Canadian Western Steel Corp., Ltd., Calgary, Alberta, Canada. Rolling mill at Medicine Hat, Alberta: blt. 1911, last active 1920, was acquired by Alberta Steel Co., Ltd., in 1926. In April, 1928, the Manitoba Rolling Mill Co., Ltd. acquired the plant which was subsequently dismantled and part of machinery removed to Calgary works of Manitoba Rolling Mill Co., Ltd., remainder removed to Selkirk, Manitoba for storage.

CANONSBURG STEEL & IRON WORKS, Canonsburg, Pa.

Inc. Sept. 2, 1902 in Pennsylvania.

H. W. Edwards, P.; G. R. Edwards, V. P.; O. S. Larkby, Sec.; G. D. Myers, T.; at Cincinnati, Ohio. D. M. Stembel, V. P.; at Canonsburg.

Works at Canonsburg: blt. 1882; 6 sheet and 6 pair fur.; 6 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.; 2 pickling mach. (1 Mesta 3-arm, 1 plunger); 2 galvanizing pots. Roll black sheets to 40" wide and 144" long according to gauge.

Product: black sheets for galvanizing, stamping, japanning, flat and corrugated, pickled and deep drawing; galvanized sheets: annual cap., 38,000 tons black sheets, 16,000 tons galvanized sheets.

Canton Rolling Mill Corp., Canton, Ohio.

The Canton Rolling Mill Corp. is being organized to operate the works at Canton formerly owned and operated by The Falcon Tin Plate Co. to March, 1929.

Alvin L. Bear, P.; Charles M. Easterly, V. P.; Godfrey M. Cohn, Sec. & T.

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 are being replaced with hot black sheet mills; 8 stands cold rolls (five 24" x 42", two 24" x 48", one 24" x 54"); 8 box annealing fur.; 2 Mesta pickling mach. Plant idle; being rebuilt.

Canton Steel Foundry Co. (The), Canton, Ohio, went into bankruptcy in 1927 and was liquidated. Steel Foundry (three 40-

ton A. O. H. fur.) was sold at auction Nov. 30, 1927 to The Luntz Iron & Steel Co. The International Steel Corp'n. was organized April, 1929 to operate the foundry under lease for manufacture of steel castings under the Bosshardt furnace process.

Carbon & Alloy Steels Co., Ltd. (The), Welland, Ont., Canada, acquired Feb. 20, 1926, the plant at Welland of former Electric Steel & Metals Co., Ltd., for manufacture of steel castings and forging ingots. Equipment consists of two Heroult electric fur. (6-ton). Plant was sold Mar. 30, 1929, together with other properties of The Carbon & Alloy Steels Co., Ltd., to National Steel, Ltd.

Carbon Furnace Co., Parryville, Pa. Carbon Furnace at Parryville (1 stack), was sold July 2, 1928 to Harry Orkin, Slatington, Pa., and dismantled.

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.; L. H. Burnett, V. P.; A. N. Diehl, V. P.; J. S. Oursler, V. P.; W. C. McCausland, T.; C. L. Wood, G. M. S.; Charles R. Miller, Jr., P. A.

Sales offices:

Birmingham, Willard Wilson, Brown-Marx Bldg.

Boston, Wilbur S. Locke, 20 Providence St.

Buffalo, Fred C. Deming, Marine National Bank Bldg.

Chicago, Edwin S. Mills and D. T. Buffington, 208 South La Salle 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, 506 Olive St.

St. Paul, W. J. Totten, 1308 Merchants National Bank 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; bessemer, open-hearth and electric steel ingots; chrome, nickel, copper and vanadium steels; blooms, billets, slabs, sheet and tinplate bars;

forging blooms and forging billets; standard steel rails; light rails, mine rails, angle splice bars, fish plates, steel cross ties, rail joints; structural shapes, beams, channels, angles, tees, zees; steel mine timbers, steel sheet piling; universal and sheared plates, boiler, ship, tank, bridge, column and machine base, and Carnegie floor 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, etc. Iron, steel and brass castings, ingot molds and stools for own use. Coke and coke by-products.

Bellaire Works, Bellaire, Ohio: Blast Furnaces (2 stacks) and Steel Works were dismantled in 1929.

Carrie Furnaces, Rankin, Pa.: 7 stacks; No. 1, 94' 9½" x 24', blt. 1883, last rebt. 1925; No. 2, 94' 9½" x 24', blt. 1888-89, rebt. 1925; No. 3, 96' 8½" x 24' 9", blt. 1899-1901, relined 1927; No. 4, 96' 8½" x 24' 9", blt. 1899-1901, relined 1927; No. 5, 93' 3" x 21', blt. 1902-03, relined 1926; No. 6, 96' x 24' 9", blt. 1906-07, rebt. 1926; No. 7, 96' x 24' 9", blt. 1906-07, rebt. 1926; 27 stoves, 20 Massicks & Crooke 3-pass, 7 own design 2-pass (ten 110' x 21', two 110' x 22', eight 90' x 21', seven 110' x 26'); 6 blowing eng. (2 steam, 4 gas) and 6 steam turbo-blowers, 601,800 cfm. (engines 271,800 cfm., 18 to 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, 2,502 H. P. comb. coal and gas-fired; 6 water-tube boilers, 6,672 H. P. coal and coke-fired; 5 Heyl & Patterson double-strand pig casting mach.; 1 slag granulating pit, annual cap., 275,000 tons. Conn. beehive and Clairton by-product coke; Lake ore. Molten metal to Homestead Steel Works. Product: basic pig iron, annual cap., 1,593,900 tons.

Clairton Steel Works and Furnaces, Clairton, Pa. (leased; owned by Clairton Steel Co.): Blast Furnaces: 3 stacks; No. 1, 96" x 22' 4", blt. 1901-03, rebt. 1929; No. 2, 82' 1½" x 21' 8", blt. 1901-03, relined 1928; No. 3, 82' 1½" x 21' 8", blt. 1901-03, relined 1929; 11 stoves (three 2-pass 110' x 26', eight Massicks & Crooke 3-pass 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. 544,000 tons. Steel Works: blt. 1901-02; 16 B. O. H. fur. (80-ton), fuel, coke oven gas; one 1,300-ton mixer; seven 4-hole soaking pits; 11 heat. fur. (7 cont., four 5-d.), coke oven gas-fired; 40" 2-h. 1-st. reversing blooming; 28" 3-h. 1-st. 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. 1-st. bar; 14" structural with 14" 3-h. 3-st. and 14" 2-h. 4-st. Prod-

uct: steel ingots, annual cap., 720,000 tons; alloy steel ingots (copper); blooms, billets and slabs, 620,000 tons; finished hot rolled products, 525,000 tons including 132,000 tons merchant bars, and 393,000 tons structural shapes (283,000 tons heavy, 110,000 tons light shapes).

Clairton By-Product Coke Works, Clairton, Pa. (leased; owned by Clairton By-Product Coke Co.): 768 Koppers and 714 Koppers-Becker by-product coke ovens, annual cap. 6,924,500 net tons coke; by-product recovery plant and Koppers benzol plant, annual cap., 36,959,900 gals. light oil.

Duquesne Steel Works and Furnaces, Duquesne, Pa.:

Blast Furnaces: 6 stacks; No. 1, 100' x 22' 6", f. o. June 8, 1896, rebld. 1924, relined 1929; No. 2, 100' x 22' 6", f. o. Oct. 7, 1896, rebld. 1925, relined 1928; No. 3, 100' x 22' 6", f. o. May 7, 1897, rebld. 1922, relined 1928; No. 4, 100' x 24' 6", f. o. June 21, 1897, rebld. 1917, relined 1929; No. 5, 94' x 23' 9", f. o. Mar. 16, 1909, rebld. 1920, relined 1929; No. 6, 94' x 23' 9", f. o. Aug. 10, 1909, relined 1929; 24 two-pass central draft Diehl hot blast stoves (eight 100' x 22', sixteen 96' x 21'); 14 blowing eng. (10 steeple Corliss compound steam, 4 twin-tandem gas) 420,000 cfm., 25 lbs. rated pressure; 2 old steam blowing eng. as spares; 17 B. & W. water-tube boilers, 24,810 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). Clairton by-product coke; Lake ore. Product: basic pig iron, annual cap., 1,319,200 tons. Steel Works: bld. 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); 64 Hughes gas producers (not in use); 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" 2-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. cont. roughing and 10" 2-h. 6-st. finishing bar; 13" 2-h. 4-st. cont. roughing and 13" 2-h. 6-st. finishing bar; 2-h. and 3-h. guide mill with 12" 1-st. roughing, 10" 5-st. finishing; 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., 1,510,000 tons (1,475,000 tons B. O. H., 35,000 tons electric); steel castings, 1,200 tons; alloy steel ingots (nickel, copper, chrome, vanadium); blooms and billets, 1,054,500 tons; sheet and tinplate bars, 100,000 tons; splice bar shapes, 70,000 tons; merchant bars, 910,000 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' 3½" x 21' 7½", f. o. Jan. 15, 1880, relined 1920; B, 82' 11" x 20' 10½", f. o. Apr. 2, 1880, relined 1924; C, 82' 11" x 20' 4½", f. o. Nov. 6, 1880, relined 1924; D, 97' 8½" x 29', f. o. Apr. 19, 1882, rebld. 1929; E, 93' 0½" x 23', f. o. June 22, 1882, relined 1924; F, 93' 0½" x 23', f. o. Oct. 17, 1886, relined 1924; G, 92' 5½" x 24' 3", f. o. June 20, 1887, relined 1926; H, 92' 5½" x 24' 3", f. o. Feb. 27, 1890, relined 1929; I, 91' 3½" x 24' 3", f. o. Aug. 14, 1890, relined 1929; J, 88' 3½" x 22' 2½", f. o. Feb. 16, 1903, relined 1927; K, 88' 3½" x 22', f. o. Dec. 5, 1902, relined 1924; 44 two-pass side comb. stoves (seven 91' 5" x 21', eight 98' 4" x 21', eight 101' x 21', three 125' x 21', five 100' x 22', nine 125' x 22', under construction four 127' x 21'); 26 blowing eng. (22 steam, 4 turbo-blowers) 528,300 cfm., 30 lbs. rated pressure; 68 water-tube boilers (8 twin Sterling, 26 Rust, 32 Cahall, 2 waste heat), 38,176 H. P. serve also steel works and rolling mills and Braddock Plant of American Steel & Wire Co.; 6 Uehling double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 500,000 tons. Clairton by-product coke: Lake ore. Product: bessemer and basic pig iron, annual cap., 2,234,000 tons. Steel Works: blt. 1873, f. o. Aug. 26, 1875; 4 bessemer converters (15-ton); 16 B. O. H. fur. (99-ton); 3 mixers (one 150-ton, one, 1,000-ton, one 600-ton); 7 cupolas for spiegel; ten 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., 1,445,000 tons (1,080,000 tons B. O. H., 365,000 tons bessemer; bessemer capacity can be expanded to 1,010,000 tons if demand requires); alloy steel ingots (copper); blooms, 750,000 tons; sheet bars, 462,000 tons; splice bar shapes 30,000 tons; rails, 694,000 tons; splice bars, 85,000 tons; mine ties, 12,000 tons; elevator tees, 20,000 tons; castings for own use (180,000 tons ingot moulds and stools, 13,300 tons iron castings and rolls, 1,600 tons brass castings, 75 tons babbitt metal).

Edith Furnace, North Side, Pittsburgh (leased; owned by American Steel & Wire Co.): 1 stack; was dismantled in 1926.

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, 95' 7" x 23' 6", blt. 1902-04, f. o. September 9, 1904, rebld. 1920-21, relined 1928; No. 3, 95' 7" x 23' 6", blt. 1902-04, f. o. Nov. 27, 1904, rebld. 1918-19, relined 1927; 12 Cowper-Kennedy stoves (111' x 22'); 6 steam blowing eng. and 1 turbo-blower (172,300 cfm.)

16 to 20 lbs. rated pressure; 16 Sterling water-tube boilers, 13,344 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 bee-hive coke: Lake ore. Product: basic pig iron, annual cap. 586,400 tons.

Steel Works: blt. 1900-01, f. o. Apr. 30, 1901; 15 B. O. H. fur. (twelve 70-ton, three 75-ton) fuel, tar; one 250-ton mixer; six 4-hole soaking pits; 6 regen. 4-d. heat. fur.; 36" 2-h. 1-st. blooming; 24" 2-h. 4-st. roughing mill; 18" 2-h. 8-st. billet and sheet bar; 48" 2-h. universal plate mill, horizontal rolls 30" x 88". Roll universal plates 5/16" to 5" thick, 18" to 43½" wide, to 60' long. Product: steel ingots, annual cap., 780,000 tons; alloy steel ingots (copper); blooms and billets, 53,000 tons; sheet and tinplates bars, 403,000 tons; universal plates or skelp, 157,000 tons.

Homestead Steel Works, Munhall, Pa.: blt. 1880-81; 65 B. O. H. fur. (one 13-ton, twenty-two 45-ton, twenty-eight 65-ton, fourteen 82-ton) fuel, natural and coke oven gas, and tar; 3 mixers (200-ton, 250-ton, 1,300-ton); 28 soaking pits (one 3-hole, twenty-one 4-hole, six 5-hole); 45 heat. fur. (nine 3-d., thirty-four 4-d., two 5-d.); 25 heat. treating fur.; 32" 2-h. 1-st. universal slabbing; 30" 2-h. 1-st. universal slabbing; 54" 2-h. 1-st. blooming; 44" 2-h. 1-st. blooming; 36" 2-h. 1-st. roughing; 28"/32" 3-st., two 3-h. one 2-h., structural; 52" 2-h. 3-st. structural; 5 sheared plate mills (30½" x 74" 3-h., 32½" x 86" 3-h., 36½" x 110" 3-h., 35½" x 118" 3-h., 38½" 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"); 4 steam ham. (1,500-lb. to 2,000-lb.); 4 forging presses (2,000-ton to 12,000-ton). Roll sheared plates, 3/16" thick to 90" wide x 270" long; ¼" thick to 114" x 175"; 5/16" thick to 120" x 240"; ⅜" thick to 128" x 220" and to 2¼" thick to 128" x 150"; universal plates ¼" thick, 36" wide; 5/16" to 2¼" thick, 48" wide. Beam fitting shop; gray iron and steel foundry for own use. Armor plate, protective deck plate and heavy forgings depts. operating only a small percent of capacity. Product: steel ingots, annual cap., 2,613,200 tons; alloy steel ingots (nickel, chrome, copper, silicon); steel castings for own use, 3,200 tons; gray iron castings for own use, 3,500 tons; slabs, blooms and billets, 2,432,200 tons; finished hot rolled products, 2,099,500 tons including 764,300 tons heavy structural shapes, 990,200 tons sheared plates; and 345,000 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. break down mill; 12 steam ham. (7,000-lb. to 7,500-lb.). Fuel, natural and coke oven gas, and oil. Product: finished car and locomotive axles, annual cap., 165,000 tons.

Isabella Furnaces, Etna, Pa.: 3 stacks; No. 1, 94' 3" x 21' 6", blt. 1872, reblt. 1902 and relined 1924; No. 2, 90' 3" x 19' 6", blt. 1872, reblt. 1911 and relined 1927; No. 3, 94' 3" x 21' 6", blt. 1887, reblt. 1902, relined 1929; 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 for briquetting flue dust, annual cap., 36,000 tons; 2 slag granulating pits, annual cap., 145,000 tons. Clairton by-product coke: Lake ore, and foreign and domestic manganese ore. Gray iron foundry, 1,100 tons. Product: basic pig iron and ferro-manganese; annual cap., 35,500 tons basic pig iron, 122,100 tons ? ferro-manganese.

Lucy Furnaces, 51st St. and A. V. R. R., Pittsburgh, Pa.: 2 stacks; No. 1, 87' 8" x 20', blt. 1872, last reblt. 1908, relined 1929; No. 2, 97' 9" x 21' 6", blt. 1877, last reblt. 1898, relined 1926; 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. Clairton by-product coke: Lake ore, and foreign and domestic manganese ore. Product: spiegeleisen, ferro-manganese and ferro-silicon, annual cap. 108,600 tons. ?

McCutcheon Mills, North Side, Pittsburgh, Pa. were dismantled in 1928.

McDonald Mills, McDonald, Ohio: blt. 1916-20, f. o. Jan. 3, 1918; 12 cont. heat. fur., fuel pulv. coal and tar; 12" 2-h. 12-st., 2 vert. edgers, cont. hoop; 12" 2-h. 5-st., 10" 3-h. 3-st., 10" 2-h. 2-st., semi-cont. hoop; two 10" 2-h. 6-st., 8" 3-h. 3-st., 8" 2-h. 2-st. semi-cont. hoop; 12" 2-h. 6-st., 10" 3-h. 3-st., 10" 2-h. 3st. semi-cont. shape; 16" 2-h. 4-st., 14" 2-h. 4-st., 12" 2-h. 3-st., 2 vert. edgers, cont. strip; 20" 2-h. 3-st., 18" 3-h. 2-st., 18" 2-h. 3-st., 1 horiz. and 3 vert. edgers, band mill; 18" 2-h. 5-st., 14" 3-h. 1-st., 14" 2-h. 5-st. cross country bar; 12" 2-h. 5-st., 10" 3-h. 2-st., 10" 2-h. 2-st. cross country bar; 10" 2-h. 6-st., 8" 3-h. 3-st., 8" 2-h. 2-st. semi-cont. bar. One slack barrel hoop factory. Product: finished hot rolled products, 826,000 tons including 156,000 tons merchant bars; 350,900 tons hoops and bands; 1,300 tons heavy and 85,400 tons light structural shapes; 228,500 tons skelp; 3,900 tons universal plates; slack barrel hoops, 36,000 tons.

Mingo Steel Works and Furnaces, Mingo Junction, Ohio:

Blast Furnaces; 3 stacks, No. 2, 97' 0½" x 24', reblt. 1925-26, f. o. Jan. 27, 1927; No. 3, 106' 1½" x 22', blt. 1900-01, f. o. Apr. 1901, relined 1919; No. 4, 89' 7½" x 22', blt. 1905-06, f. o. Jan.

20, 1906, relined 1924; (No. 1 furnace dismantled Oct., 1925); 11 stoves (3 central comb. 2-pass 110' 6" x 22', 4 Massicks & Crooke central comb. 3-pass 85' x 21', 2 Massicks & Crooke central comb. 3-pass 100' x 21', 2 single-pass with outside comb. tube 100'x21'); four stoves at No. 2, dismantled in 1925; 6 steam blowing eng. (193,000 cfm.) 20 lbs. rated pressure (1 dismantled Aug., 1929); 12 Sterling water-tube boilers, 13,600 H. P. serves also entire plant; 3 Heyl & Patterson double-strand pig casting mach.; one Dwight & Lloyd sintering plant for flue dust, annual cap. 120,000 tons. By-product coke: Lake ore. Product: bessemer pig iron, annual cap. 629,500 tons.

Steel Works: blt. 1882, 1885-86; two 10-ton bessemer converters; 3 cupolas; 2 mixers (one 1,500-ton, one 250-ton); 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; 13" 2-h. 6-st., 10" 2-h. 4-st. and 10" 3-h. 4-st. cont. bar and skelp mill. Fuel, producer gas. Product: steel ingots, annual cap., 600,000 tons; alloy steel ingots (copper); blooms and billets, 70,000 tons, sheet and tinplate bars, 416,000 tons; merchant bars or skelp, 65,000 tons.

Neville Furnace, Neville Island, Allegheny County, Pa. (1 stack) formerly leased from American Steel & Wire Co., reverted to owner April 1, 1928 and sold Sept. 12, 1928 to Davison Coke & Iron Co.

New Castle Steel Works, and Furnaces, New Castle, Pa.:

Blast Furnaces: 3 stacks, No. 1 dismantled in 1927; No. 2, 92' 6" x 23', last rebt. 1903-4, relined 1929; No. 3, 94' 6" x 22' 6", last rebt. 1903-04, relined 1924; No. 4, 106' 6" x 23', blt. 1900-01, relined 1927; 13 hot blast stoves including 5 Massicks & Crooke stoves (four 85' x 21'; one 85' x 19' 6"), eight 2-pass, side comb. (one 84' 9" x 20'; one 85' x 21'; three 100' x 22'; three 110' x 22'); 7 steam blowing eng. (178,000 cfm.) 18 lbs. rated pressure; 6 Sterling water-tube boilers, 7,176 H. P., serve also steel works and rolling mill; 2 Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap. 120,000 tons; 3 slag granulating pits, annual cap. 271,000 tons. Conn. beehive and Clairton by-product coke; Lake ore. Product: bessemer pig iron, annual cap., 560,500 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., 500,000 tons; alloy steel ingots (copper); sheet and tinplate bars, 425,300 tons.

Ohio Steel Works and Furnaces, Youngstown, Ohio:

Blast Furnaces: 6 stacks; No. 1, 105' x 24' 6", blt. 1899-00, rebt. 1924; No. 2, 103' x 28', blt. 1899-00, rebt. 1928-29; No. 3, 105' x 24' 6", blt. 1900-01, rebt. 1925-26; No. 4, 86' 6" x 24', blt. 1903-04, relined 1927; No. 5, 91' 6" x 23', blt. 1907-09, relined 1926; No. 6, 91' 6" x 23' 9", blt. 1907-09, relined 1926; 24 stoves (4 Massicks & Crooke, 118' 3" x 21'; 20 Cowper-Kennedy, 118' x 21'); 11 blowing eng. (7 steam, 4 twin-tandem gas) 500,000 cfm., 30 lbs. rated pressure; 54 water-tube boilers (6 Connelly, 48 Sterling) 23,914 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., 1,405,000 tons.

Steel Works: blt. 1893-94; 2 bessemer converters (10-ton); 15 B. O. H. fur. (90-ton), fuel prod. gas and tar; 60 gas producers; 15 Federal fire tube waste heat boilers, 8,250 H. P.; 5 cupolas; 5 mixers (three 250-ton, two 1,500-ton); sixteen 4-hole soaking pits, fuel prod. gas; 43" 3-h. 1-st. blooming; 40" 2-h. 1-st. blooming; 23" 2-h. and 3-h. 8-st. billet and sheet bar mill; 15" 2-h. 8-st. cont. billet mill. Product: steel ingots, annual cap., 1,700,000 tons (700,000 tons bessemer, 1,000,000 tons B. O. H.); alloy steel ingots (copper, chrome, vanadium); semi-finished rolled products 1,351,000 tons, including 175,000 tons slabs, 770,400 tons blooms and billets, and 405,600 tons sheet and tinplate bars.

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, 11,700 tons.

Upper Union Mills, 33d St., Pittsburgh, Pa.: blt. 1863-64; dismantled in 1926.

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. 7-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., 290,000 tons, including 155,500 tons merchant bars, 58,900 tons hoops, bands and cotton ties, 19,000 skelp and 56,600 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.

Total annual capacity of the 47 blast furnaces, 8,792,700 tons pig iron and ferro-alloys; of the 13 steel works and rolling mills, 9,871,400 tons steel ingots (2,165,000 tons bessemer, 7,671,400 tons basic open-hearth, 35,000 tons electric); 8,237,000 tons semi-finished rolled products (5,925,100 tons blooms, billets and slabs, 2,211,900 tons sheet and tinplate bars, 100,000 tons splice bar shapes); 6,181,700 tons finished hot rolled products, including 694,000 tons rails, 1,069,400 tons heavy and 259,800 tons light structural shapes, 505,900 tons universal and 990,200 tons sheared plates, 1,542,400 tons merchant bars, concrete bars and special shapes, 413,800 tons hoops, bands and cotton ties, 312,500 tons skelp, 143,700 tons steel wheels and miscellaneous rolled products; 165,000 tons forged axles; 85,000 tons splice bars; 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, Reedsdale Street, Pittsburgh, Pa.

Texas Warehouse, Clinton Road, Houston, Texas.

CARPENTER STEEL CO. (The), 101 West Bern St., Reading, Pa.

Inc. Nov. 1, 1904 in New Jersey. Capital stock: com., par value \$100, auth. \$8,000,000, issued \$6,000,000.

W. B. Kunhardt, Ch.; at 100 Broadway, New York, N. Y.

F. A. Bigelow, P. & G. S. M.; J. H. Parker, V. P.; E. J.

Poole, V. P. & G. S.; Joseph S. Pendleton, Sec. & T.; C. W.

Gaul, P. A.

Sales offices:

Chicago, Ill., 1516 Carroll Ave.
 Cleveland, Ohio, 1515 Hamilton Ave.
 Detroit, Mich., 6181 Warren Ave., West.
 Hartford, Conn., 3284 Main St.
 Indianapolis, Ind., 633 Fulton St.
 New York, N. Y., 100 Broadway.
 Philadelphia, Pa., 3701 North Broad St.
 St. Louis, Mo., 4063 Forest Park Blvd.

Carpenter Steel Works, Reading, Pa.: blt. 1889-90, rebt. 1892; 2 crucible fur. (42 pots each) dismantled 1925; 3 B. O. H. fur. (10-ton) dismantled 1928-29; 3 Heroult electric fur. (7½-ton); 1 Moore Lectromelt fur. for experimental purposes; 17 heat. fur. (two 1-d., six 2-d., one 3-d., four 4-d., four cont.), fuel, coal and oil; 22" 3-h. 3-st. cogging; 16" 3-h. 6-st. cogging and finishing; Belgian mill with 18" 3-h. 2-st., 12" 3-h. 2-st., and 10" 3-h. 7-st.; 12" 3-h. 3-st.; 10" 3-h. 7-st.; 10" 3-h. 5-st.; 9" 3-h. 6-st.; 19 cold rolling mach. (one 12", five 10", seven 8", six 6"); 35 box annealing fur.; 23 wooden and brick hand pickling tanks, 2 cont. strip pickling mach.; 6 steam hammers (600-lb. to 14,000-lb.); 21 wire drawing blocks.

Product: electric steel ingots, annual cap., 43,000 tons; alloy steel ingots; hot rolled products, 25,000 tons; forged products, 5,000 tons; cold rolled products, 3,520 tons; plain wire, 6,000 net tons; rolled and hammered carbon and alloy tool steels; 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 bars, discs, dies, rings and shape forgings.

CENTRAL ALLOY STEEL CORPN., Oberlin Road, Massillon, Ohio.

Inc. Oct. 24, 1916 in New York. Capital stock: com., no par value, auth. 2,000,000 shares, issued 1,637,759 shares; pref. 7% cum., auth. and issued \$10,000,000; bonds \$8,694,200. Subsidiary of Republic Steel Corporation.

Frederick J. Griffiths, Ch.; B. F. Fairless, P. & G. M.; J. M. Schlendorf, V. P. (sales); S. S. French, V. P. & T.; J. P. Moseley, Sec.; G. H. Freeborn, A. T.; L. A. Anderson, C.; E. A. Portz, G. S.; W. M. Garrigues, G. S. M.; C. A. Ilgenfritz, P. A.

Sales offices:

Central Alloy Steel Corporation:

Chicago, Ill., Straus Bldg.
 Cleveland, Ohio, Union Trust Bldg.
 Detroit, Mich., Fisher Bldg.
 Los Angeles, Calif., San Fernando Bldg.
 New York, N. Y., New York Central Bldg.

Philadelphia, Pa., Fidelity Trust Bldg.

San Francisco, Calif., Rialto Bldg.

St. Louis, Mo., Paul Brown Bldg.

Seattle, Wash., Dexter Horton Bldg.

Syracuse, N. Y., State Tower Bldg.

Interstate Iron & Steel Company:

Chicago, Ill., Monroe Bldg.

Detroit, Mich., General Motors Bldg.

Kansas City, Mo., Gimbel Bldg.

Milwaukee, Wis., First Wisconsin National Bank Bldg.

St. Louis, Mo., International Bank Bldg.

St. Paul, Minn., Merchants National Bank Bldg.

The Berger Manufacturing Company:

Boston, Mass., 307-17 Dorchester Ave.

Chicago, Ill., 123 West Madison St.

Dallas, Texas, Carinth & 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: Agathon Steels, Toncan Steel, Nitralloy Steel (sheet and strip); Uloy (steel and sheets); Enduro (stainless iron bars, sheet and strip).

Product: basic and malleable pig iron; steel ingots, alloy steel ingots; slabs, blooms, billets and sheet bars; merchant and concrete bars, tie plates; blue annealed sheets, black and galvanized sheets; open-hearth plain carbon, copper bearing, electric and stainless sheets; cold rolled stainless and black sheets; hot rolled strip steel; heat-treated and cold drawn products; wire rods; plain wire; wire nails.

Canton Works, Furnace Division, Canton, Ohio (formerly United Furnace Div., United Alloy Steel Corpn. to Aug. 25, 1926): 1 stack, 90' x 22', blt. 1915-16, reblt. and relined 1927; three 2-pass stoves 110' x 22'; 2 Mesta steam blowing eng. (60,000 cfm.), 22-lbs. rated pressure; 11 B. & W. water-tube boilers, 8,448 H. P. serve also by-product coke plant; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 109,500 tons. By-product coke plant; 62 Koppers by-product coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 275,000 net tons coke, 3,500,000 gals. light oil. By-product coke: Lake ore. Product: basic and malleable pig iron, annual cap., 250,000 tons.

United Steel Division, Canton, Ohio (formerly Alloy Div., United Alloy Steel Corp'n. to Aug. 25, 1926): blt. 1903-04, f. o. July, 1904; 10 B. O. H. fur. (100-ton) fuel, oil, tar and coke oven gas; 27 Morgan gas producers; 4 electric fur. (three 15-ton, one 6-ton); one 300-ton mixer; eight 4-hole soaking pits, fuel, prod. gas; 6 cont. heat. fur. fuel prod., nat. and coke oven gas; 35" 2-h. 1-st. blooming; 34" 2-h. 1-st. blooming; 18" 2-h. 6-st. Morgan billet; bar mill with 26" 2-h. 1-st. Lamberton roughing and 20" 2-h. 4-st. finishing; Morgan bar mill with 16" 2-h. 6-st. cont. roughing and 12" 2-h. 4-st. finishing; bar mill with 14" 3-h. 1-st. roughing and 9" 3-h. 4-st. Belgian finishing; Morgan rod mill with 12" 2-h. 6-st. cont. roughing and 8" 2-h. 5-st. finishing; 2 Watson pickling mach. in cold drawing dept.; 10 hand pickling tanks. Product: steel ingots, annual cap., 610,000 tons (550,000 B. O. H., 60,000 electric); alloy steel ingots in all analyses; semi-finished hot rolled products 440,000 tons including 60,000 tons slabs, 200,000 tons billets, 180,000 tons sheet bars; hot rolled products, 396,000 tons including 6,000 tons wire rods, 390,000 tons merchant and concrete bars.

Stark Sheet Division, Canton, Ohio (formerly Berger Div., United Alloy Steel Corp'n. to Aug. 25, 1926): blt. 1900-01, f. o. Oct. 1, 1901; enl. 1906-07; 22 sheet and 22 pair fur.; 28" x 54" 2-h. jobbing plate mill; 27 hot black sheet mills (26" x 54"); 3 trains of 9 stands 26" cold rolls; 26 box annealing fur.; 1 blue annealing fur.; 5 pickling mach. (2 Cook, 3 Plunger); 10 galvanizing pots. Roll job mill sheets 7 to 16 gauge, 18" to 48" wide, to 200" long; black sheets 7 to 30 gauge, 18" to 44" wide, to 144" long. Product: black sheets, annual cap., 150,000 tons; blue annealed sheets, 25,000 tons; galvanized sheets, 140,000 tons; open-hearth plain carbon and copper bearing sheets.

South Steel Division, Canton (formely United Alloy Steel Corp'n. to Aug. 25, 1926): blt. 1917, f. o. Nov. 26, 1917; 4 B. O. H. fur. (90-ton) fuel, oil; four 4-hole soaking pits, fuel, prod. gas; 32" 3-h. 1-st., blooming; 18" 2-h. 3-st. and 18" 2-h. 1-st. Belgian sheet bar mill. Product: steel ingots, annual cap., 240,000 tons; sheet bars, 200,000 tons.

South Sheet Division, Canton, Ohio (formerly South Steel Div., United Alloy Steel Corp'n. to Aug. 25, 1926): blt. 1910, f. o. Jan. 2, 1911; 13 sheet and 13 pair fur.; 30" x 60" 2-h. jobbing plate mill; 12 hot black sheet mills (28" x 54"); Bliss Cluster cold rolling mill (14" x 54"); 1 train of 4 stands 24" cold rolls; 15 box annealing fur.; 1 blue annealing fur.; 2 Mesta pickling mach.; 1 hand pickling tank. Roll job mill sheets 7 to 16 gauge, 18" to 48" wide, to 200" long; black sheets 7 to 30 gauge, 18" to 44" wide, to 144" long. Product: black sheets, annual cap., 65,000 tons; blue annealed sheets, 25,000 tons; cold rolled stain-

less and black sheets, 12,000 tons; open-hearth, plain carbon, electric and stainless sheets.

Massillon Steel Division, Massillon, Ohio (formerly Central Div., Central Steel Co. to Aug. 25, 1926): blt. 1914-15, f. o. June 8, 1915: 9 B. O. H. fur. (two 100-ton, seven 80-ton) fuel, oil, tar and coke oven gas; one 150-ton ladle mixer; seven 4-hole soaking pits, fuel prod. gas; nine 4-d. prod. gas-fired heat. fur.; 34" 2-h. 1-st. blooming; 24" 3-h. 2-st. billet; 24" 3-h. 2-st. and 24" 2-h. 1-st. sheet bar; 24" 3-h. 1-st. and 18" 3-h. 4-st. bar; 16" 3-h. 1-st. and 12" 3-h. 4-st. bar; 5 hand pickling tanks. Product: steel ingots, annual cap., 450,000 tons; alloy steel ingots in all analyses; semi-finished rolled products 380,000 tons including 10,000 tons slabs, 370,000 tons blooms and billets; merchant bars, 340,000 tons; hot rolled, cold drawn and heat-treated bars in alloy steels.

Strip Division, Massillon, Ohio (formerly National Div., Central Steel Co. to Aug. 25, 1926): blt. 1916-17, f. o. Dec., 1917; 2 cont. oil-fired heat. fur.; strip mill with 24" 2-h. 1-st. universal roughing, 18" duo repeater with 1-st. 2 sets of rolls and 18" 2-h. 1-st. bull head; 2 box annealing fur.; 5 hand pickling tanks. Product: hot rolled strip steel, annual cap., 100,000 tons.

Massillon Sheet Division, Massillon, Ohio (formerly Sheet Mill Div., Central Steel Co.): blt. 1908-09, f. o. Mar. 23, 1909: 14 sheet and 14 pair fur.; 14 hot black sheet mills (28" x 42" to 72"); 12 stands cold rolls in 2 trains of 6 stands each (24" and 26"); 3 Mesta pickling mach.; 32 box annealing fur. Roll black sheets 8 to 26 gauge to 60" wide. Product: black sheets, annual cap., 90,000 tons.

Massillon Works, Furnace Division, Massillon, Ohio (The Central Furnace Co. to Aug. 25, 1926): 1 stack, 92' x 22' 6", blt. 1925-26 and blown in Oct. 28, 1926; four 2-pass stoves, 95' x 22'; 2 turbo-blowers, 50,000 cfm., 30 lbs. rated pressure; 6 Sterling water-tube boilers, 5,400 H. P., serve also coke oven plant; 1 Heyl & Patterson double-strand pig casting machine; Dwight & Lloyd sintering plant for flue dust, annual cap., 60,000 tons. By-product coke: Lake ore. By-product coke plant; 49 Becker by-product ovens, by-product recovery plant and Koppers benzol plant, annual cap., 315,000 net tons coke, 4,000,000 gals. light oil. Product: basic and malleable pig iron, annual cap., 250,000 tons.

East Chicago Works, East Chicago, Ind. (Interstate Iron & Steel Co. to Oct. 1, 1929): blt. 1900, f. o. July, 1900; 8 coal-fired heat. fur. (two 4-d., six 5-d.): 22" 3-h. 3-st. bar; 16" 3-h. 3-st. bar; 9" 3-h. 5-st. Belgian; 8" 3-h. 5-st. Belgian; 1 box annealing fur.; 2 hand pickling tanks. Product: hot rolled products, annual cap., 150,000 tons, including 110,000 tons merchant and concrete bars, 40,000 tons tie plates.

South Chicago Works, South Chicago, Ill. (118 St. Works, Interstate Iron & Steel Co. to Oct. 1, 1929): blt. 1902-03; f. o. July, 1903; 8 B. O. H. fur. (four 75-ton, four 100-ton) fuel, oil; seven 4-hole soaking pits, fuel, prod. gas; 3 cont. prod. gas-fired heat. fur.; 35" 2-h. 1-st. reversing blooming; continuous billet mill with 21" 2-h. 2-st. and 18" 2-h. 6-st.; 12" 2-h. 12-st. cont. bar; 10" 2-h. 19-st. comb. cont. billet and bar; 5 pickling tanks. Product: steel ingots, annual cap., 400,000 tons; alloy steel ingots in all analyses; blooms and billets, 325,000 tons; hot rolled products, 305,000 tons, including 245,000 tons merchant and concrete bars, 60,000 tons wire rods.

Grand Crossing Works, Chicago, Ill. (Interstate Iron & Steel Co. to Oct. 1, 1929): wire mill, rod mill added 1899-00, f. o. Feb. 1, 1900; one 1-d. billet heat. fur. gas-fired; Morgan cont. rod mill with 14-st.; 102 wire drawing blocks for wire $\frac{1}{2}$ " to 18 gauge; 83 wire nail mach. Product: wire rods, annual cap., 55,500 tons; plain wire, 45,000 net tons; wire nails, 240,000 kegs (100-lb.).

Total annual capacity: pig iron, 500,000 tons; steel ingots, 1,700,000 tons; semi-finished hot rolled products, 1,345,000 tons including 70,000 tons slabs, 895,000 blooms and billets, 380,000 tons sheet bars; finished hot rolled products, 1,651,500 tons including 1,085,000 tons merchant and concrete bars, 100,000 tons hot rolled strip steel, 121,500 tons wire rods, 305,000 tons black sheets, 40,000 tons tie plates; blue annealed sheets, 50,000 tons; galvanized sheets, 140,000 tons; cold rolled stainless and black sheets, 12,000 tons; plain wire, 45,000 net tons; wire nails, 240,000 kegs.

Central Furnace Co. (The), Massillon, Ohio, was merged Aug. 25, 1926 with United Alloy Steel Corp'n. and Central Steel Co. in Central Alloy Steel Corp'n.

CENTRAL IRON & COAL CO., 420 Lexington Ave., New York, N. Y.

Inc. Mar. 2, 1901 in New Jersey. Capital stock: com., no par value, auth. and issued 3,000 shares; bonds \$915,000.

Louis B. Ladoux, P.; B. L. Flynn, Sec.; E. McElheaney, T.; Charles Gurenson, C.; at New York. M. J. Moloney, V. P. & G. M.; at Holt, Ala.

Brands: Tuscaloosa, Warrior (pig iron).

Tuscaloosa Furnace, Holt, Ala.: 1 stack, 87' x 19' 6", blt. 1901-03; reblt. 1911-12; relined 1926 and blown in May 12, 1926; 4 Foote 2-pass stoves, 85' x 19'; 4 vertical steam blowing eng. (1 Mesta Machine Co., 3 Birmingham Machine & Foundry Co.), 85,300 cfm., 20 lb. rated pressure; 12 boilers (10 Hyde vertical water-tube, 2 Connelly tubular), 3,200 H. P.; nodulizing plant for pyrites cinder; annual cap., 90,000 tons. By-product coke;

local red and brown hematite. Company owns red ore mines at Valley View, Ala. (idle); and brown ore mines at Giles, Ala., annual cap., 100,000 tons; also coal mine at Kellerman, Ala., annual cap., 300,000 tons. At Holt, 60 Semet-Solvay by-product coke ovens; annual cap., 200,000 net tons and 164 beehive ovens (long idle).

Product: foundry pig iron for sale; annual cap., 120,000 tons.

Central Iron & Metal Co., Chicago, Ill. Rolling mill at Vincennes, Ind. for manufacture of merchant bar iron and steel, was dismantled in 1927 and sold.

CENTRAL IRON & STEEL CO., 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., Statler Bldg.

Charleston, S. C., Cameron & Barkley Co.

Cincinnati, Ohio, Adams Steel Co., American Bldg.

Cleveland, Ohio, A. E. Quere Co., Rockefeller Bldg.

Detroit, Mich., Acme Steel Products Co., General Motors Bldg.

El Paso, Texas, Francis Wagner, 307 San Francisco St.

Houston, Texas, C. B. Porter Co., Electric Bldg.

Los Angeles, Calif., Pitman & Squier, Western Mutual Life Bldg.

Montreal, Canada, J. W. Pyke & Co., 388 St. James St.

New York, N. Y., Cunard Bldg., 25 Broadway.

Philadelphia, Pa., Stock Exchange Bldg.

Pittsburgh, Pa., R. C. Barton, Oliver Bldg.

St. Louis, Mo., H. C. Beckwith, Chemical Bldg.

San Francisco, Calif., Pitman & Squier, Underwood Bldg.

Seattle, Wash., Barde Steel Co., 2709 Utah Ave.

Syracuse, N. Y., Chimes Bldg.

Brand: Central "Knobby" Non-Skid Steel Floor Plates.

Product: 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., 205,000 tons.

Works at Harrisburg, Pa.:

Paxton Furnaces: 2 stacks: No. 1, 75' x 14', blt. 1855 and No. 2, 80' x 18', blt. 1872, dismantled 1926. Lochiel Furnace: 1 stack, 75' x 13' 6", blt. 1872, dismantled 1928.

Open-hearth Steel Works: blt. 1903-04, enl. 1917-18, f. o. June 9, 1904; 6 B. O. H. fur. (five 100-ton, one 60-ton); fuel, prod. gas; 29 gas producers. Product: steel ingots, annual cap., 250,000 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 6" to 8 gauge to 120" wide and 60' long. Flanging Shop. Gray iron and brass foundry for works castings, 1,000 tons. Product: sheared plates, annual cap., 78,000 tons.

Central Iron Works: orig. blt. 1853; five 3-d. heat. fur. (fuel, pulv. coal); 25" x 42" 2-h. universal plate mill. Roll universal plates 6" to 8 gauge, 7" to 40" wide, to 100' long. Five heat. fur. (two 4-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 14 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; floor plates, 14,000 tons; hot and cold stampings and pressed parts, 5,000 tons.

Central of Georgia Railway Co., Savannah, Ga. Reclaiming rolls at Macon Shops, Macon, Ga., last operated in 1920, were dismantled in 1925.

Central Steel Co., Chicago, Ill. Rolling mill equipment at Ottawa, Ill. was sold to Highland Iron & Steel Co. in 1928, removed and installed at the Terre Haute Works, Terre Haute, Ind. of the latter company.

Central Steel Co., Massillon, Ohio, was merged Aug. 25, 1926 with United Alloy Steel Corp. and The Central Furnace Co. in Central Alloy Steel Corp.

Chapman Price Steel Co., Indianapolis, Ind. was merged July 1, 1927 with Kokomo Steel & Wire Co. and The Superior Sheet Steel Co. in the Continental Steel Corp.

CHAPMAN VALVE MFG. CO. (The), 203 Hampshire St., Indian Orchard, Mass.

Adolph W. Gilbert, P.; E. A. Carter, V. P.; John J. Duggan, Sec. & T.; E. C. Gilbert, G. M.; George E. Fox, G. S.; Thomas Maher, G. S. M.; L. C. Haswell, P. A.

Company manufactures valves and fittings and operates a steel, iron and bronze foundry for own use only.

Works at Indian Orchard, Mass.: steel foundry blt. 1921, f. o. Jan. 17, 1922; 1 Pittsburgh Lectromelt electric fur. (2-ton); 2 cupolas. Cast iron and semi-steel (8,500 tons) and bronze (1,100 tons) foundry.

Product: steel castings for own use only, annual cap., 2,500 tons; alloy steel castings (chrome, nickel).

Charcoal Iron Co. of America, Marquette, Mich. went into hands of receivers in 1926 and James D. Lacey & Co. were subsequently appointed as operating agents for receivers. The Boyne

City Plant, Boyne City, Mich. (1 stack), was abandoned in 1926. The Ashland Plant, Ashland, Wis. (1 stack), was purchased, Nov. 5, 1926 by Jesse C. Stone, Ashland, Wis. and was subsequently sold for unpaid taxes to A. E. Appleyard, Feb. 16, 1929. The Ashland furnace is probably abandoned. The Manistique Plant, Manistique, Mich. (1 stack) and the Newberry Plant, Newberry, Mich. (1 stack) were acquired by Newberry Lumber & Chemical Co., May 25, 1929.

Charcoal Iron Products Co., Washington, Pa. with works at Washington for manufacture of charcoal blooms, black and long terne sheets, black plate for tinning and terne roofing plates, was acquired in 1927 by Washington Steel Co. The latter company was subsequently acquired in 1928 by United Stainless Steel Corp'n. and works were dismantled.

Charleroi Steel & Foundries Co., Charleroi, Pa., acquired plant at Charleroi formerly operated by Electric Alloy Steel Co. Company went into hands receiver in 1927 and is out of business.

CHATEAUGAY ORE & IRON CO., Lyon Mountain, N. Y.

Subsidiary of Delaware & Hudson Co.

L. F. Loree, P.; F. W. Leamy, Senior V. P.; R. C. Kann, Sec. & T.; H. D. Chamberlain, C.; E. J. Burnes, G. S. A.; at 26 Liberty St., New York, N. Y. A. M. Fine, V. P.; C. W. Carpenter, P. A.; at 424 Wyoming Ave., Scranton, Pa. J. R. Linney, V. P.; W. H. Carnes, A.; at Lyon Mountain. Marshall Prosser, G. S.; at Standish.

Selling agents: Walter-Wallingford & Co., Traction Bldg., Cincinnati, Ohio, and Straus Bldg., Chicago, Ill.; Railway Power & Engineering Corp'n., Toronto, Ont., Canada.

Brand: Chateaugay (low-phosphorus pig iron).

Standish Furnace at Standish, N. Y.; 1 stack, 78' 6" x 17'; blt. 1886; remod. 1921-22, relined 1926; 6 stoves (4 Foote 71' x 16', 2 Freyn Eng. Co. 105' x 22'); 2 vertical reciprocating blowing eng. (1 Allis-Chalmers, 1 Southwark), 1 Ingersoll-Rand turbo-blower, 30,000 cfm.; 7 water-tube boilers (4 Stirling, 2 B. & W., 1 Erie City) 1,700 H. P.; 1 single-strand pig casting mach.; Dwight & Lloyd sintering plant for Chateaugay low-phos. concentrates, annual cap., 300,000 tons. Brownsville, Pa. coke: sintered Lyon Mountain ore. Chateaugay Ore and Iron Co. owns and operates iron ore mine at Lyon Mountain, annual cap., 750,000 tons crude ore, 300,000 tons concentrates and sintered ore.

Product: low phosphorus pig iron, annual cap., 109,500 tons.

Steel Works at Standish, N. Y.: blt. 1927-28; 2 Whiting side-blow converters, never operated.

Chattanooga Iron & Coal Corp., Chattanooga, Tenn. Chattanooga Furnace at Chattanooga (1 stack), last operated in 1921, was acquired by S. C. Weber Iron & Steel Co. in 1928 and dismantled.

Chester Steel Castings Co., Philadelphia, Pa. Works at Chester, Pa. with 2 A. O. H. fur. (30-ton) and 8 McHaffie cementation fur. for manufacture of steel castings, last operated Dec. 20, 1920, are abandoned. Company out of business.

CHICAGO MALLEABLE CASTINGS CO., 12000 South Racine Ave., Chicago, Ill.

Inc. 1899; reinc. Dec. 27, 1923 in Illinois. Capital stock: com., par value \$50, auth. and issued \$500,000; pref. 7% cum. auth. and issued \$500,000.

J. T. Llewellyn, P.; W. L. Beaudway, V. P. & G. M.; W. F. Hoffman, Sec., T. & A.; L. F. Hartwig, G. S.; H. D. Menke, P. A.

Works at West Pullman, Ill. for manufacture of malleable iron castings, annual cap. 15,000 tons.

Steel Foundry, West Harvey, Ill. (operated by Allied Steel Castings Co.): blt. 1914, 2 A. O. H. fur. (15-ton). Fuel, oil.

Product: steel castings for sale, annual cap., 10,000 tons; alloy steel castings; railroad castings and chrome alloy castings for draft gears.

Chicago Rolling Mills, Inc., 228 North La Salle St., Chicago, Ill. acquired forge plant of J. H. Williams & Co., at 120th St. and Morgan St., Chicago, July 29, 1929. Company projects re-equipping plant for rolling of sheets and manufacture of formed sheet products.

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 \$386,500.

David Evans, P. & T.; C. M. Lauritzen, V. P.; Arthur I. Gilbert, Sec. & P. A.; P. A. Gleason, A.; John A. Marr, G. M.; H. J. Georgen, G. S. M.

Sales offices:

Indianapolis, Ind., 335 Postal Station Bldg.

New York, N. Y., 149 Broadway.

Philadelphia, Pa., Bourse Bldg.

Tulsa, Okla., P. O. Box 1378.

Brands: PyraSteel (heat and acid resisting alloy); Evansteel (wear resisting chrome-nickel alloy).

Works at 3720 South Kedzie Ave., Chicago: blt. 1912; f. o. Aug. 13, 1912; 2 Tropenas converters (1-ton, 2-ton) abandoned in 1926 and sold; 2 Heroult electric fur. (1½-ton, 3½-ton). Heroult electric fur. (1½-ton) used exclusively for alloy castings.

Product: steel castings for own use and for sale; annual cap. 6,000 tons electric steel castings. Alloy steel castings (nickel, chrome). Steel castings for carburizing pots and boxes, furnace fixtures, track liners, oil well sheaves, car-knuckles, valves and high pressure fittings.

CHROME ALLOY PRODUCTS, Inc., Nicetown, Philadelphia, Pa.

Inc. Mar. 21, 1927 in Delaware. Subsidiary of The Midvale Company since Oct. 21, 1929.

Alva C. Dinkey, P.; H. L. Frevert, V. P.; Stuart Hazlewood, V. P. (sales); J. M. Milliken, Sec. & T.; Joseph P. Coonahan, P. A.

Sales offices:

Chicago, Ill., 316 McCormick Bldg.

Cleveland, Ohio, 1610 Union Trust bldg.

New York, N. Y., 165 Broadway.

Pittsburgh, Pa., 475 Union Trust Bldg.

San Francisco, Calif., 457 Monadnock Bldg.

Washington, D. C., 1121 Woodward Bldg.

Works at Elm and Harry Sts., Conshohocken (leased; land and buildings owned by Lenoir Realty Co.); '1 Rennerfelt electric fur. (1½-ton). (Wm. T. Bate & Sons to May 5, 1926; T. H. Nelson & Co. to March, 1927).

Product: steel castings for sale, annual cap., 1,000 tons; alloy steel castings (nickel, chrome); special corrosion and heat resisting castings.

CHROME STEEL CORPORATION, Carteret, New Jersey.

Inc. 1929 in New Jersey. Capital stock: com., no par value, auth. 10,000 shares, issued 4,135 shares.

Abeel Canda, P. & G. M.; H. Clifford Gayley, V. P., Sec., T. & G. S.; Philip H. Martin, A. T.; Clarence E. Meissner, G. S. M.

Sales office: S. C. Myers, 1514 South Stanley St., Los Angeles, Calif.

Brand: Adamantine (grinding balls).

Works at Carteret: blt. 1902-04; f. o. Mar. 19, 1904; steel works department dismantled, see Chrome Steel Works; 3 oil-fired cont. heat, fur.; 16" 3-h. 3-st. and 9" 3-h. 4-st. Lewis bar mill; 12" 3-h. 6-st. Garrison bar mill; 4 steam hammers (three 2,500-lb., one 1,000-lb.); 2 Acme forging mach.

Product: merchant and concrete bars, annual cap., 40,000 tons; forged grinding balls, ¾" to 6" dia., annual cap., 10,000 tons.

Chrome Steel Works, Carteret, N. J. Steel Works department including 1 B. O. H. fur. (25-ton) last active in 1923, dismantled 1927; 4 A. O. H. fur. (two 25-ton, two 20-ton) last active in 1928, dismantled 1928-29; 14 gas prod. dismantled. Chrome Steel Works was liquidated and Canda-Gayley Steel Corpn. was organized

to take over and operate the rolling mill department in March, 1929. In May, 1929, corporate title of Canda-Gayley Steel Corpn. was changed to Chrome Steel Corpn.

CINCINNATI STEEL CASTINGS CO. (The), 1218 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., C. & G. M.; Joseph Luebbbers, A.; Leonard Geiser, G. S.; P. B. Kennedy, G. S. M.; H. C. Cross, P. A.

Works at 1218 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.

Product: electric steel castings for sale; annual cap., 2,680 tons. Alloy steel castings (nickel, chrome, vanadium).

CLARK EQUIPMENT CO., Buchanan, Mich.

Inc. Dec. 26, 1916 in Michigan. Capital stock: com., no par value, auth. 250,000 shares, issued 150,000 shares; pref. 7% cum. auth. \$2,000,000, issued \$1,214,900.

Eugene B. Clark, P.; E. B. Ross, V. P.; M. L. Hanlin, V. P.; E. C. Mogford, V. P.; Frank Habicht, V. P.; A. S. Bonner, Sec. & T.

Brand: Celfor (high speed drills and reamers).

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. (2½-ton, 4-ton). Wheel and axle housing shop; annual cap., 24,000 finished steel wheels.

Product: electric steel castings for own use and for sale; annual cap., 8,000 tons; steel wheels and axle housings for motor trucks; high speed drills, automobile front and rear axles, transmissions and wheels; industrial tractors.

CLEVELAND ALLOYS CO. (The), 2284 Scranton Road, Cleveland, Ohio.

Inc. Sept., 1920 in Ohio as The Ohio Steel Castings Co., name changed to The Cleveland Alloys Co., March, 1928.

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.

Brands: Allegheny Metal, Ascoloy (alloy castings).

Works at 2284 Scranton Road, Cleveland: blt. 1912-13; 1 Calumet converter (4,000-lb.) abandoned in 1926; 1 Moore Lectromelt electric fur. (1-ton) installed Dec., 1925, f. o. Jan. 5, 1926.

Product: electric alloy steel castings for sale, annual cap., 1,800 tons; acid, corrosion, high temperature and abrasion resisting alloy castings.

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; pref., no par value, \$5 cum., auth. and issued 500,000 shares.

William G. Mather, P.; S. L. Mather, V. P.; V. P. Geffine, Sec.; Charles G. Heer, T.; at Cleveland. 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).

Brand: Marquette (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, 73' 3" x 12', blt. 1901-03, relined 1927 and blown in Dec. 26, 1927; 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.

The Company also operates the blast furnace plant of The Trumbull-Cliffs Furnace Co. making coke pig iron, see under head of Trumbull-Cliffs Furnace Co.

The company owns, leases, or operates the following mines: Cliff Shaft, Holmes and Morris-Lloyd Mines, Ishpeming, Mich.; Princeton, Gardner-Mackinaw and Stephenson Mines, Gwinn, Mich.; Republic Mine, Republic, Mich.; Maas, South Jackson, Athens and Negaunee Mines, Negaunee, Mich.; Spies-Virgil Mine, Iron River, Mich.; Webster Mines (idle), Michigamme, Mich.; Wade-Helmer Mine, Kinney, Minn.; Canisteo Mine, Taconite, Minn.; Holman-Brown, Bingham, North Star and Hill-Trumbull Mines, 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., 250,000 tons; and Mather, Pa., 300,000 tons. Company also sells coal from other mines and operates coal docks at Green Bay, Wis. and Escanaba and Port Huron, Mich. Company operates fleet of freighters on Great Lakes (171,550 tons) primarily for transport of its own ore and coal.

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.; Thomas P. Robbins, 1 V. P. & T.; Edgar E. Adams, 2 V. P. & G. M.; Alva A. Gay, Sec. & G. S. M.; William R. Lorenz, A.; H. C. Kennedy, G. S.; 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; rebt. 1891; 2 gas-fired heat. fur. (one 3-d., one 4-d.); 10" 3-h. 6-st. merchant mill; 2 box annealing fur.; 2 Ideal pickling mach.; 2 hand pickling tanks; drop hammers (up to 4,000-lb.).

Product: rolled shapes for own use for forgings and hardware; annual cap., 5,900 tons rolled products, 25,000 tons forgings.

Cleveland Steel Co. (The), Cleveland, Ohio. Rolling mill at foot of East 38th St., Cleveland for manufacture of plates and sheets, last operated Aug. 19, 1926, was dismantled in 1926 and equipment sold.

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. (one 20-ton, one 25-ton), fuel, oil.

Product: steel castings for own use and for sale, annual cap., 10,718 tons; machine molded gears and pinions.

CLIMAX MOLYBDENUM CO., 61 Broadway, New York, N. Y.

Inc. Jan. 17, 1918 in Delaware. Capital stock: com., no par value, auth. 1,000,000 shares, issued 840,000 shares; bonds \$2,386,819.68.

B. F. Phillipson, P.; J. B. Thorpe, A. P. & V. P.; Alan Kiscock, V. P.; Ludwig Vogelstein, V. P.; H. K. Hochschild, Sec. & T.; D. A. Goodkind, A.

Sales offices:

Denver, Colo., 421 Continental Oil Bldg.

Detroit, Mich., 2807 Book Tower Bldg.

Pittsburgh, Pa., 2010 Clark Bldg.

The company operates an ore mine and mill at Climax, Colo. and a conversion plant at Langeloth, Pa.

Plant at Langeloth, Pa. (leased from The American Metal Co., Ltd.): calcium molybdate first made in 1925; 2 Herreschoff roasting furnaces. Electric power from West Penn Power Co.

Product: calcium molybdate; annual cap., 2,400 tons metallic molybdenum contained in calcium molybdate (average 40% molybdenum) and roasted molybdenite concentrate (commercial molybdic oxide).

Clinton Iron and Steel Co., Pittsburgh, Pa. Clinton Furnace at Pittsburgh (1 stack), last operated in May, 1927 was dismantled in that year and property sold.

CLYDE IRON WORKS, Duluth, Minn.

Inc. 1907 in Maine. Capital stock: com., par value \$100, auth. \$1,500,000, issued \$1,250,000; pref., auth. and issued \$500,000. C. A. Luster, P.; J. R. McGiffert, V. P.; M. W. Lepp, Sec. & T. Works at Duluth: electric fur. (1,200-lb.) installed 1929, f. o. Feb., 1929; 1 cupola. Gray iron and brass foundry, annual cap., 2,400 tons gray iron and 40 tons brass castings for own use and for sale.

Product: electric steel castings for own use and for sale, annual cap., 500 tons.

Coes Wrench Co., Worcester, Mass. see Loring Coes and Co., Inc.

COHOES ROLLING MILL CO., Canvass St., Cohoes, N. Y.

Est. 1854; inc. 1901 in New York. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$850,000.

W. W. Near, P.; H. Rooke, T.; at 100 Church St., Toronto, Canada.

Julius Ilch, 1 V. P.; D. H. Friedman, 2 V. P.; at Albany, N. Y. A. Macfadyen, Sec. & G. M.; W. S. Crawford, C.; H. L. Nelson, G. S. (rolling mill); J. Ackenbrack, G. S. (pipe mill); H. R. Slater, G. S. M.; Charles R. Lee, P. A.; at Cohoes, N. Y.

Sales offices:

Chicago, Ill., 810 West Lake St.

Detroit, Mich., 222 McKerchy Bldg.

Los Angeles, Calif., 1041 Citizens National Bank Bldg.

New York, N. Y., 342 Madison Ave.

Norfolk, Va., 404 Board of Trade Bldg.

Brand: Cohoes (genuine wrought iron pipe, nipples and couplings).

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 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.

Inc. 1834 in Connecticut. Capital stock: com., par value \$100, auth. and issued \$1,500,000.

Charles L. Taylor, P.; F. Spencer Goodwin, Sec.; at Hartford, Conn. Albert E. Newton, V. P. & G. M.; Clayton Jenkins, T.; C. M. Elston, A. G. M.; F. J. Hough, G. S.; P. D. Preston, S. M. (domestic); L. B. Hough, S. M. (export); Albert I. Johnson, P. A.; at Collinsville.

Sales office: 35 South William St., New York, N. Y.

Works at Collinsville: 1 arc electric fur. ($\frac{1}{2}$ -ton) installed June, 1929; 2 Siemens gas crucible fur. (48 pots) dismantled Nov., 1928; rolling mills and steam hammers dismantled in 1924. Gray iron (55 tons) foundry for own use.

Product: electric steel castings for own use, annual cap., 360 tons; steel castings for plow parts.

COLONIAL IRON CO., Riddlesburg, Pa.

Inc. May 2, 1899 in Pennsylvania. Capital stock: com., par value \$50., auth. and issued \$1,000,000.

Henry H. Adams, P.; Col. John L. Roberts, 2 V. P.; F. G. Gottsch, Sec.; William D. Norman, T. & P. A.; at 285 Madison Ave., New York, N. Y. John M. Reynolds, 1 V. P.; at Bedford, Pa. E. P. Ross, G. M.; at Riddlesburg, Pa.

Sales office: Henry H. Adams & Co., Inc., 285 Madison Ave., 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'; 3 steam blowing eng. (2 old-type reciprocating, 1 General Electric Co. turbo-blower), 55,000 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 \$3,250,000; pref., auth. \$750,000, none issued. Subsidiary of Vanadium-Alloys Steel Co. Roy C. McKenna, P.; Floyd Rose, V. P.; Horace Sisler, Sec. & T.; Lawrence Wood, G. S. M.; B. M. Trautman, P. A.; at Pittsburgh. Alex Nimick, Works M. at Colona, Pa. (P. O. address, Monaca, Pa.).

Sales offices:

Branch offices and warehouses:

Boston, Mass., D. & Fargo Sts.

Buffalo, N. Y., 375 Ellicott Square.

Chicago, Ill., 1440-42 West Randolph St.

Cincinnati, Ohio, 605 Mercantile Library Bldg.

Cleveland, Ohio, 2121 St. Clair Ave.

Detroit, Mich., 5223 Trumbull Ave.

Los Angeles, Calif., 825 Santa Fe Ave.

New York, N. Y., 149-151 Varick St.

Philadelphia, Pa., 308 North 15th St.
 St. Louis, Mo., 712-14 Cass Ave.
 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-Holliday Steel Co.
 Erie, Pa., Erie Mfg. & Supply Co.
 Knoxville, Tenn., W. S. Murrian Co.
 Los Angeles, Calif., Denman & Grier Steel Co.
 New Haven, Conn., C. S. Mersick & Co.
 Newark, N. J., Kienzle & Hahn.
 Rochester, N. Y., Homer Strong, Inc.
 San Francisco, Calif., Peninsula Iron & Steel Co.
 Trenton, N. J., Barbour Brothers.

Brands: Colonial (safe and jail steel, stainless iron and steel); Red Star (tool steel, hollow drill); Beaver (high speed, die blocks, soft center plow); Colona (die blocks); O-Hi-O (die steel); Tungo (chisel steel); No. 6 (oil hardening); Hot Header No. 3; Co-Co; No. 7.

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. (30-ton) fuel prod. gas, 5 gas producers; 1 Heroult electric fur. (6-ton); two 36-pot crucible steel fur., fuel prod. gas; one 6-hole soaking pit; 21 coal and prod. gas-fired heat. fur. (two 1-d., two 2-d., eleven 4-d., six other); 24" 2-h. 1-st. blooming; 16" 3-h. 5-st. bar; 12" 3-h. 6-st. bar; 9" 3-h. 6-st. bar; 22" x 36" 2-h. plow; 28" x 80" 3-h. sheared plate and saw plate; two 20" x 36" 2-h. sheet mills; 6 box annealing fur.; 9 wooden picking tanks; 8 steam ham. (600-lb. to 8-ton).

Product: steel ingots, annual cap., 57,600 tons (45,000 tons B. O. H., 7,200 tons electric, 5,400 tons crucible); alloy steel ingots (nickel, chrome, tungsten, vanadium, silicon, manganese); slabs, blooms and billets, 36,000 tons; hot rolled products, 20,000 tons; forged products, 15,000 tons; high speed and carbon tool steel, agricultural plates, plow steel, safe steel, alloy and special steels, copper-clad steel rods; spring, cutlery, tool, stainless and high-speed steel sheets; forged die blocks, rings, discs, 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 \$34,050,500; pref. 8% cum. auth. and issued \$2,000,000; bonds \$32,585,000.

J. F. Welborn, Ch.; Arthur Roeder, P.; Everett Drennen, V. P.; S. G. Pierson, V. P. & T.; J. C. Hamilton, Sec.; Harold Butt, C.; C. H. Murphey, S. M. (steel); T. Aurelius, S. M. (rail-

road); Gerald Alley, P. A.; at Denver. Arthur Woods, V. P.; at New York, N. Y. W. A. Maxwell, Jr., V. P.; L. F. Quigg, G. S.; at Pueblo, Colo.

Sales offices:

Amarillo, Texas, W. B. Knight, 603 Oliver-Eagle Bldg.
 El Paso, Texas, J. C. Durham, 508 Mills Bldg.
 Fort Worth, Texas, I. I. Paddock, 2103 Ft. Worth Natl. Bank Bldg.
 Lincoln, Neb., H. B. Miller, 1117 Federal Trust Bldg.
 Los Angeles, Calif., B. C. Harmon, 407 A. G. Bartlett Bldg.
 Oklahoma City, Okla., E. E. Fisher, 905 Colcord Bldg.
 Portland, Ore., W. E. Madden, 512 Lewis Bldg.
 Salt Lake City, Utah, J. J. Fitzgerald, 408 Walker Bldg.
 San Francisco, Calif., C. H. Macdonald, 614 Balboa Bldg.
 Spokane, Wash., F. P. Dillinger, 906 Paulsen Bldg.
 Wichita, Kan., T. D. Fahey, 917 Beacon Bldg.

Product: pig iron, blooms and billets, steel rails, mine rails, splice and angle bars, structural and other shapes, merchant bars, reinforcing bars, grinding rods, wire rods; bright, annealed and galvanized wire; wire nails and staples; barbed wire, field fence, chain link fence, poultry netting, bale ties, fence posts, cinch fence stays, etc., railroad and boat spikes, track bolts, tie plates, 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' 3 1/4", 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; D, 94' 11 1/2" x 22' 6", blt. 1901-02, f. o. Nov. 20, 1902, last rebt. 1926; E, 89' 8 1/2" x 22' 6", blt. 1901-02, f. o. May 30, 1903, rebt. Mar. 1925; F, 84' 8 1/2" 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); 3 vertical steam blowing eng. and 4 turbo-blowers, total blowing cap., 290,000 cfm.; 29 Sterling water-tube boilers, 19,400 H. P., serve also rail mill, pipe foundry and shops; 2 Uehling double-strand pig casting mach.; 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, limonite ore from Colorado. Product: basic, high manganese (6%) and foundry pig iron, annual cap., 540,000 tons; ferro-manganese for own use.

By-product Coke Plant: 120 Koppers ovens, by-product recovery plant and Koppers benzol plant, annual cap., 605,000 net tons coke, 2,800,000 gals. light oil.

Bessemer Dept.: 2 bessemer converters (15-ton) dismantled in 1927.

Open-Hearth Dept.: blt. 1902-03, f. o. June 29, 1903; 16 B. O. H. fur. (70-ton); 5 mixers (one 250-ton, four 125-ton); 4 cupolas for pig iron; 2 cupolas for spiegel. Fuel nat. gas, coke oven gas, tar, and oil; 24 gas prod. (18 Wellman-Seaver-Morgan, 6 Hughes) not in use. Product: steel ingots and steel castings for own use, annual cap., 900,000 tons (898,000 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; 11 heat. fur. (9 cont., two 3-d.) fuel, nat. gas and coke oven gas; 40" 2-h. 1-st. blooming; rail mill with 36" 2-h. 1st. blooming, 28" 3-h. 1-st. roughing, 26" 3-h. 1-st. and 26" 2-h. 1-st. finishing; 25" 3-h. 3-st. structural mill; 17" to 10" 2-h. 18-st. Garrett rod mill; Garrett mill for merchant bars with 14" 2-h. 1-st. and 10" 2-h. 6-st.; 14" 2-h. and 3-h. 9-st. continuous bar mill; 20" 3-h. 4-st. merchant mill; 12" 3-h. 6-st. merchant mill. Product: slabs, blooms and billets, annual cap., 810,000 tons; finished hot rolled products, 630,000 tons including 315,000 tons rails, 15,000 tons heavy and 20,000 tons light structural shapes, 75,000 tons wire rods, 75,000 tons merchant and concrete bars, 30,000 tons spike, bolt, nut and rivet rods, 100,000 tons tie plates and angle bar strips.

Wire Mill: blt. 1902-03: 380 wire drawing blocks for wire $\frac{1}{2}$ " to 36 gauge; 184 wire nail mach.; 38 barbed wire mach.; 32 wire fence mach.; 4 galv. pans; 7 staple mach.; 21 bale tie mach. Product: plain wire, annual cap., 120,000 net tons; galvanized wire, 60,000 net tons; barbed wire, 30,000 net tons; wire fence, 21,000 net tons; staples, 3,000 net tons; bale ties, 9,000 net tons; wire nails, 1,200,000 kegs (100-lb.). Spike, Bolt, Nut and Rivet Dept. for track spikes $2\frac{1}{2}$ " x $5\frac{1}{16}$ " to 6" x $\frac{5}{8}$ ", boat spikes $2\frac{1}{4}$ " x $\frac{1}{4}$ " to 12" x $\frac{3}{4}$ ", track bolts, machine bolts, nuts, rivets, etc. Annual cap., 250,000 kegs spikes, 70,000 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., 12,000 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, 450 tons brass castings for own use.

Iron Ore, Coal, Coke and Railroad Properties:

The Colorado Fuel & Iron Co. owns the Sunrise Mine in Laramie Co., Wyoming, and the Orient Mine in Saguache Co., Colo.; annual cap., 1,120,000 tons. It operates Kirchman Mine, Silver City, New Mexico, annual cap., 75,000 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 in Colorado. The annual capacity of the mines is about 4,500,000 tons. 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 Tercio, 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 Corpn., San Francisco, Calif. was acquired by United States Steel Products Co., a subsidiary of United States Steel Corpn., as of Feb. 1, 1930, see under United States Steel Products Co.

COLUMBIA TOOL STEEL CO., Lincoln Highway and State St., Chicago Heights, Ill.

Inc. 1904 in Illinois.

Arthur T. Clarage, P.; A. R. Waters, V. P.; L. B. Adams, A.; R. M. Sandberg, G. M.; C. B. Shoenberger, G. S.; at Chicago Heights. Alexander B. Peterson, Sec.; at Chicago, Ill. A. J. Scheid, T.; at Milwaukee, Wis.

Sales offices:

Chicago, Ill., 552-554 West Lake St.

Cincinnati, Ohio, 112 West Second St.

Cleveland, Ohio, 1231 West 9th St.

Detroit, Mich., 1718 Howard St.

Milwaukee, Wis., 109 Reed St.

Newark, N. J., 87 Poinier St.

Brands: Clarite, Maxite, Superdie, Double Special, Oildie, Buster Brand, Columbia Special, Columbia Extra.

Works at Chicago Heights: blt. 1904-05; f. o. May, 1905; 2 crucible fur., 60 pots; 4 Siemens gas prod.; installed 1 Pittsburgh Electromelt fur. (3-ton) in 1928; 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.); 6 steam hammers, 500 to 8,000-lb. 6 electric heat treating and annealing fur. in separate department, not used in connection with rolling mill.

Product: electric and crucible steel ingots, rolled and hammered carbon and alloy tool steels; annual cap., 8,820 tons ingots (4,000 tons electric, 4,820 tons crucible); alloy steel ingots

(tungsten, chrome, vanadium, cobalt); finished hot rolled product, 1,500 tons; forged products, 2,250 tons tool steel bars and blocks.

COMMERCIAL STEEL CASTING CO. (The), Marion, Ohio.

Inc. 1917 in Ohio. Subsidiary of The Osgood Co., Marion, Ohio. Frank D. Glosser, P.; M. C. McNeil, V. P., Sec. & T.; John Gallagher, G. S.; C. G. Heepke, G. S. M.; W. A. Griffith, P. A.

Sales offices:

Chicago, Ill., 1623 Conway Bldg.

Cincinnati, Ohio, W. W. Pettis Co., First Natl. Bank Bldg.

Cleveland, Ohio, W. R. McDonough & Co., 620 National Bldg.

New York, N. Y., The Maybar Co., 154 Nassau St.

Works at Marion, Ohio: blt. 1918; f. o. Sept. 1, 1918; 1 A. O. H. fur. (10-ton) fuel, oil.

Product: steel castings for own use and for sale, annual cap., 6,500 tons.

Commonwealth Steel Co., St. Louis, Mo. was acquired by General Steel Castings Corpn., July 30, 1929.

Connellsville Foundry, Machine & Steel Casting Co., Connellsville, Pa. Receivers appointed Feb., 1924, sold plant at Gibson Ave., Connellsville to The Lundy Co. Manufacture of steel castings discontinued and plant used by new owners for other purposes.

CONNOLLY STEEL CASTING CO., Clark Ave., Chelsea, Mass.

Inc. Oct. 29, 1910 in Massachusetts. Capital stock: com., par value \$100, auth. \$5,000, issued \$2,100.

Julia Connolly, P.; James Connolly, T., G. M., & P. A.; Archibald Munro, Sec. & G. S.

Works at Clark Ave., Chelsea: blt. 1900; 2 crucible fur., 12 pots; f. o. Oct. 29, 1910. Fuel, oil. Works leased, owned by Snow White Laundry, 70 Webster Ave., Chelsea.

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

Small steel castings, 1 oz. to 500-lb. for tools and shoe machinery.

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.

Works at Woodlawn, Birmingham, Ala.; 2 cont. gas-fired heat. fur.; semi-continuous hoop and cotton tie mill with 12" 4-st. cont. roughing, 10" 4-st. cont. strand, 10" 1-st. planishing, 10" 1-st. finishing; bar mill with 12" 3-h. 4-st. roughing, 9" 3-h. 2-st. finishing. Fabricating shop.

Product: hoops, light bands, cotton ties, reinforcing bars, angles, etc.; annual cap., 60,000 to 70,000 tons.

Consolidated Foundries, San Francisco, Calif., acquired Best Steel Casting Co. April 1, 1929, see Best Steel Casting Co. Consolidated Foundries also owns capital stock of Jewell Steel & Malleable Co. (air furnace castings), Pacific Malleable Castings Co., Western Malleable Castings Co., and California Steel Wheel Corpn.

CONSOLIDATED MINING & SMELTING CO. OF CANADA, Ltd. (The), Trail, B. C., Canada.

Company operates a steel foundry at Trail, B. C., Canada, for own use in smelting and refining plants.

Works at Trail, B. C.: 1 Greene 3-phase arc electric fur. (3-ton); 2 cupolas. Gray iron, semi-steel, brass and aluminum foundry for own use.

Product: electric steel castings for own use, annual cap., 3,000 tons; alloy steel castings (nickel, chrome).

CONTINENTAL CAN COMPANY, Inc., 100 East 42nd St., New York, N. Y.

Inc. Jan. 17, 1913 in New York. Capital stock: com., no par value, auth. 2,000,000 shares, issued 1,725,045 shares.

C. C. Conway, P.; F. A. Prah, V. P. (in charge of mfg.); J. F. Hartlieb, V. P.; O. C. Huffman, V. P.; I. W. England, V. P.; J. B. Jeffress, Jr., Sec. & T.; J. S. Snelham, C.; A. G. Mead, P. A.; at New York. S. J. Steele, V. P. (in charge of sales); at 111 West Washington St., Chicago, Ill.

The company operates 35 plants for the manufacture of tin cans, distributed in 24 cities of the United States and Cuba, including three plants for the manufacture of can making machinery and a tinplate plant for own use at Clearing, Ill., described below. The company also owns The Standard Tin Plate Co., see under that head.

Clearing Tin House, Clearing, Ill.: tinplates first made June 27, 1927; 14 tinning sets for coke tinplates. Fuel, gas.

Product: coke tinplates for own use, annual cap., 1,250,000 base boxes.

CONTINENTAL STEEL CORPN., Kokomo, Ind.

Inc. June 21, 1927 in Indiana. Capital stock: com., no par value, auth. 300,000 shares, issued 171,511 shares; pref. 7% cum., auth. \$5,000,000, issued \$3,107,100; bonds \$1,955,000. The Superior Sheet Steel Co., Chapman Price Steel Co. and Kokomo Steel & Wire Co. were merged in the Continental Steel Corpn., July 1, 1927.

J. E. Fredrick, Ch.; H. A. Roemer, P. & G. M.; D. A. Williams, V. P. & G. S.; B. B. McCandliss, V. P.; H. A. Taubensee, V. P. & G. S. M.; S. S. Shambaugh, V. P.; A. A. Charles, V. P.; U. K. Becker, Sec.; F. J. Schlatter, C.; G. L. Rathel, P. A.; at Kokomo. Niles Chapman, T.; at Indianapolis, Ind.

Branch sales offices and sales agents:

Baltimore, Md., John K. Wilson Co., 807 Whitaker Bldg.
 Chicago, Ill., Taubensee & Richards, 111 West Washington St.
 Chicago, Ill., H. L. Green & Co., Ogden Bldg.
 Cleveland, Ohio, Frank H. Grace & Co., 1740 East 12th St.
 Detroit, Mich., A. A. Griffiths, Dime Bank Bldg.
 Kansas City, Mo., B. B. Luck, Commerce Bldg.
 Los Angeles, Calif., Frank Pittman, 321 West 3d St.
 Minneapolis, Minn., A. E. Small, 401 Palace Bldg.
 New Orleans, La., J. Wilton Jones, Inc.
 New York, N. Y., Bernard Eberlin, 50 Church St.
 New York, N. Y., D. G. Baldwin & Co., 45 Murray St.
 Philadelphia, Pa., Park & Williams, Real Estate Trust Bldg.
 St. Louis, Mo., E. R. Hensel, Planters Bldg.
 San Francisco, Calif., O. A. & S. A. Berger, Mills Bldg.
 Waco, Texas, R. I. Williams, 512 Liberty Bank Bldg.

Brands: Galvannealed, Super Metal, Superior (coated sheets); Pioneer, Champion, Victory, Liberty (woven wire fencing); Pioneer, Champion, Kokomo Perfection, Kokomo Perfect, Victory (barbed wire); Pioneer, Continental (nails); Pioneer (gates).

Product: steel ingots, blooms, billets and sheet bars; black sheets, wire rods; black sheets for galvanizing, stamping, flat and corrugated sheets; blue annealed and galvanized sheets; long terne plates; plain, galvanized and barbed wire, wire fencing, merchant wire, wire nails.

Works at Kokomo, Ind.: blt. 1900; 5 B. O. H. fur. (100-ton), fuel, oil; blt. 1913-14, f. o. Feb. 6, 1914; 6 semi-automatic gas prod.; four 4-hole soaking pits, fuel, prod. gas; 1 cont. oil-fired billet heat. fur.; 34" 2-h. 1-st. reversing blooming mill; 19" 2-h. 6-st. cont. sheet bar and billet mill; Garrett rod mill with 14-st., first 3-st. continuous; 6 sheet and 6 pair fur.; 6 hot black sheet mills (29" x 38" to 56"); 2 stands cold rolls (26" x 54"); 6 box annealing fur.; 1 Aetna Standard pickling mach.; 3 galvanizing pots; 209 wire drawing blocks for wire $\frac{1}{4}$ " to 20 gauge; 127 wire nail mach.; 32 barbed wire mach.; 33 wire fence mach.; 4 galvanizing pans. Roll black sheets 10 to 26 gauge, up to 48" x 120" and 10 to 30 gauge, 36" x 144". (Kokomo Steel & Wire Co. to July 1, 1927). Product: steel ingots, annual cap., 250,000 tons, blooms, billets and sheet bars, 225,000 tons; finished hot rolled products, 170,000 tons including 50,000 tons black sheets, 120,000 tons wire rods; galvanized sheets, 40,000 tons; blue annealed sheets, 1,500 tons; plain wire 120,000 net tons, galvanized wire 60,000 net tons, barbed wire 18,000 net tons, wire fencing 30,000 net tons, merchant wire 12,000 net tons, wire nails 1,000,000 kegs.

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 50"); 5

stands cold rolls (26" x 54"); 4 double box annealing fur.; 2 Plunger pickling mach.; 5 galvanizing pots; 1 long terne pot. Roll black sheets 10 to 27 gauge, up to 42" x 120" and 10 to 30 gauge, 36" x 144". (The Superior Sheet Steel Co. to July 1, 1927). Product: black sheets, annual cap., 75,000 tons; galvanized sheets, 60,000 tons; blue annealed sheets, 2,000 tons; long terne plate, 10,000 tons.

Works at Indianapolis, Ind.: 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 (28" x 38" and 28" x 44"); 2 cold roll stands (24" x 48") in hot mill train; 5 box annealing fur.; 2 Plunger pickling mach.; 4 galvanizing pots. Roll black sheets 12 to 30 gauge, to 38" wide and 144" long. (Chapman Price Steel Co. to July 1, 1927). Product: black sheets, annual cap., 45,000 tons; galvanized sheets, 48,000 tons.

Total annual cap., 250,000 tons steel ingots, 225,000 tons blooms, billets and sheet bars; finished hot rolled products, 290,000 tons including 170,000 tons black sheets, 120,000 tons wire rods: 148,000 tons galvanized sheets; 3,500 tons blue annealed sheets; 10,000 tons long terne plate; 120,000 net tons plain wire, 60,000 net tons galvanized wire, 18,000 net tons barbed wire, 30,000 net tons wire fencing, 12,000 net tons merchant wire, 1,000,000 kegs wire nails.

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.; N. A. Evers, G. S.; William Bauschbach, G. S. M.; Carl Koch, P. A.

Company manufactures tube well supplies, pumps, pump rods, working barrels and well tools.

Works at Lawrenceburg, Ind.: 2 crucible steel fur., 6 pots, fuel, oil; 1 cupola; 2 stands of 2 high cold rolls. Semi-steel and bronze foundry; annual cap., 600 tons semi-steel and 125 tons bronze castings for own use.

Product: crucible steel castings for own use, annual cap., 50 tons; cold rolled iron pump rods for own use, 250 tons.

COPLAN STEEL CORPORATION, Inc., 30 Church St., New York, 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.; T. F. Wilson, Sec. & T.

Sales office: New York, N. Y., T. F. Wilson, 30 Church St.

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.

COPPERWELD STEEL CO., Glassport, Pa.

Inc. May 1914 in Pennsylvania. Capital stock: com., no par value, auth. 300,000 shares, issued 216,422 shares.

S. E. Bramer, P. & G. M.; R. J. Frank, V. P.; W. K. Frank, 2 V. P.; Stanton Hertz, G. S. M.; M. M. Siegel, P. A.; at Glassport. I. A. Simon, V. P.; F. R. S. Kaplan, Sec. & T.; at Pittsburgh, Pa.

Sales offices:

Birmingham, Ala., American Traders Bank Bldg.

Chicago, Ill., 129 South Jefferson St.

Dallas, Texas, 823 South Edgefield St.

New York, N. Y., 30 Church St.

Brand: Aristos Copperweld (wire, strand and ground rods).

Works at Rankin, Pa.: abandoned and equipment for rolling copperweld rods removed in 1927 to plant of former Kelly Axle & Tool Co. at Glassport, Pa.

Works at Glassport: blt. 1927-28; f. o. March, 1928; 2 cont. natural gas-fired heat. fur.; 24" 3-h. 1-st. blooming; 14" 3-h. 3-st., 10" 2-h. 5-st. and 8" 2-h. 2-st. merchant; concrete lead lined hand pickling tank. Wire mill: 70 wire drawing blocks; 1 barbed wire mach.; 1 wire fence mach.

Product: blooms and billets, annual cap., 30,000 tons; finished hot rolled products, 30,000 tons wire rods; 10,000 net tons plain wire ($\frac{3}{8}$ " to .045"), 50 net tons barbed wire, 500 net tons wire fencing.

Cordova Mines, Ltd., Toronto, Ont., Canada. Works at Cordova Mines, Ont., for manufacture of ferro-chrome, last operated in 1918, are abandoned.

CORRIGAN, McKINNEY STEEL CO. (The), 3100 East 45th St., Cleveland, Ohio.

Inc. May 6, 1901 in Ohio.

John H. Watson, Jr., P.; H. T. Harrison, V. P. & G. M. Manufacture; J. S. McKesson, V. P. & G. S. M.; Donald B. Gillies, V. P. & G. M. Mining; E. G. Resch, Sec. & T.; T. F. Cowan, A.; G. P. Lenz, P. A.

River Blast Furnaces and Steel Plant, Cleveland, Ohio:

River Furnaces: 4 stacks; No. 1, 90' x 22', blt. 1909-10, rebt. 1924, relined 1927; No. 2, 90' x 22', blt. 1910-11, rebt. 1925, relined 1928; No. 3, 90' x 22', blt. 1915-16, relined 1925; No. 4, 90' x 22', blt. 1915-16, relined 1926; 16 McClure 3-pass center comb. stoves, 95' x 22'; 10 steam blowing eng. (3 Mesta, 4 Tod, 3 Wisconsin), 230,000 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, oil, tar and coke oven gas; 30 Hughes gas producers; one 1,000-ton hot metal mixer; seven 4-hole soaking pits; under construction, 1 battery of 7-hole pits; 1 cont. prod. gas-fired heat. fur.; 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.); 22½" 2-h. 4-st. continuous sheet bar mill; 18" 2-h. 8-st. continuous sheet bar mill (6-st. vert., 2-st. horiz.); Morgan continuous merchant bar and strip mill with 14" 2-h. 4-st. roughing, 12" 2-h. 4-st. roughing, 10" 2-h. 4-st. finishing and 10" 2-h. 2-st. strip; Morgan merchant mill with 18" 2-h. 4-st. roughing, 16" 2-h. 4-st. intermediate roughing, and 12" 2-h. 4-st. finishing; under construction 32" 2-h. 1-st. reversing blooming mill; 1 hand pickling tank. Product: steel ingots, annual cap., 1,000,000 tons, steel castings for own use, 1,700 tons; semi-finished rolled products 733,000 tons including 29,000 tons slabs, 320,000 tons billets, 384,000 tons sheet bars; finished rolled products, 268,000 tons merchant and concrete bars.

Genesee Furnace, Charlotte, N. Y.: 1 stack, last operated Apr. 16, 1927, was dismantled in that year.

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); 4 steam blowing eng. (1 Macbeth, 3 Tod) 55,700 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: 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. to Jan. 10, 1926. Furnace reverted to owner.

Total pig iron capacity (6 furnaces) 1,240,000 tons.

Company owns and leases iron ore mines on Gogebic, Mesabi and Menominee Ranges, annual cap., 2,500,000 tons: coal mines at Wolfpit and Greasy Creek, Ky. (idle).

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.; C. E. Weaver, G. S.; at Johnson City.

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 16' 10"; 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 County, Va. 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. \$75,000,000, issued \$58,695,625; pref. 7% cum. auth. \$15,000,000, issued \$14,962,000.

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.; D. G. Park, V. P. & P. A.; C. D. Little, V. P.; R. B. Stiles, V. P.; H. W. Seymour, V. P. & G. S. M.; H. P. Bishop, Sec.; W. Evensen, T.; H. S. Campbell, A.; V. E. Flodin, G. S.; at Chicago. L. B. Peeples, V. P.; at 321 East Third St., Los Angeles, Calif.

Company operates plants at Chicago, Bridgeport, Birmingham, Chattanooga, North Tonawanda, Trenton, Montreal, London, England and Paris, France, for manufacture of valves and fittings, and plumbing materials.

Chicago Works, Steel Foundry: blt. 1906-07; f. o. Jan. 2, 1907; 2 Zenzes converters (3-ton) dismantled 1927; 2 Heroult electric fur. (one 3-ton, one 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., 8,000 tons electric steel castings.

Bridgeport Works, Steel Foundry, Bridgeport, Conn.: blt. 1919; f. o. Mar., 1919; 1 Zenzes converter (2-ton) abandoned Jan. 1, 1927.

CRUCIBLE STEEL CO. OF AMERICA, 17 East 42nd St., New York, N. Y.

Inc. July 21, 1900 in New Jersey. Capital stock: com., par values \$100, auth. \$75,000,000, issued \$55,000,000; pref. 7% cum. auth. and issued \$25,000,000. H. S. Wilkinson, Ch.; F. B. Hufnagel, P.; J. M. McComb, V. P.; A. T. Galbraith, V. P. & G. S. M.; John A. Mathews, V. P.; George E. Shaw, Sec. & T.; H. L. Gellinger, A.; R. H. Filsinger, P. A.; at New York. R. M. Keeney, V. P.; at Oliver Bldg., Pittsburgh, Pa.

Sales offices:

Atlanta, Ga., 381 Whitehall St.
 Baltimore, Md., 8 South Frederick St.
 Barcelona, Spain.
 Basle, Switzerland.
 Boston, Mass., 540 Atlantic Ave.
 Buffalo, N. Y., 69 Carroll St.
 Chicago, Ill., 650 Washington Blvd.
 Cincinnati, Ohio, 209 West Third St.
 Cleveland, Ohio, 1258 East 55th St.
 Copenhagen, Denmark.
 Denver, Colo., 2635 Walnut St.
 Detroit, Mich., 1723 Lafayette Blvd. West.
 Hartford, Conn., 417 Capitol Bldg.
 Houston, Texas, 804 Esperson Bldg.
 Indianapolis, Ind., 437 South Illinois St.
 Kansas City, Mo., 901 Commerce Bldg.
 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., Clark & Dominick Sts.
 Philadelphia, Pa., 1224 Callowhill St.
 Pittsburgh, Pa., Oliver Bldg.
 Pittsburgh, Pa., Ridge & Belmont Aves.
 Portland, Ore., 527 Kearney St.
 St. Paul, Minn., Endicott Bldg.
 Salt Lake City, Utah, 328 West 2nd St., South.
 San Francisco, Calif., 536 Folsom St.
 Seattle, Wash., 2755 First Ave., South.
 Springfield, Mass., 118 Liberty St.
 Syracuse, N. Y., Fayette & Magnolia Sts.
 Toronto, Canada, 163 Richmond St., West.

Crucible Steel Company of America owns the entire capital stock of Pittsburgh Crucible Steel Company, Halcomb Steel Company and Crucible Fuel Company, and large stock interest in the Snyder Mining Company, Krupp Nirosa Company and American Stainless Steel Company. It is also licensed by Chemical Foundation Company, Cold Metal Process Company and Nitralloy Corporation. 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: helical and elliptical springs for steam and electric railroads, and industrial uses, annual cap., 18,000 tons.

Atha Works, Harrison, N. J.: blt. 1888-89; 2 A. O. H. fur. (one 50-ton, one 40-ton) fuel, gas and oil; 4 Heroult electric fur.

(three 6-ton, one 3-ton); 4 crucible steel fur. dismantled in 1926; 26 heat. fur. (one 1-d., five 2-d., one 3-d., fourteen 4-d., one cont., four other), fuel, coal and oil; 16" 3-h. 6-st. bar; bar mill with 16" 3-h. 1-st. and 10" 3-h. 7-st.; bar mill with 14" 3-h. 2-st. and 9" 3-h. 7-st.; 12" 3-h. 5-st. bar; rod mill with 20" 2-h. 1-st., 12" 2-h. 3-st. and 9" 2-h. 7-st.; 12-car annealing fur.; 9 hand pickling tanks; 23 steam hammers (750-lb. to 10-ton); 5 steam hydraulic presses; 10 hydraulic presses (2,000-ton). Product: steel ingots, annual cap., 86,000 tons (50,000 tons A. O. H., 36,000 tons electric); alloy steel ingots; hot rolled products, 82,000 tons; forged products, 10,000 tons; non-corrosive and heat resisting steels; tool, machinery, rifle and gun steels; wire rods, die blocks and forgings; projectiles, torpedoes, periscope tubes and gun forgings.

Park Works, 30th and Smallman Sts., Pittsburgh, Pa.: blt. 1862; 4 B. O. H. fur. (50-ton) fuel, oil; 2 Heroult electric fur. (8-ton); 7 crucible steel fur. (300 pots total) dismantled in 1927; 6 Morgan gas prod., 2 prod. gas-fired soaking pits (one 4-hole, one 5-hole); 20 heat. fur. (one 1-d., five 2-d., five 3-d., three 4-d., four 5-d., two 6-d.), fuel, coal, oil and gas; 2 coal-fired hammer fires: 34" 2-h. 1-st. blooming; 24" 3-h. 3-st. and 14" 3-h. 5-st. cogging and finishing mills; 16" 3-h. 1-st. and 14" 3-h. 2-st. cogging mills; 10" 3-h. 6-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 $\frac{1}{2}$ " thick or 48" wide x 2" to 3" wide x $\frac{1}{4}$ "; 3 sheet and 2 pair fur.; 4 2-h. hot sheet mills (one 26" x 37", one 26" x 40", one 26" x 44", one 26" x 56"): 7 box annealing fur.; 19 hand pickling tanks; 5 steam hammers (750-lb. to 5-ton). Product: steel ingots, annual cap., 124,000 tons (100,000 B. O. H., 24,000 electric); alloy steel ingots (nickel, chrome, tungsten, vanadium, molybdenum, copper); slabs, blooms and billets, 120,000 tons; hot rolled products, 105,650 tons, including 75,000 tons bars, 23,650 tons sheared plates, 7,000 tons sheets; forged products, 6,000 tons; carbon, alloy and high speed tool steels, corrosion and heat resisting steels, bit and jar steels, solid and hollow mining drill, machinery, cutlery, spring, saw, file, and axe steels, safe and jail steels and forgings.

Cayuga Works, Auburn, N. Y. are being dismantled in 1929-30.

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, nat. and prod. gas; 8 Swindell gas producers; 61 heat. fur. (twenty-eight 1-d., five 2-d., eighteen 3-d., eight 4-d., one 5-d., one 6-d.), fuel, coal, coke, oil and gas; 18" 3-h. 4-st. band; 14" 3-h. 5-st., 12" 3-h. 6-st., 9" 3-h. 5-st., 9" 3-h. 4-st. and 8" 3-h. 5-st. bar mills; cold mill with 4-st. 2-h. (2-st. each train); 5 sheet fur.; 2 hot sheet mills (16" x 36"), roll black sheets 28 to 9 guage; 4 box annealing

fur.; 5 picking tanks; 21 steam hammers (300-lb. to 12,000-lb.). Product: steel ingots, annual cap., 63,000 tons (45,000 tons B. O. H., 18,000 tons crucible); alloy steel ingots; hot rolled products, 15,000 tons, including 13,500 tons bars, 1,500 tons black sheets; cold rolled spring and shank steel, 1,200 tons; forged products, 10,000 tons; hammered and rolled tool steels for tools, drills and machinery; sheets and forgings.

La Belle Works, Ridge Ave. & Rebecca St., North Side, Pittsburgh: blt. 1863; 2 A. O. H. fur. (15-ton) fuel nat. gas and oil; 3 crucible steel fur. (126 pots total), fuel, nat. gas, 2 gas producers: 26 heat. fur. (three 1-d., seven 2-d., thirteen 3-d., three 4-d.), fuel, gas and coal; 24" 2-h. 4-st., 20" 2-h. 4-st. and 10" 3-h. 6-st. bar or plate mills; 16" 2-h. 4-st. bar; 14" 3-h. 5-st., 10" 3-h. 4-st. bar and 9" 3-h. 4-st. guide mills; 4 box annealing fur.; 9 hand pickling tanks; 6 steam hammers (800-lb. to 7-ton). Product: steel ingots, annual cap., 24,750 tons (15,840 tons A. O. H., 8,910 tons crucible): alloy steel ingots (nickel, chrome, vanadium, tungsten, cobalt, molybdenum, copper); blooms and billets, 9,428 tons; hot rolled products, 26,675 tons, including 6,780 tons bars, 18,200 tons plates, 1,695 tons hot rolled strip steel; forged products, 1,255 tons; merchant steel, tool and machinery steel, cutlery steel, alloy steels in hot rolled and hammered bars, forged agricultural implement steel.

Norwalk Works, Norwalk, Ohio, abandoned in 1926.

Sanderson Works, Syracuse, N. Y.: blt. 1876; 2 Heroult electric fur. (3-ton); 4 crucible steel fur. dismantled in 1928; 16 heat. fur. (one 1-d., eight 2-d., six 3-d., one 4-d.) fuel, gas and coal; 12" 3-h. 5-st. cogging and finishing; 10" 3-h. 4-st. and 10" 2-h. 3-st., and 9" 3-h. 6-st. finishing bar mills; 9 annealing fur.; 21 hand pickling tanks; 8 steam hammers (600-lb. to 8,000-lb.): 96 wire drawing blocks for wire 35/64" to .013". Product: electric steel ingots, annual cap., 15,000 tons; alloy steel ingots (tungsten, chrome, molybdenum, vanadium, cobalt); hot rolled products, 10,714 tons, including 1,339 tons wire rods, 9,375 tons bars; forged products, 3,600 tons; wire and drawn products, 1,200 net tons; hammered and rolled tool steels, drill rods, etc. in carbon, alloy and high speed steels: fine wire products.

Singer-Nimick Works, West Carson St., Pittsburgh, Pa. abandoned in 1925.

Spaulding & Jennings Works, Jersey City, N. J. are abandoned. Total annual capacity: steel ingots, 312,750 tons (145,000 tons B. O. H., 65,840 tons A. O. H., 75,000 tons electric, 26,910 tons crucible): hot rolled products, 240,039 tons; forgings, 30,855 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.; 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. (1½-ton).

Product: electric steel castings for sale; annual cap., 3,000 tons. Alloy steel castings (nickel, chrome, vanadium). Specialty, rolling mill plugs, piercing points and mill guides for seamless tube mills.

CRUCIBLE STEEL CASTING CO., Union Ave. and Penna. Railroad, 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.; J. J. Walsch, G. S.; H. K. Pollard, G. S. M.

Works at Lansdowne: blt. 1905; first electric steel, Jan. 1, 1921; 1 Heroult electric fur. (2½-ton).

Product: electric steel castings for sale; annual cap., 3,300 tons. Alloy steel castings (vanadium, chrome, nickel, molybdenum). Carbon and alloy steel castings from 1-lb. to 1,000-lb.

CRUCIBLE STEEL CASTING CO., 15th and Oklahoma Aves., Milwaukee, Wis.

Inc. Sept. 24, 1898 in Wisconsin. Capital stock: com., par value \$100, auth. \$150,000, issued \$117,400.

A. C. Lange, P. & G. M.; Walter W. Lange, V. P.; F. A. Lange, Jr., Sec. & P. A.; Allen J. Hoffmann, T.

Sales office: R. A. Braunberger, 130 North Wells St., Chicago, Ill.

Works at 612 Clinton St., Milwaukee, Wis.: blt. 1898, abandoned May 1926 and Moore Lectromelt electric fur. (1½-ton) for manufacture of steel castings was removed to new works, 15th and Oklahoma Aves.

Works at 15th and Oklahoma Aves., Milwaukee, Wis.: blt. 1925-26, f. o. June 1, 1926; 2 Moore Lectromelt electric fur. (1½-ton).

Product: small and medium sized steel castings to 5,000-lb. for sale, annual cap., 3,700 tons. Alloy steel castings (nickel, chrome).

Cumberland Coal & Iron Co., Dayton, Tenn. owns the properties of the former Dayton Coal, Iron & Railway Co. at Dayton, Tenn. Blast furnaces at Dayton, idle for several years, may be regarded as abandoned.

CUMMING (J. W.) MANUFACTURING CO., Ltd., New Glasgow, N. S., Canada.

Inc. Oct. 1920 in Nova Scotia. Capital stock: com., par value \$100, auth. \$350,000, issued \$250,000; pref. 8% cum. auth. \$350,000, issued \$322,100.

James T. Cumming, P. & G. M.; H. Scott Cameron, V. P. & G. S.; A. S. Fraser, Sec. & T.; at New Glasgow. George H. Holder, A.; at Halifax, N. S., Canada.

Works at Glasgow St., New Glasgow: steel foundry; 1 Heroult electric fur. (4-ton). Brass foundry with 3 crucible fur.; annual cap., 300 tons brass castings for sale.

Product: steel castings for sale, annual cap., 3,000 tons; railway and car builders' castings, mine car wheels, anchors, and misc. castings.

Curtin Forge Co., Curtin, Pa. Works at Curtin (leased; owned by H. L. Curtin) for manufacture of charcoal blooms and charcoal iron skelp, last operated in 1921, are abandoned.

CYCLONE FENCE CO., North Chicago, Ill.

Inc. July 19, 1906 in Illinois. Subsidiary of United States Steel Corporation.

J. S. Keefe, P.; A. F. Allen, Sec.; A. H. Garry, A.; at Cleveland, Ohio. J. H. Kinney, V. P. & G. M.; W. F. Kirkham, T.; H. G. Chapman, G. S. A.; W. W. Bilharz, G. S.; at North Chicago.

Sales offices:

Atlanta, Ga., J. H. Laughlin, 101 Marietta St.

Cleveland, Ohio, S. W. Burr, Hamilton Ave. & Marquette Road.

Detroit, Mich., C. A. Tenhoopen, 221 Vinewood Ave.

Fort Worth, Texas, E. Kyndberg, 1316 East Front St.

Newark, N. J., R. E. Pinning, 796-808 Frelinghuysen Ave.

North Chicago, Ill., H. G. Chapman.

Product: chain link and lawn fencing; iron fencing; fence gates; wire baskets; wire partition work; chain link wire belting; wire screen cloth.

Cleveland Works, Cleveland, Ohio: blt. 1894; 6 chain link weaving mach.; 23 lawn fence mach.; 1 galvanizing pan. Gate dept.

