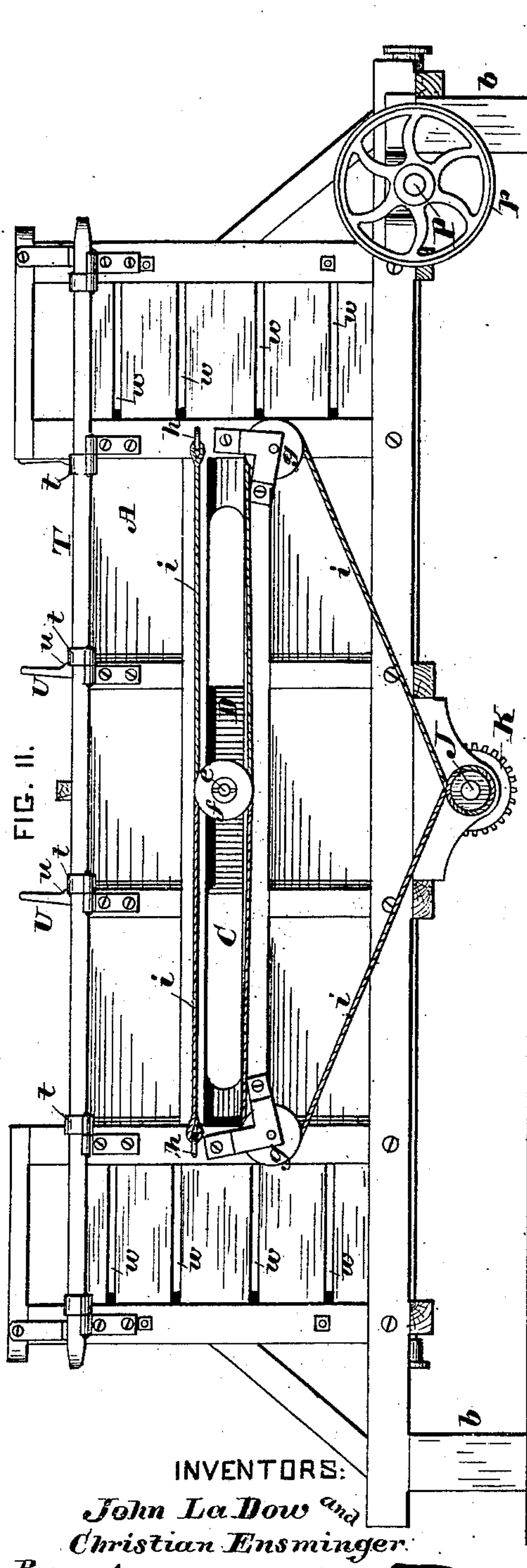
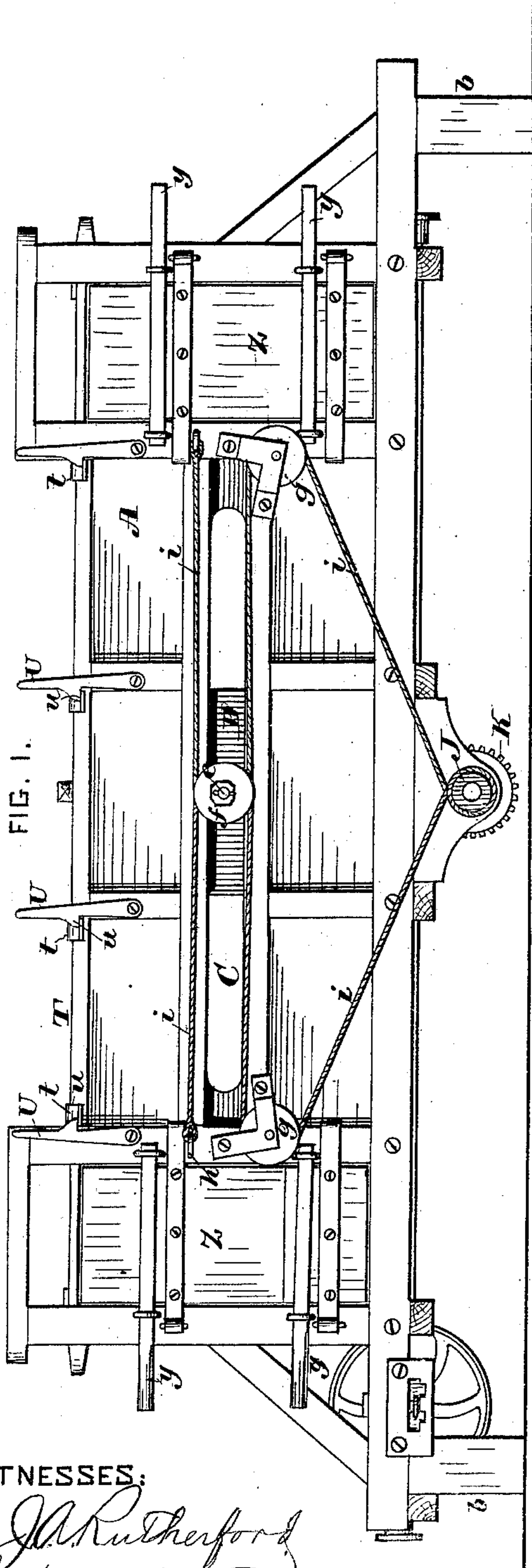


