

(No Model.)

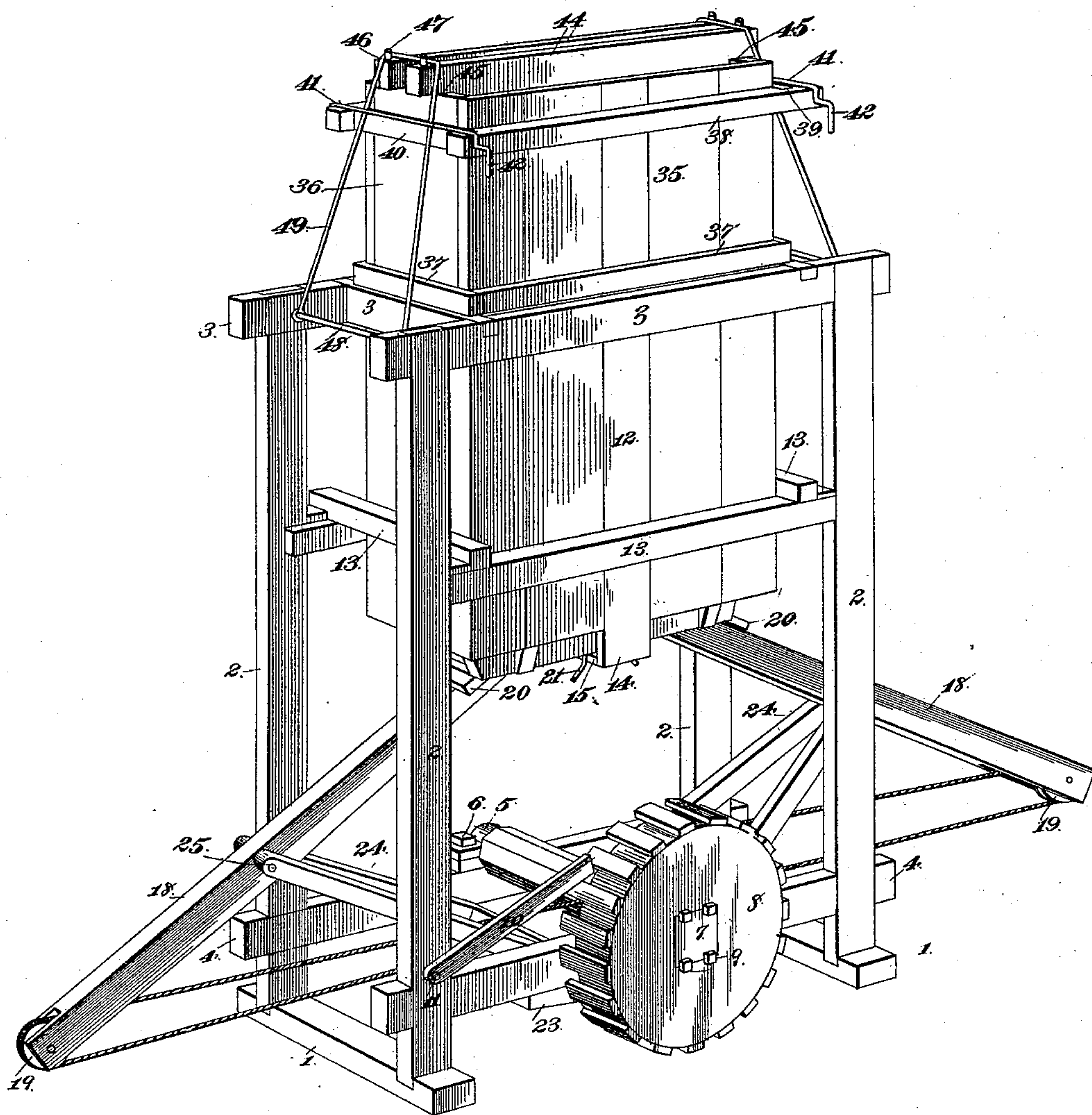
2 Sheets—Sheet 1.

P. B. MARSH.
COTTON PRESS.

No. 478,755.

Patented July 12, 1892.

Fig. 1.



