"THE STANDARD"
CONCRETE MIXER
AND
CONTRACTORS' EQUIPMENTS

THE STANDARD SCALE & SUPPLY CO.
MANUFACTURERS
PITTSBURGH · CHICAGO · PHILADELPHIA · NEW YORK

CATALOG Y-100

THE STANDARD SCALE AND SUPPLY COMPANY

MANUFACTURERS

"THE STANDARD"

LOW CHARGING

CONCRETE MIXERS

AND

"The Standard" Scales, Steam Engines and Boilers, Gasoline Engines, Contractors Machinery, Hoists and Elevators, Pumping Outfits, Dump Wagons, Cars, Scrapers, Wheelbarrows, Carts, Trucks, Etc. :: ::

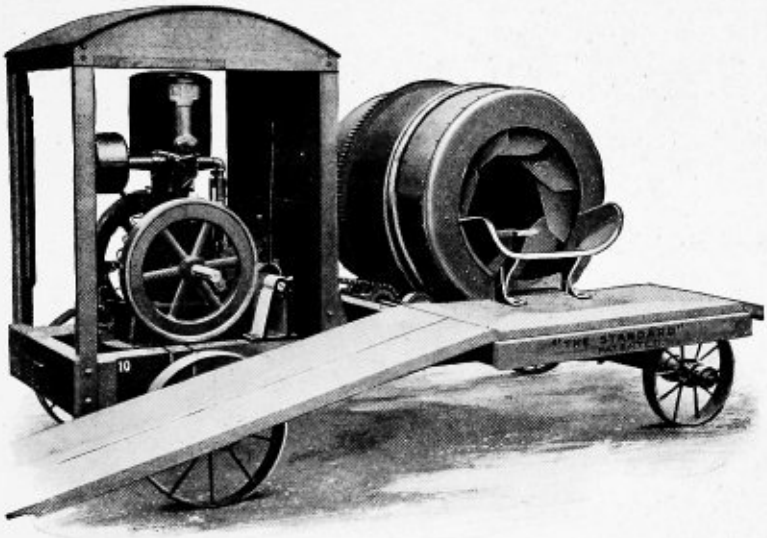
Stores and Warehouses:

PITTSBURGH 243-245 Water St.	CHICAGO 1345-1347 Wabash Ave.	NEW YORK 136 West Broadway
PHILADELPHIA 35 S. Fourth St.	CLEVELAND 1547 Columbus Road	CINCINNATI 212 Walnut St.

Introductory

IT HAS been said by some of our eminent writers that "Time is Money," by others, that to "Make Money Requires Time," and while we admit that there is a certain amount of truth and perhaps logic in these statements, we are inclined to believe, and have about reached the conclusion, that the modern contractor can neither make money or properly employ his time unless he keeps his working force equipped with the highest grade tools and machines for the performance of the various labors that devolve upon him. The earning capacity of any employe or crew of employes depends upon their physical comfort and surroundings, and efficiency of tools given them with which to work. With this in mind we have endeavored to manufacture and offer our customers a line of machinery and tools that combine all features of material, durability simplicity, convenience and money-making qualities that are required by the operating contractor.

"The Standard" Low Charging Concrete Mixer

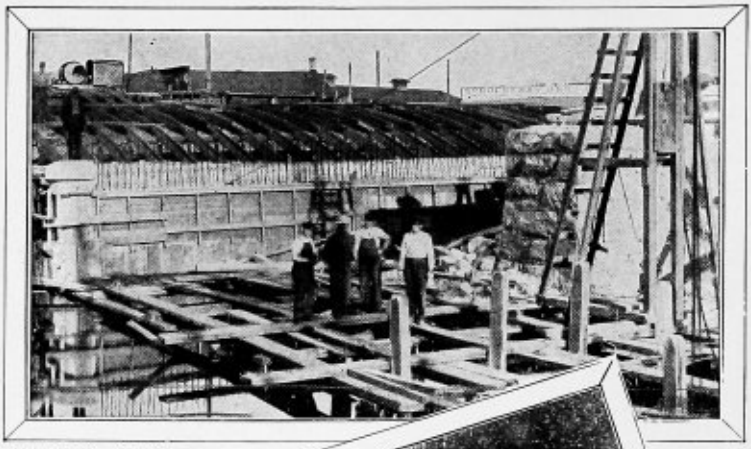


Y-90-3

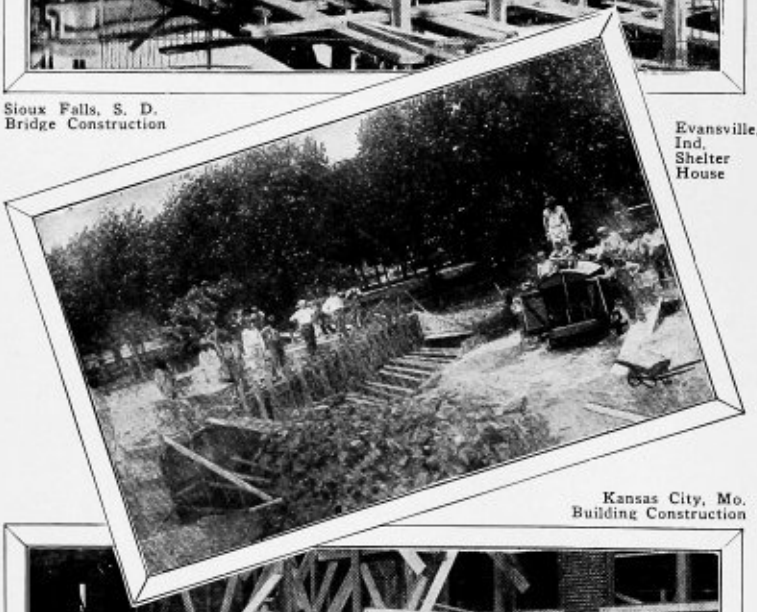
With Regular Platform

We maintain that a high charging mixer is impractical and unprofitable without a mechanical elevating arrangement, that this device often makes the cost prohibitive, adding fully one-third to the price of the machine, that about one-half more power is necessary to operate a mixer equipped in this manner, that a needless skilled workman is required to take care of the charging outfit, that the complicated charging mechanism is the part of a mixer most frequently out of order and consequently the part that causes delays and additional expense, and that all of this expense and annoyance is avoided in the simple, low charging design of "THE STANDARD" Batch Mixer.

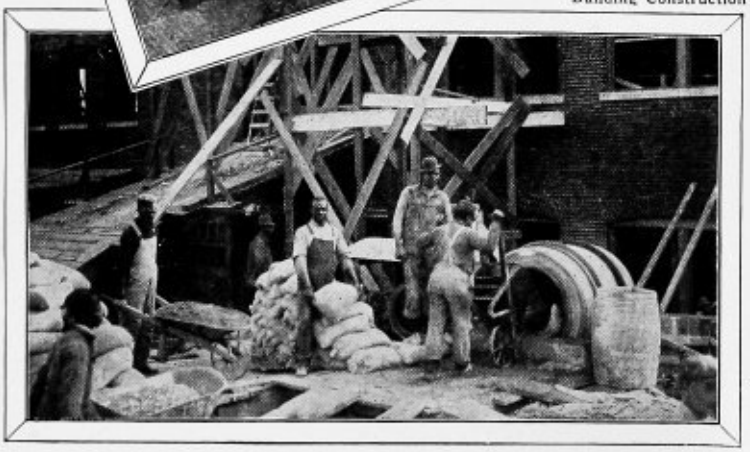
"THE STANDARD" Low Charging Platform is only about two feet high and portable with the mixer.



Sioux Falls, S. D.
Bridge Construction

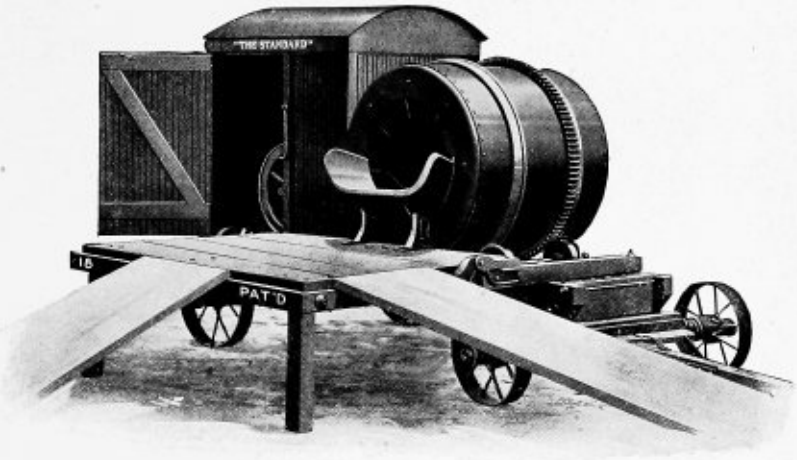


Evansville, Ind.
Shelter House



Kansas City, Mo.
Building Construction

"The Standard" Low Charging Concrete Mixer



Y-90-5

With Folding Platform

This type of mixer is especially adapted for contracts where the mixer is moved frequently as the work progresses, or from one job to another. The platform can always be folded up (see illustration on next page) in front of the drum for moving and as soon as it arrives on the job it is dropped down into mixing position, making a low, wide platform ready for immediate use.

"The Standard" folding platform is very popular with users of "The Standard" Mixers. Many contractors having regular platforms have purchased the necessary parts and equipped their outfits with the folding platforms.

Note the large opening in the drum which enables the operator to inspect the batch while mixing.

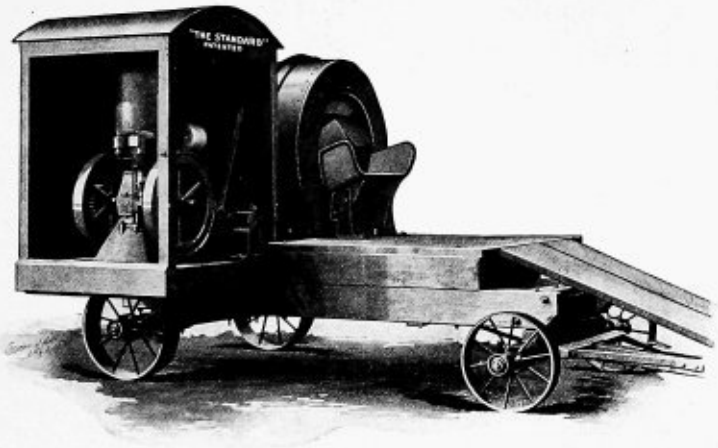
"The Standard" Low Charging Concrete Mixer

Y-90-6

With Folding Platform

Illustration of the same mixer as shown on preceding page but with platform folded up ready for moving. The use of the folding platform allows the mixer to be set up or taken down in about one minute. A big time and money saver over building and tearing down of high charging platforms.

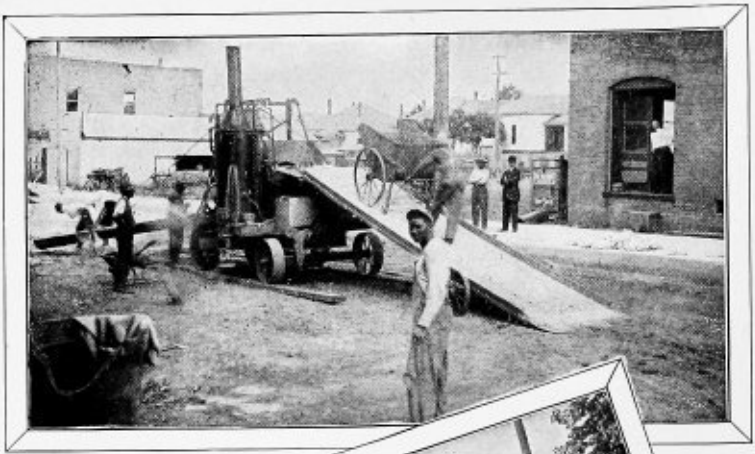
"The Standard" Low Charging Concrete Mixer



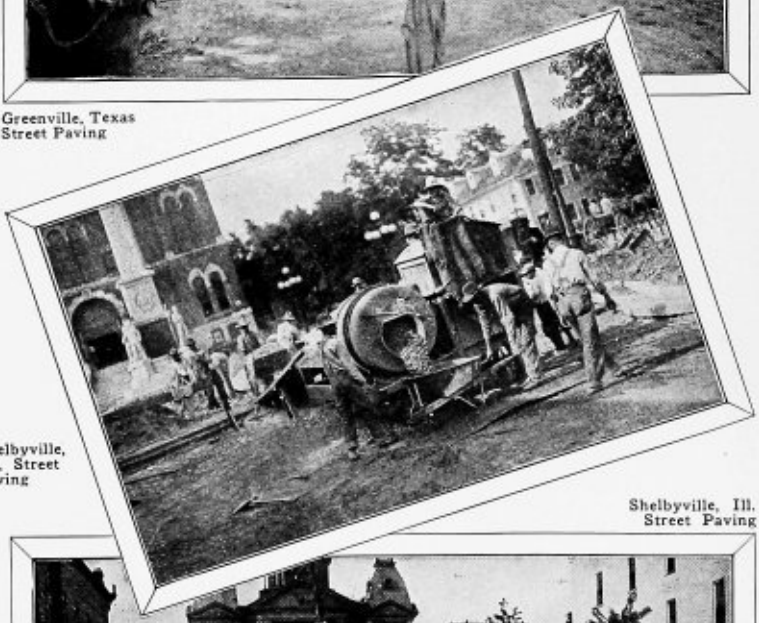
Y-90-7

Rear Discharge, Cross Mounted

The style of mounting on this mixer is used for street work where the mixed concrete is discharged on the grade. Can be equipped with distributing spout for concrete.



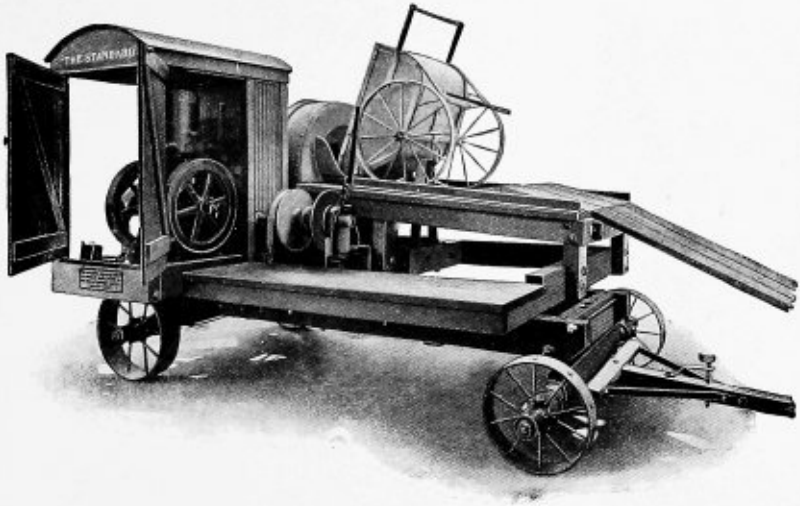
Greenville, Texas
Street Paving



Shelbyville,
Ill., Street
Paving

Shelbyville, Ill.
Street Paving

"The Standard" Low Charging Concrete Mixer

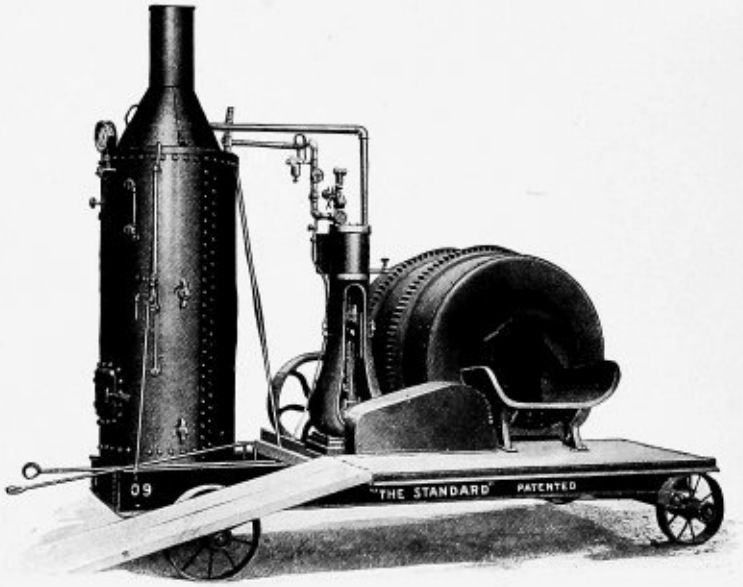


Y-90-9

With Cart Charger

Designed for rapid work on large contracts and to eliminate all wheeling. In charging the mixer a complete batch is placed in each of the carts, at the material piles, and pulled to the mixer by a simple hoist with cable attachment. Only one man required to guide the carts to and from the mixer. By using several carts the workmen shoveling can always be loading the empties.

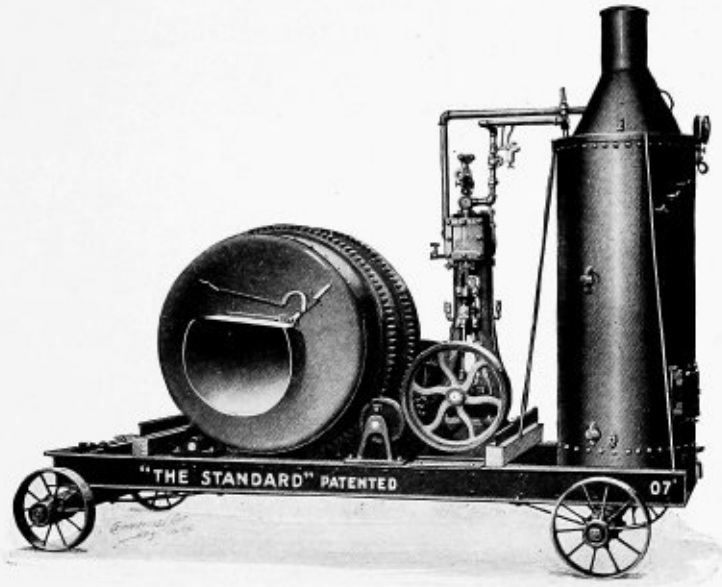
"The Standard" Low Charging Concrete Mixer



Y-90-10

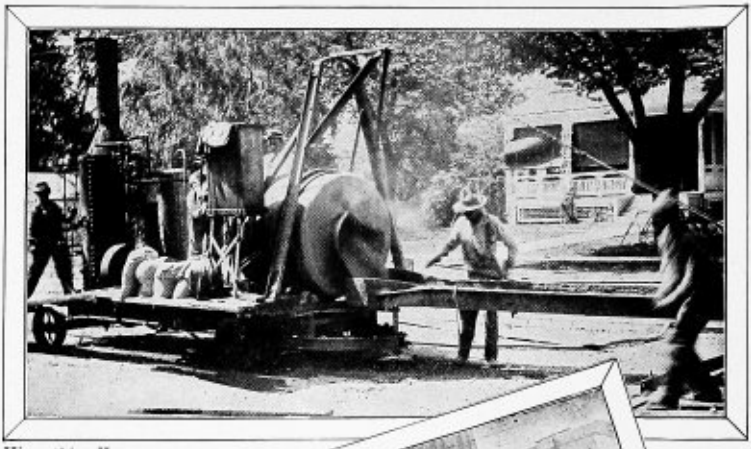
Low charging enables you to do more work because your men can wheel more material up a short incline, two feet high, than they could a long incline five to seven feet high. Also low charging eliminates the necessity of building and tearing down high platforms which are necessary with high charging machines.

"The Standard" Low Charging Concrete Mixer

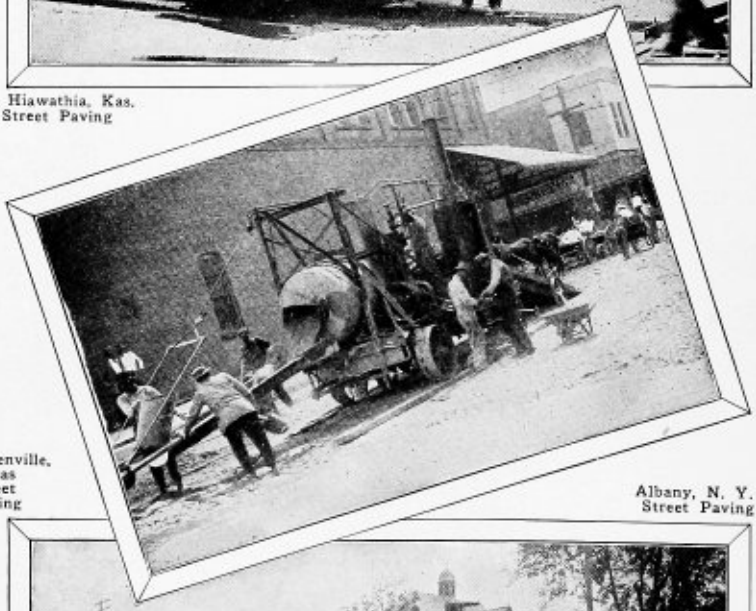


Y-90-11

View of discharging side, showing the Semi-Automatic discharge, which can be operated from either side of the drum. The discharge chute is high enough to permit the use of any size wheelbarrow. Each revolution of the drum discharges about three cubic feet. Special rapid discharge when specified.

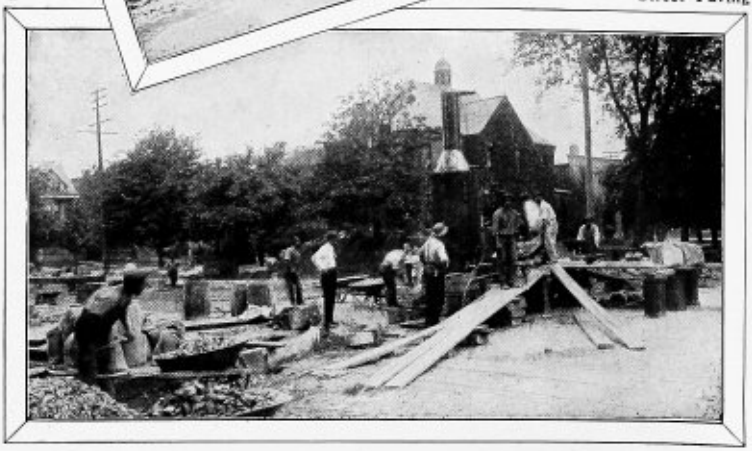


Hiawathia, Kas.
Street Paving

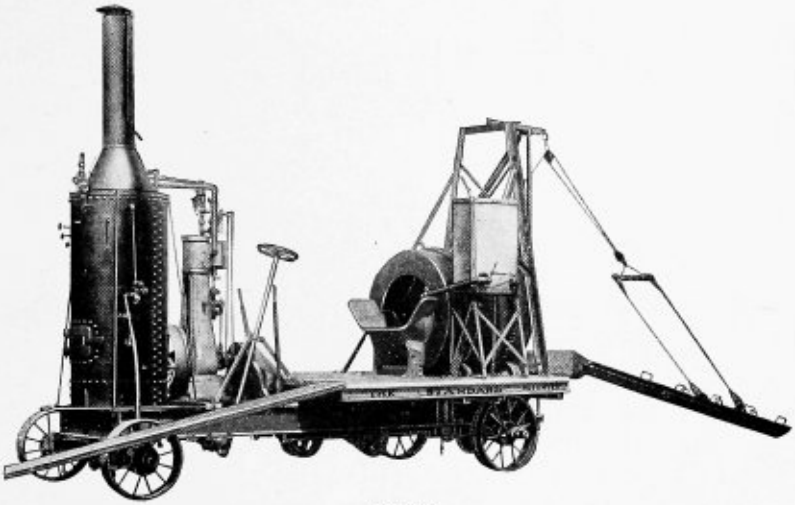


Greenville,
Texas
Street
Paving

Albany, N. Y.
Street Paving



"The Standard" Low Charging Concrete Mixer



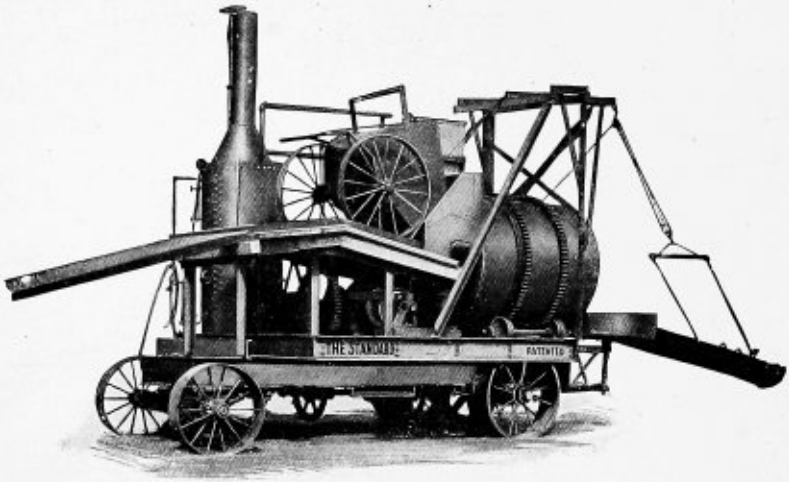
Y-90-13

With Distributing Spout and Reverse Traction

This is another special design which is particularly adapted for street paving, but can be used for variety of other work.

The mixed concrete is discharged through the distributing spout, eliminating the use of barrows or other means for conveying.

"The Standard" Low Charging Concrete Mixer

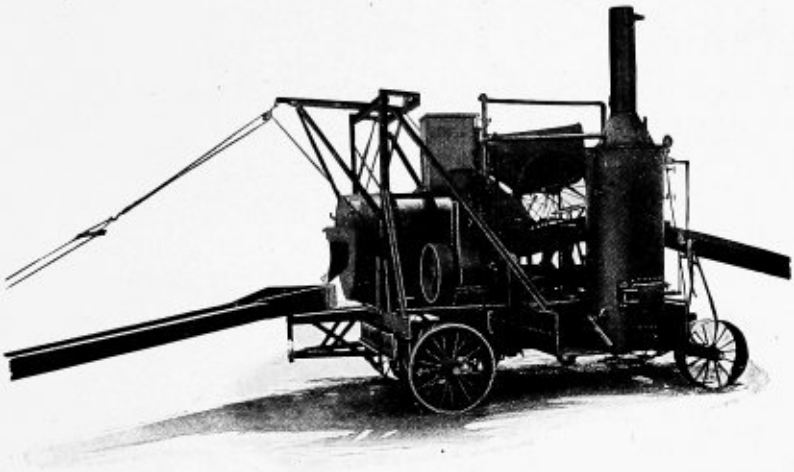


Y-90-14

Special Street Paving Outfit with Cart Charger, Distributing Spout and Reverse Traction

The complete batch, including the gravel or stone, sand and cement, is placed in the carts on the ground level and the whole batch pulled from the material piles on to the mixer platform by the power that operates the mixer, and is ready to be charged into drum as soon as the previous batch is discharged. With the carts there is no clogging and no necessity for pounding on the bottom, or using other methods to make the discharge clear, as is so necessary on charging hoppers and side loaders.

"The Standard" Low Charging Concrete Mixer



Y-90-15

Special Street Paving Outfit with Cart Charger, Distributing Spout and Reverse Traction

View of discharging side and swinging sectional distributing spout for placing concrete on road and street construction.

Saving in the cost of laying concrete paving base by use of this special street machine is surprising, and will very quickly pay for the outfit.

The distributing spout can be removed and the batch discharged into carts if desired.

Clinton, Ill.
Building Construction

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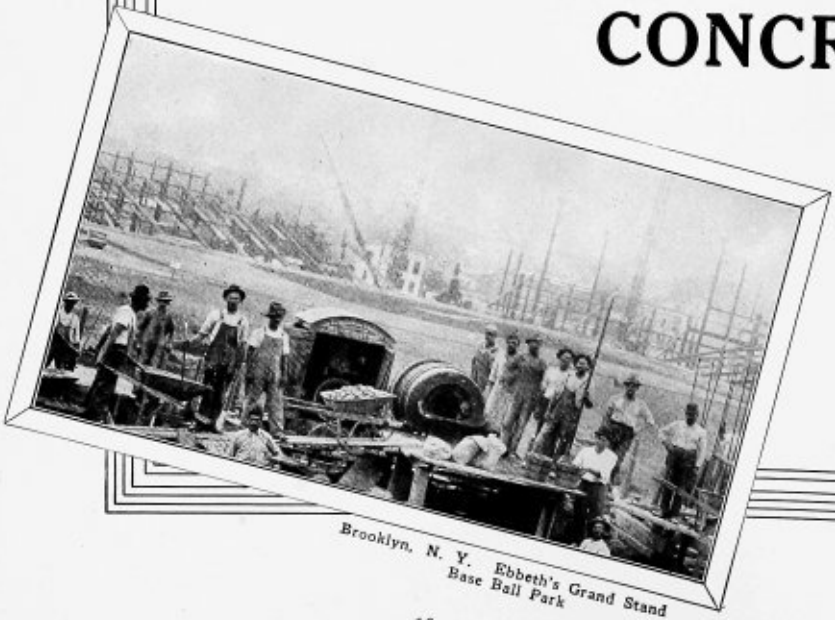
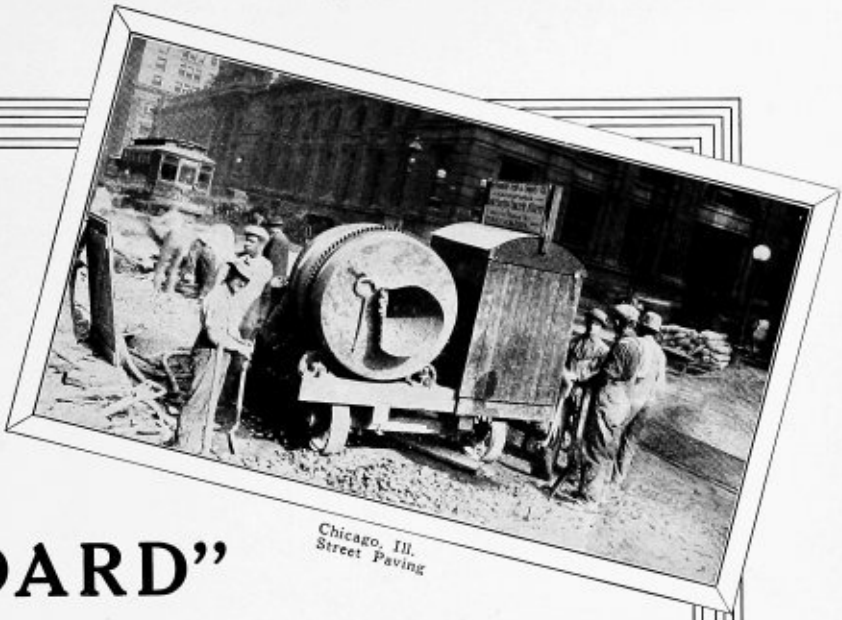


Brooklyn, N. Y. Ebbeth's Grand Stand
Base Ball Park



Chicago, Ill.
Street Paving

ANDARD"

HARGING

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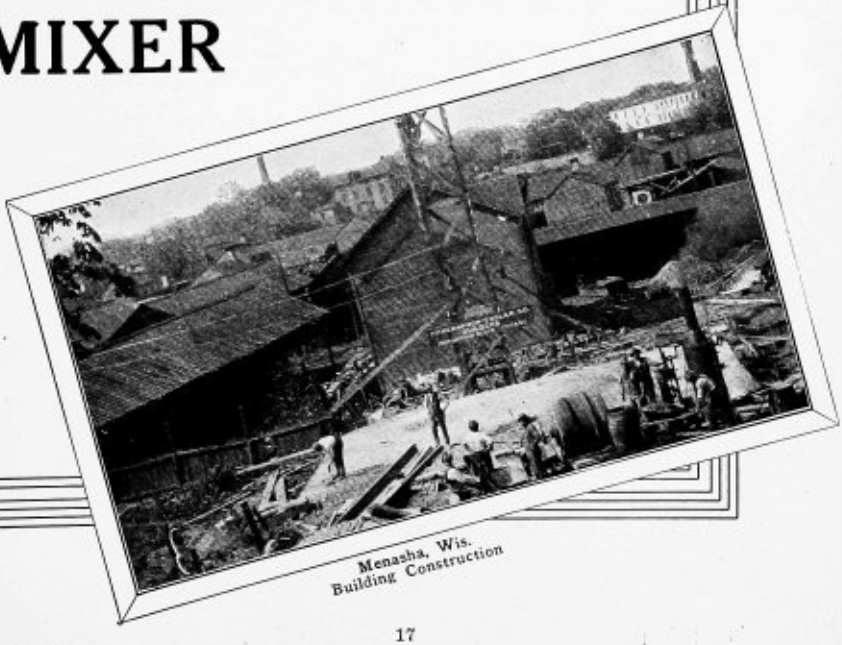
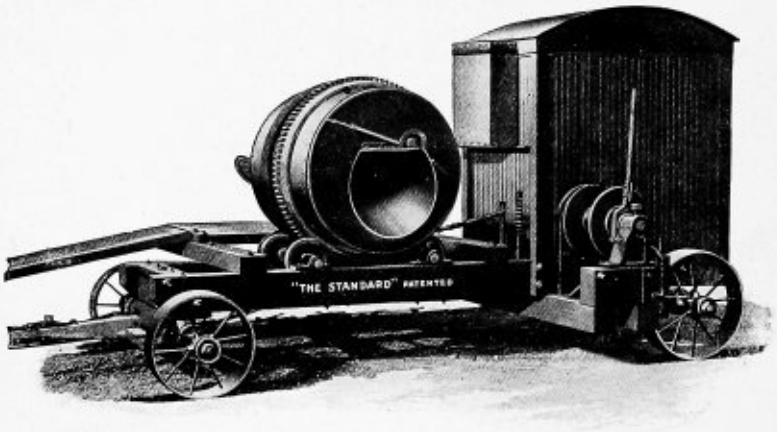


Menasha, Wis.
Building Construction

"The Standard" Low Charging Concrete Mixers



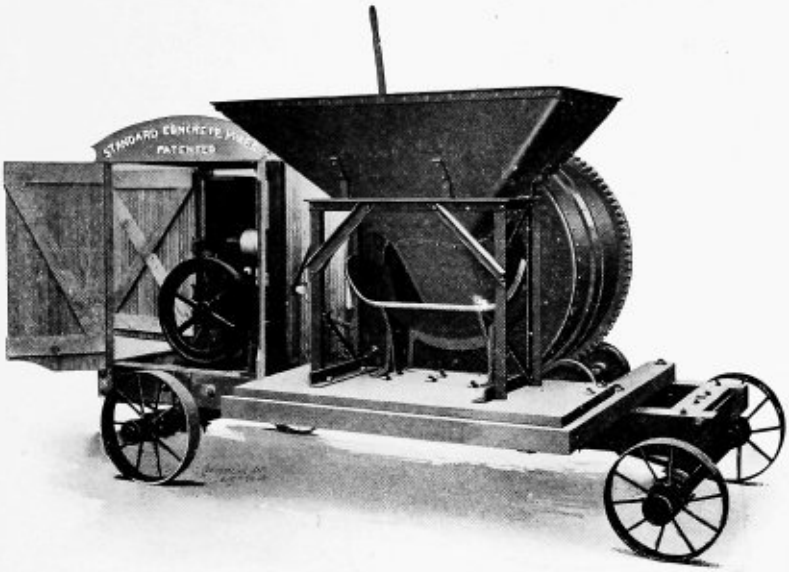
Y-90-18

With Hoist for Mixed Concrete and other Purposes

Designed for handling the mixed concrete without the necessity of having a separate hoisting equipment, both mixer and hoist are driven by the same engine, and either can be operated independently if so desired. It is especially adapted for building work, towers, silos, smokestacks, etc. Built in various sizes and capacities.

Furnished with single line hoist as shown in illustration, also with reversing hoist for operating two cage elevator.

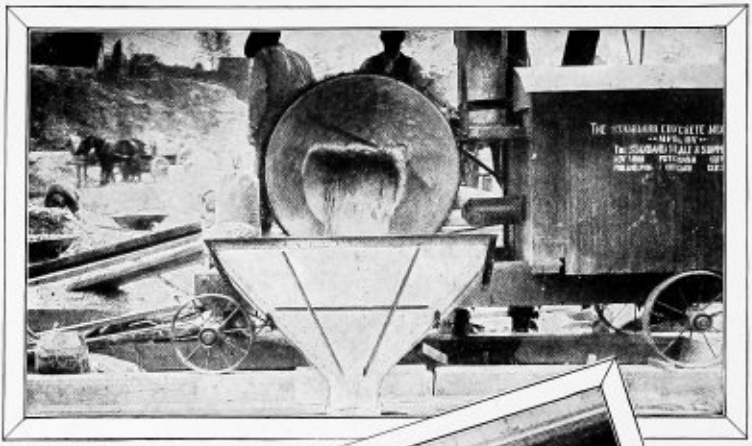
"The Standard" Low Charging Concrete Mixer



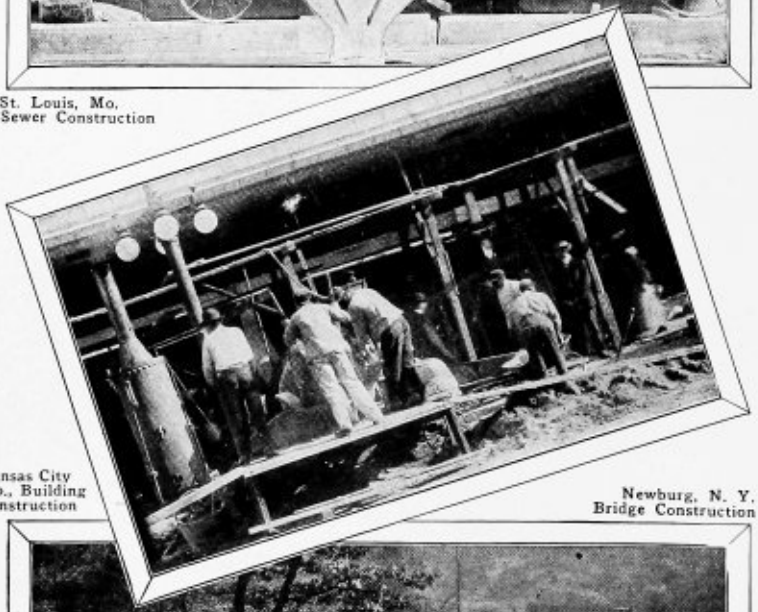
Y-90-19

With Removable Charging Hopper

Adapted for work where it is desirable to use a charging hopper as when the mixer is placed below ground level. This charging hopper has an advantage over others, in that it is placed on the regular low platform and can be quickly removed and the mixer charged directly in the usual manner.



St. Louis, Mo.
Sewer Construction



Kansas City
Mo., Building
Construction

Newburg, N. Y.
Bridge Construction

MANUFACTURERS

"The Standard" Concrete Mixer

DESIGN

"The Standard" Concrete Mixer is of the Batch Type, which is specified, or preferred, by architects and engineers. The quality of concrete produced is always uniform and the best obtainable.

CONSTRUCTION

The low design of "The Standard" Mixer, obviating the necessity of using mechanical charging devices, enables it to be made of fewest possible parts. This feature permits the construction to be exceptionally strong and rigid, maintaining, at the same time, light weight and great portability. The entire mechanism is simple and dependable, and is readily understood, requiring no specially skilled labor in its operation.

CHARGING

An important feature of "The Standard" Mixer is our patented low charging device, whereby we charge the drum at its base. The material to be mixed is wheeled onto a low platform, which is portable with the outfit, and is charged directly into the end of the drum from where it is drawn into the center by charging blades which are a part of and rotate with the drum. This design being very simple and requiring no special mechanism to operate, solves the problem of low charging and does away with hoisting hoppers and other complicated devices usually employed for conveying the material to the mixer, which not only require extra power, expert mechanics, and an additional high-priced man to attend the device, but which, experience has proven, is the only part of a mixer that is frequently out of order.

MIXING

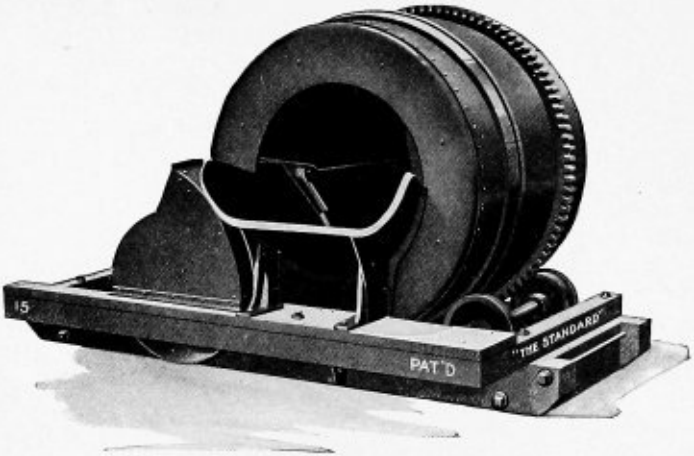
In the interior of the drum are diagonal mixing blades which are firmly attached to the drum and rotate with it. Some of these blades are placed in the center and throw the material to the sides where it is acted upon by other blades placed at an angle in the sides, producing a longitudinal, or end to end, mixing in addition to the pouring action from the rotation of the drum.

DISCHARGING

One of these blades is made low and extends from the charging end diagonally towards the discharging pocket which is shown at the rear of drum. (See illustration, Y-90-24.) A discharge chute extends into the drum through the head at the discharging end. A shaft extends through the drum, near the chute, on which is mounted a door held over the opening in the chute when mixing.

MANUFACTURERS

"The Standard" Low Charging Concrete Mixer



Y-90-22

Skid-Mounted Charging Side

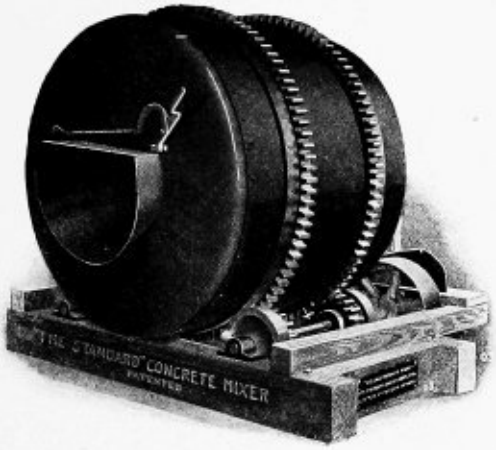
When ready to discharge the shaft carrying the door is turned by the handle at either end, so that the door drops down, closing the space between the head at discharging end and a blade parallel with the head at the inner edge of the door, thus forming a pocket which conveys the mixed concrete into the discharging chute.

SEMI-AUTOMATIC DISCHARGE

The discharging arrangement is semi-automatic in that the door is held in either mixing or discharging position by a strong spring under tension and it is only necessary for the operator to throw this door past the center of tension in either direction and the spring will complete the movement and hold the door until it is again thrown by the operator.

The discharge of "The Standard" Mixer is our own patented invention. It is so designed that it discharges high above the ground, affording ample clearance for barrows or carts and is rapid in operation. It is always under perfect control, and the batch may be discharged in wheelbarrow loads of two or three cubic feet each revolution or in a unit as desired.

"The Standard" Low Charging Concrete Mixer



Y-90-23

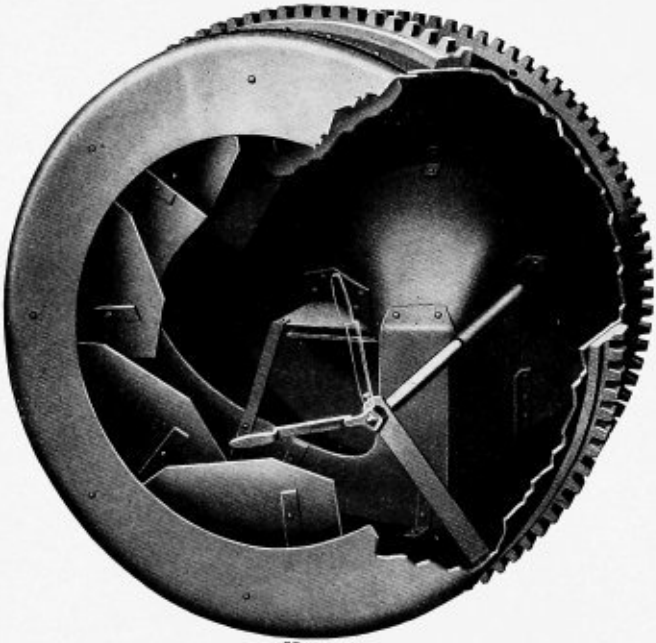
Skid-Mounted. Discharging Side

The discharging arrangement is semi-automatic and the discharge door is opened and closed from either end of the drum, dispensing with the services of the man required to operate the discharging device on other mixers.

ADAPTED FOR MANY KINDS OF MIXING

"The Standard" Mixer is not only adapted for mixing concrete and cement mortar but has mixed successfully: Plaster, Westrumite, Tar Asphalt, Oil Applications, Marbleite, Enameling, Dry Paint, Lead, Glass, Fertilizer, Floor Sweep, and various other materials. Special mixing devices and dust-proof machines are built to meet special requirements.

"The Standard" Low Charging Concrete Mixer



Y-90-24
Sectional View

DRUM

The drum of "The Standard" Concrete Mixer is made with Flanged Steel Heads, riveted to surrounding shell of rolled plate steel which is reinforced with two heavy rings or bands with flare for rollers and one or both of the bands are provided with gear or sprocket for driving.

The drum is supported by trunnion rollers which tread against the flare of the track bands. It is rotated by pinions meshing into the gear bands, the power being transmitted through the shaft on which these pinions are placed.

While the illustration shows two gear bands, all except very large sizes are built with one gear band or sprocket band and one roller band.

When sprocket band is used the driving chain is placed around the drum. This construction is not shown in illustrations.

At the charging end there is a large circular opening in the flanged head and diagonal overlapping charging blades which carry the material into the drum. These charging blades extend within the plane of opening and are attached to the flanged head and also to the interior of the shell.

LARGE OPENING

The large opening in the charging end of the drum is another decided advantage because the entire batch can be seen while mixing. It enables the operator to determine that the batch is in the desired condition before discharging. For this reason it is not necessary to discharge a part of the batch to see whether the mix is too dry or too wet, as is often the case with mixers having small openings.

The fact that the entire batch can be seen while mixing enables the user to produce uniform, high-grade concrete, which is an absolute requisite to secure best quality of product. This large opening also makes the drum easy to clean and easy of access.

WATER TANK

Several of the illustrations in this catalog show "The Standard" Mixers equipped with water tank which we are prepared to furnish with all sizes. "The Standard" tank is simple in construction and operation and has proven very satisfactory to the user.

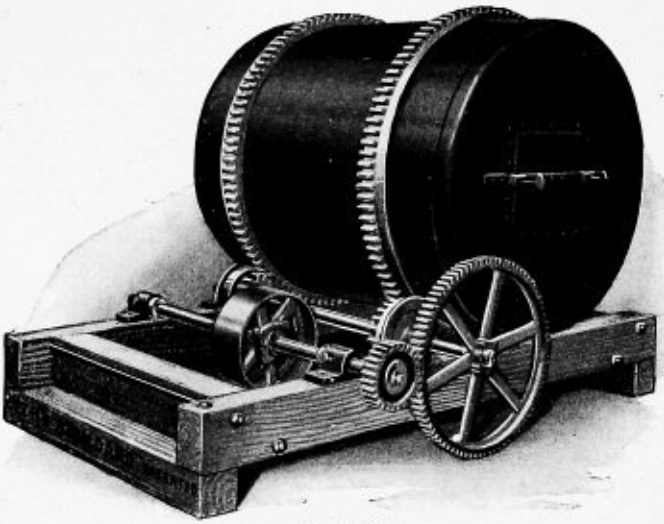
MIXES WET OR DRY WITHOUT SLOPPING

An important feature of "The Standard" Mixer is that it will operate on either a wet or dry mix, with any kind of material, without clogging or slopping. It is used with equal success for mixing cement mortar or top dressing for side-walks. The smaller sizes are especially adapted for sidewalk work on account of their light weight, making them more portable than any other mixer of equal capacity and, therefore, enabling them to be kept in most convenient position on the job for rapid work with least time lost in moving.

