We also manufacture Presses for a variety of purposes, prominent among which are

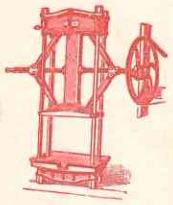
LARD.

Cotton Mills,
Woolen Mills,
Paper Mills,
Bleacheries,

BALING.

Paper Stock, Brewer's Grains,
Dye Works, Print Works,
Lard Oil, Tallow Oil,
Paraffine Oil, Leather Belting,
Leather, Binders' Board,
Vulcanizing, Herbs, Glue Stock,
Fertilizer, Tinctures,
Veneer,

and for many other purposes requiring Pressure.



OIL.

☞All our Goods are delivered Free on Board Cars or Boat at Syracuse.

HYDRAULIC.

—ADDRESS—

BOOMER & BOSCHERT PRESS CO.,
SYRACUSE, N. Y.

WINE AND CIDER MACHINERY.

BOOMER & BOSCHERT PRESS CO.,
SYRACUSE, N. Y.,
U. S. A.

1899.

Boomer & Boschert Press Company,

INCORPORATED 1874.

OFFICERS:

R. E. BOSCHERT, *President.* W. D. DUNNING, *Secretary and Treasurer.*

OFFICE AND WORKS:

329 WEST WATER STREET, - SYRACUSE, N. Y.

INDEX.

CIRCULAR.

IN presenting our *twenty-sixth Annual Catalogue*, 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. Late in the season the rush for machinery is so great that it is impossible to do either our customers or ourselves justice. To remedy this we suggest ordering early, and we will make the terms of payment to correspond. The large demand for our machinery shows that its reputation for good work, power, capacity and durability is appreciated. For the coming season we can only promise greater efforts than ever before to fill orders promptly and to merit your approval.

Having three different kinds of power, viz: Screw, Hydraulic and Knuckle 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 Grater, Evaporators, Pumps, &c., speak for themselves in hundreds of mills all over the land.

Our 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.

Do not be deceived by discounts. Compare the size of cheese, weight of material, power, size of rods, &c., with the NET PRICES.

We endeavor to make our terms of payment convenient to customers, and solicit correspondence.

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

BOOMER & BOSCHERT PRESS CO.,

SYRACUSE, N. Y.

Knuckle Joint Press.

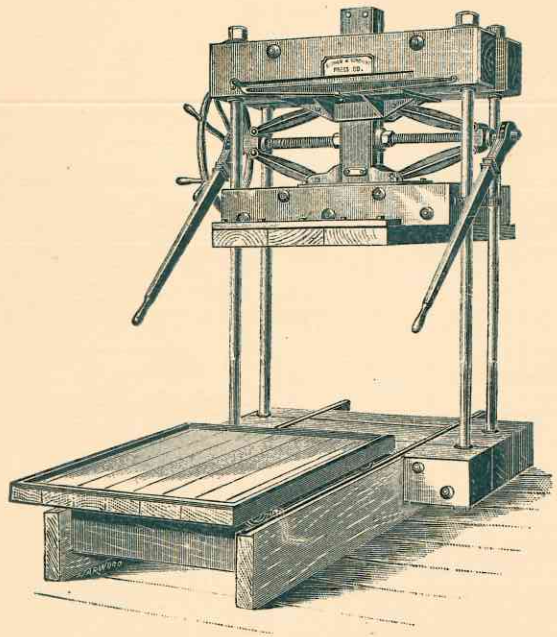


FIG. 1.

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, makes them peculiarly 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.

Press, Wooded	**$140 00**
Platform on Wheels	**20 00**
Eight Racks and form	**8 50**
Seven Cloths, (Medium)	**8 25**
	$176 75

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

DIMENSIONS.

Extreme Height of Press	8 ft. 4 in.	Screw (Steel)	2¼ in.
Head Beams (each)	10 x 12 in.	Racks	48 in. square.
Base	12 x 24 in.	Form	42 in. square.
Follower	8 x 20 in.	Cloth	72 x 102 in.

NOTE.—When the Reversible, or Single Platform on Wheels are used, the extreme height of Press will be 8 feet 8 inches. With steel head and base beams add $50.00.

HAND CIDER PRESS.

By Hand with Single Platform on Wheels.

Press, Wooded	**$225 00**
Platform on Wheels	**25 00**
Nine Racks and Form	**12 50**
Eight Cloths, (Medium)	**13 00**
	$275 50

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

DIMENSIONS.

Extreme Height of Press	10 ft. 5 in.	Racks	4 ft. 10 in. square.
Head Beams (each)	12 x 15 in.	Form	4 ft. 4 in. square.
Base	12 x 30 in.	Cloth	84 x 118 in.
Follower	10 x 24 in.	Rise of Follower	2 ft. 6 in.

NOTE.—When the Reversible, Combination or Single Platform on Wheels are used, the extreme height of Press will be 10 feet 10 inches. With steel head and base beams add $70.00.

KNUCKLE JOINT

Cider Press.

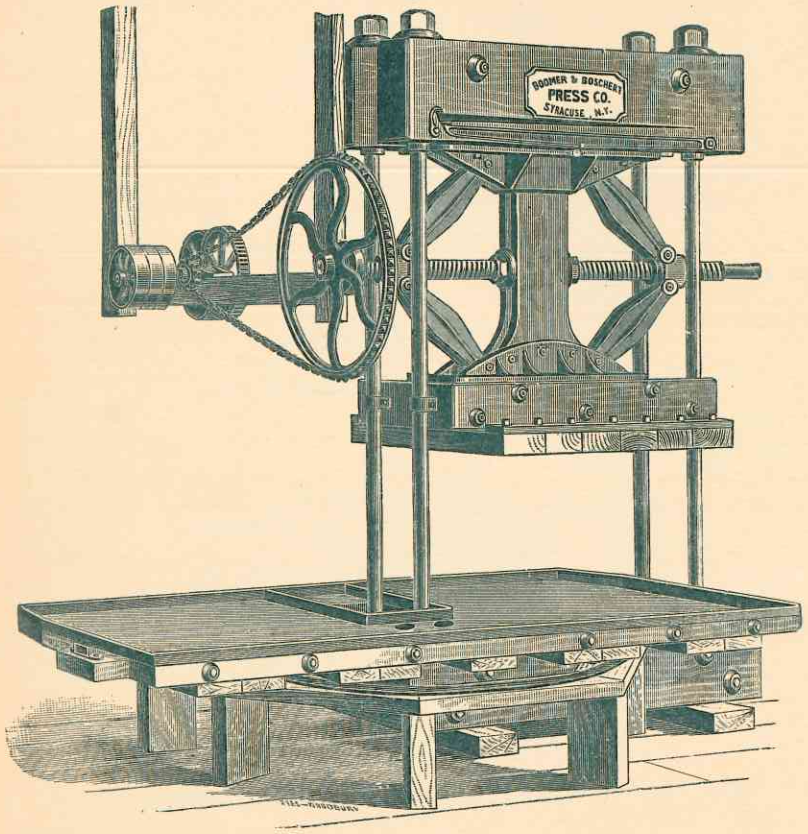


FIG. 2.

WITH

POWER ATTACHMENT

AND

REVERSIBLE PLATFORM.

WINE PRESS.

Press, Wooded	$140 00
Power Attachment, with 2½ ft. Wheel and 14 ft. Chain	40 00
Platform, either Double or Reversible	50 00
Sixteen Racks and Form	17 00
Fourteen Cloths	16 50
Total	$263 50

Weight about ....4,500 lbs.

HAND CIDER PRESS.

Press, Wooded	$225 00
Power Attachment, with 3 ft. Wheel and 16 ft. Chain	45 00
Platform, either Double or Reversible	65 00
Eighteen Racks and Form	25 00
Sixteen Cloths	26 00
Total	$386 00

Weight about.....7,500 lbs.

NOTE.—For dimensions of above Presses see page 6. Any other style of Platform furnished if desired.

POWDER CIDER PRESS.

Press, Wooded	$367 00
Power Attachment, with 4 ft. Wheel and 22 ft. Chain	50 00
Platform, either Double or Reversible	70 00
Twenty-Two Racks and Form	33 00
Twenty Cloths, (Heavy)	50 00
Total	$570 00

DIMENSIONS.

Extreme Height of Press.....11 ft. 9 in.	Form .....4 ft. 8 in. square.
Head Beams (each).....14 x 18 in.	Cloths.....96 x 126 in.
Base.....12 x 40 in.	Screw, (steel).....2¾ in.
Racks.....5 ft. 2 in. square.	Shipping weight, about..... 9,500 lbs.

NOTE.—With Double Platform this Press is 11 feet 4 inches high. With steel head and base beams add $90.00.

EXTRA HEAVY POWER CIDER PRESS.

Press, Wooded, with Double Platform and Power Attachment	$652 00
Twenty-Four Racks and Form	41 00
Twenty-Two Cloths, (Heavy)	55 00
Total	$748 00

DIMENSIONS.

Extreme Height of Press.....12 ft. 4 in.	Form.....4 ft. 8 in. square inside.
Head Beams (each).....16 x 20 in.	Cloths.....96 x 126 in.
Base.....15 x 40 in.	Screw, (steel).....3¼ in.
Racks.....5 ft. 2 in.	Shipping weight, about.....12,000 lbs.

NOTE.—When the Reversible or Combination Platforms are used, the height of Press is 12 feet 10 inches. With steel head and base beams add $110.00.

No. 02 Screw Press.

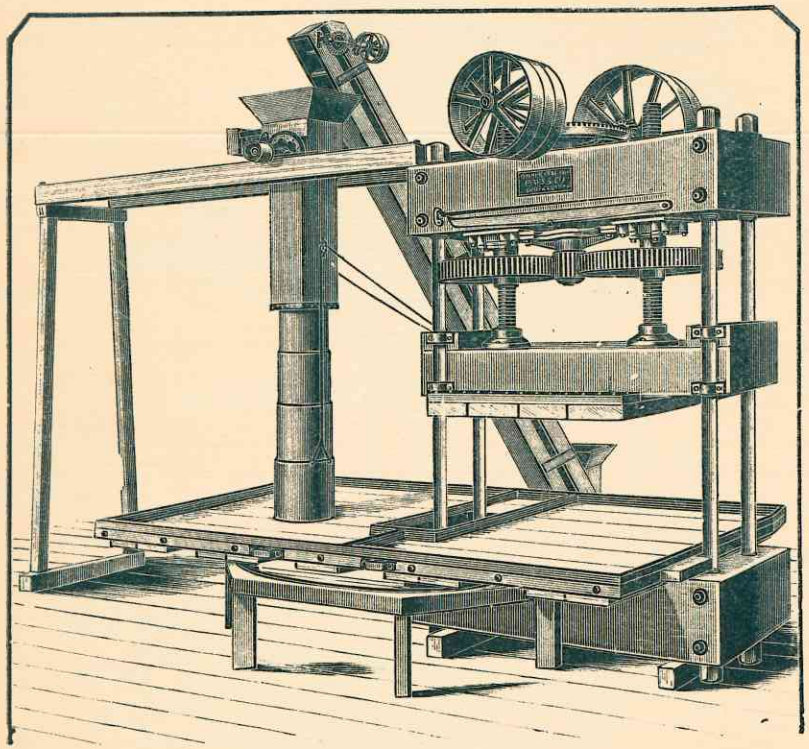


Fig. 3.

WITH

REVERSIBLE PLATFORM,

ELEVATOR AND GRATER.

No. 02 Screw Press.

This is a small, quick acting, powerful Press, 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.

The 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, and will run clear down, pressing one layer if desired. Although shown in Fig. 3 with a Reversible Platform, it will be fitted with any style of platform desired.

