The

Dunning & Boschert Press Co., Inc.

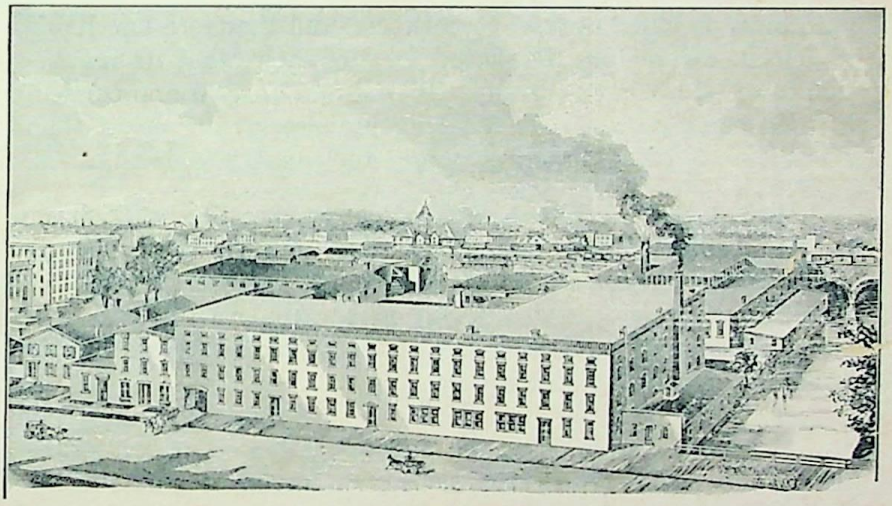
SYRACUSE, NEW YORK

Catalogue No. 51

THE

Dunning & Boschert Press Company

INCORPORATED



Factory and Home Office

Syracuse, N. Y.

U. S. A.

CIRCULAR

IN presenting out fifty-seventh Annual Catalogue of Cider and Wine Machinery, we wish to express our thanks for the liberal patronage of our friends in the past, and to assure them that we shall spare no pains to give them the very best service in our power in the future. We do not make extravagant claims for our machinery and hence we are able to do *more* than we claim, with corresponding satisfaction to our customers. A careful examination of the details of construction will show that our machinery is much heavier than others, and therefore less liable to get out of repairs. The large demand shows that its reputation for good work, power, capacity and durability is appreciated. For the coming season we can only promise greater effort than ever before to fill all orders promptly and to merit your approval.

Having three different kinds of power viz.: Screw, Hydraulic, and Kunckle Joint, and several sizes of each kind, together with platforms adapted to all situations, we are prepared to furnish outfits for any size mill from the smallest to the largest Our Graters, Evaporators, Pumps, etc., speak for themselves in hundreds of mills all over the land.

Prices. Discounts quoted on application. Our net prices are as low as is consistent with good material, the best workmanship, and a fair profit. Machinery cannot be sold on any other basis and prove satisfactory to the purchaser.

Guarantee. We guarantee all our work to be of good material and workmanship, and we will replace any part found defective from flaws or fault in manufacture.

All goods are delivered free on board cars or boat in Syracuse.

Dunning & Boschert Press Co., Inc.
SYRACUSE, N. Y.

Dunning & Boschert Press Company
INCORPORATED

ESTABLISHED 1872
INCORPORATED 1874

Officers

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C. A. Dunning, *Secretary and Treasurer,*
Geo. E. Boschert, *Vice-President and Gen. Manager.*

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No. 02 Screw Press

With Single Platform on Wheels

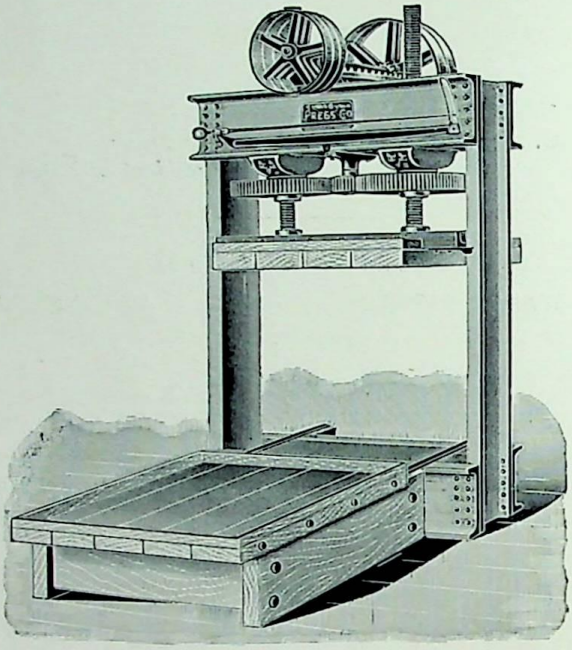


Fig. 1

This is a small, quick acting, powerful Press with steel frame, intended for sections where apples are not so plentiful as to warrant the outlay for a larger size. It is fitted to be run by power, having a fast motion for running up, and both fast and slow motions down. It has steel screws 3 inches in diameter, adjustable bearings and Indicator, the same as our large screw presses. It has a capacity of 1,000 gallons of cider per day of ten hours.

Prices

With Single Platform on Wheels

Press (with Steel Frame)	
Platform	
Nine Racks and Form	
Eight Cloths (Medium) 72"x72"	
Total	

For dimensions, etc., see page 7.

No. 02 Screw Press

With Reversible Platform

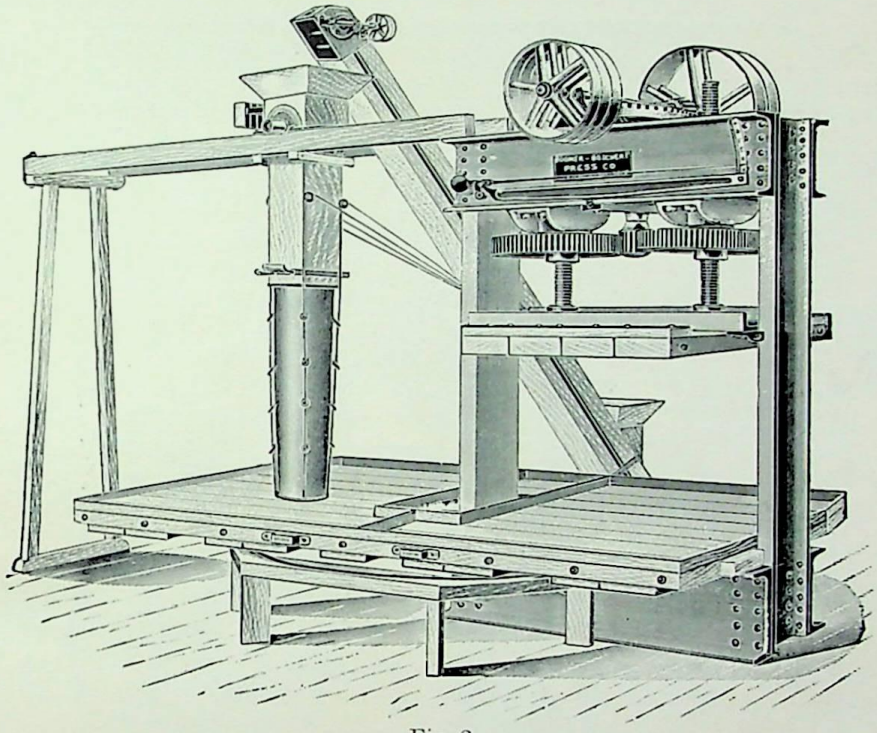


Fig. 2

The Reversible Platform shown is the best of its kind yet devised, and with the Elevator and Grater, makes it very desirable for the smaller custom mills.

It will make about three barrels of cider at a time. It will run clear down, pressing one layer if desired, and has a capacity of about 2,000 gallons of cider per day of ten hours. It can be fitted with any style of platform desired.

Prices

With Either Reversible or Double Platform

Press (with Steel Frame) .....
Platform .....
Eighteen Racks and Form .....
Sixteen Cloths (Medium) 72"x72" .....
Total .....

For Elevator..... For Large Grater.....
"Sup'g Frame and Canvas Chute .....

The Racks are 42 inches square, and the Form 37 inches square inside.
From floor to top of platform, about 20 inches.
Frame is made of 12-inch Steel Channel Beams.
Weight, about 4,000 pounds.

For Shafting and Pulley. see page 45.
Height to top of pulleys, 9'-2".
Height to top of elevator, 12'-9".
Diameter of circle described by platform, 12'-0".
Large pulleys run 50 rev. per min.
Small pulleys run 250 rev. per min.

No. 1 Screw Press

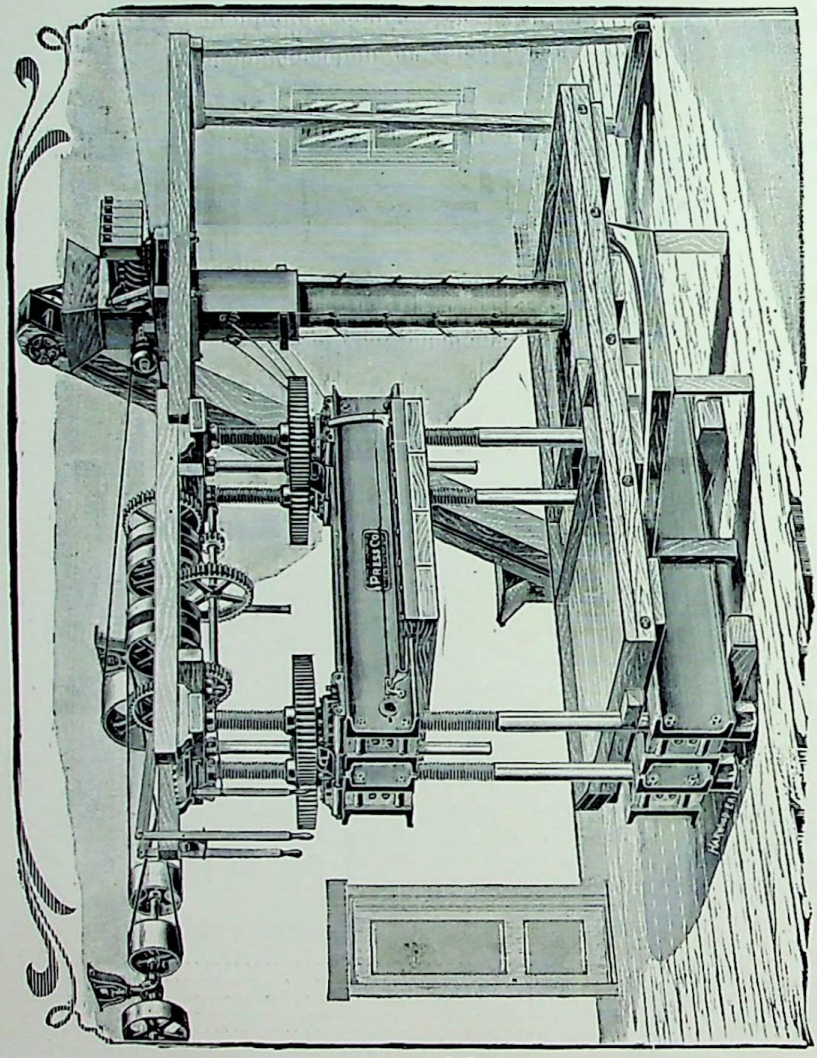


Fig. 3

with

Steel Beams

Reversible Platform

Elevator and Grater

No. 1 Screw Press

The Press and fixtures represented on opposite page were especially designed to meet the wants of custom mills where each customer's apples are made up separately and no apples are stored. The fruit is thrown from the wagon into the hopper of the Elevator, which delivers them to the Grater. The Elevator, being driven from a pulley on the grater shaft, will only deliver the apples in proportion to the speed of the Grater, and thus avoids any danger of overloading it. A slide in the spout holds the pomace back while placing the Racks and Cloths. The Reversible Platform enables the operator to press one cheese while grinding another, and if our Pump is added, the cider may be put into the barrels on the wagon, thus avoiding all heavy work. Any other style of platform may be used on the Press if desired.

Prices

Press (with Steel Beams) .....

With either Double or Reversible Platform .....

Twenty Racks and Form .....

Eighteen Cloths (Medium), 84"x84" .....

Elevator, (No. 57 Chain) .....

Large Grater .....

Supporting Frame and Canvas Chute .....

Dimensions

Size of Steel Screws .....2¼ inches	Size of Cloths ....84x84 or 72x102 in.
Width between Screws .....5 feet	Width of Belt required ....2 inches
Size of Racks .....48x48 inches	Bushels in full Cheese ....45 to 50
Size of Form .....42x42 inches	Capacity ..2500 to 3000 gals. per day

Extreme Height of Press, 8 feet 10 inches.
Extreme Height to Top of Elevator, 12 feet.
Distance from center of Platform to outside of Elevator, 10 feet, 8 in.
Diameter of Circle described by Platform, 13 feet.
Weight, about 6,000 pounds.
For Combination Platform, add.....
For Shafting Pulleys, see page 45.
Pulleys on press run 300 rev. per minute.

No. 2 Screw Press

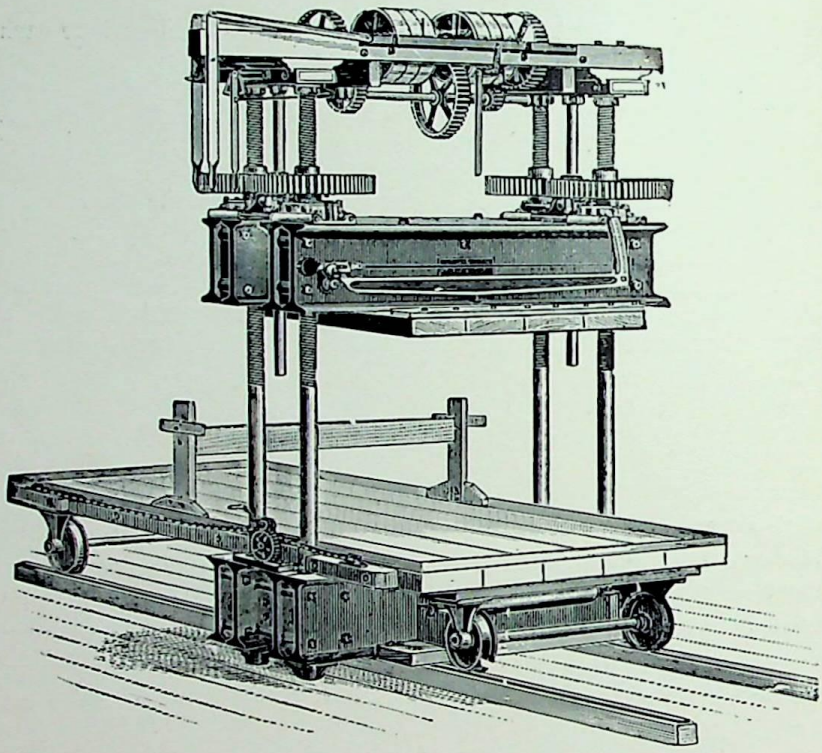


Fig. 4

With

Steel Beams

and

Double Platform

No. 2 Screw Press

This is an excellent Press for the ordinary custom mills, and is capable of doing a large amount of work, in fact its capacity depends almost entirely on the skill of the operators in laying up the cheese, as with three different speeds it can be handled as quickly as desired. It will press any amount from one layer to a full cheese without any handling of blocking and give full pressure at any point. It many be arranged with Reversible Platform, Grater or Elevator, as on page 8.

Prices

With Double Platform

As shown on page 10.

Press (With Steel Beams) .....
Double Platform .....
Twenty-Two Racks and Form .....
Twenty Cloths (Medium) 84"x118" .....
Total .....

With Combination Platform

As shown on page 12.

Press (with Steel Beams) .....
Combination Platform .....
Twenty-Two Racks and Form .....
Twenty Cloths (Medium) 84"x118" .....
Total .....

With Reversible Platform

As shown on page 8.

Press (with Steel Beams) .....
Reversible Platform .....
Twenty-Two Racks and Form .....
Twenty Cloths (Medium) 84"x118" .....
Total .....
Elevator (No. 77 chain) .....
Large Grater .....
Supporting Frame and Canvas Chute .....

Dimensions

Size of Screws .....2½ in.
Extreme Height .....9½ ft.
Size of Racks ....4 ft. 10 in. square
Size of Cloths .....84x118 in.
Bushels in Full Cheese ....70 to 80
Capacity ..3500 to 4000 gals. per day
Weight, about.....10,000 lbs.

For Shafting and Pulleys, see page 45.

Pulleys on Press run 300 rev. per minute.

