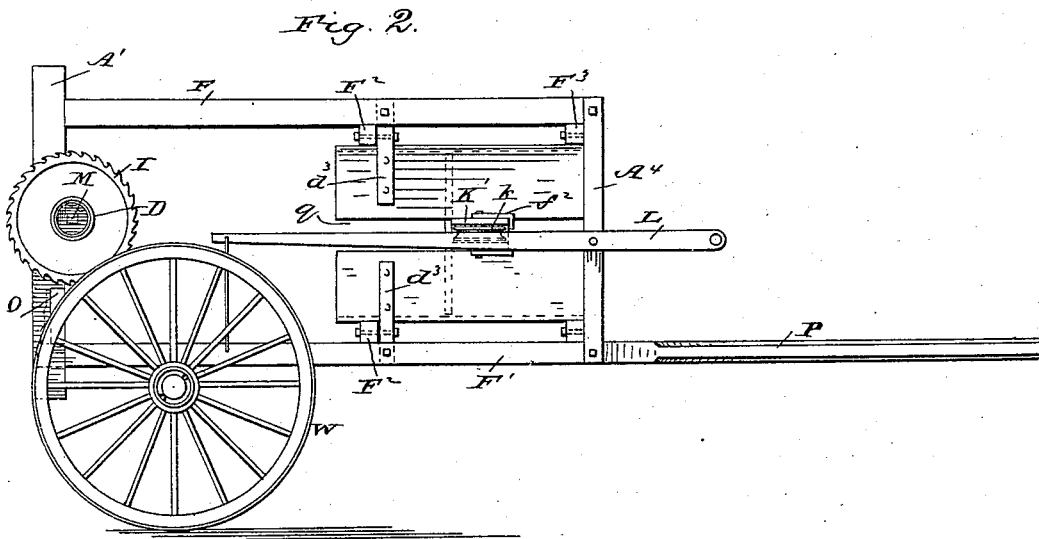
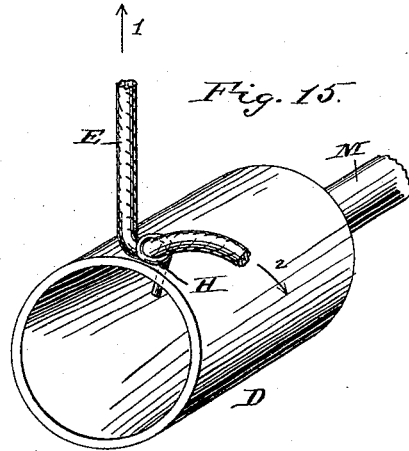
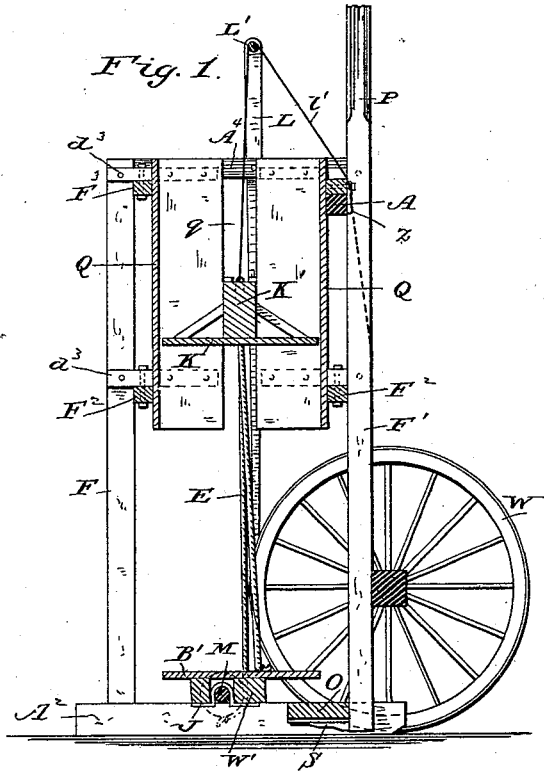


H. O. KING.  
COTTON PRESS.

No. 307,858.

Patented Nov. 11, 1884.