J. La DOW & C. ENSMINGER.  
Baling-Press.

No. 223,152.

Patented Dec. 30, 1879.



WITNESSES:

*J. A. Rutherford*  
*J. Henry Kaiser*

INVENTORS:

*John La Dow and*  
*Christian Ensminger*

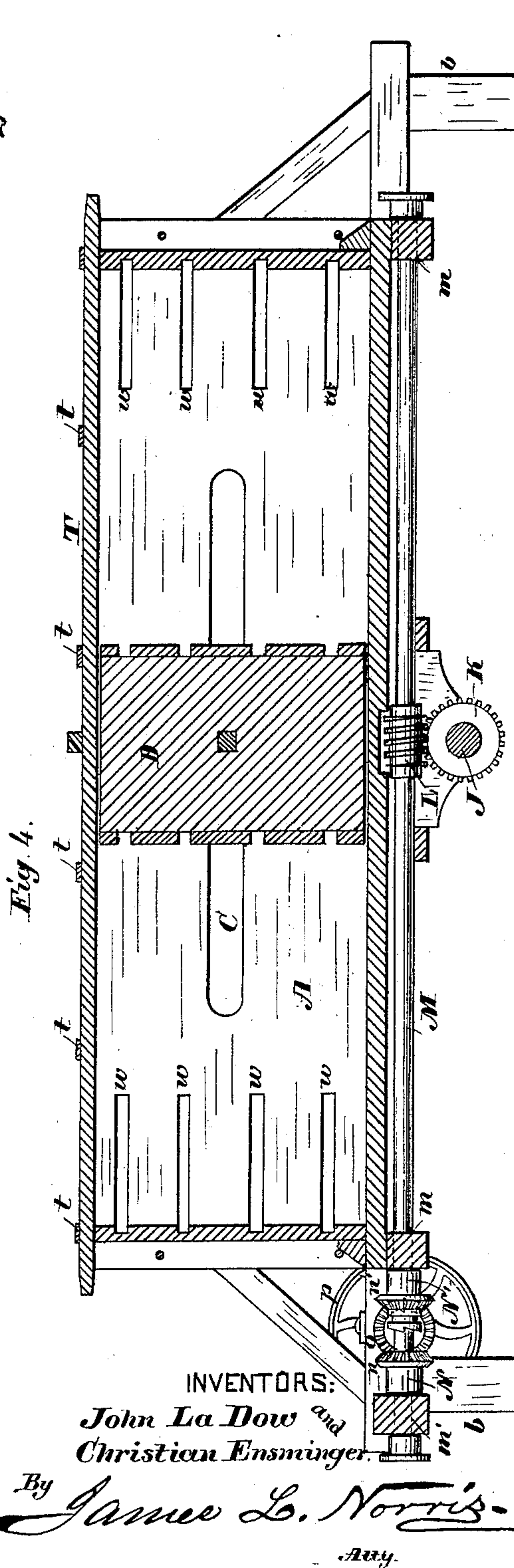
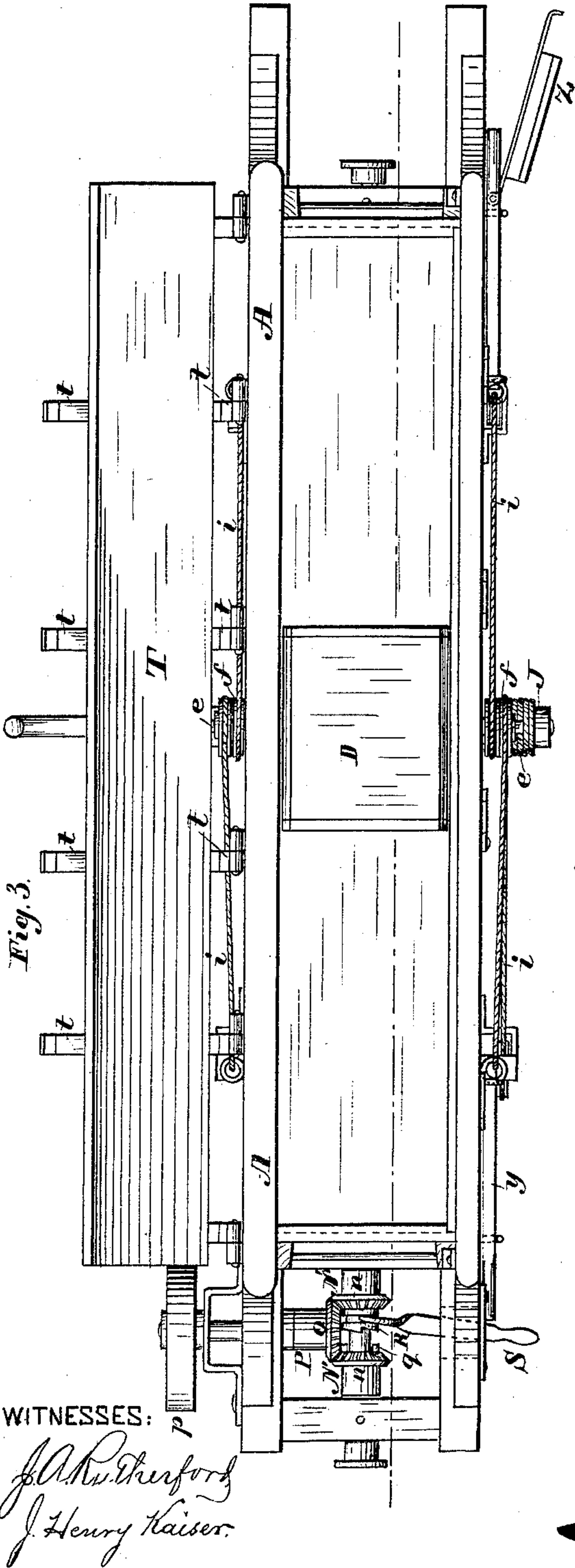
By *James L. Norris*

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FIG. VI.