Witnesses

M. E. Fowler

J. S. Duwall

Inventor

Pickens B. Marsh

By his Attorneys,

C. A. Snow & Co.

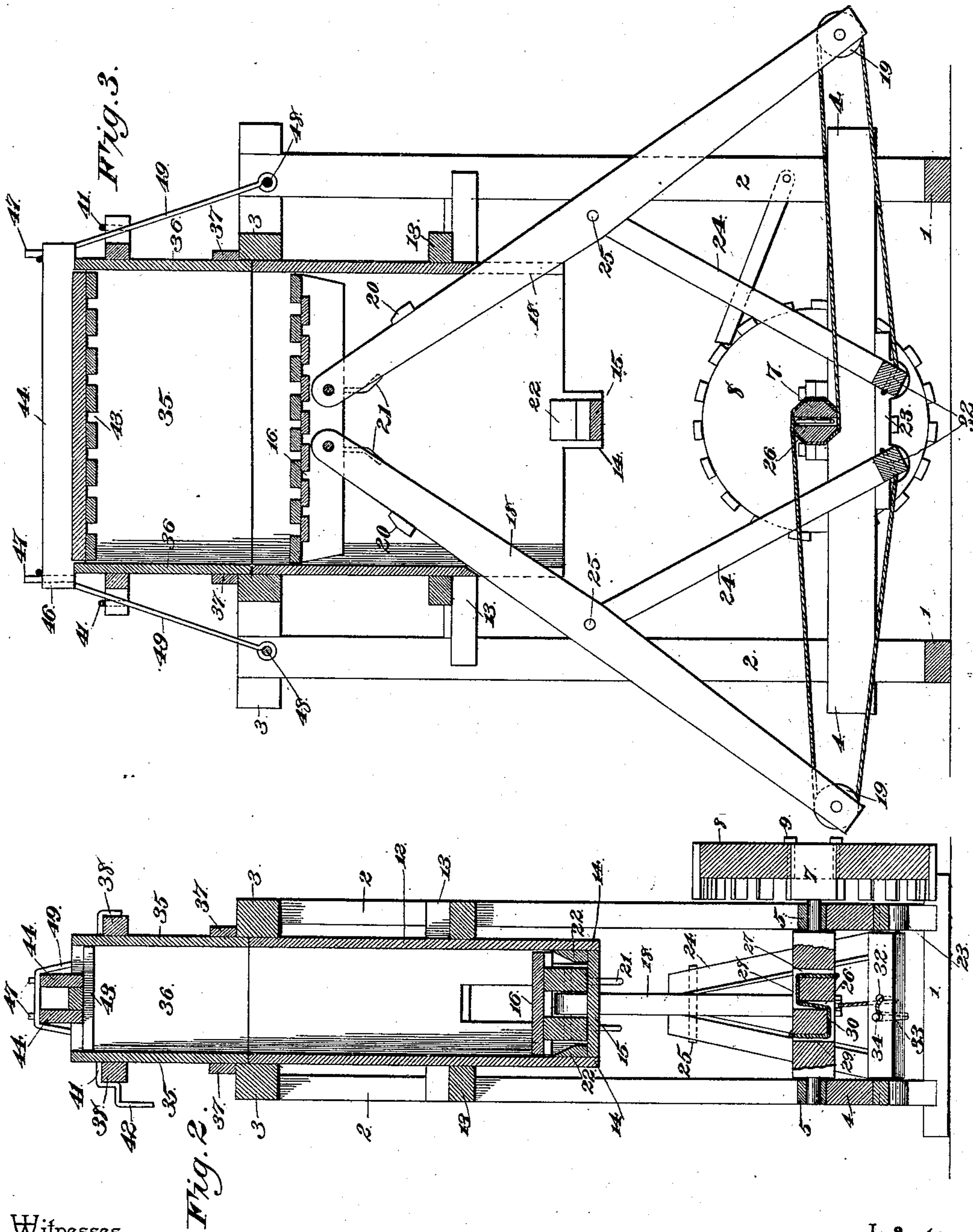
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UNITED STATES PATENT OFFICE.

PICKENS BUTLER MARSH, OF GRANITEVILLE, SOUTH CAROLINA, ASSIGNOR
OF ONE-HALF TO WILLIAM O. TATUM, OF SAME PLACE.

COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 478,755, dated July 12, 1892.

Application filed December 4, 1891. Serial No. 414,020. (No model.)

To all whom it may concern:

Be it known that I, PICKENS BUTLER MARSH, a citizen of the United States, residing at Graniteville, in the county of Aiken and State of South Carolina, have invented a new and useful Improvement in Cotton-Presses, of which the following is a specification.

This invention relates to improvements in baling-presses, and to that particular class thereof known as "toggle-joint" and used in forming plantation bales.

The objects of my invention are to simplify and cheapen the construction of the press as a whole, reduce the number of parts, and adapt the press to be more conveniently operated than presses of this class usually are.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of a baling-press constructed in accordance with my invention. Fig. 2 is a vertical transverse sectional view of the same. Fig. 3 is a vertical longitudinal sectional view of the same.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the pair of opposite transverse end sills, into the upper sides of which, near their ends, are let opposite pairs of vertically-disposed standards or posts 2, the upper ends of which are connected by a pair of opposite longitudinal beams 3, the beams and standards being let into each other. Immediately above the end sills 1 longitudinal beams 4 connect each pair of longitudinally-opposite standards 2, the standards and beams being let into each other, as shown.

