

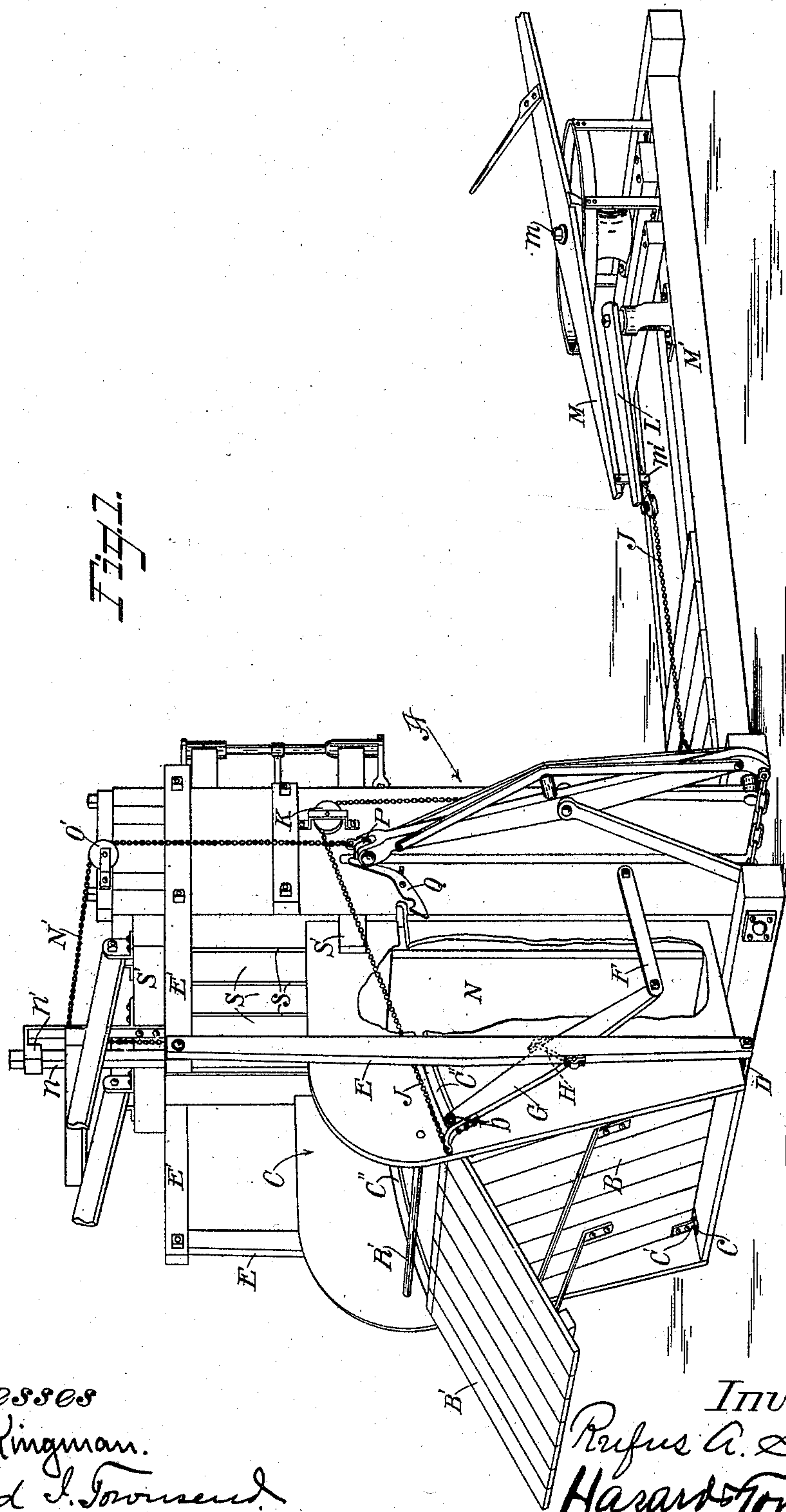
(No Model.)

2 Sheets—Sheet 1.

R. A. SIMPSON.
HAY PRESS.

No. 584,751.

Patented June 15, 1897.



Witnesses
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Alfred L. Townsend.

Inventor
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his attys

(No Model.)

2 Sheets—Sheet 2.

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Fig 2.