No. 3 Screw Press

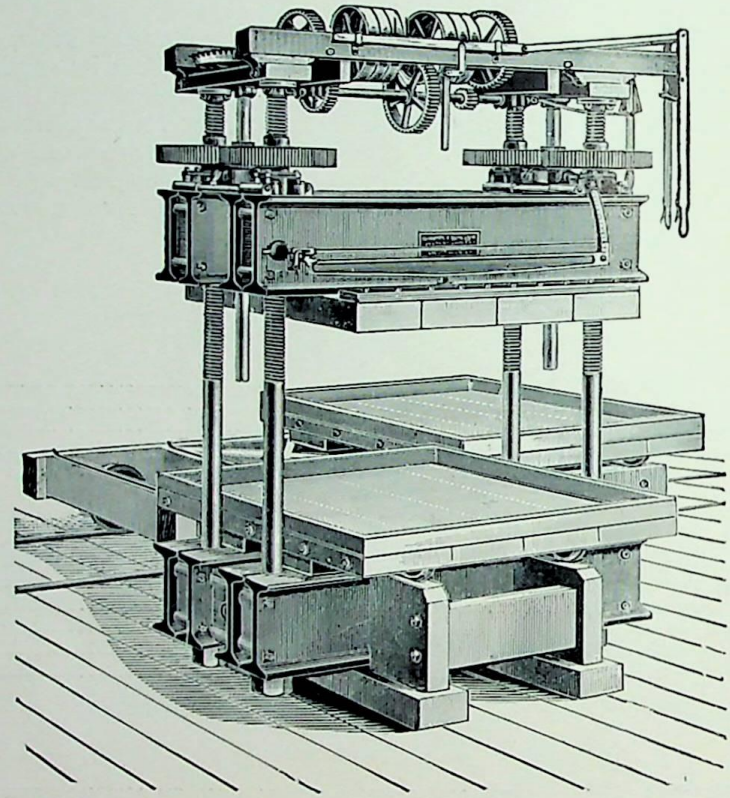


Fig. 5

With

Steel Beams

and

Combination Platform

No. 3 Screw Press

This Press is designed for heavy and continuous work, and with a view to avoid danger of breakage and consequent delay. The screws are of steel, three inches in diameter. The screw nuts are of the best quality of bronze. The small bevel gears on top and the sliding pinions on upright shafts are also of steel. The workmanship is the very best, and no expense is spared to make the Press strong and durable.

The cut shows the Press with the combination platform, but any other style platform desired may be used.

Prices

Press (with Steel Beams) .....

Combination Platform .....

Twenty-Four Racks and Form .....

Twenty-Two Cloths (Heavy) 96"x126" .....

Total .....

The above with either Double or Reversible Platform .....

Dimensions

Extreme Height .....13 feet 1 inch	Size of Form .4 feet 8 inches square
Size of Steel Screws .....3 inches	Width of Belt required ..2½ inches
Width between Screws .....6 feet	Bushels in Full Cheese ....90 to 100
Size of Racks .5 feet 2 inches square	Capacity, 4000 to 4500 gals. per day
Size of Cloths .....96x126 inches	Weight, about .....13,000 pounds

Pulleys on Press run 300 Rev. per minute.

No. 4 Screw Press

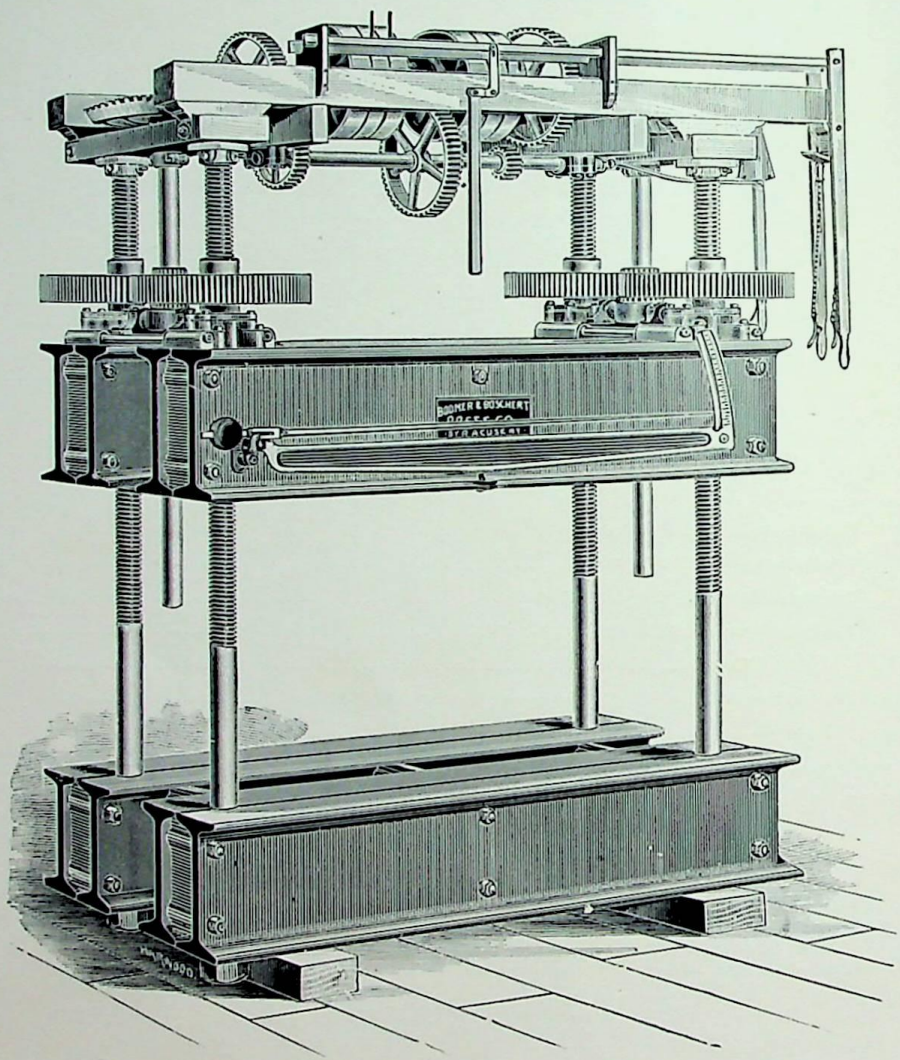


Fig. 6

With

Steel Beams

No. 4 Screw Press

This Press is used by the larger merchant mills mainly for repressing, and in its designing and construction we have had in view the extremely heavy service required. The Screws are of steel, 3½ inches in diameter. The screw nuts are made of special quality of hard bronze, having bearings on the screws 10 inches in length and extra depth of thread to give a large bearing surface. The bevel pinions, the spur pinions between the large gears and all the shafts are of steel. It cannot be excelled by any other press for durability and effective work. Any style of platform may be used.

Prices

Press (with Steel Frame) .....

Double Platform (Fig. 4) .....

Twenty-Eight Racks and Form .....

Twenty-Six Cloths (Extra Heavy) 96"x126" .....

Total .....

With Combination Platform (Fig. 5), add .....

Dimensions

Extreme Height ....13 feet 8 inches	Size of Form..4 feet 8 inches square
Size of Steel Screws ....3½ inches	Width of Belt required ..2½ inches
Size of Steel Beams .....20 inches	Bushels in Full Cheese ..100 to 120
Size of Racks 5 feet 2 inches square	Capacity 4500 to 5500 gallons per day
Size of Cloths .....96x126 inches	Weight, about .....17,000 pounds

Pulleys on Press run 300 Rev. per minute.

No. 8 Hydraulic Press

Upward Pressure

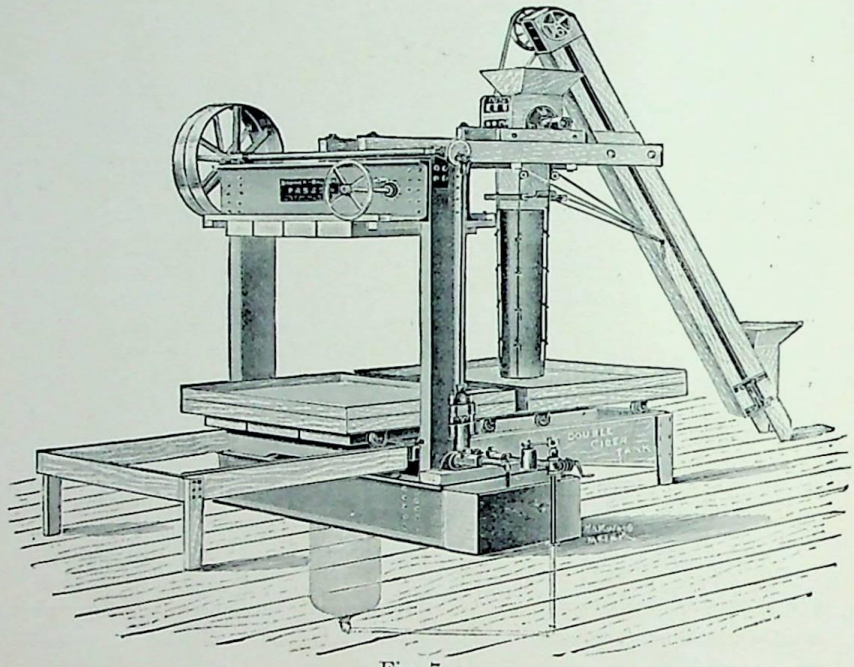


Fig. 7

The frame of this Press is made of rolled steel channel beams, securely bolted or riveted together. The ram is of cast iron, turned and polished. The *cylinder is of steel* packed in the neck. The drop follower is conveniently and quickly adjusted to suit the varying height of cheese. The pump is noiseless and driven by pulleys 30″ in diameter for a 4″ belt. The valves and plungers are of the best bronze and the water tank is of galvanized iron. The platform can be easily handled and the outlet for the cider is always over the tank when laying up or pressing, so that each customer's cider can be kept separate.

Prices

Press, Two Platforms and Power Pump .....
Twenty Racks and Form .....
Eighteen Cloths (Medium) 66″x66″ .....
Total .....

For Elevator, add ..... For Inverted Press, add. .....
For Large Grater, add .. .. For Double low down Pump, add.....
For Shafting and Pulleys see page 45
For Combination Platform as in Fig. 9, add.....

Dimensions

Size of Steel Channel Beams 12 ins.	Cheese .....22 to 25 bushels
Bet. Platform and Blocking .33 ins.	Capacity .....2500 gallons per day
Movement of Ram .....26 ins.	Weight complete, about 6,000 pounds
Size of Rack .....36 ins.	Height to top of Pump Pulleys 8 ft.
Size of Form (inside) .....32 ins.	Height to top of Elevator 10 ft. 6 ins.

Hydraulic Wine Press

By Hand

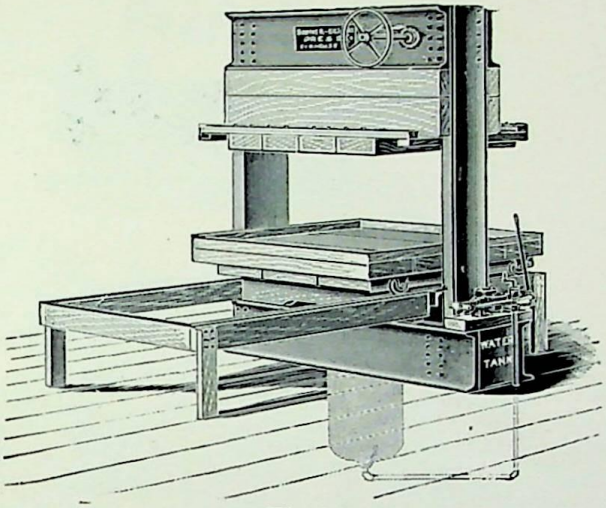


Fig. 8

The above illustration shows our Hydraulic Wine or Cider Press with pump to be worked by hand and with a single platform on wheels. The pump has one large plunger 1⅝″ diameter to get press up quickly and one of ⅝″ diameter to give the heavy pressure, thus saving much time in working. A drop Follower is provided so that a small cheese can be pressed without loss of time. The dimensions are the same as given on page 16 of our catalogue.

For larger sizes see pages 21-23.

No. 8 Hydraulic Press

With Steel Frame

Prices

Press, Hand Pump and Platform ....

Ten Racks and Form ....

Nine Cloths, 66″x66″ (Medium ....

Total ....

No. 10 Hydraulic Press

With Rods and Steel Beams

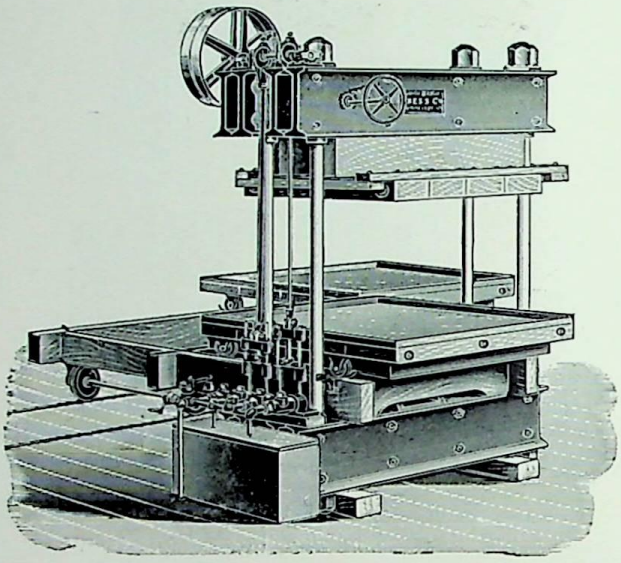


Fig. 9

This illustration shows our Hydraulic Wine or Cider Press having Head and Base made of steel beams connected by rods of large size and ample strength. Although shown with Combination Platform, we can furnish with either Single Platform or our Transfer Car System, to suit the convenience of our customers. This press has cast steel cylinder and heavy iron platen, babbitted around rods.

Prices

No. 10 Press, Steel Beam and Rod Frame, (No Pump)	
Combination Platform	
Twenty-Two Racks and Form	
Twenty Cloths (Heavy) 84"x84"	
Total	

Add for Transfer Car System (two platforms, two short cars)	
Add for Inverted Press	
Add for Column Pump, Fig. 32, or Double Pump on Press Fig. 9	
Add for Elevator	
Add for Large Grater	
Add for Sup'g Frame and Canvas Chute	
For Shafting and Pulleys	See page 45

Dimensions

Bet. Platform and Blocking	40 in.	Cheese	45 to 50 bushels
Movement of Ram	30 in.	Capacity	125 bbls. per day
Size of Rack	48 in.	Weight, complete, about	10,000 lbs.
Diameter of Rods	2¼ in.	Floor to top of rods	6 ft. 4 in.
Size of Form (inside)	42 in.	Floor to bottom of cylinder,	4ft. 6 in.

Channel Beam Frame

Hydraulic Press

Upward Pressure

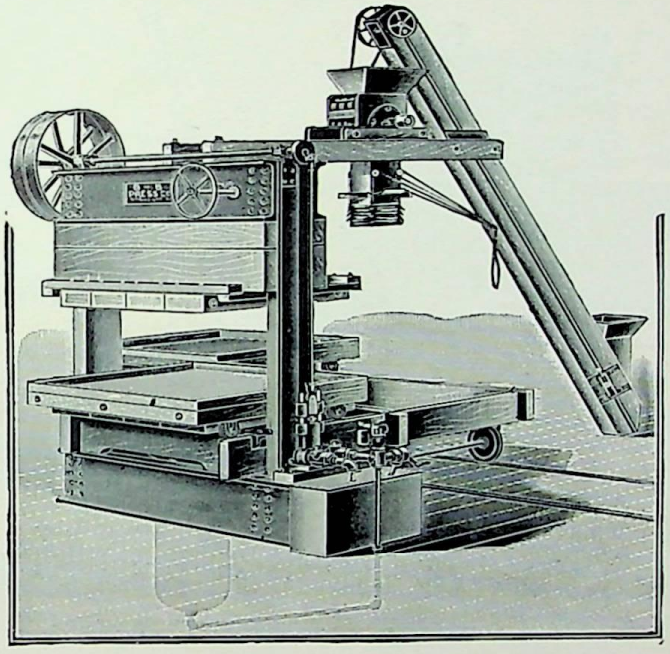


Fig. 10

Showing

Combination Platform

and

Drop Follower

Pump Shaft Runs Parallel to Head Beams

Upward Hydraulic Presses

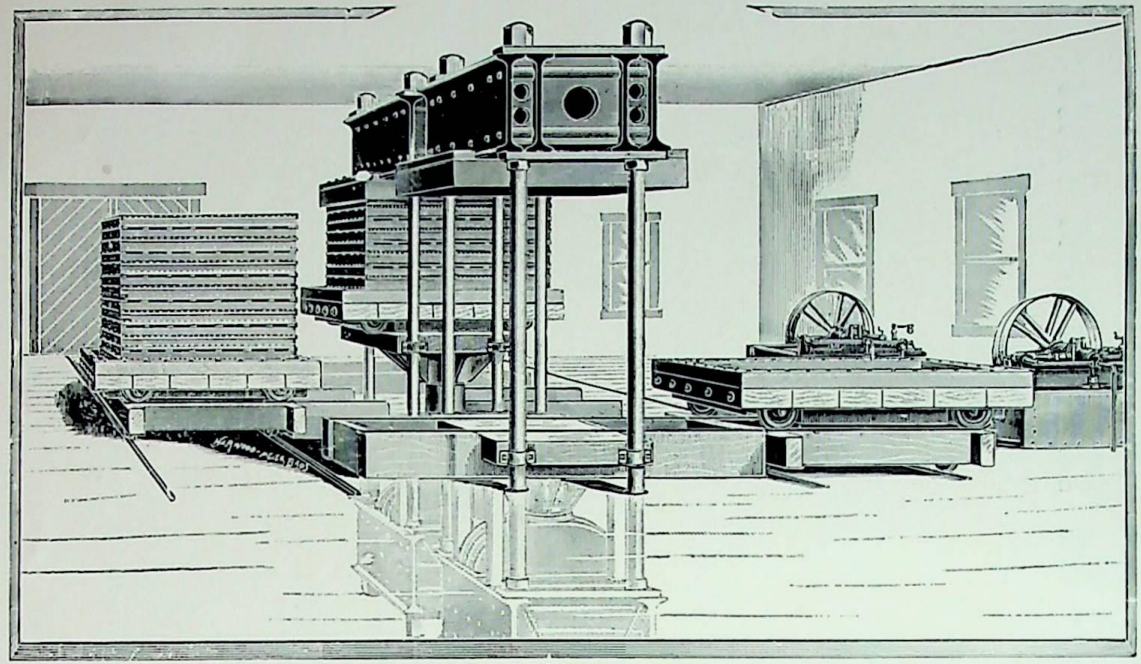


Fig. 12

With Transfer Car System

No. 14 and 20
Hydraulic Presses

These Presses are generally used for repressing, and are constructed especially for heavy work. They have all the improvements contained in our other Presses, all of which have been subjected to extended use and are of practical worth and not experimental. While prices are given with outfits using belt pumps, in many cases steam Hydraulic Pumps will be found preferable, and will be furnished to order at an increase in price, according to size.