Upon the upper sides of the longitudinal beams 4 and at the centers thereof there is secured a pair of journal-boxes 5 by means of lag-screws 6. In these boxes is journaled a transverse power-shaft 7, one end of which extends beyond one of the bearing-boxes 5, is squared, and receives a drive-wheel 8, keyed to the shaft by lag-bolts 9, whereby the wheel may be readily removed. A locking-pawl 10 is pivoted at 11 to one of the standards 2 and at its free end rides over the toothed periph-

ery of the wheel or pulley 8. This wheel or pulley 8 may be driven by any suitable motor or may be connected to the gin-operating mechanism by any suitable intermediate power-conveying machinery.

12 designates the rectangular packing-box of the press, and the same is embraced upon its four sides by the upper transverse and longitudinal beams 3 and opposite and lower longitudinal and transverse beams 13, which, like the beams 3, are let into the standards 2. The opposite side walls of the box 12 have their center planks extended downwardly, as at 14, below the bottom edge of the box, and are connected below the box by a transverse rest 15. Within the box there is mounted the follower 16, and to the same, at opposite sides of its center, there are pivoted, as at 17, follower operating levers 18, which extend at opposite sides of the rest, are bifurcated at their outer extremities, and have journaled therein loose grooved pulleys 19. Upon the outer edges and near their upper ends beveled rest-blocks 20 are located, the same receiving and forming a support for the follower when the same is wholly lowered. The follower is also provided at opposite sides of its center with curved embracing rods or guides 21, designed to loosely embrace the opposite edges of the rest 15, by which the block is maintained in the center of the box. At the angles between the planks 14 and the rest 15 inclined guide-blocks 22 are located, which guide-blocks serve to maintain the follower in the transverse center of the box 12 when the same is in its lowest position. By means of these guide-rods and guide-blocks the follower is prevented from buckling or becoming locked within the chamber at the beginning of its upward movement, as is often the case in this class of presses, and to the contrary said block is maintained in the center of the box and hence can have no contact with the edges or side walls of the box.

In journal-boxes 23, secured by lag-screws to the under side of the longitudinal beams 4, are mounted the opposite trunnions of a pair of twin-levers 24, the upper ends of which embrace and are pivoted to the centers of the main levers 18, as at 25.

The windlass-shaft 7 is provided with three openings, the center opening 26 being connected at one end to the corresponding end of one of the side openings 27 by a groove or channel 28 and to the opposite side opening 29 at its opposite end by a groove or channel 30. A cable 31 has one end passed through the central opening, follows the groove or channel 28, and, oppositely passed through the opening 27, continues from said opening outwardly over the pulley 19 of one of the levers 18, and thence inwardly, where it is secured by means, hereinafter described, to the inner or pivoted end of the adjacent twin or fulcrum lever 24. The opposite terminal of the cable passes through the groove or channel 30, thence through the perforation 29 to the opposite side of the press over the remaining pulley 19 of the main lever 18, thence inwardly, and is connected to the inner end of the twin or fulcrum lever 24 at that side of the press. At the inner ends of these fulcrum-levers 24 pairs of perforations 32 and 33 are formed, and the ends of the cables are passed through one of the perforations and into the other—for instance, the perforation 33, in which they terminate—and into said latter perforations tapered securing-pins 34 are driven in a removable manner, but sufficiently tight to lock the cables in position. It will be obvious that the cables may be adjusted by removing the pins, arranging the cables, and re-driving the pins. It will also be obvious that as the main pulley 8 is revolved the cable will be wound in opposite directions upon the windlass-shaft 7, and thus the lower ends of the main levers 18 will be drawn inwardly. In their inward swinging the main levers 18 are brought from an inclined to a vertical position, or substantially so, and the twin levers 24 serve as fulcrums for the main levers and swing inwardly with them. Such movement upon the part of the main levers, it will be obvious, will cause the follower to ascend, as is usual in this class of presses, and in this manner the bale is formed.

The baling-chamber comprises the opposite longitudinal side walls 35 and the opposite end walls 36, the four walls being independent and separable from each other. The side and end walls of the chamber are provided with cleats 37 upon their exteriors, and when the walls are assembled and combined to form a box fitting within the upper end of the box 12 the cleats 37 will rest upon the longitudinal and transverse beams 3 at the upper ends of the frame-work, which, as will be seen, constitute a rectangular frame for the reception of the baling-chamber. Cleats 38 are secured to the exteriors of the side walls 35 of the baling-chamber and have their ends extending beyond the ends of the side walls, and are provided with notches 39, into which take and interlock the ends of a pair of opposite end cleats 40, secured to the exteriors and near the upper edges of the end walls 36.