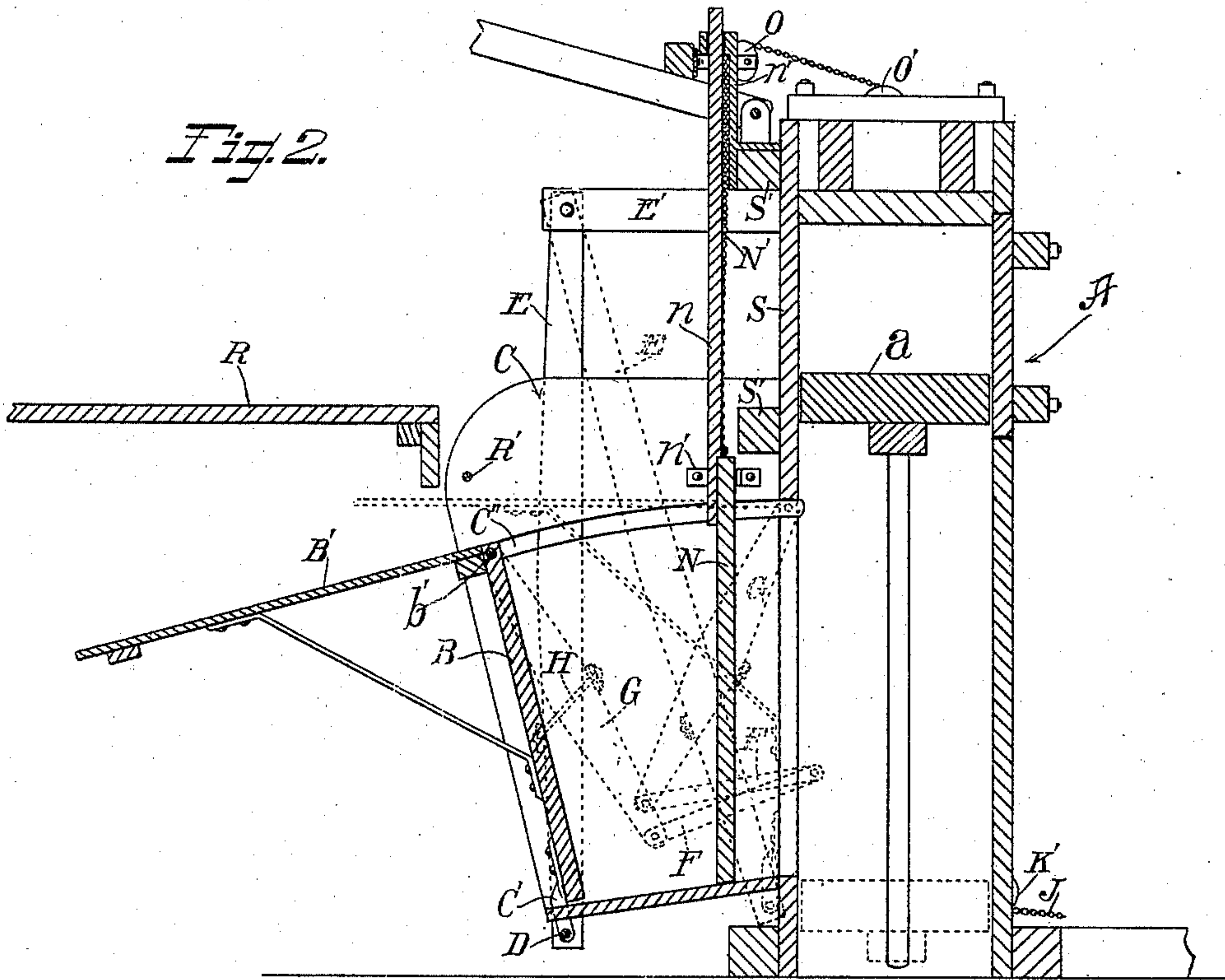
