

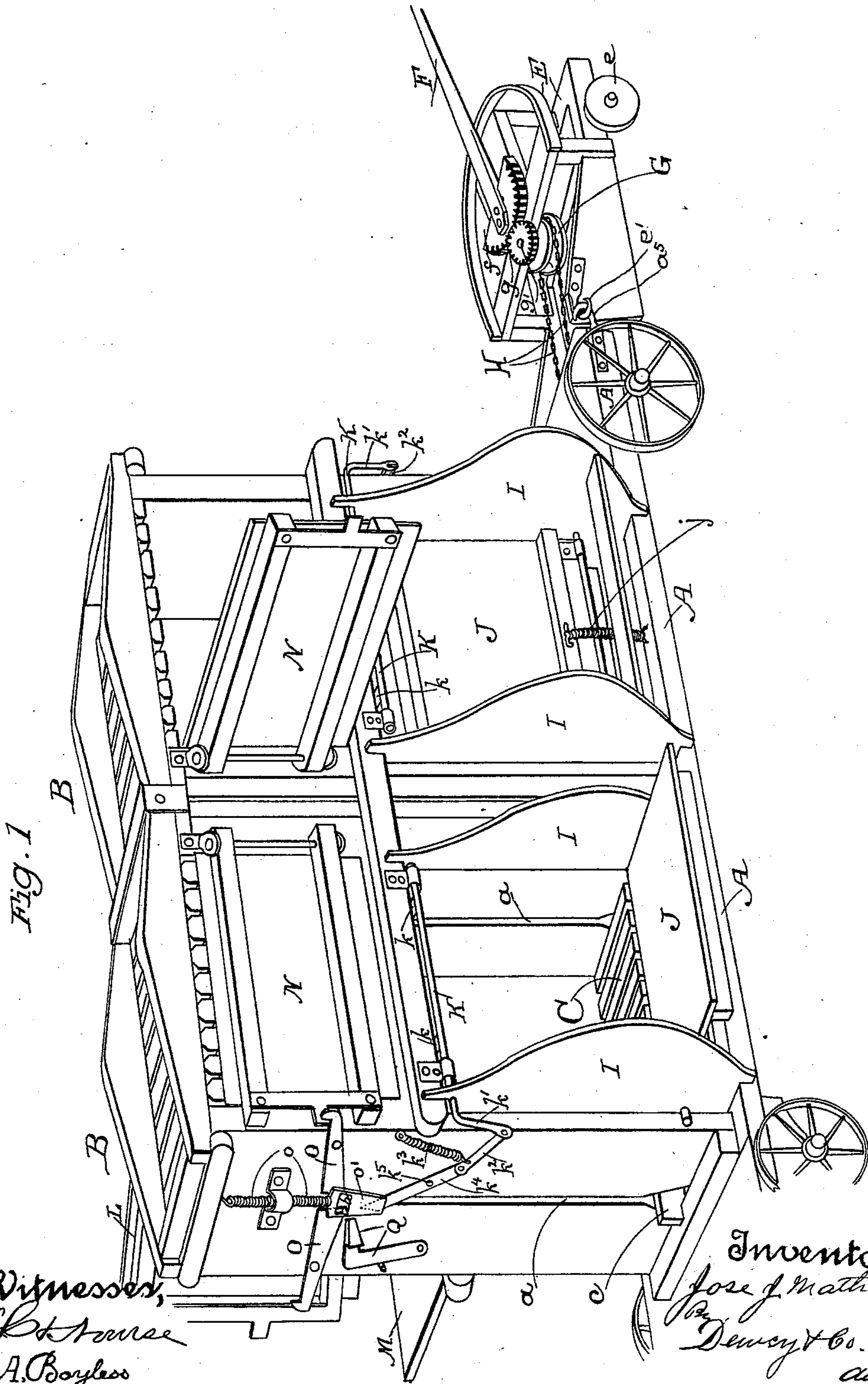
(No Model.)

