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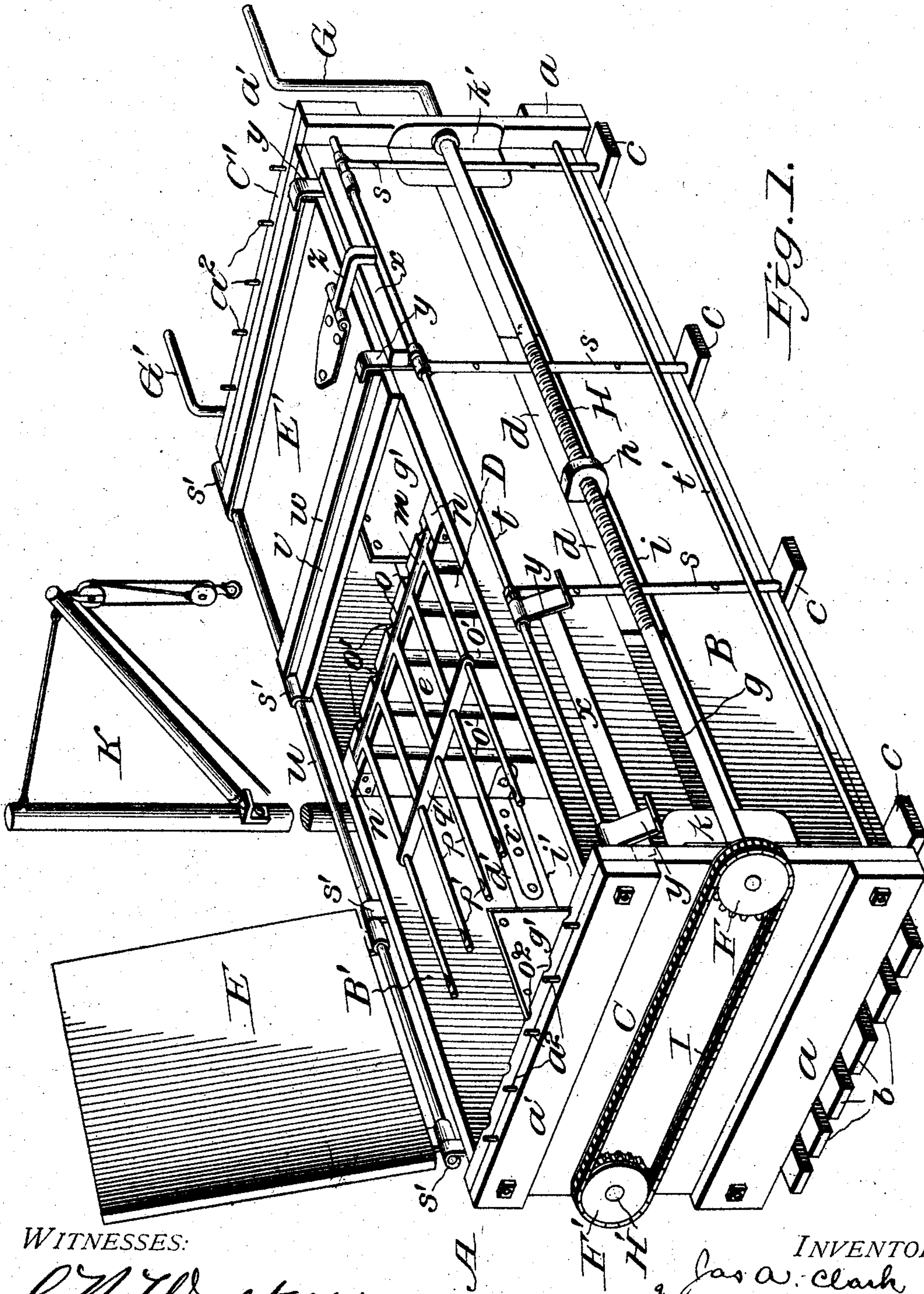
PATENTED DEC. 27, 1904.

J. A. CLARK & W. E. BEACH.

BALING PRESS.