No. 14 Hydraulic Press

With Steel Beams, Steel Cylinder and Iron Platen

Prices

Press only (No Pump) .....

Combination Platform .....

Twenty-Eight Racks and Form .....

Twenty-Six Cloths, 96"x126", (Extra Heavy) .....

Total .....

For Inverted Press, add..... For Pumps, see pages 37-38.

Dimensions

Inside Diameter of Cylinder	14 in.	Size of Form (inside)	56 in.
Diameter of Steel Rods	4½ in.	Size of Cloths	96x126 in.
Width between Rods	74 in.	Guaranteed pressure	300 tons
Bet. Platform and Blocking	52 in.	Weight, complete, about	24,000 lbs.
Movement of Ram	42 in.	Cheese, about	100 bushels
Size of Rack	62 in.		

No. 20 Hydraulic Press

With Steel Beams, Steel Cylinder and Iron Platen

Prices

Press (without Pump) .....

Combination Platform .....

Twenty-Eight Racks and Form .....

Twenty-Six Cloths, 96"x126" (Extra Heavy) .....

Total .....

For Inverted Press, add..... For Pumps, see pages 37-38

Dimensions

Inside Diameter of Cylinder	20 in.	Size of Rack	62 in.
Diameter of Rods	5 in.	Size of Form (inside)	56 in.
Width between Rods	74 in.	Size of Cloths	96x126 in.
Bet. Platform and Blocking	60 in.	Guaranteed pressure	350 tons
Movement of Ram	46 in.	Weight, complete, about	30,000 lbs.

Hydraulic Press

Downward Pressure

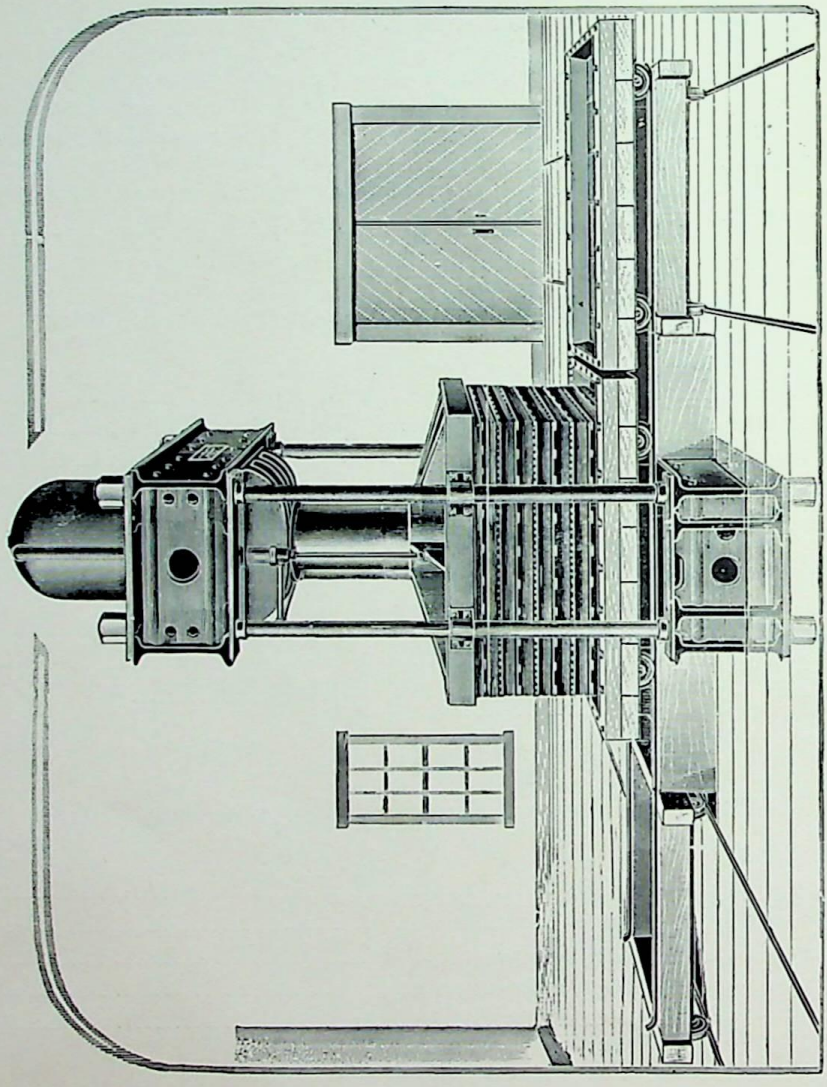


Fig. 13

With

Transfer Car System

Channel Beam

Hydraulic Press

Upward Pressure

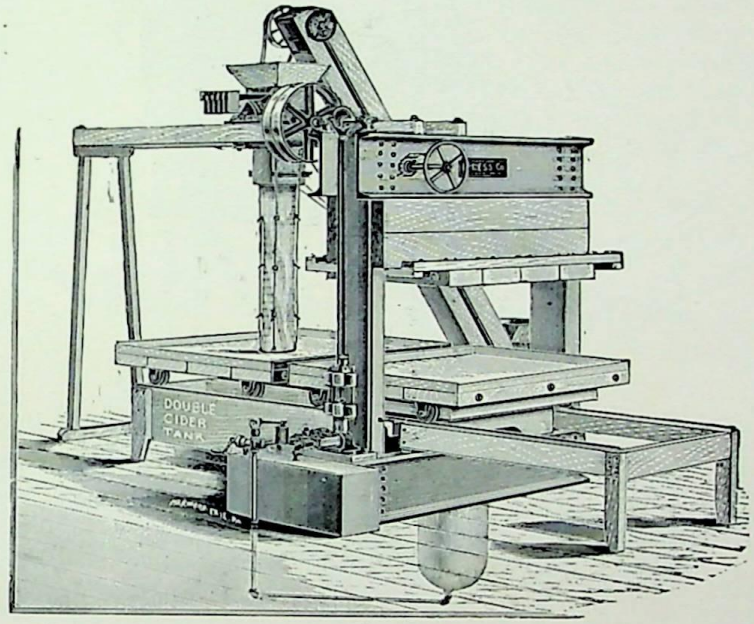


Fig. 14

Showing Drop Follower

Let Down

For Small Cheese

Knuckle Joint Press

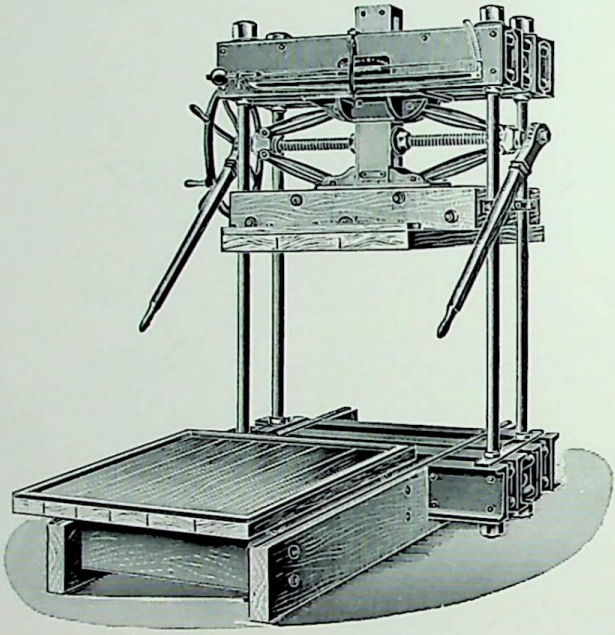


Fig. 15

With

Single Platform on Wheels

Knuckle Joint Press

This Press is so well known it does not need an extended description. The right and left hand screw acting on levers produces a power almost unlimited when the levers are near a perpendicular, and the motion of the follower being rapid at first when the material is soft, decreasing in speed and increasing power as the levers straighten and the material becomes dense, making them particularly well adapted to cider and wine making. Their simplicity is conceded, and their durability can be established by hundreds who have used them for many years without any expense for repairs. We can furnish with any style of platform shown in catalogue.

Wine Press
By Hand With Single Platform on Wheels

Prices

Press (with Steel Beams) .....

Platform on Wheels .....

Eight Racks and Form .....

Seven Cloths (Medium) 84"x84" .....

Weight about .....3,500 lbs.

Dimensions

Extreme Height of Press	8 ft. 4 in.	Screw (Steel)	2¼ in.
Head Beams (Steel)	12 in.	Racks	48 in. square
Base (Steel)	10 in.	Form	42 in. square
Follower	8x10 in.	Cloths	72x102 in.

Hand Cider Press
By Hand With Single Platform on Wheels

Prices

Press (with Steel Beam) .....

Platform on Wheels .....

Nine Racks and Form .....

Eight Cloths (Medium) 84"x118" .....

Weight, about .....5,000 lbs.

Dimensions

Extreme Height of Press	10 ft. 5 in.	Racks	4 ft. 10 in. square
Head Beams (Steel)	15 in.	Form	4 ft. 4 in. square
Base (Steel)	12 in.	Cloths	84x118 in.
Follower	10x24 in.	Rise of Follower	2 ft. 6 in.

Apple Grater

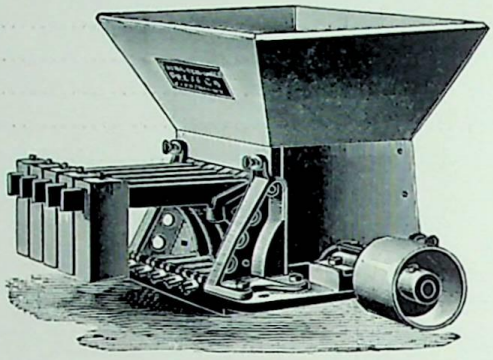


Fig. 17

The frame of our Grater is of iron, which gives a security, strength and stability which no wood frame, however well made, possesses.

Securely attached to the frame are two standards, holding the rod upon which swing the concaves, which consist of five iron levers with movable weights, allowing any stone or other hard substance to pass through without injury to the knives.

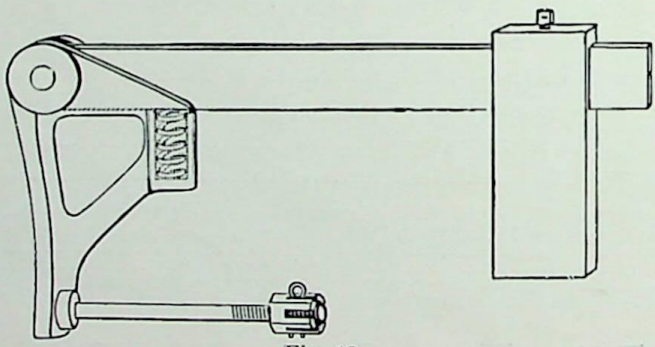


Fig. 18

The concaves are made in two parts, the lever on which the weights are hung being wrought iron, and resting on a coil spring placed in the recess in the concave proper, and which serve to break the sudden shock or concussion caused by the rapid passage of hard substance between the concaves and cylinder. (See Fig. 18). To the lower end of the concaves is rigidly attached a one-half inch bolt, upon the end of which is a pronged nut which rests against the projections on the frame.

By turning the nut, the distance between the concaves and the cylinder can be very nicely adjusted. This can be done while the Grater is in motion and without the use of a wrench. A hole is drilled through the bolt and a spring pin put through between the prongs of the nuts, which prevents them from turning by the jar and working of the concaves.

The cylinder is of iron, turned and put in accurate running balance, each Grater being tested at a speed of 2,500 revolutions per minute before leaving the factory. It has planed grooves to receive the knives—ten in number—which are adjusted by square headed set screws above and below at each end, and held firmly in their places by a heavy wrought iron band shrunk on each end of the cylinder. The heads of the cylinder being solid and close to the ends avoids the accumulation of pomace. (See Fig. 19.)

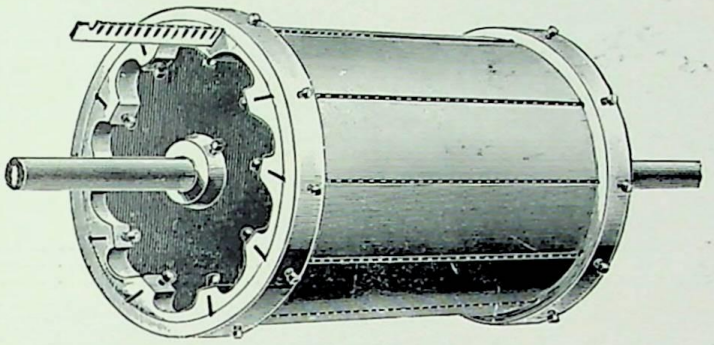


Fig. 19

The knives are made of finely tempered steel and can be driven straight out without having first to be driven down. We can furnish knives corrugated as in Fig. 20, or with teeth milled through the blade as in Fig. 21.

The shaft is of steel $1\frac{7}{16}$ inches in diameter, running in babbitted boxes $4\frac{3}{4}$ inches long, and is of sufficient length to allow the pulleys to be put on either end. The Grater should run 2,000 revolutions per minute, but with limited horse power that speed cannot be obtained. The knives may then be set finer, and the Grater will do as good work, but not so fast. The hopper is of hard wood, oiled and varnished, and can be swung back or entirely removed while changing the knives.

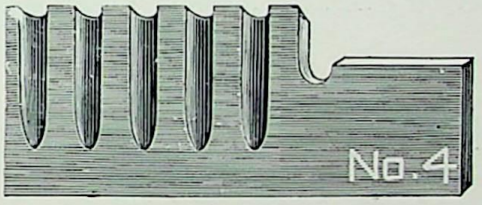


Fig. 20

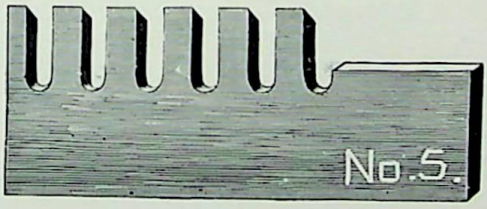


Fig 21

Prices

Grater, with one set of knives and single pulley .....

Extra Set of Knives—ten .....

Knives, each .....

Fast and Loose Pulleys—extra .....

Dimensions

Diameter of Cylinder .....11 inches
Length of Cylinder .....12 inches
Face of Pulley .....5½ inches
Diameter of Pulley .....4, 5 or 6 inches, as ordered
Weight of Grater .....350 pounds
Number of Knives—ten .....1 inch wide, $\frac{3}{8}$ inch thick, and 12 inches long
Capacity .....from 50 to 400 bushels per hour, according to power

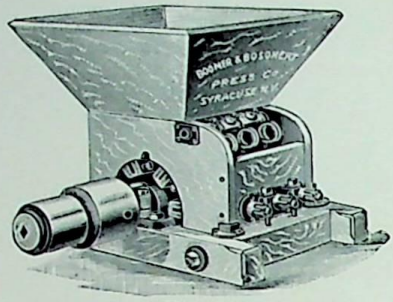


Fig. 22

This Grater is intended for light powers. It has a wooden frame, and three spring concaves. The six knives are the same size as those used in the large Graters and are held by set screws on the sides. The workmanship and material are first-class in every respect.