PRICES.

With Single Platform on Wheels.

Press	**$150 00**
Platform and Follower Plank	**16 00**
Eight Rack and Form	**7 50**
Seven Cloths, (Medium)	**6 50**
Total	**$180 00**

With Either Reversible, Double or Drag Platform.

Press	**$150 00**	
Platform and Follower Plank	**42 00**	
Sixteen Racks and Form	**15 00**	
Fourteen Cloths, (Medium)	**13 00**	**$220 00**
Elevator	**$ 25 00**	
Grater	**45 00**	
Supporting Frame and Chute	**10 00**	**$ 80 00**
Total		**$300 00**

The racks are 42 inches square, and the Form 37 inches square inside.
For Steel Head and Base Beams, add $50.00.
For Shafting and Pulleys see page 52.

No. 1 Screw Press.

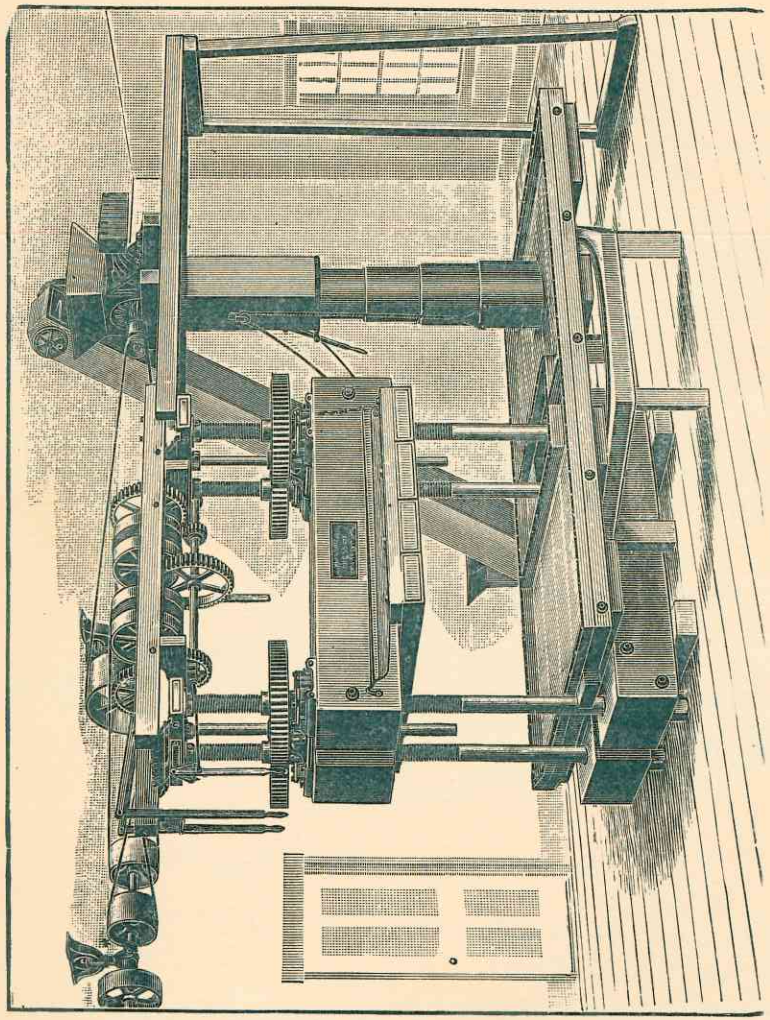


FIG. 4.

WITH

REVERSIBLE PLATFORM,

ELEVATOR AND GRATER.

No. 1 Screw Press.

The Press and fixtures represented on opposite page was 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 can be used on the Press if desired.

PRICES.

Press	$210 00	
With either Double, Reversible or Drag Platform	60 00	
Eighteen Racks and Form	19 00	
Sixteen Cloths, (Medium)	19 00	$308 00
Elevator	32 00	
Grater, with Supporting Frame and Spout	60 00	92 00
		$400 00

DIMENSIONS.

Size of Steel Screws	2¼ in.	Size of Form	42 x 42 in.
Width between Screws	5 ft.	Size of Cloths	84 x 84 in. or 72 x 102 in.
Size of Head Beams	10 x 15 in.	Width of Belt required	2 in.
Size of Racks	48 x 48 in.	Bushels in full Cheese	45 to 50.

Extreme Height of Press, 8 ft. 10 in.
Extreme Height to Top of Elevator, 12 ft.
Distance from center of Platform to outside of Elevator, 10 ft. 8 in.
Diameter of Circle described by Platform, 13 ft.
Weight, about 6,000 lbs.
For Steel Head and Base Beams add $70.00.
For Shafting and Pulleys see page 52.

No. 2 Screw Press.

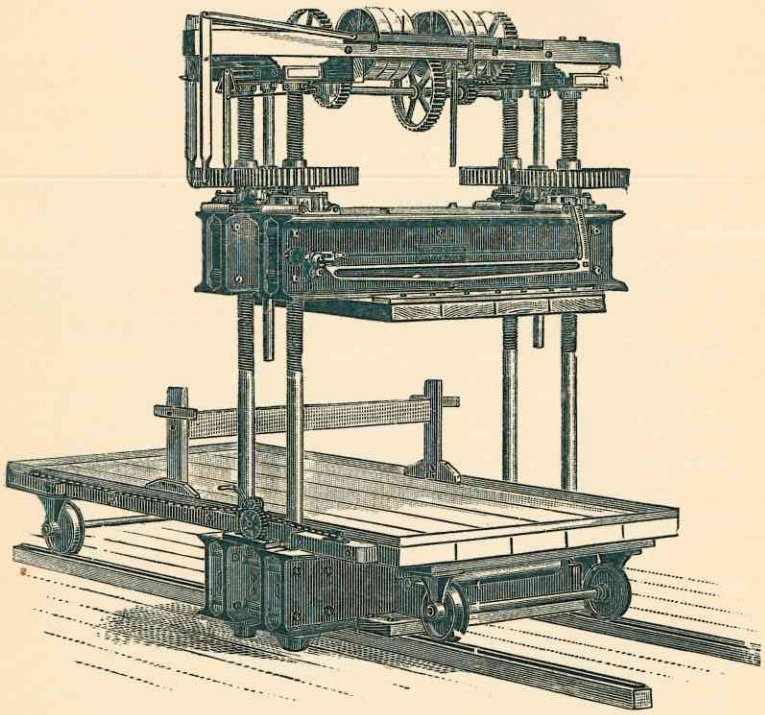


FIG. 5.

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 may be arranged with Reversible Platform, Grater or Elevator, as on page 10.

PRICES.

With Double Platform.

As shown on page 12.

Press, (with Wooden Beams)	**$300 00**
Platform	**65 00**
Twenty Racks and Form	**27 75**
Eighteen Cloths, (Medium)	**29 25**
Total	**$422 00**

With Combination Platform.

As shown on page 14.

Press, (with Wooden Beams)	**$300 00**
Combination Platform	**86 00**
Twenty Racks and Form	**27 75**
Eighteen Cloths, (Medium)	**29 25**
Total	**$443 00**

With Reversible Platform, Elevator and Grater.

As shown on page 10.

Press, (with Wooden Beams)		**$300 00**
Reversible Platform		**65 00**
Twenty Racks and Form		**27 75**
Eighteen Cloths, (Medium)		**29 25**
		$422 00
Elevator	**$ 38 00**	
Grater, with Supporting Frame, &c.	**62 00**	
		$100 00
Total		**$522 00**

DIMENSIONS.

Size of Screws	2½ in.	Size of Racks	4 ft. 10 in. square.
Size of Head Beams	14 x 18 in.	Size of Cloths	84 x 118 in.
Size of Base Beams	12 x 20 in.	Bushel in full Cheese	70 to 80
Extreme Height	9½ ft.	Weight, about	10,000 lbs.

For Steel Head and Base Beams, add $95.00.

For Shafting and Pulleys see page 52.

No. 3 Screw Press.

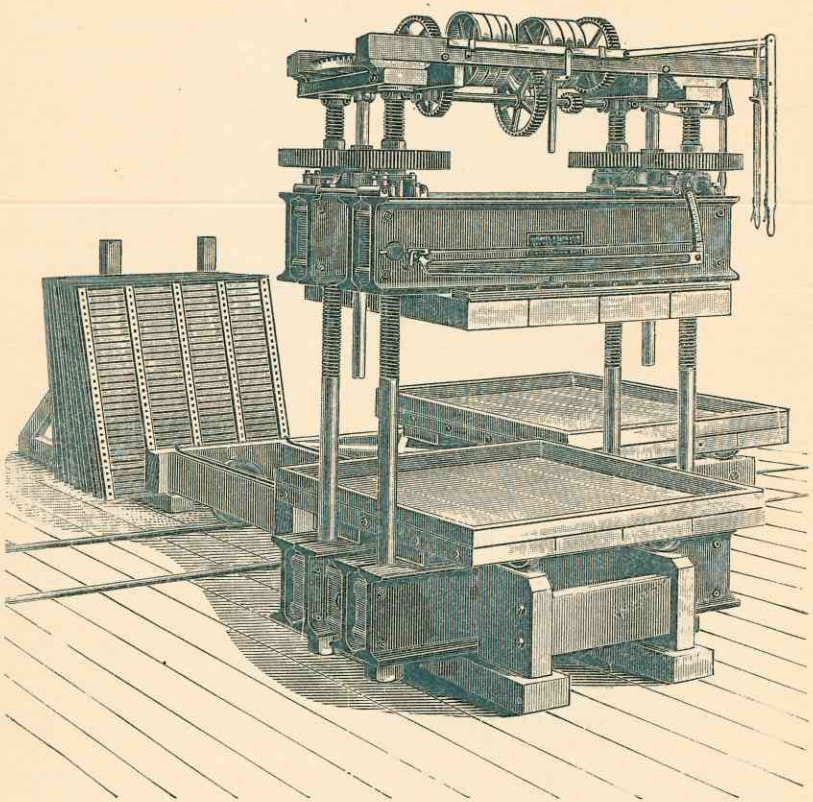


FIG. 6.

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, 3 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 shaft are of steel castings, and the 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 style of platform desired may be used.

PRICES.

Press, (with Wooden Beams)	**$500 00**
With Combination Platform	**86 00**
Twenty-Four Racks and Form	**41 00**
Twenty-Two Cloths, (Heavy)	**55 00**
Total	**$682 00**
Above outfit with either Double or Reversible Platform	**$670 00**

DIMENSIONS.

Extreme Height	12 ft. 1 in.	Size of Cloths	96 x 126 ft.
Size of Steel Screws	3 in.	Size of Form	4 ft. 8 in. square.
Width between Screws	6 ft.	Width of Belt required	2¼ in.
Size of Head	18 x 48 in.	Bushels in full Cheese	90 to 100.
Size of Racks	5 ft. 2 in. square.	Weight, about	12,000 lbs.

For Steel Head and Base Beams, add $130.00.

No. 4 Screw Press.