APPLICATION FILED MAR. 30, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

C. N. Walker,

J. T. Walker.

INVENTORS

INVENTORS
Jas A. Clark
Walter E. Beach
BY
Victor H. Mallon
Attorney

Attorney

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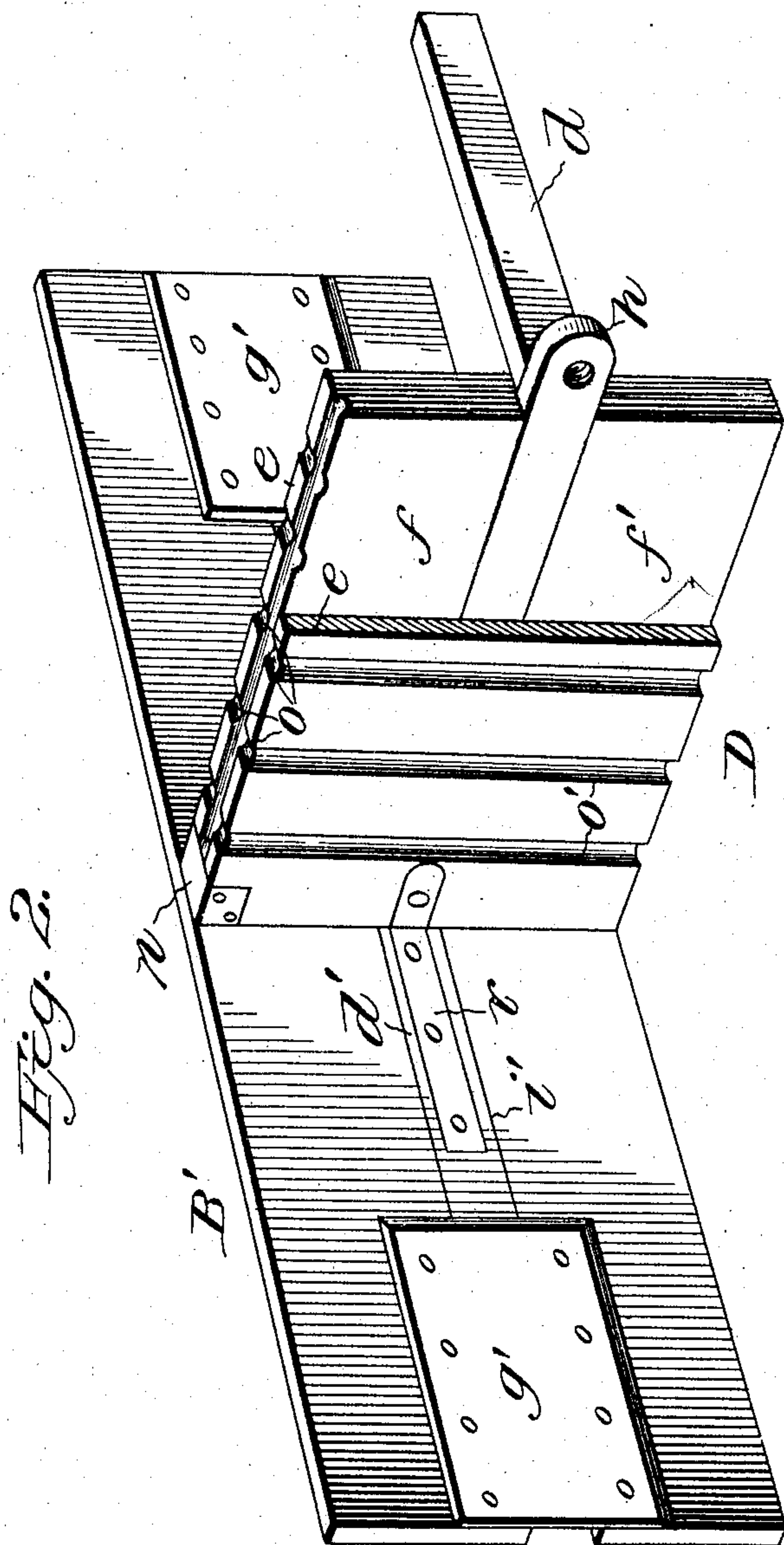
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Walter E. Beach
BY
Victor H. Mawar
Attorney

UNITED STATES PATENT OFFICE.