Product: chain link fabric, lawn fence, gates.

Greensburg Works, Greensburg, Ind.: blt. 1903; 134 looms and accessories; 2 electro-galvanizing units. Product: painted and galvanized wire screen cloth.

Tecumseh Works, Tecumseh, Mich.; blt. 1903; 131 looms and accessories; 1 electro-galvanizing unit. Product: painted and galvanized wire screen cloth.

Waukegan Works, North Chicago, Ill.: blt. 1912; 7 chain link weaving mach.; 20 lawn fence mach.; 3 chain link belting mach.; 1 basket weaving mach.; 2 wire partition mach.; 3 hot galvanizing pans; 1 electric-galvanizing unit. One iron fence and one gate dept. Product: chain link fabric, lawn fence, iron fence, wire baskets, wire partition work, chain link belting.

CYCLOPS STEEL CO., Titusville, Pa.

Inc. June 2, 1926 in Pennsylvania. Capital stock: com., no par value, auth. 20,000 shares, issued 1,820 shares; pref. 7% cum. auth. \$500,000, issued \$200,000.

Walter H. Baker, P. & T.; Frank Garratt, V. P.; E. L. Stockdale, Sec.; at Bridgeville, Pa. Charles T. Evans, V. P. & G. M.; at Titusville. William S. Jones, V. P.; at 10 East 40th St., New York, N. Y.

Sales offices:

Chicago, Ill., 172 North May St.

Cleveland, Ohio, 2568 Overlook Road.

Detroit, Mich., 5185-5191 Loraine Ave.

Fayetteville, N. Y., Fayetteville Road.

Indianapolis, Ind., 233 Buckingham Drive.

Llanerch, Pa., 200 Park Road.

New Haven, Conn., P. O. Box 103, Westville Sta.

New York, N. Y., 10 East 40th St.

Norfolk, Va.

Pittsburgh, Pa., 604 Chamber of Commerce Bldg.

Richmond, Va., 411 Roseneath Road.

Toronto, Ont., Canada.

Washington, D. C., 1113 17th St., N. W.

Brands: B-6 (high speed); B-7 and B-8 (cobalt high speed); Ajax and K (hot work); Uniloy 1409, 1809, 1430 and 1860 (stainless); Cyclops 17, Uniloy 18-8, 21-12, 2825 (non-corrosive and heat resisting); Wando (oil hardening); Ultradie (non-deforming); Apollo, Mercury, Titus, Alco Chisel, C. W. Chisel, Carbon, Draco (tool steels).

Works at Titusville: blt. 1879, rebt. 1884; 4 crucible fur. (114 pots total), fuel, prod. gas, 2 Swindell gas producers; 1 Moore Lectromelt electric fur. (1,000-lb.); 13 coal-fired heat. fur. (four 1-d., nine 2-d.); 12" 3-h. 6-st. bar; 10" 3-h. 6-st. bar; 4 box annealing fur.; 4 hand pickling tanks; 8 steam hammers (600-lb. to 12,000-lb.). (Cyclops Steel Co. of New York to Sept. 1, 1926).

Product: steel ingots and castings, annual cap., 9,800 tons (9,000 tons crucible ingots, 800 tons electric castings); carbon, alloy and high speed tool steels, annual cap., 7,000 tons rolled products and 2,500 tons forged products; heat and corrosion resisting electric steel castings.

Cyclops Steel Co. of New York, Titusville, Pa.

Inc. March, 1916 in New York. C. S. Newhall and D. J. McLaughlin were appointed receivers Aug. 7, 1924. The plant at Titusville was leased to Charles T. Evans on Feb. 1, 1926. Plant was sold under foreclosure proceedings to bondholders June 14, 1926. Lease was canceled Sept. 1, 1926 and plant was acquired by Cyclops Steel Co. of Pennsylvania.

DAMASCUS STEEL CASTING CO., New Brighton, Pa.

Inc. Sept. 28, 1923 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$300,000.

C. A. Capper, P.; E. M. Capper, V. P.; W. F. Quivey, Sec. & P. A.; I. C. Anderson, T. & G. M.; H. V. Arnot, G. S.; T. G. Bateman, G. S. M.

Works at New Brighton, Pa.: blt. 1900-01; f. o. Feb. 5, 1901; first electric steel Feb., 1917; 1 Heroult electric fur. (2-ton). Product: manganese steel castings; annual cap., 1,500 tons.

Works at Hammond, Ind. were sold Feb. 19, 1930 to B. A. Zikmund, Wauwatosa, Wis. On March 8, 1930, the Calumet Electric Casteel Co. was organized to take over and operate the works.

Danville Iron & Steel Corporation, Danville, Pa. completed construction of a rolling mill at Danville in 1926 and plant was destroyed by fire in that year. The plant was subsequently converted into a gray iron, brass and aluminum foundry.

Danville Structural Steel Co., Danville, Pa. was acquired by Bethlehem Steel Corp. Feb. 1, 1930. Works are now known as Danville Division of Steelton Plant, Bethlehem Steel Company.

Danville Structural Tubing Co., Danville, Pa. was merged March 31, 1927 with the Pennsylvania Brake Beam Co. and the Penn State Steel Co. in the Danville Structural Steel Co. The latter company was acquired by the Bethlehem Steel Corp. Feb. 1, 1930. Works are now known as Danville Division of Steelton Plant, Bethlehem Steel Company.

Davidson Mfg. Co., Ltd. (The Thomas), Montreal, P. Q., Canada. Steel, gray iron and brass foundry at Turcot (Lachine Canal), P. Q., was acquired by Ayrmont Properties, Ltd. in Dec., 1927.

Davis Brothers, Inc., Philadelphia, Pa. Rolling mill at 4250 Wissahickon Ave., Philadelphia, for manufacture of spike rods, merchant and concrete bars, was abandoned in 1928. Company continues manufacturing railroad, mine, boat and wharf spikes.

DAVISON COKE & IRON CO., 2119 Oliver Bldg., Pittsburgh, Pa.

Inc. Aug. 28, 1928 in Pennsylvania. Capital stock: com., no par value, auth. and issued 100,000 shares; pref. 6% cum. auth. and issued \$6,500,000; bonds \$4,000,000.

George S. Davison, P.; Allen S. Davison, V. P. & T.; Albert P. Meyer, V. P. & Sec.; A. M. Kennedy, G. M. (works); George D. Buckwell, G. S. M.

Brands: Neville, Cherry Valley, Sharpsville, Claire (pig iron).

Davison Coke & Iron Co. acquired Sept. 12, 1928, Sharpsville Furnace Co. and Neville Furnace at Neville Island, Pa. from American Steel & Wire Co. (formerly operated under lease by Carnegie Steel Co.). Davison Coke & Iron Co. also leased May 1, 1929, Cherry Valley Plant of The Hanna Furnace Co. and on Aug. 1, 1929, leased Claire Furnace of Reliance Coke & Furnace Co.

Sharpsville Furnace, Sharpsville, Pa.: 1 stack; 80' x 19', blt. 1847, last rebt. 1922-23, relined 1927; four 2-pass side-comb. stoves, 80' x 20'; 3 steam blowing eng. (45,000 cfm.) 25 lbs. rated pressure; 5 Rust water-tube boilers, 2,100 H. P.; 1 Slag Rock Machine Co. single-strand pig casting mach. By-product coke from own plant at Neville Island, Pa.; Lake ore. (The Sharpsville Furnace Co. to Sept. 12, 1928). Product: basic, malleable and foundry pig iron, annual cap., 150,000 tons.

Claire Furnace, Sharpsville, Pa. (leased; owned by Reliance Coke & Furnace Co.): 1 stack; 86' 3" x 20' 9", blt. 1869, rebt. 1920-21, relined 1925; 3 Brassert 2-pass side-comb. stoves, 100' x 20'; 3 steam blowing eng. (60,000 cfm.) 25 lbs. rated pressure; 5 Erie City water-tube boilers, 2,300 H. P.; 1 Heyl & Patterson single-strand pig casting mach. By-product coke from own plant at Neville Island, Pa.; Lake ore. Product: basic, bessemer, malleable and foundry pig iron, annual cap., 200,000 tons.

Cherry Valley Furnace, Leetonia, Ohio (leased; owned by The Hannah Furnace Co.); 1 stack, 81' 6" x 20' 7", rebt. 1924, relined 1929; 4 McClure 3-pass stoves, 80' x 21'; 3 steam blowing eng. (60,000 cfm.) 25 lbs. rated pressure; 6 water-tube boilers, 2,466 H. P.; 1 Pittsburgh Coal Washer Co. single-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 19,800 tons. By-product coke from own plant at Neville Island, Pa.; Lake ore. Product: basic and foundry pig iron, annual cap., 164,000 tons.

Neville Furnace, Neville Island, Allegheny County, Pa.: 1 stack; 100' x 21', blt. 1900-01, relined 1925; four 2-pass side-comb. stoves, 100' x 22'; 2 turbo-blowers (120,000 cfm.) 30 lbs. rated pressure; 4 Sterling water-tube boilers, 3,400 H. P. serve also power house, cement plant and coke plant; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach.; 1 slag granulating pit, annual cap., 120,000 tons. By-product coke from local plant: Lake ore. (formerly owned by American Steel & Wire Co. to Sept. 12, 1928; operated under lease by Carnegie Steel Co. to Apr. 1, 1928). Product: basic and foundry pig iron, annual cap., 180,000 tons.

Total annual cap., 694,000 tons basic, bessemer, malleable and foundry pig iron.

The company owns and operates by-product coke plant at Neville Island, Pa., consisting of 70 Becker by-product ovens, annual cap., 600,000 net tons coke; Koppers benzol plant, annual cap., 2,000,000 gals. light oil. The company also has a beehive coke plant at Leetonia, Ohio (leased; owned by The Hanna Furnace Co.) consisting of 203 beehive coke ovens, annual cap., 146,000 net tons coke. Plant for manufacture of Portland cement at Neville Island, annual capacity, 1,250,000 barrels.

Dayton Malleable Iron Co. (The), Dayton, Ohio.

Company operates plants at Dayton, Canton and Ironton, Ohio for manufacture of malleable iron and gray iron castings. Steel Foundry at Canton (one 2-ton Heroult electric fur.) has not been operated for manufacture of steel castings since 1922. Electric furnace at Dayton Plant (2½-ton) is still in plant but not used for manufacture of steel castings.

DAYTON STEEL FOUNDRY CO. (The), Dayton, Ohio.

Inc. Sept. 30, 1909 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$417,600; pref. auth. \$250,000, none issued.

George Walther, P. & G. S. M.; Jacob Walther, V. P. & G. M.; W. A. Pierce, Sec. & T.; J. A. Graham, P. A.

Brand: Dayton (steel wheels).

Works at Dayton: blt. 1905, f. o. Nov., 1905; 1 side-blow converter (4,000-lb.) abandoned 1926; 1 Snyder electric fur. (3-ton) abandoned and partially dismantled, idle since 1927; 2 Moore electric fur. (5-ton) in use.

Product: electric steel castings for sale, annual cap., 9,000 tons; steel wheels for motor trucks, busses and trailers.

Deemer, S. S., New Castle, Delaware. Works at New Castle for manufacture of steel castings, dismantled in 1928. Site sold and converted into a chemical plant.

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.; Daniel C. Eagan, S. M.; J. H. Speicher, A. T.; Wm. W. Swayze, S.; 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 offices:

Baltimore, Md., Levering Bros., 200 Key Highway.

New York, N. Y., Hooper-Byrne Co., 39 Cortland St.

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 for sale; annual cap., 3,000 tons; alloy steel castings; 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; 2 cupolas. Fuel, coke and oil.

Product: steel castings for own use, annual cap., 200 tons; gray iron castings, 2,000 tons; brass castings, 175 tons.

Delaware, Lackawanna & Western Railroad Co., Scranton, Pa. Scrap reclaiming rolls installed June 1913, at Keyser Valley Shops, Scranton, for manufacture of rounds and flats for own use, were dismantled Aug. 16, 1926.

DELAWARE RIVER STEEL CO., Foot of Wilson St., 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.; Robert H. McCurdy, Sec. & T.; at Chester. Myron A. Wick, V. P.; at Cleveland, Ohio.

Sales agents: F. W. Marshall & Co., Pennsylvania Bldg., Philadelphia, Pa. (for foundry and malleable grades).

Brand: Delaware.

Delaware Furnace, Chester: 1 stack, 85' x 17' 9", f. o. 1881; last rebt. 1925; 5 stoves (3 Foote, 65' x 18' 6", 1 McClure, 80' x 20', 1 Rust 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. serve also coke ovens of United G. I. Co. adjoining plant; 1 Uehling single-strand pig casting mach.; one slag granulating pit. By-product coke: foreign ores. By-product coke from adjoining plant of Philadelphia Suburban Counties Gas & Electric Co.

Product: all grades of coke pig iron, specialty low-phosphorus pig iron; annual cap., 120,000 tons.

DELAWARE SEAMLESS TUBE CO., Auburn, Pa.

Inc. Jan. 3, 1903 in Delaware; reinc. Aug. 17, 1927 in Pennsylvania. Subsidiary of Allegheny Steel Co.

H. E. Sheldon, P.; R. D. Campbell, V. P.; F. H. Stephens, Sec.; at Brackenridge, Pa. V. M. Kennerdell, T.; Robert J. Schwartz, G. S.; at Auburn.

Works at Auburn: rebt. 1926; 1 cont. oil-fired heat. fur.; 14" 1-st. Mannesman piercing mill; 14" 1-st. swaging mill replaced with a Pilger mill; 3 annealing fur., fuel, oil.

Product: hot finished and cold drawn seamless steel tubes; annual cap., 3,600 tons hot finished (2½" to 4") and 3,600 tons cold drawn seamless steel tubes (¾" to 4½").

DELTA CHEMICAL & IRON CO., Wells, Delta Co., Mich.

Inc. Jan. 1, 1923 in Michigan. Capital stock: com., par value \$100. auth. \$800,000, issued \$678,000.

M. J. Corbett, P.; at 1040 Park Ave., New York, N. Y. J. E. Morgan, V. P.; at Oshkosh, Wis. G. N. Harder, Sec.; G. C. Craver, T. & G. M.; R. W. Roberts, G. S.; at Wells.

Brand: Wells Lake Superior (charcoal pig iron).

Furnace, Wells, Mich.: 1 stack, 65' x 10' 6", blt. 1911-12, relined 1923; 1 double Durham hot blast stove; 1 Wymer steam blowing eng., 700 cfm., 6½ lbs. rated pressure; 6 tubular boilers (2 Wicks, 4 Muskegon), 800 H. P. Charcoal: Lake ore. Charcoal plant; 20 retorts; annual cap., 2,400,000 bushels.

Product: semi-warm blast charcoal pig iron, annual cap., 24,000 tons.

Denver Rock Drill Mfg. Co. (The), Denver, Colo. Steel foundry at Denver was taken over April 1, 1927 by Gardner-Denver Co. who sold same to United States Foundries, Inc., Dec. 1, 1928.

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.

Detachable Rock Drill Bits, Ltd., Three Rivers, P. Q., Canada.

Works at Three Rivers: 2 A. O. H. fur. (25-ton). Idle several years, (formerly owned by the Corporation of the City of Three Rivers to 1927).

DETROIT ALLOY STEEL COMPANY, Foot of Iron St., Detroit, Mich.

Inc. Feb. 2, 1929 in Michigan. Capital stock: com., no par value, auth. 100,000 shares, issued 65,000 shares.

Hugh Martin, P. & G. M.; Louis W. Schimmel, V. P.; Harry H. Wyatt, Sec. & T.; Sidney T. Wyatt, A.; Edward A. Kreller, G. S.; Herman F. Kluender, G. S. M.; L. S. Sredinski, P. A.

Works at Foot of Iron St., Detroit (leased, Detroit Gray Iron Foundry Co. owner): installed in 1929; one 1-ton Pittsburgh Electromelt electric fur. (first steel castings Mar. 17, first steel ingots June 1, 1929) also used for melting ferro-alloys.

Product: electric steel ingots and castings; annual cap., 1,500 tons (750 tons ingots, 750 tons castings). Alloy steel ingots and castings (chrome); air hardening alloy tool steel.

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.; at Pittsburgh, Pa. C. H. Hobbs, P. & G. M.; J. H. Dunbar, V. P. (operations); S. J. Cameron, Sec. & T.; F. R. Taylor, A.; S. H. Worrell, G. S. M.; F. W. Conat, P. A.; at Detroit.

Sales offices:

Chicago, Ill., 332 South Michigan Ave.

Cincinnati, Ohio, Joseph T. Ryerson & Son.

Cleveland, Ohio, 709 Guardian Bldg.

Houston, Texas, Harrisburg Pipe & Pipe Bending Co.

Los Angeles, Calif., Charles W. Carter Co.

Montreal, Canada, Lyman Tube & Supply Co.

New York, N. Y., 342 Madison Ave.

Philadelphia, Pa., W. H. S. Bateman & Co.

San Francisco, Calif., Charles W. Carter 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., Fordson, Mich.: blt. 1919-20, f. o. June 17, 1920; 2 oil-fired heat. fur. (one 1-d. billet heat., one cont. reheat.); 22" 2-h. 1-st. tube rolling mill, 1 piercing mill, 2 reelers, 1 sizing mill, 1 reducing mill; 6 wooden 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.

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. auth. \$300,000, none issued.

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.

New York, N. Y., J. J. Murray, 342 Madison Ave.

Roanoke, Va., Thomas Spratt, 301 Boxley Bldg.

Works at Detroit: blt. 1889, rebt. 1905; 1 side blown converter (2,000-lb.) removed Oct. 1, 1925; 2 A. O. H. fur. (20-ton), fuel, oil; 1 Moore Pittsburgh electric fur. (1½-ton).

Product: steel castings for sale, annual cap., 12,400 tons (10,000 tons A. O. H., 2,400 tons electric); alloy steel castings (nickel, chrome, vanadium); high silicon heat-resisting steel castings; castings for locomotives, freight and passenger cars, motor trucks and trailers; bridges and general work.

DIBERT, BANCROFT & ROSS CO., Ltd., 3400 Tulane Ave., New Orleans, La.

Inc. in Louisiana. Capital stock: com., par value \$100, auth. \$200,000, issued \$192,400.

Raphael Ross, P.; E. J. Ross, V. P.; Marcus Walker, V. P.; G. G. Trowbridge, Sec., T. & G. M.; G. R. Cannady, G. S.

Works at Tulane Ave. & Jefferson Davis Parkway, New Orleans:

1 Moore Lectromelt electric fur. (3-ton) f. o. Jan. 20, 1923;

3 cupolas. Gray iron (6,000 tons) and brass (75-ton) foundry.

Product: steel castings for sale, annual cap., 3,500 tons; sugar mill, saw mill, dredge boat, railroad car and locomotive, and miscellaneous steel castings.

Dilworth, Porter & Co., Inc., Pittsburgh, Pa. was acquired by the Donner Steel Co., Inc., Jan. 31, 1930. Works are now known as Dilworth, Porter & Co. Division, Donner Steel Co., Inc.

DISSTON (HENRY) & SONS, Inc., Tacony, Philadelphia, Pa.

Est. 1840; inc. Dec. 1886 in Pennsylvania. Capital stock: com., par value \$100, auth. \$10,000,000, issued \$9,500,000.

Frank Disston, P.; George Satterthwaite, 1 V. P. & G. M.; S. Horace Disston, 2 V. P. & G. S. M.; William S. Armstrong, Sec. & T.; Charles P. Smith, A.; Richard T. Nalle, G. S.; Clarence Gerhart, P. A.

Sales offices:

Bangor, Me., R. B. McKim Co., Inc., 120 Exchange St.

Boston, Mass., R. B. McKim Co., Inc., 716 Columbus Ave.

Chicago, Ill., 111 North Jefferson St.

Cincinnati, Ohio, 6th & Baymiller Sts.

Detroit, Mich., 620 East Hancock Ave.

London, England, 35 Upper Thames St.

Memphis, Tenn., The Riechman-Crosby Co.

New Orleans, La., C. T. Patterson Co., Inc.

Portland, Ore., 155 North 15th St.

San Francisco, Calif., 144 Second St.

Seattle, Wash., 1555 Fourth Ave., South.

Spokane, Wash., 176 South Howard St.

Sydney, N. S. W., Australia, University & Gibbens Sts.

Tacoma, Wash., 507 Puyallup Ave.

Toronto, Ont., Canada, 2 Fraser Ave.

Vancouver, B. C., Canada, 81 Robson St.

Brands: Disston (band, circular, cross cut, hand and other saws, saw fitting tools, plumbs, levels, bevels, squares, screw drivers, trowels, machine knives, files, grass and hedge shears, vine and tree pruners, etc.); Keystone and Gold Medal (files); Kutkwick, Eltun, Mansil and Enduro (steel).

Works at Tacony, Philadelphia: manufacture of saws begun 1840; steel, 1854; 2 crucible steel fur. (one 30-pot, one 36-pot) fuel prod. gas, 6 Wood gas prod.; 3 crucible steel fur. (30-pots each) dismantled 1927; 2 Heroult electric fur. (one 3-ton, one 6-ton); 14 heat. fur. (seven 2-d., seven cont.) fuel coal and oil; 18" 3-h. 5-st. bar, 12" 3-h. 7-st. bar, 9" 3-h. 7-st. guide, 9" 3-h. 7-st. guide; 12 sheet fur.: 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"); 17 stands cold rolls (two 20", five 10", ten 8"); 8 box annealing fur.; 1 Mesta pickling mach.; 21 hand pickling tanks; 4 wire drawing blocks; 6 steam hammers (750-lb. to 6-ton). Roll sheared plates to 76" x 76" x $\frac{3}{8}$ "; black sheets 18" x 72", 10 to 30 gauge.

Product: steel ingots, annual cap., 16,000 tons (12,000 tons electric, 4,000 tons crucible); alloy steel ingots (nickel, chrome, vanadium, manganese, molybdenum); hot rolled products, 34,500 tons including 150 tons wire rods, 14,850 tons bars, 5,000 tons hot rolled strip, 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.

The company also has plants at Chicago, Ill., Cincinnati, Ohio, Seattle, Wash., Sydney, N. S. W., Australia, and Toronto, Ont., Canada, for manufacture of saws, machine knives, 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.; Alfred Kauffman, P.; at 910 South Michigan Ave., Chicago, Ill. Clarence Tolan, Jr., V. P. & G. M.; Chester S. Roberts, Sec. & T.; John R. Baush, G. S.; Arthur S. Breithaupt, G. S. M.; Howard J. Showers, P. A.

Sales office: Woolworth Bldg., New York, N. Y.

Works at 6501 Tacony St., Phila.: blt. 1919-20, f. o. Mar. 12, 1920; 1 modified Greaves-Etchell electric fur. (2½-ton).

Product: electric steel castings for sale, annual cap., 3,500 tons. Alloy steel castings (nickel, chrome).

Dominion Alloy Steel Corporation, Sarnia, Ont., Canada.

William B. Boyd, P.; Toronto office: 1301 Metropolitan Bldg., Toronto.

Works at Sarnia, Ont.: construction begun March 26, 1924; buildings for a sheet mill and installation of cranes, foundation for equipment, etc. completed, balance of equipment not yet installed. Plans for future construction of open-hearth steel works, and rolling mill with billet mill and bar mills are being held in abeyance. Galvanizing dept.: blt. 1925, f. o. May 26, 1925; 2 plunger pickling mach.; 2 galvanizing tanks; annual capacity, 30,000 tons galvanized sheets.

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 \$2,998,000; pref. 8% cum., auth. \$1,000,000, issued \$719,900; bonds \$123,500.

C. W. Sherman, P.; F. A. Sherman, V. P. & G. M.; A. G. Wright, V. P., Sec. & T.; G. H. Gordon, V. P. & G. S. M.; F. A. Loosley, G. S.; William Davies, P. A.; at Hamilton. W. J. Verity, V. P.; at Brantford, Ont.

Works at Hamilton: blt. 1912; f. o. Nov. 19, 1912; 2 B. O. H. fur. (35-ton), fuel, oil; 2 B. O. H. fur. (20-ton) and 2 A. O. H. fur. (20-ton) dismantled; 2 Heroult electric fur. (6-ton); rolling mill blt. 1916; 1 Rust gas-fired cont. heat. fur.; 22" 2-h. 2-st. bar mill; 27" x 72" 2-h. universal and sheared plate mill installed 1920; 2 hand pickling tanks; 1 steam hammer, 1,500-lb.; 4 forging presses (1 steam hydr. 1,000-ton, 3 hydr. 500-ton). Roll sheared plates from 3/16", up to 60" wide; universal plates from 3/16", up to 40" wide.

Product: steel ingots, annual cap., 60,000 tons B. O. H.; electric steel castings for own use and for sale, 30,000 tons; alloy steel ingots and castings (nickel, chrome, vanadium); car and locomotive castings, couplers, bolsters, side-frames; heavy castings for hydro power development and miscellaneous steel castings; tank, car and bridge plates; universal and sheared plates, 120,000 tons; forged car and locomotive 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., no par value, auth. 570,000 shares, issued 455,450 shares; convertible pref., no par value, \$6. dividend cum., auth. 30,000 shares, issued 27,500 shares; bonds \$6,313,000.

William P. Witherow, Ch.; Floyd K. Smith, P.; W. W. Hancock, V. P. & Sec.; William F. Vosmer, V. P. (sales); John C.

Dilworth, V. P.; Joseph Dilworth, V. P.; Pearce F. Boyer, T. & C.; A. G. Greenamyre, G. S.; R. A. Butler, P. A.

Sales offices:

Buffalo, N. Y., W. F. Vosmer, V. P., 475 Abbott Road.

Detroit, Mich., E. D. Pumphrey, General Motors Bldg.

New York, N. Y., P. M. Guba, 120 Broadway.

Philadelphia, Pa., H. G. Uphouse, Morris Bldg.

Brands: Niagara, Donner (pig iron).

Product: basic, malleable and foundry pig iron; open-hearth and electric steel ingots, alloy steel ingots, billets; merchant and concrete bars, forging steels, special shapes, bands, spike rods, tie plate bars; Witherow die rolled products, automobile axles, special sections; standard railroad spikes.

Works at 475 Abbott Road, Buffalo:

Blast Furnaces: 2 stacks; No. 1, 89' 6" x 21' 6", blt. 1916-17, relined 1928, blown in Dec. 30, 1928; No. 2, 86' 9" x 23' 6", blt. 1906-09, last rebt. 1927, blown in Mar. 5, 1927; 8 center comb. stoves (four 3-pass 104' x 21', four 3-pass 111' 6" x 21'; 3 steam blowing eng. (2 Southwark vertical, 1 U. E. & F. Co.) and 1 Ingersoll Rand turbo-blower, total blowing cap., 180,000 cfm., 17 to 30 lbs. rated pressure; 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., 432,000 tons.

Steel Works: blt. 1905-07, f. o. April 18, 1907; 9 B. O. H. fur. (one 200-ton, eight 80-ton), fuel in O. H. tar, fuel oil and coke oven gas; 1 Heroult electric fur. (25-ton) added in 1928; 1 metal mixer (600-ton); 6 soaking pits (five 4-hole, one 5-hole) fuel coke oven gas; 3 cont. heat. fur.; 38" 2-h. 1-st. blooming; 18" 2-h. 8-st. cont. billet; 18" to 14" 2-h. and 3-h. 9-st. merchant; 21" 2-h. 1-st. forming; 14" to 10" 2-h. and 3-h. 10-st. continuous bar; 10" to 8" 2-h. and 3-h. 13-st. merchant; one train cold rolls (5" x 3" 2-st. horizontal and vertical); 2 box annealing fur; 1 Watson pickling mach.; 4 pickling tanks (2 bar, 2 coil). Fuel, coke oven gas, coal tar and fuel oil. **Product:** basic, malleable and foundry pig iron, annual cap., 432,000 tons; steel ingots, 560,000 tons (540,000 tons B. O. H., 20,000 tons electric); alloy steel ingots (nickel, chrome, vanadium, molybdenum, silicon, manganese, etc.); billets, 450,000 tons; merchant and concrete bars, forging steels, special shapes, and bands, 410,000 tons; cold drawing dept., 30,000 tons; forming mill finishing dept., 18,000 tons; cold rolled hexagon bars $\frac{3}{8}$ " to 1 $\frac{1}{2}$ ".

Dilworth, Porter & Co. Division (Dilworth, Porter & Co., Inc. to Jan. 31, 1930): Glendon Rolling Mill, Pittsburgh, Pa.: blt. 1857, rebt. 1902; 15 heat. fur. (five 1-d. rod. three 2-d. rod,

five cont. billet and slab, fuel pulv. coal; two 3-d. rod and tie plate bar, fuel, nat. gas); bar mill with 18" 3-h. 2-st. roughing and 18" 2-h. 2-st. finishing; two 10" 2-h. 8-st. cont. rod mills; 10 automatic spike mach.; 3 hand spike mach. Rolled tie plates from 7" to 15", gauges up to $\frac{7}{8}$ ". Product: spike rods and tie plate bars, annual cap., 90,000 tons (30,000 tons spike rods, 60,000 tons tie plate bars); Witherow die rolled products; standard railroad spikes, 2" x 5/16" to 7" x $\frac{5}{8}$ ", 202,000 kegs (200-lb.).

Witherow Die Rolling Division (Witherow Steel Co. to Jan. 6, 1930): Works at Neville Island: blt. 1916-17, f. o. Jan., 1917; cont. heat. fur. Special bar mills. Product: special shapes, Witherow die rolled products, automobile axles and special sections.

Donner Steel Co. owns 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 Corpn. 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 the entire capital stock of Donner Steamship Co. operating 10,000 ton ore vessel, the "H. F. Black."

DORK FOUNDRY CO., 53rd Ave. West & Polk St., Duluth, Minn.

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. (McDougall-Duluth Shipbuilding Co. to Nov., 1926; Lake Superior Steel Foundry Co. to Dec. 31, 1928).

Product: steel castings for own use and for sale, annual cap., 4,000 tons.

Dover Iron Co., Tennessee Ridge, Tenn. Dover Furnace, Carlisle, Tenn. (1 stack) was sold to H. L. Williams, Clarksville, Tenn. in 1928 and dismantled.

Drain Steel Co., Moore, Pa. Works at Moore for manufacture of steel ingots, were acquired by East Penn Steel Co. in 1926 and dismantled in 1929.

DRIVER-HARRIS CO., Middlesex St., Harrison, N. J.

Inc. 1899 in New Jersey. Capital stock: com., par value \$10, auth. \$1,500,000, issued \$1,000,000; pref. 7% cum. auth. \$3,000,000, issued \$1,102,800; bonds, \$934,500.

Frank L. Driver, Jr., P. & G. M.; H. D. McKinney, V. P.; F. V. Lindsey, V. P. & G. S. M.; Stanley M. Tracy, Sec. & T.; A. N. Knapp, Jr., A.; John Hoza, G. S.; E. A. Harleman, P. A.

Sales offices:

Chicago, Ill., 574 West Randolph St.

Cleveland, Ohio, 7016 Euclid Ave.

Detroit, Mich., 7-169 General Motors Bldg.

Brands: Nichrome (wire, strip, sheets and castings); Climax, Advance, S. M. L. Alloy, 193 Alloy (wire and strip); Cimet (castings); Comet (wire); Chromax (castings).

Works at Harrison, N. J.: crucible fur. (10-pots) fuel, oil; 6 electric fur. (two 2-ton Heroult, one 1,000-lb. Greaves-Etchells, two ring type induction 300-lb., one Coreless type induction 500-lb.); three 4-d. oil-fired heat. fur.; hot rolls added 1921-22, f. o. Sept., 1922; 20" 3-h. 2-st. bar mills; 9" 3-h. 9-st. bar and rod mill; 47 stands cold rolls for cold rolled strip; 10 annealing fur.; 4 pickling tanks; 2 steam hammers (1,500-lb., 4,000-lb.); 268 wire drawing blocks (wire .001" to $\frac{1}{2}$ ").

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., 2,000 tons; including 1,000 tons wire rods, 1,000 tons bars. 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.

Inc. May 22, 1913 in Quebec. Capital stock: com., par value \$100, auth. and issued \$199,000.

Gaudiose Drolet, P.; Emile Drolet, V. P.; J. Hector Hamel, Sec.; Arthur Drolet, T.; J. N. Bourque, P. A.

Works at 206 Bridge St., Quebec: 1 Baillot side-blow converter (2,000-lb.); 3 cupolas (two 30", one 18"). Gray iron, semi-steel and brass foundry, annual cap., 1,000 tons gray iron, 5,000 tons semi-steel and 25 tons brass castings.

Product: steel castings for own use and for sale, annual cap., 300 tons. Pumps, steam engines, passenger and freight elevators; electric and oxy-acetylene welding; repairs on steel and wooden ships and general machinery repairs.

Dunbar Corporation, Dunbar, Pa. Dunbar Furnaces at Dunbar (2 stacks); Furnace No. 2 was dismantled in 1927; Furnace No. 1 was dismantled in 1928.

DUQUESNE STEEL FOUNDRY CO. (The), Kendall Station (P. & L. E. R. R. Co.), Moon Township, Pa.

Inc. Dec. 13, 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. \$1,200,000, issued \$830,400.

D. C. Bakewell, P. & G. S. M.; W. E. Troutman, V. P. & G. M.; B. P. Bakewell, Sec. & P. A.; A. W. Remensnyder, A.; F. B.

McConnell, G. S.; at Coraopolis, Pa. E. S. Eggers, T.; at Union National Bank Bldg., Pittsburgh, Pa.

Sales offices:

Lafayette, Ind., L. O. Hiner.

Pittsburgh, Pa., Union National Bank Bldg.

Washington, D. C., H. H. Moffitt, Transportation Bldg.

Brands: Duquesne Special, Molybdenite, Duquesne Special Grain, Structural Grain (alloy rolls, pinions, and steel castings); Temp-alloy (heat resisting castings); Circle D (steel castings).

Works at Kendall Station, P. & L. E. R. R., Moon Township, Allegheny Co., Pa.: 3 A. O. H. fur. (two 25-ton, one 15-ton) fuel, oil. Iron Foundry: Iron alloy castings for own use and for sale, annual cap., 50 tons.

Product: steel ingots and steel castings for sale, annual cap., 43,200 tons (13,200 tons ingots, 30,000 tons castings). Alloy steel ingots and steel castings (nickel, chrome, molybdenum, vanadium). Steel ingots for forging purposes only. Steel castings for rolling mill rolls, annealing equipment, miscellaneous railroad castings and electrical castings.

DURALOY CO. (The), 86-90 South 26th St., Pittsburgh, Pa.

Inc. May 9, 1924 in Delaware. Capital stock: com., no par value, auth. 1,000 shares, issued 850 shares; pref. 7% cum. auth. \$50,000, issued \$44,500; bonds \$32,500.

Thomas R. Heyward, Jr., P.; C. E. Hughes, Sec. & T.; H. R. McCrea, P. A.; at Pittsburgh. Walter F. Furman, 1 V. P. & G. S. M.; at 136 Liberty St., New York, N. Y. O. K. Carpenter, 2 V. P. & G. S.; at New Cumberland, West Va.

*Sales offices: Boston, Chicago, Cleveland, El Paso, Los Angeles, New York, Phoenix, San Francisco, Scranton.

Brand: Duraloy (alloy steel castings).

Works at New Cumberland, W. Va.: blt. 1916; 1 A. O. H. fur. (20-ton) dismantled 1927; 2 Moore Lectromelt electric fur. (one ½-ton, one 1½-ton); electric steel castings first made Feb. 27, 1923.

Product: electric steel castings, annual cap., 4,800 tons; alloy steel castings (chrome, nickel).

DURIRON COMPANY, Inc. (The), P. O. Box 1019, Dayton, Ohio.

Inc. 1912 in New York. Capital stock: com., par value \$100, auth. and issued \$580,000; pref., auth. \$20,000, none issued.

P. D. Schenck, P.; E. B. Thacker, Sec.; R. A. Herbruck, T., G. M. & P. A.; M. L. Bettcher, G. S.; W. H. Scott, G. S. M.; at Dayton. W. E. Hall, V. P.; at 505 Fifth Ave., New York, N. Y.

Sales office: 1054 Grand Central Terminal, New York, N. Y.

Brands: Durimet, Duriron and Nirosta.

Works at Dayton, Ohio: blt. 1918; installed one 6-ton electric fur. in 1929.

Product: electric steel castings for own use and for sale, annual cap., 3,000 tons. Alloy steel castings (nickel, chrome, silicon).

Dycast Steel Co., Collinsville, Conn. operated under lease, steel plant owned by The Collins Co., from March 1, 1924, to Jan. 22, 1927. Steel plant reverted to owner.

EAGAN-JOHNSON STEEL & IRON CO., Chester Pike, Crum Lynne, Pa.

Inc. Feb. 26, 1912 in Pennsylvania.

Daniel C. Egan and Pennsylvania Title & Trust Co., Co-
Receivers (appointed Sept., 1928).

Works at Crum Lynne: blt. 1912, f. o. July 29, 1912; 1 Stoughton
converter (2-ton). Idle since 1928.

Product: steel castings, annual cap., 4,000 tons.

East End Puddle Mill, Milton, Pa. Works at Milton for manufacture
of muck bar, were dismantled in 1926.

East Jordan Furnace Co., East Jordan, Mich. East Jordan Furnace
at East Jordan (1 stack) for manufacture of charcoal pig iron,
was acquired by Michigan Iron & Chemical Co. in Feb., 1929
and dismantled.

East Penn Steel Co., Moore, Pa. acquired in 1926, works at Moore
of former Drain Steel Co. The 2 B. O. H. fur. (65-ton), last
operated in 1921, were dismantled in 1929.

EASTERN ROLLING MILL CO. (The), P. O. Box 1113, Baltimore, Md.

Inc. June 26, 1919 in Maryland. Capital stock: com., no par
value, auth. 500,000 shares, issued 239,200 shares.

Charles E. F. Clarke, Ch.; at 60 Wall St., New York, N. Y.
A. J. Hazlett, P.; C. A. Pennock, V. P. & G. M.; J. A. Downey,
V. P., Sec. & T.; J. E. Cook, S.; A. T. Hunt, G. S. M.; C. C.
Copenhaver, P. A.; at Baltimore.

Sales agents: Dean Higgins & Co., Detroit, Mich., Toledo and
Cincinnati, Ohio; Wetherell Brothers Co., Cambridge, Mass.

Brand: Normite (extra deep drawing sheets).

Works at Baltimore St. and Rolling Mill Ave., Colgate, Baltimore
Co., Md.: blt. 1919-20, f. o. May 17, 1920; 12 sheet and 12 pair
fur.; 12 2-h. hot black sheet mills (30" to 34" dia. by 34" to
76"); 20 stands cold rolls (26" x 52" to 80") 4 stands on hot
mill train, 16 stands on cold mill train; 18 annealing fur. (16
double box, 2 open cont.); 5 Mesta pickling mach.

Product: black sheets 10 to 20 gauge 70" wide, 21 to 22 gauge
52" wide, 24 gauge 36" wide; automobile, metallic furniture
and stamping sheets; annual cap., 100,000 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. & T.; at 117 Liberty St., New York, N. Y. Guy N. Jones, A.; J. A. Hilton, Supt. Steel Plant; at Pottsville, Pa. Sales offices:

New York, N. Y., 117 Liberty St.

Philadelphia, Pa., Pennsylvania Bldg.

Eastern Steel Co. Plant, Pottsville: blt. 1852, last rebt. 1902; O. H. added 1890, rebt. 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; 4 heat. fur. (2 cont., pulv. coal-fired; two 6-d. regenerative, prod. gas-fired); 44" 2-h. 1-st. blooming, 28" 3-h. 3-st. structural, 12" 3-h. 3-st. merchant mill.

Product: ingots, billets and structural shapes, annual cap., 144,000 tons ingots, 120,000 tons blooms and billets, 90,000 tons structural shapes (50,000 tons heavy; 40,000 tons light).

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; two 8-pot crucible fur. Fuel, oil.

Product: steel castings for sale, annual cap., 400 tons.

EASTERN STEEL CASTINGS, Avenue L and Edward St., Newark, N. J.

Inc. Nov. 21, 1922 in New Jersey. Capital stock: 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. & G. M.; M. C. Renshaw, V. P. & G. S. M.; R. B. Dean, Sec. & C.; W. C. Cadwallader, G. S.; J. A. O'Neill, P. A.

Works at Ave. L and Edward St., Newark: blt. 1923; 1 A. O. H. fur. (8-ton) for duplexing; 1 Moore electric fur. (1½-ton); f. o. May 17, 1923. Fuel in O. H., oil. Electric power purchased.

Product: electric steel castings for own use and for sale, annual cap., 9,360 tons. Alloy steel castings (nickel, chrome, molybdenum).

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.; Frank Eckel, V. P.; W. L. Lamirande, Sec.; Jacob E. Eckel, T., G. M., G. S. M. & P. A.

Works at Syracuse: blt. and f. o. 1899: two 4-d. coal-fired heat. fur.; 12" 3-h. 4-st. merchant mill.

Product: merchant bars and light bedstead angles from rail stock, annual cap., 10,000 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, reblt. 1901; 1 B. O. H. fur. (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 (slab zinc).

Cherryvale Works. Cherryvale, Kansas: 5,160 retorts.

Product: slab zinc, annual cap., 31,500 net tons.

EDGEWATER STEEL CO., P. O. Box 249, Pittsburgh, Pa.

Inc. Aug. 4, 1916 in Pennsylvania. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$4,715,000.

F. B. Bell, P.; J. H. Baily, Sec.; Wm. F. Carey, T.; W. A. McKean, P. A.; at Pittsburgh. Wm. V. D. Wrought, V. P.; at Chicago, Ill. D. W. McGeorge, A. Sec.; M. A. Smith, G. M.; R. C. Boak, G. S.; at Oakmont, Pa.

Sales offices and sales agents:

Atlanta, Ga., E. A. Thornwell, 1407 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, 1479-81 Starks Bldg.

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

Philadelphia, Pa., J. H. Perry, Jr., 820 Commercial Trust Bldg.

Portland, Ore., Hickok & Hickok, 114 North 16th St.

St. Louis, Mo., H. J. Tierney, F-19 Railway Exchange Bldg.

St. Paul, Minn., Goodell & Hoppe, 906 Merchants Bank Bldg.

San Francisco, Calif., Hickok & Hickok, 540 Brannan St.

Seattle, Wash., Hickok & Hickok, 2929 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).

Product: steel ingots; locomotive tires, rolled steel wheels, steel tired wheels. Annual cap., 85,000 tons ingots (62,000 tons B. O. H., 23,000 tons A. O. H.); 45,000 tons rolled steel tires and steel wheels; 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 merchant bars, etc.

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 CASTINGS CO., Indianapolis, Ind.

Inc. June 1, 1922 in Indiana. Capital stock: com., par value \$100, auth. and issued \$50,000.

Hugh M. Love, P.; M. G. Spencer, V. P. & G. M.; T. A. Elder, Sec. & P. A.; Hugh McK. Landon, T.; 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).

Product: electric steel castings for sale, annual cap., 2,500 tons. Alloy steel castings (chrome).

ELECTRIC STEEL CASTINGS CO., Turners Falls, Mass.

Olaf Hoff, Supt.

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 CO., Inc., 1328 Second St., Berkeley, Calif.

Inc. April 24, 1926 in California. Capital stock: com., par value \$100, auth. \$50,500, issued \$16,500.

O. R. Moller, P.; P. H. Moller, V. P.; A. Klaeger, Sec. & T.

Works at 1328 Second St., Berkeley: 1 Greene electric fur. ($\frac{3}{4}$ -ton) installed in 1921; f. o. Jan. 1, 1922. (Berkeley Steel Foundry Co. to July 7, 1926).

Product: small electric steel castings for sale, annual cap., 600 tons.

ELECTRIC STEEL FOUNDRY CO., 24th & York Sts., Portland, Ore.

Inc. Sept., 1913, in Oregon. Capital stock: com., par value \$100, auth. 150,000, issued \$131,000.

C. F. Swigert, P.; c/o Pacific Bridge Co., Portland, Ore. C. F. Swigert, Jr., 1 V. P.; Ernest G. Swigert, 2 V. P. & G. S. M.; Herman Cohn, Sec.; Newman Ward, T. & G. S.; C. E. Buckner, P. A.

Sales offices:

Aberdeen, Wash., Grays Harbor Equipment Co.

Los Angeles, Calif., Ward-Livesley Co.

San Francisco, Calif., W. H. Worden Co.

Salt Lake City, Utah, National Equipment Co.

Seattle, Wash., 2434 First Ave. S.

Spokane, Wash., Washington Machinery & Supply Co.

Wallace, Idaho, Cœur d'Alene Hardware & Foundry Co.

Brand: ESCO.

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, molybdenum).

ELECTRIC STEEL & MANUFACTURING CO., 3334 East Slauson Ave., Los Angeles, Calif.

Inc. Jan. 1926 in California as Warman Electric Foundry Co., name changed to Electric Steel & Manufacturing Co. Capital stock: com., par value \$100, auth. \$200,000, issued \$117,600; bonds \$100,000.

G. B. Warman, P.; N. W. Warman, V. P. & T.; A. R. Cowan, Sec.; Thomas S. Hutton, G. M.

Works at 3334 East Slauson Ave., Los Angeles: blt. 1926, f. o. May 1926; 1 Moore Lectromelt electric fur. ($1\frac{1}{2}$ -ton).

Product: electric steel castings for sale, annual cap., 2,500 tons; alloy steel castings (nickel, chrome); stainless and heat resisting steel castings.

ELECTRO METALLURGICAL CO., 30 East 42nd St., New York, N. Y.

Inc. Aug. 29, 1906 in West Virginia. Capital stock: com., par value \$100, auth. and issued \$5,000,000.

F. H. Haggerson, P.; F. M. Becket, V. P.; F. P. Gormely, V. P. & G. M.; A. C. Cornell, Sec.; C. T. Ayres, T.

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-alloy 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., 46 King St., West, Toronto, Ont., Canada.

Inc. Dec. 7, 1922 in Dominion of Canada. Capital stock: com., no par value, auth. 30,000 shares, issued 20,000 shares.

F. H. Haggerson, P.; A. C. Cornell, Sec.; C. T. Ayres, T.; W. H. Billings, A.; at 30 East 42d St., New York, N. Y. Leighton McCarthy, V. P.; at Canada Life Bldg., Toronto, 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 and ferro-manganese (15% and 50%); carbon electrodes.

Electro Steel Co., Inc. (The), Jones Bldg., Pittsburgh, Pa.

Inc. 1910 in New Jersey. Charles R. Bryson, P.

Works at Pittsburgh: blt. 1904; f. o. 1904; Kjellen electric fur. Plant idle since 1917.

Product: steel ingots, castings and high speed steel; annual cap., 1,500 tons.

Electro Steel Castings Co., Joplin, Mo. was organized Oct. 1, 1926 to operate the steel foundry at Third & Railroad Sts., Joplin, owned by Joplin Steel & Malleable Co. Manufacture of steel castings was discontinued Dec. 1, 1926.

ELMIRA STEEL CO., Inc., 56 Pine St., New York, N. Y.

Inc. July, 1923 in New York as Valley Rolling Mills, Inc., name changed to Elmira Steel Co., Inc., in 1927. Capital stock: com., par value \$10, auth. \$500,000, issued \$485,000; pref. 7% cum., auth. \$250,000, issued \$192,000.

J. G. Christopher, P.; E. F. Quirke, V. P.; S. B. Quirke, Sec. & A. T.

Works at Elmira Heights, Elmira, N. Y.: blt. 1920, f. o. Sept., 1920; two 4-d. coal-fired heat. fur.; 12" 3-h. 1-st. roughing; 8" 3-h. 5-st. finishing bar mill.

Product: merchant and concrete bars, annual cap., 12,000 tons.

EL PASO FOUNDRY & MACHINE CO., 1800 East San Antonio St., El Paso, Texas.

Inc. 1890 in Texas. Capital stock: com., par value \$100, auth. \$300,000, issued \$288,500; bonds \$80,000.

W. D. Small, P. & G. M.; R. H. Carrington, V. P. & T.; O. G. Lemley, Sec. & P. A.; F. C. Corbin, A.; J. T. Watson, G. S.

Brand: EPF in diamond.

Works at El Paso: blt. 1907, f. o. Oct. 23, 1907; 2 side-blown converters (2-ton); 2 cupolas. Gray iron, white iron and semi-steel foundry, annual cap., 10,000 tons; brass foundry, 300 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; fabricated plate and structural material, 3,600 tons.

Elyria Iron & Steel Co. (The), Cleveland, Ohio, name changed Oct. 1, 1927 to Steel and Tubes, Inc. The Republic Iron & Steel Co. acquired control of Steel & Tubes, Inc., Oct. 1, 1928 through the purchase of all the common stock of that company.

Empire Steel Co. (The), Cleveland, Ohio, was merged March 1, 1928 with The Ashtabula Steel Sheet Co., The Falcon Steel Co., The Mansfield Sheet & Tin Plate Co., The Thomas Sheet Steel Co., and The Waddell Steel Co., in the Empire Steel Corporation.

EMPIRE STEEL CORPN., P. O. Box 369, Mansfield, Ohio.

Inc. Dec. 29, 1927 in Ohio. Capital stock: com., no par value, auth. 550,000 shares, issued 223,389½ shares; pref. 7% cum., auth. \$15,000,000, issued \$7,430,200; bonds \$3,540,000. The Ashtabula Steel Sheet Co., The Empire Steel Co., The Falcon Steel Co., The Mansfield Sheet & Tin Plate Co., The Thomas Sheet Steel Co., and The Waddell Steel Co. were merged in the Empire Steel Corpn., March 1, 1928.

W. H. Davey, P.; A. I. Davey, Sec. & P. A.; W. R. Jenkins, T.; W. H. Ungashick, A.; Samuel Davey, G. M.; Charles H. Stamm, G. S. M.; at Mansfield. J. D. Waddell, V. P.; at Niles, Ohio.

Sales offices:

Buffalo, N. Y., 288 Hartwell Road.

Chicago (Cicero), Ill., 1838 South 54th Ave.

Cincinnati, Ohio, 3427 Hazelwood Ave.

Cleveland, Ohio, 2002 Union Trust Bldg.

Detroit, Mich., 7-233 General Motors Bldg.

New York, N. Y., National City Bank Bldg., 17 East 42nd St.

Philadelphia, Pa., 3701 North Broad St.

Product: steel ingots, sheet bars; black sheets for galvanizing, stamping, extra deep drawing, japanning, enameling; automobile body, hood and fender stock; electrical sheets; galvanized sheets.

Brands: Empire (steel sheets for automobile body work and for metal furniture); Wabik (vitreous enameling sheets); Tranelec, Dynelec, Motolec and Armelec (electrical sheets).

Mansfield Works, Mansfield, Ohio: blt. 1908-09, f. o. June, 1909; steel plant added 1920-22, f. o. Apr., 1922; 6 B. O. H. fur. (four 100-ton, two 85-ton) fuel, oil; 2 Chapman gas prod.; four 4-hole soaking pits, fuel, prod. gas; 1 normalizing surface comb. cont. heat. fur., nat. gas-fired; 32" 3-h. 1-st. blooming; 24" 3-h. 1-st. and 24" 2-h. 1-st. sheet bar mill; 19 sheet and 19 pair fur.; 19 hot black sheet mills (seven 28" x 32" to 44", twelve 30" x 42" to 60"); 2 trains of cold rolls, 1 of 6 stands (2-st. 54", 4-st. 56"), 1 of 12 stands (6-st. 60", 6-st. 66"); 34 box annealing fur.; 6 Mesta pickling mach. Roll black sheets, 14 to 30 gauge, to 68" wide, to 144" long. (The Mansfield Sheet & Tin Plate Co. to Mar. 1, 1928). Product: steel ingots, sheet bars, annual cap., 333,000 tons ingots, 270,000 tons sheet bars; black sheets, 129,500 tons.

Ashtabula Works, Ashtabula, Ohio: blt. 1920-22, f. o. Aug. 17, 1922; 1 normalizing cont. heat. fur., oil-fired; 8 comb. sheet and pair fur.; 7 hot black sheet mills (29" x 38" to 60"); 6 stands cold rolls (26" x 52" to 64"); 6 box annealing fur.; 2 pickling mach. (1 Mesta, 1 Plunger). Roll black sheets, 10 to 30 gauge, to 48" wide, to 144" long. (The Ashtabula Steel Sheet Co. to Mar. 1, 1928). Product: black sheets, annual cap., 51,600 tons.

Cleveland Works, Cleveland, Ohio: blt. 1900, f. o. Dec. 15, 1900; 3 sheet and 4 pair fur.; 3 comb. sheet and pair fur.; 6 hot black sheet mills (29" x 34" to 48"); 3 stands cold rolls (48" to 60"); 4 double box annealing fur.; 2 plunger pickling mach. Roll black sheets, 12 to 30 gauge, to 48" wide, to 144" long. (The Empire Steel Co. to Mar. 1, 1928). Product: black sheets, annual cap., 54,000 tons.

Waddell Works, Niles, Ohio: blt. 1902, f. o. Oct., 1902; 7 sheet and 7 pair fur.; 7 hot black sheet mills (two 27" x 36", one 29" x 36", four 42" x 44"); 3 stands cold rolls (two 26" x 58", one 26" x 48"); 6 double box annealing fur.; 6 hand pickling tanks. Roll black sheets, 14 to 16 gauge, to 96" long, lighter gauges to 144" long. (The Waddell Steel Co. to Mar. 1, 1928). Product: black sheets, annual cap., 50,000 tons.

Thomas Works, Niles, Ohio: blt. 1901, remod. 1924; three 1-d. nat. gas-fired heat. fur.; 11 sheet and 10 pair fur.; 14 hot black sheet mills (28" x 42" to 84"); 8 stands cold rolls (2-st. 26" x 70", 3-st. 26" x 60", 3-st. 26" x 66"); 16 box annealing fur.;

4 Mesta pickling mach. Roll black sheets, 15 to 20 gauge, 52" x 120" to 64" x 90". (The Thomas Sheet Steel Co. to Mar. 1, 1928). Product: black sheets, annual cap., 75,000 tons.

Falcon Works, Niles, Ohio: blt. 1919, f. o. Mar. 1, 1920; two 1-d. nat. gas and oil-fired heat. fur.; 7 sheet and 12 pair fur.; 18 hot black sheet mills (29" x 46" to 84"); 3 trains cold rolls, 1 of 3 stands (26" x 55" to 72"), 1 of 3 stands (26" x 72" to 84"), 1 of 5 stands (26" x 55" to 70"); 20 box annealing fur.; 5 pickling mach. (3 Plunger, 2 Mesta); 3 galvanizing pots. Roll black sheets, 16 to 24 gauge, 72" x 120". (The Falcon Steel Co. to Mar. 1, 1928). Product: black and galvanized sheets, annual cap., 108,000 tons black sheets, 41,000 tons galvanized sheets.

Total annual capacity (6 Works): steel ingots, 333,000 tons; sheet bars, 270,000 tons; black sheets, 468,100 tons; galvanized sheets, 41,000 tons.

Empire Steel Casting Co., Reading, Pa. Name of company changed to Empire Steel Castings, Inc., July 1, 1929.

EMPIRE STEEL CASTINGS, Inc., Reading, Pa.

Inc. Aug. 17, 1921 in Pennsylvania as Empire Steel Casting Co., reinc. July 1, 1929 in Pennsylvania and name changed to Empire Steel Castings, Inc. Capital stock: com., no par value, 6,666 shares; pref. 7% cum. \$150,000.

Frank Hodson, P.; J. E. Horton, Sec. & T.; D. W. Phillips, G. S.; M. G. Moore, G. S. M.

Sales offices:

Beacon, N. Y., J. Howard Reed, 9 Tompkins Ave.

Boston, Mass., Allen Engineering Co., 142 Berkley St.

Pittsburgh, Pa., W. W. Barr, 626 Wabash Bldg.

San Francisco, Calif., Peake Engineering Co., 155 Montgomery St.

Brands: Chromax (wear resisting alloy steel); Radiac (radio steel); Resista (heat resisting alloy steel); Nogroth (heat resisting alloy iron).

Works at Frush Valley, Reading, Pa.: blt. 1921, f. o. Dec. 1921; 1 Booth electric fur. (150-lb.) used for experimental work only; 1 Moore electric fur. (2-ton).

Product: electric steel castings for sale, annual cap., 1,500 tons; heat and wear resisting carbon and alloy steel castings (nickel, chrome, molybdenum, vanadium, cobalt); cobaltrom cast magnets and die steels; electric furnace heat resisting iron castings.

Emporium Iron Co., Emporium, Pa., name changed to Emporium Iron Manufacturing Corp.

EMPORIUM IRON MANUFACTURING CORPN., Emporium, Pa.

Inc. 1912 in Pennsylvania as Emporium Iron Co., name changed to Emporium Iron Manufacturing Corpn. in 1928.

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). Idle since Feb., 1926.

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. \$500,000, issued \$490,900; pref. 7% cum., auth. \$350,000, issued \$100,000.

Charles Hoehn, P. & G. M.; A. J. Martens, V. P. & T.; J. W. Heaney, Sec.; H. Hoehn, G. S.; F. Williams, G. S. M.; J. Lenz, A. P. A.

Sales offices: South San Francisco, San Mateo Co., Calif., and 1603 North Ditman St., Los Angeles, Calif.

Brand: "Enterprise."

Company has plants at 2902 19th St., San Francisco; 320 Fremont St., San Francisco; South San Francisco, Richmond and Los Angeles, Calif. Make gray iron and brass castings for own use and for sale, annual cap., 12,000 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. (10-ton) fuel, oil; 2 single-phase electric fur. (1-ton) used also for melting ferro-alloys.

Product: forging ingots, annual cap., 5,000 tons (B. O. H.); steel castings for own use and for sale, annual cap., 6,200 tons (5,000 tons B. O. H., 1,200 tons electric); alloy steel castings (chrome); heat-resisting metal for ceramic and heat treating furnaces.

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 \$473,000. R. F. Devine, Jr., P., T. & G. M.; G. W. J. Stout, V. P. & G. S.; H. C. McLaughlin, Sec.; Wm. J. Franklin, A.; E. H. Lang, G. S. M.; J. F. Roehl, P. A.

Sales offices:

Buffalo, N. Y., V. B. Schupp, 1010 Ellicott Sq. Bldg.
Cincinnati, Ohio, P. H. Adams, 1002 American Bldg.
Cleveland, Ohio, E. Francis, 974 Rockefeller Bldg.

Milwaukee, Wis., Williams, Cole & Wolff, 610 Michigan St.

New York, N. Y., J. E. McKee, Room 300, 30 Church St.

Philadelphia, Pa., T. W. Illingworth, 615 Atlantic Bldg.

Pittsburgh, Pa., Frank Ryman, 1302 Commonwealth Bldg.

St. Louis, Mo., O. A. Schilling, 312 Chemical Bldg.

San Francisco, Calif., Edwin Forrest, 75 Fremont St.

Seattle, Wash., Richard Froboese, 83 Marion St.

Works at Erie, Pa.: blt. and f. o. 1873, first steel May 17, 1909; 1 B. O. H. fur. (50-ton) not in use; 2 A. O. H. fur. (20-ton); fuel, oil; 6 Bradley gas prod.; 2 modified Bessemer converters (2-ton) dismantled 1927.

Product: carbon and alloy steel ingots for own use and for sale, annual cap., 12,000 tons (A. O. H.); steel castings for sale, 12,000 tons (A. O. H.); alloy steel castings (nickel, chrome, vanadium).

ERIE FORGE & STEEL CO., Green Garden Road, 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, Jr., P., T. & G. M.; G. W. J. Stout, V. P. & G. S.; H. C. McLaughlin, Sec.; William J. Franklin, A.; J. F. Roehl, P. A.

Works at Erie, Pa.: blt. 1917-18; 2 B. O. H. fur. (60-ton) fuel, oil; one 4-hole soaking pit, fuel, oil; 8 Stevens oil-fired heat. fur. (four 1-d., four 2-d.); 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, molybdenum); steel forgings of all kinds, 40,000 tons.

EVERETT-SAXTON CO., 1710 Franklin Trust Bldg., Philadelphia, Pa.

Inc. Nov. 1, 1925 in Pennsylvania. Capital stock: com., no par value, auth. and issued 8,000 shares.

Banks Hudson, P.; at Everett, Pa. W. S. Pilling, V. P.; Andrew S. Webb, V. P.; G. P. Pilling, Sec. & T.; at Philadelphia.

Sales agent: Pilling & Company, Inc., 1710 Franklin Trust Bldg., Philadelphia, Pa.

Brands: Everett-Saxton (pig iron); Ashcom (limestone).

Earlston Furnace, Everett, Pa.: 1 stack, 82' x 20', blt. 1883-84, rebt. 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.

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 \$50,500.

R. Baylor Hickman, P.; G. O. Boomer, V. P. & T.; S. E. Frazee, V. P. & Sec.; B. O. Hickman, V. P.; J. H. Romann, G. S.

Sales offices:

Chicago, Ill., Railway Exchange Bldg.

New York, N. Y., 501 Fifth Ave.

St. Paul, Minn., Pioneer 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" 3-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 fires; 2 steam hammers (one 5-ton, one 10-ton). Fuel, charcoal.

Product: engine bolt iron, staybolt iron, annual cap., 12,000 tons; charcoal blooms, 5,000 tons for own consumption; hammered iron billets for sale, 1,000 tons.

Exolon Company (The), Thorold, Ont., Canada, discontinued producing ferro-silicon as a by-product in manufacture of abrasives, in 1921.

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., G. M., G. S. M. & P. A.; Ray T. Maynard, V. P.; Ora R. Fowler, Sec., T. & A.; Lave Willbaugh, G. S.

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., 2,500 tons; alloy steel castings (manganese, chrome, nickel); steel castings for automobiles and trucks, annealing pots and general castings.

Fairbanks Steam Shovel Co. (The), Marion, Ohio. Steel foundry at Marion was sold to The Alloy Cast Steel Co. May 18, 1926.

Falcon Steel Co. (The), Niles, Ohio, was merged March 1, 1928 with The Ashtabula Steel Sheet Co., The Empire Steel Co., The Mansfield Sheet & Tin Plate Co., The Thomas Sheet Steel Co., and The Waddell Steel Co. in the Empire Steel Corporation.

Falcon Tin Plate Co. (The), Niles, Ohio. Receiver appointed in Nov., 1927 and rolling mill at Canton, Ohio was sold by sheriff in Mar., 1929 to Kulka Iron & Metal Co., who resold the plant in July, 1929 to Alvin L. Bear and Godfrey M. Cohn. The Canton Rolling Mill Corpn. is being organized to take over and operate the plant.

FALK CORPORATION (The), Milwaukee, Wis.

Inc. 1895 in Wisconsin.

Herman W. Falk, P.; Otto H. Falk, 1 V. P.; Harold S. Falk, 2 V. P. & G. M.; Arthur Simonson, 3 V. P.; Clarence R. Falk, Sec. & T.; Edward P. Connell, C.

Sales offices: Akron, Albany, Birmingham, Chicago, Cleveland, Denver, Detroit, Houston, Kalamazoo, Los Angeles, Minneapolis, New York, Pittsburgh, Portland, Rochester, St. Louis, San Francisco, Wilkesbarre.

Works at Foot of 30th St., Milwaukee: blt. 1900, f. o. Apr. 7, 1900; 3 A. O. H. fur. (two 20-ton, one 25-ton) fuel, oil. Brass, bronze and aluminum foundry for own use only.

Product: steel castings for own use and for sale, annual cap., 25,000 tons; hydro-electric, railroad, machinery castings and gears and miscellaneous steel castings. Herringbone gears and pinions, gear drives, speed reducers, flexible couplings, Diesel engines.

FALLS HOLLOW STAYBOLT CO., Cuyahoga Falls, Ohio.

Not incorporated.

C. M. Walsh, Prop. & G. M.

Works at 21 E. Portage St., Cuyahoga Falls: blt. 1865; rebt. 1884; remod. 1903; four 3-d. oil-fired heat. fur.; 16" 3-h. 2-st. bar mill; 10" 3-h. 4-st. guide mill.

Product: slabs, blooms and billets, annual cap., 2,800 tons; hot rolled hollow and solid staybolt iron bars, 2,000 tons.

FARRELL-CHEEK STEEL FOUNDRY CO. (The), P. O. Box 721, Sandusky, Ohio.

Inc. May 1910 in Ohio. Capital stock: com., no par value, auth. and issued 10,000 shares.

Herbert Farrell, P.; R. C. Farrell, V. P.; John E. Sweet, Sec. & P. A.; H. B. Castleman, T.; T. A. Martin, G. S.; M. L. Ritter, G. S. M.

Sales offices:

Birmingham, Ala., L. K. Plosser, Jr., 2124 Highland Ave.

Buffalo, N. Y., Schupp & Mansfield, 1010 Ellicott Square.

Denver, Colo., Paul Kranefeld, 1626 Detroit St.

New York, N. Y., F. F. Picksley, Room 215, 25 Church St.

Philadelphia, Pa., C. Ed. Peterson, 2401 Chestnut St.

Brand: Farrell's 85 (shock and abrasion resisting steel).

Works at Sandusky: blt. 1910, f. o. Oct. 17, 1910; 2 Tropenas converters (1-ton) abandoned; 1 Moore Electromelt electric fur. (3-ton).

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

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).

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.

Norris H. Schwenk, P.; William D. Ward, V. P.; William Mick, P. A.; at Richmond and Norris Sts., Philadelphia. Wallace G. Smith, V. P. & G. M.; William V. Compton, Sec. & T.; Alfred G. Rennie, Works M.; William B. Roberts, G. S. M.; at Chester. Sales office: New York, N. Y., William D. Ward, 33 Rector St. Works at Chester: blt. 1903-04, f. o. June 27, 1904; 2 B. O. H. fur. (27-ton), fuel, oil.

Product: steel castings for sale, annual cap., 6,600 tons; hydraulic, machinery, locomotive, dredging and ship castings (hull, engine and general machines).

Ferro Alloy Co. (The), Denver, Colo. was dissolved in 1926 and plant at Utah Junction for manufacture of ferro-chrome, ferro-silicon, etc., was dismantled in that year.

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.; Eben B. Clarke, V. P.; at Oliver Bldg., Pittsburgh, Pa. E. D. Gray, Sec.; D. E. Jackman, T.; L. Gerald Firth, G. M.; R. S. Stevick, Works M.; D. G. Clark, G. S. M.; H. R. Huemme, P. A.; at McKeesport.

Sales offices:

Boston, The Statler Bldg.

Chicago, Ill., 710 West Lake St.

Cleveland, 1424 East 25th St., N. E.

Detroit, 2800 East Grand Boulevard.

Hartford, 410 New Park Ave.

Los Angeles, 1327 Santa Fe Ave.

New York, 312 Hudson St.

Philadelphia, 1121 Frankford Ave.

Pittsburgh, 1541 Oliver Bldg.

Brands: Blue Chip, C in circle, Cromovan, Invaro, Special, Sterling, C. Y. W., Dimondite (tool, die and cutlery steels).

Demmler Works, Demmler Station, McKeesport: est. 1875, three 30-pot crucible fur.; 2 Heroult electric fur. (2½-ton); 1 B. O. H. fur. (4½-ton); fuel for crucible fur., prod. gas., 3 Swindell gas prod.; for O. H., oil or gas; 18 heat. fur. bit. coal-fired (two 1-d., five 2-d., seven 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.; 4 pipe annealing fur.; 9 electric annealing fur.; 4 hand pickling tanks; 7 steam hammers (1,000 to 12,000-lb.); 1 tilt hammer.

Product: steel ingots, alloy steel ingots (chrome, tungsten, vanadium, molybdenum, cobalt); 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., G. S. M. & P. A.; O. M. Smith, Sec.; G. W. Peacock, G. S.

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) Gray iron foundry, 1 cupola; annual cap., 2,000 tons. Machine shop.

Product: steel castings for sale, annual cap., 1,500 tons.

FOLLANSBEE BROTHERS CO., 3rd & Liberty Aves., Pittsburgh, Pa.

Inc. Sept. 6, 1894 in Pennsylvania. Capital stock: com., no par value, auth. 280,000 shares, issued 180,000 shares; pref. 6% cum., auth. and issued \$3,000,000; bonds \$3,250,000.

William U. Follansbee, Ch.; John Follansbee, P.; B. G. Follansbee, V. P.; R. C. Kirk, V. P. & T.; William D. Reid, V. P. & Sec.; Edgar Masters, A.; C. A. Wilson, A. P. & G. S. M.; R. B. Perry, P. A.; at Pittsburgh. A. J. McFarland, G. M.; at Follansbee, West Va. Gilbert Follansbee, G. M.; at Toronto, Ohio.

Sales offices:

Buffalo, N. Y., Edward Harper, 505 Ellicott Square.

Chicago, Ill., Marcus A. Follansbee, 208 South La Salle St.

Cincinnati, Ohio, Carl J. Terstegge, 3d & Eggleston Aves.

Cleveland, Ohio, Scott Follansbee, 1299 Union Trust Bldg.

Detroit, Mich., H. C. Pletscher, 684 Amsterdam Ave.

Detroit, Mich., E. G. Campbell, 684 Amsterdam Ave.

Indianapolis, Ind., E. C. Folkening, 321 South Missouri St.

Indianapolis, Ind., Jere J. Doherty, 321 South Missouri St.

Louisville, Ky., Carl J. Terstegge, 3009-11 West Broadway.

Memphis, Tenn., Edward Schrader, Tennessee & Nettleton Sts.

Milwaukee, Wis., H. H. Wherry, 31st & Auer Sts.

Nashville, Tenn., L. K. Notgrass, 602 Exchange Bldg.

New York, N. Y., Albert Matthews, Hudson Terminal Bldg.

Philadelphia, Pa., W. W. Keefer, 607 Otis 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, nat. gas; four 4-d. pulv. coal-fired ingot reheat. fur.; one 1,000-ton forging press; 30" 2-h. reversing sheet bar mill; 13 comb. sheet and pair fur.; 7 2-h. hot black sheet mills (two 28" x 38", one 30" x 38", three 30" x 44", one 30" x 48"); 6 2-h. 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"); 17 box annealing fur. (15 double, 2 single); 4 pickling mach. (1 Gray, 2 suspended frame, 1 plunger). 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; 12 tinning sets, 6 for charcoal tinplate, 4 for terne plates, 2 for long ternes. Fuel, gas. Product: steel ingots, annual cap., 90,000 tons; billets, 84,500 tons; sheet and tinplate bars, 79,000 tons; hot rolled products, 65,000 tons including 40,000 tons black sheets, 25,000 tons black plate for tinning; sheets for stamping, japanning, etc., polished, planished, automobile and electric sheets; charcoal tinplates, 175,000 base boxes; terne plates, 125,000 base boxes; long terne plates, 11,500 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, nat. gas; 8 Morgan gas prod. (idle); four 3-d. pulv. coal-fired ingot heat. fur.; one 1,000-ton forging press; 30" 2-h. reversing sheet bar mill; 11 sheet and 11 pair fur.; 11 2-h. hot black sheet mills (six 30" x 44", one 30" x 60", one 30" x 70", three 30" x 50"); 10 stands cold rolls (1-st. 28" x 84", 1-st. 28" x 60", 8-st. one drive with 7-st. 28" x 60" and 1-st. 28" x 84"); 7 box annealing fur.; 2 cont. Dressler kilns; 3 Kinter plunger pickling mach. Roll black sheets 12 to 30 gauge, to 43" x 144". Product: steel ingots, annual cap., 110,000 tons; sheet bars, 100,000 tons; black sheets, 84,820 tons; sheets for stamping, japanning, etc., automobile sheets.

FORD MOTOR CO., 3674 Schaefer Road, Dearborn, Mich.

Inc. 1903 in Michigan; reinc. July 9, 1919 in Delaware. Capital stock: com., par value \$100, auth. \$100,000,000, issued \$17,264,500.

Edsel B. Ford, P. & T.; P. E. Martin, V. P.; B. J. Craig, Sec.; H. L. Moekle, A.; C. E. Sorenson, G. S.; M. L. Bricker, Supt.; D. J. Hutchins, Mgr. Sales By-Products; A. M. Wibbel, P. A.

Rouge Plant, Dearborn, Mich.: 2 stacks, const. began Feb., 1917; Henry 92' x 22' 9" f. o. May 17, 1920, relined Oct. 10, 1926; Benson, 92' x 22' 9", f. o. Oct. 11, 1922, relined Oct. 30, 1928; 8 side comb. 2-pass stoves, 110' x 22'; 2 turbo-blowers, 40,000 cfm. 23 lbs. rated pressure; 1 Heyl & Patterson double-strand

pig casting mach.; Greenwalt sintering plant for flue dust and borings, annual cap., 30,000 tons; slag granulating plant (2 pits), annual cap., 180,000 tons. By-product coke: Lake ores. By-product coke plant, 240 coke ovens (120 Semet-Solvay, 120 Wilputte), annual cap., 1,346,499 net tons coke. By-product recovery and benzol plant (Semet-Solvay and Wilputte steam distillation), annual cap., 4,750,000 gals. light oil. Charcoal plant, Iron Mountain, Mich.: 3 retorts; annual cap., 69,350,000 lbs. and by-product recovery. Company owns coal mines in Kentucky and West Virginia, annual cap., 2,800,000 tons; iron ore mines, Imperial Mine, Michigamme, Mich. and Blueberry Mine, Ishpeming, Mich.

Product: foundry and basic pig iron, annual cap., 375,000 tons. Steel Works & Foundry: 6 electric fur. (two 10-ton, one 3-ton and one 1-ton Greaves-Etchells; one $\frac{1}{2}$ -ton Gruenwald-Dixon; one $\frac{1}{4}$ -ton Moore Electromelt experimental): 10 B. O. H. fur. (three 125-ton, seven 100-ton), fuel, tar; one 600-ton mixer. Product: steel ingots, annual capacity, 519,350 tons (15,350 tons electric, 504,000 tons B. O. H.): electric steel castings for own use, 7,350 tons. Alloy steel ingots and steel castings (nickel, chrome).

Rolling Mills, const. begun in spring, 1925; f. o. Dec., 1925; nine 4-hole soaking pits, fuel, coke oven gas; 11 heat. fur. (5 Morgan cont., 2 recuperative, 3 regenerative, fuel, oil and gas; 1 Smythe, fuel, oil); 42" 2-h. 4-st. and 32" 2-h. 4-st. Morgan cont. mill; 18" 2-h. 6-st. and 14" 2-h. 4-st. Morgan interrupted cont. mill; 18" 2-h. 6-st. Morgan cont. mill with 2 vertical edgers; 14" 2-h. 5-st. and 12" 2-h. 3-st. Morgan cont. spring with 2 vertical edgers; 14" 2-h. 4-st., 12" 2-h. 4-st. and 10" 2-h. 8-st. Morgan cont. rod; 1 3-h. Mesta hand mill. Wire mill: 4 wire drawing blocks for wire from 17 gauge to $\frac{3}{4}$ ". Forge shop: 57 hammers (20 Ajax 2,500-lb., 37 Erie 1,000-lb. to 5,000-lb.); 6 forging presses (5 No. 48 and 1 No. 79 $\frac{1}{2}$ Bliss 1,500-lb.). Product: merchant bars, annual cap., 480,000 tons.

Forged Steel Wheel Co., Pittsburgh, Pa. was merged March, 1926 in The Columbia Steel Co., Elyria, Ohio. The latter company was acquired by The American Rolling Mill Co., Aug. 1, 1927. Works are now known as Columbia Division, Butler Works, The American Rolling Mill Co.

FORGING AND CASTING CORP. (The), 500 Ross Bldg., 14th & Vernor Highway, Detroit, Mich.

Inc. June 18, 1929 in Michigan. Capital stock: com., no par value, auth. 60,000 shares, issued 50,000 shares; pref. 8% non-cum., auth. and issued \$250,000.

James R. Murray, P. & G. M.; John J. Findlater, 1 V. P.; Kenneth L. Clark, 2 V. P. & G. S. M.; Thomas A. Moormann,

3 V. P.; Albert G. Goetz, Sec.; G. Hubert Noble, T.; Alex Lumsden, G. S.; F. J. Krumm, P. A.

Brands: FCC (air hardening tool steel); Cyclops No. 17 (metal castings and grids, heat and acid resisting castings); K-Alloy (heat resisting).

Works at Ferndale, Mich.: blt. 1929, f. o. Sept. 15, 1929; 2 Electro-melt electric fur. (one 1,500-lb., one 150-lb.) used also for melting ferro-alloys; 4 hammers (one 1,500-lb., one 2,500-lb., two 3,500-lb.).

Product: steel ingots and steel castings for sale, annual cap., 650 tons; alloy steel ingots and castings (nickel, chrome, tungsten); special alloy tool steel castings; smooth hammered forgings from 1-lb. to 6,000-lbs.

Fort Dodge Culvert & Steel Co., Fort Dodge, Iowa. Open-hearth furnace and rolling mill at Fort Dodge dismantled in 1928 and sold. Company out of business.

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.

Carleton 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 Wayne Rolling Mill Corp'n. (The), Fort Wayne, Ind. with rolling mill at Fort Wayne was acquired by Joslyn Mfg. & Supply Co., April 7, 1928.

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, 333 State St.

New York, 52 Vanderbilt Ave.

Works at Franklin: orig. blt. 1902-03; f. o. Aug., 1903; rebt. 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, pulv. coal. 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.

Thomas Moses, P.; Thomas W. Dawson, V. P.; William Gates, Sec.; Philip Keller, T.; C. S. Wardley, A.; T. S. Duncan, P. A.; at Pittsburgh. Clay F. Lynch, V. P. & G. S.; at Scottdale, 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 18,900 acres of surface lands and 107,900 acres of coal in Western Pennsylvania. It operates 17 coke plants with 5,129 beehive ovens in Fayette County, and 8 coke plants with 2,085 beehive ovens in Westmoreland County. The company owns and operates plants producing coal at Colonial 1-3-4, Edenborn, Lambert, Leckrone, Davidson, Gates, Palmer, Ralph, Maxwell, Continental 3, Trotter, Shoaf and Footedale mines in Fayette County; the Alverton, Central and Dorothy 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 541 acres of surface lands and 3,220 acres of coal in Fayette County, Pa., and operates coal plants at Bridgeport and Fairbank, Pa.

Sharon Coke Company owns 286 acres of surface lands and 856 acres of coal in Fayette County, Pa., and operates coal plant at Ronco, Pa.

Sharon Coal & Limestone Co. owns and leases 433 acres of surface lands and 2,587 acres of coal in Mercer and Lawrence Counties, Pa., and operates 2 coal mines.

United States Coal & Coke Co. holds under lease 59,085 acres of coal in McDowell and Wyoming Counties, W. Va., and Tazewell County, Va. It operates 11 mines producing coal. The company owns 33,654 acres of surface lands and 80,828 acres of coal in Letcher and Harlan Counties, Kentucky, and operates one mine. It owns 32,569 acres of surface lands and 61,847 acres of coal in Mingo and Logan Counties, W. Va. It owns 107 acres of surface lands and 10,251 acres of coal in Barbour County, W. Va., on which is located one coal mine.

National Mining Co. and Mingo Coal Co. own 18,753 acres of coal in Allegheny and Washington Counties, Pa., on which are located three coal mines.

The United States Fuel Company owns 5,085 acres of surface lands and 77,372 acres of coal located 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 various uses. In connection with the mines 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 supply of water has been provided.

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.

Sales offices:

Baltimore, Md., W. E. Jeffries, First National Bank Bldg.

Chicago, Ill., H. A. Johann, 105 West Monroe St.

New York, N. Y., E. L. Pemberton & Co., 30 Church St.

Pittsburgh, Pa., J. S. Morrison, Oliver Bldg.

Brand: Indian (manganese steel castings).

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 ferro-manganese).

Product: manganese steel castings for sale, annual cap., 3,000 tons; frogs, crossings, switches; castings for crushing, mining and cement mill machinery.

Gardner-Denver Co., Denver, Colo., acquired The Denver Rock Drill Mfg. Co. with steel foundry at Denver, April 1, 1927, and sold the steel foundry to United States Foundries, Inc., Dec. 1, 1928.

Gary Tube Co., Pittsburgh, Pa., see under National Tube Co.

GENERAL ELECTRIC CO., 1 River Road, Schenectady, N. Y.

Inc. Apr. 15, 1892 in New York. Capital stock: com., no par value, auth. 7,400,000 shares, issued 7,211,481 shares; special, par value, \$10, auth. \$55,000,000, issued \$42,929,635; bonds \$2,047,000.

Owen D. Young, Ch.; Gerard Swope, P.; Edwin W. Allen, V. P.; Charles W. Appleton, V. P.; George P. Baldwin, V. P.; John G. Barry, V. P.; William R. Burrows, V. P.; Cummings C. Chesney, V. P.; Albert G. Davis, V. P.; Charles E. Eveleth, V. P.; Theodore W. Frech, V. P.; Charles E. Patterson, V. P.; Darius E. Peck, V. P.; Willis R. Whitney, V. P.; James A. Cranston, V. P.; William J. Hanley, V. P.; Harry L. Monroe, V. P.; Charles K. West, V. P.; Dana R. Bullen, A. V. P.; Samuel L. Whitestone, C.; Robert S. Murray, T.; William W. Trench, Sec.

Sales offices in all 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. (15-ton) fuel, oil; 1 Heroult electric fur. (6-ton) being transferred from River Works, to be in operation about July, 1930. Gray iron foundry (5,000 tons). Product: steel castings for own use, annual cap., 18,000 tons (13,000 tons A. O. H., 5,000 tons electric).

River Works, Lynn, Mass.: blt. 1892, f. o. Mar. 4, 1893; 2 A. O. H. fur. (one 20-ton, one 25-ton) and 1 Heroult electric fur. (6-ton) steel foundry dismantled Mar., 1929. Forge with 21 board drop ham. (500-lb. to 3,000-lb.), 3 steam drop ham. (600-lb. to 6,000-lb.), 8 steam ham. (600-lb. to 12,000-lb.). Gray iron (7,500 tons) and brass and aluminum (1,500 tons) foundries for own use.

Pittsfield Works, Pittsfield, Mass.: manufacture of steel ingots and steel castings was discontinued in 1928. 1 Heroult electric fur. (1-ton) and 1 General Electric induction fur. (2-ton) used for manufacture of non-magnetic cast iron only. Gray iron (15,000 tons) and brass (500 tons) foundries for own use.

Schenectady Works, Schenectady, N. Y.; 3 electric fur. (2 Heroult electric fur., one 6-ton, one 5-ton; one 3-ton Swindell); forge with 2 air ham. (300-lb.), 16 board drop ham. (200-lb. to 2,500-lb.), 24 steam ham. (600-lb. to 7,000-lb.). Gray iron (9,000 tons), copper and aluminum (690 tons) foundries for own use. Product: steel ingots and castings for own use, annual cap., 3,300 tons castings and 890 tons alloy steel ingots (nickel, chrome, etc.) for high speed steel for tools.

Erie Works, Erie, Pa.: Gray iron foundry (3,500 tons), malleable iron foundry (10,000 tons) and brass foundry (1,000 tons) for own use only.

General Steel Company, Milwaukee, Wis. Works at St. Francis, Wis. for manufacture of electric steel ingots and castings and forged products, were acquired in 1927 by The Wisconsin General Railway, a subsidiary of The Milwaukee Electric Railway & Light Co. The electric furnaces were abandoned in 1928.

GENERAL STEEL CASTINGS CORPN., Eddystone, Pa.

Inc. Dec. 11, 1928 in Delaware. Capital stock: com., no par value, auth. 900,000 shares, issued 420,000 shares; pref., no par value, \$6 dividend cum., auth. and issued 100,000 shares; bonds \$20,000,000.

Clarence H. Howard, Ch.; H. M. Pflager, V. P.; Harrison Hoblitzelle, V. P.; C. R. Pilsbury, A. T.; at Granite City, Ill. George H. Houston, Ch. (executive committee); A. S. Blagden, V. P.; G. L. Alston, Sec. & T.; A. S. Bryant, A. Sec. & A. T.; P. Cracium, A. T.; at Eddystone. R. H. Ripley, P.; at Chicago, Ill.

Commonwealth Division, Granite City, Ill.: blt. 1902, f. o. Sept. 8, 1902; 6 B. O. H. fur. (three 29-ton, three 50-ton) fuel, oil. (Commonwealth Steel Co. to July 30, 1929). Product: steel castings for sale, annual cap., 80,000 tons; patented cast steel specialties for locomotives and railway cars.

Eddystone Works, Eddystone, Pa.: construction begun May, 1929, to operate in 1930; 3 B. O. H. fur. (50-ton) fuel, oil. Product: steel castings for sale, annual cap., 60,000 tons; patented cast steel specialties for locomotives and railway cars.

Seaboard Works, Chester, Pa.: blt. 1900, f. o. Dec. 29, 1900; 3 A. O. H. fur. (one 18-ton, one 20-ton, one 22-ton) fuel, oil. (American Locomotive Co. to Dec. 31, 1929). Product: steel castings for sale, annual cap., 21,400 tons; alloy steel castings (nickel, vanadium); locomotive castings.

Thurlow Works, Chester, Pa.: blt. 1883-84, f. o. May, 1884; 3 A. O. H. fur. (25-ton) fuel, oil. (American Steel Foundries to Dec. 31, 1929). Product: steel castings for sale, annual cap., 21,500 tons; alloy steel castings (chrome, vanadium, manganese).

Total annual cap., 182,900 tons steel castings.

General Steel Foundries, Inc., Newark, N. J. Steel foundry at Newark destroyed by fire in Sept., 1925, was not rebuilt. Company was dissolved.

General Trust of Canada, Montmagny, P. Q., Canada.

Montmagny Works, Montmagny: blt. 1913, f. o. Nov. 28, 1913; 1 Baillot steel converter (1-ton); 2 B. O. H. fur. (20-ton); 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.

Gerlinger Electric Steel Casting Co., West Allis, Wis., placed in hands of receiver, June 13, 1927. Works at West Allis for manufacture of electric steel castings, sold June 15, 1928 to Bondholders Committee and subsequently acquired May 1, 1929 by Kearney & Trecker Co. Electric furnace dismantled and sold. Site will be used for other purposes.

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.; Harry W. Prizer, Sec.; A. Coleman Smith, T.; at Pottstown. Andrew B. Murray, V. P.; at Brooklyn, N. Y.

Sales offices:

Boston, Mass., Harrington, Robinson & Co.

Brooklyn, N. Y., A. B. Murray & Co., Inc., 147 Wolcott St.

Chicago, Ill., Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts.

Brands: Glasgow (manheads, saddles, pipe flanges); Glasgow Iron (wrought iron forging billets, plates); Roe (manheads). Glasgow Plant and Valley Mill, Pottstown, Pa.: blt. 1874; 8 double puddling fur.; 1 rotary squeezer; 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. Product: muck bar, annual cap., 10,000 tons; iron and steel sheared plates and skelp, annual cap., 12,000 tons; hot rolled ship, tank, bridge, boiler plates, etc.; forged and pressed manheads, manhole saddles, pipe flanges, furnace valves and seats, and misc. flanged and pressed work.

Lower Works, Pottstown (leased from McClintic-Marshall Construction Co.): blt. 1861, enl. 1867; 14 double puddling fur.; 2 rotary squeezers; ten 3-d. heat. fur., fuel gas; 32" x 112" 3-h. sheared plate mill; 36" 2-h. universal plate mill also used for rolling forging iron billets. Roll sheared plates 10 B. W. G.

to 1" thick, up to 104" wide; universal plates $\frac{1}{4}$ " to 10" thick, to 35 $\frac{1}{2}$ " wide. Product: muck bar, annual cap., 35,000 tons; forging iron billets, 12,000 tons; iron and steel plates and skelp, annual cap., 35,000 tons sheared, and 35,000 tons universal plates.

GLOBE IRON CO., Jackson, Ohio.

Inc. 1873 in Ohio. Capital stock: com., par value \$10, auth. and issued \$1,200,000.

John E. Jones, P. & G. M.; Moses Morgan, V. P.; Charles P. Chapman, Sec.; Edwin A. Jones, T., G. S., G. S. M. & P. A. Sales agents: Rogers, Brown & Crocker Bros., Inc., Cincinnati and elsewhere; Nicholas and Miller, Chicago.

Brands: Globe (high silicon silveries and bessemer ferro-silicon). Globe Furnace, Jackson, Ohio: 1 stack (new), 87' 6" x 18', blt. 1928-29, blown in June 1929; old stack, 76' x 17' 6", blt. 1900-01, dismantled 1929; 5 hot blast stoves (three 95' x 18', two 90' x 20'); 3 Weimer steam blowing eng., 45,000 cfm., 20 lbs. rated pressure; 14 horizontal return tubular boilers, 2,000 H. P.; Heyl & Patterson single-strand pig casting mach. Coke and coal: Lake ore.

Product: bessemer ferro-silicon, high silicon silvery and foundry pig iron, annual cap., 90,000 tons high silicon or 180,000 tons foundry.

GLOBE STEEL TUBES CO., 1345 Burnham St., Milwaukee, Wis.

Inc. July 26, 1922 in Delaware. Capital stock: com., no par value, auth. 500,000 shares, issued 143,000 shares; bonds \$850,000.

F. J. O'Brien, P. & G. M.; 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.
Cleveland, Ohio, 1436 Engineers Natl. Bank Bldg.
Detroit, Mich., 5-169 General Motors Bldg.
New York, N. Y., Room 910, 110 East 42d 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., three 2-d. tube reheat. fur., oil-fired; one 2-d. electric annealing fur.; 32" 2-h. 1-st. piercing mill; 27" 2-h. 1-st. piercing mill; 22" 2-h. 1-st. tube rolling mill; 21" 2-h. 1-st. tube rolling mill; 19" 2-h. 5-st. sizing mill; four 10 $\frac{1}{2}$ " 2-h. 13-st. reducing cont. mills.

Product: seamless steel tubes (hot rolled to 6" O. D.; cold drawn $\frac{1}{2}$ " to 5 $\frac{1}{2}$ " O. D.), annual cap., 50,000 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. Victoria Furnace at Goshen for manufacture of foundry pig iron, idle several years, was abandoned in 1928.

GOULD CASTINGS CORPN., Kansas City, Kansas.

Works at Kansas City: construction begun in 1927; installing electric furnace for manufacture of steel, gray iron and semi-steel castings, to be completed and in operation early in 1930.

GOULD COUPLER CO. (The), 230 Park Ave., New York, N. Y.

Inc. Jan. 29, 1925 in Maryland. Capital stock: com., no par value, auth. 350,000 shares, issued 300,000 shares; Class "A" pref., no par value, auth. and issued 175,000 shares; bonds \$3,600,000.

C. J. Symington, P.; J. A. Sauer, V. P.; at New York. D. S. Barrows, V. P.; P. P. Meade, Sec. & T.; A. H. Gardner, A. Sec. & A. T.; at Rochester, N. Y., P. O. Box 993. D. M. Scott, V. P.; C. H. Shaffer, Works Mgr.; A. R. McHenry, P. A.; at Depew, N. Y.

Sales offices:

Baltimore, Md., 1000 Maryland Trust Bldg.

Boston, Mass., 84 State St.

Chicago, Ill., Straus Bldg., 310 South Michigan Ave.

Montreal, P. Q., Canada, 974 St. Antoine St.

St. Louis, Mo., Room 462, Paul Brown Bldg.

St. Paul, Minn., Room 924, Merchants Natl. Bank Bldg.

San Francisco, Calif., Hobart Bldg.

Works at Depew, N. Y.: blt. 1902, f. o. Nov. 30, 1903; 4 B. O. H. fur. (25-ton); 1 A. O. H. fur. (10-ton); 4 annealing fur. Fuel, oil.

Product: steel castings for own use and for sale, annual cap., 74,000 tons (67,000 tons B. O. H., 7,000 tons A. O. H.); couplers, side frames, bolsters, end sills, draft gear and miscellaneous car castings.

Graham Furnace, Bluefield, Va. Graham Furnace at Bluefield for manufacture of foundry pig iron, last operated in 1921, was abandoned in 1928.

GRANITE CITY STEEL CO., 20th St. and Madison Ave., Granite City, Ill.

Inc. Nov. 1, 1927 in Delaware. Capital stock (owned by National Enameling & Stamping Co.): com., no par value, auth. 300,000 shares, issued 292,347 shares; pref., auth. \$4,000,000, none outstanding.

A. J. Kieckhefer, P.; G. H. Niedringhaus, V. P. & G. M.;
L. F. Miller, V. P. & S. M.; J. F. Hahn, Sec. & T.; W. A.
Martin, A. Sec.; Phil. Stremmel, G. S.; J. W. Hargate, P. A.

Sales offices:

Chicago, Ill., 1703 Lake Michigan Bldg.
Dallas, Texas, 511 Central Bank Bldg.
Detroit, Mich., 2208 West Fort St.
Kansas City, Mo., 404 Ridge Arcade Bldg.
Los Angeles, Calif., 350 East First St.
Memphis, Tenn., 1415 Fidelity Bank Bldg.
St. Louis, Mo., 1805 Boatmen's Bank Bldg.
St. Paul, Minn., 1422 Pioneer Bldg.
Salt Lake City, Utah, 402 Scott Bldg.
San Francisco, Calif., 718 Mission St.
Seattle, Wash., 710 Terminal Sales Bldg.

Works at Granite City, Ill.: blt. 1895, f. o. Aug. 31, 1895; 10 B. O. H. fur. (60-ton) fuel, oil and nat. gas; 8 gas producers; nine 4-hole soaking pits, fuel prod. gas; 1 cont. oil-fired ingot heat. fur.; 30 sheet and 30 pair fur.; sheared plate mill with 30" x 100" 2-h. roughing and 34" x 100" 3-h. finishing, middle roll 22" x 100"; 30" x 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", 2 single stands 22" x 56", and 2 single stands 26" x 72"; 20 double box annealing fur.; 1 blue annealing fur.; 5 pickling mach. (3 Mesta, 2 United); 4 galvanizing pots; 9 tinning sets for coke tinplates. Roll sheared plates up to 88" wide, 1" thick; black sheets 8 to 30 gauge, 48" x 144" maximum according to gauge; black plates 14 to 38 gauge, 32" x 84" maximum according to gauge. (Operated by National Enameling & Stamping Co. to Nov. 1, 1927).

Product: steel ingots, annual cap., 360,000 tons; sheet and tinplate bars, 176,540 tons; finished hot rolled products, 240,315 tons including 95,000 tons sheared plates, 77,315 tons black sheets, 68,000 tons black plate for tinning; blue annealed sheets, 15,100 tons; galvanized sheets, 57,100 tons; tinplates, 1,112,000 base boxes.

Grant, Robert, New York, N. Y. Slatington Rolling Mills at Slatington, Pa., last operated in July, 1923, were dismantled in 1926 and buildings sold.

Gray, J. J., Jr., Rockdale, Tenn., sold Rockdale Furnace at Rockdale, Tenn. to Bon Air Coal & Iron Corp'n. in Feb., 1926. Name of Bon Air Coal & Iron Corp'n. was changed to Tennessee Products Corp'n.

GREAT LAKES STEEL CORPN., Ecorse, Detroit, Mich.

Inc. Feb. 23, 1929 in Delaware. Capital stock: com., no par value, auth. 700,000 shares, issued 400,000 shares; pref., no par value, auth. 300,000 shares, none issued. Subsidiary of National Steel Corporation since Dec. 1, 1929.

George R. Fink, P.; Elmer R. Milburn, V. P. & Sec.; David Thomson, V. P.; Lacey S. Brown, T.; Kenneth B. Coates, A. T.; Paul T. Farrell, P. A.

Works at Ecorse, Mich.: construction begun in June, 1929; installing 6 B. O. H. fur. (150-ton) fuel, oil; three 110-ton hot metal mixer ladle cars; rolling mills for billets, slabs, light plates and strip; to be completed and in operation about July 1, 1930.

Product: steel ingots, annual cap., 600,000 tons.

GREAT NORTHERN RAILWAY CO., St. Paul, Minn.

C. O. Jenks, Vice-President.

St. Cloud Shops, Waite Park, 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., 4,150 tons.

GULF STATES STEEL CO., Brown-Marx Bldg., Birmingham, Ala.

Inc. Nov. 1, 1913 in Delaware. Capital stock: com., no par value, auth. 300,000 shares, issued 197,500 shares; pref. 7% cum. auth. \$3,000,000, issued \$2,000,000; bonds \$3,687,500.

W. H. Coverdale, P.; at 52 Wall St., New York, N. Y. L. E. Geohegan, V. P. & G. M.; A. R. Forsyth, V. P. & T.; H. Sanborn Smith, A. P.; P. R. Owens, Sec. & A.; R. P. Daggitt, G. S. M.; B. F. Tyler, P. A.; at Birmingham. F. R. Thompson, A. G. M.; at Alabama City, Ala.

Sales agents:

Anniston, Ala., T. D. Donoho.

Baton Rouge, La., Doherty Hardware Co., 441 LaFayette St.

Charleston, S. C., James S. Simmons, 177 East Bay St.

Chattanooga, Tenn., John C. Vance Iron & Steel Co.

Cincinnati, Ohio, S. E. Anning Co., 1106 Union Trust Bldg.

Dallas, Texas, Charles E. Paddock, 1301 Magnolia Bldg.

El Paso, Texas, Owsley Sales Co., 902 Mills Bldg.

Harrison, Ark., Milburn Brokerage Co.

Jacksonville, Fla., Lloyd A. Gray & Co., P. O. Box 325.

Los Angeles, Calif., Frank Pittman, Room 617, 321 West 3d St.

McComb, Miss., Williams Bros.

Memphis, Tenn., McClelland Joy, 324 Cotton Exchange Bldg.

Meridian, Miss., Scott & Roth.

New Orleans, La., Woodward, Wight & Co., Ltd.

New York, N. Y., J. H. Bryan, Room 1372, 50 Church St.

Philadelphia, Pa., Phillips Bros., 34 South 17th St.

St. Louis, Mo., S. J. Waterman, 426 Chemical Bldg.

Savannah, Ga., M. C. Tobias & Co.

Seattle, Wash., A. A. Hilton, L. C. Smith Bldg.

Brands: Coosa, Gulf Perfect, Alabama Special, Cactus, Cherokee (barb wire); Southern, Warrior (fence); Agate (bright wire); Gulf (pig iron) and Gulf Deformed (reinforcing bars).

Alabama City Works, Alabama City, Ala.:

Alabama City Furnace: 1 stack, 90' x 21' 6", blt. 1902-03, rebuilt 1928; four 2-pass side comb. hot blast stoves, 90' x 20'; 2 Ingersoll-Rand turbo-blowers, 120,000 cfm.; 4 Sterling water-tube boilers, 900 H. P.; 1 Heyl & Patterson single-strand pig casting mach. By-product coke: Alabama red ore and Alabama and Georgia brown ore. Product: basic and foundry pig iron, annual cap., 180,000 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., 200,000 net tons coke, 582,000 gals. light oil.

Steel Works: blt. 1903-04, f. o. June 24, 1904; 6 B. O. H. fur. (75-ton); fuel, prod. gas, 30 Forter-Miller gas producers; two (125-ton) Treadwell hot metal cars (Pugh type); 1 cupola; four 4-hole soaking pits; 11 heat. fur. (two 1-d. coal-fired, two 4-d. coal-fired, 3 cont. coal-fired, 4 cont. gas-fired); 36" 2-h. 1-st. blooming; Garrett-Cromwell rod mill with 11-st. 2-h.; bar mill with 10-st., 20" 3-h. and 13" 2-h.; bar mill with 12-st., 12" to 9"; 280 wire drawing blocks for wire 00000 to 22 gauge; 264 wire nail mach.; 70 barbed wire mach.; 14 wire fence mach.; 3 galvanizing pans. Gray iron and brass foundry for own use. Product: steel ingots, annual cap., 280,000 tons, steel castings for own use, 500 tons; blooms and billets, 250,000 tons; finished hot rolled products, 200,000 tons including 90,000 tons wire rods and 95,000 tons steel merchant and concrete bars, 15,000 tons angles and channels; 180,000 net tons plain wire, 50,000 net tons galvanized wire, 24,000 net tons barbed wire, 30,000 net tons wire fence, 1,440,000 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., 500,000 net tons coal.

Hadfield-Penfield Steel Co. (The), Bucyrus, Ohio, was acquired by W. A. Riddell Co., July 8, 1927.

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.

H. S. Wilkinson, Ch.; F. B. Hufnagel, P.; George E. Shaw, T.; H. L. Gellinger, A.; A. T. Galbraith, G. S. M.; R. H. Filsinger, P. A.; at New York. W. A. Mackenzie, Sec.; R. H. Dougherty, Works M.; H. A. Pardee, Mgr. (sales division); at Syracuse, N. Y.

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, 1258 East 55th St.

Detroit, Mich., 542 East Fort St.

Los Angeles, Calif., 1207 Santa Fe Ave.

New York, N. Y., 1 Dominick St.

Philadelphia, Pa., 1224 Callowhill St.

Halcomb Works, Syracuse, N. Y.: blt. 1905-06, f. o. 1906; 7 electric steel fur. (5 Heroult, one 3.3-ton, one 4-ton, three 9-ton; 2 Greaves-Etchells, 3½-ton); four 24-pot crucible fur.; 1 Hughes gas prod.; one 5-hole oil-fired soaking pit; 31 reheat. fur. (two 1-d., eight 2-d., nine 3-d., three 4-d. coal-fired; four 3-d., five 4-d. oil-fired); 25" 3-h. 1-st. blooming; 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", 6-st. 10" and 5-st. 9"; 6 cold rolling mach.; 8 sheet fur.; 4 hot black sheet mills, 18" x 26"; roll carbon and alloy tool steel sheets .020" to .375" in thickness; 25 annealing fur.; 2 pickling mach. (1 Morgan, 1 Wrightwire), 15 hand-pickling tanks; 79 wire drawing blocks for wire from .006" to ½" and cold drawn bars ½" to 3"; 8 steam hammers (600-lb. to 12,000-lb.).