Prices

Grater, one set of Knives and single pulley .....
Knives, each .....
Fast and Loose Pulleys, extra .....

Dimensions

Diameter of Cylinder .....7 inches
Length of Cylinder between bands .....9¼ inches
Face of Pulley .....3½ inches
Diameter of Pulley .....6 inches
Weight of Grater .....160 pounds
Number of Knives—six .....1 inch wide, ⅜ inch thick, and 12 inches long
Capacity .....from 50 to 150 bushels per hour, according to power

Grater Knife Grinder

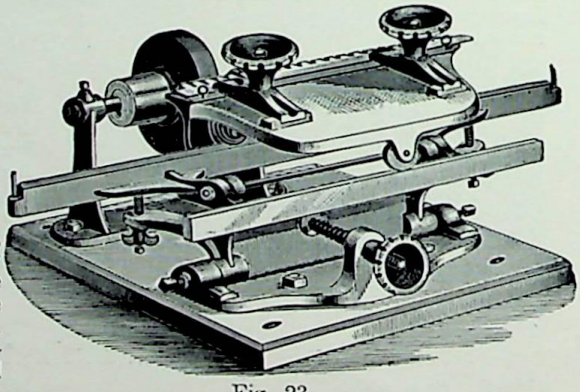


Fig. 23

The cut represents a very simple and efficient machine for grinding grater knives. The emery wheel is 6 inches in diameter and 1¼-in. face. The pulley is 2 inches in diameter for a 1½-inch belt. The arbor is of steel. The knife is clamped near both ends, which holds it securely and at the same time straightens it if sprung. The frame holding the way and carriage is pivoted at the bottom and held from the wheel by the bolt passing through the stationary upright standard. The hand wheel regulates the forward movement and gives a rigid support, avoiding crowding the knife against the wheel and securing a perfectly straight edge on the knife being ground. With a desire that every one using our graters may buy one of these knife grinders, we have made the price very low. Price, ...

Power Attachment

For Knuckle Joint Presses

It is operated by belts open and crossed, and the power is communicated to the Press by a chain belt, passing over a chain wheel, upon the end of the press screw. All our Power Attachments have three speeds, *one down slow for regular pressing, one down fast* to avoid loss of time in getting pressure on to the cheese, and one for running Press *up fast.*

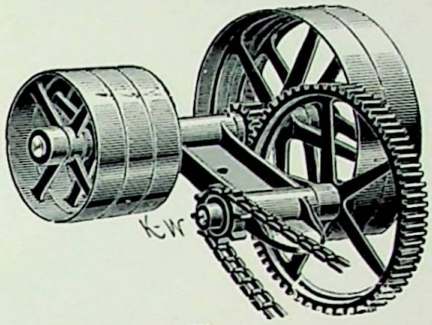


Fig. 24

Prices, Etc.

Name	Size of Large Pulleys	Size of Small Pulleys	Size of Chain Wheel on Screw	Length of Chain	Price
W. P.	16x3 in.	10x3 in.	30 in.	14 ft.	
H. C.	22x3 in.	12x3 in.	36 in.	16 ft.	
P. C.	22x3 in.	12x3 in.	48 in.	22 ft.	
Ex. H. P. C.	28x3 in.	12x3 in.	52 in.	22 ft.	

Pomace Chute

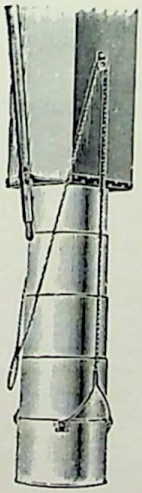


Fig. 25

One of the most disagreeable features of a well ordered Cider Mill has been the spattering of the pomace when laying up the cheese when the Grater is located overhead. Many devices have been tried; some of them fairly successful, but none of them containing merit enough to warrant thein general use.

Fig. 25 represents a galvanized iron or copper telescope chute which can be easily attached to a square wooden spout of a suitable length to reach from the Grater to the platform when the chute is extended. The upper end of the chute has a slide for shutting off the pomace, and several sections beneath sliding in each other, with a cord attached to the lower section so it can be raised from the rack to spread the pomace The chute is about twelve inches long when closed, and when open is of sufficient length to reach clear down to the platform so that when the slide is drawn and the pomace drops, it effectually prevents all spattering.

Prices

Galvanized Iron Chute and Wooden Box Complete .. ..
Copper " " " " " .. ..
Canvas " " " " " .. ..
Galvanized Chute, only ....
Copper " " ....

Apple Elevator

Each season more fully demonstrates the fact that cider makers are awakening to the necessity of saving manual labor, and that only by the closest economy can they compete with the large merchant mills. Each year has increased our sale of elevators, and they have become a necessity in every well regulated mill.

Fig. 26 is a section of very cheap and efficient Elevator. The chain runs over a sprocket gear at the head and foot of Elevator, the one at the head being furnished with fast and loose pulleys. The foot gear has "take up boxes" for taking up the slack of chain as it wears. The scrapers are of wood three inches wide and from 8 to 11½ inches long, bolted to lugs or projections on the chain. When run from 50 to 75 revolutions per minute, it will elevate from 5 to 20 bushels per minute. It is perfectly reliable, runs easily, cannot slip, works at any inclination or carries on a level. It can be put up in a variety of ways and *Can be adapted to all situations*. See Fig. 27.

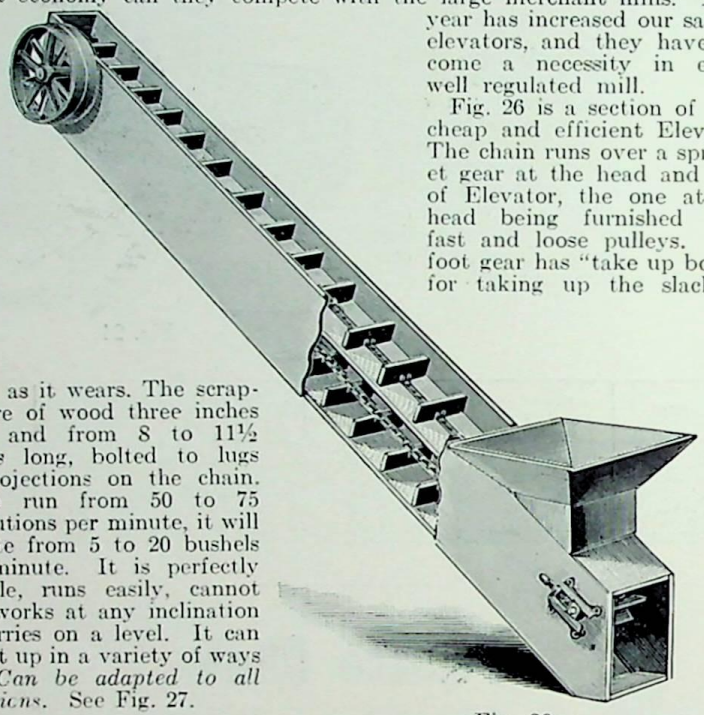


Fig. 26

To elevate perpendicularly, or nearly so, requires a modification of the scrapers, which increases the cost.

When designed to run from a pulley on the grater shaft as shown in Fig. 7, we put on a geared head to reduce the motion. When the Elevator is to be set parallel with the line shaft, we put on beveled gears at a slightly increased cost. We can furnish to order any length desired, of good lumber, well finished and varnished.

Prices

Centers, 12 feet, width 8 inches inside, closed frame—No. 57 chain .....
Centers, 12 feet, width 10 inches inside, closed frame—No. 57 chain .....
Centers, 14 feet, width 10 inches inside, closed frame—No. 77 chain .....

We also furnish the iron work when desired at the following prices:

Head Gear, Plain, with two pulleys 22x3 inches .....
Head Gear, with Internal gears, Fig 3 .....
Head Gear, with bevel gears, Fig. 2 .....
Foot Gear, with take up boxes .....
Double Center Gear, complete, to connect Elevator and Carrier .....
No. 77 Chain, per foot with Scrapers .....
No. 57 Chain, per foot with Scrapers .....
Wood Scrapers, each.....; Bolts, each.....; per 100.....

Should it be required to elevate more than 30 feet, we furnish in place of the pulleys 22x2 in. a pair of pulleys 24x4 in. at an additional cost.

Elevator Plans

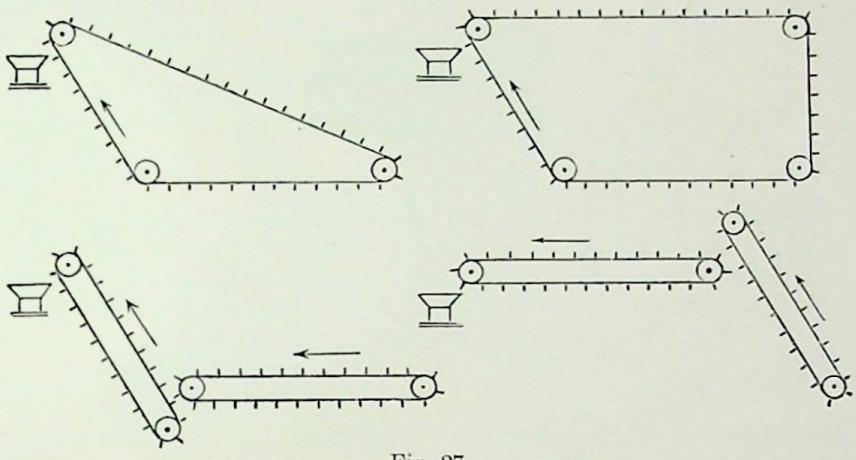


Fig. 27

Vat for Reversible Platform

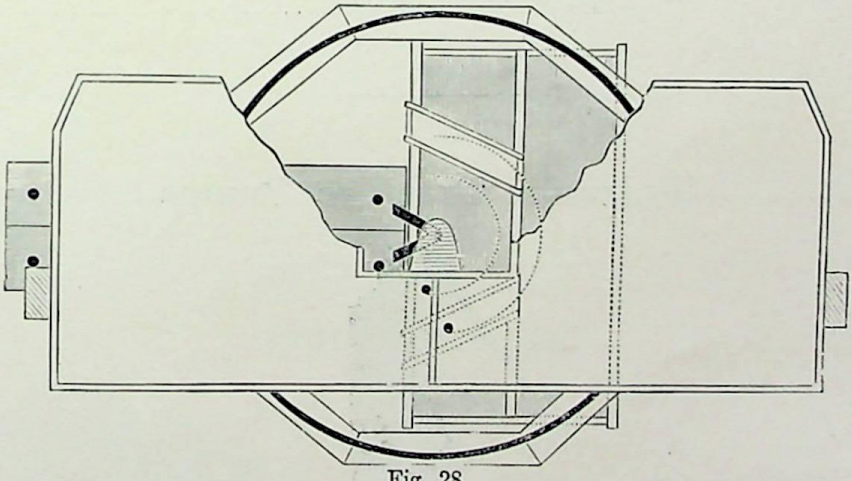


Fig. 28

The above cut shows the vat as arranged in connection with the Reversible Platform when it is desired to keep the cider from each customer's apples separate. It is simply a wooden vat with a partition placed beneath the platform and inside the circular track. As will be noticed, the inlet from each end of the platform is made so that in turning they describe different circles. Thus the outlet describing the smaller circle, (as shown by dotted lines) is over one compartment of the vat, while the outlet from the other end is over a shallow trough, which leads to the other compartment, and no matter what is the position of the platform the cider must run in its proper vat.

Prices, ... to ....., according to size.

Tank Clamps

Fig. 29

These clamps will be found very convenient and easily applied. The bands are common iron rods with threads and nuts, and passing each other in the clamp as shown. On large tanks two or more on each band can be used, and will be found cheaper and handier than welding.

Prices

For 5-8 Inch Rods—Less than One Hundred.....
" " " " —One Hundred and over.....
" 3-4 " " —Less than One Hundred.....
" " " " —One Hundred and over.....

Hydraulic Pressure Pumps

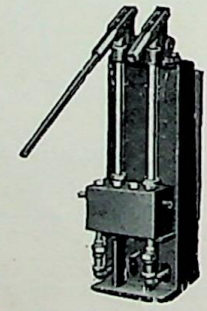


Fig. 30

The Hand Pump shown in Fig. 30 has two plungers, the larger one for getting the press up to its work quickly and the smaller one for getting the maximum pressure. The pump body is a forged steel block, with inserted phosphor bronze seats and checks. The water tank is of galvanized iron.

Fig. 31 shows the pump with Reverse valve used on the Inverted Presses. A simple movement of the lever shown turns the water pressure from large to small cylinders and vice versa, to run the press up or down as desired.

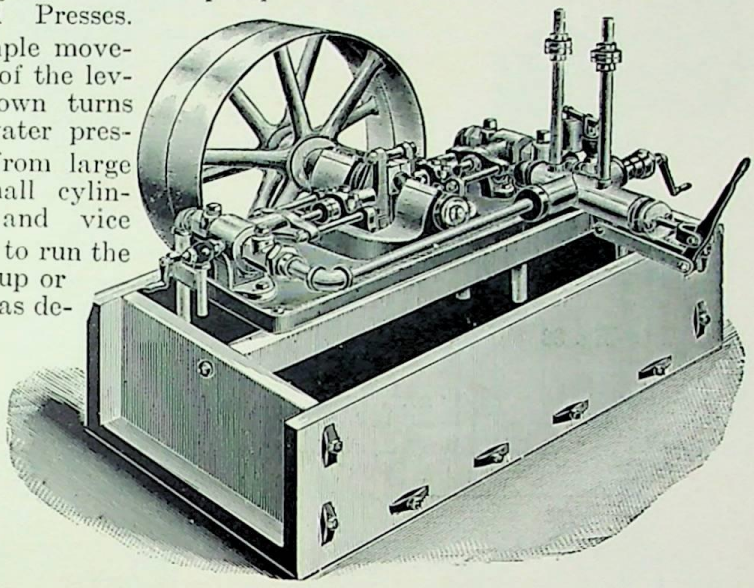


Fig. 31

Prices

No.	Diameter of Plungers	Stroke	Size of Pulleys	Price
5	¾ in.	3 in.	30"x4"	.....
6	1⅛ in.	4 in.	36"x5"	.....

Column Pumps

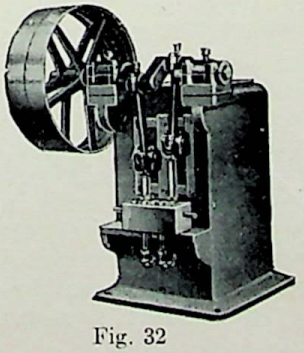


Fig. 32

The frame of this pump forms the tank for holding the water or oil used for the Press, making a very solid and substantial support for the working parts, and practically impossible to get out of line. The Crank Shaft is of steel; the pump block or body is a steel forging with all the passages drilled out of the solid. The checks and seats are of phosphor bronze, the seats being driven in on a taper, and when worn out can be easily renewed. The

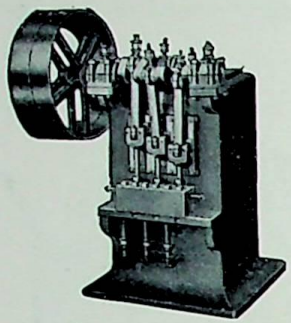


Fig. 33

plugs over checks are of Tobin Bronze; the Connecting Rods and Cross Heads are of hard cast bronze. The plungers are made of steel or bronze, according to the nature of the work. We can make with either two, three, four or six plungers, and with three inches of four inches stroke, and with all plungers of the same size for accumulator pressure, or of different sizes, to give different pressures. When the pumps are made double, as shown in Fig. 34, the gears are machine cut. Ample provision is made for oiling and all the parts are easily accessible.

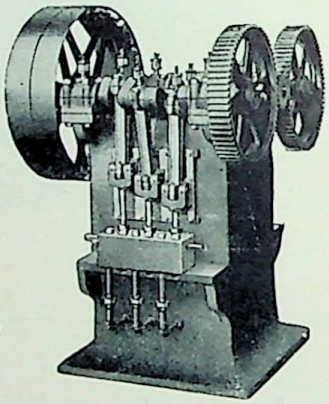


Fig. 34

Large Power Pumps

For large presses of those requiring high water pressure we can furnish geared pumps, as shown in Fig. 35, having machine cut gears, steel water barrels, forged steel valve blocks, hard bronze or hardened steel removable seats, hard bronze or tool steel checks, hard bronze or tool steel water plungers, steel crank shaft and connecting rods, bronze crosshead slides, adjustable for wear, self-oiling bronze stuffing box glands, babbitted shaft bearings hammered in and bored, in fact the best possible material and workmanship, having in view heavy and continuous service. Can furnish either with or without motors. When asking for prices, give as nearly as possible capacity and pressure, and kind of drive required.