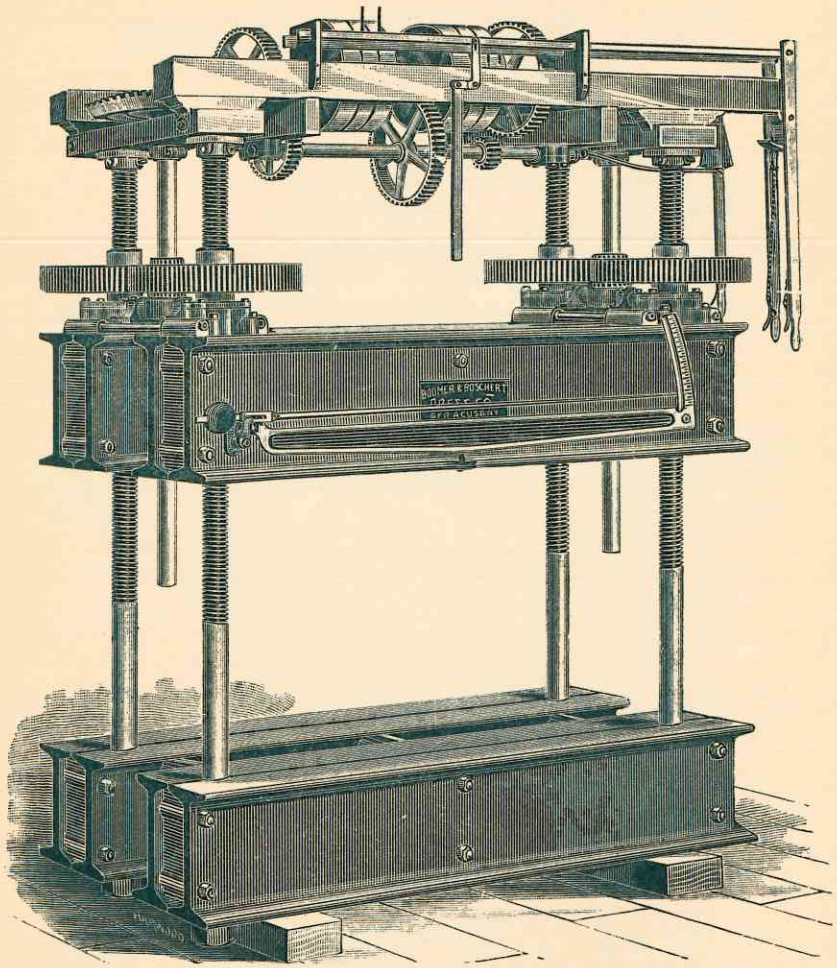


FIG. 7.

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 a 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. When fitted with steel beams it cannot be excelled by any other press for durability and effective work. Any style of platform may be used.

PRICES.

Press, (with Wooden Beams)	**$700 00**
Double Platform	**75 00**
Twenty-Eight Racks and Form	**48 00**
Twenty-Six Cloths, (Heavy)	**65 00**
Total	**$888 00**
With Steel Beams	**$1,058 00**

DIMENSIONS.

Extreme Height ..... 13 ft. 8 in.	Size of Cloths ..... 96 x 126 in.
Size of Steel Screws ..... 3½ in.	Size of Form ..... 4 ft. 8 in. square.
Size of Head ..... 20 x 48 in.	Width of Belt Required ..... 2½ in.
Size of Racks ..... 5 ft. 2 in. square.	Weight, about ..... 17,000 lbs.

Power Screw Press.

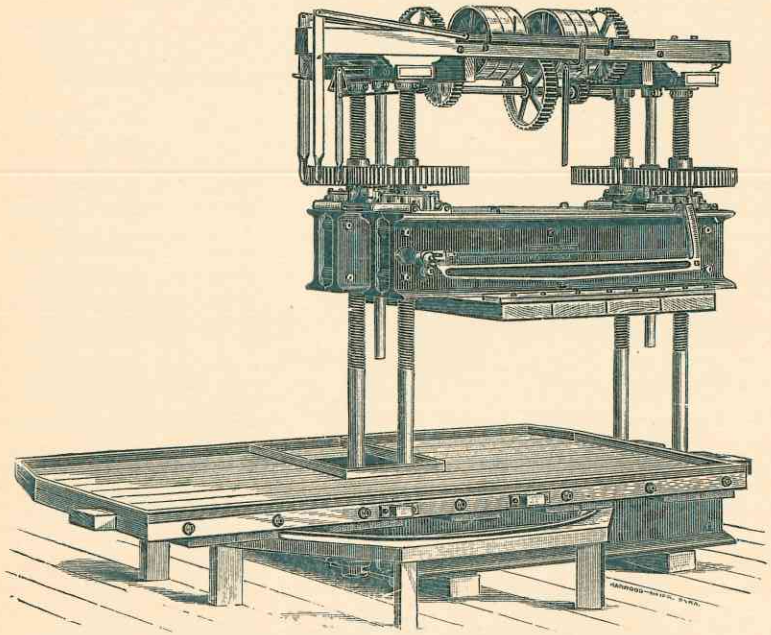


FIG. 8.

WITH

STEEL BEAMS

—AND—

REVERSIBLE PLATFORM.

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 fast 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.

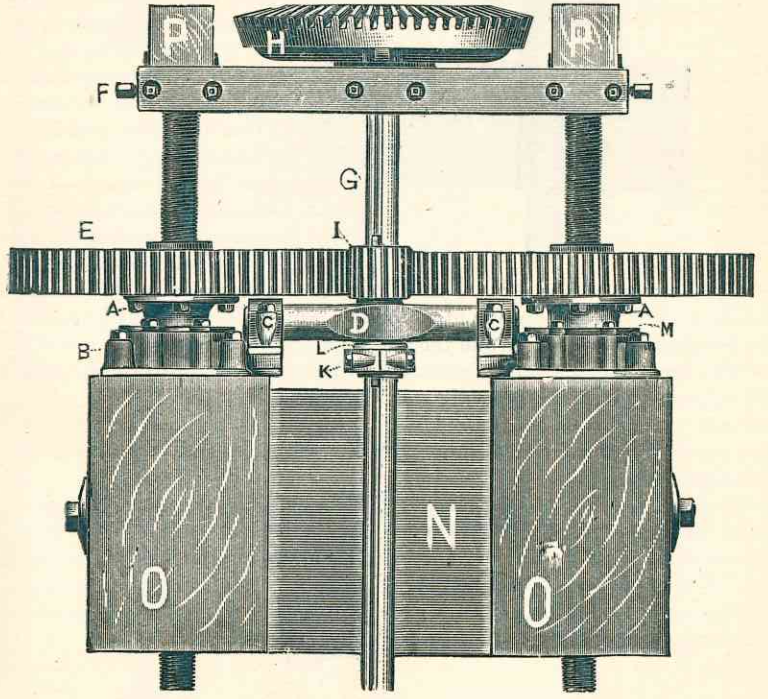


FIG. 9!

Fig. 9 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 it is held from drawing out by the

clamp collar K. The yoke and pinion are carried up und down in connection with the head by being fastened to the washers by the boxes C. The upright shaft G, has a groove or keyway planed its entire length, in which slides the key in 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. 11) 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.

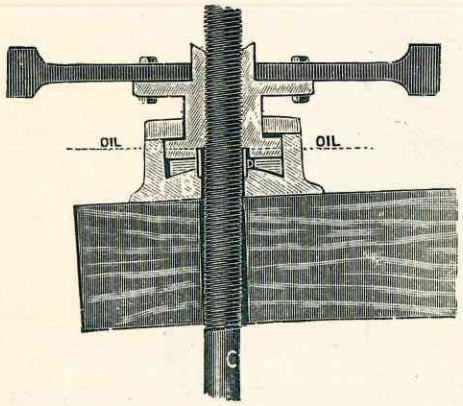


FIG. 10.

Fig. 10 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 illustrate, if the lower part 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. 10, 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 beam and still maintain the nut A in its proper position, rendering it impossible to bind or cramp on the screw.

The Patent Concave Washer and Oil Reservoir.

USED IN THE BOOMER & BOSCHERT SCREW PRESS.

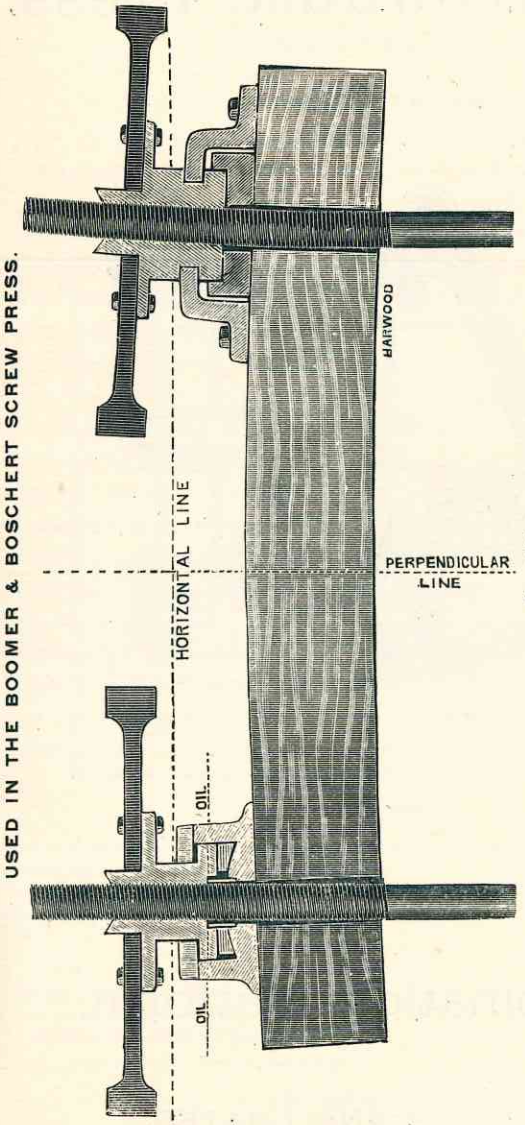


FIG. 11.

The above cut shows the head beam of a press, fitted on the left with screw nut and seat, as furnished with the Boomer & Boschert Screw Press, and on the right with those of ordinary manufacturers. 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 20) 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 planed across the face of the nut allows the oil to cover the whole surface at each revolution. In those of ordinary manufacture, the oil is soon forced by the pressure from between the surface, causing immense loss of power from friction, and unless oiled after each pressing, there is great danger of abrading 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.

No. 8 Hydraulic Press.

(UPWARD PRESSURE.)

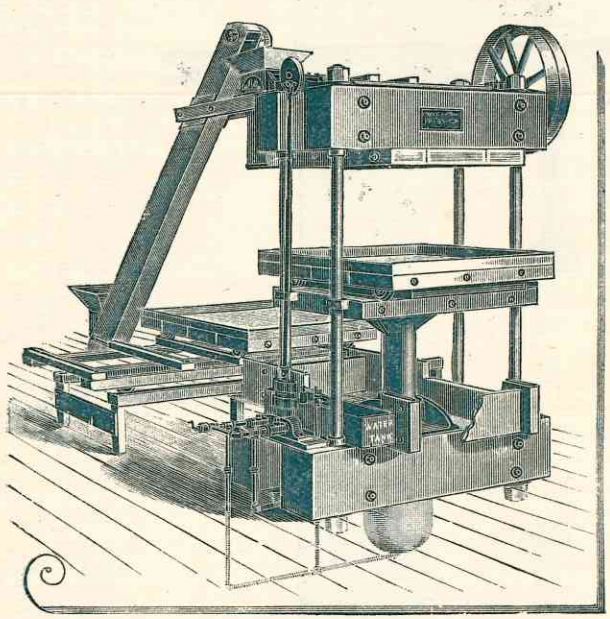


FIG. 12.

WITH

Combination Platform,

ELEVATOR AND GRATER.

No. 8 Hydraulic Press.

(UPWARD PRESSURE.)

The increasing demand for small outfits that can be run by light powers has induced us to design this size, and in view of the importance of having a thoroughly reliable press we ask a careful study of the sizes, dimensions and weights of the different parts.