Product: steel ingots, annual cap., 51,700 tons (43,900 electric, 7,800 crucible); alloy steel ingots (nickel, chrome, vanadium, molybdenum, tungsten); steel billets, 30,000 tons; hot rolled products, 30,000 tons including 9,000 tons wire rods, 3,600 tons sheets, 17,400 tons tool steel bars; forged products, 12,680 tons; wire products, 8,000 net tons; carbon alloy and high speed tool steels, hammered and rolled bars, sheets, forgings; fine wire, drill rods, cold rolled and cold drawn special shapes, bars and strips.

HAMILTON COKE & IRON CO., Box 446, Hamilton, Ohio.

Inc. May 11, 1927 in Delaware. Owned jointly by the Koppers Co., Pittsburgh, Pa. and the American Rolling Mill Co., Middletown, Ohio.

H. B. Rust, P.; W. F. Rust, V. P.; John S. Brookes, Jr., Sec.; S. T. Brown, T.; at Koppers Bldg., Pittsburgh, Pa. J. H. Franz, V. P.; at 1120 Huntington Bank Bldg., Columbus, Ohio. R. G. McKinney, A. T.; J. T. Whiting, G. M.; O. E. Clark, Supt. (blast furnace); C. L. Haldeman, Supt. (coke plant); J. A. Bouffard, G. S. M.; C. H. Henneberger, P. A.; at Hamilton.

Hamilton Furnace, Hamilton: 1 stack, 89' 9" x 20' 6", blt. 1907-08, remod. 1928, relined 1928, blown in May 25, 1928; 4 hot-blast stoves (1 Kennedy 2-pass 110' x 20', 3 Brassert-Diehl 92' x 20'); 3 steam blowing eng. (1 Hoooven-Owen-Rentschler, 5,000 H. P., 2 Todd, 3,500 H. P. in tandem) 105,000 cfm., 15 lbs. rated pressure; 5 Sterling 3-drum water-tube boilers, 2,300 H. P. serve also by-product coke plant; Heyl & Patterson double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 45,600 tons (under construction); By-product coke: Lake ore. By-product Coke Plant: 45 Becker by-product coke ovens; by-product recovery plant and Koppers benzol plant, annual cap., 320,000 net tons coke, 1,400,000 gals. light oil. (Hamilton Furnace Co. to May 10, 1927). Hot metal to American Rolling Mill Co., East Side Works, at Middletown, Ohio.

Product: basic pig iron, annual cap., 225,000 tons.

Hamilton Furnace Co., Duluth, Minn. with blast furnace at Hamilton, Ohio, was acquired by Hamilton Coke & Iron Co. May 10, 1927.

HANFORD IRON WORKS, INC., 119 South Arrowhead Ave., San Bernardino, Calif.

Inc. May, 1918 in California. Capital stock: com., par value \$100, auth. \$175,000, issued \$100,000; pref. 8% cum., auth. \$75,000, none issued.

R. P. Drummond, P. & G. S.; W. J. Hanford, V. P.; Wm. Guthrie, Sec. & T.; R. M. Hays, G. M.

Sales office: 806 Santa Fe Ave., Los Angeles, Calif.

Works at 119 South Arrowhead Ave., San Bernardino: Steel foundry, blt. 1920, f. o. Jan. 17, 1921; 1 Greene electric fur. (3-ton); 1 cupola. Gray iron foundry, annual cap., 800 tons gray iron castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 4,500 tons. Alloy steel castings (nickel, chrome).

Hanging Rock Iron Co. (The), Hanging Rock, Ohio. Hamilton Furnace at Hanging Rock, last operated in 1923, was dismantled in 1928.

HANNA FURNACE CO. (The), 1300 Leader Bldg., Cleveland, Ohio.

Inc. Oct. 1, 1920 in Delaware. Capital stock: com., par value \$10, auth. \$15,000,000, issued \$9,895,000; pref. 8% cum. auth. and issued \$750,000. Subsidiary of National Steel Corporation since Dec. 1, 1929.

C. A. Collins, P.; W. G. Sharp, V. P.; R. E. McMahon, V. P.; C. N. Osborne, Sec. & T.; W. H. Peter, A.; at Cleveland. P. J. Moran, Mgr.; at Detroit, Mich.

Sales agent: The M. A. Hanna Company, Cleveland, Ohio.

Brand: Hanna (pig iron).

Detroit Plant, Zug Is., River Rouge, Wayne Co., Mich.: 2 stacks; "A", 78' x 18' 9", blt. 1903, rebld. 1911, last relined 1925; "B", 80' x 21', blt. 1909-10, rebld. 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 Pittsburgh Coal Washer Co. double-strand pig casting mach.; Greenawalt sintering plant for flue dust. By-product coke: Lake ore. Product: foundry, malleable and basic pig iron, annual cap., 350,000 tons.

Buffalo Plant, Buffalo, N. Y., lease given up Nov. 20, 1927 and plant reverted to owner, Buffalo Union Furnace Co. Now known as Hamburg Street Plant, Buffalo Union Furnace Co.

Dover Plant, Dover, Ohio: 1 stack; Dover Furnace was acquired by Valley Furnace Co., Oct. 18, 1929 and abandoned as of Dec. 31, 1929.

Cherry Valley Plant, Leetonia, Ohio: 1 stack; Cherry Valley Furnace, was leased to Davison Coke & Iron Co., May 1, 1929.

Fannie Plant, West Middlesex, Pa.: 1 stack, Fannie Furnace, was sold in Jan., 1929 to Contracting Machinery & Supply Co., Pittsburgh, Pa. and dismantled in that year.

HARNISCHFEGER CORPORATION, 38th & National Aves., Milwaukee, Wis.

Inc. Jan. 7, 1910 in Wisconsin. Capital stock: com., no par value, auth. 500,000 shares, issued 300,000 shares; pref. 7% cum. auth. and issued \$2,000,000.

H. Harnischfeger, P.; W. Harnischfeger, V. P. & G. S. M.; E. Standfuss, V. P. & Works M.; R. von Schleinitz, Sec. & T.; R. Binkowski, A. Sec. & C.; D. Caesar, G. S.; F. H. Gavigan, P. A.

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; Milwaukee Electric Crane & Hoist Corp., 60th & Greenfield Aves.; Steel Foundry at 871 Robinson Ave., Milwaukee.

Steel Foundry, 871-891 Robinson Ave., Milwaukee: blt. 1918-19, f. o. Feb. 1, 1919; one Vom Baur electric fur. (10-ton); 1 cupola; gray iron and brass foundry, annual cap., 7,300 tons gray iron castings (4,800 tons cupola, 2,500 tons electric) and 600 tons brass castings for own use.

Product: steel castings for own use, annual cap., 8,000 tons.

HARRISBURG PIPE & PIPE BENDING CO., 10th & Herr Sts., Harrisburg, Pa.

Inc. Dec. 28, 1899 in Pennsylvania. Capital stock: com., par value \$50, auth. \$1,000,000, issued \$916,500; pref. 7% cum., auth. \$150,000, none issued.

C. B. Houck, P.; at 336 West Green St., Hazleton, Pa. Edward C. Smith, V. P.; N. W. Cassel, Sec. & P. A.; Wilbert Wear, T.; Christian Wilson, Jr., G. S.; H. W. Bishop, Jr., G. S. M.; at Harrisburg.

Sales agents: Joseph A. Janney, Jr., 1204 Morris Bldg., Philadelphia, Pa., and Charles L. Gulick, 110 East 42d St., New York, N. Y., sales agents for seamless steel cylinders.

Works at Harrisburg: blt. 1900; steel plant and rolling mill added 1902-03; 3 B. O. H. fur. (45-ton) fuel, oil; 7 Hughes gas prod.; two 4-hole soaking pits, fuel, coal gas; 2 cont. coal-fired billet and slab heat. fur.; 32" 2-h. 1-st. blooming; 10" 3-h. 5-st. guide; 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 hand pickling tank; 7 steam drop forge hammers, 2,000 to 8,000-lb.; 15 hydraulic forging presses 1,250-lb. to 100-ton. Shop for manufacture of iron, brass and copper pipe coils, feed water heaters, and freezing plates. Washer dept. discontinued.

Product: steel ingots, annual cap., 80,000 tons; alloy steel ingots (nickel, chrome, vanadium, molybdenum, silicio-manganese); blooms, billets and slabs, 72,000 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, couplings and hollow forgings.

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 cont. coal-fired heat. fur.; 12" 3-h. 2-st. and 9" 3-h. 5-st. bar mills.

Product: carbon and alloy steel bars, annual cap., 9,000 tons.

Harrison Real Estate Corpn., Buffalo, N. Y. Works at Lockport, N. Y. for manufacture of merchant bars, dismantled in 1925 and equipment removed. Site was acquired by Tuscarora Hydraulic Co., Inc.

HARRISON STEEL CASTINGS CO., Attica, Ind.

Inc. 1917 in Indiana. Capital stock: com., no par value, auth. and issued 12,000 shares. Company acquired assets and property of National Car Coupler Co. as of January 1, 1928.

J. W. Harrison, P.; R. J. Harrison, V. P. & G. M.; G. W. Harrison, Sec. & S. M.; W. C. Harrison, T.; Jessie Coen, A.; W. G. Kirkman, G. S.; W. E. Albert, P. A.

Works at Attica, Ind.: blt. 1906-07, f. o. May 18, 1907; 3 A. O. H. fur. (two 20-ton, one 10-ton) fuel, oil.

Product: steel castings for sale, annual cap., 24,000 tons miscellaneous castings.

HARROW SPRING CO., Stambaugh Bldg., Youngstown, Ohio.

Inc. June 20, 1910 in Michigan. Capital stock: com., par value \$10, auth. \$60,000, issued \$56,005. Subsidiary of The Youngstown Sheet & Tube Co., Youngstown, Ohio, since July 1, 1923.

C. S. Robinson, P.; W. C. Reilly, V. P.; W. E. Meub, Sec.; W. J. Morris, T.; J. H. Steeves, A.; W. N. McDonald, C.; W. E. Watson, G. S. M.; C. T. Moke, P. A.; at Youngstown. E. B. Kibby, G. S.; at Kalamazoo, Mich.

Works at Kalamazoo, Mich.: blt. 1900-01, f. o. Jan. 30, 1901; 1 Heroult electric fur. (6-ton) dismantled 1929; rolling mill equipment dismantled 1928-29. Forge plant: 5 hammers (3 C. C. Bradley cushion helve 60-lb., 80-lb., 100-lb. and 2 William & White board drop 900-lb., 1,500-lb.); 2 forging mach. (one Ajax 1½-ton, one Acme 2-ton).

Product: forged products, annual cap., 4,400 tons harrow teeth, rake teeth and cultivator teeth.

Hartford Electric Light Co., Hartford, Conn. Works at Hartford were leased July 7, 1927 to John D. Scott. The Scott-Witter Steel Corp. was organized Nov. 16, 1928 to take over and operate the works. Corporate title of the latter company was changed to The Hartford Electric Steel Corp. Feb. 24, 1930.

HARTFORD ELECTRIC STEEL CORPN. (The), 540 Flatbush Ave., Hartford, Conn.

Inc. Nov. 16, 1928 in Connecticut as The Scott-Witter Steel Corp., name changed to The Hartford Electric Steel Corp. Feb. 24, 1930. Capital stock owned by the Hartford Electric Light Co.

Edmund S. Gardner, P. & G. M.; George C. Hagstrom, 1 V. P. & G. S. M.; K. P. Applegate, 2 V. P.; John C. Lynch, Sec. & T.; William F. Chase, P. A.

Works at 540 Flatbush Ave., Hartford (owned by Hartford Electric Light Co.): blt. 1916, f. o. Feb. 19, 1917; 2 Heroult electric fur. (2-ton).

Product: electric steel castings for own use and for sale, annual cap., 5,000 tons.

Helgerson Foundry Co., Green Bay, Wis. Works at 1148 Main St., Green Bay, acquired by Wisconsin Foundries, Inc., Sept. 9, 1929. The 1-ton Whiting converter (idle) is still in the plant and is being held for sale.

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 \$499,000; pref. 7% cum. auth. \$200,000, issued \$197,100; bonds \$329,500.

Paul E. Heller, P. & G. M.; Fred H. Stout, V. P., Sec. & G. S. M.; Walter M. Heller, T.; A. W. Ibach, A.; Arthur C. Heller, P. A.

Sales offices:

Cleveland, Ohio, 1549 Superior Ave.

Detroit, Mich., 4461 West Jefferson St.

Company owns a plant at Newcomerstown, Ohio for manufacture of steel files and a steel works and rolling mill at Newark, N. J. described below.

Works at 865 Mt. Prospect Ave., Newark: steel wks. blt. 1882; 1 crucible fur. (30-pot) fuel, prod. gas, 2 gas prod.; 7 coal-fired heat. fur. (two 1-d., three 2-d., two 4-d.); 16" 3-h. 1-st. cogging and 10" 3-h. 7-st. finishing merchant mill; 3 box annealing fur.; 1 pickling tank. Fuel, coal and prod. gas.

Product: steel ingots, annual cap., 1,500 tons; alloy steel ingots (nickel, chrome, tungsten, molybdenum, vanadium); rolled bars for own use and for sale, annual cap., 11,000 tons; soft steel, special shapes, file steel and tool steel bars. 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., Pittsburgh, Pa. Works at Greensburg, Pa. for manufacture of steel castings, valves, pipe fittings, gray iron, semi-steel, etc. were abandoned in 1925.

HENDERSON IRON WORKS & SUPPLY CO. (The W. K.), Ltd., Shreveport, La.

W. K. Henderson—E. A. Frost, Co-Receiver (appointed Nov. 27, 1929).

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 COMPANY, 4620 Hatfield St., Pittsburgh, Pa.
Inc. May 19, 1890 in Pennsylvania. Capital stock: com., par value \$50, auth. \$300,000, issued \$245,650.

C. W. Heppenstall, P.; S. B. Heppenstall, V. P.; B. B. Weinberg, V. P. & G. S. M.; Robert B. Heppenstall, V. P.; G. F. Ritenbaugh, Sec.; F. G. Riethmiller, T.; H. S. Rogers, G. S.; I. E. Walton, P. A.

Sales offices:

Bridgeport, Conn., A. J. Porter, Jr., 95 Howard Ave.

Buffalo, N. Y., Brace-Mueller-Huntley, Inc., 525 Marine Trust Bldg.

Chicago, Ill., L. A. Daines, 815 Straus Bldg.

Cleveland, Ohio, George I. Allen, 644 Rockefeller Bldg.

Detroit, Mich., F. C. Moyer, W. Jefferson Ave. & W. Grand Blvd.

Denver, Col., J. M. Moore, 1038 U. S. National Bank Bldg.

Fort Worth, Tex., C. A. Fischer, 2101 Fort Worth Natl. Bank Bldg.

Indianapolis, Ind., Geo. O. Desautels Co., 335 Postal Station Bldg.

Los Angeles, Calif., Milton C. Ryer, 415 I. E. Hellman Bldg.

Mattapan, Mass., H. P. Jones, P. O. Box 21.

Milwaukee, Wis., Mielke & Bemm, 6134 Plankinton Arcade.

New York, N. Y., C. G. Singleton, 3912 Woolworth Bldg.

Philadelphia, Pa., A. J. Wurster, 1020 Drexel Bldg.

Richmond, Va., J. R. Johnson & Co., P. O. Box 515.

Rochester, N. Y., Ray Morris, 421 Central Trust Bldg.

St. Louis, Mo., K. P. Wesseling, 3007 Norwood St.

Syracuse, N. Y., Brace-Mueller-Huntley, Inc., 1202 Hills Bldg.

Brands: Hardtem (die blocks); E. I. E. (electric induction furnace steels).

Company operates through subsidiaries a forge at Pittsburgh (Heppenstall Forge & Knife Co.) and a forge at Bridgeport, Conn. (Heppenstall Forge Co.) and warehouse at Detroit, Mich. (Heppenstall Steel Co.).

Works at 46th St. & A. V. R. R., Pittsburgh (Heppenstall Forge & Knife Co.): 2 A. O. H. fur. (25-ton) added 1920, first O. H. steel 1920, fuel in O. H., oil; 1 electric induction fur. (600-lb.) added 1928, first electric steel 1928; 4 steam hammers (one 4,000-lb., two 2,000-lb., one 150-ton); 3 steam hydraulic forging presses (two 1,000-ton, one 1,500-ton).

Product: forgings, blooms, die blocks, pinion blanks, piston rods, hammer rams, shouldered and flanged shafts, shear knives, annual cap., steel ingots, 25,450 tons (25,000 tons A. O. H., 450 tons electric); forged products, 42,000 tons.

Heppenstall Forge & Knife Co., see Heppenstall Co.

HERCULES MANUFACTURING CO., Centerville, Iowa.

Inc. June, 1912 in Iowa. Capital stock: com., par value \$100, auth. \$200,000, issued \$125,000.

B. A. Fuller, P., T., G. M. & P. A.; Miles Bateman, V. P.; C. D. Cook, Sec.

Brand: Hercules (stump pullers and steel mine car trucks).

Works at Centerville: blt. 1912, f. o. Mar. 16, 1912; 1 side blown converter (2-ton); 1 cupola.

Product: steel castings for own use and for sale, annual cap., 2,400 tons; stump pullers, mine car trucks and general jobbing steel castings from 1-lb. to 2,500-lbs.

Hess Steel Corporation (The), Baltimore, Md. with works at Baltimore owned by Bondholders Protective Committee, was acquired by Rustless Iron Corporation of America, Mar., 1926.

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.; John B. Schlossberg, Plant M.; William Dean, Jr., Plant S.; R. R. Schoonover, P. A.; at Terre Haute. Nathan B. Marple, Sec.; at Columbus, Ohio. William C. Wolfe, G. S. M.; at Chicago, Ill.

Sales offices:

Chicago, Ill., Wm. C. Wolfe, G. S. M., 400 West Madison St. St. Paul, Minn., Goodell & Hoppe, Merchants Natl. 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 coal-fired and 2 oil-fired heat. fur. (4-d.); 20" 3-h. 2-st. puddle; 20" bar mill 20" 3-h. 2-st. roughing and strand rolls and 20" 2-h. 1-st. finishing; 10" guide mill with 12" 3-h. 1-st. Belgian roughing, 10" 3-h. 2-st. pony roughing and strand, 10" 2-h. 2-st. edging and finishing; 8" guide mill with 10" 3-h. 1-st. Belgian roughing, 8" 3-h. 3-st. and 8" 2-h. 2-st. finishing. Product: muck bar and scrap bar, annual cap., 30,000 tons; iron and steel merchant bars, engine bolt and staybolt iron, annual cap., 60,000 tons rolled product (50,000 tons merchant bars, 7,500 tons engine bolt and staybolt iron, 2,500 tons special shapes).

West Pullman Works, 123rd St. & Ashland Ave., Chicago, Ill.: blt. 1909, rolling mills for manufacture of iron and steel merchant bars, dismantled 1929.

HIGHWAY TRAILER CO., Edgerton, Wis.

Inc. Nov. 1, 1917 in Wisconsin. Capital stock: com., par value \$100, auth. \$180,000, issued \$172,400; pref., auth. \$820,000, issued \$593,125. J. W. Menhall, P.; William Wentworth, V. P.;

E. Z. Menhall, Sec.; A. McIntosh, T.; W. R. Borman, C.;
H. L. Brunger, G. S.; C. R. Jahn, G. S. M.; E. J. Aaberg, P. A.

Sales offices:

Chicago, Ill., 2001 South Wabash St.
Dallas, Texas, 1801 North Market St.
Detroit, Mich., 5815 West Jefferson St.
Philadelphia, Pa., 5307 Lansdowne Ave.
Tulsa, Okla., 420 North Main St.

Brand: Highway.

Company owns works at Stoughton, Wis. for manufacture of steel and wood bodies for trailers and motor trucks, and a steel foundry at Edgerton, Wis. described below.

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., 1,800 tons; trailer, digger and winch castings.

Hoopes & Townsend Corpn., Philadelphia, Pa. Fort Washington Plant at Fort Washington, Pa. for manufacture of muck and scrap bar, merchant bars, bolt, nut and rivet rods, was sold in 1927 and dismantled.

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., Pittsburgh, Pa. Works at 62nd & Butler Sts., Pittsburgh, for manufacture of shovel blanks, destroyed by fire Mar. 2, 1926 and equipment scrapped.

HUBBARD STEEL FOUNDRY CO., 144th St. & Railroad Ave., East Chicago, Ind.

Inc. Nov. 29, 1918 in Delaware. Capital stock: com., par value \$100, auth. and issued \$1,000,000; pref. 6% cum., auth. \$500,000, issued \$200,000; bonds \$1,203,500.

Albert Pack, P.; J. T. Osler, V. P., T. & G. M.; W. H. Seaman, V. P.; E. D. Leonard, V. P.; G. T. Flynn, Sec.; M. G. Sternberg, G. S.; G. B. Wadlow, M. Steel Casting Sales; H. F. Fiegen-schuh, P. A.

Sales offices:

Chicago, Ill., 1940 McCormick Bldg.
Cleveland, Ohio, 620 National Bldg.
Milwaukee, Wis., First Wisconsin National Bank Bldg.
Pittsburgh, Pa., 421 Oliver Bldg.

Works at East Chicago, Ind. (Plant No. 1): blt. 1910, f. o. Aug. 26, 1910; 2 A. O. H. fur. (31-ton), fuel, oil. Roll foundry, annual cap., 16,000 tons chill and sand cast iron rolls. Machine shop for heavy jobbing work.

(Plant No. 2): 1 A. O. H. fur. (13-ton), fuel, oil; 1 electric fur. (1½-ton), first electric steel made Oct. 22, 1928.

Product: steel castings for sale, annual cap., 25,720 tons (Plant No. 1, 17,140 tons A. O. H.; Plant No. 2, 6,970 tons A. O. H., 1,610 tons electric). Alloy steel castings (molybdenum). Steel and iron rolls.

Hudson Valley Coke & Products Corpn., New York, N. Y. owning and operating Burden Furnace, Troy, N. Y. sold its assets Sept. 30, 1929 to Hudson Valley Fuel Corpn.

HUDSON VALLEY FUEL CORPN., P. O. Box 71, Troy, N. Y.

Inc. Sept. 26, 1929 in New York. Capital stock: com., no par value, auth. and issued 10,000 shares; bonds \$2,564,000.

Charles S. Buffner, P.; Otto Snyder, 1 V. P.; J. F. McKinney, Sec.; P. D. Weathers, T.; at 126 State St., Albany, N. Y. W. S. Blauvelt, 2 V. P.; C. W. Cook, 3 V. P. & G. M.; A. J. Silber, A. T.; H. M. Chapman, W. M.; H. D. Bernhard, S M. (coke); F. M. Guerin, P. A.; at 251 River St., Troy, N. Y.

Sales offices:

Albany, N. Y., 47 Maiden Lane.

Burlington, Vt., 194 College St.

Kingston, N. Y., 14 Cedar St.

North Adams, Mass.

Pittsfield, Mass., 116 West St.

Poughkeepsie, N. Y., 10 North Market St.

Troy, N. Y., 1 Franklin Square.

Brand: Hudson Valley Coke.

Blast Furnace (formerly Burden Furnace), Troy, N. Y.: 1 stack, 95' x 21' 6", blt. 1905-06, rebt. and enlarged 1925-26; 4 hot blast stoves; 2 steam blowing eng. (36,000 cfm.); 13 tubular boilers, 1,950 H. P. By-product coke: Lake ore. By-product coke plant: 55 ovens, by-product recovery plant and benzol plant, annual cap., 365,000 net tons coke, 1,750,000 gals. light oil. (Hudson Valley Coke & Products Corpn. to Sept. 30, 1929). Furnace idle since Oct., 1927.

Product: basic and foundry pig iron, annual cap., 150,000 tons.

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 bit.

coal-fired 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: muck bar, annual cap., 18,000 tons; bar iron specialties, bands, hoops and rods; annual cap., 15,000 tons.

HUGHES TOOL CO., Houston, Texas.

Inc. 1913 in Texas. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,500,000.

Howard R. Hughes, P.; at 804 Taft Bldg., Hollywood, Calif. Frank Andrews, V. P.; C. S. Johnson, Sec. & T.; R. C. Kuldell, G. M.; M. E. Boehm, G. S.; S. P. Brown, G. S. M.; G. O. Schulenberg, P. A.; at Houston.

Sales offices:

Los Angeles, Calif., 2445 Enterprise St.

New York, N. Y., 3912 Woolworth Bldg.

Oklahoma City, Okla., 20th & Santa Fe Sts.

Works at Houston, Texas: foundry blt. 1924, f. o. June, 1924; 2 Lectromelt electric fur. (one 3-ton, one $\frac{1}{2}$ -ton).

Product: steel castings for own use and for sale, annual cap., 10,500 tons; alloy steel castings (nickel, chrome); rotary drilling tools and high pressure-temperature valves and fittings.

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.; F. Palen, V. P. & P. A.; O. Pullan, Sec. & T.; C. Hacker, G. S.

Company owns Coplan Steel Corpn., Inc., Ogdensburg, N. Y.

Sales agents: Vincent Woodbury, Timmins, Ont.; Laurie Machinery Co., Ltd., Montreal, P. Q., Canada.

Brand: CHROMITE (heat resisting steel grate bars for locomotives and steamships); Hisco (non-magnetic manganese steel).

Works at Hull: blt. 1913-14, f. o. April 22, 1914; 2 side-blow converters (4,000-lb.) abandoned; 1 A. O. H. fur. (16-ton) idle; 1 Hull electric fur. (6-ton). Forge shop.

Product: steel castings for sale, annual cap., 7,200 tons A. O. H. and electric; alloy steel castings (nickel, chrome, manganese); railroad car and locomotive castings, cement mill and mining machinery parts; forged steel grinding balls; ball mill linings; stamp mill dies.

Huron Steel Co., Ltd., Collingwood, Ont., Canada. Plant at Collingwood, Ontario for manufacture of steel castings, was dismantled and site together with building was acquired by the town of Collingwood.

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 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.; Edwin S. Mills, V. P. & G. S. M.; E. B. Harkness, Sec.; A. W. Carlisle, T.; H. Morrison, A.; F. J. Rief, P. A.

Sales offices:

Birmingham, Ala., Willard Wilson, 2000 First Ave. North.

Boston, Mass., W. S. Locke, 20 Providence St.

Buffalo, N. Y., F. C. Deming, 233 Main St.

Chicago, Ill., D. T. Buffington, 208 South La Salle St.

Cincinnati, Ohio, G. H. Vant, 36 East 4th St.

Cleveland, Ohio, J. R. Mills, 614 Superior Ave., N. W.

Denver, Colo., E. M. Sparhawk, 17th & Stout Sts.

Detroit, Mich., W. B. Weston, Buhl Bldg., 535 Griswold St.

New Orleans, La., Dennis Crowley, Jr., Maison Blanche, 921 Canal St.

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, spiegeleisen, 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, zees, etc.; universal and sheared plates, floor plates, column and machine bases; angle bars, rail joints and splices, tie plates, etc., track spikes, screw spikes, track bolts and nuts; merchant bars, rounds, squares, flats, bands and special shapes; wire rods; skelp; railway car and locomotive axles; steel railway car wheels; steel forgings; steel, gray iron and brass castings; rolls, ingot moulds and stools for own use.

Total annual cap.: pig iron (27 blast furnaces) 6,894,800 tons; steel ingots, 8,286,000 tons; semi-finished hot rolled products, 5,918,500 tons; finished hot rolled products, 5,416,100 tons.

Gary Works, Gary, Ind. (leased from Indiana Steel Co., owner): Blast Furnaces: 12 stacks, No. 1, 92' 6" x 23' 6", f. o. Mar. 14, 1918, rebt. 1923, relined 1928; No. 2, 92' 6" x 23' 6", f. o. Mar. 4, 1917, rebt. 1922, relined 1927; No. 3, 92' 6" x 23' 6", f. o. July 4, 1917, rebt. 1921, relined 1927; No. 4, 92' 6" x 23' 6", f. o. April 14, 1917, rebt. 1924, relined 1927; No. 5, 92' 6" x 24' 9", f. o. Mar. 16, 1911, rebt. 1924, relined 1928; No. 6, 87' x 24' 9", f. o. Mar. 16, 1910, last rebt. 1924, relined 1928; No. 7, 87' x 24', f. o. Dec. 4, 1909, rebt. 1924, relined 1928; No. 8, 87' x 24', f. o. Nov. 23, 1909, rebt. 1921, relined 1926; No. 9, 92' 6" x 26', f. o. June 11, 1909, rebt. 1927; No. 10, 92' 6" x 28', f. o. Jan. 26, 1909, rebt. 1929; No. 11, 92' 6" x 28', f. o. Dec. 29, 1908, rebt. 1929; No. 12, 92' 6" x 27' 6", f. o. Dec. 21, 1908, rebt. 1928; 46 stoves (20 Massicks & Crooke 3-pass, 100' x 22'; 14 center-comb. 2-pass, 110' x 22'; 4 center-comb. 2-pass 100' 6" x 22'; 8 center-comb. 2-pass 117' x 22'); 2 Todd horiz. cross comp. steam blowing eng., 15 Allis-Chalmers and 8 Westinghouse 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 turbo generators; 6 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for sludge dust, annual cap., 49,200 tons; rotary kiln nodulizing 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., 3,400,000 tons.

By-product Coke Plant: 700 Koppers and 138 Koppers-Becker by-product coke ovens, annual cap., 4,545,800 net tons coke; by-product recovery plant and Carl Still and Wilputte benzol plant, annual cap., 14,261,000 gals. light oil.

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. coal, tar and coke oven gas, 182 Morgan and 3 Hughes gas producers; 3 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., 4,428,000 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); 32 heat. fur. (19 cont., 13 regen. reversing) coke oven gas-fired; rail mill, blt. 1908-09, f. o. Feb. 17, 1909, 40" 2-h. 4-st., 40" 3-h. 1-st., 28" 3-h. 1-st., 28" 2-h. 6-st.; 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. 3-st., 20" 2-h. 4-st., 20" 2-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. 4-st., 12" 3-h. 1-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. 5-st., 10" 2-h. 2-st., 9" 2-h. 4-st.; 10" merchant mill, blt. 1920, f. o. June 19, 1920, 13" 3-h. 2-st., 13" 2-h., 1-st., 10" 2-h., 1-st.; 10" merchant mill, blt. 1928, 16" 2-h. 1-st., 14" 2-h. 5-st., 12" 2-h. 2-st., 10" 2-h. 2-st.; 9" merchant mill, blt. 1928, 14" 2-h. 1-st., 12" 2-h. 7-st., 9" 2-h. 4-st.; 20" strip mill, blt. 1920-22, f. o. Jan., 1922, 24" 2-h. 2-st., 20" 2-h. 8-st.; 12" strip, blt. 1920-22, f. o. Mar., 1922, 14" 2-h. 5-st., 12" 2-h. 7-st.; 28" strip mill (building), 28" 2-h. 1-st., 28" 2-h. 1-st., 28" 2-h. 3-st., 28" 2-h. 2-st., 28" 2-h. 6-st., 2 vertical edgers; 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"; 3 Extruded Metal Products Co. pickling tanks; 6 steam hammers (7,500-lb.); 4 hydraulic presses (600-ton, 1,000-ton, 2,000-ton, 10,000-ton). Roll sheared plate, $\frac{1}{4}$ " to $\frac{3}{4}$ " thick to 152" wide; universal plates $\frac{1}{4}$ " to 2" thick, 15" to 60" wide. Product: semi-finished hot rolled products, annual cap., 2,772,000 tons, including 960,000 tons slabs, 1,512,000 tons blooms and billets, 300,000 tons sheet bars; finished hot rolled products, 3,301,500 tons, including 960,000 tons rails, 168,500 tons heavy structural shapes, 240,000 tons sheared plates, 240,000 tons universal plates, 976,500 tons

merchant and concrete bars, 140,500 tons long tie plate bars, 576,000 tons hot rolled strip; axles, 120,000 tons; steel wheels, 60,000 tons.

Joliet Works, Joliet, Ill.:

Blast Furnaces: 4 stacks, No. 1, 78' 5½" x 19' 6", blt. 1873, f. o. June 9, 1880, relined 1922; No. 2, 78' 4 11/16" x 19' 6", blt. 1873, f. o. Feb. 8, 1882, relined 1920; No. 3, 89' 6¼ x 23' 6", blt. 1903, f. o. Jan., 1904, last remod. 1929; No. 4, 88' 10¼" x 22' 6", blt. 1906, f. o. Sept. 2, 1906, relined 1922; 16 stoves (eight 2-pass side-comb. 110' x 22', four 2-pass side-comb. 100' x 25', four 3-pass McClure 101' 9" x 22'); 7 horiz. cross comp. steam blowing eng. (6 Southwark, 1 Mesta), 200,000 cfm., 30 lbs. rated pressure; 5 Heine water-tube boilers, 5,320 H. P.; 6 Connelly water-tube boilers, 6,270 H. P. serve also entire plant; 2 Heyl & Patterson double-strand pig casting mach. By-product coke: Lake ore. Product: bessemer pig iron, annual cap., 594,800 tons.

By-product Coke Plant: 280 Koppers by-product coke ovens, by-product recovery plant and Carl Still benzol plant, annual cap., 1,313,600 net tons coke, 3,368,600 gals. light oil.

Steel Works: blt. 1870; 3 bessemer converters (two 10-ton, one 12-ton); 6 cupolas; Heroult electric fur. (¼-ton) for melting ferro-alloys (idle); 2 mixers (250-ton); 19 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., 660,000 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, blast furnace and prod. gas and oil; 36" 3-h. 1-st. blooming; 25" 3-h. 1-st. roughing, 24" 3-h. 1-st. finishing; cont. rod with 18" 2-h. 6-st., 16" 2-h. 1-st., 12" 2-h. 3-st., 10" 2-h. 4-st.; 10" 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; 11½" 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., 600,000 tons including 108,000 tons slabs, 492,000 tons blooms and billets; finished hot rolled products, 405,400 tons, including 252,000 tons wire rods, 141,700 tons spike, bolt and nut rods, 11,700 tons small billets and 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; abandoned in 1928.

Rolling Mills: (idle) 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. Products: 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 24' 3", blt. 1880-81, f. o. June 1881, rebt. 1920, relined 1927; No. 2, 88' x 25', blt. 1880-81, f. o. June, 1881, last rebt. 1928; No. 3, 90' x 22' 9", blt. 1880-81, f. o. 1882, rebt. 1919, relined 1924; No. 4, 90' x 23' 6", blt. 1880-81, f. o. 1882, rebt. 1921, relined 1926; E, 90' x 24' 3", blt. 1905-06, f. o. June 21, 1906, rebt. 1922, relined 1929; No. 5, 92' x 24' 3", blt. 1890-91, f. o. May, 1891, rebt. 1924; No. 6, 92' x 25', blt. 1890-91, f. o. May, 1891, rebt. 1924, relined 1929; No. 7, 94' x 22', blt. 1890-91, f. o. July, 1891, rebt. 1922, relined 1927; No. 8, 90' x 27' 9", blt. 1890-91, f. o. Jan., 1892, now rebldg.; No. 9, 99' 3" x 22' 6", blt. 1900-01, f. o. July 3, 1901, rebt. 1918, relined 1924; No. 10, 92' x 25' 9", blt. 1900-01, f. o. Dec. 3, 1901, last rebt. 1928; 44 hot blast stoves (eight 128½' x 21' 11"; 33 Cowper 2-pass of which twelve 107' 11 13/16" x 21', four 90' x 25', six 100' x 25', three 90' x 21'; eight Mas-sicks & Crooke 3-pass 96' 6" x 21' 11"; three Whitwell 4-pass 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 20 lbs. rated pressure; 84 water-tube boilers (50 Sterling, 10 Rust, 24 Wheeler) 29,560 H. P. serve also No. 1 open-hearth, duplex plant, slab, rail, plate and alloy bar mills, power station and foundry; 6 Heyl & Pat-terson double-strand pig casting mach.; rotary kiln (62' x 7') sintering plant for flue dust, annual cap., 58,000 tons, 4 slag granulating pits, annual cap., 950,000 tons. By-product coke: Lake ore. Product: bessemer, basic and foundry pig iron, spiegeleisen, ferro-manganese and ferro-silicon, annual cap., 2,900,000 tons.

Steel Works: 3 bessemer converters (25-ton) used also for du-plexing 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; 121 gas producers; 4 Heroult electric fur. (three 25-ton, one 15-ton); 7 mixers (one 150-ton, one 250-ton, three 300-ton, two 1,300-ton); foundry with 2 cupolas for gray iron (150,000 tons ingot moulds and stools, 4,200 tons gray iron) and brass (420 tons) castings for own use. Product: steel ingots, annual cap., 3,198,000 tons (708,000 tons bessemer, 2,406,000 tons B. O. H., 84,000 tons electric); steel castings for own use, 6,000 tons (electric); alloy steel ingots and castings (nickel, chrome, vanadium, molybdenum, tungsten, manganese).

Rolling Mills: 40 soaking pits (thirty 1-hole, ten 4-hole) fuel, prod. and blast fur. gas; 20 heat. fur. (fourteen 5-d., 6 cont.) fuel, prod. gas and blast furnace gas; 40" 2-h. 1-st. slabbing; two 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 28" 3-h. 3-st. roughing and finishing, 28" 2-h. 1-st. dummy; 24" 3-h. 3-st. light rail mill; 16" 2-h. 9 st. bar; 12" 2 h. 4 st. bar; 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 annealing fur.; 4 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 3/16"; 30" to 110" x 1/4"; 30" to 115" x 5/8" to 2"; circles 18" to 75" dia. x 3/16"; 18" to 115" dia. x 1/4" to 2"; universal plates 6 1/2" to 24" x 3/16"; 6 1/2" to 30" x 1/4" to 2". Product: semi-finished hot rolled products, annual cap., 2,546,500 tons, including 897,500 tons slabs, 1,349,000 tons blooms and billets, 300,000 tons sheet bars; finished hot rolled products, 1,466,400 tons, including 48,000 tons rails, 461,200 tons structural shapes, 480,000 tons sheared plates, 156,000 tons universal plates, 218,400 tons merchant and concrete bars, 102,800 tons unfinished shapes; 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., 120,000 tons. Warehouse with storage capacity of 40,000 tons.

St. Louis Warehouse, 21st. & Gratiot Sts., St. Louis; plant for cutting to size and distributing, annual cap., 30,000 tons. Warehouses have storage capacity of 10,000 tons.

St. Paul Warehouse, Twin City Plant, University Ave. & Eustis St., St. Paul, Minn.; plant for cutting to size and distributing, annual cap., 36,000 tons. Warehouses have storage capacity of 18,000 tons.

INDIANA ROLLING MILL CO., New Castle, Ind.

Inc. 1902 in Indiana. Entire capital stock acquired by Galesburg Coulter-Disc Co., Jan. 1, 1928; name of Galesburg Coulter-Disc Co. changed to Ingersoll Steel & Disc Co., Mar. 4, 1930. R. C. Ingersoll, P.; at Galesburg, Ill. H. G. Ingersoll, V. P. & T.; A. P. Zetterburg, V. P. & Sec.; R. S. Lueder, A. & A. T.; H. D. Warfield, P. A.; at New Castle.

Works at New Castle: blt. 1902-03, f. o. June 1, 1903; 1 Heroult electric fur. (3-ton) installed in 1926; 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"); 2 box annealing fur.; 4 hand pickling tanks; 1 steam hammer (1,500-lb.). Shovel works connected with the plant.

Product: steel ingots, annual cap., 10,000 tons; hot rolled products, 60,000 tons including black sheets, 20,000 tons, jobbing mill products, 40,000 tons; high carbon steel sheets for discs, sections, coulters, shovels; spades, shovels and scoops.

Indianapolis Steel Products Co., New Palestine, Ind. went into hands of receiver in 1926 and was liquidated. Construction of a rolling mill at New Palestine, begun in Nov., 1920, was not completed and plant was sold in 1926 to Lewis Galvanizing Co. Site used for other purposes.

INDUSTRIAL BROWNHOIST CORPN., 4403 St. Clair Ave., Cleveland, Ohio.

Inc. Sept. 22, 1927 in Ohio. Capital stock: com., no par value, auth. 150,000 shares, issued 100,000 shares; pref. 7% cum., auth. and issued \$1,000,000; bonds \$3,257,000. Industrial Works was merged Sept. 22, 1927 with Brown Hoisting Machinery Co. in Industrial Brownhoist Corpn.

Alexander C. Brown, P.; Melvin Pattison, 1 V. P.; Harold H. Perry, 2 V. P.; E. W. Taylor, 3 V. P.; Carroll W. Brown, T.; J. J. Harant, C.; G. L. Harman, G. S. M.; T. P. Bolton, P. A.; at Cleveland. Edward S. Clark, Sec.; J. S. See, Bay City Div. M.; S. R. Robinson, Foundry S.; at Bay City, Mich.

Sales offices:

Chicago, Ill., 208 South La Salle St.

Detroit, Mich., 1345 Book Bldg., 1247 Washington Blvd.

New Orleans, La., 1402 Whitney Central Bldg., 228 Charles St.

New York, N. Y., 1773 Hudson Terminal Bldg., 50 Church St.

Philadelphia, Pa., 2216 Packard Bldg., 15th & Chestnut Sts.

Pittsburgh, Pa., 2401-2402 Koppers Bldg., 7th Ave. & Grant St.

San Francisco, Calif., 843 Monadnock Bldg., 681 Market St.

Brand: Industrial Brownhoist.

Company manufactures wrecking, locomotive and tractor cranes, steam, gas or electric pile drivers, rail saws, clamshell buckets and steam pipe hammers. It operates a steel and brass foundry at Bay City, Mich. and iron and brass foundry at Elyria, Ohio, in connection with this manufacture.

Works at Bay City, Mich. (Industrial Works to Sept. 22, 1927): blt. 1873; steel foundry added 1911-12, f. o. Mar., 1912; 2 Tropenas converters (6,000-lb.); brass foundry; 2 cupolas; annual cap., 320 tons brass castings for own use. Product: steel castings for own use and for sale, annual cap., 6,400 tons. Alloy steel castings (vanadium).

Works at Elyria, Ohio: gray iron and brass foundry, annual cap., 7,500 tons gray iron and 300 tons brass castings for own use.

Industrial Plants Corporation, 25 Church St., New York, N. Y.
Holds for resale, plant formerly operated by Penn Seaboard Steel Corp'n. at New Castle, Del., purchased Oct., 1929 by H. A. Robinson, Philadelphia, Pa.

New Castle Plant, New Castle, Del. (formerly called Baldt Works):
blt. 1903-04, f. o. Apr. 22, 1905; 3 B. O. H. fur. (two 6-ton, one 30-ton); 2 A. O. H. fur. (30-ton); 2 gas producers; 4 soaking pits (two 2-hole and two 4-hole); 34" 2-h. 1-st. blooming. Idle since June, 1927, for sale.

Product: steel ingots, annual cap., 160,000 tons (100,000 tons B. O. H., 60,000 A. O. H.); blooms, slabs and billets, 250,000 tons.

INDUSTRIAL STEEL CASTING CO. (The), 2237 Water Works Drive, Toledo, Ohio.

Inc. 1919 in Ohio. Capital stock: com., no par value, auth. 50,000 shares, issued 38,593 shares.

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: 2 electric fur. (one 3-ton Snyder Industrial, one 2½-ton Pittsburgh Lectromelt) f. o. Oct. 1, 1919. Pattern storage and pattern repair dept.

Product: small electric steel castings for sale, annual cap., 4,800 tons. Alloy steel castings (nickel, manganese).

Industrial Works, Bay City, Mich. was merged Sept. 22, 1927 with Brown Hoisting Machinery Co. in Industrial Brownhoist Corp'n.

INGERSOLL STEEL & DISC CO., 119th & Morgan Sts., Chicago, Ill.

S. A. Ingersoll, P.; S. L. Ingersoll, V. P.

Chicago Works, 120th & Morgan Sts., Chicago: one slab rerolling mill and two sheet bar rerolling mills installed 1929-30. (J. H. Williams & Co. to July 29, 1929; Chicago Rolling Mills, Inc. to March, 1930).

Product: high carbon and alloy plates and sheets.

Company owns entire capital stock of the Indiana Rolling Mill Co., see under that head.

Inland Engineering Co., Chicago, Ill., steel foundry at Kensington Ave. was acquired by Kensington Steel Co. July 29, 1926.

INLAND STEEL CO., 38 South Dearborn St., Chicago, Ill.

Inc. Feb. 7, 1917 in Delaware. Capital stock: com., no par value, auth. and issued 1,200,000 shares; bonds \$30,000,000.

L. E. Block, Ch.; P. D. Block, P.; E. M. Adams, 1 V. P. & G. S. M.; E. J. Block, V. P.; F. R. Meyer, Jr., V. P.; A. C. Roeth, V. P.; J. L. Block, V. P.; H. H. Straus, 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.; C. B. Rapdall,

A. V. P.; at Chicago. J. H. Walsh, G. S.; L. E. Block, P. A.; at Indiana Harbor, Ind.

Sales offices:

El Paso, Texas, 307 San Francisco St.
 Kansas City, Mo., Commerce Trust Bldg.
 Milwaukee, Wis., Bankers Bldg.
 St. Louis, Mo., Bank of Commerce Bldg.
 St. Paul, Minn., Pioneer Press Bldg.
 Salt Lake City, Utah, Dooly Bldg.

Brands: Inland Extra Soft Open Hearth, Inland Copper Alloy.

Product: basic 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; blue annealed sheets; railroad spikes, track bolts and nuts, rivets, silo rods, etc.

Indiana Harbor Works, Indiana Harbor, Ind.:

Inland Furnaces: 4 stacks; No. 1, 84' 11½" x 20' 9", blt. 1906-07, f. o. Aug. 30, 1907, relined Oct., 1928; No. 2, 88' 3" x 22' 6", blt. 1911-12, f. o. Apr. 3, 1912, rebld. 1927; No. 3, 89' 10¼" x 22', blt. 1916-17, f. o. Apr. 24, 1917, relined May, 1927; No. 4, 94' x 23' 6", blt. 1926, f. o. May, 1926; 16 two-pass stoves (4 central comb. 93' x 22', 8 side comb. 93' x 24', 4 side comb. 105' x 25'); 5 Ingersoll-Rand turbo-blowers, 300,000 cfm., 30 lbs. rated pressure; 10 water-tube boilers (4 Sterling, 6 Heine) 10,356 H. P., furnish steam also for generation of power for general mill use; 2 double-strand pig casting mach. (1 Heyl & Patterson, 1 Pittsburgh Coal Washer Co.); Dwight-Lloyd sintering plant under construction; slag granulating pit, annual cap., 450,000 tons. By-product coke: Lake ore. Iron, brass and aluminum foundry (2,051 tons). Product: basic pig iron, annual cap., 1,003,000 tons. By-Product Coke Plant: 204 Koppers & Becker by-product coke ovens, by-product recovery plant and Koppers and Wilputte benzol plant; annual cap., 1,040,000 net tons coke, 5,200,000 gals. light oil.

Steel Works: blt. 1901-02, first steel July 21, 1902, first rolled products, Nov. 1, 1902: 27 B. O. H. fur. (twelve 75-ton, fifteen 125-ton) fuel in O. H. coke oven gas, oil and tar; one 600-ton mixer; 13 soaking pits (six 2-hole, five 4-hole, two 3-hole) fuel prod. gas; 19 cont. heat. fur. (5 pulv. coal-fired slab, 4 prod. gas-fired billet, 6 coke oven gas-fired billet, 2 splice bar and 2 tie plate); 40" 2-h. 1-st. blooming; 36" 2-h. 1-st. blooming; 32" 2-h. 1-st. roughing; 28" 3-h. 3-st. rail and structural mill; 24" 3-h. 1-st. billet; 24" 2-h. 4-st. bar and universal plate mill; 24" 2-h. 6-st. and 24" 2-h. 1-st. edging Morgan cont. billet mill; 24" 2-h. 8-st. and 19" 2-h. 4-st. edging cont. sheet bar; 14" to

8" 2-h. 14-st. Morgan cont. bar mill; 14" duo type finishing mill with 18" 2-h. 6-st. cont. roughing and 14" 2-h. 4-st. staggered duo; 10" 2-h. 12-st. horizontal and 10" 2-h. 3-st. vertical cont. merchant mill; 32" x 100" 3-h. 1-st. sheared plate mill; universal plates are rolled on 24" structural mill; 2 jobbing mills (one 30" x 68", one 30" x 60"); 10 sheet and 8 pair fur.; 6 comb. sheet and pair fur.; 16 hot black sheet mills (28" x 34" to 56"); 6 stands cold rolls (2-st. coupled to mill train, 1-st. and 3-st. independent drives) rolls 24" x 48" to 60"; 21 box annealing fur.; 1 double blue annealing fur.; 2 Cook pickling mach.; 6 galv. pots. Roll sheared plates 8 gauge to 1½" to 94" wide; universal plates ¼" to 2" x 6½" to 24"; black sheets 30 gauge to 3/16", 24" to 60" wide, up to 240" long. Spike, Bolt and Rivet Dept.: railroad spikes ¾" sq.—5½" to 6½" long and 9/16" sq.—5" to 6" long; track bolts ¾" to 1½" x 2½" to 7" long; track nuts to fit; rivets ½" to 1½" x ¾" to 10" long.

Product: steel ingots, annual cap., 2,000,000 tons; semi-finished, 1,756,800 tons (slabs, 326,000 tons; billets and blooms, 1,168,800 tons; sheet bars, 262,000 tons); hot rolled products, 1,410,000 tons including 240,000 tons rails, 200,000 tons heavy structural shapes, 120,000 tons light structural shapes, 80,000 tons universal plates, 170,000 tons sheared plates, 350,000 tons merchant and concrete bars, 30,000 tons spike, bolt, nut and rivet rods, 20,000 tons angle bars, 40,000 tons tie plates, 160,000 tons black sheets; 70,000 tons galvanized sheets; 42,000 tons blue annealed sheets, 180,000 kegs railroad spikes, 56,000 kegs track bolts and nuts, 50,000 kegs rivets.

Chicago Heights Works, Chicago Heights, Ill.: blt. 1893-94, f. o. Jan. 1894; 1 pulv. coal-fired reheat. fur.; rail slitting bar mill with 18" 2-h. 1-st. splitter, two 14" 2-h. 1-st. breakdown and 14" 3-h. 8-st. finishing. Product: merchant and concrete bars, angles, tees, channels and agricultural shapes, annual cap., 60,000 tons.

Milwaukee Works, Milwaukee, Wis.: blt. 1920-21, f. o. Apr., 1921; 10 sheet and 2 pair fur.; 8 comb. sheet and pair fur.; 10 hot black sheet mills (28" x 32" to 30" x 56"); 4 stands cold rolls on end of hot mill train (25" x 60" to 65"); 8 box annealing fur.; 2 blue annealing fur.; 2 plunger pickling mach.; 5 galvanizing pots. Roll black sheets 12 to 30 gauge, to 48" wide. Product: black sheets, annual cap., 60,000 tons; blue annealed sheets, 20,000 tons; galvanized sheets, 40,000 tons.

The company owns and operates ore mines on Mesaba Range, annual cap., 600,000 tons iron ore, Cuyuna Range, 585,000 tons and Gogebic Range, 300,000 tons. The company also owns and operates coal mines (Freeport seam) at Indianola, Allegheny Co., Pa., annual cap., 840,000 tons.

INTERLAKE IRON CORPN., 332 South Michigan Ave., Chicago, Ill.

Inc. 1905 in New York as By-Products Coke Corpn., name changed Jan. 1, 1930 to Interlake Iron Corpn. The Perry Iron Co., The Toledo Furnace Co. and Zenith Furnace Co. were merged in the Interlake Iron Corpn., Jan. 1, 1930. Capital stock: com., no par value, auth. 2,500,000 shares, issued 2,000,000 shares; bonds \$9,614,000.

H. G. Dalton, Ch.; C. D. Caldwell, P.; Seymour Wheeler, V. P.; D. L. Ward, V. P. & G. M.; C. P. Fitzgerald, Sec.; D. S. Boynton, T.; B. L. Lynch, A.; at Chicago. Elton Hoyt, II, V. P.; at 2000 Union Trust Bldg., Cleveland, Ohio. W. B. Castle, V. P.; at Duluth, Minn.

Sales agent: Pickands, Mather & Co., at 2000 Union Trust Bldg., Cleveland, Ohio, and 332 South Michigan Ave., Chicago, Ill.

Brands: Federal, Perry, Toledo, Zenith (pig iron).

Product: basic, malleable and foundry pig iron, total annual cap., (6 stacks) 1,035,750 tons.

Federal Furnaces, 108th St. & Calumet River, Chicago, Ill.: 2 stacks; A, 80' x 19' 6", blt. 1905-06, f. o. Feb. 1, 1907, relined 1929; B, 80' x 21' 1", blt. 1907-09, f. o. Aug. 20, 1909, relined 1928; eight 2-pass side-comb. stoves, 80' x 20'; 3 turbo-blowers (180,000 cfm.) 22 lbs. rated pressure, now under construction to replace 5 steam blowing eng.; 4 Connelly water-tube boilers, 2,560 H. P.; 1 Heyl & Patterson three-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 95,000 tons. By-product coke: Lake ore. Ingot mould foundry, annual cap., 45,000 tons. (By-Products Coke Corpn. to Jan. 1, 1930). Product: basic, malleable and foundry pig iron, annual cap., 350,000 tons. By-Product Coke Plant, 112th St. & Torrence Ave., South Chicago, Ill.; 120 Semet-Solvay recuperative and 110 Koppers-Becker by-product coke ovens, annual cap., 1,600,000 net tons coke; by-product recovery plant.

Perry Furnace Co., Perry Furnace, Erie, Pa.: 1 stack, 85' x 19' 6", blt. 1906-07, rebld. 1924, relined 1927-28; 4 stoves (3 McClure 70' x 21', 1 McKee 70' x 22'); 2 vertical steam blowing eng. and 1 turbo-blower, total blowing cap., 72,000 cfm., 15 to 30 lbs. rated pressure; 7 water-tube boilers (6 Rust, 1 Sterling), 2,990 H. P. serve also by-product coke plant; 1 Uehling singe-strand pig casting mach. By-Product Coke: Lake ore. (Perry Iron Co. to Jan. 1, 1930). Product: basic, malleable and foundry pig iron, annual cap., 127,750 tons.

By-Product Coke Plant, Erie, Pa.: 37 Wilputte regenerative by-product coke ovens, annual cap., 223,200 net tons coke; by-product recovery plant and Wilputte benzol plant, annual cap., 875,000 gals. light oil.

Toledo Furnaces, Toledo, Ohio: 2 stacks; A, 86' x 24' 2", blt. 1902-03, rebld. 1928; B, 95' x 25' 8", blt. 1906-07, rebld. 1924-

25, relined 1929; 8 Kennedy stoves (four 90' x 22', four 109' x 22'); 3 turbo-blowers (180,000 cfm.) 30 lbs. rated pressure; 5 Babcock & Wilcox water-tube boilers, 3,815 H. P. serve also by-product coke plant and electric power plant; 2 Uehling double-strand pig casting mach.; 1 Dwight & Lloyd sintering plant for flue dust, annual cap., 50,000 tons. By-product coke: Lake ore. (The Toledo Furnace Co. to Jan. 1, 1930). Product: basic, malleable and foundry pig iron, annual cap., 438,000 tons. By-Product Coke Plant, Toledo, Ohio: 94 Koppers by-product coke ovens, annual cap., 350,000 net tons coke; by-product recovery plant and Koppers benzol plant, annual cap., 2,000,000 gals. light oil.

Zenith Furnace, Duluth, Minn.: 1 stack, 76' 9½" x 15' 10", blt. 1889-90, last rebt. 1914, relined 1927; 4 side-comb. stoves, 80' x 20'; 4 vertical steam blowing eng. (26,000 cfm.) 17 lbs. rated pressure; 8 B. & W. water-tube boilers, 3,200 H. P. serve also by-product coke plant; 1 Slag Rock Machine Co. single-strand pig casting mach.; slag granulating pit, annual cap., 75,000 tons. By-product coke: Lake ore. Gray iron (300 tons) foundry. (Zenith Furnace Co. to Jan. 1, 1930). Product: malleable and foundry pig iron, annual cap., 120,000 tons.

By-Product Coke Plant, Duluth, Minn.: 41 Becker by-product coke ovens, annual cap., 350,000 net tons coke; by-product recovery plant.

Intermont Coal & Iron Corp., Big Stone Gap, Va. went into hands of receiver in 1928 and sold Union Furnace at Big Stone Gap to Platnik Brothers, Bluefield, West Va. in 1929. Furnace was dismantled in that year.

INTERNATIONAL HARVESTER CO., 606 South Michigan Ave., Chicago, Ill.

Inc. Sept. 19, 1918 in New Jersey. Capital stock: com., no par value, auth. 6,000,000 shares, issued 4,409,185 shares; pref. 7% cum., auth. \$100,000,000, issued \$73,712,300.

Cyrus H. McCormick, Ch.; Harold F. McCormick, Ch. Ex. Com.; H. F. Perkins, 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, V. P.; William M. Gale, Sec.; William P. Kelly, C.; 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, 80' x 16', blt. 1880, last rebt. 1906; Furnace No. 1, 88' 6" x 21' 6", blt. 1902-03, rebt. 1914; Furnace No. 2, 88' x 21' 6", blt. 1906-8; 12 two-pass stoves (four 75' x 20', four 90' x 22', four 100' x 21' 6"); 9

steam blowing eng. (238,250 cfm.) 20 lbs. rated pressure; 25 water-tube boilers, 8,882 H. P., furnish power also to rolling mills and bessemer converters; 1 Uehling double-strand pig casting machine. Molten metal to mixers. By-product 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, 2,370,000 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); 7 B. O. H. fur. (100-ton); first O. H. steel Mar. 20, 1924; fuel in O. H. oil, blast furnace and coke oven gas; 1 cupola (idle); 13 soaking pits (five 4-hole, eight 1-hole) fuel, prod. gas; 7 cont. reheat. fur.; 40" 2-h. 1-st. blooming added in 1925, 35" 2-h. 1-st. blooming; Morgan semi-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; semi-cont. bar mill with 16" 3-h. 1-st., 16" 2-h. 2-st., and 14" 2-h. 4-st. roughing, 12" 2-h. 5-st. and 8" 2-h. 2-st. finishing; comb. plate and bar mill with 27" 2-h. 2-st. and 24" 2-h. 5-st.; 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, 2 hand pickling tanks. Roll universal plates, 3/16" to 1 1/2" thick, 8" to 30" wide. Product: steel ingots, annual cap., 732,000 tons (540,000 B. O. H., 192,000 bessemer); slabs, blooms and billets, 600,000 tons; finished rolled products, 480,000 tons including 276,000 tons merchant and concrete bars, 1,000 tons wire rods, 65,000 tons skelp, 38,000 tons heavy and 38,000 tons light structural shapes, 57,000 tons universal plates, 5,000 tons miscellaneous.

Deering Works Rolling Mill, 2201 Oakdale Ave., Chicago, Ill.: blt. 1901, f. o. Oct. 10, 1901; 2 oil-fired flat sand bottom heat. fur.; 14" 3-h. 5-st. hand merchant mill. Product: merchant bars, flats, rounds, angles, channels, ovals, rolled from old steel rails and billets, annual cap., 34,000 tons.

The company leases iron ore mines as follows: Agnew Mine, Hibbing, Minn.; Hawkins Mine, Nashwauk, Minn.; Sargent Mine, Keewatin, Minn.; Bruce Mine, Chisholm, Minn. These mines have an annual cap. of 1,500,000 tons of iron ore. Wisconsin Steel Co. owns 6,509 acres of coal lands in Benham, Harlan Co., Kentucky, annual cap., 900,000 tons.

International High Speed Steel Co., Rockaway, N. J., was acquired by The Rockaway Rolling Mill, June, 1926. Works now known as West Works, The Rockaway Rolling Mill.

INTERNATIONAL STEEL CORPN., Canton, Ohio.

Inc. April, 1929 in Delaware. Capital stock: com., no par value, 500,000 shares.

L. J. Harley, Jr., P.; Ellis Miller, 1 V. P. & T.; W. J. Willis, 2 V. P.; Egbert H. Womack, Sec.; J. S. Blue, G. M.; at 347 Madison Ave., New York, N. Y. George R. Berger, 3 V. P.; at Chicago, Ill.

Sales offices:

Chicago, Ill., 110 South Dearborn St.

New York, N. Y., 347 Madison Ave.

Works at Canton (leased, Luntz Iron & Steel Co. owner): 3 A. O. H. fur. (40-ton), long idle, to be dismantled and replaced in 1930 by 2 Bosshardt open-hearth fur. (3½-ton). (The Canton Steel Foundry Co. to Nov. 30, 1927).

Product: light weight steel castings for sale, annual cap., 6,000 tons.

Interstate Foundries, Inc., Cleveland, Ohio. Works at West 66th St., Chicago, Ill. (Clearing Plant) operated under lease by Mathews Steel Castings Co. for manufacture of steel castings, were dismantled in 1928. Machinery and equipment sold at auction July 12, 1928. The company owns works at 2311 West 73d St., Cleveland, Ohio, leased to Mathews Steel Castings Co.

Interstate Iron & Steel Co., Chicago, Ill., was acquired by Central Alloy Steel Corpn., Oct. 1, 1929.

Ivanhoe Mining & Smelting Corpn., Pittsburgh, Pa. Ivanhoe Furnace at Ivanhoe for manufacture of foundry pig iron, last operated in 1913, was abandoned in 1928.

IVINS (ELLWOOD) STEEL TUBE WORKS, Oak Lane Station, Philadelphia, Pa.

Inc. April 12, 1929 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$300,000.

Ellwood Ivins, P.; Lewis Boyd, 1 V. P. & G. M.; William Feenie, 2 V. P. & G. S. M.; Martin Hey, 3 V. P. & G. S.; Horace Kircher, 4 V. P.; Norman H. Jack, Sec. & P. A.; John B. Cording, T.; Franklin Smith, A.

Sales agents: Steel Sales Co., 129 South Jefferson St., Chicago, Ill.; Peter A. Frasse Co., 50 Exchange St., Buffalo, N. Y.; 7 Grand St., New York, N. Y.; Wissahickon & Hunting Park Aves., Philadelphia, Pa.

Works at Oak Lane: blt. 1893, f. o. 1894; 2 annealing fur. (one Lavite, one Ryan electric).

Product: cold drawn seamless steel tubes, 3½" O. D. and down, annual cap., 725 tons.

Ivins' (Ellwood) Tube Works, Philadelphia, Pa., was incorporated April 12, 1929 with the corporate title, Ellwood Ivins' Steel Tube Works.

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.

D. D. Davis, P.; at Oak Hill, Ohio. E. J. Daehler, V. P.; at Portsmouth, Ohio. J. W. Potter, Sec. & G. S. M.; J. S. Morgan, T. & P. A.; H. R. Shick, G. S.; at Jackson.

Sales agents:

Debevoise-Anderson Co., Philadelphia, Pa. and New York, N. Y.
Hickman, Williams & Co., at Chicago, Cincinnati, Cleveland,
New York, Pittsburgh and St. Louis.

A. P. McClure, Detroit, Mich.

Pickands, Brown & Co., Chicago, Ill.

Pickands, Mather & Co., Cleveland, Ohio.

Ranson & Orr Co., Cincinnati, Ohio.

Brand: JISCO (silvery-bessemer ferro-silicon and silicon specialties).

Jisco Furnace, Jackson: 1 stack, 75' x 17' 6", blt. 1906-08; relined 1928, blown in Dec. 22, 1928; 5 Amsler hot blast stoves, 80' x 18'; 3 vertical steam blowing eng. (2 Weimer, 1 Todd) 42,000 cfm., 15-lbs. rated pressure; 6 boilers (5 B. & W. tubular, 1 Sterling cylindrical) 2,600 H. P.; 1 Pittsburgh single-strand pig casting mach. Beehive coke and Jackson County coal: Lake ore. Company owns Jisco Coal Mine at Jackson, annual cap., 36,000 tons.

Product: silvery-bessemer ferro-silicon, annual cap., 60,000 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; bonds \$35,000.

William C. Kasel, P.; Frank V. Kasel, Sec., T., G. M. & P. A.
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. Spike factory for railroad spikes 5/16" x 2" to 3/4" x 6 1/2", boat and dock spikes 5/16" x 4" to 7/8" x 24".

Product: iron and steel merchant bars, annual cap., 15,000 tons; concrete bars, hoops and bands, bolt, nut and rivet rods; 65,000 kegs (200-lbs.) spikes.

JENIFER IRON CO., Jenifer, Ala.

W. Aubrey Thomas, Owner.

Brand: "Jenifer."

Jenifer Furnace, Jenifer, Ala.: 1 stack, 75' x 15', blt. 1901, f. o. Sept. 26, 1901; rebt. 1918; 4 stoves (two Hugh Kennedy 45' x

16', one 4-pass 60' x 16', one 4-pass 75' x 20'); 3 steam blowing eng. (2 Allis-Chalmers, 1 Wm. Todd) 30,000 cfm., 12 lbs. rated pressure; 6 Wheeler & Atlas water-tube boilers, 1,200 H. P. Beehive coke: local brown hematite ore. Company owns iron ore mines at Jenifer, annual cap., 100,000 tons; coal mines at Aubrey, Ala., 150,000 tons; limestone quarries at Wewoke, Ala.; and 100 beehive coke ovens at Aubrey, Ala., annual cap., 36,000 net tons.

Product: foundry pig iron; annual cap., 50,000 tons.

JESSOP STEEL CO., Washington, Pa.

Inc. 1901 in Pennsylvania.

S. A. Grayson, P.; R. E. Emery, V. P.; F. T. H. Youngman, Sec. & T.

Sales offices:

Cambridge, Mass., 246 Bent St.

Chicago, Ill., 230 North Jefferson St.

Cincinnati, Ohio, 13 East 2d St.

Cleveland, Ohio, 1277 West 9th St.

Detroit, Mich., 2208 Fort St., West.

Hamilton, Ont., Canada, 50 King William St.

New York, N. Y., 291 Pearl St.

Philadelphia, Pa., Morgan Steel Co., 1230 Callowhill St.

Toronto, Ont., Canada, 125 St. Patrick St.

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, nat. gas; 1 Gronwall-Dixon electric steel fur. (5-ton); 18 coal-fired heat. fur. (eight 1-d., six 2-d., four 3-d.); 12 sheet and 1 pair fur.; 1 comb. sheet and pair fur.; 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 26" x 76" 2-h. sheared plate mill; one 26" x 34" 2-h. jobbing mill; four 21½" x 32" 2-h. sheet mills; 4 trains of 8" 4-st. cold rolls; 5 box annealing fur., 5 hand pickling tanks; 4 steam hammers, 700-lb. to 10,000-lb. Roll sheared plates ¼" to 11 gauge, 6" to 64" wide; black sheets 12 to 28 gauge, 6" to 27" wide.

Product: steel ingots, annual cap., 5,600 tons (2,000 crucible, 3,600 electric); alloy steel ingots (nickel, chrome, tungsten, vanadium, molybdenum); carbon and alloy steel plates and sheets for saws, springs, cutlery, etc., annual cap., 18,000 tons; forged tool steel bars and shapes, 12,000 tons.

JOLIETTE STEEL, Ltd., Joliette, P. Q., Canada.

Inc. 1925 in Dominion of Canada. Capital stock: com., no par value, auth. and issued 10,000 shares; pref., 7% cum. \$125,000; bonds \$70,000.

J. B. Fontaine, P.; L. A. Fontaine, V. P.; L. E. E. Jones, T.; P. H. Desrosiers, G. M.; E. G. Jones, G. S.; J. Critchley (sales engineer); H. V. Carriere, A. S. M.; E. Richard, P. A.; at Joliette. H. M. Gardner, A.; at Montreal, P. Q., Canada.
Sales offices: 360 Dorchester St., West, Montreal, P. Q.; 331 Bay St., Toronto, Ont., Canada.
Brands: Joliette Orbit; Joliette Tisco.
Works at Joliette: blt. 1916, f. o. June 15, 1916; 1 Greaves-Etchells electric fur. (4,000-lb.); first electric steel Jan., 1921.
Product: steel castings for sale, annual cap., 2,500 tons; alloy steel castings (manganese).

JONES & LAUGHLIN STEEL CORPN., Third Ave. & Ross St., Pittsburgh, Pa.

Inc. Dec. 19, 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 \$11,328,000.
G. M. Laughlin, Jr., Ch.; George G. Crawford, P.; Willis L. King, V. P.; W. C. Moreland, V. P.; S. E. Hackett, V. P.; B. F. Jones, 3d, V. P. & Sec.; W. J. Creighton, V. P.; A. B. Shepherd, V. P.; J. C. Watson, T.; W. H. Dupka, C.; J. A. Doyle, A.; F. E. Fieger, G. M.; C. S. Bradley, G. M. S.; F. W. Ochsenhirt, Jr., P. A.
Sales offices:
Atlanta, Ga., Wm. Miller, 1313 Healey Bldg.
Boston, Mass., S. A. Fuller, 131 State St.
Buffalo, N. Y., C. F. Gold, 1017-19 Liberty Bank Bldg.
Chicago, Ill., M. A. Blessing, 111 West Washington St.
Chicago, Ill., R. H. Atwood, 2250 West 47th St. (warehouse).
Cincinnati, Ohio, A. W. Herron, 1205 Union Trust Co. Bldg.
Cincinnati, Ohio, G. E. Mayer, 1205 Union Trust Co. Bldg. (warehouse).
Cleveland, Ohio, E. A. France, 1407 Union Trust Bldg.
Denver, Colo., H. H. Galbraith, 1122-23 First Natl. Bank Bldg.
Detroit, Mich., F. D. Heath, 2111 Fisher Bldg.
Detroit, Mich., Fred A. Wittman, Roehm & Davidson Warehouse, 3289 Beaufait St.
Los Angeles, Calif., T. W. Bell, 1109 Spring Arcade Bldg.
Memphis, Tenn., E. H. Hughes, 1 Auction St. & Wolfe River (warehouse).
Milwaukee, Wis., F. T. Roberts, 1410-11 The Bankers Bldg.
Minneapolis, Minn., W. H. Jamieson, 1030 Rand Tower.
New York, N. Y., R. M. Kilgore, 165 Broadway.
Philadelphia, Pa., Thomas C. Ham, 1331 Commercial Trust Bldg.
Pittsburgh, Pa., A. C. Pollock, 112 Jones & Laughlin Bldg.
Pittsburgh, Pa., J. M. Hilbish, 2601 Jane St. (warehouse).

St. Louis, Mo., H. L. Miller, 1710 Boatman's Bank Bldg.

San Francisco, Calif., C. P. Hensley, 628 Standard Oil Bldg.

Washington, D. C., James Warden, 408-409 Woodward Bldg.

Canadian representatives:

Toronto, Ont., Canada, B. P. Toles, Jones & Laughlin Steel Products Co., 808 Toronto Daily Star 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; hot rolled seamless tubes; forgings. Total annual capacity: 3,000,000 tons pig iron; 3,420,000 tons steel ingots; 2,727,000 tons finished hot rolled products.

Pittsburgh Works, Pittsburgh, Pa.:

Blast Furnaces: 7 stacks; Eliza No. 1, 96' x 0½" x 22' 6", blt. 1888-89, relined 1918, being remod.; No. 2, 96' 1½" x 26' 9", blt. 1898-99, remod. 1929; No. 3, 96' 0½" x 24', blt. 1900, relined 1924; No. 4, 96' 0½" x 22' 6", blt. 1899-00, relined 1926; No. 5, 91' 7½" x 22' 6", blt. 1903, relined 1926; No. 6, 91' 1" x 22' 6", blt. 1917, relined 1924; Soho No. 1, 86' 1½" x 19' blt. 1872, relined 1918; 28 two-pass stoves (seven 104' x 21', ten 108' x 22', ten 100' x 22', one 118' x 22'); 15 steam blowing eng. (1 vertical single, 14 cross comp.) 486,000 cfm., 20 lbs. rated pressure; 87 water-tube boilers (56 Laughlin, 14 B. & W., 2 Edgemoor, 8 Cahall, 2 Wicks, 2 Rust, 5 B. & W. under construction) 27,400 H. P.; 3 Uehling double-strand pig casting mach.; 7 slag granulating pits. By-product coke; Lake ore. Ingot mould foundry, annual cap., 59,000 tons. Product: bessemer and basic pig iron, annual cap., 1,662,000 tons.

Coke Oven Plant: 300 Koppers and 60 Wilputte by-product coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 1,638,000 net tons coke, 6,500,000 gals. light oil.

Steel Works and Rolling Mill: steel plant blt. 1886, f. o. Aug. 19, 1886; rolling mill blt. 1852; 4 bessemer converters (10-ton); 2 bessemer converters (25-ton) being installed; 24 B. O. H. fur. (four 30-ton, two 40-ton, nine 50-ton, five 200-ton, four 250-ton); 2 A. O. H. fur. (25-ton); fuel in open-hearth, coke oven and prod. gas and tar, 16 Wellman-Seaver-Morgan gas producers; 3 mixers (two 250-ton, one 1,300-ton); iron (4,800 tons) and brass (800 tons) foundry for own use; 20 soaking pits (four 1-hole, four 5-hole, six 6-hole, six 7-hole), fuel, coke oven gas; 27 heat. fur. (eight 4-d. of which 3 coke oven gas-fired,

3 prod. or coke oven gas-fired, 2 coal-fired; 19 cont. of which 2 coal-fired, 9 prod. gas-fired, 8 coke oven gas and tar-fired); 44" 2-h. 1-st. reversing blooming; 34" 2-h. 1-st. reversing 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; 28" 3-h. 4-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; 13" 3-h. 4-st., 10" 3-h. 4-st., 9" 3-h. 4-st., 8" 3-h. 5-st., and 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; 3 trains cold rolls, 1-st. to each train; 8 pickling mach.; 4 steam hammers (two 1,200-lb., one 2,500-lb., one 5-ton). Spike dept. for railroad spikes 2½" x 5/16" to 8" x ½". 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, 2,000,000 tons (400,000 tons bessemer, based on trade requirements with surplus converter capacity used for duplexing; 1,580,000 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, 1,686,000 tons; finished hot rolled products, 1,578,000 tons, including 20,000 tons light rails (40-lb. and under), 365,000 tons structural shapes (330,000 tons heavy, 35,000 tons light), 216,000 tons sheared plates, 72,000 tons universal plates, 492,000 tons merchant and concrete bars, 15,000 tons hoops and bands, 120,000 tons skelp, 150,000 tons spike, bolt, nut and rivet rods, 108,000 tons tie plates, 20,000 tons steel piling; cold finished rounds, flats, hexagons, etc., 280,000 tons; 480,000 kegs railroad spikes.

Aliquippa Works, Aliquippa, Beaver Co., Pa.:

Blast Furnaces: 5 stacks; No. 1, 91' x 22', blt. 1907-09, relined 1923; No. 2, 91' x 24' 4", blt. 1907-10, relined 1924; No. 3, 91' x 22' 6", blt. 1907-10, relined 1924; No. 4, 90' x 28' 6", blt. 1907-11, remod. 1929; No. 5, 90' x 26' 3", blt. 1919, remod. 1927; 20 hot blast stoves 100' x 22'; 10 Alis-Chalmers vertical steam blowing eng., and 1 G. E. turbo-blower, total blowing cap., 405,000 cfm., 15 to 19 lbs. rated pressure; under construction, to be completed Aug., 1930, 1 De Laval turbo-blower (90,000 cfm.) 30 lbs. rated pressure; 58 water-tube boilers (24 Sterling, 28 Erie City, 3 B. & W., 3 B. & W. under construction to replace 7 Erie City) 29,100 H. P. furnish power also to steel works, rolling mills and power house; 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 (7,000 tons). Product: bessemer and basic pig iron, annual cap., 1,338,000 tons.

Coke Oven Plant: 488 rectangular beehive ovens, annual cap., 438,000 net tons coke; 203 Koppers by-product ovens (includes 81 Koppers by-product ovens under construction, to be completed about June, 1930), by-product recovery plant and Koppers benzol plant, annual cap., 1,934,500 net tons coke (includes 620,500 tons cap. ovens building), 3,800,000 gals. light oil. Under construction, Koppers benzol plant, annual cap., 2,740,000 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 to 300-ton Talbot) fuel in open-hearth prod. gas, 18 Chapman gas producers; 2 mixers (one 400-ton, one 600-ton); 2 cupolas; ten 4-hole soaking pits; 6 cont. prod. gas-fired heat. fur.; 40" 2-h. 1-st. blooming; 30" 2-h. 1-st. round; 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.; 31 sets for coke tinplates. Roll black plate 14 to 38 gauge, 16" to 32" wide, 28" to 96" long.

Wire Mill: 360 wire drawing blocks for wire $\frac{5}{8}$ " to 18 gauge; 227 wire nail mach.; 4 staple mach.; 110 barbed wire mach.; 8 wire fence mach.; 3 galvanizing plans. Tube Mill: 4 butt-weld fur. for pipe $\frac{1}{8}$ " to 3"; 3 lap-weld fur. for pipe $1\frac{1}{2}$ " to 16"; 2 galv. pots. Hot rolled seamless tubes $2\frac{3}{8}$ " O. D. to $13\frac{1}{8}$ " O. D.

Product: steel ingots, annual cap., 1,420,000 tons (520,000 tons bessemer, based on trade requirements with surplus converter capacity used for duplexing: 900,000 tons B. O. H.); semi-finished hot rolled products, 1,084,800 tons, including 910,800 tons slabs, blooms and billets, and 174,000 tons sheet and tinplate bars; finished hot rolled products, 1,149,000 tons, including 90,000 tons heavy and light structural shapes, 18,000 tons junior beams, 168,000 tons black plate for tinning, 294,000 tons wire rods, 90,000 tons bars, hoops and bands; 297,000 tons skelp, 192,000 tons rounds for seamless tubes; tinplates, 3,180,000 base boxes; plain wire, 192,000 net tons; galvanized wire, 66,000 net tons; barbed wire, 39,600 net tons; wire fence, 14,400 net tons; wire nails, 1,470,000 kegs; black pipe, 380,000 tons; galvanized pipe, 75,000 tons; hot rolled seamless tubes, 187,500 tons.

Jones and Laughlin Steel Corporation owns iron ore mines on Mesabi, Marquette, Gogebic and Menominee Ranges, annual cap., 4,500,000 tons; coal properties in Washington and Greene Counties, Pa., annual cap., 5,000,000 tons; limestone quarries at Millville and Martinsburg, W. Va., annual cap., 625,000 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.; G. G. Hood, Sec. & M.; Fort Petch, T.; C. S. MacKenzie, G. S.; at Gananoque.

Sales offices:

Montreal, P. Q., F. Bacon & Co., Ltd., 111 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. leased from Joplin Steel & Malleable Co., works at Third & Railroad Sts., Joplin, for manufacture of steel castings. Leasehold was taken over Mar. 12, 1924 by Rogers Foundry & Mfg. Co., who operated the works for manufacture of steel and gray iron castings to Oct. 1, 1926 at which time The Electro Steel Castings Co. was organized to take over and operate the steel foundry. The manufacture of steel castings was discontinued by the latter company on Dec. 1, 1926.

JOSLYN MFG. & SUPPLY CO., Room 1920, 120 South La Salle St., Chicago, Ill.

Inc. Dec. 10, 1902 in Illinois. Capital stock: com., no par value, auth. and issued 120,000 shares; pref. 7% cum., auth. and issued \$1,000,000.

M. L. Joslyn, P.; B. S. Handwork, V. P.; R. C. Boozer, Sec. & T.; F. C. Waite, A.; A. J. Blaeser, G. M. (purchases and sales); G. H. Lowe, G. S.

Sales offices: 1st & Graeter Sts., Fort Wayne, Ind.; 120 South La Salle St. and 3700 South Morgan St., Chicago, Ill.

Product: finished hot rolled products, merchant and concrete bars, special sections, bands, light structural shapes; total annual cap., 65,000 tons.

Works at 1st & Graeter Sts., Fort Wayne, Ind.: blt. 1903; f. o. Dec. 23, 1903; five 4-d. heat. fur. (2 reverberatory, 3 regenerative); one 6-d. reverberatory heat. fur.; 20" 3-h. 2-st. muck, 18" 3-h. 4-st. bar, not operating; 9" Belgian mill with 16" 3-h. 1-st., 12" 3-h. 1-st. and 9" 3-h. 4-st.; 8" 3-h. 5-st. guide. Fuel, prod.

gas and pulv. coal. (Fort Wayne Rolling Mill Corpn. to April 7, 1928). Product: merchant and concrete bars, bands, etc.; annual cap., 55,000 tons.

Works at 3700 South Morgan St., Chicago, Ill.: first hot rolled products, June 1919; two 4-d. reverberatory heat. fur.; Belgian mill with 12" 3-h. 1-st. and 9" 3-h. 4-st. Fuel, oil. Product: merchant bars, special sections, light structural shapes, bands; annual cap., 10,000 tons.

Judson Manufacturing Co., San Francisco, Calif., sold equipment of plant and lease of plant site December 1, 1929 to Botchford Steel Co. Judson Manufacturing Co. continues as a holding company with stock interests in Botchford Steel Co. and Judson-Pacific Co. (fabricators).

Kansas City Southern Railway Co. (The), Kansas City, Mo. have abandoned in 1928, the 10" Ajax scrap reclaiming rolls in their shops at Pittsburg, Kansas.

Kansas City Steel & Wire Co., Kansas City, Kansas. Rolling mill at Kansas City, Kansas is abandoned.

Kay-Brunner Steel Casting Co., Los Angeles, Calif.
Inc. April 17, 1922 in California as Kay-Brunner Steel Casting Co., reincorporated Nov. 23, 1929 in Delaware as Kay-Brunner Steel Products, Inc.

KAY-BRUNNER STEEL PRODUCTS, Inc., 2721 Elm St., Los Angeles, Calif.

Inc. Nov. 23, 1929 in Delaware. Capital stock: com., no par value, auth. 100,000 shares, issued 48,809 shares. (Kay-Brunner Steel Casting Co. to Nov. 23, 1929).

Lloyd D. Kay, P., G. M. & G. S. M.; G. B. Montgomery, V. P. & G. S.; J. F. Brunner, Sec., T. & P. A.; W. H. Stuhlmann, C.; at Los Angeles. R. V. Reverdy, V. P.; at 999 Meridian Ave., Alhambra, Calif.

Sales offices:

Alhambra, Calif., 999 Meridian Ave.

Chicago, Ill., 2540 South Wabash Ave.

Philadelphia, Pa., 620 South Delaware Ave.

St. Louis, Mo., 826 Clark Ave.

San Francisco, Calif., S. Clyde Kyle, Rialto Bldg.

Brands: Kay (steel motor truck wheels); K (steel castings); Electro-Art (architectural steel).

Product: electric steel castings for own use and for sale for motor truck wheels, steel furniture, steel grills, architectural steel products and miscellaneous commercial castings. Alloy steel castings (nickel, chrome). Total annual cap., 7,800 tons.

Works at 2721 Elm St., Los Angeles: blt. 1921, f. o. Oct. 24, 1921: 2 Kay three-phase electric fur. (2½-ton). Product: electric steel castings for own use and for sale, annual cap., 3,600 tons; architectural steel products, steel furniture, steel grills and miscellaneous commercial steel castings; alloy steel castings (nickel, chrome).

Works at 999 Meridian Ave., Alhambra, Calif.: blt. 1928, f. o. Jan. 1, 1929; 2 Kay three-phase electric fur. (3-ton). Product: electric steel castings for own use and for sale, annual cap., 4,200 tons; motor truck wheels and miscellaneous commercial steel castings; alloy steel castings (nickel, chrome).

Keith, John L., Beaumont, Texas, see H. A. Perlstein.

KENNEDY & SONS (The William), Ltd., Owen Sound, Ontario, Canada.

Inc. May 6, 1896 in Province of Ontario. Capital stock: com., par value \$100, auth. \$150,000, issued \$98,200; pref. 6% cum., auth. \$50,000, issued \$28,700.

Matthew Kennedy, Sr., P.; D. J. Kennedy, 1 V. P. & G. S. M.; Matthew Kennedy, Jr., 2 V. P. & G. S.; T. D. Kennedy, Sec. & T.; C. A. Fleming, A.; 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, 112 McGill St.

Toronto, Ont., H. H. Todd, 105 Bond St.

Vancouver, B. C., Mill, Mine & Machinery Supply Co., 608 Dominion Bldg.

Works at Owen Sound: blt. 1899-1900, f. o. May, 1900; 1 Tropenas converter (5,000-lb.): 3 cupolas. Gray iron and bronze foundry.

Product: steel castings for sale, annual cap., 1,500 tons; alloy steel castings (chrome, manganese); steel castings $\frac{1}{2}$ lb. to 6,000 lbs. for miscellaneous custom work.

KENSINGTON STEEL CO., 505 Kensington Ave., Chicago, Ill.

Inc. July 29, 1926 in Illinois. Capital stock: com., no par value, auth. 8,500 shares, issued 3,861 shares; pref. 7% cum., auth. \$250,000, issued \$235,200.

W. S. McKee, P.; E. C. Bauer, V. P.; Mrs. L. G. Alt, Sec.;

W. F. Mandel, T.; Kenneth Jensen, G. M.; S. H. Olson, P. A.

Sales agent: M. S. Dennett Co., 334 Lexington Bldg., Detroit, Mich.

Brand: ORO (manganese steel).

Works at 505 Kensington Ave., Chicago: f. o. Mar., 1919; 1 Rennerfelt electric fur. (1 $\frac{1}{2}$ -ton). (Inland Engineering Co. to July 29, 1926).

Product: manganese steel castings for sale, annual cap., 1,800 tons.

KEOKUK ELECTRO-METALS CO., Keokuk, Iowa.

Inc. Sept. 1915 in Iowa. Capital stock: com., par value \$100, auth. \$250,000, issued \$226,000.

G. E. Weissenburger, P., G. M. & P. A.; John Dillon, V. P.,

T. & G. S. M.; G. L. Weissenburger, Sec.; L. E. Othmer, G. S.

Sales agent: Nicholas & Miller, McCormick Bldg., Chicago, Ill.

Works at Keokuk: blt. 1916, f. o. Apr., 1916; 4 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., 15,000 tons 50% ferro-silicon or 45,000 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. Miss L. Buss, Sec.; R. O. Mackie, T., G. S. & P. A.; W. H. Jacobi, G. M. & G. S. M.; at Keokuk.

Sales agent: L. R. Merritt & Co., 250 Park Ave., New York, N. Y. Works at Keokuk: blt. 1919, f. o. Dec. 2, 1919; 1 Moore electric fur. (1½-ton); electric annealing oven, heat treating oven and core oven.

Product: electric steel castings for sale, annual cap., 3,000 tons; alloy steel castings (nickel, chrome and other as specified). Pressure castings of all descriptions.

KEYSTONE DRILLER CO., 20th St. & 8th Ave., Beaver Falls, Pa.

Inc. Mar. 3, 1891 in Pennsylvania. Capital stock: com., par value \$50, auth. \$2,000,000, issued \$1,674,059.38; pref. 7% cum. auth. and issued \$225,000.

J. Vale Downie, P. & G. S. M.; C. R. May, V. P.; Rex Downie, Sec. & G. M.; Charles T. Smith, T.; James D. Bowser, A.; D. W. Merriman, G. S.; J. H. McCoy, P. A.

Sales offices:

Arlington, N. J., Rae Kramer.

Birmingham, Ala., Ellis Bostick, 512 North 9th St.

Joplin, Mo., F. B. Ransom.

New York, N. Y., R. J. Bole, 170 Broadway.

Waukegan, Ill., C. W. Holmes, 1325 Bellevedere St.

Brands: Keystone (drills and excavators); Downie (deep well pumps).

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. (1½-ton); 2 cupolas; 1 small gas fur. for melting ferro-alloys; gray iron (1,250 tons) and brass (250 tons) foundry.

Product: steel castings for own use and for sale, annual cap., 1,500 tons.

Keystone Iron & Steel Work, Inc., Los Angeles, Calif. discontinued the manufacture of steel castings in 1926 and sold the electric furnace to Warman Steel Casting Co. in that year. Company went into bankruptcy in 1926 and assets were sold by order of the court.

KEYSTONE STEEL & WIRE CO., Peoria, Ill.

Inc. July 20, 1907 in Illinois. Capital stock: com., no par value, auth. 210,000 shares, issued 202,284 shares; pref. 7% cum. auth. \$3,500,000, issued \$2,023,000; bonds, \$2,450,000.

W. H. Sommer, P. & G. M.; C. W. LaPorte, V. P.; D. P. Sommer, V. P., Sec. & G. S.; Henry G. Sommer, V. P. & T.; R. E. Sommer, V. P. & G. S. M.; A. L. Ackerman, A.; John Hinnen, C.; E. P. Kastien, P. A.

Brand: Red (galvanized fence).

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. (110-ton), fuel, oil; 3 three-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 18 stands; 134 wire drawing blocks and 26 continuous wire drawing mach. for wire 000 to 22 gauge; 97 wire nail mach.; 45 barbed wire mach.; 44 wire fence mach.; 9 galvanizing pans.

Product: steel ingots, billets, wire rods and wire; annual cap., 180,000 tons ingots, 170,000 tons billets, 150,000 tons wire rods, 135,000 net tons plain wire, 108,000 net tons galvanized wire, 670,000 kegs (100-lb.) wire nails, 72,000 net tons woven wire fence, 25,000 net tons barbed wire.

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.; W. R. Rankin, G. S.

Works at Anniston, Ala.: blt. 1908, rolling mill added 1916-17, f. o. Feb. 23, 1917; four 3-d. scrap heat. fur.; 18" Break-down mill; 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; bolts and nuts, 6,000 tons.

Kinite Company, Milwaukee, Wis., operating under lease works at Milwaukee for manufacture of steel castings, was acquired by the Kinite Corporation, Jan., 1926.

KINITE CORPORATION, Foot of Park Place, Milwaukee, Wis.

Inc. Jan., 1926 in Wisconsin. Capital stock: com., no par value, auth. and issued 5,400 shares; pref. 7% cum., auth. \$135,000, issued \$38,500.

P. H. Dorr, P.; A. G. Gibbons, V. P.; William Fleming, Jr., Sec. & T.; John R. Hale, A.; Roy H. Herbst, G. S.; William G. Salkeld, G. S. M.; F. E. Spartz, P. A.

Sales agents:

Chicago, Ill., Danly Machine Specialties, Inc., 2104 South 52nd Ave.

Cleveland, Ohio, The Bissett Steel Co., 947 East 67th St.

Detroit, Mich., Dorsell Products Corp., 5187 Loraine Ave.

New York, N. Y., H. Boker & Co., Inc., 101 Duane St.

Toronto, Ont., Canada, J. A. M. Taylor Tool Co., 76 Nelson St.

Venice, Calif., Triangle Engineering Co., Inc., 20 Park Ave.

Brand: Kinite.

Works at Foot of Park Place, Milwaukee (leased from Milwaukee Worsted Mills): blt. 1918, f. o. Oct. 15, 1918; 2 electric steel fur. (one 300-lb. Snyder single-phase; one 500-lb. Moore Lectro-melt). (Formerly owned by The Cutler Hammer Mfg. Co. and operated under lease by Kinite Co. to Jan., 1926).

Product: electric steel ingots and steel castings for sale, annual cap., 915 tons (575 tons ingots, 340 tons castings); alloy steel ingots and steel castings (chrome).

Kittanning Iron & Steel Mfg. Co., Pittsburgh, Pa. Rebecca Furnace (1 stack) for manufacture of basic and foundry pig iron and Kittanning Rolling Mill at Kittanning, Pa. for manufacture of muck bar, were sold in 1927 and dismantled.

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.; G. M. & P. A.; W. O. Schaad, Sec. & T.; F. J. Scott, G. S.; F. H. Sparks, G. S. M.; at Knoxville.

Works at Lonsdale, Knoxville, Tenn.: blt. 1902-03, f. o. Mar., 1903; 8 single puddling fur.; 8 cinder bottom busheling fur.; 1 squeezer; six 4-d. heat. fur., fuel pulv. coal; 20" 3-h. 2-st. muck; 16" bar mill with 3-h. roughing, 3-h. strand and 2-h. finishing; 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., 18,000 tons; hot rolled products, 42,000 tons including 29,000 tons iron and steel merchant bars and concrete bars, 5,000 tons heavy and 8,000 tons light structural shapes.

Koken, W. T., Trustee, St. Louis, Mo. Works at 3400 Maury Ave., St. Louis for manufacture of electric and acid open-hearth steel castings, were dismantled in 1928.

Kokomo Steel & Wire Co., Kokomo, Ind. was merged July 1, 1927 with Chapman Price Steel Co. and The Superior Sheet Steel Co. in the Continental Steel Corp.

Lacey (James D.) & Co., see Charcoal Iron Co. of America.

LACLEDE STEEL CO., 1317 Arcade Bldg., St. Louis, Mo.

Inc. June 3, 1911 in Missouri. Capital stock: com., par value \$20, auth. and issued \$4,125,000.

Thomas R. Akin, P. & T.; W. W. Scott, Jr., V. P. & G. S. M.; S. R. Tyler, V. P. & Sec.; Fred A. Eisele, A.; Lafayette Young, G. S.; S. W. Manss, P. A.

Sales offices:

Chicago, Ill., 208 South La Salle St.

Kansas City, Mo., 227-228 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., 100,000 tons; small shapes, bedstead angles, agricultural shapes, spirals, rail and billet steel deformed bars for reinforcing.

Alton Works, Alton, Ill.: blt. 1913, first steel, Oct. 28, 1913, first rolled products, Aug. 14, 1913; 4 B. O. H. fur. (one 100-ton, two 85-ton, one 75-ton), fuel, oil; 4 gas producers (2 Morgan, 2 Swindell); four 4-hole soaking pits; 2 Chapman-Stein cont. gas-fired heat. fur.; 32" 2-h. 1-st. blooming; 18" 3-h. 2-st. billet; 12" 2-h. 4-st. Morgan cont.; 10" 2-h. 1-st. and 10" 4-h. 5-st. strip; 12" 3-h. 1-st. roughing; 8" 3-h. 4-st. and 8" 2-h. 1-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., 225,000 tons; blooms and billets, 200,000 tons; finished hot rolled products, 180,000 tons including 20,000 tons merchant and concrete bars, 20,000 tons hoops and bands, 125,000 tons hot rolled strip, 15,000 tons skelp; cold rolled strip steel, 8,000 tons.

LACLEDE TUBE CO., 1317 Arcade Bldg., St. Louis, Mo.

Inc. June 13, 1929 in Delaware. Capital stock: com., no par value, auth. and issued 7,000 shares.

Thomas R. Akin, P. & T.; J. P. Gangwisch, 1 V. P.; W. W. Scott, Jr., 2 V. P. & G. S. M.; S. R. Tyler, Sec.; F. A. Eisele, A.; Lafayette Young, G. S.; S. W. Manss, P. A.

Sales offices:

Chicago, Ill., 208 South La Salle St.

Kansas City, Mo., 227-228 Scarritt Bldg.

Tube Mill, Alton, Ill.; blt. 1929; 1 butt-weld fur. for pipe $\frac{1}{8}$ " to 4"; one galvanizing pot.

Product: black and galvanized pipe, annual cap., 40,000 tons.

La Follette Coal & Iron Co., La Follette, Tenn. La Follette Furnace at La Follette (1 stack), last operated in 1924, was abandoned in 1928.

Lake Erie Bolt & Nut Co. (The), Cleveland, Ohio. Rolling mill at Cleveland Works for manufacture of merchant bars, bolt and nut rods, was dismantled in 1926.

Lake Superior Steel Foundry Co., Duluth, Minn., see McDougall-Duluth Shipbuilding Co. and Dork Foundry Co.

Lalance & Grosjean Mfg. Co., New York, N. Y. Works at Harrisburg, Pa. for manufacture of black sheets, black plate for tinning and tinplates, last operated in 1924, were dismantled in 1926.

LAMB-GRAYS HARBOR CO., Hoquiam, Wash.

Inc. Mar. 4, 1912 in Washington as Lamb Machine Co., name changed to Lamb-Grays Harbor Co., May 1, 1928 at which time Grays Harbor Iron & Machine Works was merged in the latter company.

Sales offices:

Aberdeen, Wash., Foot of F St.

Portland, Ore., 18th and Upshur Sts.

Raymond, Wash., Heath St.

Seattle, Wash., 532 First Ave. South.

Vancouver, B. C., National Machinery Co.

Brands: Lam Steel A (sheaves and wear resisting castings); Lam Steel B (alloy castings); Lam Steel C (forged alloy steel for hooks).

Company operates plants at Aberdeen and Raymond, Wash. for manufacture of saw mill machinery, etc., and steel, gray iron, brass and bronze foundry at Hoquiam, Wash. described below.

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 shope 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, lumbering and saw mill machinery, railroads and power transmission.

Lamb Machine Co., Hoquiam, Wash., acquired May 1, 1928, the Grays Harbor Iron & Machine Works and name was subsequently changed to Lamb-Grays Harbor Co.

LATEX IRON & STEEL WORKS, Inc., Linwood Ave. & West Kirby Sts., Shreveport, La.

Inc. 1924 in Louisiana. Capital stock: com., par value \$100, auth. \$500,000, issued \$300,000.

T. R. O'Donnell, P.; W. T. Moran, V. P.; E. F. Cronk, Sec. & T.; J. H. Crosby, G. S.

Brand: Latex (steel fittings and valves).

Works at Shreveport: blt. 1924, f. o. 1924; 1 electric furnace (1-ton) used also for making gray iron castings for own use.

Product: electric steel castings for own use and for sale, annual cap., 400 tons; alloy steel castings (nickel, chrome); steel castings for fittings and valves.

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, 5140-A Superior Ave.

Detroit, Mich., 1930 Rivard St.

New York, N. Y., C. W. Guttzeit, G. S. M., 8 West 40th St.

Pittsburgh, Pa., First National Bank Bldg.

Toledo, Ohio, 28 Broadway.

Works at Latrobe: blt. 1913, f. o. Dec. 1, 1913; 4 Heroult electric fur. (two 6-ton, one 3-ton, one 1,500-lb.); 18 coal-fired heat. fur. (two 1-d., seven 2-d., nine 3-d.); 16" 3-h. 4-st.; two 12" 3-h. 5-st.; 10" 3-h. 6-st. and 9" 3-h. 7-st. bar mills; one 8" Precision cold rolling mill; 13 box annealing fur.; 2 hand pickling tanks; 7 steam hammers, 750-lb. to 8-ton.

Product: steel ingots, annual cap., 15,800 tons; alloy steel ingots; rolled and forged tool steel bars, annual cap., 11,000 tons rolled products, 100 tons cold rolled steels, 7,000 tons forged steels.

LAVINO FURNACE CO., Bullitt Bldg., Philadelphia, Pa.

Inc. Jan. 22, 1918 in Delaware. Capital stock: com., no par value, auth. and issued, 50,000 shares.

E. M. Lavino, P.; John J. Howard, V. P.; C. W. Rodman, Sec.; at Philadelphia. M. D. Langhorne, G. S.; at Lebanon, Pa.

Lebanon Furnace, Lebanon, Pa.: 1 stack, 63' 1½" x 14', blt. 1867, dismantled 1927.

Marietta Furnace, Marietta, Pa.: 1 stack, 74' 3" x 15' 4", reblt. 1917, relined 1928; 5 stoves (four 4-pass side comb. 60' x 18', one 3-pass center comb. 70' x 18'); 2 vertical steam blowing

eng., 16,000 cfm., 10 to 12 lbs. rated pressure; 6 water-tube boilers (5 B. & W., 1 Sterling), 1,418 H. P.; 1 slag granulating plant. Fuel, coke. Product: ferro-manganese and spiegeleisen, annual cap., 25,000 tons ferro-manganese.

Sheridan Furnace, Sheridan, Pa.: 1 stack, 78' 6" x 16' 9", blt. 1874-75, last rebt. 1918; 4 stoves (one 2-pass side comb. 78' 6" x 20', two 2-pass side comb. 80' x 20', one 3-pass center comb. 90' x 20'); 2 vertical steam blowing eng. 25,000 cfm., 10 to 12 lbs. rated pressure; 5 water-tube boilers (1 Sterling, 1 Rust, 3 Wheeler), 2,200 H. P.; Sutcliffe Speakman & Co., Ltd., briquetting plant for flue dust, annual cap., 38,400 tons. Fuel, coke. Product: ferro-manganese and spiegeleisen, annual cap., 27,000 tons ferro-manganese.

Oriskany Furnace, Reusens, Campbell Co., Va.: 1 stack 81' x 16' 10", blt. 1912-13, rebt. 1918, relined 1928; five 2-pass side comb. stoves (four 70' x 18', one 78' 6" x 20'); 3 vertical steam blowing eng., 30,000 cfm., 10 to 12 lbs. rated pressure; 5 Sterling water-tube boilers, 1,482 H. P.; Dwight & Lloyd sintering plant (idle); rotary kiln nodulizing plant, annual cap., 50,000 tons. Fuel, coke. Product: foundry pig iron, ferro-manganese and spiegeleisen, annual cap., 60,000 tons foundry or 27,000 tons ferro-manganese. Total annual cap. (3 furnaces), 79,000 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), last operated in 1918, were abandoned.

Lebanon Iron Co., Lebanon, Pa., was merged Nov. 1, 1928 with Scranton Bolt & Nut Co. in Wrought Iron Company of America.

LEBANON STEEL FOUNDRY, Lebanon, Pa.

Inc. Dec. 11, 1911 in Pennsylvania. Capital stock: com., no par value, auth. 20,000 shares, issued 6,182 shares; pref. 8% cum., auth. \$1,000,000, issued \$618,200.

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.; S. M. Gingrich, P. A.

Sales offices:

Boston, Mass., J. L. Blackledge, 950 Park Square Bldg.

New York, N. Y., J. B. Armstrong and J. W. Gerke, 303 Fifth Ave.