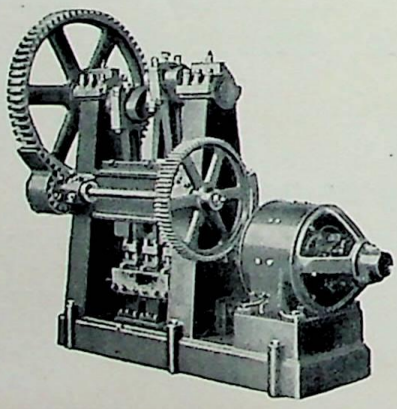


Fig. 35

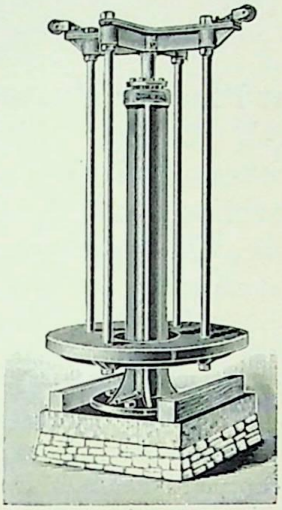


Fig. 36

We can furnish Accumulators for almost any service, either high or low pressure, made for iron weights as in Fig. 36, or with steel beam frame for weighting with brick, stone or concrete, as in Fig. 37. They are very desirable and economical for running several presses. They can be run by either steam or belt pumps and are arranged to automatically control the pump, thus requiring practically no attention.

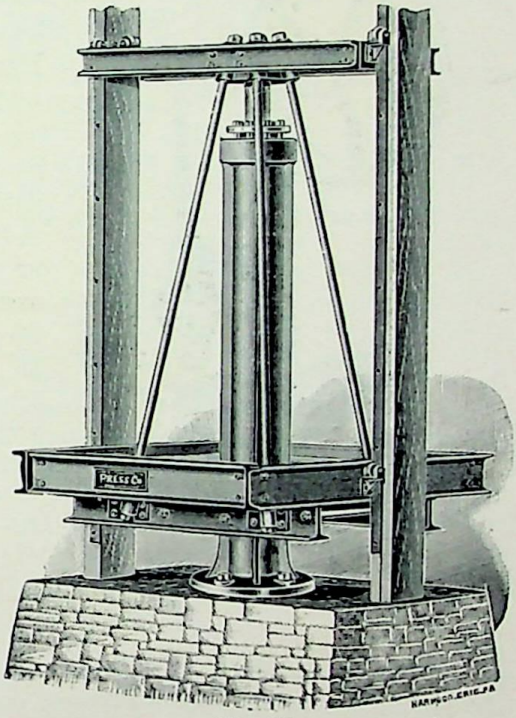


Fig. 37

Dimensions and Prices of Accumulators

Diameter of Ram	Length of Stroke	Size of Platform	Water Pressure Per Sq. Inch	Price
3 in.	5 ft. 0 in.	6 ft. 0 in. square	4,500 lbs.	
4 in.	5 ft. 0 in.	7 ft. 0 in. square	4,500 lbs.	
4 in.	7 ft. 0 in.	7 ft. 0 in. square	4,500 lbs.	
5 in.	7 ft. 0 in.	8 ft. 0 in. square	4,500 lbs.	
5½ in.	8 ft. 0 in.	9 ft. 0 in. square	4,500 lbs.	
7¼ in.	7 ft. 0 in.	7 ft. 0 in. square	1,500 lbs.	
8¾ in.	7 ft. 0 in.	8 ft. 0 in. square	1,500 lbs.	
9¾ in.	8 ft. 0 in.	8 ft. 0 in. square	1,500 lbs.	

Other sizes and pressures made to order. Prices do not cover weights.

Pump

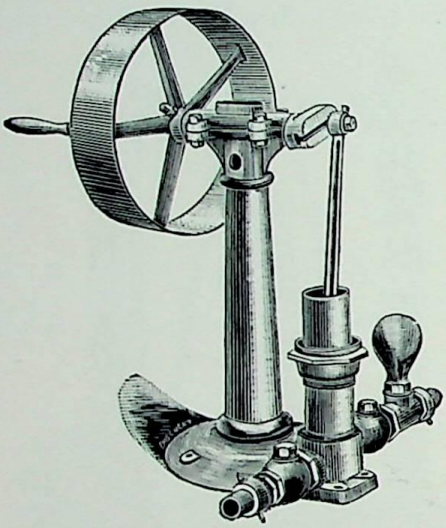


Fig. 38

The Plunger, Pump Barrel, Valves, Air Chamber and Hose Connections of this Pump are of Bronze, so that no cider can come in contact with iron. The connecting rod is of bronze with steel pin in the lower end, and babbitted split box on upper end so that the wear can be taken up. They should be run *not to exceed* 80 *revolutions per minute.* Handles are provided to work the Pump by hand when necessary.

Prices

No.	Size of Cylinder	Stroke	Suction	Discharge	Pulley	Capacity per Min.	Price
1	3 in.	4½ in.	1¼ in.	1 in.	16x4	10 Gal.	

Fast and loose Pulleys, Extra.....

Common hose should not be used for suction, as it is not stiff enough and will collapse and prevent the Pump drawing. Four-ply steam hose may be used where the suction is short, but where over 8 or 10 feet, heavier steam hose, regular wire wound suction hose, or copper pipe should be used, with a foot valve on lower end.

The P. & B. Paint

FOR — Vats, Barrels, Tanks, Racks, Platforms of Presses, Etc.

The peculiar interest this paint has for Cider and Vinegar makers is that it is acid proof, neither cider or vinegar having the slightest effect upon it. It gives a smooth, polished surface to tanks, platforms of presses, racks and all woodwork, not unlike enamel. It stops leaks and prevents the cider from soaking into the pores of the wood and souring.

In painting tanks great care should be taken, as the fumes of the paint are gaseous, similar to turpentine. When one goes into a deep tank, where no ventilation is to be had, it is better to inhale the air through a rubber hose and exhale through the nose. For coating Tanks, Vats, Pipes and Platforms of Presses, also Barrels and Racks, it cannot be excelled. Racks should be painted some time before using, so as to become hard and not stick to the cloths.

In coating barrels it is necessary that they be clean and dry. Turn two or three gallons of the paint into the bunghole, stand the cask on each end, then lay it down and roll slowly over, turn out all that will run, and leave them on a frame where air can get at them, with bung and tap out. In three or four days they can be used; as the gas from the paint is heavier than the air, the bung should be turned down to allow it to escape. Before filling rinse with water. Iron pipes can be coated on the inside so as to form a perfect protection. Plug up one end, fill with paint and turn it out, and when dry it will be found cider and vinegar proof.

As this paint evaporates very rapidly, only a small quantity should be drawn at a time when painting.

We have sold large quantities of this paint and it has given great satisfaction.

Prices

In Gallon Cans	per gallon
In 5 Gallon Cans	" "
In Barrels	" "

Oils, Etc.

We have been frequently called upon to "Prescribe" for a press in which the screw "trembled" when under very heavy strain—or a "squeak" was heard which could not be located. In a majority of cases the trouble has disappeared at once when a good quality of oil was used. In many cases the fault (if a knuckle joint press) has been the want of proper lubrication of the ends of the arm bearings in the upper socket. These being somewhat difficult to get at, have had to do with one oiling or greasing in a season, and in some cases none at all. We have never found any oil equal to castor oil, but as it is of gummy nature the parts should be occasionally cleaned. Grease or solidified oil may be used for the gearing of our Screw Presses.

Racks

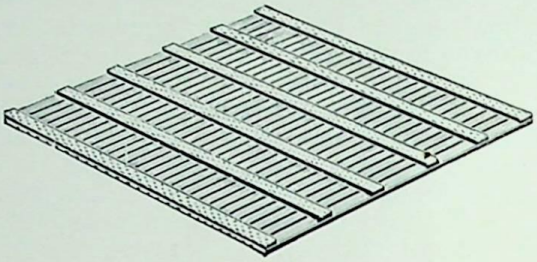


Fig. 40

The Racks as shown in Fig. 40, are made square, of wooden strips ½ inch thick by 1⅜ inches wide, placed ¼ inch apart, with five or more strips 2 inches wide and ⅜ inches thick, nailed across, as shown in cut. The strips are rounded on the edges so as not to injure the cloth. Wrought nails are used of sufficient length to securely clinch.

Prices

36	inches	square	each
42	"	"	"
48	"	"	"
58	"	"	"
62	"	"	"

Beveled Edge Racks

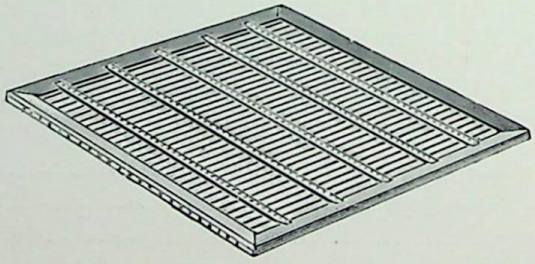


Fig. 41

Fig. 41 shows our Beveled Edge Rack the advantage of which is in pressing the edges of the layers where the ordinary racks leave them moist, and in its increased strength and lasting qualities.

We furnish them at the following

Prices

36	inches	square	each
42	"	"	"
48	"	"	"
58	"	"	"
62	"	"	"

Double Racks

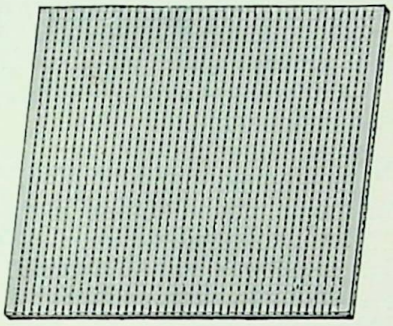


Fig. 42

These are made with the same number of slats both ways, closely nailed, and while somewhat heavier and more difficult to clean than the plain or beveled edge, are very strong and durable.

Prices

36	inches	square	....	each
42	"	"	....	"
48	"	"	....	"
58	"	"	....	"
62	"	"	....	"

Form

The form is square inside, and 3½ inches deep. It is made by nailing together boards 1 inch thick and 3½ inches wide, in the form of the sides of a box. To stiffen and guide against, a board is nailed across each end as shown in cut and a casting is bolted in each corner to stiffen it and keep it square.

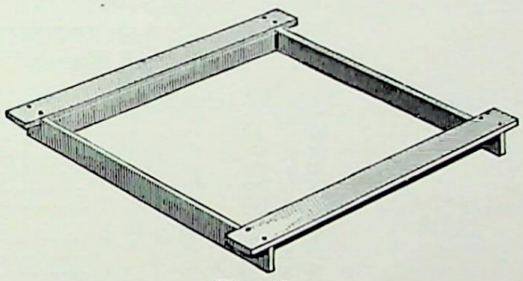


Fig. 43

How to Lay Up a Cheese

Commence on the platform of the press and lay a rack; place thereon a form of three and one-half inches deep, and five or six inches smaller each way than the rack. Over this form spread a cloth, and fill the form even full of pomace, then turn in the sides and ends of the cloth over the pomace, the cloth being of sufficient size to cover. The form is then raised and another rack placed on the layer of pomace thus made, the form being placed on the new rack, a cloth again placed over it, and another layer of pomace put in as before. Eight or ten racks are used in one cheese, and as many cloths less one. When the last layer is formed, the form is taken off and a rack placed. The follower is then put on and the pressing commenced. By placing the racks alternately across and lengthwise of the platform, the cheese will be less liable to move or cant over, and the rack to spread. A guide should be used in laying up the cheese, so as to have form come every time directly over the layer.

Cider Cloth

Our immense sale of cloth each season demonstrates the truth of our claim of furnishing the *very best in use.* It is made of long staple cotton, woven quite open, and of the same strength in both warp and filling. We shall as far as possible carry in stock the following widths and qualities:

By the Yard

Medium,	66	inches	wide	.....	cents per running yard
"	72	"	"	.....	" " " "
"	84	"	"	.....	" " " "
"	96	"	"	.....	" " " "
Heavy,	52	"	"	.....	" " " "
"	72	"	"	.....	" " " "
"	84	"	"	.....	" " " "
"	96	"	"	.....	" " " "
Extra Heavy,	52	"	"	.....	" " " "
" "	72	"	"	.....	" " " "
" "	84	"	"	.....	" " " "
" "	96	"	"	.....	" " " "

Hemmed Ready for Use

Medium,	66 x 66	inches	wide	.....	each for 36 inch Racks
"	72 x 72	"	"	.....	" " 42 " "
"	84 x 84	"	"	.....	" " 48 " "
"	96 x 96	"	"	.....	" " 58 " "
"	72 x 102	"	"	.....	" " 48 " "
"	84 x 118	"	"	.....	" " 58 " "
"	96 x 126	"	"	.....	" " 62 " "
Heavy,	66 x 72	"	"	.....	" " 36 " "
"	72 x 72	"	"	.....	" " 42 " "
"	84 x 84	"	"	.....	" " 48 " "
"	96 x 96	"	"	.....	" " 58 " "
"	52 x 126	"	"	.....	" " 62 " "
"	72 x 102	"	"	.....	" " 48 " "
"	84 x 118	"	"	.....	" " 58 " "
"	96 x 126	"	"	.....	" " 62 " "
Extra Heavy,	72 x 72	"	"	.....	" " 42 " "
" "	84 x 84	"	"	.....	" " 48 " "
" "	96 x 96	"	"	.....	" " 58 " "
" "	52 x 126	"	"	.....	" " 62 " "
" "	72 x 102	"	"	.....	" " 48 " "
" "	84 x 118	"	"	.....	" " 58 " "
" "	96 x 126	"	"	.....	" " 62 " "

It is a well-known fact that the strength of a chain is only that of its weakest link. This is equally true of cloth, as the weakest thread will break first. Hence cloth made of five-ply warp and four-ply filling has only the strength of the four-ply threads, or cloth having the same size thread both ways and woven with 12 threads per inch one way and 8 the other, has only the strength of the weakest way. Cloth should be woven open enough to allow for the proper amount of shrinkage or "fulling," otherwise after a few times use it will be so close as to necessitate running the presses slower or burst the cloths. It is far better to run the presses slow a few times when cloth is new and open, than to be obliged to run slow the greater part of the season because they are too close.

Each thread in both warp and filling of our cloth is composed of an equal number of small threads, which designate the "ply," and is balanced "both in twist and ply."

"Medium" Cloth is 6 Ply
"Heavy" Cloth is 8 Ply
"Extra Heavy" Cloth is 10 Ply

Please note difference in making comparisons.
Samples sent free on application.

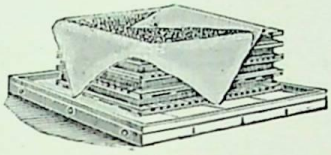


Fig. 44

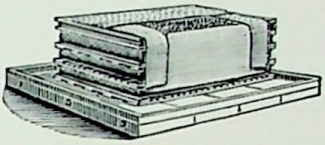


Fig. 45

Some of our customers using the smaller Presses prefer to have their cloths made square, folding the corners towards the center, as shown in Fig. 44. For the larger sizes our regular cloths laid up as in Fig. 45 will be preferred.

Shafting, Pulleys, Etc.

In many cases shafting, pulleys, etc., can be purchased locally as cheaply as we can furnish them, but to give an idea of their cost we quote approximate prices of same for different outfits, the cost varying somewhat with the speed of shaft and size of driving pulley required, and this can only be determined by knowing the size of driving or engine pulley and speed of same.

For No. 02 Screw Press—1 shaft 8 feet long, 2 collars, 2 hangers, 5 pulleys, to run 300 per minute .....

For No. 1 Screw Press—1 shaft 12 feet long, 2 collars, 3 hangers, 4 pulleys, to run 300 per minute .....

" " 400 per minute .....

For No. 2 Screw Press—1 shaft 12 feet long, 2 collars, 3 hangers, 4 pulleys, to run 300 per minute .....

" " 400 per minute .....

For No. 8 or 10 Hydraulic Press—1 shaft 10 feet long, 2 collars, 2 hangers, 3 pulleys, to run 300 per minute .....

" " 400 per minute .....

Friction Clutch Pulleys

Instead of fast and loose pulleys on the Grater some prefer a friction clutch pulley on the line shaft. The cost of such will depend on the size required, to run the Grater at the necessary speed.

Description
of the
Power Screw Press

The following cuts represent our Four Screw Press, which is well adapted for custom work, as the head of the Press will run down to the base, pressing one layer as well as more.

It is run by the two belts open and crossed, and has *three rates of speed* up and down, *fast, medium* and *slow*. This enables the operator to run down until the head strikes the cheese; then shift to the medium motion, until the bulk of the cider is extracted, and to finish on the slow speed, the power increasing as the speed decreases.