The cylinder is copper lined, 8 inches diameter inside, 12 inches outside, 42 inches long over all and weighs 875 pounds. The ram is of iron, strongly ribbed and provided with our quick adjusting end packing (see page 35) which can be adjusted without removing the ram from the cylinder. The ram is long enough to give full movement, so that blocking does not have to be used on a small cheese. The rods are 1¾ inches in diameter. The Pump is single, noiseless and driven by pulleys 30 inches in diameter and for a 4-inch belt, and will be made with pulleys as shown in Fig. 12, or as in Fig. 16, as ordered. The valves and plunger are of the best bronze, and the water tank is of galvanized iron. The Platforms have anti-friction bearings and can be easily moved by a boy, even when fully loaded. The racks are 36 inches square and each customer's cider can be kept separate.

PRICES.

Press, Combination Platform and Single Power Pump	**$250 00**
Twenty Racks and Form	**15 00**
Eighteen Cloths, (Medium) 66 inches square	**15 00**
Elevator	**25 00**
Grater	**45 00**
Total	**$350 00**
With Steel Beams add	**$60 00**
For Inverted Press add	**25 00**
For Double Low-Down Pump add	**25 00**

For Shafting and Pulleys, see page 52.

DIMENSIONS.

Width between Rods ..... 48 in.	Size of Form, (inside) ..... 32 in.
Between Platform and Blocking... 33 in.	Size of Cloths, (square) .. .. 66 in.
Movement of Ram ..... 30 in.	Cheese ..... 22 to 25 bushels.
Size of Rack ..... 36 in.	Weight complete, about ..... 5,000 lbs.

No. 10 Hydraulic Press.

(DOWNWARD PRESSURE.)

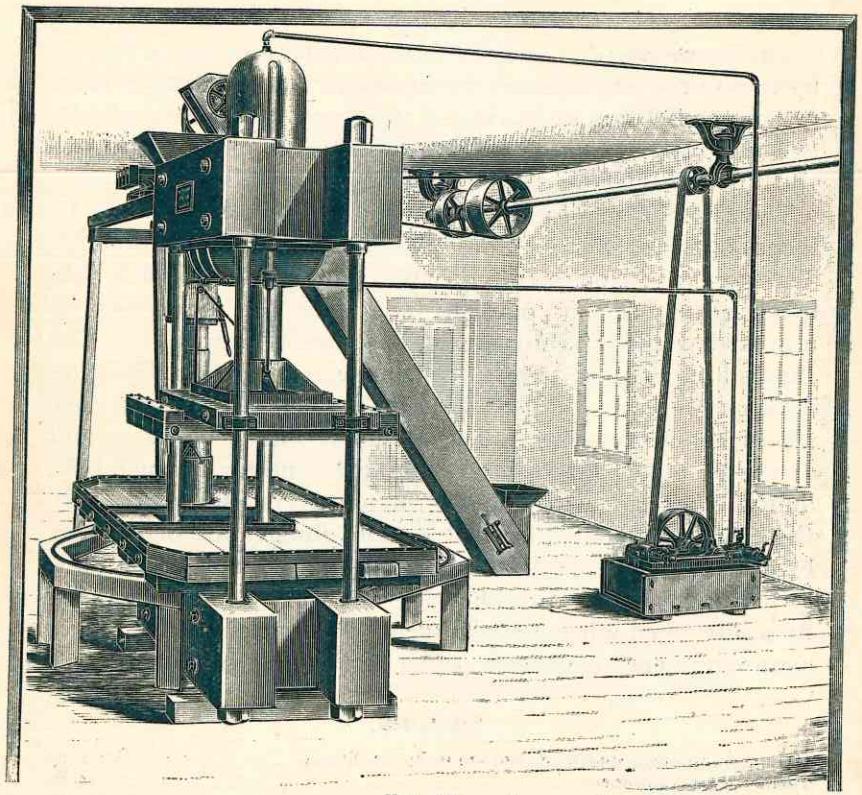


FIG. 13.

WITH

REVERSIBLE PLATFORM,

ELEVATOR AND GRATER.

No. 10 Hydraulic Press.

This is by far the heaviest, most powerful and has the largest capacity of any 10-inch Hydraulic Cider Press made. The cylinder is 10 inches inside, 16 inches outside, 52 inches long over all, and lined with heavy copper. The opening for the cheese is 40 inches and the rise of follower is 38 inches, so that blocking is not necessary in pressing even the smallest cheese. This is an advantage that no other Hydraulic Cider Press possesses. The Pump is double, low down, separate from the Press, noiseless, and takes but one-half the power used by a single plunger pump of same capacity. The ram is of iron fitted with our improved adjustable packing (see page 35) which can be adjusted without removing from the cylinder, and is far in advance of the so-called adjustable packing used by others. Every cylinder is tested before leaving the factory, and we will furnish either "upward" or "downward" pressure at the same price.

PRICES.

Press, Reversible Platform and Double Power Pumps	**$360 00**
Twenty-two Racks and Form	**22 00**
Twenty Cloths, (Heavy)	**30 00**
Elevator	**28 00**
Grater	**45 00**
Supporting Frame and Becker Chute	**15 00**
Total	**$500 00**
With Steel Beams add	**$80 00**

For Shafting and Pulleys, see page 52.

DIMENSIONS.

Size of Wood Beams, (each)...10 x 18 in.	Size of Rack.....48 in.
Inside Diameter of Cylinder.....10 in.	Size of Form, (inside).....42 in.
Diameter of Rods.....2¼ in.	Size of Cloth..84 in. square or 72 x 102 in.
Width between Rods.....66 in.	Cheese.....45 to 50 bushels.
Between Platform and Blocking...40 in.	Guaranteed Safe Pressnre.....100 tons.
Movement of Ram.....38 in.	Weight complete, about.....10,000 lbs.

Hydraulic Press.

(UPWARD PRESSURE.)

WITH

STEEL BEAMS,

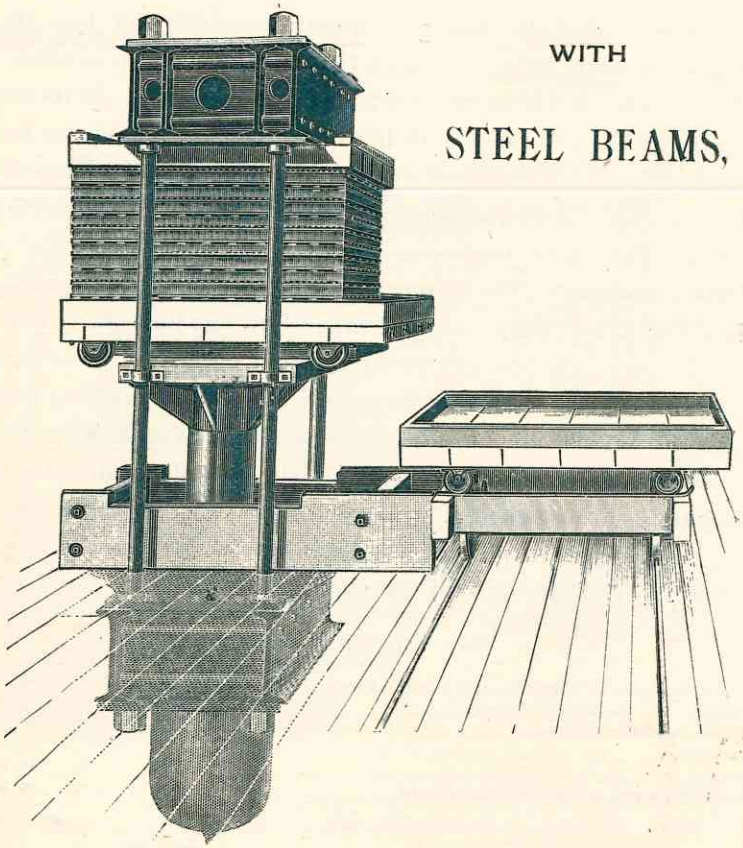


FIG. 14.

SINGLE PLATFORMS ON WHEELS

—AND—

TRANSFER CARS.

No. 12 Hydraulic Press.

This Press being designed for merchant work is heavy, and constructed with a view of giving great pressure and great durability as well. The cylinder is 12 inches inside, 20 inches outside, and 48 inches long over all. It is lined with copper ⅛-inch thick, and has an iron ram with our improved adjustable packing as explained on page 35. The Pump is noiseless, either low-down or upright as preferred, has plungers 15/16 inch diameter by 4 inches stroke, and pulleys 36 inches diameter for a 5-inch belt. For the "upward" pressure we provide a third plunger of large diameter to get the Press up quickly to its work, and thus save time equal to the pressing of two or three cheese a day. It has equal power, equal or greater capacity and greater weight of iron than any 12-inch Hydraulic Cider Press made. Either "upward" or "downward" pressure at same price.

PRICES.

Press, with Wood Beams and Double Power Pump	**$450 00**
Either Reversible, Double or Drag Platform	**70 00**
Twenty-Two Racks and Form	**30 00**
Twenty Cloths, (Heavy) 96 inches square	**39 00**
Total	**$589 00**

NOTE.—For this Press with Steel Beams add $90.00.
" For Shafting and Pulley, see page 52.

DIMENSIONS.

Size of Wood Beams	16 x 20 in.	Size of Rack	58 in.
Diameter of Rods	2½ in.	Size of Form, (inside)	52 in.
Width between Rods	70 in.	Size of Cloth	96 in. square, or 84 x 118 in.
Between Platform and Blocking	42 in.	Cheese, about	75 bushels.
Movement of Ram	34 in.	Weight complete	12,000 lbs.

INVERTED

Hydraulic Press.

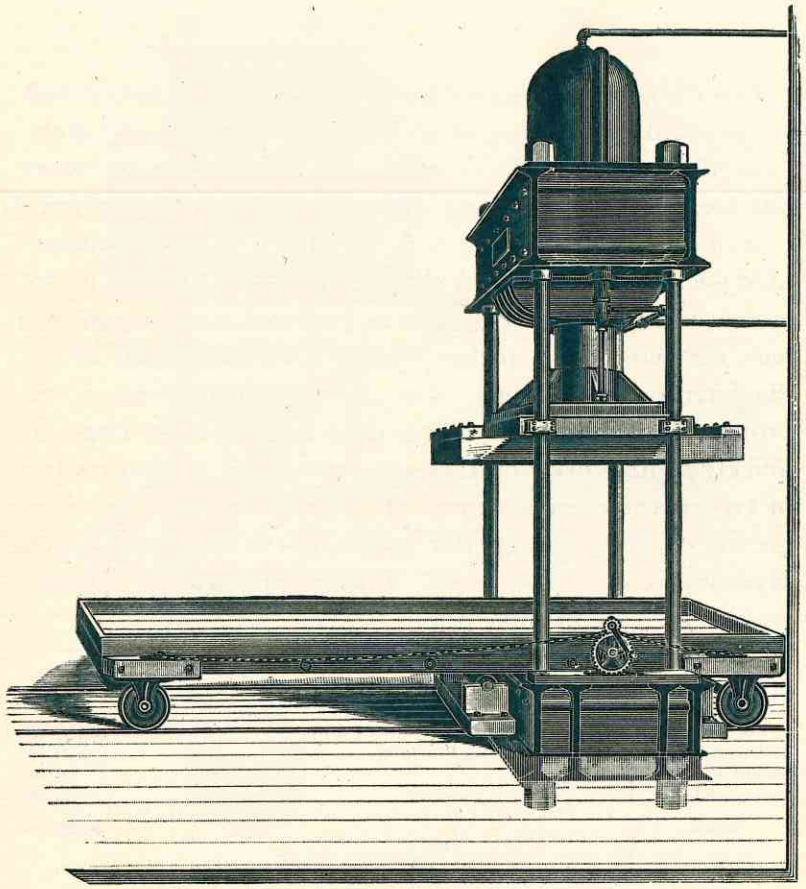


FIG. 15.