JAMES A. CLARK AND WALTER E. BEACH, OF RINGWOOD, OKLAHOMA TERRITORY.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 778,446, dated December 27, 1904.

Application filed March 30, 1904. Serial No. 200,783.

To all whom it may concern:

Be it known that we, JAMES A. CLARK and WALTER E. BEACH, citizens of the United States, residing at Ringwood, in the county of Woods and Territory of Oklahoma, have invented a new and useful Improvement in Baling-Presses, of which the following is a specification.

The invention relates to baling-presses which may be adapted to compress various products, but is particularly applicable to broom-corn presses, and is intended to produce a strong, simple, and improved device of this character wherein by means of two oppositely-disposed baling-chambers and a reciprocating follower the material in one baling-chamber is compressed while the other is receiving its charge.

The invention consists of certain novel features of construction, as hereinafter set forth and described, and especially pointed out in the claims.

In the drawings, Figure 1 is a perspective view of our press, showing one of the baling-chambers open and the other closed. Fig. 2 is a detailed perspective view of the follower with one of its faces partially broken away, showing its construction and the manner in which it is attached to the press-box.

A represents the press-box. It is constructed of wood or other suitable material, is rectangular in cross-section, and in use is arranged horizontally, as shown. It is divided into two oppositely-disposed baling-chambers or compartments by means of a reciprocating follower D. The follower is formed of two oppositely-disposed faces e e , securely bolted or otherwise fastened to inner portions f and f' , having a metal bar h dividing and passing centrally between them and projecting beyond the perpendicular edges of the follower, as shown in Fig. 2. These projections of the bar h when the follower is attached to the press pass through two parallel longitudinal slots i and i' , formed in and extending throughout the entire length of each of the sides B and B' of the press-box. The slots i and i' are so arranged as to register one with the other and are of sufficient width

to permit the projections of the follower-bar to pass backward and forward along them without friction. These projections of the follower-bar each extend beyond the outer faces of the sides B and B' of the press-box and there by means of screw-threads formed in them engage and travel upon similar parallel screw-threaded shafts H and H', longitudinally disposed upon each side of the press-box. These shafts H and H' are only screw-threaded for about two-fifths of their length in the center, thus preventing the follower and its attachments from jamming against either end of the press-box.

The ends C and C' of the press-box project slightly beyond its sides and are reinforced at their top and bottom by the strips a and a' . These strips a and a' are provided with a series of studs a^2 , fastened in their upper edges opposite the extremities of the grooves o^2 , hereinafter described. Secured to the outer faces of the sides B and B' at their extremities, and to the inner projecting faces of the ends C and C' are the angle-plates k and k' , so arranged as to cover the slots i and i' for a short distance at each end. The shafts H and H' are diminished near their extremities, and these diminished portions pass through and are journaled in the angle-plates k and k' and the projecting portions of the ends C and C', and each shaft correspondingly terminates in a sprocket-wheel F and F', respectively, at one end and at the other in a hand-crank G and G', respectively. These hand-cranks are adapted to rotate the shafts in either direction and to thereby cause the follower to move backward or forward, as desired. The two sprocket-wheels F and F' are of like diameter and are operatively connected by the sprocket-chain I.

The upper edge of the follower has a longitudinal groove running through its center, and extending from end to end of this groove is the rod m , having its extremities journaled under the metal caps or plates n , fastened to the ends of the upper edge of the follower. The longitudinal groove is intersected at right angles by the transverse grooves o , which are of equal depth therewith and may be of any

desired number. Each of these transverse grooves o meets a vertical groove o' , formed in each face of the follower. A corresponding series of vertical grooves o'' is formed in the inner face of each end of the press-box, and both the grooves o' and o'' are so disposed that the lower extremities of like grooves in each series meet a common slot formed in the bottom of the press-box. Resting in the grooves o and projecting from and formed integral with the rod m are a corresponding number of parallel rods or fingers p , which may be braced together by a cross-piece q , the whole forming a "finger-board." The fingers of the finger-board are of such length that when it is swung either to one side or the other of the press and the door upon that side closed their extremities will be held beneath that door. Each finger is provided at its outer extremity with an eye p' .