2 Sheets—Sheet 1.

J. J. MATHIAS.  
BALING PRESS.

No. 539,588.

Patented May 21, 1895.



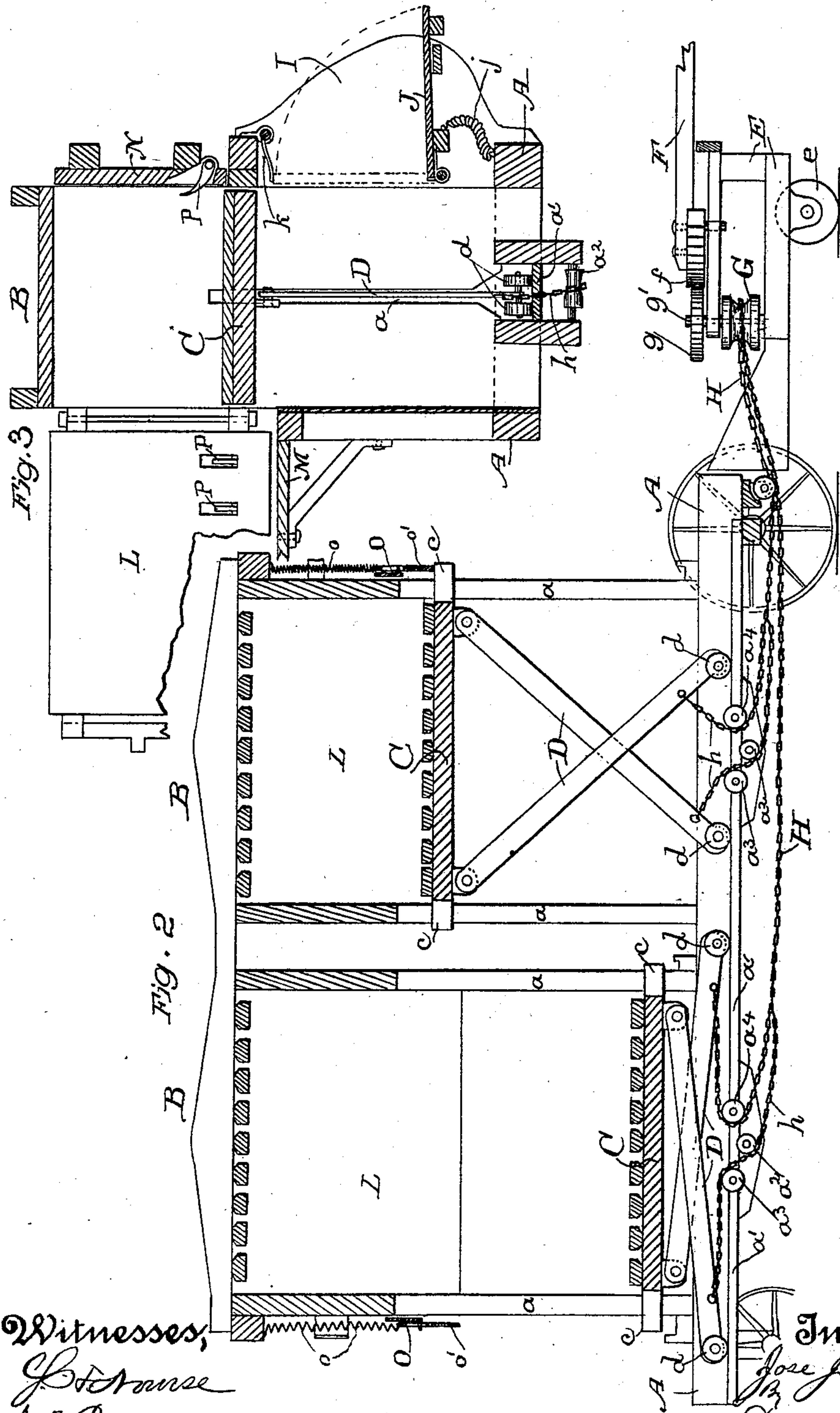
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J. J. MATHIAS.  
BALING PRESS.