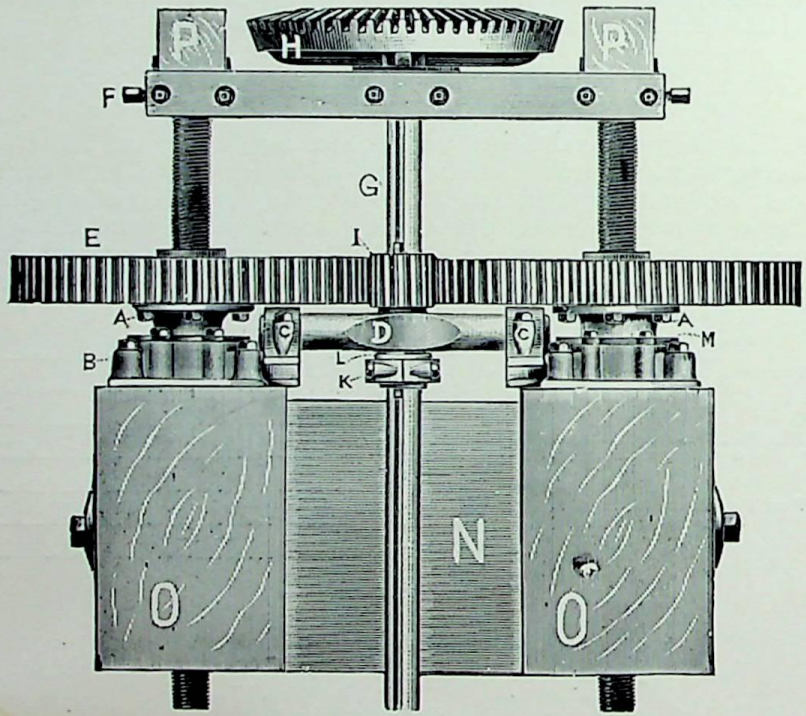


Fig. 46

Fig. 46 illustrates the manner of communicating power to the nuts on the screws. The pinion I, has on its lower end a long hub which passes through the yoke D, in which it turns freely, but is held from drawing

out by the clamp collar K. The yoke and pinion are carried up and down in connection with the head by being fastened to the washesr by the boxes C. The upright shaft G, has a groove or keyway planned its entire length, in which slides the key to the pinion I. The four nuts are driven simultaneously, and the head beam moves up and down exactly even.

When the common screw presses are doing no work the head beam is straight, the base of the nuts are on a line with it, and at right angles to the perpendicular screw. When pressure is applied the head beam springs, the washers are inclined outwards, the nuts are tilted to conform to the incline of the washers (see Fig. 48) and bind on the screws, producing enormous and unnecessary friction, and often breakage, as many of our customers who formerly used common screw presses will testify.

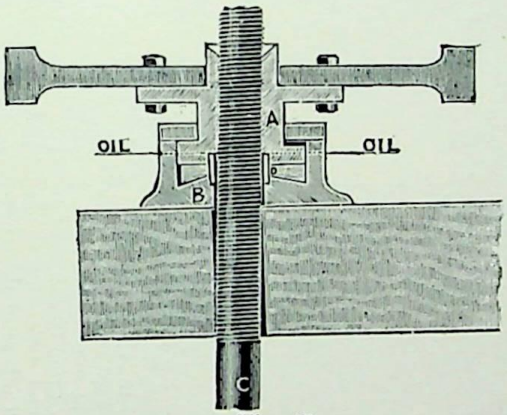


Fig. 47

Fig. 47 illustrates an invention as applied to our Screw Press, for preventing the binding of the nut on the screw when the heavy pressure bends the head beam, thus throwing the base of the nut out of its proper line at right angles with the screw.

The invention consists in giving to the nut the action to a limited extent of the universal joint. To illus trate, if the lower half of the nut A was a half globe supported in a washer made to receive it, the washer when tipped in any direction would allow the screw to retain its perpendicular position, and the nut would conform to the position of the screw; but a globular nut of sufficient radius to give a proper base outside of a large screw would generate too much friction. After trials of various devices we settled on the plan shown in Fig. 47, as the one most desirable for producing the universal joint required and experience has shown that its action is perfect

The spur gear nut A is separated from the washer B by the self-adjusting concave washer D. The convex portion of B is the exact segment of a globe, and D turns with the nut or remains stationary, the nut turning on top of it. It is made with sufficient play to allow it to conform to any spring or warp of the head beams and still maintain the nut A in its proper position, rendering it impossible to bind or cramp on the screw

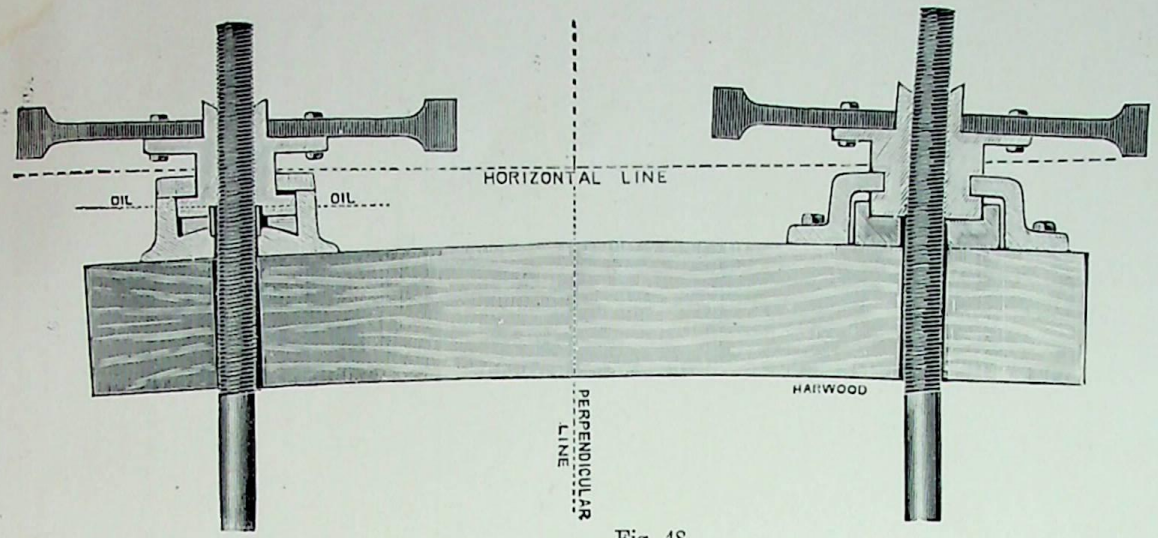


Fig. 48

The above cut shows the beam of a press, fitted on the left with a screw and nut and seat, as furnished with the Dunning & Boschert Screw Press, and on the right with those of ordinary manufacture. It tells the story so well that little needs to be added. While the springing or warping of the head beam has no effect on the screws of our presses, on account of the self-adjusting concave washer used (see page 47) the press of ordinary manufacture will soon work its own ruin. Another feature is the running of the screw nuts in oil. A flange projects upward from the seat through the adjustable concave washer, and into the nut which is recessed to receive it loosely. This forms a cup or reservoir in which the screw nut turns, and being filled with oil, the surfaces are kept constantly lubricated. A small groove planned across the face of the nut allows the oil to cover the whole surface at one revolution. In those of ordinary manufacture, the oil is soon forced by the pressure from between the surfaces, causes immense loss of power from friction, and unless oiled after each pressing, there is great danger of abraiding the surface and destroying the press. There are many other inventions embodied in these presses placing them far in advance of all others of this class.

Indicators

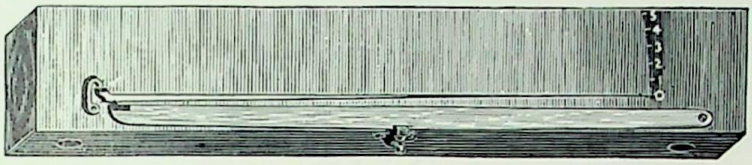


Fig. 49

The Indicator consists of two levers arranged to accurately indicate the spring of the Head Beam of the Press. It enables one to see at a glance the amount of pressure being transmitted to the material under pressure.

The advantage of this will be readily seen, especially when Presses are run by power. It greatly reduces the possibilities of breakage and enables the operator to determine when the material is sufficiently pressed. It will be furnished without extra charge on all our Knuckle Joint and Screw Presses.

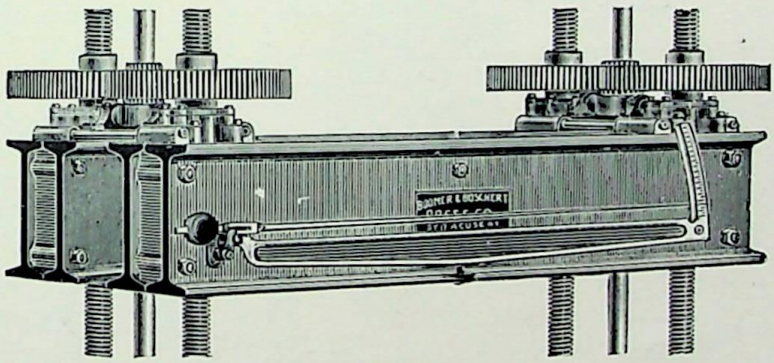


Fig. 50

The above cut illustrates the Indicator as attached to our steel Presses The bar is fastened by a screw to one end of the head, and supported by a bolt from the center. The opposite end receives one of the bearings of the pointer, which are hardened and constructed with knife edges, like the bearings of steel-yards or scales. The weight of the pointer is nearly counterbalanced by the ball upon the outer end. A very slight spring of the head is multiplied, so as to show a considerable movement of the pointer on the scale. The pointer is adjusted to 0 by the pointed set screw in the lower end of the center bolt. The Indicator is as accurate as a pair of steel-yards or scales, and enables the operator to put more or less pressure upon the material in the Press as desired.

Description
of the
Hydraulic Press

As the action of the Hydraulic Press does not seem to be understood by all, we have prepared the following illustrations, which clearly show the principles involved. The power depends upon the principle that liquids press equally in all directions, and that if the power applied to the plunger of a force pump be multiplied by the ratio existing between the area of the pump plunger and that of the ram of the press, the product will be the power of the press; thus if the diameter of the pump plunger be $^{8}/_{10}$ of an inch the area would be ½ of a square inch, and if the ram were 12 inches in diameter, the area being 113 square inches, the ratio between pump and ram would be as 1 to 226, or the area of the ram would be 226 times larger than the pump plunger. Now if one thousand pounds weight were laid on the pump plunger, the pressure transmitted through the water to the press ram would be 226 × 1000=226,000 pounds, or 113 tons, and the water pressure would be 2,000 pounds per square inch of surface, both in pump, pipes, valves and cylinder. In other words the power of the press would be 226 times the pressure or weight appiled to the pump plunger. Increasing the size of the ram, or decreasing the size of the plunger, would

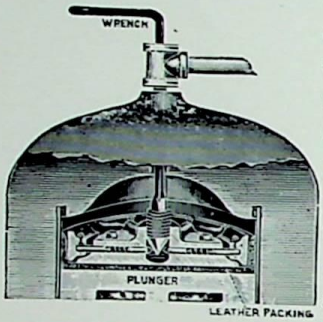


Fig. 51

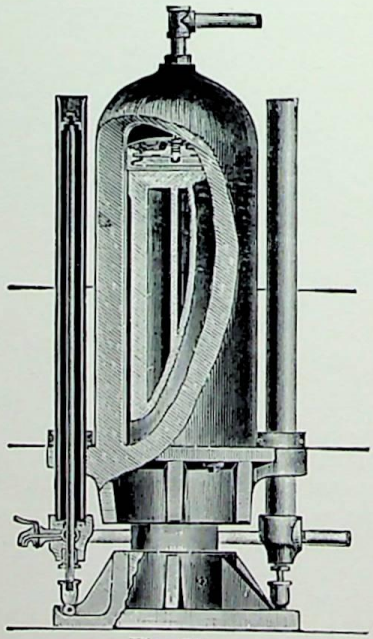


Fig. 52

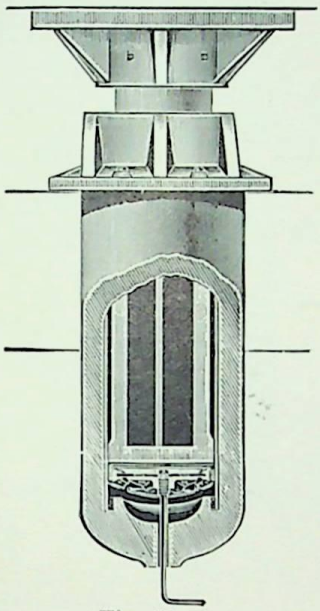


Fig. 53

per lined and the packing being reversed draws the follower up, when the water is turned into them from the pumps.

Fig. 53 shows a copper lined cylinder for an upward press.

The packing and means of adjustment are the same as shown in Fig. 51. In most presses it is desirable to finish the ram and put the packing in the neck of the cylinder. The different ways are shown in Figs. 54. 55 and 56. In Fig. 56 a groove is turned in the neck of the cylinder to receive the packing, but this increase the ratio and hence would give increased power to the press.

Fig. 53 shows a cylinder lined with copper and our adjustable packing. The leather packing is cup-shaped and the edge held against the copper lining by an elastic packing, which is adjusted by a special wrench inserted through the tee as shown in Fig. 51 without removing the plunger from the cylinder. Just sufficient pressure is given to hold the leather in place and not create any friction when the Press is dropped down.

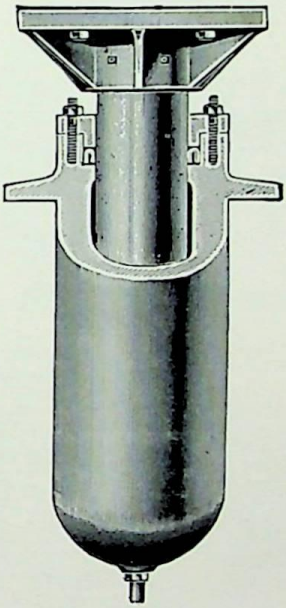


Fig. 54

Fig. 52 shows our Inverted Presses. The small cylinders are cop-

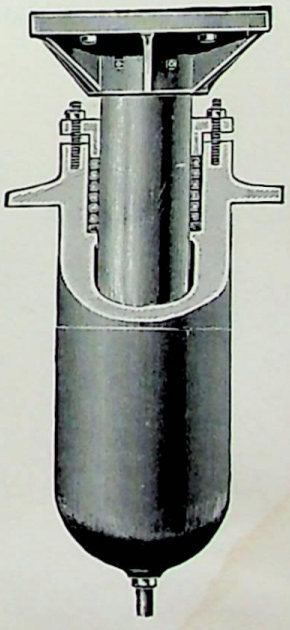


Fig. 55

requires the removal of the ram to insert the packing and is not desirable. In most cases it is more convenient to provide a gland on top of the cylinder held by bolts, as in Figs. 54 and 55, and by removing which the packing can be inserted over the top of the ram without removing the ram from the cylinder.

Braided flax packing is often used on large presses as shown in Fig. 55. The packing is compressed by the gland on the same principle as the piston of a steam engine. It has the advantage of being easily replaced without disturbing either ram or cylinder. It has given good satisfaction wherever used.

Valves are provided for drawing off the water from cylinder, pipes and pump to prevent freezing. Every cylinder is tested before leaving the factory to a greater pressure than it would ever be called upon to endure in ordinary work.

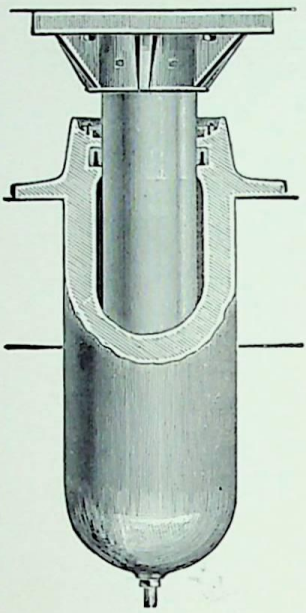


Fig. 56

Steam Hydraulic Pump

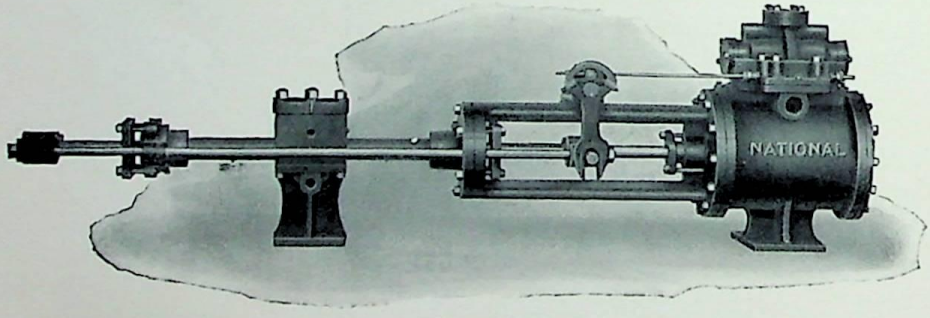


Fig. 57

In many cases the Steam Hydraulic Pump may be used to advantage as it can be run without running the engine, and "follow up" without the loss of any power. The water ends are of steel, the plungers of hard bronze, and the valves are easily accessible. A safety valve is provided, and the whole set on a base in the form of a saucer which catches any drip and conducts it through a water pipe where desired. Almost any size can be furnished either single acting or duplex.