41 designates a pair of opposite inverted-U-shaped clamps, which embrace the cleats 38 beyond the end walls of the baling-chamber. One of the ends of each clamp is extended to form a handle 42, by which the clamp may be sprung from over the ends of the cleats 38 or sprung upon the same. When upon the cleats, it will be observed that the upper ends of the side walls 35 are prevented from spreading and from disengaging with the upper cleats 40 of the end walls, so that the chamber as a whole remains intact.

43 designates the platen or head of the press, and the same is secured to the underside of a pair of parallel longitudinally-disposed beams 44, notched at their ends, as at 45, so as to fit within the upper end of and close the baling-chamber. The ends of the beams 44 extend beyond the end walls of the baling-chamber, are perforated, as at 46, and in the perforations are mounted removable keys 47.

Upon transverse rods 48, connecting the side beams 3 at the upper end of the frame-work, there is mounted a pair of opposite U-shaped swinging locking-bails 49, the upper ends of which are adapted to swing over the extremities of the beams 45 and to be locked against removal from the beams by the keys 47, which are passed into the perforations 46 in said beams outside of the bales. It will be obvious that by removing the pins or keys the bails may be swung outwardly, the platen removed, the clamping-bars sprung from over the cleats 38 of the baling-chamber, and the walls 35 and 36 removed from around the bale which has been formed.

The operation of my invention will be readily understood from the foregoing description, in connection with the accompanying drawings, but may be briefly stated as follows: The baling-chamber is removed from the top of the box and the packing-box 12 filled with the substance to be baled, after which the baling-chamber is mounted in position upon the packing-box in the manner heretofore described, and the machinery started. The windlass-shaft revolving of course shortens the cable, which exerts equal tension upon the two levers 18, in that said cable is movable through the perforations of the windlass-shaft, so as to be strained equally at opposite sides of the shaft. As the cable is shortened, the inner ends of the main levers 18 are gradually drawn inwardly, and as they assume a vertical position the material is pressed against the platen and up into the baling-chamber. The windlass and its pulley are prevented from retrograding by the gravity-pawl 10, the free end of which, as before stated, rides loosely over the teeth of the pulley 8, and in this manner the bale is held in an elevated position during the removal of the same from the baling-chamber.

By the employment of the swinging bails for locking the platen in position I avoid the necessity of continuing the standards 2 to a point above the baling-chamber and provid-

ing the same with the usual extra side and end beams for embracing the chamber.

By constructing the press in the manner here described the same is made much lower 5 and hence more accessible, the follower is prevented from binding in the box, and after an elevation of the follower in the act of pressing a bale a release of the pulley or drive-wheel permits the parts to return by 10 gravity to their former position ready for a subsequent recharging.

Having described my invention, what I claim is—

1. In a cotton-press, the combination, with 15 the framework, the packing-box, the follower, and means for operating the same, of the baling-chamber seated in the upper end of the packing-box and comprising opposite independent and separable side and end walls, 20 longitudinal cleats secured to the side walls and extending beyond the ends of the same and provided at their inner sides with notches, transverse cleats secured to the end walls, projecting beyond the same and at their ends 25 adapted to engage with the notches, and means for locking the side walls against separation, substantially as specified.

2. In a cotton-press, the combination, with 30 the framework, the packing-box, the follower, and means for operating the same, of the baling-chamber seated in the upper end of the packing-box and comprising opposite independent and separable side and end walls, longitudinal cleats secured to the side walls 35 and extending beyond the ends of the same

and provided at their inner sides with notches, transverse cleats secured to the end walls, projecting beyond the same and at their ends adapted to engage with the notches, and inverted-U-shaped clamps sprung over and connecting the ends of the longitudinal cleats, 40 substantially as specified.

3. In a cotton-press, the combination, with the framework, the packing-box having its central planks of its opposite sides depending 45 from its lower edge, and a rest-strip connecting the lower ends of the planks, of a follower mounted for reciprocation in the box, levers pivoted to and adapted to operate the plunger and located at opposite sides of the rest, and 50 means for operating the levers, substantially as specified.

4. In a cotton-press, the combination, with the framework, the packing-box having the depending central planks, and the rest-bar 55 connecting the same, of the follower located in the packing-box, the diverging guides depending from the follower and adapted to embrace the rest-bar, the inclined guide-blocks located at the ends of the rest-bar, the levers 60 for raising and lowering the follower, and means for operating the levers, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 65 the presence of two witnesses.

PICKENS BUTLER MARSH.

Witnesses:

M. B. WOODWARD,
G. W. FOSTER.