When it is desired to make top dressing, all that is required is to throw in a few pails of water to wash out the drum and then put in the sand and cement and mix in the same manner as concrete.

"The Standard" Mixer will mix cement mortar at much less expense than it can be produced by hand mixing. The mortar is also of superior quality and more evenly tempered.

"The Standard" Mixer



Y-90-26

Special Design for Mixing Dry Materials

VARIOUS STYLES AND SIZES

While the description on the preceding pages applies more particularly to the usual medium-sized outfit mounted on trucks, "The Standard" Mixer is built in various styles and capacities and is mounted as special conditions may require. Special equipments are also built for facilitating the handling of materials and the mixed concrete.

RAPIDITY OF MIXING

The material from the barrow is charged through the large opening into the drum very quickly. In charging the drum it is preferable to put water in first, then a barrow of stone or gravel, to be followed with a barrow of sand. The cement can be preferably placed on top of the sand and both dumped together. A final barrow of stone follows the sand and cement. This method, of course, is based on the one bag batch.

By charging the mixer in this manner it is only necessary to rotate the drum two or three revolutions after the last barrow of material is delivered to the mixer before the batch is ready for discharging. This is due to the fact that the aggregates are being mixed during the process of charging and it is only necessary to thoroughly mingle the last barrow load with the other material.

From the preceding description it will be seen that if three revolutions are required for mixing and four for discharging and the drum is operated at 15 revolutions per minute, there will still remain eight revolutions for charging to enable a complete batch a minute to be turned out. Under average conditions the charging of the drum should be accomplished during three or four revolutions of the drum, making a batch a minute, a very conservative rating, as this would allow an average of about four revolutions for lost time.

We have shown that "The Standard" Low Charging Mixer, under average working conditions, can be depended on to turn out a batch of perfectly mixed concrete per minute and maintain this speed indefinitely. By referring to our table of sizes and estimating that a batch can be produced each minute the quantity of concrete produced by any size of machine in a given time can be readily determined.

PORTABILITY

The exceptionally simple construction of "The Standard" Mixer and the fact that no charging elevator is required make it more portable than any other batch mixer of equal capacity. The charging platform is attached to the truck and this, together with the inclined runways, are portable with the machine. This entire outfit is very simple and consists of few working parts, with no unnecessary weight and for this reason it can be quickly moved on the job by manual labor or drawn by one or two horses, depending upon the size and the equipment.

SIMPLICITY

The construction of "The Standard" Low Charging Concrete Mixer allows it to be moved very easily and if necessary can be taken thru an ordinary door by removing the charging platform. The simplicity of its construction eliminates the necessity of employing skilled men for its operation. All working parts are compact but easy of access for cleaning or removing.

MANUFACTURERS

"The Standard" Concrete Mixer

SIZES AND APPROXIMATE CAPACITIES

Y-90 CATALOG — Wood Mounted / Steel Mounted	102 202	103 203	105 205	108 208	111 211	115 215	121 221	130 230	140 240
Max. cap. per batch unmixed cubic feet.	3	4	6	9	12	16	21	30	40
Approx. charge batch cement cubic feet.	¼	⅓	½	1	1	2	2	3	4
Approx. charge batch sand cubic feet...	¾	1	1½	2	3	4	6	9	12
Approx. charge batch stone cubic feet..	1½	2	3	4	6	8	12	18	24
Discharge per revolution cubic feet.....	1	1½	2	2½	2½	3	3	4½	6
Est. cap. batch mixed concrete cu. yds.	1/12	1/10	⅛	⅛	¼	⅓	½	¾	1
Est. cap. per hr. mixed concrete cu. yds.	3	4	6	8	11	15	20	25	30
H. P. furnished Gasoline	1½	2½	3 or 4	5	5 or 6	7 or 8	10		
H. P. furnished Steam Engine	0	2	2	4	5	6	8	12	15
H. P. furnished Steam Boiler	0	3	3	5	6	7	9	14	16
Revolutions per minute	16	16	16	16	15	14	14	13	13
Drum size	30x30	36x30	36x38	42x36	42x42	48x42	48x56	60x62	60x75

ESTIMATED WEIGHTS

On skids with pulley or gear (no power)...	600	1000	1200	1500	1700	2200	2800	3900	4600
On skids with gasoline engine	1200	1700	2000	2500	2700	3400	4500	5600	....
On skids with steam engine only	....	1500	1600	2100	2300	3200	3800	6200	6500
On skids with steam engine and boiler	....	2100	2200	3400	3800	4900	6500	7800	9700
On skids with electric motor	1100	1400	1700	2200	2500	3100	4300	5100	....
On truck with pulley or gear (no power)...	1000	1500	1700	2000	2100	2800	3800	5000	6000
On truck with gasoline engine, housed	1600	2200	2500	2900	3200	4400	5700	6500	....
On truck with steam engine only	....	1900	2100	2600	2900	3700	5000	6400	8000
On truck with steam engine and boiler	....	2600	2700	3900	4300	5400	7000	8500	11000
On truck with electric motor, housed	1500	2100	2300	2900	3100	3900	4900	6100	.....

Weights given are for plain side discharge outfits. Shipping weights will vary for different mountings and equipment, also to include boxing or crating when necessary.

Wood mounted outfits, or on wood skids or trucks, usually furnished unless otherwise ordered. Steel mounted, or on steel skids or trucks, when specified.

House for power included only on outfits ordered complete with gasoline engine or electric motor on trucks.

Friction Clutch or Belt Drive with Tightener included with Gasoline Engines only. When furnished on Truck, Pole only is included, Double Trees and Neck Yoke extra.

For Electric Motor give voltage and whether direct or alternating current.

All mixers mounted for side discharge unless otherwise ordered. Rear Discharge Mixers furnished when specified at extra charge.

One Gear or Sprocket band and one Roller band furnished on all sizes smaller than No. 121 or 221.

Telegraph Code

ORDER AND SHIPPING INFORMATION, QUOTATIONS, ETC.

Freight	Ship at once by freight.
Express	Ship at once by express.
Boat	Ship at once by boat.
Oakum	Ship and draw at sight against bill of lading.
Oarlap	Prepare for immediate shipment, instructions by letter.
Oath	Give gross and net shipping weight.
Obadiah	Follow shipment with tracer.
Obang	How soon can you ship?
Obedible	Answer by mail at once.
Obedience	Answer by telegraph immediately.
Obeisance	Can ship at once.
Obelion	Can ship in.....days.
Obelisk	Trace by telegraph shipment of order.....
Opium	Mail us lowest price on
Opossum	Telegraph us lowest price on
Optic	f. o. b. cars Beaver Falls.

"THE STANDARD" CONCRETE MIXER CODE WORDS

Number of Mixer								
102 202	103 203	105 205	108 208	111 211	115 215	121 221	130 230	140 240
On Skids with Pulley or Gear (no power)								
Locust	Macaw	Maize	Mason	Medal	Metre	Minor	Mitten	Morsel
On Skids with Gasoline Engine								
Loom	Mackeral	Mallet	Master	Mellow	Midday	Minstrel	Mocassin	Mortal
On Skids with Steam Engine only								
Lottery	Madcap	Mammal	Match	Melon	Migrate	Mirage	Modern	Mortise
On Skids with Steam Engine and Boiler								
Lowland	Madness	Mandate	Mature	Memoir	Mildew	Mirky	Modulate	Mossy
On Skids with Electric Motor								
Lounge	Madden	Manacle	Matinee	Member	Milch	Mire	Modify	Mosque
On Wood Truck with Pulley or Gear (no power)								
Lucid	Magic	Mangle	Maxim	Menial	Mileage	Mischief	Molecule	Motive
On Wood Truck with Gasoline Engine Housed								
Luggage	Magnate	Maple	Mayor	Mercer	Millet	Miser	Moment	Moulder
On Wood Truck with Steam Engine only								
Lump	Magnify	Marble	Mazy	Merino	Mimic	Missive	Mongrel	Mountain
On Wood Truck with Steam Engine and Boiler								
Lunch	Magpie	Mariner	Meadow	Meteor	Mineral	Misty	Monsoon	Mouser
On Wood Truck with Electric Motor Housed								
Lustre	Maiden	Maroon	Meagre	Method	Mingle	Mite	Monster	Mower

GENERAL INSTRUCTIONS

Muffin	Mounted for Rear Discharge (Side Discharge is Regular).
Mulatto	Wood Mounted.
Mulberry	Steel Mounted.
Multiped	With Charging Hopper and Hoist.
Multitude	With Automatic Water Tank.
Mumble	With Vertical Water-Cooled Gasoline Engine.
Mummify	With "S.S.S." Horizontal Water-Cooled Gasoline Engine.
Mummy	With Air-Cooled Gasoline Engine.
Mundane	With Short Circulating Tank and Pump.
Munition	With Folding Platform.
Mural	With Removable Charging Hopper.
Murmur	With Belt Drive.
Murrhine	With Sprocket Band around Drum.
Muscular	With Discharge Chute for Street Work.
Museum	With Hoist Type "I" for Mixed Materials.
Musket	With Hoist Type "O" for Mixed Materials.
Musquito	With Hoist Type "B" for Double Platform Elevator.
Mustang	With Cart Charger.
Mutable	With Traction drive forward only.
Mutton	With Reverse Traction drive.
Mutual	With incline for carts.

Gasoline Engine Furnished with "The Standard" Mixers

We offer our customers choice of Air-Cooled or Water-Cooled Gasoline Engine.

We select engines after extensive experience with gasoline power as being in our judgment the best in the market of their respective type and size for concrete mixer use.

All of our gasoline equipped mixers, have engines of ample power to meet every condition of service.

The engines generally used are shown in the illustrations of the various mounted outfits throughout the catalog.

Steam Engines and Boilers Used on "The Standard" Concrete Mixers

The engines and boilers used on "The Standard" Mixer shown in various illustrations are of the vertical type and the best on the market today for concrete mixer use.

The engines and boilers furnished with all mixers are of capacity to easily handle the mixer in the heaviest service.

The Eclipse Concrete Stone or Block Machine

The Eclipse face-down concrete stone machine has many desirable features such as adjustability, simplicity, rapidity in operation, accuracy, high quality of stone, low first cost and operating cost.

The Eclipse is adjustable in that one machine will make stone 4 inches to 12 inches wide and 4 inches to 18 inches long, and can be made up to 24 inches long by securing extra plates.

The cost of extras for other machines, for making these various sizes of blocks would alone be greater than the first cost of the Eclipse.

Write for Stone Machine Catalog.

Y-90-30A

Y-90-30B

The Perfect Brick Machine

Large Capacity. Low Price.

The Perfect Brick Machine is automatically operated by either hand or foot or both, constructed of steel, superior because of its rapidity, simplicity and durability. The fastest machine on the market.

With this machine three to ten thousand bricks can be made per day by one to three men.

Write for Brick Machine Catalog.

Guarantee

Our factory, situated in the heart of the steel and iron industry, is thoroughly up-to-date and equipped with all the latest improved machinery. We employ none but the best mechanics, and therefore realize in our product the highest class workmanship. We guarantee all material used in the construction of "The Standard" Low Charging Concrete Mixers to be well made, of first-class material and workmanship, and if at any time within one year from date of shipment any part should break, because of defect in material used in its manufacture, we will furnish new part without charge, f. o. b. Factory, provided the defective part is returned to us charges prepaid.

Patents

The Low Charging Open Drum construction and the Semi-Automatic discharging arrangement used in "The Standard" Concrete Mixer are broadly covered by United States and Foreign Patents already issued, and other patents pending.

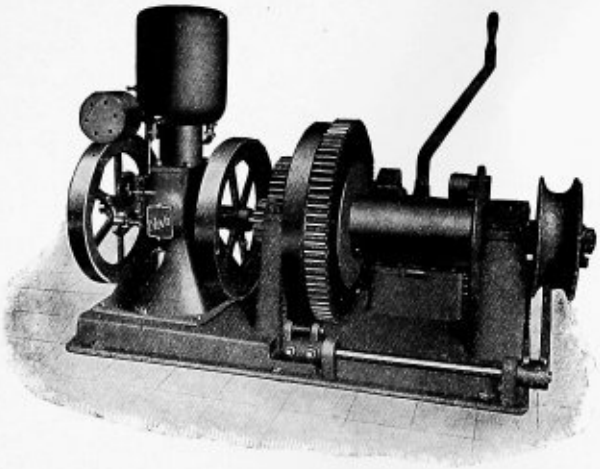
Notice is given to infringers that our rights will be vigorously enforced.

Responsibility

The Standard Scale & Supply Co.'s experience of a quarter of a century as manufacturers, and with well equipped Factory, complete selling organization, stores, warerooms, branch houses, agencies and representatives in all sections of the world insure to the purchasers of "The Standard" Mixers, not only unequalled service when order is placed, but a guarantee of good service for future requirements.

The practical contractor will appreciate the importance, when buying machinery of any kind, of purchasing from an old established, reliable house.

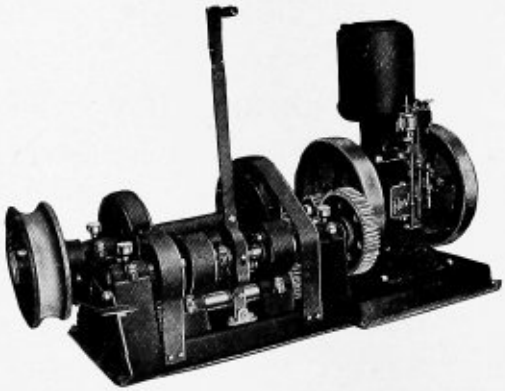
"S. S. S." Contractors' Reversible Hoists



Y-100-32A

No. 1 and 4

Reversible drum, with reversible sheave for operating double cage material elevator. Drum operates independently of sheave.



Y-100-32B

No. 2 and 3

Heavily Built, Strong and Durable and on self-contained base.

Specifications of "S. S. S." Hoisting Outfits

No. 1 "S. S. S." Hoisting Outfit (6 H.-P.)

Floor space	31 in. x 63 in.
Brake surface	24¾ in. diam. x 2½ in. face
Hoisting sheave	11½ in. diam.
Gears	3 pitch, 2½ in. face
Back geared from engine	12 to 1 or 9 to 1
Diameter of shafts	2 in.
Length of bearings	5 in.
Weight with engine	2100 lbs.
Will lift, geared 12 to 1	1500 lbs. 100 ft. per min.
Will lift, geared 9 to 1	1200 lbs. 150 ft. per min.
Brake power of engine	6 H. P.
Code Word	Noise

No. 2 "S. S. S." Hoisting Outfit (2½ H.-P.)

Floor space	24 in. x 62 in.
Brake surface	13 in. diam. x 2 in. face
Hoisting sheave	12 in. diam.
Gears	5 pitch, 2 in. face
Back geared from engine	12 to 1
Diam. of shafts	1½ in. and 1⅞
Length of bearings	4 in. and 4½ in.
Weight with engine	900 lbs.
Will lift	600 lbs. 125 ft. per min.
Brake power of engine	2½ H. P.
Code Word	Noised

No. 3 "S. S. S." Hoisting Outfit (4 H.-P.)

Floor space	24 in. x 62 in.
Brake surface	13 in. diam. x 3 in. face
Hoisting sheave	12 in. diam.
Gears	5 pitch, 2 in. face
Back geared from engine	12 to 1
Diam. of shafts	1½ in. and 1⅞
Length of bearings	4 in. and 4½ in.
Weight with engine	1050 lbs.
Will lift	900 lbs. 100 ft. per min.
Brake power of engine	4 H. P.
Code word	Noising

No. 4 "S. S. S." Hoisting Outfit (10 H.-P.)

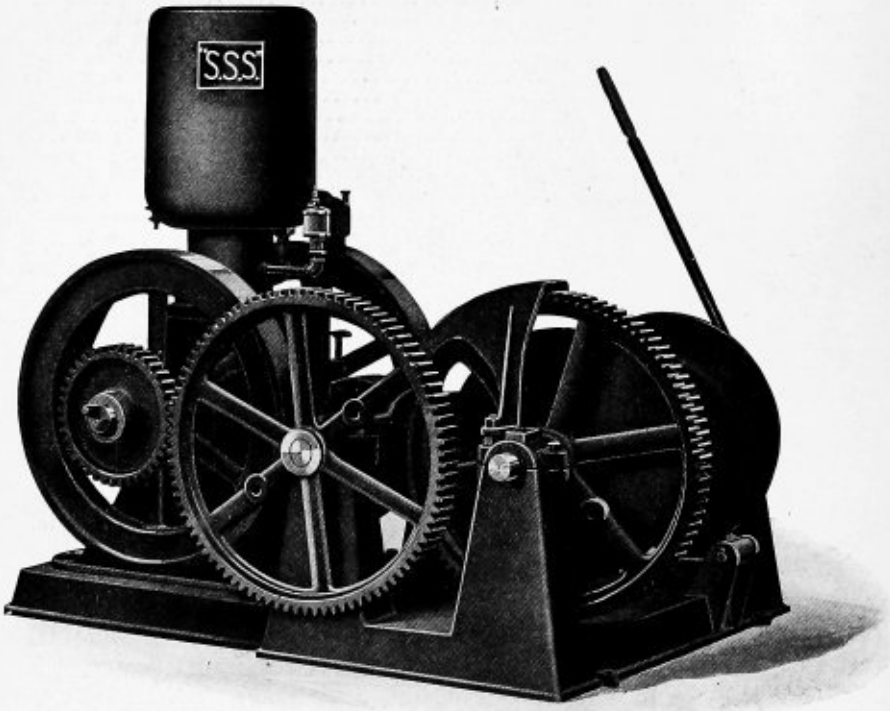
Floor space	36 in. x 70 in.
Brake surface	24¾ in. diam. x 2½ in. face
Hoisting sheave	11½ in. diam.
Gears	3 pitch, 2½ in. face
Back geared from engine	12 to 1 and 9 to 1
Diam. of shafts	2 in.
Length of bearings	5 in.
Weight with engine	3300 lbs.
Will lift, geared 12 to 1	3000 lbs. 100 ft. per min.
Will lift, geared 9 to 1	2000 lbs. 150 ft. per min.
Brake power of engine	10 H. P.
Code Word	Noiseless

Furnishings—"S. S. S." Hoisting Outfits are regularly furnished with "S. S. S." Stationary Engine, with full equipment. We can make quotations on portable elevators, complete with cages, guides, and cable for completing the equipment for contractors' work if desired.

"S. S. S." Hoisting Outfit can be furnished mounted on steel truck for portable work.

Short base hoist with pulley for belt drive same type and capacity as above. Direct gear connected motor drive if desired. Ask for special bulletin.

"S. S. S." Single Line Hoisting Outfits



Y-100-34

6 H.-P. "S. S. S." Engine with No. 00 Hoist

The "S. S. S." Single Line Hoisting Outfits are strongly constructed machines suitable for all single way elevating or hauling work.

The gearing is machine cast and runs very quietly with but little friction. The drum for holding the cable is loose on the shaft and is controlled by a strong positive friction clutch placed on the shaft at one end of the drum shaft. The drum is fitted with a brake band (operated by a foot lever) of ample size to hold the lifted load on the drum cable. The clutch and brake levers are conveniently located for the operator.

These outfits are not reversible and are not recommended for use with double platform elevator. No cable or sheaves furnished with this outfit.

"S. S. S." Single Line Hoisting Outfits

SPECIFICATIONS

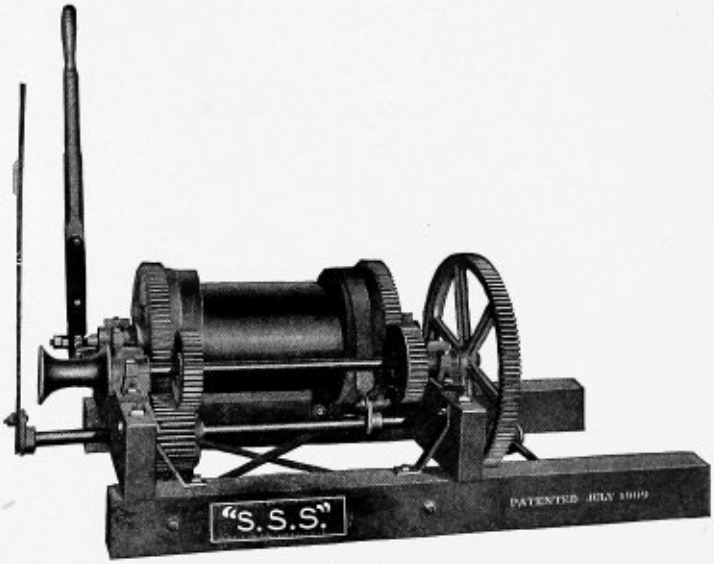
Hoist Number	No. 000	No. 0	No. 00
H. P. of Engine	2½	4	6
Floor Space, inches	39x51	39x51	39x51
Diameter Hoisting Drum, inches	10	10	10
Length Hoisting Drum, inches	16	16	16
Diameter Sheave, inches	6	6	6
Diameter Brake Drum, inches	16	16	16
Width Brake Band, inches	2½	2½	2½
Pitch of Gears	4	4	4
Face of Gears, inches	2	2	2
Back Geared from Engine	1 to 20	1 to 10	1 to 6¾
Diameter of Shafts, inches	1½—1¾	1½—1¾	1½—1¾
Length of Bearings, inches	4	4	4
Weight without Engine, pounds	800	800	800
Weight with Engine	1130	1230	1450
Drum holds ½-inch Cable, feet	900	900	900
Lifts, pounds	800	900	1000
Feet per Minute	50	100	150
Code Word	Nod	Noun	November

FURNISHINGS

"S. S. S." Single Line Hoisting Outfits are furnished with "S. S. S." Stationary Engine, with full equipment. We can make quotations upon cable for use with these outfits when customer desires.

"S. S. S." Hoisting Outfit can be furnished, mounted on all steel team truck for portable work.

"S. S. S." "Contractor's Friend" Without Power



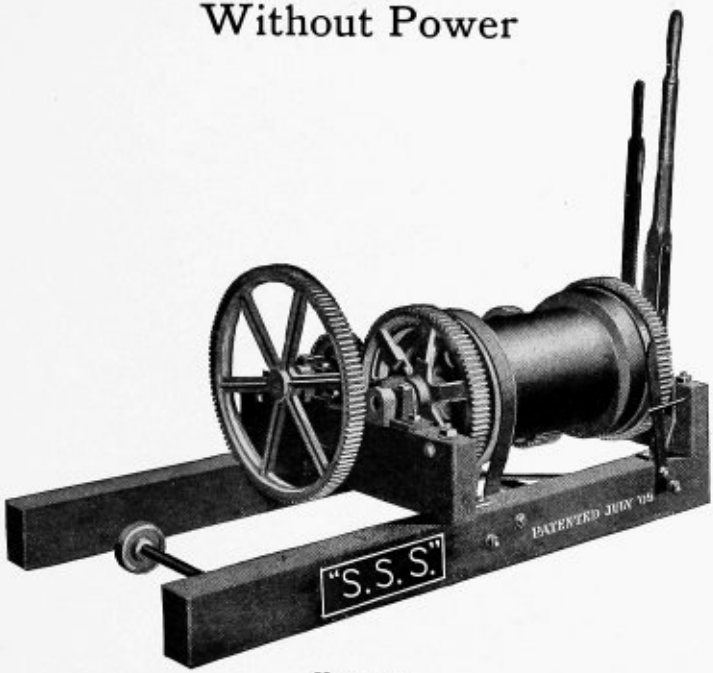
Y-100-36

This Hoist is designed and built for hard work. Weighs, without power, only 750 pounds. Capacity 1000 pounds at 140 feet per minute. 5 to 6 H. P. gasoline engine or electric motor required.

This Hoist is designed for Building Contractors, for running single or double platform material elevators and takes the place of a high priced machine. It costs only half as much as other makes and it does the same work. It is built durable and reliable in every way, perfect in operation, easy to move and set up, it has no unnecessary weight to handle from one job to another, it can be taken through a three-foot door and placed in a standard sized wagon box.

Can be operated from the floors where the elevators stop, and the operator can help take care of the material as it comes up and see that the masons are kept busy. It does away with the signalling and whistling to the operator to go ahead. He can at any time let the load come up, take it off, and put on the empties.

"S. S. S." "Contractor's Friend" Without Power



Y-100-37
Type "I"

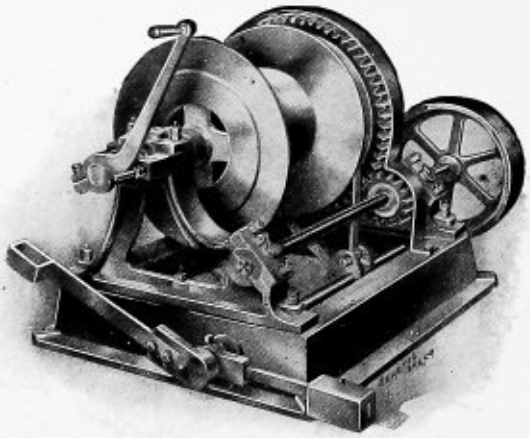
DESCRIPTION

The frame is made of the best rock elm timber, well braced and ironed off. The drum is covered with 1½-inch hard maple staves; revolves in either direction at the will of the operator. To operate double cage elevator the cable is wrapped around the drum three or four times to give it a hold and avoid slipping. All gears are cut teeth and of the best iron, carefully made and smooth running. All shafts are steel and run in babbitted boxes. The load can be held at any desired point by setting the brake. The winch head can be used independently of the drum. The drum is 13 inches in diameter, and 17 inches between flanges; this gives room enough with ½-inch cables to run the elevator 96 feet high. The hoist can be operated from the second floor or higher up. This is a great advantage and saves labor. No experienced labor or hoisting engineer is required, a boy can run it.

Lever and foot brake for operating machine from second floor or higher comes with each hoist.

When ordering without power give speed of motor or gasoline engine and size of shaft.

"S. S. S." Single Friction Drum Belt Hoists



Y-100-38
Type "O"

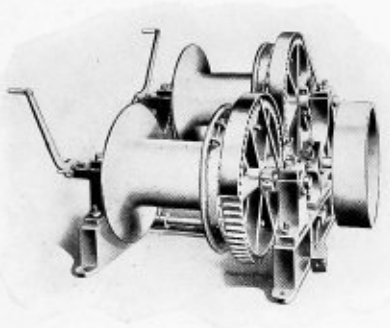
"S. S. S." single line, type "O," hoist can be used to a great advantage in operating a pile driver or derrick, as well as all kinds of contracting work, also well digging, etc. This is a very strong friction hoist with powerful brakes and is always under complete control.

Type with pulley may be driven by line shaft, steam, electric, gas, gasoline or kerosene engine and gear connected if desired. Made in three weights, six speeds.

TABLE OF DIMENSIONS

Number of Hoist	100	101	102	103	104	105
Diameter of Drum, inches	12	16	14	20	14	24
Diameter of Flanges, inches	22	22	29	29	36	36
Length of Drum, inches	14	14	16	16	20	20
Diameter and Face of Pulley	24x6	24x6	24x8½	24x8½	30x8½	30x8½
Floor Space required, inches	40x59	40x59	46x70	46x70	55x74	55x74
Weight Hoisted, Single Rope	2500	2500	4000	4000	6000	6000
Foot Speed, per minute	160	210	185	260	185	310
R. P. M. of countershaft	100	100	100	100	100	100
Approx. Shipping Weight, lbs.	1500	1500	1800	1800	2500	2500
Cipher Code Name	Kaiser	Kalt	Kamp	Kane	Kapp	Kase

"S.S.S." Double Friction Drum Belt Hoist



Y-100-39

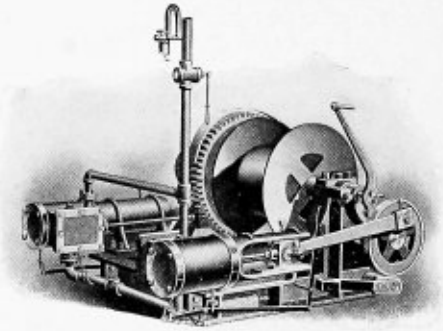
This hoist is similar to single drum, except is double drum on same base.

TABLE OF DIMENSIONS

Number of Hoist	200	201	202	203	204	205
Diameter of Drums, inches	12	16	14	20	14	24
Diameter of Flanges, inches	22	22	29	29	36	36
Length of Drums, inches	14	14	16	16	20	20
Diameter and Face of Pulley	24x6	24x6	24x8½	24x8½	30x8½	30x8½
Floor Space required, inches	52x59	52x59	56x66	56x66	74x74	74x74
Weight Hoisted, Single Rope	2500	2500	4000	4000	6000	6000
Foot Speed	160	210	185	260	185	310
R. P. M. of countershaft	100	100	100	100	100	100
Approximate Shipping Weight	2000	2100	2950	3150	4800	4950
Cipher Code Name	Kehl	Keim	Kent	Kern	Keist	King

"S. S. S." Special Horizontal Hoisting Engine

Double Cylinder, Single Drum, Without Boiler



Y-100-40

WITH LARGE DRUMS AND SECTIONAL FRAMES

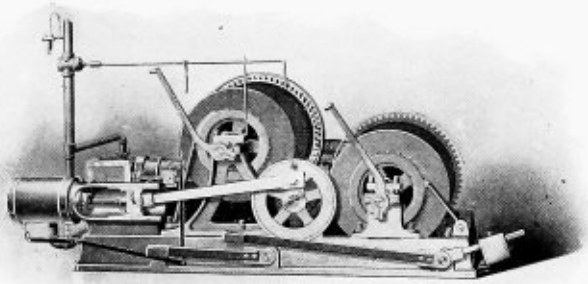
These Engines will be found especially adapted for moving over the mountains or placing within the mines. The frames are made in sections, but securely bolted together, and all parts are well secured by dowel pins. By this means they can be taken apart and packed in a very small space for prospecting purposes, or can be readily lowered down a shaft for service on the levels.

TABLE OF DIMENSIONS

Size Number of Engine	132	133½	134	135	136	137
Horse-power	8	10	15	25	35	45
Size of Cylinder, inches	4x6	5x7	6¼x8	7x10	8½x10	9x12
Diameter of Drum, inches	14	16	20	24	28	32
Diameter of Flanges, inches...	20½	22	29	36	38	40
Length of Drum, inches	12	14	16	20	26	26
Floor Space required, inches..	33½x41	35x48	42x53	51x64	67x72½	67x81½
Weight Hoisted, Single Rope, usual speed, pounds	1000	2000	3000	5000	8000	11000
Approx. Shipping Weight, lbs.	1400	2000	2700	4400	6400	9500
Cipher Code Name	Isanel	Israel	Isaac	Ivy	Ivine	Ivis

"S. S. S." Special Horizontal Hoisting Engines

Double Cylinder, Double Drum, Without Boiler



Y-100-41

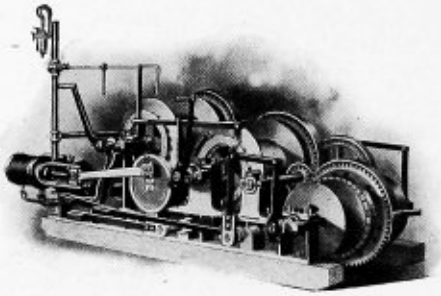
Two Drums

TABLE OF DIMENSIONS

Size Number of Engine	70½	70¾	71½
Horse-power	10	15	25
Size of Cylinder, inches	5x7	6¼x8	7x10
Diameter and Length of Drum, inches.	12x13	14x16	14x20
Floor Space required, inches	37x72	44x81	53x96
Weight Hoisted, Single Rope, usual speed, pounds	2000	3000	5000
Suitable Weight for Pile-driving Hammer, pounds	1200	1600	2500
Approx. Shipping Weight, pounds...	3300	4400	5500
Cipher Code Name	Hooker	Horace	Homer

"S. S. S." Derrick Engine

Double Cylinder, Double Drum, and Derrick Drum Hoisting Engine, without Boiler



Y-100-42

Two Sizes—15 and 25 Horse-power

All gears on these Engines are cut from the solid metal, thereby insuring a smooth-running Engine.

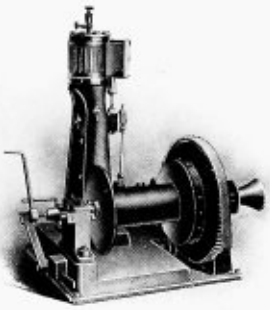
TABLE OF DIMENSIONS

Size Number of Engine	170¾	171½
Horse-power	15	25
Size of Cylinder, inches	6¼x8	7x10
Diameter of Drums, inches	14	14
Diameter of Drum Flanges, inches	26	30
Length of Drum between Flanges, inches	16	20
Diameter of Derrick Drums, inches	8	8
Diameter of Derrick Drum Flanges, inches	18	19
Length between Derrick Drum Flanges, inches	7¾	9
Weight Hoisted, usual speed, pounds	3000	5000
Suitable Weight for Pile-driving Hammer, pounds.	1600	2500
Approximate shipping weight, pounds	5900	7500
Cipher Code Name	Holdon	Hostler

Winch Heads are furnished on the above Engines.

"S. S. S." Special Vertical Hoisting Engine

Single Drum, Equipped with "Wern" Friction



Y-100-43

Contractors' Favorite

This drum is so well known to the trade that it is useless for us to enter into a description of it.

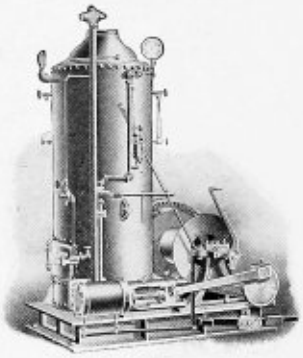
They are made with especial care, and while in quality they are superior to any Single Cylinder Hoisting Engine, in price they are within the reach of all. We build three sizes as below.

TABLE OF DIMENSIONS

Size Number of Engine	12	13	14
Horse-power	5	7	10
Size of Cylinder, inches	5x5	6x6	7x7
Diameter of Drum, inches	8	10	12
Length of Drum, inches	15	18	21
Diameter of Flanges, inches	18½	20½	26½
Diameter of Gear-wheel, inches	25	29	35
Diameter of Pinion, inches	6	7	8½
Diameter and Face of Band-wheel, ins.	20x5	24x6	28x7
Estimated Lifting Capacity at the rate of 100 feet per minute, pounds	600	1000	1500
Floor Space required, inches	32x37	39x43	46x51
Weight of Engine, pounds	1000	1600	2400
Cipher Code Name	Fanny	Folsom	Frank

"S. S. S." Special Hoisting Engine and Boiler

Single Cylinder, Single Drum, with Boiler and Fixtures complete on Bed-plates



Y-100-44

All Complete on One Base

Specially adapted for pile-driving, railroads, contractors, coal yards, docks, ships, quarries, and general hoisting purposes.

TABLE OF DIMENSIONS

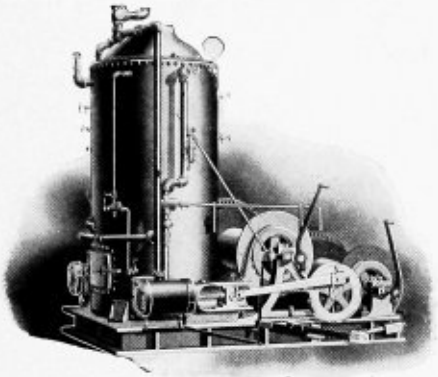
Size Number of Engine	1½	2	3½
Horse-power	5	8	12
Size of Cylinder, inches	5x7	6¼x8	7x10
Diameter of Drum, inches	10	11	14
Diameter of Flanges, inches	22	23	28
Length of Drum, inches	16	19	24
Diameter of Gear-wheel, inches	25	26½	32½
Diameter of Pinion, inches	6	6½	8
Diameter and Face of Band-wheel, ins.	20x5	20x5	28x7
Size of Boiler, inches	27x60	30x72	36x72
Number 2-inch Tubes	30	42	60
Floor Space required, inches	35x58	40x66	48x76
Weight Hoisted, Single Rope, usual speed, pounds	1200	1500	2500
Weight of Suitable Pile-driving Hammer, pounds	1000	1250	1800
Approximate Weight, pounds	3600	4400	6500
Cipher Code Name	George	General	Gerald

Nigger head furnished if desired.

MANUFACTURERS

"S. S. S."
Special Horizontal Hoisting Engine

Double Cylinder, Double Drum, with Boiler and Fixtures, complete, on One Bed-plate



Y-100-45
Three Sizes—10, 15 and 25 Horse-power

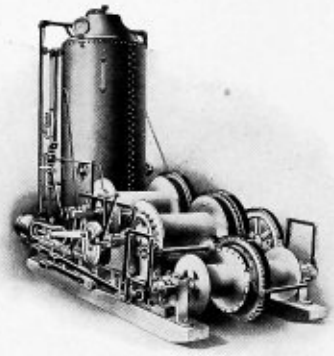
Gears and pinion all cut from the solid steel, perfect balance, quick acting, same grade material and workmanship throughout the entire line.

TABLE OF DIMENSIONS

Size Number of Engine	70	70¼	71
Horse-power	10	15	25
Size of Cylinder, inches	5x7	6¼x8	7x10
Diameter of Drums, inches	12	14	14
Diameter of Flanges, inches	22	26	30
Length of Drums, between Flanges, in.	20	25	32
Size of Boiler, inches	30x72	36x84	42x84
Number 2-inch Tubes	55	60	84
Floor Space required, inches	42x78	48x88	60x108
Weight Hoisted, Single Rope, usual Speed, pounds	2000	3000	5000
Suitable Weight for Pile-driving Hammer, pounds	1200	1600	2500
Approximate Shipping Weight, pounds	6800	7500	11000
Cipher Code Name	Harry	Harold	Hagan

"S. S. S." Special Derrick Engine With Swinger

Double Cylinder, Double Friction Drums, and Derrick Drums, with Boiler and Fixtures complete



Y-100-46

Quarrymen's friend, Bridgebuilders' favorite. None better made.

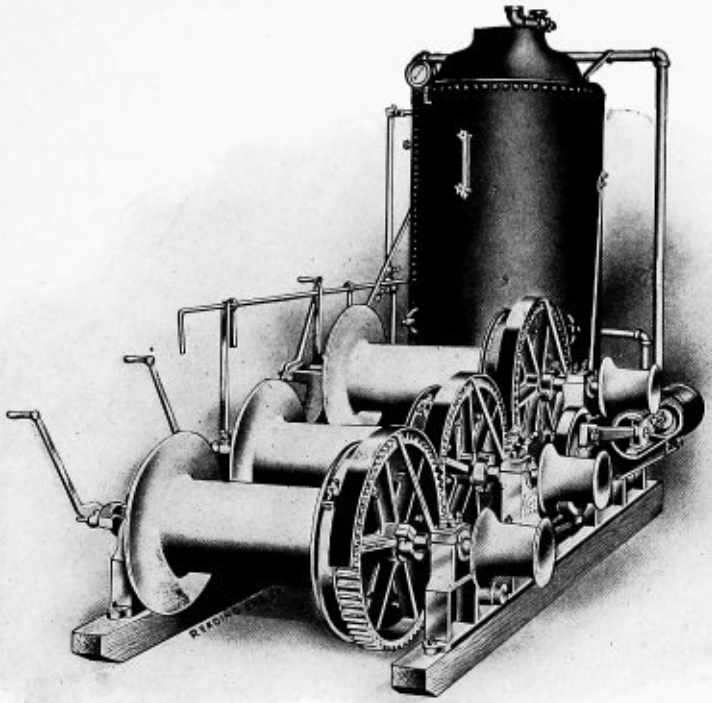
TABLE OF DIMENSIONS

Size Number of Engine	170¼	171
Horse-power	15	25
Size of Cylinder, inches	6¼x8	7x10
Diameter of Drums, inches	14	14
Diameter of Flanges, inches	26	30
Length of Drums, inches	25	32
Diameter of Derrick Drums, inches	10	12
Diameter of Derrick Drum Flanges, inches	18	19
Length of Derrick Drums, inches	12	15
Size of Boiler, inches	36x84	42x84
No. 2-inch Tubes	60	84
Floor Space required, inches	48x113	60x135
Weight Hoisted, usual speed, pounds	3000	5000
Suitable weight for Pile-driving Hammer, pounds	1600	2500
Approximate Shipping Weight, pounds	9000	13000
Cipher Code Name	Hasok	Homon

MANUFACTURERS

"S. S. S." Double Cylinder

Triple Tandem, Friction Drum Hoisting Engine, with Boiler



Y-100-47

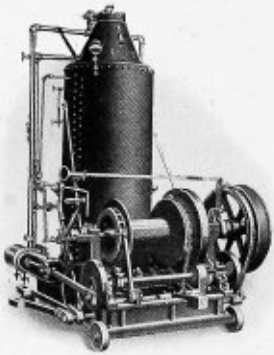
One Size—25 Horse-power

This Engine is specially designed for operating clamshell and orange-peel bucket, and for logging purposes.

TABLE OF DIMENSIONS

Size Number of Engine	371
Horse-power	25
Size of Cylinder, inches	7x10
Diameter of Drums, inches	14
Diameter of Flanges, inches	30
Length of Drums between Flanges, inches	32
Size of Boiler, inches	42x84
Number of 2-inch Tubes	84
Floor Space required, inches	87x148
Weight Hoisted, Single Rope, usual speed, pounds	5000
Suitable Weight of Bucket with Load, pounds	3800
Approximate Shipping Weight, pounds	13000
Cipher Code Name	Harding

"S. S. S." Contractors' Hoisting Engine



Y-100-48
Simple, convenient and durable

This Hoist has been designed to fill the many and various requirements encountered in the erection of buildings.

The Drum is fitted with our standard "Wern" Friction, and can be used as a regular friction hoist for pile-driving, etc.

The Drum Shaft is fitted with a large sheave, and the engines are made reversible for the purpose of running material elevators when so desired. This sheave is capable of being thrown out by means of a clutch arrangement when the Engine is needed for other hoisting, and re-rigging is thereby avoided.

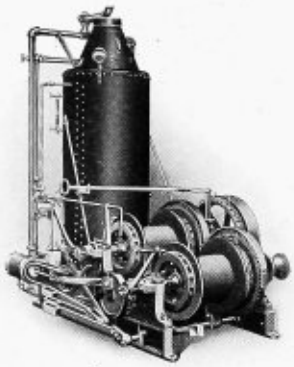
The Engine is equipped with suitable foot-brake, and all the working levers are within easy reach of the operator at one position.

TABLE OF DIMENSIONS

Size Number of Engine	5
Horse-power	10
Size of Cylinder, inches	5x7
Diameter of Drum, inches	8
Diameter of Flanges, inches	22
Length of Drum between Flanges, inches	18
Diameter of Gear-wheel, inches	25
Diameter of Pinion, inches	6
Diameter of Sheave, inches	30
Size of Boiler, inches	30x72
Number of 2-inch Tubes	55
Floor Space required, inches	43x58
Weight Hoisted, Single Rope, usual speed, pounds	2000
Weight Hoisted on Sheave Wheel, Single Rope, usual speed lbs.	800
Approximate Shipping Weight, pounds	5000
Cipher Code Name	Gustave

"S. S. S."
Double Cylinder, Double Friction Drum Hoisting Engine

With Boiler and Fixtures complete on One Bed-plate



Y-100-49

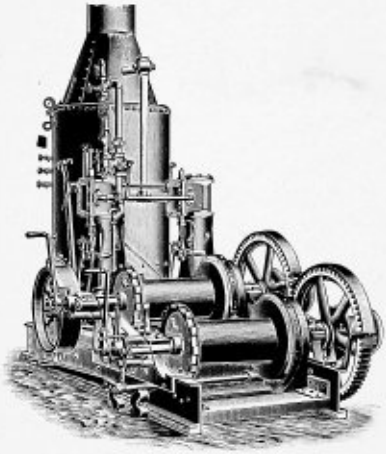
Both Drums are fitted with our standard "Wern" Friction, and are bushed with Phosphor Bronze Bushings.

Both Drums and Sheave are equipped with suitable foot-brakes and all the working levers are within easy reach of the operator at one position.

TABLE OF DIMENSIONS

Size Number of Engine	570
Horse-power	10
Size of Cylinder, inches	5x7
Diameter of Drum, inches	12
Diameter of Flanges, inches	22
Length of Drum between Flanges, inches	16
Diameter of Sheave, inches	30
Size of Boiler, inches	30x72
Number of 2-inch Tubes	55
Floor Space required, inches	42x78
Weight Hoisted, Single Rope, usual speed, pounds	2000
Approximate Shipping Weight, pounds	5700
Cipher Code Name	Hacker

"S. S. S." Double Cylinder, Double Friction Drum Hoisting Engine



Y-100-50

The double cylinders insure a steady, uniform motion, with ease and safety in handling. The cylinders, cross head guides and crankshaft bearings are all contained in one casting, which is bored at one setting. This absolutely prevents any of the parts getting out of perfect alignment.

The gears are large and well proportioned, being cast from patterns with machine cut teeth. The gear reduction is large, averaging about 6 to 1, making the load on the gear light in proportion to the load hoisted.

The drums are made with steel pipe barrels, which makes them lighter and more durable than those with cast iron barrels and causes less wear on the shaft.

All engines are built with the best style of cone friction clutch and are large enough to hold any load the engine can put on them with a light load on the hand lever.

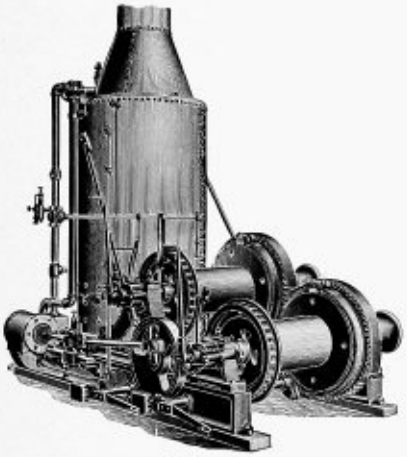
The frame is of structural steel and is practically unbreakable.

The "S. S. S." engines have back of them over thirty years of experience in hoisting engine building.

DIMENSIONS

Stock Number of Engine	Horse-power Usually Rated	Dimensions of Frame: Width, Inches	Dimensions of Frame: Length, Inches	Dimensions of Boiler: Diameter Shell, Inches	Dimensions of Boiler: Height Shell, Inches	Dimensions of Boiler: Number 2-inch Tubes	Dimensions of Cylinder: Diameter, Inches	Dimensions of Cylinder: Stroke, Inches	Dimensions of Drum: Diameter Flanges, Inches	Dimensions of Drum: Diameter Drum, Inches	Dimensions of Drum: Length Between Flanges, Inches	Weight Hoisted Single Line 200 ft. per Minute	Weight of Pile Hammer	Estimated Shipping Weight Complete, Pounds
40	8	40	116	30	66	43	4½	5¾	20	11	21	2000	1250	6400
42	16	42	122	36	70	71	5½	7	24	11	23	4000	1800	7750
43	20	45	135	38	76	81	6	7	24	15	24	5000	2500	8800
44	25	47	140	38	84	81	6¾	7	24	15	26	6000	2700	9500

"S. S. S." Horizontal Double Cylinder, Double Friction Drum Hoisting Engine



Y-100-51

This is the latest pattern and embodies all the new features which "S. S. S." thirty years' experience in hoisting engine building has proved desirable.

They are equipped with the newest type of cone friction clutch. The levers are all located so that the operator can easily reach them without effort.

The boilers are made of open hearth steel plate, having a tensile strength of 60,000 lbs. with large heating surface and grate area, making them easy steaming with a moderate amount of fuel.