No. 539,588.

Patented May 21, 1895.



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# UNITED STATES PATENT OFFICE.

JOSE JACINTHO MATHIAS, OF MOUNTAIN VIEW, CALIFORNIA.

## BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 539,588, dated May 21, 1895.

Application filed November 17, 1894. Serial No. 529,161. (No model.)

*To all whom it may concern:*

Be it known that I, JOSE JACINTHO MATHIAS, a citizen of Portugal, residing at Mountain View, county of Santa Clara, State of California, have invented an Improvement in Baling-Presses; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the general class of baling-presses, and it consists in the construction, arrangement and combination of devices which I shall hereinafter fully describe and specifically claim.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my baling-press. Fig. 2 is a vertical longitudinal section of same. Fig. 3 is a cross-section through the center of one of the baling-chambers.

A is a frame-work which forms the foundation upon which the press is constructed. This frame-work may be a stationary one or, preferably, as I have here shown, may constitute the body of a wheeled vehicle whereby the press may be conveniently and rapidly transported from point to point. Upon this foundation or frame-work A are built the presses B B, one being the duplicate of the other. In the chamber of each press is mounted a follower C. These followers are adapted to move vertically in the baling chambers, and each is provided with a cross-bar *c* which is fitted in vertical slots or grooves *a* in the end walls of the baling chambers, whereby the followers are guided in their vertical movements.

The followers are operated by the following mechanism: Each follower is fitted with a pair of crossed levers D. One member of the pair is pivoted at its upper end, under and near the end of the follower, and at its lower end it is provided with rollers *d* which travel on fixed guides or tracks *a'* in the foundation frame A of the machine. The other lever of the pair is pivoted at its upper end under the opposite end of the follower, and at its lower end it is also provided with rollers *d* traveling on the same fixed guides or tracks *a'*. These levers extend diagonally, and centrally across each other.

At the front of the frame A is a frame E

which carries a suitable horse power. I have here shown this horse power as consisting of the main power lever F to which the horse or horses are to be attached. This lever operates a segment gear *f* which meshes with a pinion *g* on an upright shaft *g'* which carries a drum G. Around this drum passes a chain H, the ends of which are carried forwardly under the bottom of the frame A, and to each are secured branches *h*. One of the branches of one end passes under a guide pulley *a<sup>2</sup>* under the frame, and up around a guide pulley *a<sup>3</sup>* therein and is secured to the lower end of one of the crossed levers D. The other branch of the same end, passes under and around another guide pulley *a<sup>4</sup>* and backwardly, and is secured to the lower end of the other cross lever D of the same pair. In like manner the branches of the other end of the chain H are severally secured to the lower ends of the crossed levers D of the pair of the other follower. Now, it will be seen, by this mechanism, that upon turning the draft or main power lever F in one direction, the drum G will be so turned that one side of the chain H will be pulled in, thereby drawing together the lower ends of the crossed levers of one pair, which movement of said levers will cause the rise of the follower to which they are attached; and the same movement of the drum will pay out the other side of the chain, whereby the crossed levers to which its branches are secured will, under the weight of the follower to which they are attached, separate their lower ends, thereby allowing said follower to descend. Thus, in one baling chamber, the follower rises to its work, while at the same time in the other, the follower is descending to relieve the previously depressed bale and to receive a fresh charge. The reverse movement of the power lever F, effects a reverse operation of the followers.

The frame E of the horse power, when in use, lies firmly upon the ground; but when the press is to be moved, wheels *e* are placed upon said frame, and its rear end is provided with hooks *e'* which are adapted to engage hooks *a<sup>5</sup>* on the end of the frame A whereby the horse power frame E may be readily connected with said frame A, and the whole be drawn along together, with ease.