Prices will be quoted on application.

"Right" and "Left" Hand Threads

As there seems to be some difficulty in understanding the above terms, we herewith present engravings which will clearly explain what is meant.

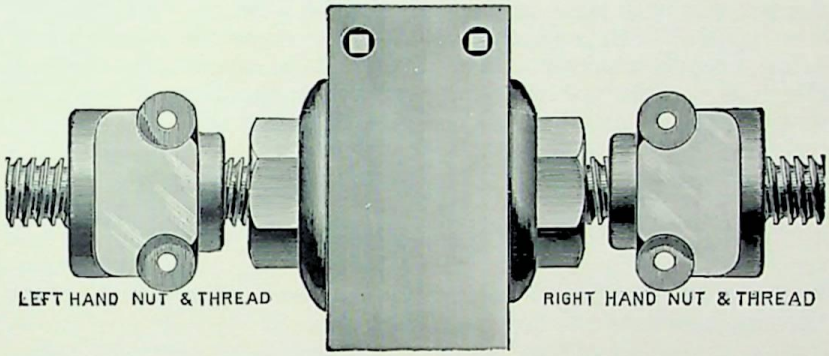
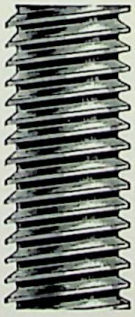


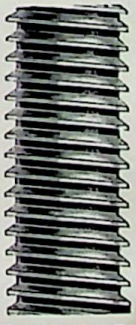
Fig. 58

The above represent a portion of the screw used in our Knuckle Joint Presses, the collars near the center being threaded the same as the nuts, screwed on and keyed in place.



RIGHT HAND THREAD
Fig. 59

Our four Screw Presses are made with two right and two left hand threaded screws. The Figs. 59 and 60 so clearly represent them that no further explanation is necessary. A comparison of the inclination of the threads in the engravings with the screws in the Press will enable any one to order correctly, if repairs should ever be found necessary.



LEFT HAND THREAD
Fig. 60

Steam Evaporators

for

Cider, Jelly, Etc.

A few years ago Cider Jelly was a thing unknown in the market. It now fills an important place among the prepared fruit relishes. As an article of food, it possesses the merit of being cheap, wholesome and delicious—a combination which rarely occurs, but which is quickly appreciated by caterers and housewives.

Fundamental Principles

In the evaporation of saccharine liquids there are certain fundamental principles involved, which are well understood by both practical and scientific men, and with which every manufacturer should be familiar.

First—The liquid must be thoroughly defected or cleansed. This is done by heating and carefully skimming.

Second—It should be reduced to the proper density, with as little carbonization and oxidation as possible. This is one of the most important principles involved in the manufacture of Cider Jelly, and is the most difficult of accomplishment. No appliance has yet been devised but will, to a greater or less extent, discolor the product. Even the vacuum pan, though costing several thousand dollars, and introduced by sugar manufacturers for the express purpose of preventing oxidation (or coloring) will not in the case of Cider Jelly entirely overcome the difficulty.

Third—No degree of heat will injure the product, so long as it contains a large percentage of water.

Fourth—The denser the liquid, or the more nearly it becomes free from water, the more rapidly becomes the oxidation and carbonization under heat; therefore the longer it is subjected to heat after the bulk of the water is thrown off, the darker the product will become.

Fifth—Long continued heat prevents or destroys granulation, and in cider prevents jellying.

These rules apply with equal force to all saccharine liquids, whether sugar cane, sorghum, cider or other juices.

Apples

To make good jelly, it is necessary to have good sound fruit well ripened. A few rotten apples will destroy its flavor and give it a sticky consistency. Fermentation about the grater, vats, presses, racks, cloths, or pipes, will have the same result. Therefore everything should be kept sweet and clean.

Mixed Apples

The flavor of the jelly will correspond to that of the apples used. If a sweet jelly is desired, make it from sweet apples; if medium, mix sweet and sour together. All sour apples will make the jelly very tart, but many like it so. The finest flavor, and one that suits most people, is produced by mixing about one-third very sweet with two-thirds of very sour apples. It gives a jelly that has a character. It is like a pie made from sour apples with plenty of sugar; not liable to that insipidity which would result from using fruit of no decided character.

Sweet Jelly

When a sufficient supply of sweet apples cannot be procured, sweet jelly may be made by adding syrup in the proper proportions. Syrup may be easily made by taking a barrel of sugar, and mixing it with the proportion of water in the vat, boiling and drawing off into casks, when it is ready for use.

Quantity Produced

per bushel varies, according to the season and apples. The sugar in early apples being only partially developed, will produce a smaller amount of jelly, and that of poorer quality, than later apples, well ripened, when the amount of sugar is at the maximum. Also whether the pomace is repressed ,soaked, steamed or otherwise treated, to extract as far as possible the sugar. Owing to this diversified treatment, the amount varies from five to eleven pounds per bushel of fifty pounds.

Pomace Jelly

It has been demonstrated that the cider produced when the pomace is repressed, after being reground, soaked or steamed will make a lighter colored and firmer jelly than the cider from first pressings, but lacks in flavor. If the juice from the two pressings is mixed and evaporated, the quality, quantity and flavor are much improved. Care must be taken to avoid fermentation during this process.

Steam Coils

For Jelly, Cider, Syrup, Etc.

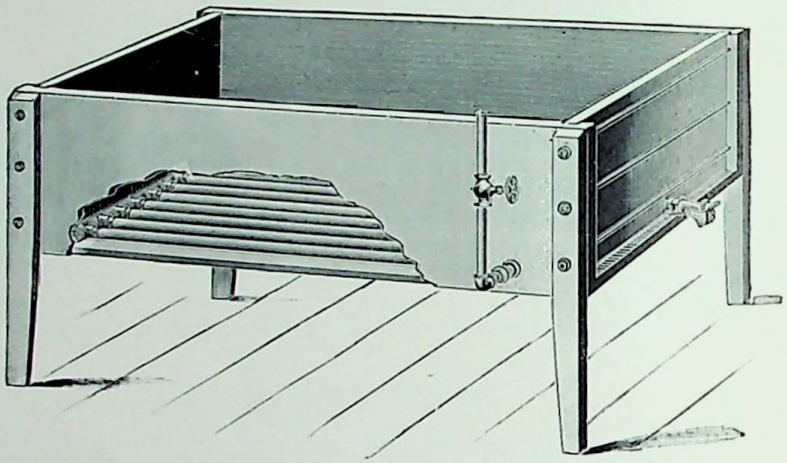


Fig. 61

Fig. 61 shows a vat with copper pipes, the impurities being removed by hand skimmers. A quantity of juice is put in the vat, boiled and skimmed until reduced to the required density. then it is drawn off and the operation repeated. For scalding cider it is very convenient, and also in cases where customers wish their cider reduced two to one, three to one, etc., as by measuring the raw cider when first put in it will be shown just how deep it should be when reduced to the required density. This style may also be used for the defecation of sorghum, manufacture of apple butter, etc. The coils can be turned up on end for cleaning.

Dimensions
As shown in Fig. 61.

Size	Estimated Horse Power	Inside Length	Inside Width	Inside Depth	Heating Surface of Pipes	Price with Copper Coil
A	6 to 10	55 inches	20 inches	20 inches	1400 sq. inches	.....
B	12 to 20	72 "	29 "	22 "	2700 " "	.....
C	18 to 25	84 "	37 "	24 "	3900 " "	.....

Fig. 62 is another style of coil, taking steam in one end and passing through the coil the condensed water is discharged at the other.

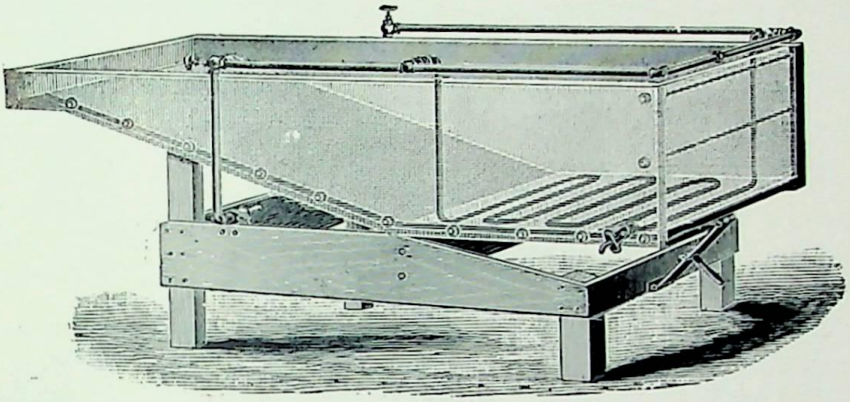


Fig. 62

Among the advantages of this Evaporator are, ease of skimming as the foam flows toward the incline and the scum or impurities are easily swept into the trough, the reduction of the area as the juice becomes condensed, thus keeping the pipes covered, the ease of draining the vat by dropping it down on the back end, and the turning or raising the coil out of the vat without disconnecting it in any way, making it very easy to get at all the parts for cleaning. The outlet for product is a straight way gate that cannot become stopped. The copper coil is connected with unions to the steam pipe swinging handle, and the construction of the whole machine is first-class in every respect.

Dimensions

As shown in Fig. 62.

Size	Required Horse Power	Length on Top	Length on Bottom	Inside Width	Inside Dept	Sq. inches Heating Surface	Price with Copper Coil
D	4 to 10	7 ft. 4 in.	2 ft. 6 in.	26 inches	24 inches	900	.....
E	12 to 20	9 ft. 4 in.	3 ft. 0 in.	36 "	24 "	2705	.....

Continuous Evaporator

Figs. 63 and 64 show our Continuous Evaporator as now constructed with all the latest improvements, and we believe it is perfect in every detail.

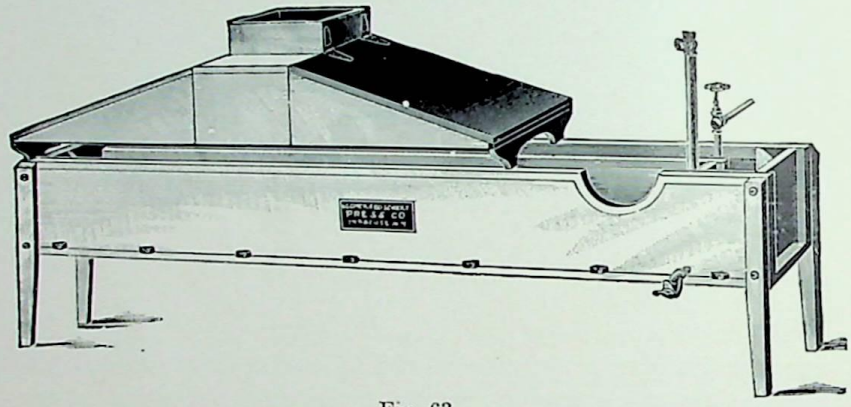


Fig. 63

The cover is so made that a flue of any length can be easily attached to reach through the roof or out of the sides of the building. The cover is raised above the vat, and is hinged at both ends for convenience in cleaning vat and pipes, and being raised the operator has full view of the boiling.

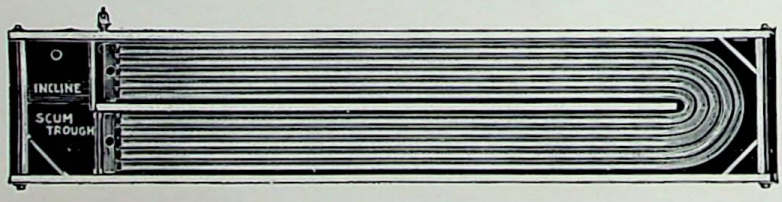


Fig 64

The advantage of being able at all times to see just how the coil is operating will be appreciated by all who have used a closed cover.

The portion cut out of the side of the vat enables the operator to get a better view of the thermometer without having to handle it. The outlet is a straightway gate and being short and straight can be easily kept clean and will not clog. By a shield around the steam pipe where it enters the manifold the liquid is kept away from the pipe, and there is no trouble from burning on as in the ordinary way. The exhaust pipe being comparatively cool, there being no danger of burning, we take it out over the top of the vat instead of through the bottom as formerly and by making the outlet small we are able to make this standing pipe practically a steam trap, leaving the steam pipe fully open and regulating the boiling by the exhaust pipe valve. The coils are made of copper pipe ¾-inch outside diameter.

By using a number of small pipes we get the necessary heating surface, and as they require less juice to cover them than large pipes, we can boil faster, keep the juice under heat less time, and make a lighter colored, firmer jelly.

Dimensions

As shown on page 58.

Size	Estimated Horse Power	Floor Space Occupied		Heating Surface in Square Inches	No. of Pipes	Price with Copper Coil
		Width	Length			
M	5	1 ft. 3 in.	9 ft. 1 in.	1000	3	.....
N	8	1 ft. 5 in.	9 ft. 10 in.	1800	4	.....
O	12	1 ft. 8 in.	11 ft. 4 in.	2700	5	.....
P	16	1 ft. 8 in.	14 ft. 9½ in.	3600	5	.....
R	20	2 ft. 0 in.	14 ft. 11 in.	4500	6	.....
S	24	2 ft. 4 in.	15 ft. 11 in.	5600	8	.....

Operating

The cold juice is admitted to the scum trough and passing under the scum board, which is slightly raised from the bottom, it comes in contact with the coil, which being coolest at the end, gradually heats it, causing the impurities to rise to tht surface, and flow over the scum board into the scum trough, from whence it is occasionally swept over the incline and is drawn off at (C) As the clarified juice continues on its course, it comes in contact with a higher degree of heat, which causes the foam to rise higher and flow towards the scum board rapidly, forming a reverse current, the juice flowing towards the outlet and the foam with the scum towards the inlet or scum trough. The juice should be carried deep enough to hardly cover the pipes, the supply being regulated according to the steam pressure, and the rapidity with which it is finished sufficiently. When starting the first few gallons may not be sufficiently cooked and can be put back into the supply tank. Keep the steam pressure as regular as possible It may be cooked either to 28° to 34° by the Saccharometer, 218° to 224° on the Thermometer, the degrees varying according to fruit, etc. As it becomes sufficiently reduced it is drawn off, being retarded with a paddle if too thin, or hurried along if too heavy.

Cleaning

In cleaning the coil must be disconnected and lifted out of the vat, and both coil and vat kept perfectly clean and free from any fermentation.

Copper Coils

All of our Evaporator tubes are of hard drawn copper, and as thin as possible and not easily bruised. They will transmit the heat much more readily than heavy copper, and are thus more economical of steam.

The prices include a Saccharometer, Hydrometer, Thermometer, and valves ready to be attached to boiler.

The vats are well made, of a good quality of lumber, with the joints grooved, tongued and clamped together securely with bolts, and are well painted.

Apple Butter Cooker

The illustration shows our latest improved Steam Coil for cooking Apple Butter, scalding cider, etc.

It consists of a copper coil one inch outside diameter, arranged to go in an ordinary cask from which the head has been removed.

From the coil a ¾-inch steam pipe extends to a double stuffing box, arranged to be bolted to a post or the side of the building. The stuffing box is cast with a partition in the center, one end being for steam and the other for exhaust. The entrance of the steam is controlled by the valve above the stuffing box, and passing through the pipe and coil, is exhausted through the other pipe, and the condensed water conducted outside the building through the pipe extending downward from the stuffing box. The blowing out of the condensed water is regulated by the valve near the coil within easy reach of the operator's hand. Extending from the fittings on top of coil are two handles of gas pipe, plugged so as to exclude the steam, and connected on the outer ends by a wooden handle. The handle extending beyond the cask, not only enables the operator to stand back from over the heat and steam, but gives a leverage which greatly lessens the labor, as it does not have to be worked at arms length as where hose is used. Full boiler pressure can be carried without danger of bursting or blowing off hose, which those who have operated coils fitted with hose will appreciate. The coils being balanced by the weight, will hang suspended in any position. The stuffing box is placed at just one-half the height of the cask, and the circle described by the coil in working, is that of the curve of the staves.