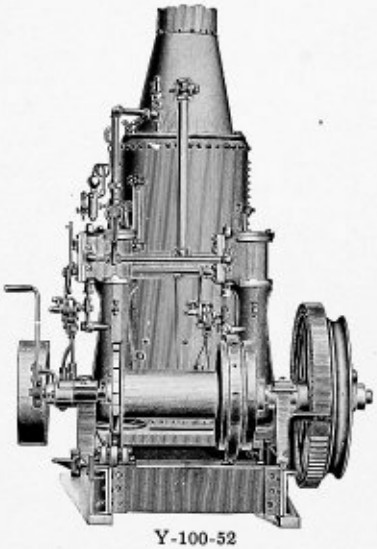
The base is cast in sections so that in case of accident it is only necessary to replace the broken part.

These engines are built under our duplicate part system, which insures absolute accuracy. A full line of finished parts is kept in stock and shipment can be made on receipt of order.

DIMENSIONS

Stock Number of Engine	Horse-power Usually Rated	Dimensions of Frame: Width, Inches	Dimensions of Frame: Length, Inches	Dimensions of Boiler: Diameter Shell, Inches	Dimensions of Boiler: Height Shell, Inches	Dimensions of Boiler: Number 2-inch Tubes	Dimensions of Cylinder: Diameter, Inches	Dimensions of Cylinder: Stroke, Inches	Dimensions of Drum: Diameter Flanges, Inches	Dimensions of Drum: Diameter Drum, Inches	Dimensions of Drum: Length Between Flanges, Inches	Weight Hoisted Single Line 200 ft. per Minute	Suitable Weight Pile Driving Hammer for Quick Work, Pounds	Estimated Shipping Weight Complete, Pounds
110	20	55	89	40	78	91	7	10	26½	15	26½	5000	2500	9600
115	32	61	110	46	91	115	8½	10	29½	15	28	8500	3500	11500

"S. S. S." Building Contractors' Engine With Elevator Sheave



Y-100-52

These engines are equipped with reversible link motion and elevator sheaves, suitable for running double platform elevators. The drum may be used for operating a derrick or for hoisting stone and timber.

The band fly wheel is turned to be used as a belt pulley and can be used independently to run a circular saw, pump, fan, etc.

The sheave can easily be released from the shaft when it is necessary to use the drum.

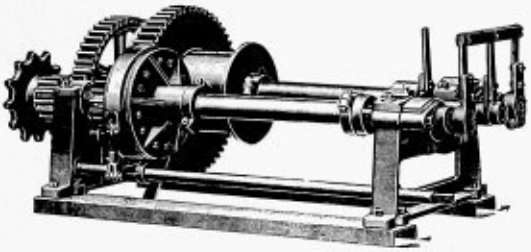
The engines are light and very compact and can be moved from one place to another without trouble. The power, as rated, is for the pull on a single line at the drum barrel, with power on the sheave sufficient to handle the elevators with a load of brick or mortar at a speed of from 300 to 800 feet per minute, according to size of engine and sheave.

Every engine is thoroughly tested before it leaves the shop and every engine is guaranteed against all defects of material and workmanship.

DIMENSIONS

		Dimensions of Frame		Dimensions of Boiler			Dimensions of Cylinder		Dimensions of Drum						
Stock Number of Engine	Horse-power Usually Rated	Width, Inches	Length, Inches	Diameter Shell, Inches	Height Shell, Inches	Number 2-inch Tubes	Diameter, Inches	Stroke, Inches	Diameter Flanges, Inches	Diameter Drum, Inches	Length Between Flanges, Inches	Weight Hoisted Single Line on Drum	Speed in Feet per Minute	Size of Sheave	Estimated Shipping Weight Complete, Pounds
7A	8	35	79	26	60	37	4½	5¾	20	9	16	2600	150	30 in.	4000
9A	16	40	95	32	70	55	5½	7	24	11	21	4000	200	40 in.	5400

"S. S. S." Boom Swinger



Y-100-53

This is our improved standard boom swinger. For simplicity of construction, ease of operation and effectiveness it has no equal. The drum, being between the bearings, does not tend to spring the shaft as in the overhung style, making the whole machine perfectly rigid under any load. The swinging rope is in two pieces, one end of each being fastened at the ends of the drum and so arranged that while one rope is running on, the other will be running off from the drum, allowing a large amount of rope to be used.

The operation of the swinger is controlled by one lever placed in a convenient position for the operator and may be placed at any distance from the swinger. The lever in the forward position, causing the drum to revolve in one direction and in the backward position, reverses the direction of the drum.

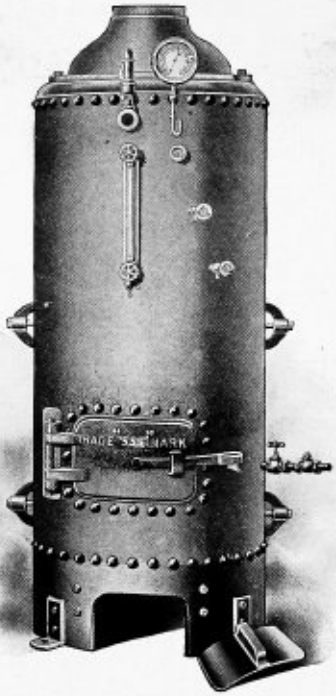
This machine is built on steel channels, making it self-contained and compact. It can be used with any make of engine by placing a sprocket wheel on the front drum shaft. The drum being short, and at one side of the swinger, allows the hoisting ropes from the engine to pass the swinger ropes without any interference. The drum will handle enough ½-inch rope to make a complete revolution of a 16-foot bull wheel and can be made larger if specially ordered.

The main improvement on this machine is the application of the regular friction screws on the shafts in place of the cams which were not perfectly satisfactory for quick work. The swinger is also now furnished with steel spur and idler pinions in place of cast iron furnished with former machines

Weight complete, 1450 lbs.

Complete with sprockets and chain.

"S. S. S." Vertical Boilers



Y-100-54

"Full Length Tubes"

Boiler is equipped as shown above, when ordered complete. Stack extra.
For specifications see page 55.

"Full Length Tube" Vertical Boiler, Class E

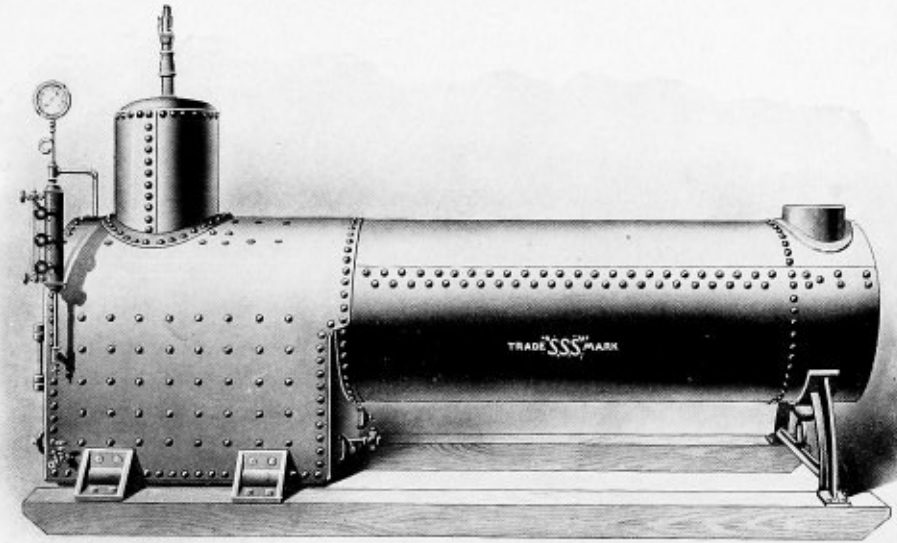
TABLE OF DIMENSIONS

Number of Size	O-E	A-E	B-E	1-E	2-E	3-E	3½-E	4-E	5-E	6-E	7-E	8-E	9-E	10-E	11-E	12-E	13-E	14-E	15-E
Horse-power	1½	2	3	4	5	6	6	7	9	11	12	14	16	20	23	27	30	35	40
Diameter of Boiler, in.	20	20	20	24	24	24	27	30	30	30	36	36	36	42	42	42	48	48	48
Height over all	3'6"	4'0"	4'6"	4'8"	5'8"	6'8"	5'9"	5'10"	6'10"	7'10"	6'10"	7'10"	8'10"	7'11"	8'11"	9'11"	9'0"	10'0"	11'0"
Diameter of Furnace, in.	16	16	16	19	19	19	21	24	24	24	30	30	30	36	36	36	42	42	42
Height of Furnace, in.	18	18	18	23	23	23	26	26	26	26	26	26	26	30	30	30	30	30	30
Thickness of Shell, in.	5/32	5/32	5/32	¼	¼	¼	¼	¼	¼	¼	¼	¼	¼	¼	7/32	7/32	7/32	11/32	11/32	11/32
Thickness of Heads, in.	5/16	5/16	5/16	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	7/16	3/8	3/8	3/8
Thickness of Fur. Plate, in	5/32	5/32	5/32	¼	¼	¼	¼	¼	¼	¼	¼	¼	¼	¼	7/32	7/32	7/32	11/32	11/32	11/32
Number of 2-inch Tubes	16	19	19	24	24	24	30	42	42	42	60	60	60	84	84	84	120	120	120
Length of Tubes, inches	18	24	30	24	36	48	33	34	46	58	46	58	68	55	68	80	68	80	90
Sq. Ft. of Heating Surface	18	25	30	39	51	63	59	75	96	107	134	164	194	219	261	303	363	423	483
Weight of Bare Boiler, lbs.	375	475	575	950	1050	1150	1150	1400	1500	1700	2000	2300	2600	3200	3500	3800	4500	4900	5200
Weight of Complete Boiler	450	500	600	1100	1200	1300	1400	1700	1900	2100	2400	2700	2900	3500	3900	4200	5200	5600	5900
Diameter of Stack, inches.	8	8	8	8	8	8	10	10	10	10	14	14	14	16	16	16	20	20	20
Cipher Code Name	Palm	Paris	Park	Patton	Paul	Payne	Peck	Peirce	Peleg	Penn	Peter	Pike	Piper	Pius	Philip	Plank	Pope	Posey	Post

20-inch Boilers are equipped with Lever Safety Valves. Injectors and Stack will be furnished at an extra cost.

Vertical boiler of similar type and the same equipment with either round or octagon base may be had. They are made of Open-Hearth Flange Steel Plate, having a tensile strength of 60,000 pounds per square inch of section. All sizes above 20 inches and upward in diameter have their vertical seams double riveted. From No. 1 to No. 10 inclusive, the shells are made of a single sheet. Boilers 20 to 30 inches in diameter have two, and the larger sizes three hand holes around water leg, and the same number above the crown sheet. In boilers 20 inches in diameter the water space around the fire-box is 1½ inches wide, in the 24-inch diameter 2 inches, and in all other sizes 2½ inches wide.

"S. S. S." Special Horizontal Locomotive Type



Y-100-56

Water Front, Open Bottom, on Skids.

Specifications Page 57.

"S. S. S." Special Horizontal Locomotive Type

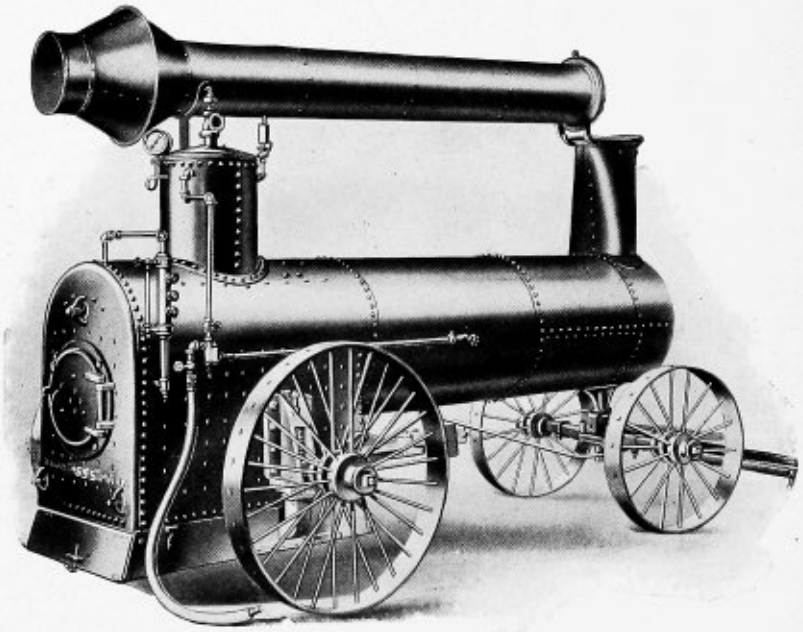
Water Front and Open Bottom, on Skids

TABLE OF DIMENSIONS

Number of Size	3	4	5	6	7	8	9	10	11	12
Horse-power	10	12	15	20	25	30	35	40	50	60
Diameter of Boiler, inches	32	32	32	34	36	36	40	42	48	48
Length of Fire-box, inches	38	38	44	52	52	52	52	54	54	64
Height of Fire-box, inches	33	33	33	36	38	40	42	46	52	52
Width of Fire-box, inches	26	26	26	28	30	30	34	36	42	42
Number of 3-inch Tubes	26	26	26	28	34	34	40	43	56	56
Length of Tubes, inches	66	72	78	90	96	120	102	120	126	144
Thickness of Shell, inches	¼	¼	¼	¼	¼	¼	9/32	9/32	5/16	5/16
Thickness of Furnace Plates, inches	¼	¼	¼	¼	9/32	9/32	9/32	5/16	5/16	5/16
Thickness of Tube Sheets and Heads, inches	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Size of Dome, inches	18×22	18×22	18×22	20×24	20×24	20×24	22×26	22×26	26×30	26×30
Diameter of Stack, inches	14	14	14	16	16	16	20	20	22	22
*Length of Stack, feet	16	18	20	25	25	25	25	25	35	35
No. of Steel in Stack	16	16	16	16	16	16	16	16	16	16
Weight of Bare Boiler on Skids	3125	3500	3800	4800	5500	6000	6700	7700	10200	11000
Weight of Boiler complete, with Fixtures	3875	4200	4400	5800	6400	6900	7800	8900	11700	12500
Cipher Code Name	Laurie	Lam	Laura	Lou	Lotta	Lillie	Lucy	Lizzie	Lovie	Luke

*Guy Rods four times length of Stack.

"S. S. S." Special Horizontal Locomotive Type



Y-100-58

Water Front, Open Bottom, on Wheels.

Specifications Page 59

"S. S. S." Special Horizontal Locomotive Type

Water Front and Open Bottom, Mounted on Wheels

TABLE OF DIMENSIONS

Number of Size	60	61	62	63	64	65	66	67	68
Horse-power	10	12	15	20	25	30	35	40	50
Diameter of Boiler, inches	32	32	32	34	36	36	40	42	48
Length of Fire-box, inches	38	38	44	52	52	52	52	54	54
Height of Fire-box, inches	33	33	33	36	38	40	42	46	52
Width of Fire-box, inches	26	26	26	28	30	30	34	36	42
Number of 3-inch Tubes	26	26	26	28	34	34	40	43	56
Length of Tubes, inches	66	72	78	90	96	120	102	120	126
Thickness of Shell, inches	¼	¼	¼	¼	¼	¼	3/16	3/16	7/16
Thickness of Furnace Plates, inches	¼	¼	¼	¼	3/16	3/16	3/16	7/16	7/16
Thickness of Tube Sheets and Heads, inches	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Size of Dome, inches	18×22	18×22	18×22	20×24	20×24	20×24	22×26	22×26	26×30
Diameter of Stack, inches	14	14	14	16	16	16	20	20	22
Length of Stack, feet	10	11	12	13	14	16	15	16	17
No. of Steel in Stack	16	16	16	16	16	16	16	16	16
Weight, pounds	5500	6100	6300	7500	8200	8800	9800	10900	13700
Cipher Code Name	Laird	Laity	Lang	Lapp	Lash	Latus	Lauter	Laux	Lary

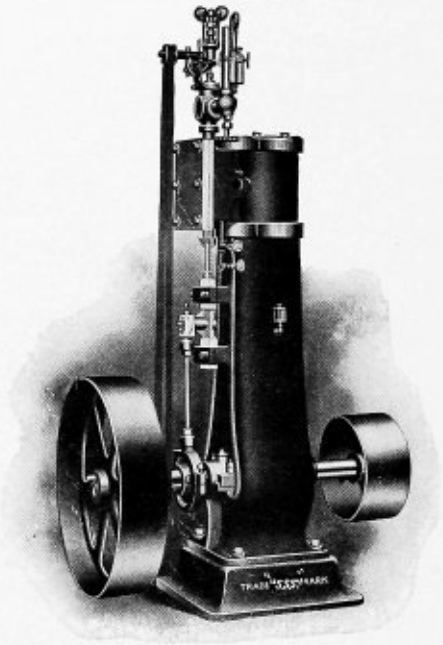
Fittings and Fixtures comprise grates, water column, water gauge, gauge cocks, steam gauge, pop safety valve, check and stop valves, whistle, blow-off valve, hinged stack, ash pan, injector attached, running gear as shown in cut, including wheels, tongue, neckyoke, doubletree, whiffletrees and brake.

All wheels are of iron. Axle is one piece, made of the best steel, bent to shape and extends across underneath fire-box. Rear axle is equipped with springs.

"S. S. S." Special Steam Engine

Vertical Stationary

Class F



Y-100-60

For specifications see page 61

Class F Vertical Engines

This Engine is well made throughout, yet, owing to its simplicity of construction, it can be produced at less cost than more elaborate designs.

The rods are made of steel, the crank-shaft of solid hammered steel, the "Brasses" of phosphor bronze, and the bearings of the best babbitt.

This type of Engine is used by manufacturers of about 17 different types of concrete mixers.

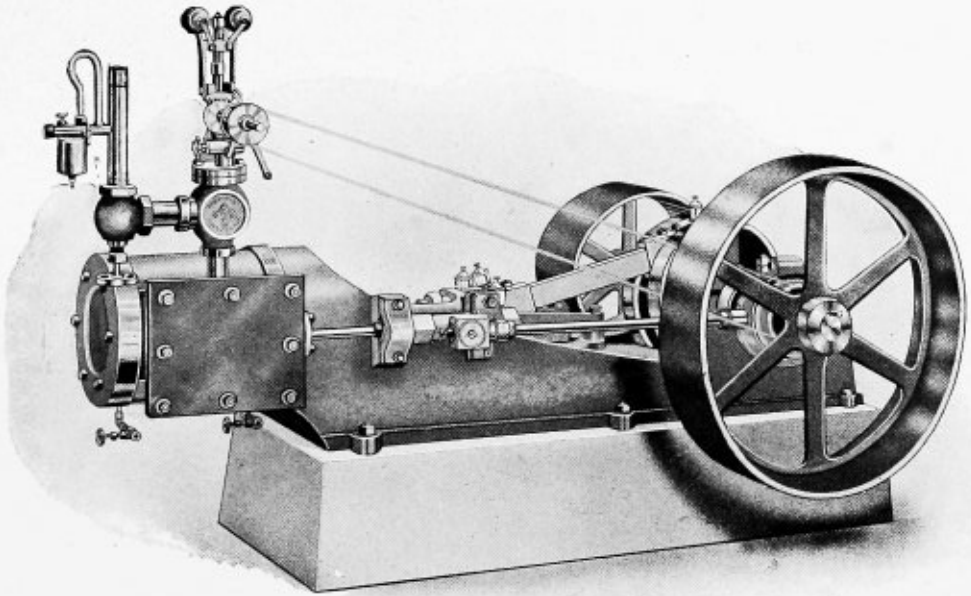
We manufacture larger sizes in slightly different patterns.

TABLE OF DIMENSIONS

Horse-power	1	2	4	5	6	8	9	12	15
Size of Cylinder, inches	2½×3	3×5	4×5	5×5	5×7½	6×7½	6½×7½	7×8½	8×8½
Revolutions per minute	400	350	325	250	250	225	225	200	200
Diameter of Steam-pipe, inches	⅜	½	¾	¾	1	1¼	1¼	1¼	1½
Diameter of Exhaust-pipe, inches	½	¾	1	1	1¼	1½	1½	1½	2
Diameter of Shaft, inches	1⅞	1⅞	1⅞	1⅞	2⅜	2⅜	2⅜	2⅜	2⅜
Diameter and Face of Wheel, inches	13×3½	15×4	17×4½	20×5	24×6	24×6	28×7	30×6¾	36×7¼
Diameter and Face of Pulley, inches	6×3	10×5	12×6	12×6	14×7	14×7	14×7	16×7½	18×8
Height from Floor to Centre of Shaft, inches	7	10	10	10	13	13	14½	17¼	19¼
Height from Floor to Top of Cylinder, inches	28	43	43	43	54	54	55½	67	69
Floor Space occupied, inches square	13	17	17	17	20	20	20	24	24
Approximate Weight, pounds	200	400	425	500	800	825	1000	1375	1475
Cipher Code Name	Agnes	Abel	Amy	Austin	Arthur	Aurora	Ayers	Ariel	Ault

"S. S. S." Horizontal General Service Steam Engine

Class F—Without Sub-base



Y-100-62

Class F Horizontal Engines

Without Sub-Base

This Engine, like the vertical type, is well made throughout, yet, owing to its simplicity of construction, it can be produced at less cost than more elaborate designs and it fills the requirements of a high grade, reasonably priced unit of power.

The rods are made of steel, the crank-shaft of solid hammered steel, the "Brasses" of phosphor bronze, and the bearings of the best babbitt.

Sub-base furnished at a small additional cost.

TABLE OF DIMENSIONS

Horse-power	6	8	9	10	12	15	20	25
Size of Cylinder, inches	5×7½	6×7½	6½×7½	7×10	7½×10	8×10	9×12	10×12
Diameter of Steam-pipe, inches	1	1¼	1¼	1½	1½	1½	2	2½
Diameter of Exhaust-pipe, inches	1¼	1½	1½	2	2	2	2½	3
Diameter of Shaft, inches	2⅜	2⅜	2⅜	2⅞	2⅞	2⅞	3¼	3¼
Diameter and Face of Wheel, inches	24×6	24×6	28×7	30×6¾	30×6¾	36×7¼	44×10	44×10
Diameter and Face of Pulley, inches	14×7	14×7	14×7	16×7½	18×7½	18×7½	20×10	24×12
Revolutions per minute	250	225	225	200	180	180	160	160
Floor Space required for base, inches	18×48	18×48	18×48	20×57½	20×57½	20×57½	26×62	26×62
Approximate Shipping Weight, pounds	800	875	950	1300	1350	1400	2900	3100
Cipher Code Name	Constance	Cynthia	Carroll	Charity	Christian	Cephas	Cannon	Carlin

"S. S. S." Vertical Gasoline Engine

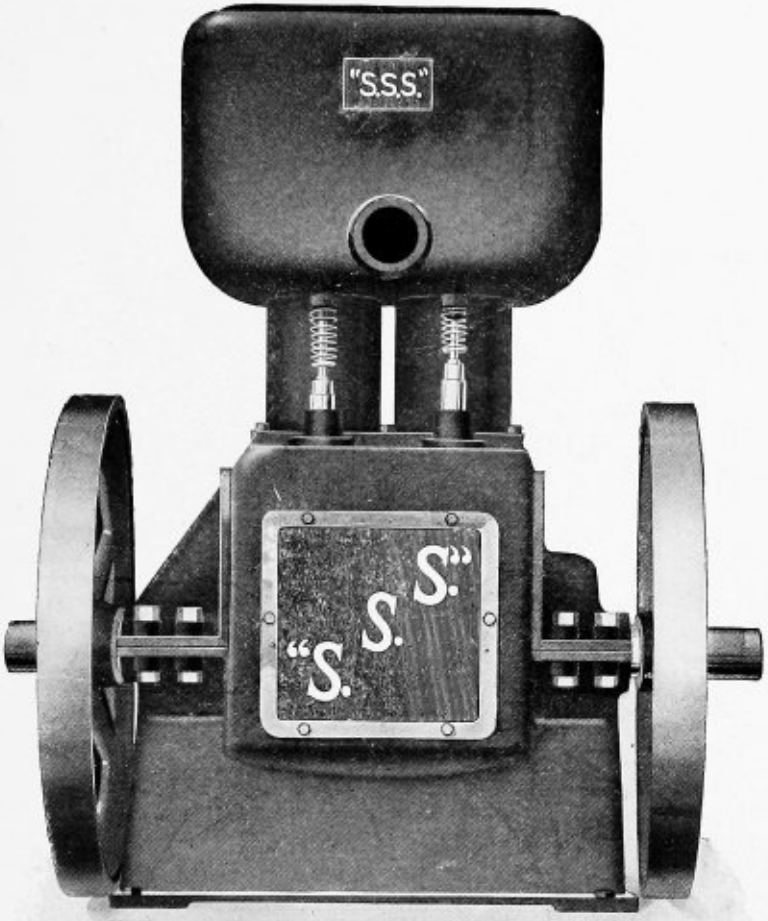
Y-100-64

These engines are an especially convenient frost-proof power plant for stationary work in machine and wood-working shops, creameries, printing offices, feed and grist mills, irrigation and municipal pumping plants, saw mills, rock crushing plants, cement block and brick factories, etc.

They are vertical in type, constructed by modern skilled labor, equipped with jump spark ignition and other improvements, require little floor space, are easily started, can be operated on gas or gasoline and are used for operating more than 25 different types of concrete mixers.

Specifications on page 66.

"S. S. S." Vertical Gasoline Engine



Y-100-65

The 12 H.-P. and 15 H.-P. "S. S. S." Engines

The 12 H.-P. and 15 H.-P. "S. S. S." Engines are of the two cylinder four-cycle type, entirely self-contained and compact in design, and of light weight for the power delivered. Every working part is protected from dust and dirt by the enclosed crank case.

Specifications on page 66.

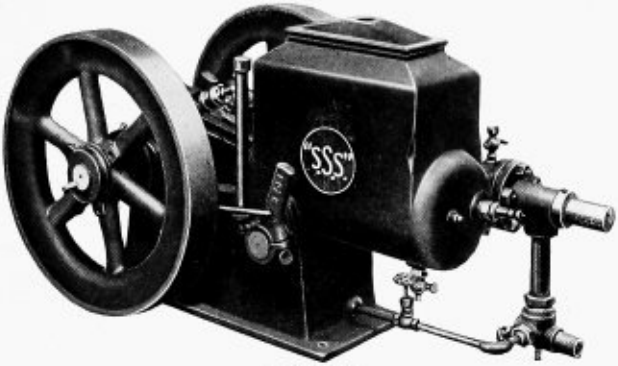
Specifications of "S. S. S." Engines

TABLE OF DIMENSIONS

Size of Engine	S.S.S. Jr.	1½ H.P.	2½ H.P.	3½ H.P.	4 H.P.	5 H.P.	6 H.P.	7-8 H.P.	10 H.P.	12 H.P.	15 H.P.
Speed, R. P. M.	600	600	525	475	475	450	450	425	400	400	375
Diam. Fly Wheel, In.	15	15	18	20	20	24	24	29	29	30	30
Fly Wheel Face, In.	1¾	1¾	2¼	2½	2½	2¾	2¾	3⅜	3⅜	3⅜	3⅜
Diam. Crank Shaft, In.	1⅛	1⅛	1½	1¾	1¾	2	2	2⅜	2⅜	2¾	2¾
Anchor Bolt Holes	8¼×10¾	11¼×10¾	11×15	12×17	12×17	14½×20½	14½×20½	20¾×24½	20¾×24½	27⅞×26¾	27⅞×26¾
Diam. Pulley, In.	4	4	6	8	8	14	14	16	18	20	20
Face Pulley, In.	3	3	4	4	4	6	6	6	6	8	8
Height, In.	25	28	33¾	38	38	42⅝	42⅝	51	55½	54	54
Fuel Tank Cap. Gal.	1	1¾	2½	3½	3½	6	6	11	11	15½	15½
Bare Weight, Pounds	160*	200*	330	424	430	643	650	1150	1400	1800	1900
Shipping Weight, Pounds	200*	250*	425	525	530	800	810	1425	1675	2000	2100
Code Word Stationary Engine	Nobled	Nobby	Nobody	Noc-turn	Noc-turnal	Node	Nodose	Nodule	Noon-time	North-ward	North-land
Code Word Stationary Engine with Detachable Pump Jack	Noble	Nobly									

"S. S. S." Horizontal Engines

Semi-Automatic



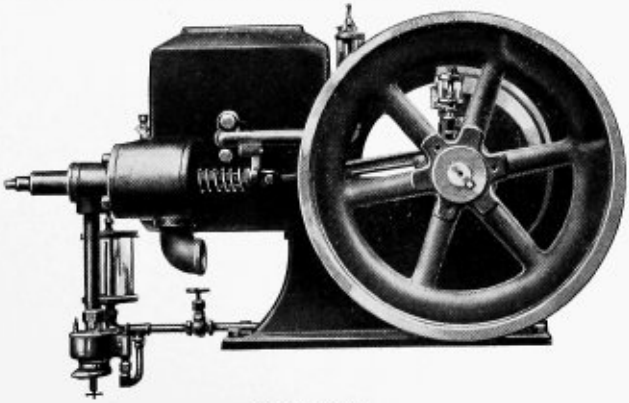
Y-100-67A

Left Side View, Semi-Automatic, 1½ H. P.

This Engine is the result of years of experiment, mechanical tests, engineering knowledge and, above all, tests by our customers, and the universal verdict is the "Best Ever."

SOME OF THE GOOD POINTS

Jump Spark ignition, balanced wheels, horizontal type, renowned hopper-cooled cylinder,—has no gears, no cams, simple governor, "operating on the spark contact only," and will operate on various fuels including manufactured gas, natural gas, gasoline and kerosene.



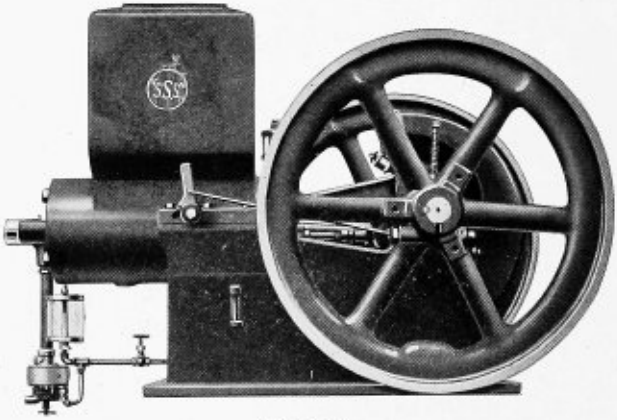
Y-100-67B

Right Side View, Semi-Automatic

A General Purpose Engine.

"S. S. S." Horizontal Engines

Semi-Automatic



Y-100-68

Right Side View, 7 H.-P.

Actual Horse Power	Revolutions Per Minute	Floor Space Inches	Size Pulley Crowned Inches	Shipping Weight Pounds
1½	600	36 x24	5 x4	400
2½	475	36½x24	5½x4	475
4	400	45 x31	8 x8	880
7	375	56½x31⅜	8 x8	1345

"S. S. S." Horizontal Engines

Standard Type

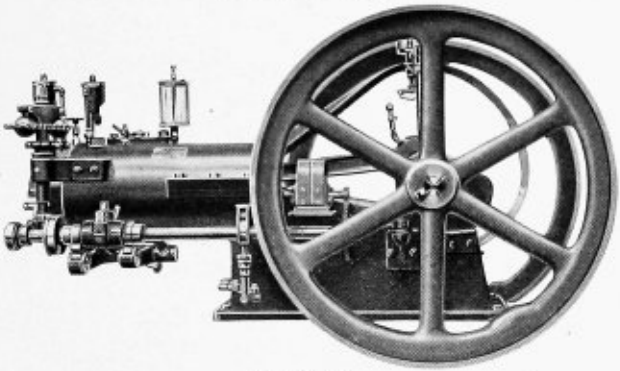
Specifications

Actual Horse Power	Revolutions Per Minute	Floor Space Inches	Size Pulley Crowned Inches	Shipping Weight Pounds
10	350	50x40	10x6	2800
12	325	50x40	12x8	3800
15	300	60x42	14x8	4700

Mounted Engines, Pumping Outfits and special equipments, similar to the vertical outfit, described on the preceding pages, will be made up on special request.

"S. S. S." Horizontal Engines

Standard Type

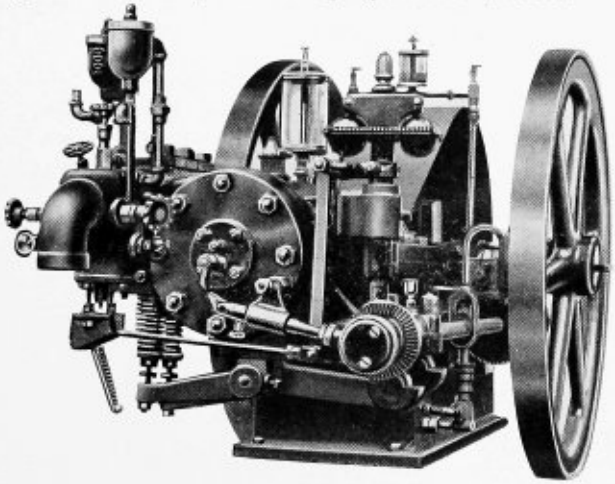


Y-100-69A

Right Side View, "S. S. S." Engine

DESCRIPTION

This Engine is made up in three sizes, viz.: 10, 12, 15 Horse-power, equipped with make and break ignition, perfectly balanced wheels, mechanically operated valves. Ignition outfit. Equipped with regular "S .S. S." Dry Batteries, with gear driven magneto at slightly additional cost.



Y-100-69B

Hit and miss or Throttling Governor as ordered. See specifications, page 68.

"S. S. S." Original Air-Cooled Engine

TO THE TRADE

The "S. S. S." Original Air-Cooled Engine has been on the market for over 10 years and was the first successful Air-Cooled Engine manufactured.

To those requiring small power we offer the "S. S. S." Original Air-Cooled Engine as it can be started on a moment's notice without the annoyance and delay of providing water required by water-cooled engines.

We give you our guarantee that the "S. S. S." Original Air-Cooled Engine will cool when working under full load and we are willing to refer you to thousands of satisfied customers.

The Air-Cooled feature is not alone the cause of our great success—coupled with this is simple design, good material and good workmanship.

We will ship anybody, anywhere in the United States, one of our "S. S. S." Original Air-Cooled Engines on 30 days' trial and if the engine it not found as represented it can be returned at our expense. We cannot put our faith in this engine in any stronger terms than to let our customers see what they are buying before we get their money.

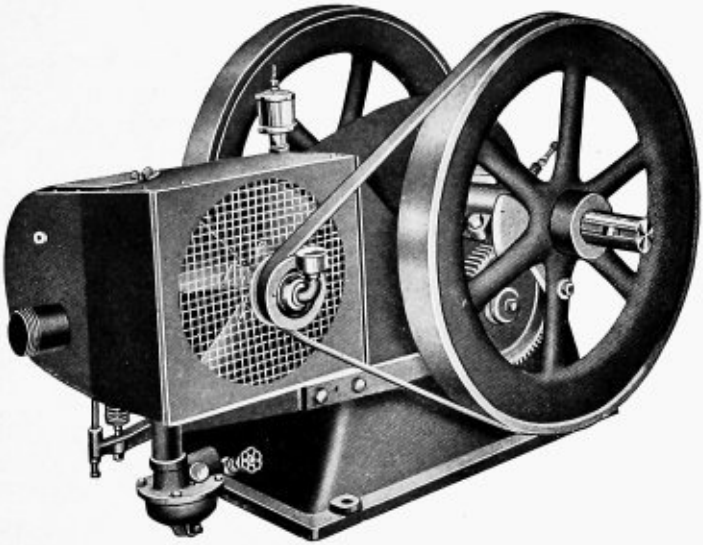
Back of the "S. S. S." Original Air-Cooled Engine is Mr. R. E. Olds, pioneer builder of gasoline engines and automobiles in the United States. Can you ask for any better guarantee that you get the best that money or brains can produce when you buy the "S. S. S." Original Air-Cooled Engine?

The S. S. S. Original Air-Cooled Engine is constructed upon what is known as the four-cycle principle, which is standard with all of the best manufacturers.

We use the jump spark ignition, which is very simple and on account of being used on all automobiles is thoroughly understood by all who own and repair cars.

Great care is taken in the workmanship on our line of "S. S. S." Original Air-Cooled Engines, especially the cylinder, piston, and rings, as they are the most important parts of the engine and nothing but the best of material and workmanship should be allowed.

"S. S. S." Original Air-Cooled Engine



Y-100-71

The "S. S. S." Original Air-Cooled Engine

We build the "S. S. S." Original Air-Cooled Engine in 1, 2, 3½, 5 and 10 H. P. and show above our latest type of construction which we feel safe in saying is the best designed, simplest and most reliable Air-Cooled Engine on the market.

You will find the "S. S. S." Original Air-Cooled Engine very easy to start and operate, all the moving parts are amply strong and are easy of access. We call your attention to illustrations on pages 73, 74 and 75, which will give you an idea of its simple construction, etc. For complete specifications, see page 77.

"S. S. S." Original Air-Cooled Engine

In finishing our cylinders we bore them three times and finish with a floating reamer, which leaves a perfectly smooth surface and insures perfect interchangeability.

Cylinder rings are turned eccentric, ground on both sides to an absolutely true surface, cut at an angle of 45 degrees, sprung together and ground on the outside to an absolute circle and highly polished.

All pistons and crank shafts are ground to micrometer gauges, all piston pins, gear studs, and fan shafts are case hardened and then ground to gauges.

The crankshaft and connecting rod on all our engines are drop forged. The connecting rod is fitted with brass liners of various thicknesses for adjusting the wear.

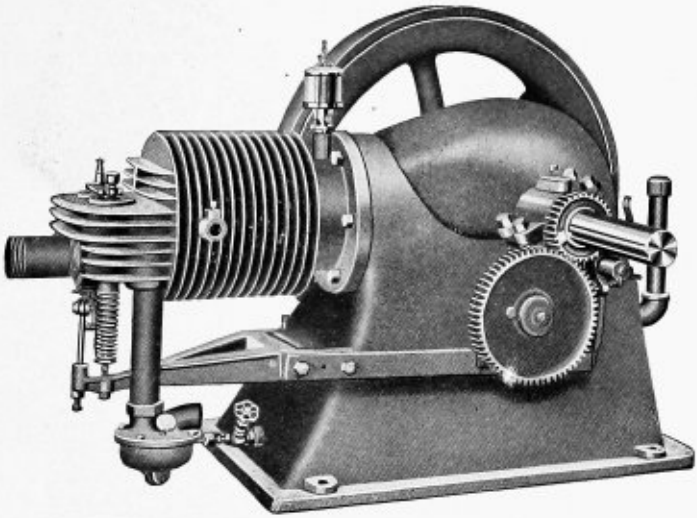
All engines are equipped with steel hoods around cylinder and valve chamber and a cast iron over crankshaft and connecting rod, making them dust-proof.

The fan shaft and connecting rod are lubricated by hard oilers and the upper boxes over crank shaft have extra large oil cups.

It is our aim in manufacturing gasoline engines to give our customers the very best engine that good design, good material and good workmanship can produce. We can not and will not compete with the manufacturers who sell the output of their factories on price only, regardless of quality. We keep our overhead charges down as low as possible and with our large, well equipped factory are able to give our customers the best engine on the market at reasonable prices. We ask those about to buy an engine to remember that the service an engine renders determines whether it is cheap or high in price.

Some engines are dear at any price and others are cheap at much higher prices. To own a good reliable engine is a source of pleasure as well as profit, but to own and have to operate an engine of poor design, made from cheap material by poor workmen is a constant annoyance and expense. **You take no chances when you buy the "S. S. S." Original Air-Cooled Engine.**

"S. S. S." Original Air-Cooled Engine



Y-100-73

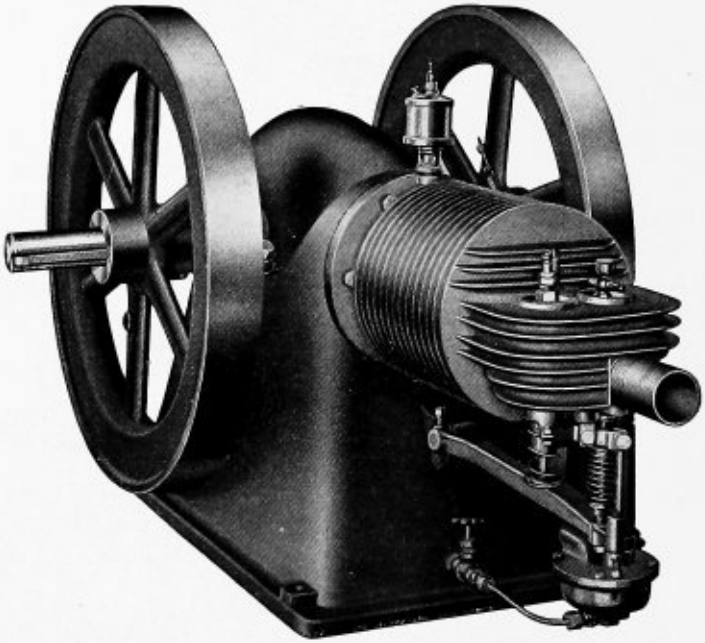
The "S. S. S." Original Air-Cooled Engine with Cylinder Hood, Fan and Balance Wheel Removed

We ask your careful inspection of above cut, also those on pages 74 and 75.

You will note that both the intake and exhaust valves are vertical, which permits their having a perfect seat; they are amply large to take care of the gases without back pressure and are located in a combustion chamber back of the cylinder, which obviates unequal heating of the working portion of the cylinder and allows uniform lubrication. Both valves can be easily removed by taking out two brass plugs, one of the plugs carries the spark plug and the other the priming cup.

The carburetor is located on the starting side of the engine, close to the combustion chamber, and the cool incoming gases pass between the cylinder and exhaust valve, which not only keeps them cool, but also adds greatly to the efficiency of the engine when using low grade gasoline.

"S. S. S." Original Air-Cooled Engine



Y-100-74

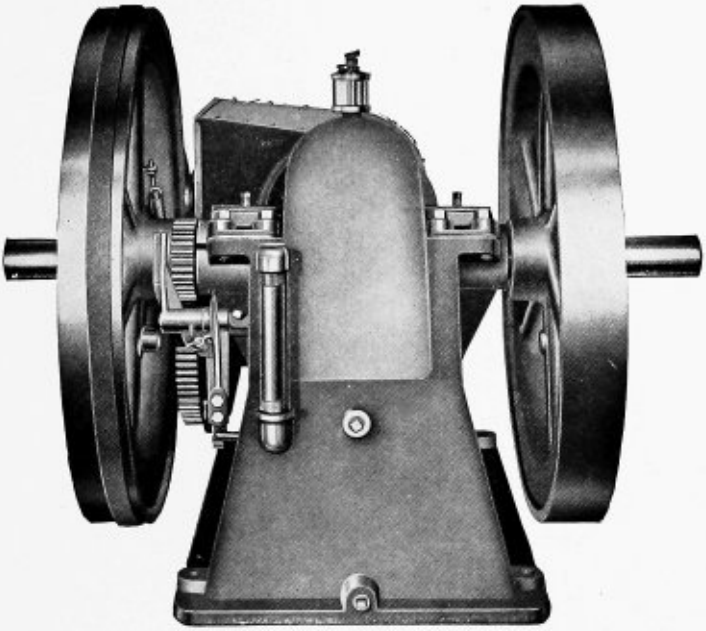
Rear View of the "S. S. S." Original Air-Cooled Engine with Hood Removed

The cylinders on all sizes of our "S. S. S." Original Air-Cooled Engines are bolted to the engine base, thus making it an easy matter to get at the piston and rings, and also permits us to have a solid head, which does away with all packed joints.

On the 5 and 10 H.-P. we have a simple device that increases the tension of spring on intake valve while exhaust valve is open, thus preventing waste of gasoline when engine is running idle.

The exhaust valve is operated by direct acting walking beam which carries the contact spring, cam roller and governor catch block. It is the strongest and simplest mechanism for this purpose found on any engine.

"S. S. S." Original Air-Cooled Engine



Y-100-75

Front View of the "S. S. S." Original Air-Cooled Engine

You will notice from above cut that the crank case is enclosed with a cast iron cover which keeps all dust and dirt from cylinder and piston.

The main bearings are set on a quarter and are extra length.

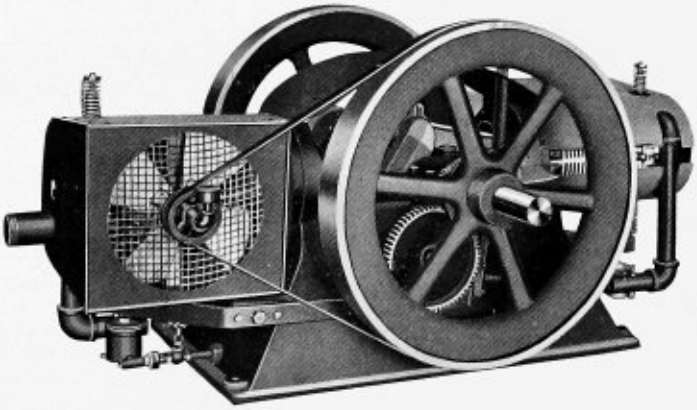
The speed of all "S. S. S." Original Air-Cooled Engines can be increased or decreased without stopping, which is a very important feature.

The gasoline is carried in the base and the plug at the bottom is located for the drainage of the gasoline if it is found necessary.

The connecting rod and fan shaft are lubricated by hard oilers.

The "S. S. S." Original Air-Cooled Engine should be seen in operation to be appreciated.

"S. S. S." Original Air-Cooled Engine



Y-100-76

10 H.-P. "S. S. S." Original Air-Cooled Engine with Double Opposed Cylinders

We furnish the 10 H.-P. "S. S. S." Original Air-Cooled Engine to operate 4-roll husker, hay baler, and for other work requiring about 10 H. P.

The construction of this engine is very simple and we claim that it will run steadier than any other engine on the market, that it is lighter weight for the power delivered, making it especially desirable for mounting on trucks.

"S. S. S." Original Air-Cooled Engine

SPECIFICATIONS

H. P.	Bore	Stroke	Pulley	Diameter Crank Shaft	Speed	Shipping Weight	Floor Space
Junior	3	4	4x3	1⅛	500	175	9½x13
2	4	5	6x3	1¼	500	400	13x21
3½	5	5	8 10x4	1½	475	500	13x21
5	6	6	12-14-16x6	2⅛	425	1200	16x28
10	6	6	16-18x6	2⅛	425	1400	20x37

ALL "S. S. S." ORIGINAL ENGINES ARE GUARANTEED

Every engine is guaranteed to be just as represented in this catalog. Warranted to develop their full rated horse-power when properly installed and operated, and not to become overheated by hard, continuous work if properly cared for.

Any part proving defective in material or workmanship within one year from date of sale will be replaced free of charge at our factory. No bills for repairs made without our authority will be allowed.

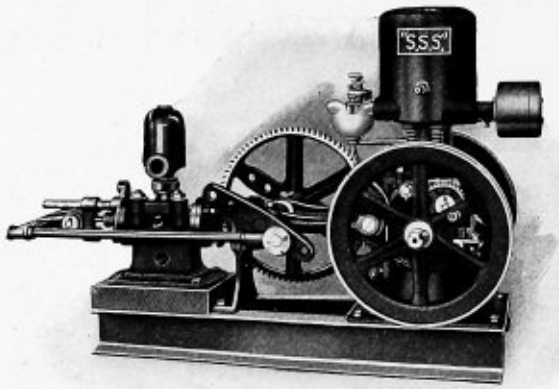
EQUIPMENT

We furnish with each engine: Battery, spark coil, plug, necessary wire, cylinder oiler, grease cups, etc.

MANUFACTURERS

"S. S. S."

Direct Connected Pumping Outfits



Y-100-78

1½ H.-P. "S. S. S." Back Geared Engine with Double Acting Suction and Force Pump, mounted on channel steel base

These outfits are suitable for all pumping service within their capacities where the suction head does not exceed 25 feet.