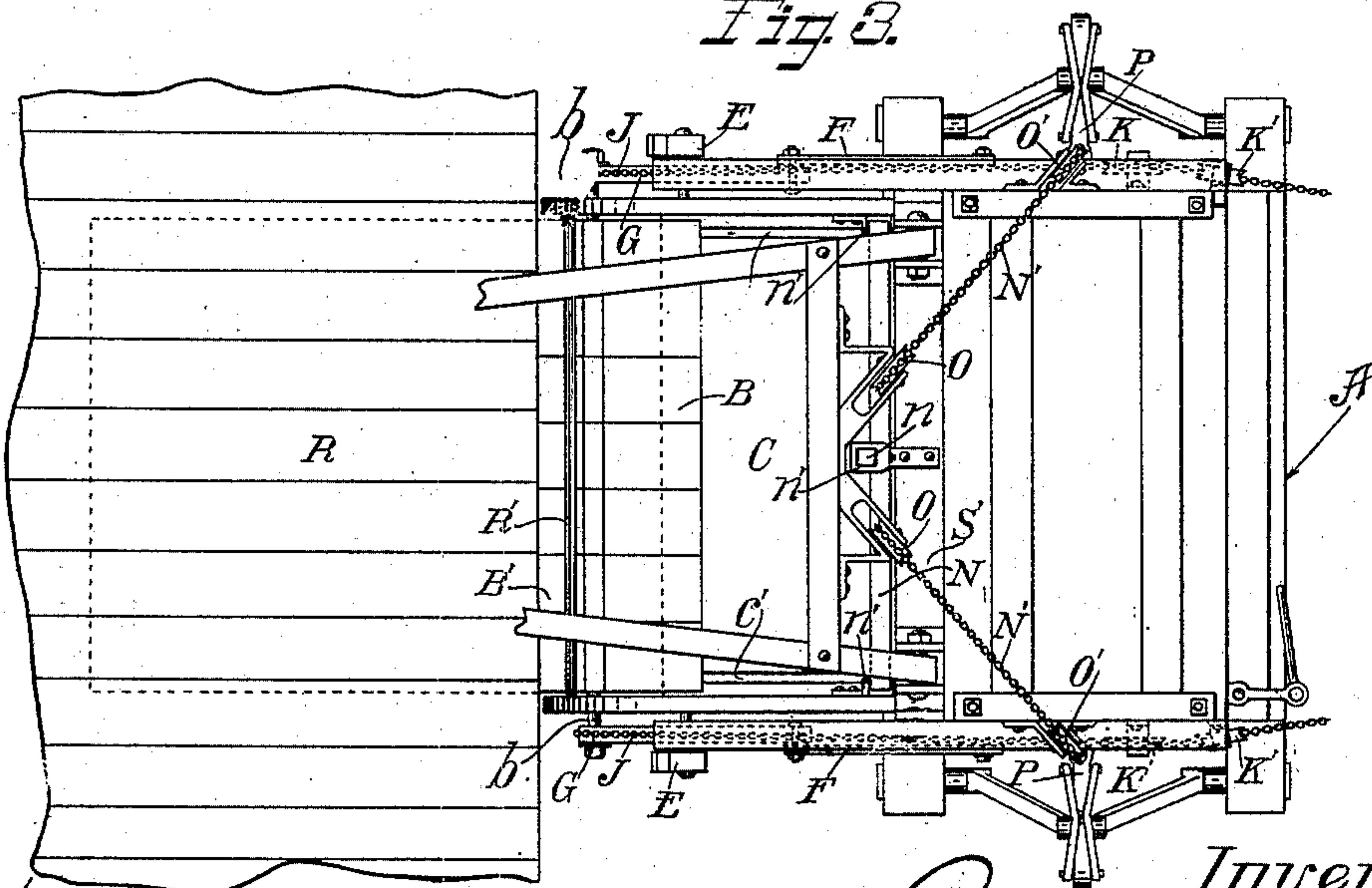