Philadelphia, Pa., A. J. McDonald, Bellevue Court Bldg.

Works at Lebanon: blt. 1911, first steel Feb. 1, 1912; 3 electric fur. (two are 2-ton, one induction 1,000-lb.).

Product: steel castings for sale, annual cap., 5,285 tons. Alloy steel castings (nickel, chrome, vanadium, molybdenum). Motor truck, railroad car and locomotive castings; machine tool, high

pressure and corrosion resisting valves and fitting castings; heat and corrosion resisting alloy steel castings.

Leesport Furnace & Foundry Co., Philadelphia, Pa. Leesport Furnace at Leesport, Pa. (1 stack) was sold Jan. 1, 1928 to Garrett J. Rehr & Bro. and dismantled.

LEHIGH VALLEY TRANSIT CO., 14th & Gordon Sts., Allentown, Pa.

W. C. Klein, Supt. of Equipment.

Madison Street Shop, Allentown: 1 Moore Lectromelt electric fur. (500-lb.).

Product: steel castings for own use (street railway) annual cap., 360 tons; alloy steel castings (nickel, chrome, molybdenum).

LeMoyne Steel Co., Monongahela, Pa.

H. A. Kuhn, President.

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.). Plant idle and for lease.

LENOIR CAR WORKS, Lenoir City, Tenn.

Works at Lenoir City, Tenn.: 1 A. O. H. fur. (8-ton), fuel, oil. Gray iron (3,125 tons) and brass (4,800 tons) foundry for own use.

Product: steel castings for sale and for own use, annual cap., 3,300 tons; steel castings for locomotive and freight cars.

Lenor Realty Corporation, care E. P. Wilbur Trust Co., Bethlehem, Pa. owner of plant formerly operated by Hummel Steel Foundry Co. at Conshohocken, Pa. Plant consisting of 1 Rennerfelt electric fur. (3,000-lb.) for manufacture of steel castings now operated under lease by Chrome Alloy Products, Inc.

Lewis Foundry & Machine Co., 1512 Farmers Bank Bldg., Pittsburgh, Pa.

Subsidiary of Blaw-Knox Company.

Company operates a foundry at Groveton, Pa. for manufacture of gray iron castings, chilled iron rolls and rolling mill machinery. The 25-ton A. O. H. fur. at Groveton Works, was dismantled in 1928.

LIDGERWOOD PACIFIC CO., Canal St., Tacoma, Wash.

Inc. 1926 in Washington. Capital stock: com., no par value, auth. and issued 500 shares; pref. 6% cum., auth. and issued \$435,000.

John H. Lidgerwood, P.; at Elizabeth, N. J. W. E. Morris, Sec., T. & P. A.; M. H. Dickinson, G. M. & G. S. M.; A. Worley, G. S.; at Tacoma.

Sales agents:

Logger's & Contractors Machinery Co., 805 Government St., Victoria, B. C.

Manila Machinery & Supply Co., Inc., Manila, P. I.

Meany Equipment Co., 306 Pine St., Portland, Ore.

Company fabricates structural steel and operates machine shop and foundry for jobbing and manufacture of logging machinery, hoisting engines, etc.

Works at Canal St., Tacoma: blt. 1895; 1 bessemer converter (2-ton) f. o. Dec., 1910, 1 electric fur. (3-ton) added in 1926; 2 cupolas; foundry for gray iron, semi-steel and brass castings for own use and for sale (7,500 tons). (The Puget Sound Iron & Steel Works to July 1, 1926).

Product: steel castings for own use and for sale, annual cap., 3,000 tons (1,000 tons converter, 2,000 tons electric); alloy steel castings (manganese, chrome).

LINK BELT CO., 910 South Michigan Ave., Chicago, Ill.

Inc. Nov. 15, 1880 in Illinois. Capital stock: com., no par value, auth. 740,350 shares, issued 709,177 shares; pref. 6½% cum., auth. and issued \$4,000,000.

Charles Piez, Ch.; Alfred Kauffmann, P.; Richard W. Yerkes, Sec. & T.; at 910 So. Michigan Ave., Chicago. Humphrey J. Kiely, V. P.; at New York. George P. Torrence, V. P.; James S. Watson, V. P.; at Indianapolis, Ind. George L. Morehead, V. P.; at Philadelphia, Pa. W. C. Carter, V. P.; at 300 West Pershing Road, Chicago.

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, 2410 West 18th St. (gray iron foundry, 3,600 tons); Philadelphia Plant, 2045 Hunting Park Ave., Nicetown (machine and structural shops); Olney Foundry, Philadelphia, 180 West Duncan Ave. (gray iron foundry, 7,200 tons); Dodge Plant, Indianapolis, 501 North Holmes Ave. (silent and roller 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 Howe Chain Co., Muskegon, and Dodge Steel Co., Philadelphia; see Dodge Steel Co.

Steel Foundry, Chicago Plant, 300 West Pershing Road: 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.

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., G. S. M. & P. A.; T. J. Gillespie, Jr., Sec. & T.; C. W. Shuman, A.; Samuel Poster, G. S.

Brands: Vulcan, Vulcan Special, Vulcan XX, Vulcan Bloom.

Vulcan Forge & Iron Works, McKees Rocks, Pa.: forge blt. 1877; rolling mill blt. 1882; 42 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.

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 12,210 shares; pref. 7% cum. auth. \$550,000, issued \$300,000.

H. E. Muchnic, P. & G. M.; C. Hastings, V. P.; G. I. Bromley, Sec. & T.; A. H. Moorhead, 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 Sectional Packing Ring (patented locomotive cylinder packing); Universal Permanent Highway Crossing (patented cast iron highway crossing).

Works at Atchison, Kansas: 2 electric fur. (1 Swindell 2-ton, 1 Pittsburgh 3-ton); 2 cupolas; foundry for gray iron and semi-steel castings, annual cap., 25,000 tons.

Product: steel castings for own use and for sale, annual cap., 10,000 tons; alloy steel castings (manganese, nickel, chrome); railway, oil field, cement plant and general industrial castings.

LOGAN IRON & STEEL CO., 807 Stephen Girard Bldg., Philadelphia, Pa.

Inc. Jan. 16, 1871, reinc. 1921 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$240,000.

Frank G. Kennedy, Jr., P.; at Philadelphia. Frank G. Jones, Sec.; Robert K. Jones, T.; Thomas Jameson, Manager; at Burnham, Mifflin Co., Pa.

Sales agents:

Boston, Mass., A. E. Hunt Steel Co., 80 Boylston St.
 Lafayette, Ind., L. D. Hiner, 514 South 10th St.
 New York, N. Y., F. A. Dirkes, 52 Vanderbilt Ave.
 Pittsburgh, Pa., James R. Fuller, 1806 Benedum Trees Bldg.
 San Francisco, Calif., J. A. Kinkead, 1135 Mission St.
 St. Louis, Mo., W. R. Maxwell, 915 Olive St.
 St. Paul, Minn., George M. Kenyon Co., 116 East Fourth St.
 Washington, D. C., J. T. Stephenson, Munsey Bldg.

Brands: Logan, sLb (staybolt iron); LISCO (engine bolt iron); LICO (double refined iron).

Works at Burnham, Mifflin Co., Pa.: blt. 1869; rebt. 1894; 11 double puddling fur.; one 48" rotary squeezer; 6 bit. coal-fired heat. fur. (two 3-d., four 4-d.); 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, spring hanger, forging, fender and boat irons; flats, rounds, squares, ovals, hexagons, half ovals, half rounds 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, auth. \$500,000, issued \$290,000.

J. F. White, P.; C. H. White, V. P., Sec., T. & G. M.

Works at London: blt. 1902-03, f. o. Mar. 1903; 1 Heroult electric fur. (7-ton) added in 1926, first steel made in 1927; similar electric furnace to be erected in 1930; 2 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: steel ingots, annual cap., 9,300 tons; muck bar, 3,500 tons; finished rolled products, 14,000 tons merchant bar iron and steel.

LORAIN STEEL CO. (The), 545 Central Ave., Johnstown, Pa.

Inc. April 13, 1893, in Pennsylvania. Subsidiary of United States Steel Corporation.

Carroll Burton, P.; H. M. Davies, Sec. & A.; W. W. Grout, T.; C. R. Bossler, G. S.; C. F. Brandler, P. A.

Sales agents:

Atlanta, Ga., W. W. Kingston, Trust Company of Georgia Bldg.
 Chicago, Ill., S. P. McGough, Continental & Commercial Bank Bldg.

Cleveland, Ohio, Otto Fischer, Rockefeller Bldg.

Dallas, Texas, J. G. Vance, Praetorian Bldg.

New York, N. Y., T. W. Brush, 71 Broadway.

Philadelphia, Pa., S. J. Cotsworth, Widener Bldg.

Pittsburgh, Pa., H. L. Gleeson, Frick Bldg.

San Francisco, Calif., United States Steel Products Co., Russ 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 Heroult electric fur. (3-ton), one used for melting spiegel; 2 cupolas; semi-steel foundry, annual cap., 4,800 tons semi-steel castings for own use and for sale. Frog and switch shops, and mine car dept.

Product: steel castings for own use and for sale, annual cap., 18,500 tons (15,000 tons A. O. H., 3,500 tons electric); alloy steel castings (chrome, nickel, manganese, molybdenum); special and standard trackwork for street railways and steam railroads; grinding balls for the cement and metal grinding industries; apparatus for coal mining including conveyors, collapsible mine posts, etc.; steel and composite mine and industrial cars.

LORING COES AND CO., Inc., 1 Coes Square, Worcester, Mass.

Inc. Mar. 18, 1888 in Massachusetts. Capital stock: com., par value \$100, auth. and issued \$150,000.

Frank L. Coes, P., T., G. S. M. & P. A.; Frederick Searle, V. P. & G. S.; Charles Rose, Sec.

Selling agent: Walter E. Robbins, 23 East 26th St., New York.

Brand: Micro-Ground (machine knives).

Works at Worcester (Coes Wrench Co.): 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.

Los Angeles Foundry Co., Los Angeles, Calif., with works at 2444 South Alameda St., Los Angeles, for manufacture of steel castings, sold equipment and leased the plant to Los Angeles Steel Casting Co. in Aug., 1929.

LOS ANGELES STEEL CASTING CO., 2444 South Alameda St., Los Angeles, Calif.

Inc. July 13, 1929 in California. Capital stock: com., par value \$25, auth. and issued \$30,000.

C. B. Tibbetts, P. & G. M.; J. G. Coffman, V. P. & G. S.; E. S. Atkins, Sec., T. & P. A.; G. M. Gilmore, G. S. M.

Brand: Nikel-Adium (alloy steel castings).

Works at 2444 South Alameda St., Los Angeles (leased, Los Angeles Foundry Co. owner): blt. 1910; 2 electric fur. (1 Greene 2-ton, 1 Lectromelt 3-ton).

Product: steel castings for sale, annual cap., 4,500 tons; alloy steel castings (nickel, chrome, vanadium); steel castings for oil well equipment.

Louisville Steel & Iron Co., Jeffersonville, Ind. Works at Louisville, Ky. for manufacture of muck bar and merchant bars, are abandoned.

Low Moor Iron Co. of Virginia (The), Low Moor, Va. Furnace C at Covington, Va. (1 stack), blt. 1891-93, was dismantled in 1927. Furnaces A and B, at Low Moor, Va. (2 stacks); A, blt. 1880, B, blt. 1887; last active in 1926, have been abandoned. Company is being liquidated.

LUDLUM STEEL CO., Watervliet, N. Y.

Org. 1854; inc. Mar. 11, 1898 in New Jersey. Capital stock: com., no par value, auth. 500,000 shares, issued 170,000 shares; pref. 6½% cum., auth. \$10,000,000, issued \$4,500,000.

Edwin Corning, P. & G. M.; Parker Corning, 1 V. P. & T.; Hiland G. Batcheller, 2 V. P.; A. F. Dohn, 3 V. P. & G. S. M.; I. J. Morris, A. T.; John Shillinglaw, A.; W. H. Tuck, C.; A. K. Martin, G. S.; Frank S. Quick, P. A.; at Watervliet. F. B. Lounsbury, 4 V. P.; E. Palmer Gavitt, Sec.; Walter Bould, P. A.; at Dunkirk, N. Y.

Sales offices:

Boston, Mass., 1135 Statler Bldg.

Chicago, Ill., 1249 Fulton St.

Cleveland, Ohio, 1593 East 41st St.

Detroit, Mich., 1637 East Grand Blvd. (tool steel).

Detroit, Mich., 920 Fisher Bldg. (alloy steel).

Los Angeles, Calif., 1417 Santa Fe Ave.

New York, N. Y., 2640 New York Central Bldg.

Philadelphia, Pa., 1614 Summer St.

St. Louis, Mo., 209 North Beaumont St.

San Francisco, Calif., 90 Tehama St.

Brands: Pompton Tool, Huron, Seminole, Mohawk Extra, LXX, Deward, Silchrome, Nitralloy, Nirosta and Strauss Metal.

Product: steel ingots, alloy steel ingots; hammered and rolled bars, squares, rounds, flats, octagons, hexagons, etc. for tools, drills, lathe tools, punches, dies, etc.; wire rods; plain wire.

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): 14 heat. fur. (four 3-d. and nine 4-d. coal-fired, one cont. oil-fired); 18" 3-h. 3-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; 8 annealing fur. Wire Dept.: 4 wire drawing blocks. Hammer Shop: 5 steam hammers (½-ton to 6-ton). Fuel, bit. coal and oil. Product: steel ingots, annual cap., 22,000 tons; alloy steel ingots; hot

rolled products, 16,000 tons including 11,500 tons tool steel bars, and 4,500 tons wire rods; hammered tool steel bars.

Atlas Plant, 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) dismantled 1928; 22 heat. fur. (three 2-d. and eighteen 3-d. coal-fired, one 3-d. oil-fired); 20" 3-h. 2-st. blooming, 14" 3-h. 5-st., 10" 3-h. 7-st. and 10" 3-h. 6-st. bar mills; 14 annealing fur. Wire Dept.: 6 wire drawing blocks. Hammer Shop: 9 steam hammers (1,000-lb. to 12,000-lb.). (Atlas Alloy Steel Corp'n. to Jan. 1, 1929). Product: steel ingots, annual cap., 23,000 tons; alloy steel ingots (chrome, vanadium, tungsten, molybdenum); hot rolled products, 15,000 tons including 12,500 tons tool steel bars, and 2,500 tons wire rods; hammered tool steel bars; plain wire, 2,000 net tons.

Total annual capacity: steel ingots, 45,000 tons; hot rolled products, 31,000 tons (24,000 tons tool steel bars, 7,000 tons wire rods); plain wire, 2,000 net tons.

LUKENS STEEL COMPANY, Coatesville, Pa.

Inc. Jan. 17, 1917 in Pennsylvania. Capital stock: com., par value \$50, auth. \$22,500,000, outstanding \$16,398,800; bonds \$4,513,600.

R. W. Wolcott, P.; Charles L. Huston, V. P.; D. S. Wolcott, V. P.; F. H. Gordon, V. P.; W. H. Warren, V. P.; J. Stewart Huston, Sec.; George Thomas, 3rd, T.; J. W. Herman, A. T.; W. J. Bassett, C.; J. H. McElhinney, G. S.; G. L. Gordon, G. S. M.; Hugh Kenworthy, P. A.

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., 1639 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., 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 Allegheny Ore & Iron Co. with 1 blast furnace and iron mines in Virginia.

The company also owns a warehouse and fabricating shop at New Orleans.

Works at Coatesville: est. 1810; steel works added 1892, first steel made 1892; 17 B. O. H. fur. (eight 100-ton, six 50-ton, three 35-ton) and 7 A. O. H. fur. (35-ton), fuel in O. H., oil; 13 soaking pits (ten 4-hole, three 3-hole) fuel, prod. gas; 11 heat. fur. (three 3-d. prod. gas-fired, four 4-d. prod. gas-fired, four 4-d. oil-fired); 84" 2-h. and 4-h. sheared plate mill 40" x 84½", middle rolls 23" x 85", 112" 3-h. sheared plate mill, 36" x 112", middle roll 20" x 112"; 140" 3-h. sheared plate mill, 38" x 140", middle roll 22" x 140"; 206" 4-h. sheared plate, 50" x 206", middle rolls 34" x 206"; 48" 3-h. universal plate mill, 28" x 66" and 21" x 66", vertical rolls 17½" x 25½" and 15½" x 24½"; 1 blue annealing fur. in 84" sheared plate mill; 1 hand pickling tank. 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. Roll sheared plates 16 gauge and over in thickness, up to 204" wide; universal plates, over ¼" thick, up to 48" wide.

Product: steel ingots, annual cap., 686,500 tons (542,280 basic, 144,220 acid open-hearth); slabs, 300,000 tons; sheared plates, 380,000 tons; universal plates, 83,400 tons.

LUNKENHEIMER COMPANY (The), P. O. Box 876, Cincinnati, Ohio.

Org. 1862; inc. 1889 in Ohio. Capital stock: com., no par value, auth. and issued 200,000 shares; pref. 6% cum. auth. and issued \$1,000,000.

Eshelby F. Lunken, P.; David C. Jones, 1 V. P. & G. M.; Alfred J. Jupp, V. P.; Charles A. Brown, Sec. & A. G. M.; L. J. Bradford, T.; C. C. Isekeit, A. T.; George A. Seyler, G. S.; E. H. Korte, P. A.

Sales offices and stores:

Boston, Mass., 63 Pearl St.

Chicago, Ill., 558-560 West Randolph St.

New York, N. Y., 318-322 Hudson St.

Philadelphia, Pa., 317-323 North Twelfth St.

Pittsburgh, Pa., 355 Fifth Ave.

San Francisco, Calif., 116 New Montgomery St.

Works at Cincinnati, Ohio: blt. 1901, steel foundry added 1905, f. o. Dec., 1905; 2 electric fur. (one 2½-ton Heroult, one 2.3-ton LECTROMELT) first electric steel 1917; 2 cupolas. Gray iron, brass and bronze foundry, annual cap., 8,000 tons gray iron and 4,000 tons brass and bronze castings for own use.

Product: steel castings largely for own use and for sale, annual cap., 2,000 tons; iron and steel valves, lubricators, oil and grease cups, etc.

Luntz Iron & Steel Co. (The), Canton, Ohio, purchased on Nov. 30, 1927, the steel foundry of former Canton Steel Foundry Co., with 3 A. O. H. fur. (40-ton) long idle. The International Steel Corp'n. was organized April, 1929 to operate the foundry under lease for manufacture of steel castings under the Bosshardt furnace process.

McCONWAY & TORLEY CO. (The), 48th St. & A. V. R. R., Pittsburgh, Pa.

Inc. Jan. 31, 1884 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$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, J. J. Hughes, 1313 Peoples Gas Bldg.

St. Louis, O'Fallon Railroad Supply Co., 10th & Pine Sts.

Richmond, Va., Stewart H. Ford, 1231 Mutual Bldg.

San Francisco, Latham McMullin, 2910 Russ Bldg.

Works at 48th St. & A. V. R. R., Pittsburgh: blt. 1901-02, f. o. Jan. 25, 1902; 3 A. O. H. fur. (two 18-ton, one 25-ton). Fuel, nat. gas and fuel oil.

Product: steel castings for own use and for sale, annual cap., 28,000 tons; steel car couplers and miscellaneous car and locomotive castings.

McCord & Co., Chicago, Ill. Works at West Pullman, Ill. for manufacture of converter and electric steel castings and gray iron castings, dismantled in 1926 and equipment sold.

McCoy & Linn, Milesburg, Pa. Hecla Furnace at Milesburg (1 stack), last operated in 1919, was dismantled in 1927.

McDougall-Duluth Shipbuilding Co., Riverside, Duluth, Minn. Steel foundry was acquired by the Lake Superior Steel Foundry Co. in Nov., 1926. The latter company went out of business on Dec. 31, 1928 and works at 53rd Ave. West and Polk St., Duluth, were acquired by Dork Foundry Co.

McINNES STEEL CO., Ltd., Corry, Erie Co., Pa.

Inc. 1901 in Pennsylvania. Limited partnership.

J. J. McInnes, P. & G. S.; H. B. Smith, Sec. & T.

Sales offices:

Cincinnati, Ohio, Room 11, Thoms Bldg.

Pittsburgh, Pa., 405 Penn Ave.

Brands: Cello Vanadium (oil hardening steel); Vanadium V, Record A (high speed steel); Vanadium Crucible, Superior, Misco (A), McInnes Special (tool steel).

Works at Corry: one 30-pot crucible steel fur., fuel, nat. gas; 11 heat. fur. (four 1-d. nat. gas, seven 2-d. coal and coke); 1 annealing fur., fuel, nat. gas; 12" 2-h. 2-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., Leetonia, Ohio. Blast furnace plant at Leetonia was acquired in July, 1929 by Atlas Steel Supply Co., Cleveland, Ohio.

McKEESPORT TIN PLATE CO., McKeesport, Pa.

Inc. May 7, 1901 in Pennsylvania. Capital stock: com., no par value, auth. and issued 300,000 shares.

E. R. Crawford, P.; G. V. Parkins, V. P.; C. A. Kinkaid, Sec.; E. C. Robinson, T.; H. E. Houser, A.; W. T. Brownscombe, G. S.; C. M. Smith, P. A.

Sales office: 256 Broadway, New York, N. Y., Charles Breche-min, 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 40") plates 38 to 14 gauge; 42 cold mills (24" x 36" and 26" x 44", arranged tandem in 3 sets each); 6 Mesta pickling mach. (four 4-arm, two 3-arm); 14 box annealing fur. Tin House: 35 tinning pots for coke tin plates; 2 tinning pots for charcoal plates; 1 tinning pot forterne plate; fuel, prod. gas.

Product: black plates for tinning, annual cap., 180,000 tons; tin-plates, 4,000,000 base boxes.

McKENNA PROCESS CO., 1603 Jackson St., Joliet, Ill.

Inc. 1920 in Illinois. Capital stock: com., par value \$100, auth. and issued \$300,000.

George Langford, P.; Harvey Lynch, V. P. & G. S. M.; George Langford, Jr., Sec. & G. S.; at Joliet. Victor Morris, T.; at 410 Oakland Ave., Milwaukee, Wis.

Joliet Works, Joliet, Ill.: blt. 1897, f. o. Aug. 11, 1897; two 3-d. coal-fired heat. fur.; two 27" 2-h. 1-st. Lewis rail mills. Angle bar dept. added 1925 for pressing and restoring worn angle bars for rail points; 2 Toledo forging presses (1,500-ton).

Product: renewed rails from old rails, annual cap., 60,000 tons; pressed and restored worn angle bars for rail joints, 15,000 tons.

McKinney Steel Co. (The), Cleveland, Ohio, name changed to The Corrigan, McKinney Steel Co. in Sept., 1926.

McManus Steel & Iron Co., Detroit, Mich. acquired plant of Buhl Malleable Co., Wight and Adair Sts., Detroit (1 A. O. H. fur. (5-ton) and malleable foundry) Jan. 7, 1929. Company in hands of receivers and not operating.

MACHINED STEEL CASTING CO. (The), 1450 South Mahoning Ave., Alliance, Ohio.

Inc. Jan. 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.; F. E. Dussel, 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 or gas. Cap. limited by foundry equipment.

Product: steel castings for own use and for sale, annual cap., 10,800 tons. Alloy steel castings (nickel, chrome).

MACKINTOSH-HEMPHILL CO., Point Bldg., Penn Ave. & Water St., Pittsburgh, Pa.

Est. 1803; inc. Feb. 13, 1893; reinc. 1928 in Delaware. Capital stock: com., no par value, auth. 100,000 shares, issued 60,000 shares; bonds \$1,570,800.

H. V. Blaxter, Ch.; F. H. Moyer, P.; William L. Ditzes, V. P. (engineering); F. C. T. Daniels, V. P. (foundry operations); D. H. Baum, Sec.; W. C. Rice, T.; C. H. Paul, A. T. & C.; Fred Griffiths (roll sales); J. R. Patterson (Adamite sales); F. K. Acker, P. A.

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) dismantled 1929.

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; Adamite, steel foundry; roll finishing shops. Product: Adamite and steel castings, annual cap., 23,000 tons; alloy steel castings (nickel, chrome, molybdenum); Adamite, steel and alloy rolls.

Wooster Plant, Wooster, Ohio: est. 1916; brass foundry (750 tons); gear cutting and machine shops. Product: brass castings, gear cutting, rolling mill and misc. machinery.

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 B. Hosack, V. P. & T.; George L.

Wick, A. T.; Paul O. Cline, A.; Harry C. Davis, G. S.; C. A. Thomas, G. S. M.; Robert W. Wilson, A. Sec. & P. A.; at Niles, Ohio.

Sales offices:

Chicago, Ill., Elmer Gripe, Otis Bldg., 10 South La Salle St.
Cleveland, Ohio, D. W. Glanzer & Co., 840 Rockefeller Bldg.
Detroit, Mich., W. J. Clarke, 11-252 General Motors Bldg.
Indianapolis, Ind., James S. Marlowe, State Life Bldg.
New York, N. Y., F. A. Dirkes, 52 Vanderbilt Ave.
Philadelphia, Pa., E. C. Crowther, 1502 West Venango St.
St. Louis, Mo., S. J. Waterman, 8th & Olive Sts.
Toledo, Ohio, Paul A. Billings.

Works at Niles: blt. 1916-17, f. o. May 28, 1917; 8 comb. sheet and pair. fur.; 8 2-h. hot black sheet mills (four 28" x 36", three 28" x 44", one 28" x 48"); 6 single-stand cold mills, 26" x 50"; 4 plunger pickling mach.; 18 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., New York, N. Y. Works at Rumford, Maine, for manufacture of ferro-silicon, were abandoned in 1926.

MALCOLM FOUNDRY CO., Inc., 67-69 Polk St., Newark, N. J.
Inc. June, 1923 in New Jersey. Capital stock: com., par value \$100, auth. 25,000, issued \$13,500.

Thomas Malcolm, P., G. M., G. S. & G. S. M.; Myrtle F. Malcolm, V. P. & P. A.; at 783 Clifton Ave., Newark. Herold T. Malcolm, Sec.; at 21 Wilson Place, Belleville, N. J.

Works at 67 Polk St., Newark (leased from Flockhart Foundry Co.); blt. 1923, f. o. June, 1923; two 10-pot crucible steel fur. Fuel, oil.

Product: steel castings for sale, annual cap., 250 tons; alloy steel castings.

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.; V. T. Hammer, 1 V. P. & G. S.; T. F. Hammer, 2 V. P.; L. J. Nichols, Sec.; H. E. Thatcher, P. A.; at Branford. A. E. Rose, G. S. M.; at Hotel Taft, New Haven, Conn.

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) fuel, oil; 1 Lectromelt electric fur. (3-ton); 2 cupolas (1 for pig iron, 1 for spiegel). Semi-steel, malleable iron and brass foundry, annual cap. 2,000 tons

semi-steel, 12,000 tons malleable iron, and 100 tons brass castings for own use and for sale. Machine shop for pipe fittings and general jobbing.

Product: steel castings for own use and for sale, annual cap., 13,000 tons (5,000 tons converter, 5,000 tons A. O. H., 3,000 tons electric); alloy steel castings (nickel, chrome, vanadium); castings for high-pressure pipe fittings, valves, ship work, general machinery, etc.

Mallory, B. L., Memphis, Tenn.

Works at Memphis: blt. 1920, f. o. Oct. 25, 1920; two 4-d. coal-fired heat. fur.; 16" 2-h. 3-st. bar mill. (Memphis Iron & Steel Co. to 1927). Idle and for sale or lease.

Product: merchant bars, annual cap., 25,000 tons.

Manganese & Steel Foundry, Ltd., Sherbrooke, P. Q., Canada, went out of business Jan. 5, 1924. Steel foundry at Water St., Sherbrooke, was acquired by the Manganese Steel Castings, Ltd. in Feb., 1924.

MANGANESE STEEL CASTINGS, Ltd., Sherbrooke, P. Q., Canada.

Inc., Feb., 1924 in Quebec. Capital stock: com., par value \$100, auth. \$49,000, issued \$32,600.

D. J. Salls, P.; C. Picard, Sec. & T.; P. McCullough, G. M.; W. J. Humphrey, P. A.; at Sherbrooke. A. H. Mackinnon, V. P.; at Montreal, P. Q., Canada.

Works at Water St., Sherbrooke: steel foundry blt. 1922, f. o. Aug. 1, 1922; one 3-phase arc electric fur. (2½-ton). (Manganese & Steel Foundry, Ltd. to Jan., 1924).

Product: electric steel castings for sale, annual cap., 600 tons; alloy steel castings (nickel, chrome, manganese); steel castings for hydraulic machinery.

MANITOBA ROLLING MILL CO., Ltd., Tecumseh St. & Logan Ave. West, Winnipeg, Man., Canada.

Inc. 1905 in Manitoba. Capital stock: com., par value \$100, auth. \$500,000, issued \$300,000. Subsidiary of Manitoba Bridge & Iron Works, Ltd.

H. B. Lyall, P.; T. R. Deacon, 1 V. P.; P. J. Smith, 2 V. P.; E. J. Burleigh, Sec. & T.; W. Stuart, G. S. M.; at Winnipeg. Robert Smith, G. S.; at Selkirk, Man.

Sales offices: Regina, Sask.; Calgary and Edmonton, Alta.

Product: steel ingots; merchant and concrete reinforcing bars, light rails, angles and tie plates.

Works at Selkirk, Manitoba: blt. 1914; steel plant added 1920, f. o. Sept. 15, 1920; 2 B. O. H. fur. (20-ton) fuel, oil; 4 pulv. coal-fired heat. fur. (two 3-d., two 4-d.); 16" 3-h. 3-st. bar; Belgian mill with 14" 3-h. 1-st. roughing and 9" 3-h. 5-st. finish-

ing. Product: steel ingots, annual cap., 35,000 tons; finished rolled products, 35,000 tons merchant bars.

Works at Calgary, Alberta: blt. 1929, f. o. Nov. 4, 1929; 1 B. O. H. fur. (20-ton) fuel, nat. gas; 4 nat. gas-fired heat. fur. (two 4-d., two 5-d.); 20" 3-h. 3-st. bar; Belgian mill with 14" 3-h. 1-st. roughing and 10" 3-h. 5-st. finishing. Product: steel ingots, annual cap., 20,000 tons; finished rolled products, 40,000 tons merchant and concrete reinforcing bars, light rails, angles and tie plates.

MANITOBA STEEL FOUNDRIES, Ltd., 917 Transportation Bldg., 132 St. James St., Montreal, P. Q., Canada.

Inc. 1915 in Dominion of Canada. Capital stock: com., auth. \$300,000, issued \$140,000, no par value, auth. 6,000 shares, issued 2,800 shares.

Thomas Arnold, P.; at Montreal. F. J. Manning, V. P. & P. A.; R. George, S. M.; at 906 Confederation Life Bldg., Winnipeg, Man. D. R. McLeod, Sec. & T.; N. Bedard, G. S.; at Selkirk, Man., Canada.

Sales offices:

Calgary, Alberta, Land Bldg., 9th & 1st St., West.

Winnipeg, Man., 906 Confederation Life Bldg.

Brand: Arnold (manganese steel).

Works at Selkirk, Manitoba: blt. 1916; destroyed by fire May 19, 1926, rebt. 1926, f. o. Sept. 19, 1926; 1 Moore Lectromelt electric fur. (3-ton); one 2-pot crucible fur. for melting ferro-alloys, fuel, oil.

Product: steel ingots and steel castings for sale, annual cap., 3,200 tons (1,200 tons ingots, 2,000 tons castings). Alloy steel castings (vanadium, chrome, nickel, manganese).

Mansfield Sheet & Tin Plate Co. (The), Mansfield, Ohio, was merged March 1, 1928, with The Ashtabula Steel Sheet Co., The Empire Steel Co., The Falcon Steel Co., The Thomas Sheet Steel Co., and The Waddell Steel Co. in the Empire Steel Corporation.

MARION STEAM SHOVEL CO. (The), 617 West Center St., Marion, Ohio.

Inc. Aug. 9, 1884 in Ohio. Capital stock: com., no par value, auth. and issued 100,000 shares; pref. 7% cum., auth. and issued \$3,100,000; bonds \$3,444,000.

J. H. Watters, P. & G. M.; Charles B. King, V. P.; D. J. Shelton, V. P.; J. L. Grissinger, Sec.; H. J. Cronin, T.; G. E. Turner, G. S.; H. T. Gracely, G. S. M.; C. W. Taylor, P. A.; E. L. Usner, Wks. Mgr.

Sales offices in the principal cities of the United States and Canada and in London, England.

Brand: Marion (all machinery produced).

Company manufactures steam, electric, gasoline-electric and Diesel-electric shovels, railroad ditchers, and ballast unloaders.

Works at Marion: Steel Dept. blt. 1900-01, f. o. Feb. 1901; 1 B. O. H. fur. (25-ton) fuel, oil; 1 Moore Lectromelt electric fur. (4-ton). Gray iron foundry, annual cap., 4,500 tons gray iron castings for own use.

Product: steel castings for own use, annual cap., 14,100 tons (10,500 tons B. O. H., 3,600 tons electric). Alloy steel castings (copper).

Marquette Iron & Steel Co., 705 Olive St., St. Louis, Mo., Inc. Aug. 28, 1928 in Delaware. Capital stock: com., par value \$10, auth. \$1,000,000, issued \$631,000.

E. M. McGary, P.; J. J. O'Brien, V. P.; W. H. Hallerberg, Sec. & T.; at St. Louis. John F. Harmon, Jr., G. M.; at Brandsville, Mo.

Plant at LeCrone, Howell Co., Mo.: partly erected stack (about 90% completed, date of completion uncertain) for manufacture of charcoal manganese pig iron. (Owned by Mid-States Steel & Iron Corp. to 1926; August Schlafly, St. Louis, Mo. to Aug. 27, 1928). Company contemplates installing an electric furnace for manufacture of steel castings. Company owns and operates iron ore mines at LeCrone, Howell Co., Mo. and manganese ore mine at Stone Co., Ark.

MARTING IRON & STEEL CO. (The), 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 M. Reif, Sec.; W. P. Lewis, T.; C. B. Fowler, G. S.

Brand: Ironton and Nellie (pig iron).

Ironton Plant, 2nd & Lorain Sts., Ironton: 1 stack, 75' x 18' 6"; blt. 1907-08, relined 1919; 4 Foote stoves, 80' x 20'; 4 steam blowing eng. (2 Weimer, 1 Todd, 1 Ironton); 2 Rust water-tube and 12 Atlas flue boilers, 2,300 H. P.; 1 Heyl & Patterson single-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 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, 87' x 20', blt. 1875, rebt. 1899, relined 1927; 4 stoves (1 Foote 75' x 20', 3 McKee 100' x 20'); 4 steam blowing eng. (3 Todd, 1 Cuyahoga); 7 water-tube boilers (4 Rust, 2 Erie City, 1 Wickes) 2,700 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.

MASSILLON STEEL CASTING CO. (The), Massillon, Ohio.

Inc. July 10, 1917 in Ohio. Capital stock: com., par value \$100, auth. \$500,000, issued \$278,800.

Clifford E. Pierce, P.; at Betz-Pierce Co., Cleveland, Ohio. A. H. Anthony, V. P., G. M. & P. A.; F. O. Humberger, Jr., Sec. & 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.) abandoned; 1 Moore Electromelt electric fur. (2½-ton) installed 1928, first electric steel Apr. 1928.

Product: electric steel castings for sale, annual cap., 3,600 tons; alloy steel castings (nickel, vanadium, molybdenum); general commercial 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.) abandoned; 2 cupolas; 1 electric furnace (3-ton).

Product: electric steel castings for sale, annual cap., 4,800 tons; motor truck and tractor castings, and misc. small castings.

MAYNARD ELECTRIC STEEL CASTING CO., 1302 22nd Ave., Milwaukee, Wis.

Inc. 1919 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. & P. A.; O. H. Schildknecht, A. & G. S. M.; Frank Meyers, G. S.

Sales offices:

Chicago, Ill., 942 McCormick Bldg.

Detroit, Mich., 8647 Woodward Ave.

St. Louis, Mo., 215 Chouteau Trust Bldg.

Works at 1302 22d Ave., Milwaukee: blt. 1918; 3 Moore electric fur. (4-ton), one inst. 1918, one in 1925, one in 1929.

Product: steel castings for sale, annual cap., 12,000 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. Subsidiary of The Youngstown Sheet & Tube Co.

C. S. Robinson, P.; W. C. Reilly, V. P.; W. E. Meub, Sec. & A. T.; W. J. Morris, T.; R. M. Welch, A. Sec. & A. T.; C. H. Rose, A. T.; J. H. Steeves, A.; W. N. McDonald, C.; W. E.

Watson, G. S. M.; C. T. Moke, P. A.; at Youngstown. L. A. Manchester, General Counsel; J. C. Argetsinger, Asst. General Counsel; W. F. Costello, Supt.; at Mayville, Wis.

Brands: Mayville, Sydney (pig iron).

Mayville Works: 2 blast furnaces, "A" 79' 9 $\frac{1}{2}$ " x 17' 8", blt. 1848, last rebt. 1922; "B", 82' x 18', blt. 1905-07, rebt. 1919, relined Feb. 1927; 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-Chambers 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); rotary kiln (10' x 150') sintering plant for ore and flue dust, annual cap., 75,000 tons. By-product coke: Lake and Mayville ore. By-product coke plant dismantled in 1929.

Product: foundry and high phosphorous 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., Memphis, Tenn. Rolling mill at Memphis for manufacture of merchant bars, was acquired by B. L. Malloy in 1927. Company out of business.

MESTA MACHINE CO., P. O. Box 1124, Pittsburgh, Pa.

Inc. Nov. 21, 1898 in Pennsylvania. Capital stock: com., par value \$5, auth. \$5,000,000, issued \$3,000,000; pref. 6% cum., auth. and issued \$2,000,000.

H. F. Wahr, P.; J. O. Horning, V. P. & T.; L. Iverson, V. P.; 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 heavy rolling mill and steel works machinery, continuous mills, four-high mills, etc.; gear drives; roll grinders; 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 40-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; one 60" cupola; 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. subsidiary of Ludlum Steel Co. since Nov., 1920, discontinued the manufacture of ferro-alloys at its plant at Watervliet.

METAL & THERMIT CORPN., 120 Broadway, New York, N. Y.
Inc. 1908 in New Jersey. Capital stock: com., no par value, auth. 150,000 shares, issued 95,165 shares; pref. 7% cum. auth. \$1,500,000, issued \$615,600.

W. T. Graham, Ch.; F. H. Hirschland, P. & G. M.; Hubert E. Rogers, V. P. & Sec.; F. W. Cohen, V. P. & A. Sec.; E. Becher, V. P.; Benjamin Anderson, T.; J. E. Strayer, A.; John B. Tinnon, 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 heavy melting steel scrap, 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; pure metals (chromium, manganese, tungsten powder, cobalt, titanium): special alloys (manganese-titanium, manganese-boron, manganese-aluminum, manganese-copper, cobalt-copper, chromium-copper, titanium-copper): Thermit, tetrachloride of tin, tin oxide, sodium antimonate, heavy melting steel scrap.

METROPOLITAN STEEL CASTING CO., 301 Bergen St., Harrison, N. J.

Inc. June 23, 1926 in New Jersey. Capital stock: com. issued \$10,000.

John A. Williams, P.; Joseph A. Tedesco, T.

Works at 301 Bergen St., Harrison (leased, Joseph E. Belbey, owner): blt. 1926, f. o. Dec. 23, 1926; 1 crucible fur. (8 pots.). Fuel, oil.

Product: small crucible steel castings for sale, annual cap., 400 tons; alloy steel castings (nickel, chrome).

MICHIGAN STEEL CORPORATION, Mill & 4th Sts., Ecorse, Detroit, Mich.

Inc. Sept. 22, 1922 in New Jersey. Capital stock: com., no par value, auth. and issued 220,000 shares; debenture bonds \$1,250. George R. Fink, P.; H. M. Steele, V. P.; E. R. Milburn, Sec.; L. S. Brown, T.; G. A. Faunce, A.; Fred W. Pitts, G. M.; E. L. Wetstein, G. S. M.; E. R. Schneider, P. A.

Works at Ecorse: blt. 1923, f. o. July 7, 1923; 16 comb. sheet and pair fur.; 16 hot black sheet mills 28" x 34" to 29" x 82"; 12 stands cold rolls 26" x 50" to 26" x 82"; 13 double box annealing fur.; 6 Mesta pickling mach. Roll black sheets to 72" wide and 150" long, 4 to 22 gauge.

Product: black sheets, annual cap., 175,000 tons. Stamping, automobile, and electric sheets.

MICHIGAN STEEL CASTING CO., 1986 Guoin St., Detroit, Mich.

Inc. Mar., 1907 in Michigan. Capital stock: com., par value \$100, auth. \$400,000, issued \$327,300.

R. F. Flintermann, P.; C. H. L. Flintermann, V. P.; F. J. Stanley, Sec. & G. M.; Hobart B. Hoyt, T.; William Gordon, G. S.; E. D. Flintermann, G. S. M.; Lee J. Curtin, P. A.

Sales offices: Buffalo, N. Y., Chicago, Ill., Cleveland, Ohio, Fort Wayne, Ind., and Philadelphia, Pa.

Brand: MISCO (carburizing containers and heat-resisting alloy metal).

Works at Detroit: blt. 1907, first steel Jan., 1910; 3 electric fur. (one 3-ton Heroult, one 1-ton Heroult, one ½-ton special), first electric steel Oct. 21, 1915.

Product: electric steel castings for sale, annual cap., 6,000 tons; alloy steel castings (nickel, chrome, vanadium, tungsten); castings for automobiles, trucks, truck wheels, and general machinery; special heat treating alloys.

Mid-Continent Iron Co., Midco, Mo., was liquidated in 1926 and Midco Furnace at Midco, Mo. for manufacture of charcoal pig iron, abandoned in that year.

Mid-States Steel & Iron Corp., Terre Haute, Ind. owning plant at Terre Haute of former Hoosier Rolling Mill Co., was sold at receivers sale to American Steel Co. of Indiana, Inc. in Oct., 1926.

Mid-Western Steel Corp., Chicago, Ill. was organized in Dec., 1925 and operated under lease, plant of Riverdale Rolling Mill Co. at Riverdale, Chicago, from Jan. 15, 1926 to May, 1926, at which time the company was dissolved and plant reverted to owner. Riverdale Rolling Mill Co. dismantled the plant late in 1926.

Midland Coke & Iron Corpn., Chicago, Ill. changed corporate title Jan. 15, 1926 to St. Louis Coke & Iron Corporation.

MIDVALE COMPANY (The), Nicetown, Philadelphia, Pa.

Inc. Mar. 28, 1923 in Delaware. Capital stock: com., no par value, auth. and issued 200,000 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. Coonahan, P. A.

Sales offices:

Chicago, Ill., 316 McCormick Bldg.

Cleveland, Ohio, 1610 Union Trust Bldg.

New York, N. Y., 165 Broadway.

Philadelphia, Pa., The Midvale Co., Nicetown.

Pittsburgh, Pa., 475 Union Trust Bldg.

San Francisco, Calif., 459 Monadnock Bldg.

Washington, D. C., 1121 Woodward Bldg.

Brands: Midvale.

Product: steel ingots; iron and steel 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, corrosion and heat resistant products; 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 bar steel warehouses at Philadelphia, Cleveland, and San Francisco.

Company also owns Chrome Alloy Products, Inc. which it acquired Oct. 21, 1929, see Chrome Alloy Products, Inc.

Nicotown Works, Nicetown, Philadelphia, Pa.: 4 B. O. H. fur. (50-ton); 3 A. O. H. fur. (60-ton); fuel in O. H. oil; 1 Heroult electric fur. (7-ton); 2 crucible steel fur. (60-pots total) dismantled 1926-27; 41 Hughes and Duff gas prod. (idle); 2 cupolas; steel and gray iron foundry; 15" 3-h. 2-st. bar; 12" 3-h. 5-st. bar; 9" 3-h. 6-st. bar; 2 roughing and 2 finishing tire mills; 14 steam hammers (1,000-lb. to 24,000-lb.); 9 hydraulic and steam hydr. presses (500-ton to 9,000-ton). Armor Plate Dept.; Projectile Dept.

Annual cap. 200,000 tons ingots, (93,760 tons B. O. H., 97,040 tons A. O. H., 9,200 tons electric); alloy steel ingots and castings (nickel, chrome, tungsten, vanadium, molybdenum); steel and gray iron castings, 21,750 tons for own use and for sale;

billets, 21,500 tons; bar steel, 15,000 tons; tires and weldless rings, 60,000 tons; forgings, 87,000 tons.

Miles, W. A., Copake Falls, N. Y. Copake Iron Works at Copake Falls with blast furnace for manufacture of charcoal pig iron, last operated in 1903, were abandoned in 1926.

MILLBURY STEEL FOUNDRY CO., Millbury, Mass.

Inc. Sept. 1908 in Massachusetts. Capital stock: com., no par value, auth. and issued 20,000 shares; bonds \$12,000.

William W. Brierly, P. & G. M.; Robert C. Travers, V. P.; George E. Pratt, Sec. & G. S. M.; Fred W. Moore, T.; A. C. Davidson, G. S.; Walter W. Dolan, P. A.

Brands: Mico and Noncorrodite (alloy steel castings).

Works at Millbury: blt. 1902, f. o. 1902; 2 electric fur. (one 2-ton Heroult, one 500-lb. Moore Lectromelt), first electric steel made Nov., 1917.

Product: steel castings for sale, annual cap., 1,200 tons. Alloy steel castings. Steel castings for dies, rams, rolls, etc.; stainless steel castings for all purposes.

Milton Iron Co. (The), Wellston, Ohio. Milton Furnace at Wellston (1-stack) for manufacture of silvery pig iron and bessemer ferro-silicon, last operated in 1923, was abandoned in 1928.

MILTON MANUFACTURING CO. (The), Milton, Pa.

Est. 1886; inc. 1893; reinc. Dec. 28, 1922 in Pennsylvania. Capital stock: com., no par value, auth. 29,050 shares, issued 17,800 shares; first pref. 6% cum. auth. and issued \$350,000; second pref., non-cum., auth. and issued \$295,000; bonds \$562,200.

W. W. Wilson, P.; R. W. Krise, V. P. & G. M.; H. W. Chamberlin, Sec.; O. S. Stamm, T.; C. A. Eschbach, A.; J. F. Butler, G. S.; O. H. Reinhart, G. S. M.; A. E. Balliet, P. A.

Sales offices:

Atlanta, Ga., Fourth National Bank Bldg.

Chicago, Ill., 549 Washington Blvd.

Milwaukee, Wis., 6134 Plankinton Arcade.

New York, N. Y., Room 433, 30 Church St.

Norfolk, Va., National Bank of Commerce Bldg.

Philadelphia, Pa., 619 Locust Ave., Germantown.

Pittsburgh, Pa., 1428 Oliver Bldg.

San Francisco, Calif., Russ Bldg.

Trade Mark: M in hexagon.

Works at Milton, Pa.: blt. 1886-87, f. o. Feb., 1889; 2 Heroult electric fur. (one 6-ton, one 3-ton) dismantled 1929; 3 pulv. coal-fired 4-d. heat. fur.; bar mill with 16" 3-h. 2-st. roughing, 10" 3-h. 3-st. secondary, 10" 2-h. 4-st. finishing and 8" 2-h. 2-st. finishing; 1 steam hammer (3,000-lb.); 1 steam-hydraulic press (500-ton) for large nuts. Bolt, nut and rivet departments.

Product: finished hot rolled products, annual cap., 40,000 tons

including 20,000 tons iron and steel merchant and concrete bars, 20,000 tons spike, bolt, nut and rivet rods; carriage, machine, lag bolts, nuts, etc., 175,000 kegs (200-lbs.); forged nuts and cutter heads, 500 tons.

MILWAUKEE STEEL FOUNDRY CO., 127 South Water St., Milwaukee, Wis.

Inc. Nov. 16, 1903 in Wisconsin. Capital stock: com., par value \$100, auth. and issued \$300,000.

Burton C. Wait, P. & G. M.; 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.; at Milwaukee. F. A. Weiss, V. P.; at 488 68th St., Wauwatosa, Wis.

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).

Product: steel castings for sale, annual cap., 6,600 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; pref. 7% cum. auth. \$50,000.

S. V. Wood, P. & G. M.; R. A. Wood, V. P. & T.; O. A. Bakke, Sec. & P. A.; W. D. Kuszler, G. S.

Works at 38th Ave. & 5th St., Minneapolis: first electric steel May 1, 1917; 2 electric fur. (one single-phase 1-ton, one three-phase 3-ton).

Product: steel castings for sale, annual cap., 5,300 tons. Alloy steel castings (nickel, chrome, silicon, molybdenum, manganese).

MINNESOTA STEEL CO., Morgan Park, Duluth, Minn.

Inc. June 10, 1907 in Minnesota. Subsidiary of United States Steel Corporation.

L. C. Reis, P.; H. H. Lumley, A. P.; B. F. Burch, A.; H. C. Jones, G. S.; at Morgan Park, Duluth. W. J. Filbert, Sec.; G. L. Edwards, T.; at 71 Broadway, New York, N. Y. Edwin S. Mills and D. A. Merriman, G. S. M.; F. J. Rief, P. A.; at 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, rebld. 1924, relined 1929; No. 2, 95' x 20' 5", blt. 1910-16, f. o. Feb. 19, 1916, rebld. 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 gas; 28 Hughes gas producers; 1 mixer (600-ton); five 4-hole soaking pits, fuel, 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; 225 wire drawing blocks for wire, .480" to 20 gauge; 183 wire nail mach.; 50 barbed wire mach.; 14 wire fence mach.; 3 galv. pans. Spike and rivet dept., spikes, 7" x 5/16" to 12" x 3/4"; rivets, 3/8" x 3/16" to 13/16" x 1/2". Product: steel ingots, annual cap., 540,000 tons; semi-finished rolled products, 444,800 tons blooms and billets; 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, 47,950 net tons; barbed wire, 25,000 net tons; wire fence, 28,600 net tons; wire nails, 570,000 kegs (100-lb.); spikes 22,500 kegs (200-lb.), rivets, 3,000 kegs (200-lb.).

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 650 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 ore. Company owns iron mines at Waukon, Iowa, annual cap., 75,000 tons.

Product: foundry, basic and malleable pig iron, annual cap., 125,000 tons.

MISSOURI ROLLING MILL CORPN., 6800 Manchester Ave., St. Louis, Mo.

Inc. Mar. 3, 1921 in Missouri. Capital stock: com., par value \$1, auth. and issued \$35,000; pref. 8% cum., auth. \$500,000, issued \$482,000; bonds \$250,000.

Carl Bauer, P. & T.; D. C. Lee, 1 V. P., G. M., G. S. M. & P. A.;
H. W. Danforth, 2 V. P.; Charles Dettenwanger, Sec. & A.;
W. L. Hyde, G. S.

Brand: STA-PUT (steel fence posts).

Works at 6800 Manchester Ave., St. Louis: blt. 1900, f. o. July 5,
1900; 1 cont. oil-fired heat. fur.; 14" 2-h. 4-st. rail slitting mill;
9" 2-h. 4-st. rerolling mill.

Product: concrete bars and shapes from old rails, annual cap.,
20,000 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, re-
lined 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
(operated by Cadillac Malleable Iron Co.) annual cap.,
5,000 tons.

Product: warm blast charcoal pig iron (foundry, malleable and
special irons) annual cap., 40,000 tons.

MOBILE STOVE & PULLEY MFG. CO., Mobile, Ala.

Inc. 1904 in Alabama.

A. J. Parsons, P.; J. S. Wardle, V. P.; C. S. Latshaw, G. S. M.
Sales office: Transmission Machinery Co., 1146 Tchoupitoulas St.,
New Orleans, La.

Brand: MP.

Mobile Pulley & Machine Works, Ann & Tennessee Sts., Mobile:
1 Heroult electric fur. (2-ton) installed 1922, f. o. Nov. 23, 1922.
Gray iron foundry: 2 cupolas for gray iron and semi-steel
castings 1 lb. to 10,000 lbs. (10,000 tons).

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

MOLOCH FOUNDRY & MACHINE CO., Kaukauna, Wis.

Inc. 1920 in Wisconsin. Capital stock: com., par value \$100,
auth. and issued \$200,000; pref. 7% cum., auth. \$175,000, issued
\$86,300.

R. M. Kanik, P. & G. M.; C. D. Boyd, V. P.; H. Weifenbach,
Sec.; Joseph J. Jansen, T.; G. R. Charlesworth, A.; O. Abrahamson,
G. S. M.; R. Mattka, P. A.

Brands: Moloch Power Hammer (power driven forge hammer);
Moloch Super Capacity Pump (rotary pumps).

Works at Kaukauna: 1 Snyder electric fur. (5-ton) installed 1929, f. o. Aug. 24, 1929. Gray iron, semi-steel and brass foundry, annual cap., 3,000 tons gray iron and semi-steel and 150 tons brass castings for sale.

Product: steel castings for own use and for sale, annual cap., 3,150 tons. Alloy steel castings (nickel).

MOLYBDENUM CORPORATION OF AMERICA, 908 Empire Bldg., Pittsburgh, Pa.

Inc. June 1, 1920 in Delaware. Capital stock: com., par value \$10, auth. and issued \$5,000,000.

J. W. Weitzenkorn, P.; William B. Kuntz, A. T.; Clifton Taylor, G. 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.

Product: ferro-molybdenum, molyte, ferro-tungsten, annual cap., 2,875 tons.

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.; R. E. Noack, Sec. & T.; G. A. Damon, G. S., at Stockton. F. A. Meyers, V. P.; at San Andreas, Calif.

Works at Sacramento, Union & Oak Sts., Stockton: first electric steel June 15, 1916; 2 electric fur. (one Heroult 1-ton, one Lectromelt 1½-ton); gray iron, semi-steel and bronze foundry; 1 Detroit electric fur. for melting ferro-alloys.

Product: electric steel castings for own use and for sale, annual cap., 5,760 tons. Alloy steel castings (nickel, chrome).

Monarch Steel Castings Co., Detroit, Mich. Plant which was sold at receivers sale on Feb. 26, 1923 to James McMillan Estate, was dismantled in 1926.

MONONGAHELA IRON & STEEL CO., 2403 First National Bank Bldg., Pittsburgh, Pa.

Inc. May 12, 1917 in West Virginia. Capital stock: com., par value \$100, auth. and issued \$900,000.

W. B. Eichleay, P.; J. B. Armstrong, V. P. & T.; A. B. Sheets, V. P.; Thomas Watson, Sec.

Works at Paden City, W. Va.: blt. 1903-05, f. o. 1906; 24 single puddling fur.; 1 squeezer; two 3-d. coal-fired heat. fur.; 20" 3-h. 2-st. muck mill; 14" 3-h. 2-st. bar mill, 10" 3-h. 4-st. guide mill. Product: muck bar, annual cap., 20,000 tons; merchant bars 5,000 tons.

MONROE STEEL CASTINGS CO., 917 West Front St., Monroe, Mich.

Inc. Jan. 12, 1912 in Michigan. Capital stock: com., par value \$10, auth. \$300,000, issued \$132,500.

Carl F. Clarke, P. & G. M.; Paul Geigenmueller, T. & P. A.; at Monroe. E. B. Busby, V. P. & Sec.; at Detroit, Mich.

Sales office: 2315 Dime Bank Bldg., Detroit, Mich.

Works at Monroe: blt. 1910-11, f. o. Feb. 21, 1911; first electric steel Oct. 1, 1916; 1 Moore Lectromelt electric fur. (3-ton) added in 1929 replacing a Booth-Hall electric fur. (1½-ton).

Product: steel castings for sale, annual cap., 3,600 tons.

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 \$1,526,983; pref. 7% cum., auth. \$1,000,000, issued \$490,570.

_____, P.; Morris Cohn, 1 V. P.; at Los Angeles. Watt L. Moreland, 2 V. P. & G. M.; C. W. Creighton, Sec. & T.; C. S. Bottsford, G. S.; P. H. Mallory, G. S. M.; W. J. Awe, P. A.; at Burbank, Calif.

Sales offices at Bakersfield, Fresno, Los Angeles, Oakland, Sacramento, San Diego, San Francisco, and Stockton, Calif.; Salt Lake City, Utah; Portland, Ore.; Seattle and Spokane, Wash. Company has plant for construction of Moreland motor trucks and a steel foundry at Burbank, Calif.

Burbank Works, Burbank, Calif.: 2 electric fur. (one ¾-ton Rennerfelt, one 1½-ton Vom Baur). Gray iron, semi-steel, brass, bronze and aluminum foundry for own use.

Product: steel castings for own use, annual cap., 2,000 tons. Alloy steel castings (nickel).

MOUNTAIN STATE STEEL FOUNDRIES, Camden Ave., South Side, Parkersburg, W. Va.

Inc. Mar. 15, 1929 in West Virginia. Capital stock: com., no par value, auth. 1,200 shares, issued 800 shares; bonds \$135,000. H. F. Stratton, P. & G. M.; B. W. Miller, V. P., Sec. & T.; W. E. Shivers, A.

Works at Parkersburg, W. Va.; blt. 1922-23, f. o. July 1, 1923; 1 Moore Lectromelt electric fur. (2½-ton). (Blackwood Electric Steel Corp., to March 18, 1929).

Product: small electric steel castings for sale, annual cap., 3,000 tons. Alloy steel castings (nickel, chrome, manganese).

MYSTIC IRON WORKS, 250 Stuart St., Boston, Mass.

Inc. July 6, 1923 in Massachusetts. Capital stock: com., par value \$100, auth. and issued \$5,500,000.

William E. McKay, Ch.; Thomas W. Kennedy, P. & G. M.; Edward Page, V. P.; C. A. Alden, T.; Ernest C. Melville, A.; H. J. Briney, G. S.; H. T. Outwater, G. S. M.; John A. Roche, P. A.

Brand: Mystic (foundry pig iron); Nekonegan (malleable pig iron).

Mystic Furnace, Everett, Mass.: 1 stack, 92' x 20' 6", blt. 1924-26, blown in Sept. 27, 1926; 3 two-pass stoves, 100' x 22'; 2 turbo-blowers, 90,000 cfm., 30 lbs. rated pressure; 6 three-drum water-tube boilers, 800 H. P.; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach. By-product coke: foreign and domestic ores.

Product: foundry, malleable and basic pig iron; annual cap., 165,000 tons.

Nagle Steel Co. (The), Pottstown, Pa. Pottstown Works at Pottstown, Pa. for manufacture of sheared plates, were dismantled in 1926 and Seyfert Works at Seyfert Station, Pa. for manufacture of sheared plates, were dismantled in 1927.

Napier Iron Works, Nashville, Tenn. Napier Furnace at Napier, Tenn. (1 stack) for manufacture of foundry pig iron, was dismantled in 1929.

NATIONAL ALLOY STEEL CO., Blawnox, Allegheny Co., Pa. Inc. July 7, 1927 in Pennsylvania. Capital stock: com., no par value, auth. and issued 1,000 shares; pref. 7% cum., auth. and issued \$100,000. Subsidiary of Blaw-Knox Company.

N. B. Ornitz, P.; Frank Cordes, V. P.; Irvin F. Lehman, V. P.; Chester H. Lehman, Sec.; George L. Dumbauld, T.; Williams S. Boyd, P. A.; at Pittsburgh, Pa.

Sales offices:

Baltimore, Md., Bayard & Warner Sts.

Birmingham, Ala., Brown-Marx Bldg.

Boston, Mass., 605 Statler Bldg.

Buffalo, N. Y., 623 Genesee Bldg.

Chicago, Ill., Peoples Gas Bldg.

Cleveland, Ohio, 526 Union Bldg.

New York, N. Y., 342 Madison Ave.

Philadelphia, Pa., 906 Widener Bldg.

San Francisco, Calif., 1023 Financial Center Bldg.

Brand: National Alloy.

Works at Blawnox, Allegheny Co., Pa.: blt. 1927, f. o. Nov. 23, 1927; 1 arc electric fur. (1 ton).

Product: electric steel castings for sale, annual cap., 2,000 tons; alloy steel castings (nickel, chrome); heat, corrosion and abrasion resisting steel castings; normalizing furnaces, pack heating furnaces and heat resisting valves.

National Car Coupler Co., Attica, Ind. Works at Murphysboro, Ill. with 1 A. O. H. fur. (20-ton) for manufacture of steel castings, dismantled 1925-26. Works at Attica, Ind. for manufacture of steel castings, acquired by Harrison Steel Castings Co. Jan. 1, 1928.

National Castings, Ltd., Belleville, Ont., Canada. Works at Belleville, Ont. for manufacture of electric steel castings, were destroyed by fire in 1926 and have not been rebuilt.

National Enameling & Stamping Co., Milwaukee, Wis. Granite City Steel Works at Granite City, Ill. were taken over by the Granite

City Steel Co., Nov. 1, 1927. Entire capital stock of the Granite City Steel Co. is owned by National Enameling & Stamping Co. Granite Iron Rolling Mills at St. Louis, Mo. were dismantled in 1927.

NATIONAL-ERIE CO., Erie, Pa.

Inc. July 11, 1899 in Pennsylvania as National Foundry Co., reinc. Mar. 28, 1929 and name changed to National-Erie Co. Capital stock: com., par value \$25, auth. and issued \$1,500,000; bonds \$750,000.

E. W. Sheldon, P.; A. W. Reichert, Sec. & G. S. M.; A. H. Willis, T. & G. M.; P. L. Lemmon, A.; W. C. Quirk, G. S.; H. E. McLaughlin, P. A.

Sales offices: Pittsburgh, Pa. and Akron, Ohio.

Works at Erie: 2 A. O. H. fur. (25-ton) fuel, oil; first O. H. steel made Mar. 4, 1907; electric fur. (1½-ton) added in 1926. Gear cutting plant, general machine shop and pattern shop.

Product: steel ingots and steel castings for own use and for sale, annual cap., 23,000 tons (7,500 tons O. H. ingots; 12,500 tons O. H. castings; 3,000 tons electric castings). Alloy steel castings (nickel, chrome, vanadium). Light and heavy steel castings for steam shovels, gears, rubber making machinery and general machinery.

NATIONAL FORGE & ORDNANCE CO., Irvine, Warren Co., Pa.

Inc. Mar. 5, 1927 in Delaware. Capital stock: com., par value \$100, auth. and issued \$800,000.

C. E. Wilder, P. & G. M.; F. K. Wilder, V. P.; G. H. Stephenson, Sec. & T.; John C. Harrington, Jr., A. G. M. & G. S. M.; C. P. Miller, G. S.; C. H. Sontag, P. A.

Sales offices:

Chicago, Ill., Peoples Gas Bldg.

Cleveland, Ohio, Citizens Bldg.

Detroit, Mich., East Grand Blvd., Cor. Oakland.

Pittsburgh, Pa., First National Bank Bldg.

St. Louis, Mo., Paul Brown Bldg.

Works at Irvine, Warren Co., Pa.: blt. 1929, f. o. July 23, 1929; 2 Heroult electric fur. (one 6-ton, one 10-ton); 4 steam hammers (1,500-lb. to 8,000-lb.). Heat-treating department and machine shops.

Product: steel ingots and steel castings for own use, annual cap., 22,250 tons ingots; alloy steel ingots (nickel, chrome, vanadium, molybdenum); forgings, 6,000 tons.

National Foundry Co., Erie, Pa., name changed to National-Erie Co. March 28, 1929.

National Lock Washer Co. (The), Newark, N. J. Riverside Works at Riverside, N. J. for manufacture of merchant bars, were

sold Aug. 1, 1929 to Crucible Steel Co. of America and dismantled. The National Lock Washer Co. operates plants at Newark, N. J. and Milwaukee, Wis. for manufacture of lock washers, screw machine products and car window equipment.

NATIONAL MALLEABLE & STEEL CASTINGS CO., 10600 Quincy Ave., S. E., Cleveland, Ohio.

Inc. Dec. 1, 1923 in Ohio. Capital stock: com., no par value, auth. 600,000 shares, issued 488,676 shares.

Henry F. Pope, P.; S. L. Smith, V. P.; William G. Kranz, V. P.; O. W. Loomis, V. P.; Ernest W. Whittemore, Sec. & T.; H. J. Ward, A.; C. T. Lonney, C.

Sales offices:

Cleveland, Ohio, 10600 Quincy Ave., S. E.

Chicago, Ill., 501 Railway Exchange Bldg.

Cicero, Ill., 1400 South 52nd Ave.

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., 317 Insurance Company of North America Bldg.

St. Louis, Mo., 1420 Ambassador Bldg.

San Francisco, Calif., 603 Monadnock Bldg.

Sharon, Pa., South Dock St.

Washington, D. C., 518 Munsey Bldg.

Product: steel castings, automatic car couplers, friction draft gears; spun steel car wheels; Naco cast steel anchor chain; all kinds of malleable iron castings.

Company owns and operates 7 plants, 3 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.

Cleveland 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., 35,000 tons.

Chicago Works, 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, spun steel car wheels, Naco cast steel anchor chain.

Malleable iron castings plants at Cicero, Ill.; Indianapolis, Ind. and Toledo, Ohio.

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. \$250,000, issued \$213,800.

William Goudy, P., T. & G. M.; D. H. Slonaker, 1 V. P. & Sec.; F. J. Kaib, A. T. & A.; A. J. Baird, A. G. M.; at Avonmore. M. E. Baird, 2 V. P.; at Cincinnati, Ohio. W. H. Melaney, G. S. M.; at 5357 Broad St., Pittsburgh, Pa.

Works at Avonmore, Pa.: blt. 1905-06; 1 A. O. H. (20-ton) fuel, nat. gas and oil. Iron foundry: 2 cupolas; 4 air fur.; annual cap., 20,000 tons sand and chilled iron rolls, alloy chilled iron rolls and iron castings. Rolling mill equipment.

Product: steel castings for own use and for sale, annual cap., 3,600 tons. Alloy steel castings.

National Steel, Ltd., Welland, Canada purchased Mar. 30, 1929, from The Carbon & Alloy Steels Co., Ltd., the plant at Welland of former Electric Steel & Metals Co., Ltd., together with other properties of the Carbon & Alloy Steels Co., Ltd. Plant idle; future product not decided.

NATIONAL STEEL CORPORATION, 2703 Grant Bldg., Pittsburgh, Pa.

Inc. Nov. 7, 1929 in Delaware. Capital stock: com., no par value, auth. 3,000,000 shares, issued 2,063,090 shares.

E. T. Weir, Ch.; Frank M. Hesse, Sec. & T.; at Pittsburgh. George R. Fink, P.; Carlton M. Higbie, V. P.; at Detroit, Mich. J. C. Williams, V. P.; at Weirton, W. Va. Charles A. Collins, V. P.; at Cleveland, Ohio.

Company acquired as of Dec. 1, 1929, by exchange of securities the capital stock of the following companies:

Wholly owned companies:

*Weirton Steel Company.

*Great Lakes Steel Corporation.

*Buffalo Union Furnace Company.

*Hanna Furnace Company.

American Boston Mining Company.

Hayes Mining Company.

Hanna Iron Ore Company (Delaware).

* These subsidiaries are described in the alphabetic list under the title of the respective companies.

Hanna Iron Ore Company (Michigan).
 Bates Iron Company.
 Mead Iron Company.
 Marting Ore Company.
 Weirton Coal Company.
 Weirton Improvement Company.
 Producers Steamship Company.

Partly owned companies:

Donner Hanna Coke Corporation.
 Mahland Iron Company.
 Nokay Iron Company.
 Richmond Iron Company.
 Stambaugh Iron Company (The).
 Wakefield Iron Company.
 Buffalo Iron Mining Company.
 Hanna Ore Mining Company.
 Virginia Ore Mining Company.
 Canisteo Cliffs Mining Co.
 Holman Cliffs Mining Company.
 LaRue Mining Company.
 Consumers Ore Company.
 Susquehanna Ore Company.
 Mahoning Ore & Steel Company.
 Oakhill Supply Company.
 Waukenabo Company.
 Crystal Falls Hotel.

National Steel Casting Co., Montpelier, Indiana. Receiver appointed Aug. 17, 1927 and sold Works at Montpelier for manufacture of open-hearth and crucible steel castings, April 29, 1929 to Max Zeigler & Bros., Muncie, Indiana. Purchaser holds the property for resale.

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.; W. P. Bradley, 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 SUPPLY CO. OF CALIFORNIA (The), 147-149 North Los Angeles St., Los Angeles, Calif.

Company operates plants at Torrance, Calif., Carnegie, Pa., and West Chicago, Ill. for manufacture of oil well tools and machinery for drilling and operating oil wells. Steel plant at Torrance, see below.

Union Tool Division, Torrance, Calif.: 2 Heroult electric fur. (one 3-ton, one 15-ton); 2 forging presses (one 500-ton, one 1,200-ton). Gray iron foundry; 4 cupolas; annual cap., 12,000 tons gray iron castings for own use and for sale. (Union Tool Co. to Dec., 1927).

Product: steel ingots and steel castings for own use and for sale, annual cap., 9,000 tons ingots, 6,000 tons steel castings; alloy steel ingots (chrome, vanadium, manganese).

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.

F. D. Williams, P. & G. M.; L. C. Longaker, V. P. & T.; F. G. Zimmerman, Sec.; H. C. Baker, C.; J. P. Coffman, G. S.; N. A. Newton, G. S. M.; Lynn Holbrook, P. A.

Sales offices:

Cleveland, Ohio, C. A. Roberts, 402 Marshall Bldg.

Houston, Texas, W. H. Gaither, Second Natl. Bank Bldg.

Houston, Texas, Peden Iron & Steel Co.

Los Angeles, Calif., Wm. Francis, P. O. Box 30, Arcade Sta.

Los Angeles, Calif., Republic Supply Co., 2122 East 7th St.

New York, N. Y., Room 320-E, 30 Church St.

Philadelphia, Pa., W. P. Valentine, 26 South Broad St.

Pittsburgh, Pa., George Kroto, 1421 Farmers Bank Bldg.

St. Louis, Mo., Reeves & Skinner Mach. Co., 2211 Olive St.

Salt Lake City, Utah, F. C. Richmond Mach. Co., Second St.

Tulsa, Okla., W. C. McLeod, 924 Kennedy Bldg.

Tulsa, Okla., Frick-Reid Supply Corporation.

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). Gray iron and semi-steel (7,000 tons) and brass (550 tons) castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 1,150 tons. Alloy steel castings (nickel).

NATIONAL TUBE CO., Frick Bldg., Pittsburgh, Pa.

Inc. Feb. 16, 1899 in New Jersey. Subsidiary of United States Steel Corporation.

F. W. Waterman, P.; P. C. Patterson, V. P.; J. H. Nicholson, V. P.; B. C. Moise, V. P., 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., Statler Bldg.
 Chicago, Ill., H. S. Raymond, Continental & Commercial Bank Bldg.
 Denver, Colo., F. O. Young, First Natl. Bank Bldg.
 Detroit, Mich., A. M. Lally, Buhl 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 Co. Bldg.
 St. Paul, Minn., H. S. Raymond, Merchants Natl. Bank Bldg.
 Salt Lake City, Utah, F. O. Young, Walker Bldg.

National Works, McKeesport, Pa.:

Blast Furnaces: 4 stacks; No. 1, 90' x 23', blt. 1907, rebt. 1924, relined 1929; No. 2, 94' x 24' 3", blt. 1903-05, rebt. 1928; No. 3, 90' x 22', blt. 1889-90, rebt. 1920; No. 4, 89' x 23' 6", blt. 1890, rebt. 1919, relined 1926; 15 stoves (fourteen 2-pass 120' 4½" x 22', one 3-pass 96' 5½" 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., 350,000 tons. By-product coke; Lake ore. Product: bessemer pig iron, annual cap., 800,000 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, fuel, prod. gas; 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. 5-st. and 13" 4-h. 6-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 ¾" to 3", 7 lap-weld fur. for pipe 2" to 24". Galvanizing Dept., Versailles, Pa.: 2 galvanizing pots; 14 steam hammers (400-lb. to 6,000-lb.); 1 steam hydr. press (500-ton) for forgings for own use only. Product: steel ingots, annual cap., 704,000 tons; alloy steel ingots (copper); semi-finished hot rolled products, 667,000 tons (561,000 tons slabs, 106,000 tons billets); skelp, 576,800 tons; black pipe 531,600 tons; galvanized pipe, 60,000 tons; forgings for own use for repairs, castings for own use (gray iron, 8,200 tons; rolls, 500 tons; brass and bronze castings, 450 tons).

Christy Park Works, McKeesport, Pa.: 14 regen. gas-fired heat. fur.; 9 steam hammers (400-lb. to 2,000-lb.); 9 hydraulic presses (180-ton to 2,000-ton). Product: flasks, cylinders, coupling

blanks and job work products, annual cap., 20,500 tons; hammer weld black pipe, 16,000 tons.

Ellwood Works, Ellwood City, Pa.: blt. 1895, f. o. June 1895; 19 heat. fur. prod. gas-fired (one 2-d., one 3-d., three 4-d., three 5-d., 1 cont. regen. 10 cont. reverb.); 3 cont. reverb. nat. gas-fired heat. fur.; 21" 2-h. 5-st. bar; one 28" 2-h. 1-st. tube mill; five 21" 2-h. 1-st. tube mills; one 13" 2-h. 1-st. tube mill; 13 hammers (7 steam, 6 air) 250-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., 4,000 tons. Product: seamless tube blanks, annual cap., 300,000 tons; seamless tubes (1 5/16" to 10 3/4") hot finished and cold drawn, 350,000 tons.

Pittsburgh Works (include 2 plants, Pennsylvania Dept. and Republic Dept., separately described below).

Continental Department, Second Ave., Pittsburgh, was dismantled in 1928.

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; coupling finishing shop with capacity for threading and electro-galvanizing 8,300 tons of seamless couplings per annum.

Riverside Works, Benwood, W. Va. sold to Wheeling Steel Corpn. Feb. 2, 1928.

Lorain Works, Lorain, Ohio (leased, The National Tube Co. owner):

Blast furnaces: 5 stacks; No. 1, 91' 6" x 25' 9", blt. 1898-99, last rebt. 1926, now relining; No. 2, 91' 6" x 25' 3", blt. 1898-99, rebt. 1924, relined 1927; No. 3, 86' 6" x 23' 6", blt. 1903-04, rebt. 1924, relined 1928; No. 4, 90' 6" x 24' 9", blt. 1903-05, rebt. 1922, relined 1927; No. 5, 91' 6" x 25', blt. 1907, rebt. 1925, relined 1929; 22 Cowper stoves (four 100' x 21', eight 120' x 21', one 100' x 22', six 120' x 22', three 120' x 23'); 5 horizontal cross comp. steam blowing eng. and 3 turbo-blowers, 388,500 cfm.; 9 vertical water-tube boilers, 19,200 H. P. serve also steel works and blooming mills; 2 Heyl & Patterson double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 250,000 tons. By-product coke: Lake ore. Product: bessemer and basic pig iron, annual cap., 1,167,000 tons.

By-product coke plant: 208 Koppers coke ovens, by-product recovery plant and Carl Still benzol plant, annual cap., 1,213,000 net tons coke, 4,500,000 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. (90-ton) fuel, tar and coke oven gas; 3 mixers (one 500-ton, two 300-ton); 4 cupolas; foundry

for ingot moulds, rolls, iron and brass castings for own use; 12 soaking pits (four 3-hole, five 4-hole, three 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; 32" 2-h. 1-st. bar; 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"; 4 lap-weld fur. for pipe 2" to 22"; 2 seamless fur. for seamless tubes $2\frac{1}{8}$ " to $13\frac{1}{8}$ "; 2 galv. pots; 10 steam hammers (800-lb. to 6,000-lb.): 1 forging press (1,000-ton). Product: steel ingots, annual cap., 1,500,000 tons (600,000 tons bessemer, 900,000 tons B. O. H.); alloy steel ingots (copper, rephosphorus); semi-finished rolled products, 1,242,000 tons including 505,000 tons slabs, 737,000 tons blooms and billets; 1,045,000 tons finished hot rolled products including 90,000 tons rails, 4,000 tons splice bars, 529,000 tons skelp, 369,300 tons rounds, 52,700 tons small billets; black pipe, 318,700 tons; galvanized pipe, 50,000 tons; hot finished seamless tubes, 200,000 tons; forgings for own use only; castings for own use (ingot moulds, 25,000 tons; rolls, 200 tons; iron castings, 7,800 tons; brass castings, 600 tons).

Gary Works, Gary, Ind. (leased, Gary Tube Co. owner): 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 $\frac{1}{8}$ " to 3"; 3 lap-weld fur. for pipe $3\frac{1}{2}$ " to 22"; 1 seamless fur. for seamless tubes $4\frac{1}{2}$ " to $13\frac{1}{8}$ "; 1 galvanizing pot. Product: skelp, annual cap., 345,900 tons; black pipe, 271,800 tons; galvanized pipe, 50,000 tons; hot finished seamless tubes, 150,000 tons.

Total annual capacity: pig iron, 1,967,000 tons; steel ingots, 2,204,000 tons; slabs, blooms and billets, 1,909,000 tons; finished hot rolled products, 2,267,700 tons including 1,451,700 tons skelp, 300,000 tons seamless tube blanks, 90,000 tons rails, 4,000 tons splice bars, 369,300 tons rounds, 52,700 tons small billets; black pipe, 1,422,100 tons; galvanized pipe, 160,000 tons; seamless tubes, 700,000 tons; flasks, cylinders, etc., 20,500 tons; hammer weld black pipe, 16,000 tons.

National Tube Co. (The), Pittsburgh, Pa., see National Tube Co.

Nelson (T. H.) & Co., Conshohocken, Pa., see Wm. T. Bate & Son, Inc. and Chrome Alloy Products, Inc.

NEW JERSEY ZINC CO. of Pa. (The), 160 Front St., New York, N. Y.

Inc. Aug. 1, 1898 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$600,000. Subsidiary of The New Jersey Zinc Co., of New Jersey.

J. E. Hayes, P.; A. P. Cobb, V. P.; F. N. Spencer, V. P.; R. G. Hudson, Sec.; H. S. Wardner, T.; G. F. Wolff, C.; H. Hardenbergh, G. M.; W. J. Lee, P. A.; at New York. W. M. Kelsey, G. S.; at Palmerton, Pa.

Palmerton Furnaces, Palmerton, Pa.: 2 stacks; No. 1, 64' 8 $\frac{1}{2}$ " x 17', blt. 1901-03, f. o. Apr. 5, 1904, rebt. 1917, relined Jan. 1929; No. 2, 60' 5 $\frac{1}{2}$ " x 14' 10", blt. 1905-06, f. o. Sept. 3, 1906, rebt. 1928; 9 two-pass side comb. stoves (five 82' x 20' for No. 1 fur., four 80' x 18' for No. 2 fur.); 3 horizontal cross compound steam blowing eng., 48,000 cfm., 25 lbs. rated pressure. Blast furnace dept. furnished with steam from central plant; 4 Croxton slag granulating pits, annual cap., 100,000 tons. By-product coke: zinc residuum for ore. Company owns limestone quarry at East Allentown, Pa. (idle).

Product: spiegeleisen.

New Process Iron & Steel Co., Noblesville, Ind. was placed in hands of a receiver in Dec., 1927. Construction of rolling mill at Noblesville begun in Sept., 1920, was not completed. Installed equipment was dismantled in 1929.

NEWBERRY LUMBER & CHEMICAL CO., Newberry, Mich.

Inc. May 25, 1929 in Delaware. Capital stock: com., no par value, class A, auth. and issued 40,806 $\frac{2}{3}$ shares, class B, auth. and issued 8,161 $\frac{1}{3}$ shares; pref. 5% cum., auth. and issued \$765,125; bonds \$765,125.

W. H. Matthews, P.; at Memphis, Tenn. Charles R. Dunn, V. P.; at Detroit, Mich. J. E. Tracy, Sec.; H. L. Harker, T.; at Chicago, Ill. P. S. Hamilton, Plant M.; H. C. Berg, P. A.; at Newberry.

Brand: Newberry (pig iron).

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 chemical plant and saw mill. Charcoal: Lake ore. Charcoal plant: 20 retorts; annual cap., 2,920,000 bu. and by-product recovery plant. (Charcoal Iron Co. of America to 1926; James D. Lacey & Co., operating agents for receivers to May 25, 1929). Product: hot blast charcoal pig 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; no separate boilers for furnace, power from by-product plant. Charcoal: Lake ore. Charcoal plant (idle): 90 kilns; annual cap., 3,150,000 bu. and by-product recovery plant. (Charcoal Iron Co. of America to 1926; James D. Lacey & Co., operating agents for receivers to May 25, 1929). Idle since 1924. Product: charcoal pig iron, annual cap., 36,000 tons.

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.; L. C. Branch, A.; E. G. Rogers, S.; at Newport News. E. A. Adams, Sec. & T.; James Plummer, P. A.; at 233 Broadway, New York, N. Y.

Company builds and repairs vessels, engines, boilers, and hydraulic machinery, and operates steel foundry in connection therewith.

Works at Newport News: 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., 3,950 tons (3,000 tons electric ingots; 950 tons electric castings). Alloy steel ingots and castings (chrome, vanadium). Castings for ship construction, and for hydraulic turbines and accessories.

NEWPORT ROLLING MILL CO. (The), 9th & Lowell St., Newport, 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.; Frank A. Moeschl, G. S. M.; Rud K. Boggs, P. A.

Sales offices:

Boise, Idaho, A. W. Smith, 215 W. South Ave.

Boston, Mass., Wetherell Bros.

Chicago, Ill., Steel Mill Products Co., 330 South Wells St.

Cleveland, Ohio, Frank A. Mitchell Co., 809 Bulkley Bldg.

Detroit, Mich., G. C. Davies, 3729 Crane Ave.

Detroit, Mich., R. O. Wire, Kresge Bldg.

New Orleans, La., John C. Brill Co., Masonic Bldg.

St. Louis, Mo., H. C. Beckwith, 1413-14 Chemical Bldg.

Seattle, Wash., B. F. Woods, P. O. Box 814.

Brand: Globe; GOHI (genuine open-hearth iron); Kentucky Copper Bearing Steel (black and galvanized formed products).

Works at Newport: blt. 1857; 7 sheet and 8 pair fur.; 13 comb. sheet and pair fur.; 1 pack fur.; 17 hot black sheet mills (30" x 38" and 30" x 44"); 1 jobbing plate mill, 30" x 72"; 2 hot black plate (tin) mills, 30" x 38"; 1 cold roll train of 8 stands; 4 pickling mach. (1 Mesta, 1 Cook, 2 Erie); 13 box annealing fur., 1 blue annealing fur.; 8 galvanizing pots, annual cap., 80,000 tons. Roll black sheets 24" to 48" wide and 72" to 144" long, 3 to 30 gauge.

Product: black sheets, annual cap., 150,000 tons (including 16,000 tons blue annealed, 124,000 tons black sheets, 10,000 tons black plate); galvanized sheets, 80,000 tons. Blue annealed, black

and galvanized, stamping, full finish furniture, automobile, electric and enamel sheets.

NEWTON STEEL CO. (The), First National Bank Bldg., Youngstown, Ohio.

Inc. June, 1919 in Ohio. Capital stock: com., no par value, auth. 300,000 shares, issued 240,000 shares; pref. 6% cum., auth. \$4,000,000, issued \$2,250,000.

Edward F. Clark, P. & T.; J. H. Fitch, Jr., V. P. (sales); C. B. Pollock, V. P. (operations); W. V. Eaton, Sec.; C. J. Koelsch, A.; J. D. Lewis, C.; H. E. Robinson, G. S. M.; F. J. Laskey, P. A.; at Youngstown. R. L. Ritzie, G. M.; at Newton Falls, Ohio. R. M. Laning, G. M.; at Monroe, Mich.

Sales offices:

Chicago, Ill., Peoples Gas Bldg., 122 South Michigan Ave.

Cleveland, Ohio, Union Trust Bldg.

Detroit, Mich., Fisher Bldg.

New York, N. Y., Corn Exchange Bank Bldg., 1 East 42nd St.

Brand: NEWSTEEL.

Product: black sheets; blue annealed, stamping, japanning stock and automobile sheets.

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" x 38" to 54" and 30" x 44" to 84"); 6 trains of 26" cold rolls (4 trains of 2 stands each, 2 trains of 5 stands each); 3 Mesta pickling mach.; 53 box annealing fur.; 4 blue annealing fur. Roll black sheets 27" to 60" wide and 70" to 144" long, 13 to 24 gauge. **Product:** black sheets, annual cap., 200,000 tons (including 25,000 tons blue annealed sheets). Blue annealed, stamping, japanning stock and automobile sheets.

Works at Monroe, Mich.: construction commenced Apr. 1, 1929, to operate about Mar. 15, 1930; 10 sheet and 14 pair fur.; 10 hot black sheet mills (30" x 40" to 84"); 6 trains of 26" cold rolls (4 trains of 2 stands each, 2 trains of 5 stands each); 2 Mesta pickling mach.; 50 box annealing fur. Roll black sheets 20" to 60" wide and 70" to 144" long, 13 to 24 gauge. **Product:** black sheets, annual cap., 200,000 tons. Stamping, japanning stock and automobile sheets.

Niagara Electrolytic Iron Co., Inc., New York, N. Y. Works at Niagara Falls, N. Y. for manufacture of electrolytic iron in form of tubes for deep stampings, electrical uses and for special alloys, have been dismantled. Company out of business.

NICETOWN PLATE WASHER CO., Inc., 1824 West Juniata St., Philadelphia, Pa.

Inc. July 2, 1918 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$195,000.

Wheeler Lord, P. & G. M.; Alexander Henry Carver, Sec.; Ellsworth Hamilton, T. & G. S.

Works at Nicetown, Philadelphia: blt. 1900; two 3-d. coal-fired reverberatory heat. fur.; 10" 3-h. 5-st. bar mill. Washer dept. for washers 3/16" to 2" and larger, standard and special.

Product: iron and steel merchant bars, rounds, flats and squares, annual cap., 12,000 tons. Wrought washers, standard and special, annual cap., 20,000 kegs (200-lb.).

Noble Electric Steel Co., San Francisco, Calif., in receivership since Feb. 28, 1919, dismantled their works at Heroult, Calif. in 1928.

NORFOLK & WESTERN RAILWAY CO., Roanoke, Va.

Roanoke Foundry, Roanoke, Va.: 1 Gronwall-Dixon electric fur. 4½-ton) added 1918, f. o. Mar., 1918; gray iron, brass and bronze foundry for locomotive and car castings for own use.

Product: steel castings for own use, annual cap., 1,500 tons.

NORTHWEST STEEL ROLLING MILLS, Inc., 4315 9th Ave., N. W., Seattle, Wash.

Inc. Feb. 26, 1926 in Washington. Capital stock: com., par value \$100, auth. and issued \$525,000.

Herman Goetz, P.; James Stirrat, V. P.; E. A. Goetz, Sec., T. & G. M.; C. H. Hass, A. G. M. & P. A.; Paul Steuding, G. S. M.

Brand: Lectro Steel.

Works at 4315 9th Ave. N. W., Seattle: blt. 1926, first steel Nov. 26, 1926, first rolled products May 17, 1926; 1 Moore electric fur. (4-ton); two 4-d. oil-fired heat. fur.; bar mill with 16" 3-h. 1-st. roughing and 10" 3-h. 4-st. finishing.

Product: steel ingots, annual cap., 15,000 tons; alloy steel ingots (nickel); merchant and concrete bars, chain, bolt, and rivet rods, 12,000 tons.

NORTHWESTERN STEEL & IRON CORPN., 2907 Fourth St., S. E., Minneapolis, Minn.

Inc. April, 1910; reinc. Dec. 1923 in Illinois. Capital stock: com., par value \$5, auth. \$250,000, issued \$240,000; pref., auth. and issued \$800,000; debenture bonds \$900,000.

W. C. Davis, P.; W. J. Miller, V. P.; E. H. Vogt, Sec.

General office: 111 North Canal St., Chicago, Ill.

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 make 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, Ashland, Ky. Controlling interest in capital stock of the Norton Iron Works was acquired by The American Rolling Mill Co. in 1927 and the property purchased Oct. 1, 1928. Operation of the Works at Ashland was taken over by the latter company on Oct. 1, 1928. Works are now known as Ashland Division, Norton Iron Works, The American Rolling Mill Co.

Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N. S., Canada.
See under British Empire Steel Corporation.

Nugent Steel Castings Co. of Illinois, Chicago, Ill., name changed to Southwest Steel Casting Co. Mar. 11, 1926 and reincorporated Mar. 12, 1926 in Delaware as The Nugent Steel Castings Co. The latter company was merged Feb. 28, 1930 in Sivyer Steel Casting Co.

NUTMEG CRUCIBLE STEEL CO., Main St., Stony Creek, Conn.
Inc. Jan. 1, 1920 in Connecticut. Capital stock: com., par value \$100, auth. \$10,000, issued \$6,300.

G. A. Frid, P.; C. R. Reynolds, G. M. & P. A.; at Stony Creek.
Charles Reynolds, Sec., T. & G. S. M.; at Branford, Conn.

Works at Stony Creek, Conn.: blt. 1919, f. o. 1920; two 10-pot crucible steel fur. Fuel, oil.

Product: steel castings for sale, annual cap., 200 tons.

OAKLAND STEEL FOUNDRY CO., 2934 Ford St., Oakland, Calif.

Inc. June 11, 1926 in California. Capital stock: com., par value \$100, auth. \$50,000, issued \$41,000.

A. S. Landgren, P. & G. S.; V. F. Andre, Sec. & T.

Works at 2934 Ford St., Oakland: blt. 1926, f. o. Oct. 1, 1926; one 1-ton electric furnace.

Product: electric steel castings for sale, annual cap., 200 tons. Alloy steel castings.

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 FERRO-ALLOYS CORPN., 307 Witter Bldg., Canton, Ohio.

Inc. May 4, 1929 in Ohio. Capital stock: com., no par value, auth. 7,500 shares, issued 4,498 shares.

Harry Ross Jones, P.; L. G. Pritz, V. P. & G. M.; D. C. Danford, Sec. & T.; George W. Starr, G. S. M.

Works at Philo, Ohio: blt. 1928, f. o. Oct. 1, 1928; 2 Bailly arc resistance 3-phase electric fur. (one 6,000 KVA, one 5,000 KVA); one additional 6,000 KVA electric fur. to be installed before Feb. 1, 1930. Electric power from Ohio Power Co., Philo.

Product: ferro-silicon, ferro-manganese and ferro-phosphorus, annual cap., 17,500 tons.

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 \$1,570,000.

A. C. Morse, P. & G. M.; F. L. Benham, A. G. M.; R. C. Skiles, V. P.; C. H. Wood, V. P. & G. S. M.; G. L. Reichert, Sec. & T.; B. V. Hollenbaugh, G. S.; M. E. Nimmons, P. A.

Sales offices:

Chicago, Ill., 1150 Peoples Gas Bldg.
Cleveland, Ohio, 1328 Union Mortgage Bldg.
Detroit, Mich., 2859 East Grand Blvd.
New York, N. Y., 100 East 45th St.
St. Louis, Mo.

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.); 33 single and 6 double cold drawing benches; under construction, 10 single 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), Cleveland, Ohio, name changed March, 1928 to The Cleveland Alloys Co.

OHIO STEEL FOUNDRY CO. (The), Lima, Ohio.

Inc. Feb. 17, 1907 in Ohio. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$601,000; first pref. 7% cum., auth. \$500,000, issued \$432,700; second pref. 7% cum., auth. \$750,000, issued \$584,400.

J. E. Galvin, P.; W. J. Gilmore, 2 V. P.; T. H. Harvey, 3 V. P.; D. R. Carpenter, Sec. & T.; F. C. Bowman, A.; J. E. Neely, P. A.; at Lima. George S. Vail, 1 V. P.; at 1310 Terminal Tower Bldg., Cleveland, Ohio.

Sales offices:

Chicago, Ill., J. J. Hughes, 1313 Peoples Gas Bldg.
Detroit, Mich., J. F. Monfils, 304 Boulevard Temple Bldg.
Houston, Texas, The J. A. Rossiter Co., 410 Union National Bank Bldg.
Los Angeles, Calif., Flickinger & Meyers, 129 West 2nd St.
New York, N. Y., Rice & Malone, 75 West St.
Philadelphia, Pa., Rice & Malone, 22 South 15th St.
Pittsburgh, Pa., Fawell Engineering Co., First Natl. Bank Bldg.
Richmond, Va., James E. Stewart, Amer. National Bank Bldg.
Tulsa, Okla., Vinson-Canter Co., 422 Wright Bldg.

Brands: Ohioloy (special alloy castings); Fahrite (heat resisting alloy castings).

Lima Works, Lima, Ohio: blt. 1907, f. o. Sept. 21, 1907; 2 B. O. H. fur. (25-ton), fuel, oil. Product: steel castings for own use and for sale, annual cap., 36,000 tons. Alloy steel castings (vanadium).

Bucyrus Works, Bucyrus, Ohio (blt. 1906-07, f. o. Mar. 1907) sold in 1925 and open-hearth steel furnace was subsequently dismantled.

Springfield Works, Springfield, Ohio: blt. 1916, f. o. Sept. 1, 1916; 2 electric fur. (one 6-ton Pittsburgh Electromelt, one 1,800-lb. Swindell). Product: steel castings for own use and for sale, annual cap., 8,500 tons. Alloy steel castings (nickel, chrome). Total annual cap., (2 plants) 44,500 tons steel castings. Commercial steel castings; specialty, fittings and oil still castings. Alloy steel castings (nickel, chrome, vanadium, special heat resisting).

Oil City Iron Works, Inc., Shreveport, La., corporate title changed to The Brewster Co., Inc. Jan. 1, 1929.

OIL WELL SUPPLY CO., P. O. Box 91, Pittsburgh, Pa.

Est. 1862; inc. Mar. 19, 1891 in Pennsylvania. Capital stock: com., par value \$25, auth. \$15,000,000, issued \$9,890,625; pref. 7% cum., auth. \$7,000,000, issued \$6,550,000.

B. F. Harris, P.; Leon F. Payne, V. P. & T.; D. J. Brown, V. P. & G. M.; S. Clarke Reed, V. P.; M. L. Moore, V. P.; J. H. Hillman, Jr., V. P.; E. W. Criswell, Sec.; George W. Rooney, A.; William H. Weis, C.; at Pittsburgh. H. J. Morlang, V. P.; at Tulsa, Okla. L. H. Keim, V. P.; at Main & Alameda Sts., Los Angeles, Calif. H. S. Charnell, P. A.; at Oil City, Pa.

District sales offices: Oil City, Pa.; Tulsa, Okla.; Los Angeles, Calif.; and branch sales offices, stores or sales agencies located at over 100 points in 17 different states, also in England, Roumania, Canada, Mexico and Trinidad.

Brand: Oilwell.

Company manufactures oil well supplies, boilers, engines, pumps, fittings, drilling tools, etc.; it operates plants at Oil City, Pa.; Oswego, N. Y.; Bradford, Pa.; 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 Heroult electric fur. (2-ton). Gray iron foundry, annual cap., 9,000 tons for own use.

Product: steel castings for own use only, annual cap., 2,180 tons.

Oklahoma Iron Works, Tulsa, Okla. Steel foundry at East Archer St., Tulsa, operated for own use, idle since 1920, is abandoned.

OKLAHOMA STEEL CASTINGS CO., 1200 North Peoria Ave., Tulsa, Okla.

Inc. Jan. 26, 1920; reinc. June 29, 1927 in Delaware. Capital stock: com., no par value, auth. 3,300 shares, issued 2,835 shares.

Ernest H. Cornelius, P.; Burtner Fluger, V. P. & G. M.; L. C. Baston, Sec. & T.; Lee J. Moses, A.; Anton Johnson, G. S.; S. J. Moore, G. S. M.; R. V. Shirk, P. A.

Brand: Tuf-Wear (alloy steel).

Works at Tulsa: blt. 1922, f. o. Aug. 8, 1922; 1 Moore Lectromelt electric fur. (1½-ton).

Product: steel castings for sale, annual cap., 3,800 tons. Alloy steel castings (chrome, manganese). Railroad, tank car, oil field and general miscellaneous steel castings.

Old Dominion Iron & Steel Corp., Richmond, Va., name changed Jan. 1, 1926 to Old Dominion Iron & Steel Works, Inc.

OLD DOMINION IRON & STEEL WORKS, Inc., P. O. Box 466, Richmond, Va.

Inc. 1836 in Virginia. Capital stock: com., par value \$25, auth. and issued \$250,000; pref. 6% cum., auth. \$150,000, issued \$135,000.

Thomas S. Wheelwright, P.; H. R. Wayt, V. P. & G. M.; William F. Daniel, Sec.

Sales offices:

Chicago, Ill., 1810 Farwell Ave.

Kansas City, Mo., 5160 Brookwood Ave.

Los Angeles, Calif., 713 Third St.

St. Louis, Mo., 772 Paul Brown Bldg.

Washington, D. C., Room 509 Second National Bank Bldg.

Brands: FASCES (solid and hollow rolled Old Dominion special vibratory staybolt iron); Old Dominion (solid and hollow rolled electric steel staybolt bars).

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; 2 coal-fired heat. fur. (one 3-d., one 4-d.); 20" 2-h. 2-st. muck; 12" 3-h. 1-st. and 10" 3-h. 4-st. Belgian. Gray iron foundry.

Product: steel ingots and castings, annual cap. 5,000 tons; alloy steel ingots (nickel); muck bar, 10,000 tons; finished rolled products, 5,000 tons; solid and hollow rolled staybolt iron and electric steel staybolt bars; hollow rolled drill rod steel.

Old National City Co. (The), Lima, Ohio, an affiliated company of The Old National City Bank, Lima, Ohio, took over the plant at Lima, formerly owned by Lima Steel Casting Co. and purchased by Bernhard Boiler Co. in 1923. The Old National City Bank purchased the property at bankruptcy sale in 1926 in order to protect a loan made to Lima Steel Casting Co. and turned over the property to The Old National City Co. for liquidation. The Whiting converter (1½-ton) and A. O. H. fur. (5-ton) are still in the plant and for sale.

Oliver Chilled Plow Works, South Bend, Ind. was acquired by Oliver Farm Equipment Co., Feb. 13, 1929.

OLIVER FARM EQUIPMENT CO., 400 West Madison St., Chicago, Ill.

Inc. Feb. 13, 1929 in Delaware. Capital stock: com., no par value, 2,000,000 shares; prior pref., no par value, 300,000 shares; convertible pref., no par value, 750,000 shares.

M. W. Ellis, P.; R. C. Roling, V. P. & G. M.; W. A. Weed, V. P.; T. A. Freeman, Sec.; W. D. Fowler, T.; R. O. Morgan, A.; A. H. Witt, C.; H. S. Lord, G. S. M.; A. E. Udell, P. A.

Sales offices:

Calgary, Alta., Canada, Oliver Ltd., 239 Tenth Ave.

Dallas, Texas, 1106 Wood St.

Edmonton, Alta., Canada, Oliver Ltd., 10201 108th St.

Great Falls, Mont.

Harrisburg, Pa., 1420 Mayflower St.

Kansas City, Mo., 13th & Hickory Sts.

Memphis, Tenn., 27 Hotel St.

Minneapolis, Minn., 607 Washington Ave.

Oakland, Calif., 1066 47th Ave.

Omaha, Neb., 305 South 10th St.

Peoria, Ill., 1550 North Adams St.

Regina, Sask., Canada, Oliver Ltd.

Richmond, Va., Washington & 17th Sts.

Saskatoon, Sask., Canada, 132nd Ave. A. S.

South Bend, Ind., 533 Chapin St.

Winnipeg, Man., Canada, Oliver Ltd., 156 McPhillips St.

Brands: Red River Special (threshers); Superior (drills and planters); Black Hawk (spreaders); Nichols & Shepard (combines and corn pickers); Hart-Parr (tractors); Oliver (tillage implements).

Company operates plants at Battle Creek, Mich., Charles City, Iowa, Springfield, Ohio, and La Crosse, Wis. for manufacture of agricultural implements and a steel, gray iron and malleable iron foundry at South Bend, Ind. in connection with this manufacture.

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. (Oliver Chilled Plow Works to Feb. 13, 1929).

Product: steel castings for own use, annual cap., 3,000 tons.

Oliver Iron & Steel Corp., Oliver Bldg., Pittsburgh, Pa. Rolling mill at Pittsburgh (Oliver Works), last operated Aug. 31, 1926, was dismantled in that year. Company manufactures cold rolled strip steel at Morris & Bailey Division, Wilson Station, Pa.

OLIVER IRON MINING CO., Wolvin Bldg., Duluth, Minn.

Subsidiary of United States Steel Corporation.

LeRoy Salsich, P.; A. Y. Peterson, V. P. & G. M.; C. P. Pray, A. V. P.; J. H. Hearing, A. G. M.; 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.; R. G. Mace, P. A.; R. W. Marshall, A. P. A.; at Duluth. J. M. Sias, 2 A. Sec.; at 71 Broadway, New York, N. Y.

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, North Norrie, East Norrie, Pabst, North Pabst, Aurora, North Aurora, Puritan, North Puritan and Royal mines.

Marquette Range: Champion, Section 16, Section 21, Hard Ore, Hematite, Moore, Richards, Winthrop and Richmond mines.

Menominee Range: Brier Hill, Townsite, Penn, Chapin, Hamilton, Ludington, Iron Ridge, Dober, Duff, Isabella and Youngstown mines.

Vermilion Range: Pioneer, Sibley and Soudan Mines.

Baraboo District: Iroquois Mine.

Missabe Range:

Virginia District: Higgins, Mountain Iron, Aetna, Rathbun, Prindle, Rouchleau, Stephens, Missabe Mountain, Lone Jack, Ohio, Moose, Sauntry, Shaw, Sharon, Minnewas and Union ($\frac{1}{2}$) mines.