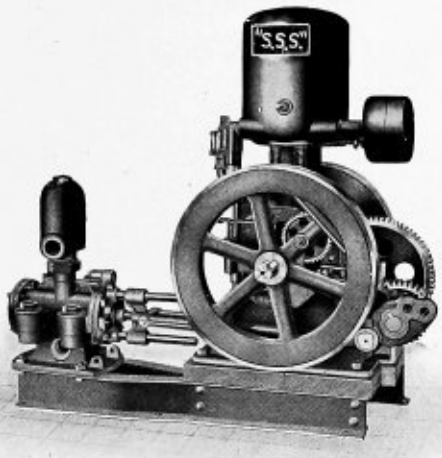
The pump has brass cylinder lining held in position by flanges at end of cylinder and by head of the pump. The valves and valve seats are of brass, placed under individual caps, and are accessible without disturbing other parts of the pump. The brass piston rod is supported by a strong crosshead operating on heavy steel guides and proper alignment of working parts is always assured. Suction pipe can be attached at either side of the pump and discharge run in any direction. No piping or pipe fittings furnished.

SPECIFICATIONS

Outfit Number	H.-P. of Engine	Pump Number	Cylinder Dia., In.	Length Stroke, In.	Suction and Discharge Pipe, In.	Capacity Gallons per Hour	Maximum Lift, Feet	Bare Weight, Pounds	Code Word
1	1	458	2	5	1	350	150	443	Nose
2	1½	458	2	5	1	400	175	491	Nosed
3	1½	456	3	5	1¼	800	125	512	Nosing

MANUFACTURERS

"S. S. S."
Direct Connected Pumping Outfits



Y-100-79

2½ H.-P. "S. S. S." Back Geared Engine with Double Action Suction and Force Pump, mounted on channel steel base

"S. S. S." Direct Connected Pumping outfits with Double Acting Suction and Force pumps are extensively used in every pumping service within range of their capacities, when the suction head does not exceed 25 ft.

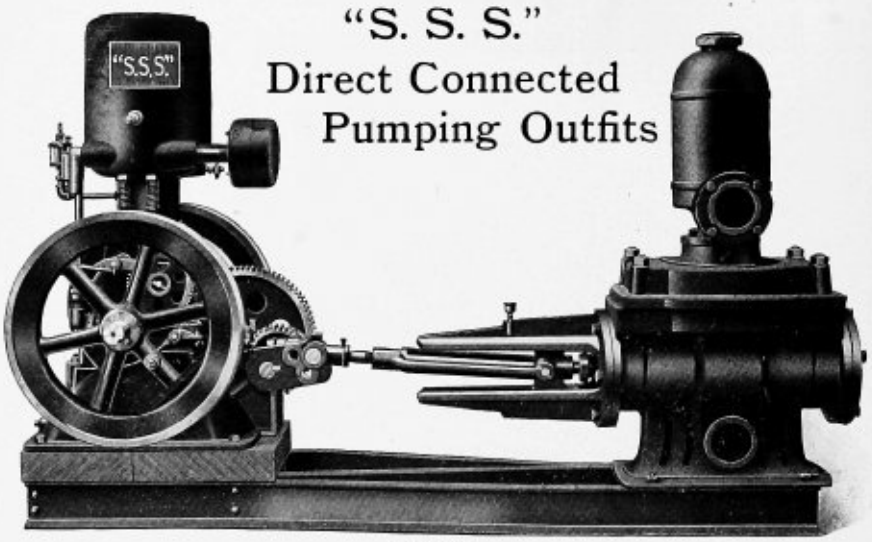
All gears are full machine cut from solid blanks, and run quietly without friction. Pump and gears are fully protected from shock or overload by a break pin attachment fitted on crankshaft of the engine. Engine can be disconnected from pump and used for other power requirements. Pitman shaft from engine to pump has large bearings, and the entire outfit is held in perfect alignment by the channel steel base.

No piping or pipe fittings are furnished with these outfits.

SPECIFICATIONS

Outfit Number	H.-P. of Engine	Pump Number	Cylinder Dia., In.	Length Stroke, In.	Suction and Discharge Pipe, In.	Capacity Gallons per Hour	Maximum Lift, Feet	Bare Weight, Pounds	Code Word
4	2½	456	3	5	1¼	900	175	540	Nosologist
5	2½	454	5	5	2	2000	100	560	Nosology
6	3½	454	5	5	2	2400	125	890	Nostalgia

"S. S. S." Direct Connected Pumping Outfits



Y-100-80

4 H.-P. "S. S. S." Back Geared Engine with Double Acting Suction and Force Pump, mounted on channel steel base

This outfit is especially recommended for service where a heavy duty pumping outfit is required, with a suction lift not over 25 ft.

The pump is designed for heavy work and the engine is of ample power to deliver the maximum capacity of the pump. Pump has brass valve seats of the gird pattern, and rubber poppet valves fitted with quick closing coil springs. The piston rod is brass covered, and held in perfect alignment by the slide crosshead operating in bored guide ways mounted on the cylinder head.

The valves are located under the top cap of the pump, and are easily accessible for repairing.

The channel steel base is very rigid, and holds pump and engine in perfect alignment.

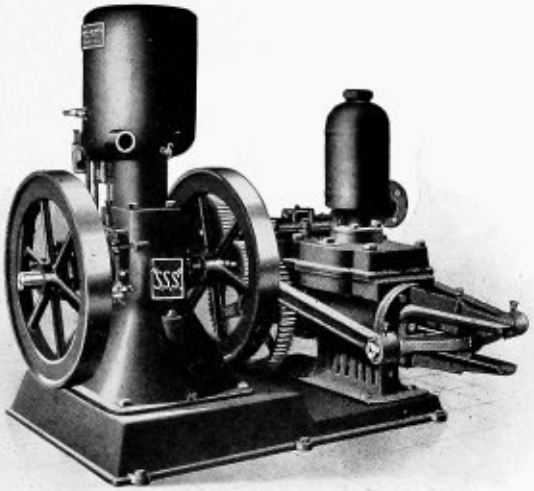
No piping or pipe fittings furnished.

SPECIFICATIONS

Outfit Number	H.-P. of Engine	Pump Number	Cylinder Dia., In.	Length Stroke, In.	Suction and Discharge Pipe, In.	Capacity Gallons per Hour	Maximum Lift, Feet	Bare Weight, Pounds	Code Word
7	4	346	6	10	3	4000	50	1285	Nostrum
8	6	346	6	10	3	5800	125	1730	None

MANUFACTURERS

"S.S.S." Direct Connected Pumping Outfits



Y-100-81

6 H.-P. "S. S. S." Engine with Back Geared, Double Acting Suction and Force Pump, on strong cast base

This outfit is widely used for small municipal pumping stations, factory water supply systems, irrigation plants, etc., where the suction head is not over 25 ft.

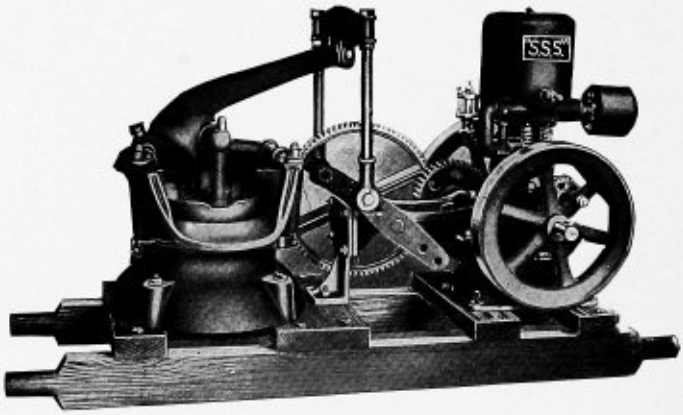
The pump is designed throughout for heavy work. The power is transmitted to the plunger by pinion on engine shaft and two sets of gears; one on either end of the main shaft of the pump. Gears are full machine cut with 2½-inch face and heavy teeth. Main shaft is 2 inches in diameter and fitted in an adjustable babbitted box. All bearings are provided with oil cups. Cylinder is brass lined, piston rod is brass covered with crosshead working in bored ways on the guides mounted on cylinder head. Valves are of hard rubber, 4½ inches in diameter, and fitted with coil springs to prevent slipping under heavy pressure. The outfit is mounted on a substantial cast base, and furnished complete, without piping or pipe fittings.

SPECIFICATIONS

Outfit Number	H.-P. of Engine	Pump Number	Cylinder Dia., In.	Length Stroke, In.	Suction and Discharge Pipe, In.	Capacity Gallons per Hour	Maximum Lift, Feet	Bare Weight, Pounds	Code Word
9	6	352	6	10	3	6000	125	1245	Nothing
9½	10	363	6	20	4	7500 to 10000	150	3500	Notable

"S. S. S." Trench Pumping Outfits

(Also known as Diaphragm or Bilge Pumpers)



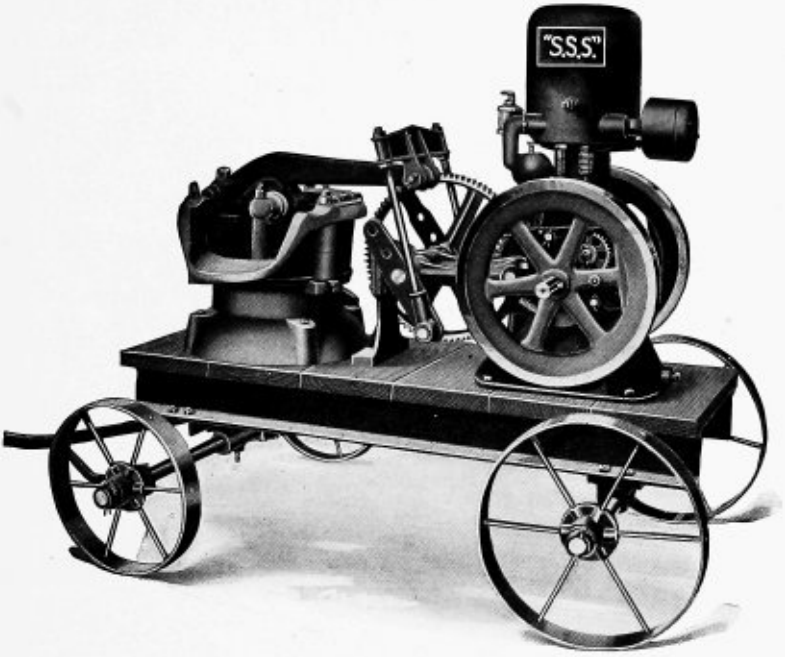
Y-100-82

"S. S. S." Trench Pumping Outfit, Skid Mounted

The "S. S. S." Pumping Outfit is a "S. S. S." Back Geared Engine, direct connected to a diaphragm suction pump, and mounted on a strong wooden skid or steel truck, as may be desired.

The diaphragm suction pump is the simplest pump made for handling large quantities of muddy or gritty water. It has no complicated parts to get out of order, and no sliding plunger or cylinder to become worn. Two valves and a strong rubber diaphragm, which creates suction by an up-and-down motion, make up the pumping mechanism. The rugged construction, reliability, and large capacity of these outfits make them the favorite with contractors, and anyone who has large quantities of muddy water to pump, will find them equally serviceable.

"S. S. S." Trench Pumping Outtits



Y-100-83

"S. S. S." Trench Pumping Outfit, Truck Mounted

These outfits are suitable for use in any place where the suction lift does not exceed twenty-five feet, and where the water can be allowed to flow away from the mouth of the pump. The suction is cut for iron pipe thread, which is generally used for hose couplings. Suction hose, hose couplings, and strainer are extras and must be ordered if wanted.

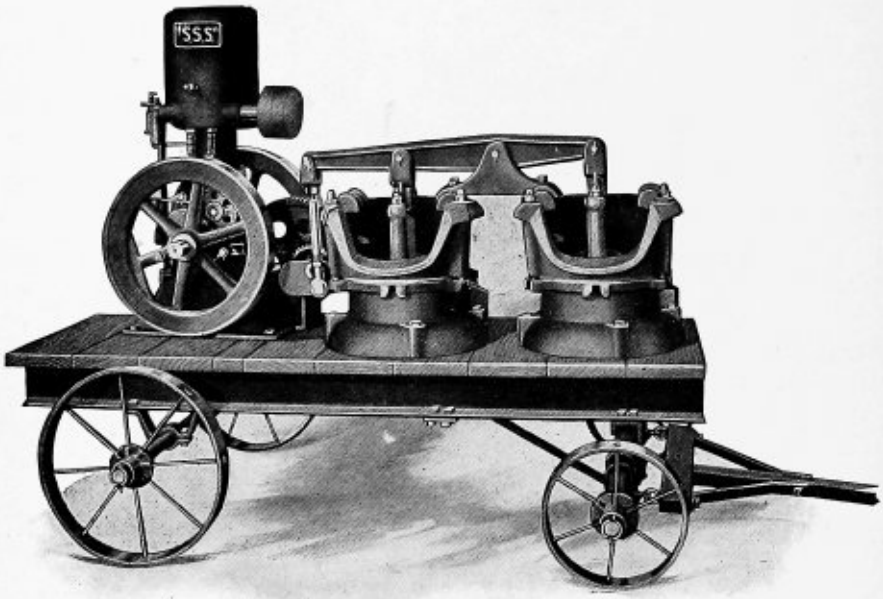
SPECIFICATIONS

"S. S. S." Trench Pumping Outfits

Pump No.	H.-P. of Engine	Pump Cap. Gals. per hr.	Size Suction Pipe, Inches	Shipping Weight, Pounds	Code Word Skid* Mounted
3	"S.S.S." Jr.	3500	3	500	Nor
3	1½ H.-P.	3500	3	550	Norm
3	2½ H.-P.	3500	3	650	Normal
4	2½ H.-P.	6000	4	800	Norther
4	3½ H.-P.	6000	4	900	Now

* When outfit is wanted with truck mounting, add the code word "—truck" to the proper code word of the outfit, as "Northertruck" for No. 4 with 2½ H.-P. "S. S. S." Engine mounted on all steel hand truck.

"S. S. S." Double Trench Pumping Outfit



Y-100-84

"S. S. S." Double Trench Pumping Outfit—Truck Mounted

These outfits are recommended for use where extra large quantities of water must be pumped. For ordinary work, one pump may be disconnected from the engine and the outfit used with the single pump.

SPECIFICATIONS

Pump No.	H.-P. of Engine	Pump Cap. Gals. per hr.	Size Suction Pipe, Inches	Shipping Weight Pounds	Code Word Truck Mounted
Two 3's	3½ H.-P.	7000	3	1100	Northeast
Two 4's	4 H.-P.	12000	4	1350	Northeastern

"S. S. S." Diaphragm Trench Pumps

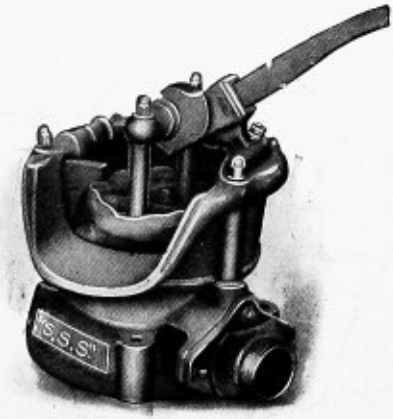
Y-100-85A

This cut represents "S. S. S." Frictionless Non-Chokable Diaphragm Pump, side suction pattern. This Pump, like the one below, is the most efficient hand pump on the market. Has large open valve ways, making it particularly adapted to pumping sewerage, swamps, foundation and trenches.

Number	Size of Pipe Suction	Gallons per Stroke	Gallons per Hour
1	2½ in.	¾	1800
2	3 in.	1½	3600
3	4 in.	2½	6000

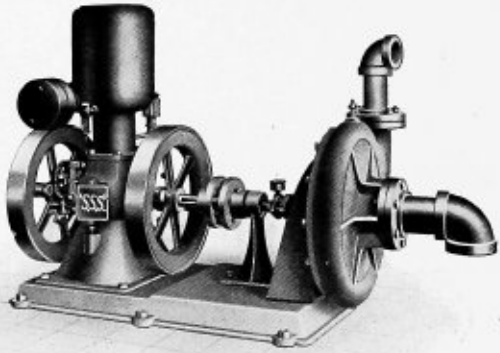
Capacity based on 40 strokes per minute.

This pump is of the renowned Edison Type, of heavy construction through-out. Both these pumps may be secured with bottom suction if so ordered. The Diaphragms used in each pump are made of the finest grade of para-rubber that has demonstrated its superior resistance and will absolutely outwear any other material.



Y-100-85B

"S. S. S." Centrifugal Pumping Outfits



Y-100-86

Direct Connected Type On Cast Base

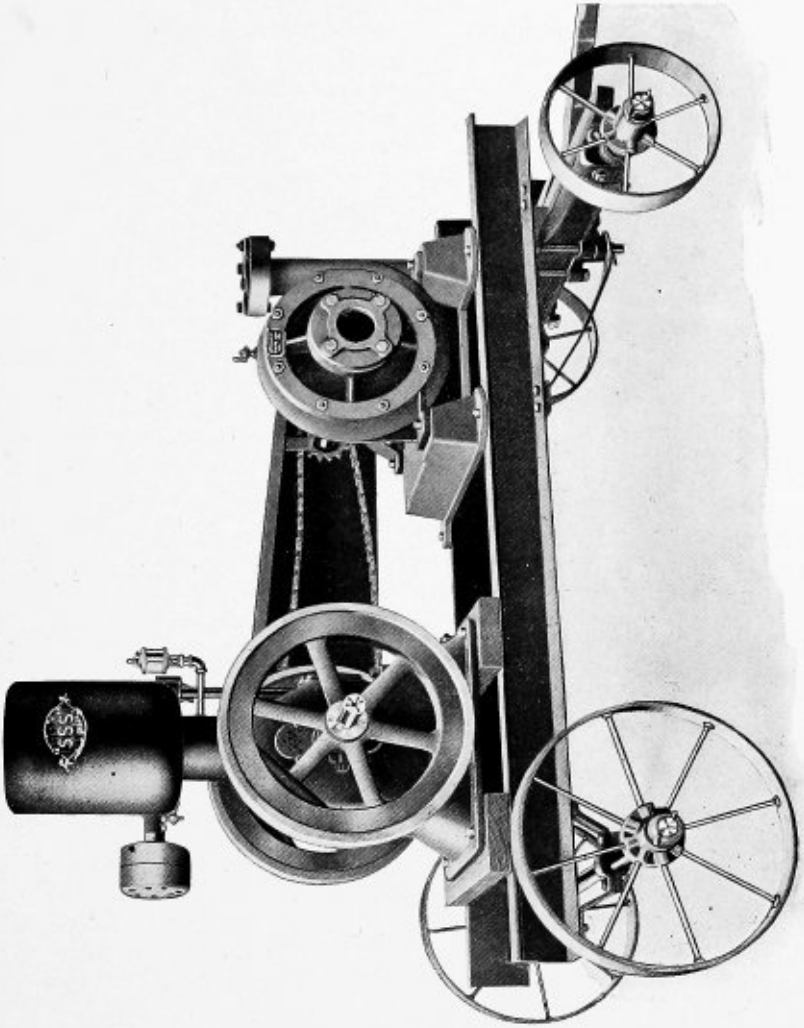
These "S. S. S." Centrifugal Pumping Outfits are of very compact and convenient design, and consist of a "S. S. S." Stationary Engine direct connected by means of a flexible shaft coupling to a centrifugal pump. The entire outfit is mounted on a substantial cast base which forms a rigid foundation for the pump and engine.

SPECIFICATIONS

"S. S. S." Centrifugal Pumping Outfits—Direct Connected Type

Number of Outfit	H.-P. of Engine	Total Head in feet	Capacity Gals. per Min.	Pump Speed R. P. M.	Size Suction Pipe, Inches	Size Discharge Pipe in In.
38	2½	15	90	500	3	2½
39	6	20	480	480	6	5
40	10	20	625	390	8	6

"S. S. S." Centrifugal Pumping Outfits



Y-100-87

"S. S. S." Engine with Automobile Chain Driven Centrifugal Pump Mounted on Steel Truck

"S. S. S." Centrifugal Pumping Outfits

Chain Driven Type

These outfits are our regular "S. S. S." Engines, connected by automobile driving chain to a single stage, single suction, horizontal shaft, centrifugal pump—the entire outfit being mounted on a channel steel base or steel truck as may be desired.

The pumps are exceptionally well built throughout, and so designed that all counter currents are eliminated.

The impeller is of the open type, and the vanes are of the correct shape to insure the highest efficiency under normal conditions. The shaft is of the open hearth high carbon steel, and of ample strength to transmit the maximum power. All bearings are provided with grease cups, and stuffing box is fitted with brass water sealing ring, to insure a perfect vacuum.

The engine drives the pump by sprockets and automobile transmission chain, insuring a positive, quiet running outfit. The sprockets and chain are guaranteed to be of ample strength to transmit double the power developed in these outfits and are thoroughly tested before using. Drive chain is enclosed in a guard, and the entire outfit is mounted on channel steel beams to insure the perfect alignment of pump and engine.

We can furnish outfits with other capacities and heads. If you have a special case, write us with details of what you want.

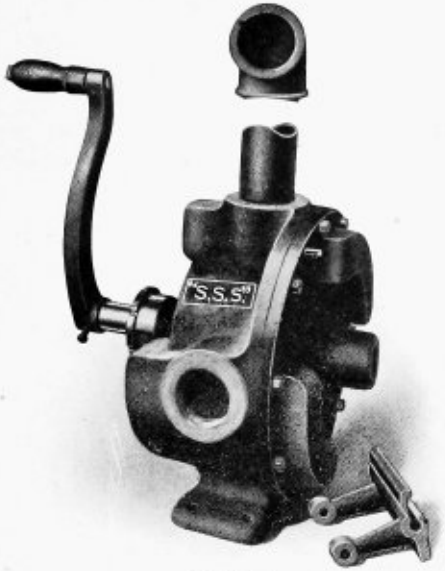
SPECIFICATIONS

"S. S. S." Centrifugal Pumping Outfits—Chain Driven Type

No. of Outfit	H.-P. of Engine	Total Head in Feet	Capacity Gal. P. Min.	Speed R. P. M.	Size Suc. Pipe in In.	Size Discharge Pipe in In.	Code Word
30	2½	20	75	1000	3	2	Nice
31	3½	30	120	1320	3	2	Niche
32	3½	35	140	1025	3	2½	Nick
33	5	40	160	1150	3	2½	Nickle
34	4	30	190	825	4	3	Niece
35	6	30	250	900	4	3	Nigh
36	6	30	300	580	5	4	Night
37	10	35	420	700	5	4	Nightfall

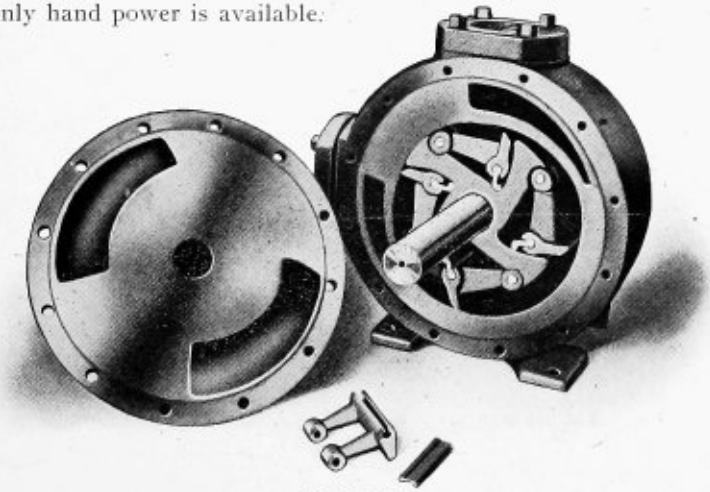
MANUFACTURERS

"S. S. S." Positive Pumps



Y-100-89A

This cut illustrates our No. 7 hand pump, made of either iron or bronze, having 2-in. pipe connections. This makes an ideal pump for transfer service where only hand power is available.

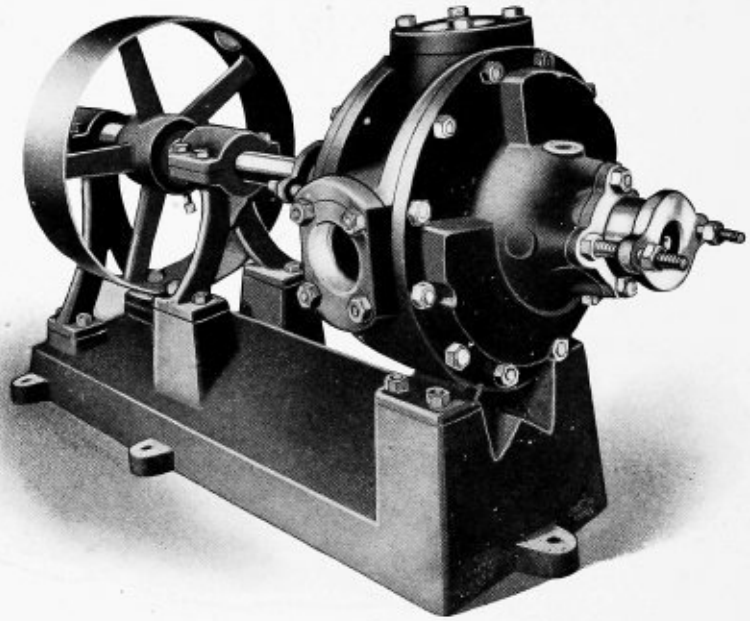


Y-100-89B

This cut shows parts and buckets

MANUFACTURERS

"S. S. S." Positive Pumps



Y-100-90

The above cut illustrates our High Pressure pumps, which we build of either iron or bronze having capacities ranging from 35 to 400 gallons per minute and suitable for working against heads up to 150 feet.

If so desired, we can furnish these pumps mounted on heavy iron sub-base and equipped with cut gears for connection to any style or make of engine or motor.

SPECIFICATIONS

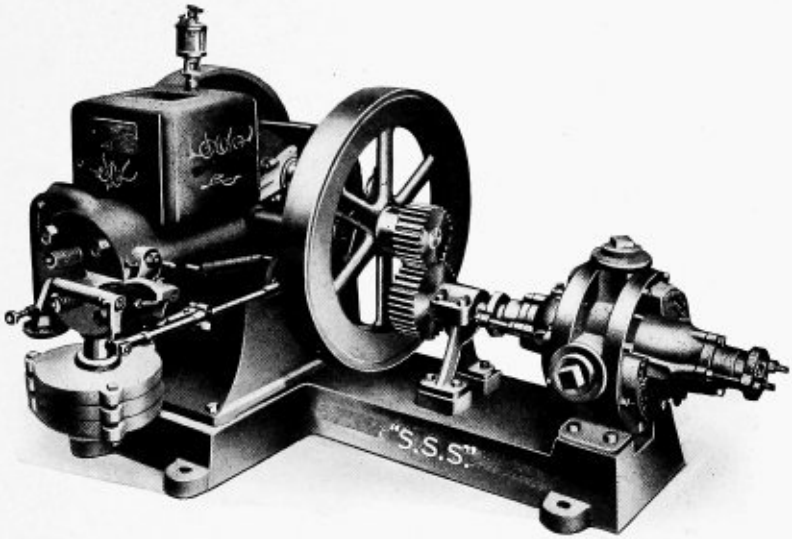
Number of Pump		Normal Capacity R. P. M.	Pipe Connections	Normal Speed R. P. M.	Size of Pulleys	Floor Space	Weight Pounds
A-1½	L. P.	50	1½	275	16x4	12x36	200
A-2	L. P.	100	2	200	20x5	15x45	400
A-3	L. P.	200	3	150	28x6	20x56	775
A-5	L. P.	300	5	130	36x8	30x72	1250
7	Hand		2			13x13	125
2	H. P.	50	2	275	16x4	12x36	250
2½	H. P.	100	2½	200	20x5	15x45	500
3½	H. P.	200	3½	150	28x6	20x56	900
5	H. P.	300	5	130	36x8	30x72	1500

For intermittent service, pumps may be run at a higher speed than listed above. The capacity will vary with the speed. Acid-Resisting Bronze Pump built special.

Note:—L. P. (Low Pressure), 75 ft. H. P. (High Pressure), 150 ft.

"S. S. S."

Positive Pumps with Gasoline Engine



Y-100-91

The above cut illustrates our "S. S. S." Positive Gasoline pumping unit. Built in sizes 2, 2½ and 3½, having capacities of 50, 100 and 250 G. P. M. each.

If so desired we can mount two pumps on one base and connect them to engine by means of friction gears so that either pump may be thrown in or out without stopping the engine.

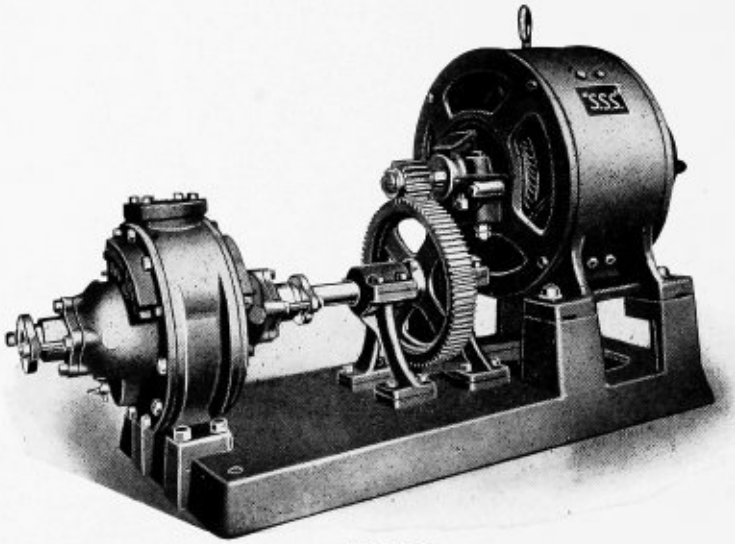
Specifications same as electric motor.

*Engine not included in weight of geared unit.

†Will vary according to style of engine used.

For specifications see page 92.

"S. S. S."
Positive Pumps with Electric Motor



Y-100-92

No. Pump	Size of Suction and Exhaust	BELTED Weight Iron	BELTED Weight Bronze	BELTED Floor Space	BELTED Size of Pulleys	GEARED *Weight Iron	GEARED *Weight Bronze	GEARED †Floor Space	Normal Speed, R. P. M.	Normal Capacity G. P. M.
2	2	240	260	11x30	15x 4	450	470	20x36	275	50
2½	2½	465	510	14x46	20x 6	650	695	28x54	200	100
3½	3½	965	1040	20x60	24x10	1350	1425	36x72	150	200

* Motors not included in weight of geared unit.

† Will vary according to style of motor used.

The above cut illustrates our high pressure electric pumping units which are built in sizes shown above, suitable for working against heads up to 150 feet. These pumps can also be mounted for belt drive or for direct connection by means of gears to steam, gas or gasoline engine.

"S. S. S." "Niagara" Double-Acting Horizontal Force Pump

Adjustable Lever, Brass-Lined Cylinder

Y-100-93

The illustration represents our Horizontal Double-Acting Force Pump, with adjustable lever and brass-lined cylinder. The piston rod, valves and valve seats are bronze. The nuts on the rods on either side of pump are brass, so that all parts of the pump exposed to the action of water are non-corrosive. At each end of pump are brass plugs for emptying it of water to prevent freezing, while there is another and larger one for priming the pump when necessary. The valves are readily laid bare by unscrewing the brass nuts on the side of air-chamber. By removing the air-chamber the upper valves are exposed, and the lower ones are accessible by the removal of the body of pump.

Always fitted, suction and discharge, for iron pipe, unless otherwise ordered.

Furnished with or without plank.

DIMENSIONS

No.	Diam. cylinder	Stroke	Suction fitted for	Discharge fitted for	Brass lined Cipher	Brass cylinder Cipher	Brass Cipher
2	2½ in.	4½ in.	1¼ in.	1 in. pipe	Cider	Yearning	Circuit
4	3 in.	4½ in.	1¼ in.	1 in. pipe	Cinder	Yeast	Churn
8	4 in.	4½ in.	1½ in.	1¼ in. pipe	Citron	Yell	Claimer
12	5 in.	5 in.	2 in.	1½ in. pipe	Cigar	Yellow	Clamber
16	6 in.	5 in.	2½ in.	2 in. pipe	Zoology	Yellowish	Zorah

Capacity per revolution. No. 2, .19 gal.; No. 4, .28 gal.; No. 8, .49 gal.; No. 12, .85 gal.; No. 16, 1.5 gal.

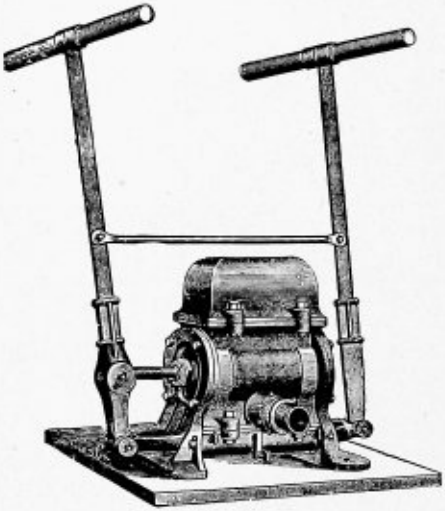
Lift and force. No. 2 and 4, 150 feet; No. 8, 12 and 16, 100 feet.

Brass pumps are made entirely of brass, except levers, links and bolts.

Total lift and force from supply to point of delivery, pump not more than 25 feet above water.

"S. S. S." "Niagara" Double-Acting Horizontal Force Pump

With Brass-Lined Cylinder and Double Levers



Y-100-94

This illustration represents another style of our celebrated "S. S. S. Niagara Double-Acting Pumps, very strong, durable and effective, and which must engage the attention of our many patrons and friends.

The Cylinder is lined with brass, the piston rod, valves and valve seats are of bronze, the nuts on the bolts at the side are of brass, so that all parts of the pump exposed to water are non-corrosive.

For use on ships, wharves, about factories, mills, warehouses, etc., it is capable of inestimable service.

Both suction and discharge fitted for hose, unless otherwise ordered. Can be fitted for wrought iron pipe if desired.

DIMENSIONS

No.	Diam. cylinder	Stroke	Suction fitted for	Brass lined Cipher	Brass cylinder Cipher	Brass Cipher
8	4 in.	4½ in.	1½ in.	Yelping	Yoeman	Yet
11	5 in.	5 in.	2 in.	Chopper	Yes	Chowder
16	6 in.	5 in.	2½ in.	Chosen	Yesterday	Chorus

Discharge fitted for No. 8, 1¼ in. pipe; No. 12, 1½ in. pipe; No. 16, 2 in. pipe;

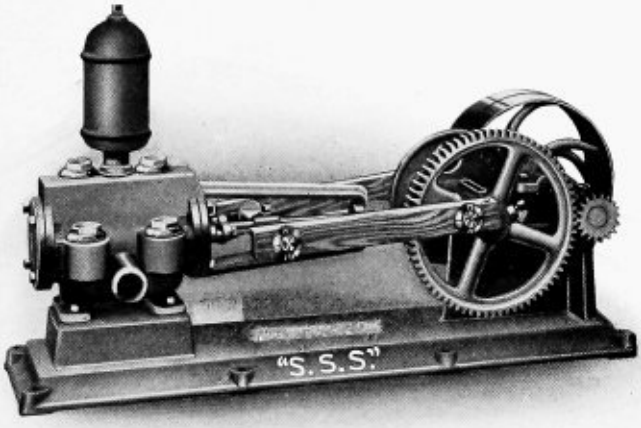
Capacity per revolution, No. 8, .49 gal.; No. 12, .85 gal.; No. 16, 1.50 gal.

Lift and force. Nos. 8, 12 and 16, 125 feet.

Brass pumps are made entirely of brass except levers, links and bolts.

Total lift and force from supply of delivery pump not more than 25 feet above water.

"S. S. S." "Panama" Double-Acting Horizontal Force Pump



Y-100-95

"S. S. S." Panama Double-Acting Horizontal Force Pump, is one of the latest additions to our line. It has been designed to be used where the duties are not severe enough to require a monitor pump. This pump is one of the neatest, most compact and strongest pumps of this class on the market. A special feature is the valve arrangement. The valves are all on the outside of the pump where they can be readily exposed or taken out by merely removing the individual caps directly over them, thus the discharge, suction or any part of the pump other than the caps referred to, need not be disturbed to take out or expose the valves.

The base is of cast-iron, ridged and occupies a floor space of 40x10 inches. The bearings are all babbitted. The piston rod is steel brass cased. The valves are brass and have brass seats. Each valve has a separate valve box. The pump is furnished with either 2½- or 3-inch lined cylinder, also tight and loose pulleys 2¼x12 inches, and when carefully crated for shipping weighs 230 lbs. Back geared 4 to 1.

DIMENSIONS

No.	Diameter Cylinder	Stroke	Suction fitted for pipe	Discharge fitted for pipe	Capacity per complete stroke
2	2½ inches	5 inches	1¼ inch	1 inch	.21 gallons
4	3 inches	5 inches	1½ inch	1¼ inch	.31 gallons

"S. S. S." "Wonder" Double-Acting Tank Pump Lift and Force 75 feet

Y-100-96

This represents our "S. S. S." Wonder Improved Tank Pump. The cylinder is double-acting, 5 inches in diameter, with 5-inch stroke, has metal discharge valves, brass valve seats. The check valves also have brass valve seats.

The hose connections are all reversible and may be turned in any direction. The suction is fitted for 2-inch hose and the discharge for 1-inch. The body of the pump is threaded inside the suction and discharge openings for 2-inch pipe by removing the suction tube and goose neck spout pipe may be connected without the use of any fittings.

The solid piston rod operates through a brass stuffing-box without any side thrust and the long wood lever makes the labor light. The waterways are large and direct, and the capacity is from 1½ to 2½ barrels per minute, according to the rapidity of operation.

Pumps are fitted with strainers, hose couplings and clamps.

DIMENSIONS

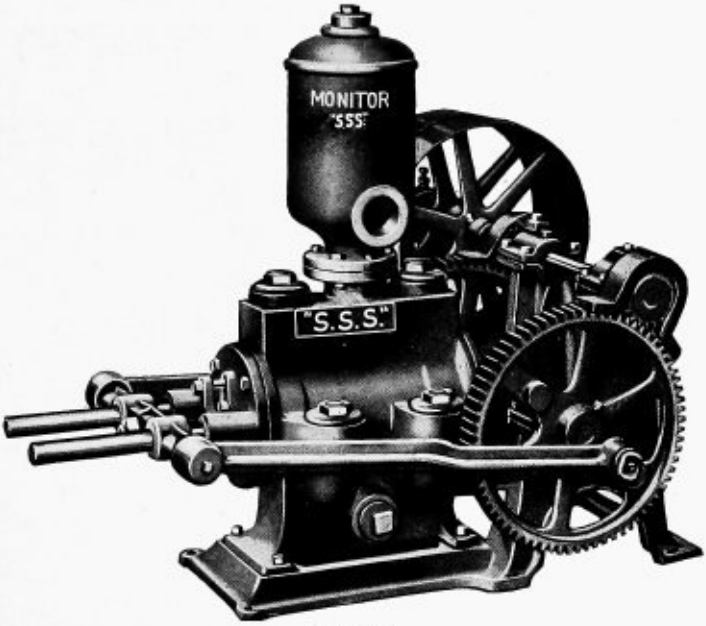
	Diameter cylinder	Stroke	Capacity per revolution	Suction	Discharge	Lift and force	Weight
Pumps, Strainers Couplings and Clamps	5-inch	5-inch	.85 gal.	2-in. hose or 2-in. pipe	1-in. hose or 2-in. pipe	75 ft.	83 lbs.

Outfit No. 1. Tank Pump with 15 ft. of 2-inch Spiral Suction Hose, 12½ ft. 1-inch 3-ply Discharge Hose, Couplings and Nozzle complete

Outfit No. 2. Tank Pump with 20 ft. of 2-inch Spiral Suction Hose, 12½ ft. 1-inch 3-ply Discharge Hose, Couplings and Nozzle complete

Outfit No. 3. Tank Pump with 25 ft. of 2-inch Spiral Suction Hose, 12½ ft. 1-inch 3-ply Discharge Hose, Couplings and Nozzle complete

"S. S. S." Monitor Power Pumps



Y-100-97

View of No. 2 and 3 showing location of valves, back head with guides for piston, the way in which the cylinder is bolted to the base.

VALVES: The Valves on the "S. S. S." Monitor Pumps are extra heavy, of bronze and have bronze metal seats. Each valve has a separate valve box, and all are on the outside of pump where they can easily be exposed to view by merely removing the cap on the valve box.

PLUNGER: The Plunger has two crimps made of leather, especially treated for this use. The plunger or piston rod is steel, brass cased. No. 2 and 3 is 7/8-inch and No. 4 and 5 is one inch in diameter. The rear rest consists of two steel guides which prevents any chance of the piston becoming out of line. The piston packing is tightened by means of stud bolts so there is never any trouble in the way of keeping the piston thoroughly packed.

"S. S. S." Monitor Power Pumps

GEARING. "S. S. S." Monitor Pumps have double gears and are back geared 4 to 1. The gears on Nos. 2 and 3 are 12 inches in diameter and have 1½-inch face. The gears on Nos. 4 and 5 are 15 inches in diameter and have 1⅜-inch face. Pinions on Nos. 2 and 3 are 3½ inches in diameter, on Nos. 4 and 5 are 4 inches in diameter. The gears are fully protected by guards.

BEARINGS. The bearings are all babbitted. The main bearings on Nos. 2 and 3 are 2¼ inches in width and the outside bearing is 2 inches in width. The main bearings on Nos. 4 and 5 are 3½ inches in width, and outside bearing is 5 inches in width.

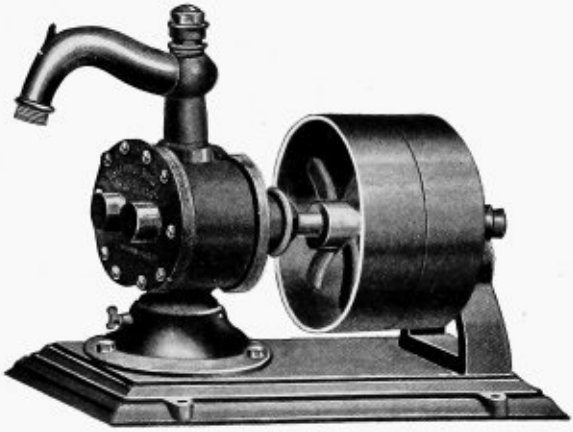
SUCTION AND DISCHARGE. The suction may be taken from either side. The discharge may be turned in any one of four directions.

DIMENSIONS

No.	Diam. of cylinder	Gal. per stroke	Gal. per hour	Size of suction	Size of discharge	Pulleys	Floor space	Height over all	Cubical contents
2	2½ in.	.212	500	1½ in.	1¼ in.	2½x14	28x40	29 in.	32480
3	3 in.	.304	720	1½ in.	1¼ in.	2½x14	28x40	29 in.	32480
4	4 in.	.542	1300	2 in.	2 in.	4 x16	36x42	35 in.	52920
5	5 in.	.84	2000	2 in.	2 in.	4 x16	36x42	35 in.	52920

MANUFACTURERS

"S. S. S." Rotary Force Pump



Y-100-99A

This illustration represents our "S. S. S." Rotary Force Pump for Power purposes, being mounted on a heavy cast iron base or frame and provided with tight and loose pulleys, supported by bearings with babbitted boxes. Drip plugs are provided to drain the pump and prevent freezing. This pump can be run at a very high rate of speed and is very useful for fire purposes; can be operated against a pressure of 40 pounds and will throw water from 100 to 150 feet horizontally.

Total vertical life and force 60 feet from supply to point of delivery. Pump not over 20 feet above water. Fitted regular for iron pipe, but will be furnished fitted with either hose or lead pipe when so ordered.

Bronze pumps of bronze material, except frame, bearings and pulleys. Furnished with metallic check valves for pumping hot liquids, if so desired.

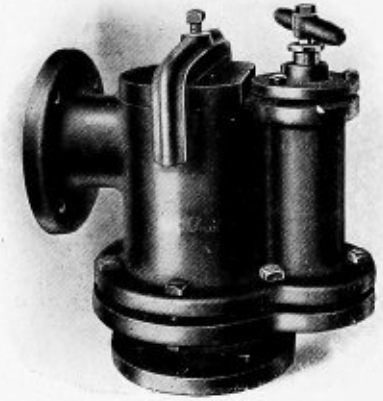
"S. S. S." Rotary Force Pump, Y-100-99B (not shown here), for power purposes. This pump is of the same style and design as Y-100-99A, excepting that it has no spout and is adapted for pumping to elevated tanks, etc.

DIMENSIONS

	No.	Suction fitted for pipe	Discharge fitted for pipe	Discharge per minute at 100 revolutions	Weight
Y-100-99A	1	1¼ in.	1 in.	13 gals.	67 lbs.
	2	1¼ in.	1 in.	14 gals.	70 lbs.
	3	1½ in.	1¼ in.	17 gals.	74 lbs.
	4	1½ in.	1½ in.	27 gals.	134 lbs.
	5	2 in.	2 in.	36 gals.	143 lbs.
	6	3 in.	3 in.	55 gals.	205 lbs.
Y-100-99B	1	1¼ in.	1 in.	13 gals.	64 lbs.
	2	1¼ in.	1 in.	14 gals.	67 lbs.
	3	1½ in.	1¼ in.	17 gals.	71 lbs.
	4	1½ in.	1½ in.	27 gals.	127 lbs.
	5	2 in.	2 in.	36 gals.	137 lbs.
	6	3 in.	3 in.	55 gals.	189 lbs.

"S. S. S."

Hand Primer for Centrifugal Outfit



Y-100-100

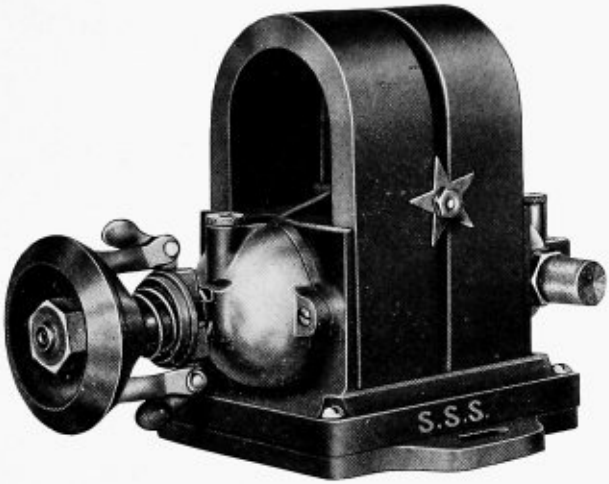
Hand Primer for "S. S. S." Centrifugal Pump.

Any of our "S. S. S." Centrifugal Pumping Outfits can be furnished on special order with a hand primer bolted to the suction flange of the pump. This primer acts as a suction hand pump, and is used to fill the centrifugal pump with water for starting.

Constructed of high grade material and practically indispensable to the modern contractor. Will pay for itself in a short time by the labor and time saved in starting.

MANUFACTURERS

"S. S. S." Magnetos



Y-100-101A

High duty magnetos, with either bevel or straight face drive with Automatic Governor to regulate speed for Jump Spark or Make and Break ignition on 1, 2, 3 and 4 cylinder engines.

COILS

Jump Spark—Make and Break, for 1, 2, 3 or 4 cylinder engines.

"S. S. S." Dry Batteries

SPECIAL IGNITION CELLS

Y-100-101B

White Hot Spark

High amperes—Uniform Voltage—Long Life.

"S. S. S." Storage Batteries

Designed for

Isolated Lighting and Power Plants, Laboratories, Telephone Exchanges, Automobile Service, Motor Boat Lighting and Ignition

and all work where a stationary battery is needed, that may be allowed to stand in a charged or partially discharged condition for a few weeks or months without suffering loss of capacity or permanent injury.