Witnesses:  
*E. D. Smith*  
*J. Waller Blandford*

Inventor.  
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*att.*

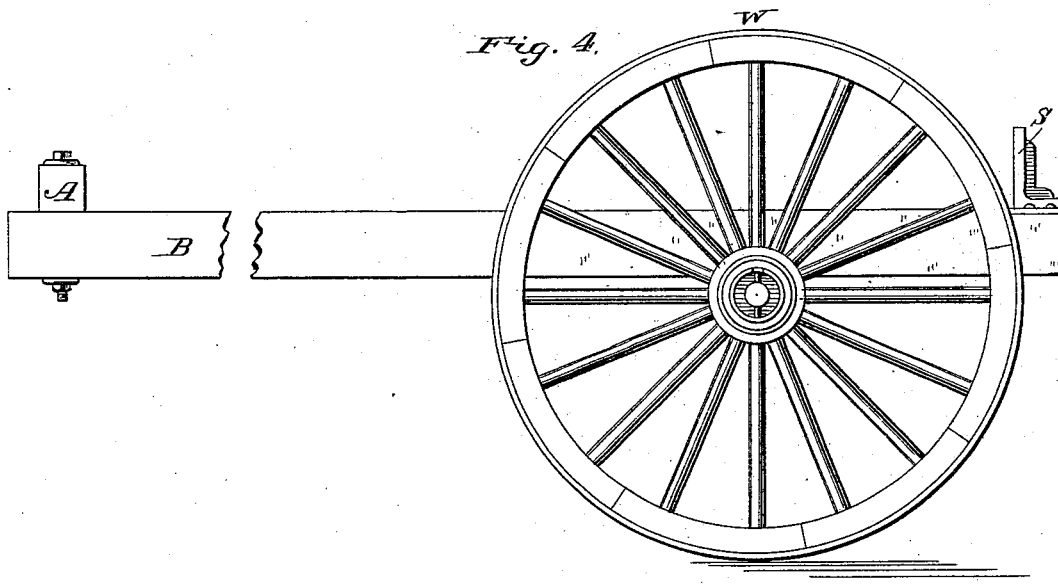
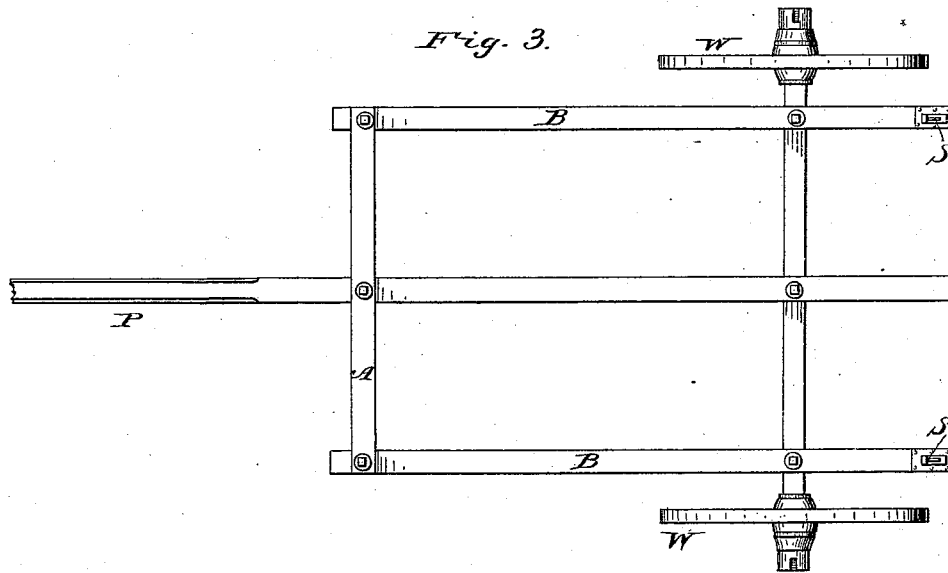
(No Model.)

4 Sheets—Sheet 2.

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No. 307,858.

Patented Nov. 11, 1884.