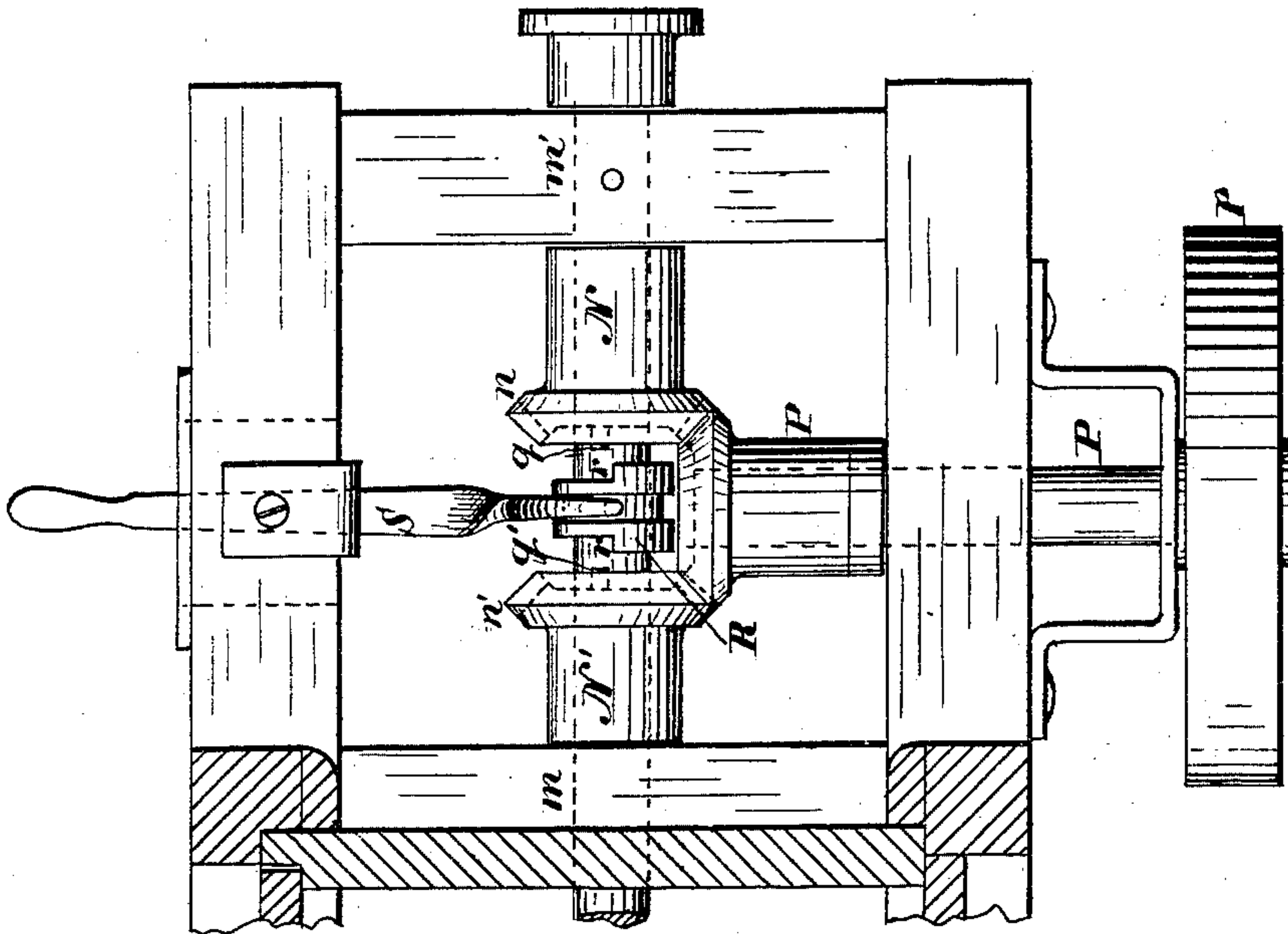