Y-100-102

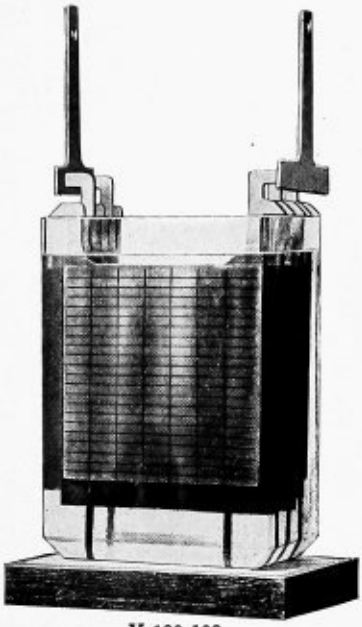
PORTABLE OUTFIT—TYPE L

Type	Volts	Capacity amp. hrs.	Width	Length	Height	Weight complete in lbs.
			Outside dimensions of oak case in inches			
3-L	6	25	7 3/8	5 3/8	7 3/4	22
5-L	6	50	7 3/8	7 5/8	7 3/4	30 1/4
7-L	6	70	7 3/8	10 1/8	7 3/4	39
9-L	6	80	7 3/8	12 1/16	7 3/4	48 1/2
11-L	6	100	7 3/8	14 1/8	7 3/4	59

"S. S. S." Storage Batteries

In an isolated house lighting plant, for instance, no one can afford to give a battery the attention required to recharge it more often than once every week or two. The successful battery for this service must hold its charge when current is not being taken from it, and it must be so constructed and be of such a type that it will not suffer permanent injury when allowed to stand in a charged or partially discharged condition for periods of a week to a month or more. For service on automobiles, auto trucks and concrete mixers it cannot be excelled.

The construction of the modern Faure or pasted plate is such that, if made from pure materials, it will retain its charge and not be permanently injured when allowed to stand in a charged or partially discharged condition. Not every battery of the pasted type, however, possesses the exacting requirements of intermittent service. In order to produce a battery of high capacity and efficiency, that will retain its charge, only the purest materials can be used in its manufacture.



Y-100-103
One Hundred Ampere Hour
Type E Cell

By the use of the purest materials obtainable, including distilled water and chemically pure acid, by rigid inspection at every stage of manufacture, and by constant check on all materials by chemical analysis, we are able to produce a durable and uniform product of the highest capacity, low internal resistance and free from self-discharge.

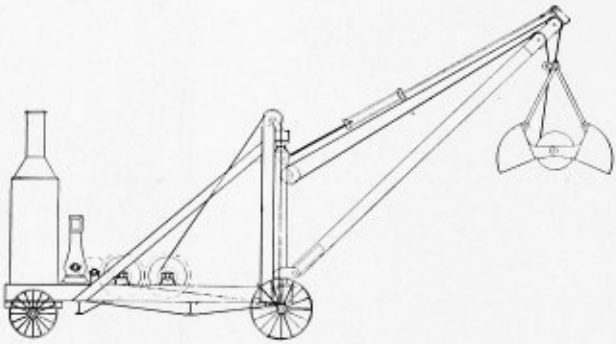
TYPE E

Size of plates 7¾ inches by 7¾ inches.

No. of plates per cell	Capacity at 8 hour rate amp. hours	Outside dimensions of glass jars in ins.			Weight in pounds	
		Length	Width	Height	Acid only	Complete cell
3	50	9	3⅝	12	10	33
5	100	9⅛	5¾	12	14	51¼
7	150	9⅛	6½	12	21	63
9	200	9⅛	8¾	12	24	76
11	250	9¼	11¼	12	35	92
13	300	9⅛	12⅛	12	36	112

Price, complete, include elements with separators, glass jars, electrolyte, and one bolt connector per cell. Cells of higher or lower capacity will be furnished when required.

"S. S. S." Stiff Leg Derrick on Truck for Steam Power



Y-100-104

Self-Lubricating Bushings in all Sheaves

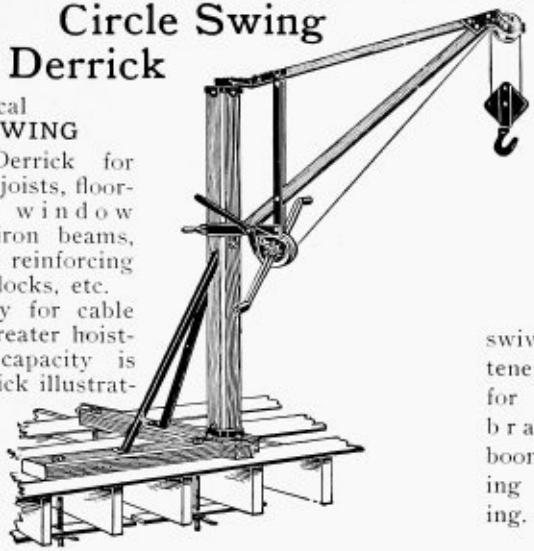
LIST OF IRONS FURNISHED WITH DERRICK

1 Mast and Boom Bottom with Double Step. Mast furnished as specified either 8-10-12-14 inches. 1 Mast top. 1 Mast Bracket with Double Sheave. 1 Boom Point Band. 2 Top Stiff Leg Irons. 1 Boom Sheave.

"S. S. S." Lightweight Champion Circle Swing Builders' Derrick

The most practical **CIRCLE SWING** hand power Derrick for hoisting timber, joists, flooring, door and window frames, stone, iron beams, girders, concrete reinforcing bars, concrete blocks, etc.

Drum capacity for cable is 160 feet; if greater hoisting or cable capacity is wanted see derrick illustrated below.



Y-100-105A

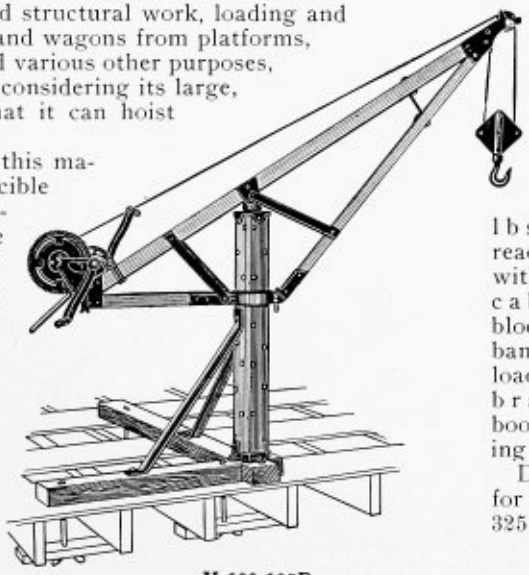
Height 8 ft. Swing 12 ft. Capacity 1500 lbs. Weight 250 lbs. Equipped ready for hoisting with 110 ft. cable, swivel block, fasteners, band brake for load, boom brake to keep boom from swinging when hoisting.

"S. S. S." Reinforced Circle Swing Builders' Derrick

For building and structural work, loading and unloading cars and wagons from platforms, well digging and various other purposes, it has no equal, considering its large, capacity and that it can hoist 300 feet.

The fittings on this machine are all crucible steel and malleable including the geared winch, which makes the derrick safe and durable.

We make this Derrick if desired so that it can be used by hand or power at a slight additional charge.



Y-100-105B

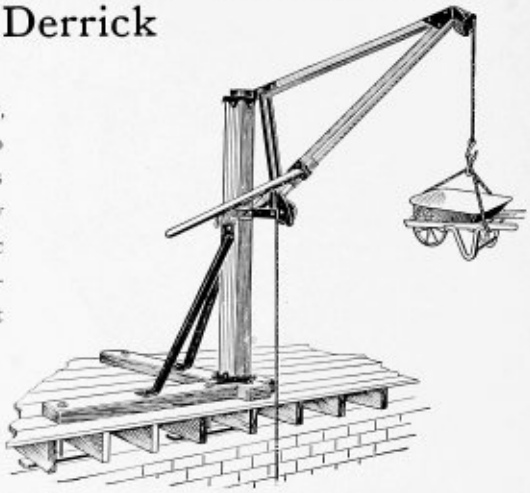
Height 8 ft. Swing 10 ft. Capacity 2500 lbs. (Using cable triple.) Weight 350 lbs. Equipped ready for hoisting with 150 ft. $\frac{5}{8}$-in. cable, swivel block, fasteners, band brake for load and boom brake to keep boom from swinging when hoisting.

Drum capacity for cable is 300 to 325 ft.

MANUFACTURERS

"S. S. S." Circle Swing Wheelbarrow Derrick

For hoisting brick and mortar, stone, etc., on buildings two to five stories and where stories are added. Can be used by horse, gas, gasoline, electric or steam power, outside or inside of buildings. Easily set up and removed.



Y-100-106A

Y-100-106B

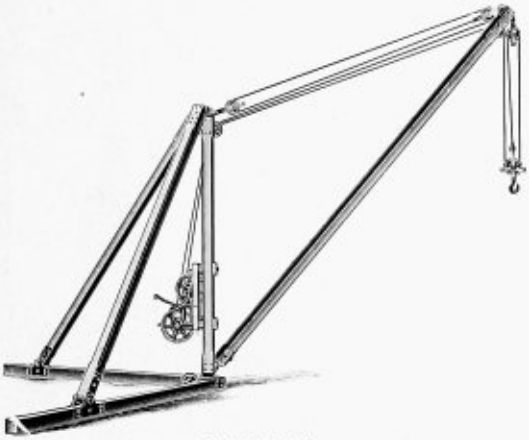
Our regular circle swing mast is fitted so that either hand or power boom can be used on the same, so that by having one mast with two booms it can be used by hand, horse or other power.

This illustration shows the derrick at work.

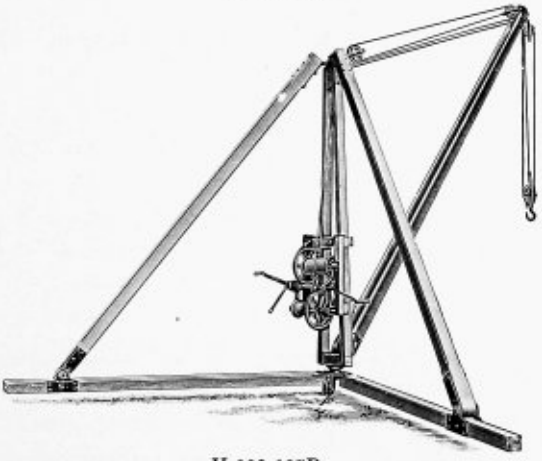
Our 1913 machines are fitted with a boom hinge so that the booms can be put on or taken off the mast within an instant.

MANUFACTURERS

"S. S. S." Stiff Legged Derrick



Y-100-107A



Y-100-107B

Built with a split mast and boom, and fitted throughout with malleable and crucible steel fittings, making it light and strong, and arranged so that it can be operated by hand or power. For hoisting by power all that is necessary is to run the cable from the top to the bottom sheave frame, which is located under the boom seat and back to hoist, or where hoist is used, stories underneath the derrick cable is run through the mast bottom seat to a snatch block below and then to hoist.

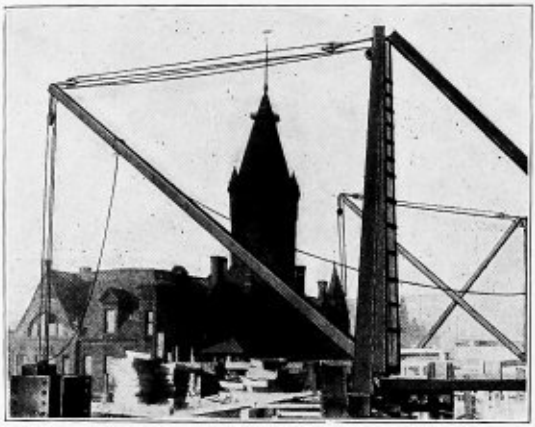
LIGHT, STRONG AND QUICKLY SET UP OR TAKEN APART

and for this reason it is especially handy on buildings. The gears and frames of our double drum hoisting winch is also made of malleable and crucible steel, which saves the breakage of gears.

Any capacity up to eight ton.

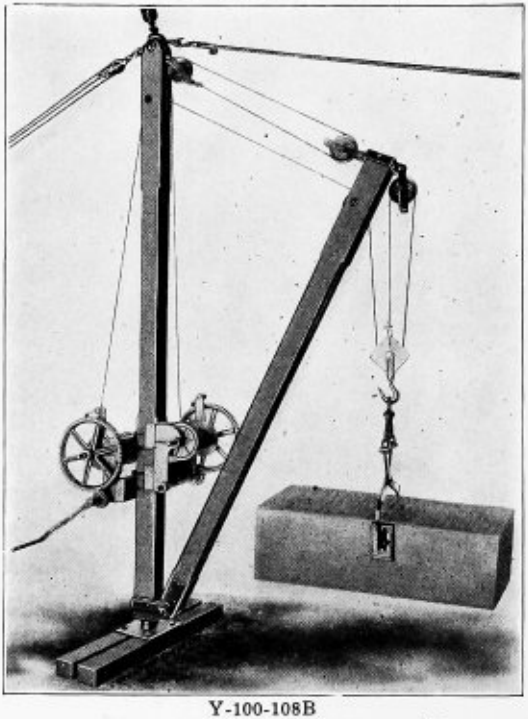
"S. S. S." Stiff Legged Derrick

At work during the construction of an 8-story reinforced concrete structure setting iron beams, hoisting and distributing concrete with large buckets.



Y-100-108A

"S. S. S." Guy Line Derrick

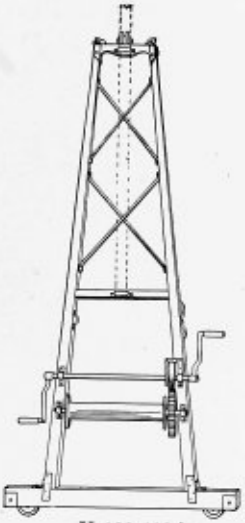


Y-100-108B

This derrick is also very handy for building purposes, especially where full circle swing is necessary or where there is not sufficient room to set up a Stiff Legged Derrick. This illustration shows that the derrick is guyed by fish tackle guy lines, which enables the derrick to be set up quickly and to keep the guy lines perfectly tight.

PRICES on **GUY LINE DERRICKS** will be furnished on application specifying length of mast and boom.

"S. S. S." Setter Derricks

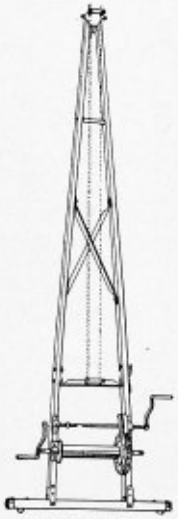


Y-100-109A

Have many improvements over the old style Setter Derricks, which are worth your while considering. The top frames of our Setter Derricks are made of the best malleable iron, equipped with two sheaves, does away with the block on top, and increases the hoisting height about two feet. Have lugs for guy lines in front and back, and also clamps for fastening extension pole. Our top frames are extended forward which enables to hoist the load without scraping the derricks. The shaft boxes are so arranged that the drum and gear shafts can be taken out without loosening bolts which hold the boxes. The bottom and side pieces are connected with two malleable castings. This makes a very strong connection. We square ends of gear and drum shafts so that the handles can be used on either. By using a single block the fall line can be regulated to single, double, or triple, according to work being done.

"S. S. S." Top Point Setter Derrick

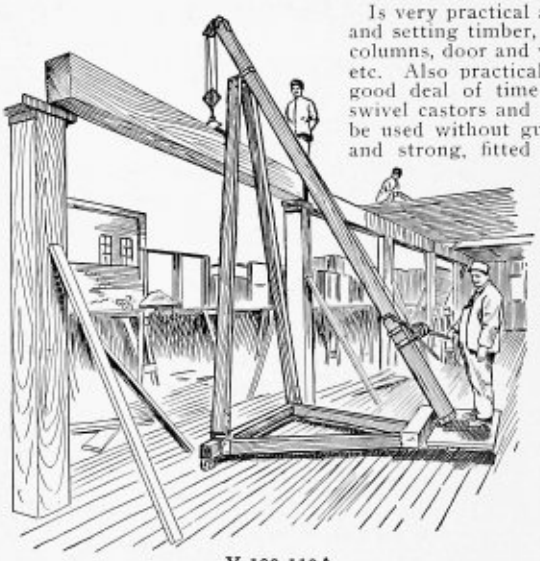
Is recommended very highly for setting structural iron, stone, heavy joists, girders, etc., where loads range from 1½ to 2 tons. It is light and handy to get around with, especially where it is used from floors above. It is equipped with top sheave frame which has lugs for guy lines in back and front, also clamps for extension pole, steel gears with shaft boxes so arranged that the drum and gear shafts can be taken out without loosening bolts which hold the boxes. Fitted throughout on the same style as our **REGULAR SETTER DERRICK** with the exception of being built lighter, and weighing only about ⅔ of what the Regular Setter Derrick of the same length would weigh.



Y-100-109B

"S. S. S." "A" Frame Derrick

Is very practical and desirable derrick for hoisting and setting timber, girders, heavy joists, iron beams, columns, door and window frames, stone, terra cotta, etc. Also practical for laying sewer pipe, saving a good deal of time and labor as it is mounted on swivel castors and can be easily rolled around. Can be used without guy lines or fastening. Built light and strong, fitted with malleable fittings. By removing 4 bolts it comes in 4 parts which makes it handy and easy to set up and take apart. Height 17 to 18 ft. Capacity 2000 or 2500 lbs. Weight 500 lbs. equipped. Complete ready for use with winch, 125 ft. cable and block.

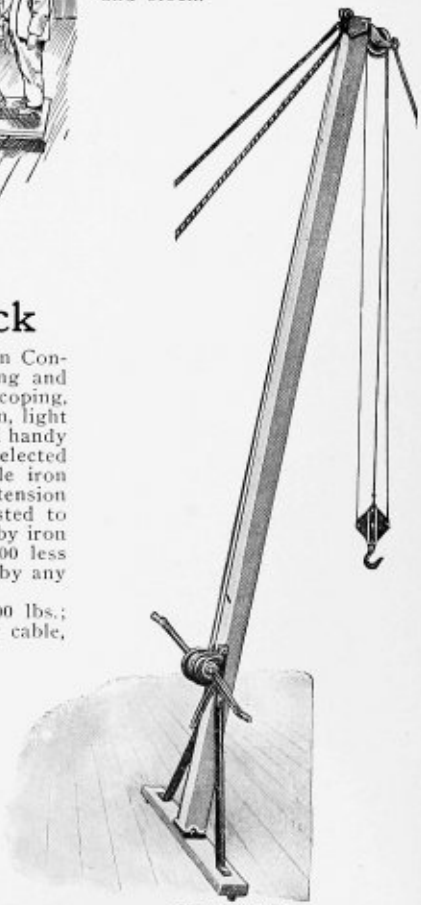


Y-100-110A

"S. S. S." Pole Derrick

Is extensively used by Carpenter and Mason Contractors and also by Iron Setters for hoisting and setting columns, girders, heavy joists, stone, coping, terra cotta, etc. It is practical in construction, light in weight, quick and powerful in operation and handy to move around. Pole is built of 5½x5½ in. selected wood, 4x6 in. 6 ft. bottom, fitted with angle iron braces and best malleable castings, and extension sheave frame which enables load to be hoisted to top without scraping pole. We are informed by iron setters that they are able to set iron for $1.00 less per ton with one of these Pole Derricks than by any other method they know of.

Weight, 200 lbs.; capacity, 1800 lbs. or 2500 lbs.; equipped with 110 ft. ⅞-in. standard hoisting cable, swivel block, and winch ready for use.



Y-100-110B

Y-100-111A

"S. S. S." Tripod Derrick

Is well adapted for laying sewer pipe, handling burial vaults, setting grave stones and many other purposes. This derrick is made with a capacity of 1500 to 2500 pounds. Height about 10 feet. Equipped with winch, block and cable.

"S. S. S." Traveling Crane

Y-100-111B

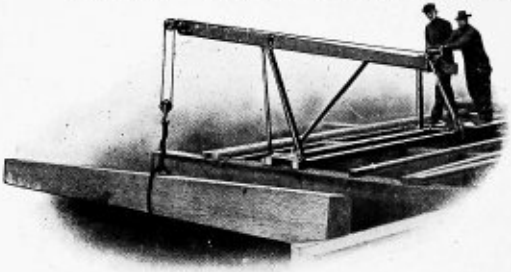
Photo taken at Montrose Cemetery, Chicago.

Height, 8 ft. Width, 9 ft. Capacity, 1½ ton. Equipped with geared winch, cable and block ready for use.

This photo shows the Crane handling burial vaults, and for the reason that it is equipped with rollers at the bottom, so that the same can be rolled about, it is very handy in this kind of work. The Crane is also very practical for small stone yards or for laying sewer pipe and many other classes of work.

MANUFACTURERS

"S. S. S." FOLDING GRASSHOPPER DERRICK



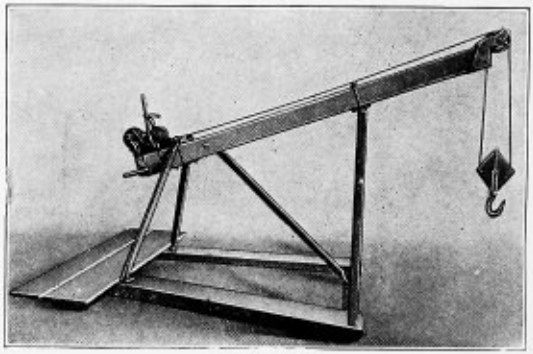
Very handy for raising and setting joists from top, inasmuch as when there are a few joists set, the machine can be placed on them and joists can be raised and set very rapidly.

The machine is about 8 ft. long and can be folded together when through using for removal. Weight about 250 lbs.

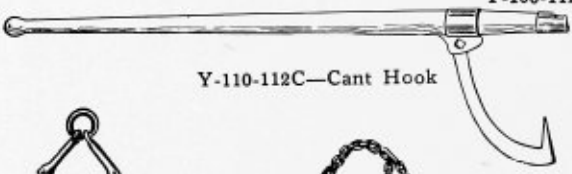
Y-100-112A

"S. S. S." Folding Roofers' Derrick

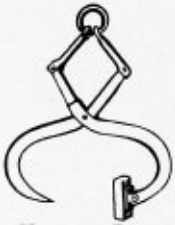
This derrick is built very light and so it can be folded together and easily taken apart if necessary in order to get the derrick on the roof. The length of the derrick is about 6 ft. The weight is about 175 lbs. This derrick is built for hand power and can be used by horse-power by fastening a rope block to the top of the derrick.



Y-100-112B



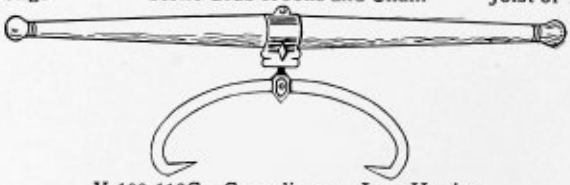
Y-110-112C—Cant Hook



Y-100-112D
Stone Tongs

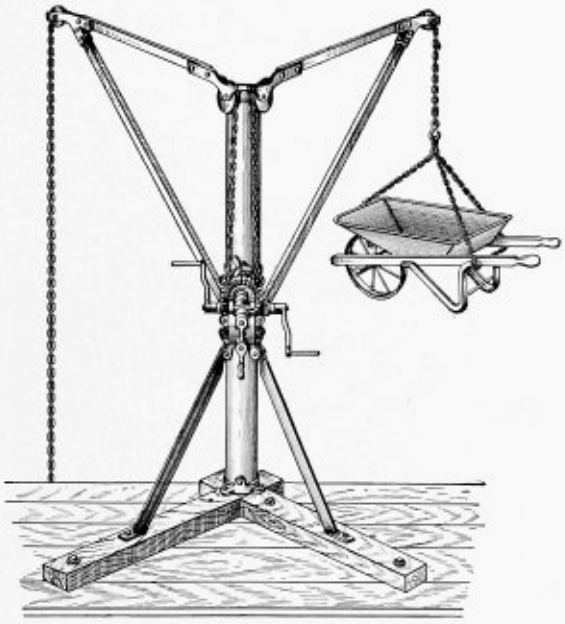
Y-100-112E
Stone Grab Hooks and Chain

Y-100-112F
Joist or Timber Tongs



Y-100-112G—Grappling or Lug Hooks

"S. S. S." Circle Swing Double Boom Wheelbarrow Derrick



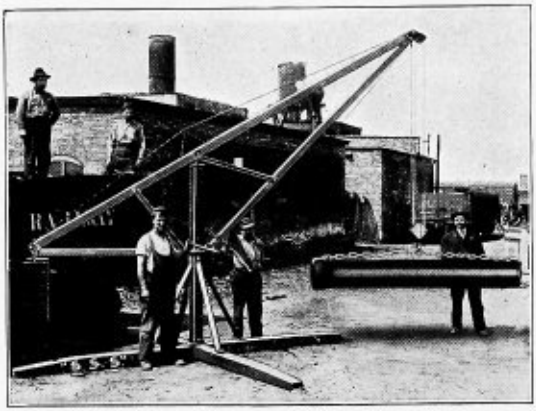
Y-100-113

The only derrick of its kind on the market with a full circle swing and a double boom that will hoist the loaded wheelbarrow and let down the empty one at the same time, and that can be used for hoisting loads from the outside or inside of the building. Fitted so that the handles are continuously turned forward as by shifting gears the drum will work either right or left which makes it much more convenient than to turn the handles forward and backward, to raise and lower wheelbarrows. This winch is also equipped with a small gear which works on the collar around the mast to which a handle is connected to swing the boom right or left. It has many advantages over anything else to hoist wheelbarrows by hand. It is very simple in operation, easy to set up and can be taken in two pieces within a half minute's time. This derrick is indispensable to any contractor who builds two and three story buildings, as the machine will pay for itself within a short time.

Machine furnished complete ready for use with sufficient chain for three story building.

"S. S. S." Circle Swing Counterweight Derrick

For Loading and Unloading Cars and Wagons



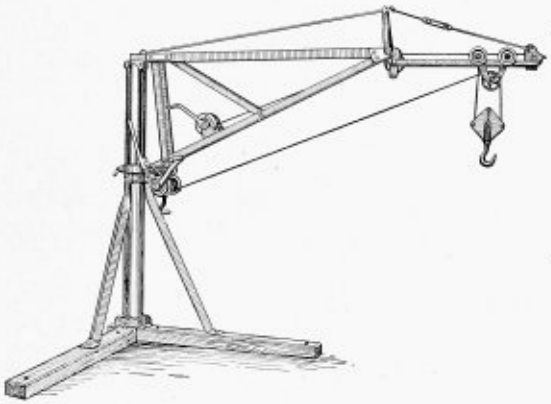
Y-100-114

Also Very Practical for Excavating, Sewer Work, Laying Pipe, Building Purposes, Handling Small Boats on Docks or Platforms in or out of Water, etc.

It is especially handy around foundries or yards where heavy castings, iron-pipe, beams and bars, timbers, stone, etc., are being raised or lowered into or from wagons. On account of being quick in operation and having a full circle swing, its use saves a good deal of time and labor in the above mentioned work. The above illustration shows the derrick in operation loading main hole castings weighing 1500 lbs., which formerly by other methods of loading required 6 men and about one day's time to load one carload of these castings, and these people truthfully state that with our machine it only requires 4 men and from 1 to 2 hours to load a car. This derrick does fully as well in handling lumber, and for the reason that it can be moved around the yard very easily and used without fastening, it is much superior to other derricks used for that purpose.

Height 14 feet; circle swing, 18 feet; weight, about 500 lbs.; capacity, 2000 lbs. Equipped with block and 125 ft. cable.

"S. S. S." Circle Swing Silo Derrick



Y-100-115

Height 6 ft., Boom Reach 9 ft.

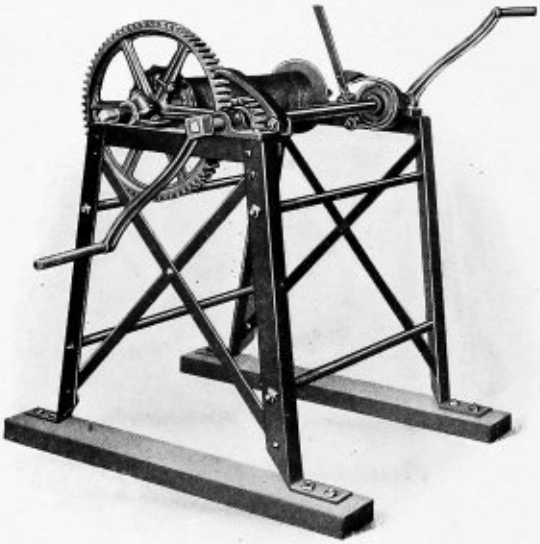
Equipped with collapsible trolley extension which is used for leading bucket to its proper distance for hoisting and pouring silos from 12 to 18 feet in diameter. The concrete can be poured the full circle into forms. This Derrick does away with carrying buckets, which is a great item in pouring the concrete in silo work.

Equipped ready for use with 80 ft. crucible steel cable and sufficient cable for trolley, swivel hoisting block and cleats for fastening.

Special derricks and hoists with extra fittings for special service may be had at a slight additional cost above price of regular outfits.

Larger and heavier derricks, masts and booms with stiff legs and wire guys at reasonable prices.

"S. S. S." Angle Steel Frame Portable Winch

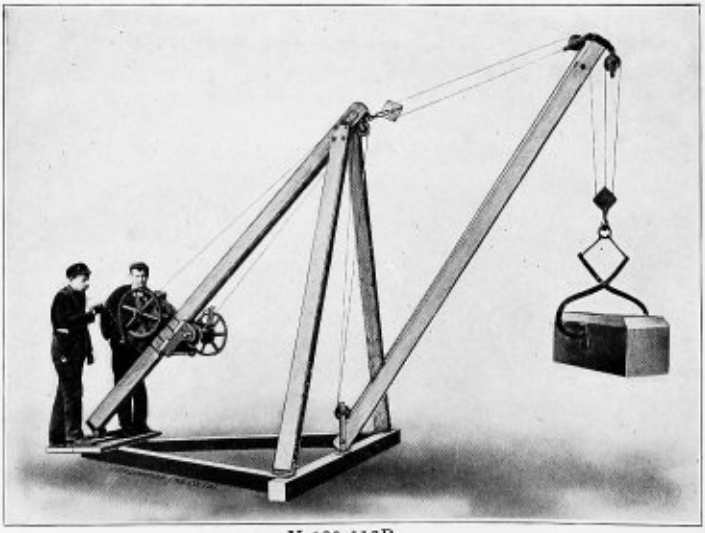


Y-100-116A

Equipped with 5x24-in. drum, malleable gear and pinion, and band brake. **CAPACITY** — 2-ton or more according to blocks used. This winch is very handy where hoisting is done from floors above. It is very easy to move around and in most cases does not need any fastening. Can be used with cable or rope.

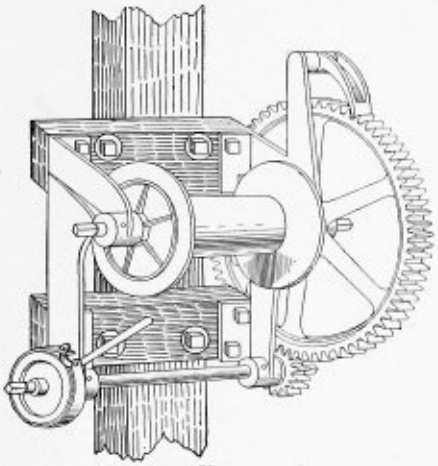
"S. S. S." A Frame Boom Derrick

Made with and without rollers. Boom has a half circle swing. This derrick is very handy where the same has to be shifted around very much, and where the derrick cannot be fastened and has to be weighed down instead. When writing for price give length of boom, capacity and with or without cable.



Y-100-116B

"S. S. S." Single Drum Geared Winch



Y-100-117A

CAPACITY FOR FOUR MEN

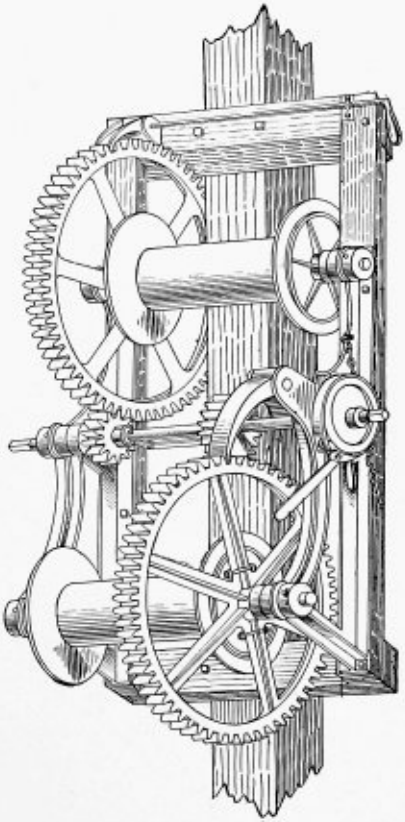
Diameter and length of drum	Diameter of gear and pinion	Lift of two men with single block, lbs.	Lift with double and triple blocks two men, lbs.
5x12	18x4	2,700	6,000
5x14	18x4	2,700	6,000
5x16	18x4	2,700	6,000
5x18	18x4	2,700	6,000

"S. S. S." Double Drum Geared Winch

CAPACITY FOR FOUR MEN

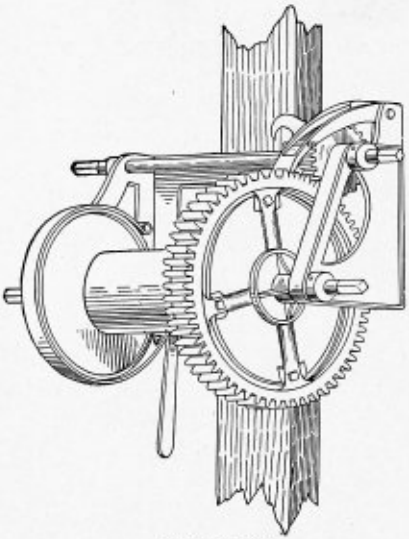
Diameter and length of drum	Diameter of gear and pinion	Lift of two men with single block, lbs.	Lift with double and triple blocks two men, lbs.
5x12	18x4	2,700	6,000
5x14	18x4	2,700	6,000
5x16	18x4	2,700	6,000
5x18	18x4	2,700	6,000

This winch is made of all malleable and crucible steel, including gears. Is equipped with a band brake and has special lever for shifting pinions into or out of large gears, which works both pinions at one time. The dog for the top gear is also handled by a lever. And on account of the pinion lever and top dog lever it makes it possible for the operator to arrange everything from the one side which is very convenient in many cases.



Y-100-117B

"S. S. S."
Small Single Drum Geared Winch



Y-100-118A

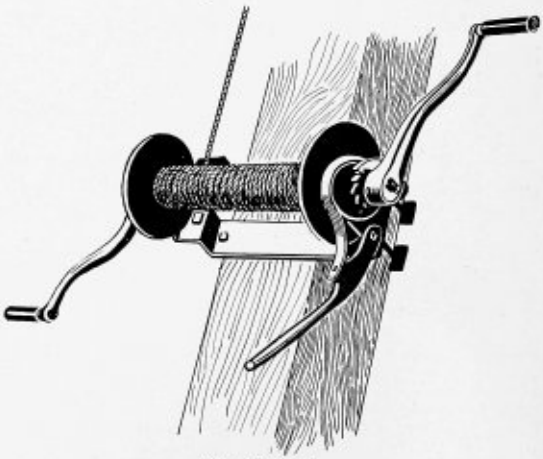
This winch is made in one size. The drum is 4x8 in., large gear 12 in., pinion 3 in. Both gears are made of malleable. The main frame is made in one piece and is also of malleable iron, which makes it very compact and strong, and very light to get around with. The weight of the winch complete with handles is 65 lbs.

This winch has a drum capacity of 300 ft. of $\frac{5}{16}$-in. cable. Hand brake attached.

Including Band Brake.

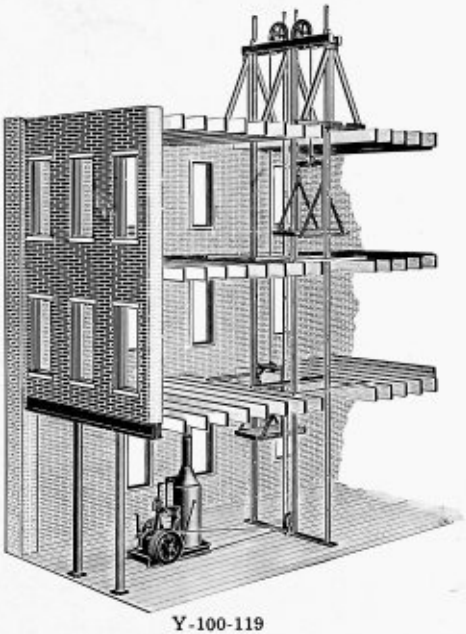
"S. S. S." Small Winch, Not Geared

This winch is made in two sizes, 3½x12 in. and 14 in. Equipped with band brake mounted to steel frame and equipped with clamps so that it can be clamped to 6x6 or smaller. This winch is alright where light loads are to be hoisted. Can be used with cable or ½ to ¾-in. rope.



Y-100-118B

"S. S. S." Material Elevators with Wood Guides



Y-100-119

For the last fifteen years we have been building these elevators with wood guides only, as they have proven to be the best.

They are light and easily handled from floor to floor in little time and can be repaired by any one in case of accidental breakage.

The cages are made of wood, well braced with iron and so designed that the platform is disconnected from the upright frame by removing two bolts. When disconnected the two pieces take up but little room and are easily stored in a small space.

Each cage is provided with a drum on the top piece for storing rope not in use, which prevents kinks and accidents.

The head sheaves are well proportioned with smooth groove and being of large diameter, insuring long life to the rope. The hub of the sheave is fixed to the axle, which runs in babbitted boxes bolted to the head piece.

The guides are made of selected wood with a T cross section. They are made in lengths of 13½ ft. The flange projects at one end and the web at the other, so that in order to splice the rails it is only necessary to bolt the flange of one to the web of the other.

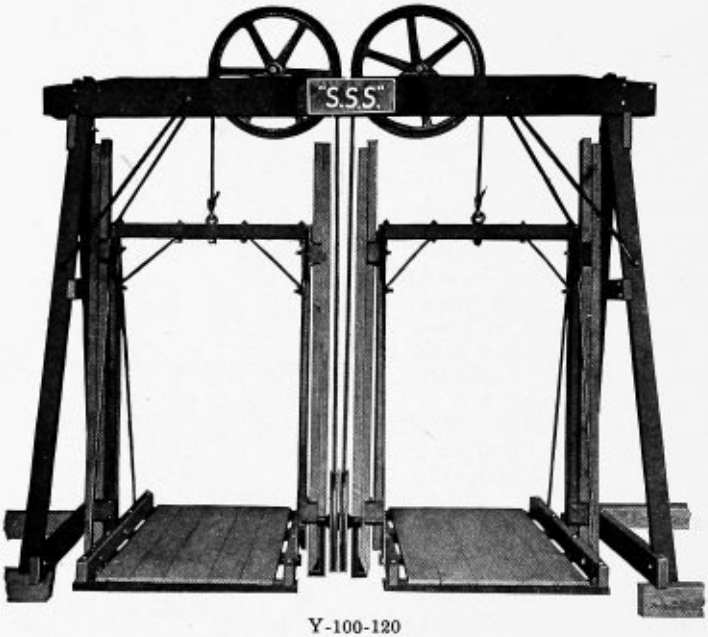
A ⅜ in. 6x19, best crucible steel hoisting rope is furnished and included with each elevator.

For operating the double platform elevator it is necessary to have a reversing engine, as the direction must be reversed in hoisting each cage.

WEIGHT OF COMPLETE ELEVATORS

Guides	Weight with guides	Weight without guides	Guides	Weight with guides	Weight without guides
40 ft.	1700 lbs.	1200 lbs.	108 ft.	2600 lbs.	1200 lbs.
54 ft.	1800 lbs.	1200 lbs.	121 ft.	2700 lbs.	1200 lbs.
67 ft.	2000 lbs.	1200 lbs.	135 ft.	2800 lbs.	1200 lbs.
81 ft.	2200 lbs.	1200 lbs.	148 ft.	3000 lbs.	1200 lbs.
94 ft.	2400 lbs.	1200 lbs.	162 ft.	3100 lbs.	1200 lbs.

"S. S. S." Elevators Equipped with Wood Guides



Y-100-120

SPECIFICATION

Gages. 3 ft.-4x6 ft., built of Hardwood with strong iron braces.

Truss Beam. The top truss is of Hardwood provided with 26-inch sheaves, mounted on steel shaft and equipped with substantial cast iron boxes.

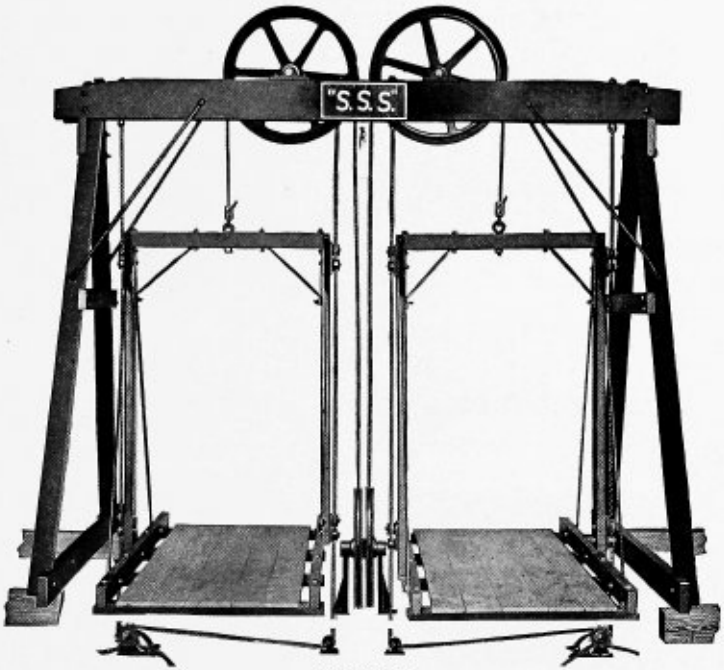
Support. The truss beam is supported by the side horses, built of Hardwood and strong iron braces.

Foot Sheaves. The sheaves at the foot of the elevator are 22 inches in diameter and mounted on strong grey iron boxes.

Guides. The elevator is arranged to operate with either wire cable or wood guides. Unless otherwise specified, elevator will be equipped for wood guides. Wood—The wood guides are built up with Hardwood, forming a tee section, securely bolted together. Guides are built in 14 ft. and 7 ft. lengths, arranged with a lap and provided with bolt connections.

Equipped with patent device for taking up slack in the cable.

"S. S. S." Elevators Equipped with Cable Guides



Y-100-121

SPECIFICATION

Guides. Wire, ⅜-inch Crucible steel, 6 strand, 9 wire with hemp center. Cable guides are fastened by eyebolts at the top and tightened by small drum at the bottom, as shown in above illustration.

Floor Space. The total floor space required for the elevator is 6 ft. x 9 ft.

Power Operation. The elevator may be operated by horse-power, electric motor, steam or gasoline engine.

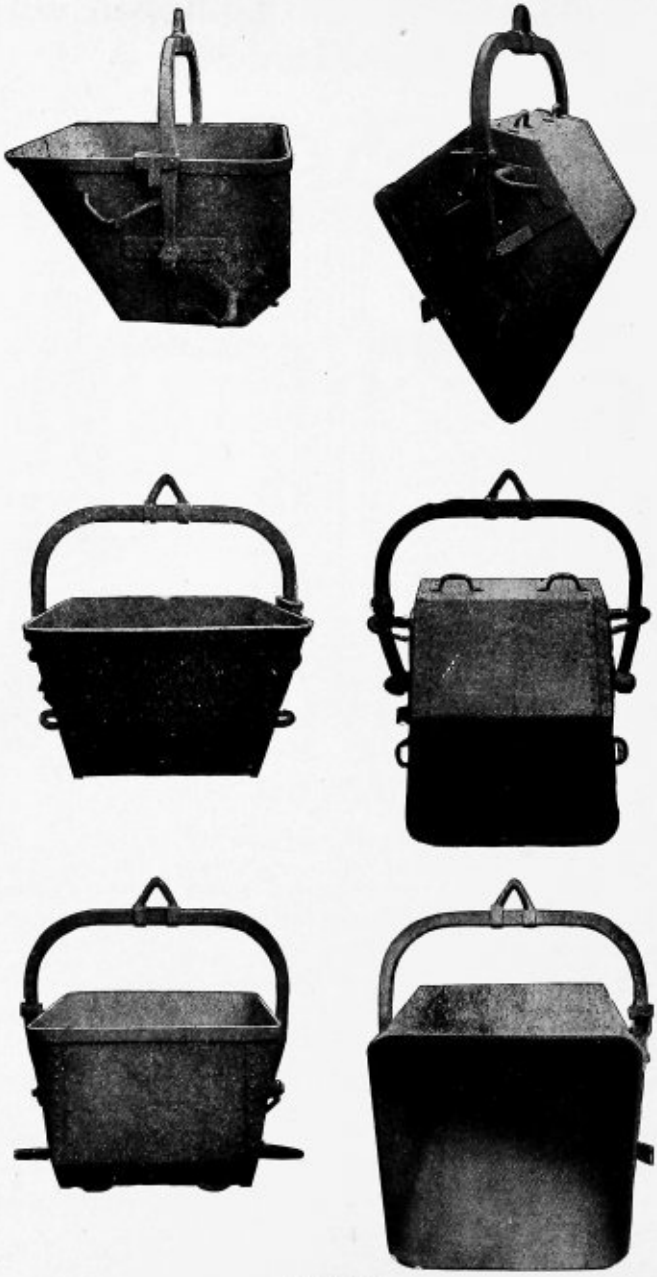
Standard Equipment. The elevators are regularly equipped for mechanical power. When horse-power is used, the elevator is equipped with an automatic brake, which holds the load under control at all times. This device is absolutely essential if elevator is to be operated by horse-power.

Capacity. With a double platform elevator and proper power, sufficient material can be handled to employ 40 masons.

MANUFACTURERS

"S. S. S." CLASS "A" FLARING SIDES

Standard Self-Dumping and Self-Righting Contractors' Bucket.



"S. S. S." Class "A" Flaring Sides

Standard Self-Dumping and Self-Righting Contractors' Bucket
For Handling Stone, Sand, Clay, Mortar, Concrete, Etc.

Patented June 30th, 1891. (See opposite page.)

The form of a Dumping Bucket is governed by the nature of the material to be handled.

Our self-dumping bucket shown on preceding page was especially designed for the use of contractors with which stone, sand, clay, concrete, etc., can be efficiently handled.

The top of the bucket is from eight to ten inches wider than the bottom, which permits the bucket to be quickly filled and the load cleanly and rapidly dumped.

It is simple in construction, easily handled and well adapted for sinking shafts, sewer work and similar operations.

The bucket, although of greater first cost than the ordinary skip or other form of cheap bucket, is the cheapest in the long run, when durability with clean and quick dumping, and the avoidance of delays caused by unwarranted breakage is considered.

They are used by many of the leading contractors, who declare them superior to all other designs for handling soft material.

We furnish these buckets of capacities and dimensions as tabulated below, but can vary the dimensions and retain the capacities given.

We furnish buckets of larger capacities, and varying dimensions, to suit the requirements of any service.

TABLE OF SIZES, ETC.

Size No. of bucket	Capacity	Width over all	Length	Depth
86	3 cubic ft.	30 inches	26 inches	15 inches
87	4½ cubic ft.	32 inches	29 inches	18 inches
88	6 cubic ft.	34 inches	31 inches	19 inches
89	8 cubic ft.	36 inches	33 inches	20 inches
90	10 cubic ft.	41 inches	36 inches	21½ inches
91	12 cubic ft.	44 inches	40 inches	23 inches
92	14 cubic ft.	46 inches	42 inches	25 inches
93	21 cubic ft.	48 inches	47 inches	28 inches
94	27 cubic ft.	53 inches	50 inches	31 inches
95	36 cubic ft.	65 inches	58 inches	33 inches
96	42 cubic ft.	66 inches	59 inches	34½ inches

"S. S. S." Class "B" Straight Side

Standard Self-Dumping and Self-Righting Bucket

"S. S. S." Class "B" Straight Side

Standard Self-Dumping and Self-Righting Contractors' Bucket

The Straight Side, Class B Bucket was designed to meet the demand for a Bucket of less weight and cost than Class A.