Fig 3.



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UNITED STATES PATENT OFFICE.

RUFUS A. SIMPSON, OF FLORENCE, CALIFORNIA, ASSIGNOR TO GEORGE J. NADEAU, OF SAME PLACE.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 584,751, dated June 15, 1897.

Application filed November 23, 1896. Serial No. 613,209. (No model.)

To all whom it may concern:

Be it known that I, RUFUS A. SIMPSON, a citizen of the United States, residing at Florence, in the county of Los Angeles and State of California, have invented new and useful Improvements in Hay-Balers, of which the following is a specification.

My invention particularly relates to improvements in vertical presses, and has been applied by me to the press known in California as the "Monarch" press. This press is provided with a plunger which moves from below upward and compresses the charge in the upper portion of the chamber.

The especial object of my invention is to provide means for feeding the press in such a manner that one man will be enabled to feed the press where before it required two men to do the same work, and at the same time to make the operation less laborious for the man doing the feeding than it was for the two men to do it formerly.

Another object of my invention is to so adapt and arrange the press that the feed-chamber may be filled while the plunger is on its downward movement without allowing the hay to enter the press beneath the plunger, thus enabling me to not only decrease the number of men required to form the crew, but to so economize time that the capacity of the press is greatly increased.

My invention comprises the various features of construction and combinations of parts hereinafter fully set forth and claimed, whereby I accomplish the objects above set forth.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective side elevation of a press embodying my invention. In this view the platform upon which the hay is deposited before being fed to the press is removed in order to avoid obstructing the view. Fig. 2 is a vertical mid-section of the press and feed-chamber. Fig. 3 is a plan view of the press.

In the drawings, A represents a press which is of the vertical type and is provided with a plunger or follower α , which reciprocates in the press-chamber in the ordinary manner.

C is a feed-chamber which is arranged on

one side of the press, and B is a door or shutter arranged to intermittently move back and forth through the feed-chamber. The bottom of the feed-chamber is provided with two slots $c\ c'$, through which project bracket-arms C' , which are rigidly fixed to the shutter and pivotally secured upon a cross-shaft D, which is carried by vertically-arranged swinging levers E, which have their upper ends pivoted to suitable supports E' , projecting from the top of the press. The means for operating the shutter comprises duplicate sets of levers, one set arranged upon each side of the press-chamber. So a description of one will suffice for both.

Each side wall of the feed-chamber is provided with a slot C'' , through which projects a pivot-pin b , formed by the end of a rod b' , which is secured to the top of the shutter B.

To the press is secured one end of a link F, and to the other end of the link is secured one end of an operating-lever G, the other end of which is pivoted upon the pivot b . The lever E and the lever G are connected with each other by means of a crank-pivot H, so as to allow the levers to slide or shear past each other while they are being swung to carry the shutter to and fro.

A flexible connection, such as the chain J, is secured to the upper end of each lever G, passed toward the rear over a pulley K, secured upon the press, thence down over a pulley K' and inward to the rear of the machine, where the two members are attached to each other. From this point a single chain leads outward and is attached to a short lever L, which is pivoted to the horse-power frame M' at one side of the pivotal center m of the power-lever M, which operates the press. To this power-lever is attached a projecting pin m' , which is adapted to engage with the short lever L when such lever is in the position shown in Fig. 1 and the shutter or door B is retracted to open the feed-chamber. By the rotation of the lever M the lever L will draw endwise out of engagement with the pin when the lever L has been carried a sufficient distance to fully close the shutter.

In order to prevent the hay which is placed in the feed-chamber from entering the press before the plunger is fully retracted, I pro-

vide a suitable sliding door N, which is provided with a guiding-stem *n*, working through guides *n'*, to cause it to slide vertically up and down in the feed-chamber. To each side of this door is secured a flexible connection N', which passes over pulleys O O' and down and has its other end secured to the plunger-operating mechanism P, so that as the plunger is retracted from the position shown in Fig. 1 the flexible connection operates to raise the sliding door, and as the plunger is forced upward to compress the hay in the baling-chamber the flexible connection is released to allow the door to slide down into the chamber and to intermittently cut off communication between the feed-chamber and the press-chamber. Upon each side of the press is arranged a suitable dog or catch Q, which catches its respective pivot *b* and holds the shutter fully closed while the plunger is moving upward. The rear end of each dog projects into the path of the plunger-operating mechanism, so that when the plunger has passed above the top of the shutter the dog is released by the plunger-operating mechanism and allows the shutter to open.

To the top of the shutter is secured a rearwardly-projecting slide or shelf B', which is adapted to close the top of the feed-chamber when the shutter is closed, so that the man who is feeding the press may place hay upon the slide when the shutter is fully closed, and when the shutter swings open, by reason of the catches Q being released from the pivots *b*, the slide passes from beneath the hay and allows it to drop into the chamber.