On one side of each baling-press, at its lower



portion, are formed the feed guides I, consisting of a frame-work in which the doors J operate. These doors form the feed doors, as well as the feed platforms, onto which the operators throw the material to be baled. These doors J are hinged along the line of their lower edges and are controlled by a spring *j* secured to them below, the tendency of which is to throw and hold said doors open in a horizontal position, resting within their frames. When in a vertical position these doors close the baling feed chamber, and they are held in this vertical position and automatically released or tripped therefrom by the following device:

K is a rock-shaft mounted in suitable bearings on the side of the press, and extending parallel with the top of the door J. This rock-shaft has upon it, friction arms *k* of a springy or other nature which, when turned downwardly into the path of the upper edge of the closing door J, bind and cramp upon said edge in such a manner as to hold the door in an upright position, against the tendency of its spring *j* to pull it down. At the end, this rock-shaft has a crank *k'*, to the end of which is connected a link *k<sup>2</sup>* controlled by a spring *k<sup>3</sup>*. To the end of this link is connected a lever *k<sup>4</sup>* pivoted to the end of the press at *k<sup>5</sup>* and having its upper end adapted to lie transversely of the slot *a* in the end of the press, and thus to traverse the path of the projecting end of the cross-bar *c* of the follower. When thus set and held under the influence of the spring *k<sup>3</sup>*, the rock-shaft K is so turned that its friction crank arms *k* will be down far enough to frictionally engage the upper edge of the door J, and to hold said door. Now, as the follower rises, its cross-bar *c* coming in contact with the end of the lever *k<sup>4</sup>*, which lies in its path, will turn said lever about its pivotal point *k<sup>5</sup>*, which movement will, through the link *k<sup>2</sup>*, rock the shaft K, and cause it to lift its frictional arms *k* from the edge of the door, whereupon the spring *j* will draw said door outwardly and throw it down to a horizontal position. When the follower descends again, and its cross bar *c* relieves the lever *k<sup>4</sup>*, the latter will, under the influence of the spring *k<sup>3</sup>*, return to its normal position in the path of the cross bar and will, by this movement, return the shaft K to such a position that its friction arms *k* will be once more in place, to receive and hold the door J when closed. It will be understood that for each door, there will be this tripping mechanism, so that there will be two rock-shafts K and the parts necessary to operate them, one set being upon one end of the press and the other upon the other end.

On the opposite side of the press, one for each baling chamber, are doors L. These are the discharge doors and they open out the baling chamber on to a receiving platform M from which the bales may be delivered into wag-  
ons driven up alongside. These discharge

doors L are hinged vertically along their adjacent ends so that they turn outwardly and toward each other, in horizontal planes.

On the first side of the press are doors N similar to the doors L except that they are not so wide. These doors are for the purpose of permitting freedom of action in roping or wiring the bales, which operation is effected by passing the ropes or wires through between suitable channels in the follower, and suitable channels in the top of the baling chamber as is usual in such cases.

The doors L and N are locked by means of pivoted latch levers O upon the end of the press, the outer ends of said levers engaging suitable lugs upon the doors. These locking latch levers are automatically released by the following mechanism: A spring *o* acting upon their adjacent inner ends, serves to hold their outer ends in engagement with the door lugs. A contact piece *o'* is freely connected with the adjacent inner ends of said latch levers, and the lower end of this contact piece is adapted to be set directly in the line of the upward movement of the cross bar *c* of the follower. Now, when the follower has risen to its limit, and completely pressed the bale, its cross-bar *c*, coming in contact with the piece *o'*, will raise the inner ends of the locking levers O, thereby depressing their outer or latch ends and freeing the doors on both sides which, under the pressure from within, will thereupon spring open.

In the lower portions of the doors L and N are freely pivoted the hooks P which project inwardly into the baling chamber and are so beveled that they permit the uprise of the material past them, and prevent it from coming down again.