It is somewhat similar in appearance to Class A but differs by reason of being of equal width both top and bottom, and consequently soft material will not free itself from its sides as easily as from a Bucket having flaring sides.

It is, however, a very good and substantial bucket, and will for many purposes do the work equally as well as the Class A Bucket.

The best steel and iron are used in its construction. It is nicely balanced, has double bottom, strong bail, trunnions and reliable latch.

The standard sizes are tabulated below. For Buckets of greater or less capacity and of varying dimensions, estimates will be furnished upon request.

TABLE OF SIZES, ETC.

Size Number of Bucket	Capacity	Width over	Length	Depth
97	3	28	26	15
98	5	31	28	18
99	6	31½	29	19
100	7	34	30	19
101	8	35	31	19
102	10	36	35	21
103	12	38	38	23
104	14	38	40	25
105	18	43	43	27
106	21	45	46	28
107	27	47	50	30½
108	36	52	54	33
109	41	54	58	36

MANUFACTURERS

"S. S. S." STANDARD CLASS "C" Straight Side CONTRACTORS' BUCKET

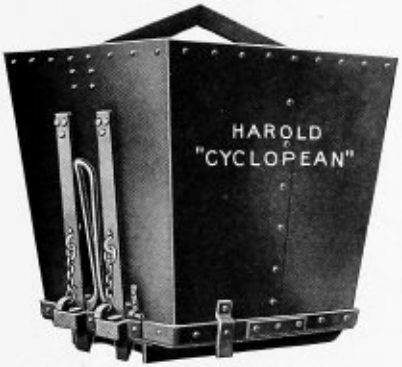
Y-100-126

This Bucket differs from the Class B Bucket, only, in having the back rounded as shown on cut. It is adapted for handling similar materials.

TABLE OF SIZES, ETC.

Size Number of bucket	Capacity in cubic feet	Width over all in inches	Length in inches	Depth in inches
110	3	28	26	15
111	5	31	28	18
112	6	31½	29	19
113	7	34	30	19
114	8	35	31	19
115	10	36	35	21
116	12	38	38	23
117	14	38	40	25
118	18	43	43	27
119	21	45	46	28
120	27	47	50	30½
121	36	52	54	33
122	41	54	58	36

"S. S. S." Harold "Cyclopean"



Y-100-127

BOTTOM DUMPING BUCKETS FOR CONCRETE, ETC.

The speediest and most economical bottom dumping bucket. Eight years on the market.

Standard Sizes of "S. S. S." Harold "Cyclopean" Bottom Dumping Buckets

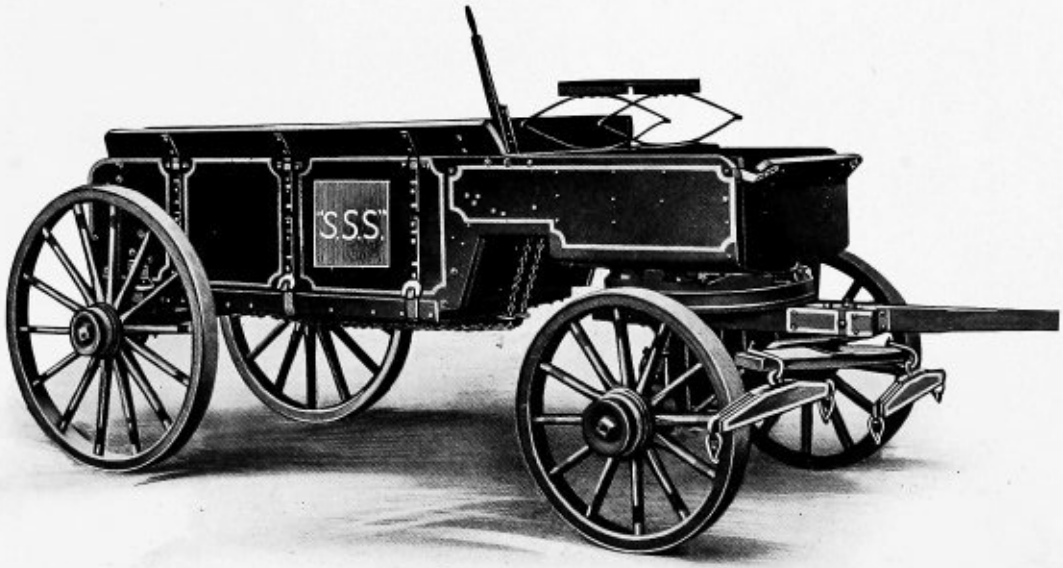
Size or capacity	Width of top	Width of Bottom	Depth of inside	Approx. weight
½ cubic yard	31 inches	25 inches	30 inches	550 lbs.
¾ cubic yard	36 inches	28 inches	34 inches	700 lbs.
1 cubic yard	42 inches	32 inches	36 inches	885 lbs.
1½ cubic yards	46 inches	35 inches	42 inches	1050 lbs.
2 cubic yards	51 inches	39 inches	45 inches	1680 lbs.
2½ cubic yards	56 inches	43 inches	48 inches	2165 lbs.
3 cubic yards	60 inches	48 inches	48 inches	2500 lbs.

Specifications on larger sizes upon request

The Best
Costs Least

Y-100-127B

"S. S. S." Dump Wagons



Y-100-128

Dump Wagons—Various types for stone, sand, gravel, asphalt, coal, concrete, etc.

"S. S. S." Dump Wagons

View on opposite page is of standard one and one-half yard wagon with doors closed. All our wagons are fitted with stiff or drop poles. Eveners on top of pole with stay chains, or underneath with draft chains fastened direct to front axle as ordered.

Type	Capacity	Solid collar type axles	Size of wheels	Size of tires	Size of felloes	Weight	Cipher code
E	1½ Yards	2 inches front 2¼ inches rear	3 feet high 4 feet high	3x½ inch	2x3 inches	1800 lbs.	Kane
F	2 Yards	2 inches front 2¼ inches rear	3 feet high 4 feet high	3x½ inch	2x3 inches	1900 lbs.	Rain

Wagons fitted with 3x⅝ inch, 4x¾ inch, 4x½ inch, 4x⅝ inch or 4x¾ inch tires. Doors steel lined, or boxes and doors steel lined and with brakes, if so ordered, at extra cost.

ASPHALT WAGON

Steel and asbestos lined, extra heavily ironed and built to stand hard usage.

Type	Capacity	Solid collar type axles	Size of wheels	Size of tires	Weight	Cipher code
G	2 Yards	2 inches front 2¼ inches rear	3 feet front 4 feet rear	⅝x3 and 4 inches	2250 lbs.	Seneca
H	2½ Yards	2 inches front 2¼ inches rear	3 feet front 4 feet rear	¾x3 and 4 inches	2350 lbs.	Mark
I	3 Yards	2 inches front 2¼ inches rear	3 feet front 4 feet rear	¾x3 and 4 inches	2500 lbs.	Hope

GARBAGE WAGON

Type	Capacity	Solid collar type axles	Size of wheels	Size of tires	Weight	Cipher code
J	3 Yards	2 inches front 2¼ inches rear	3 feet front 4 feet rear	3x½ inches	2300 lbs.	Show
K	4 Yards	2 inches front 2¼ inches rear	3 ft., 4 inches front 4 ft., 4 inches rear	3x⅝ inches	2700 lbs.	Faith
L	5 Yards	2¼ inches front 2½ inches rear	4 ft., 4 inches front 4 ft., 4 inches rear	3x⅝ inches	3000 lbs.	Good

Fitted with 4-inch tires, ⅝ or ¾ inch thick and with three-horse hitch, if desired.

MANUFACTURERS

"S. S. S." Dump Wagons

Strongest, Simplest and Most Compact Wagon on the Market

THE BOX is made of 2-inch thoroughly seasoned hard wood, planed and finished. The corners are fastened together on the outside of front and rear end boards by 2x2-inch wrought angle iron, liberally bolted, and box is also reinforced by rods in front and in the back. Some dump wagon boxes are built of 1½-inch timber and not angle-ironed on corners. Experience has proven that this construction will not stand steam shovel work.

THE NECK is 2x12-inch wood, reinforced by boiler plate on outside, and turned to right angle underneath and carried to front end of box, where it is bolted to the same, making a brace on each side of eight inches of boiler plate on edge. Guaranteed to stand steam shovel loading.

THE DOORS are made of same material as the box, with 2½x2½-inch oak truss, which prevents warping, and swing from the sides on heavy wrought hinges. They lap two inches and one never fails to come up first. They close absolutely tight. A steel coil spring shortens the chain on door with lap, compelling it to close first.

THE CHAIN is single, and is close link, of the best quality, and is fastened on rear end board through grab hooks, where it can be easily and quickly adjusted for spreading work, and is carried on bottom of doors to the winding arbor in front. No chains or sprocket wheels on side of box to be clogged with mud.

WINDING ARBOR is of steel pipe, with 7x2-inch ratchet wheel, with a positive lock on the foot trip, which absolutely prevents load from being accidentally dumped.

AXLES—2-inch Sheldon increased spindle square bed, on one and one-half and two-yard wagons in front and 2¼-inch in rear. Spindles same size as on 2½-inch loose collar axles, but stronger on account of solid collar.

WHEELS are of the best quality, having 9x10-inch or 10x12-inch red birch hubs as ordered, and 2½-inch spokes in rear wheels and 2¼-inch in front, or 2¾-inch and 2½-inch as ordered. Rear wheels are four feet. Front wheels three feet.

TIRES—Hot set, three and four inches in width, and one-half, five-eights, or three-fourths inch thick, as ordered.

SPRING SEAT.

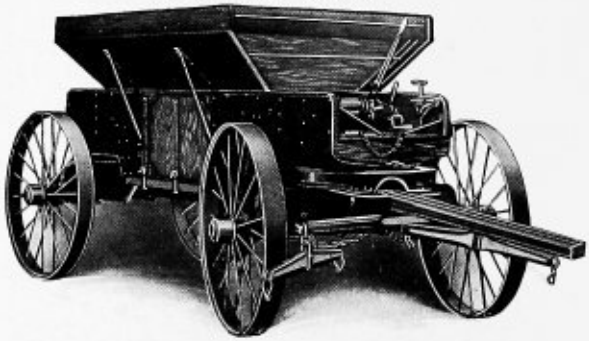
STANDARD COLOR—Vermilion with straw-color running gear.

STANDARD CAPACITY—One and one-half yards.

TOP BOXES to make two or two and one-half wagons at extra cost.

WEIGHT with 3-inch tires, 1,800 lbs.

"S. S. S." Reversible Traction Engine Dump Car



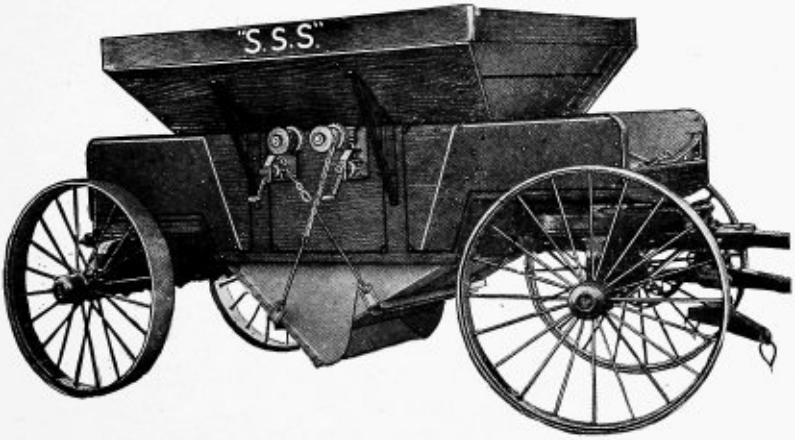
Y-100-130

This cut represents the traction reversible car with pole, double- and singletrees, to be drawn by team. This car can be poled and drawn from either end by changing pole, drawing two back pins on rear axle and dropping pins on other axle. The car has adjustable gear hooks and chains.

"S. S. S." Reversible Spreading Wagons

To be Drawn in Trains by Traction Engine or Singly by Teams

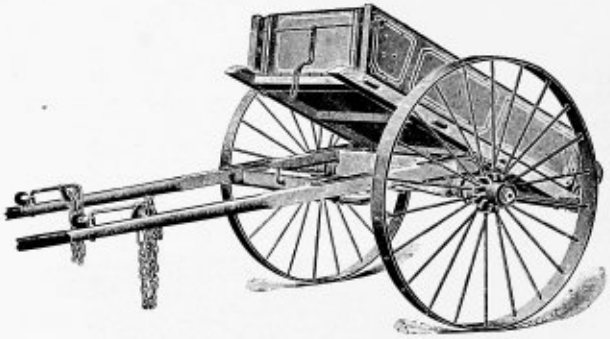
View of three-yard "S. S. S." Reversible Spreading Wagon constructed with steel doors with wings on the side hung cross-ways of the body of the wagon. These steel doors close up inside of the body underneath steel shields which protect them from the material. The doors are raised and lowered by worm gears operated by bevel gear arrangement with handle connected with the worm. The winding drums are fastened steel shafts running crosswise through the body and are covered on the inside of the body by 1½ in. steel pipe which protects the shafts from coming in contact with the material. The doors are controlled independently and can be lowered or raised so as to spread the material from 3 in. to 14 in. in depth. From the fact that the material is only permitted to flow out of the chute as formed by the doors it chokes itself when the wagon is stopped and the even distribution of the



Y-100-131

material does not depend on the movement of the wagon whether fast or slow. It lays material out as evenly as a cement sidewalk and does perfect work. They are constructed on the same principle as our regular hauling wagon, having all steel hot forged wheels and roller bearings, which reduce the draft 30 to 40% on the engine. From the fact that they have these roller bearings they can be handled by teams and a team will haul 3½ yards crowned-over on one of these wagons as easily as 2½ yards on an ordinary dump wagon. They are equipped with short steel couplings for train hauling and if wanted also to be handled by teams we equip them with poles, eveners and whiffletrees. They make an all around equipment for the contractor, either for work in the country with traction engine or in the city with teams. Extra top-boxes are furnished for these wagons to make the capacity 4 yards water-measure or 4½ crowned-over at extra cost.

"S. S. S." Contractors' Dump Cart



Y-100-132

The cut above shows our Farm and Contractors' Cart with wheels 54 inches high, 4-inch tires, ½-inch thick. The cart is built of selected stock and is heavily braced to stand hard usage. The bed is 5 feet long, average width 45½ inches, average depth 13 inches, capacity 20½ cubic feet. The shafts are well ironed and fitted with both back and draft chains, making it all ready to hitch to. For very rough service we advise tires ⅝-inch thick. We build carts for contractors and for other purposes; consequently can give you almost anything you want in this line, and shall be pleased to quote on receipt of specifications.

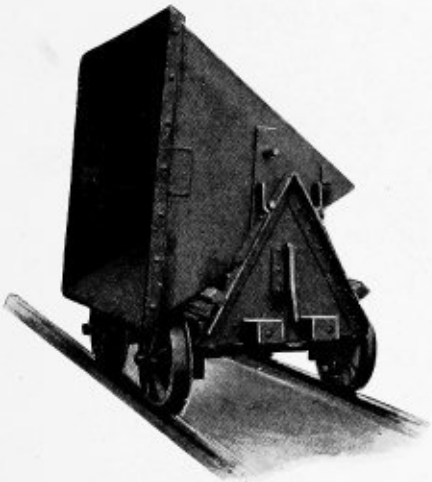
We can furnish the wheels and axles alone if you do not want the complete cart.

SPECIFICATIONS

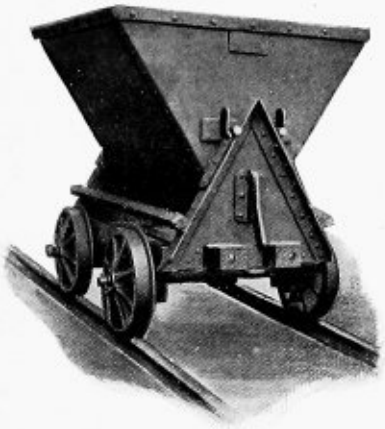
Height of Wheel	Size of Tire	Capacity	Size of Cast Skein	Weight	Size of Steel Axle	Weight
54 in.	4x½ in.	1800 lbs.	3¼x10 in.	740 lbs.	1¾ in.	780 lbs.
54 in.	4x½ in.	2000 lbs.	3½x10 in.	760 lbs.	2 in.	800 lbs.
CONTRACTORS' CART						
54 in.	4x⅝ in.	2000 lbs.	3½x10 in.	830 lbs.	2 in.	870 lbs.

With steel axle bearings are 2x10 in.
With hickory axle bearings are 3½x10 in.

"S. S. S." Contractors' Tip Car



Y-100-133A



Y-100-134B

To meet the special requirements of the contractors' work, we build a Tip Car as here represented.

It is entirely of iron and steel. Bumpers and link couplings enable them to be coupled and propelled either by hand, horse or steam power.

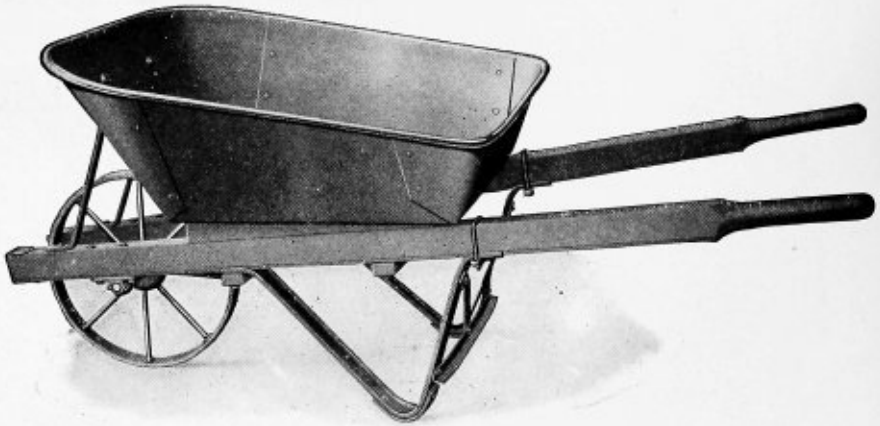
Their large wheels are fitted to strong axles, which turn in anti-friction roller bearings.

TABLE OF SIZES, ETC.

Size Number of car	Capacity in cubic feet	Width in inches	Length in inches	Height of cars in inches	Gauge of Track in inches
235	20	48	60	54	24
236	27	52	65	56	28
237	36	54	68	61	30
238	45	58	74	64	36

We can furnish price on dump cars, mixer cars, special railroad contractors' dump cart upon request.

"S. S. S." Wheelbarrows and Carts



Y-100-134A
"S. S. S." No. 10 A Wheelbarrows

"S. S. S." No. 10A is made to handle wet or sloppy concrete as the deep construction of the sides keep the concrete from spilling. Capacity 3 cubic feet of wet concrete, or 4½ cubic feet dry material. Weight per dozen 875 lbs.

Y-100-134B
"S. S. S." No. 3 Cart

"S. S. S." cart No. 3 is for handling mixed concrete capacity about 7 cu. ft. This cart is especially adapted for street work or large foundation.

"S. S. S." carts are also furnished in various sizes and capacities and specially arranged for attaching cable for our cart charging mixer.

"S. S. S." barrows and carts prices are net and uniform and very low, our aim being to sell large quantity of high grade goods at a very close margin.

"S. S. S." Wheelbarrows

Y-100-135

"S. S. S." No. 6 A Wheelbarrows

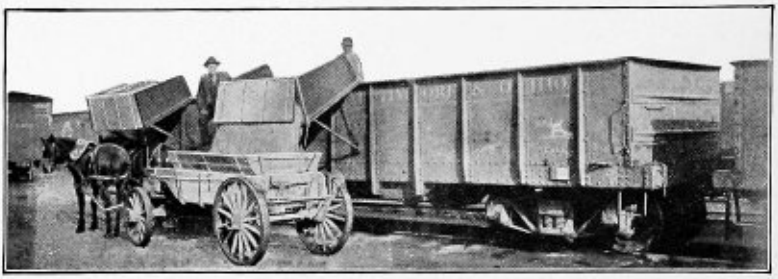
"S. S. S." wheelbarrows and carts are offered to meet the demand for high grade goods in this line. "S. S. S." barrows are sturdy in their design and constructed so that the wheels carry the greatest part of the load possible. They are economical to the contractor because of their long life, few repairs, and moderate first cost.

You will note in looking over the barrows shown here that there are desirable and patented features such as self-lubricating wheels, the metal tips on the front protecting the ends of the handles when dumping either forward or sideward. Also note the U bolt around the handle instead of going through the handle thus avoiding breakage at this point which is so common among other barrows.

"S. S. S." Barrows are made exceptionally strong and durable, the wheels being especially well built and practically indestructible on ordinary service. The legs are made of channel iron instead of angle, this prevents buckling, the shoe on the legs prevents the leg from wearing out. You can not afford to overlook these advantages.

"S. S. S." No. 6A, capacity 3½ cu. ft. is recommended for charging mixers. Weight per dozen 820 lbs.

"S. S. S." Quick Unloader



Y-100-136A

OUR QUICK UNLOADING CAR CHUTE SAVES $6.00 PER CAR

Wagon Loaded in One Minute

Is readily attached to the side of cars, bins or any storage above level of wagon top. Built of Steel Plate and practically indestructible. Comparatively light in weight, easily transported and readily placed in operating position.

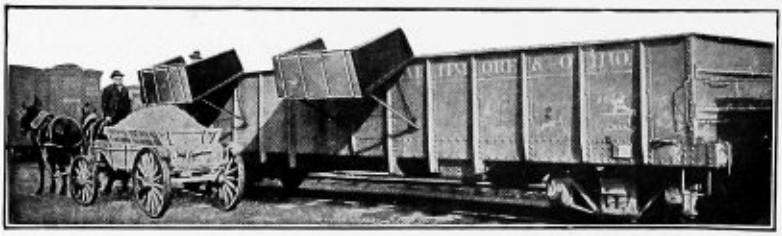
The wasted time of your teams will pay for several chutes each year.

Why not Prevent this Loss?

It requires by hand thirty minutes, on an average, to load one wagon —one minute with "Quick Unloading Chute."

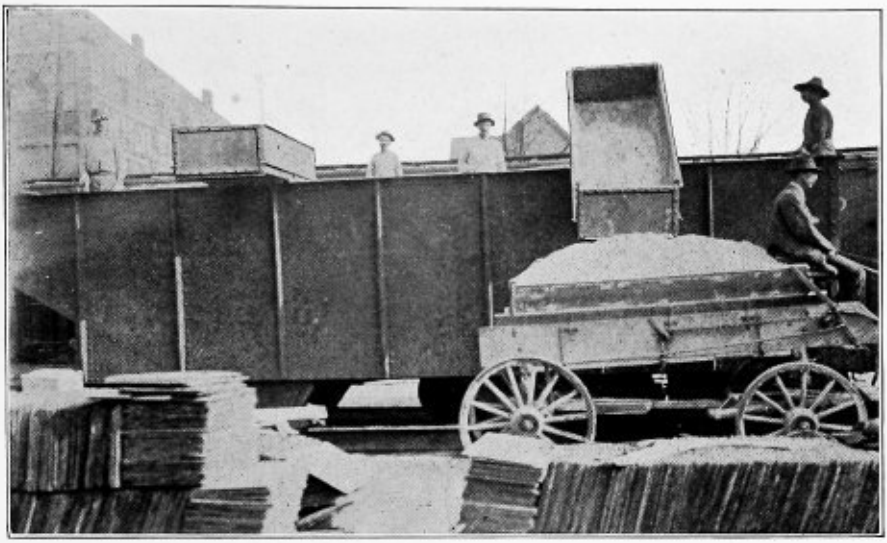
If you have any unloading to do you are losing money on every wagon load without the assistance of our Chutes. Made in three sizes—¾, 1 and 1½ cubic yds. Order to fit your wagon.

A pencil and paper will soon show to a surprising extent what a saving can be expected.



Y-100-136B

"S. S. S." Lightbody Rapid Loader



Y-100-137

If your business entails the handling of quantities of sand, gravel, coal, limestone, cinders, coke, brick, dirt, paving block, etc., from this time on their possession will determine very materially the success or failure of any concern having large quantities of these materials to handle from railroad cars.

You cannot fail to recognize what a vast saving their use insures. They pay for themselves in no time and not only increase the margin of profit but are destined henceforth to be a determining factor in the awarding of contracts, no bidder without them being in position to handle work as cheaply, as quickly, or as well, as his up-to-date competitor who is so equipped.

WEIGHT AND SIZE OF "S. S. S." LIGHTBODY RAPID LOADER

No.	Dimensions	Capacity	Wt. of heaviest part	Shipping weight
1	6 ft. 6 in. x 3 ft. x 13 in.	¾ cu. yd.	160 lbs.	400 lbs.
2	6 ft. 6 in. x 3 ft. x 18 in.	1 cu. yd.	160 lbs.	450 lbs.
3	6 ft. 6 in. x 4 ft. x 18 in.	1½ cu. yd.	190 lbs.	490 lbs.
*4	6 ft. 6 in. x 4 ft. x 24 in.	2 cu. yd.	190 lbs.	520 lbs.

*The No. 4 loader is only guaranteed to handle such light material as coal, granulated slag, etc.

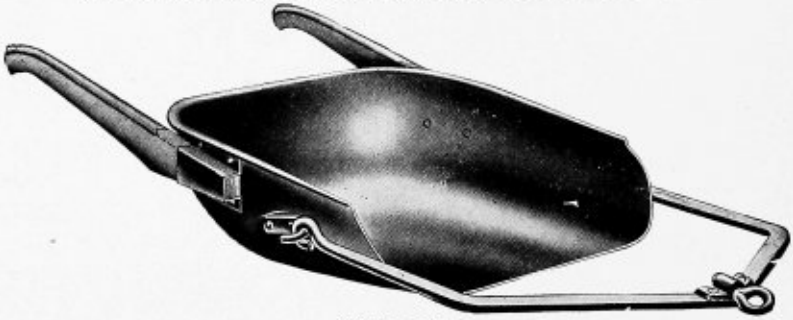
The above represents two rapid wagon loaders, with a 3 cu. ft. wagon loaded in exactly 20 seconds without the driver leaving his seat. Two loaders save their cost on first month's hauling, one team does the work of three and with half the hauling strain, when you use "S. S. S." dump wagon.

MANUFACTURERS

"S. S. S."
Crescent Solid Pressed Steel Drag Scraper

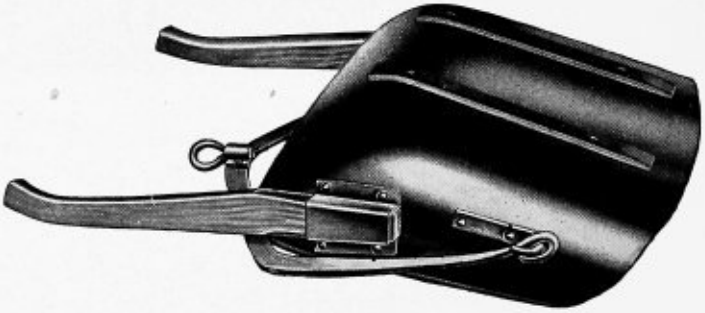
With Flat Handles on Side

Made with Runners, without Runners or with Double Bottom



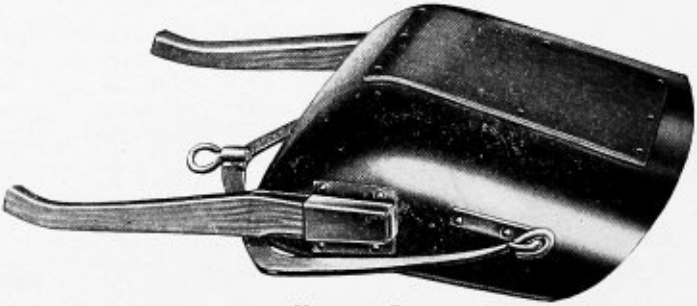
Y-100-138A

Top View of Scraper with Flat Handles on Side.



Y-100-138B

View of Scraper with Runners and Flat Handles on Side.



Y-100-138C

View of Scraper with Double Bottom and Flat Handles on Side

"S. S. S."
Crescent Solid Steel Drag Scraper

With Flat Handles on Side

This style of handle is preferred by most users, because of its greater convenience.

The "S. S. S." scraper is superior in design, material and workmanship. Strong, durable, efficient. Fills easily—dumps easily—works perfectly in all kinds of soil. Solid pressed steel bowl. "Flanged top." "Thick center." Heavy steel bail, hooks, sockets—perfectly working swivel.

No. 1, the largest size, is used for heavy grading and long hauls.

No. 2, is the best for general use. It can be used with two horses on heavy work and one horse on lighter work.

No. 3, is adapted for light work of any kind—cutting and cleaning ditches, finishing off high embankments.

		Capacity	Weight	Code
No. 1	Without runners	7 cubic feet	94 pounds	Treasurer
No. 2	Without runners	5 cubic feet	84 pounds	Tripod
No. 3	Without runners	3½ cubic feet	74 pounds	Triumph
No. 1	With runners	7 cubic feet	100 pounds	Texas
No. 2	With runners	5 cubic feet	90 pounds	Trenton
No. 3	With runners	3½ cubic feet	80 pounds	Tunrkey
No. 1	Double bottom	7 cubic feet	106 pounds	Plate
No. 2	Double bottom	5 cubic feet	86 pounds	Pack
No. 3	Double bottom	3½ cubic feet	96 pounds	Peg

When ordering, use the code word to distinguish the size and style, or be sure to state whether scrapers are wanted with runners, without runners, or with double bottom.

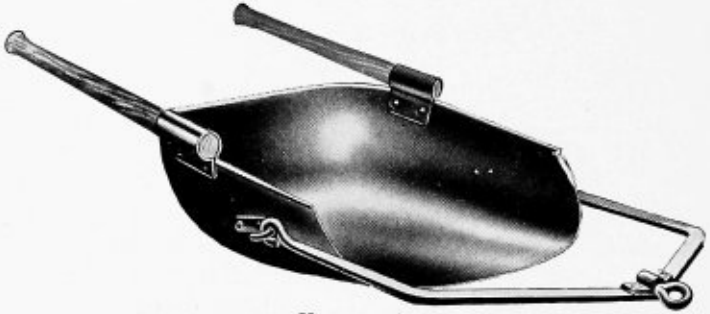
Scrapers with runners will always be shipped unless otherwise ordered.

MANUFACTURERS

"S. S. S." Eclipse Solid Pressed Steel Drag Scraper

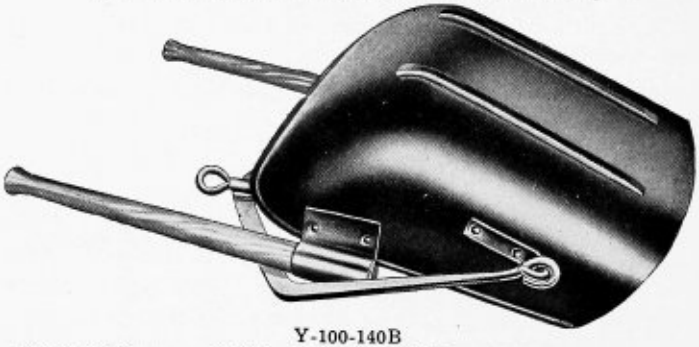
With Round Handles on Top

Made with Runners, Without Runners or with Double Bottom



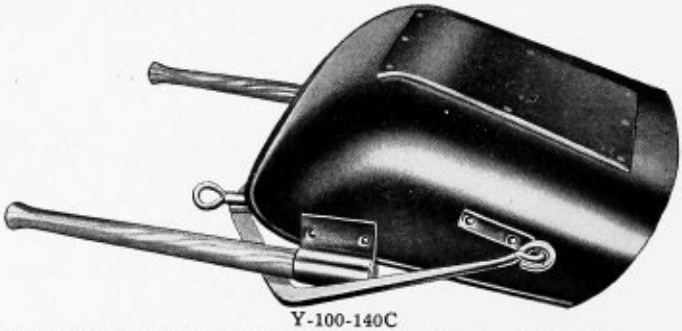
Y-100-140A

Top View of Scraper with Round Handles on Top



Y-100-140B

View of Scraper with Runners and with Round Handles on Top



Y-100-140C

View of Scraper with Double Bottom and with Round Handles on Top

"S. S. S."
Eclipse Solid Pressed Steel Drag Scraper

With Round Handles on Top

This style of handle is preferred by some users, though the flat handle shown on page 140 is much more generally used.

"S. S. S." Eclipse scraper is superior in design, material and workmanship. Strong, durable, efficient. Fills easily—Dumps easily—Works perfectly in any kind of soil. Solid pressed steel bowl. "Flanged top." "Thick center." Heavy steel bail, hooks, sockets, perfectly working swivel.

No. 1, the largest size, is used for heavy grading and long hauls.

No. 2, is the best size for general use. It can be used with two horses on heavy work and one horse on lighter work.

No. 3, is adapted for light grading of any sort—cutting and cleaning ditches, finishing off high embankments.

LIST OF SIZES AND WEIGHTS

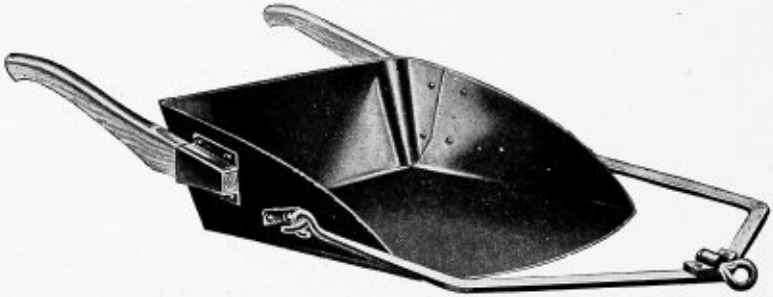
		Capacity	Weight	Code
No. 1	Without runners	7 cubic feet	94 pounds	Ring
No. 2	Without runners	5 cubic feet	84 pounds	Risk
No. 3	Without runners	3½ cubic feet	74 pounds	Ruby
No. 1	With runners	7 cubic feet	100 pounds	Round
No. 2	With runners	5 cubic feet	90 pounds	Rack
No. 3	With runners	3½ cubic feet	80 pounds	Read
No. 1	Double bottom	7 cubic feet	106 pounds	Reason
No. 2	Double bottom	5 cubic feet	96 pounds	Ritual
No. 3	Double bottom	3½ cubic feet	86 pounds	Robust

When ordering, use the Code Word to distinguish the size and stayle. or be sure to state whether scrapers are wanted with runners, without runners, or with double bottom.

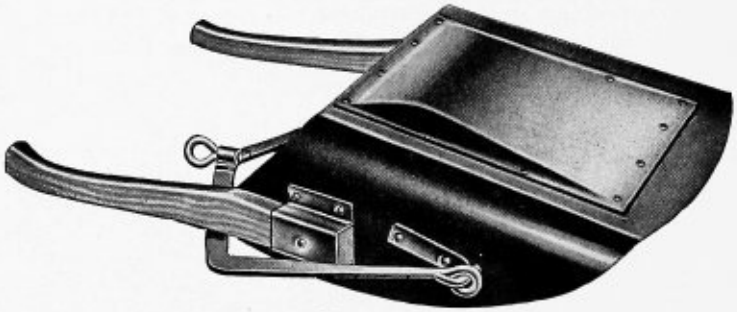
Scrapers with runners will always be shipped unless otherwise ordered.

"S. S. S." Vulture Square Back All Steel Drag Scraper

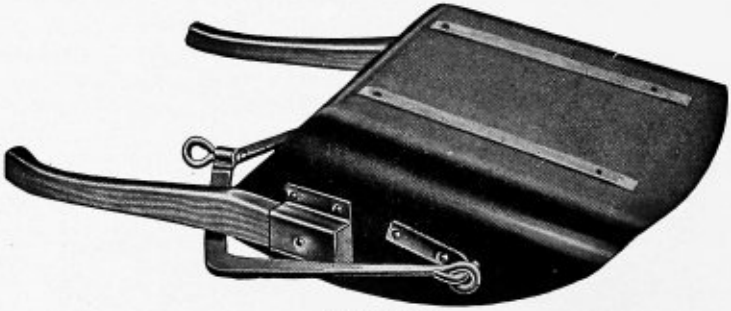
WESTERN PATTERN



Y-100-142A
Top View of Square Back Scraper



Y-100-142B
Square Back Scraper with Broad Pressed Single Runner



Y-100-142C
Square Back Scraper with Two Runners

"S. S. S." Vulture Square Back All Steel Drag Scraper

WESTERN PATTERN

This scraper is made of one piece of High Carbon Special Scraper Steel bent up in curved lines at the sides and back, and securely riveted. Corner laps are so arranged that the bowl is smooth and free from obstructions. It fills and dumps easily and works perfectly in any kind of soil. It is equipped with heavy Steel Bail, Hooks, Sockets and perfectly Working Swivel.

THE BROAD SINGLE RUNNER is pressed from very hard steel and attached by deep countersunk rivets. Rivet holes uniformly located so runner can be replaced when worn out, making the scraper good as new.

DOUBLE RUNNERS are extra heavy and are attached by deep countersunk rivets so no wear comes on rivet heads.

HANDLES are of best quality hardwood, tapered so as to fit securely in the sockets.

No. 1, the largest size, is used for heavy grading and long hauls.

No. 2 is the best size for general use. It can be used with two horses on heavy work and one horse on lighter work.

Square back scrapers are made in only two sizes.

		Capacity	Weight	Code
No. 1	Without runners	7 cubic feet	94 pounds	Sachem
No. 2	Without runners	5 cubic feet	84 pounds	Scarlet
No. 1	With runners	7 cubic feet	110 pounds	Songster
No. 2	With runners	5 cubic feet	100 pounds	Simpson
No. 1	Double runners	7 cubic feet	100 pounds	Septum
No. 2	Double runners	5 cubic feet	90 pounds	Shekel

When ordering, use the code word to distinguish the size and style, or be sure to state whether scrapers are wanted with single runner, with two runners or without runners.

Scrapers with single runners will always be shipped unless otherwise ordered.

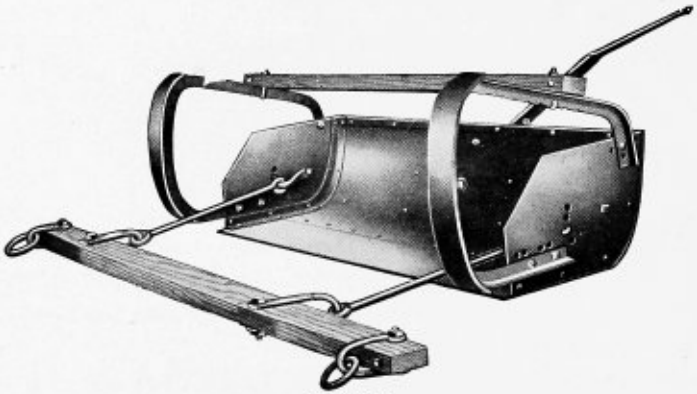
"S. S. S." Square Back Single Runner Scraper is extraordinarily strong and heavy and is a special favorite with Western contractors.

MANUFACTURERS

"S. S. S." Fresno Scraper

It is a "good roads" tool of exceptional merit. Its record is unsurpassed for economy and efficiency in

Road Building, Railroad Grading, Irrigation Leveling, Ditch and Levee Construction



Y-100-144

One man with a "S. S. S." Fresno can move 150 to 225 cubic yards of earth in ten hours. An example of the cost of handling earth with "S. S. S." Fresno Scrapers is recorded, showing a result as low as 5c per cubic yard on a job where wages and expenses were high and the working day only 8 hours.

The "S. S. S." Fresno Scraper is a modified form of Drag Scraper which has been used extensively by Western contractors for more than a generation. It was originally designed for constructing ditches and leveling land for irrigation purposes, but it showed such marked economy and efficiency in that class of work that its use was quickly extended to all sorts of grading.

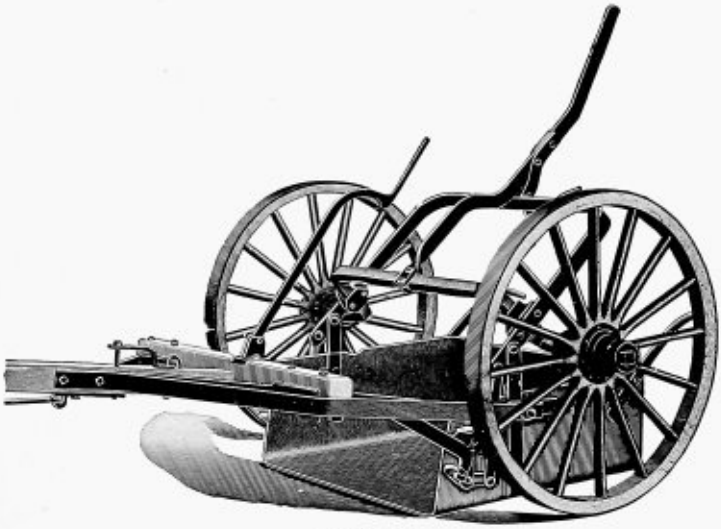
Its long bowl gives it large capacity, and it fills easily because the distance from the cutting edge to the rear of the bowl is very short. It is so easy to operate that the driver can load and dump it without assistance. The load can be dumped in one spot or deposited and spread in layers ranging from 1 to 12 inches in thickness.

The steel used in the construction of "S. S. S." Fresno Scrapers is extra heavy and extra hard, insuring great strength and long resistance against wear. The only parts subject to wear are the bit, shoes and runners, and these parts can be replaced at small cost when necessary, making the scraper as good as new. The bits are all 12 inches wide.

Made in 3 Sizes	Width	Weight	Code
No. 1, 4-horse	5 ft.	300 lbs.	"Fresno"
No. 2, 2 or 4-horse	4 ft.	275 lbs.	"Fawn"
No. 3, 2-horse	3½ ft.	250 lbs.	"Fish"

"S. S. S." Latest Improved Patent Double Strength Wheeled Scraper

The best Test of a wheeled scraper is to put it in the ground



Y-100-145

Position while Being Filled

Action of the Lever and Hooks is positive—the Scraper Cannot Dump While Being Filled

THE BEST BRACED AND STRONGEST TONGUE HOUNDS. CANNOT SAG OR TWIST OUT OF SHAPE

"S. S. S." Improved Double Strength Wheeled Scrapers

DESCRIPTION OF SIZES

Size	Capacity	Bowl			Wheels			Total weight lbs.	Code
		Long in.	Wide in.	Deep in.	Diam. in.	Tire in.	Axle sq. in.		
No. 1	9 cu. ft.	35	35	12	36	3x1¼	1½	500	Ponto
No. 2	13 cu. ft.	37	38	13½	40	3x1¼	1¾	650	Plymoth
No. 2½	14½ cu. ft.	40	38	14	42	3x$\frac{5}{16}$	1¾	700	Pagan
No. 3	17 cu. ft.	41	44	16	44	3x$\frac{5}{16}$	1¾	800	Pyramid

No. 1 is the smallest size and is especially adapted for township work and on high embankments. It fills full, and is easily and rapidly handled. We have sold this size for years, and can truthfully say that for making roads, excavating cellars, ponds, and general farm work, it is without a peer. A small team can handle it all day as easily as a drag scraper and do at least two and one-half times as much work.

No. 2 is the medium size and the one that is the most frequently used. A medium-sized team of horses or mules can handle it all day as easily as a drag scraper, and make as many trips and do nearly three times as much work. One man can load and dump this scraper either up or down hill without difficulty. We recommend this size as the best scraper for general purposes.

No. 2½ is a little larger than No. 2, and is nearly as heavy as the No. 3. It is a very strong scraper, carries high from the ground, and is intended for heavy grading. This size is furnished with snatch rod.

No. 3 is the largest size. It is exceedingly strong, and is used for long hauls. This size is furnished with a snatch rod, and requires an extra team in order to fill it properly. This extra team can assist in filling a gang of six to eight scrapers, owing to length of haul. When it is properly filled it carries seventeen cubic feet, and moves earth rapidly. It does the best of work, and makes the fill or grade very compact.

Snatch rods are always furnished on Nos. 2½ and 3 wheelers. No. 2 is furnished with snatch rod only when specially ordered, at slight additional cost.

Doubletrees and Neck Yokes furnished when ordered at small additional cost.

"S. S. S." Wheeled Scraper With Automatic End Gate

Y-100-147
Position for Filling

The end gate is very simple in construction, works automatically and is easy to put on or take off. When scraper is lowered in position to fill, the end gate is raised as shown in cut, and when scraper is loaded and lifted into carrying position the end gate drops, closes the front of the scraper and prevents the contents from wasting out on the haul.

End gates are of no advantage except where scrapers are handling very loose material on long haul or down hill.

We make an extra charge for end gates, and never furnish them except when specifically ordered.

	Code
End Gate for No. 1 Wheeled Scraper	Earl
End Gate for No. 2 Wheeled Scraper	Echo
End Gate for No. 2½ Wheeled Scraper	Elder
End Gate for No. 3 Wheeled Scraper	Emit

Instructions for Loading and Operating "S. S. S." Wheeled Scrapers

The ground should be thoroughly plowed, leaving no uncut ridges between or beneath the furrows. The scraper to be loaded is driven to the end of the plowed furrow, and the man that is to do the filling unhooks the lever from the scraper bowl and elevates the lever until the hooks on the hounds catch on the hooks on the sides of the bowl. This drops the bowl into proper position for filling. As the team is started, the filler should press the lever forward with one hand and hold one of the handles of the bowl with the other hand, lifting up on the handles slightly until the point of the bowl catches in the ground. The scraper will then run perfectly level and regulate the depth itself. Ease the strain on the team when necessary by pulling back slightly on the lever. When the bowl is filled and while the team is in motion pull back and down upon the lever until the latch catches at the back of the bowl. The team is then turned sharply to the right or left and is driven to the dump. On arriving at the dump the man employed for that purpose raises up the rear handles, thus depressing the point of the scraper until it catches in the ground, when the forward motion of the team will complete the dumping.

The No. 2 Wheeler can be filled in good material by one man, but in heavy material it is better to have two. It can, however, be dumped by one man. The No. 3 Wheeler requires two men to fill, but can be dumped by one, although two are frequently employed. The No. 2 is generally loaded with one team, but if the material is very heavy an extra team is sometimes used. In this case snatch rods can be attached to the No. 2 Wheeled Scraper Tongue, or the snatch team can be hitched direct to the end of the tongue. The No. 3 always requires a snatch team to assist in loading.

The number of wheel scrapers in a "gang" depends entirely upon the distance the earth is to be hauled. Just such number should be used as will keep a snatch team and loader busy. There should not be too many used, as in that case the teams and drivers would be obliged to wait their turn and thereby loose time. The number of gangs of scrapers that may be used on a given piece of work depends entirely upon the number of dumping places. The ground should be plowed in strips of not less than the width of the scraper bowl and while the scrapers are filling on one strip the plowman is plowing another. In this way all the teams and men are at work; no one waiting for another. The size of plow to be used depends upon the kind of material. If two or four horses can do the work, our No. 1 should be used. If more teams are required, one of our larger plows should be used.