R is a platform upon which is placed the hay to be baled. This is done by means of a derrick-fork in the ordinary manner, and a cross-rod R' is arranged a slight distance above the top of the feed-chamber, so that when the shutter opens the hay which has been placed upon the slide B' will by means of the rod be prevented from being carried to the rear with the slide, and the hay will thus be caused to fall into the feed-chamber.

In operating my improved press we will suppose that the feed-chamber is open, as shown in Figs. 1, 2, and 3. The man who feeds the press takes his position upon the platform R and fills the feed-chamber C full of hay. Then the power is operated to bring the projection *m'* into engagement with the lever L, and thus such lever is swung away from the press, drawing upon the flexible connection or chain J, which in turn draws upon the levers G, which in turn operates the levers E and causes the shutter B to swing through the feed-chamber and to carry the hay therefrom into the press-chamber. As soon as the dogs Q engage with the pivots *b* the power operates to start the plunger upward in the press, thus to compress the hay into the upper portion of the press. By reason of the difference in the pivotal points of the levers L and M as the lever M moves onward the projection *m'* slides along the lever L until it reaches the

end, when the lever is released and swings back into its normal position, leaving the chain J slack, so that the shutter may swing open when the dogs Q are released from the pivots *b*. When the plunger has moved upward a sufficient distance to bring it above the top of the shutter B, the plunger-operating mechanism P engages with the dogs Q and releases the shutter. In the meantime the operator has continued piling hay upon the slide or shelf B' and the upward motion of the plunger has relaxed the flexible connections N', which are attached to the vertical sliding door. The door is then supported only by the slide or shelf B', and as soon as the dogs Q are released the first outward movement of the shutter carries the shutter from beneath the sliding door N, and it drops down into the chamber C in advance of the hay and closing the entrance to the press, while the shelf B' swings from beneath the hay piled thereupon and allows the hay to drop down into the chamber. In the meantime the plunger has been operated to fully compress the hay in the press and is released, thus allowing the plunger to be retracted, and as the plunger is retracted it draws upon the flexible connections N' and raises the sliding door N, thus opening the entrance to the press. The door holds the hay back a sufficient distance from the press to prevent the hay from entering the chamber beneath the plunger before the plunger is fully retracted. As soon as the plunger is fully retracted the projection *m* upon the lever M is again brought into engagement with the lever L, and the shutter or door B is again operated to feed the hay from the feed-chamber to the press. The operation is continuous, and by reason of allowing the man who is feeding to place the hay upon the slide while the plunger is moving upward and downward much time is saved and a large amount of labor is avoided.

In constructing the baler for use with my improvement I dispense with one side door of the press and replace it by planks S, rigidly secured in place by means of the usual cross-beams S', excepting that I move the upper cross-beam upward to above the top of the press-chamber and leave cracks *s* between the planks S in order to allow for convenient tying of the bales. This avoids the inconvenience heretofore encountered in placing the tying bands or wires in this class of presses. Heretofore it has been necessary to either open the doors upon both sides of the press-chamber before passing the wires or bands around the bale or to climb on top of the press and shove the wires down through between the bale and the strengthening-beam, which is not only laborious, but also consumes much time. By my improved construction after the first charge is compressed the wires are passed through the press above the top of the charge, and by reason of the beam being above the top of the chamber it is entirely out of the way of the wire, which may

be pulled through and passed through beneath the bale after the last charge has been compressed, after which the door upon the rear side of the press is opened and the ends of the bale-tie secured together.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a hay-baler, the combination set forth of a vertically-arranged press; a feed-chamber arranged at one side of the press; a shutter arranged to move back and forth in said chamber and to feed hay from such chamber to the press; a movable support adapted to temporarily support the hay above the chamber when the shutter is closed; means for operating the support; and suitable means connecting the shutter with the power, and arranged to operate the shutter to feed hay into the press when the plunger is retracted.

2. The combination set forth of a vertically-arranged press; a feed-chamber arranged at one side of the press; a shutter arranged to move back and forth in said chamber and to feed hay from the chamber to the press; swinging levers pivotally secured to both top and bottom of the shutter and adapted to swing it back and forth through the chamber; a plunger arranged in the press; a power for operating the plunger; and suitable means connecting the shutter with the power, and adapted to operate the shutter to feed hay from the chamber into the press when the plunger is retracted.