Eveleth District: Adams, Hull, Leonidas, Nelson, Cloquet, Spruce, Auburn, Duluth, Duluth Nos. 1, 2, 3, Fayal No. 4, Fayal Fee, Security, Gilbert, Elba, McKinley, Morrow Extension and Biwabik ($\frac{1}{2}$) mines.

Hibbing-Chisholm District: Burt, Pool, Day, Carson Lake, Hull, Rust, Penobscot, New Chisholm, Kerr-Rust, Morris, Morris-Day, Morris-Burt, Sellers, Sellers Townsite, West Rust and Mahoning ($\frac{1}{2}$), Duncan, Hartley, Hartley-Burt, Glen, Godfrey, Leonard-Burt, Monroe-Tener, Pillsbury, St. Clair, Wellington and Fraser Mines.

Canisteo District: Arcturus, Walker, Diamond, Morrison, Fletcher and Lewis 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., par value \$100, auth. and issued \$90,000.

C. W. Kucher, P.; E. R. Hinton, V. P., T., G. M. & G. S. M.; Rex L. Alexander, Sec., A. & P. A.; Jack Chapman, G. S.

Works at 151 Horton St., Seattle; first steel, Nov. 5, 1915; 2 Greene electric fur. (one 2½-ton, one 1-ton).

Product: steel castings for sale, annual cap., 2,400 tons. Alloy steel castings (chrome, nickel, vanadium). General machinery and miscellaneous castings.

OMAHA STEEL WORKS, 48th & Leavenworth Sts., Omaha, Neb.

Inc. 1907 in Nebraska. Capital stock: com., par value \$100, auth. \$500,000, issued \$467,500; pref. 7% cum., auth. and issued \$250,000.

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.; F. W. Johnson, A.; John C. Wickman, G. S.; G. C. Caywood, G. S. M.; M. J. Hess 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 sale, annual cap., 3,000 tons. Alloy steel castings (nickel, chrome, manganese).

Onondaga Steel Co., Inc., P. O. Box 5, Eastwood Station, Syracuse, N. Y. Inc. May 25, 1916 in New York. Capital stock: com., no par value, auth. and issued 5,000 shares; pref. 7% cum. auth. and issued \$211,700.

A. J. Briggs, P.; E. D. Newkirk, V. P., G. M. & P. A.; at Syracuse. E. L. King, Sec. & T.; at 17 East 42nd St., New York, N. Y.

Brands: On, On Plus, On Top (high speed steels).

Works at James St. & Thompson Road, Dewitt, N. Y.: blt. 1916-17; f. o. March, 1917; first electric steel, April, 1918; 1 Newkirk electric fur. (2-ton); three 2-d. oil-fired heat. fur.; 3 anneal-

ing fur.; bar mill with 18" 2-h. 1-st. roughing and 10" 3-h. 13-st. finishing, f. o. May, 1917; one 3,000-lb. steam hammer. (Works last operated in 1928). For sale or lease.

Product: steel ingots, annual cap., 360 tons; rolled and hammered high speed tool steel bars, 1,000 tons.

Osgood Company (The), Marion, Ohio was merged June 1, 1928 with The Commercial Steel Casting Co. The latter company, a subsidiary of The Osgood Company, continues to operate the works at Marion for manufacture of steel castings.

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 \$21,609,200; pref. 6% non-cum., auth. and issued \$6,500,000.

W. D. Baldwin, Ch.; J. H. Van Alstyne, P.; Glover Beardsley, V. P.; J. C. Knapp, V. P.; A. J. McComb, V. P.; E. A. Fitch, V. P.; T. M. Logan, Sec.; C. A. Sanford, T.; C. K. Kirkbride, A.; G. H. Heilman, P. A.

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; 3 Moore Electromelt electric fur. (two 6-ton, one 1-ton).

Product: steel castings for own use and for sale, annual cap., 10,750 tons. Alloy steel castings (nickel, chrome).

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, 100 tons bronze and brass castings for own use only.

OTIS STEEL COMPANY (The), 3341 Jennings Road, Cleveland, Ohio.

Est. 1873; inc. Jan. 3, 1912; reinc. Oct. 1, 1919 in Ohio. Capital stock: com., no par value, auth. 1,000,000 shares, issued 807,002 shares; pref. 7% cum. auth. \$25,000,000, issued \$11,731,417; bonds \$12,000,000.

E. J. Kulas, P.; R. H. Clarke, 1 V. P.; J. G. Carruthers, 2 V. P. & G. S. M.; G. Bartol, 3 V. P.; F. G. Oviatt, Sec. & T.; R. L. Davis, G. S.; L. C. Parrott, P. A.

Sales offices:

Chicago, Ill., W. H. Meyst Co., Bell Bldg.

Detroit, Mich., General Motors 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, 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'; 5 vertical steam blowing eng., 20 lbs. rated pressure; 1 G. E. turbo-blower, 30 lbs. rated pressure; total blowing capacity, 165,000 cfm.; 18 water-tube boilers (17 Sterling, 1 B. & W.), 11,068 H. P. serve also coke ovens, steel works and rolling mill; 1 Uehling double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust, annual cap., 100,000 tons; slag granulating pit, annual cap., 120,000 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.

Company owns coal mines at West Virginia (idle) and limestone quarry at Kelley Island (idle).

Steel Works and Rolling Mill: rolling mill blt. 1913-14, f. o. Sept. 1914; O. H. plant added 1922-23, f. o. Jan. 25, 1924; 8 B. O. H. fur. (125-ton) fuel oil and coke oven gas; 11 soaking pits (ten 1-hole, one 4-hole); 19 heat. fur. (two 1-d., three 3-d., ten 4-d., one 5-d., fuel, prod. gas; three cont., fuel, oil); 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; 22 cold strip mills (20" 4-st. and 3-st., 16" 4-st. and 1-st., 12" 3-st. and 2-st., 10" 4-st. and 1-st.); 30" x 84" 3-h. sheared plate mill; 30" x 72" 2-h. jobbing plate mill; 28 box annealing fur.; 3 blue annealing fur.; 3 pickling mach. (1 Agitator, 1 Mesta, 1 cont.). Roll sheared plates 30" to 72" wide, 55" to 130" long, 3 to 11 gauge; black sheets 24" to 64" wide, 60" to 180" long, 10 to 16 gauge. Product: steel ingots, annual cap., 820,000 tons; semi-finished rolled products, 726,000 tons including 420,000 tons slabs, 156,000 tons blooms and billets, 150,000 tons sheet bars; finished hot rolled products 376,500 tons, including 128,500 tons sheared plates, 13,000 tons blue annealed sheets, 235,000 tons hot rolled strip; cold rolled strip, 60,000 tons. Sheet Mill: blt. 1920-21, f. o. May 31, 1921; 10 sheet and 6 pair fur.; 10 2-h. hot black sheet mills (30" x 40" to 72"); 12 cold mills (82" 2-st., 72" 1-st., 60" 5-st., 54" 4-st.); 26 box annealing fur.; 4 open annealing fur.; 3 Mesta pickling mach.; 5 hand pickling tanks. Roll black

sheets 19" to 60" wide, 55" to 130" long, 16 to 22 gauge. Product: black sheets, annual cap., 107,000 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., nat. gas and oil; 1 Tropenas converter (4,000-lb.); 1 cupola; 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. Roll sheared plate 24" to 144" wide, 190" to 400" long, $\frac{1}{4}$ " to $1\frac{1}{2}$ " thick.

Product: steel ingots and steel castings for own use and for sale, annual cap., 194,400 tons including 170,000 tons ingots (168,000 tons B. O. H., 2,000 tons A. O. H.) and 24,400 tons castings (21,600 tons A. O. H., 2,800 tons converter); sheared plates, annual cap., 75,000 tons.

Total steel capacity, 1,014,400 tons including 990,000 tons ingots and 24,400 tons castings; finished hot rolled products, 558,500 tons, including 203,500 tons sheared plates, 13,000 tons blue annealed sheets, 107,000 tons black sheets, 235,000 tons hot rolled strip.

PACIFIC CAR & FOUNDRY CO., 711 White Bldg., Seattle, Wash.

Inc. July 1, 1917 in Washington. Capital stock: com., no par value, auth. and issued 36,000 shares; pref. 6% and 7% cum. auth. \$2,200,000, outstanding \$1,873,195.

L. T. Carroll, P.; H. N. Curd, V. P. & G. M.; W. S. Bassage, Sec. & T.; F. W. Chriswell, G. S. M.; at 711 White Bldg., Seattle. Horace Hager, V. P.; at 30 Church St., New York. J. Browne, A.; T. E. Gillen, G. S.; S. C. Williams, P. A.; at Renton, Wash.

Sales offices:

Portland, Ore., 206 East 55th St., North.

San Francisco, Calif., 814 Kohl Bldg.

Seattle, Wash., 711 White Bldg.

Vancouver, B. C., Vancouver Equipment Co., Ltd., Bank of Nova Scotia 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. (one 3-ton, one 1½-ton).

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

Pacific Coast Steel Co., San Francisco, Calif., was acquired by Pacific Coast Steel Corporation, a subsidiary of Bethlehem Steel Corporation, as of Jan. 1, 1930.

PACIFIC COAST STEEL CORPORATION, 20th & Illinois Sts., San Francisco, Calif., and Bethlehem, Pa.

Inc. July 2, 1919 in Delaware as Redington Standard Fittings Co., name changed to Pacific Coast Steel Corporation Dec. 23, 1929. Capital stock: com., par value \$100, auth. \$500,000, issued \$50,000. Subsidiary of Bethlehem Steel Corporation.

D. E. McLaughlin, P.; F. S. Clingan, V. P.; Arnold Foster, V. P.; E. B. Hill, V. P. & T.; F. A. Shick, C.; F. E. Watts, A.

Sales offices:

Los Angeles, Calif., Pacific Finance Bldg.

Portland, Ore., American Bank Bldg.

San Francisco, Calif., Matson Bldg.

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

Product: steel ingots, steel castings for own use; blooms and billets; merchant and concrete bars, heavy and light structural shapes,

universal plates, hoops and bands, spike, bolt, nut and rivet rods; forging ingots, forged round, square and flat billets; bolts, nuts and rivets; fabricated structural steel transmission towers, poles, etc. Total annual cap. (3 plants), 380,000 tons ingots; 291,000 tons finished hot rolled products.

Los Angeles Plant, Vernon, Calif. (P. O. Huntington Park): blt. 1919-23, f. o. June 18, 1920; first O. H. steel, Feb. 6, 1923, first rolled products, Dec. 1, 1923; 3 B. O. H. fur. (40-ton) fuel, oil; 3 cont. oil-fired heat. fur.; 22" 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). Bolt and nut factory; bolts, nuts and rivets, $\frac{1}{8}$ " to 2 $\frac{1}{2}$ " in all lengths. (Southern California Iron & Steel Co. to Jan. 1, 1930). Product: steel ingots, annual cap., 85,000 tons; blooms and billets, 36,000 tons; finished rolled products, 66,500 tons including 44,000 tons merchant bars, 3,500 tons hoops and bands, 19,000 tons bolt, nut and rivet rods; forged rounds, squares and flats, 8,500 tons; bolts, nuts and rivets, 120,000 kegs (200-lbs.).

San Francisco Plant, South San Francisco, Calif.: blt. 1910-11, f. o. Jan. 2, 1912; 6 B. O. H. fur. (three 50-ton, one 45-ton, two 30-ton) fuel, oil; 3 cont. oil-fired heat. fur. (2 for ingots or billets, 1 for billets only); 24" 3-h. 2-st. billet mill; 18" 3-h. 2-st. structural and merchant; 16" and 12" 3-h. 5-st. merchant; 12" and 9" 3-h. 5-st. finishing merchant. Spike, bolt, nut and rivet factory; spikes, bolts, nuts, track bolts and rivets, $\frac{1}{4}$ " to 1 $\frac{1}{2}$ " in all lengths. 2 galvanizing pots for galvanizing transmission towers, annual cap., 10,000 tons. Shop for fabricating structural steel transmission towers, poles, etc. (Pacific Coast Steel Co. to Jan. 1, 1930). Product: steel ingots, annual cap., 155,000 tons; steel castings for own use only; billets for own use only; finished rolled products, 132,000 tons including 27,500 tons heavy, and 25,000 tons light structural shapes, 58,000 tons merchant and concrete bars, 6,000 tons hoops and bands, 11,000 tons bolt, nut and rivet rods, 4,500 tons miscellaneous rods; spikes, bolts, nuts and rivets, 150,000 kegs (200-lbs.).

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. (45-ton) fuel, oil; 3 cont. oil-fired heat. fur.; 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. Roll universal plates, $\frac{1}{4}$ " to 2", 9" to 22" wide. (Pacific Coast Steel Co. to Jan. 1, 1930). Product: steel ingots, annual cap., 140,000 tons; finished rolled products, 122,000 tons including 24,000 tons heavy, and 4,000 tons light structural shapes, 18,000 tons universal plates, 50,000 tons merchant and concrete bars, 1,500 tons hoops and bands, 16,000 tons bolt, nut and rivet rods, 8,500 tons miscellaneous products.

Portland Plant, Willbridge, Ore.: construction begun Nov., 1918 on B. O. H. steel plant and rolling mill. Works subsequently suspended. (Pacific Coast Steel Co. to Jan. 1, 1930).

Pacific Sheet Steel Corp., South San Francisco, Calif. was acquired by Columbia Steel Corp. Nov. 21, 1926. Plant at South San Francisco was dismantled in 1927 and machinery moved to Llewellyn Mills, Torrance, Calif. of the latter company. The Columbia Steel Corp. was subsequently acquired by United States Steel Products Co., a subsidiary of United States Steel Corp., as of Feb. 1, 1930.

PAGE STEEL & WIRE CO., Inc., 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.; George H. Maslen, Jr., A.; Stanley Mann, C.; C. G. Williams, P. A.; at Bridgeport, Conn. A. W. Taylor, G. S.; at Monessen, Pa. W. T. Kyle, G. S. M.; at New York, N. Y.

Sales offices:

Chicago, Ill., 208 South La Salle St.

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

Pittsburgh, Pa., 644 Union Trust Bldg.

San Francisco, Calif., 425 Second St.

Company has exclusive right to sell ARMCO products of American Rolling Mill Co.

Company operates plants at Monessen, Pa., Adrian, Mich., and York, Pa. Plants at Adrian, Mich. and York, Pa. produce automobile bumpers. 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. powd. coal-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; 402 wire drawing blocks for wire 15/32" to .012"; 2 wire nail mach.; 7 barbed wire mach.; 13 wire fence mach.; 6 galv. pans. Product: steel ingots, annual cap., 65,000 tons (idle since 1921); wire rods and chain rods, 90,000 tons; plain wire, 110,000 net tons; galvanized wire, 35,000 net tons; barbed wire, 4,500 net tons; wire fencing, 18,000 net tons; wire nails, 12,000 kegs.

PANAMA CANAL (The Mechanical Division of the), Balboa, C. Z., Panama.

Col. Harry Burgess, U. S. A., Governor; Capt. R. W. Ryden, U. S. N., Supt.; at Balboa Heights. A. L. Flint, P. A.; Washington, D. C.

Works at Balboa: 1 Tropenas converter (2-ton); 2 cupolas; 2 oil-fired heat. fur. (one 1-d., one 2-d.); 1 Ajax reclaiming mill 12" 3-h. 2-st., installed 1919-20, f. o. Jan. 15, 1920; 1 Southwark 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, 1,500 tons brass, bronze, aluminum and various alloy 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 caps., 1,200 tons; forged products, 2,500 tons; forged machine parts for Panama Canal and for ship repairs, railway forgings.

Pardee Steel Corpn., Perth Amboy, N. J. sold June 1, 1925, works at Market & Herbert Sts., Perth Amboy, for manufacture of steel ingots, billets and merchant bars, to Improvement Realty Co., Division of Perth Amboy Trust Co. The works were acquired from the latter company by Ramapo, Inc., 30 Broad St., New York, N. Y. on Jan. 1, 1926 and dismantled in that year.

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.

L. A. Meyran, Ch.; 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.

Pittsburgh office: Union 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 (28" 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, 30,000 tons; galvanized sheets, 24,000 tons.

Parkesburg Iron Co., Parkesburg, Pa. Charcoal Forge at Spring City, Pa. was sold in June, 1928 to George F. Pettinos, Philadelphia, Pa. Manufacture of charcoal blooms was discontinued and new owner is using site for other purposes. Parkesburg Iron Works at Parkesburg, Pa. for manufacture of charcoal iron skelp and boiler tubes, were sold at public auction in Sept., 1928

and site used by new owner for other purposes. The Parkesburg Iron Co. was liquidated in Dec., 1928.

Parry Sound Iron Co., Ltd., Parry Sound, Ont., Canada. Parry Sound Furnace at Parry Sound (1 stack), last operated in 1919, was dismantled in 1926.

PARSONS COMPANY (The), Newton, Iowa.

Inc. 1906 in Iowa. Capital stock: com., par value \$100, auth. \$750,000, issued \$600,000; bonds \$60,000. Entire capital stock acquired by National Equipment Corp. Oct. 1, 1928.

H. C. McCardell, P. & G. M.; N. DeWind, V. P. & G. S. M.; G. A. Vaughn, Sec.; M. S. Vincent, T. & G. S.; H. J. Lammers, A.; D. M. Clark, P. A.

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.) dismantled in 1927 and replaced by 1 Moore Lectromelt electric fur. (2-ton).

Product: electric steel castings for own use and for sale, annual cap., 1,000 tons.

Peck Rolling Mills, Ltd. (The), Montreal, P. Q., Canada, with works at 63 Mill St., Montreal, for manufacture of merchant and concrete bars, light structural shapes, wire nails, etc., was acquired by Dominion Steel Corporation, Ltd., a subsidiary of British Empire Steel Corporation, Ltd., June 1, 1928, see British Empire Steel Corporation, Ltd.

PELTON STEEL CASTING CO., Chase Ave. & Elliott Place, Milwaukee, Wis.

Inc. Dec. 8, 1925 in Wisconsin. Capital stock: com., par value \$100, auth. \$200,000, issued \$175,000.

Arthur J. Ehne, P. & T.; H. A. Leekley, 1 V. P., G. M. & P. A.; Ambrose H. Peters, 2 V. P.; Allen M. Slichter, Sec. & G. S. M.

Works at Chase Ave. & Elliott Place, Milwaukee: blt. 1921; 1 Pittsburgh electric fur. (1½-ton). Malleable iron foundry, last operated in 1925 and dismantled in 1928. (The Stowell Co. to Dec. 1, 1925).

Product: electric steel castings for sale, annual cap., 2,000 tons; small miscellaneous steel castings.

PENN IRON & STEEL CO., Creighton, Pa.

Inc. May, 1916 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$150,000.

Lewis W. Hicks, P.; at 1017 Farmers Bank Bldg., Pittsburgh, Pa. W. A. Hicks, V. P. (operation) & G. M.; C. J. Nieman, Sec., T., G. S. M. & P. A.; John W. Davis, G. S.; at Creighton. S. N. Hicks, V. P.; at Denver, Colo.

Sales agents: Joseph T. Ryerson & Son, Inc., Chicago, Ill. (warehouses at Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, New York and St. Louis).

Brand: Lewis (special staybolt and enginebolt iron, hollow drilled, headed and threaded staybolts).

Works at Creighton: blt. 1916-17, f. o. 1917; 10 single and 6 double puddling fur.; 1 rotary squeezer; five 3-d. coal-fired heat. fur.; 20" 3-h. 2-st. muck; 18" 3-h. 3-st. bar; 14" 3-h. 1-st. and 10" 3-h. 4-st. Belgian guide mill. Drilling Dept. for hollow staybolts; 2 cut-off mach.; 72 drilling spindles; 5 threading spindles; 1 horizontal bolt shear; 1 cold heading press; annual cap., 2,000,000 drilled bolts, 500,000 threaded bolts.

Product: low phosphorus melting bar, refined iron, special staybolt and enginebolt iron, U. S. Navy chain iron; hollow drilled, plain, headed, or headed and threaded staybolts. Annual cap., 10,000 tons muck bar, 12,000 tons finished rolled products.

Penn Seaboard Steel Corp., New Castle, Del. Receivers appointed July 1, 1927, sold works at New Castle in Oct., 1929 to H. A. Robinson, Philadelphia, Pa. Works are being held for resale by Industrial Plants Corporation.

Penn Steel Castings Co. of Delaware, Chester, Pa., reincorporated Feb. 21, 1929 in Maryland as Penn Steel Castings Corp.

PENN STEEL CASTINGS CORPN., Front & Penn Sts., Chester, Pa.

Inc. Feb. 21, 1929 in Maryland. Capital stock: com., no par value, auth. and issued 5,000 shares.

S. E. Sproul, P. & P. A.; W. S. Haney, V. P. & G. S. M.; A. M. Andorn, Sec. & T.; Frank 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 Steel Castings Co. to Feb. 21, 1929).

Product: steel castings for sale, annual cap., 13,500 tons.

Pennebacker Co. (The), Emaus, Pa.

Company acquired from Emaus Furnace Co. in April, 1929, the Crumwold Furnace, Emaus, Pa. formerly owned and operated by The Reading Iron Co. Furnace idle, for sale or lease.

Crumwold Furnace, Emaus, Pa.: 1 stack, 75' x 16', blt. 1872, rebt. 1909, relined 1920; 5 stoves (3 Roberts 80' x 20', 2 small); 2 steam blowing eng. (20,000 cfm.); 5 water-tube boilers, 1,750 H. P. Conn., W. Va., and by-product coke: N. Y. and N. J. magnetites, Lake and Swedish ores. (Reading Iron Co. to Aug., 1928; Emaus Furnace Co. to April, 1929). Idle since 1920.

Product: foundry and forge pig iron, annual cap., 62,000 tons.

Pennsylvania Brake Beam Co., Danville, Pa. was merged March 31, 1927 with the Danville Structural Tubing Co. and the Penn State Steel Co. in the Danville Structural Steel Co. The latter company was acquired by the Bethlehem Steel Corp. Feb. 1, 1930. Works are now known as Danville Division of Steelton Plant, Bethlehem Steel Company.

PENNSYLVANIA ELECTRIC STEEL CASTING CO., 3rd & Arch Sts., 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. & P. A.; H. R. Shollenberger, Sec.; F. P. Renno, T.; H. Kercher, G. S.

Works at Hamburg, Pa.: blt. 1917, f. o. May, 1918; 1 Heroult electric furnace (1½-ton).

Product: steel castings for sale, annual cap., 1,200 tons; alloy steel castings (nickel, chrome, manganese); steel castings for automobiles, trucks and tractors.

Perlstein H. A., Trustee, Beaumont, Texas.

Sam Lanham Furnace, Rusk, Texas: 1 stack, blt. 1883, last operated 1919, to be dismantled. Cast iron pipe foundry dismantled in 1922. (John L. Keith, Trustee to April 24, 1929).

Perry Iron Co., Cleveland, Ohio, was merged Jan. 1, 1930 with The Toledo Furnace Co. and Zenith Furnace Co. in By-Products Coke Corp., and name of By-Products Coke Corp. was changed to Interlake Iron Corp.

PETTIBONE MULLIKEN CO., 4710 West Division St., Chicago, Ill.

Inc. June 21, 1912; reinc. July 8, 1928 in Delaware. Capital stock: com., no par value, auth. and issued 100,000 shares; pref. 7% cum. auth. \$3,000,000, outstanding \$1,500,000; bonds \$3,000,000.

C. H. Eib, P.; H. R. Prest, Sec. & T.; L. Strom, A.; J. D. Lewis, C.; O. W. Andersen, Works M.; A. P. Marwick, G. S. M.; L. V. Calhoun, P. A.

Sales office: 120 Broadway, New York, N. Y.

Works at 4710 West 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 and semi-steel (750 tons) castings for own use and for sale.

Product: steel castings for own use and for sale, annual cap., 13,000 tons; alloy steel castings (nickel, chrome, manganese); drop forgings, upset forgings, complete line of fabricated railway track material.

Phoenix Horseshoe Co., New York. see Phoenix Manufacturing Co.

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 \$1,000,000.

Samuel J. Reeves, P.; George C. Carson, Jr., V. P. & T.; Robert C. Craig, A. T.; W. O. Lange, Sec. & G. S. M.; George H. Lange, P. A.; at Philadelphia. F. P. Morris, 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 plts (three 4-hole, two 3-hole) fuel, prod. gas; 2 cont. oil-fired heat. fur.; 24" 3-h. 4-st. and 22" 3-h. 3-st. structural mills; 1 box annealing fur.; 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., 223,800 tons; blooms and billets, 200,000 tons; heavy and light structural shapes, 150,000 tons.

PHOENIX MANUFACTURING CO., Phoenix Ave., Joliet, Ill.
Inc. 1892 in Illinois as Phoenix Horseshoe Co., name changed to Phoenix Manufacturing Co.

Capital stock: com., par value \$100, auth. \$3,000,000, issued \$2,308,500; bonds \$500,000.

John W. Kiser, P.; M. F. O'Connor, M. S. (export); at 347 Madison Ave., New York. Edward N. Gosselin, V. P. & G. M.; R. E. Meyer, Sec. & T.; C. H. Tappert, A.; R. P. Plunkett, G. S.; H. W. Ruesch, P. A.; at Joliet. A. W. Sexsmith, V. P. & G. S. M. at Rookery Bldg., Chicago. J. E. Tweedy, G. S.; H. M. Holton, P. A.; at Catasauqua, Pa.

Sales offices:

Catasauqua, Pa.

Chicago, Ill., 209 South La Salle St.

Joliet, Ill. (general offices).

New York, N. Y., 347 Madison Ave.

Brands: Phoenix (horseshoes), Phoenix Neverslip (calk shoes and calks) Phoenix Brock (special racing shoes); American, Bull Dog (calks); Juniata (shoes and calks); Powers (rubber shoes and pads).

Joliet Works, Joliet, Ill.: blt. and f. o. 1893; 7 heat. fur. (two 3-d., three 4-d. coal-fired, two 4-d. prod. gas-fired); 20" 2-h. 1-st. breakdown; 10" 3-h. 3-st. and 9" 3-h. 3-st. guide mills. Product: horseshoe and toe calk bars, annual cap., 15,000 tons.

Catasauqua Works, Catasauqua, Pa.: est. 1882, rolling mill blt. 1889-90, f. o. Apr. 1890; 13 heat. fur. (four 1-d. gas, six 3-d. coal, two 4-d. regen. prod. gas, one electric); 20" 3-h. 1-st. breakdown; 10" 3-h. 5-st. Lewis bar mill; 9 drop hammers (1,200-lb. to 2,000-lb.). Bryden-Neverslip Co. to Dec. 28, 1928. Product: horseshoe bars, merchant bars, annual cap., 6,000 tons; commercial forgings, 1,500 tons.

Poughkeepsie Works, Poughkeepsie, N. Y.; 27 heat. fur.; 5 trains (one 18", four 9") ceased operation in April, 1929 and is closed down indefinitely.

Cleves Works, Cleves, Ohio, was closed in 1929 and the plant dismantled.

PINE IRON WORKS CO., Pine Forge, Berks Co., Pa.

Inc. 1899 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$300,000.

James B. Bailey, P.; J. E. Dougherty, A. T. & G. M.; 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.; 28" x 84" 2-h. sheared plate and 28" x 84" 2-h. jobbing plate mills. Roll plates to 80" 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., reverted to owner, Sweet's Steel Co., on expiration of lease in 1925 and are abandoned.

Lucknow Forge, Lucknow, Pa., reverted to owner, John W. Reilly, on expiration of lease in 1925 and was dismantled in that year.

PITTSBURGH CRUCIBLE STEEL CO., Oliver Bldg., Pittsburgh, Pa.

Inc. Feb. 20, 1911 in Pennsylvania. Subsidiary of Crucible Steel Company of America.

R. M. Keeney, P.; F. E. Spencer, G. S. M.; at Pittsburgh. H. S. Wilkinson, V. P.; F. B. Hufnagel, V. P.; F. M. Barnes, Sec.; George E. Shaw, T.; H. L. Gellinger, A.; F. H. Filsinger, P. A.; at 17 East 42d St., New York, N. Y. A. L. Sonnhalter, G. S.; at Midland, Pa.

Sales offices:

Cambridge, Mass., 251 Albany St.

Chicago, Ill., 650 Washington Blvd.

Cleveland, Ohio, 1720 Keith Bldg.

Detroit, Mich., 5-229 General Motors Bldg.

Philadelphia, Pa., 1224 Callowhill St.

Pittsburgh, Pa., Oliver Bldg.

Syracuse, N. Y., Fayette & Magnolia Sts.

Midland Works, Midland, Pa.:

Midland Furnaces: 2 stacks, No. 2 (formerly No. 1), 84' 10½" x 22', blt. 1905-06, rebt. 1914, relined 1928; No. 3 (formerly No. 2), 92' x 22' 6", blt. 1918-20, f. o. Oct. 9, 1920, relined 1928; 8 stoves (4 McClure 3-pass, 100' x 21' 1"; 3 two-pass side comb., 105' x 23' 1"; 1 two-pass side comb., 100' x 21' 1"); 3 steam blowing eng. (2 Southwark, 1 Mesta) 125,000 cfm., 22-lbs. rated pressure; 31 water-tube boilers (Rust and Sterling) 17,500 H. P. serve also coke plant and steel works; one Heyl & Patterson double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 60,000 tons; one slag granulating pit, annual cap., 120,000 tons. By-product coke: Lake ore. Limestone quarry at Walford, Pa., annual cap., 150,000 tons.

Product: basic pig iron, annual cap., 460,000 tons.

By-product Coke Plant: 100 Koppers coke ovens, by-product recovery plant and Koppers benzol plant, annual cap., 450,000 net tons coke, 2,295,000 gals. light oil.

Steel Works: blt. 1911-12, f. o. Aug. 4, 1913: 12 B. O. H. fur. (100-ton) fuel prod. gas, coke oven gas, tar and oil; 21 Morgan and Hughes gas producers; one 600-ton mixer; seven 4-hole soaking pits; 8 heat. fur. (four 6-d. and three cont. prod. and coke oven gas, one 5-d. coke oven gas); 40" 2-h. 1-st. blooming; 28" 3-h. 1-st. billet; 24" 2-h. 3-st. bar; 18" 3-h. 3-st. roughing, 18" 2-h. 2-st finishing, 12" 3-h. 4-st. and 12" 2-h. 1-st. finishing merchant mill; 12" 2-h. 14-st., 14" 2-h. 2-st., 8" 2-h. 2-st. merchant mill; 2 pickling mach.; 5 hand pickling tanks.

Product: steel ingots, annual cap., 660,000 tons; alloy steel ingots (nickel, chrome, molybdenum, vanadium, silicon, manganese); blooms and billets, 535,000 tons; merchant bars, 360,000 tons.

PITTSBURGH FORGE & IRON CO., 801 Chamber of Commerce Bldg., Pittsburgh, Pa.

Inc. 1867; reinc. 1919 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$600,000.

F. E. Richardson, P.; D. C. Bakewell, V. P.; W. I. Miller, Sec. & T.; H. C. Fetzer, A.; J. P. Fleming, G. S.; Charles Clark, P. A.

Sales offices:

Boston, Mass., Sherburne & Co., 53 Oliver St.

Chicago, Ill., R. A. Dugan, Railway Exchange Bldg.

Philadelphia, Pa., S. Worcester Sargent, 160 Walnut St.

Roanoke, Va., John R. Hayward, 1st National Bank Bldg.

San Francisco, Calif., Latham McMullin, Russ Bldg.

Brands: Atlas (staybolt iron and engine bolt iron); Thor (forging bloom iron).

Works at North Side, Pittsburgh, Pa.: blt. 1864; 29 single puddling fur.; 1 squeezer; 21 heat. fur. (two 1-d. prod. or nat. gas-fired; one 2-d., five 3-d., eight 4-d. prod. gas-fired; four small nat. gas-fired, one small coke-fired); 8 gas prod.; 20" 3-h. 2-st. muck; 16" 3-h. 3-st. bar; 9" 3-h. 5-st. guide; 2 car annealing fur.; 6 steam ham. (600-lb. to 10,000-lb.); 2 hydraulic forging presses (500-ton, 1,000-ton). Spike department.

Product and annual cap.: muck and scrap bar (25,000 tons); finished rolled products, 25,000 tons including merchant bars (5,000 tons), skelp, flue and pipe iron (5,000 tons), spike and bolt rods (5,000 tons), engine bolt iron, staybolt iron, etc. (10,000 tons); screw spikes (3,600 kegs); heavy marine and machine forgings, car and locomotive axles, crank pins, piston rods, shafts, etc. (25,000 tons).

PITTSBURGH METALLURGICAL CO., Inc., Niagara Falls, N. Y.

Inc. June, 1913 in Delaware. Capital stock: com., par value \$100, auth. \$1,000,000, issued \$500,000.

A. F. Plock, P. & G. M.; E. Webb, G. S.; Harold Grisdale, P. A.; at Niagara Falls, N. Y. J. R. Stroh, V. P. & G. S. M.; at 1st National Bank Bldg., Youngstown, Ohio. Kenneth Seaver, Sec. & T.; J. W. McVicker, A.; at Farmers Bank Bldg., Pittsburgh, Pa.

Sales offices:

New York, N. Y., Phillips Isham, 30 Church St.

Youngstown, Ohio, J. R. Stroh, 1st National Bank Bldg.

Brand: Niagara (all products).

Works at Niagara Falls, N. Y.: blt. 1920, f. o. June 1, 1920; 5 electric fur. of ferro-alloy type; 1 Monarch tilting crucible fur. (400-lb.); 1 pig casting mach. Hydro-electric power (25,000 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; ferro-chrome, 2,000 tons; ferro-manganese, 2,000 tons; silico-aluminum, 1,000 tons.

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. Subsidiary of Blaw-Knox Company.

Q. S. Snyder, P. & G. M.; W. H. Nichols, 1 V. P.; I. F. Lehman, 2 V. P.; Chester H. Lehman, Sec.; George L. Dumbauld, T.; P. M. Fleming, C.; Walter Douthitt, G. S.; A. J. Ramsay, G. S. M.; H. P. Bork, Jr., P. A.

Sales offices:

Philadelphia, Pa., Widener Bldg.

San Francisco, Calif., 375 Valdez Ave.

Brands: Phoenix Metal, Phoenix A. (alloy rolls).

Phoenix Roll Works, 41st & Willow Sts., Pittsburgh: 2 A. O. H. fur. (one 20-ton, one 15-ton) fuel, oil; 1 cupola; 4 air fur.; roll foundry for steel, chill and sand iron and alloy rolls.

Product: steel castings for own use and for sale, annual cap., 20,000 tons; alloy steel castings (nickel, chrome, etc.); Phoenix metal patent semi-steel rolls; chill iron (12,000 tons) and sand iron (5,000 tons) rolls; steel, alloy and iron pinions.

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. 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, 72 steamships, 14 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. \$39,500,000, issued \$25,350,000; pref. 7% cum. auth. and issued \$10,500,000.

Homer D. Williams, P.; Emil Winter, 1 V. P.; William C. Reitz, V. P. & T.; Henry J. Miller, V. P. & Sec.; Charles E. Beeson, V. P. (raw materials); William C. Sutherland, V. P. (manufacturing); Ray Maxwell, A. Sec.; William L. Rowe, A. T.; George W. Jones, G. S. M.; Robert McMillan, P. A.; at Pittsburgh. D. P. King, G. S.; at Monessen.

Sales offices:

Chicago, Ill., D. F. Mann, Straus Bldg.

Dallas, Texas, H. B. Webster, Central Bank Bldg.

Detroit, Mich., C. F. McClain, 7-239 General Motors Bldg.

Los Angeles, Calif., Sanford Stephenson, 1358 Wholesale St.

Memphis, Tenn., E. W. Watson, 313 South Front St.

New York, N. Y., M. E. Johnson, Equitable Bldg.

Portland, Ore., James D. Towers, Luckenbach Terminal.

San Francisco, Calif., Wm. M. Jensen, 351 Bryant St.

Brand: Pittsburgh Perfect.

Product: pig iron, steel billets, rounds for seamless tubes, hoops, bands and cotton ties; wire rods, bright, annealed, galvanized and coppered wire, barbed wire, wire fence, wire nails, staples, wire fabric for reinforcing concrete and steeltex for plaster base.

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.
Pittsburgh Steel Sales Co.
Pittsburgh Steel Ore Co.
National Steel Fabric Co.
Standard Land and Improvement Co.
Monessen Coal & Coke Co.
Monessen Southwestern Railway Co.
Daly Gas Co.

The company owns substantial interest in Bennett Mining Co., Mesaba Cliffs Iron Mining Co., Holman-Cliffs Iron Mining Co. and Plymouth Mining Co. It also owns and operates at Alicia, Pa., coal mines, annual cap., 798,000 tons coal, and 400 Mitchell rectangular coke ovens, annual cap., 421,000 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 1927; No. 2, 90' x 22', blt. 1912-13, f. o. Aug. 28, 1913, relined 1929; 8 McClure 3-pass stoves, 106' x 22'; 4 Southwark vertical cross comp. steam blowing eng. (100,000 cfm.), 25 lbs. rated pressure; 15 Sterling water-tube boilers and 4 Ladd boilers, 13,340 H. P. serve also electric power plant; 1 Heyl & Patterson triple-strand pig casting mach.; 3 Greenawalt sintering units for flue dust, annual cap., 50,000 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. (95-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., 720,000 tons.

Rolling Mill Dept.: 'blt. 1901-02; six 5-hole soaking pits; 4 cont. heat. fur.; 46" 3-h. 1-st. blooming; 28" 3-h. 2-st. billet; 18" 2-h. 6-st. continuous bar; 16" to 12" 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., 600,000 tons; wire rods, 300,000 tons.

Wire Mill: 493 wire drawing blocks for wire $\frac{1}{2}$ " to 18 gauge, 370 wire nail mach., 53 barbed wire mach., 40 wire fence mach., 6 galvanizing pans. Product: plain wire, annual cap., 250,000 net tons; galvanized wire, 120,000 net tons; barbed wire, 20,000 net tons; wire fencing, 30,000 net tons; wire nails, 2,800,000 kegs (100-lbs.)

Glassport Works, Glassport, Pa.: blt. 1890-1900, f. o. Mar. 1900; 2 nat. gas-fired heat. fur. (one 5-d., one 6-d.); 2 trains (10" 3-h. 5-st. and 8" 3-h. 5-st. hoop and band mills); 2 hand pickling

tanks; 1 hammer. Product: hoops, bands and cotton ties, annual cap., 35,000 tons.

Pittsburgh Steel Foundry Co., Pittsburgh, Pa. was acquired by the Pittsburgh Steel Foundry Corpn. April 1, 1925.

PITTSBURGH STEEL FOUNDRY CORPN., Glassport, Pa.

Inc. March 26, 1925 in Pennsylvania. Capital stock: com., no par value, auth. and issued 60,000 shares; pref. 5% cum., auth. \$750,000, issued \$670,500; bonds \$400,000.

G. A. Hassel, P.; C. W. Howat, 1 V. P.; J. E. Rew, 2 V. P. & G. S.; John Bright, Sec. & T.; W. C. Eichenlaub, G. S. M.; J. B. Wilson, P. A.

Sales offices:

Boston, Mass., George T. Paraschos.

Chicago, Ill., E. H. Batchelder.

Philadelphia, Pa., H. V. Seth.

Richmond, Va., J. F. Leonard.

Washington, D. C., J. R. Forney.

Glassport Plant, Glassport, Pa.: blt. 1899, f. o. Nov., 1899; 4 B. O. H. fur. (three 15-ton, one 20-ton), fuel, oil. Machine shop for own use and jobbing. (Pittsburgh Steel Foundry Co. to April 1, 1925). Product: steel castings for own use and for sale, annual cap., 30,000 tons; alloy steel castings (nickel, chrome); finished castings for rolling mill machinery, charging boxes, ingot cars; railroad bolsters and side frames; miscellaneous car castings; annealing equipment.

Sharon Plant, Wheatland, Pa.: blt. 1903, f. o. Dec. 18, 1905; 2 A. O. H. fur. (15-ton), fuel, oil. (Sharon Foundry Co. to July 15, 1929). Product: steel castings for sale, annual cap., 10,000 tons; alloy steel castings (nickel, chrome); steel castings for general mill work.

Total annual cap., 40,000 tons steel castings (30,000 tons B. O. H., 10,000 tons A. O. H.).

PITTSBURGH STEEL PRODUCTS CO., 700 Union Trust Bldg., Pittsburgh, Pa.

Inc. Feb. 9, 1909, in Pennsylvania. Capital stock, \$10,600,000. Subsidiary of Pittsburgh Steel Co.

Homer D. Williams, P.; Emil Winter, 1 V. P.; William C. Reitz, V. P. & T.; Charles E. Beeson, V. P.; Henry J. Miller, V. P. & Sec.; Ray Maxwell, A. Sec.; William L. Rowe, A. T.; W. K. Given, A.; Robert McMillan, G. P. A.; D. P. King, G. S.; J. D. Case, S. (Monessen Plant); F. N. Gilmore, S. (Allenport Plant).

Sales offices:

Chicago, Ill., Straus Bldg.

Detroit, Mich., General Motors Bldg.

Houston, Texas, Second National Bank Bldg.

New York, N. Y., Equitable Bldg.

St. Louis, Mo., Shell Bldg.

Tulsa, Okla., Atlas Life Bldg.

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 8 billet piercing mills and 12 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 14" dia. and less.

Product: hot rolled seamless tube blanks; hot rolled and cold drawn seamless tubes, annual cap., 280,000 tons; boiler tubes, arch tubes, superheater flues and pipes; mechanical tubing for automotive purposes, etc.; oil country casing, tubing and drill pipe; line pipe and still tubing.

Pittsburgh Tin Plate & Steel Corpn., Marietta, Ohio, was acquired by W. F. Robertson Steel & Iron Co., Oct. 1928. Works are now known as Pittsburgh Works, W. F. Robertson Steel & Iron Co.

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 \$1,300,000; pref., auth. and issued \$350,000; bonds \$1,100,000.

C. A. Anderson, Jr., P.; S. G. Patterson, Sec. & T.; E. J. Diesher, A.; J. C. Farrington, G. S.; W. H. Arnold, 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.

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. & 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), 820 Temple Bar Bldg., Cincinnati, Ohio.

Inc. Sept. 25, 1911 in Ohio. Capital stock: com., par value \$100, auth. and issued \$400,000.

Maurice E. Pollak, P.; Julian A. Pollak, V. P.; V. W. Prather, Sec.; C. M. Grimm, T.; A. C. Wehl, G. M.; C. G. Talbott, S. M. (rolled products); C. L. Volkman, S. M. (reinforcing bars); E. J. Paque, P. A.; at Cincinnati. R. H. Knecht, G. S.; at Marion, Ohio.

Brands: Posco (reinforcing bars); Notch Back (steel fence posts). 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. Products: steel rounds, squares, angles, flats, channel flats, U bars, concrete bars, steel fence posts, etc.; annual cap., 50,000 tons.

Cincinnati Plant, Carthage Station, B. & O. R. R., Cincinnati, dismantled 1926.

South Chicago Plant, 98th St. & Baltimore Ave., South Chicago, sold in 1926.

Port Moody (City of), Port Moody, B. C., Canada.

Works at Port Moody, B. C.: 1 electric fur.; 1 reheat. fur.; 12" bar mill. Idle and for sale. (Port Moody Steel Works, Ltd. to 1926).

Port Moody Steel Works, Ltd., Vancouver, B. C., Canada.

Steel works and rolling mill at Port Moody, B. C. taken over by the City of Port Moody in 1926.

PRATT & LETCHWORTH CO., 189 Tonawanda St., Buffalo, N. Y.

Inc. Jan. 1, 1896 in New York. Subsidiary of Dayton Malleable Iron Co.

John C. Haswell, P.; H. D. Hunter, 1 V. P.; C. E. Swank, Sec. & T.; W. B. Runyan, G. S.; at Dayton, Ohio. Keith Williams, 2 V. P. & G. M.; Arthur M. Edwards, 3 V. P. & G. S. M.; A. C. Christiansen, A. Sec. & A. T.; Otto A. Dworak, P. A.; at Buffalo.

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 and coal. Malleable iron foundry, annual cap., 10,000 tons.

Product: steel castings for sale, annual cap., 32,000 tons; helical springs for railroad and industrial purposes, 850 tons; railroad and miscellaneous steel castings.

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 forge shops at McKees Rocks, Pa. and Hegewisch, Ill. in connection with this manufacture. It also operates under a lease a steel, gray iron and malleable iron foundry at McKees Rocks owned by Pennsylvania Malleable Co. Officers of the 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. (15-ton) fuel, nat. gas and oil. Gray iron (35,600 tons) and malleable iron (2,400 tons) foundry. Product: steel castings for own use and for sale, annual cap., 30,000 tons; truck side frames, truck bolsters, general car castings and miscellaneous castings; gray iron wheels, 35,000 tons.

Forge Shop, McKees Rocks, Pa.: 10 Bradley hammers (85-lb. to 500-lb.); 6 drop hammers (600-lb. to 4,000-lb.); 7 steam hammers (1,100-lb. to 5,000-lb.); 1 Mesta forging press (1,500-ton). Rivet dept. for rivets $\frac{1}{2}$ " to $\frac{3}{8}$ " head. dia., up to 6" long. Product: forgings for railroad cars and commercial uses, annual cap., 8,100 tons; rivets, 45,000 kegs (200-lb.).

Works at Hegewisch, Ill.: steel foundry; two Snyder electric fur. (1 $\frac{1}{2}$ -ton) added in 1918, and one Tropenas converter (3-ton) added in 1919 (idle). Gray iron, malleable iron and brass foundry (idle). Forge shop: 13 hammers (600-lb. to 5,000-lb.) Car-building plant. (Western Steel Car & Foundry Co. to Feb. 18, 1926): Product: steel castings for own use and for sale, annual cap., 7,500 tons (idle), 5,000 tons converter, 2,500 tons electric; drop forgings, forging machine work and steam hammer forgings, 50,000 tons; bolsters, brake beams, stake pockets, stakes, etc.; hot and cold pressed parts, heavy blanking and punching.

Princess Iron Corporation, Glen Wilton, Va. in receivership since Aug. 20, 1923. Princess Furnace at Glen Wilton (1 stack), last operated Oct. 11, 1921, was sold in April, 1928 by order of the court to W. W. Zimmerman and dismantled.

Puget Sound Iron & Steel Works (The), Tacoma, Wash. and the Pacific Coast branch of The Lidgerwood Manufacturing Co. of New York, were consolidated under the name of Lidgerwood-Pacific Co., July 1, 1926.

PULASKI FOUNDRY & MFG. CORPN., Pulaski, Va.

Inc. Sept. 1916 in Virginia. Capital stock: com., par value \$100, auth. \$200,000, issued \$52,100; pref. 7% cum. auth. \$200,000, issued \$88,300.

Robert E. Baker, P.; Arthur G. McKee, V. P.; J. D. Williams, Sec. & A.; J. Krumhansl, T.; at 2422 Euclid Ave., Cleveland, Ohio. L. E. Gulliford, G. M. & G. S. M.; W. R. Walker, P. A.; at Pulaski.

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 sale, annual cap., 400 tons. Alloy steel castings (nickel).

PULASKI IRON CO., Pulaski, Va.

Inc. Mar. 17, 1884 in Virginia. Capital stock: com., par value \$100, issued \$450,000.

Percival Johnson, P.; at 1101 Union Bank Bldg., 1518 Walnut St., 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: 1101 Union Bank Bldg., 1518 Walnut St., Philadelphia, Pa.

Brand: Pulaski (machine cast foundry pig iron).

Furnace at Pulaski: 1 stack, 80' x 17' 9", blt. 1887, last rebt. 1916, relined 1925 and blown in Feb. 4, 1926; 6 stoves (four 2-pass side comb. 90' x 20', 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.; 1 Uehling single-strand pig casting mach.; Greenawalt sintering plant for flue dust and pyrites cinder, annual cap., 120,000 tons. Beehive coke: local brown, red and manganiferous ores and purchased Mundic clinker. 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.

PUNXSUTAWNEY FURNACE CO., DuBois, Pa.

Inc. 1912 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$300,000.

B. M. Clark, P.; Heath S. Clark, V. P.; at Indiana, Pa. F. G. St. Clair, Sec., T., G. M. & P. A.; C. H. Emerick, G. S. M.; at DuBois.

Sales agents: Phillips Isham, 30 Church St., New York, N. Y.; Carson, Marshall & Co., Inc., Franklin Trust Bldg., Philadelphia, Pa.; Hickman, Williams & Co., Inc., Oliver Bldg., Pittsburgh, Pa.

Brand: Punxy (foundry pig iron).

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.

QUINCY STEEL CASTING CO., Inc., 30 Fayette St., North Quincy, 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., North Quincy: 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.

Alloy steel castings (nickel, chrome, vanadium).

RACINE STEEL CASTINGS CO., 1442 Forest St., Racine, Wis.

Inc. Aug. 18, 1908; reinc. June 25, 1928 in Wisconsin. Subsidiary of Belle City Malleable Iron Co.

Judson F. Stone, P.; at Chicago, Ill. C. S. Anderson, V. P., Sec. & G. M.; S. Kitto, T.; G. M. Goepfert, G. S.; E. O. Jones, P. A.; at Racine.

Sales offices: Sor-Buck, Chicago, Ill.; E. C. Prior & Co., Cleveland, Ohio.

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., 4,500 tons. Alloy steel castings (nickel, chrome). Commercial steel castings.

RAIL JOINT CO. (The), 165 Broadway, New York, N. Y.

Inc. 1905 in New York. Capital stock: com., par value \$100, auth. and issued \$2,000,000; pref. non-cum., auth. and issued \$2,000,000.

Victor C. Armstrong, P.; Edwards A. Condit, Jr., V. P.; Stuart E. MacKellar, Sec. & T.; James R. Adams, A.; Thomas Willett, P. A.

Sales offices:

Boston, Mass., 84 State St.

Chicago, Ill., 80 East Jackson St.

Denver, Colo., 511 Midland Savings Bldg.

Montreal, Canada, The Rail Joint Co. of Canada, Ltd., 485 McGill St.

San Francisco, Calif., 111 Sutter St.

St. Louis, Mo., 319 North Fourth St.

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, Burden Ave., Troy, N. Y.: orig. blt. 1819; 2 cont. oil-fired rehear. fur.; two 21" 3-h. 4-st. bar mills. Product: rail joints and bars for railroad equipment, annual cap., 20,000 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; reinc. May 11, 1926 in Delaware. Capital stock: com., par value \$100, auth. and issued \$1,000,000. Subsidiary of American Locomotive Co.

William H. Woodin, Ch.; Alexander S. Henry, P.; Edward McCormick, V. P.; Joseph Davis, V. P. & C.; Melville B. Parker, Sec.; J. Oakley Hobby, Jr., T.; F. Pierce Brent, A. C.; Chester K. Shreve, A. Sec.; Harry S. Banghart, A. T.; H. C. Harrington, P. A.

Sales offices: Chicago, Ill.; Dallas, Tex.; Denver, Colo.; Detroit, Mich.; Montreal, Canada; Pittsburgh, Pa.; Richmond, Va.; St. Louis, Mo.; St. Paul, Minn.; San Francisco, Calif.

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. (leased, American Locomotive Co. owner): 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. (leased, American Locomotive Co. owner): 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 (5,000-ton). 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.

The company operates spring works as follows: Chicago Works, Chicago Heights, Ill.; French Works, Latrobe, Pa.; St. Louis Works, East St. Louis, Ill. The company also operates the Canadian Steel-Tire & Wheel Company, 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.; R. J. Wenger, V. P.; George W. Delany, Sec.; H. N. Yost, T.; G. F. D. Hallman, P. A.; J. Norman Sherer, G. S. (ore mines and blast furnaces); at Reading. P. N. Guthrie, Jr., V. P.; H. F. Mattern, G. S. M.; F. M. English, A. G. S. M.; J. K. Aimer, Mgr. (R. R. sales); at 230 Park Ave., New York, N. Y.

General Sales Office: New York, N. Y., 230 Park Ave.

District Sales Representatives:

Baltimore, Md., W. J. White, 1104 Continental Bldg.

Boston, Mass., J. G. Ross, Room 506, 100 Arlington St.

Buffalo, N. Y., E. P. Hannig, 321 Jackson Bldg.

Chicago, Ill., R. A. Griffin, 1714 Engineering Bldg.

Cincinnati, Ohio, E. W. Thomas, Jr., 618 Dixie Terminal Bldg.

Detroit, Mich., W. F. Hoff, 2350 Penobscot Bldg.

Houston, Texas, George E. Tyson, 3121 Navigation Bldv.

New York, N. Y., H. S. Carland, 230 Park Ave.

Philadelphia, Pa., A. R. Kinsler, 962 Drexel Bldg.

Pittsburgh, Pa., Wyman Howells, 1302 First Natl. Bank Bldg.

St. Louis, Mo., F. W. Deppe, 1823 Railway Exchange Bldg.

San Francisco, Calif., John F. Heil, 1009 Balboa Bldg., 593 Market St.

Seattle, Wash., F. C. Neupert, 330 Central Bldg.

Tulsa, Okla., A. M. Cullum, Mgr. (oil country sales), N. R. Putnam, D. S. R., Room 609, Exchange Bank Bldg.

Products: pig iron; charcoal iron blooms, muck bar and skelp for own use; merchant bar iron; standard wrought iron pipe, oil country tubular goods, line pipe, nipples, couplings, 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, last rebt. 1926, relined 1926; 4 Massicks & Crooke stoves, 75' x 19' 6", 4 steam blowing eng. (58,000 cfm.); 2 Rust and 8 Cahall boilers, 3,000 H. P. Conn., and by-product coke: Adirondack and New Jersey magnetites and concentrates and foreign ores. Product: foundry, forge, basic and malleable pig iron, annual cap., 130,000 tons.

Crumwold Furnace Dept., Emaus, Pa.: property sold in Aug., 1928. Montour Rolling Mills Dept., Danville, Pa.: blt. 1839, rebt. 1901-02; 19 double puddling fur.; 2 double and 1 single busheling 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. 3-st. bar, 12" 3-h. 5-st. bar). Fuel, bit. coal. Product: muck bar, annual cap., 30,000 tons; merchant bar iron and grooved skelp, annual cap., 35,000 tons hot rolled products.

- Danville Puddle Dept., Danville, Pa. was dismantled in 1927.
- Ninth Street Mills Dept., Reading, Pa.: blt. 1868, last remod. 1911; 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.
- South Street Rolling Mill, Reading, Pa.: blt. 1927; two 4-door heat. fur.; 16" and 12" Belgian mills. Fuel, prod. gas. Roll skelp and socket iron 1½" to 8 3/16" wide. Product: skelp and socket iron, annual cap., 35,000 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. was abandoned in 1926.
- Tube Works Dept., Reading, Pa.: orig. blt. 1856; 8 pipe mills (3 butt-weld, 5 lap-weld); 2 galv. pots. Make butt-weld pipe ½" to 1½", lap-weld pipe, 1½" to 20" dia. Product: wrought iron pipe; annual cap., 150,000 tons (100,000 tons black pipe, 25,000 tons galvanized pipe, 25,000 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; one 3-motion hydraulic squeezer; 2 tilting cinder melting fur.; 4 coal-fired heat. 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.
- Charcoal Iron Plant, Reading, Pa.: blt. 1923; 20 knobbling fires, fuel charcoal; 2 hammers; 23" 3-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. is being dismantled in 1929.
- Pottstown Dept., Pottstown, Pa.: blt. 1884-85, rebilt. 1894; 8 double puddling fur.; 1 squeezer; 2 gas-fired heat. fur.; 21" 2-h. 1-st. muck mill; 22" 3-h. 1-st. grooved nail plate mill; 105 cut nail mach. Fuel, bit. coal. Product: muck bar, annual cap., 8,000 tons; nail plate, 12,000 tons; cut nails, 200,000 kegs.
- Columbia Mill, Columbia, Pa. was dismantled in 1928.
- Reading Iron Co. owns the capital stock of Thomas Iron Co., see description under that head; also iron ore rights in Albe-

marle, 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. Controlling interest in capital stock was acquired by American Chain Co. in Jan., 1920.

Walter B. Lashar, P.; William T. Morris, V. P. & G. M.; William M. Wheeler, Sec.; Wilmot F. Wheeler, T.; George H. Maslen, A.; Stanley Mann, C.; W. McCausland, G. S. M.; C. G. Williams, P. A.; at Bridgeport, Conn. R. J. Doty, G. S.; at Reading, Pa.

Sales offices:

Boston, Mass., 35 Hartford St.
Chicago, Ill., 400 West Madison St.
Cleveland, Ohio, 1420 West 9th St.
Detroit, Mich., 251 Jefferson Ave., West.
Hartford, Conn., 556 Capitol Ave.
Houston, Texas, 1505 Live Oak St.
New York, N. Y., Grand Central Terminal.
Philadelphia, Pa., 147 North 7th St.
Pittsburgh, Pa., 211 Ross St.
Rochester, N. Y., 809 Wilder Bldg.
San Francisco, Calif., 425 Second St.
Tulsa, Okla., 214½ East Brady 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 A. O. H. fur. (20-ton), abandoned 1926; one 3-phase arc electric fur. (7-ton) added in 1926, f. o. Jan., 1926. Machine shop.

Product: steel castings for sale and for own use, annual cap., 7,000 tons; steel valves, fittings and kindred products.

Works at Hartford, Conn.: brass and iron valves and kindred products.

RED RIVER LUMBER CO. (The), Westwood, Calif.

Company is engaged in logging and manufacture of lumber products and operates a steel foundry for manufacture of steel castings for own use only.

Works at Westwood: blt. 1925, f. o. 1925; 1 Moore Electromelt electric fur. (500-lb.). Gray iron and brass foundry for own use.

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

Redcliff Rolling Mills & Bolt Co., Ltd.; Redcliff Rolling Mills, Redcliff, Alberta, Canada, held by Laidlaw & Blanchard, Medicine Hat, Alberta, Solicitors for bondholders, sold to Manitoba Rolling Mill Co., Ltd. in 1928 and subsequently dismantled.

REED FOUNDRY & MACHINE CO., Kalamazoo, Mich.

Inc. in Michigan. Capital stock: com., par value \$10, auth. \$400,000, issued \$202,000; bonds \$75,000.

Joseph E. Brown, P.; H. E. Wynn, V. P. & G. S. M.; J. E. Welborn, Sec. & T.; Charles H. Young, G. S.

Works at Kalamazoo: steel foundry blt. 1914, f. o. July, 1914; 2 converters (1½-ton); 1 cupola. Fuel, coke.

Product: steel castings for sale, annual cap., 2,500 tons; general machinery castings.

REEVES MANUFACTURING CO. (The), Dover, Ohio.

Inc. Oct., 1900 in Ohio. Capital stock: com., par value \$100 auth. \$1,000,000, issued \$791,900.

H. C. Greer, P.; at Morgantown, W. Va. S. J. Reeves, V. P.; J. A. Krantz, Sec. & P. A.; A. J. Krantz, T. & G. M.; H. A. Sproul, 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; 20" 3-h. 1-st., muck bar; 20" 3-h. 1-st. roughing and 20" 2-h. 1-st. finishing; 2 sheet and 2 pair fur.; 6 comb. sheet and pair fur.; 8 2-h. hot black sheet mills (28" x 34" to 30" 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.; 15 box annealing fur.; 5 galvanizing pots. Roll black sheets 16 to 30 gauge, 36" wide up to 144" long.

Charcoal Forge: blt. 1903-04, f. o. Oct. 19, 1904; 10 knobbling fires; one 5,000-lb. steam hammer. Charcoal blooms from scrap for sale, annual cap., 12,000 tons.

Product: charcoal iron blooms; black and galvanized iron and steel sheets; annual cap., 12,000 tons blooms; 50,000 tons black sheets, 30,000 tons galvanized sheets.

Reliance Coke & Furnace Co., Pittsburgh, Pa. Claire Furnace at Sharpsville, Pa. was leased to Davison Coke & Iron Co. Aug. 1, 1929.

RELIANCE FOUNDRY CO., Ltd. (The), 149 Fourth Ave., West, Vancouver, B. C., Canada.

Works at 149 Fourth Ave., West, Vancouver: one 1-ton electric fur., first electric steel made Mar., 1927. Gray iron foundry.

Product: electric steel castings for sale, annual cap., 500 tons.

RELIANCE STEEL CASTING CO., 28th & Smallman Sts., Pittsburgh, Pa.

Inc. 1910 in Pennsylvania. Capital stock: com., \$200,000.

Joseph A. Kelly, P.; E. A. Blasdel, V. P., T. & G. M.; C. L. Snowdon, Jr., 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., 7,000 tons; alloy steel castings (nickel, chrome, manganese, zirconium, molybdenum, special H. D. vanadium); castings for blast furnace tops; crushing machinery, rolls and gear blanks.

Replogle Steel Co., Wharton, N. J., was acquired by Warren Foundry & Pipe Corp., April 20, 1927.

REPUBLIC IRON & STEEL CO., Republic Bldg., Youngstown, Ohio.

Inc. May 3, 1899 in New Jersey. Capital stock: com., no par value, auth. 1,000,000 shares, issued 691,251 shares; pref. 7% cum. auth. and issued \$25,000,000; bonds \$32,726,500.

———, P.; Harry L. Rownd, V. P.; Harry T. Gilbert, V. P.; William M. Neckerman, V. P.; Richard Jones, Jr., Sec.; John U. Anderson, T.; Walter B. Ohl, C.; H. B. Carpenter, G. S.; A. E. Walker, G. S. M.; W. J. Massman, P. A.

Sales offices:

Birmingham, Ala., Norman W. Foy, Woodward Bldg.

Boston, Mass., Kenneth D. Mann, 1033 Chamber of Commerce Bldg.

Buffalo, N. Y., Reno V. Jones, Liberty Bank Bldg.

Chicago, Ill., H. W. Craig, 758 McCormick Bldg.

Cincinnati, Ohio, Warner A. Peck, First Natl. Bank Bldg.

Cleveland, Ohio, W. E. Collier, Hanna Bldg.

Dallas, Texas, William Anderson, Wilson Bldg.

Denver, Colo., Edward C. McSheehy, 332 Continental Oil Bldg.

Detroit, Mich., W. J. Hanna, 1102 Buhl Bldg.

Los Angeles, Calif., Robert E. Lanier, 1134-5 Rives Strong Bldg.

New Orleans, La., A. S. White, 635 Common St.

New York, N. Y., W. H. Oliver, 17 Battery Place.

Philadelphia, Pa., C. S. McKinley, 1512 Packard Bldg.

Pittsburgh, Pa., F. M. Welsh, Oliver Bldg.

St. Louis, Mo., J. B. Beyer, Paul Brown Bldg.

San Francisco, Calif., Geo. F. Emanuels, Rialto Bldg.

Product: pig iron; blooms, billets, slabs and sheet bars; merchant bars, concrete bars, shapes, small I beams, channels, universal and sheared plates, skelp, pipe; steel sheets and sheet metal products; black plate for tinning; hot and cold rolled strip, bands; tinplates; turnbuckles, spikes, bolt, nuts, washers, etc.

Haselton Furnaces, Youngstown, Ohio: 4 stacks; No. 1, dismantled in 1927; No. 2, 95' 3" x 24' 8", blt. 1905-06, last rebt. 1926; No. 3, 90' x 20' 6", blt. 1905-06, rebt. 1923; No. 4, 90' 4½" x 21' 6", blt. 1910-11, rebt. 1914, relined 1924; No. 5, 95' x 22' 8", blt. 1916-17, relined 1924; 15 two-pass stoves (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, part of open-hearth department and tube mill; 2 Uehling double-strand pig casting mach., Greenawalt sintering plant for flue dust, annual cap., 120,000 tons; 1 slag granulating pit for 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.

Thomas Furnaces, Thomas, Ala. (formerly called Pioneer Furnaces): 3 stacks, No. 1, 85' x 21' 6", blt. 1886-88, rebt. 1915, relined 1929; No. 2, 85' x 20' 6", blt. 1889-90, rebt. 1916, relined 1928; No. 3, 85' x 20', blt. 1901-02, rebt. 1910, relined 1918; 12 Massicks & Crooke stoves (ten 3-pass 85' x 21', two 2-pass 85' x 21'); 11 vertical compound steam blowing eng. (165,000 cfm.) 30 lbs. rated pressure; 16 Sterling water-tube boilers, 10,000 H. P. serve also coke ovens and provide electric power for coal mines; 2 pig casting mach. (1 Uehling double-strand, 1 Slag Rock single-strand). By-product coke: local red and brown ores. Product: basic and foundry pig iron, annual cap., 450,000 tons.

Total pig iron capacity (7 furnaces) 1,350,000 tons.

Open-Hearth Steel Works, Youngstown, Ohio: blt. 1910-13, first steel June 12, 1911; 15 B. O. H. fur. (thirteen 80-ton, one 140-ton, one 175-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. continuous billet; 18" 2-h. 6-st. continuous billet; 16" 2-h. 8-st. and 14" 2-h. 3-st. continuous merchant; 32" and 22" x 84" 3-h. universal and sheared plate mill. Product: steel ingots, annual cap., 960,000 tons; semi-finished rolled products, 800,000 tons; finished rolled products, 261,000 tons including 141,000 tons universal or sheared plates and 120,000 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); five 4-hole soaking pits, fuel prod. gas; 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;

16" 2-h. 2-st. and 10" 2-h. 1-st. vertical continuous edging; 19" 2-h. 6-st. horizontal—continuous finishing for sheet bars, billets and skelp. Product: steel ingots, annual cap., 480,000 tons; semi-finished hot rolled products, 400,000 tons.

Brown-Bonnell Works, Youngstown, Ohio: orig. blt. 1846; 6 cont. heat. fur. prod. gas-fired; cont. skelp mill with 10" 2-h. 5-st. roughing, 10" 2-h. 2-st. vertical roughing, 10" 2-h. 1-st. vertical intermediate and 10" 2-h. 3-st. finishing; 12" 3-h. 5-st. merchant mill; merchant mill with 10" 2-h. 1-st. roughing, 8" 3-h. 6-st. strand, and 10" 2-h. 1-st. finishing; semi-cont. merchant mill with 10" 2-h. 5-st. roughing and 10" 3-h. 5-st. finishing; semi-cont. merchant mill with 10" 2-h. 4-st. roughing and 8" 3-h. 5-st. finishing; semi-cont. merchant mill with 10" 2-h. 5-st. roughing and 7" 3-h. 6-st. finishing. Spike and washer dept. Product: finished hot rolled products, annual cap., 400,000 tons including 261,000 tons merchant and concrete bars, 139,000 tons skelp; 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 $\frac{1}{8}$ " to 3", lap-weld, 2" to 16"; 2 galvanizing pots: Electro-galv. unit for couplings. 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 pickling mach. (1 Mesta, 1 Cook); 4 galvanizing pots; 1 terne pot. Product: black sheets, annual cap., 110,000 tons; galvanized sheets, 42,000 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., 54,000 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.

Warren Works, Warren, Ohio (formerly Home Plant, The Trumbull Steel Co. to April 30, 1928): blt. 1912-13, f. o. July 31, 1913; 8 B. O. H. fur. (140-ton) fuel in O. H. prod. gas, coke oven gas, and tar, 15 Hughes gas prod.; six 4-hole soaking pits, 5 cont. slab heat. fur., fuel prod. gas; 16" 2-h. 5-st. and 16" 4-h. 5-st. cont. strip; 14" 2-h. 10-st. cont. strip; 9" 2-h. 9-st. cont. strip. Cold rolling dept. for cold rolled strip with 6 tandems, 2-h. of 4 stands each; one 4-h. tandem of 3 stands; 16 single stands 2-h.; 1 single stand 4-h. Sheet mill: 3 nat. gas-

fired sheet normalizing fur.; 32 comb. sheet and pair fur.; 8 hot black sheet mills, 28" x 36" to 54"; 24 hot black plate (tin) mills, 28" x 28" to 40"; 1 train cold rolls consisting of 6 mills of 3 stands each in tandem and 2 mills of 2 stands each in tandem with rolls 24" x 36" to 40", 1 train of 7 single 2-h. stands with rolls 24" x 40" to 60"; 18 annealing fur. in sheet and tin dept.; 42 annealing fur. in cold strip dept.; 2 blue annealing fur.; 10 pickling mach. (7 plunger, 3 cont.); 8 pickling tanks. Roll black sheets, 14 to 30 gauge, 20" to 48" wide, 60" to 144" long. Tin house: f. o. Aug. 30, 1913; 12 tinning sets for coke tinplates; fuel nat. gas. Product: steel ingots, annual cap., 756,000 tons; slabs, billets, sheet and tinplate bars, 650,000 tons; finished hot rolled products, 678,000 tons including 43,000 tons black sheets, 100,000 tons black plate for tinning, 535,000 tons hot rolled strip; cold-rolled strip, 80,000 tons; tinplates, 1,500,000 base boxes.

Liberty Works, Warren, Ohio (formerly Liberty Plant, The Trumbull Steel Co. to April 30, 1928): blt. 1917-18, f. o. May, 1918; 1 nat. gas-fired sheet normalizing fur.; 10 comb. sheet and pair fur.; 10 hot black plate (tin) mills, 28" x 32" to 40"; 10 stands cold rolls 24" x 40"; 16 box annealing fur.; 1 plunger pickling mach. Product: black plate for tinning, annual cap., 45,000 tons. Total annual capacity: pig iron, 1,350,000 tons; steel ingots, 2,196,000 tons; semi-finished rolled products, 1,850,000 tons; finished hot rolled products, 1,548,000 tons.

In the Lake Superior Region, the Company operates the Cambria No. 1 and Cambria No. 2 mines on the Marquette Range and the Kinney mine 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, Mesaba-Cliffs Iron Mining Co., 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; total annual cap., 750,000 tons. The Company owns a one-half interest in the Potter Ore Company.

By-Product Coke Works, Youngstown, Ohio: 204 Koppers by-product coke ovens. By-product recovery plant and Otto and Koppers benzol plant, annual capacity, 4,650,000 gallons light oil.

The Company owns coal mines in Pennsylvania as follows: Republic mines at Republic, Martin mine at Martin, Bonwood mine at Smithfield, Bessemer mine at Russellton, total annual cap., 1,800,000 tons.

In Alabama, the Company owns and operates Warner, Sayreton, Thompson and Palos mines; total annual cap., 720,000 tons. By-product coke plant: 57 Koppers by-product coke ovens and Koppers benzol plant at its blast furnaces at Thomas, Ala.; annual cap., 460,000 net tons coke, 1,800,000 gals. light oil.

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.

The Company also owns a controlling interest in Trumbull-Cliffs Furnace Co., Steel & Tubes, Inc., and Union Drawn Steel Co., described in the alphabetic list under the title of the respective companies.

Republic Rolling Mill Corpn., Chicago, Ill. Rolling mill at East Chicago, Ind. for manufacture of iron and steel merchant and concrete bars, was dismantled in 1929.

REPUBLIC STEEL CORPORATION, 1882 Union Trust Bldg., Cleveland, Ohio.

Capital stock: com., no par value, auth. 5,000,000 shares, outstanding 1,985,212 shares; pref. 6% cum. convertible, par value \$100, auth. \$150,000,000, outstanding \$60,000,000: pref. stock subsidiary \$5,000,000; bonds of subsidiaries, \$58,335,800.

T. M. Girdler, Ch.; ——— ———, P.; Benj. F. Fairless, 1 V. P.; Harry T. Gilbert, V. P. (sales); R. J. Wysor, V. P. (operations); Rollin S. Hall, V. P.; Wm. P. Witherow, V. P.; Richard Jones, Jr., Sec.; John U. Anderson, T.

Republic Steel Corporation was formed in Dec. 1929 to acquire by exchange of shares of capital stock, the assets of the following companies:

Republic Iron & Steel Company.

Central Alloy Steel Corporation.

Donner Steel Company, Inc.

Bourne-Fuller Company (The).

These companies are described in the alphabetic list under the title of the respective company. It is expected that Republic Steel Corporation will in the near future operate directly the plants now operated by the constituent companies.

Rhode Island Crucible Steel Co., Providence, R. I. Plant at 604 South Main St., Providence, for manufacture of electric steel castings, together with machinery was sold at auction in May, 1928. Plant is being used for other purposes.

RIDDELL (W. A.) CO., Bucyrus, Ohio.

Inc. July 2, 1927 in Ohio. Capital stock: com., no par value, auth. and issued 20,000 shares; bonds \$2,000,000.

W. A. Riddell, P.; G. M. Schmidt, Sec., T. & G. M.; W. G. Beebe, A.; J. L. Blair, G. S.; V. M. Virtue, P. A.

Bucyrus Works, Bucyrus, Ohio: 2 Whiting converters (4,000-lb.) added in 1918, f. o. Jan., 1919; 1 Greaves-Etchells electric fur. (3-ton) first electric steel Aug., 1924 (idle since 1927); 3 cupolas; (The Hadfield-Penfield Steel Co. to July 8, 1927).

Product: steel castings for own use and for sale, annual cap., 6,000 tons (3,600 tons converter and 2,400 tons (idle) electric); alloy steel castings (manganese).

Company owns gray iron foundry (idle) at Willoughby, Ohio, for the manufacture of clay-working, sand-lime brick and cement machinery.

RIEDEL & SONS MFG. CO., P. O. Box 162, New Brighton, Pa.

Inc. Mar., 1927 in Delaware. Capital stock: com., par value \$100, auth. \$80,000, issued \$50,000; bonds \$5,000.

Charles Riedel, P., G. S. M. & P. A.; Erich Riedel, V. P.; Curtis Riedel, Sec. & T.

Works at New Brighton, Pa.: blt. 1927; 1 B. O. H. fur. (10-ton) installed 1927-28. Brass, bronze and aluminum foundry.

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

Riverdale Rolling Mill Co., Riverdale, Chicago, Ill. Rolling mill at Riverdale for manufacture of iron and steel merchant bars, etc. was dismantled late in 1926 and property sold. Company out of business.

RIVERSIDE IRON WORKS, Ltd., 803 24th Ave., S. E., Calgary, Alberta, Canada.

Inc. May 28, 1921 in Alberta. Capital stock: com., par value \$100, auth. \$465,000, issued \$326,200; pref. 7% cum., auth. \$35,000, issued \$31,400; bonds \$217,500.

S. W. Campbell, P.; at Winnipeg, Man., Canada. J. P. Carroll, Sec.; F. L. Irving, Mgr.; L. Duchscher, Supt.; R. Bessell, P. A.; at Calgary.

Brand: RIW in diamond.

Works at 803 24th Ave., S. E., Calgary: 1 Greene electric fur. (1½-ton) installed 1926, f. o. Feb. 1, 1927; 1 cupola. Gray iron (1,350 tons), brass (50 tons), bronze and aluminum foundry.

Product: electric steel castings for own use and for sale, annual cap., 1,500 tons; alloy steel castings (nickel, chrome, vanadium); railroad car castings.

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; bonds \$36,500.

John W. Ferguson, P.; at United Bank Bldg., 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.

Branch sales office: 62 Long Wharf, Boston, Mass.

Works at South Kearny, N. J.; blt. 1911, f. o. Dec. 1911; 2 A.
O. H. fur. (one 8-ton, one 10-ton) fuel, oil.

Product: steel castings for sale, annual cap., 5,400 tons. Alloy
steel castings (nickel, chrome, molybdenum).

ROANE IRON CO., 42 Chamberlain Bldg., Chattanooga, Tenn.

Inc. Dec. 6, 1867 in Tennessee. Capital stock: com., par value
\$100, auth. and issued \$1,000,000; bonds \$380,000.

M. Chamberlain, P.; R. H. Kimball, V. P.; C. T. Culbert, Sec. &
T.; at Chattanooga. Howard Howie, G. M.; C. C. Haga, P. A.;
at Rockwood, Tenn.

Sales agents: Rogers Brown & Crocker Bros., V. E. Montgomery
Co., Walter Wallingford & Co., and Hickman, Williams & Co.,
Cincinnati, Ohio; Baylor Hickman Co., Louisville, Ky.

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, McClure Amsler type, 70' x 20'; 6 Macbeth steam blowing
eng., 100,000 cfm., 18 lbs. rated pressure; 8 water-tube boilers
(5 Woods, 3 Rust) 2,250 H. P.; 1 Pittsburgh Coal Washer Co.
single-strand pig casting mach. Rockwood coke: local red ore.
Company owns coal mine and 150 beehive coke ovens at Rock-
wood, annual cap., 90,000 net tons coke; limestone quarry 2
miles south of furnace, annual cap., 30,000 tons; red iron ore
mine at Rockwood, anual cap., 180,000 tons.

Product: foundry pig iron, annual cap., 180,000 tons.

ROBERTSON (W. F.) STEEL & IRON CO., 71 Elm St., Cincinnati, Ohio.

W. F. Robertson, sole owner.

Company operates one plant at Cincinnati, two at Springfield and
two at Marietta, Ohio. Plants at Cincinnati and Springfield,
Ohio produce tin cans and signs. The two rolling mill plants
at Marietta are described below.

Product: black plate for tinning; tin mill blue and full finish
tin mill black plate; tinplates. Total annual cap., 45,000 tons
black plate for tinning; 615,000 base boxes tinplates.

Hudson Works, Marietta, Ohio: blt. 1918, 6 sheet and 6 pair fur.;
6 hot black plate (tin) mills (26" x 28" to 38"); 4 cold mills
set tandem; 2 triple box annealing fur.; 1 blue annealing fur.;
1 Mesta pickling mach.; 10 tinning sets for coke tinplates.
Fuel, gas. Roll black plate in tin mill sizes. Product: black
plate for tinning, annual cap., 25,000 tons; tinplates, 500,000
base boxes.

Pittsburgh Works, Marietta, Ohio: blt. 1902-03, f. o. Apr. 15, 1903; 4 sheet and 4 pair fur.; 4 hot black plate (tin) mills (26" x 28" to 48"); 4 stands cold rolls; 4 box annealing fur.; 1 blue annealing fur.; 1 Mesta pickling mach.; 1 hand pickling tank; 2 tinning sets for coke tinplates. (Pittsburgh Tin Plate & Steel Corp'n. to Oct., 1928). Product: black plate for tinning, annual cap., 20,000 tons; tinplates, 115,000 base boxes.

Robeson Iron Co., Philadelphia, Pa. Robeson Furnace, Robeson, Pa., 1 stack, acquired by Bethlehem Steel Realty Corp'n., a subsidiary of Bethlehem Steel Corp'n., April 18, 1927 and subsequently dismantled.

ROCKAWAY ROLLING MILL (The), Pine St., Rockaway, N. J. Inc. 1904 in New Jersey. Capital stock: com., par value \$100, auth. \$100,000, issued \$22,700.

Edward Ehlers, P., G. S. M. & P. A.; F. K. Ehlers, Sec. & T. Product: iron and steel merchant bars, plain and deformed reinforcing bars, angles, channels, tubing, double refined iron; total annual cap., 30,000 tons.

East Works, Rockaway: blt. 1900-01; three 3-d. coal-fired heat. fur.; 14" 3-h. 1-st. roughing, 10" 3-h. 4-st. guide mill. Product: iron and steel merchant bars, plain and deformed reinforcing bars, angles, channels, double refined iron; annual cap., 15,000 tons.

West Works, Rockaway: blt. 1915-18, f. o. Aug., 1915; four 4-d. heat. fur. (3 coal-fired, 1 oil-fired); 13½" 3-h. 4-st. and 10" 3-h. 7-st. bar mills. Forging equipment abandoned. (International High Speed Steel Co. to June, 1926). Product: rolled steel angles and tubing from old rails, annual cap., 15,000 tons.

Rock Run Iron Co. (The), Rock Run, Ala. Rock Run Furnace at Rock Run (1 stack) for manufacture of warm blast charcoal foundry pig iron, was dismantled in 1928.

ROEBLING'S (JOHN A.) SONS CO., 640 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.

F. W. Roebling, Jr., P.; W. A. Anderson, 1 V. P., T. & G. M.; Siegfried Roebling, 2 V. P.; Austin C. Cooley, Sec.; A. W. Brown, A.; Charles C. Cooley, G. S. M.; Joseph W. Gaskill, P. A.

Sales offices:

Atlanta, Ga., Avon Ave. and Ashby St., Oakland City.

Boston, Mass., 93 Pearl St.

Chicago, Ill., 205 West Wacker Drive.

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.
 Portland, Ore., 14th & Marshall Sts.
 San Francisco, Calif., 624 Folsom St.
 Seattle, Wash., 900 First Ave., South.

Brand: Blue Center Wire Rope.

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. (four 40-ton, three 30-ton); fuel in O. H., oil; two 4-hole soaking pits; 8 heat. fur. (1 Morgan cont. prod. gas-fired, 1 Roebling cont. oil-fired, 6 ingot preheat. oil-fired); 35" 3-h. 1-st. blooming; 18" 2-h. 4-st. billet; Morgan continuous rod mill with 14", 12" and 9" 2-h. 20-st.; 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: 20 cont. wire drawing mach.; 2,128 wire drawing blocks for wire .001" to .460"; 6 galvanizing pans; 19 cont. wire patenting fur.; tempering and annealing shops. Wire cloth and netting shops. Product: steel ingots, annual cap., 231,025 tons (99,275 tons basic, 131,750 tons acid); billets, 150,000 tons; wire rods, 110,000 tons; hot rolled strip, 12,000 tons; plain wire 75,000 net tons, galvanized wire, 25,000 net tons; plain and tinned copper wire; copper strand and wire cloth.

Upper Works, Trenton, N. J.: est. 1848; rod mill abandoned in 1923; wire mill: 403 wire drawing blocks for wire .001" to .460"; 23 continuous wire drawing mach., tinning and heat. treating depts.; cold rolling mills, 273 cold rolling mach. 6" to 12" for flat strip; wire rope shops and insulating depts. Product: plain wire, annual cap., 15,000 net tons; wire rope, insulated copper wire and flat wire. High and low carbon cold rolled flat strip, 45,000 tons.

Buckthorn Works, Trenton, N. J.: rebt. 1915; wire rope, insulated copper wire and lead encased copper cables.

Lalor St. Works, Trenton, N. J.: blt. 1920; electro-galvanized round and flat wire, tinned steel wire.

Total annual cap.; 231,025 tons ingots (99,275 tons B. O. H., 131,750 tons A. O. H.); 110,000 tons wire rods, 12,000 tons hot rolled strip; 45,000 tons cold rolled strip; 90,000 net tons plain wire, 25,000 net tons galvanized wire.

Roehm Steel Rolling Mills (The), Detroit, Mich., Rolling Mill at Michigan and Hubbard Aves., Detroit for manufacture of bars, hoops and bands, was dismantled in 1926.

Rogers Brown Iron Co., Buffalo, N. Y. was acquired by the Iron Corporation of Buffalo, Sept. 29, 1927. The latter company was subsequently merged in the Buffalo Union Furnace Co. Nov. 30, 1927.

Rogers Foundry & Mfg. Co., Joplin, Mo. leased on Mar. 12, 1924, works at Third and Railroad Sts., Joplin, owned by Joplin Steel & Malleable Co. Rogers Foundry & Mfg. Co. operated the works for manufacture of steel and gray iron castings to Oct. 1, 1926 at which time The Electro Steel Castings Co. was organized to take over and operate the steel foundry. The manufacture of steel castings was discontinued by the latter company on Dec. 1, 1926.

Rome Iron Mills, Inc., New York, N. Y. leased works at Rome to Wrought Iron Company of America Sept. 2, 1929.

ROSS-MEEHAN FOUNDRIES, Carter St. and Belt Railway, Chattanooga, Tenn.

Inc. Jan. 1889 in Tennessee. Capital stock: com., no par value, auth. and issued 12,600 shares.

G. F. Meehan, P. & G. M.; Frank M. Robbins, V. P.; Henry Bond, Sec. & T.; K. J. Harris, A.; Reginald Drant, G. S. M.; D. F. Vennigerholz, P. A.

Sales offices:

Houston, Texas, G. L. Griffin, 2103 Esperson Bldg.

New Orleans, La., Harry R. Davies, 1101-A Maritime Bldg.

Brands: Certified Malleable Iron (castings); Electric Steel-Electrically Annealed (castings); Meehanite Metal (castings).

Works at Chattanooga: gray iron fdy. blt. 1889, malleable iron fdy. blt. 1892, steel fdy. blt. 1914: 1 Tropenas converter (2,000-lb.); 1 Moore Lectromelt electric fur. (3-ton) added 1924; electric annealing ovens; 3 cupolas. 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 own use and for sale, annual cap., 8,000 tons (3,000 tons converter, 5,000 tons electric).

Rothert Process Steel Co., Seattle, Wash. was placed in hands of receiver in 1925, and taken over by Rothert Steel Corp'n. in April, 1926.

ROTHERT STEEL CORPN., 622 Othello St., Seattle, Wash.

Inc. Oct. 1925 in Washington.

E. H. Rothert, P. & G. M.; George H. Rummens, Sec. & T.

Brand: Rothert Steel (tool steel).

Works at 622 Othello St., Seattle: two 2-ton electric fur.; 1 steam hammer. (Rothert Process Steel Co. to April, 1926).

Product: steel ingots, annual cap., 1,800 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. and issued \$25,000.

Isaac E. Sexton, P.; at Everett, Mass. P. C. Rogers, T. & G. M.; at Boston.

Works at 53 Gerard St., Boston (leased from G. W. & F. Smith): 2 A. O. H. fur. (15-ton) fuel, oil; 2 Tropenas converters (2,000-lb.) dismantled Dec., 1929.

Product: steel castings for sale, annual cap., 15,000 tons.

RUSTLESS IRON CORPORATION OF AMERICA, Loney's Lane & Penna. R. R., Baltimore, Md.

Inc. Feb. 24, 1926 in Maryland. Capital stock: com., no par value, Class A, auth. and issued 50,000 shares, Class B, auth. and issued 50,000 shares; pref. 7% cum., auth. and issued \$500,000.

A. H. Wild, P.; C. C. Brooks, T.; at 122 East 42nd St., New York, N. Y. Ronald Wild, V. P.; W. W. Bowers, C.; at Baltimore. Sales agent: Superior Steel Corp., Pittsburgh, Pa. with offices in all principal cities in United States.

Brands: Defirust, Special Defirust, Defistain, Defiheat.

Works at Baltimore: blt. 1916; 5 Heroult electric fur. (three 7-ton, two 6-ton); 4 coal-fired heat. fur. (two 2-d., 2 cont.); 20" 3-h. 3-st. bar; 14" 3-h. 1-st. and 9" 3-h. 5-st. bar; 2 box annealing fur.; 2 hand picking tanks. (The Hess Steel Corporation to Mar., 1926).

Product: electric steel ingots, annual cap., 20,000 tons; alloy steel ingots (nickel, chrome); hot rolled products, 15,000 tons chrome rustless iron and chrome nickel stainless steel bars.

SAGINAW FOUNDRIES CO., 942 South Water St., Saginaw, Mich.

Inc. Aug. 5, 1929 in Michigan. Capital stock: com., no par value, auth. 2,000 shares, issued 1,750 shares; pref. 7% cum., auth. \$200,000, issued \$175,000.

Carl Pletscher, P.; Fred W. Stork, V. P.; Arthur A. Schupp, Sec. & T.

Works at 900-960 South Water St., Saginaw: 1 Moore Lectromelt electric fur. (1½-ton) building, construction begun in 1929, to be completed about April 1, 1930; gray iron foundry with 2 cupolas.

Product: electric steel castings for sale, annual cap., 1,500 tons.

ST. JOSEPH ELECTRIC STEEL CASTINGS CO., St. Joseph, Mich.

Inc. Feb. 18, 1928 in Michigan. Capital stock: com., no par value, auth. 45,000 shares, issued 35,000 shares; bonds \$73,000. J. J. Theisen, P.; James P. McKeon, V. P. & T.; Lester J. Neuman, Sec.; Dan McCarthy, G. S.

Sales office: 200 Railway Exchange Bldg., Chicago, Ill.

Works at St. Joseph: blt. 1928, f. o. May 15, 1928; 2 Pittsburgh electric fur. (½-ton).

Product: electric steel castings for sale, annual cap., 5,000 tons; alloy, Nirosa (Ka2) and commercial steel castings.

St. Louis Coke & Iron Corporation, Chicago, Ill. was acquired by St. Louis Gas & Coke Corporation June 30, 1927.

ST. LOUIS GAS & COKE CORPORATION, Granite City, Ill.

Inc. June 30, 1927 in Delaware. Capital stock: com., no par value, auth. and issued 50,000 shares; pref., no par value, \$7 dividend, auth. and issued 50,000 shares; bonds \$9,900,000.

M. D. Curran, P.; A. J. Mann, T.; George F. Vosburg, G. S.; C. A. Wieselthier, P. A.; at Granite City. J. N. Canavan, V. P.; W. A. Horner, Sec.; at 327 South La Salle St., Chicago, Ill. J. C. Gore, G. S. M.; at 1501 Telephone Bldg., St. Louis, Mo.

Sales office: 1501 Telephone Bldg., St. Louis, Mo.

Brands: Granite (pig iron); Granite City (by-product coke).

Furnaces A & B, Granite City, Ill.: 2 stacks; A, 86' x 20' 6", blt. 1919-20, f. o. Feb. 7, 1921, rebld. 1924, relined 1928; B, 92' x 22' 6", blt. 1926, f. o. Oct. 16, 1926; 7 Freyn Brassert side comb. stoves (four 100' x 20', three 105' x 22'); 3 turbo-blowers; 10 water-tube boilers (7 Heine, 3 B. & W.) 8,000 H. P.; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach.; Dwight & Lloyd sintering plant for flue dust. By-product coke: Lake and Missouri ores. Gray iron foundry for own use only.

By-product Coke Plant: 80 Roberts by-product coke ovens, by-product recovery plant and Bartlett-Hayward benzol plant. (Midland Coke and Iron Corp'n. to Jan. 15, 1926; St. Louis Coke & Iron Corp'n. to June 30, 1927).

Product: basic, malleable and foundry pig iron, annual cap., 400,000 tons.

St. Louis Screw Co., St. Louis, Mo., name changed to St. Louis Screw & Bolt Co.

ST. LOUIS SCREW & BOLT CO., 6900 North Broadway, St. Louis, Mo.

Est. 1887; inc. Apr. 15, 1911 in Missouri as St. Louis Screw Co., name changed to St. Louis Screw & Bolt Co. in 1928. Capital stock: com., par value \$25, auth. \$1,250,000, issued \$769,500; pref. 7% cum. auth. \$750,000, issued \$692,100; bonds \$100,000. E. J. Miller, P. & G. M.; Edward H. Miller, V. P.; A. E. Krug, V. P. & G. S. M.; George Gruenewald, Sec. & T.; Roy W. Miller, G. S.; C. F. Dammann, P. A.

Rolling Mill at St. Louis: blt. 1914-15, f. o. May, 1915; 4 heat. fur. (two 4-d., two 5-d.); 2 forge fires; 18" bar with 2-st. 3-h. and 1-st. 2-h.; Belgian guide with 12" 3-h. 1-st. roughing 9" 3-h. 2-st. and 9" 2-h. 2-st. finishing; 1 galvanizing pot; one 500-lb. hammer. Fuel, pulverized coal.

Product: merchant bars, bolt and nut rods for own use and for sale, annual cap., 5,500 tons; galvanized bolts, castings, etc., 700 tons.

Bolt and Nut Plant. Product: bolts 3/16" to 3" dia., nuts 3/16" to 2" dia.; annual cap., 45,500 kegs (200-lbs.).

ST. LOUIS STEEL CASTING CO., 100 Malt St., St. Louis, Mo.

Inc. Nov. 29, 1923 in Missouri. Capital stock: com., par value \$100, auth. and issued \$90,000.

W. F. Heinecke, P.; C. A. Binder, V. P., G. M. & G. S.; F. G. Langbein, Sec. & G. S. M.; J. L. Mahoney, T.

Works at 100 Malt St., St. Louis: blt. 1924, f. o. May 1, 1924; 1 bessemer converter (3½-ton) dismantled Oct. 1, 1928; 1 LECTRO-melt electric fur. (1½-ton) installed in 1928.

Product: steel castings for sale, annual cap., 4,200 tons; alloy steel castings (nickel, chrome); miscellaneous steel castings.

Savannah Steel Corp'n., Savannah, Ga. went into bankruptcy in 1927 before Works at Port Wentworth, Savannah were completed. Company assets were acquired by American Industrial Corporation, Atlanta, Georgia in 1927. American Industrial Corporation sold the rolling mills and accessories in 1928 to Tulsa Rolling Mills Co., Tulsa, Okla. for removal to their works at Sand Springs, Okla.

SAWBROOK STEEL CASTINGS CO. (The), Lockland, Cincinnati, Ohio.

Inc. Oct. 28, 1923 in Ohio. Capital stock: com., par value \$100, auth. \$300,000, issued \$250,000; pref. 7% cum., auth. \$50,000, issued \$37,300.

E. S. Sawtelle, P.; A. E. Anderson, V. P.; A. A. Stroppel, Sec. & P. A.; E. L. Brooks, T.; W. F. Wright, G. S.; R. E. DeTurk, G. S. M.

Works at Shepherd & McWhorter Sts., Lockland, Cincinnati, Ohio:

blt. 1924, f. o. Aug. 1, 1924; 1 Lectromelt electric fur. (1½-ton).

Product: steel castings for sale, annual cap., 2,450 tons; alloy steel castings (nickel, chrome, vanadium); castings for gears and general miscellaneous castings.

Schonthal Co. (The Joseph), Columbus, Ohio, leased the rolling mill at Joliet, Ill. owned by Briggs & Turivas in July, 1925. Lease terminated in May, 1926 and plant reverted to owner.

Scott, John D., Hartford, Conn. leased the steel foundry at Hartford owned by Hartford Electric Light Co. on July 7, 1927. The Scott-Witter Steel Corpn. was organized Nov. 16, 1928 to take over and operate the works. Corporate title of the latter company was changed to The Hartford Steel Corpn. Jan. 10, 1930.

Scott-Witter Steel Corpn. (The), Hartford, Conn. See The Hartford Electric Steel Corpn. and Hartford Electric Light Co.

Scranton Bolt & Nut Co., Scranton, Pa. was merged Nov. 1, 1928 with Lebanon Iron Co. in Wrought Iron Company of America.

SCULLIN STEEL CO., 6700 Manchester Ave., St. Louis, Mo.

Inc. July 7, 1899; reinc. Dec. 20, 1926 in Delaware. Capital stock: com., no par value, auth. and issued 30,000 shares; pref. 7% cum., no par value, auth. and issued 100,000 shares; bonds \$5,000,000.

Harry Scullin, P.; H. E. Doerr, A. P.; A. J. Davis, 1 V. P. & G. S. M.; V. C. Turner, V. P. & T.; E. F. Judge, Sec.; H. M. Dryer, P. A.; at St. Louis. F. L. Norton, V. P.; at New York, N. Y. E. S. Wortham, V. P.; at Chicago, Ill.

Sales offices:

Baltimore, Md., N. S. Kenney, Munsey Bldg.

Chicago, Ill., E. S. Wortham, V. P., McCormick Bldg.

New York, N. Y., F. L. Norton, V. P., Grand Central Terminal.

Richmond, Va., W. L. Jefferies, Jr., Mutual Bldg.

St. Louis, Mo., A. J. Davis, 1 V. P., Railway Exchange Bldg.

St. Paul, Minn., B. W. Parsons, Builders Exchange Bldg.

Works at 6700 Manchester Ave., St. Louis: 11 B. O. H. fur. (five 30-ton, six 35-ton), fuel, nat. gas; rolling mill added 1920; f. o. Aug. 31, 1920; 4 cont. oil-fired heat. fur. (2 ingot, 1 billet, 1 rail); 24" 3-h. 4-st. and 24" 2-h. 1-st. structural and billet; 16" 3-h.

1-st. bar roughing, 14" 3-h. 2-st. and 14" 2-h. 1-st. bar roughing and finishing, 12" 3-h. 4-st. and 12" 2-h. 1-st. bar finishing; rod mill with 8" 3-h. 4-st. and 8" 2-h. 1-st. Spike shop for railroad spikes 9/16" x 5½" to 6" and ¾" x 5½" to 6".

Product: steel ingots for own use and steel castings for sale, annual cap., 180,000 tons (115,000 tons ingots, 65,000 tons castings); billets, 15,000 tons; finished hot rolled products, annual capacity 125,000 tons including heavy and light structural shapes, 40,000 tons; squares, rounds, angles and flats, 25,000 tons; tie plates, 60,000 tons; railroad spikes, 75,000 kegs (200-lbs.); steel castings for bolsters and side frames of freight cars, general miscellaneous castings.

Seamless Tube Co. of Wisconsin, Appleton, Wis. was acquired by Appleton Steel Tube Co., Dec., 1927.

Seidel, J. A., Marysville, Pa. Perry Forge at Marysville for manufacture of charcoal blooms, idle several years, is abandoned.

SELLERS MANUFACTURING CO., 4705 Montrose Ave., Chicago, Ill.

Inc. Apr. 24, 1895 in Illinois. Capital stock: com., par value \$100, auth. \$400,000, issued \$300,000; pref. 6% cum., auth. \$400,000, none outstanding.

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 4705 Montrose Ave.

Brand: Sellers Anchor Bottom (wrought iron tie plates).

Works at 4705 Montrose 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.

K. L. Griffith, P. & G. M.; James S. Paterson, V. P.; Clifford Hubbell, V. P.; T. W. Paterson, Sec.; Alex. Paterson, T.; F. H. Trost, A.; W. F. Stahl, G. S. M.; D. H. Shoop, P. A.

Sales offices: 2-236 General Motors Bldg., Detroit, Mich.; 1572 Woolworth Bldg., New York, N. Y.

Sales agents: Theodore Geissmann & Co., 180 North Michigan Blvd., Chicago, Ill.; Hunker & Dixon, 908 Merchants Bank Bldg., Indianapolis, Ind.; H. J. Kelly, 728 Union Trust Bldg., Cleveland, Ohio.

Works at Blasdel, Erie Co., N. Y.: blt. 1907, f. o. Oct. 7, 1907; 16 sheet and 16 pair fur., 2 comb. sheet and pair fur.; 18 hot black sheet mills, 29" x 36" and 29" x 72"; 15 stands cold rolls, 26" x 52" and 26" x 66" in four trains (2-st., 3-st., 4-st and 6-st.); 2 Mesta pickling mach., 8 plunger pickling tanks; 32 box annealing fur. Roll black sheets 12 to 28 gauge inc., to 60" wide and 144" long.

Product: black sheets, annual cap., 120,000 tons. Sheets for stamping, japanning, automobile sheets.

Sharon Foundry Co., Sharon, Pa. was acquired by the Pittsburgh Steel Foundry Corp. July 15, 1929. Works are now known as Sharon Plant, Pittsburgh Steel Foundry Corp.

SHARON STEEL HOOP CO., Sharon, Pa.

Inc. Oct. 8, 1900 in Pennsylvania. Capital stock: com., no par value, auth. 500,000 shares, issued 375,000 shares; bonds \$6,750,000 being retired.

Severn P. Ker, P.; T. P. Draper, V. P.; B. E. Kibbee, V. P.; J. Reid Evans, Sec. & T.; G. R. Johnston, A.; W. B. Caldwell, G. S.; A. S. Booth, G. S. M.; A. D. Troth, P. A.

Sales offices:

Chicago, Ill., McCormick Bldg.

Cincinnati, Ohio, Union Trust Bldg.

Cleveland, Ohio, Union Trust Bldg.

Detroit, Mich., General Motors Bldg.

Montreal, Canada, Hugh Russell & Sons, Ltd., Royal Ins. Bldg.

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., J. W. Richards, 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., 155,000 tons pig iron, 450,000 tons ingots, 362,000 tons semi-finished; 424,000 tons hoops, bands and strips, and 107,000 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., 155,000 tons.

Steel Works: blt. 1914-15, f. o. Sept. 1, 1915; 6 B. O. H. fur. (100-ton) fuel prod. gas; 25 gas prod. (7 mechanical, 18 hand); five 4-hole soaking pits; 34" 2-h. 1-st. reversing blooming; 21" 2-h. 7-st. (5 flat, 2 edging) Morgan continuous sheet bar and billet mill. Product: steel ingots, annual cap., 450,000 tons; semi-finished rolled products, 362,000 tons including 175,000 tons slabs, 87,000 tons blooms and billets, 100,000 tons sheet bars.

Sharon Works, Sharon, Pa.: blt. 1900-01, f. o. Mar. 15, 1901; 6 heat. fur. (five cont. recuperative, one 6-d. regen.); fuel, prod. gas; 18" 2-h. 5-st. and 14" 2-h. 6-st. cont. strip; 14" 3-h. 5-st. and 12" 3-h. 3-st. strip; 12" 3-h. 4-st. and 10" 3-h. 5-st. strip; 12" 3-h. 4-st. and 9" 3-h. 5-st. strip; 8" 3-h. 6-st. strip; 18 stands cold rolls (1 train 10½" x 21" 4-st. cont. cluster, 1 train 10½" x 10" 3-st. cont. with edgers, 1 train 8½" x 18" 4-st. cont. cluster, 7 single stand finishing mills); 8 box annealing fur.; 2 cont. pickling mach.; 4 hand pickling tanks; 1 galvanizing pot, annual cap., 2,500 tons galv. strips. Product: hoops, bands and strips, annual cap., 424,000 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"); 4 sets cold rolls (two 26" x 48", one 26" x 56", one 26" x 66"); 8 box annealing fur.; 3 blue annealing fur.; 2 plunger pickling mach., 4 hand pickling tanks. Product: black and blue annealed sheets, annual cap., 107,000 tons.

Sharpsville Furnace Co. (The), Pittsburgh, Pa. owning and operating Sharpsville Furnace, Sharpsville, Pa., was acquired by Davison Coke & Iron Co., Sept. 12, 1928.

SHAWINIGAN STAINLESS STEEL & ALLOYS, Ltd., Shawinigan Falls, P. Q., Canada.