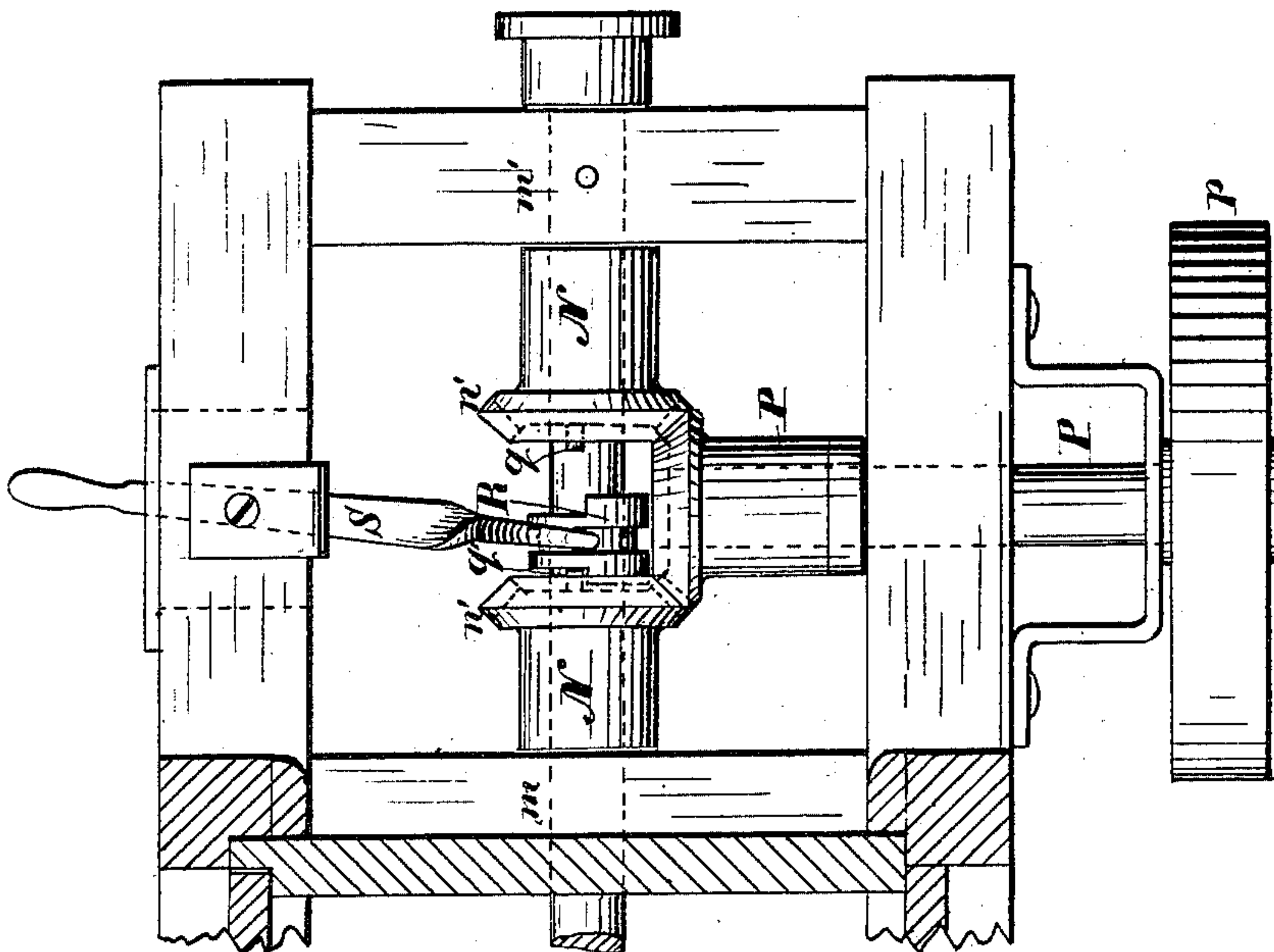