WITH

STEEL BEAMS

AND

DOUBLE PLATFORM.

Nos. 13 and 14

Hydraulic Presses.

Either "Upward" or "Downward" Pressure at same prices.

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 from $50.00 to $75.00 in addition to prices below, according to size. Where belt pumps are used for "upward pressure" we attach a third plunger of large capacity to get the Press up quickly to its work, thus saving largely in time.

NO. 13. HYDRAULIC PRESS.

WITH STEEL BEAMS.

PRICES.

Press, with Steel Beams and Double Power Pump	**$600 00**
Combination Platform	**75 00**
Twenty-Four Racks and Form	**33 00**
Twenty-Two Cloths, (Heavy) 96 inches square	**42 00**
Total	**$750 00**

DIMENSIONS.

Inside Diameter of Cylinder	13 in.	Size of Rack	58 in.
Diameter of Rods	3 in.	Size of Form, (inside)	52 in.
Width between Rods	70 in.	Size of Cloths	96 in. sq. or 84 x 118 in.
Between Platform and Blocking	44 in.	Weight complete, about	14,000 lbs.
Movement of Ram	34 in.	Cheese, about	85 bushels.

NO. 14 HYDRAULIC PRESS.

WITH STEEL BEAMS.

PRICES.

Press, with Steel Beams and Double Power Pump	**$727 00**
Combination Platform	**80 00**
Twenty-Six Double Racks and Form	**65 00**
Twenty-Four Cloths, (Heavy) 96 x 126 inches	**60 00**
Total	**$932 00**

DIMENSIONS.

Inside Diameter of Cylinder	14 in.	Size of Rack	62 in.
Diameter of Rods	3½ in.	Size of Form, (inside)	56 in.
Width between Rods	72 in.	Size of Cloths	96 x 126 in.
Between Platform and Blocking	46 in.	Weight complete, about	16,000 lbs.
Movement of Ram	36 in.	Cheese, about	100 bushels.

Hydraulic Press.

(UPWARD PRESSURE.)

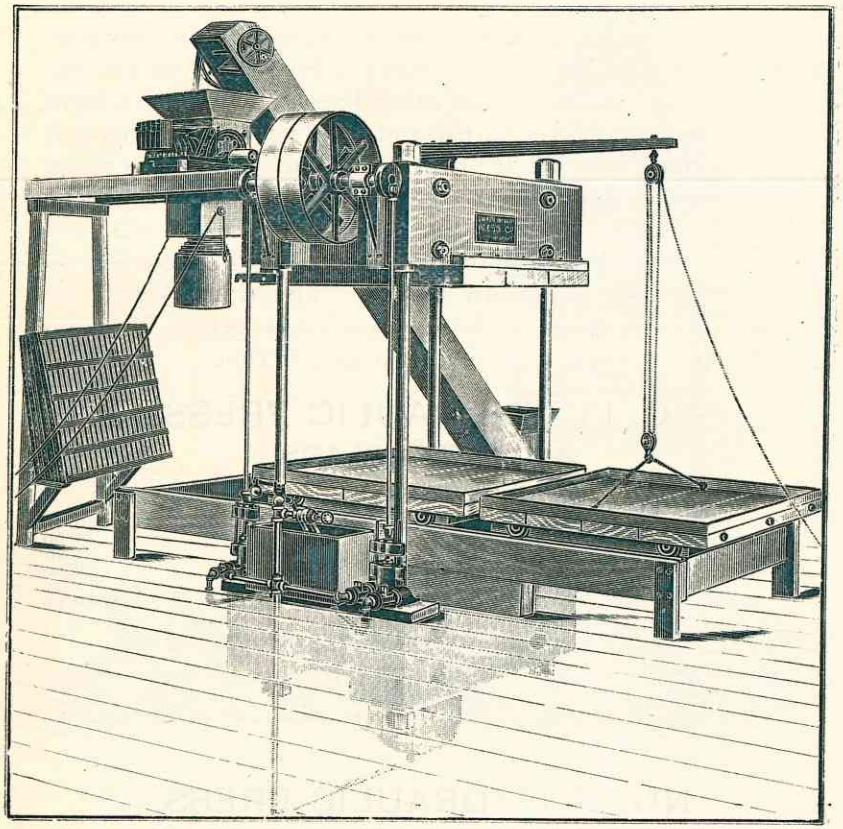


FIG. 16.

WITH

Single Platforms on Wheels,

AND CRANE ATTACHMENT.

Hydraulic Press.

(UPWARD PRESSURE.)

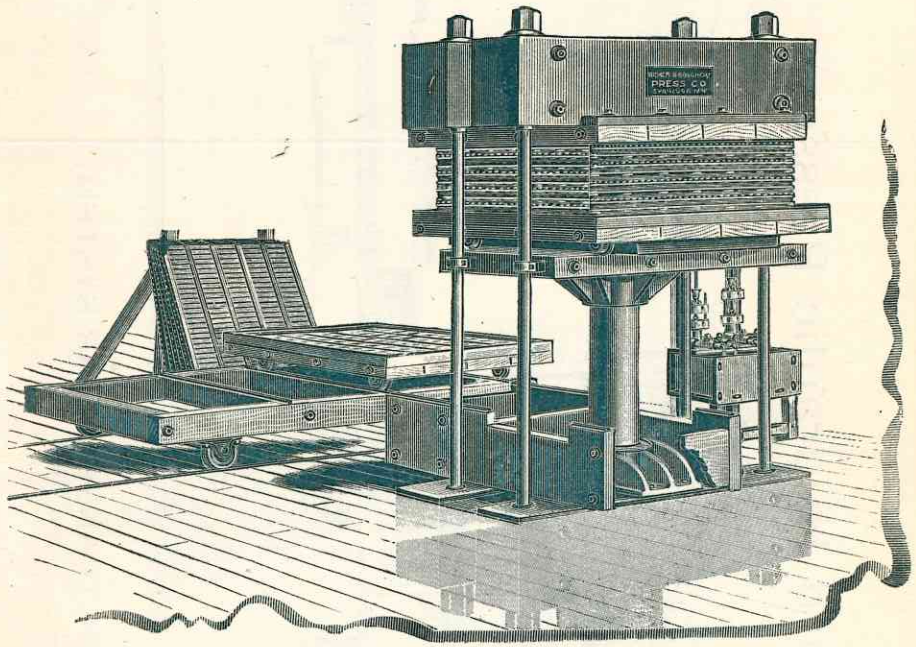


FIG. 17.

WITH

WOODEN BEAMS

—AND—

COMBINATION PLATFORM.

Upward Hydraulic Presses.

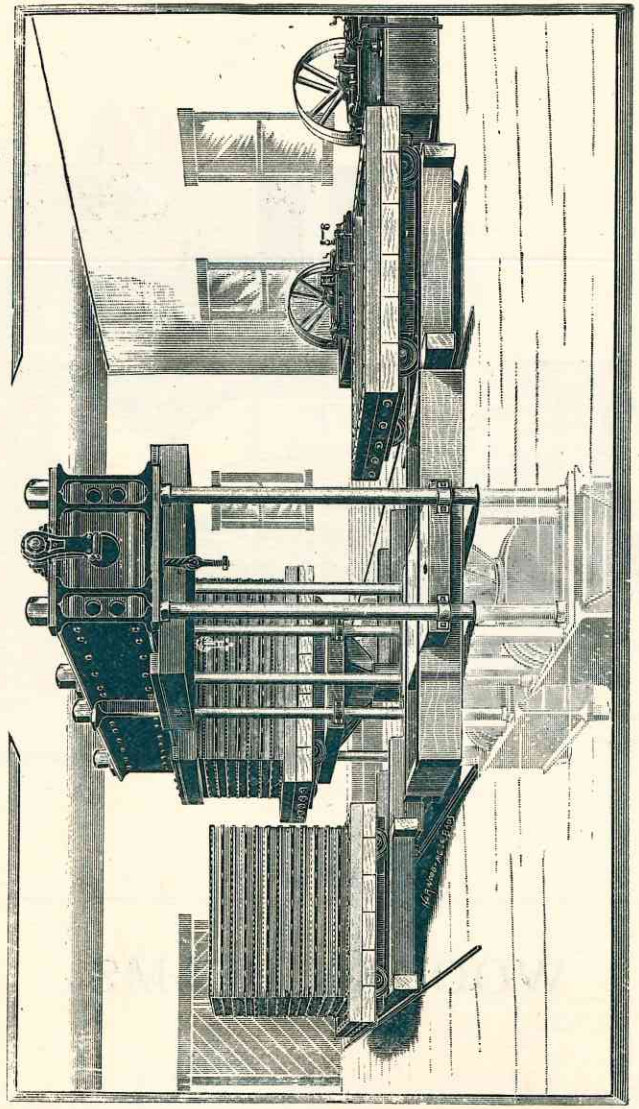


Fig. 18.

WITH TRANSFER CAR SYSTEM.

Hydraulic Press.

(DOWNWARD PRESSURE.)

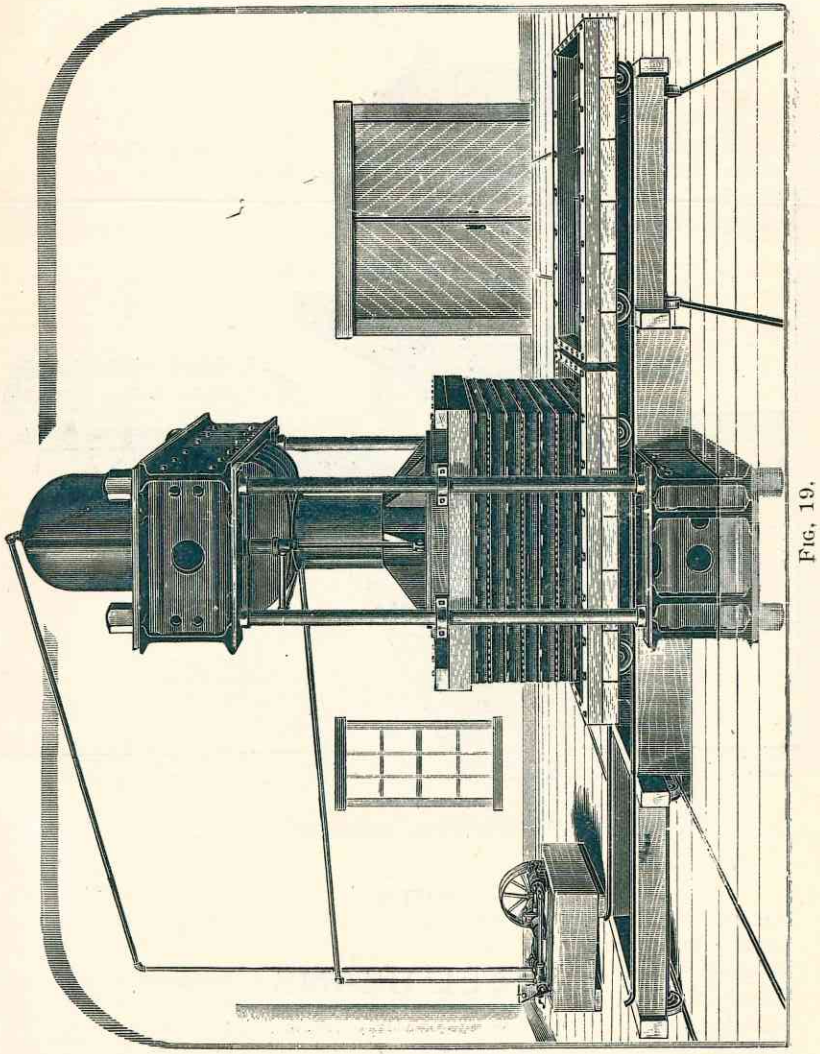


Fig. 19.