Inc. Nov., 1928 in Quebec. Subsidiary of Shawinigan Water & Power Co. R. A. Witherspoon, P.; H. G. Budden, Sec.; James Wilson, T.; at Power Bldg., Montreal, P. Q. James L. Gibney, V. P. & G. M.; at Shawinigan Falls.

Brand: Shawinigan.

Works at Shawinigan Falls, P. Q.: blt. 1929, f. o. July, 1929; 2 Volta electric fur. (one 2-ton, one 1-ton).

Product; electric steel castings for sale, annual cap., 1,000 tons; alloy steel castings (nickel, chrome); stainless and heat resisting steel castings; Duriron castings.

SHEFFIELD STEEL CORPORATION, Sheffield Station, Kansas City, Mo.

Inc. Oct. 13, 1925 in Delaware. Capital stock: com., no par value, auth. 200,000 shares, issued 187,081 shares; pref. 7% cum. auth. \$10,000,000, issued \$2,500,000; bonds \$2,000,000.

W. L. Allen, P.; Ernest Baxter, A. P.; R. L. Gray, V. P. & G. M.; J. C. Shepherd, V. P.; Lewis L. Middleton, Sec. & P. A.; H. R. Warren, T.; W. M. Agin, A.; J. W. Anderson, G. S. M.

Sales offices:

Dallas, Texas, 1110 Santa Fe Bldg.

Oklahoma City, Okla., G Ave. and Santa Fe Tracks.

St. Louis, Mo., 2063 Railway Exchange Bldg.

Tulsa, Okla., 820 Mayo Bldg.

Trade name: Sheffield (all products).

Works at Sheffield Station, Kansas City, Mo.: blt. 1887-88, f. o. Jan., 1889; steel plant added 1919-20, f. o. Nov., 1920; 4 B. O. H. fur. (100-ton), fuel, oil and nat. gas; 7 oil and gas-fired heat. fur. (two 4-d. regen., two cont. ingot, two cont. billet, one cont. rail); 2 sheet and 2 pair fur.; 24" 3-h. 3-st. billet and sheet bar; 24" 2-h. 1-st. tie plate finishing; 18" 2-h. 4-st. cont. billet; merchant mill with 12" 2-h. 4-st. cont., 10" 3-h. 5-st. and 8" 2-h. 2-st.; merchant and rail slitting mill with 16" 3-h. 3-st., 10" 3-h. 4-st. and 10" 3-h. 3-st.; rod and merchant mill with 14" 2-h. 4-st. cont., 12" 2-h. 3-st. cont. and 10" 2-h. 10-st. cont.; 32" x 84" 3-h. jobbing plate mill; 32" x 36" to 68" 2-h. jobbing plate mill; 2 blue annealing fur.; 2 hammers (800-lb. and 1,500-lb.). Sheared plates 3/16" to 3/8" thick, to 72" wide, to 240" long; black and blue annealed sheets 3/16" to 18 gauge, to 72" wide, to 240" long. Wire mill: 52 wire drawing blocks for wire from 18 gauge to 1/2"; 55 wire nail mach.; 15 barbed wire mach.; 5 wire fence mach.; 1 galvanizing pan. Spike, bolt, nut and rivet factory.

Product: steel ingots, annual cap., 210,000 tons; semi-finished hot rolled products, 190,000 tons including 160,000 tons billets and 30,000 tons sheet bars; finished hot rolled products, 180,000 tons including 80,000 tons merchant and concrete bars, 36,000 tons wire rods, 30,000 tons spike, bolt, nut and rivet rods, 12,000 tons sheared plates, 12,000 tons black and blue annealed sheets, 10,000 tons miscellaneous; plain wire, 36,000 net tons; wire nails, 360,000 kegs (100-lb.); barbed wire, 9,000 net tons; wire fencing, 9,000 net tons; galvanized wire, 20,000 net tons; spikes (9/16" and 5/8" to 6" long), 90,000 kegs (200-lb.); machine and carriage bolts, 60,000 kegs; rivets (1/2" and larger), 50,000 kegs; hot pressed nuts, 30,000 kegs; forged products, 3,000 tons.

Shelby Iron Co., Shelby, Ala. Shelby Furnaces at Shelby (2 stacks) for manufacture of warm blast charcoal pig iron, last operated Aug., 1923, were sold in June, 1929 to W. M. Smith & Co., Birmingham, and dismantled.

SHENANGO FURNACE CO. (The), 812 Oliver Bldg., Pittsburgh, Pa.

Inc. Feb. 1, 1906 in Pennsylvania. Capital stock: com., par value \$100, auth. \$5,000,000, issued \$4,422,000.

William P. Snyder, Jr., P.; George L. Collord, V. P.; 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. C. J. Peck, M. of Steamships at Cleveland, Ohio.

Sales agents: W. P. Snyder & Co., Pittsburgh, Pa.

Brand: Shenango (pig iron, iron ore).

Shenango Furnaces, Sharpsville, Pa.: 2 stacks; No. 1, 87' 10" x 22' 4", blt, 1906, rebt. 1914, relined 1927; No. 3, 94' 10" x 23' 3", blt. 1895, last rebt. 1922: 9 stoves (4 McClure 3-pass 85' x 21' at No. 1, 4 McClure 3-pass 85' x 19' 6" and 1 Freyn 2-pass 103' x 23' at No. 3); 7 vertical long crosshead steam blowing eng., 90,000 cfm., 25 lbs. rated pressure; 16 water-tube boilers (7 Wheeler, 8 Sterling, 1 B. & W.) 6,795 H. P.; 2 double-strand pig casting mach. (1 Heyl & Patterson, 1 Slag Rock Mach.); slag crushing plant, annual cap., 260,000 net tons hard slag. Coke: Lake ore.

Product: bessemer, basic, malleable and foundry pig iron, annual cap., 410,000 tons.

Ingot Mold Plant: Owns capital stock of Shenango Penn Mold Plant at Sharpsville, Pa. and Brass Foundry at Dover, Ohio.

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).

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., 230 Park Ave., New York, N. Y.

Inc. Dec. 14, 1915 in Delaware. Capital stock: com., no par value, auth. 2,000,000 shares, issued 1,100,000 shares.

Z. G. Simmons, P.; G. S. Fowler, V. P.; G. H. Milne, V. P.; Z. G. Simmons, Jr., V. P.; Grant G. Simmons, Sec. & T.; O. Gordon Pritchard, A.; George L. Ahrens, C.; George F. Fowler, G. S. M.; at New York. John F. Gail, V. P.; at Kenosha, Wisconsin. J. H. Hirsch, V. P.; at Atlanta, Georgia. J. F. Leahy, V. P.; F. P. Simmen, V. P.; at 295 Bay St., San Francisco, Calif. M. W. Price, V. P.; Alfred Terrell, V. P.; C. W. Voight, P. A.; at 666 Lake Shore Drive, Chicago, Ill.

Sales offices in principal cities of United States and Canada.

Brands: Ace, Slumber King (springs); Beautyrest Deepsleep (mattresses).

The company and its subsidiaries operate plants at Kenosha, Wis., San Francisco, Calif., Atlanta, Ga., Elizabeth, N. J., 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" 2-h. 1-st. rail slitting; 12" 3-h. 5-st. and 12" 2-h. 2-st. rail rerolling mill; 9" 3-h. 1-st. and 9" 2-h. 2-st. rail rerolling mill. Product: rail steel bars, light angles and skelp for own use only, annual cap., 40,000 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., 10,000 tons.

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 50,000 shares; bonds \$1,390,000.

Alvan T. Simonds, P.; Gifford K. Simonds, G. M.; Ralph A. Shaffer, G. S. M.; at 89 Broad St., Boston, Mass. Thomas F. Howarth, 1 V. P.; Harlan K. Simonds, T.; at Fitchburg. Henry A. Sargent, 2 V. P.; at Portland, Ore.

Sales offices:

Atlanta, Ga., 130 Forsyth St., S. W.
Boston, Mass., 1350 Columbia Road.
Chicago, Ill., 127 South Green St.
Detroit Mich., 1017 Franklin St.
Lockport, N. Y.
Los Angeles, Calif., 400 East 3rd St.
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., 228 First St.
St. John's, N. B., Canada, 55 Water St.
Seattle, Wash., 1934 First Ave., South.
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. abandoned 1927; 3 Heroult electric fur. (6-ton) f. o. Sept. 7, 1911; 5 Morgan gas producers; 19 heat. fur. (six 2-d., nine 3-d., three 4-d., one 6-d.), 5 rehear. 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; 3 box annealing fur.; 2 electric annealing fur.; 1 Cook pickling mach.; 2 wooden pickling tanks; 4 steam hammers (1,000-lb. to 14,000-lb.). Roll plates for knives, etc. $\frac{3}{8}$ " to $1\frac{1}{2}$ " thick, 4" to 16" wide; hot rolled sheets for saws, knives, etc. to .025 minimum thickness, $3\frac{1}{2}$ " to 30" wide; circular saw plates, $1/16$ " to $\frac{1}{8}$ " thick, 6" to 88" diameter.

Product: steel ingots, annual cap., 11,000 tons; 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, blt. 1871, dismantled 1928.

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., 37th Ave. & Mitchell St., Milwaukee, Wis.

Inc. Jan., 1909 in Wisconsin. Capital stock: com., no par value, auth. 100,000 shares, issued 80,000 shares. The Nugent Steel Castings Co. was merged in Sivyver Steel Casting Co., Feb. 28, 1930.

L. S. Peregoy, P. & G. M.; M. A. Fladoes, V. P. & G. S. M.; Charles St. Clair, G. S.; W. F. Stremke, P. A.; at Milwaukee. George L. Pollock, Sec.; C. A. MacDonald, T.; at 3100 South Wood St., Chicago, Ill.

Works at 37th Ave. & Mitchell St., Milwaukee: blt. 1910, f. o. Apr. 3, 1910; two 3-phase Moore electric fur. (one 7,000-lb., one 1,000-lb.) first electric steel Apr. 19, 1916. Product: electric steel castings for own use and for sale, annual cap., 6,800 tons. Alloy steel castings (nickel, chrome, vanadium, molybdenum).

Works at 3100 South Wood St., Chicago, Ill.: blt. 1915-16, f. o. Mar. 15, 1916; 2 electric fur. (one 3-ton Moore Lectromelt, one 1-ton Snyder). (The Nugent Steel Castings Co. to Feb. 28, 1930). Product: electric steel castings for sale, annual cap., 5,000 tons; alloy steel castings (nickel, chrome, manganese); high pressure and railroad castings.

Total annual cap., 11,800 tons electric steel castings.

Sizer Steel Corporation, Buffalo, N. Y. Works at 244 Larkin St., Buffalo, consisting of 2 Heroult electric fur., forging presses, hammers and machine shop, were purchased in 1926 by McCabe & Sheeran Machinery Corp., New York, and dismantled.

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 \$45,000.

D. G. McIntyre, P.; S. S. McIntyre, V. P. & G. M.; W. E. Berry, Sec. & T.; E. J. Hoyt, G. S. M.; E. B. Devener, P. A.

Sales agents: Vancouver Machinery Depot, Ltd., Vancouver, B. C., Canada; Manila Machinery & Supply Co., Manila, P. I.; Parry & Co., Ltd., Madras, India.

Brands: Skagit (gasoline donkeys and steel castings); M. A. C (gasoline hoists, rail cars and speeders).

Company manufactures 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.

Product: electric steel castings for own use and for sale, annual cap., 1,200 tons. Castings for logging equipment and cement mills.

SLOSS-SHEFFIELD STEEL & IRON CO., American-Traders Bank 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; bonds \$5,380,000.

Hugh Morrow, P.; F. W. Miller, V. P.; J. P. Dovel, V. P.; Russell Hunt, Sec., T. & G. S. M.; H. A. Lovejoy, A.; W. B. Dowell, P. A.

Sales offices:

Boston, Mass., Debevoise-Anderson Co., 53 State St.

Chicago, Ill., Nicholas & Miller, 1419 McCormick Bldg.

Cincinnati, Ohio, The Ransom & Orr Co., 711 Dixie Terminal.

New York, N. Y., Debevoise-Anderson Co., 117 Liberty St.

Philadelphia, Pa., Debevoise-Anderson Co., Stephen-Girard Bldg.

St. Louis, Mo., C. A. Fitzgerald, C-21 Railway Exchange Bldg.

San Francisco, Calif., Rolph, Mills & Co., 525 Market St.

Brands: Sloss, Noala, Etowah, Clifton (pig iron); Sunbeam (coke).
Product: foundry pig iron, total annual cap., 520,000 tons.

City Furnaces, Birmingham, Ala.: 2 stacks, No. 1, 84' 6" x 21', rebt. 1928, blown in Jan. 1, 1929; No. 2, 84' 6" x 21', rebt. 1927, blown in July 30, 1927; old No. 1, blt. 1881-82, was dismantled in 1928, old No. 2, blt. 1882, was dismantled in 1927; twelve 4-pass stoves (six 85' x 20', six 70' x 20'); 9 Allis-Chalmers vertical steam blowing eng. (120,000 cfm.) 18 lbs. rated pressure; 16 water-tube boilers (12 Rust vertical, 4 Casey Hedges) 7,200 H. P. serve also low pressure electric generator plant. By-product coke; local red and brown ore. Product: foundry pig iron, annual cap., 300,000 tons.

North Birmingham Furnaces, North Birmingham, Ala.: 2 stacks; No. 3, 83' x 18', blt. 1887-88, rebt. 1901, relined 1926; No. 4, 83' x 18', blt. 1887-89, rebt. 1919, relined 1926; 11 four-pass stoves (nine 85' x 20', two 70' x 20'); 7 vertical steam blowing eng. (2 Mesta, 1 Weimer, 4 Allis-Chalmers) 85,000 cfm., 18 lbs. rated pressure; 18 water-tube boilers (2 Rust, 2 Casey Hedges, 14 Sterling) 5,900 H. P. serve also low pressure electric generator plant. By-product coke: local red and brown ore. Product: foundry pig iron, annual cap., 220,000 tons.

Sheffield Furnaces, Sheffield, Ala.: 2 stacks, No. 5, formerly known as Hattie Ensley No. 2, and No. 6 of former Sheffield Iron Corp'n. were abandoned Dec. 31, 1929.

Furnace No. 8, formerly known as Philadelphia Furnace, Florence, Ala., was dismantled in Dec., 1928.

Furnaces Nos. 9 and 10, formerly Etowah Furnaces, Gadsden, Ala. were abandoned Dec. 31, 1929.

Company operates coal mines at Flat Top, Bessie, Blossburg, Lewisburg, Searles and Ivy, 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, and dolomite quarries at North Birmingham.

SMITH (GEORGE H.) STEEL CASTING CO., 500 Clinton St., Milwaukee, Wis.

Inc. Oct. 15, 1901 in Wisconsin. Capital stock: com., no par value, auth. and issued 22,500 shares; pref. 7% cum., auth. and issued \$810,000.

F. E. Hinners, P.; W. H. Stiemke, V. P. & G. M.; W. J. Donnelly, Sec. & T.

Sales office: 549 West Washington St., Chicago, Ill.

Brand: Smithco (steel castings).

Works at 500 Clinton St., Milwaukee: blt. 1897; 1 Moore electric fur. (3-ton) installed 1921, f. o. May 5, 1921.

Product: electric steel castings for own use and for sale, annual cap., 6,500 tons. Alloy steel castings (nickel, chrome, vanadium, titanium). Tractor, electric and general machinery castings.

Sofranscy (H.) Company, Allentown, Pa. Tipton Furnace at Tipton, Pa. (1 stack) for manufacture of foundry pig iron, was dismantled in 1926.

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.; J. P. Walker, 1 V. P.; R. H. Strickland, V. P. & G. S. M.; Frank Sturges, Sec. & T.; C. P. McHenry, A.; R. S. Robertson, P. A.; at Melrose Park. M. T. Bentzen, V. P.; at Minneapolis, Minn. E. J. Harris, V. P.; at New York, N. Y.

Sales office: 169 Duane St., New York, N. Y.

Brands: Solar (milk cans), Ultra Weld (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.; 14 hand pickling tanks; 2 blue annealing fur.; 1 automatic mach. for charcoal tinplates; 1 stack for terne coating hoops; 6 stacks for tinning stamped ware. Fuel, coal and gas.

Product: tinplates for own use, sheet metal products.

Southern California Edison Co., Los Angeles, Calif. discontinued manufacturing steel castings at its plant at Auberry, Calif. in 1925.

Southern California Iron & Steel Co., Huntington Park, Calif., was acquired by Pacific Coast Steel Corporation, a subsidiary of Bethlehem Steel Corporation, as of Jan. 1, 1930.

SOUTHERN FERRO-ALLOYS CO., Chestnut & 21st Sts., Chattanooga, Tenn.

Inc. 1917 in Tennessee. Capital stock: com. auth. \$210,000, issued \$150,000; pref. 8% cum., auth. \$90,000, none outstanding. Paul J. Kruesi, P. & T.; George L. Davison, V. P. & M.; N. W. Westbrook, Sec.

Sales agents: Walter-Wallingford & Co., at Traction Bldg., Cincinnati, Ohio; Nicholas & Miller, at McCormick Bldg., Chicago, Ill.

Brand: Chattanooga (silvery iron and bessemer ferro-silicon).
Works at Chattanooga: blt. 1917, f. o. 1917; 4 special electric fur.
Electric power from Tennessee Electric Power Co.

Product: ferro-silicon in all grades, calcium silicide; annual cap., 12,000 tons 50% ferro-silicon, 36,000 tons bessemer ferro-silicon.
Works at Cleveland, Tennessee dismantled in 1926.

SOUTHERN MANGANESE CORPORATION, Box 96, 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.; R. W. Weatherly, G. S. M.; at Birmingham, Ala. C. M. Jespersen, Sec. & T.; E. L. Sayers, G. 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 23-26%), annual cap., 20,000 tons.

SOUTHERN MANGANESE STEEL CO., 333 North 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.; A. W. Daniels, G. S. M.; at 333 North Michigan Ave., Chicago. W. J. Hall, V. P. & G. S.; at 6600 Ridge Ave., St. Louis, Mo. H. F. Rikoff, Sec.; at Chicago Heights, Ill.

Sales offices:

Chicago, Ill., 333 North Michigan Ave.

Chicago Heights, Ill.

Cleveland, Ohio, D. M. Powers, 1176 Union Trust Bldg.

Los Angeles, Calif., Ryer Co., Suite 415, 124 West 4th St.

New York, N. Y., 230 Park Ave.

Pittsburgh, Pa., B. L. Jarrett, Koppers Bldg.

Brands: AMSCO (manganese steel castings); Fahlralloy (non-corrosive and heat resisting steel).

Works at 6500 Easton Ave., St. Louis, Mo.: 3 Moore electric fur. (two 1½-ton, one 500-lb.) first electric steel made in 1925. Shops for railway track work, forgings and pressed steel work.

Product: steel castings for sale, annual cap., 5,000 tons; alloy steel castings (manganese, nickel, chrome); manganese, carbon and non-corrosive heat resisting alloy steel castings.

SOUTHERN PACIFIC CO., 65 Market St., San Francisco, Calif.

Inc. March 17, 1884 in Kentucky.

Paul Shoup, P.; J. H. Dyer, V. P. (operations); F. L. McCaffery, A.; F. L. Burckhalter, G. M.; F. W. Taylor, P. A.; George McCormick, G. S. (motive power); at San Francisco. Hugh Neill, Sec.; G. M. Thornton, T.; H. B. Johnson, C.; at 165 Broadway, New York, N. Y.

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. (one 1-d., six 2-d., six 3-d., eight other for forging); two 18" 3-h. 3-st. bar mills; two 12" 3-h. 2-st. and 12" 2-h. 1-st. bar mills; 2 box annealing fur.; 8 steam hammers (800-lb. to 5-ton); 1 steam hydr. press (300-ton). Foundry with 2 cupolas for steel, gray iron (12,000 tons) and brass castings (7,500 tons) for own use only; cast iron car wheels, 30,000 tons. Bolt and Nut Dept.; machine bolt $\frac{1}{8}$ " to 2", track bolts and nuts $\frac{1}{4}$ " and $\frac{3}{8}$ ".

Product: steel ingots and steel castings for own use only; annual cap., 9,000 tons electric steel ingots, 3,500 tons electric steel castings; 1,200 tons blooms and billets; 21,200 tons hot rolled products, including 20,000 tons iron and steel merchant bars and 1,200 tons bolt, nut and rivet rods; locomotive, freight and passenger car forgings, 5,500 tons; machine bolts 7,100 kegs, track bolts and nuts, 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.

D. B. Lesser, Sec., T. & G. M.

Brand: Pol-Hex (Reinforcing bars).

Works at East Birmingham, Ala.: blt. 1904; two 2-d. scrap and one cont. heat. fur.; 16" 3-h. 3-st. bar mill; 10" 2-h. 1-st. splitter, 8" 3-h. 4-st. bar mill; new 10" bar mill installed in 1927.

Product: merchant bars, concrete reinforcing bars, light structural shapes, fence posts, light rails; annual cap., 18,000 tons.

SPANG, CHALFANT & CO., Inc., Clark Bldg., Pittsburgh, Pa.

Inc. July 3, 1899 in Pennsylvania. Capital stock: com., no par value, auth. 1,000,000 shares, issued 750,000 shares; pref. 6% cum., auth. \$15,000,000, issued \$13,750,000; bonds \$9,330,000. Gordon Fisher, P.; C. F. Cruciger, V. P. & T.; W. J. Hampton, V. P.; C. R. Barton, V. P.; C. F. Beachler, Sec.; A. D. Lowdermilk, A.; J. A. Herman, P. A.

Sales offices:

Chicago, Ill., 1922 McCormick Bldg.
 Los Angeles, Calif., 911 Bank of Italy Bldg.
 New York, N. Y., 1608 Vanderbilt Ave.
 Pittsburgh, Pa., 2300 Clark Bldg.
 St. Louis, Mo., 1400 Boatmen's Bank Bldg.
 Tulsa, Okla., 2202 Exchange Bank Bldg.

Brands: Spang Welded, Standard Seamless, Simancro Seamless Casing.

Spang Plant (formerly Etna Iron & Tube Works), Etna, Pa.: blt. 1828; 4 trains 16" and 12" skelp mills, last operated 1921, were dismantled 1927-29; 3 butt-weld, 4 lap-weld fur.; 1 galvanizing pot. Pipe, butt-weld $\frac{1}{8}$ " to 3"; lap-weld $1\frac{1}{2}$ " to 24". Product: black and galvanized pipe; annual cap., 300,000 tons black pipe, 60,000 tons galvanized pipe.

Standard Seamless Plant, Ambridge, Pa.: 8 cont. billet heat. fur., fuel, prod. gas; 8 gas producers; 25" 3-h. 5-st. bar mill; 1 double piercer (36" and 51") with 32" automatic tube rolling mach., reelers and sizing mill; one 36" piercer with 22" automatic rolling mill, reeling mach., sizing and reducing mill. (Standard Seamless Tube Co. to Feb. 27, 1928). Product: hot finished seamless tubes 2" to 15", annual cap., 350,000 tons.

Spencer (John T.), Jr., Iron Mountain, Mich.

Foundations for building charcoal blast furnace at Iron Mountain, completed in 1922. Further work suspended. Date of erection of furnace uncertain. (Property owned by Keweenaw Land Association, Ltd.; leased to West Chapin Mines Co. to 1926, then leasehold taken over by Iron Mountain Mining & Mfg. Co. and subsequently leased to John T. Spencer, Jr. in 1928).

STANDARD BRAKE SHOE & FOUNDRY CO., P. O. Box 652, Pine Bluff, Ark.

Inc. Apr. 2, 1924 in Arkansas. Capital stock: com., par value \$100, auth. \$500,000, issued \$360,000; bonds \$90,000.

F. L. Dilley, P.; E. S. Dilley, V. P., G. M. & P. A.; Wendell D. Lee, Sec.; R. B. Hill, A.; W. M. Carty, G. S.; C. K. Elliott, Sr., G. S. M.

Sales offices:

Chicago, Ill., 603 West Washington Blvd.
 Kansas City, Mo., 1820 Cherry St.
 Memphis, Tenn., 810 Dermon Bldg.
 St. Louis, Mo., 1406 Paul Brown Bldg.
 Tulsa, Okla., 218 East Brady St.

Washington, D. C., Room 12, Central National Bank Bldg.

Brands: Diamond D; Stanfire (grate bars); Stanfast (spring bands); Stanlastic (steel).

Works at Pine Bluff: 1 Greene electric fur. (2-ton) installed 1920, f. o. Aug. 10, 1920; 2 cupolas. Gray iron and semi-steel castings and Stanfire grate bars.

Product: steel castings for sale, annual cap., 4,000 tons. Alloy steel castings (nickel, chrome, vanadium). Castings for locomotives, cars and railway equipment.

Standard Chemical Co., Pittsburgh, Pa. has discontinued the manufacture of ferro-alloys at its plant at Canonsburg, Pa.

Standard Crucible Steel Casting Co., Milwaukee, Wis. went into bankruptcy in Dec., 1928 and plant at 717-723 30th St., Milwaukee for manufacture of steel castings, was dismantled Dec. 17, 1928 and equipment sold as scrap.

STANDARD FENCE CO., Oakland, Calif.

Inc. July 14, 1920 in California. Subsidiary of Cyclone Fence Company which is a subsidiary of United States Steel Corporation.

J. H. Kinney, P.; W. F. Kirkham, T.; W. W. Bilharz, G. S.; at North Chicago, Ill. A. F. Allen, Sec.; A. H. Garry, A.; at Cleveland, Ohio. R. G. Russell, V. P. & G. M.; at Oakland, Calif.

Sales offices:

Los Angeles, Calif., G. K. Smith, 1107 North Highland Ave.

Oakland, Calif., R. G. Russell, 60th & Lowell Sts.

Portland, Ore., S. H. Palmer, East 11th & Flanders St.

Product: chain link and flat wire belting, wire baskets, wire cloth; sand and gravel screens, wire partition work, gates, iron fence.

Oakland Works, Oakland, Calif.: blt. 1920. Product: wire partition work, chain link belting, flat wire belting, iron fence, gates, posts.

Portland Works, Portland, Ore.: blt. 1911. Product: chain link belting, sand and gravel screens, wire cloth, wire partition work, gates.

Standard Horse Shoe Co., Boston, Mass., discontinued on Feb. 3, 1930 the manufacture of horseshoe bars and finished horse and mule shoes at its works at South Wareham, Mass. Works are idle and will be dismantled.

Standard Seamless Tube Co., Pittsburgh, Pa. was acquired by Spang, Chalfant & Co., Inc., Feb. 27, 1928. Works are now known as Standard Seamless Plant, Spang, Chalfant & Co., Inc.

STANDARD STEEL WORKS CO., Paschall Station, Philadelphia, Pa.

Inc. Dec. 20, 1902 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$8,000,000. The company is a subsidiary of The Baldwin Locomotive Works.

George H. Houston, P.; John P. Sykes, 1 V. P.; William de Krafft, V. P. & T.; F. K. Metzger, V. P. (sales); A. L. Church, Sec.; C. F. Noyes, C.; R. U. Watt, A. S. M.; J. Harvey Hart, P. A.; at Philadelphia. O. C. Skinner, G. M.; G. H. Lewis, W. M.; at Burnham, Pa.

Sales offices:

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

New York, N. Y., J. R. Guinn, 120 Broadway.

Portland, Ore., A. J. Benter, 313 American Bank Bldg.

Richmond, Va., W. B. Keys, 512 Richmond Trust Bldg.

St. Louis, Mo., A. S. Goble, 1010 Pine St.

San Francisco, Calif., Latham McMullin, 2910 Russ Bldg.

Brand: letter S between two anchors.

Works at Burnham, Pa.: 10 A. O. H. fur. (two 75-ton, five 50-ton, three 20-ton); four 2-pot crucible steel fur.; 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. 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. Annual cap., 145,086 tons ingots (145,000 tons A. O. H., 86 tons crucible); 38,400 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.

STANDARD STOKER CO., Erie, Pa.

Works at Erie, Pa.: one 3-ton Heroult electric fur. f. o. Nov. 26, 1919; 1 cupola. Iron and bronze foundry, annual cap., 2,950 tons iron and 225 tons bronze castings for own use.

Product: electric steel castings for own use, annual cap., 2,840 tons; alloy steel castings (manganese).

STANDARD TIN PLATE CO. (The), Canonsburg, Pa.

Inc. Sept. 9, 1902 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$500,000. Company is a subsidiary of Continental Can Co., Inc.

C. C. Conway, P.; F. A. Pahl, 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.; D. B. Geeseman, G. 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 34"); 24 stands cold rolls, 8 st. on each train, 26" x 42"; 10 box annealing 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 for coke tin plates, fuel, washed gas.

Product: black plates for tinning, annual cap., 104,400 tons; tin-plates, 3,000,000 base boxes.

STANLEY STEEL COMPANY, Ltd., Hamilton, Ont., Canada.

Inc. 1916 in Ontario. Capital stock: com., par value \$100, auth. \$350,000, issued \$250,000. Subsidiary of The Stanley Works, New Britain, Conn.

C. F. Bennett, P.; W. C. Milkey, A.; at New Britain, Conn. A. F. Hatch, 1 V. P.; Col. H. C. Hatch, 2 V. P., Sec., T. & G. M.; H. E. Aspinwall, G. S.; G. L. Burjaw, G. S. M.; George H. Hughes, P. A.; at Hamilton, Ont., Canada.

Brand: Stanley Steel (cold rolled strip steel).

Works at Hamilton, Ont.: blt. 1917, f. o. 1918; 9 stands cold rolls (one 12½" x 18", two 12½" x 18" tandem, one 10" x 16", four 10" x 16" tandem, one 8" x 10"); 2 annealing fur. (1 electric, 1 gas-fired); 2 pickling mach. (1 automatic for coils, 1 for iron).

Product: cold rolled strip steel, annual cap., 8,000 tons; strips and coils, 1" to 15" wide, .02" to .25" thick in carbon and alloy steels.

STANLEY WORKS (The), 195 Lake St., New Britain, Conn.

Inc. 1901 in Connecticut. Capital stock: com., par value \$25, auth. and issued \$13,000,000; pref. 6% cum., auth. and issued \$3,500,000; bonds \$450,000.

C. F. Bennett, P.; W. H. Hart, V. P.; J. E. Cooper, V. P.; E. W. Pelton, V. P.; R. E. Pritchard, V. P.; J. E. Stone, V. P. & G. S. M.; M. Farmer, V. P.; E. W. Christ, V. P., Sec. & P. A.; L. W. Young, T.; W. C. Milkey, A.

Sales offices: 61 West Kinsie St. (Chicago Ave. Station), Chicago, Ill.; and 100 Lafayette St., New York, N. Y.

Product: builders' hardware, cold rolled strip steel, wrought steel specialties, box strapping and fasteners for containers.

The company operates hot and cold rolled strip mills and hardware plant at New Britain, Conn.; hardware plant at Niles, Ohio; steel works, hot and cold rolled strip mills at American Tube & Stamping Plant, Bridgeport, Conn.

The company also owns the Stanley Steel Co., Ltd., with cold rolled strip mills at Hamilton, Ont., Canada, see Stanley Steel Co., Ltd.

New Britain Works, New Britain, Conn.: 2 B. O. H. fur. (25-ton) dismantled in 1927; 1 cont. oil-fired heat. fur.; 4 gas prod.; semi-cont. strip mill with 12" 2-h. 6-st. and 10" 3-h. 5-st.; 7 trains cold rolls (two 12½" x 18" 4-st. tandem, two 10" x 16" 7-st. tandem, one 8" x 5½" 6-st. tandem, one 6" x 4½" 3-st. tandem, one 10" x 18" 3-st. tandem); 15 box annealing fur.; 6 pickling mach. Washer Dept. for wrought steel punched washers up to 4½" x 2½". Product: hot rolled strip, annual cap., 35,000 tons; cold rolled strip steel, 50,000 tons; washers, 37,000 kegs.

American Tube & Stamping Plant, Bridgeport, Conn.; 3 B. O. H. fur. (one 75-ton, two 50-ton) fuel, oil; 5 Morgan gas producers;

three 4-hole soaking pits, fuel, prod. gas; 4 oil-fired cont. billet heat. fur.; 34" 2-h. 1-st. blooming mill; 16" 2-h. 4-st. and 16" 3-h. 4-st. semi-continuous Belgian; 22" 2-h. 4-st. and 18" 2-h. 2-st. continuous bar; 16" 3-h. 2-st., 14" 3-h. 3-st. and 12" 3-h. 5-st. strip mill; 12" 2-h. 8-st. and 12" to 10" 3-h. 4-st. continuous Belgian; 20", 14" and 12" 2-h. and 3-h. 11-st. strip mill; 9 trains cold rolls (one 12½" 2-h. 4-st. tandem, one 3" cluster 4-st. tandem, one 3" cluster 1-st., one 10" 2-h. 1-st., two 14" 2-h. 1-st., one 16" 2-h. 1-st., one 6" 2-h. 1-st., one 5" 2-h. 1-st.); 3 box annealing fur.; 11 pickling tanks (American Tube and Stamping Co. to June 1, 1926). Product: steel ingots, annual cap., 120,000 tons; blooms and billets, 100,000 tons; hot rolled strip, 125,000 tons; cold rolled strip steel, 25,000 tons.

Bridgewater Works, Bridgewater, Mass.: rolling mill dismantled in 1929.

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. & P. A.; at Jackson.

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; 6 batteries 6" flue boilers, 1,500 H. P. W. Va. and Ky. coke, and raw coal; Lake ore. (Idle since 1923.)

Product: silvery, high-silicon pig iron, bessemer ferro-silicon, annual cap., 30,000 tons.

Starr Manufacturing Co., Ltd., Dartmouth, N. S., Canada. Rolling mill at Dartmouth, idle for several years, may be regarded as abandoned. Company operates plants at Dartmouth for manufacture of railway and ship spikes, bolts, nuts, and boiler and bridge rivets.

STEEL COMPANY OF CANADA (The), Ltd., Hamilton, Ont., Canada.

Inc. June 9, 1910 in Ontario. Capital stock: com., no par value, auth. 600,000 shares, issued 460,000 shares; pref. 7% cum., auth. \$10,000,000, issued \$6,496,300; bonds \$5,350,524.76.

Charles S. Wilcox, Ch.; H. H. Champ, V. P. & T.; R. G. Wells, V. P.; H. S. Alexander, Sec.; S. E. LeBrocq, C.; George Spence, G. S. M.; B. C. Ball, P. A.; at Hamilton, Ont. R. H. McMaster, P.; H. T. Diplock, V. P. & S. M.; H. M. Jaquays, V. P.; at Montreal, P. Q.

Sales offices at Halifax, Hamilton, London (England), Montreal, St. John, Toronto, Vancouver 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 and coke); Hamilton (pig iron); 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 1929; Furnace "B", 91' x 20' 8", blt. 1906-07, f. o. Nov. 8, 1907, rebt. 1922; relined 1927; 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 Sterling water-tube boilers, 4,150 H. P. furnish power also to coke ovens; 1 Pittsburgh Coal Washer Co. double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 90,000 tons. By-product coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 325,000 tons.

By-Product coke plant: 80 Wilputte by-product ovens, annual cap., 430,000 net tons coke. By-product recovery plant. Wilputte benzol plant, annual cap., 2,190,000 gals. light oil.

Steel Works: blt. 1900; 10 B. O. H. fur. (four 50-ton, four 85-ton, two 130-ton); one 150-ton mixer; fuel in O. H. coke oven gas, blast furnace gas, tar and prod. gas, 6 Morgan gas prod.; six 4-hole soaking pits; 3 cont. billet heat. fur.; 24" 2-h. 1-st. reversing blooming; cont. billet and sheet bar mill with 18" 2-h. 6-st. and two st. edging rolls; semi-cont. bar mill with 16" 2-h. 4-st., 12" 2-h. 4-st. and 10" 2-h. 2-st.; 12" to 10" 2-h. 16-st. cont. rod and bar mill; 14" 3-h. 3-st. and 10" 3-h. 3-st. hand bar mills; 6 sheet and 7 pair fur.; 30" x 40" to 56" 2-h. jobbing mill; 5 sheet mills (two 28" x 44", one 28" x 38", one 30" x 44", one 30" x 40"); 1 train of 4 stands cold rolls, 26" x 42" to 56"; 12 box annealing fur; 1 blue annealing fur.; 1 plunger pickling mach.; 2 galvanizing pots. Roll black sheets 17 to 30 gauge, blue annealed sheets 8 to 16 gauge. Spike Shop: standard railway spikes 9/16" and 5/8" x 5 1/2" to 9", small railway spikes 5/16" x 2 1/2" to 1/2" x 5 1/2", boat spikes 1/4" x 3" to 1/4" x 14".

Product and annual cap.: 525,000 tons ingots; 425,000 tons blooms, billets and sheet bars; 294,000 tons hot rolled products including 120,000 tons wire rods, 120,000 tons merchant bars,

bolt, nut and spike rods, light structural shapes, agricultural implement shapes, etc., 34,000 tons black sheets for galvanizing, stamping, forming, etc., and tack plate, blue annealed sheets, 20,000 tons; galvanized sheets, 22,000 tons; 250,000 kegs railway and boat spikes.

Ontario Works, Hamilton, Ont.: blt. 1861; 2 cont. billet heat. fur., coal-fired; 1 cont. tie plate reheat. fur., oil-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., were dismantled in 1926.

Notre Dame Works, Montreal, P. Q.; blt. 1857; 1 busheling fur.; 6 reheat. fur. coal-fired (five 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. tandem merchant. Bolt and Nut Dept.; spikes 3/16" to 1 1/4", bolts and nuts 3/16" to 3", rivets 14 gauge to 1 1/2" dia. 5/16" to 3" bolt hole. Nail and Wire Works; 18 cut nail mach.; 596 wire drawing blocks for wire .560" to .010"; 150 wire nail mach.; 1 galvanizing pan. Product: scrap bar, annual cap., 4,500 tons; iron and steel merchant bars, horseshoe bars, nail and hinge plate, bolt, nut and rivet rods, 43,000 tons; cut nails, 20,000 kegs; plain wire, 30,000 net tons, galvanized wire 1,000 net tons, wire nails, 300,000 kegs; spikes, bolts, nuts and rivets 81,000 kegs.

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 and washer dept.; spikes 5/8" x 12", washers 5 1/2" outside dia. 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., 12,000 kegs, spikes, 10,000 kegs washers.

St. Henry Works, 172 St. Ambroise St., Montreal, P. Q.: last rebt. 1928; 1 butt weld fur. for pipe 1/4" to 4", 2 gas prod.; 1 galv. pot. Product: iron and steel pipe, black and galvanized; conduit, fence and signal pipe; couplings and nipples; annual cap., 18,000 tons black pipe, 8,000 tons galvanized pipe.

Dominion Works, 75 St. Joseph St., Lachine: blt. 1885; 83 wire drawing blocks for wire 5/16" to 17 gauge: 50 wire nail mach.; 25 barbed wire mach.; 6 wire fence mach.; 3 chain link fence mach.; 3 galv. pans. Product: plain wire, annual cap., 25,000 net tons; galvanized wire, 19,000 net tons; wire nails, 12,000 kegs (100-lb.); barbed wire, 5,000 net tons; wire fencing, 6,000 net tons; chain link fence, 1,000 net tons; bale ties, wire cable, fence gates, screws, cotters, hooks, etc.; copper and brass wire.

Canada Works, Hamilton, Ont.: orig. blt. 1887; 274 wire drawing blocks for wire $\frac{5}{8}$ " to 34 gauge; 156 wire nail mach. Product: plain wire, annual cap., 43,000 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., 25,000 kegs (100-lb.); staples, barbed wire, braided clothes line.

Brantford Works, Colbourne St. West, Brantford, Ont.: Product: machine, carriage, plow and tire bolt; 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).

STEEL AND TUBES, INC., 224 East 131st St., Cleveland, Ohio.

Inc. Aug., 1902 in Ohio as The Elyria Iron & Steel Co., name changed to Steel and Tubes, Inc., Oct. 1, 1927. Capital stock: com., no par value, auth. and issued 117,000 shares; pref. 6% cum., class A, auth. 72,000 shares, outstanding 53,524 shares; class B, auth. 45,000 shares, outstanding 10,734 shares; class C, auth. 117,000 shares, outstanding 52,740 shares; bonds \$4,-382,500. Controlling interest in capital stock acquired by Republic Iron & Steel Co., Oct. 1, 1928.

E. T. McCleary, Ch.; at Youngstown, Ohio. M. A. Wick, P.; Henry Wick, 1 V. P.; William J. Sampson, Jr., 2 V. P.; George C. W. Klippel, 3 V. P.; W. T. Brentz, 4 V. P. & G. S. M.; George F. White, Sec. & T.; A. M. Dewey, A. & C.; H. E. Harvey, G. S. (tubing plants); E. Falk, P. A.; at Cleveland.

Sales offices:

Atlanta, Candler Bldg.

Chicago, 1330 Peoples Gas Bldg.

Cleveland, 224 East 131st St.

Detroit, Wanda Ave., Ferndale, Mich.

Hartford, 125 Trumbull St.

New York, 547 Madison Ave.

Brands: ELISCO, STEELTUBES.

Works at Elyria, Ohio: blt. 1902-03, f. o. 1903; 2 nat. gas-fired cont. heat. fur.; 20" 3-h. 1-st., 18" 2-h. 3-st. skelp mill; 16" 3-h. 2-st., 16" 2-h. 1-st., 16" 2-h. 1-st. strip mill; 13 stands 2-h. cold rolls (2 trains of 3 stands each, 12" rolls; 3 single stands, 12" rolls; 4 single stands, 10" rolls); 6 box annealing fur.; 3 hand pickling tanks; 2 steam hammers (600-lb., 1,200-lb.). Product: skelp, annual cap., 24,000 tons; hot and cold rolled strip, 54,000 tons.

Works at Elyria, Ohio (formerly Superior Metal Products Co. to Jan. 1, 1926).

Product: stampings.

Works at 224 East 131st St., Cleveland: blt. 1915. Product: electrically welded tubing.

Works at Wanda Ave., Ferndale, Mich.: blt. 1929. Product: electrically welded tubing.

Works at 300 Scott Ave., Brooklyn, N. Y. (formerly Mohegan Tube Co. to Apr. 15, 1927). Product: electrically welded tubing and conduit.

Sterling Steel Co., East St. Louis, Ill., name changed Aug. 18, 1928, to Sterling Steel Casting Co.

STERLING STEEL CASTING CO., East St. Louis, Ill.

Inc. July, 1922 in Illinois as Sterling Steel Co., name changed to Sterling Steel Casting Co. Aug. 18, 1928. Capital stock: com., par value \$100, auth. \$100,000, issued \$99,240.

R. O. Shive, P., G. M. & P. A.; C. L. Harrell, V. P., Sec., T. & G. S. M.

Branch sales office: 805 Mayo Bldg., Tulsa, Okla.

Works at East St. Louis, Ill.: blt. 1922, f. o. Jan. 12, 1923; 1 Moore electric fur. (1½-ton).

Product: electric steel castings for sale, annual cap., 2,150 tons. Alloy steel castings (nickel, chrome).

STERLING STEEL FOUNDRY CO., Braddock, Pa.

Inc. May 9, 1902 in Pennsylvania. Capital stock: com., no par value, auth. 10,000 shares, issued 9,699¼ shares; pref. 8% cum. auth. \$1,000,000, issued \$562,000.

George W. Smith, P. & G. M.; M. A. Quinn, Sec. & A.; H. G. Smith, T.; D. B. Webb, G. S. & P. A.; J. B. Eccleston, G. S. M.; at Braddock. F. C. Irvine, V. P.; at Tarentum, Pa.

Sales office: Charles Hubbard & Co., 17 Battery Place, New York. Brand: Sterling (castings).

Works at Braddock: blt. 1902, f. o. Oct., 1902; 2 A. O. H. fur. (20-ton), fuel, gas.

Product: steel ingots and steel castings for sale, annual cap., 26,400 tons (12,000 tons ingots, 14,400 tons castings). 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. Capital stock: com., no par value, auth. 50,000 shares, issued 42,108 shares.

Fayette Brown, P.; Harvey H. Brown, Jr., V. P.; George W. Nichols, Sec. & T.

Brand: Stewart (low phos. and bessemer pig iron).

Stewart Furnace, Sharon, Pa.: 1 stack, 75' x 17' 6", blt. 1872, last rebt. 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.

STOCKHAM PIPE & FITTINGS CO., P. O. Box 2592, Birmingham, Ala.

Inc. 1902 in Alabama.

H. C. Stockham, P.; L. N. Shannon, V. P.; D. W. Stockham, V. P.; R. J. Stockham, Sec.; W. A. Abercrombie, T.; R. L. Stewart, G. S. M.

Sales offices: Boston, Brooklyn, Chicago, Detroit, Houston, Los Angeles and Philadelphia.

Brand: Stockham (fittings).

Works at Birmingham, Ala.: 1 Moore Lectromelt electric fur. (2½-ton) installed 1927, f. o. Oct. 1, 1927.

Product: electric steel castings for own use and for sale, annual cap., 5,000 tons; alloy steel castings (nickel, chrome); cast iron screwed, drainage, flanged fittings and flanges, malleable fittings, steel flanged fittings for 150 lbs. to 1,350 lbs. steam working pressures.

Stowell Company (The), South Milwaukee, Wis. Plant No. 1 at South Milwaukee; gray iron foundry destroyed by fire Dec. 4, 1926 and never rebuilt, malleable iron and brass foundry subsequently acquired by Wisconsin Appleton Co. Plant No. 2 at Milwaukee; malleable iron and steel foundry acquired by the Pelton Steel Casting Co. Dec. 1, 1925.

STROH PROCESS STEEL CO., Pittsburgh, Pa.

W. Y. Stroh, President.

Lawrence Works, 32nd St. & A. V. R. R., Pittsburgh: 1 A. O. H. fur. (10-ton) last operated in 1927. (Stroh Steel Hardening Process Co. to Oct., 1929).

Product: steel castings for sale, annual cap., 4,000 tons.

Stroh Steel Hardening Process Co., Pittsburgh, Pa. leased Lawrence Works, 32nd St. & A. V. R. R., Pittsburgh, from Carbon Steel

Co. The company was liquidated in Oct., 1929 by order of the court and the works were subsequently acquired (Feb., 1930) by Stroh Process Steel Co.

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; bonds, \$171,000.

C. P. Champlin, P. & T.; D. V. Sherlock, V. P. & G. M.; O. H. P. Champlin, Sec.

Works at 33 Norris St., Buffalo: blt. 1912-13, f. o. Feb., 1913; 1 A. O. H. fur. (25-ton). Fuel, oil.

Product: steel castings for sale, annual cap., 7,000 tons. Alloy steel castings (nickel).

Struthers Furnace Co. (The), Struthers, Ohio. Receiver, appointed in 1925, sold plant and assets to bondholders' protective committee at public sale in Nov., 1927. The Struthers Iron & Steel Co. was organized Nov. 4, 1927, to take over and operate the plant.

STRUTHERS IRON & STEEL CO. (The), Struthers, Ohio.

Inc. Nov. 4, 1927 in Ohio. Capital stock: com., no par value, 10,000 shares; 1st pref. 6% cum., \$1,500,000; 2nd pref. 6% cum., \$200,000.

W. C. Holzworth, P.; R. Selkirk, T.; C. B. Myers, A.; M. P. Reagan, G. S.; at Struthers. E. G. Tillotson, V. P.; at Cleveland, Ohio. A. M. Henderson, Sec.; at Youngstown, Ohio.

Sales agents: Rogers Brown & Crocker Bros., Inc., New York, N. Y.; Kerchner, Marshall & Co., Pittsburgh, Pa.

Brand: Struthers (pig iron).

Anna Furnace, Struthers, Ohio: 1 stack, 83' x 20' 6", blt. 1869, last rebld. 1909; relined 1928 and blown in Dec. 15, 1928; 5 stoves (four 70' x 18', one 100' x 22'); 3 vertical steam blowing eng. (45,000 cfm.) 30-lbs. rated pressure; 8 water-tube boilers, 2,700 H. P.; 1 Uehling double-strand pig casting mach.; Greenawalt sintering plant for flue dust, annual cap., 20,000 tons. Coke: Lake ore. (The Struthers Furnace Co. to Nov. 4, 1927).

Product: foundry, basic and malleable pig iron, annual cap., 180,000 tons.

SULLIVAN MACHINERY CO., 400 North Michigan Ave., Chicago, Ill.

Inc. Dec. 26, 1913 in Massachusetts. Capital stock: com., no par value, auth. 200,000 shares, issued 191,172.3.

A. E. Blackwood, P.; H. T. Walsh, V. P.; F. W. Copeland, V. P.; E. A. Krevis, A.; at Chicago. T. W. Fry, Sec.; J. D. Upham, T.; H. A. Lincoln, Wks. M.; G. W. Bateman, P. A.; at Claremont, N. H. S. T. Nelson, Wks. M.; L. Copeland, P. A.; at Michigan City, Ind.

Sales offices in all principal cities.

Brand: Sullivan (all products).

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 and gray iron foundry at Claremont Works.

Claremont Works, Claremont, N. H.: steel foundry, blt. 1920, f. o. June 24, 1920; 1 Swindell electric fur. (1½-ton). Gray iron foundry; 1 cupola; annual cap., 1,275 tons gray iron, 200 tons brass castings for own use.

Product: steel castings for own use, annual cap., 1,245 tons.

SUPERIOR ALLOYS, Ltd., 527 Queen St., East, Sault Ste. Marie, Ont., Canada.

Inc. July 22, 1929 in Ontario. Capital stock: com., no par value, auth. 2,000 shares, issued 1,750 shares; pref. 7% cum., auth. \$100,000, issued \$75,000.

Robert Turnbull, Ch.; at 152 King St., West, Toronto, Ont., Canada. Hon. James Lyons, P.; John A. McPhail, 1 V. P.; J. Kelleher, 2 V. P. & G. M.; J. M. McNeil, Sec. & T.; J. McNeil, P. A.; at Sault Ste. Marie, Ont.

Sales agent: A. C. Leslie & Co., P. O. Box 1420, Montreal, P. Q., Canada.

Works at Sault Ste. Marie, Ont.: blt. 1929-30, f. o. in 1930; 2 Volta 3-phase electric fur.

Product: ferro-silicon (all grades), annual cap., 4,500 tons.

Superior Sheet Steel Co. (The), Canton, Ohio, was merged July 1, 1927 with Chapman Price Steel Co. and Kokomo Steel & Wire Co. in the Continental Steel Corpn.

SUPERIOR STEEL CORPORATION, 3122 Grant Bldg., Pittsburgh, Pa.

Inc. Dec., 1916 in Virginia. Capital stock: com., par value \$100, auth. and issued \$11,500,000; bonds \$1,850,000.

Frank R. Frost, P.; W. L. Woodward, V. P.; C. D. Claney, Sec. & A. T.; Paul C. Jennings, T.; W. P. Ewing, A. G. S. M.; at Pittsburgh. David Pryde, Wks. M.; A. D. Feeman, P. A.; at Carnegie, Pa.

Sales offices:

Buffalo, N. Y., Brace-Mueller-Huntley, Inc., Marine Trust Bldg. Chicago, Ill., Steel Sales Corpn., Jefferson & Adams Sts.

Cleveland, Ohio, Edgar T. Ward's Sons Co., 1210 East 55th St. Dayton, Ohio, Edgar T. Ward's Sons Co., Third National Bldg. Detroit, Mich., Fisher Bldg.

Los Angeles, Calif., Milton Pray Co.

Montreal, P. Q., Canada, Drummond McCall & Co.
 Philadelphia, Pa., 1904 Fidelity-Philadelphia Trust Bldg.
 San Francisco, Calif., Milton Pray Co.
 Seattle, Wash., Milton Pray Co.
 Syracuse, N. Y., Brace-Mueller-Huntley, Inc., 1202 Hills Bldg.
 Toronto, Ont., Canada, Drummond McCall & Co.

Brand: Superior (hot and cold rolled strip steel).

Works at Carnegie, Pa.: blt. 1892, f. o. Jan. 3, 1893; 10 gas-fired billet heating fur. (1 cont., three 3-d., two 4-d., four 5-d.); five 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; 8" 3-h. 3-st. and 2-h. 2-st.); 15 trains cold rolls (one 4-h. 3-st., one 20" 2-h. 1-st., one 16" 2-h. 4-st., one 14" 3-h. 1-st. and 2-h. 3-st., four 12" 3-h. 2-st. and 2-h. 15-st., three 10" 2-h. 8-st., four 8" 2-h. 11-st.); 10 box annealing fur.; 20 pickling tanks; 1 cont. pickling tank.

Product: hot rolled strip steel, annual cap., 120,000 net tons; cold rolled strip steel, 60,000 net tons.

Superior Steel Castings Co., Benton Harbor, Mich., name changed to Superior Steel & Malleable Castings Co., May 19, 1926.

SUPERIOR STEEL & MALLEABLE CASTINGS CO., Benton Harbor, Mich.

Inc. June, 1916 in Michigan as Superior Steel Castings Co., name changed to Superior Steel & Malleable Castings Co., May 19, 1926. Capital stock: com., no par value, auth. and issued 10,000 shares; pref. 7% cum., auth. and issued \$225,000.

S. E. Doster, P. & G. S. M.; W. R. Gilmore, V. P. & G. M.; J. A. McConomy, A.; at Benton Harbor. C. A. Pratt, Sec.; F. H. Johnston, T.; at 4834 Halsted St., Chicago, Ill.

Sales office: P. A. Hill, 3958 Calumet Ave., Chicago, Ill.

Brand: Superior.

Works at Benton Harbor: blt. 1916, f. o. Nov. 1916; 2 A. O. H. fur. (15-ton) fuel, oil; 1 Moore electric fur. (2½-ton) added 1929; 1 electric annealing fur. Malleable iron foundry, annual cap., 6,000 tons.

Product: steel castings for own use and for sale, annual cap., 10,000 tons (6,000 tons A. O. H., 4,000 tons electric). Alloy steel castings (manganese, vanadium). Railroad, blast furnace and general machinery steel castings, electrically annealed electric furnace machinery castings; malleable iron castings.

Sutton, Steele & Steele, Inc., Dallas, Texas. Works at Dallas for manufacture of steel and gray iron castings for own use, were dismantled in 1927.

Suwanee Iron Co., Inc., Nashville, Tenn. Grand Rivers Furnaces, Grand Rivers, Ky., 2 stacks, idle since 1920, are abandoned and will probably be dismantled in 1930.

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; Moore Electromelt electric fur. (1½-ton) installed 1927, first electric steel Feb. 1928; 2 cupolas.

Product: steel castings for sale and for own use, annual cap., 9,600 tons (3,000 tons converter, 600 tons crucible, 6,000 tons electric); alloy crucible steel castings (nickel); automobile castings, heat treating pots and boxes.

Swedish Crucible Steel Co. of Canada, Ltd. (The), Windsor, Ont., Canada. Works at Windsor for manufacture of converter and crucible steel castings, were dismantled in 1925.

SWEET'S STEEL CO., 101 Sweet's St., Williamsport, Pa.

Inc. Aug. 5, 1903; reinc. Feb. 18, 1920 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$450,000; bonds \$331,000.

Joseph Kaye, Ch.; Daniel F. Swartz, P. & G. M.; William P. Beeber, V. P.; Charles C. Steel, V. P. & G. S. M.; Clarence L. Peaslee, Sec.; John E. Spotts, T. & P. A.; Maxwell Hayward, A.; John A. Schultz, G. S.

Sales offices:

Chicago, Ill., A. A. Prausnitz, Peoples Gas Bldg.

New York, N. Y., E. E. Munday, 274 Madison Ave.

Philadelphia, Pa., L. E. Kipe, Land Title Bldg.

Pittsburgh, Pa., George M. Crawford, 611 Bessemer Bldg.

Works at Newberry, Williamsport, Pa.: blt. 1903-04, f. o. July 27, 1904; 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; steel fence posts; portable track, frogs and switches.

SYMINGTON COMPANY (The), 230 Park Ave., New York, N. Y.

Inc. Dec., 1924 in Maryland. Capital stock: com., no par value, auth. and issued 300,000 shares; pref., no par value, dividend \$2 per share, cum., auth. and issued 200,000 shares.

C. J. Symington, P.; J. A. Sauer, V. P.; at New York, N. Y.
 D. S. Barrows, V. P.; P. P. Meade, Sec. & T.; A. H. Gardner,
 A. Sec. & A. T.; at Rochester, N. Y. D. M. Scott, V. P.; A. R.
 McHenry, G. P. A.; at Depew, N. Y.

Sales offices:

Baltimore, Md., 1000 Maryland Trust Bldg.
 Boston, Mass., 84 State St.
 Chicago, Ill., Straus Bldg., 310 South Michigan Ave.
 Montreal, P. Q., Canada, 974 St. Antoine St.
 St. Louis, Mo., Room 462, Paul Brown Bldg.
 St. Paul, Minn., Room 924, Merchants National Bank Bldg.
 San Francisco, Calif., Hobart Bldg.

Brand: Farlow (draft attachments); Symington (journal boxes).
 Works at Lincoln Park, Rochester, N. Y.: 2 Heroult electric fur.
 (1-ton). Malleable iron (36,000 tons) and gray iron (5,000 tons)
 foundry.

Product: steel castings for sale, annual cap., 1,800 tons; alloy steel
 castings (nickel, chrome, manganese, silicon, vanadium); rail-
 way car specialties.

Tacony Steel Co., Philadelphia, Pa. Steel Works and rolling mill at Tacony, Philadelphia, were abandoned in 1925 and dismantled in 1926. Receivers were appointed July 1, 1927 and property sold.

Talladega Furnace Properties, Inc., 1905 14th Ave. South, Birmingham, Ala. Watt T. Brown, President.

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 Wattsville, Ala., and 122 beehive coke ovens at Talladega. (Alexander Tison, Trustee, to 1926). (Idle; for sale or lease).

Product: foundry pig iron, annual cap., 45,000 tons.

TARENTUM STEEL CORPN., Tarentum, Pa.

Works at Tarentum, Pa.: construction begun Oct., 1929; installing 6 double hot black sheet mills, annual cap., 50,000 tons, to be completed about Aug., 1930.

Taylor (N. & G.) Co., Inc., Philadelphia, Pa. is being dissolved and a new company under the name of The N. & G. Taylor Company has been formed and is being operated as a subsidiary of the Corrigan, McKinney Steel Co.

TAYLOR (The N. & G.) CO., Cumberland, Md.

Subsidiary of Corrigan, McKinney Steel Co.

William McLean, P.; Charles Hazlehurst, Sec. & T.; at Philadelphia. John M. Read, G. M.; at Cumberland, Md.

Sales offices:

Chicago, Ill., C. H. Hallgath, 208 South La Salle St.

Los Angeles, Calif., J. A. Drummond, 845 Seward St.

Works at Cumberland, Md.: Steel Works blt. 1899; four 25-ton B. O. H. fur. dismantled in 1926; 1 cont. ingot heat. fur. and 24" 3-h. 2-st. billet and bar mill dismantled in 1927; 6 sheet and 6 pair fur.; 6 hot black plate (tin) 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 (7 coke, 3 charcoal, 6 terne). Fuel coal.

Product: black plates for tinning, annual cap., 20,000 tons; tinplates, 350,000 base boxes; terne plates, 150,000 base boxes.

Taylor (W. P.) Company, 218 Ellicott Sq., Buffalo, N. Y. sold works at Buffalo, July 1, 1928. Bingham & Taylor Corporation was formed to take over and operate the works.

TAYLOR-WHARTON IRON & STEEL CO., High Bridge, N. J.

Inc. Aug. 7, 1891 in New Jersey. Capital stock: com., no par value, auth. 40,000 shares, outstanding 15,780 shares; pref. 7% cum. auth. \$2,000,000, outstanding \$1,874,000; bonds \$2,170,000. George R. Hanks, P.; Samuel M. Buck, V. P. (mfg. and service); William A. Ingram, Sec. & T.; L. N. Aller, C.; A. M. Cornell, S.; at High Bridge. John C. Taylor, Jr., V. P. (sales); R. C. Schaeffer, P. A.; at Easton, Pa.

Sales offices:

Boston, Mass., C. N. Wood Co., 948 Old South Bldg.
 Chicago, Ill., H. F. McDermott, 208 South La Salle St.
 Easton, Pa., P. O. Box 214.
 Houston, Texas, Charles H. Folwell, Jr., 813 Second National Bldg.
 Joliette, P. Q., Canada, Joliette Steel Limited.
 Los Angeles, Calif., Lukins and Sperry, 465 East 3rd St.
 New York, N. Y., C. N. Schaffner, 110 East 42nd St.
 Philadelphia, Pa., J. A. MacFadyen, 503 Widener Bldg.
 Pittsburgh, Pa., J. R. Smith, 1418 Oliver Bldg.
 San Francisco, Calif., Yuba Manufacturing Co., 351 California St.
 Scranton, Pa., J. A. MacFadyen, 822 Connell Bldg.
 Tampa, Fla., Cameron and Barkley Co.

Brand: Tisco, Tisco Timang, Tisco Timanxx.

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., Easton, Pa.
 Philadelphia Roll & Machine Co., Philadelphia, Pa.
 Tioga Steel & Iron Co., Philadelphia, Pa.
 Manganese Steel Safe Co., High Bridge, N. J.

High Bridge Works, High Bridge, N. J.: blt. 1892, f. o. Sept. 1892; 1 bessemer converter (3-ton); 2 electric fur. (one 4-ton Heroult, one 1-ton Pittsburgh); 2 cupolas (1 for pig iron, 1 for spiegel). Gray iron foundry (400 tons). Machine shops for finishing castings. **Product:** alloy steel castings, annual cap., 18,000 tons (9,000 converter, 9,000 electric); alloy steel ingots and castings (nickel, chrome, manganese).

Easton Works, Easton, Pa. (owned and operated by Wm. Wharton, Jr. & Co., Inc.): blt. 1915, f. o. Mar., 1916; 2 Tropenas converters (3,000-lb.); 1 Heroult electric fur. (6-ton) not in use; 3 cupolas (2 for pig iron, 1 for spiegel); 9 steam hammers (250-lb. to 4,000-lb.); 2 hydraulic forging presses (1,000-ton). Semi-steel foundry (600 tons). **Product:** steel castings for own use

and for sale, annual cap., 6,000 tons (converter); alloy steel castings (manganese, nickel, chrome, molybdenum); special track work for railroads and electric railways; general carbon and alloy steel castings up to 4,000 lbs.; forgings, annual cap., 15,000 tons, seamless steel gas cylinders and other special seamless drawn forgings, track accessories, machinery, oil well supplies, airplane cylinders.

Philadelphia Works, 52nd & Grays Ave., Philadelphia, Pa. (formerly owned and operated by Tioga Steel & Iron Co.); major part of equipment dismantled in 1927 and moved to Easton Works. Remainder of equipment including gray iron foundry and real estate, subsequently sold.

Temple Furnace Co. (The), Temple, Pa. Receiver appointed Dec., 1925, sold July 10, 1928, Temple Furnaces at Temple (2 stacks) for manufacture of foundry pig iron, to Aaron Aronsky, who dismantled the furnaces in that year.

Tennent Steel Castings Co., Tacoma, Wash., corporate title changed June 15, 1927, to Tennent Steel Corporation.

TENNENT STEEL CORPORATION, P. O. Box 1610, Tacoma, Wash.

Inc. Jan., 1921 in Washington as Tennent Steel Casting Co., corporate title changed to Tennent Steel Corporation, June 15, 1927. Capital stock: com., par value \$100, auth. \$200,000, issued \$180,700; pref. 7% cum., auth. \$50,000, issued \$7,200.

M. G. Tennent, P. & G. M.; J. E. Sinclair, Sec.; W. G. Custis, T. & A.; at Tacoma. M. S. Alexander, V. P.; at Seattle, Wash.

Brand: Diamond T (castings and steel products).

Product: electric steel castings for own use and for sale, total annual cap. (4 plants), 11,000 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). Product: steel castings, annual cap., 3,000 tons.

Tacoma Works No. 2: blt. 1925; machine shop; forge shop (2 steam hammers) riveting machine.

Seattle Works, 145 Horton St., Seattle, Wash.: blt. 1917, f. o. Aug., 1917; 1 Greene electric fur. (2-ton). 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). Product: steel castings, annual cap., 1,500 tons.

Vancouver Works, Vancouver, Wash.: 1 electric fur. (3-ton) moved to Portland Works in 1928.

Portland Works, Foot of Wood St., Portland, Ore.: blt. 1925; 2 electric fur. (one 1-ton, one 3-ton). Product: alloy steel castings, annual cap., 3,500 tons.

Tennessee Charcoal Iron Co., Collinwood, Tenn. Anna Furnace at Collinwood (1 stack) for manufacture of hot blast charcoal pig iron, was dismantled in 1929. Company out of business.

TENNESSEE COAL, IRON & RAILROAD CO., Brown-Marx Bldg., Birmingham, Ala.

Inc. March 24, 1860 in Tennessee. Subsidiary of United States Steel Corporation.

H. C. Ryding, P.; Willard Wilson, V. P. & G. S. M.; Karl Langrebe, V. P.; Thomas Chalmers, V. P.; C. E. Abbott, V. P.; L. T. Beecher, Sec. & T.; F. B. Winslow, A.; LeRoy Holt, P. A.

Sales offices:

Boston, Mass., Wilbur S. Locke, 20 Providence 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, 614 Superior Ave., N. W.
 Denver, Colo., Edwin M. Sparhawk, 17th & Stout Sts.
 Detroit, Mich., W. B. Weston, 2130 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 distributors: United States Steel Products Co., 30 Church St., New York, N. Y.

Pacific Coast distributors: United States Steel Products Co., Pacific Coast Department, at

Los Angeles, Calif., 2087 East Slauson Ave.
 Portland, Ore., 777 Nicolai St.
 San Francisco, Calif., Russ Bldg., 235 Montgomery St.
 Seattle, Wash., Fourth Ave., South & Connecticut St.
 Honolulu, T. H., Castle & Cook Bldg.

Product: basic foundry and forge pig iron; ferro-manganese; steel ingots; steel castings for own use and for sale; blooms, billets, slabs, sheet bars; standard rails, light rails; sheared plates; black and galvanized, flat and corrugated sheets; structural shapes, merchant bars, concrete bars, small shapes, agricultural shapes, bands, cotton ties, hoops; tool steel; angle bars, tie plates, standard track bolts and spikes; axles, forgings, steel pressings; coal, coke, coke by-products; ground open-hearth basic slag.

Total annual capacity: 1,571,625 tons pig iron; 18,430 tons ferro-manganese; 1,752,000 tons steel ingots; 18,000 tons steel castings;

1,290,720 tons blooms, billets and slabs; 120,880 tons sheet bars; 1,171,610 tons hot rolled products including 480,000 tons standard rails, 3,600 tons light rails, 102,060 tons sheared plates, 99,250 tons black and blue annealed sheets, 93,520 tons heavy structural shapes, 60,000 tons hoops, bands and cotton ties, 182,000 tons merchant bars, 102,950 tons long tie plate bars, 48,230 tons long angle splice bars.

Alice Furnace, Birmingham, Ala. (1 stack) was abandoned in 1927.

Bessemer Furnaces, Bessemer, Ala.: 2 stacks; No. 3, 75' 7½" x 19', blt. 1889-90, relined 1923; No. 4, 75' 7½" x 19', blt. 1889-90, relined 1926; No. 1 and No. 2 dismantled 1929; No. 5 dismantled 1927; 8 four-pass side comb. Whitwell stoves 60' x 20'; 8 vertical long crosshead steam blowing eng. (114,240 cfm.) 12 lbs. rated pressure; 17 water-tube boilers (5 Cahall, 10 Wickes, 2 Sterling) 4,950 H. P.; 1 slag granulating pit. By-product coke: local red hematite ore. Product: basic, foundry and recarburizing pig iron, annual cap., 126,390 tons; ferro-manganese, 18,430 tons.

Bessemer Rolling Mills, Bessemer, Ala.: blt. 1887-88; 2 cont. reheat. fur., fuel prod. gas; 16" 2-h. 1-st. and 16" 3-h. 2-st. bar mill; 12" 3-h. 1-st. roughing, 8" 3-h. 3-st. and 8" 2-h. 2-st. finishing guide mill; sheared plate mill is being dismantled. Product: hot rolled products, annual cap., 67,000 tons including 5,000 tons heavy structural shapes, and 62,000 tons merchant and concrete bars and small shapes.

Ensley Works, Ensley, Ala.: 6 stacks, No. 1, 93' 5½" x 25' 6", blt. 1887-89, f. o. Mar. 19, 1889, rebt. 1922, relined 1925; No. 2, 90' x 23', blt. 1887-88, f. o. Dec. 1, 1888, now being rebt.; No. 3, 98' 5½" x 24' 3", blt. 1887-88, f. o. June 5, 1888, last rebt. 1926; No. 4, 98' 5½" x 26', blt. 1887-88, f. o. April 9, 1888, last rebt. 1926; No. 5, 83' 10 7/16" x 22' 5", blt. 1903-05, f. o. Apr. 17, 1906, rebt. 1919, relined 1929; No. 6, 82' 7/8" x 19', blt. 1903-05, f. o. Apr. 28, 1905, now being remod.; 31 stoves (20 McClure 100' x 21', 4 Kennedy 92' 6½" x 21', 2 Roberts 110' ¾" x 22', 2 Roberts 110' 3" x 25', 3 T. C. I. 114' x 26'); 20 Mesta vertical long crosshead steam blowing eng. and 4 turbo-blowers (3 Ingersoll-Rand, 1 General Electric), 502,000 cfm., 25 to 30 lbs. rated pressure; 43 water-tube boilers (22 Rust, 17 Sterling, 4 Casey Hedges) 29,208 H. P. serve also electric power house and assist mill power system; 2 Uehling double-strand pig casting mach. By-product coke: local red and brown ore. Product: basic, foundry and recarburizing pig iron, annual cap., 996,835 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 (25,800 tons) and brass (730 tons) foundry for own use. Product: steel ingots, annual cap., 1,020,000 tons; steel castings for own use.

Rolling Mills: 10 four-hole soaking pits, 1 one-hole preheater, fuel coke oven gas; 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., 691,600 tons; rails, 480,000 tons.

Works at Fairfield, Ala.:

Fairfield Furnaces: 2 stacks; No. 5, 100' x 26' 6", blt. 1928, f. o. June, 1928; No. 6, 100' x 26' 6", blt. 1928, f. o. Sept., 1928; 8 T. C. I. 2-pass center comb. stoves 120' 6" x 26'; 3 Ingersoll-Rand turbo-blowers (150,000 cfm.) 30 lbs. rated pressure; 5 Sterling water-tube boilers, 7,305 H. P. serve also electric power house; 1 Uehling double-strand pig casting mach. By-product coke: red hematite ore. Product: basic and foundry pig iron, annual cap., 448,400 tons.

Fairfield Steel Works: blt. 1917-18, first rolled products Jan. 13, 1919, first steel May 9, 1925; 10 B. O. H. fur. (eight 150-ton, two 15-ton) fuel, tar, oil and coke oven gas; one 1,000-ton mixer; 7 four-hole soaking pits, fuel coke oven gas; 11 coke oven gas-fired rehear. fur. (eight 4-d., three 2-d.); 45" 2-h. 1-st. blooming; 28" 3-h. 1-st., 26" 2-h. 3-st., 24" 3-h. 1-st. and 24" 2-h. 1-st. comb. bar and structural; 32" 2-h. 1-st. and 21" 2-h. 5-st. cont. billet and sheet bar; 16" 2-h. 6-st., 12" 2-h. 4-st., 12" 2-h. 3-st. and 11" 2-h. 1-st. continuous merchant; 12" 2-h. 12-st. with 14" 2-st. vertical edgers cotton tie and hoop; 36" x 110" 3-h. sheared plate mill. Roll sheared plates 3/16" to 1 1/4" thick, 33" to 96" wide, 100" to 600" long. 7 hammers (1,500-lb. to 10,000-lb.); 1 steam hydraulic press (1,000-ton). Spike, bolt and nut shop; railroad spikes 4" x 1/2" to 6" x 3/4"; track bolts and nuts, 2 1/2" x 5/8" to 6 1/4" x 1 1/8": finished bolts 1/2" to 1" x 6", 1/2" to 2" x any length; finished nuts 1/2" to 1", rivets 3/8" to 1" x 6", 3/8" to 2" x any length. Splice bar shop. Tie plate shop for tie plates 3/8" x 9" to 1 1/16" x 11" Product: steel ingots, annual cap., 732,000 tons; steel castings for own use and for sale, 18,000 tons; semi-finished hot rolled products, 720,000 tons including 599,120 tons slabs, blooms, billets and 120,880 tons sheet bars; finished hot rolled products, 525,360 tons including 3,600 tons light rails, 88,520 tons heavy structural shapes, 102,060 tons sheared plates, 120,000 tons merchant and concrete bars, 60,000 tons hoops, bands and cotton ties, 48,230 tons long splice bars, 102,950 tons tie plate bars; railroad spikes, 240,128 kegs; track bolts and nuts, 181,104 kegs; finished bolts, 32,480 kegs; finished nuts, 7,728 kegs; rivets, 20,160 kegs; finished splice bars, 42,860 tons;

finished tie plates, 92,160 tons; axles, miscellaneous light and heavy forgings, 18,400 tons.

Fairfield Car Works, Fairfield, Ala., combined with Fairfield Steel Works as of Nov. 1, 1929.

Fairfield Sheet Works: 2 jobbing plate mills 32" x 56" to 78" roughing, 32" x 38" to 72" finishing; 11 sheet and 13 pair fur.; 18 hot black sheet mills (seven 32" x 44" to 60" roughing, eleven 32" x 32" to 56" finishing); 1 cold train of 6 stands 2-h. 26" x 44" to 72"; 15 box annealing fur.; 2 blue annealing fur.; 6 Plunger pickling mach.; 5 galvanizing pots. Roll job mill sheets 1" to 16 gauge, to 60" wide and 240" long; black sheets 18 to 32 gauge, 20" to 48" wide, 60" to 144" long. Product: black sheets, annual cap., 99,250 tons; blue annealed sheets, 20,050 tons; galvanized sheets, 55,700 tons.

Oxmoor Furnaces, Oxmoor, Ala. (2 stacks) were abandoned in 1927.

Coal and Coke Properties: The company owns about 259,000 acres of surface lands and 363,000 acres of coal, comprising five operating mines and six operating washers. Coal is produced for steam and gas purposes and for manufacture into furnace coke. At Fairfield, Ala., there are 434 Koppers and 63 Becker by-product ovens, annual capacity 2,469,550 net tons coke, by-product recovery plant and Koppers type benzol plant (9,826,200 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 (2 active mines).

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.

TENNESSEE PRODUCTS CORPN., American Trust Bldg., Nashville, Tenn.

Inc. July 20, 1917 in Tennessee as Bon Air Coal & Iron Corpn., name changed to Tennessee Products Corpn. in Feb., 1926, at which time the latter company acquired Rockdale Furnace formerly owned and operated by J. J. Gray, Jr., the Bon Air Chemical Co. and the plants and properties of the Chattanooga Coke and Gas Co. Capital stock: com., no par value, auth. 300,000 shares, issued 207,501 shares; pref. 8% cum., auth. \$1,000,000, issued \$988,000; bonds \$2,598,000.

Frederic Leake, P. & G. M.; Alvin Foster, Sec. & T.; E. H. Eakle, A.; R. E. Lewis, G. S. M.; John D. Cummins, P. A.; at

Nashville. John McE. Bowman, 1 V. P.; at Biltmore Hotel, New York, N. Y. Dr. W. B. Young, 2 V. P.; at Ravenscroft, Tenn.

Brands: Mannie (pig iron); Wrigley (charcoal pig iron); Rockdale (ferro-phosphorus).

Mannie Furnace, Ruppertown, Tenn.: 1 stack; No. 1, 60' x 12' 6", blt. 1892-93, f. o. Apr., 1893; No. 2 furnace was dismantled in 1926; 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. was dismantled in 1926.

Rockdale Furnace, Rockdale, Tenn.: 1 stack, 70' x 16', rebt. 1925, relined 1928; four 2-pass stoves 75' x 18'; 3 steam blowing eng. (2 vert., 1 horiz.) 19,728 cfm., 10 lbs. rated pressure; 6 water-tube boilers (3 Cahall, 2 B. & W., 1 Rust) 1,500 H. P.; 1 slag granulating pit, annual cap., 54,750 tons. By-product coke: brown ore. (J. J. Gray, Jr. to Feb., 1926). Product: ferro-phosphorus, annual cap., 21,900 tons.

Wrigley Furnace, Lyles-Wrigley, Tenn.: 1 stack, 60' x 12', rebt. 1918-19, relined Dec., 1928; 2 iron pipe stoves; 2 steam blowing eng. (1 Nordberg, 1 Gordon) 9,000 cfm., 5 lbs. rated pressure; 5 Wicks water-tube boilers, 2,000 H. P. serve also wood distillation plant. Charcoal: local brown ore. (Bon Air Chemical Co. to Feb., 1926). Product: semi-cold blast charcoal pig iron, annual cap., 24,000 tons.

Company owns iron ore mines at Iron City, Iron Hill and Wrigley, Tenn., annual cap., 99,125 tons; limestone quarry at Wrigley, Tenn., annual capacity, 10,000 tons; also 22 charcoal retorts at Wrigley, Tenn., annual cap., 3,500,000 bushels charcoal.

TEXAS ELECTRIC STEEL CASTING CO., Bringham & Gellis- **pie Sts., Houston, Texas.**

Inc. 1926 in Texas. Capital stock: com., par value \$25, auth. \$150,000.

C. W. Shartle, P.; F. A. Kroll, V. P. & G. M.

Brand: TESCO.

Works at Bringham & Gellispie Sts., Houston: blt. 1926, f. o. 1927; 3 electric fur. (two Swindell 3-ton, one Westinghouse 1-ton).

Product: electric steel castings for sale, annual cap., 10,000 tons. Alloy steel castings (nickel, chrome, manganese).

TEXAS STEEL CO., 4100 Hemphill St., Fort Worth, Texas.

Inc. May, 1923; reinc. 1928, in Texas. Capital stock: com., par value \$100, auth. \$800,000, issued \$500,000; bonds \$296,000.

G. W. Armstrong, Sr., P.; G. W. Armstrong, Jr., V. P. & G. M.; M. Post, Sec. & T.; G. Cash, P. A.

Works at Fort Worth, Texas: blt. 1904-05; 1 Moore Lectromelt electric fur. (4-ton) first electric steel 1923; 2 nat. gas-fired billet heat. fur. (one 6-d., one cont.); 18" 3-h. 2-st. bar; 10" 3-h. 5-st. guide; 10" 3-h. 1-st. roughing, 10" 3-h. 4-st. finishing guide mill.

Product: steel ingots, annual cap., 11,000 tons; steel castings for own use and for sale, 1,000 tons; merchant and concrete bars, 15,000 tons; alloy steel ingots and castings (nickel).

Thomas Furnace Co. (The), Milwaukee, Wis. Receiver appointed Jan. 4, 1927. Thomas Furnace at Milwaukee (1 stack), blt. 1908, last active in 1926, was sold by sheriff June 2, 1927 to Garraway Investment Co., subsequently acquired by Milwaukee Blast Furnace Co. in Aug. 1927, and dismantled in 1929.

THOMAS IRON CO. (The), Baer Bldg., Reading, Pa.

Inc. Apr. 4, 1854 in Pennsylvania. Capital stock: com., par value \$50, auth. and issued \$1,000,000. Subsidiary of Reading Iron Co.

Leon E. Thomas, P.; John M. Callen, V. P.; George W. Delany, Sec.; Henry N. Yost, T.; J. Norman Sherer, G. S.; Elbridge Walker, G. S. M.; G. F. D. Hallman, P. A.

Sales agents: Debevoise-Anderson Co., Inc., at 117 Liberty St., New York; Exchange Bldg., Boston; Stephen Girard Bldg., Philadelphia.

Brand: Thomas Vanadium (pig iron).

Mary Furnace, Hokendauqua, Pa.: 1 stack, 90' x 20' 6", blt. 1863, last rebt. 1922, relined 1925; 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 magnetite and Swedish ores. No. 1 furnace dismantled Dec., 1927.

Product: foundry, forge, malleable and basic pig iron, annual cap., 150,000 tons.

The company owns Richard Mine, Wharton, N. J., annual cap., 200,000 tons iron ore concentrates.

Thomas Sheet Steel Co. (The), Niles, Ohio, was merged March 1, 1928 with The Ashtabula Steel Sheet Co., The Empire Steel Co., The Falcon Steel Co., The Mansfield Sheet & Tin Plate Co., and The Waddell Steel Co. in the Empire Steel Corporation.

Three Rivers (Corporation of the City of), Three Rivers, P. Q., Canada. Works at Three Rivers were sold in 1927 to Detchable Rock Drill Bits, Ltd.

TIDEWATER ROLLING MILLS, Inc., 75 West St., New York, N. Y.

Inc. May 11, 1928 in Delaware. Capital stock: com., no par value, auth. and issued 20,000 shares; pref. 7% cum., auth. \$1,000,000, issued \$298,500.

L. G. Pritz, P. & G. M.; at 307 Witters Bldg., Canton, Ohio. Watson B. Williams, Exec. V. P.; Harry L. McGee, 1 V. P. & G. S. M.; J. R. Pouncey, C.; J. H. Pritchard, P. A.; at New York. Adelbert A. Kenyon, Sec. & T.; at 105 Hudson St., Jersey City, N. J. Matthew Harty, G. S.; at 646 Doremus Ave., Newark, N. J.

Sales agent: Robert Grant Co., 475 Fifth Ave., New York, N. Y. Works at 646 Doremus Ave., Newark, N. J.; blt. 1923, f. o. Sept. 17, 1923; one 8-d. cont. oil-fired heat. fur.; merchant mill with 12" 3-h. 1-st. roughing and 8" 3-h. 5-st. finishing. (Walsh & McGee Steel Co. to Jan. 30, 1929).

Product: merchant and concrete bars, annual cap., 12,000 tons.

Timken Roller Bearing Co. (The), Canton, Ohio, organized on Aug. 14, 1928 a subsidiary company, The Timken Steel & Tube Co., to take over and operate its steelworks and seamless tube plants. The latter company acquired The Weldless Tube Co., Nov. 1, 1928.

TIMKEN STEEL & TUBE CO. (The), 1835 Dueber Ave., S. W., Canton, Ohio.

Inc. Aug. 14, 1928 in Ohio. Subsidiary of The Timken Roller Bearing Co.

M. T. Lothrop, P. & G. M.; J. W. Spray, V. P.; J. E. Daily, V. P. & G. S.; A. J. Sanford, V. P. & G. S. M.; J. F. Strough, Sec. & T.; R. C. Brower, A. Sec. & A. T.; J. A. Riley, C.; Peter Voss, P. A.

Sales offices: Chicago, Detroit, Los Angeles and New York.

Brand: Timken.

Product: steel ingots; alloy steel ingots; blooms and billets; wire rods; piercing bars; hot rolled and cold drawn seamless tubes.

Works at Canton, Ohio: blt. 1901; 3 B. O. H. fur. (100-ton) blt. 1927-28, fuel, oil; 4 Heroult electric fur. (one 7-ton, two 20-ton, one 50-ton) first electric steel Oct. 5, 1916; six 2-hole soaking pits, fuel gas; 7 cont. gas-fired heat. fur.; 35" 3-h. 1-st. blooming; 28" 3-h. 2-st. billet and bar; 22" 3-h. 4-st. bar; 16", 12" and 10", 2-h. 16-st. merchant mill. Hot rolled seamless tubes from 2" O. D. to 8" O. D. (operated by The Timken Roller Bearing Co. to Aug. 14, 1928). Product: steel ingots, annual

cap., 307,200 tons (162,000 tons B. O. H., 145,200 tons electric); alloy steel ingots; blooms and billets, 240,000 tons; hot rolled products 210,000 tons including 24,000 tons wire rods, 186,000 tons piercing bars; hot finished seamless tubes, 60,000 tons.

Works at Wooster, Ohio: blt. 1922: 1 piercing mill; 1 automatic rerolling mill; 16 stand reducing mill; 2 cont. billet heat. fur.; 1 intermediate tube reheat. fur.; 2 pointing fur., 2 pointing hammers; 1 swaging mach.; 2 annealing fur.; 8 draw benches (50,000-lb.); six 3" turning mach.; auxiliary straightening and cut-off equipment. (The Weldless Tube Co. to Nov. 1, 1928). Product: hot rolled seamless tubing, annual cap., 24,000 tons; locomotive and marine boiler tubes (1½" to 3½" dia.); cold drawn seamless tubing (up to 3½" dia.), annual cap., 15,000 tons; all classes of mechanical tubing.

Works at Gambirinus, Ohio: blt. 1929, f. o. Jan., 1930; one 36" piercing mill; one 26" 2-h. automatic rerolling mill; 10 stand reducing mill; 5 stand sizing mill; 1 cont. billet heat. fur.; 1 intermediate tube reheat. fur.; 5 pointing and forging fur.; 4 pointing hammers; 2 annealing fur.; 10 draw benches (two 150,000-lb., two 100,000-lb., six 50,000-lb.); six 6" turning mach.; one 3" bull dozer; 3 forging presses; straightening, cut-off and auxiliary equipment. Product: hot rolled seamless tubing (3¼" to 10" O. D.), annual cap., 80,000 tons; cold drawn seamless tubing (up to 10" O. D.), 56,000 tons.

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, was acquired by Talladega Furnace Properties, Inc. in 1926.

Titan Terminal Co. (The), Newark, N. J., sold Works at 8 Lister Ave., Newark, equipped with three 30-ton B. O. H. fur. and one 25-ton A. O. H. fur. for manufacture of steel castings, to Houser Van Winkle Co. in 1926. Manufacture of steel castings was discontinued and plant is being used for other purposes.

TITANIUM ALLOY MFG. CO. (The), 60 John St., New York, N. Y.

Inc. 1907 in Maine. Capital stock: com., par value \$100, auth. and issued \$500,000; pref. 7% cum., auth. \$500,000, issued \$270,200.

William F. Meredith, P.; Joseph D. Meredith, Sec. & T.; Paul Haasis, A.; George H. Bahrenburg, C.; at 60 John St., New York, N. Y. Andrew Thompson, V. P., G. M. & G. S. M.; R. R. Pratt, G. S.; Ralph S. Tabor, P. A.; at Niagara Falls.

Sales offices:

Cleveland, Ohio, B. F. Keith Bldg.

Los Angeles, Calif., Balfour, Guthrie & Co.

Pittsburgh, Pa., Oliver Bldg.

San Francisco, Calif., Balfour, Guthrie & Co.

Seattle, Wash., Balfour, Guthrie & Co.

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 from Niagara Falls Power Co.

Product: ferro-carbon-titanium, annual cap., 5,000 tons.

Tivani Electric Steel Co., Ltd., Belleville, Ont., Canada. Works at Belleville, Ont., equipped with electric furnaces for manufacture of ferro-molybdenum, low-phosphorus pig iron and steel ingots, were dismantled in 1928.

Toledo Furnace Co. (The), Cleveland, Ohio, was merged Jan. 1, 1930 with Perry Iron Co. and Zenith Furnace Co. in By-Products Coke Corp'n. and name of By-Products Coke Corp'n. was changed to Interlake Iron Corp'n.

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. C. Smith, Sec., T. & G. M.; W. C. Miller, A. & P. A.; G. A. Weihrauch, G. S.; W. E. Fitzgerald, G. S. M.

Sales office: Detroit, Mich., H. S. Lee Corp'n., 2842 West Grand Blvd.

Brand: Toledo Steel and Toledo Alloy (castings).

Works at Bancroft St. & Smead Ave., Toledo: blt. 1890, first converter steel, June, 1905; 1 tropenas converter (2-ton), 1 cupola.

Product: steel castings for sale, annual cap., 3,600 tons. Small carbon and special Toledo alloy castings.

TONAWANDA ELECTRIC STEEL CASTING CORPN., 5 Mechanic St., North Tonawanda, N. Y.

Inc. Feb. 15, 1926 in New York. Capital stock: com., no par value, auth. 250 shares, issued 150 shares.

Lewis J. Fitzpatrick, P. & G. M.; Frederic J. Still, V. P. & G. S.; C. F. Towne, Sec., T. & G. S. M.; at North Tonawanda, N. Y. James L. Nichols, A.; at Crosby Bldg., Buffalo, N. Y.

Brand: Tesco (steel castings).

Works at North Tonawanda (equipment owned, buildings and real estate leased): 1 Snyder electric fur. (1½-ton) blt. 1915, f. o. July 1, 1915.

Product: steel castings for sale, annual cap., 750 tons; alloy steel castings (nickel); commercial steel castings up to 600 lbs.

TONAWANDA IRON CORPN., North Tonawanda, 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.; B. S. Stephenson, 1 V. P.; R. J. Hamilton, 2 V. P. & Sec.; D. M. Forgan, T.; J. E. King, A. T.; at 40 West 40th St., New York, N. Y. Robert McClurkin, Mgr.; at North Tonawanda, N. Y.

Brand: Tonawanda (foundry pig iron).

Tonawanda Furnace, North Tonawanda, N. Y.: 1 stack, 85' 6" x 15' 6", blt. 1873, last remod. in 1924, relined 1928 and blown in Dec. 28, 1929; five 2-pass center comb. stoves 80' x 18'; 3 Allis-Chalmers high-pressure condensing steam blowing eng. and 1 G. E. turbo-blower (85,000 cfm.) 15 lbs. rated pressure; 8 B. & W. water-tube boilers, 4,000 H. P.; 1 Pittsburgh Coal Washer double-strand pig casting mach. Conn. and by-product coke: Lake ore.

Product: foundry pig iron, annual cap., 162,000 tons.

Company owns one-half interest in James Mining Co. operating iron ore mine at Caspian, Mich., annual cap., 300,000 tons.

Transit Supply Co., St. Paul, Minn. converter for steel castings has been dismantled. Operate grey iron and brass foundry for own use only.

Transue & Williams Steel Forging Corp., Alliance, Ohio. Rolling mill at Alliance for rolling rings, dismantled in 1928. Company operates drop forge plant and metal stamping plant only.

TREADWELL ENGINEERING CO., 25th & Lennox St., Easton, Pa.

Inc. Oct., 1910 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$450,000; bonds \$130,000.

J. S. Casey, Ch.; 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: P. M. Smith, Mgr., 508 Farmer's Bank Bldg., Pittsburgh, Pa.

Works at Easton: blt. 1911; 1 Heroult electric fur. (2½-ton); 2 cupolas; gray iron foundry, annual cap., 10,000 tons.

Product: steel castings for own use and for sale, annual cap., 4,000 tons.

TREDEGAR COMPANY, P. O. Box 1398, Richmond, Va.

Inc. 1867 in Virginia. Capital stock: com., par value \$100, auth. \$2,000,000, issued \$1,000,000.

Archer Anderson, Jr., P.; J. R. A. Hobson, V. P. & G. M. S.; J. R. J. Anderson, 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 (horse and mule shoes).

Works at Tredegar & Seventh Sts., Richmond: blt. 1836; 14 heat-fur. (five 1-d. coke-fired, seven 2-d. coke or coal-fired, two 2-d. coal-fired); five 4-d. prod. gas-fired reheat. fur.; 18" 3-h. 3-st., 12" 3-h. 4-st. and 10" 3-h. 4-st. spike rod; 14" and 12" 3-h. 5-st. tandem roughing; 1 trip hammer; 1 forging press (1,000-ton). Spike Shop: 12 spike mach. for railroad track spikes $\frac{3}{4}$ " to $\frac{5}{8}$ ". Gray iron and brass foundry. Machine, blacksmith and boiler shops.

Product: finished hot rolled products, annual cap., 47,000 tons including 10,000 tons iron and steel merchant bars, 25,000 tons spike rods, 12,000 tons angle bars; railroad track spikes, 100,000 kegs (200-lbs.); angle and fish plates, horse and mule shoes; freight car wheels; semi-steel projectiles; gray iron castings.

Tremont Nail Co., West Wareham, Mass. sold steel works and rolling mill in 1927 to United Shoe Machinery Corp'n. Works dismantled in 1928 and machinery sold. Company operates nail dept. at West Wareham for manufacture of cut nails.

TROJAN ELECTRIC STEEL CO., 3401 South Hoyne Ave., Chicago, Ill.

Not incorporated. Eugene Guy Lilly, owner.

Brands: Trojan (Hot Work No. 1 and No. 2, carbon tool steel, No. 1, No. 2 and No. 3); O. V. B. D. (non-shrinking) High Speed and TTT (hot work).

Works at 3401 South Hoyne Ave. (leased building from H. H. Walker & Co., Chicago): blt. 1916-17, f. o. 1917; 1 Heroult electric furnace (2,000-lb.); one 2,500-lb. steam hammer; 1 annealing furnace.

Product: steel ingots for sale, annual cap., 2,000 tons; alloy steel ingots (nickel, chrome, tungsten); bars, rings, discs and special forgings, 300 tons.

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 \$2,545,200.

William G. Mather, P.; D. T. Croxton, V. P.; E. H. Jaynes, Sec.; C. G. Heer, T.; V. P. Geffine, A.; at Cleveland. E. T. McCleary, V. P.; at Youngstown, Ohio. J. S. Fraser, G. S.; at Warren, Ohio.

Trumbull-Cliffs Furnace, Warren, Ohio: 1 stack, 92' x 22' 6", blt. 1920-21, f. o. Jan. 16, 1922, relined 1928; 4 Brassert side-comb. stoves 100' x 22'; 2 Ingersoll-Rand turbo-blowers, 45,000 cfm., 14.3 lbs. rated pressure; 7 Sterling water-tube boilers, 5,565 H. P. serve also coke plant; 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; 64 Koppers by-product coke ovens, by-product recovery plant and Koppers motor fuel plant, annual cap., 380,000 net tons coke, 1,500,000 gals. light oil. By-product coke: Lake ore.

Product: basic pig iron, annual cap., 260,000 tons.

Trumbull Steel Co. (The), Warren, Ohio, was acquired by Republic Iron & Steel Co., April 30, 1928.

TULSA ROLLING MILLS CO., Thompson Bldg., Tulsa, Okla.

Inc. Mar. 19, 1928 in Delaware. Capital stock: com., no par value, auth. 10,000 shares, issued 9,662 shares; pref. 7% cum., auth. \$600,000, issued \$380,400; bonds \$200,000.

J. H. McAlarney, P.; C. A. Coakley, Sec.; C. F. Tingley, T.; H. B. Bevan, G. S. M.; at Tulsa. E. M. Monsell, 1 V. P.; L. W. Conroy, 2 V. P.; W. C. McCarthy, P. A.; at Sand Springs, Okla.

Sales offices:

Dallas, Texas, Construction Bldg.

Wichita, Kansas, Fourth National Bank Bldg.

Works at Sand Springs, Okla.: blt. 1928-29, f. o. July, 1929; 1 B. O. H. fur. (100-ton) fuel, oil; 2 cont. oil-fired heat. fur.; 24" 3-h. 1-st. blooming; 16" 3-h. 1-st. billet; 10" 3-h. 5-st. guide mill.

Product: steel ingots, annual cap., 60,000 tons; blooms and billets, 50,000 tons; merchant and concrete bars, 45,000 tons.

Turnbull Electro Metals, Ltd., St. Catherines, Ont., Canada discontinued the manufacture of low phosphorus and silvery pig iron at its plant at St. Catherines, Ontario.

TUTTLE, CHARLES W., Foot of McMaster St., Auburn, N. Y.

Est. 1853. Charles W. Tuttle, Owner; Kirk Bowen, Sec., T. & P. A.; Merritt E. Tice, G. M.

Brand: Auburn Hammered Iron (wrought iron bars); Auburn Hammered Staybolt Iron (wrought iron staybolts).

Auburn Iron Works, Auburn, N. Y.: blt. 1853; one 2-d. oil-fired heat. fur.; 10" 3-h. 4-st. bar mill; one 7-ton steam helve hammer.

Product: double refined merchant 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. Stoebe, A.; K. G. Jansson, S.; R. L. Adkins, G. S. M.

Works at Stillwater: 1 Heroult electric fur. (6-ton) installed 1918, f. o. June, 1918. Drop forging plant: 12 hammers (500-lb. to 12,000-lb.).

Product: steel castings for own use and for sale, annual cap., 6,000 tons; drop forgings, 3,600 tons.

Tyler Tube & Pipe Co. (The), Washington, Pa. Rolling mill at Washington was abandoned in 1928 and charcoal forge was dismantled in that year. Company continues to manufacture boiler tubes.

ULSTER IRON WORKS, 21 North Sussex St., Dover, N. J.

Est. 1827; inc. July 3, 1903 in New Jersey. Capital stock: com., no par value, auth. and issued 6,000 shares; pref. 7% cum., auth. and issued \$100,000.

Frank W. Hamilton, P.; John D. B. Vreeland, Sec. & T.; Thomas H. Smith, G. S.; F. T. Leighton, P. A.; at Dover. Henry T. Bradley, V. P.; E. W. Kavanagh, S. M.; at 52 Vanderbilt Ave., New York, N. Y.

Sales offices:

Chicago, Ill., 122 South Michigan Ave.
Houston, Texas, 810 Niels Esperson Bldg.
Montreal, P. Q., Canada, McGill Bldg.
New Orleans, La., Japonica & North Miro Sts.
New York, N. Y., 52 Vanderbilt Ave.
Ottawa, Ont., Canada, 356 Sparks St.
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, iron rivets, hammered iron billets); Ulster Special (staybolt iron, seamless drilled hollow staybolts).

Works at Dover: 14 double puddling fur.; 2 squeezers (1 rotary, 1 jaw); 5 coal-fired heat. fur. (two 2-d., three 3-d.); 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, and rivets (cone and pan head, and countersunk) $\frac{1}{2}$ " to $1\frac{1}{4}$ " dia., $1\frac{1}{2}$ " long and up; 2 rivet mach. and forging equipment for bolts.

Product: muck bar, annual cap., 19,000 tons; staybolt and engine bolt iron, 17,000 tons; drilled hollow staybolts, 6,000 tons; rivets, 15,000 kegs (200-lbs.); hammered iron billets.

UNION DRAWN STEEL CO., 401 Seventh Ave., Beaver Falls, Pa.

Inc. May 6, 1889 in Pennsylvania. Subsidiary of Republic Iron & Steel Co. since Jan. 1, 1930.

E. S. Hoopes, P. & G. M.; C. H. Beegle, V. P. & A. Sec.; H. A. May, V. P. & A. T.; George B. Mitchell, V. P. & G. S. M.; L. E. Creighton, V. P. (operations); E. C. Rebeske, Sec. & T.; George W. Weitz, A.; J. H. Graebing, P. A.

Sales offices:

Buffalo, N. Y., Liberty Bank Bldg.
Chattanooga, Tenn.
Chicago, Ill., Tribune Tower.

Cincinnati, Ohio, 2225 Bogen St.
Cleveland, Ohio, Rockefeller Bldg.
Dallas, Texas.
Detroit, Mich., 237 Joseph Campau Ave.
Hartford, Conn., 775 Capitol Ave.
Indianapolis, Ind., Merchants Bank Bldg.
Los Angeles, Calif.
Philadelphia, Pa., Insurance Co. of N. A. Bldg.
Richmond, Va.
St. Louis, Mo., First & Ashley Sts.
St. Paul, Minn., Pioneer Bldg.
San Francisco, Calif.
Seattle, Wash.

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.

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 dismantled in 1929 and machinery sold May 2, 1929 to Frank B. Foster, Pittsburgh, Pa. and removed.

UNION ELECTRIC STEEL CORPN., 2822 Grant 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 \$375,000.

C. F. Berree, P.; O. G. Lechlitter, V. P.; W. F. Newbury, Sec. & G. S. M.; R. G. Campbell, T.; E. G. Winner, A. & P. A.

Works at Carnegie, Pa.: blt. 1916-17, f. o. July, 1917; 2 Heroult electric fur. (10-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., 10,000 tons; alloy steel ingots; alloy and stainless billets, die blocks, trimmer steels, piston rods, forged steel rolls.

UNION IRON WORKS, P. O. Box 2135, Spokane, Wash.

Inc. 1889 in Washington. Capital stock: com., par value \$10, auth. and issued \$100,000.

Austin Corbin, 2nd, P.; E. J. Roberts, V. P.; J. M. Fitzpatrick, Sec. & T.

Works at Spokane: blt. 1889; first converter steel, April, 1912; one 3,000-lb. Tropenas converter. Gray iron (2,000 tons) and brass foundry.

Product: steel castings, annual cap., 300 tons.

UNION SPRING & MANUFACTURING CO., 2001 Clark 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. Forge shop.

Product: steel castings for own use and for sale up to 10,000-lb. annual cap. 10,200 tons (5,000 tons converter, 5,200 tons electric); alloy steel castings (manganese, chrome, nickel); coil and elliptic springs; pressed steel curb angles and road material.

Company acquired Aug. 1, 1929, the Pittsburgh Works of American Sheet & Tin Plate Co., located at New Kensington, Pa. Rolling mill machinery and buildings removed. Site will be held for future use by Union Spring & Manufacturing Co.

UNION STEEL CASTING CO., 62nd & Butler Sts., Pittsburgh, Pa.

Inc. Apr. 27, 1899 in Pennsylvania. Capital stock: com., no par value, auth. 200,000 shares, issued 114,236 shares; pref. auth. \$5,000,000, none outstanding. Subsidiary of Blaw-Knox Company.

Jan R. Dunsford, P. & G. M.; J. B. Henry, V. P.; I. F. Lehman, V. P.; C. H. Lehman, Sec.; G. L. Dumbauld, T.; C. E. Gillespie, A. T.; B. F. Mercer, G. S.; H. C. Wickline, P. A.

Brands: Univan, Unionaloy (alloy castings); Union (castings, annealing boxes).