FIG. V.



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By *James L. Norris.*  
*Att'y*



# UNITED STATES PATENT OFFICE.

JOHN LA DOW AND CHRISTIAN ENSMINGER, OF ALBANY, N. Y., ASSIGNORS  
TO SAID JOHN LA DOW AND CHARLES LA DOW, OF SAME PLACE.

## IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. 223,152, dated December 30, 1879; application filed December 5, 1879.

*To all whom it may concern:*

Be it known that we, JOHN LA DOW and CHRISTIAN ENSMINGER, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to that class of hay-baling presses commonly designated "power hay-presses."

Its object is to produce a double-acting press in which the movement in both directions of a reciprocating follower may be utilized for compressing hay or other material into bales, and while one bale is being formed, tied, and removed, material for another may be placed in position to receive the compressive action of the follower in its reverse movement.

It consists, generally, in the combination, in a baling-press, of a horizontal casing having bale-discharge doors at each end, grooves in its end walls, and openings in its side walls opposite the discharge-doors, a reciprocating follower having grooves in its pressing-faces opposite the grooves in the end walls arranged within said casing, and devices connected with said follower externally of the casing, for giving a reciprocating or reversing movement in either direction at will while the driving-wheel is revolved continuously in one common direction, whereby the movements of said follower in both directions may be utilized for pressing bales and the material for forming a new bale may be placed in proper position to receive the pressure of the follower while a bale already pressed is being tied and removed.

It also consists in certain improved combinations of devices involved in the construction of our press, and which will be hereinafter fully described, and pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front, and Fig. 2 a rear, elevation of our improved press. Fig. 3 is a top view of the press with its cover thrown back. Fig. 4 is a vertical section taken on line *x x*, Fig. 3. Figs. 5 and 6 are detached top views of the driving and reversing mechanism of the press.

The letter A indicates the casing in which

the hay or other material is compressed into bales. This casing is supported in a horizontal position on legs *b*. In each of the side walls of the casing is a longitudinal slot, C, about midway its height, and extending between the limits of travel of a follower, D, arranged to reciprocate in the casing. From the front and rear sides of the follower D gudgeons *e* project through the slot C, and each has mounted upon it, outside the casing, two pulleys, *f*. Just below and a little beyond each end of the two slots C is mounted upon the walls of the casing a pulley, *g*, and just above each of these pulleys *g* is an eye, *h*, firmly fixed to the wall. From each of the eyes *h* a rope, *i*, passes over a pulley, *f*, mounted on the gudgeons *e*, back over a pulley, *g*, and obliquely downward to the projecting end of a shaft, J, mounted transversely under the center of the casing A. To the projecting ends of this shaft the ends of the ropes are secured, and upon the middle of said shaft, directly under the center of the casing-floor, is mounted a worm-wheel, K, which meshes with a worm, L, carried by the shaft M, which extends longitudinally under the casing-floor, and is mounted in bearings *m m* at the ends thereof. This shaft is prolonged beyond the casing at one end, (the left-hand end, as shown in the drawings,) and has an additional bearing, *m'*. Between the two bearings at this end of the press the shaft M carries two loose sleeves, N N', having at their adjacent ends the bevel-gears *n n'*, both of which mesh with the bevel-gear *o*, carried by the driving-shaft P, upon the outer end of which is mounted the belt-wheel *p*.

From the face of each of the bevel-gears *n n'* projects a pin, *q* or *q'*, and upon the shaft M, between said gears, is mounted a sleeve, R, capable of longitudinal but not rotary movement independent of the shaft. One semicircular half of this sleeve is reduced in width to form shoulders *r r'* at its edges, and when said sleeve is shifted by means of the shifting-lever S, connected and operating in the usual manner against the face of one of the bevel-gears *n* or *n'*, the pin projecting from the gear, if in rotation, will strike one of the shoulders on that edge of the sleeve, carrying the sleeve, and of course the shaft M, with it. As the



gears  $n$   $n'$  are rotated in opposite directions by the gear  $o$ , the direction of rotation of the shaft  $M$  depends upon which of the said gears  $n$  and  $n'$  engages the sleeve, and this is controlled by the shifting-lever.

The letter  $T$  indicates the hinged top or cover of the casing. This cover is secured to cross-bars  $t$ , the rear ends of which are hinged to the casing, while the front ends are bent downward to take over the top edges of the front wall, to engage with the shoulder  $u$  of the latch-lever  $U$ , pivoted to the casing and serving to keep the top of the casing from spreading.