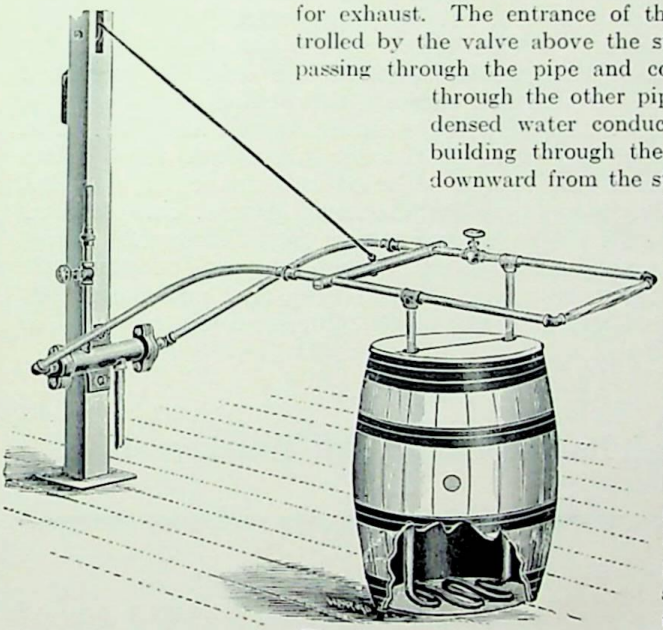


Fig. 65

Price, without Cask, Post or Weight .....

Apple Butter

This is a delicacy much in use in some sections and becoming almost a necessity wherever known. It is easily made and wherever introduced adds quite materially to the income of custom mills.

Fill the cooker partly full of clean, ripe apples, pared or not as the customer chooses. Add four or six quarts of cider to each bushel. Cover and cook thirty or forty minutes according to kind and condition of fruit. When cooked soft churn with the coil until you have thin sauce. Remove to a colander or screen made of brass wire and rub through this, which will separate the seeds, skins, etc., and leave the sauce smooth and fine. Put the screened sauce back into the Cooker and add to each gallon of the sauce about one quart of heavily boiled cider or jelly, one pound of sugar and one-half ounce of ground cinnamon or other spices to suit the taste, and churn until thoroughly mixed and cooked to a consistency to suit. Customers will require their butter made with more or less sugar, spices, etc., and the proper quantities of each must be left to the judgment of the operator.

Combined Barrel Gauge and Wantage Rod

Fig. 66

The above cut shows a combined gauge manufactured expressly for our trade. As usually made the gauge and rod are separate, and some of the tables are of no use to cider makers; only tending to confuse, besides there being two separate rods, are more liable to get misplaced or lost. By this combination of both in one, we secure a very neat and compact rod, and with much less liability of error than when those of ordinary manufacture are used. The workmanship is the very best. The figures being large, are easily read. We will send one of the gauges by mail, with full directions for use, on receipt of.....

.....

Hydrometer

Fig. 67

The specific gravity of cider before it is fermented indicates the amount of sugar it contains and determines its value. It is shown by the Cider Hydrometer.

Cider that shows 10° on the Hydrometer contains one ounce of sugar to the pound of cider, 20° indicates two ounces per pound, or about one pound to the gallon.

Cider made early in the season is generally of little value, standing on the Hydrometer at 12° to 15°. Later as the apples become ripe, it runs up to 18°, 20°, 22°, and sometimes from choice apples much higher.

The higher the cider stands on the hydrometer, the more jelly it will make, and of better quality. It will be found of great service. Forwarded by express at *buyer's risk,* on receipt of.....

Saccharometer

Fig. 68

This instrument is used to indicate the specific gravity of heavy liquids, or those containing much saccharine matter. It is often called "Baume scale." It is used for determining when the liquid is sufficiently reduced to form jelly of any desired consistency, which varies from 28° to 34°, according to fruit and season, as explained elsewhere. As both this and the hydrometer are of glass and easily broken, we advise when possible, buying at some drug store near home, but when parties are unable to obtain it, we will forward them by express at *buyer's risk*, on receipt of.....

Thermometer

Fig. 69

Thermometers are sometimes used for determining when the jelly is sufficiently reduced. The denser it becomes the higher degree of heat it will show on the thermometer. The degree at which it will be properly cooked to make soft or firm jelly, varies from 218° to 224°, according to the condition of apples, cider, etc.

The cut shows an angle Thermometer which can be attached to any of our steam coils or Continuous Evaporators, the lower end passing through a cork in the side of the vat so the bulb of the Thermometer comes in contact with the liquid in the vat and saves handling. These will be attached when desired or furnished separate, for.....each. We can also furnish Thermometers 15 inches in length, with large mercury column, which enables the operator to easily see the degree while immersed in the liquid, at.....each. We shall take great care in packing these goods, and will send by express *at buyer's risk of breakage.*

Capacity for Cisterns or Tanks in Gallons for Each Inch in Depth

Diameter in feet	Gallons	Diameter in feet	Gallons	Diameter in feet	Gallons
2	1.95	6½	20.68	12	70.05
2½	3.05	7	23.98	13	82.74
3	4.06	7½	27.34	14	95.96
3½	5.99	8	31.33	15	110.16
4	7.88	8½	35.27	20	195.84
4½	9.12	9	39.65	25	305.99
5	12.24	9½	46.14	30	440.64
5½	14.81	10	48.96	35	599.
6	17.62	11	59.54	40	783.1

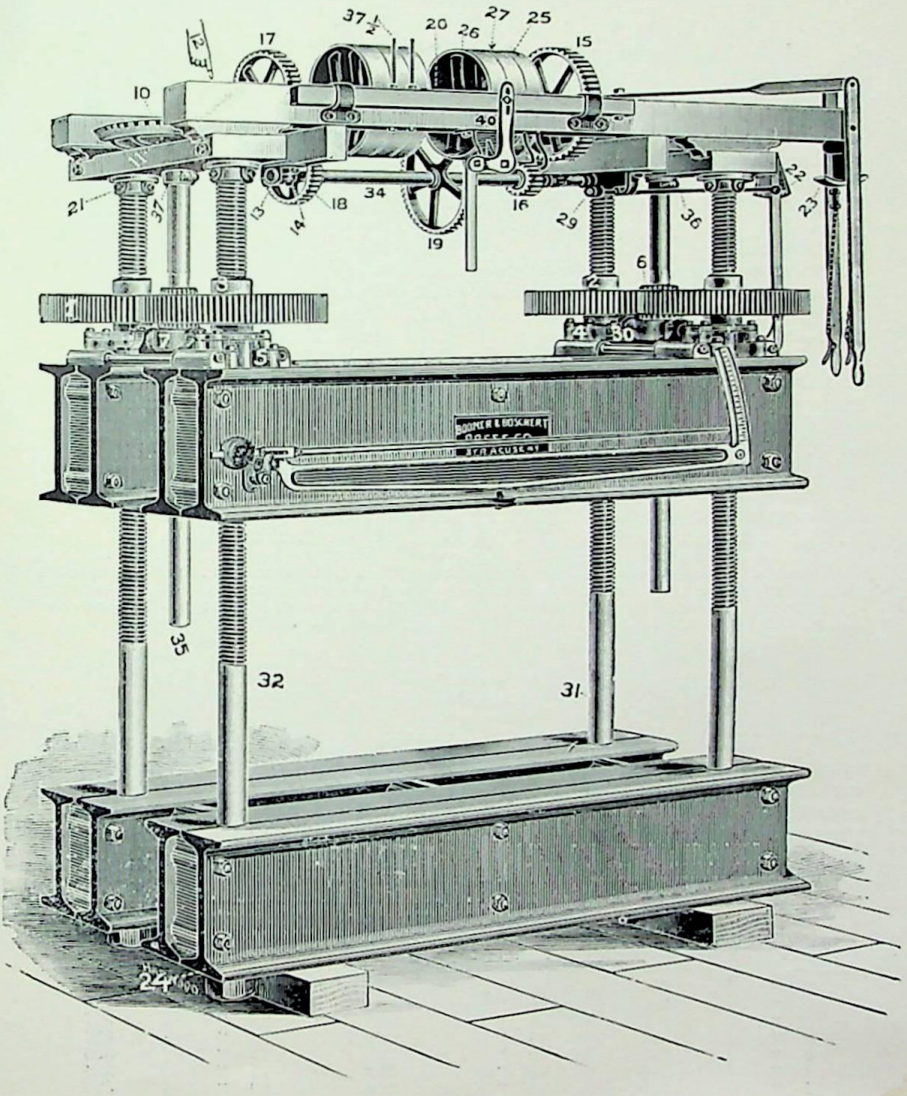


Fig. 70

For List of Parts See Page 66

Parts of
Power Screw Press

1. Large spur gear on screws.
2. Right hand thread screw nut.
3. Left hand thread screw nut.
4. Head socket washer.
5. Cover for same.
6. Spur pinion sliding on upright.
7. Yoke. (Shafts.
8. Split collar on pinion.
9. Brass washer between split col-
10. Large bevel gear. (lar and yoke.
11. Bearing for same.
12. Bevel pinion.
13. Shaft boxes.
14. Cap for same.
15. Large spur driving wheel.
16. Pinion to match.
17. Medium spur gear, upper shaft.
18. Pinion to match, lower shaft.
19. Large center spur gear.
20. Long center pinion.
21. Top casting on screws.
22. Lever quadrant.
23. Double lever quadrant.
24. Lower screw washer.
25. Pulley, fast to shaft.
26. Pulley fast to long center pinion
27. Pulley loose on shaft. (under nut.
28. Bronze plano concave washer.
29. Fork for shifting lower shaft.
30. Yoke box.
31. Screw—right hand thread.
32. Screw—left hand thread.
33. Upper shaft.
34. Lower shaft.
35. Upright end shaft.
36. Rod for shifting lower shaft.
37. Collar or end shafts.
37½ Finger for shifter.
38. Loop for shifter.
39. Bracket for self-shifter.
40. Bell crank for self-shifter.
41. Shifter bar bracket.

Each size press has a letter and each part a number. **In ordering repairs give both letter and number.** Thus the large bevel gear on the top of the upright end shaft will be marked "A 10" on the No. 1 Press; "B 10" on the No. 2, "C 10" on the No. 3 and "D 10" on the No. 4.

The following tables, taken from "Haswell," are the deductions from careful and exhaustive experiments conducted by experts having facilities for accurate work, and can therefore be relied upon as correct. It will be seen that the heat increases rapidly in proportion to the increase of steam pressure. Hence, if a higher pressure is carried on any of our Evaporators, the capacity will be increased in proportion. The pressure is given above the atmosphere, and the degrees of heat, omitting fractions:

Pressure of Steam	Degrees of Heat	Pressure of Steam	Degrees of Heat	Pressure of Steam	Degrees of Heat
2 lbs.	216	32 lbs.	279	62 lbs.	313
4 "	225	34 "	282	64 "	315
6 "	231	36 "	284	66 "	317
8 "	236	38 "	287	68 "	318
10 "	241	40 "	289	70 "	320
12 "	245	42 "	292	75 "	324
14 "	249	44 "	294	80 "	328
16 "	253	46 "	297	85 "	332
18 "	257	48 "	299	90 "	335
20 "	261	50 "	301	95 "	339
22 "	264	52 "	303	100 "	343
24 "	267	54 "	305	105 "	346
26 "	270	56 "	307	110 "	349
28 "	273	58 "	309	115 "	352
30 "	276	60 "	311	120 "	355

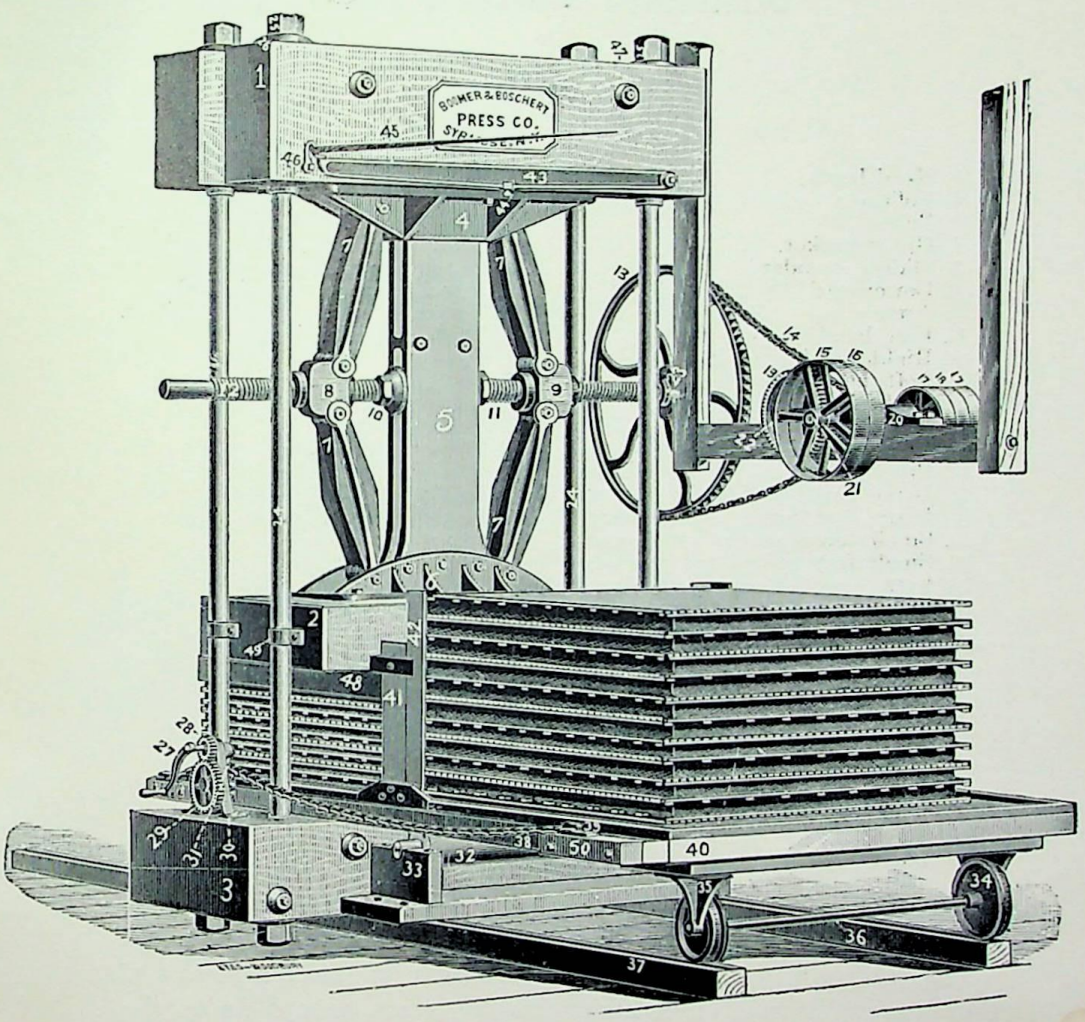


Fig. 71

For List of Parts See Page 68

Parts of
Knuckle Joint Press

1. Head beam.
2. Follower.
3. Base.
4. Upper socket.
5. Sliding standard.
6. Lower socket.
7. Arms.
8. Left hand screw nut.
9. Right hand screw nut.
10. Left hand screw collar.
11. Right hand screw collar.
12. Screw.
13. Chain wheel.
14. Press chain.
15. Large loose pulley for power attachment
16. Large fast pulley for power
17. Small loose pulley for power
18. Small fast pulley for power
19. Large gear for power attachment
20. Frame for power attachment.
21. Long shaft for power attachment
22. Short shaft for power attachment
23. Friction wheel.
24. Press rods.
25. Rod nuts.
26. Rod washers.
27. Crank for platform shifter.
28. Small gear for platform shifter.
29. Large gear for platform shifter.
30. Frame for platform shifter.
31. Sprocket wheel for platform.
32. Platform roller.
33. Platform roller box.
34. Platform wheel.
35. Platform axle stand.
36. Platform axle.
37. Platform track.
38. Platform chain.
39. Platform hook.
40. Platform.
41. Platform post.
42. Rack guide.
43. Indicator bar.
44. Indicator seat.
45. Indicator pointer.
46. Indicator hook.
47. Block between head beams.
48. Square follower plank.
49. Rod loops.
50. Platform stop.

Extras

We desire to impress upon the minds of those ordering Extras, Repairs, Etc., that during the many years we have been in business, our sale of Presses in the aggregate has been very large, and reaches into the thousands, and while we have a record of our sales, it must necessarily be imperfect, except as to the original purchasers. Hence it will save much time and trouble if those ordering will at least give date of purchase, if not the name of the person to whom the Press was shipped. In case of Repairs, a *rough pencil sketch, giving dimensions, would be of great help.* In ordering Racks and Cloth, state size and quality, as well as number wanted.

Testimonials

FOR many years we published in our Annual Catalogue the kind letters received from our customers in commendation of our Cider and Wine Machinery, but we are now so well and favorably known, and have so many presses in use to which we can refer if desired, that we do not think it necessary to continue the publication of such letters. If anyone not acquainted with our machinery should wish references we shall be glad to refer them to some of our customers in their locality.