WITH

TRANSFER CAR SYSTEM.

Hydraulic Press.

(UPWARD PRESSURE.)

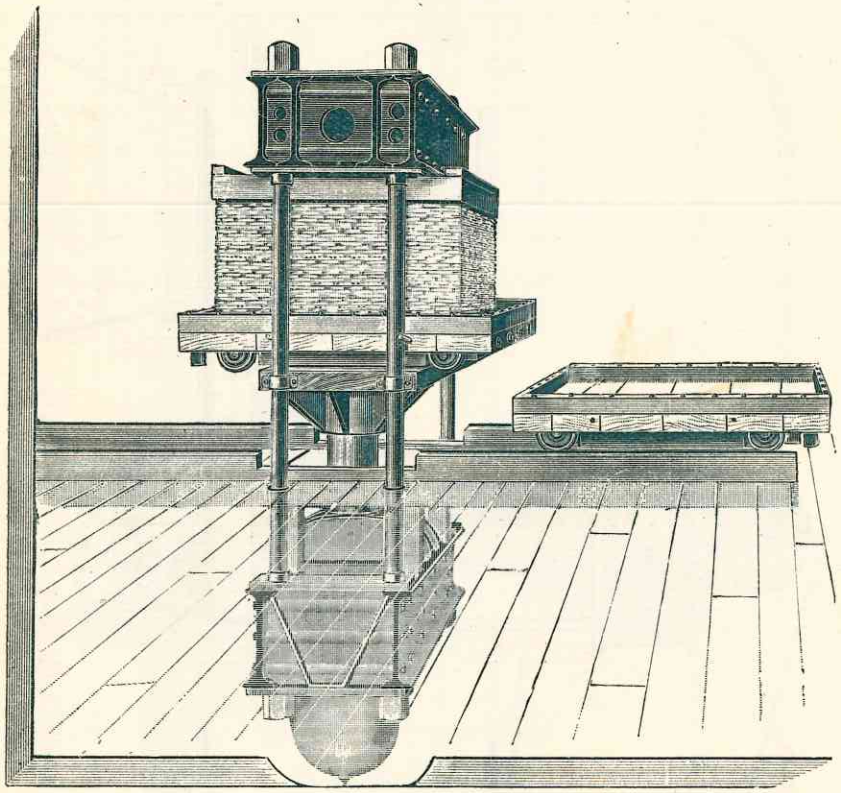


FIG. 20.

WITH

STEEL BEAMS

AND

SINGLE PLATFORMS ON WHEELS.

DESCRIPTION

—OF THE—

HYDRAULIC PRESS.

As the action of the Hydraulic Press does not seem to be generally understood, we have prepared the following illustrations which clearly show the principles involved. The power depends upon the principle that fluids press equally in all directions, and that if the pressure applied to the

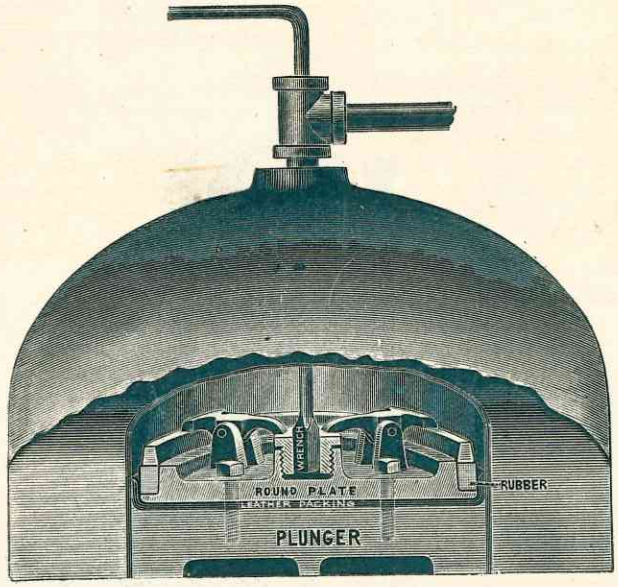


FIG. 21.

plunger of a force pump be multiplied by the ratio existing between the area of the pump plunger and that of the ram of 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 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 applied to the pump plunger. Increasing the size of the ram, or decreasing the size of the plunger, would increase the ratio and hence would give increased power to the press.

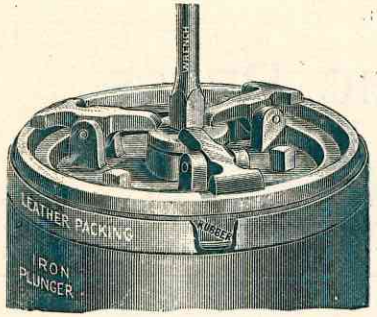


FIG. 22.

Fig. 23 shows a cylinder lined with copper and our new adjustable packing head. The ram is very heavy and strong, being made of cast iron, cross ribbed inside. The copper lining of the cylinder makes it smooth and prevents rusting. 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. 21 without removing the plunger from the cylinder. This adjustment can be made in less than five minutes. Fig. 22 illustrates this

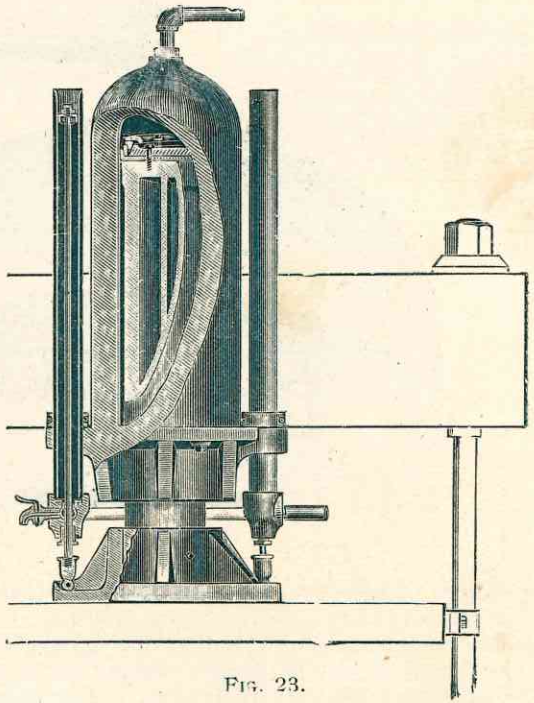


FIG. 23.

feature very clearly. Just sufficient pressure is given to hold the leather in place and not create any friction when the press is dropped down.

Fig. 23 shows the packing used in our Inverted Presses. The small cylinders are copper lined and the packing being reversed draws the follower up, when the water is turned into them from the pumps.

The cylinders and rams are of sufficient length to allow the pressing of one layer, if desired, and hence are much more convenient than when blocking must be used on less than half a cheese. 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.

Hydraulic Pumps.

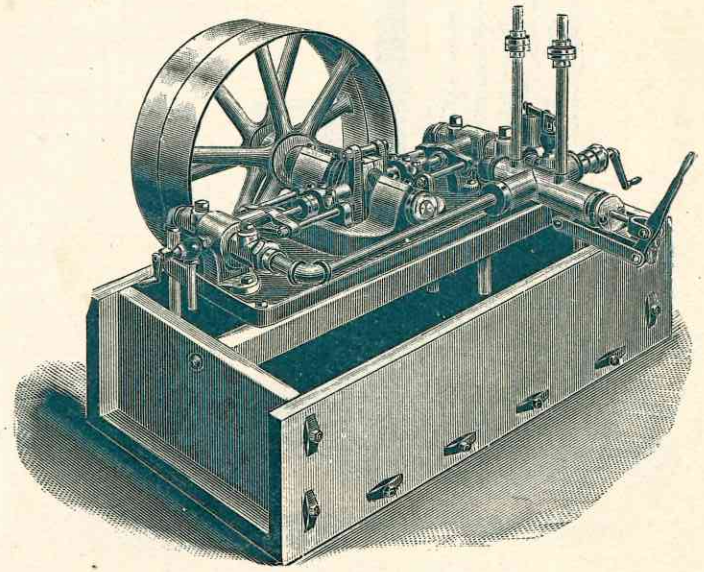


FIG. 24.

As a durable and efficient pump is one of the most desirable features of an Hydraulic Press outfit, we have not spared expense in this direction, the ones shown herewith

being equal in material and workmanship to those costing many times as much. Fig. 24 shows a double plunger pump having bronze valves, plungers and sliding box in yoke. It is self contained and sets on the water vat as shown.

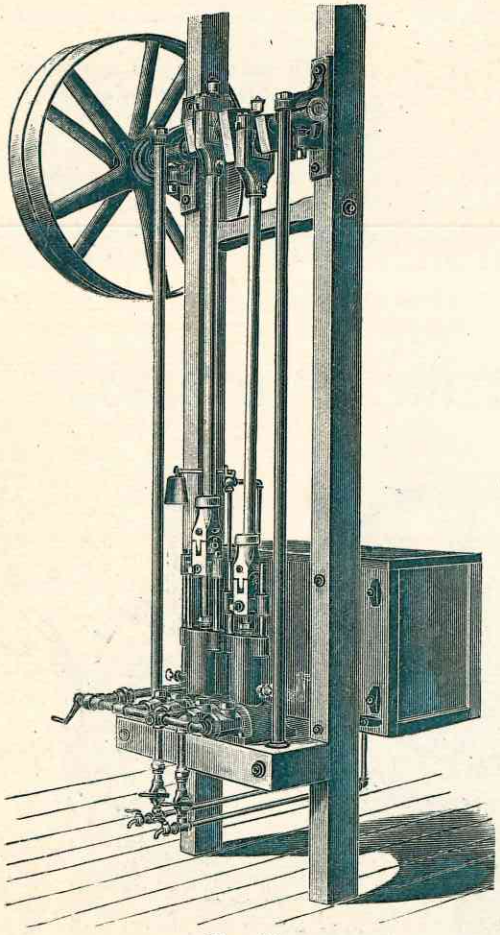


Fig. 25.

For our Inverted Press has a reverse valve of peculiar construction, which by the simple movement of the lever shown, tnrns the water pressure from the large to the small cylinders or vice versa and runs the press up or down as desired.

Fig. 25 shows the style used in cases where it is required to have the pulleys elevated.

Fig. 26 shows the style of Pump used on the larger upward pressure Hydraulic Presses, having in addition to the two small plungers a large one run by a crank on the end of the shaft which will raise the follower of the press from 12″ to 18″ per minute, according to size of press, and gives a very great advantage in point of time over those of ordinary manufacture. This saving of time is often equal to the pressing of from one to four more cheese per day of ten hours, and the result is a clear profit which will amount to a considerable sum at the end of the season. The plungers, valves and crank-pin are of bronze, the shafts of steel, the fittings and pipe extra heavy, and all the parts made with a view of giving durability and ease of access. The small Pumps have

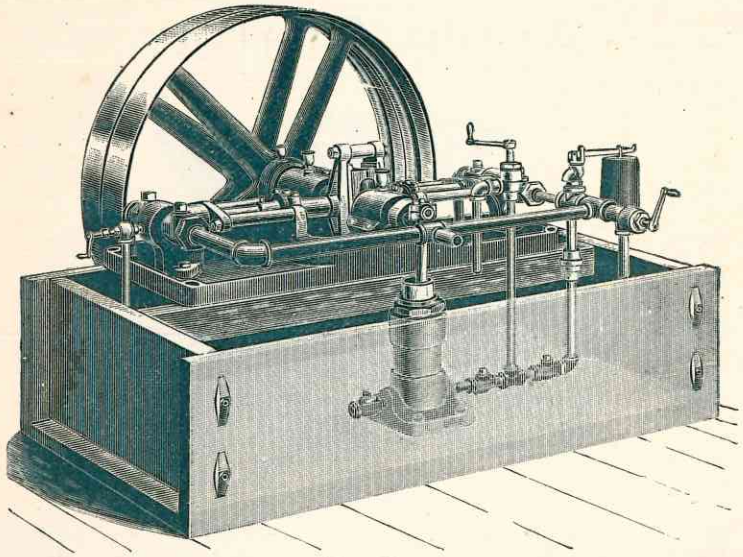


Fig. 26.

fast and loose pulleys 30″ diam. for a 4″ belt, and the large Pumps have pulleys 36″ diam. for 5″ belts.