At each end of the front wall of the casing  $A$  is a door,  $Z$ , for the removal of bales after compression. Directly opposite each door, in the rear wall of the casing, is a series of slots,  $w$ , a proper distance apart for the ties to be placed upon a bale, and in each pressing-face of the follower and the end walls of the casing are grooves coinciding with these slots.

The doors may be held closed by bars  $y$ , inserted in hooks or staples upon the casing, or by any other suitable means.

It will be seen that when rotary motion is communicated to the belt-wheel  $p$ , and through one of the gears  $n$  or  $n'$  and sleeve  $o$  to the shaft  $M$ , and through the worm  $L$  and worm-wheel  $K$  to shaft  $J$ , one of the ropes  $i$  on each side of the press will be wound upon the projecting ends of said shaft  $J$ , and the other ropes will be unwound, the ropes which are wound up drawing the follower toward that end of the machine near which they are secured, while the other ropes are unwound and permit the movement of said follower.

To operate this press, apply the driving-belt to the wheel  $p$  and run the follower to one end of the box; then throw open the top or cover and fill in the loose material to be pressed; then close the cover and fasten down securely by means of the latches. Next start the power, and, by means of the shifting-lever and sleeve  $o$ , engage one of the bevel-gears  $n$  or  $n'$  with worm-shaft  $M$ . The shaft  $J$  will then commence taking up one set of ropes, thereby moving the follower toward the end, gradually compressing the loose material till the follower reaches its limit of motion near the end of box, when the bale will be pressed and ready for tying. Then move the shifting-lever till the sleeve  $o$  stands midway between bevel-gears  $n$   $n'$ , where it is held by a projection on the shifting-lever resting in a notch or slotted guide, (which serves to hold said lever either in or out of gear.) The machine will then be out of gear. Now throw open the cover and commence filling the vacant space in the box,

while the pressed bale in the other end is being tied preparatory to removal, which is done by opening the door and passing wires around the bale through the grooves in the follower and casing-wall and the slots  $w$ , provided for that purpose. When the casing is full, reverse shifting-lever, which will start the follower in opposite direction. Now remove the pressed bale, close the cover, and proceed as before. If a power-lever or ground-jack is used for running the press, a tumbling-rod with universal-joint coupling may be attached to either end of worm-shaft; or a belt may be applied to wheel  $p$ , in the ordinary manner.

Having fully described our invention, what we claim is—

1. The combination, in a baling-press, of a horizontal casing having a bale-discharging door at each end, grooves in its end walls, and openings in its side walls opposite the doors, a reciprocating follower having grooves in its pressing-faces, and arranged within said casing, and devices, essentially such as described, connected with said follower externally of the case, for giving it a reciprocating or reversing movement, substantially as and for the purpose set forth.

2. The combination, with the casing  $A$ , having the bale-discharge doors at each end and the slots  $C$  in its walls, of the follower having gudgeons projecting through said slots and carrying the pulleys  $f$ , the ropes having each one end secured to a stationary support passing over the pulley  $f$ , and the pulleys fixed to the casing, the shaft  $J$ , having said ropes connected to its ends, and means for communicating to said shaft rotary motion alternately in opposite directions, substantially as described.

3. The combination, with the casing, its discharge-doors, the follower, the shaft  $J$ , and intermediate devices for transmitting motion from said shaft to said follower, the longitudinal shaft  $M$  and devices for transmitting motion to said shaft  $J$ , and the reversing devices consisting of the loose bevel-gears  $n$   $n'$ , mounted on the said longitudinal shaft, a bevel-gear meshing with both of said loose gears, and devices for engaging either of said gears with said longitudinal shaft, as desired, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of the subscribing witnesses.

JOHN LA DOW.

CHRISTIAN ENSMINGER.

Witnesses:

JAMES H. MELICK,  
J. J. JANSEN.