The baling is done in several charges, and when a sufficient quantity of material is fed into the feed chamber, the follower is raised, and that amount or charge of material is pressed upwardly into the baling chamber, passing the hooks and being retained by them when the follower descends again. A second charge follows the first and so on until the required amount for the bale is complete. Now, in order, during this repeated operation of the follower, to prevent the doors L and N from being tripped, I have, on the end of the press a pivoted or swinging stop piece Q which is adapted to be swung under the contact piece *o'*, and the adjacent ends of the levers O, thereby holding them outwardly sufficiently far, to remove them from the path of the cross-bar *c* of the follower, so that said cross-bar may rise without operating the contact-piece *o'*; but upon the last charge in the press, the stop piece Q is thrown backwardly, thus allowing the contact piece *o'* to fall into the path of the cross-bar *c*, whereby it will be actuated by the latter, and upon this stroke the doors will be tripped and will fly open. In closing them, they slip to their engage-



ment with the latch levers O by reason of the heads of the latter being properly beveled as shown.

In operation the followers act alternately and continuously, one follower forcing the charge upwardly into the baling chamber, while the other is descending to receive a fresh charge, so that no time is lost in baling.

It will be seen that the levers D for operating the followers are all out of the way, being inclosed and housed as it were, within the bottom of the press, or the frame-work or foundation below, instead of being exterior to the press upon the ends thereof as is usual for power mechanism.

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

1. An improved baling press consisting of duplicate vertical baling chambers mounted upon the same frame, independent followers in said chambers each having a pair of crossed levers connected with their bottoms, and with their lower ends traveling over continuous tracks on the main frame common to both pairs, the oscillating power drum and means for operating the same, a single chain for operating both followers, pulleys  $a^3$  and  $a^4$  journaled on the lower portion of the frame beneath each baling chamber and a pulley  $a^2$  intermediate of the said pulleys, said chain having its bight around the drum, and each of its ends provided with branches one of which of each pair passes under the pulley  $a^4$  and thence extends forwardly and is connected with one of the crossed levers of one pair, and the other of which passes under the intermediate pulley  $a^2$  and thence over the pulley  $a^3$  and is connected with the other crossed lever of the same pair, whereby the followers are alternately operated by the movement of the single chain, substantially as herein described.

2. In a baling-press, a baling chamber with a reciprocating follower therein, having a cross-bar projecting through slots in the baling chamber, in combination with a side door affording access to the feeding chamber of

the press, a spring connected with the lower portion of the door and tending to hold said door normally open and the means for holding said door closed in a vertical position and tripping it automatically by the movement of the follower, consisting of the rock-shaft on the side of the press parallel with the top of the door having the spring friction holding arms and crank, the spring-controlled link connected with said crank and the pivoted lever connected with said link and lying in the path of the cross-bar of the follower.

3. In a baling-press, a baling chamber having within it a reciprocating follower with a cross-bar, in combination with hinged side doors affording access to the baling chamber, and the means for locking said doors and tripping them again, consisting of the pivoted latch levers on the end of the frame engaging the doors, the spring for holding the latch levers closed and the contact piece in the path of the cross-bar of the follower whereby the latch levers are released as the followers move.

4. In a baling-press, a baling chamber having within it a vertically reciprocating follower with a cross-bar, in combination with hinged side doors affording access to the baling chamber, the means for locking said doors and tripping them again, consisting of the pivoted latch levers on the end of the frame engaging the doors, the spring for holding the latch levers closed and the contact piece in the path of the cross-bar of the follower whereby the latch levers are released as the follower moves, and the means for holding the contact piece out of the way of the cross-bar until the last charge is forced into the baling chamber, consisting of the swinging stop piece adapted to move behind and to force outwardly the contact piece from the path of the follower cross-bar.

In witness whereof I have hereunto set my hand.

JOSE JACINTHO MATHIAS.

Witnesses:

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JOHN VAILADAO.