STEAM HYDRAULIC PUMP.

When the greatest efficiency is desired the Steam Hydraulic Pump may be used to advantage. Its first cost is more than a first-class belt pump, but it uses no steam that is not required for effective work, can be run without running the engine, and "follows up" without the loss of any power. In a belt pump the surplus water must overflow through the safety valve, consuming power and wearing the valve rapidly. 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.

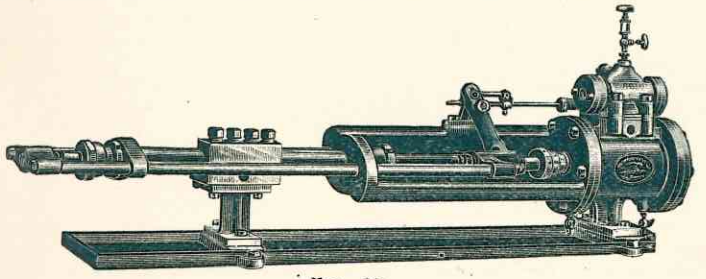


Fig. 27.

Apple Grater.

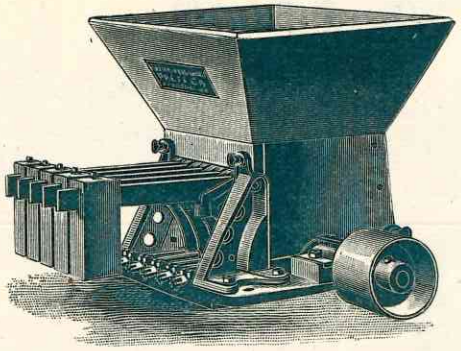


FIG. 28.

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 swings the concaves, which consists of five iron levers with movable weights, allowing any stones or other hard substances to pass through without injury to the knives.

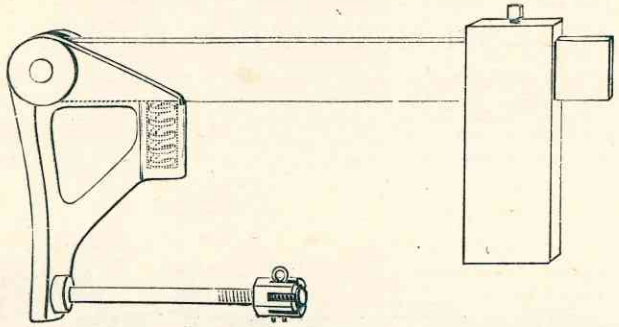


FIG. 29.

The concaves are made in two parts, the lever on which the weight is hung being wrought iron, and resting on a brass 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 substances between the concaves and cylinder. (See Fig. 29) To the lower ends of the concaves is rigidly attached a one-half inch bolt, upon the end of which is a pronged nut which rests against 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 inside. (See Fig. 30.)

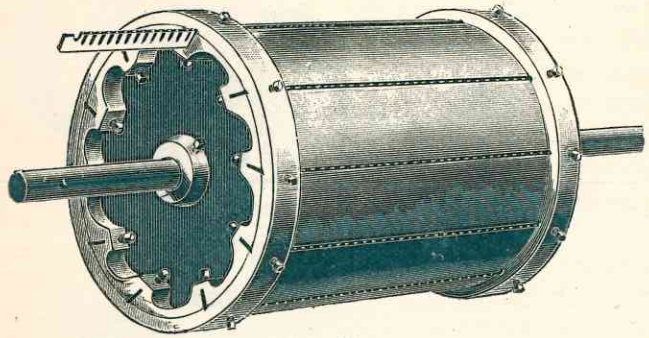


FIG. 30.

The knives are made of finely tempered steel and can be driven straight out without having to be first driven down. We can furnish knives corrugated as in Fig. 31, or with teeth milled through the blade as in Fig. 32.

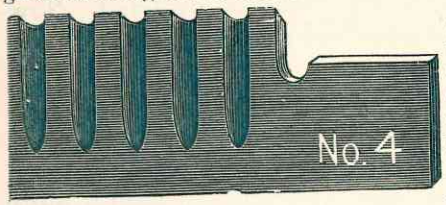


FIG. 31.

The shaft is of steel 1 7-16 inches in diameter, running in babbitted boxes 4¾ inches long, and is of sufficient length to allow the pulley to be put on either end. The Grater should run 2,000 revolutions per minute, but with one or two-horse power that speed can not 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 by loosening thumb screws while changing the knives.

When fast and loose pulleys are desired, $3.00 extra will be added to price.

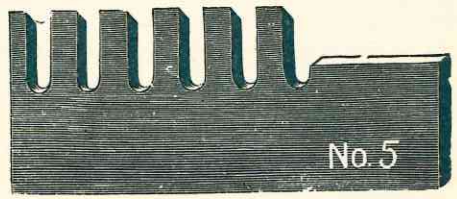


FIG. 32.

PRICES.

Grater, with one set of Knives	**$45 00**
Extra Set of Knives—ten	**5 00**
Knives, each	**50**

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, 5-32 inch thick, and 12 inches long.
Capacity	from 50 to 400 bushels per hour, according to power.

Power Attachment

—FOR—

KNUCKLE JOINT PRESSES.

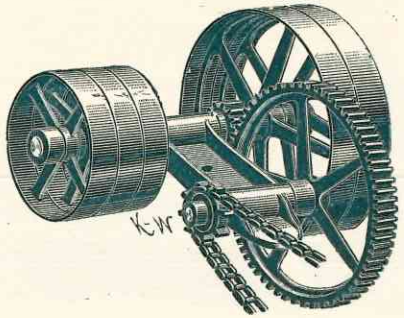


FIG. 33.

A few years ago such a thing as running a Cider Press by power was almost unknown, probably 90 out of every 100, or even a larger proportion, being worked by hand. Now all is changed, and all the larger and a larger portion of the smaller mills, have power presses.

This revolution has been chiefly brought about by the simplicity, perfect working and low cost of our Power Attachment, shown in Fig. 33. It not only saves manual labor, but it also saves the juice, and tends to keep a more steady and even pressure upon the pomace, and never tires out.

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.

PRICES, &c.

Name.	Size of Large Pulleys.	Size of Small Pullleys.	Size of Chain Wheel On Screw.	Length of Chain.	Price.
W. P.....	16 x 3 inches.	10 x 3 inches.	30 inches.	14 feet.	$40.00
H. C.....	22 x 3 "	12 x 3 "	36 "	16 "	45.00
H. C.....	22 x 3 "	12 x 3 "	48 "	22 "	50.00
Bx. H. P. C.	28 x 3 "	12 x 3 "	52 "	22 "	60.00

Pump.

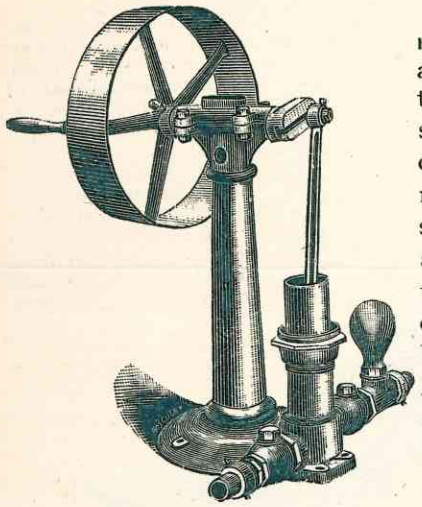


FIG. 34.

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 Cylinder.	Stroke.	Suction.	Discharge.	Pulley.	Capacity per Min.	Price.
1	3 inches.	4½ in.	1¼ in.	1 in.	15 x 4	10 Gal.	$35.00

Fig. 35 shows our Rotary Pump with valves, case and connections of bronze so that no cider or vinegar can come in contact with iron. It has 1¼ inch suction and 1 inch discharge. The pulleys are 10 inches diameter for 3-inch belt. All fittings are provided ready for attaching hose. Price $35.00.

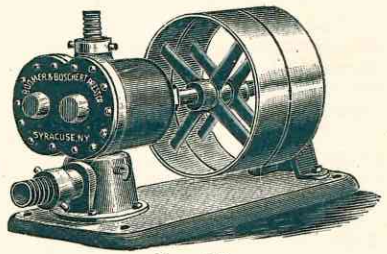


FIG. 35.

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.

These are force pumps, and will easily elevate cider 50 feet.

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. 36 is a section of a 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 3 inches wide and from 8 to 11½ inches long, bolted to lugs or projections on the chain. When run at from 50 to 75 revolutions per minute, it will elevate from 5 to 10 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. 37.

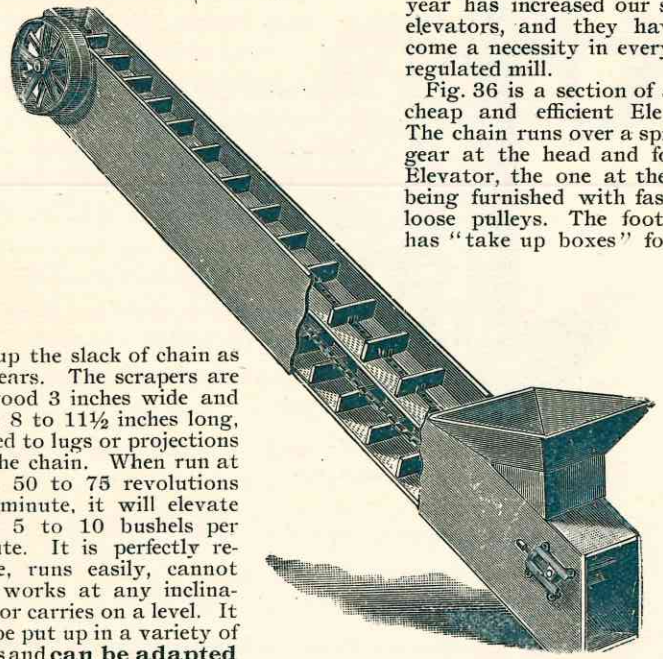


Fig. 36.

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. 4, 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 white-wood, well finished and varnished.

PRICES.

Centers 12 feet, width 8 inches inside, open frame—No. 57 chain	**$25.00**
" 12 " " 10 " " closed " " "	**32.00**
" 14 " " 10 " " " " " "	**38.00**

We also furnish the iron work when desired at the following

PRICES.

Plain Head Gear, with 2 Pulleys 22 x 3 inches	**$10.00**
Foot Gear, with take up boxes	**4.00**
No. 77 Chain, per foot with Scraper	**.21**
**No. 57 Chain " " " "	**.15**

Should it be required to elevate more than 30 feet, we furnish in place of the pulleys 22 x 3 inches, a pair of pulleys 24 x 4 inches at an additional cost of $3.