Works at 62nd and Butler Sts., Pittsburgh: Plant 1, blt. 1899; Plant 2, blt. 1911; 3 A. O. H. fur. (two 25-ton, one 22-ton) fuel, oil; 1 Heroult electric fur. (2-ton) installed in 1927.

Product: steel castings for sale, annual cap., 27,900 tons (26,800 tons A. O. H., 1,100 tons electric). Alloy steel castings (nickel, chrome, vanadium, molybdenum). Locomotive and railroad castings, rolling mill castings, annealing boxes, general machinery castings.

Union Tool Co., Torrance, Calif. with plants at Carnegie, Pa., West Chicago, Ill. and steel works at Torrance, Calif., was acquired by The National Supply Co. of California, in Dec., 1927.

United Alloy Steel Corpn., Canton, Ohio, was merged Aug. 25, 1926 with Central Steel Co. and The Central Furnace Co. in Central Alloy Steel Corpn.

UNITED ENGINEERING & FOUNDRY CO., Farmers Bank Bldg., Pittsburgh, Pa.

Inc. June 25, 1901 in Pennsylvania. Capital stock: com., no par value, auth. and issued 416,118 shares; pref. 7% cum. auth. and issued \$1,574,900.

George T. Ladd, P. & G. M.; F. C. Biggert, Jr., V. P.; G. G. Small, V. P.; William Gardner, V. P.; K. C. Gardner, V. P.; George H. Friesel, Sec. & T.; George V. Lang, A.; G. Walter Sanborn, P. A.

Branch sales office: Richard S. Jensen Co., Union League Bldg., Los Angeles, Calif.

Trade names: High Speed Forging Presses (Davy patents); Adamite (rolls), United Special (steel rolls), Unefco (iron 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:

Canton Plant, Canton, Ohio.

Youngstown Plant, Youngstown, Ohio.

Vandergrift Plant, Vandergrift, Pa.

Frank-Kneeland Plant, 54th St. & A. V. Ry., Pittsburgh, Pa.

Lincoln Plant, 60th and Butler Sts., 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 machinery (10,000 tons); Canton, Ohio, foundry for chilled and sand iron rolls (30,000 tons); 60th & Butler Sts., Pittsburgh, Pa., foundry for chilled and sand iron rolls (12,000 tons). Steel foundry at Vandergrift, Pa.

Steel Foundry Dept., Vandergrift, Pa.: 4 A. O. H. fur. (three 35-ton, one 15-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 STATES FOUNDRIES, Inc., 3975 Williams St., Denver, Colo.

Inc. Dec., 1928 in Colorado. Capital stock: com., par value \$100, auth. and issued \$100,000.

A. C. Hovey, P. & G. M.; Martin Herstrom, V. P.; William B. McDonald, V. P.; W. C. Eichelberger, Sec. & T.

Brands: Molly-Chrome (chrome-molybdenum alloy castings); U-S-F (all other steel castings produced).

Works at 39th and Williams Sts., Denver: blt. 1910; one Snyder 3-phase electric fur. (1-ton) replaced by 1 Moore Lectromelt 3-phase electric fur. (1-ton) in 1927; first electric steel May 31, 1919. (Denver Rock Drill Mfg. Co. to April 1, 1927; Gardner-Denver Co. to Dec. 1, 1928).

Product: electric steel castings for sale, annual cap., 1,000 tons. Alloy steel castings (chrome, nickel, molybdenum).

UNITED STATES GOVERNMENT, Navy Department.

Navy Yard, Boston, Mass.: 1 Tropenas converter (4,000-lb.) installed 1917, f. o. March 5, 1917; 4 cupolas; gray iron (15,000 tons) and brass (55 tons) foundry for own use. Product: steel castings for own use, annual cap., 1,200 tons.

Navy Yard, Mare Island, Vallejo, Calif.: 1 Tropenas converter (4,000-lb.) dismantled 1928; 1 Greaves-Etchells electric fur. (6-ton) dismantled 1927. Now manufacture gray iron and non-ferrous castings only.

Norfolk Navy Yard, Portsmouth, Va.: 1 Tropenas converter (4,000-lb.) dismantled 1928; 3 electric fur. (one 6-ton Greaves-Etchells, one 3-ton Greaves-Etchells, one $\frac{1}{2}$ -ton Moore Lectromelt) first electric steel Oct. 21, 1919; 4 cupolas. Gray iron and semi-steel (8,000 tons) and brass, bronze, aluminum and monel (1,500 tons) foundry for own use. Product: electric steel castings for own use, annual cap., 2,100 tons; alloy steel castings (nickel, chrome, manganese).

Navy Yard, Philadelphia, Pa.: steel foundry added 1911-12; first electric steel July 2, 1919; 1 Greaves-Etchells electric fur. (3-ton) dismantled in July 1929 and replaced by 1 Moore Lectromelt electric fur. (1 $\frac{1}{2}$ -ton); 4 cupolas, gray iron (200 tons) and non-ferrous (1,200 tons) foundry installed July, 1918. Product: steel castings for own use, annual cap., 600 tons; alloy steel castings (nickel).

Navy Yard, Puget Sound, Bremerton, Wash.: 2 electric fur. (1 Greaves-Etchells 6-ton, 1 Moore Lectromelt $\frac{1}{2}$ -ton), first electric steel Aug. 24, 1918; 1 Tropenas converter (2,000-lb.) idle; 3 cupolas; gray iron (300 tons) and non-ferrous (350 tons) foundry for own use. Product: steel castings for own use, annual cap., 800 tons (electric); alloy steel castings (nickel, chrome).

Navy Yard, Washington, D. C. (Naval Gun Factory): 2 Tropenas converters (5,000-lb.) dismantled 1929; 1 A. O. H. fur. (50-ton), fuel, oil; 1 Heroult electric fur. (6-ton); 3 cupolas. Gray iron and non-ferrous foundry. Forge shop. Product: steel ingots, annual cap., 10,500 tons (7,500 tons A. O. H., 3,000 tons electric); steel castings, 14,400 tons (10,400 tons A. O. H., 4,000

tons electric); alloy steel ingots and castings (nickel, chrome); forgings for guns, mounts and miscellaneous ordnance parts.

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, one 6-ton); gray iron and semi-steel (9,360 tons) and bronze (735 tons in Detroit electric fur.; 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., 55,795 tons (44,670 tons A. O. H. ingots; 11,125 tons electric steel castings); alloy steel ingots and castings; forgings for guns and gun carriages, 44,784 tons.

United States Horse Shoe Co., Erie, Pa. discontinued on Dec. 31, 1928 the manufacture of billets, horse shoe bars, horse and mule shoes at its works at East Lake Road, Erie, Pa. Plant and property was subsequently sold and rolling mill dismantled in 1929.

UNITED STATES PIPE & FOUNDRY CO., Burlington, N. J.

Inc. Mar. 2, 1899 as United States Cast Iron Pipe & Foundry Co., name changed to United States Pipe & Foundry Co. in 1929. Capital stock: com., par value \$20, auth. and issued \$12,000,000; First pref., \$1.20 per share cum., auth. and issued 600,000 shares; Second pref., \$1.20 per share cum., auth. and issued 180,000 shares.

N. F. S. Russell, P.; B. F. Haughton, V. P.; D. P. Hopkins, V. P.; D. B. Stokes, V. P.; Charles R. Rauth, Sec. & T.; D. H. Tyson, C.; S. H. Bonsall, P. A.; at Burlington. W. T. C. Carpenter, 1 V. P.; at 14 Wall St., New York, N. Y.

Sales offices:

Birmingham, Ala., American Traders National Bank Bldg.
Buffalo, N. Y., 957 East Ferry St.
Chicago, Ill., Peoples Gas Bldg.
Cleveland, Ohio, 1150 East 26th St.
Dallas, Texas, Magnolia Bldg.
Kansas City, Mo., Interstate Bldg.
Los Angeles, Calif., Wright & Callender Bldg.
Minneapolis, Minn., Plymouth Bldg.

New York, N. Y., 71 Broadway.

Philadelphia, Pa., 1421 Chestnut St.

Pittsburgh, Pa., Oliver Bldg.

San Francisco, Calif., Monadnock Bldg.

Seattle, Wash., Colman Bldg.

Company operates plants at Addyston and Cleveland, Ohio; Anniston, Bessemer, and Birmingham, Ala.; Burlington, N. J., Chattanooga, Tenn., Scottdale, Pa. for manufacture of cast iron gas and water pipe, special and miscellaneous castings; also owns Scottdale Furnace at Scottdale, Pa. described below.

Scottdale Furnace, Scottdale, Pa.: 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. (leased by former McKinney Steel Co. to Jan. 10, 1926). Idle since 1925.

Product: basic, malleable and foundry pig iron, annual cap., 120,000 tons.

United States Rail Co., Cumberland, Md. Lease of Cumberland Rolling Mill, Cumberland, terminated Jan. 4, 1926. Rolling mill reverted to owners, Baltimore & Ohio Railroad Co. Company out of business.

UNITED STATES STEEL CORPORATION, 71 Broadway, New York, N. Y.

Inc. Feb. 25, 1901. Capital stock: com. auth. \$1,250,000,000; issued \$856,087,600; pref. 7% cum. auth. \$400,000,000, outstanding \$360,281,100; bonds outstanding Dec. 31, 1929 \$6,007,000; subsidiary companies' bonds outstanding Dec. 31, 1929 \$106,250,978.

J. Pierpont Morgan, Ch.; James A. Farrell, P.; David G. Kerr, V. P.; John Hulst, V. P.; I. Lamont Hughes, V. P.; Eugene P. Thomas, V. P.; William J. Filbert, C.; Nathan L. Miller, General Counsel; Gordon L. Edwards, T.; George K. Leet, Sec.

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.

*Illinois Steel Co.

*American Steel & Wire Co.

*Cyclone Fence Co.

*Standard Fence Co.

*American Sheet & Tin Plate Co.

*These subsidiaries are described in the alphabetic list under the title of the respective companies.

- *National Tube Company.
- *American Bridge Company.
- *The Canadian Bridge Co., Ltd.
- *Minnesota Steel Co.
- *The Lorain Steel Co.
- *Tennessee Coal, Iron & Railroad Co.
- *Canadian Steel Corporation, Ltd.
- Federal Shipbuilding & Dry Dock Co.
- Universal-Atlas Cement Co.
- *Edgar Zinc Co.
- *United States Steel Products Co. (incl. Columbia Department).
- *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.

G. C. Scott, P.; W. T. Corbett, V. P.; C. O. Holmes, V. P.; T. P. Alder, Sec. & T.; W. A. Sweet, A.; at New York, N. Y. A. T. DeForest, V. P.; at San Francisco, Calif.

This Company sells for export the products of the following subsidiary companies of the United States Steel Corporation: Carnegie Steel Company, Illinois Steel Company, The Lorain Steel Company, National-Tube Company, American Sheet and Tin Plate Company, American Steel and Wire Company, American Bridge Company, and Tennessee Coal, Iron and Railroad Company.

The company also owns and operates, as its Columbia Department, plants in California, Utah and Oregon formerly owned by the Columbia Steel Corporation; also owns and operates warehouses in Pacific Coast territory for the storage of stocks of steel products and the distribution thereof.

Export Department, 30 Church St., New York, N. Y.

Sales offices abroad:

Buenos Aires, Argentine Republic, Edificio Houlder, Calle 25 de Mayo, 489.

Havana, Cuba, Edificio La Metropolitana, Calle Presidente Zayas y Perfecto Lacoste.

Johannesburg, South Africa, Locarno House.

Lima, Peru, Edificio Wiese, Esquina Nunez y Filipinas.

London, England, 36 New Broad St., E. C. 2.

Mexico City, Mexico, Calle 2a, de Capuchinas, 50.

Monterrey, Mexico, Banco Mercantil de Monterrey Bldg.

Montreal, Canada, 360 St. James St.

Port Alegre, Brazil, Edificio Ely.

Rio de Janeiro, Brazil, 20 Rua General Camara.

Sao Paulo, Brazil, Rua Boa Vista, No. 2.

Shanghai, China, Union Bank Building, Canton Road.

Soerabaya, Java, 65 Palmenlaan.

Sydney, Australia, Endeavour House, Macquarie Place.

The Hague, Holland, 18 Bezuidenhout.

Toronto, Ontario, Canada, Royal Bank Bldg.

Valparaiso, Chile, Calle Prat 62, Edificio del Banco Nacional.

Vancouver, Canada, 190 Second Ave., W.

Winnipeg, Canada, Bank of Hamilton Bldg., 396 Main St.

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 tabular poles.

Beams, channels, angles, tees, zeos, 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; 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; seamless cylinders for compressed air, carbonic acid gas, anhy-

drous 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.

COLUMBIA DEPARTMENT

United States Steel Products Co., Russ Bldg., San Francisco, Calif.
A. T. DeForest, V. P.; L. F. Rains, G. M.; W. A. Ross, A. V. P. & T.; H. F. Wilson, A. & A. Sec.

The Columbia Department of United States Steel Products Co. operates the plants and properties formerly owned by the Columbia Steel Corp. described below, these properties having been acquired by the United States Steel Products Co. on Feb. 1, 1930. The Columbia Department also owns and operates steel storage and distributing warehouses as hereinafter described.

The Columbia Department in addition, sells for distribution in Pacific Coast territory, the products of all the iron and steel manufacturing subsidiary companies of the United States Steel Corpn.

Sales offices:

Honolulu, Hawaii, Castle & Cooke Bldg.

Los Angeles, Calif., 2087 East Slauson Ave.

Phoenix, Arizona, Luhrs Bldg.

Portland, Ore., 777 Nicolai St.

Salt Lake City, Utah, Clift Bldg.

San Francisco, Calif., Russ Bldg., 235 Montgomery St.

Seattle, Wash., 4th Ave. South and Connecticut St.

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, wire specialties; black sheets, barrel stock, steam blue, flat and corrugated galvanized sheets and culvert stock; tinplate; carbon and alloy steel castings.

Ironton Plant, Ironton (near Provo), Utah: 1 stack 83' x 19' 6", blt. 1923-24, construction commenced Apr. 6, 1923, f. o. Apr.

30, 1924; four 2-pass side comb. stoves 85' x 20'; 2 Ingersoll-Rand turbo-blowers, 100,000 cfm., 17 lbs. rated pressure; 6 V type water-tube boilers, 3,702 H. P., serve also by-product coke plant and power plant; 1 Heyl & Patterson double-strand pig casting mach. By-product coke; Utah ore from Iron County, Utah. By-product coke plant with 56 Koppers-Becker ovens, by-product recovery plant and Koppers benzol plant, annual cap., 297,000 net tons coke, 2,190,000 gals. light oil. Company owns coal mines at Columbia, Utah, annual cap., 600,000 tons; also iron ore mines at Iron County, Utah, annual cap., 400,000 tons; also limestone quarries, one near Ironton and one near Senitaquiss, Utah. Product: foundry and basic pig iron, annual cap., 175,000 tons.

Pittsburg Plant, 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; 6 B. O. H. fur. (four 65-ton, one 20-ton, one 15-ton) fuel, oil; 1 A. O. H. fur. (5-ton); 2 cont. oil-fired heat. fur.; 26" 3-h. 1-st. blooming; 24" 2-h. 7-st. cont. billet, sheet and tin bar; 18" 3-h. 2-st. billet, sheet bar and tie plate; 12" 3-h. 5-st. merchant; 12" 3-h. 5-st. and 12" 3-h. 6-st. rod mill; 13 sheet and 13 pair fur.; 5 hot black sheet mills (three 30" x 38", one 30" x 44", one 30" x 48"); 8 hot black plate (tin) mills (28" x 34"); 11 stands cold rolls (one 26" x 60", one 26" x 54", nine 24" x 44" of which 2 sets of 4 tandem and 1 single); 18 box annealing fur.; 4 plunger pickling mach.; 2 galv. pots. Roll black sheets 14 to 30 gauge, 24" to 42" wide, to 144" long. Tin house: blt. 1928-29, f. o. Mar. 12, 1929; 8 automatic tinning sets for coke tinplates. Wire mill: blt. 1923, f. o. Nov., 1923; 124 wire drawing blocks for wire $\frac{5}{8}$ " to 22 gauge; 68 wire nail mach.; 2 barbed wire mach.; 3 wire fence mach.; 2 galv. pans. Brass and copper (110 tons) foundry for own use. Product: steel ingots for own use and steel castings for own use and for sale, annual cap., 192,000 tons (176,000 tons B. O. H. ingots, 14,000 tons B. O. H. castings, 2,000 tons A. O. H. castings); alloy steel castings (nickel, chrome); semi-finished hot rolled products, 173,800 tons including 83,200 tons billets, 90,600 tons sheet bars; finished hot rolled products, 173,600 tons including 40,000 tons black sheets, 40,000 tons wire rods, 43,200 tons merchant bars, 14,400 tons tie plates, 36,000 tons black plates for tinning; 24,000 tons galvanized sheets; 720,000 base boxes coke tinplates, 39,600 net tons plain wire, 8,400 net tons galvanized wire, 750 net tons barbed wire, 770 tons wire fencing, 432,000 kegs wire nails.

Portland Works, 10th & Johnson Sts., Portland, Ore. (leased, S. P. & S. Ry., Portland, owner): blt. 1903, f. o. May 1, 1903; 1 Tropenas converter (3-ton) abandoned; 1 Greene electric fur. (3-ton); 1 cupola for ferro-alloys. Product: electric steel cast-

ings for sale, annual cap., 2,000 tons; carbon and alloy (nickel, chrome, manganese) steel castings of all kinds.

Llewellyn Mills, Torrance, Calif.; blt. 1916, f. o. Oct. 1, 1916; 4 B. O. H. fur. (45-ton) fuel, oil; 1 Heroult electric fur. (5-ton); 3 cont. oil-fired heat. fur.; 36" 3-h. 1-st. blooming; 22" 3-h. 5-st. bar and finishing mill; 16" 3-h. 1-st., 12" 3-h. 4-st. and 12" 2-h. 1-st. merchant mill; 1 jobbing plate mill (30" x 56"); 5 sheet and 5 pair fur.; 4 hot black sheet mills (one 30" x 44", three 30" x 38"); 2 stands cold rolls connected on hot mill train; 6 box annealing fur.; 1 blue annealing fur.; 1 agitator pickling mach.; 2 galvanizing pots. Roll black sheets 8 to 30 gauge. Product: steel ingots and steel castings for own use and for sale, annual cap., 171,000 tons (164,000 tons B. O. H. ingots, 4,500 tons B. O. H. castings, 2,500 tons electric castings); alloy steel castings (nickel, chrome); semifinished hot rolled products, 135,000 tons including billets, 91,000 tons, sheet bars, 44,000 tons; hot rolled products, 112,000 tons, including 12,300 tons heavy and 15,200 tons light structural shapes, 48,500 tons merchant and concrete bars, 36,000 tons black sheets; blue annealed sheets, 11,500 tons; galvanized sheets, 30,800 tons.

Warehouses for storage and distribution of steel products operated by Columbia Department:

Los Angeles, Calif., 2087 East Slauson Ave.

Portland, Ore., 777 Nicolai St.

San Francisco, Calif., 16th St. warehouse, 16th and Folsom Sts.

San Francisco, Calif., 20th St. dock warehouse, 20th St.

Seattle, Wash., 4th Ave. South and Connecticut St.

UNITED STATES VANADIUM CORPN., 30 East 42nd St., New York, N. Y.

Inc. Dec. 2, 1926 in Delaware. Capital stock: com., par value \$100, auth. \$4,000,000, issued \$2,275,000. Subsidiary of Union Carbide & Carbon Corp.

F. H. Haggerson, P.; F. M. Becket, V. P.; J. B. Huffard, V. P.; B. G. Smith, Sec.; C. T. Ayres, T.

The company owns and operates ore mines and plant for treating ore at Rifle, Garfield Co., Colo., and reduction plant at Columbiana, Ohio.

Plant at Columbiana, Ohio: ferro-alloys first made in 1926; exothermic process used.

Product: ferro-vanadium.

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., no par value, auth. 20,000 shares, issued 16,707 shares; pref. 6% cum., auth. \$3,000,000, issued \$2,329,800.

Walter H. Baker, P., T. & G. M.; E. L. Stockdale, Sec. & G. S. M.; J. Howard Blair, A.; U. G. Miller, G. S.; H. B. Speasmaker, P. A.; at Bridgeville. W. S. Jones, V. P.; at New York, N. Y.

Sales offices:

Chicago, Ill., Otto F. Carl, 172 North May St.

Detroit, Mich., Higgins-Bothwell Co., 614 Free Press Bldg.

New York, N. Y., W. S. Jones, Suite 2401, 10 East 40th St.

Pittsburgh, Pa., Karl Knapp, 604 Chamber of Commerce Bldg.

Works at Kirwan Station, Bridgeville, Pa.: blt. 1908-09, first rolled products, March, 1909; 1 A. O. H. fur. (20-ton), fuel, oil; 3 Heroult electric fur. (one 12-ton, one 9-ton, one 3½-ton); two 2-hole soaking pits; 35 coal-fired heat. fur. (one 1-d., twenty-six 2-d., two 3-d., two 4-d., three 5-d., one cont.); 28" x 72" blooming mill; 22" 3-h. 1-st. roughing; 16" 3-h. 1-st. roughing; 14" 3-h. 5-st., 14" 2-h. 1-st., 10" 3-h. 4-st., 10" 2-h. 1-st. and 8" 3-h. 2-st. finishing mills; jobbing plate mills 32" x 84" 2-h. 1-st., 28" x 32" 2-h. 2-st., and 30" x 84" 2-h. 1-st.; 9 hot black sheet mills (seven 26" x 32" to 26" x 44", one 32" x 44", one 26" x 48"); 10 stands cold rolls (four 10", four 8" two 4"); 1 box annealing fur.; 1 blue annealing fur.; 22 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 ¾", 16" to 60" wide. Wire mill; 10 wire drawing blocks for wire from 1/16" to 9/16".

Product: steel ingots, annual cap., 50,650 tons (18,000 tons A. O. H., 32,650 tons electric); alloy steel ingots (all alloys); blooms and billets, 26,000 tons; finished hot rolled products, 28,000 tons, including 15,000 tons bars and 13,000 tons plates and sheets; cold rolled steel, 2,100 tons; plain wire, 3,200 net tons; high carbon and alloy steel plates and sheets; tool steel bars; saw, plow, spring and shovel steel.

University of Washington, Dept. of Engineering Shops, Seattle, Wash. Engineering Dept.: 1 Green electric fur. (250-lb.) installed in 1927 for manufacture of steel, gray iron and non-ferrous castings for own use.

Utah Steel Corporation, Midvale, Utah in receivership, was sold Jan., 1927 to Western Steel Co. The latter company was acquired by Western Steel & Foundry Co., April 1, 1929.

Valley Furnace Co. (The), Cleveland, Ohio, acquired Dover Furnace (1 stack), Dover, Ohio, from The Hanna Furnace Co. on Oct. 18, 1929. The furnace was last operated in 1927 and abandoned in 1929.

Valley Mould & Iron Corp., Sharpsville, Pa. Alice Furnace at Sharpsville (1 stack) for manufacture of basic pig iron, was dismantled in 1926. Sharpsville Foundry for manufacture of ingot moulds was abandoned in 1926 and a new plant for the manufacture of ingot moulds was built at Hubbard, Ohio, in that year.

Valley Rolling Mills, Inc., New York, N. Y., name changed to Elmira Steel Co.

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., no par value, auth. and issued 210,000 shares.

Roy C. McKenna, P.; F. P. Underwood, Sec.; Robert E. Reed, T.; L. E. Moore, A.; C. R. Sipe, G. S.; L. D. Bowman, P. A.; at Latrobe. Floyd Rose, V. P. & G. S. M.; at 1212 Keystone Bank Bldg., Pittsburgh, Pa.

Sales offices:

Buffalo, N. Y., H. D. Taylor Co., 101 Oak St.

Chicago, Ill., 1440 West Randolph St.

Cincinnati, Ohio, 605 Mercantile Library Bldg.

Cleveland, Ohio, 2121 St. Clair Ave.

Detroit, Mich., 5221 Trumbull Ave.

Knoxville, Tenn., W. S. Murrian Co., 1509 General Bldg.

Los Angeles, Calif., Colonial Steel Co., 825 Santa Fe Ave.

New York, N. Y., 270 Madison Ave.

Newark, N. J., Faitoute Iron & Steel Co., 182 Frelinghuysen Ave.

Philadelphia, Pa., Edgcomb Steel Co., D St. below Erie Ave.

Pittsburgh, Pa., 1212 Keystone Bldg.

St. Louis, Mo., 712 Cass Ave.

San Francisco, Calif., Peninsula Iron & Steel Co., 770 Folsom St.

Springfield, Mass., 240 Plainfield St.

Brand: VASCO (carbon and alloy tool steels), Red Cut Superior and Red Cut Cobalt (high speed steels).

Works at Latrobe, Pa.: 2 Heroult electric fur. (3-ton); four coal-fired heat. fur. (two 2-d., two 3-d.); 12" 3-h. 5-st. bar mill; 10" 3-h. 5-st. bar mill; 3 annealing fur. (1 coal-fired, 2 electric); 4 steam hammers (3,000-lb. to 16,000-lb.). Product: steel ingots, annual cap., 4,500 tons; alloy steel ingots (tungsten, chrome, vanadium, cobalt); blooms and billets, 1,060 tons; finished rolled products, 2,600 tons: carbon and alloy tool steels; high speed steels.

The company acquired on July 1, 1927, the Anchor Drawn Steel Co. with a plant at Latrobe, Pa. for manufacture of high speed and carbon steel drill rods and cold drawn shapes.

The company also acquired the Colonial Steel Co. Oct. 31, 1928, see under Colonial Steel Co.

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 378,367 $\frac{1}{2}$ shares.

A. A. Corey, Jr., P.; Ward A. Miller, 2 V. P.; Charles Rees, 3 V. P.; Nils Falk, Sec. & T.; at 120 Broadway, New York, N. Y. B. D. Saklatwalla, 1 V. P.; S. C. King, G. S.; at Bridgeville, Pa. C. A. Proudfoot, G. M.; at Niagara Falls, N. Y. J. A. Miller, G. S. M.; at Oliver Bldg., Pittsburgh, Pa.

Sales offices:

Chicago, Ill., C. B. Woodworth, Straus Bldg.

Detroit, Mich., T. N. Bourke, Book Bldg.

Detroit, Mich., C. N. Dawe, Book Bldg.

New York, N. Y., Gustav Laub, A. G. S. M., 120 Broadway.

Pittsburgh, Pa., J. A. Miller, G. S. M., Oliver Bldg.

Brands: Vancoram, Alsifer.

The company owns mining properties in Peru and Colorado, silica rock deposit at Lewiston, N. Y., chrome ore deposits at Black Lake, P. Q., Canada, and reduction plants at Bridgeville, Pa., and Niagara Falls, N. Y.

Plant at Kirwan (Bridgeville), Pa.: ferro-alloys first made May, 1908; one 3-phase electric fur.; alumino-thermic process also used. Fuel, coal and gas. Electric power from Duquesne Light Co., Pittsburgh, Pa.

Product: ferro-vanadium, annual cap., 960 tons; vanadium oxide and chemicals; tungsten, molybdenum, chromium, titanium and zirconium chemicals.

Plant at Niagara Falls, N. Y.: ferro-alloys first made 1919; 11 open-top electric fur. Power from Niagara Falls Power Co.

Product: ferro-silicon (all grades), ferro-chrome, silico-manganese, and Alsifer; annual cap., 40,000 tons.

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. 8% cum. auth. and issued \$125,000.

Eric Davies, P. & T.; W. Martin Griffin, Sec.; A. L. Hiles, G. M.; W. R. Duckworth, G. S.; E. Redpath, G. S. M.; F. G. Tripp, P. A.

Company manufactures boilers, logging and hoisting engines, mining, sawmill, pulp and paper machinery, electric welded steel pipe, Canadian Kenworth trucks; operates steel and iron foundry.

Works at 519-659 Sixth Ave. West, Vancouver; 1 Whiting converter (2-ton) idle; 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.

Product: steel castings for own use and for sale, annual cap., 800 tons electric steel castings. Alloy steel castings (nickel, chrome, manganese).

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., Pittsburgh, Pa. Steel casting plant at Verona, Pa. was acquired Nov. 21, 1926 by American Steel Foundries. Works are now known as Verona Works, American Steel Foundries.

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 \$1,628,000.

John B. Newton, P.; D. D. Hull, Jr., V. P.; J. W. Cure, Sec. & T.; J. J. Sellers, A.; C. E. Bertie, A. P.; 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: Colonial Bank Bldg., Roanoke, Va.

Brands: Crozer, Dora, Max Meadows, Radford (pig iron).

Product: foundry pig iron, total annual cap. (4 furnaces), 260,000 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, rebt. 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, dismantled in 1926. Company owns iron ore mines in Bedford, Botetourt, Pulaski, Carroll, 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 Mines, 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, P. O. Box 437, Wilkes-Barre, Pa.

Inc. Apr. 17, 1867 in Pennsylvania. Capital stock: com., par value \$50, auth. \$2,500,000, issued \$2,478,250.

Samuel T. Nicholson, P. & G. M.; George Nicholson, 1 V. P.; Fred O. Smith, 2 V. P. & P. A.; William E. Willingale, Sec. & T.; George Brown, G. S. M.; R. W. Thomas, S. (steel foundry).

Sales offices: 50 Church St., New York, N. Y. and McCormick Bldg., Chicago, Ill.

Company operates plants for manufacture of steam, gasoline and electric locomotives, electric mine hoists, cement mill and sugar mill machinery, steel, gray iron, semi-steel and brass castings as follows:

Vulcan Shops, Wilkes-Barre, Pa.

Wyoming Valley Shops, Wilkes-Barre, Pa.

Pittston Shops, Pittston, Pa.

Steel Foundry, Buttonwood, Pa.

Steel Foundry, Buttonwood (near Wilkes-Barre), Pa.: 1 A. O. H. fur. (25-ton) fuel, oil; 4 cupolas; gray iron, semi-steel and brass foundry.

Product: steel ingots and steel castings for own use and for sale, annual cap., 10,000 tons (5,000 tons ingots, 5,000 tons castings).

VULCAN IRON WORKS (The), Ltd., Point Douglas & Maple Sts., Winnipeg, Man., Canada.

Est. 1874: inc. Mar. 23, 1903; reinc. Nov. 20, 1928 in Dominion of Canada.

Capital stock: com., no par value, auth. and issued 25,000 shares; pref. 6% cum. auth. \$750,000, issued \$480,000; bonds \$690,000.

E. G. Barrett, P.; L. R. Barrett, V. P. & G. M.; J. D. McDonald, Sec., T. & P. A.; H. Lalter, C.; J. S. Mowat, G. S.; E. A. Parkin, G. S. M.

Sales office: W. B. Young, Lancaster Bldg., Calgary, Alberta, Canada.

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 Lectromelt 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).

Waddell Steel Co. (The), Niles, Ohio, was merged March 1, 1928 with The Ashtabula Steel Sheet Co., The Empire Steel Co., The Falcon Steel Co., The Mansfield Sheet & Tin Plate Co., and The Thomas Sheet Steel Co. in the Empire Steel Corporation.

WALLACE FOUNDRY CO., Ltd., Granville Island, Vancouver, B. C., Canada.

Inc. Sept. 27, 1917 in British Columbia. Capital stock: com. auth. and issued \$75,000.

C. Wallace, P.; H. S. Barwick, M.

Works at Granville Island, Vancouver: blt. 1918; 2 Greene electric fur. (one 3-ton, one 5-ton) f. o. Aug. 24, 1923; gray iron and white iron (1,200 tons) and brass (100 tons) foundry.

Product: steel castings for sale, annual cap., 1,500 tons. Alloy steel castings (nickel, chrome).

Walsh & McGee Steel Co., New York, N. Y. with rolling mill at Newark, N. J. was acquired by Tidewater Rolling Mills, Inc., Jan. 30, 1929.

WALWORTH COMPANY, P. O. Box 0, Back Bay Post Office, Statler Bldg., Boston, Mass.

Inc. Feb. 12, 1872 in Massachusetts. Capital stock: com., no par value, auth. 500,000 shares, issued 319,365 shares; pref. 6% cum., auth. and issued \$1,000,000; bonds \$10,211,000.

Howard Coonley, P.; George A. Ricker, V. P. & T.; James L. Crawshaw, A.; Ralph B. Currier, A. T.; William A. Jackson, P. A.; Statler Bldg., Boston. Prentiss L. Coonley, V. P. & G. S. M.; James S. Mattimore, V. P.; John M. Olmsted, V. P.; Alfred J. Eichler, V. P.; at 51 East 42nd St., New York. Archie J. Mather, V. P.; at Kewanee, Ill.

Sales offices:

Boston, Mass., 142 High St.

Chicago, Ill., 2436 West 15th St.

Cleveland, Ohio, 1614 East 40th St.

New York, N. Y., 448 Jackson Ave.

San Francisco, Calif., Rialto Bldg.

Seattle, Wash., 414 First Ave., South.

Export sales agent: Walworth International Co., 11 Broadway, New York, and branch offices in foreign countries.

Company operates plants at Kewanee, Ill.; Boston, Mass.; Attalla, Ala.; and Greensburg, Pa.; steel foundry at Greensburg plant.

Works at South Greensburg, Pa.: steel foundry added 1916; first steel castings (converter) Sept. 2, 1916; 1 converter (1-ton),

abandoned 1927; 1 Swindell Duplex electric fur. (1½-ton) added 1923, f. o. May 1, 1923. Gray iron (43,000 tons), malleable iron (16,000 tons) and brass (3,000 tons) foundry.

Product: electric steel castings for own use and for sale, annual cap., 2,400 tons; steel castings for valves and fittings; stillson wrenches, 2,000 tons.

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 Electric Foundry Co., Los Angeles, Calif., name changed to Electric Steel & Manufacturing Co.

WARMAN STEEL CASTING CO., P. O. Box 800, Huntington Park, Calif.

Inc. July, 1911 in California. Capital stock: com., par value \$1. auth. and issued \$500,000.

Charles J. Wild, P. & T.; F. D. Wild, V. P.; J. P. Arnoldy, Sec. & G. M.; J. H. Jones, G. S.

Works at 6100 South Boyle Ave., Los Angeles, Calif.: blt. 1917, f. o. May 20, 1917; 3 electric fur. (two 3-ton Heroult, one 3-ton Moore).

Product: electric steel ingots and steel castings for sale, annual cap., 10,000 tons (4,000 tons ingots, 6,000 tons castings); alloy steel ingots and steel castings (chrome, nickel).

WARNER IRON CO., Cumberland Furnace, Tenn.

Org. May 13, 1899, not inc.

Joseph Warner, Sole Owner and Operator.

Cumberland Furnace, Cumberland Furnace P. O., Dickson Co., Tenn.: 1 stack, 60' x 13', blt. 1892-93, relined 1929; four 3-pass stoves; 2 steam blowing eng., 20,000 cfm., 6½ lbs. rated pressure; 6 boilers (3 water-tube, 3 flue), 1,050 H. P. Coke: local brown hematite ore. Company owns iron mine at Cumberland Furnace, annual cap., 15,000 tons.

Product: ferro-phosphorus.

WARREN FOUNDRY & PIPE CORPN., Wharton, N. J.

Inc. April 8, 1927 in Delaware. Capital stock: com., no par value, auth. and issued 250,000 shares.

Leonard Peckitt, P.; William H. Hulick, V. P.; at 11 Broadway, New York. L. R. Dohm, Sec. & T.; L. H. McClellan, P. A.; at Wharton.

Warren Foundry & Pipe Corpn. owns 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, 90' x 21' 6", blt. 1900-01, rebt. 1920, relined 1925; B, 90' x 21' 6", blt. 1902-03, rebt. 1920; 8 Roberts stoves 100' x 20'; 8 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; 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, dismantled in 1927.

Total annual cap. (3 furnaces), 495,000 tons pig iron.

Warren Foundry & Pipe Corpn. 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.

Warren Iron & Steel Co. (The), Warren, Ohio, in receivership from Feb. 28, 1925, was acquired by Bondholders Committee June 18, 1926. Land, buildings and equipment were sold at public auction Aug. 15, 1928 to General Fire Extinguisher Co. The Warren Rolling Mill Co. was formed to take over and operate the works at Warren for manufacture of steel plates and sheets. The latter company was unable to organize and plant was dismantled and equipment sold.

Warwick Iron & Steel Co., Pottstown, Pa. Warwick furnaces at Pottstown (2 stacks) were dismantled in 1928 and sold as scrap. Company liquidated in 1929.

WASHBURN WIRE CO., Phillipsdale, R. I.

Inc. Dec. 1919 in Rhode Island. Capital stock: com., par value \$100, auth. and issued \$1,500,000.

F. N. Phillips, P.; W. C. Ingerson, Sec. & P. A.; J. C. Richardson, G. M.; O. W. Lundgren, G. S.; S. W. Wray, G. S. M.; at Phillipsdale. F. C. Weidenmiller, V. P.; at Leicester, Mass. Fuller F. Barnes, T.; at Bristol, Conn.

Works at Phillipsdale: blt. 1901, f. o. May, 1901; 3 B. O. H. fur. (15-ton) fuel, oil; 4 Morgan gas prod.; 4 cont. oil-fired heat. fur.; 24" 3-h. 1-st. billet; Garrett rod mill with 20" 3-h. 1-st.,

20" 2-h. 1-st., 9" 2-h. 7-st. and 10" 4-h. 2-st.; Garrett rod mill with 15" 3-h. 1-st., 15" 2-h. 1-st., 10" 2-h. 5-st. and 9" 2-h. 6-st.; 2 annealing fur.; 1 Morgan pickling mach.; 83 wire drawing blocks for wire .042" to .500".

Product: steel ingots, annual cap., 39,000 tons; alloy steel ingots (nickel, chrome, vanadium, molybdenum); blooms and billets, 31,600 tons; finished rolled products, 49,000 tons including 25,000 tons wire rods and 24,000 tons hot rolled strip; plain wire, 6,000 net tons.

Company owns American Electrical Works with works at Phillipsdale for rolling copper rods and manufacture of copper wire.

WASHINGTON IRON WORKS, 1520 Sixth Ave., South., Seattle, Wash.

Inc. 1882; reinc. 1908 in Washington. Capital stock: com., par value \$100, auth. and issued \$500,000; bonds \$246,000.

Gerald Frink, P. & G. M.; Francis G. Frink, V. P., Sec. & P. A.; Carman F. Bridge, T.

Sales offices:

Los Angeles, Calif., Ward Livesley Co., 621 East 3rd St.

Manila, P. I., Edward J. Nell Co., P. O. Box 1640.

Portland, Ore., 524 Marshall St.

San Francisco, Calif., W. H. Worden Co., 355 Fremont St.

Vancouver, B. C., Canada, Vancouver Machinery Depot, Ltd.

Company builds logging and hoisting engines, boilers, tanks and marine machinery.

Works at 1520 Sixth Ave. South, Seattle: blt. 1882; 1 Heroult electric fur. (3-ton); 1 cupola; gray iron (4,500 tons), semi-steel (4,500 tons), brass (300 tons), and bronze (300 tons) castings for own use and for sale.

Product: steel ingots and castings for own use and for sale, annual cap., 5,100 tons (1,500 tons ingots, 3,600 tons castings). Alloy steel ingots and castings (nickel, chrome, molybdenum, manganese).

WASHINGTON TIN PLATE CO., Washington, Pa.

Inc. Aug. 7, 1907 in Pennsylvania. Capital stock: com., par value \$100, auth. and issued \$1,800,000.

G. W. Hannan, P.; John F. Kraft, V. P., Sec. & T.; T. P. McDonough, G. M.; B. F. Brehl, P. A.

Brand: Quality Coke Tin Plates.

Works at Washington: rebt. 1911-12, f. o. April 1, 1912; 6 comb. sheet and pair fur.; 6 hot black plate mills (28" 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); 5 tinning sets for coke tinplates. Fuel, coal and gas.

Product: black plates for tinning, annual cap., 26,000 tons; tinplates, 600,000 base boxes.

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: F. Jacobson, 30 Church St., New York.

Works at Weatherly, Pa. (leased from Weatherly Steel Co.):

1 Tropenas converter (4,000-lb.); 1 cupola.

Product: steel castings for sale, annual cap., 600 tons.

WEHR STEEL CO., 45th & Gordon Ave., West Allis, Milwaukee, Wis.

Inc. 1910 in Wisconsin.

William E. Wehr, P.; Henry W. Wehr, V. P. & G. S. M.; Edward R. Wehr, V. P.; C. F. Wehr, Sec. & T.; A. C. Blumberg, A. & P. A.; A. F. Blackwood, G. M.; L. Pawelk, G. S.

Works at 45th & Gordon Aves., West Allis: blt. 1910, f. o. Sept. 10, 1910, first electric steel made June 1, 1913; one 4-ton electric furnace.

Product: electric steel castings for sale, annual cap., 7,000 tons; carbon and alloy steel castings.

WEIRTON STEEL CO., Weirton, West Virginia.

Inc. May 20, 1925 in Delaware. Capital stock: com., par value \$100, auth. \$30,000,000, issued \$23,562,000. Subsidiary of National Steel Corporation since Dec. 1, 1929.

J. C. Williams, P.; F. A. Hanlin, V. P.; H. D. Westfall, V. P. & G. S. M.; W. A. Murphy, Sec.; F. M. Hesse, T.; W. L. Horner, A. T.; G. W. Vreeland, G. S.; E. H. Kern, P. A.; at Weirton, W. Va. W. F. Morris, Jr., V. P.; at Pittsburgh, Pa. W. H. Baldridge, V. P.; at New York, N. Y.

Sales offices:

Boston, Mass., Chamber of Commerce Bldg.

Cleveland, Ohio, 413 Bulkley Bldg.

Chicago, Ill., 208 South La Salle St.

Detroit, Mich., General Motors Bldg.

New York, N. Y., 30 Church St.

Philadelphia, Pa., Packard Bldg.

Pittsburgh, Pa., Grant Bldg.

Rochester, N. Y., Lincoln Alliance Bldg.

San Francisco, Calif., Sharon Bldg.

Toronto, Ont., Canada, General Assurance Bldg.

Sales agents:

Baltimore, Md., E. B. Mallory & Co.

Buenos Aires, Argentine, H. C. Walton Co.

Chattanooga, Tenn., Egbert-Hancock Co., James Bldg.

Denver, Colo., John S. Worthington Co.

Havana, Cuba, Luis R. Rios.

London, England, Everitt and Co., Ltd.

Montreal, P. Q., Canada, A. C. Leslie & Co., Ltd.

New Orleans, La., A. Campbell White, 2027 Short St.

St. Louis, Mo., E. R. Hensel Steel & Copper Co., Planters Bldg.

Product: basic pig iron; open-hearth steel ingots, 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 Furnaces: 2 stacks; No. 1, 92' x 22' 6", blt. 1918, relined 1927; No. 2, 92' x 24' 3", blt. 1926, relined 1929; 7 stoves (three 2-pass side-comb. 100' x 22', four 2-pass side-comb. 100' x 25'); 2 Mesta cross-comp. steam blowing eng. and 2 turbo-blowers, total blowing cap., 150,000 cfm., 20 lbs. rated pressure; 15 water-tube boilers, 11,400 H. P.; 1 double-strand pig casting mach.; 2 slag granulating pits, annual cap., 260,000 tons; conveyor sintering plant for flue dust, annual cap. 72,000 tons. By-product coke: Lake ore. Product: basic pig iron, annual cap., 550,000 tons.

By-Product Coke Plant: 86 Becker by-product coke ovens, annual cap., 550,000 net tons coke; by-product recovery plant and Koppers benzol plant, annual cap., 2,500,000 gals. light oil. Steel Works: blt. 1919; 12 B. O. H. fur. (six 150-ton, four 250-ton, one 275-ton, one 350-ton) fuel, prod. gas, 35 Morgan gas producers; one 1,300-ton metal mixer; eight 4-hole soaking pits; 40" 2-h. 1-st. reversing blooming; 24" 2-h. 2-st. roughing; 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.; 1,250,000 tons ingots, 1,110,000 tons slabs, billets and sheet bars. Tinplate Dept.: blt. 1909, f. o. Jan., 1910; 26 sheet and 26 pair fur.; 26 hot black plate (tin) mills 28" x 28" to 38"; 16 cold rolls (8 stands of 2 tandem); 12 double box annealing fur.; 4 Mesta four-arm pickling mach.; 33 sets for tin and terne plates (22 coke, 4 charcoal, 2 terne, 5 long terne). Product: black plates for tinning, annual cap., 115,000 tons; tinplates and terne plates, 3,300,000 base boxes.

Strip Steel Dept.: 5 cont. prod. gas-fired heat. fur.; semi-cont. strip mill with 20" 2-h. 6-st. and 16" 2-h. 6-st.; 6 sets of 2-h. cold rolls (4 mills each 8" to 16" x 10" to 20", 4 skin rolls 1-st. each); 18 double box annealing fur.; 10 pickling mach. Product: hot rolled strip, annual cap., 350,000 tons; cold rolled strip, 100,000 tons. Sheet Mill Dept.: blt. 1922-23, f. o. Oct. 1, 1923; 9

sheet and 9 pair fur.; 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 and 1 single box annealing fur.; 2 Plunger pickling mach.; 4 galvanizing pots; 1 tinning pot for long terne plates. Product: black and galvanized sheets and long terne plates, annual cap., 100,000 tons.

48" Mill: blt. 1926-27, f. o. Aug. 1927; 4 cont. prod. gas-fired heat. fur.; continuous strip mill with 32" x 66" 2-h. 1-st., 32" x 54" 2-h. 1-st., 18" x 54" 4-h. 3-st. with 16" edger and 16½" x 54" 4-h. 5-st.; 13 stands cold rolls (1 train 42" 4-st., 1 train 48" 4-st., 5 skin mills); 24 double box annealing fur.; 3 pickling mach. Product: hot rolled strip, annual cap., 400,000 tons; cold rolled strip, 150,000 tons.

Clarksburg Plant, Clarksburg, W. Va.: blt. 1901-02, f. o. June, 1902; 12 sheet and 12 pair fur.; 12 hot black plate (tin) mills 26" x 28" to 36"; 12 cold mills (6 stands of 2 tandem); 4 double and 1 triple box annealing fur.; 3 pickling mach.; 14 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 sheet and 12 pair fur.; 12 hot black plate (tin) mills 28" x 28" to 34"; 12 cold mills (6 stands of 2 tandem); 6 triple box annealing fur.; 3 pickling mach.; 14 sets for coke tinplates. Product: black plates for tinning, annual cap., 55,000 tons; coke tinplates, 1,100,000 base boxes.

Company operates a coal mine at Isabella, Pa., annual cap., 600,000 tons.

Weldless Tube Co. (The), Wooster, Ohio, was acquired by The Timken Steel & Tube Co., Nov. 1, 1928.

WELLAND STEEL CASTINGS, Ltd., Welland, Ont., Canada.

Inc. Nov. 30, 1923 in Ontario. Capital stock: com., par value \$100, auth. \$100,000, issued \$38,000.

H. D. Davison, P. & T.; E. S. Davison, V. P.; C. M. Carmichael, Sec. & G. M.

Sales office: Emmons, Ltd., 1111 Beaver Hall Hill, Montreal, P. Q., Canada.

Brand: Allegheny Metal.

Works at Welland: blt. 1924, f. o. Feb. 18, 1924; 2 Heroult electric fur. (one 2-ton, one ½-ton).

Product: steel castings for sale, annual cap 3,000 tons; alloy steel castings (nickel, chrome, manganese); stainless steel castings.

Wellston Iron Furnace Co. (The), Jackson, Ohio, sold in 1929 Wellston Furnaces at Wellston, Ohio (2 stacks) for manufacture of bessemer, low-phosphorus and malleable pig iron, to The Joseph Schonthal Co. who dismantled the furnaces in that year.

West Chapin Mines Co., Iron Mountain, Mich., see John T. Spencer, Jr., Iron Mountain, Mich.

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 \$2,387,000.

J. W. Kirkpatrick, Ch.; James Lippincott, P. & G. M.; J. L. Kirkpatrick, V. P.; D. M. Campbell, V. P.; M. W. Leech, V. P.; C. S. Todd, V. P.; George W. Sheridan, Sec. & T.; J. James Grogan, A.; John E. Garrity, G. S. M.; A. S. Geiger, P. A.; at Pittsburgh. Noble Jones, Works Mgr.; at Leechburg, Pa.

Sales offices:

Chicago, Ill., 957 Peoples Gas Bldg.

Cincinnati, Ohio, Dean Higgins Co., 1707 Union Central Bldg.

Detroit, Mich., 5-255 General Motors Bldg.

Hartford, Conn., 236 North Quaker Lane, West Hartford.

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

Newark, N. J., Edgcomb Steel Corp., 350 Frelinghuysen Ave.

Philadelphia, Pa., Edgcomb Steel Co., D Street, below Erie Ave.

St. Louis, Mo., 1413 Chemical Bldg.

Toledo, Ohio, The Dean Higgins Co., 906 Ohio Bldg.

Works at Leechburg, Pa.: blt. 1898; 16" 2-h. 13-st., 12" 3-h. 9-st., and 9" 2-h. 10-st. hot strip mills; 33 stands of cold rolls for cold rolling strip; pickling, liming, oiling and annealing depts. Under construction, to be ready for operation about Jan., 1930; 12" 2-h. 14-st. hot strip mill.

Product: hoops and bands, hot and cold rolled strip steel for blanking, stamping and drawing; annual cap., 240,000 net tons.

WEST MICHIGAN STEEL FOUNDRY CO., Muskegon, Mich.

Inc. Oct. 12, 1912 in Michigan. Capital stock: com., no par value 75,000 shares; prior pref., par value \$10, 12,400 shares; convertible pref., no par value, 17,500 shares.

William E. Jeannot, P.; O. A. Seyferth, V. P.; Ralph Fisher, V. P. & G. M.; John B. Jardine, Sec., T. & P. A.; J. H. Crawley, G. S.

Works at Muskegon, Mich.: blt. 1911, f. o. Dec. 4, 1911; 2 Moore Lectromelt electric fur. (one 3-ton, one 1½-ton).

Product: steel castings for sale, annual cap., 8,000 tons; alloy steel castings (vanadium). Heat resisting metal for carbonizing boxes, cyanide pots, lead pots. Resisto alloy steel for foundry flasks.

West Penn Steel Co., Brackenridge, Pa. was acquired by the Allegheny Steel Co. in May, 1929.

WEST STEEL CASTING CO. (The), 805 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., G. M. & G. S. M.; D. P. Lansdowne, V. P. & Sec.; G. G. Kraft, A.; E. C. Pender, G. S.; J. M. McKenzie, P. A.

Works at East 70th St., Cleveland: 3 converters (4,000-lb.), one Fisher, two Tropenas, f. o. Feb. 17, 1907, dismantled 1927; 1 Snyder electric fur. (4,500-lb.) f. o. Feb. 9, 1918, replaced in 1927 by 2 Moore Lectromelt electric fur. (3-ton).

Product: electric steel castings for own use and for sale, annual cap., 6,000 tons; alloy steel castings; automobile and truck castings, cast steel wheels, rear axle housings, miscellaneous small steel castings.

WEST VIRGINIA RAIL CO. (The), Foot of 17th St., Huntington, W. Va.

Inc. May, 1907 in West Virginia. Capital stock: com., no par value, auth. and issued 100,000 shares.

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.; H. H. Diehl, G. S.; C. C. Watters, A Sec. & G. S. M.; A. A. Meyer, P. A.; at Huntington, W. Va.

Sales offices:

Chicago, Ill., Railway Exchange Bldg.

Cincinnati, Ohio, Chamber of Commerce Bldg.

Columbus, Ohio, Buttles Ave.

Works at Huntington: 2 cont. heat. fur., fuel nat. gas; 21" 3-h. 2-st. with 3-h. 1-st. pinions, 1,500 H. P. motor drive, rail mill; comb. 16" and 12" bar mill with 16" 3-h. 1-st. roughing, 3-h. 1-st. pinions, 600 H. P. motor drive, 12" 3-h. 5-st. and 3-h. 1-st. pinions, 1,000 H. P. motor drive; 12" 3-h. 2-st. with 2-h. 1-st. and 3-h. 1-st. pinions, 500 H. P. drive; blt. 1918, steam drive replaced by motor drive in 1929. Shops for fabrication of frogs, switches, mine ties and concrete reinforcing bars.

Product: steel rails (8-lb. to 60-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 (65,000 tons rerolled rails, 35,000 tons bars and shapes).

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 \$51,100; pref. 7% cum., auth. \$100,000, issued \$75,700.

G. T. Honstain, Ch.; V. G. Honstain, P.; C. M. Heywood, Sec. & T.; E. F. Junger, G. M.; G. V. Ziemer, G. S.

Brand: Westeeco-Products.

Works at 2833 Grand Ave., Minneapolis: blt. 1906; 3 Snyder electric fur. (one 3-ton, one 1½-ton, one ½-ton).

Product: electric steel castings for sale, annual cap., 6,000 tons. Alloy steel castings.

WESTERN ELECTRIC COMPANY, Inc., 195 Broadway, New York, N. Y.

Company manufactures telephones, telephone cables, telegraph instruments, etc.; and operates a steel foundry at Hawthorne Station, Chicago, Ill. for own use. Subsidiary of American Telephone and Telegraph Co.

Hawthorne Plant, Hawthorne Station, Chicago, Ill.: steel ingots first made in 1928; 1 electric fur. (3-ton).

Product: alloy steel ingots for own use only, annual cap., 3,200 tons.

Western Reserve Steel Co., Cleveland, Ohio. Works at 6800 Grant Ave., Cleveland, of former Hunter Crucible Steel Co. for manufacture of electric and crucible steel ingots and rolled and hammered tool steel, were sold in June, 1926 to The H. R. Fishel Steel Co. and dismantled. Plant was converted into a warehouse.

Western Steel Co., Midvale, Utah, see Western Steel & Foundry Co. and Utah Steel Corporation.

Western Steel Car & Foundry Co., Pittsburgh, Pa. was merged Feb. 18, 1926 in the Pressed Steel Car Co.

WESTERN STEEL & FOUNDRY CO., 403 Kearns Bldg., Salt Lake City, Utah.

Inc. Apr. 1, 1929 in Utah.

W. L. Booth, P. & G. M.; D. D. Moffat, V. P.; J. O. Elton, V. P.; George L. Webster, Sec. & T.; E. L. Perkes, G. S. M.; at Salt Lake City. George L. Webster, P. A.; at Midvale, Utah.

Works at Midvale, Utah: blt. 1914-15, first steel Nov. 1, 1917; 2 B. O. H. fur. (one 20-ton, one 40-ton) fuel, oil; 2 cont. oil-fired ingot and billet heat. fur.; 22" 3-h. 3-st. roughing and finishing; 16" 3-h. 4-st. roughing and finishing; 12" 3-h. 5-st. finishing; 4 steam hammers (1,500-lb. to 3,000-lb.). (Utah Steel Corp'n. to Jan., 1927; Western Steel Co. to April 1, 1929).

Product: steel ingots, annual cap., 46,400 tons; steel castings for sale, 3,600 tons; alloy steel ingots and castings (nickel, chrome); finished hot rolled products, 40,000 tons including 15,000 tons heavy and 15,000 tons light structural shapes, 10,000 tons bars; forged products, 7,200 tons; steel castings for railroads and steel roll shells; forged chrome steel grinding balls.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO., East Pittsburgh, Pa.

Inc. 1886 in Pennsylvania. Capital stock: com., par value \$50, auth. \$196,000,000, issued \$129,317,050; pref. 7% cum., auth. \$4,000,000, issued \$3,998,700.

A. W. Robertson, Ch.; E. M. Herr, V. Ch.; L. A. Osborne, V. P.; C. A. Terry, V. P.; Walter Cary, V. P.; J. C. Bennett, V. P.; Harold Smith, V. P.; E. D. Kilburn, V. P.; S. L. Nicholson, Acting V. P.; at 150 Broadway, New York, N. Y. F. A. Merrick, P.; H. P. Davis, V. P.; H. D. Shute, V. P.; W. S. Rugg, V. P.; T. P. Gaylord, V. P.; J. S. Tritle, V. P.; W. K. Dunlap, Acting V. P.; H. F. Baetz, T.; F. E. Craig, C.; C. C. James, A.; at East Pittsburgh, Pa. 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.; East Springfield and Chicopee Falls, Mass., and Emeryville, Calif., for the manufacture of electrical machinery. It operates gray iron foundries at Trafford, Pa. (18,000 tons), Cleveland, Ohio (7,200 tons) and East Springfield, Mass. (2,100 tons); total annual cap., 27,300 tons gray iron and 3,300 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., 3,000 tons.

Wharton (Wm.), Jr. & Co., Inc., see Taylor-Wharton Iron & Steel Co.

WHEELING MOLD & FOUNDRY CO., 8 Raymond St., Wheeling, W. Va.

Inc. Sept. 30, 1919 in Delaware. Capital stock: com., no par value, auth. 40,000 shares, issued 20,000 shares; bonds \$700,000. H. E. Field, P.; D. A. Burt, V. P.; E. A. Balsley, V. P. (operations); C. C. Woods, Sec. & T.; R. S. Crawford, A Sec.; A. D. Wilson, G. S.; E. L. Schafer, Jr., P. A.

Brands: Super Steel Rolls; Cro-Mold (dies, rams and sow blocks). 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. (two 25-ton, one 30-ton) fuel, nat. gas; 1 cupola; gray iron (8,000 tons) and semi-steel (1,000 tons) foundry.

Product: steel castings for own use and for sale, annual cap., 30,000 tons. Alloy steel castings (nickel, chrome, molybdenum).

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 \$39,481,900; pref. A. 8% cum. auth. \$5,000,000, issued \$4,970,000; pref. B. 10% cum. auth. \$25,000,000, issued \$22,556,800; bonds \$32,994,500.

Isaac M. Scott, P.; Parker F. Wilson, A. P.; J. E. Montgomery, V. P.; Walter B. Higgins, V. P.; H. P. Beswick, Sec.; W. H. Manning, T.; R. D. Swinburne, C.; J. L. Neudoerfer, G. S. M.; E. D. Adams, P. A.

District sales offices: Atlanta, Ga., Boston, Mass., Chicago, Ill., Cincinnati, Ohio, Dallas, Texas, Detroit, Mich., Los Angeles, Calif., New Orleans, La., New York, N. Y., Philadelphia, Pa., St. Louis, Mo., San Francisco, Calif., Seattle, Wash.

Warehouses: Boston, Buffalo, Chattanooga, Chicago, Columbus, Des Moines, Detroit, Kansas City, Memphis, Minneapolis, New Orleans, New York, Philadelphia, Richmond, St. Louis.

Brands: Wheeling, Cop-r-loy, Extra Refined Cop-r-loy (steel products); Whitaker (range boilers); La Belle (cut nails); Channel drain (roofing).

Product: basic, bessemer, malleable and foundry pig iron; steel ingots and steel castings for own use; slabs, blooms, billets and sheet and tinplate bars; sheared plates; hot and cold rolled strip steel; 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; tie plates; railroad spikes; galvanized range boilers; steel drums; metal roofing and accessories, metal lath and building materials; metalware, portable ovens, gas heaters; steel shipping containers; steel ceilings; culverts; stove pipe and elbows; gray iron and brass castings for own use; coke oven by-products.

Steubenville Works, Steubenville, Ohio:

Blast Furnaces: 2 stacks; No. 1, 92' x 24', blt. 1865, reblgd. 1929; No. 2, 92' x 25', blt. 1903-04, reblt. 1926, relined 1928; eight 3-pass McClure stoves (two 85' x 21' and two 110' x 21' at No. 1, four 85' x 21' at No. 2); 3 Mesta steam blowing eng. (150,000 cfm.) 20 lbs. rated pressure; 22 water-tube boilers (5 Connelly, 17 Sterling) 11,965 H. P. serve entire plant; 2 Heyl & Patterson double-strand pig casting mach.; American Ore Reclamation sintering plant for flue dust, annual cap., 47,450 tons. By-product coke from own plant at East Steubenville, W. Va.: Lake ore. Product: basic pig iron, annual cap., 510,000 tons.

Steel Works and Rolling Mills: orig. blt. 1855; 11 B. O. H. fur. (125-ton) fuel, prod. gas and coke oven gas; 44 Laughlin-Chapman gas prod.; one 250-ton mixer; seven 4-hole soaking pits;

3 cont. coke oven gas-fired heat. fur.; 45" 2-h. 1-st. universal slabbing; 35" 2-h. 1-st. blooming; 19" 2-h. 8-st. continuous sheet bar and skelp; 60" 2-h. 2-st. and 60" 4-h. 9-st. continuous hot strip; 2 trains cold rolls for strip (48" 4-h. 4-st. and 48" 4-h. 2-st.); two jobbing plate mills (28" x 60½" 2-h., 30" x 72½" 3-h.); 4 sheet and 4 pair fur.; 4 comb. sheet and pair. fur.; 8 2-h. hot black sheet mills 28" x 36" to 54"; one train cold rolls for sheets with 5-st. (2 stands 24" x 46", 2 stands 24" x 54", 1 stand 24" x 60"); 14 box annealing fur.; 2 blue annealing fur.; 4 pickling mach. (2 plunger, 2 rocker); 3 galv. pots for sheets; roll flat strip ½" to 16 gauge, 15" to 48" wide, 2' to 32' long, black sheets 10 to 32 gauge, 16" to 48" wide, 60" to 144" long; 2 butt weld fur. for pipe ½" to 3½"; 2 lap weld fur. for pipe 2" to 12"; 1 galv. pot. Product: steel ingots, annual cap., 900,000 tons; semi-finished hot rolled products, 460,000 tons slabs, 440,000 tons sheet bars, 460,000 tons blooms and billets; finished hot rolled products, 289,000 tons including 100,000 tons hot rolled strip, 132,000 tons skelp, 57,000 tons black sheets; 29,500 tons blue annealed sheets, galvanized sheets, 46,000 tons; cold rolled strip steel, 72,000 tons; black pipe, 85,000 tons; galvanized pipe, 36,000 tons.

Wheeling Steel By-Product Coke Dept., East Steubenville, W. Va.: 145 by-product coke ovens (94 Koppers, 51 Becker), by-product recovery plant and Koppers benzol plant, annual cap., 711,750 net tons coke, 3,285,000 gals. light oil.

Beech Bottom Works, Beech Bottom, Brooke Co., W. Va.: blt. 1917-18, f. o. Feb., 1919; 8 combination sheet and pair fur.; 8 2-h. hot black sheet mills (30" x 36" to 54"); 1 train cold rolls with 6-st. 26" x 52" to 64"; 12 box annealing fur.; 2 Mesta pickling mach.; 3 pots for long terne plates. Roll black sheets 14 to 30 gauge, 20" to 48" wide, 72" to 144" long. Product: black sheets, annual cap., 56,000 tons; long terne plates, 29,000 tons.

Top Furnace, Wheeling, W. Va. was dismantled in 1928.

Martins Ferry Furnace, Martins Ferry, Ohio: 1 stack, 82' 6" x 18', blt. 1866, rebt. 1903-05, remod. 1922, relined 1929; 4 Mas-sicks-Crooke-McClure 3-pass center comb. stoves 75' x 20'; 3 Allis-Chalmers steam blowing eng. (50,000 cfm.) 15 lbs. rated pressure; 8 water-tube boilers (4 Wicks, 3 Wheeler, 1 Sterling) 3,100 H. P.; 1 Heyl & Patterson single-strand pig casting mach. Steubenville by-product coke: Lake ore. Product: bessemer, basic, malleable and foundry pig iron, annual cap., 135,000 tons.

Benwood Works, Benwood, W. Va.: blt. 1885-86, f. o. Aug. 12, 1886; 2 bessemer converters (6½-ton); 3 cupolas; 3 gas prod.; two 4-hole soaking pits; 36" 2-h. 1-st. blooming mill; 1 cont. recuperative prod. gas-fired heat. fur.; one 2-h. 14-st. Mesta

continuous skelp mill with 16" x 17½" 2-st., 14" x 17½" 4-st., and 12" x 17½" 4-st. horizontal, 22" x 6½" 1-st. and 18" x 6½" 3-st. vertical; 3 butt weld fur. for pipe ¾" to 3"; 2 lap-weld fur. for pipe 2" to 8"; 1 galv. pot. Product: steel ingots, annual cap., 296,640 tons; slabs, blooms and billets, 196,000 tons; skelp, 120,000 tons; black pipe, 148,000 tons; galvanized pipe, 46,800 tons.

Belmont Works, Wheeling, W. Va.: rolling mill dismantled in 1929.

La Belle Works, Wheeling, W. Va.: four 4-d. regen. prod. gas-fired heat. fur.; two sheared plate mills 22" x 24" 3-h. and 21" x 21" 2-h.; 1 Mesta pickling mach.; 152 cut nail mach. Roll sheared plates .058" thick and up, to 17½" wide, to 25' long. Product: sheared plates, annual cap., 70,000 tons; cut nails, 300,000 kegs (100-lb.).

Whitaker Works, Wheeling, W. Va.: 12 sheet and 12 pair fur.; 6 hot black sheet mills 28" x 36" to 29" x 44"; 6 hot black plate (tin) mills 28" x 32" to 28" x 38"; 9 stands cold rolls (1 train 4-st. and 1 train 2-st. 24" x 38" to 24" x 48", 2 stands on plate mill train and 1 stand on sheet mill train 28" x 44"); 18 box annealing fur.; 1 Mesta pickling mach. Roll black sheets 16 to 30 gauge, 20" to 36" wide, 72" to 144" long; black plate, 14 to 32 gauge, 18" to 34" wide, 44" to 97½" long. Product: black sheets, annual cap., 39,000 tons; black plate for tinning and black plate specialties, 28,000 tons.

Martins Ferry Works, Martins Ferry, Ohio: 6 comb. sheet and pair fur.; 8 hot black sheet mills (six 28" x 36" to 28" x 38", 2 roughing 28" x 44"); 2 stands cold rolls 26" x 44"; 13 box annealing fur. Roll black sheets 20 to 30 gauge, 24" to 36" wide, 72" to 144" long. Product: black sheets, annual cap., 40,000 tons.

Yorkville Works, Yorkville, Ohio: 24 sheet and 24 pair fur.; 24 hot black plate (tin) mills (28" x 32" to 36"); 35 stands cold mills (9 sets of 3-st. tandem, 1 set 2-st. tandem and 1 set single 26" x 44"; 1 train 18" x 32" 4-h. 4-st. tandem; 18" x 32" 4-h. single st.); 9 double box annealing fur.; 3 Mesta pickling mach.; 30 tinning sets (28 for coke tinplates, 2 for terne plates). Product: black plates for tinning, annual cap., 100,000 tons; blue annealed sheets, 5,000 tons; tinplates, 2,000,000 base boxes, terne plates, 150,000 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. Portsmouth by-product coke: Lake ore. Product: basic pig iron, annual cap., 200,000 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, 50" to 60"; 19 box annealing fur.; 3 blue annealing fur.; 8 pickling mach. (4 Mesta, 1 Cook, 3 Plunger); 1 pickling tank; 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 7/16" to 18 gauge; 2 galv. units; 164 wire nail mach.; 36 barbed wire mach.; 9 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. Product: steel ingots, annual cap., 418,000 tons; steel castings, 2,000 tons; semi-finished hot rolled products, slabs 90,000 tons, blooms and billets 130,000 tons, sheet and tinplate bars 140,000 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.).

Portsmouth By-Product Coke Co., Portsmouth, Ohio: 108 Semet-Solvay regenerator by-product coke ovens, by-product recovery plant and Semet-Solvay benzol plant, annual cap., 600,000 net tons coke, 2,500,000 gals. light oil.

Riverside Furnace, Benwood, W. Va.: 1 stack; No. 1, 89' 7 1/2" x 21', blt. 1871-72, rebt. 1903, last remod. and relined 1925; No. 2, is abandoned and will be dismantled; (4 Massicks-Crooke-McClure 3-pass center comb. stoves 86' x 21'; 3 Allis-Steeple-Tandem steam blowing eng. (50,000 cfm.) 25 lbs. rated pressure; 12 Sterling water-tube boilers, 3,500 H. P.; 1 Uehling double-strand pig casting mach. Steubenville by-product coke: Lake ore. (Blast furnace dept. of Riverside Works, National Tube Co. to Feb. 2, 1928). Product: bessemer pig iron, annual cap., 180,000 tons.

Total annual cap.: 1,025,000 tons pig iron; 1,614,640 tons steel ingots; 1,088,500 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 Corporation also operates iron ore mine at Mountain Iron, Minn., annual cap., 400,000 tons; coal mine at Steubenville, Ohio, annual cap., 240,000 gross tons; coal mine at Freeburn, Ky., annual cap., 600,000 net tons.

WHITAKER IRON CO., Wheeling, West Virginia.

Inc. Jan. 24, 1927 in Delaware. Capital stock: com., par value \$100, auth. \$200,000, issued \$128,400.

A. C. Whitaker, P.; L. W. Franzheim, Sec. & T.; at Wheeling. Joseph Coudon, V. P.; at Perryville, Md. J. A. Hartenstine, Mgr.; at Principio, Md.

Works at Principio Furnace, Md.: charcoal forge blt. 1883-84; 12 forge fires; 3 hammers (3,500-lb., 5,000-lb., 6,000-lb.). Steam power. Idle at present.

Product: hammered charcoal blooms from scrap for s&e, annual cap., 8,000 tons.

Company owns iron ore mines in New Castle Co., Delaware, and Baltimore Co., Maryland. (Both mines idle).

WHITE, J. W., Springfield, Ohio.

Works at Cambridge, Ohio: 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. roughing; three 14" 3-h. 2-st. merchant mills. (The Cambridge Steel Products Co. to Sept. 9, 1929).

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.

WHITING CORPORATION, Lathrop Ave. & 157th St., Harvey, Ill.

Inc. Mar., 1894; reinc. 1919 in Illinois. Capital stock: com., par value \$25, auth. \$2,500,000, issued \$2,209,300; pref. 6½% cum., auth. \$500,000, issued \$118,800.

T. S. Hammond, P. & G. M.; M. J. Evans, V. P. & G. S. M.; A. H. McDougall, V. P.; R. A. Pascoe, Sec. & T.; Walter DeVries, G. S.; H. M. Rowlette, P. A.; at Harvey, Ill. J. R. Bates, V. P.; at 136 Liberty St., New York, N. Y. R. E. Prussing, V. P.; at Penton Bldg., Cleveland, Ohio.

Sales offices in principal cities of United States and Canada.

Company manufactures cranes, foundry equipment, railway specialties, stokers, pulverized coal equipment, chemical evaporators and crystallizers 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 (3,000-lb.); 1 cupola; gray iron foundry annual cap., 5,000 tons gray iron, 150 tons bronze 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.

Charles C. Wickwire, P. & G. M.; Arthur F. Stilson, V. P. & G. S.; Frederic R. Wickwire, Sec.; Edward Stilson, T.; George H. Kennedy, G. S. M.; O. K. George, P. A.

Brands: Cortland (black painted wire cloth); Graywick (wire cloth); Wickwire (bronze wire cloth and poultry netting).

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, 6 Morgan gas prod.; 2 cont. heat. fur. (1 ingot, 1 billet) fuel, gas and coal; 20" 2-h. 1-st. blooming; 10" 2-h. 14-st. Morgan cont. rod mill; 18 pot annealing fur.; 2 blue annealing fur.; 4 muffle fur. for wire; 7 pickling mach.; 14 galvanizing pots for wire; 280 wire drawing blocks for drawing wire down to 16 gauge; 2,193 wire drawing blocks for drawing wire from 16 to 33 gauge; 240 wire nail mach.; 6 barbed wire mach.; 47 wire fence mach.

Product: steel ingots, annual cap., 35,000 tons; billets, 35,000 tons; wire rods, 35,000 tons; plain wire, 22,000 net tons; galvanized wire, barbed wire, wire fencing; wire nails 75,000 kegs (100-lb.).

WICKWIRE-SPENCER STEEL CO., 41 East 42nd St., New York, N. Y.

Edward C. Bowers and Charles L. Feldman, Receivers (appointed Oct. 22, 1927). Inc. Jan., 1925 in Delaware. Capital stock: com., no par value, auth. 1,815,000 shares, outstanding 958,750 shares; bonds \$12,679,000.

E. C. Bowers, P.; P. M. Macklin, V. P., G. M. & G. S. M.; G. H. Creveling, Sec. & T.; F. C. Yeates, P. A.

Sales offices:

Atlanta, Ga., 161 Spring St., N. W.

Buffalo, N. Y., Station B.

Chicago, Ill., 208 South La Salle St.

Chicago, Ill., Steel Sales Corp., 129 South Jefferson St.

Cleveland, Ohio, 1217 Guaranty Title Bldg.

Detroit, Mich., Craine-Schrage Steel Co., 6189 Hamilton Ave.

Los Angeles, Calif., 1070 North Alameda St.

Portland, Ore.

San Francisco, Calif., 144 North Townsend St.

Seattle, Wash., 1025 Sixth Ave., South.

Tulsa, Okla., 1304 Philtower Bldg.

Worcester, Mass., 80 Webster St.

Brands: Clinton (welded fabrics); Gold Strand, American (screen cloth); Wisco (card clothing and perforated metals); Natwire (kitchen goods); Excelsior (netting).

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 Corp'n. with weaving mills at Blue Island, Ill. and Mt. Wolf, Pa.; and stock interest in Hanna Ore Mining Co. and Buffalo Iron Mining Co.; dolomite quarry at Gasport, N. Y.

Buffalo Works, Buffalo, N. Y.:

Harriet Furnaces: 2 stacks, X, 80' x 20', blt. 1907-08, f. o. Oct. 16, 1908, remod. 1915, relined 1924; Y, 85' x 21' 6", blt. 1909-10, f. o. Oct. 1, 1910, remod. 1919, relined 1929; 8 stoves (4 Kennedy center comb. 80' x 20', 4 McKee side comb. 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. By-product and Conn. coke: Lake ore. Product: basic, malleable and foundry pig iron, annual cap., 350,000 tons.

Steel Works: blt. 1915-16, f. o. Jan. 8, 1917; 4 B. O. H. fur. (75-ton) fuel, coke oven and prod. gas, 8 Morgan gas producers; two 4-hole soaking pits, fuel, coke oven and prod. gas; 1 Morgan cont. gas-fired heat. fur.; 32" 2-h. 2-st. blooming; 18" 2-h. 6-st. billet; 10" 2-h. 16-st. Morgan cont. rod mill. Product: steel ingots and steel castings for own use, annual cap., 175,500 ton (175,000 tons ingots, 500 tons castings); billets, 150,000 tons; wire rods, 120,000 tons.

Wire Mill: blt. 1917-18, f. o. 1918; 264 wire drawing blocks for wire $\frac{5}{8}$ " to .035"; 53 wire nail mach.; 9 wire fence mach.; 1 galv. pan. Product: plain wire, annual cap., 78,000 net tons; galvanized wire, 12,000 net tons; wire fencing, 2,500 net tons; wire nails, 36,000 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 3,000-lb. hammer. Steam power. 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.

Greendale Works, Worcester, Mass. Product: helical springs, clock spring, 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, white enamel goods, riddles.

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.; 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; 5' double puddling fur.; 1 squeezer; one 3-d. coal-fired muck bar reheat. fur.; 1 sheet and 1 pair fur.; 1 hot black sheet mill 24" x 38" 2-h.; 1 stand cold rolls, 22" x 42"; 1 Mesta 3-arm pickling mach.; 1 box annealing fur. Roll black sheets, 16 to 30 gauge, to 30" wide and 120" long.

Product: muck bar, annual cap., 5,000 tons; sheet and tinplate bars, 5,000 tons; black sheets, 5,000 tons; flat and corrugated sheets.

WITHERBEE, SHERMAN & CO., Port Henry, N. Y.

Inc. June, 1900 in New York. Capital stock: com., par value \$100, auth. and issued \$3,000,000; pref. 8% cum. auth. \$1,000,000, issued \$408,300; bonds \$3,600,000.

E. O. Marting, P. & G. M.; A. K. McClellan, A. Sec. & A. T.; T. F. Kelly, S. (Blast Furnace Dept.); F. J. Myers, P. A.; at Port Henry, N. Y. D. C. Borden, V. P.; W. W. Lancaster, Sec.; Rollin R. Hughes, T.; at 55 Wall St., New York, N. Y. A. M. Cummings, S. (Mines Dept.); at Mineville, N. Y.

Sales agent: Hickman, Williams & Co., 120 Broadway, New York, N. Y., and 1500 Walnut St., Philadelphia, Pa.

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 Fort Henry, N. Y.

Port Henry Furnaces, Port Henry, N. Y.: 2 stacks, No. 1, 80' x 17' 2", blt. 1872-73, last rebt. 1921; No. 2, 87' x 21' 6", blt. 1922-23, relined 1929; 9 stoves (2 McClure 95' x 20', 3 Foote 80' x 18', four McClure 100' x 20'); 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 double-strand pig casting mach.; Greenawalt sintering plant for iron ore and flue dust, annual cap. 700,000 tons. Conn. Coke: local magnetite ore and concentrates.

Product: malleable, foundry and low-phosphorus pig iron, annual cap., 250,000 tons.

Witherow Steel Co., Pittsburgh, Pa. was acquired by the Donner Steel Co., Inc., Jan. 6, 1930. Works are now known as Witherow Die Rolling Division, Donner Steel Co., Inc.

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, 141 Milk St.

Chicago, Ill., Walter-Wallingford & Co., McCormick Bldg.

Cincinnati, Ohio, Water-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. Mohrs Sons, Bullitt Bldg.

Pittsburgh, Pa., Walter-Wallingford & Co., Oliver Bldg.

St. Louis, Mo., Hickman Williams & Co., Federal Commerce Trust Bldg.

Brand: Woodward (pig iron).

Product: basic and foundry pig iron, total annual cap. (5 furnaces) 465,000 tons.

Vanderbilt Furnaces, East Birmingham, Ala.: 2 stacks, No. 1, 78' 2" x 15' 4", blt. 1890, last rebt. 1901, (idle); No. 2, 80' x 18' 9", blt. 1906-08, relined 1924; five 4-pass stoves 85' x 20'; 5 vertical steam blowing eng. (3 Tod, 2 Southwark) 90,000 cfm., 20 lbs. rated pressure; 12 water-tube boilers (10 Wickes, 2 B. & W.) 5,200 H. P. By-product coke: local red ore and manganese oxide. Product: foundry and basic pig iron, annual cap., 95,000 tons.

Woodward Furnaces, Woodward, Ala.: 3 stacks, No. 1, 90' 8" x 23' 8", blt. 1882-83, rebt. 1913, relined 1928; No. 2, 86' 6" x 20' 9", blt. 1886, rebt. 1907-08, relined 1929; No. 3, 85' 6" x 20' 4", blt. 1902-05, relined 1928; 15 two-pass stoves (five 110' x 22', five 90' x 20', five 80' x 20'); 10 steam blowing engines (4 horizontal, 6 vertical) 260,000 cfm., 20 lbs. rated pressure; 35 water-tube boilers (4 Sterling, 5 Rust, 26 Wickes) 15,567 H. P. furnish power also for general power plant. By-product coke: local red ore and manganese oxide. Product: basic and foundry pig iron, annual cap., 370,000 tons.

By-Product Coke Plant at Woodward, consisting of 162 Koppers and 60 Wilputte coke ovens, annual cap., 780,000 net tons coke. By-product recovery plant. Koppers benzol plant, annual cap., 2,300,000 gals. light oil. Beehive coke plant at Woodward (idle).

Iron ore and coal mines located in Jefferson Co., Ala., annual cap., 1,300,000 tons iron ore, 1,200,000 tons coal.

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.

Los Angeles, Calif., Ducommun Corp., 219 Central Ave.

Montreal, Canada, Drummond, McCall & Co., Ltd.

New York, N. Y., W. C. Dickey, 120 Broadway.

St. Louis, Mo., Hubbell & Sharp, 2817 Laclede Ave.

San Francisco, Calif., J. W. Judge, Hunter-Dulin Bldg.

Works at Claymont, Del.: blt. 1917-18, f. o. Sept., 1918; 6 B. O. H. fur. (100-ton), fuel, oil; 11 gas-fired soaking pits (six 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.

WROUGHT IRON COMPANY OF AMERICA, Lebanon, Pa.

Inc. July, 1928 in Pennsylvania. Capital stock: com., no par value, auth. 262,500 shares, issued 200,000 shares; pref. 7% cum., auth. and issued \$1,250,000; bonds \$1,750,000. Lebanon Iron Co. and Scranton Bolt & Nut Co. were merged in Wrought Iron Company of America, Nov. 1, 1928.

Charles Hart, P.; Frank B. Smith, Sec.; at 732 Commercial Trust Bldg., Philadelphia, Pa. H. M. Clymer, V. P.; J. J. McDermott, T.; V. F. Ache, C.; J. C. Baney, P. A.; at Lebanon.

Sales offices:

Boston, Mass., 161 Devonshire St.

Mobile, Ala., Merchant Bank Bldg.

New York, N. Y., 393 Seventh Ave.

Philadelphia, Pa., 732 Commercial Trust Bldg.

Richmond, Va., Mutual Bldg.

Brands: L. B. L. (puddled iron rivets); Rome Superior, Lebanon (staybolt iron); Rome Perfection, Lebanon, Scranton (engine bolt iron).

Product: blooms, billets, muck and scrap bar; iron and steel merchant bars, spike, bolt, nut and rivet rods, staybolt and engine

bolt iron; spikes, machine, carriage and track bolts, nuts, lags and rivets.

Lebanon Works, Lebanon, Pa.: blt. 1902-03, f. o. Jan. 12, 1903; 10 double puddling fur.; 8 Ely mechanical puddling fur.; 1 vertical squeezer; 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. Spike, Bolt, Nut and Rivet Dept.: machine bolts $\frac{1}{4}$ " x $\frac{1}{2}$ " to $2\frac{1}{2}$ " x any length; carriage bolts $\frac{1}{4}$ " x $\frac{1}{2}$ " to $\frac{3}{8}$ " x any length; track bolt $\frac{3}{8}$ " x $1\frac{1}{2}$ " to $1\frac{1}{4}$ " x any length; lags $\frac{1}{4}$ " x $1\frac{1}{4}$ " to $1\frac{1}{4}$ " x any length; spikes $5/16$ " x 2" to $\frac{3}{8}$ " x 7"; rivets $\frac{1}{2}$ " and larger. (Lebanon Iron Co. to Nov. 1, 1928). Product: muck and scrap bar, annual cap., 35,000 tons; hot rolled products, 100,000 tons including 50,000 tons merchant bars, 25,000 tons spike, bolt and rivet rods, 25,000 tons staybolt and engine bolt iron; machine bolts 60,000 kegs, carriage bolts 15,000 kegs, track bolts 25,000 kegs, lags 12,000 kegs, spikes 150,000 kegs, rivets 50,000 kegs.

Duncannon Works, Duncannon, Pa.: blt. 1836; 12 single puddling fur.; 1 vertical squeezer; four 3-d. coal-fired heat. fur.; 20" 3-h. 2-st. puddle; 12" 3-h. 5-st. and 9" 3-h. 4-st. bar mills. (Lebanon Iron Co. to Nov. 1, 1928). Product: muck bar, annual cap., 10,000 tons; merchant bar iron, 35,000 tons.

Scranton Works, Scranton, Pa.: blt. 1899; 7 double puddling fur.; 1 vertical squeezer; six 3-d. coal-fired heat. fur.; 20" 3-h. 1-st. puddle; 18" 3-h. 2-st., 12" 3-h. 5-st., 14" 3-h. 1-st. and 10" 3-h. 5-st. bar mills; 16" 2-h. 1-st. universal mill for bars to 10" wide. Spike, bolt and nut factory. (Scranton Bolt & Nut Co. to Nov. 1, 1928). Product: muck bar, annual cap., 15,000 tons; hot rolled products, 55,000 tons including 35,000 tons iron and steel merchant bars, 20,000 tons spike, bolt and nut rods; bolts and nuts 60,000 kegs, spikes 40,000 kegs.

Works at Rome, N. Y. (leased, owned by Rome Iron Mills, Inc.): orig. blt. 1868; 14 double puddling fur.; 1 rotary squeezer; five 3-d. coal-fired heat. fur.; 20" 3-h. 2-st. muck; 18" 3-h. 3-st. bar; 12" 3-h. 3-st. guide; 8" 3-h. 5-st. guide. Machine shop. Product: blooms, billets and muck bar, annual cap., 11,125 tons; staybolt and engine bolt iron, 8,900 tons.

WROUGHT WASHER MANUFACTURING CO., 46-54 South Bay St., Milwaukee, Wis.

Inc. 1887 in Wisconsin. Capital stock: com., no par value, auth. 7,500 shares, issued 6,750 shares.

Fred Doepke, P. & G. M.; C. H. Disch, V. P. & P. A.; F. C. Doepke, Sec.; Wm. F. Disch, T. & G. S. M.; J. A. Holzer, G. S.

Sales offices: Los Angeles and San Francisco, Calif.; Seattle, Wash.; Denver, Colo.; New Orleans, La.

Works at Milwaukee: one 4-d. oil-fired heat. fur.; 16" 2-h. 2-st. rerolling mill. Washer Dept. for cut washers 3/16" O. D. and larger.

Product: hot rolled strip for own use only, annual cap., 5,000 tons; washers, 100,000 kegs (200-lbs.).

Wyoming Shovel Works (The), Wyoming, Pa. Rolling mill at Wyoming for manufacture of shovel plates and spring steel sheets, last operated June, 1929, to be dismantled late in 1930.

YALE & TOWNE MANUFACTURING CO. (The), 200 Henry St., Stamford, Conn.

Inc. 1882 in Connecticut. Capital stock: com., par value \$25, auth. \$25,000,000, issued \$11,000,000.

Walter G. Allen, P.; Joseph A. Horne, 1 V. P.; E. C. Waldvogel, 2 V. P.; Addison Boren, T.; M. C. Maxwell, G. S.; Wm. H. Bertine, P. A.; at Stamford. Charles W. Sager, 3 V. P.; at North Chicago, Ill. Ernst A. Damm, 4 V. P.; at Velbert, Germany. John H. Towne, Sec.; at 9 East 40th St., New York, N. Y.

Sales offices: 9 East 40th St. and 78 Walker St., New York, N. Y.; 158 West Lake St., Chicago, Ill.

Company manufactures locks, hardware, material handling equipment, etc., operates plants at Stamford, Conn.; Philadelphia, Pa.; Cincinnati, Ohio; Chicago, Waukegan, and Lockport, Ill.; St. Catharines, Ont., Canada; Velbert and Solingen, Germany; Brncha, Czecho-Slovakia; Willenhall, England. Operates steel foundry for own use in connection with Stamford Works.

Works at Stamford, Conn.: steel foundry added 1921, f. o. May 24, 1921; 1 Booth electric fur. (1½-ton); 3 cupolas; 1 air furnace (15-ton) for malleable iron castings; gray iron and semi-steel (2,000 tons), malleable iron (850 tons), brass and bronze (600 tons) foundry for own use only.

Product: steel castings for own use only, annual cap., 1,200 tons.

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, issued 3,179 1/10 shares; pref. 6% cum. auth. \$350,000, issued \$103,500; bonds \$87,500.

Van Rensselaer Lansingh, P. & G. M.; E. K. Jenckes, G. S. M.; at 25 West 43rd St., New York, N. Y. Harry D. Howe, Sec., T. & P. A.; J. M. Washington, G. S.; at York, Pa. Arthur T. Hopkins, V. P.; at Boston, Mass.

Sales office: 25 West 43rd St., New York, N. Y.

Brand: York (ferro-alloys).

Works at York, Pa.: blt. 1919, f. o. Jan. 26, 1920; 4 electric fur. for ferro-alloys and zinc oxide. Electric power from Appo. Gas & Electric System.

Product: ferro-tungsten, ferro-molybdenum, ferro-vanadium, annual cap., 1,000 tons. Molybdic acid, tungstic acid and sodium tungstate; boron deoxidizing reagents; tungsten metal powder and carbide, molybdenum metal powder and carbide.

YOUNGSTOWN SHEET & TUBE CO. (The), Stambaugh Bldg., Youngstown, Ohio.

Inc. Nov. 1900 in Ohio. Capital stock: com., no par value, auth. 2,000,000 shares, issued 1,200,000 shares; pref. 5½% cum. auth. \$25,000,000, issued \$15,000,000; bonds \$72,000,000.

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, Ch.; Frank Purnell, P.; C. S. Robinson, V. P.; W. C. Reilly, V. P.; W. J. Morris, V. P.; W. E. Watson, V. P.; W. B. Gillies, A. V. P.; W. E. Meub, Sec. & T.; R. M. Welch, A. Sec. & A. T.; C. H. Rose, A. T.; W. N. McDonald, C.; J. H. Steeves, A.; at Youngstown, H. G. Dalton, 1 V. P.; at Union Trust Bldg., Cleveland, Ohio. E. H. Stillman, District Mgr.; A. R. Finch, Works Supt.; at Indiana Harbor Works, East Chicago, Ind. A. W. Smith, Works Supt.; at Campbell Works, Campbell, Ohio. H. L. Brinker, Works Supt.; at Brier Hill Works, Youngstown, Ohio. A. S. Gasche, Works Supt.; at Evanston Works, Evanston, Ill.

Sales offices:

Atlanta, Ga., Healey Bldg.
 Boston, Mass., Chamber of Commerce Bldg.
 Buffalo, N. Y., Liberty Bank Bldg.
 Chicago, Ill., Conway Bldg.
 Cincinnati, Ohio, Union Trust Bldg.
 Cleveland, Ohio, Union Trust Bldg.
 Dallas, Texas, Magnolia Bldg.
 Denver, Colo., Continental Oil Bldg.
 Detroit, Mich., Fisher Bldg.
 Kansas City, Mo., Commerce Bldg.
 London, England, Dashwood House.
 Los Angeles, Calif., 3000 Santa Fe Ave.
 Memphis, Tenn., P. O. Box 462.
 Minneapolis, Minn., Andrus Bldg.
 New Orleans, La., Hibernia Bldg.
 New York, N. Y., 30 Church St.
 Philadelphia, Pa., Franklin Trust Bldg.
 Pittsburgh, Pa., Oliver Bldg.
 St. Louis, Mo., Shell Bldg.
 San Francisco, Calif., 55 New Montgomery St.
 Seattle, Wash., Central Bldg.
 Tulsa, Okla., Exchange National Bank 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, 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; tinplate and tin mill black plate; wire rods, plain, galvanized, copper-coated, lead and pot annealed wire; wire nails, galvanized polished, blued and cement coated; wire staples, wire hoops, barbed wire, flexible hollow steel tubing; steel pipe, black and galvanized, seamless tubes, oil well casing, tubing, drive rotary drill, line, dry kiln signal, ammonia, agricultural implement and ream and drifted pipe, upset rotary drill pipe and tubing for gasoline cracking plants; boiler tubes; rigid steel conduit, enameled and electro-galvanized; conduit elbows, steel couplings; oil and water well tools and supplies; forged steel unions.

Total annual cap.: pig iron (13 blast furnaces) 2,950,000 tons; steel ingots, 3,240,000 tons; semi-finished hot rolled products 4,920,000 tons; finished hot rolled products, 2,182,000 tons, including 1,075,000 tons skelp, 380,000 tons sheared plates, 250,000 tons merchant bars, 257,000 tons sheets, 110,000 tons wire rods, 110,000 tons black plates including black plates for tinning; black pipe, 895,000 tons; seamless tubes, 250,000 tons; wire 110,000 net tons.

Hubbard Works, Hubbard, Ohio: 2 blast furnaces; No. 1, 80' x 19', blt. 1867, last rebt. 1910, relined 1928; No. 2, 80' x 20', blt. 1872, last rebt. 1915, relined, 1927; 9 Kennedy 2-pass center-comb. stoves, 82' x 22'; 2 steam blowing engines (80,000 cfm.), 15 lbs. rated pressure; 8 water-tube boilers (7 Sterling, 1 Heine) 4,900 H. P.; 1 Uehling double-strand pig casting mach. By-product and Conn. beehive coke: Lake ore. Product: basic, bessemer, malleable and foundry pig iron, annual cap., 310,000 tons.

Campbell Works, Campbell, Ohio.

Blast Furnaces: 4 stacks: "A" 88' x 23' 6", blt. 1907-08, rebt. 1927, relined 1929; "B" 88' x 23' 6", blt. 1907-08, rebt. 1926; "C" 88' x 22' 6", blt. 1909-10, rebt. and relined 1924; "D" 88' x 22' 6", blt. 1912-13, rebt. 1923, relined 1928; 16 two-pass center comb. stoves (8 Steinhart, 3 Bradshaw, 5 Freyn) 102' x 22'; 1 steam blowing eng. and 5 turbo-blowers (160,000 cfm.) 20 to 30 lbs. rated pressure; 6 Sterling water-tube boilers, 12,000 H. P. furnish power also to Power House and Steel Works; 1 Uehling four-strand pig casting mach.; 4 slag granulating pits, annual cap., 450,000 tons. By-product coke: Lake ore. Product: bessemer and basic pig iron, annual cap., 1,000,000 tons.

By-Product Coke Plant: 306 Koppers by-product ovens, by-product recovery plant and Semet-Solvay benzol plant, annual cap., 1,320,000 net tons coke, 4,000,000 gals. light oil.

Steel Works: Bessemer Dept., blt. 1905-06, f. o. Aug. 22, 1906, 2 bessemer converters (15-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., 1,560,000 tons (720,000 tons bessemer, 840,000 tons B. O. H.).

Rolling Mill Dept.: blt. 1901-02; 16 four-hole soaking pits, fuel prod. and coke oven gas; four 4-d. slab heat. fur., fuel prod. and coke oven gas; 5 cont. prod. gas-fired heat. fur. (4 Chapman-Stein, 1 Morgan); 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; 1 universal plate mill, 30" x 81" 2-h.; 15 sheet and 15 pair fur.; 15 hot black sheet mills (one 28" x 34", fourteen 29" x 34" to 56"); 4 cold mills (one 28" x 60", three 26" x 40" to 60"); 7 four box and 1 double box annealing fur.; 2 pickling mach. (1 Cook, 1 Plunger); 5 galv. pots. Roll black sheets 10 to 30 gauge, 24" to 48" wide, 72" to 144" long. Universal plate mill used for skelp only. Tube mill with 6 butt-weld fur. for pipe $\frac{1}{8}$ " to 3"; 4 lap-weld fur. for pipe 2" to 20"; 4 galv. pots. Product: semi-finished hot rolled products, annual cap., 2,550,000 tons (1,350,000 tons slabs and blooms, 600,000 tons billets, 600,000 tons sheet bars); finished hot rolled products, 725,000 tons; 625,000 tons skelp, 100,000 tons black sheets; galvanized sheets, 75,000 tons; black pipe, 500,000 tons; galvanized pipe, 100,000 tons; hot rolled seamless pipe $2\frac{1}{8}$ " to $13\frac{3}{8}$ ", 250,000 tons.

Struthers Works, Struthers, Ohio: blt. 1902; 3 cont. heat. fur. (Morgan) fuel coke oven gas and oil; 10" 2-h. 16-st. continuous rod mill; 12" 2-h. 9-st. merchant bar; 9" 2-h. 12-st. merchant bar. Wire mill with 172 wire drawing blocks for wire $\frac{3}{4}$ " to 20 gauge; 196 wire nail mach., 29 barbed wire mach., 3 wire galvanizing pans. Conduit Dept., blt. 1912-13; 4 electro-galv. units for galvanizing conduit. Product: hot rolled products, annual cap. 360,000 tons including 110,000 tons wire rods and 250,000 tons merchant and concrete bars; plain wire, 110,000 net tons; galvanized wire, 70,000 net tons; barbed wire, 26,000 net tons; wire nails, 1,000,000 kegs; enameled and galvanized conduit, 50,000 tons.

Brier Hill Works, Youngstown, Ohio:

Blast Furnaces: 2 stacks; No. 1, 85' x 21', blt. 1890, rebt. 1908, relined 1925; No. 2, 87' x 23', blt. 1917-18, rebt. 1924, relined 1929; No. 3 (formerly Tod) was dismantled in 1928; 8 hot blast stoves (4 Kennedy 105' x 23', 4 McClure center-comb.

95' x 22'); 1 steam blowing eng. and 2 turbo-blowers (85,000 cfm.) 12 to 15 lbs. rated pressure; 10 Sterling water-tube boilers, 6,560 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. 470,000 tons.

By-product Coke Plant: 84 Koppers ovens, by-product recovery plant and Koppers benzol plant, annual cap., 400,000 net tons coke, 2,000,000 gals. light oil. Open-Hearth Dept.: blt. 1912-13, f. o. Nov. 1, 1913; 12 B. O. H. fur. (90-ton) fuel, tar and 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; eight 4-hole soaking pits, fuel prod. and coke oven gas; 4 cont. heat. fur. (1 Laughlin, 3 Chapman-Stein) fuel, oil and coke oven gas; 3 normalizing fur., fuel coke oven 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 48" to 76"); 2 trains cold rolls of 4 stands each (2-st. 30" x 84", 6-st. 28" x 54" to 60"); 12 box annealing fur.; 4 pickling mach. (3 Mesta, 1 Cook). Roll sheared plates 12 gauge to 2", 110" to 600" in length; black sheets, 10 to 22 gauge. Product: semi-finished hot rolled products, annual cap., 1,120,000 tons (720,000 tons slabs and blooms, 400,000 tons sheet bars); finished hot rolled products, 452,000 tons including 380,000 tons sheared plates, 72,000 tons black sheets; 115,000 tons blue annealed sheets.

Western Reserve Works, Warren, Ohio: blt. 1914-15, f. o. Jan. 4, 1915; 5 pair fur.; three 2-h. jobbing mills with 1 roughing stand and 1 finishing stand each (one 30" x 48", one 30" x 66", one 30" x 54"); 2 hot black sheet mills (one 30" x 36", one 30" x 42"); 1 cold roll stand 28" x 60"; 5 blue annealing fur.; 1 Mesta pickling mach. Roll blue annealed sheets 9 to 16 gauge, 24" to 60" wide, 72" to 144" long. Product: blue annealed sheets, annual cap., 85,000 tons.

Indiana Harbor Works, East Chicago, Ind.:

Blast Furnaces: 2 stacks: No. 1, 92' x 22' 6", blt. 1917-18, relined 1925; No. 2, 95' x 24' 9", blt. 1924-25, relined 1928; 7 hot blast stoves 2-pass side comb. (three 100' x 22', four 103' x 24'); 3 Ingersoll-Rand turbo-blowers (155,000 cfm.) 20 to 30 lbs. rated pressure; 15 water-tube boilers (6 Sterling, 6 Casey-Hedges, 3 Heine) 9,600 H. P. serve also steel plant; 1 Pittsburgh Coal Washer double-strand pig casting mach.; American Fdy. &

Mach. Co. sintering plant for sintering wet and dry flue dust, annual cap., 250,000 tons; 1 slag granulating pit, annual cap., 115,000 tons. By-product coke: Lake ore. Product: basic and bessemer pig iron, annual cap., 565,000 tons.

By-product Coke Plant: 120 Koppers coke ovens, by-product recovery plant and Semet-Solvay benzol plant, annual cap., 620,000 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. (three 75-ton, one 250-ton) fuel, oil and tar; one mixer (600-ton); 3 cupolas. Product: steel ingots, annual cap., 900,000 tons (600,000 tons bessemer, 300,000 tons B. O. H.).

Rolling Mill: blt. 1916-18; eight 4-hole soaking pits, fuel, prod. gas; five 4-d. slab reheat. fur., fuel, coke oven gas; 1 Morgan cont. heat. fur., fuel, prod. gas; 35" 2-h. 1-st. reversing blooming; 28" 2-h. 1-st. reversing billet; continuous sheet bar and skelp mill with 24" 2-h. 3-st., 21" 2-h. 4-st., 19" 2-h. 3-st. and 3-st. edging rolls; 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; 24 sheet and 24 pair fur.; 24 hot black plate (tin) mills (26" x 32" to 42"); 30 stands 2-h. cold rolls (26" x 32" to 42"); 2 annealing fur.; 3 pickling mach. (1 Mesta, 2 Gray); 19 sets for coke tinplates. Roll sheared plates 36" to 75", 3/16" to 1 1/4"; universal plates 8" to 42 1/4", 3/16" to 2". Tube mill: 2 butt-weld fur. for pipe 1/2" to 3", 3 lap-weld fur. for pipe 2" to 18"; 1 galv. pot. Product: semi-finished hot rolled products, annual cap., 1,250,000 tons (700,000 tons slabs and blooms, 250,000 tons billets, 300,000 tons sheet and tinplate bars); finished hot rolled products, 560,000 tons including 450,000 tons skelp and 110,000 tons black plates including black plates for tinning; 2,240,000 base boxes coke tinplates; black pipe, 270,000 tons, galvanized pipe, 30,000 tons.

South Chicago Works, South Chicago, Ill.:

Blast Furnaces: 3 stacks; No. 1, dismantled in 1925; No. 2, dismantled in 1928; No. 3, 92' x 22' 6", blt. 1910-12, relined 1924; No. 4, 84' 1 1/2" x 20', blt. 1910-12, remod. and enlarged 1924; No. 5, 92' x 22' 6", blt. 1917-18, relined 1929; 11 hot blast stoves (8 Kennedy 96' 4 1/2" x 22', 3 Freyn 100' x 22'); 4 turbo-blowers (3 General Electric, 1 Ingersoll-Rand) 85,000 cfm., 26 lbs. rated pressure; 18 water-tube boilers (15 Rust, 3 Erie City) 9,165 H. P.; 1 Heyl & Patterson double-strand pig casting mach.; 1 slag granulating pit, annual cap., 60,000 tons. By-product coke: Lake ore. Product: foundry, malleable, bessemer and basic pig iron, annual cap., 605,000 tons.

By-Product Coke Plant: 70 by-product coke ovens, annual cap., 500,000 net tons coke.