Fastened upon the inner faces of the sides B and B' at their ends and so disposed as to cover for a suitable distance the extremities of the slots i and i' are the plates g and g' . Fitted within the slots i and i' are the oblong blocks d and d' , two on each side. These blocks are rectangular in cross-section. They bear against each face of the projections of the follower-bar, and their own inner faces are cut away through a portion of their length, and in the depressions thus formed are seated and firmly secured the metal strips r . These strips have their inner extremities bent at right angles, and the projecting portions thus formed are bolted or otherwise secured to the respective faces of the follower. The blocks d and d' are so arranged that they slide backward and forward in the slots i and i' , which serve as guides for them. The length of the blocks d and d' is so adjusted with relation to the guiding-slots that when the follower is at a point equally distant between the two ends of the baling-box these blocks do not extend throughout the entire length of the slots. The distance between the outer ends of the blocks and the end walls of the press-box then marks the distance through which the follower may travel in either direction. The length of these blocks and of the inner plates g and g' is so adjusted with relation to each other that when the follower has been moved to the utmost point of compression in either direction the extremities of all the blocks will still be covered from within by the plates, thus always keeping the slots closed from within, so that none of the material to be baled can ever protrude through the sides of the press, and thus interfere with its operation or destroy the symmetry of the completed bale.

The bottom of the press-box is formed of a series of spaced strips b . (Shown in the drawings as extending slightly beyond the body of the press.) These strips are of such number and are so disposed that the spaced intervals

between them will form a series of slots corresponding with and meeting the lower extremities of the series of grooves o' and o'' , formed in the follower and the ends of the press-box, as before described. The strips b are reinforced by four cross-pieces c , arranged one at each end of the bottom of the press-box and the other two at such intervals as to engage the lower screw-threaded ends of the metal strips s and s' , which pass through them and are secured on the under side by suitable nuts. (Not shown in the drawings.)

The press-box is strengthened by means of longitudinal brace-rods t and t' , which extend from end to end of the press on each side of the top and bottom and are secured on the outer faces of the ends of the press by means of bolt-heads and nuts. The press at its rear side is also provided with a third longitudinal rod u , running from end to end, disposed a little above the plane of the top edge of the rear wall of the press-box and secured in eyes formed on the extended ends of the metal strips s' . To this rod u are hinged the doors E and E' of the respective baling-chambers of the press-box. These doors are so placed that when shut they completely close the baling-chambers at their ends; but they are not of sufficient width to extend to the center of the press-box, which is consequently left open. The reason for this construction is that when the material in one chamber is under pressure the follower is forced beyond the center line of the press, so that if the doors of the baling-chambers extended to the center line of the press the door of the chamber under pressure would overlap the empty chamber and interfere with the charging and the placing of the binding-wires. These doors E and E' are provided on their upper faces with raised rectangular pieces v , extending from front to rear and having the metal strips w bolted to them. These strips extend beyond the rear edge of the doors, where they are bent into eyes and loosely engage the rod u and serve as hinges for the doors. They are held against longitudinal displacement by means of the strips s' , which bear against the outer side of each hinge, respectively.

At the front of the press-box the rectangular bars x are hinged to the upper brace-rod t by means of the metal strips y , to which they are secured. These strips have their outer ends bent at right angles forming lugs and are of such length and so disposed with relation to the doors E and E' that when these doors are closed and the hinged bars x swung upward these lugs will closely fit over and engage the ends of the metal strips w , and thus prevent the doors from being opened until the blocks x are swung outward and downward and the lugs thus disengaged. Hinged to the top surface of each of the doors is a hook z , having its point bent at right angles to the shank and being preferably rec-

tangular in cross-section throughout. This hook is so placed that when the bar x is swung upward as far as possible and the lugs upon the ends of the strips y have engaged the doors as above described its bent portion will just pass over and closely bear against and engage the vertical outer face of the bar, thus absolutely locking the door and enabling it to resist any upward strain to which it may be subjected incident to the operation of the press and yet permitting the same to be readily and speedily opened. The bar x and the hinges to which it is attached are held against longitudinal displacement by means of the four strips s , which are so disposed that one will bear against the outer side of each hinge respectively. These strips s at the front and the corresponding strips s' at the back of the press are placed in relatively the same positions and all are bolted or otherwise fastened to the sides of the press-box and extend through the cross-pieces c and are secured on their under sides, as before described, thus giving additional rigidity and strength to the press-box.