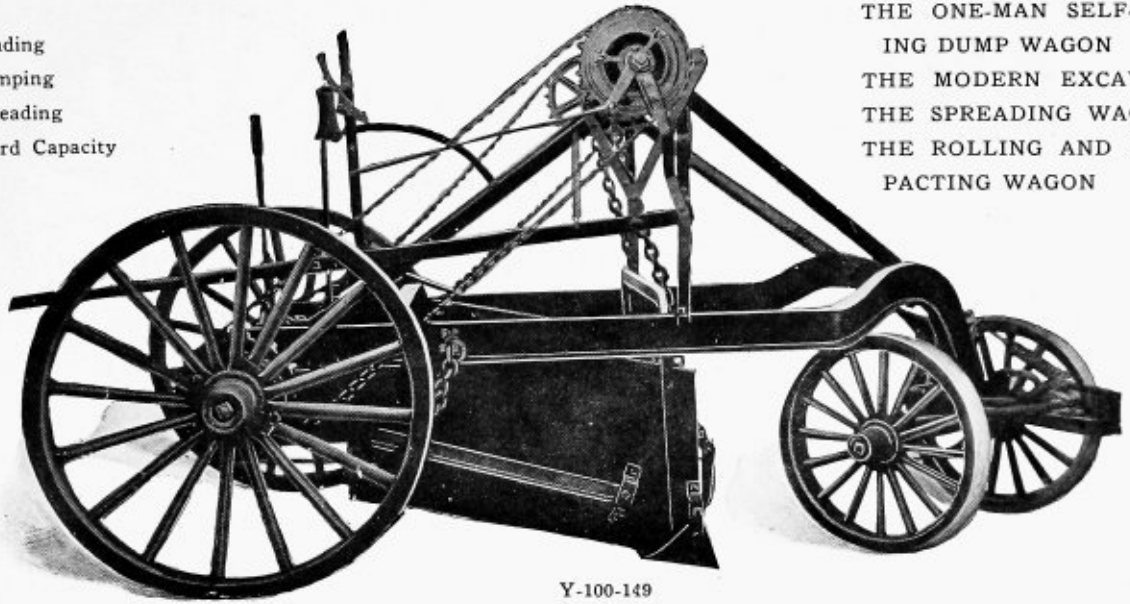
See that all bolts on the scraper are kept tight and all bearings well oiled.

The Maney "S. S. S." Four Wheel Scraper

WARNING: The Maney (name copyrighted) is covered in every detail by letters patent, and all are warned not to infringe on these patents. Users of machinery are also warned not to purchase and use machines that infringe on our patents, as we will protect ourselves under the patent laws.

Self-Loading
Self-Dumping
and Spreading
One Yard Capacity

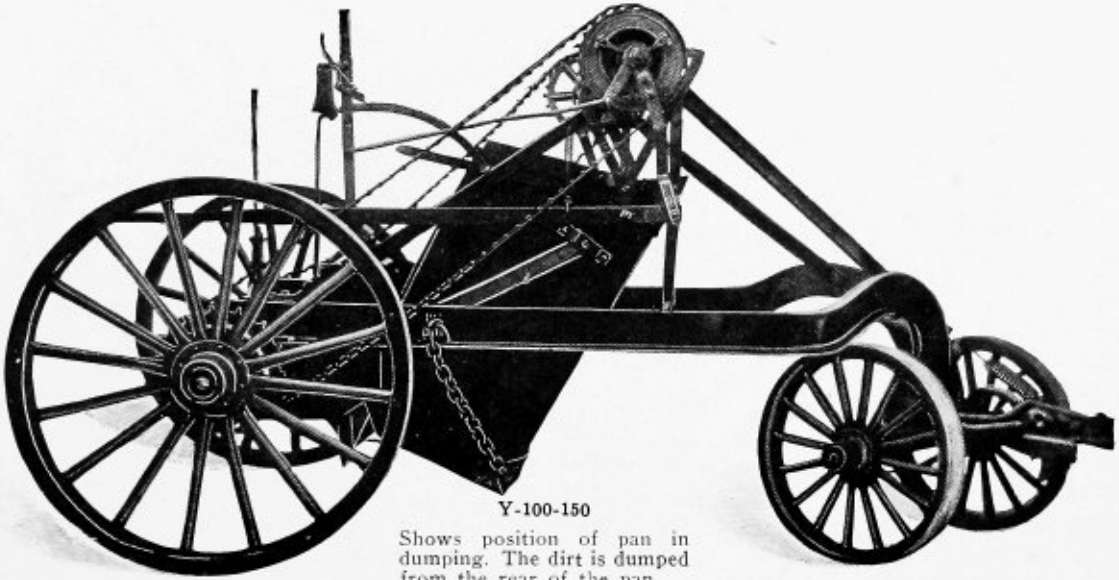
THE ONE-MAN SELF-LOADING DUMP WAGON
THE MODERN EXCAVATOR
THE SPREADING WAGON
THE ROLLING AND COMPACTING WAGON



Y-100-149

Maney, ready for loading. Note position of pan. Cutting edge touches the ground.

The Maney "S. S. S." Four Wheel Scraper



Y-100-150

Shows position of pan in dumping. The dirt is dumped from the rear of the pan.

THE MANEY'S RANGE OF WORK

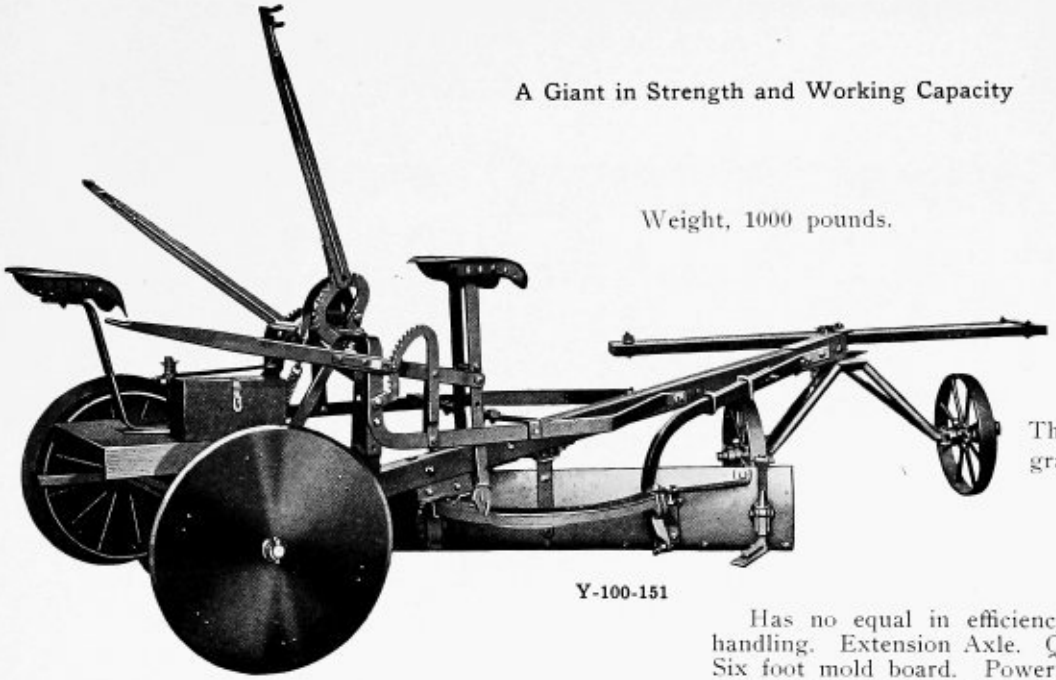
There is not an excavating machine in the world that has the great range of work possessed by the Maney. Some machines excavate and load. Some transport. Some transport and dump, but the Maney excavates, loads, transports, dumps, spreads and even rolls and compacts. As the load is dumped it can be spread in layers of any desired depth, without extra cost.

The Maney works well in dry or wet materials, loading and dumping even in water.

"S. S. S." 20th Century Road Grader No. 2.

A Giant in Strength and Working Capacity

Weight, 1000 pounds.



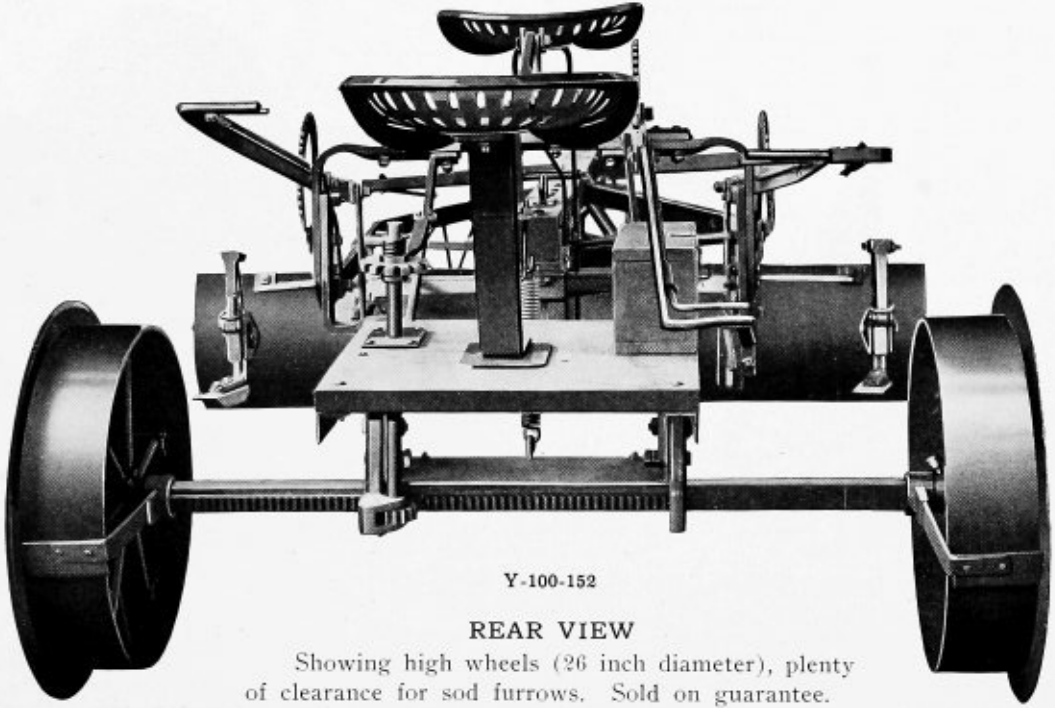
Y-100-151

The greatest up-to-date grader in the world.

A two-horse grader, built to stand the continuous pull of four horses and guaranteed to do the work.

Has no equal in efficiency and simplicity of handling. Extension Axle. Quick shifting frame. Six foot mold board. Powerful and strong. No slipping nor sliding with load when opening ditches and cutting road shoulder or berms. Dirt always moves in line of draft with this wonderful grader. Roomy platform and seat.

"S. S. S." 20th Century Road Grader



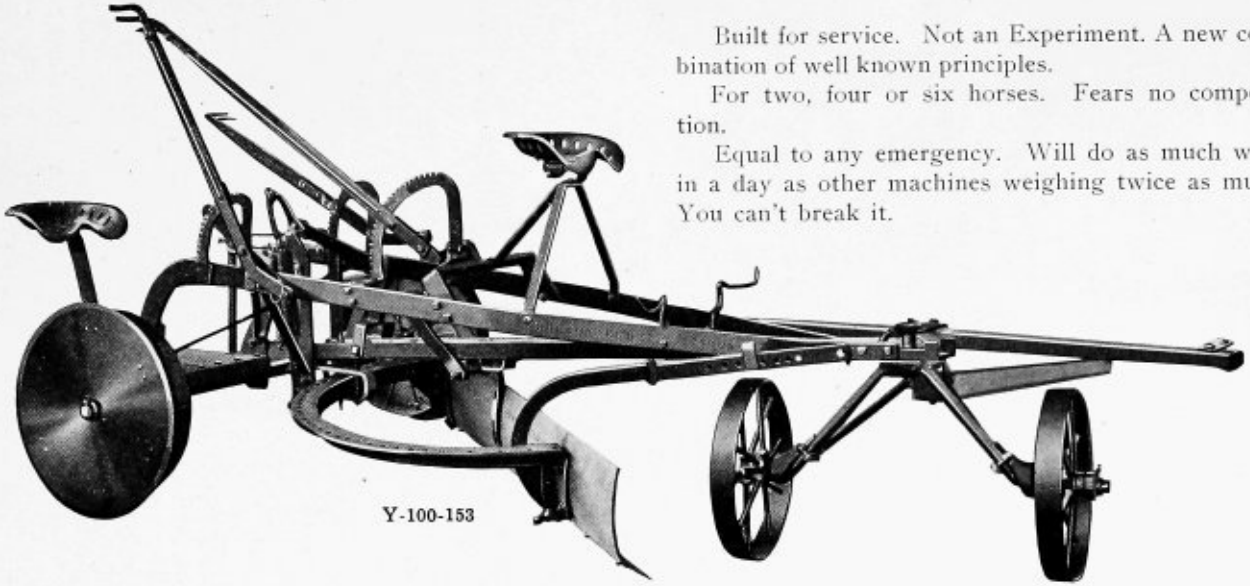
Y-100-152

REAR VIEW

Showing high wheels (26 inch diameter), plenty of clearance for sod furrows. Sold on guarantee.

Wheels Without Flanges Furnished When Desired.

"S. S. S." Dreadnought Road Grader For Heavy Work



Y-100-153

Built for service. Not an Experiment. A new combination of well known principles.

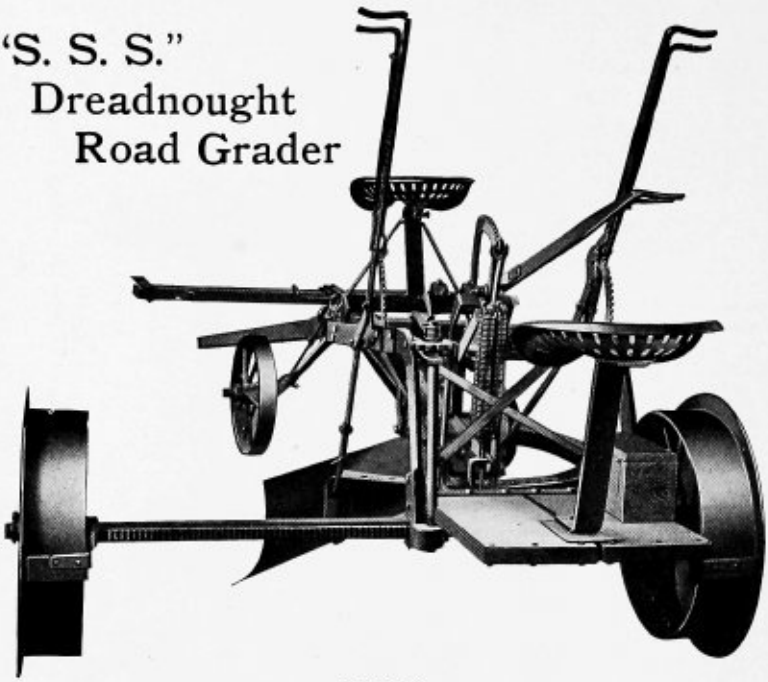
For two, four or six horses. Fears no competition.

Equal to any emergency. Will do as much work in a day as other machines weighing twice as much. You can't break it.

Weighs 1,400 pounds

Wheels without Flanges Furnished when Desired

"S. S. S." Dreadnought Road Grader



Y-100-154

Rear View. Notice the strength. The angle at which the blade strikes the ground is determined by operating one of the side levers. These levers are so hung that connection is made with the half circle, no matter what the position of moldboard. (Connection is made by passing through any one of the holes in the half circle, the pin portion of the bar attached to end of side lever. The hooked portion passes under the half circle and a ring drops over to hold it firmly in place.) Only one side lever should be used—i. e., that on the side of the machine following the rear end of blade.

Long levers give complete control of blade. Strong springs assist in lifting blade. Long rear axle permits ample side shift.

Draft is directly on moldboard. Extreme angle permits working in gumbo or other stiff soils. Steel, flanged wheels prevent side draft.

SPECIFICATIONS

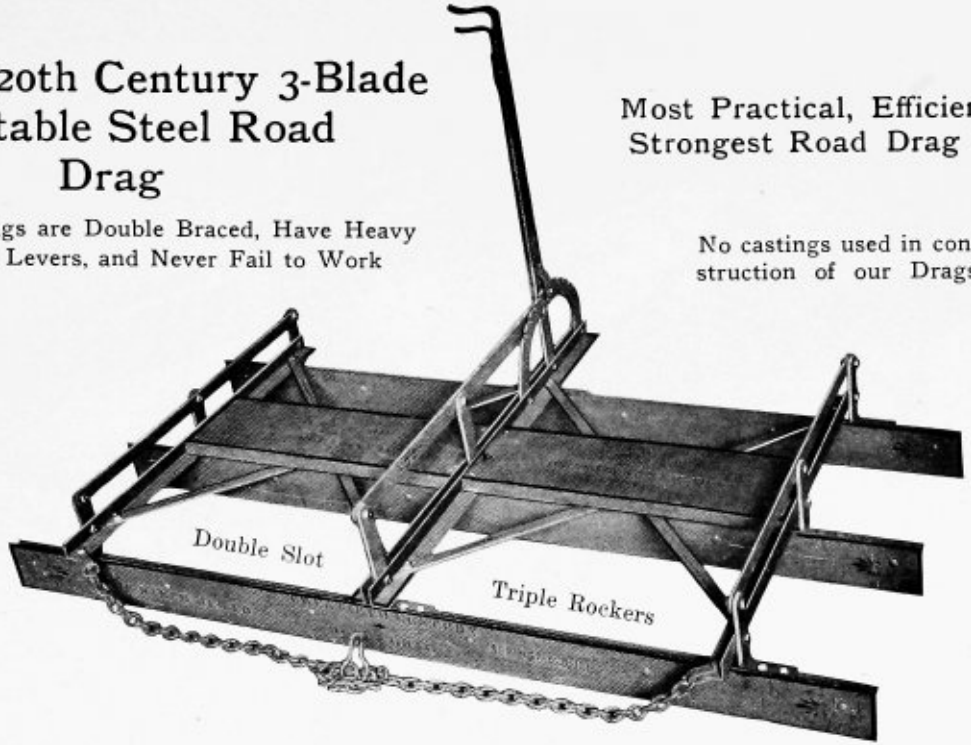
Moldboard—7 feet long, 13 inches high, ¼ inch thick. High-grade open hearth plow steel. Cutting Blade—5 inches wide, $\frac{3}{16}$ inch thick, beveled edge plow-share steel, detachable. Rear Wheels—26 inches high exclusive of flanges, rims 6 inches wide, flanges project 2 inches. Front Axle—1½ inches diameter, 31 inches long. Rear Axle—2 inches square, 6 feet long, high carbon open hearth steel. Bearings are detachable and when worn may be renewed at small expense. Draft Bar—6-inch steel channel. Main Frame—3 inches wide, ¾ inch thick, best grade open hearth steel. Half Circle—Steel angle 3½x2½x½ inches. Guy Bar—2 inches wide, ⅝ inch thick.

"S. S. S." 20th Century 3-Blade Adjustable Steel Road Drag

All Our Drags are Double Braced, Have Heavy Powerful Levers, and Never Fail to Work

Most Practical, Efficient and Strongest Road Drag Made

No castings used in construction of our Drags



Y-100-155

Has 50 per cent more efficiency than two-blade drag and costs very little more. The three blades hold drag always on same plane and prevent dipping into depressions. Blades are easily adjusted by long lever. By shifting the grab link, draft may be adjusted to any angle. We supply steel platform when desired.

Blades are 8 feet long, 6 inches high, open hearth steel, reinforced entire length by stiff high carbon steel angles.

Width of drag, 45 inches. Weight, including chain, 380 pounds.

You can use this drag on muddy, sloppy roads as well as on dry roads.

The Very Best, Strongest and Most Efficient Two-Blade Drag Made

All Our Drags Double Braced

Heavy, Powerful Levers, and Never Fail to Work

We supply steel platform when desired.

"S. S. S." Illinois Two-Blade Adjustable Steel Road Drag

All steel except platform. Blades 8 feet long, 6 inches high, open hearth steel, reinforced entire length by stiff high carbon steel angles. Width of Drag, 36 inches. Weight, including chain, 320 pounds. The construction of the "S. S. S." "Illinois" is identically the same as the "S. S. S." Twentieth Century, except for the number of blades.

No castings used in construction of our Drags

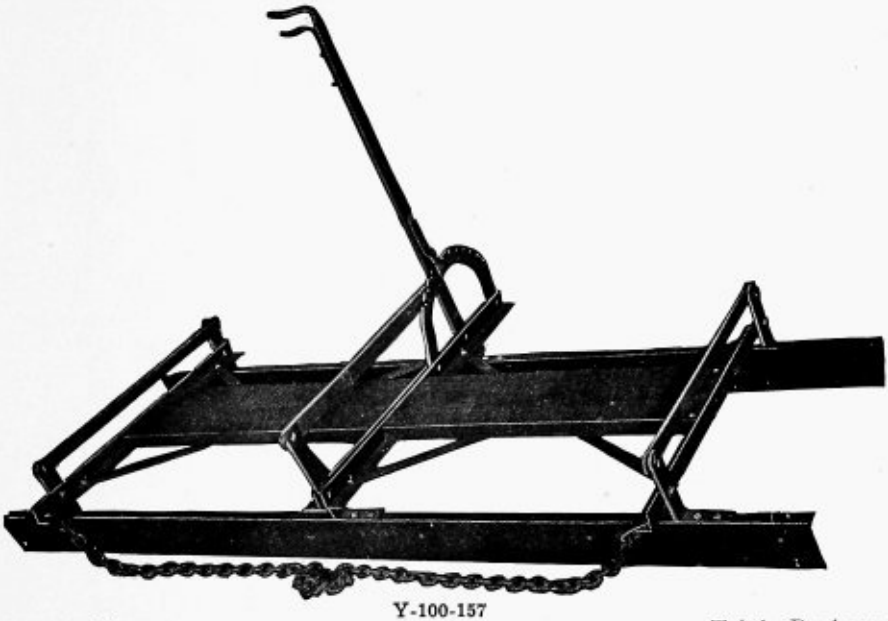
Y-100-156

You can use this Drag on muddy, sloppy roads as well as dry roads

THE STANDARD SCALE & SUPPLY CO.
MANUFACTURERS

"S. S. S." Two-Blade Adjustable Steel Road Drag

Another One of Our Powerful Well Built Drags



Y-100-157

Double Slot

Triple Rockers

No Castings Used in Construction of Our Drags

All steel except heavy running board. Blades, 7 feet long, 6 inches high, open hearth steel, reinforced entire length by stiff high carbon steel angles. Width of Drag, 36 inches.

Weight, including chain, 300 pounds. The construction of "S. S. S." Drag is identically the same as that of "S. S. S." "20th Century," except for the number of blades.

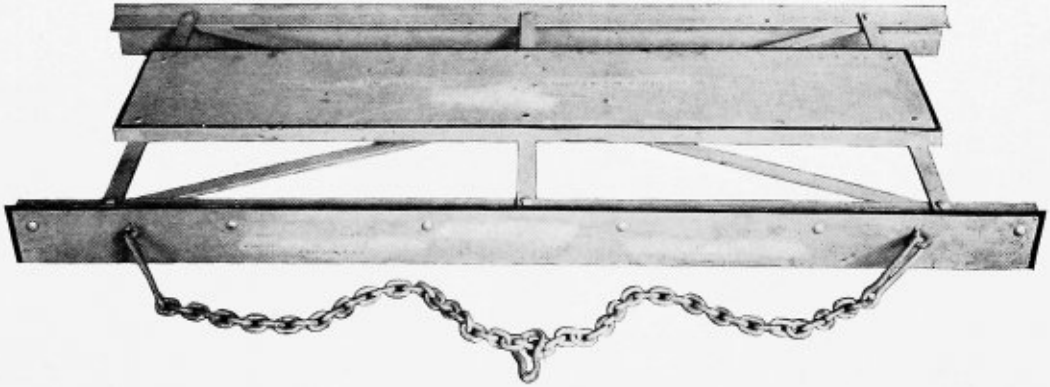
You can use this drag on muddy, sloppy roads as well as on dry roads.

We supply steel platform when desired.

"S. S. S." Springfield or Plano Steel Road Drag

Strong, Well Built Steel Edition of the "Split-Log" or "King Drag"

All steel except platform. Blades 7 feet long, 6 inches high, open hearth steel, reinforced by stiff high carbon steel angles, strongly braced. Width of Drag, 31 inches. Weight, 175 pounds. As a light two-horse Drag the "Springfield" has no superior. Don't waste time or money on wooden drags—steel is cheaper in the end



Y-100-158

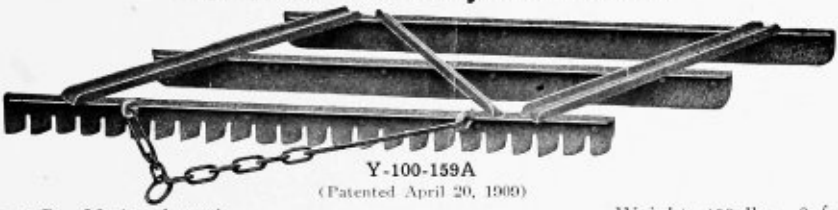
No Castings Used in Construction of Our Drags

MANUFACTURERS

"S. S. S." Economy Tools

For Light Scarifying (Harrowing) and Leveling Gravel and Stone Roads—Keeps the Ruts and Hollows Filled—Saves Repair Costs

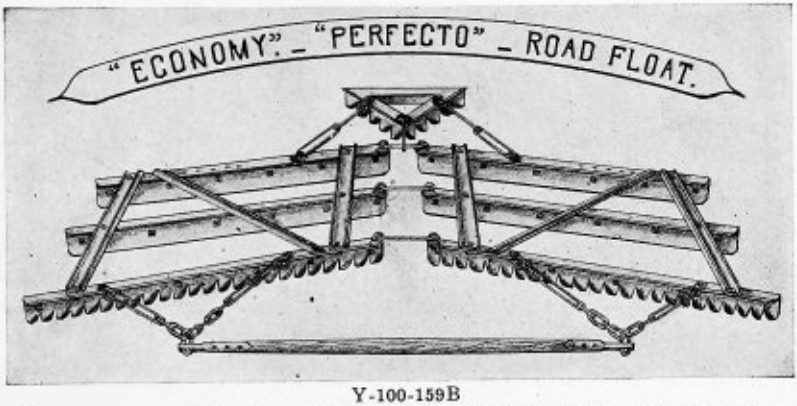
"S. S. S." Economy Road Float



Y-100-159A

(Patented April 20, 1909)

No. 4-R.	Made of steel	Weight, 400 lbs.	8 feet
No. 3-R.	Made of steel	Weight, 360 lbs.	7 feet
No. 2-R.	Made of steel	Weight, 330 lbs.	6 feet

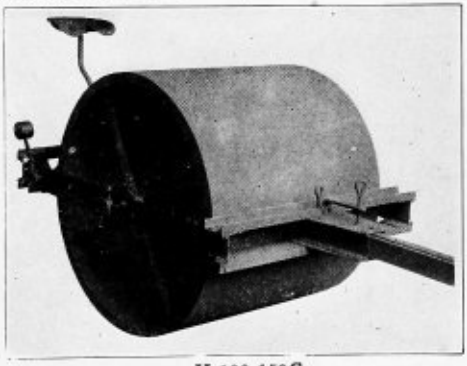


Y-100-159B

Size No. 1 (covers a road width of 10 feet) Size No. 3 (covers a road width of 14 feet)
Size No. 2 (covers a road width of 12 feet) Size No. 4 (covers a road width of 16 feet)
Special size made to order. Weights range from 660 to 800 pounds.

"S. S. S." Reversible Road Roller

For Use with Horses or Traction Engines



Y-100-159C

Acknowledged to be the best and most economical horse power roller.

Description. The cylinder or shell is made from a universal steel plate, being 4 feet high for the No. 4 or 4-ton Roller, and 4½ feet high for the No. 5 or 5-ton Roller. The shell to be filled with concrete by purchaser. All sizes have a rolling width of four feet.

No. 4 "S. S. S." Road Roller weighs four tons when filled with concrete.

No. 5 "S. S. S." Road Roller weighs five tons when filled with concrete.

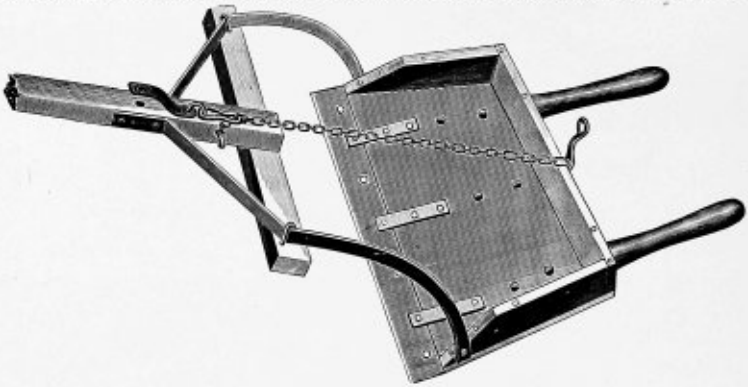
Shipping weight, either size, about 1500 pounds.

Special sizes made to order.

MANUFACTURERS

"S. S. S." Tongue Scraper, Leveler and Ditcher

For Levelling Roads or Irrigation Fields, Cutting, Cleaning or Filling Ditches



Y-100-160A

The Driver Fills and Dumps the Scraper with Ease. No Extra Man Required

No. 1	Width, 48 inches	Weight, 135 pounds	Code—Thomas
No. 2	Width, 42 inches	Weight, 120 pounds	Code—Tongue

The scraper box and handles are made of well seasoned hardwood, thoroughly bolted together. The shoes and draw-bars are of wrought steel, strong and durable. The blade is of heavy steel, extra hard and ground to a sharp cutting edge. The flipper is of malleable iron.

"S. S. S." Scraper

For Cleaning Out and Back-Filling Ditches, Leveling Roads, Barnyards, or Any Uneven Surfaces

Y-100-160B

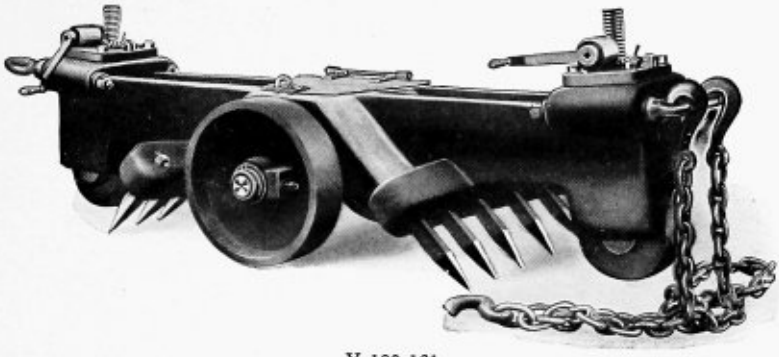
"S. S. S." Scraper is made of seasoned hardwood, well ironed and bolted. The bit is of extra hard steel ground to a cutting edge. The hounds are of 1¾x⅝ wrought steel, with ⅜ cable chain.

To back-fill a trench, a rope or chain about 20 feet long is fastened to the cable chain on the scraper, and the team is hitched to the end of the rope. The team works on one side of the trench, and the man holding the scraper works on the opposite side. Operating in this manner, one "S. S. S." Scraper will do as much back-filling in a given length of time, as 50 shovelers.

Width, 48 inches Weight, 75 pounds Code—Doan

"S. S. S." Torpedo Road Scarifier

For Rebuilding and Maintaining Permanent Roads



Y-100-161

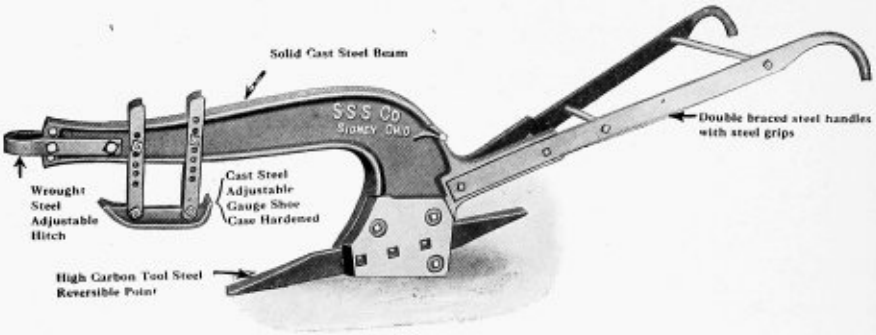
Excels in Strength, Durability, Efficiency and Safety

The "S. S. S." Torpedo Scarifier is a gigantic "Harrow" which rapidly and evenly opens the surface of the hardest macadam road, loosens and turns the stone, leaving it in perfect condition for leveling and rerolling. It has 12 picks or tines—six at each end. The number can be reduced at will to suit the pulling power. Either end or either set of picks work equally well. Reversing is easily done in a few seconds. Scarifies close to curb without readjustment. 4,000 to 5,000 square yards of road surface can be scarified and made ready for rolling in a day with one outfit, at less cost and less waste of material than any other methods. The depth worked by this Scarifier can be regulated at will, even while operating, so that the permanent road base or foundation need not be disturbed.

The picks are held at a greater angle than are the picks of other scarifiers, thus giving better results in lifting and loosening the stone, and lightening the draft. The working angle of these picks tends to wear them to a point instead of blunt ends, so that sharpening is not often necessary. Careful and proper distribution of weight (mainly towards the ends) and "low set" of the machine reduces to a minimum the lifting, pitching, swaying and swerving, and enables the Scarifier to run more true to line of draft. Suitable coil springs in attachment of pull bars absorb shocks and prevent undue strains. Regulating cranks are at the side of machine, easy to reach, quickly operated, and safe. Weight, 4600 to 4800 pounds.

"S. S. S." Rooter

Made of Malleable Iron



Y-100-162

"S. S. S." All Steel Unbreakable Rooter

No Contractor or Road Builder can afford to be without this useful tool. It is especially designed for tearing up hard-pan, frozen ground, macadam, cement, etc., that is too hard to be worked with a regular grading plow.

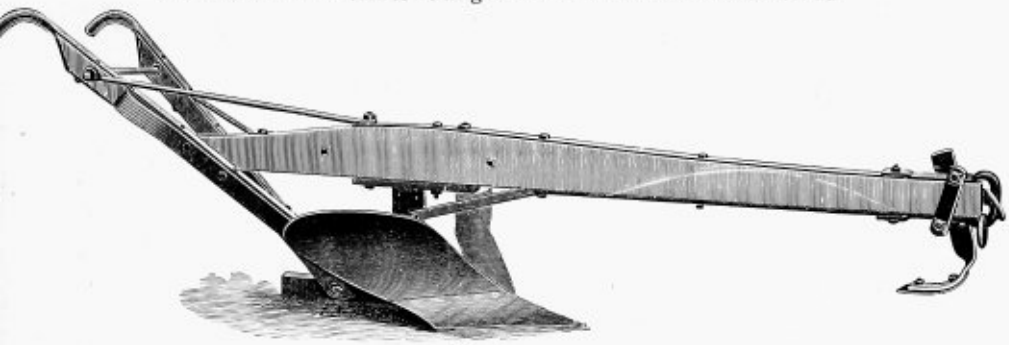
The beam, shoe and clamps are made of the best grade of malleable iron. The shoe is case hardened. The handles have steel guards as shown in cut. The point is reversible, and is made of high grade steel, specially hardened for this particular purpose.

The "S. S. S." Rooter can be handled with two horses and is built strong enough for use with four, six or eight horses, or a traction engine.

Rooter complete with reversible point	Weight, 275 lbs.	Code—Robin
Extra Reversible Point	Weight, 23 lbs.	Code—Chirp

"S. S. S." Railroad and Township Grading Plows

Furnished with either Gauge Shoe or Wheel as Preferred



Y-100-163

These plows cut narrow and deep furrows, and are light draft. Moldboards and shares made alike and interchangeable. Points put on with five-eighth bolts, and easily taken off and replaced. Scours well in all kinds of soil.

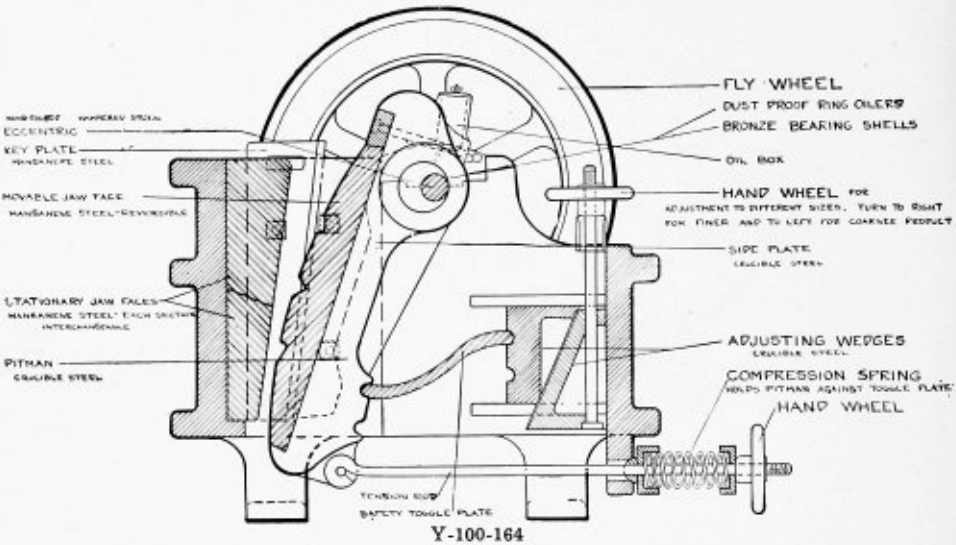
Made either right or left hand (right hand always sent unless otherwise instructed.) These plows are strong, well made and securely braced throughout. The beams are made of the best white oak, heavily ironed on both the lower and upper sides, and are complete with wrought iron clevis with two strong rings on the end. Heavy wrought steel standards, with large plate on top and securely braced. The steel used in the moldboards, shares and cutters is of the best quality plow steel and will scour anywhere. The moldboard and shares are double shinned. The cutters are reversible and very strong. The handles are of the best quality of timber, strapped on both sides with heavy iron. Nos. 1, 2 and 3 have iron handholds.

		No. Horses	Beam	Weight	Code
No. 0	Right hand	2	6 feet	180 pounds	Vice
No. 0	Left hand	2	6 feet	180 pounds	Vamp
No. 1	Right hand	2 to 4	6½ feet	200 pounds	Vapor
No. 1	Left hand	2 to 4	6½ feet	200 pounds	Value
No. 2	Right hand	4 to 6	7½ feet	270 pounds	Virgin
No. 2	Left hand	4 to 6	7½ feet	270 pounds	Vent
No. 3	Right hand	6 to 8	8½ feet	350 pounds	Vinton
No. 3	Left hand	6 to 8	8½ feet	350 pounds	Vinegar

No. 0 Right hand share, Code, Vary	No. 0 Left hand share, Code, Verb
No. 1 Right hand share, Code, Volley	No. 1 Left hand share, Code, Vine
No. 2 Right hand share, Code, Valise	No. 2 Left hand share, Code, Vortex
No. 3 Right hand share, Code, Victory	No. 3 Left hand share, Code, Violence

Important Notice—When ordering plows or repairs be careful to state number of plow, and whether right or left hand. **Right hand is always sent when left is not ordered.**

"S. S. S." Rock Crusher



Y-100-164

Cross sectional view, showing machine as equipped with our patented tapered smooth jaw. This jaw greatly increases the capacity on gravel, granite, trap-rock and very hard materials, and is of exceptional value in fine grinding, making a fine and uniform product in any desired size. It adds to the capacity by increasing the crushing surface, and emphasizes the force feed and force discharge action of the crushing jaw.

Design shows the No. 2, No. 2M, No. 4 and No. 4M type.

LIST OF PARTS

1. Stationary jaw, upper section, manganese steel.
2. Stationary jaw, lower section, manganese steel.
3. Movable jaw, manganese steel.
4R. 4L. Key plates, right and left, manganese steel.
5. Eccentric shaft, hand forged hammered steel.
6. Pitman, crucible steel.
7. Upper wedge, crucible steel.
8. Lower wedge, crucible steel
9. Safety toggle plate, cast iron.
10. Frame, special mixture semi-steel.
11. Side bearing shells, machined, bronze bearing metal.
12. Pitman bearing shells, machined, solid bronze shell in all machines up to and including the No. 2M. In larger machines the Pitman bearing shell is divided, half bronze and half babbitt, with take-up for wear.

Table of Weights and Capacities

WEIGHT, CAPACITY AND POWER REQUIRED FOR VARIOUS SIZES

No.	Weight Lbs.	Jaw Opening Corrugated	Jaw Opening Tapered for Gravel, Trap Rock, Fine Grinding	H.-P. Required	Capacity, Tons 2½ in. 10 Hrs.	Capacity, Tons ¾ in. 10 Hrs.	Capacity, Tons ¼ in. and Finer
1	550	4x6 in.	2½x6 in.	2 to 3		4 to 6	2 to 3
2	2500	8x8 in.	5½x8 in.	4 to 6	25 to 30	18 to 22	10 to 15
2M	3000	8x12 in.	5½x12 in.	5 to 7	40 to 50	25 to 30	12 to 18
3	4300	8x12 in.	5½x12 in.	6 to 8	50 to 60	35 to 40	15 to 20
3M	5500	8x16 in.	5½x16 in.	8 to 12	60 to 80	40 to 50	25 to 30
4	10500	10x18 in.	8 x18 in.	14 to 18	100 to 150	70 to 90	
4M	11500	10x22 in.	8 x22 in.	15 to 20	150 to 200	80 to 120	
5	14500	14x20 in.	11 x20 in.	18 to 25	200 to 250	90 to 130	
5M	16000	14x24 in.	11 x24 in.	24 to 28	250 to 300	100 to 150	

USES FOR THE VARIOUS SIZES

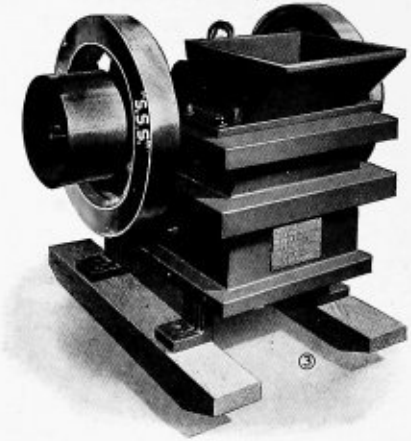
The No. 1, No. 2, and No. 2M crushers are designed specially for use in block and tile plants, or wherever a moderate capacity of fine material is needed. The No. 2 and No. 2M are high speed machines and are the ones more generally used for fine grinding.

The No. 3 and No. 3M crushers are essentially contractors machines. Although the opening on the No. 2M and No. 3 is the same, the latter is much heavier and is built for more severe work. The capacities of these crushers are well suited to the needs of the average contractor or road builder.

The No. 4, No. 5 and No. 5M crushers are heavy duty machines. They are built to handle a large size feed and should not be used for crushing finer than ¾ in. to 1 in. Any one of these three could be used for handling the rejections in a large crushing plant. The cost of up-keep on a "S. S. S." for such work is a fraction of what it is for any other type of crusher. Make a comparison of the power required with other machines of the same capacity.

The No. 4M has been produced to fill the demand for a crusher that will handle large material and produce a big capacity of uniform ½ in. stone and finer. This crusher is used in quarries, mines and cement mills, where a large capacity in fine crushing is desired, and a uniform product is essential.

"S. S. S." 2 M Crusher



Y-100-166

Jaw opening, 8 in. x 12 in. (corr. jaws). 5½ in. x 12 in. (tapered jaws.) Weight, 3000 lbs. Requires 5 to 7 H.-P.

The "S. S. S." 2M Crusher shown above is capable of wider range of work than any other crushing or grinding machine now in existence.

In the block and tile plant it will crush gravel to ¼ in. or to sand for use as aggregate or for making facing material. The "S. S. S." 2M is the best crusher for rejections for increasing the proportion of fine product from a No. 5 or No. 6 Gyratory. It is cheaper than any other known equipment for reducing ores of all kinds to a uniform fineness preparatory to the tube mill or concentrating table. It is a favorite machine for a portable contractors' or road-builders' crushing outfit.

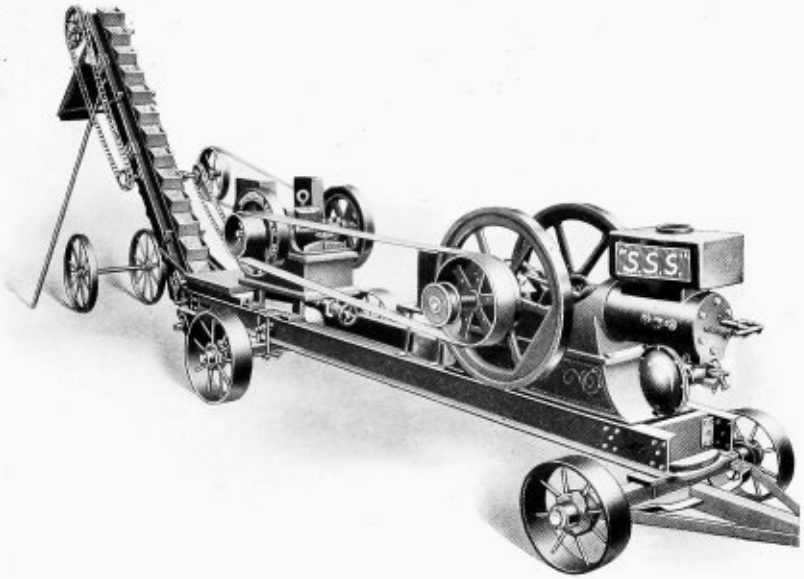
AS A GRINDER AND PULVERIZER

The old types of crushers cannot crush below 1 in. size, either uniformly or economically. Pulverizers of various kinds crush to ½ in., ¼ in. and finer, but they are costly to install and to operate, and cost from $600 to $3000. With special equipment for fine crushing the "S. S. S." 2M will crush to coarse sand, doing the work of machines that cost several times as much, at a small fraction of the operating expense. This is the machine that has been found to excel all others for economy in crushing limestone for use on the soil, producing 10 to 15 tons per day of an ideal product.

OTHER USES

Are innumerable. It is used to crush gravel, granite, traprock, sandstone, glass, oyster-shells, charcoal, slag, coal, and ores of all kinds. Customers frequently write us that on ¾ in. and 1 in. crushing, the "S. S. S." 2M gives them as much as 50 tons per 10 hours.

"S. S. S." Crusher, Mounted



Y-100-167

"S. S. S." 2M mounted outfit, a complete portable crushing plant for contractors and road builders.

Consists of "S. S. S." 2M Crusher mounted on 15 ft. steel I-beam truck; one 7½ H.-P. Gasoline Engine; one 12 ft. belt drive standard elevator, detachable and built to let down for transportation; friction clutch pulley, and all belts, chains and pulleys complete and ready for operation. Notice the platform between crusher and elevator, for economy and convenience in feeding. A belt conveyor runs under the platform, carrying the product to the elevator. Dust jacketed chute screen attached to elevator; this equipment makes a complete portable crushing plant, which can be instantly adjusted to make any size product desired.

Weight of entire outfit 6100 lbs. Capacity, 20 to 50 tons per 10 hours, according to size, makes a uniform product in any desired size, by turning the adjustment wheel, as coarse as 2½ in. or as fine as ¼ in. and finer.

This outfit is of the most solid and substantial construction throughout. It has won the praise of contractors in every part of the United States as the most economical and satisfactory portable outfit ever yet designed. It is offered at an especially low price for its advertising value, as it attracts the widest attention wherever it is seen in operation.

Made in all sizes, with any desired equipment.

"S. S. S." Air-Cooled Compressors

Y-100-168A
Single Cylinder

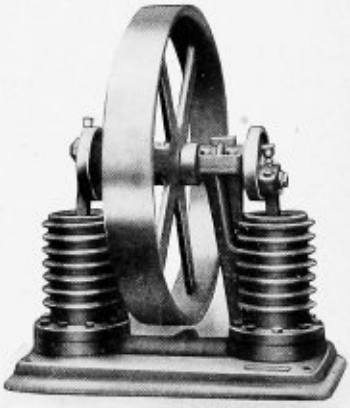
PRACTICAL, DEPENDABLE

STRONG, SIMPLE, DURABLE

These compressors were designed to supply the demand for a small but substantially built machine for heavy duty, high pressure and to minimize the cost of installation. Each outfit has been given a thorough working test for ten hours against 200 lbs. pressure.