Evanston Works, Evanston, Ill.: 2 butt-weld fur. for pipe 4" to 3"; 1 galv. pot; 2 Acme forging presses. Product: black pipe, annual cap., 125,000 tons; galvanized pipe, 30,000 tons; enameled and galvanized conduit, 19,000 tons; forged pipe unions, 450 tons.

Zanesville Works, Zanesville, Ohio, dismantled in 1929.

The Youngstown Sheet and Tube Company owns under lease, the Newport-Bonnie Mines on the Gogebic Range, Michigan, annual capacity 1,000,000 tons; the Palms-Anvil-Keweenaw group on the Gogebic Range, annual capacity 1,000,000 tons; the Isabella Mine on the Marquette Range, Michigan, annual capacity 225,000 tons. It owns The Youngstown Mines Corporation which operates one mine at the present time, namely the Croft Mine, annual capacity, 240,000 tons, balance of property is undeveloped. 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, Cuyuna Ore Company, Lehigh Mining Company, Vermillion Mining Company, Palmer Mining Company, and also in the Volunteer Ore Company, which is a leasing company. All of the above properties are operated by Pickands, Mather & Company. The Youngstown Sheet and Tube Company also owns through The Mayville Iron Company, the Mayville Mine on the Iron Ridge Range, Wisconsin (idle), and has partial ownership in The Brule Mining Company which is operated by Oglebay, Norton and 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 500,000 tons; the Nemacolin Mine, Nemacolin, Greene County, Pa., annual capacity, 2,250,000 tons; it operates under the name of The Youngstown Sheet and Tube Company the Dehue Mine located at Dehue, Logan County, West Virginia, annual capacity 600,000 tons; owns the Redfield Coal Company located at Redfield, Perry County, Ohio (idle).

The Youngstown Sheet and Tube Company owns and operates the Vinegar Hill Zinc Company with zinc and lead mines in the Illinois, Wisconsin, Kansas and 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 125,000 tons (idle); also has partial ownership in the Carbon Limestone Company, with quarry at Hillsville, Pa.

The Youngstown Sheet and Tube Company has partial ownership in the Interlake Steamship Company, The Cambria Steamship Company and the Mahoning Steamship Company, operating iron ore carriers on the Great Lakes.

Youngstown Steel Co. (The), Youngstown, Ohio, see American Puddled Iron Co.

Zeigler (Max) & Bros., Muncie, Indiana.

Purchased and hold for resale the plant at Montpelier, Ind., formerly owned and operated by National Steel Casting Co.

Works at Montpelier, Ind.: blt. and f. o. 1896; 2 A. O. H. fur. (15-ton); four 8-pot crucible fur. Idle and for sale.

Product: steel castings for sale, annual cap., 6,350 tons (5,000 tons A. O. H., 1,350 tons crucible).

Zenith Furnace Co., West Duluth, Minn. was merged Jan. 1, 1930 with Perry Iron Co. and The Toledo Furnace Co. in By-Products Coke Corp'n. and name of By-Products Coke Corp'n. was changed to Interlake Iron Corp'n.

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 \$20,000.

J. W. Bettendorf, P.; Wm. F. C. Zimmerman, V. P.; H. V. McCluskey, Sec. & T.; S. D. Treharne, A.; A. K. Reading, G. M.; F. W. Zimmerman, G. S.

Works at Bettendorf: steel foundry blt. 1915; 1 Snyder electric fur. (3½-ton) blt. 1918, f. o. Aug. 1, 1918; 1 B. O. H. fur. (25-ton) blt. 1923, f. o. Feb. 13, 1924, not in use.

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

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 1925 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.
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ALABAMA.

Alabama City.

Gulf States Steel Co. 1 180,000 a., b.

✓ Bessemer.

Tenn. C., I. & R. R. Co. 2 144,820 a., b., h.

✓ Birmingham.

Sloss-Sheffield Steel & Iron Co.
(No. 1 and No. 2) 2 300,000 A.

✓ East Birmingham.

Woodward Iron Co. (Vanderbilt). 2 95,000 A., B.

✓ Ensley.

Tenn. C., I. & R. R. Co. 6 996,835 A., B., C.

Fairfield.

Tenn. C., I. & R. R. Co. 2 448,400 A., B.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
Holt.			
Central Iron & Coal Co.....	1	120,000	A.
Jenifer.			
Jenifer Iron Co.....	1	50,000	A.
North Birmingham.			
Sloss-Sheffield Steel & Iron Co. (No. 3 and No. 4).....	2	220,000	A.
Talladega.			
Talladega Furnace Properties, Inc. (1918)	1	45,000	A.
Thomas.			
Republic Iron and Steel Co. (Thomas Furnaces)	3	450,000	A., B.
Woodward.			
Woodward Iron Co.....	3	370,000	A., B.

COLORADO.

Pueblo.			
The Colorado Fuel & Iron Co....	5	540,000	A., b., h.

ILLINOIS.

Granite City.			
St. Louis Gas & Coke Corpn.....	2	400,000	A., B., E.
Joliet.			
Illinois Steel Co.....	4	594,800	c.
South Chicago.			
Illinois Steel Co.....	11	2,900,000	A., B., C., G., H., I.
Interlake Iron Corpn. (Federal Furnaces)	2	350,000	A., B., E.
International Harvester Co.....	3	500,000	A., B., C., E.
The Youngstown Sheet & Tube Co.	3	605,000	A., B., C., E.

INDIANA.

Gary.			
Illinois Steel Co.....	12	3,400,000	b.
Indiana Harbor.			
Inland Steel Co.....	4	1,003,000	B.
The Youngstown Sheet & Tube Co.	2	565,000	B., C.

KENTUCKY.

Ashland.			
The American Rolling Mill Co.:			
Ashland Furnace	1	137,400	A., b., e.
Norton Furnace	1	144,000	A., B., E.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
MARYLAND.			
Sparrow's Point.			
Bethlehem Steel Co.....	6	1,479,600	A., b., c.
MASSACHUSETTS.			
Everett.			
Mystic Iron Works.....	1	165,000	A., B., E.
MICHIGAN.			
Cadillac.			
Mitchell-Diggins Iron Co.....	1*	40,000	A., E.
Dearborn.			
Ford Motor Co.....	2	375,000	a., b.
Mancelona.			
Antrim Iron Co.....	1*	25,000	A., E.
Manistique.			
Newberry Lumber & Chemical Co. (1924)	1*	36,000	A.
Marquette.			
The Cleveland-Cliffs Iron Co....	1*	42,000	A., E.
Newberry.			
Newberry Lumber & Chemical Co.	1*	29,000	A.
River Rouge.			
The Hanna Furnace Co.....	2	350,000	A., B., E.
Wells.			
Delta Chemical & Iron Co.....	1*	24,000	A.
MINNESOTA.			
Duluth.			
Interlake Iron Corpn. (Zenith Furnace)	1	120,000	A., E.
Minnesota Steel Co. (Morgan Park)	2	327,500	b.
MISSISSIPPI.			
Winborn.			
Mrs. William Warmack (1914)..	1*	3,500	A.
MISSOURI.			
St. Louis.			
Mississippi Valley Iron Co.....	✓ 1	125,000	A., B., E.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
NEW JERSEY.			
Wharton.			
Warren Foundry & Pipe Corpn...	2	360,000	A., B., C., E., F.
NEW YORK.			
Buffalo.			
Buffalo Union Furnace Co.:			
Hamburg Street Plant.....	3	385,000	A., E., G.
Susquehanna Plant	4	672,000	A., B., E.
Donner Steel Co., Inc.....	2	432,000	A., B., E.
Wickwire-Spencer Steel Co.....	2	350,000	A., B., E.
Lackawanna.			
Bethlehem Steel Co.....	7	1,620,000	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 Fuel Corpn.....	1	150,000	A., B.
OHIO.			
Canton.			
Central Alloy Steel Corpn.....	1	250,000	b., E.
Cleveland.			
The American Steel & Wire Co. (Central Furnaces)	4	828,000	b., c.
The Bourne-Fuller Co.....	1	120,000	b.
The Corrigan 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	300,000	A., B., E.
Hamilton.			
Hamilton Coke & Iron Co.....	1	225,000	B.
Hubbard.			
The Youngstown Sheet & Tube Co.	2	310,000	A., B., C., 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	90,000	A., G.
The Jackson Iron & Steel Co....	1	60,000	G.
Star Furnace Co. (1923).....	1	30,000	A., G.
Leetonia.			
Davison Coke & Iron Co. (Cherry Valley Furnace)	1	164,000	A., B.
Lorain.			
National Tube Co.....	5	1,167,000	b., c.
Lowellville.			
Sharon Steel Hoop Co.....	1	155,000	b.
Martins Ferry.			
Wheeling Steel Corporation.....	1	135,000	A., b., c., E.
Massillon.			
Central Alloy Steel Corpn. (Mas- sillon Furnace Div.).....	1	250,000	b., e.
Mingo Junction.			
Carnegie Steel Co.....	3	629,500	c.
Portsmouth.			
Wheeling Steel Corporation.....	1	200,000	b.
Steubenville.			
Wheeling Steel Corporation.....	2	510,000	b.
Struthers.			
The Struthers Iron & Steel Co...	1	180,000	A., B., E.
Toledo.			
* Interlake Iron Corpn. (Toledo Furnaces)	2	438,000	A., B., E.
Warren.			
* The Trumbull-Cliffs Furnace Co.	1	260,000	B.
Youngstown.			
Carnegie Steel Co. (Ohio Works) .	6	1,405,000	b., c.
* Republic Iron & Steel Co.....	4	900,000	B., C.
* The Youngstown Sheet & Tube Co.:			
Brier Hill Works.....	2	470,000	B.
Campbell Works	4	1,000,000	B., C.

PENNSYLVANIA.

Aliquippa.			
Jones & Laughlin Steel Corpr. (Aliquippa Works)	5	1,338,000	b., c.
* Bethlehem.			
Bethlehem Steel Co. (Lehigh Div.)	6	1,285,200	A., B., C. <

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
✓ Birdsboro. The E. & G. Brooke Iron Co. . . .	1	130,000	A., B., E., F.
✓ Catasauqua. Warren Foundry & Pipe Corpn. (Crane Furnace)	1	135,000	A., B.
Chester. Delaware River Steel Co.	1	120,000	A., B., C., D., E.
Clairton. Carnegie Steel Co.	3	544,000	b.
✓ Coatesville. Bethlehem Steel Co.	2	523,200	A., B., C.
Donora. The American Steel & Wire Co. . .	2	380,000	b.
Dubois. Adrian Furnace Co.	1	85,000	A.
Duquesne. Carnegie Steel Co. (Duquesne Fur- naces)	6	1,319,200	b.
✓ Emaus. The Pennebacker Co. (Crumwold Furnace) (1920)	1	62,000	A., f.
Emporium. Emporium Iron Manufacturing Corpn. (1926)	1	60,000	A.
Erie. Interlake Iron Corpn. (Perry Fur- nace)	1	127,750	A., B., E.
Etna. Carnegie Steel Co. (Isabella Fur- naces)	3	157,600	b., H.
Everett. Everett-Saxton Co.	1	90,000	A., B., D., F.
Farrell. Carnegie Steel Co.	3	586,400	b.
✓ Hokendauqua. The Thomas Iron Co.	1	150,000	A., B., E., F.
Johnstown. Bethlehem Steel Co. (Cambria Plant)	9	1,665,600	A., B., C., H.
Josephine. The Corrigan, McKinney Steel Co.	2	240,000	A., B., E., F.
McKeesport. National Tube Co.	4	800,000	c.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
7 Marietta. Lavino Furnace Co.....	1	25,000	H., I.
9 Midland. Pittsburgh Crucible Steel Co....	2	460,000	B.
Monessen. Pittsburgh Steel Co.....	2	480,000	B.
Neville Island. Davison Coke & Iron Co. (Neville Furnace)	1	180,000	A., B.
New Castle. Carnegie Steel Co.....	3	560,500	c.
North Braddock. Carnegie Steel Co. (Edgar Thom- son Furnaces)	11	2,234,000	b., c.
7 Palmerton. The New Jersey Zinc Co. of Pa..	2	not stated	I.
Pittsburgh. Carnegie Steel Co. (Lucy Fur- naces)	2	108,600	g., h., i.
Jones & Laughlin Steel Corpn....	7	1,662,000	b., c.
Punxsutawney. Punxsutawney Furnace Co.....	1	90,000	A.
Rankin. Carnegie Steel Co. (Carrie Fur- naces)	7	1,593,900	b.
→ Reading. Reading Iron Co. (Keystone Fur- nace)	1	130,000	A., B., D., E., f.
7 Riddlesburg. Colonial Iron Co.....	1	72,000	A., B., C., D.
Scottsdale. United States Pipe & Foundry Co. (1925)	1	120,000	A., B., E.
Sharon. The Stewart Furnace Co.....	1	110,000	C., D.
Sharpsville. Davison Coke & Iron Co.: Claire Furnace	1	200,000	A., B., C., E.
Sharpville Furnace	1	150,000	A., B., E.
The Shenango Furnace Co.....	2	410,000	A., B., C., E.
7 Sheridan. Lavino Furnace Co.....	1	27,000	H., I.
9 Steelton. Bethlehem Steel Co.....	3	626,400	B., C., D., E.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
→ Swedeland.			
Alan Wood Steel Co.....	2	430,000	A., B.
TENNESSEE.			
Cumberland Furnace.			
Warner Iron Co.....	1	not stated	J.
Johnson City.			
The Cranberry Furnace Co.....	1	43,800	D.
Rockdale.			
Tennessee Products Corpn. (Rock- dale Furnace)	1	21,900	J.
Rockwood.			
Roane Iron Co.....	2	180,000	A.
Ruppertown.			
Tennessee Products Corpn. (Man- nie Furnace)	1	31,000	A., G.
Wrigley (P. O. Lyles).			
Tennessee Products Corpn. (Wrig- ley Furnace)	1*	24,000	A.
UTAH.			
Provo.			
United States Steel Products Co. (Iron-ton Plant)	1	175,000	A., B.
VIRGINIA.			
Buena Vista.			
Alleghany Ore & Iron Co.....	1	55,000	A., B., D.
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.
Virginia Iron, Coal & Coke Co. (Crozer Furnace)	1	60,000	A.

Location and Operating Company.	No. of stacks.	Annual capacity. Gross tons.	Products.
WEST VIRGINIA.			
Benwood.			
Wheeling Steel Corpn. (River- side)	1	180,000	c.
Weirton.			
Weirton Steel Co.....	2	550,000	b.
WISCONSIN.			
Mayville.			
The Mayville Iron Co.....	2	275,000	A.
CANADA.			
NOVA SCOTIA.			
Sydney.			
British Empire Steel Corpn.....	6	400,000	A., B.
Sydney Mines.			
British Empire Steel Corpn. (1920)	2†	90,000	a., b.
ONTARIO.			
Hamilton.			
The Steel Co. of Canada, Ltd....	2	325,000	A., b., E.
Port Colborne.			
Canadian Furnace Co., Ltd.....	1	140,000	A., B., E.
Sault Ste. Marie.			
Algoma Steel Corpn.....	4	547,500	A., B., C., E.

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.

IOWA.

Keokuk Electro-Metals Co., Keokuk. Si., silvery pig.

MARYLAND.

Baltimore Electro-Alloys Co. (The), Baltimore. (idle). Si., Si-Al,
Cr. and other.

NEW JERSEY.

Metal & Thermit Corpn., 120 Broadway, New York, N. Y. (Works at
Jersey City), Ti., Cr., Va., W.

NEW YORK.

Electro Metallurgical Co., New York, N. Y. (Works at Niagara
Falls). Si., Cr. and other.

Norton Co., Worcester, Mass. (Works at Niagara Falls). Si.

Pittsburgh Metallurgical Co., Inc., Niagara Falls. Si., Cr., Mn., Si-Al.

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., Al-Si.

OHIO.

Ohio Ferro-Alloys Corpn., Canton. (Works at Philo). Si., Mn., P.

United States Vanadium Corpn., New York, N. Y. (Works at Co-
lumbiana). Va.

PENNSYLVANIA.

Climax Molybdenum Co., New York, N. Y. (Works at Langeloth,
Pa.). Calcium molybdate.

Molybdenum Corp'n. of America, Pittsburgh, Pa. (Works at Washington, Pa.). Mo., W.

Vanadium Corporation of America, New York, N. Y. (Works at Kirwan). Va., W., Mo., Cr., Ti., Zr.

York Metal & Alloys Co., York. W., Mo., Va.

TENNESSEE.

Southern Ferro-Alloys Co., Chattanooga. Si.

VIRGINIA.

Electro Metallurgical Co., New York, N. Y. (Works at Holcomb Rock). Cr.

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.

Norton Co., Worcester, Mass. (Works at Chippawa). Si.

Superior Alloys, Ltd., Sault Ste. Marie. Si.

QUEBEC.

Electric Reduction Co., Buckingham, P. Q., Canada. P.

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.....	280,000	b.
Ensley.		
Tennessee Coal, Iron & R. R. Co....	1,020,000	b., c.*
Fairfield.		
Tennessee Coal, Iron & R. R. Co. (Steel Works)	732,000	b.
CALIFORNIA.		
Huntington Park.		
Pacific Coast Steel Corpn. (Los Ange- les Plant)	85,000	b.
Los Angeles.		
Warman Steel Casting Co.....	4,000	E.
Oakland (Emeryville).		
Botchford Steel Co.....	60,000	b.
Pittsburg.		
United States Steel Products Co. (Pittsburg Plant)	176,000	b.

* Bessemer converters used for duplexing only.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Sacramento.		
Southern Pacific Co.....	9,000	c.
South San Francisco.		
Enterprise Foundry Co.....	5,000	B.
Pacific Coast Steel Corpn. (San Francisco Plant)	155,000	b.
Torrance.		
The National Supply Co. of Calif....	9,000	E.
United States Steel Products Co. (Llewellyn Mills)	164,000	b.
COLORADO.		
Pueblo.		
The Colorado Fuel & Iron Co.....	898,000	b.
CONNECTICUT.		
Bridgeport.		
The Stanley Works.....	120,000	b.
DELAWARE.		
Claymont.		
Worth Steel Co.....	360,000	b.
New Castle.		
Industrial Plants Corpn. (idle, for sale)	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.....	225,000	b.
Chicago.		
Trojan Electric Steel Co.....	2,000	E.
Western Electric Co., Inc. (Hawthorne Station)	3,200	c.
Chicago Heights.		
Columbia Tool Steel Co.....	8,820	d., e.
Railway Steel-Spring Co.....	80,000	b.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Granite City.		
Granite City Steel Co.....	360,000	b.
Joliet.		
Illinois Steel Co.....	660,000	c.
Peoria (South Bartonville).		
Keystone Steel & Wire Co.....	180,000	b.
South Chicago.		
Central Alloy Steel Corp.....	400,000	b.
Illinois Steel Co.....	3,198,000	b., c.,* e.
International Harvester Co.....	732,000	b., c.

INDIANA.

Gary.		
Illinois Steel Co.....	4,428,000	b., c.†
Indiana Harbor.		
Inland Steel Co.....	2,000,000	b.
The Youngstown Sheet & Tube Co...	900,000	b., c.
Kokomo.		
Continental Steel Corp.....	250,000	b.
New Castle.		
Indiana Rolling Mill Co.....	10,000	e.

KENTUCKY.

Ashland.		
The American Rolling Mill Co. (West Works)	588,000	b.
Newport.		
The Andrews Steel Co.....	360,000	b.

MARYLAND.

Baltimore.		
Rustless Iron Corp. of America.....	20,000	e.
Sparrow's Point.		
Bethlehem Steel Co. (Maryland Plant)	1,749,000	b., c.*

MASSACHUSETTS.

Watertown.		
United States Gov., War Department, Watertown Arsenal	44,670	a.
Worcester.		
The American Steel & Wire Co.....	190,000	a., b.

* Bessemer converters also used for duplexing.

† Bessemer converters used for duplexing only.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
MICHIGAN.		
Dearborn.		
Ford Motor Co.....	519,350	b., e.
Detroit.		
Detroit Alloy Steel Co.....	750	E.
Ecorse.		
Great Lakes Steel Corpn. (building) ..	600,000	b.
Ferndale.		
Forging and Casting Corpn.....	650	E.
MINNESOTA.		
Duluth (Morgan Park).		
Minnesota Steel Co.....	540,000	b.
MISSOURI.		
Kansas City.		
Sheffield Steel Corporation.....	210,000	b.
St. Louis.		
Scullin Steel Co.....	115,000	b.
NEW JERSEY.		
Harrison.		
Crucible Steel Co. of America.....	86,000	a., e.
Driver-Harris Co.	500	e.
High Bridge.		
Taylor-Wharton Iron & Steel Co.....	*	c., E.
Newark.		
Heller Brothers Co.....	1,500	d.
Roebling.		
John A. Roebling's Sons Co.....	231,025	a., b.
NEW YORK.		
Buffalo.		
Donner Steel Co., Inc.....	560,000	b., e.
Wickwire Spencer Steel Company....	175,000	b.
Cortland.		
Wickwire Bros.	35,000	b.
Dunkirk.		
Ludlum Steel Co.....	23,000	e.
Lackawanna.		
Bethlehem Steel Co. (Lakawanna Plant)	1,980,000	b., c.†

* 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.
Lockport.		
Simonds Saw & Steel Co.....	11,000	e.
Schenectady.		
General Electric Co.....	890	e.
Syracuse.		
Crucible Steel Co. of America.....	15,000	e.
Halcomb Steel Co.....	51,700	d., e.
Onondaga Steel Co. (idle; for sale)...	360	e.
Watervliet.		
Ludlum Steel Co.....	22,000	e.
OHIO.		
Canton.		
Central Alloy Steel Corp'n. (2 plants).	850,000 ✓	b., e.
The Timken Steel & Tube Co.....	307,200 ✓	b., e.
Cleveland.		
The American Steel & Wire Co.....	800,000	b., c.
The Bourne-Fuller Co.....	350,000	b.
The Corrigan, McKinney Steel Co....	1,000,000	b.
The Otis Steel Co. (2 plants).....	990,000	a., b.
Columbia Heights (near Massillon).		
Central Alloy Steel Corp'n. (Massillon Steel Div.)	450,000 ✓	b.
Lorain.		
National Tube Co.....	1,500,000	b., c.
Lowellville.		
Sharon Steel Hoop Co.....	450,000 \	b.
Mansfield.		
Empire Steel Corp'n.....	333,000	b.
Middletown.		
The American Rolling Mill Co. (2 plants)	508,705	b., e.
Mingo Junction.		
Carnegie Steel Co.....	600,000 —	c.
Portsmouth.		
Wheeling Steel Corp'n.....	418,000 \	b.
Steubenville.		
Wheeling Steel Corp'n.....	900,000 ✓	b.
Toronto.		
Follansbee Brothers Co.....	110,000 -	b.
Warren.		
Republic Iron & Steel Co.....	756,000 +	b.
Youngstown.		
Carnegie Steel Co (Ohio Works).....	1,700,000 -	b., c.
Republic Iron & Steel Co.....	1,440,000 -	b., c.
The Youngstown Sheet & Tube Co...	2,340,000 -	b., c.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
OKLAHOMA.		
Sand Springs.		
Tulsa Rolling Mills Co.....	60,000	b.
PENNSYLVANIA.		
Aliquippa.		
Jones & Laughlin Steel Corpn. (Aliquippa Works)	1,420,000 ✓	b., c.*
Vulcan Crucible Steel Co.....	8,650 ✓	d., e.
Bethlehem.		
Bethlehem Steel Co. (Bethlehem Plant)	1,681,000 ✕	a., b., e.
Birdsboro.		
Birdsboro Steel Foundry & Machine Company	24,000 ✕	A.
Brackenridge.		
Allegheny Steel Co.....	338,000 ✓	A., B., E.
Braddock.		
Sterling Steel Foundry Co.....	12,000 ✓	A.
Braeburn.		
Braeburn Alloy Steel Corpn.....	3,600 -	e.
Bridgeville.		
Universal Steel Co.....	50,650 ✓	a., e.
Burnham.		
Standard Steel Works Co.....	145,086	a., d.
Butler.		
The American Rolling Mill Co.....	570,000 -	b.
Buttonwood.		
Vulcan Iron Works.....	5,000 ✓	A.
Carnegie.		
Union Electric Steel Corpn.....	10,000 ✓	E.
Clairton.		
Carnegie Steel Co.....	720,000 ✓	b.
Coatesville.		
Bethlehem Steel Co. (Coatesville Plant)	336,000 ✓	a., b.
Lukens Steel Co.....	686,500 ✓	a., b.
Colona.		
Colonial Steel Co.....	57,600 ✓	b., d., e.
Corry.		
McInnes Steel Co., Ltd.....	1,000 ✓	d.
Crum Lynne.		
Eddystone Steel Co. (idle).....	10,000 ✓	b.

* Bessemer converters also used for duplexing.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Donora.		
The American Steel & Wire Co.....	627,000 —	b.
Duquesne.		
Carnegie Steel Co. (Duquesne Works) .	1,510,000 —	b., e.
Eddystone.		
Federal Alloy Steel Corp.....	35,000 X	B.
Erie.		
Erie Forge Co.....	12,000	A.
Erie Forge & Steel Co.....	75,000	B.
National-Erie Co.....	7,500	A.
Farrell.		
Carnegie Steel Co.....	780,000 ✓	b.
Harrisburg.		
Central Iron & Steel Co.....	250,000 X	b.
Harrisburg Pipe & Pipe Bending Co..	80,000	b.
Irvine.		
National Forge & Ordnance Co.....	22,250 X	e.
Ivy Rock.		
Alan Wood Steel Co.....	600,000 X	b.
Johnstown.		
Bethlehem Steel Co. (Cambria Plant) .	1,824,000 ✓	a., b., c.
Kendall Station (P. O. Coraopolis).		
The Duquesne Steel Foundry Co.....	13,200 —	A.
Latrobe.		
Latrobe Electric Steel Co.....	15,800 ✓	e.
Railway Steel-Spring Co.....	102,500 ✓	a., e.
Vanadium-Alloys Steel Co.....	4,500 ✓	e.
McKeesport.		
Firth-Sterling Steel Co.....	12,600 ✓	b., d., e.
National Tube Co.....	704,000 ✓	c.
Midland.		
Pittsburgh Crucible Steel Co.....	660,000 ✓	b.
Monessen.		
Page Steel & Wire Co. (idle).....	65,000 /	b.
Pittsburgh Steel Co.....	720,000 ✓	b.
Munhall.		
Carnegie Steel Co. (Homestead Works)	2,613,200 —	b.
New Castle.		
Carnegie Steel Co.....	500,000 —	c.
North Braddock.		
Carnegie Steel Co. (Edgar Thomson) .	1,445,000 —	d., c.
Oakmont.		
Edgewater Steel Co.....	85,000 —	A., B.
Pencoyd.		
American Bridge Co.....	240,000 /	b.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Philadelphia.		
Henry Disston & Sons, Inc. (Tacony).	16,000	d., e.
The John Illingworth Steel Company (Frankford)	3,000	d.
The Midvale Co. (Nicetown)	200,000	a., b., e.
Phoenixville.		
The Phoenix Iron Co.	223,800	b.
Pittsburgh.		
Crucible Steel Co. of America:		
Crescent Works	63,000	b., d.
La Belle Works	24,750	a., d.
Park Works	124,000	b., e.
The Electro Steel Co., Inc. (idle)	1,500	E.
Heppenstall Co.	25,450	a., e.
Jones & Laughlin Steel Corpn. (Pitts- burgh Works)	2,000,000	a., b., c.*
Pottsville.		
The Eastern Steel Co.	144,000	b.
Reading.		
The Carpenter Steel Co.	43,000	e.
Steelton.		
Bethlehem Steel Co. (Steelton Plant).	660,000	a., b.
Titusville.		
Cyclops Steel Co.	9,000	d.
Vandergrift.		
American Sheet & Tin Plate Co.	336,000	b.
Washington.		
Jessop Steel Co.	5,600	d., e.
West Homestead (Mesta Station).		
Mesta Machine Co.	75,000	a.

RHODE ISLAND.

Phillipsdale.		
Washburn Wire Co.	39,000	b.

TEXAS.

Beaumont.		
Beaumont Iron Works Co.	not stated	e
Fort Worth.		
Texas Steel Co.	11,000	e.

* Bessemer converters also used for duplexing.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
UTAH.		
Midvale.		
Western Steel & Foundry Co.....	46,400	b.
VIRGINIA.		
Newport News.		
Newport News Shipbuilding & Dry Dock Co.	3,000	E.
Richmond.		
Old Dominion Iron & Steel Works, Inc.	5,000	e.
WASHINGTON.		
Hoquiam.		
Lamb-Grays Harbor Co.....	1,000	E.
Seattle.		
Northwest Steel Rolling Mills, Inc....	15,000	e.
Rothert Steel Corpn.....	1,800	E.
Washington Iron Works.....	1,500	E.
Youngstown.		
Pacific Coast Steel Corpn. (Seattle Plant)	140,000	b
WEST VIRGINIA.		
Benwood.		
Wheeling Steel Corpn.....	296,640 —	c.
Follansbee.		
Follansbee Brothers Co.....	90,000 —	b.
South Charleston.		
United States Gov., Navy Depart- ment, Ordnance Plant	20,000	e.
Weirton.		
Weirton Steel Co.....	1,250,000 /	b.
WISCONSIN.		
Milwaukee.		
Kinite Corporation	575	E.

CANADA.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
ALBERTA.		
Calgary.		
Manitoba Rolling Mill Co., Ltd.....	20,000	b
MANITOBA.		
Selkirk.		
Manitoba Rolling Mill Co., Ltd.....	35,000	b.
Manitoba Steel Foundries, Ltd.....	1,200	E.
NOVA SCOTIA.		
Sydney.		
British Empire Steel Corp., Ltd....	400,000	b.
Sydney Mines.		
British Empire Steel Corp., Ltd. (idle)	130,000	b.
ONTARIO.		
Hamilton.		
Dominion Foundries & Steel, Ltd....	60,000	b.
The Steel Co. of Canada, Ltd.....	525,000	b.
London.		
London Rolling Mill Co., Ltd.....	9,300	e.
Sault Ste. Marie.		
Algoma Steel Corporation.....	720,000	b., c.*
QUEBEC.		
Montmagny.		
General Trust of Canada. (idle).....		b.
Montreal.		
Ayrmont Properties, Ltd. (idle).....	30,000	E.

* Bessemer converters used for duplexing only.

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 Steel Casting Co.....	1,200	E.
Birmingham.		
Stockham Pipe & Fittings Co.....	5,000	E
Ensley.		
Tennessee Coal, Iron & Railroad Co..	*	b.
Fairfield.		
Tennessee Coal, Iron & Railroad Co. (Steel Works)	18,000	B.
Mobile.		
Mobile Stove & Pulley Mfg. Co.....	3,000	E.
ALASKA.		
Juneau.		
Alaska Juneau Gold Mining Co.....	1,000	e.
ARKANSAS.		
Pine Bluff.		
Standard Brake Shoe & Foundry Co..	4,000	E.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
CALIFORNIA.		
Alhambra.		
Kay-Brunner Steel Products, Inc....	4,200	E.
Berkeley.		
Electric Steel Foundry Co., Inc.....	600	E.
Burbank.		
Moreland Motor Truck Co.....	2,000	e.
Los Angeles.		
Alloy Steel & Metals Co.....	3,750	E.
American Manganese Steel Co. (Plant L)	1,500	E.
Electric Steel & Manufacturing Co...	2,500	E.
Kay-Brunner Steel Products, Inc....	3,600	E.
Los Angeles Steel Casting Co.....	4,500	E.
Warman Steel Casting Co.....	6,000	E.
Oakland.		
American Manganese Steel Co. (Plant F)	2,500	E.
Best Steel Casting Co.....	12,000	C., E.
Botchford Steel Co.....	not stated	B.
Oakland Steel Foundry Co.....	200	E.
Pittsburg.		
United States Steel Products Co. (Pittsburg Plant)	16,000	A., B.
Sacramento.		
Southern Pacific Co.....	3,500	e.
San Bernardino.		
Hanford Iron Works, Inc.....	4,500	E.
South San Francisco.		
Enterprise Foundry Co.....	6,200	B., E.
Pacific Coast Steel Corpn.....	*	b.
Stockton.		
Monarch Foundry Co.....	5,760	E.
Torrance.		
The National Supply Co. of Calif....	6,000	E.
United States Steel Products Co. (Llewellyn Mills)	7,000	B., E.
Westwood.		
The Red River Lumber Co.....	300	e.
COLORADO.		
Denver.		
American Manganese Steel Co. (Plant C)	5,400	E.
United States Foundries, Inc.....	1,000	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.....	13,000	A., C., E.
Collinsville.		
The Collins Co.....	360	e.
Hartford.		
Hartford Electric Steel Corpn.....	5,000	E.
Stamford.		
Yale & Towne Manufacturing Co....	1,200	e.
Stony Creek.		
Nutmeg Crucible Steel Co.....	200	D.
DELAWARE.		
New Castle.		
American Manganese Steel Co. (Plant B)	3,600	E.
Deemer Steel Casting Co.....	3,000	C.
DISTRICT OF COLUMBIA.		
Washington.		
United States Gov., Navy Department, Naval Gun Factory.....	14,400	a., e.
FLORIDA.		
Jacksonville.		
Florida Machine & Foundry Co.....	1,500	E.
GEORGIA.		
Marietta.		
Glover Machine Works, Inc.....	2,000	e.
ILLINOIS.		
Chicago.		
American Manganese Steel Co. (Plant D)	3,600	E.
Burnside Steel Foundry Co.....	6,000	E.
Chicago Steel Foundry Co.....	6,000	E.
Crane Co.	8,000	e.
Kensington Steel Co.....	1,800	E.
Link-Belt Co.	1,200	c.
National Malleable & Steel Castings Co.	*	E.

* Electric furnaces used chiefly for malleable castings.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Chicago—(Continued)		
Pettibone Mulliken Co.....	13,000	E.
Sivyer Steel Casting Co.....	5,000	E.
Chicago Heights.		
American Manganese Steel Co. (Plant A)	11,000	E.
East St. Louis.		
American Steel Foundries.....	50,000	B.
Sterling Steel Casting Co.....	2,150	E.
Granite City.		
American Steel Foundries.....	69,000	B.
General Steel Castings Corpn. (Commonwealth Div.)	80,000	B.
Harvey.		
Whiting Corporation	1,000	c.
Hegewisch.		
Pressed Steel Car Co. (idle).....	7,500	C., E.
Joliet.		
Illinois Steel Co.....	*	c.
Melrose Park.		
National Malleable & Steel Castings Co.	40,000	B.
South Chicago.		
Illinois Steel Co.....	6,000	e.
West Harvey.		
Chicago Malleable Castings Co.....	10,000	A.
INDIANA.		
Attica.		
Harrison Steel Castings Co.....	24,000	A.
East Chicago.		
Hubbard Steel Foundry Co.....	25,720	A., E.
Gary.		
Illinois Steel Co.....	15,000	a.
Hammond.		
Calumet Electric Casteel Co.....	3,000	E.
Huntington.		
Armstrong Steel Castings Co. (idle) ..	12,000	C., E.
Indiana Harbor.		
American Steel Foundries.....	27,500	A., E.
Indianapolis.		
Electric Steel Castings Co.....	2,500	E.
Lawrenceburg.		
A. D. Cook, Inc.....	50	d.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Montpelier.		
Max Zeigler & Bros. (idle).....	6,350	A., D.
South Bend.		
Oliver Farm Equipment Co.....	3,000	c.
IOWA.		
Bettendorf.		
The Bettendorf Co.....	90,000	B.
The Zimmerman Steel Co.....	5,000	E.
Centerville.		
Hercules Manufacturing Co.....	2,400	c.
Keokuk.		
Keokuk Steel Casting Co.....	3,000	E.
Newton.		
The Parsons Co.....	1,000	E.
KANSAS.		
Atchison.		
The Locomotive Finished Material Co.	10,000	E.
Kansas City.		
Gould Castings Corpn. (building)....		E.
LOUISIANA.		
Mansfield.		
De Soto Foundry & Machine Company, Ltd.	1,800	C.
New Orleans.		
Dibert, Bancroft & Ross Co., Ltd....	3,500	E.
Shreveport.		
The Brewster Co., Inc.....	1,000	c.
The W. K. Henderson Iron Works & Supply Co., Ltd.....	2,500	E.
Latex Iron & Steel Works, Inc.....	400	E.
MARYLAND.		
Baltimore.		
Baltimore Malleable Iron & Steel Cast- ing Co.	5,000	B.
Sparrow's Point.		
Bethlehem Steel Co., Maryland Plant.	4,800	b.
MASSACHUSETTS.		
Boston.		
Eastern Steel Casting Co.....	400	D.
Roxbury Steel Casting Co.....	15,000	A.

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.....	18,000	a., e.
Indian Orchard.		
The Chapman Valve Mfg. Co.....	2,500	e.
Millbury.		
Millbury Steel Foundry Co.....	1,200	E.
North Quincy.		
Quincy Steel Casting Co.....	300	D.
Turners Falls.		
Electric Steel Castings Co.....	1,000	E.
Watertown.		
United States Government War De- partment	11,125	e.
Worcester.		
The American Steel & Wire Co.....	700	a., b.
MICHIGAN.		
Bay City.		
Bay City Electric Steel Casting Co..	1,600	E.
Industrial Brownhoist Corp.....	6,400	c.
Benton Harbor.		
Superior Steel & Malleable Castings Co.	10,000	A., E.
Buchanan.		
Clark Equipment Co.....	8,000	E.
Dearborn.		
Ford Motor Co.....	7,350	e
Detroit.		
Detroit Alloy Steel Co.....	750	E.
The Detroit Steel Casting Co.....	12,400	A., E.
Michigan Steel Casting Co.....	6,000	E.
Swedish Crucible Steel Co.....	9,600	C, D., E.
Ferndale.		
Forging and Casting Corp.....	*	E.
Kalamazoo.		
Reed Foundry & Machine Co.....	2,500	C.
Monroe.		
Monroe Steel Castings Co.....	3,600	E.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Muskegon.		
West Michigan Steel Foundry Co....	8,000	E.
Saginaw.		
S. Fair & Son, Inc.....	2,500	E.
Saginaw Foundries Co. (building)....	1,500	E.
St. Joseph.		
St. Joseph Electric Steel Castings Co.	5,000	E.
MINNESOTA.		
Duluth.		
Clyde Iron Works.....	500	E.
Dork Foundry Co.....	4,000	A.
Minneapolis.		
Minneapolis Electric Steel Castings Co.	5,300	E.
Northwestern Steel & Iron Corpn....	5,000	A.
Western Crucible Steel Casting Co...	6,000	E.
St. Paul.		
American Hoist & Derrick Co.....	4,000	c.
Stillwater.		
Twin City Forge & Foundry Co.....	6,000	E.
MISSOURI.		
Bonne Terre.		
Bonne Terre Foundry Co.....	160	C.
St. Joseph.		
Berry Iron & Steel Co.....	7,500	E.
St. Louis.		
St. Louis Steel Casting Co.....	4,200	E.
Scullin Steel Co.....	65,000	B.
Southern Manganese Steel Co.....	5,000	E.
NEBRASKA.		
Omaha.		
Omaha Steel Works.....	3,000	E.
NEW HAMPSHIRE.		
Claremont.		
Sullivan Machinery Co.....	1,245	e.
NEW JERSEY.		
Harrison.		
Driver-Harris Co.	1,050	D., E.
Metropolitan Steel Casting Co.....	400	D.
High Bridge.		
Taylor-Wharton Iron & Steel Co....	18,000	C., E.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Kearny.		
Riverside Steel Casting Co.....	5,400	A.
Newark.		
Eastern Steel Castings.....	9,360	E.
Malcolm Foundry Co.....	250	D.

NEW YORK.

Buffalo.		
American Radiator Co.....	2,700	E.
Atlas Steel Casting Co.....	12,000	A.
Bingham & Taylor Corpn.....	1,500	E.
Otis Elevator Co.....	10,750	E.
Pratt & Letchworth Co.....	32,000	A.
Strong Steel Foundry Co.....	7,000	A.
Wickwire-Spencer Steel Co.....	500	b.
Colonie (P. O. Watervliet).		
The Delaware & Hudson Co.....	200	c.
Depew.		
The Gould Coupler Co.....	74,000	A., B.
Lackawanna.		
Bethlehem Steel Co.....	4,800	b.
North Tonawanda.		
Tonawanda Electric Steel Casting Corpn.	750	E.
Ogdensburg.		
Coplan Steel Corpn., Inc.....	6,000	C.
Rochester.		
The Symington Company.....	1,800	E.
Schenectady.		
General Electric Co.....	3,300	e.
Watervliet.		
Adirondack Steel Foundries Corpn...	22,800	A., E.

OHIO.

Akron.		
The Adamson Machine Co.....	4,000	A.
The Atlantic Foundry Co.....	3,600	E.
Alliance.		
American Steel Foundries.....	69,000	B.
The Machined Steel Casting Co.....	10,800	A.
Bucyrus.		
W. A. Riddell Co.....	3,600	c.
Canton.		
The International Steel Corpn. (re- building)	6,000	

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Cincinnati.		
The Cincinnati Steel Castings Co.	2,680	E.
The Lunkenheimer Co.	2,000	E.
Cleveland.		
The Cleveland Alloys Co.	1,800	E.
The Cleveland Steel Casting Co.	10,718	A.
The Corrigan, McKinney Steel Co. . . .	1,700	b.
The Crucible Steel Casting Co.	3,000	E.
Mathews Steel Castings Co.	4,800	E.
National Malleable & Steel Castings Co.	*	E.
The Otis Steel Co.	24,400	A., C.
The West Steel Casting Co.	6,000	E.
Dayton.		
The Dayton Steel Foundry Co.	9,000	E.
The Duriron Co., Inc.	3,000	E.
Findlay.		
The Buckeye Traction Ditcher Co.	2,250	E.
Lima.		
The Ohio Steel Foundry Co.	36,000	B.
Lockland.		
The Sawbrook Steel Castings Co.	2,450	E.
Marion.		
The Alloy Cast Steel Co.	3,000	A., E.
The Commercial Steel Casting Co.	6,500	A.
The Marion Steam Shovel Co.	14,100	b., e.
Martins Ferry.		
The James H. Beans Foundry Co.	500	C.
Massillon.		
The Massillon Steel Casting Co.	3,600	E.
Middletown.		
The American Rolling Mill Co.	8,590	B., E.
Norwood.		
Allis-Chalmers Mfg Co.	2,500	e.
Portsmouth.		
Wheeling Steel Corporation.	2,000	b.
Sandusky.		
The Farrell-Cheek Steel Foundry Com- pany	6,000	E.
South Columbus (Columbus P. O.).		
The Bonney-Floyd Co.	20,000	B., E.
The Buckeye Steel Castings Co.	109,800	B., C.
Springfield.		
The Ohio Steel Foundry Co.	8,500	E.

* Electric furnaces used largely for malleable castings.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Toledo.		
The Industrial Steel Casting Co.....	4,800	E.
The Toledo Steel Casting Co.....	3,600	C.
OKLAHOMA.		
Tulsa.		
Oklahoma Steel Castings Co.....	3,800	E.
OREGON.		
Portland.		
Electric Steel Foundry Co.....	6,000	E.
Tennant Steel Corpn.....	3,500	E.
United States Steel Products Co. (Portland Works)	2,000	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.....	360	e.
Avonmore.		
The National Roll & Foundry Co....	3,600	A.
Beaver Falls.		
The Babcock & Wilcox Tube Co.....	300	E.
Beaver Falls Steel Co.....	1,000	E.
Brighton Electric Steel Casting Co....	370	E.
Keystone Driller Co.....	1,500	E.
Bethlehem.		
Bethlehem Steel Co.....	18,000	A.
Birdsboro.		
Birdsboro Steel Foundry & Machine Co.	24,000	A.
Blawnox.		
National Alloy Steel Co.....	2,000	E.
Brackenridge.		
Allegheny Steel Co.....	7,000	A.
Braddock.		
Sterling Steel Foundry Co.....	14,400	A.
Burnham.		
Standard Steel Works Co.....	38,400	A.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Buttonwood.		
Vulcan Iron Works.....	5,000	A.
Carlisle.		
The Frog, Switch & Mfg. Co.....	3,000	C.
Chester.		
Atlantic Steel Castings Co.....	7,000	A.
Federal Steel Foundry Co.....	6,600	B.
General Steel Castings Corpn.:		
Seaboard Works	21,400	A.
Thurlow Works	21,500	A.
Penn Steel Castings Corpn.....	13,500	A.
Conshohocken.		
Chrome Alloy Products, Inc.....	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.....	6,000	c.
Treadwell Engineering Co.....	4,000	E.
Eddystone.		
General Steel Castings Corpn. (Eddy- stone Works) building.....	60,000	B.
Erie.		
Erie Forge Co.....	12,000	A.
National-Erie Co.	15,500	A., E.
Standard Stoker Co.....	2,840	e.
Franklin.		
American Steel Foundries (idle).....	12,640	A.
Glassmere.		
Acme Steel Co.....	6,000	E.
Glassport.		
Pittsburgh Steel Foundry Corpn.....	30,000	B.
Greensburg.		
Walworth Company	2,400	E.
Hamburg.		
Pennsylvania Electric Steel Casting Co.	1,200	E
Irvine.		
National Forge & Ordnance Co.....	*	e.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Johnstown.		
Bethlehem Steel Co.....	1,600	a., b.
The Lorain Steel Co.....	18,500	A., E.
Kendall Station (P. O. Coraopolis).		
The Duquesne Steel Foundry Co....	30,000	A.
Lansdowne.		
Crucible Steel Casting Co.....	3,300	E.
Lebanon.		
Lebanon Steel Foundry.....	5,285	E
McKeesport.		
Fort Pitt Steel Casting Co.....	6,000	E
McKees Rocks.		
Pressed Steel Car Co.....	30,000	A.
Midland.		
Mackintosh-Hemphill Co.	23,000	A.
Munhall.		
Carnegie Steel Co. (Homestead Wks.).	3,200	b.
New Brighton.		
Damascus Steel Casting Co.....	1,500	E.
Riedel & Sons Mfg. Co.....	5,000	B
New Kensington.		
Union Spring & Manufacturing Co..	10,200	C., E.
Oil City.		
National Transit Pump & Machine Co.	1,150	c.
Oil Well Supply Co.....	2,180	e.
Pencoyd.		
American Bridge Co.....	3,200	B.
Philadelphia.		
Dodge Steel Co. (Tacony).....	3,500	E.
The Midvale Company.....	*	A, B., E.
United States Gov., Navy Dept., Philadelphia Navy Yard.....	600	e.
Phoenixville.		
The Phoenix Iron Co.....	1,200	B.
Pittsburgh.		
American Steel Foundries.....	6,500	A.
The Electro Steel Co., Inc. (idle)....	*	E.
Jones & Laughlin Steel Corp.....	10,000	a.
The McConway & Torley Co.....	28,000	A.
Pittsburgh Rolls Corporation.....	20,000	A.
Pittsburgh Valve, Foundry & Construction Co.	1,800	E.
Reliance Steel Casting Co.....	7,000	A.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Pittsburgh—(Continued)		
Stroh Process Steel Co.....	4,000	A.
Union Steel Casting Co.....	27,900	A., E.
Reading.		
Empire Steel Castings, Inc.....	1,500	E.
Reading Iron Co.....	2,500	c.
Reading Steel Casting Co.....	7,000	E.
Sharon.		
American Steel Foundries (idle)....	42,000	B.
National Malleable & Steel Castings Co.	60,000	B., E.
Steelton.		
Bethlehem Steel Co.....	18,000	A.
Titusville.		
Cyclops Steel Co.....	800	E.
Trafford.		
Westinghouse Electric & Mfg. Co....	3,000	e.
Vandergrift.		
American Sheet & Tin Plate Co.....	*	b.
United Engineering & Foundry Co...	30,000	A.
Verona.		
American Steel Foundries.....	33,000	B.
Weatherly.		
Weatherly Steel Castings Co.....	600	C.
West Homestead (Mesta Station).		
Mesta Machine Co.....	25,000	A.
Wheatland.		
Pittsburgh Steel Foundry Corpn. (Sharon Plant)	10,000	A.
TENNESSEE.		
Chattanooga.		
Ross-Meehan Foundries	8,000	C., E.
Lenoir City.		
Lenoir Car Works.....	3,300	A.
TEXAS.		
Beaumont.		
Beaumont Iron Works Co.....	3,000	E.
Corsicana.		
American Well & Prospecting Co....	1,000	e.
El Paso.		
El Paso Foundry & Machine Co.....	500	c.
Fort Worth.		
Texas Steel Co.....	1,000	E.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Houston.		
Hughes Tool Co.....	10,500	E.
Texas Electric Steel Casting Co.....	10,000	E.
UTAH.		
Midvale.		
Western Steel & Foundry Co.....	3,600	B.
Salt Lake City.		
American Foundry & Machine Co...	2,500	E.
VIRGINIA.		
Newport News.		
Newport News Shipbuilding & Dry Dock Co.	950	E.
Portsmouth.		
United States Gov., Navy Department, Norfolk Navy Yard.....	2,100	e.
Pulaski.		
Pulaski Foundry & Mfg. Corp.....	400	C.
Richmond.		
Old Dominion Iron & Steel Works....	*	e.
Roanoke.		
Norfolk & Western Railway Co.....	1,500	e.
WASHINGTON.		
Bremerton.		
United States Gov., Navy Department, Puget Sound Navy Yard.....	800	e.
Everett.		
Tennent Steel Corp.....	1,500	E.
Hoquiam.		
Lamb-Grays Harbor Co.....	2,500	E.
Renton.		
Pacific Car & Foundry Co.....	6,000	E.
Seattle.		
Olympic Steel Works.....	2,400	E.
Tennent Steel Corp.....	3,000	E.
University of Washington.....		e.
Washington Iron Works.....	3,600	E.
Sedro-Woolley.		
Skagit Steel & Iron Works.....	1,200	E.
Spokane.		
Union Iron Works.....	300	C.

* Steel casting capacity not stated; see list of steel ingot plants.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Tacoma.		
Atlas Foundry & Machine Co.....	1,500	E.
Lidgerwood Pacific Co.....	3,000	C., E.
Tennent Steel Corp.....	3,000	E.
WEST VIRGINIA.		
New Cumberland.		
The Duraloy Co.....	4,800	E.
Parkersburg.		
Mountain State Steel Foundries.....	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.....	1,800	E.
Kaukauna.		
Moloch Foundry & Machine Co.....	3,150	E.
Kenosha.		
Arneson Foundry Co.....	3,000	E.
Milwaukee (see also West Allis).		
Crucible Steel Casting Co.....	3,700	E.
The Falk Corporation.....	25,000	A.
Harnischfeger Corporation	8,000	e.
Kinite Corporation	340	E.
Maynard Electric Steel Casting Co...	12,000	E.
Milwaukee Steel Foundry Co.....	6,600	E.
National Steel Foundries.....	10,000	A.
Pelton Steel Casting Co.....	2,000	E.
Sivyer Steel Casting Co.....	6,800	E.
George H. Smith Steel Casting Co....	6,500	E.
Racine.		
Racine Steel Castings Co.....	4,500	E.
South Milwaukee.		
Bucyrus-Erie Co.	14,000	b., e.
West Allis (Milwaukee).		
Wehr Steel Co.....	7,000	E.

CANADA.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
ALBERTA.		
Calgary.		
Riverside Iron Works, Ltd.....	1,500	E.
BRITISH COLUMBIA.		
Trail.		
The Consolidated Mining & Smelting Co. of Canada, Ltd.....	3,000	e.
Vancouver.		
Reliance Foundry Co., Ltd.....	500	E.
Vancouver Engineering Works, Ltd..	800	E.
Wallace Foundry Co., Ltd.....	1,500	E.
MANITOBA.		
Selkirk.		
Manitoba Steel Foundries, Ltd.....	2,000	E.
Winnipeg.		
The Vulcan Iron Works, Ltd.....	5,000	E.
NOVA SCOTIA.		
New Glasgow.		
J. W. Cumming Manufacturing Co., Ltd.	3,000	E.
ONTARIO.		
Hamilton.		
Dominion Foundries & Steel, Ltd.....	30,000	E.
Orillia.		
Canada Electric Castings Co., Ltd...	5,600	E.
Owen Sound.		
The William Kennedy & Sons, Ltd..	1,500	C.
Welland.		
Canadian Steel Foundries, Ltd. (idle).	25,000	B.
Welland Steel Castings, Ltd.....	3,000	E.
QUEBEC.		
Hull.		
Hull Iron & Steel Foundries, Ltd....	7,200	A., E.
Joliette.		
Joliette Steel, Ltd.....	2,500	E.
Longue Pointe (Montreal).		
Canadian Steel Foundries, Ltd.....	40,000	B., E.
Montmagny.		
General Trust of Canada (idle).....		C.

Location and Operating Company.	Annual capacity. Gross tons.	Products.
Montreal.		
Ayrmont Properties, Ltd. (idle).....	15,000	E.
Quebec.		
La Compagnie F. X. Drolet.....	300	C.
Shawinigan Falls.		
Shawinigan Stainless Steel & Alloys, Ltd.	1,000	E.
Sherbrooke.		
Canadian Brake Shoe & Foundry Co., Ltd.	3,600	E.
Manganese Steel Castings, Ltd.....	600	E.
Sorel.		
Beauchemin et Fils, Ltd.....	1,800	C.
Three Rivers.		
Detachable Rock Drill Bits, Ltd. (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.
Pacific Coast Steel Corp'n. (Los Angeles Plant).
Oakland (Emeryville).
Botchford Steel Co.
Pittsburg.
United States Steel Products Co.
Sacramento.
Southern Pacific Co.
San Francisco.
Simmons Co.
South San Francisco.
Pacific Coast Steel Corp'n. (South San Francisco Plant).
Torrance.
United States Steel Products Co., Llewellyn Mills.

COLORADO.

Pueblo.
The Colorado Fuel & Iron Co. (Minnequa Works).

CONNECTICUT.

Bridgeport.

The Stanley Works (American Tube & Stamping Plant).

New Britain.

The Stanley Works.

DELAWARE.

Claymont.

Worth Steel Co.

New Castle.

Industrial Plants Corp'n. (idle).

GEORGIA.

Atlanta.

Atlantic Steel Co.

ILLINOIS.

Alton.

Laclede Steel Co.

Chicago.

Central Alloy Steel Corp'n. (Grand Crossing Works).

Ingersoll Steel & Disc Co.

International Harvester Co. (Deering Works).

Joslyn Mfg. & Supply Co.

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.

Granite City Steel Co.

Joliet.

Illinois Steel Co. (Joliet Works).

McKenna Process Co.

Phoenix Manufacturing Co. (Joliet Works).

Madison.

Laclede Steel Co.

Moline.

Republic Iron & Steel Co. (Sylvan Works).

Peoria (South Bartonville).

Keystone Steel & Wire Co.

Riverdale.

Acme Steel Co.

South Chicago.

Central Alloy Steel Corp'n. (South Chicago Works).

Illinois Steel Co. (South Works).

International Harvester Co. (Wisconsin 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.

Central Alloy Steel Corp'n. (East Chicago Works).

Elwood.

American Sheet & Tin Plate Co. (American Works).

Fort Wayne.

Joslyn Mfg. & Supply Co.

Gary.

American Sheet & Tin Plate Co.:

Gary Sheet Mill.

Gary Tin Mill.

Illinois Steel Co. (Gary Works).

National Tube Co. (Gary Works).

Indiana Harbor.

Inland Steel Co.

The Youngstown Sheet & Tube Co. (Indiana Harbor Works).

Indianapolis.

Continental Steel Corp'n.

Kokomo.

Continental Steel Corp'n.

New Albany.

Ohio Falls Iron Co.

New Castle.

Indiana Rolling Mill Co.

Terre Haute.

The Highland Iron & Steel Co. (Terre Haute Works).

KENTUCKY.

Ashland.

The American Rolling Mill Co. (Ashland Division, West Works).

Louisville.

Ewald Iron Co.

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.

Rustless Iron Corpn. of America.

Cumberland.

The Baltimore & Ohio R. R. Co. (2 Plants).

The N. & G. Taylor Co.

Sparrow's Point.

Bethlehem Steel Co. (Maryland Plant).

MASSACHUSETTS.

Worcester.

The American Steel & Wire Co. (South Works).

Loring Coes & Co., Inc.

MICHIGAN.

Dearborn.

Ford Motor Co.

Ecorse.

Great Lakes Steel Corpn. (building).

Michigan Steel Corporation.

Fordson.

Detroit Seamless Steel Tubes Co.

Monroe.

The Newton Steel Co. (building).

MINNESOTA.

Duluth (Morgan Park).

Minnesota Steel Co.

Waite Park.

Great Northern Railway Co. (St. Cloud Shops).

MISSOURI.

Kansas City.

Sheffield Steel Corporation.

St. Louis.

American Car & Foundry Co.

Missouri Rolling Mill Corporation.

St. Louis Screw & Bolt Co.

Scullin Steel Co.

NEW JERSEY.

Carteret.

Chrome Steel Corporation.

Dover.

Ulster Iron Works.

Elizabethport.

Singer Manufacturing Co.

Harrison.

Crucible Steel Co. of America (Atha Works).

Driver-Harris Co.

Jersey City.

W. Ames & Co.

Newark.

Heller Brothers Co.

Tidewater Rolling Mills, Inc.

Rockaway.

The Rockaway Rolling Mill.:

East Works.

West Works.

Roebbling.

John A. Roebbling's Sons Co. (Kinkora Works).

NEW YORK.

Auburn.

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.

Ludlum Steel Co. (Atlas Plant).

Elmira.

Elmira Steel Co., Inc.

Lackawanna.

Bethlehem Steel Co. (Lackawanna Plant).

Lockport.

Simonds Saw & Steel Co.

North Tonawanda.

Buffalo Bolt Co.

Poughkeepsie.

Phoenix Manufacturing Co. (Poughkeepsie Works) (idle).

Rome.

Wrought Iron Co. of America.

Syracuse.

Crucible Steel Co. of America (Sanderson Works).

Eckels-Nye Steel Co.

Halcomb Steel Co.

Onondaga Steel Co., Inc. (idle).

Tonawanda.

Buffalo Steel Co.

Troy.

The Burden Iron Co.

The Rail Joint Co.

Watervliet.

Ludlum Steel Co.

OHIO.

Ashtabula.

Empire Steel Corpn. (Ashtabula Works).

Bridgeport.

American Sheet & Tin Plate Co. (Aetna-Standard Works).

Cambridge.

American Sheet & Tin Plate Co.:

Cambridge Works.

Guernsey Works.

J. W. White.

Canton.

Canton Rolling Mill Corpn. (rebuilding).

Central Alloy Steel Corporation:

South Sheet Division.

South Steel Division.

Stark Sheet Division.

United Steel Division.

Continental Steel Corpn.

The Timken Steel & Tube Co.

Cleveland.

The American Steel & Wire Co.:

American Works.

Consolidated Works.

Cuyahoga Works.

Newburgh Steel Works.

The Bourne Fuller Co.:

Union Mills.

Upson Works.

The Cleveland Hardware Co.

The Corrigan, McKinney Steel Co.

Empire Steel Corpn. (Cleveland Works).

Cleveland—(Continued)

The Otis Steel Co.:

Lakeside Works.

Riverside Works.

Cuyahoga Falls.

Falls Hollow Staybolt Co.

Dover.

American Sheet & Tin Plate Co. (Dover Works).

The Reeves Manufacturing Co.

Elyria.

Steel & Tubes, Inc.

Gambrinus.

The Timken Steel & Tube Co.

Girard.

A. M. Byers Co.

Lorain.

National Tube Co. (Lorain Works).

Lowellville.

Sharon Steel Hoop Co.

McDonald.

Carnegie Steel Co. (McDonald Mills).

Mansfield.

Empire Steel Corp'n. (Mansfield Works).

Marietta.

W. F. Robertson Steel & Iron Co.:

Hudson Works.

Pittsburgh Works.

Marion.

The Pollak Steel Co.

Martins Ferry.

American Sheet & Tin Plate Co. (Laughlin Works).

Wheeling Steel Corporation.

Massillon.

Central Alloy Steel Corp'n.:

Sheet Division.

Steel Division.

Strip Division.

Middletown.

The American Rolling Mill Co. (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.

Empire Steel Corpn.:

Falcon Works.

Thomas Works.

Waddell Works.

The Mahoning Valley Steel Co.

Republic Iron & Steel Co. (Niles Works).

Portsmouth.

Wheeling Steel Corporation.

Shelby.

The Ohio Seamless Tube Co.

Steubenville.

Weirton Steel Co.

Wheeling Steel Corporation.

Struthers.

The Youngstown Sheet & Tube Co. (Struthers Works).

Toronto.

Follansbee Brothers Co.

Warren.

The American Puddled Iron Co.

Republic Iron & Steel Co.:

Liberty Works.

Warren Works.

The Youngstown Sheet & Tube Co. (Western Reserve Works).

Wellsville.

American Sheet & Tin Plate Co. (Wellsville Works).

Wooster.

The Timken Steel & Tube Co.

Yorkville.

Wheeling Steel Corporation.

Youngstown.

Carnegie Steel Co.:

Ohio Steel Works.

Lower Union Mills.

Upper Union Mills.

Republic Iron & Steel Co.:

Bessemer Steel Works.

Brown-Bonnell Works.

Open Hearth Steel Works.

Sharon Steel Hoop Co.

The Youngstown Sheet & Tube Co. (Brier Hill and Campbell Works).

Zanesville.

The American Rolling Mill Co.

OKLAHOMA.

Sand Springs.

Tulsa Rolling Mills Co.

PANAMA CANAL ZONE.

Balboa.

The Mechanical Division of the Panama Canal.

PENNSYLVANIA.

Aliquippa.

Jones & Laughlin Steel Corp. (Aliquippa Works)
Vulcan Crucible Steel Co.

Allenport.

Pittsburgh Steel Products Co.

Allentown.

The American Steel & Wire Co. (Allentown Works)

Altoona.

The Altoona Iron Co.

Ambridge.

Spang, Chalfant & Co., Inc.

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).

Brackenridge.

Allegheny Steel Co.

Braeburn.

Braeburn Alloy Steel Corporation.

Bridgeville.

Universal Steel Co.

Burnham.

Logan Iron & Steel Co.

Standard Steel Works Co.

Butler.

The American Rolling Mill Co.

Canonsburg.

Canonsburg Steel & Iron Works.

The Standard Tin Plate Co.

Carnegie.

Superior Steel Corporation.

Catasauqua.

Phoenix Manufacturing Co. (Catasauqua Works)

Clairton.

Carnegie Steel Co. (Clairton Steel Works).

Coatesville.

Bethlehem Steel Co. (Coatesville Plant).

Lukens Steel Co.

Colona.

Colonial Steel Co.

Columbia.

Edwards, E. T.:

East End Mill.

Union Street Mill.

Janson Steel & Iron Co.

Conshohocken.

Alan Wood Steel Co.

Corry.

McInnes Steel Co., Ltd.

Creighton.

Penn Iron & Steel Co.

Crum Lynne.

Eddystone Steel Co.

Danville.

The American-Swedo Iron Co.

Bethlehem Steel Co. (Danville Div.).

Reading Iron Co. (Montour Rolling Mills Dept.).

Donora.

The American Steel & Wire Co.:

Donora Steel Works.

Donora Wire Works.

Duncannon.

Wrought Iron Co. of America (Duncannon Works).

Duquesne.

Carnegie Steel Co. (Duquesne Steel Works).

Eddystone.

Federal Alloy Steel Corporation.

Ellwood City.

National Tube Co. (Ellwood Works).

Farrell.

American Sheet & Tin Plate Co.:

Farrell Works.

Mercer Works.

The American Steel & Wire Co. (Farrell Works).

Carnegie Steel Co. (Farrell Steel Works).

Franklin.

Franklin Steel Works.

Glassport.

Copperweld Steel Co.

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).

Ivy Rock.

Alan Wood Steel Co.

Johnstown.

Bethlehem Steel Co. (Cambria Plant).

Latrobe.

Latrobe Electric Steel Co.

Railway Steel-Spring Co.

Vanadium-Alloys Steel Co.

Lebanon.

Bethlehem Steel Co. (Lebanon Plant).

Wrought Iron Co. of America (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. (Vulcan Forge & Iron Works).

Midland.

Pittsburgh Crucible Steel Co.

Milton.

The Milton Manufacturing Co.

Monessen.

American Sheet & Tin Plate Co. (National Works).

Page Steel & Wire Co., Inc.

Pittsburgh Steel Co.

Pittsburgh Steel Products Co.

Munhall.

Carnegie Steel Co. (Homestead Steel Works).

Neville Island.

Donner Steel Co. (Witherow Die Rolling Div.).

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. (idle).

New Kensington.

American Sheet & Tin Plate Co. (Pennsylvania Works).

- North Braddock.
 - Carnegie Steel Co. (Edgar Thomson Steel Works).
- Northumberland.
 - Van Alen & Co. (Northumberland Iron & Nail Works).
- Oakmont.
 - Edgewater Steel Co.
- Pencoyd.
 - American Bridge Co.
- Philadelphia.
 - Henry Disston & Sons, Inc. (Tacony).
 - Hughes & Patterson.
 - The John Illingworth Steel Co. (Frankford).
 - The Midvale Co. (Nicetown).
 - Nicetown Plate Washer Co., Inc. (Nicetown).
- Phoenixville.
 - The Phoenix Iron Co.
- Pine Forge.
 - Pine Iron Works Co.
- Pittsburgh.
 - A. M. Byers Co. (South Side Plant).
 - Crucible Steel Co. of America:
 - Crescent Works.
 - La Belle Works (North Side).
 - Park Works.
 - Donner Steel Co. (Dilworth, Porter & Co. Div.).
 - Jones & Laughlin Steel Corporation (Pittsburgh Works).
 - Pittsburgh Forge & Iron Co. (North Side).
- Port Vue.
 - McKeesport Tin Plate Co.
- Pottstown.
 - Glasgow Iron Co.:
 - Glasgow Plant and Valley Mill.
 - Lower Works.
 - Reading Iron Co. (Pottstown Dept.).
- Pottsville.
 - The Eastern Steel Co.
- Rankin.
 - The American Steel & Wire Co. (Rankin Works).
- Reading.
 - The Carpenter Steel Co.
 - Reading Iron Co.:
 - Charcoal Iron Plant.
 - Ninth Street Mills Dept.
 - Oley Street Mills Dept.
 - Roe Puddling Plant.
 - South Street Rolling Mill.
- Scottdale.
 - American Sheet & Tin Plate Co. (Scottdale Works).

Scranton.

Wrought Iron Co. of America (Scranton Works).

Sharon.

Sharon Steel Hoop Co.

Wilkes Rolling Mill Co.

Steelton.

Bethlehem Steel Co.

Tarentum.

Tarentum Steel Corp'n. (building).

Titusville.

Cyclops Steel Co.

Vandergrift.

American Sheet & Tin Plate Co. (Vandergrift Works).

Washington.

Jessop Steel Co.

Washington Tin Plate Co.

West Homestead.

Carnegie Steel Co. (Howard Axle Works).

West Leechburg.

West Leechburg Steel Co.

Williamsport (Newberry).

Sweet's Steel Co.

RHODE ISLAND.

Phillipsdale.

Washburn Wire Co.

TENNESSEE.

Knoxville (Lonsdale).

Knoxville Iron Co.

Memphis.

B. L. Mallory (idle).

TEXAS.

Fort Worth.

Texas Steel Co.

UTAH.

Midvale.

Western Steel & Foundry Co.

VIRGINIA.

Richmond.

Old Dominion Iron & Steel Works, Inc.

Tredegar Company.

WASHINGTON

Lowell.

United Steel Co.

Seattle.

Northwest Steel Rolling Mills, Inc.

Youngstown.

Pacific Coast Steel Corp'n. (Seattle Plant).

WEST VIRGINIA.

Beech Bottom.

Wheeling Steel Corporation.

Benwood.

Wheeling Steel Corporation (Benwood Works).

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.

Wheeling Steel Corporation:

La Belle Works.

Whitaker Works.

WISCONSIN.

Kenosha.

Simmons Co.

Milwaukee.

Globe Steel Tubes Co.

Illinois Steel Co. (Milwaukee Works).

Inland Steel Co.

Wrought Washer Mfg. Co.

CANADA.

ALBERTA.

Calgary.

Manitoba Rolling Mill Co., Ltd.

BRITISH COLUMBIA.

Port Moody.

City of Port Moody (idle).

MANITOBA.

Selkirk.

Manitoba Rolling Mill Co., Ltd.

NOVA SCOTIA.

Amherst.

Canadian Car & Foundry Co., Ltd.

New Glasgow.

British Empire Steel Corporation, Ltd.

Sydney.

British Empire Steel Corporation, Ltd.

ONTARIO.

Gananoque.

The D. F. Jones Manufacturing Co., Ltd.

Hamilton.

Burlington Steel Co., Ltd.

Dominion Foundries & Steel, Ltd.

The Steel Co. of Canada, Ltd.:

Hamilton Works.

Ontario Works.

London.

London Rolling Mill Co., Ltd.

Sault Ste. Marie.

Algoma Steel Corporation.

Welland.

Canadian Atlas Steels, Ltd.

Canadian Steel Foundries, Ltd. (idle).

QUEBEC.

Montmagny.

General Trust of Canada. (idle).

Montreal.

British Empire Steel Corporation, Ltd.

Canadian Tube & Steel Products, 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 Steel Co., Conshohocken, Pa. (F.)
- Algoma Steel Corporation, Sault Ste. Marie, Ont., Canada. (F.)
- Allegheny Steel Co., Brackenridge, Pa.
- American Rolling Mill Co. (The), Middletown, Ohio. (F.)
- American Steel & Wire Co. (The), Cleveland, Ohio. (F.)
- Andrews Steel Co. (The), Newport, Ky. (F.)
- Atlantic Steel Co., Atlanta, Ga.
- Bethlehem Steel Co., Bethlehem, Pa. (F.)
- Bourne-Fuller Co. (The), Cleveland, Ohio.
- British Empire Steel Corp., Ltd., Montreal, P. Q., Canada. (F.)
- Carnegie Steel Co., Pittsburgh, Pa. (F.)
- Central Alloy Steel Corp., Massillon, Ohio. (F.)
- Colonial Steel Co., Pittsburgh, Pa. (F.)
- Colorado Fuel & Iron Co. (The), Denver, Colo. (F.)
- Continental Steel Corp., Kokomo, Ind. (own use).
- Corrigan, McKinney Steel Co. (The), Cleveland, Ohio.
- Crucible Steel Co. of America, New York, N. Y. (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).
- Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio. (own use).
- Federal Alloy Steel Corporation, Eddystone, Pa.
- Follansbee Brothers Co., Pittsburgh, Pa. (own use).
- Ford Motor Co., Dearborn, Mich. (F.)
- Gulf States Steel Co., Birmingham, Ala.
- Halcomb Steel Co., New York, N. Y. (F.)
- Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa. (F.)
- Illinois Steel Co., Chicago, Ill. (F.)
- Inland Steel Co., Chicago, Ill. (F.)
- International Harvester Co., Chicago, Ill.
- Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (F.)
- Keystone Steel & Wire Co., Peoria, Ill.
- Laclede Steel Co., St. Louis, Mo. (F.)
- Lukens Steel Co. (The), Coatesville, Pa. (F.; forging blanks).
- Midvale Company (The), Philadelphia, Pa. (F.)
- Minnesota Steel Co., Duluth, Minn. (F.)
- National Tube Co., Pittsburgh, Pa. (F.)
- Old Dominion Iron & Steel Works, Inc., Richmond, Va.
- Otis Steel Co. (The), Cleveland, Ohio.
- Pacific Coast Steel Corporation, San Francisco, Calif.
- Phoenix Iron Co. (The), Philadelphia, Pa.

Pittsburgh Crucible Steel Co., Pittsburgh, Pa.
Pittsburgh Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, Ohio.
Roebling's (John A.) Sons Co., Trenton, N. J. (own use).
Rustless Iron Corp'n. of America, Baltimore, Md.
Sharon Steel Hoop Co., Sharon, Pa.
Sheffield Steel Corporation, Kansas City, Mo.
Southern Pacific Co., San Francisco, Calif. (own use).
Stanley Works (The), New Britain, Conn. (own use).
Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada. (F.)
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (F.)
Timken Steel & Tube Co. (The), Canton, Ohio. (F.)
Tulsa Rolling Mills Co., Tulsa, Okla. (F.)
United States Steel Products Co., San Francisco, Calif.
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.
Wrought Iron Co. of America, Lebanon, Pa. (own use).
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 Alloy Steel Corp'n., Massillon, Ohio.
Continental Steel Corp'n., Kokomo, Ind.
Corrigan, McKinney Steel Co. (The), Cleveland, Ohio.
Empire Steel Corp'n., Mansfield, Ohio. (own use).
Follansbee Brothers Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill. (own use).
Illinois Steel Co., Chicago, Ill.
Inland Steel Co., Chicago, Ill.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
Minnesota Steel Co., Duluth, Minn.
Otis Steel Co. (The), Cleveland, Ohio.
Parkersburg Iron & Steel Co. (The), Parkersburg, W. Va. (own use).
Reeves Manufacturing Co., Dover, Ohio. (own use).
Republic Iron & Steel Co., Youngstown, Ohio.
Rustless Iron Corp'n. of America, Baltimore, Md.
Sharon Steel Hoop Co., Sharon, Pa.

Sheffield Steel Corporation, Kansas City, Mo.
 Steel Company of Canada, Ltd. (The), Hamilton, Ont., Canada.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 United States Steel Products Co., San Francisco, Calif.
 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 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., Montreal, P. Q., 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.)
 Manitoba Rolling Mill Co., Ltd., Winnipeg, Man., Canada. (L.)
 National Tube Co., Pittsburgh, Pa. (H., G.)
 Southern Steel & Rolling Mill, Inc., Birmingham, Ala. (L.)
 Sweet's Steel Co., Williamsport, Pa. (R.)
 Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (H., 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.)
 Botchford Steel Co., Emeryville, Calif. (L.)
 Bourne-Fuller Co. (The), Cleveland, Ohio. (H., L.)
 British Empire Steel Corp., Ltd., Montreal, P. Q., Canada. (H., L.)
 Buffalo Steel Co., Tonawanda, N. Y. (L.)
 Burlington Steel Co., Ltd., Hamilton, Ont., Canada. (L.)
 Calumet Steel Co., Chicago, Ill. (L.)
 Canadian Car & Foundry Co., Ltd., Montreal, Canada.

Canadian Tube & Steel Products, Ltd., Montreal, Canada.
 Carnegie Steel Co., Pittsburgh, Pa. (H., L.)
 Colorado Fuel & Iron Co. (The), Denver, Colo. (H., L.)
 Connors Steel Co., Inc., Birmingham, Ala. (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.)
 Franklin Steel Works, Franklin, Pa. (L.)
 Gulf States Steel Co., Birmingham, Ala. (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.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (H., L.)
 Joslyn Mfg. & Supply Co., Chicago, Ill. (L.)
 Knoxville Iron Co., Knoxville, Tenn. (H., 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. (L.)
 Missouri Rolling Mill Corp., St. Louis, Mo. (L.)
 Ohio Falls Iron Co., New Albany, Ind. (L.)
 Pacific Coast Steel Corporation, 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. (L.)
 Reading Iron Co., Reading, Pa. (L.)
 Republic Iron & Steel Co., Youngstown, Ohio. (L.)
 Rockaway Rolling Mill (The), 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 States Steel Products Co., San Francisco, Calif. (H., L.)
 United Steel Co., Everett, Wash. (L.)
 West Virginia Rail Co. (The), Huntington, West Va. (L.)
 Western Steel & Foundry Co., Salt Lake City, Utah. (H., L.)
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (L.)

MANUFACTURERS OF WIRE RODS.

American Steel & Wire Co. (The), Cleveland, Ohio.
 Atlantic Steel Co., Atlanta, Ga.
 Bethlehem Steel Co., Bethlehem, Pa.
 British Empire Steel Corp., Ltd., Montreal, P. Q., Canada.

Buffalo Bolt Co., North Tonawanda, N. Y.
 Carpenter Steel Co. (The), Reading, Pa.
 Central Alloy Steel Corp., Massillon, Ohio.
 Colonial Steel Co., Pittsburgh, Pa. (coppered).
 Colorado Fuel & Iron Co. (The), Denver, Colo.
 Continental Steel Corp., Kokomo, Ind.
 Copperweld Steel Co., Glassport, Pa. (coppered).
 Crucible Steel Co. of America, New York, N. Y. (for drill rods).
 Disston (Henry) & Sons, Inc., Tacony, Philadelphia, Pa.
 Driver Harris Co., Harrison, N. J.
 Gulf States Steel Co., Birmingham, Ala.
 Halcomb Steel Co., New York, N. Y. (for drill rods).
 Illinois Steel Co., Chicago, Ill.
 International Harvester Co., Chicago, Ill.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
 Keystone Steel & Wire Co., Peoria, Ill.
 Ludlum Steel Co., Watervliet, N. Y.
 Minnesota Steel Co., Duluth, Minn.
 Page Steel & Wire Co., Inc., Bridgeport, Conn.
 Pittsburgh Steel Co., Pittsburgh, Pa.
 Roebling's (John A.) Sons Co., Trenton, N. J.
 Sheffield Steel Corporation, Kansas City, Mo.
 Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
 Timken Steel & Tube Co. (The), Canton, Ohio.
 United States Steel Products Co., San Francisco, Calif.
 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 Steel Co., Conshohocken, Pa. (S.)
 Allegheny Steel Co., Brackenridge, Pa. (S.)
 American Sheet & Tin Plate Co., Pittsburgh, Pa. (S.)
 Bethlehem Steel Co., Bethlehem, Pa. (U., S.)
 Carnegie Steel Co., Pittsburgh, Pa. (U., S.)
 Central Iron & Steel Co., Harrisburg, Pa. (U., S.)
 Colonial Steel Co., Pittsburgh, Pa. (S.)
 Colorado Fuel & Iron Co. (The), Denver, Colo. (wide flats).
 Crucible Steel Co. of America, New York, N. Y. (S.)
 Disston (Henry) & Sons, Inc., Tacony, Phila., Pa. (S.)
 Dominion Foundries & Steel, Ltd., Hamilton, Ont., Canada. (U., S.)

Glasgow Iron Co., Pottstown, Pa. (U., S.)
 Granite City Steel Co., Granite City, Ill. (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.)
 International Harvester Co., Chicago, Ill. (U.)
 Jessop Steel Co., Washington, Pa. (S.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (U., S.)
 Lukens Steel Co. (The), Coatesville, Pa. (U., S.)
 Ohio Falls Iron Co., New Albany, Ind. (wide flats).
 Otis Steel Co. (The), Cleveland, Ohio. (S.)
 Pacific Coast Steel Corporation, San Francisco, Calif. (U.)
 Pine Iron Works Co., Pine Forge, Pa. (S.)
 Republic Iron & Steel Co., Youngstown, Ohio. (U., S.)
 Scullin Steel Co., St. Louis, Mo. (wide flats to 12").
 Sheffield Steel Corporation, Kansas City, Mo. (S.)
 Simonds Saw & Steel Co., Fitchburg, Mass. (own use; S. saw plates).
 Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. (S.; wide flats).
 Universal Steel Co., Bridgeville, Pa. (S.)
 Wheeling Steel Corporation, Wheeling, W. Va. (S.)
 Worth Steel Co., Claymont, Del. (S.)
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (U., S.)

MANUFACTURERS OF BLACK SHEETS.

Alan Wood Steel Co., Conshohocken, 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.
 Bethlehem Steel Co., Bethlehem, Pa.
 Canonsburg Steel & Iron Works, Canonsburg, Pa.
 Central Alloy Steel Corp., Massillon, Ohio.
 Central Iron & Steel Co., Harrisburg, Pa.
 Continental Steel Corp., Kokomo, Ind.
 Crucible Steel Co. of America, New York, N. Y.
 Disston (Henry) & Sons, Inc., Tacony, Philadelphia, Pa.
 Eastern Rolling Mill Co. (The), Baltimore, Md.
 Eddystone Steel Co., Crum Lynne, Pa.
 Empire Steel Corp., Mansfield, Ohio.
 Follansbee Brothers Co., Pittsburgh, Pa.
 Granite City Steel Co., Granite City, Ill.
 Halcomb Steel Co., New York, N. Y.
 Illingworth Steel Co. (The John), Frankford, Philadelphia, Pa.

Indiana Rolling Mill Co., New Castle, Ind.
Ingersoll Steel & Disc Co., Chicago, Ill.
Inland Steel Co., Chicago, Ill.
Jessop Steel Co., Washington, Pa.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (tin mill sizes).
Mahoning Valley Steel Co. (The), Niles, Ohio.
Michigan Steel Corporation, Detroit, Mich.
Newport Rolling Mill Co. (The), Newport, Ky.
Newton Steel Co. (The), Youngstown, Ohio.
Otis Steel Co. (The), Cleveland, Ohio.
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.
Tarentum Steel Corp., Tarentum, Pa.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
United States Steel Products Co., San Francisco, Calif.
Universal Steel Co., Bridgeville, Pa.
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 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.
Bethlehem Steel Co., Bethlehem, Pa.
Canonsburg Steel & Iron Works, Canonsburg, Pa.
Central Alloy Steel Corp., Massillon, Ohio.
Continental Steel Corp., Kokomo, Ind.
Elliott Galvanizing Co., Jersey City, N. J.
Empire Steel Corp., Mansfield, Ohio.
Granite City Steel Co., Granite City, Ill.
Gregory (Thomas) Galvanizing Corp., Maspeth, N. Y.
Inland Steel Co., Chicago, Ill.
Klauer Manufacturing Co., Dubuque, Iowa.
Lamb & Ritchie Co., Cambridge, Mass.
Lewis Galvanizing Co., New Palestine, Ind.
McVoy Sheet & Tin Plate Co., Chicago, Ill.

Meaker Co., Chicago, Ill.
 Meurer Steel Barrel Co., Inc., Newark, N. J.
 National Galvanizing Co. (The), Chicago, Ill.
 Nelson Galvanizing Co., Inc., New York, N. Y.
 New Delphos Manufacturing Co. (The), Delphos, Ohio.
 Newport Rolling Mill Co. (The), Newport, Ky.
 Northern Corrugating Co., Green Bay, Wis.
 Ohio Galvanizing & Manufacturing Co. (The), Niles, Ohio.
 Parkersburg Iron & Steel Co. (The), Parkersburg, W. Va.
 Portland Galvanizing Works, Inc., Portland, Ore.
 Reeves Manufacturing Co. (The), Dover, Ohio.
 Republic Iron & Steel Co., Youngstown, Ohio.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 United States Steel Products Co., San Francisco, Calif.
 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 Steel Co., Conshohocken, Pa.
 American Rolling Mill Co. (The), Middletown, Ohio.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Apollo Steel Co., Apollo, Pa.
 Bethlehem Steel Co., Bethlehem, Pa.
 Central Alloy Steel Corp., Massillon, Ohio.
 Central Iron & Steel Co., Harrisburg, Pa.
 Continental Steel Corp., Kokomo, Ind.
 Eddystone Steel Co., Crum Lynne, Pa.
 Granite City Steel Co., Granite City, Ill.
 Inland Steel Co., Chicago, Ill.
 Newport Rolling Mill Co. (The), Newport, Ky.
 Newton Steel Co. (The), Youngstown, Ohio.
 Otis Steel Co. (The), Cleveland, Ohio.
 Republic Iron & Steel Co., Youngstown, Ohio.
 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.
 United States Steel Products Co., San Francisco, Calif.
 Weirton Steel Co., Weirton, W. Va.
 Wheeling Steel Corporation, Wheeling, W. Va.
 Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

MANUFACTURERS OF BLACK PLATES FOR TINNING.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Follansbee Brothers Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
McKeesport Tin Plate Co., McKeesport, Pa.
Newport Rolling Mill Co. (The), Newport, Ky.
Republic Iron & Steel Co., Youngstown, Ohio.
Robertson (W. F.) Steel & Iron Co., Cincinnati, Ohio.
Standard Tin Plate Co. (The), Canonsburg, Pa.
Taylor (The N. & G.) Co., Cumberland, Md.
United States Steel Products Co., San Francisco, Calif.
Washington Tin Plate Co., Washington, Pa.
Weirton Steel Co., Weirton, W. Va.
Wheeling Steel Corporation, Wheeling, W. Va.
Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

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).
Bethlehem Steel Co., Bethlehem, Pa.
Continental Can Co., New York, N. Y. (own use).
Continental Steel Corp., Kokomo, Ind. (long ternes only).
Follansbee Brothers Co., Pittsburgh, Pa. (long ternes also).
Granite City Steel Co., Granite City, Ill.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
McKeesport Tin Plate Co., McKeesport, Pa.
Republic Iron & Steel Co., Youngstown, 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.
Taylor (The N. & G.) Co., Cumberland, Md.
United States Steel Products Co., San Francisco, Calif.
Washington Tin Plate Co., Washington, Pa.
Weirton Steel Co., Weirton, W. Va. (long ternes also).
Wheeling Steel Corporation, Wheeling, W. Va. (long ternes also).
Youngstown Sheet & Tube Co. (The), Youngstown, Ohio.

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.
 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).
 Edwards, E. T., Columbia, Pa.
 Ewald Iron Co., Louisville, Ky. (own use).
 Glasgow Iron Co., Pottstown, Pa.
 Highland Iron & Steel Co. (The), Terre Haute, Ind.
 Hughes & Patterson, Philadelphia, Pa.
 Knoxville Iron Co., Knoxville, Tenn.
 Lockhart Iron & Steel Co., Pittsburgh, Pa.
 Logan Iron & Steel Co., Philadelphia, Pa. (own use).
 London Rolling Mill Co., Ltd., London, Ont., Canada. (own use).
 Monongahela Iron & Steel 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.
 Ulster Iron Works, Dover, N. J.
 Wilkes Rolling Mill Co., Sharon, Pa.
 Wrought Iron Co. of America, Lebanon, Pa.

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.)

- Algoma Steel Corporation, Sault Ste. Marie, Ont., Canada. (S.)
- ✓ Altoona Iron Co. (The), Altoona, Pa. (I.)
- American Bridge Co., Pittsburgh, Pa. (S., R.)
- ✓ 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.)
- ✓ 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.)
- Botchford Steel Co., Emeryville, Calif. (S., R.)
- Bourne-Fuller Co. (The), Cleveland, Ohio. (S., R.)
- British Empire Steel Corp., Ltd., Montreal, P. Q., Canada. (I., S., R.)
- Buckeye Rolling Mill Co. (The), Steubenville, Ohio.
- ✓ Buffalo Bolt Co., North Tonawanda, 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.)
- Canadian Car & Foundry Co., Ltd., Montreal, P. Q., Canada. (I., S., R.)
- Canadian Tube & Steel Products, Ltd., Montreal, P. Q., Canada. (I., S., R.)
- Carnegie Steel Co., Pittsburgh, Pa. (S., R.)
- Central Alloy Steel Corp., Massillon, Ohio. (S., R.)
- Chrome Steel Corporation, Carteret, N. J. (S., R.)
- Cleveland Hardware Co. (The), Cleveland, Ohio. (own use; S.)
- Colorado Fuel & Iron Co. (The), Denver, Colo. (S., R.)
- Connors Steel Co., Inc., Birmingham, Ala. (S., R.)
- Corrigan, McKinney Steel Co. (The), Cleveland, Ohio. (S.)
- Crucible Steel Co. of America, New York, N. Y. (S.)
- 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.)
- Elmira Steel Co., Inc., New York, N. Y. (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., Dearborn, Mich. (S.)
- Franklin Steel Works, Franklin, Pa. (S., R.)
- Glasgow Iron Co., Pottstown, Pa. (I., S.)
- 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.)
- Highland Iron & Steel Co. (The), Terre Haute, Ind. (I., S., R.)
- 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.)
- Janson Steel & Iron Co., Columbia, Pa. (I., S., R.)
- Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (S., R.)
- Joslyn Mfg. & Supply Co., Chicago, Ill. (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.)
- 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.)
- Manitoba Rolling Mill Co., Ltd., Winnipeg, Man., Canada. (I., S., R.)
- 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.)
- Monongahela Iron & Steel Co., Pittsburgh, Pa. (I.)

- National Tube Co., Pittsburgh, Pa. (S.)
- ✓ Nicetown Plate Washer Co., Inc., Philadelphia, Pa. (I., S., R.)
- Northwest Steel Rolling Mills, Inc., Seattle, Wash. (S., R.)
- ✓ Ohio Falls Iron Co., New Albany, Ind. (I., S., R.)
- ✓ Old Dominion Iron & Steel Works, Inc., Richmond, Va. (I., S.)
- Pacific Coast Steel Corporation, San Francisco, Calif. (S., R.)
- Page Steel & Wire Co., Bridgeport, Conn. (S.; own use).
- ✓ Panama Canal (The), Balboa, Canal Zone, Panama. (I., S., R.)
- ✓ Penn Iron & Steel Co., Creighton, Pa. (I.)
- 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.)
- ✓ Rockaway Rolling Mill (The), Rockaway, N. J. (I., S., R.)
- Rustless Iron Corp'n. of America, Baltimore, Md. (I., S.)
- ✓ St. Louis Screw & Bolt Co., St. Louis, Mo. (I., S.)
- Scullin Steel Co., St. Louis, Mo. (S., R.)
- ✓ Sheffield Steel Corp'n., 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 Pacific Co., San Francisco, Calif. (I., S.)
- Southern Steel & Rolling Mill, Inc., Birmingham, Ala. (S., R.)
- ✓ 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.)
- Tidewater Rolling Mills, Inc., New York, N. Y. (S., R.)
- Timken Steel & Tube Co. (The), Canton, Ohio. (S.; also forging).
- ✓ Tredegar Company, Richmond, Va. (I., S.)
- Tulsa Rolling Mills Co., Tulsa, Okla. (S., R.)
- ✓ Tuttle, Charles W., Auburn, N. Y. (I.) (staybolt iron).
- ✓ Ulster Iron Works, Dover, N. J. (staybolt, engine bolt iron).
- United States Steel Products Co., San Francisco, Calif. (S., R.)
- ✓ United Steel Co., Everett, Wash. (I., S., R.)
- West Virginia Rail Co. (The), Huntington, W. Va. (S., R.)
- Western Steel & Foundry Co., Salt Lake City, Utah. (S., R.)
- Wheeling Steel Corporation, Wheeling, W. Va. (S.)
- ✓ Wrought Iron Co. of America, Lebanon, Pa. (I., S.) (staybolt, engine bolt iron).
- Youngstown Sheet & Tube Co. (The), Youngstown, Ohio. (S., R.)

MANUFACTURERS OF TOOL AND HIGH SPEED STEEL.

Bethlehem Steel Co., Bethlehem, Pa.
 Braeburn Alloy Steel Corporation, Braeburn, Pa.
 Canadian Atlas Steels, Ltd., Welland, Ont., Canada.

Carpenter Steel Co. (The), Reading, Pa.
 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, Inc., Tacony, Philadelphia, Pa.
 Driver-Harris Co., Harrison, N. J.
 Electro Steel Co., Inc. (The), Pittsburgh, Pa. (idle).
 Firth-Sterling Steel Co., McKeesport, Pa.
 Forging and Casting Corp'n. (The), Detroit, Mich.
 General Electric Co., Schenectady, N. Y.
 Halcomb Steel Co., New York, N. Y.
 Heller Brothers Co., Newark, N. J. (own use).
 Illingworth Steel Co. (The John), Frankford, Philadelphia, Pa.
 Jessop Steel Co., Washington, Pa.
 Latrobe Electric Steel Co., Latrobe, Pa.
 Loring Coes and Co., Inc., Worcester, Mass. (own use).
 Ludlum Steel Co., Watervliet, N. Y.
 McInnes Steel Co., Ltd., Corry, Pa.
 Midvale Co. (The), Philadelphia, Pa.
 National Supply Co. of California (The), Los Angeles, Calif.
 Onondaga Steel Co., Syracuse, N. Y. (idle).
 Railway Steel-Spring Co., New York, N. Y.
 Rothert Steel Corp'n., Seattle, Wash.
 Simonds Saw & Steel Co., Fitchburg, Mass.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Trojan Electric Steel Co., Chicago, Ill.
 Universal Steel Co., Bridgeville, Pa.
 Vanadium Alloys Steel Co., Latrobe, Pa.
 Vulcan Crucible Steel Co., Aliquippa, Pa.

MANUFACTURERS OF HORSESHOE BARS AND HORSESHOES.

Burden Iron Co. (The), Troy, N. Y.
 Old Dominion Iron & Steel Works, Inc., Richmond, Va.
 Phoenix Manufacturing Co., Joliet, Ill.
 Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
 Tredegar Company, Richmond, Va.
 Tuttle, Charles W. (Auburn Iron Works), Auburn, N. Y. (bars only).

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., Montreal, P. Q., Canada.
 Carnegie Steel Co., Pittsburgh, Pa.
 Central Alloy Steel Corpn., Massillon, Ohio.
 Colorado Fuel & Iron Co. (The), Denver, Colo.
 Donner Steel Co., Inc., Buffalo, N. Y.
 Illinois Steel Co., Chicago, Ill.
 Inland Steel Co., Chicago, Ill.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
 McKenna Process Co., Joliet, Ill.
 Manitoba Rolling Mill Co., Ltd., Winnipeg, Man., Canada.
 National Tube Co., Pittsburgh, Pa.
 Pacific Coast Steel Corporation, 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 Company, Richmond, Va.
 United States Steel Products Co., San Francisco, Calif.
 West Virginia Rail Co. (The), Huntington, W. Va.
 Wheeling Steel Corporation, Wheeling, W. Va.

MANUFACTURERS OF HOOPS AND BANDS.

Acme Steel Co., Chicago, Ill.
 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.
 Highland Iron & Steel Co., Terre Haute, Ind.
 Hughes & Patterson, Philadelphia, Pa.
 Illinois Steel Co., Chicago, Ill.
 Janson Steel & Iron Co., Columbia, Pa.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
 Joslyn Mfg. & Supply Co., Chicago, Ill.
 Laclede Steel Co., St. Louis, Mo.
 Lockhart Iron & Steel Co., Pittsburgh, Pa.
 Pacific Coast Steel Corporation, San Francisco, Calif.
 Pittsburgh Steel Co., Pittsburgh, Pa.
 Republic Iron & Steel Co., Youngstown, Ohio.
 Sharon Steel Hoop Co., Sharon, Pa.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.

Tulsa Rolling Mills Co., Tulsa, Okla.
 Universal Steel Co., Bridgeville, Pa.
 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 Sheet & Tin Plate Co., Pittsburgh, Pa. (H.)
 American Steel & Wire Co. (The), Cleveland, Ohio. (H., C.)
 Carnegie Steel Co., Pittsburgh, Pa. (H.)
 Carpenter Steel Co. (The), Reading, Pa. (H., C.)
 Central Alloy Steel Corp., Massillon, Ohio. (H.)
 Crucible Steel Co. of America, New York, N. Y. (H., C.)
 Disston (Henry) & Sons, Inc., Tacony, Philadelphia, Pa. (H., C.)
 Driver-Harris Co., Harrison, N. J. (H., C.)
 Halcomb Steel Co., New York, 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.)
 Republic Iron & Steel Co., Youngstown, Ohio. (H., C.)
 Roebling's (John A.) Sons Co., Trenton, N. J. (H., C.)
 Rustless Iron Corp. of America, Baltimore, Md. (H., C.)
 Sharon Steel Hoop Co., Sharon, Pa. (H.)
 Stanley Works (The), New Britain, Conn. (H., C.)
 Steel & Tubes, Inc., Cleveland, Ohio. (H., C.)
 Superior Steel Corporation, Pittsburgh, Pa. (H., C.)
 Tulsa Rolling Mills Co., Tulsa, Okla. (H.)
 Washburn Wire Co., Phillipsdale, R. I. (H.)
 Weirton Steel Co., Weirton, W. Va. (H., C.)
 West Leechburg Steel Co., Pittsburgh, Pa. (H., C.)
 Wheeling Steel Corporation, Wheeling, W. Va. (H., C.)
 Wrought Washer Mfg. Co., Milwaukee, Wis. (own use; H.)

MANUFACTURERS OF IRON AND STEEL SKELP.

(I=IRON SKELP. S=STEEL SKELP.)

Allegheny Steel Co., Pittsburgh, Pa. (S.)
 Bethlehem Steel Co., Bethlehem, Pa. (I., S.)
 Byers (A. M.) Co., Pittsburgh, Pa. (I.)
 Carnegie Steel Co., Pittsburgh, Pa. (S.)

Cohoes Rolling Mill Co., Cohoes, N. Y. (own use; I., S.)
 Glasgow Iron Co., Pottstown, Pa. (I.)
 Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa. (S.)
 Illinois Steel Co., Chicago, Ill. (S.)
 International Harvester Co., Chicago, Ill. (S.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (S.)
 National Tube Co., Pittsburgh, Pa. (S.)
 Pittsburgh Forge & Iron Co., Pittsburgh, Pa. (I.)
 Reading Iron Co., Reading, Pa. (own use; I., S.)
 Republic Iron & Steel Co., Youngstown, Ohio. (S.)
 Simmons Co., New York, N. Y. (own use; S.)
 Steel & Tubes, Inc., Cleveland, Ohio. (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.; also S. B. T.)
 Bethlehem Steel Co., Bethlehem, Pa. (S.; also 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.)
 Fretz Moon Tube Co., Butler, Pa. (S.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (S.)
 Laclede Tube Co., St. Louis, Mo. (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., Inc., San Francisco, Calif. (S. & S. B. T.)
 Page-Hersey Tubes, Ltd., Toronto, Ont., Canada. (I., S.)
 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. (S. & 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.)

Allegheny Steel Co., Brackenridge, Pa. (C.)
 Appleton Steel Tube Co., Appleton, Wis. (C.)
 Babcock & Wilcox Tube Co. (The), Beaver Falls, Pa. (H., C.)
 Delaware Seamless Tube Co., Auburn, Pa. (H., C.)
 Detroit Seamless Steel Tubes Co., Detroit, Mich. (H., C.)
 Globe Steel Tubes Co., Milwaukee, Wis. (H., C.)
 Ivins (Ellwood) Steel Tube Works, Philadelphia, Pa. (C.)
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa. (H.)
 Michigan Seamless Tube Co., South Lyon, Mich. (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.)
 Spang, Chalfant & Co., Inc., Pittsburgh, Pa. (H.)
 Summerill Tubing Co., Bridgeport, Pa. (C.)
 Taylor-Wharton Iron & Steel Co., High Bridge, N. J. (H.)
 Timken Steel & Tube Co. (The), Canton, Ohio. (H., C.)
 Youngstown Sheet & Tube Co., Youngstown, Ohio. (H.)

MANUFACTURERS OF WIRE NAILS.

American Steel & Wire Co. (The), Cleveland, Ohio.
 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., Montreal, P. Q., Canada.
 Canadian Tube & Steel Products, Ltd., Montreal, P. Q., Canada.
 Cedarburg Wire & Wire Nail Co., Cedarburg, Wis.
 Central Alloy Steel Corpn., Massillon, Ohio.
 Central Wire Nail & Specialty Co., Hempstead, L. I.
 Colorado Fuel & Iron Co. (The), Denver, Colo.
 Continental Steel Corpn., Kokomo, Ind.
 Graham Nail & Wire Products, Ltd., Toronto, Ont., Canada.
 Eastern Hardware & Supply Co., Baltimore, Md.
 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 Corpn., Ltd., Collingwood, Ont., Canada.
 Independent Nail & Packing Co., Bridgewater, Mass.
 Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
 Keystone Steel & Wire Co., Peoria, Ill.
 Kokomo Nail & Brad Co., Kokomo, Ind. (special; cement coated).
 Laidlaw Bale-Tie Co., Ltd. (The), Hamilton, Ont., Canada.
 Mid-States Steel & Wire Co., Crawfordsville, Ind.
 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.
 Page Steel & Wire Co., Inc., Bridgeport, Conn.
 Parmenter & Bulloch Co., Ltd. (The), Gananoque, Ont., Canada.
 Penn Hardware Co., Reading, Pa.
 Pittsburgh Steel Co., Pittsburgh, Pa.
 Robertson (P. L.) Manufacturing Co., Ltd., Milton, Ont., Canada.
 Sheffield Steel Corporation, Kansas City, Mo.
 Stanley (G. W.) Co. (The), Belleville, Ill.
 Steel Co. of Canada, Ltd. (The), Hamilton, Ont., Canada.
 Stronach Nail Co., Pittsburgh, Pa.
 Texas Nail & Wire Mfg. Co., Galveston, Texas.
 Tower Mfg. Co., Madison, Ind.
 Townsend Company, New Brighton, Pa.
 United Shoe Machinery Co. of Canada, Ltd., Montreal, P. Q., Canada.
 United States Steel Products Co., San Francisco, Calif.
 Wachusett Nail Corpn., Hubbardston, Mass.
 Walton & Macke Nail Co., Kokomo, Ind. (cement coated).
 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).
 Bishop & Babcock Sales Co. (The), Cleveland, Ohio.
 British Empire Steel Corpn., Ltd., Montreal, P. Q., Canada.
 Canada Tack & Nail Co., Morrisburg, Ont., Canada.
 Dominion Tack & Nail Co., Ltd., Galt, Ontario, Canada.
 Gurney (D. B.) Co., Whitman, Mass.
 Holland Manufacturing Co. (The), Baltimore, Md.
 Milwaukee Tack Co., Milwaukee, Wis.
 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.

Tower Mfg. Co., Madison, Ind.

Tremont Nail Co., Wareham, Mass.

United Shoe Machinery Co. of Canada, Ltd., Montreal, P. Q., Canada.

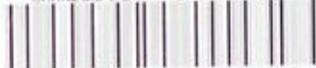
United Shoe Machinery Corp., Boston, Mass.

Van Alen & Co., Northumberland, Pa.

Wheeling Steel Corporation, Wheeling, W. Va.

York Tack & Nail Works, York, Pa.

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