3. The combination set forth of a feed-chamber; a shutter arranged to move back and forth through the feed-chamber and provided upon one side at its upper end with a horizontally-arranged support adapted to support the hay when the shutter is swung to feed hay from the chamber; and suitable means adapted to swing the shutter.

4. In a hay-press, the combination set forth of a feed-chamber; a shutter adapted to move back and forth through the feed-chamber; a supporting-lever pivoted at one end to the press and pivoted at its other end to the lower portion of the shutter; a link pivoted at one end to the press; an operating-lever pivoted at one end to the link and at its other end to the upper end of the shutter; and a crank-pivot connecting one lever with the other.

5. In a hay-baler, the combination set forth of a press; a feed-chamber; a vertical shutter adapted to swing through such feed-chamber; a supporting-lever pivoted at one end to the press and at its other end to the bottom of the shutter; a link pivotally secured at one end to the press; a lever pivotally secured at one end to the link and at its other end to the top of the shutter; a crank-pivot connecting the two levers with each other; a chain or other flexible connection secured at one end to the top of the shutter and having its other end adapted to be intermittently operated by the power to close the shutter.

6. In a hay-baler, the combination set forth

of a vertical press; a feed-chamber arranged at one side of the press; a shutter adapted to swing back and forth through the chamber; a platform adapted to support the hay above the level of the top of the chamber; a slide secured to the upper end of the shutter and adapted to close the chamber when the shutter is swung to feed hay into the press, and to swing beneath the platform when the shutter is swung to open the feed-chamber; a supporting-lever pivoted at one end to the press and at its other end to the bottom of the shutter; a link pivotally secured at one end to the press; a lever pivotally secured at one end to the link and at its other end to the top of the shutter; a crank-pivot connecting the two levers with each other; and means for operating the shutter.

7. In a hay-press, the combination of a feed-chamber; a sliding door adapted to cut off communication between the press and the feed-chamber; a shutter adapted to feed hay from the feed-chamber to the press; suitable means connecting the sliding door with the power and adapted to intermittently withdraw the door from the path of the shutter; and suitable means connecting the shutter with the power and adapted to intermittently operate the shutter to feed hay from the feed-chamber to the press each time the sliding door is withdrawn.

8. In a hay-baler, the combination set forth of a feed-chamber; a shutter arranged to swing through such feed-chamber to feed hay from the chamber to the press; suitable levers supporting the shutter; crank-pivots connecting the levers with each other; and means arranged to operate the shutter.

9. In a hay-press, the combination set forth of a feed-chamber; a shutter adapted to swing back and forth through the chamber; two supporting-levers upon each side of the shutter, each lever being pivoted at one end to the press and at the other end to the top and bottom of the shutter respectively; crank-pivots connecting the levers with each other; and suitable means for operating the levers to swing the shutter through the chamber.

10. A hay-press comprising a press-chamber; a plunger adapted to compress hay in such chamber; power for operating the plunger; a feed-chamber arranged at one side of the press-chamber; a shutter adapted to move through the feed-chamber to feed hay from such chamber into the press-chamber; a sliding door adapted to intermittently cut off communication between the press-chamber and the feed-chamber; and suitable means connecting the door and the shutter with the power and adapted to operate the door to withdraw it from the feed-chamber, and to operate the shutter to carry the hay from the feed-chamber to the press-chamber after the door has been withdrawn.

11. In a hay-press, the combination set forth of a press-chamber; a feed-chamber arranged at one side of the press-chamber; a shutter

adapted to swing through the press-chamber
to feed hay from such chamber to the press;
dogs arranged to engage the shutter to hold
it closed while the plunger is operated to
5 compress the hay in the press-chamber, and
arranged to be operated by the plunger-oper-
ating mechanism to release the dogs and al-
low the shutter to open after the plunger has
passed above the top of the shutter; and a
10 sliding door adapted to cut off communica-
tion with the press-chamber when the shut-
ter is open.

12. In a hay-baler, the combination set forth
of a vertical press; a feed-chamber arranged

at one side of the press; a shutter adapted to 15
swing back and forth through the chamber
to feed hay from such chamber to the press;
a sliding door adapted to intermittently cut
off communication between the feed-chamber
and the press; swinging levers pivoted to the 20
shutter and adapted to swing the shutter
through the press-chamber; and means for
operating the shutter and the door.

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