No.	Type	Cu. ft. free air per min.	Diam. of cylinder	Length of stroke	Rev. per minute	Discharge pipe	Diameter of pulley	Weight
1	Single	4	3½ in.	4 in.	200	½ in.	24x3 in.	240 lbs.
2	Single	6	4 in.	5 in.	200	¾ in.	24x3 in.	300 lbs.
3	Single	12½	5 in.	6 in.	200	1 in.	30x4 in.	450 lbs.
21	Double	8	3½ in.	4 in.	200	½ in.	24x3 in.	300 lbs.
22	Double	12	4 in.	5 in.	200	¾ in.	24x3 in.	350 lbs.
23	Double	25	5 in.	6 in.	200	1 in.	30x4 in.	550 lbs.

Air Cooled. The cooling principle is exactly the same as employed by manufacturers of air-cooled engines for automobile service; the cost of installation is greatly reduced, as no water tank or water pipe connections of any kind are required and it is impossible for compressor to freeze.



Y-100-168B
Double Cylinder

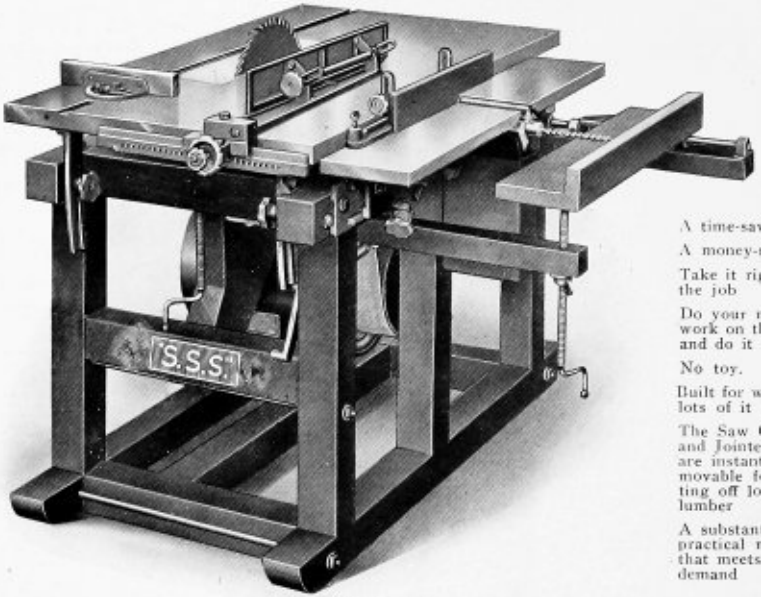
"S. S. S."
Air-Cooled Compressors and Receivers

Y-100-169

Complete Outfits for Automobile service, unexcelled for the contractor for drilling, blasting, cleaning, etc., for marble yards cannot be beat. Larger size on application.

MANUFACTURERS

"S. S. S." Contractors' Combination Saw Table with Gasoline Engine



A time-saver

A money-maker

Take it right to the job

Do your mill work on the job and do it right

No toy.

Built for work and lots of it

The Saw Gauge and Jointer Fence are instantly removable for cutting off long lumber

A substantial, practical machine that meets every demand

Y-100-170

12 Tools in One

A Rip Saw, a Cut-off Saw, a Mitre Saw, a Dado Machine, a Gaining Machine, a Grooving Machine, a Rabbitting Machine, a Jointer or Planer, a Boring Machine, a Matcher, a Moulder, a Sander—all with self-contained power.

The machine is compact, self-contained and very substantially built throughout of the best obtainable materials and will stand hard, continuous service.

The frame is made of 3½x3½ in. seasoned hard wood accurately framed and strongly bolted together, insuring strength, rigidity and durability.

The top is 54x30 in., made of iron accurately planed. It is strongly hinged to the rear of the frame and is readily raised and lowered by the hand screw and firmly held in any position by the clamps on each side. It is independent of the Jointer table and neither interferes with the other.

Adjustable ripping gauge is furnished, which is provided with a tilting fence for bevel sawing, and has rapid, fine adjustment and locking device for securing it at any point. It opens out to 14 in. from the saw.

The cut-off gauge slides in an accurately-planed groove the entire length of the table and can be set to cut squares, mitres or any angle desired.

The jointer or planer is entirely separate from the top of the machine and always ready for use without making any changes. It has a steel cutter head fitted with two 6 in. knives and slotted on two sides to receive Matcher Bits or Moulding Cutters for working a large variety of shapes. The tables are 7½ in. wide, 43 in. long, and are adjustable to any desired position. An adjustable fence is provided, which tilts to any desired bevel for chamfering, etc. The Jointer Head is removable to permit the use of the Sander Drum.

The boring table has a travel of 6 in. in line with the spindle and a vertical adjustment of 3½ in. The bits have 6 in. twist and ½ in. shanks and are carried in the end of the saw mandrel, being securely held by a hollow safety set screw.

The mandrel is steel, 1⅝ in. diameter, with self-oiling, babbitted boxes strongly yoked together, thus insuring strength, permanent alignment and cool running bearings. It is driven by a 3½ in. endless belt direct from the engine or motor, and a belt tightener is provided with adjustable spring take-up to insure proper tension on the belt.

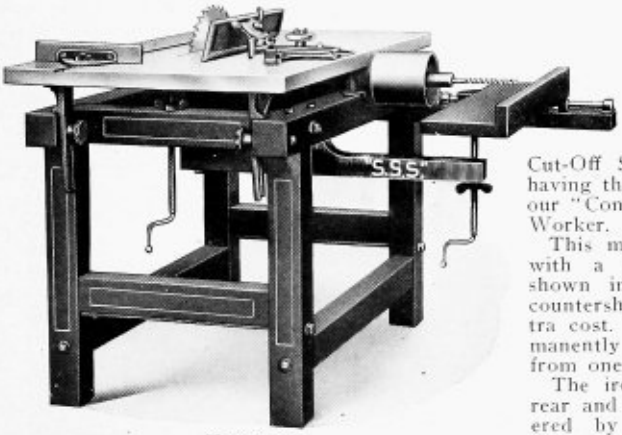
The regular equipment consists of 3 H.-P. engine with batteries, spark coil and connections, endless driving belt, rip and cut-off gauges, one 12 in. rip saw, one 12 in. cut-off saw, one ½ in. and one ⅞ in. dado head; one jointer head with two 6 in. knives; one each ½ in. and 1 in. auger bits; one sander drum and one sander disc; one emery wheel with arbor; one throat piece for dado heads; one throat piece for saws, oil can and wrenches.

Electric motor of 3 H.-P., adapted to any current or voltage, can be furnished in place of the engine at extra cost. In asking for price of machine so equipped, always state what the current and voltage is. 5 H.-P. motor can be furnished at extra cost.

When desired for heavier work we can equip the machine with 6 H.-P. engine and 14 in. saws at additional cost.

Floor space required 54x54 in.; total height, 36 in.; mandrel takes saws with 1 in. hole; shipping weight as follows: Without engine, 760 lbs.; with 3 H.-P. engine, 1060 lbs.; with 6 H.-P. engine, 1100 lbs.; with motor, 1110 lbs.

"S. S. S." Combination Saw Table



Y-100-171

For those requiring only a Rip and Cut-Off Saw Bench without the power attached, we are prepared to furnish our Combination Rip and Cut-Off Saw Bench shown here, having the same frame and top as our "Contractors'" Variety Wood Worker.

This machine may be equipped with a Boring Attachment, as shown in the cut, also with a countershaft, when desired, at extra cost. It may be located permanently in the shop or taken from one job to another.

The iron top is hinged at the rear and may be raised and lowered by the hand screw, and firmly clamped in any position.

The mandrel is 1⅝ in. steel, and runs in self-oiling babbitted bearings, which are securely yoked together. Saws up to 24 in. diameter; also Dado, Grooving and Gaining Heads can be used.

The Cut-Off Gauge slides in a groove the entire length of the table and can be set to cut square or any angle to 45 degrees. The Ripping Gauge is provided with a tilting fence for bevel sawing and has rapid, fine adjustment and locking device for securing it in any desired position.

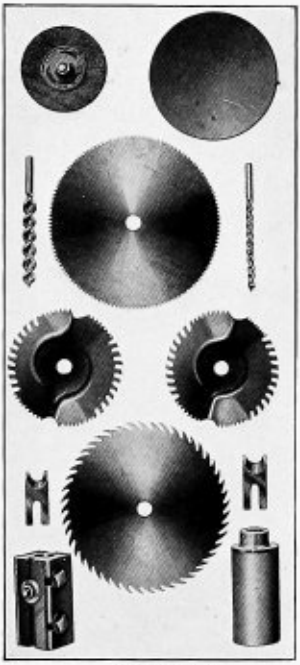
The Boring Table travels 6 in. in line with spindle and has 3½ in. vertical adjustment.

The machine is regularly furnished with one 16 in. Rip Saw, but Cut-Off Saw and other equipment can be supplied when desired at extra cost.

Table is 54x30 in.; height, 36 in. Weight without Boring Attachment, 510 lbs. Code name, "Sawn"; with Boring Attachment, 560 lbs. Code name, "Sawer."

Countershaft when furnished weighs 150 lbs. extra and has 8x6 in. Tight and Loose Pulleys that should run 675 R. P. M. Packed for export, 23 cubic feet. Export packing adds 125 lbs. to above weights.

Attachments for "S. S. S." Contractors' Saw Table

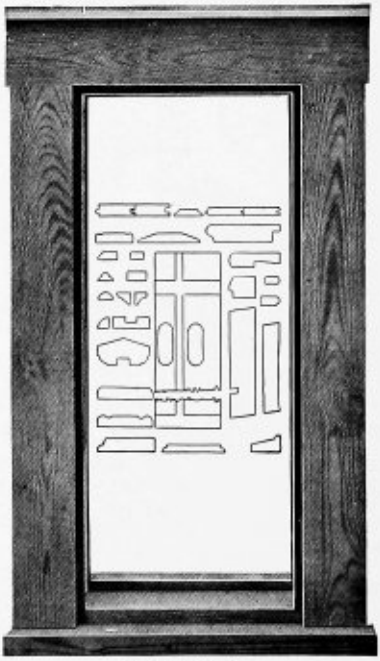


Y100-172A

6 in. Emery Wheel with Arbor, 9 in. Sander Disc, two Auger Bits, two Dado or Grooving Heads, one 12 in. Cut-off Saw, one 12 in. Rip Saw, two Nosing Bits, one 6 in. Jointer Head with Knives and one Sander Drum.

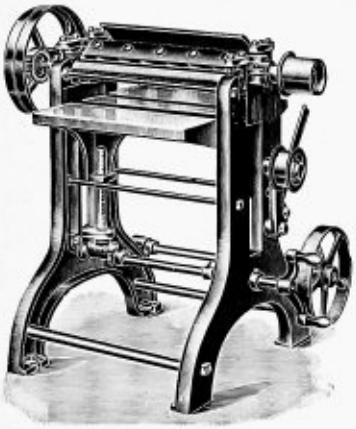
All the work on this Window Frame, including the pulley pockets and inside casing, was done on this machine.

The small Line cuts show a few of the many shapes that can be worked on the machine.



Y-100-172B

"S. S. S." Single Surface Planer



Y-100-173A

Just the Machine for Carpenter Shops, Wheelwrights, etc.

Made in two sizes, 16 in. and 20 in. wide, to plane any thickness from ¼ in. thick to 6 in. thick.

Has two driven feed rolls, one in front and one in rear of cutter head. Cutter head is solid steel.

Material and workmanship first-class.

Two speeds of feed, 30 ft. to 45 ft. per minute.

Works hard or soft wood equally well.

All adjustments quickly and easily made.

Furnished with or without countershaft.

T. & L. pulleys on counter 8 in. x 4 in. Speed 1,000 R. P. M.

Weight 637 to 700 lbs., according to width.

"S. S. S." 36-Band Saw

(Can furnish 27-inch also)

The most approved design. Frame is cored and cast in one piece with broad base, insuring stiffness and good floor support.

The Wheels are iron, accurately turned and carefully balanced, with rims covered with rubber.

The Table is iron, 28x32 in. and may be tilted to any angle up to 45 degrees.

The Guide Bar is fitted with saw guide, is counterbalanced and will raise 14 inches above the table.

Tight and loose pulleys 12x4 in. Speed 400 R. P. M.

Furnished with Brazing Clamp, Tongs, one half-inch Saw Blade and Rip Gauge.

Y-100-173B

"S. S. S." Feed Mill or Grinder

Y-100-174

These mills have stood the test of time and where ever introduced have taken their place at the head of the Feed Mill class.

Among their many advantages are the following:

Patent Machine Cut Plates that are absolutely perfect and true.

A patented Quick Release by means of which the plates can be instantly thrown apart without changing the adjusting screw.

A Ball Bearing device for taking the end thrust of the main shaft that will not heat or cause friction.

Well babbitted Split Boxes on the main shaft which can easily be adjusted to take up all wear.

Self Lining grinding plates that render it impossible for the plates to wear unevenly.

This is a mill of great capacity and is suitable for the farmer who has a large stock, or who wishes to do his neighbor's grinding as well as his own, also for the contractors with a number of horses to feed. No modern man or owner will be without this mill after they have tried once. Capacities 2 to 60 bushels per hour, from 2 to 15 H.-P. required to drive, can be attached by belt to any mixer engine.

MANUFACTURERS

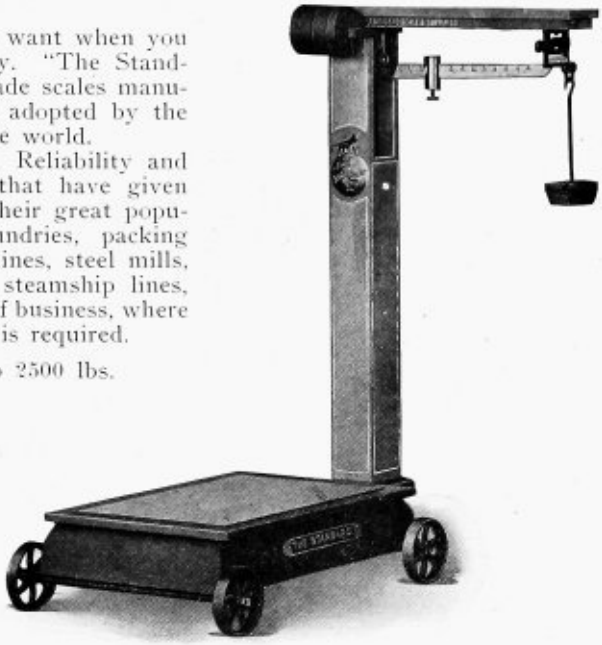
"The Standard" Scales

"The Scale Standard"

Quality is what you want when you buy weighing machinery. "The Standard" are the highest grade scales manufactured and have been adopted by the largest scale users in the world.

Strength, Durability, Reliability and Accuracy are features that have given "The Standard" Scale their great popularity in factories, foundries, packing houses, coal and iron mines, steel mills, oil refineries, railroads, steamship lines, and in fact in every line of business, where long life and durability is required.

Capacity—400 lbs. to 2500 lbs.

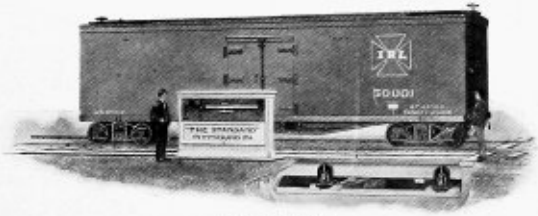


Y-100-175A

Portable Platform Scale

Your scale places the value on what you buy or sell. Let us help to correct values. Special scales for particular requirements.

Railroad Track Scales



Y-100-175B

Adopted by the largest factories and railroads throughout the United States. Heavy in construction, sensitive in operation, accurate in results.

Capacities from 15 ton to 200 tons.

Ask for a scale catalog—A-160.

Write for special scale catalog.

MANUFACTURERS

"The Standard" Scales

Dormant Warehouse Scales

Platform of scale set on the level with the floor. All parts being suspended beneath scale in a self-contained frame.

Capacity 1500 lbs. to 6000 lbs.

Y-100-176A

Wagon and Auto Truck Scale

Adapted to all classes of work, also built with extension for setting beam inside of office. Full capacities on beam if desired.

Wagon, capacity 8000 lbs. to 40000 lbs.

Auto Truck, capacity 30-000 lbs. to 50000 lbs.

Y-100-176B

Warehouse, Mine or Tipple Scales

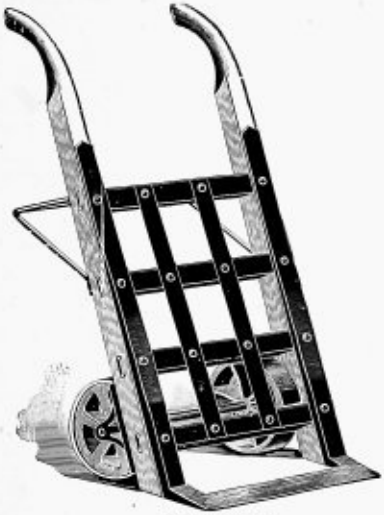
This type of scale is used universally in mines, etc., where single cars of ore or coal are weighed. Also used by factories, foundries for weighing industrial cars. Built exceptionally strong for this particular line of work.

Capacities from 6000 to 30000 lbs.

Y-100-176C

Write for special scale catalog.

"The Standard" Two-Wheel Truck



Y-100-177A
Western Pattern Warehouse Truck

Y-100-177B
Western Pattern Barrel Truck

Constructed of high grade material and adapted by the largest factories, foundries and manufacturies of all over the world, as the highest grade manufactured.

"The Standard" Pressed Steel Truck

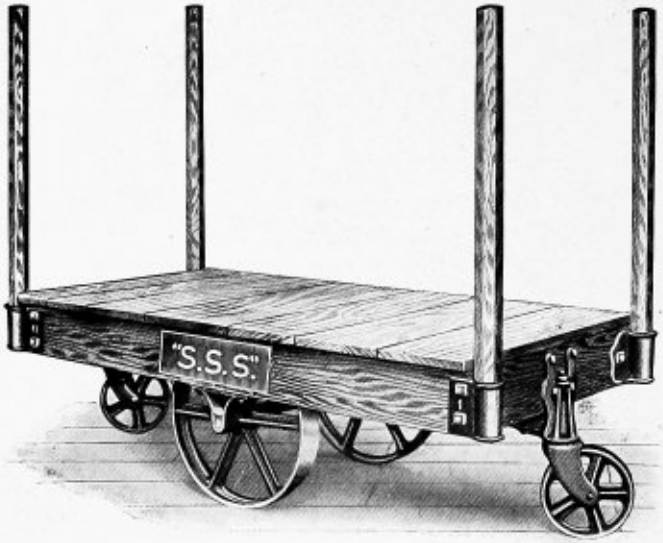
Y-100-177C

Adapted to the heaviest kind of work and will outlast any other truck 3 to 1. Entire body of the truck is pressed from one piece of steel, malleable cast iron nose and wheels. Body of truck bent so as to handle barrels as well as boxes.

Write for special truck catalog.

MANUFACTURERS

"The Standard" Trucks



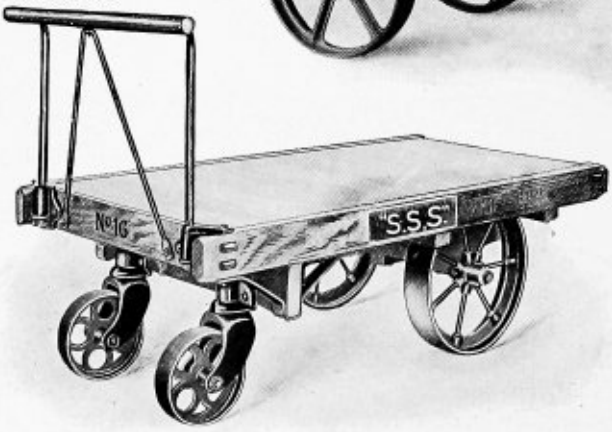
Built extra heavy and from the best material obtainable and are especially adapted to all kinds of work where trucks of well made heavy construction are required.

Y-100-178A

Bar Handle Trucks

Special trucks for particular requirements.

Y-100-178B



Stake Truck

Can be equipped with roller bearing wheels and ball bearing casters.

Y-100-178C

Write for special truck catalog.

Worth Knowing

To Find Diameter of a Circle, multiply circumference by .31831.

To Find Circumference of a Circle, multiply diameter by 3.1416.

To Find Area of a Circle, multiply square of diameter by .7854.

To find Surface of a Ball, multiply square of diameter by 3.1416.

To Find Side of an Equal Square, multiply diameter by .8862.

To Find Cubic Inches in a Ball, multiply cube of diameter by .5236.

Doubling the Diameter of a Pipe increases its capacity four times.

Double Riveting is from 16 to 20 per cent stronger than single.

One Cubic Foot of Anthracite Coal weighs about 53 pounds.

One Cubic Foot of Bituminous Coal weighs from 47 to 50 pounds.

One Ton of Coal is equivalent to two cords of wood for steam purposes.

A Gallon of Water (U. S. Standard) weighs 8⅓ pounds and contains 231 cubic inches.

A Cubic Foot of Water contains 7½ gallons, 1728 cubic inches, and weighs 62½ pounds.

A Horse-Power is equivalent to raising 33,000 pounds 1 foot per minute, or 550 pounds 1 foot per second.

Steam Rising from Water at its boiling point (212 degrees) has a pressure equal to the atmosphere (14.7 pounds to the square inch) at sea level.

To Evaporate 1 Cubic Foot of Water requires the consumption of 7½ pounds of ordinary coal, or about 1 pound of coal to 1 gallon of water.

A "Miner's Inch" of water is approximately equal to a supply of 12 U. S. gallons per minute.

The Mean Pressure of the atmosphere is estimated at 14.7 pounds per square inch, so that with a perfect vacuum it will sustain a column of water 33.9 feet high at sea level.

A Cubic Inch of water evaporated under atmospheric pressure is approximately converted into 1 cubic foot of steam.

The Horse-Power of boilers, as per standard adopted by the Am. S. M. E., is 30 pounds of water evaporated per hour at a pressure of 70 pounds per square inch, and from a temperature of 100 degrees F.

Well-Designed Boilers, under successful operation, will evaporate from 7 to 10 pounds of water per pound of first-class coal.

Each Square Foot of Heating Surface is considered sufficient to evaporate 2 pounds of water; therefore, for an engine using 30 pounds water per horse-power per hour, each horse-power of the engine requires 15 square feet heating surface in the boiler.

On One Square Foot of Fire Grate can be burned on an average from 10 to 12 pounds hard coal, or 18 to 20 pounds soft coal, per hour, with natural draft.

Two and One-Quarter Pounds of dry wood is equal to 1 pound of average quality of soft coal.

There is a Saving of about 1 per cent in fuel burned for every 11 degrees that feed water is warmed. With sufficient exhaust steam available, if cold water at 70 degrees is raised to 210 degrees Fahrenheit, the saving of fuel will approximate 12 per cent.

Speed of Steam, for designers of steam piping, is about a mile and a half per minute. Very often it is much more than this.

The Friction of Water in Pipes is as the square of velocity. The capacity of pipes is as the square of their diameters; thus, doubling the diameter of a pipe increases its capacity four times.

The Height of a Column of Fresh Water, equal to a pressure of 1 pound per square inch, is 2.31 feet. (In usual computation this is taken at 2 feet, thus allowing for ordinary friction.)

To Find the Capacity of a Cylinder, in Gallons: Multiplying the area in inches by the length of stroke in inches will give the total amount of cubic inches; divide this amount by 231 (the cubical contents of a U. S. gallon in inches), and the product is the capacity in gallons.

Electrical Units

Volt. The unit of electrical motive force. Force required to send one ampere of current through one ohm of resistance.

Ohm. Unit of resistance. The resistance offered to the passage of one ampere, when impelled by one volt.

Ampere. Unit of current. The current which one volt can send through a resistance of one ohm.

Coulomb. Unit of quanity. Quanity of current which impelled by one volt would pass through one ohm in one second.

Farad. Unit of capacity. A conductor or condenser which will hold one columb under the pressure of one volt.

Joule. Unit of work. The work done by one watt in one second.

Watt. The unit of electrical energy, and is the product of the ampere and volt. That is, one ampere of current flowing under a pressure of one volt gives one watt of energy.

One electrical horse-power is equal to 746 watts.

One kilowatt is equal to 1,000 watts.

To find the watts consumed in a given electrical circuit, such as a lamp, multiply the volts by the amperes.

To find the volts, divide the watts by the amperes.

To find the amperes, divide the watts by the volts.

To find the electrical horse-power required by a lamp, divide the watts of the lamp by 746.

To find the number of lamps that can be supplied by one electrical horse-power of energy, divide 746 by the watts of the lamp.

To find the electrical horse-power necessary, multiply the watts per lamp by the number of lamps and divide by 746.

To find the mechanical horse-power necessary to generate the required electrical horse-power, divide the latter by the efficiency of the generator.

To find the amperes of a given circuit, of which the volts and ohms resistance are known, divide the volts by the ohms.

To find the volts, when the amperes and watts are known, multiply the amperes by the ohms.

To find the resistance in ohms, when the volts and amperes are known, divide the volts by the amperes.

RULES FOR CALCULATING SIZE AND SPEED OF PULLEYS

To Find Diameter of Driven. Multiply number of revolutions of driver by its diameter and divide product by number of revolutions of driven.

To Find Revolutions of Driven Shaft. Multiply diameter of pulley on drive shaft by its number of revolutions and divide product by diameter of pulley on driven shaft.

To Find Revolution of Driving Shaft. Multiply diameter of pulley on driven shaft by revolutions per minute, and divide product by diameter of driving pulley.

Worth Knowing

To Find the Pressure in Pounds per square inch of a column of water, multiply the height of the column in feet by .434. Approximately, we say that every foot elevation is equal to ½ pound pressure per square inch; this allows for ordinary friction.

To Find the Diameter of a Pump cylinder to move a given quantity of water per minute (100 feet of piston being the standard of speed), divide the number of gallons by 4, then extract the square root, and the product will be the diameter in inches of the pump cylinder.

To Find Quantity of Water elevated in one minute, running at 100 feet of piston speed per minute, square the diameter of the water cylinder in inches and multiply by 4. Example: Capacity of a 5-inch cylinder is desired. The square of the diameter (5 inches) is 25, which, multiplied by 4, gives 100, the number of gallons per minute (approximately).

To Find the Horse-Power necessary to elevate water to a given height, multiply the weight of the water elevated per minute in pounds by the height in feet, and divide the product by 33,000 (an allowance should be added for water friction, and a further allowance for loss in steam cylinders, say from 20 to 30 per cent).

The Area of the Steam Piston, multiplied by the steam pressure, gives the total amount pressure that can be exerted. The area of the water piston, multiplied by the pressure of water per square inch, gives the resistance. A margin must be made between the power and resistance to move the piston at required speed, say from 20 to 40 per cent, according to speed and other conditions.

To Compute the Capacity of Pumping Engines, multiply the area of the water piston, in inches, by the distance it travels, in inches, in a given time. The product divided by 231 gives number of gallons in time named.

To Find the Velocity in feet per minute necessary to discharge a given volume of water in a given time, multiply the number of cubic feet of water by 144, and divide the product by the area of the pipe in inches.

To Find the Area of a Required Pipe, the volume and velocity of water being given, multiply the number of cubic feet of water by 144, and divide the product by the velocity in feet per minute. The area being found, it is easy to get the diameter of pipe necessary.

Table of Theoretical Horse-Power Required to Raise Water to Different Heights

Feet Gals. per Min.	5	10	15	20	25	30	35	40	45	50	60	75	90	100	125	150	175	200	250
5	.006	.012	.019	.025	.031	.037	.044	.05	.06	.06	.07	.09	.11	.12	.16	.19	.22	.25	.31
10	.012	.025	.037	.050	.062	.075	.087	.10	.11	.12	.15	.19	.22	.25	.31	.37	.44	.50	.62
15	.019	.037	.056	.075	.094	.112	.131	.15	.17	.19	.22	.28	.34	.37	.47	.56	.66	.75	.94
20	.025	.050	.075	.100	.125	.150	.175	.20	.22	.25	.30	.37	.45	.50	.62	.75	.87	1.00	1.25
25	.031	.062	.093	.125	.156	.187	.219	.25	.28	.31	.37	.46	.56	.62	.78	.94	1.09	1.25	1.56
30	.037	.075	.112	.150	.187	.225	.262	.30	.34	.37	.45	.56	.67	.75	.94	1.12	1.31	1.50	1.87
35	.043	.087	.131	.175	.219	.262	.306	.35	.39	.44	.52	.66	.79	.87	1.09	1.31	1.53	1.75	2.19
40	.050	.100	.150	.200	.250	.300	.350	.40	.45	.50	.60	.75	.90	1.00	1.25	1.50	1.75	2.00	2.50
45	.056	.112	.168	.225	.281	.337	.394	.45	.51	.56	.67	.84	1.01	1.12	1.41	1.69	1.97	2.25	2.81
50	.062	.125	.187	.250	.312	.375	.437	.50	.56	.62	.75	.94	1.12	1.25	1.56	1.87	2.19	2.50	3.12
60	.075	.150	.225	.300	.375	.450	.525	.60	.67	.75	.90	1.12	1.35	1.50	1.87	2.25	2.62	3.00	3.75
75	.093	.187	.281	.375	.469	.562	.656	.75	.84	.94	1.12	1.40	1.69	1.87	2.34	2.81	3.28	3.75	4.69
90	.112	.225	.337	.450	.562	.675	.787	.90	1.01	1.12	1.35	1.68	2.02	2.25	2.81	3.37	3.94	4.50	5.62
100	.125	.250	.375	.500	.625	.750	.875	1.00	1.12	1.25	1.50	1.87	2.25	2.50	3.12	3.75	4.37	5.00	6.25
125	.156	.312	.469	.625	.781	.937	1.094	1.25	1.41	1.56	1.87	2.34	2.81	3.12	3.91	4.69	5.47	6.25	7.81
150	.187	.375	.562	.750	.937	1.125	1.312	1.50	1.69	1.87	2.25	2.81	3.37	3.75	4.69	5.62	6.56	7.50	9.37
175	.219	.437	.656	.875	1.093	1.312	1.531	1.75	1.97	2.19	2.62	3.28	3.94	4.37	5.47	6.56	7.66	8.75	10.94
200	.250	.500	.750	1.000	1.250	1.500	1.750	2.00	2.25	2.50	3.00	3.75	4.50	5.00	6.25	7.50	8.75	10.00	12.50
250	.312	.625	.937	1.250	1.562	1.875	2.187	2.50	2.81	3.12	3.75	4.69	5.62	6.25	7.81	9.37	10.94	12.50	15.62
300	.375	.750	1.125	1.500	1.875	2.250	2.625	3.00	3.37	3.75	4.50	5.62	6.75	7.50	9.37	11.25	13.12	15.00	18.75
350	.437	.875	1.312	1.750	2.187	2.625	3.062	3.50	3.94	4.37	5.25	6.56	7.87	8.75	10.94	13.12	15.31	17.50	21.87
400	.500	1.000	1.500	2.000	2.500	3.000	3.500	4.00	4.50	5.00	6.00	7.50	9.00	10.00	12.50	15.00	17.50	20.00	25.00
500	.625	1.250	1.875	2.500	3.125	3.750	4.375	5.00	5.62	6.25	7.50	9.37	11.25	12.50	15.62	18.75	21.87	25.00	31.25

Irrigating

We publish here a table showing results of the Government tests on the quantity of water required for irrigation; local conditions of course vary and this table has been compiled from a comparison of various sections.

ACRES IRRIGATED BY VARIOUS QUANTITIES OF WATER

Showing the number of acres irrigated in 1, 10 and 24 hours, pumping various quantities, and irrigating various depths.

Gallons Pumped per Minute	Acres Irrigated in 1 Hr.						Acres Irrigated in 10 Hrs.						Acres Irrigated in 24 Hrs.					
	1 In. Deep	2 In. Deep	3 In. Deep	4 In. Deep	5 In. Deep	6 In. Deep	1 In. Deep	2 In. Deep	3 In. Deep	4 In. Deep	5 In. Deep	6 In. Deep	1 In. Deep	2 In. Deep	3 In. Deep	4 In. Deep	5 In. Deep	6 In. Deep
600	1.3	.6	.4	.3	.2	.2	13.2	6.6	4.4	3.3	2.6	2.2	31.8	15.9	10.6	7.9	6.3	5.3
824	1.8	.9	.6	.4	.3	.3	18.2	9.1	6.0	4.5	3.6	3.0	43.7	21.8	14.5	10.9	8.7	7.3
944	2.1	1.0	.7	.5	.4	.3	20.8	10.4	6.9	5.2	4.1	3.4	50.0	25.0	16.7	12.5	10.0	8.3
988	2.2	1.1	.7	.5	.4	.3	21.8	10.9	7.2	5.4	4.3	3.6	52.4	26.2	17.4	13.1	10.4	8.7
1000	2.2	1.1	.7	.5	.4	.3	22.1	11.0	7.3	5.5	4.4	3.7	53.0	26.5	17.6	13.2	10.6	8.8
1200	2.6	1.3	.9	.6	.5	.4	26.5	13.2	8.8	6.6	5.3	4.4	63.6	31.8	21.2	15.9	12.7	10.6
1500	3.3	1.6	1.1	.8	.6	.5	33.1	16.5	11.0	8.2	6.6	5.5	79.5	39.7	26.5	19.9	15.9	13.2
2000	4.4	2.2	1.4	1.1	.9	.7	44.2	22.1	14.7	11.0	8.8	7.3	106.0	53.0	35.3	20.5	21.2	17.6

Our "S. S. S." pump is especially adapted for this service and we have a large demand from this source.

LOSS BY FRICTION OF WATER IN PIPES

This table shows the loss in pounds pressure per square inch for each 100 feet in length due to friction, when discharging the given quantities of water per minute.

Gals. per Min.	Size of Pipes—Inside Diameter																
	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	2½ in.	3 in.	4 in.	6 in.	8 in.	10 in.	12 in.	14 in.	16 in.	18 in.
5	....	.84	.31	.12	.03	.....	.....	....	....	....	....	....	....	....	....	....	....
10	3.3	3.16	1.05	.47	.12	.03	.....	....	....	....	....	....	....	....	....	....	....
15	13.0	6.98	2.38	.97	.27	.06	.....	....	....	....	....	....	....	....	....	....	....
20	28.7	12.30	4.07	1.66	.42	.13	.03	....	....	....	....	....	....	....	....	....	....
25	50.4	19.00	6.40	2.62	.67	.21	.10	....	....	....	....	....	....	....	....	....	....
30	73.0	27.50	9.15	3.75	.91	.30	.12	.03	....	....	....	....	....	....	....	....	....
35	....	37.00	12.40	5.05	1.26	.42	.14	.05	....	....	....	....	....	....	....	....	....
40	....	48.00	16.10	6.52	1.60	.51	.17	.06	....	....	....	....	....	....	....	....	....
45	....	.....	20.20	8.15	2.11	.62	.27	.07	....	....	....	....	....	....	....	....	....
50	....	.....	24.90	10.00	2.14	.81	.35	.09	....	....	....	....	....	....	....	....	....
75	....	.....	56.10	22.40	5.32	1.80	.74	.21	.03	....	....	....	....	....	....	....	....
100	....	.....	.....	39.00	9.46	3.20	1.31	.33	.05	....	....	....	....	....	....	....	....
125	....	.....	.....	.....	14.90	4.89	1.99	.51	.07	....	....	....	....	....	....	....	....
150	....	.....	.....	.....	21.20	7.00	2.85	.69	.10	.02	....	....	....	....	....	....	....
175	....	.....	.....	.....	28.10	9.46	3.85	.95	.14	.03	....	....	....	....	....	....	....
200	....	.....	.....	.....	37.50	22.47	5.02	1.22	.17	.05	....	....	....	....	....	....	....
250	....	.....	.....	.....	.....	19.66	7.76	1.80	.26	.07	.03	.01	....	....	....	....	....
300	....	.....	.....	.....	.....	28.06	11.20	2.66	.37	.09	.04	....	....	....	....	....	....
350	....	.....	.....	.....	.....	.....	15.20	3.65	.50	.12	.05	.02	....	....	....	....	....
400	....	.....	.....	.....	.....	.....	19.50	4.73	.65	.16	.06	....	....	....	....	....	....
450	....	.....	.....	.....	.....	.....	25.00	6.01	.81	.20	.07	.03	....	....	....	....	....
500	....	.....	.....	.....	.....	.....	30.80	7.43	.96	.25	.09	.04	.017	.009	.005	....	....
750	....	.....	.....	.....	.....	.....	.....	....	2.21	.53	.18	.08	....	....	....	....	....
1000	....	.....	.....	.....	.....	.....	.....	....	3.38	.94	.32	.13	.062	.036	.020	....	....
1250	....	.....	.....	.....	.....	.....	.....	....	....	1.46	.49	.20	....	....	....	....	....
1500	....	.....	.....	.....	.....	.....	.....	....	....	2.09	.70	.29	.135	.071	.040	....	....
1750	....	.....	.....	.....	.....	.....	.....	....	....	....	.95	.38	....	....	....	....	....
2000	....	.....	.....	.....	.....	.....	.....	....	....	....	1.23	.49	.234	.123	.071	....	....
2250	....	.....	.....	.....	.....	.....	.....	....	....	....	....	.63	....	....	....	....	....
2500	....	.....	.....	.....	.....	.....	.....	....	....	....	....	.77	.362	.188	.107	....	....
3000	....	.....	.....	.....	.....	.....	.....	....	....	....	....	1.11	.515	.267	.150	....	....

Pressure and Equivalent Feet Head of Water

Pounds per Sq. In.	Feet Head	Pounds per Sq. In.	Feet Head	Pounds per Sq. In.	Feet Head
1	2.31	40	92.36	170	392.52
2	4.62	50	115.45	180	415.61
3	6.93	60	138.54	190	438.90
4	9.24	70	161.63	200	461.78
5	11.54	80	184.72	225	519.51
6	13.85	90	207.81	250	577.24
7	16.16	100	230.90	275	643.03
8	18.47	110	253.98	300	692.69
9	20.78	120	277.07	325	750.41
10	23.09	125	288.62	350	808.13
15	34.63	130	300.16	375	865.89
20	46.18	140	323.25	400	922.58
25	57.72	150	346.34	500	1154.48
30	69.27	160	369.43	1000	2308.00

Feet Head of Water and Equivalent Pressure

Feet Head	Pounds per Sq. In.	Feet Head	Pounds per Sq. In.	Feet Head	Pounds per Sq. In.
1	.43	60	25.99	200	86.62
2	.87	70	30.32	225	97.45
3	1.30	80	34.65	250	108.27
4	1.73	90	38.98	275	119.10
5	2.17	100	43.31	300	129.93
6	2.60	110	47.64	325	140.75
7	3.03	120	51.97	350	151.58
8	3.40	130	56.30	400	173.24
9	3.90	140	60.63	500	216.55
10	4.33	150	64.96	600	259.85
20	8.66	160	69.29	700	303.16
30	12.99	170	73.63	800	346.47
40	17.32	180	77.96	900	389.78
50	21.65	190	82.29	1000	433.09

Centrifugal Pump Data

Diameter Suction and Discharge	Economical Capacity per Minute	H.-P. req'd each ft. Elevation	R. P. M. Required for Economical Capacity at Given Elevations									
			5 ft.	10 ft.	15 ft.	20 ft.	25 ft.	30 ft.	35 ft.	40 ft.	50 ft.	60 ft.
1½ in.	70 Gal.	.058	642	784	904	1010	1104	1193	1274	1352	1493	1622
1¾ in.	90 Gal.	.075	473	570	651	724	790	850	906	959	1058	1147
2 in.	120 Gal.	.1	364	443	511	570	623	672	718	762	840	913
2½ in.	185 Gal.	.15	389	448	500	547	590	630	667	703	770	830
3 in.	265 Gal.	.22	286	359	419	475	517	559	599	636	704	766
3½ in.	360 Gal.	.26	352	413	455	513	555	595	632	667	733	793
4 in.	470 Gal.	.3	324	390	445	493	539	580	618	654	721	771
5 in.	735 Gal.	.45	311	368	418	462	502	532	574	606	666	722
6 in.	1060 Gal.	.59	247	300	345	385	421	453	484	513	566	615
8 in.	2000 Gal.	1.	293	345	390	430	466	500	532	561	617	667
10 in.	3000 Gal.	1.52	160	226	278	320	358	392	424	456	506	555
12 in.	4300 Gal.	2.	133	188	230	266	298	326	352	376	421	461
15 in.	7000 Gal.	3.5	105	148	181	209	234	256	277	295	331	362
18 in.	10000 Gal.	4.5	105	148	181	209	234	256	277	295	331	362
20 in.	12000 Gal.	5.4	142	202	245	285	317	349	376	403	450	492

Horse-Power Shafting will Transmit

Diameter of Shaft in Inches	Revolutions per Minute				
	100	125	150	175	200
1 1/16	1.4 h.-p.	1.4 h.-p.	1.7 h.-p.	2.1 h.-p.	2.4 h.-p.
1 3/16	2.4 "	3.1 "	3.7 "	4.3 "	4.9 "
1 5/16	4.3 "	5.3 "	6.4 "	7.4 "	8.5 "
1 7/16	6.7 "	8.4 "	10.1 "	11.7 "	13.4 "
1 1/2	10.0 "	12.5 "	15.0 "	17.5 "	20.0 "
1 5/8	14.3 "	17.8 "	21.4 "	24.9 "	28.5 "
1 11/16	19.5 "	24.4 "	29.3 "	34.1 "	39.0 "
1 3/4	26.0 "	32.5 "	39.0 "	43.5 "	52.0 "
1 7/8	33.8 "	42.2 "	50.6 "	59.1 "	67.5 "
1 15/16	43.0 "	53.6 "	64.4 "	75.1 "	85.8 "
2 1/16	53.6 "	67.0 "	79.4 "	93.8 "	107.2 "
2 1/4	65.9 "	82.4 "	97.9 "	115.4 "	121.8 "
2 3/8	80.0 "	100.0 "	120.0 "	140.0 "	160.0 "
2 7/16	113.9 "	142.4 "	170.8 "	199.3 "	227.8 "
2 7/8	156.3 "	195.3 "	234.4 "	273.4 "	312.5 "
	225	250	300	350	400
3 1/8	2.6 h.-p.	3.1 h.-p.	3.6 h.-p.	4.3 h.-p.	5.0 h.-p.
3 3/16	5.5 "	6.1 "	7.3 "	8.5 "	9.7 "
3 7/16	9.5 "	10.5 "	12.7 "	14.8 "	16.9 "
3 1/2	15.1 "	16.7 "	20.1 "	23.4 "	26.8 "
3 5/8	22.5 "	25.0 "	30.0 "	35.0 "	40.0 "
3 15/16	32.1 "	35.6 "	42.7 "	49.8 "	57.0 "
4 1/16	44.1 "	48.7 "	58.5 "	68.2 "	78.0 "
4 1/4	58.5 "	65.0 "	78.0 "	87.0 "	104.0 "
4 3/8	75.9 "	84.4 "	101.3 "	118.2 "	135.0 "
4 7/16	96.6 "	107.3 "	128.7 "	150.3 "	171.6 "
4 7/8	120.1 "	134.0 "	158.8 "	187.6 "	214.4 "
4 15/16	148.3 "	164.8 "	195.7 "	230.7 "	243.6 "
5 1/8	180.0 "	200.0 "	240.0 "	280.0 "	320.0 "
5 3/16	256.2 "	284.7 "	341.7 "	398.6 "	455.6 "
5 7/8	351.5 "	390.6 "	468.7 "	546.8 "	625.0 "

Horse-Power Belting will Transmit

Table of horse-power which may be transmitted by open single leather belts to pulleys running 100 revolutions per minute, the diameters of the driving and driven pulleys being equal. For double belts add 43% to figures given below.

Diameter of Pulley, Ins.	Width of Belt in Inches										
	2 in.	2½ in.	3 in.	3½ in.	4 in.	5 in.	6 in.	8 in.	10 in.	12 in.	16 in.
6	.47	.59	.71	.83	.95	1.18	1.42	.....	.....	.....	.....
7	.55	.69	.83	.97	1.11	1.38	1.66	2.22	.....	.....	.....
8	.63	.79	.95	1.11	1.26	1.58	1.90	2.53	.....	.....	.....
9	.71	.89	1.08	1.25	1.42	1.78	2.14	2.85	3.57	.....	.....
10	.79	.99	1.19	1.38	1.58	1.98	2.38	3.17	3.97	.....	.....
12	.95	1.19	1.42	1.66	1.90	2.38	2.85	3.80	4.77	.....	.....
14	1.11	1.38	1.66	1.94	2.22	2.77	3.33	4.44	5.57	6.68	.....
16	1.27	1.58	1.90	2.22	2.54	3.17	3.81	5.08	6.36	7.63	10.15
18	1.43	1.78	2.14	2.50	2.86	3.57	4.28	5.72	7.15	8.58	11.42
20	1.58	1.98	2.38	2.78	3.17	3.96	4.76	6.35	7.95	9.59	12.70
22	1.74	2.18	2.62	3.05	3.49	4.36	5.24	6.98	8.74	10.48	13.96
24	....	....	....	....	....	....	....	7.62	9.53	11.43	15.23
26	....	....	....	....	....	....	....	8.25	10.32	12.38	16.50
28	....	....	....	....	....	....	....	8.89	11.11	13.33	17.78
30	....	....	....	....	....	....	....	9.52	11.90	14.29	19.04
32	....	....	....	....	....	....	....	10.17	12.70	15.23	20.30
34	....	....	....	....	....	....	....	10.79	13.50	16.19	21.58
36	....	....	....	....	....	....	....	11.42	14.29	17.14	22.85
40	....	....	....	....	....	....	....	12.70	15.88	19.05	25.40
42	....	....	....	....	....	....	....	13.33	16.66	20.00	26.66
48	....	....	....	....	....	....	....	15.23	19.05	22.86	30.48
54	....	....	....	....	....	....	....	17.14	21.43	25.71	34.30
60	....	....	....	....	....	....	....	19.04	23.80	28.57	38.10
72	....	....	....	....	....	....	....	22.84	28.58	34.29	45.70
84	....	....	....	....	....	....	....	26.64	33.32	40.00	53.30

To find velocity of a belt in feet per minute:

Multiply diameter of driving pulley in inches by 3.1416 x times the revolutions per minute and divide by 12.

To find necessary width of belt to transmit any given horse-power. For single belt: Multiply the horse-power by 33000, divide by 50 times velocity in feet per minute; for double belt divide by 80 times velocity.

Commercial Rules in Daily Use

To find horse-power required to drive a dynamo or generator, multiply kilo-watts by 1½, the product will cover actual requirements and friction.

To find amount of current required to operate an electric motor, multiply horse-power by 746, add 20 per cent of quotient and the result will cover requirements and friction.

To find horse-power required to elevate a weight with a hoist on a single line, multiply the total load to be lifted including the carrier, container and holder by the foot speed per minute. Divide the quotient by 25000 and the result will cover requirements including friction, provided not more than three 10-inch or larger sheaves are used. If smaller sheaves are used, add 5% for each inch less than 10 inches, add 5% to each additional sheave above three.

To find length of belt required, add the diameter of driving and driven pulleys, multiply by 3⅛, divide by 24, to this quotient add twice the distance between shaft centers, result will be length in feet.

To find the positive satisfaction in contract work and the largest earnings per capita from your working force, equip them with high grade engines, concrete mixers, hoists, carts, wagons, barrows and other tools manufactured or for sale by The Standard Scale & Supply Company.

To find high grade machinery or tools, keep a copy of this catalog on your desk, and when in need, write, wire or phone to The Standard Scale & Supply Company at Pittsburgh or any of the branches shown in preface, result will be satisfaction at reasonable prices.

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