When the press is in operation, the door of the baling-chamber to be charged is opened. Loops are formed in one end of the binding-wires, and these loops are passed over the studs a^2 in the ends of the press-box. The finger-board is lifted into a perpendicular position, and the other ends of the binding-wires are passed through the eyes formed in the extremities of the fingers, and the intermediate portions of the binding-wires are disposed so as to rest in the grooves formed in the inner face of the end of the press-box and the opposed face of the follower and in the slots in the bottom of the press-box. The baling-chamber is then filled with loose material and the finger-board swung down over the charged end of the press, where it will rest on top of the proposed bale and there hold the ends of the binding-wires in position. The door of the baling-chamber is closed and the bar x and the hook z adjusted. The hand-cranks G and G' are then turned, so as to move the follower toward the charged end of the press until a sufficient degree of pressure has been exerted and the bale reduced to proper size.

As before explained, the doors of the baling-chambers do not extend to the central portion of the press-box, which is left open; but when the loose material is fed into one of the chambers and the finger-board swung to that side and the door closed upon the ends of the fingers the material in the open portion of the press is held under the fingers of the finger-board, which slide beneath the closed door as this open space is reduced through pressure. It has been found in practice that when the bale has been finally reduced and the operation of the press stopped the door of the charged baling-chamber may be opened before the binding-wires have been

fastened without danger of the compressed bale bulging upward.

Through the forward travel of the follower incident to the compression of the bale the extremities of the fingers of the finger-board will have been brought to or almost to the end of the press when the bale is sufficiently reduced, thus bringing the two opposite ends of the different binding-wires together or almost together and in such a position that they can be readily fastened to each other when the door of the baling-chamber is opened. While the material in one end of the press is being compressed the other baling-chamber may be opened and filled, and when the first bale is completed the operation of the press can be reversed. When the pressure is removed, the completed bale is lifted from the press by means of the derrick and crane K .

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a baling-press, the combination of a press-box having parallel, longitudinal slots in its sides, a reciprocating follower located in the press-box, means attached to the follower for forcing the ends of baling-wires together, projections on the follower extending through the slots and engaging threaded shafts, means for operating the shafts, blocks attached to the follower and traveling in the slots, plates secured to the inner faces of the sides and covering each extremity of the slots, doors hinged to the press-box, and means for fastening the doors, comprising hinged bars carrying lugs adapted to engage the doors and hooks fastened to the doors and adapted to engage the hinged bars, substantially as set forth and for the purpose described.

2. In a baling-press, the combination of a press-box with a follower adapted to travel therein, and provided with means for forcing the inner ends of binding-wires forward in its line of travel, and over the upper surface of the material to be baled, comprising a rod longitudinally disposed upon the upper edge of the follower and having its extremities journaled thereto, together with a series of parallel integral rods spaced upon this longitudinal rod, and extending at right angles thereto, substantially as described.

3. In a baling-press having oppositely-disposed baling-chambers, the combination of a reciprocating follower with a device for attaching binding-wires, comprising a rod longitudinally disposed upon the upper edge of the follower, and having its extremities journaled thereto, together with a series of parallel, integral rods spaced upon the longitudinal rod and extending at right angles thereto, and having means for engaging the ends of binding-wires, and adapted to project from either face of the follower into its line of travel, substantially as described.

4. In a baling-press, the combination of a

press-box having oppositely-disposed baling-chambers, doors hinged to the press-box and means for fastening the doors, comprising hinged bars having lugs adapted to engage
5 the upper surface of the doors, and hooks fastened to the doors and adapted to engage the hinged bars, substantially as described.

In testimony whereof we have signed our

names to this specification in the presence of two subscribing witnesses.

JAMES A. CLARK.
WALTER E. BEACH.

Witnesses:

C. L. WALTERS,
J. W. COURTNEY.