ELEVATOR PLANS.

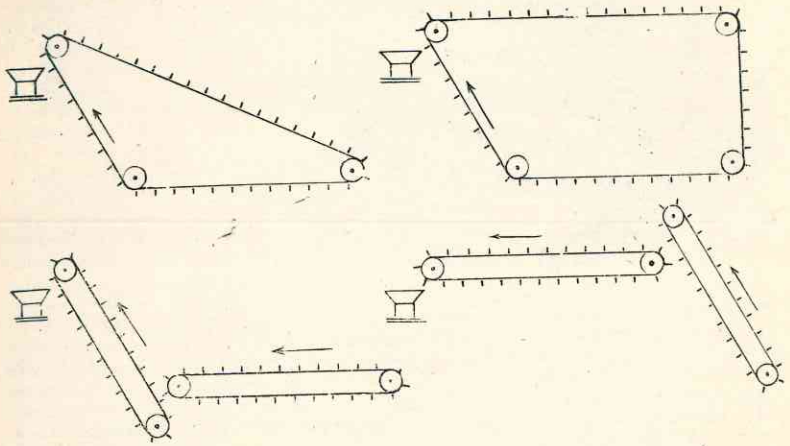


Fig. 37.

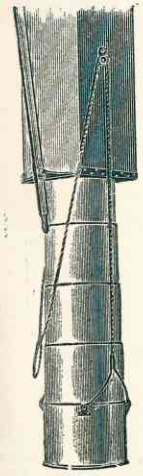


Fig. 38.

THE "BECKER" POMACE CHUTE.

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

Fig. 38 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	**$10.00**
Copper	**15.00**

GRATER KNIFE GRINDER.

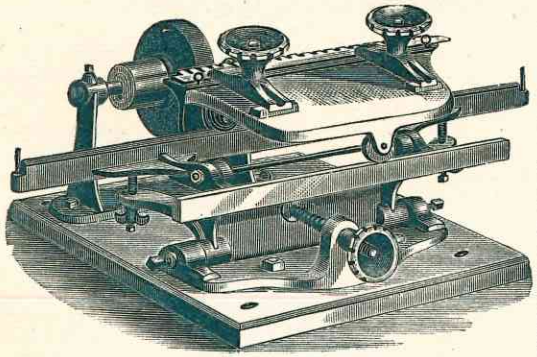


FIG. 39.

The cut represents a very simple and efficient machine for grinding grater knives. The emery wheel is 6 inches in diameter and 1¼ inch 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 rigld 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, and **will send to responsible parties on trial.** PRICE, $7.50.

VAT FOR REVERSIBLE PLATFORM.

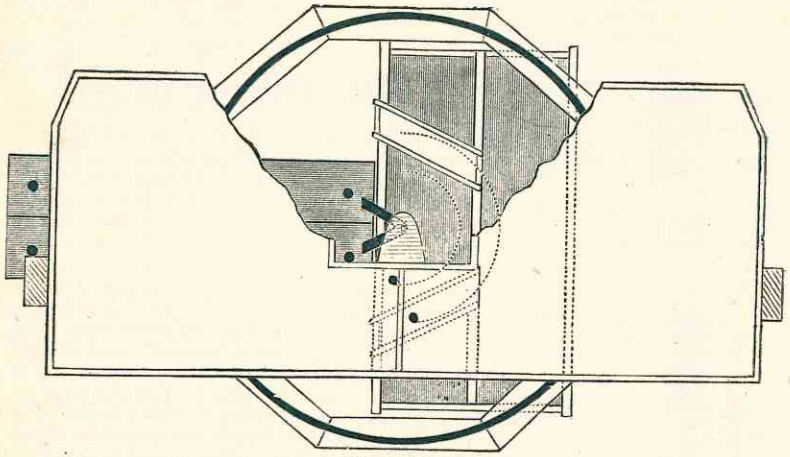


FIG. 40.

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 of 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 compartments, and no matter what is the position of the platform the cider must run into its proper vat. Prices $10 00 to $15.00 according to size.

Indicators.

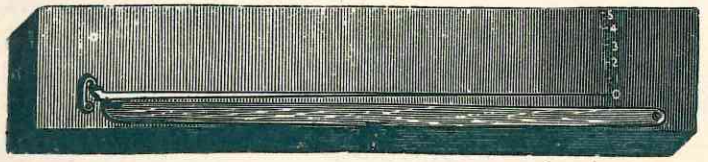


FIG. 41.

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 Presses.

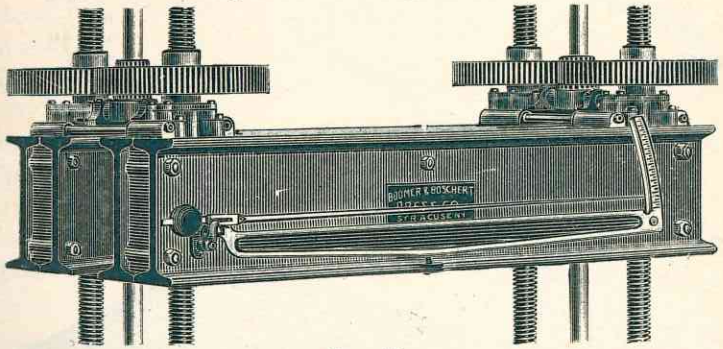


FIG. 42.

The above cut illustrates the Indicator as attached to all our iron 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 bearing 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 counter-balanced 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.

Racks.

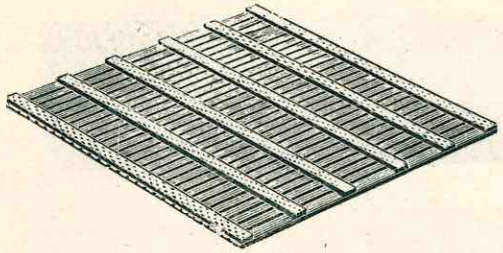


FIG. 43.

The racks as shown in Fig. 43 are made square, of wooden strips ½ inch thick by 1⅜ inch wide, placed ½ inch apart, with five or more strips 2 inches wide and ⅜ inches thick, nailed across, as showu 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			$0.75 each.
42	"	"	.90 "
48	"	"	1.00 "
58	"	"	1.38 "
62	"	"	1.50 "
62	"	" (Extra heavy).	1.70 "

BEVELED EDGE RACKS.

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.

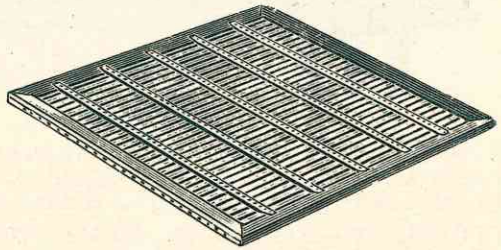


FIG. 44.

We also furnish them at the following

PRICES.

42 inches square			$1.15 each.
48	"	"	1.30 "
58	"	"	1.75 "
62	"	"	2.00 "
52	"	" (Extra heavy)	2.25 "

DOUBLE RACKS.

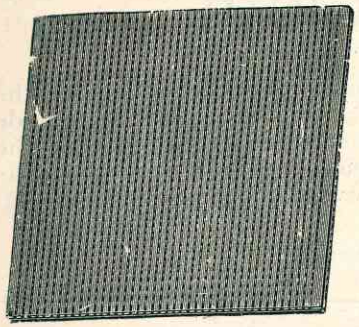


FIG. 45.

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			$1.00 each.
42	"	"	1.25 "
48	"	"	1.50 "
58	"	"	2.00 "
62	"	"	2.25 "

Form.

The form is square inside, and 2½ inches deep. It is made by nailing together boards 1 inch thick by 3¾ 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.

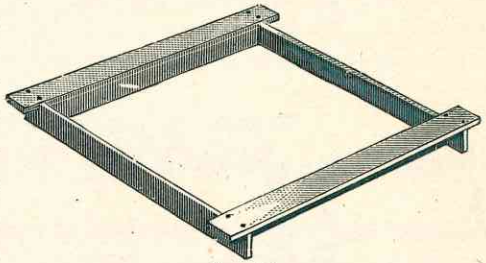


FIG 46.

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 cloth 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 cover every time directly over the last 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 Texas 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 width and qualities:

BY THE YARD.

Medium,	**72**	**inches**	**wide**	**40**	**cents**	**per**	**running**	**Yard**
"	**84**	"	"	**45**	"	"	"	"
"	**96**	"	"	**52**	"	"	"	"
Heavy,	**52**	"	"	**35**	"	"	"	"
"	**72**	"	"	**52**	"	"	"	"
"	**84**	"	"	**59**	"	"	"	"
"	**96**	"	"	**67**	"	"	"	"
Extra Heavy,	**52**	"	"	**40**	"	"	"	"
"	**84**	"	"	**68**	"	"	"	"
"	**96**	"	"	**76**	"	"	"	"

At the following prices when sold in less than full sets:

HEMMED READY FOR USE.

Medium,	**66 x 66**	**inches**	**wide**	**$ .85**	**each**	**for**	**36**	**inch**	**Racks.**
"	**72 x 72**	"	"	**.95**	"		**42**	"	
"	**84 x 84**	"	"	**1.20**	"		**48**	"	
"	**96 x 96**	"	"	**1.55**	"		**58**	"	
"	**72 x 102**	"	"	**1.20**	"		**48**	"	
"	**84 x 118**	"	"	**1.65**	"		**58**	"	
"	**96 x 126**	"	"	**2 00**	"		**62**	"	
Heavy,	**66 x 66**	"	"	**1.15**	"		**36**	"	
"	**72 x 72**	"	"	**1.30**	"		**42**	"	
"	**84 x 84**	"	"	**1.55**	"		**48**	"	
"	**96 x 96**	"	"	**1.95**	"		**58**	"	
"	**72 x 102**	"	"	**1.70**	"		**48**	"	
"	**84 x 118**	"	"	**2.10**	"		**58**	"	
"	**96 x 126**	"	"	**2.50**	"		**62**	"	
Extra Heavy,	**84 x 84**	"	"	**1.90**	"		**48**	"	
"	**96 x 96**	"	"	**2.25**	"		**58**	"	
"	**84 x 118**	"	"	**2.40**	"		**58**	"	
"	**96 x 126**	"	"	**3.00**	"		**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 enougn 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.

Please note difference in making comparisons.

Sample sent free on application.

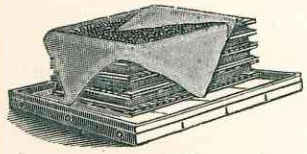


Fig. 47.

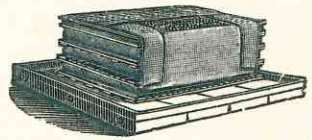


Fig. 48.

As 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. 47, we have added to our sizes 72 inches square for 42 inch racks, 84 inches square for 48 inch racks. For the larger sizes our regular cloths laid up as in Fig. 48, will be preferred.

Iron Work.

As some are desirous of purchasing the irons and making their own wood work we give herewith prices of Hand Cider and Wine Press irons, and will furnish printed specifications to work from. The prices cover all the bolts and washers necessary in making.

WINE PRESS.

Complete Set of Irons for Press	**$115 00**
" " " " **Double Platform**	**40 00**
" " " " **Reversible**	**30 00**

HAND CIDER PRESS.

Complete Set of Irons for Press	**$180 00**
" " " " **Double Platform**	**40 00**
" " " " **Reversible Platform**	**35 00**

If the inside or working parts of Press only are wanted, the price will be, for:—

Wine Press, Inside Work	**$ 90 00**
Hand Cider Press, Inside Work	**145 00**