*witnesses:*

*E. D. Smith*  
*Alice L. Low*

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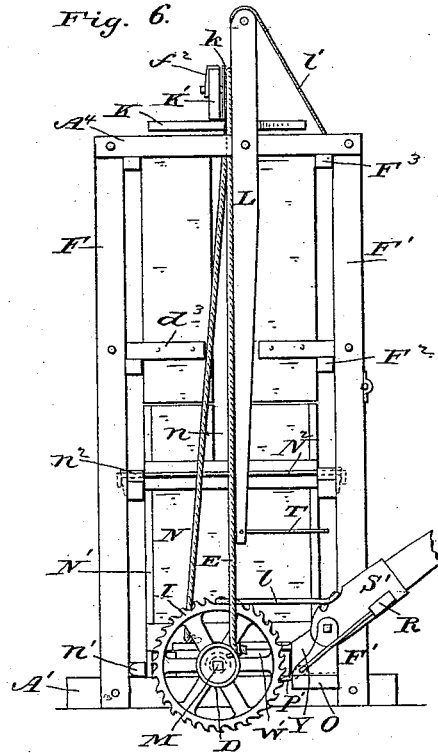
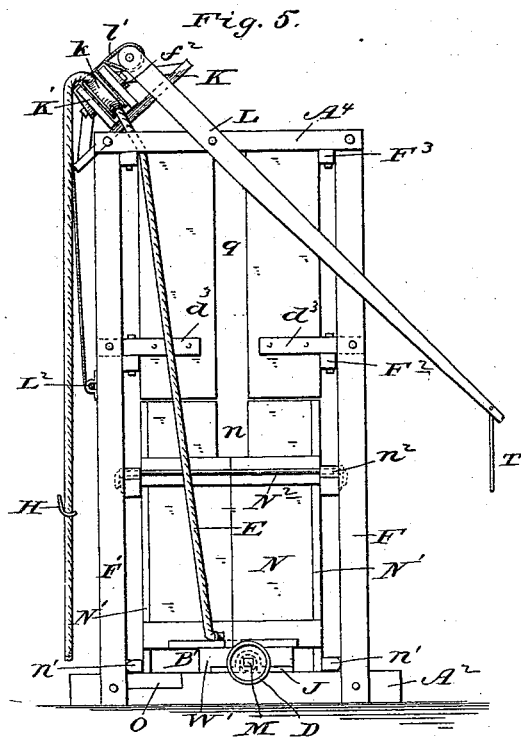
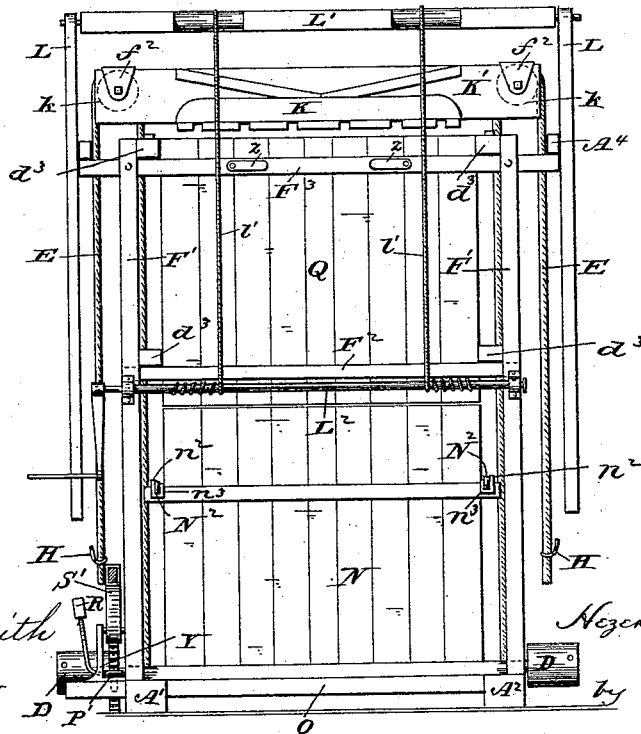


Fig. 7.



Witnesses:

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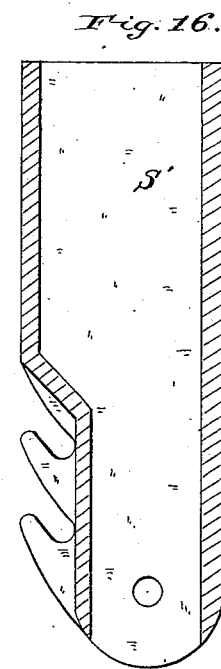
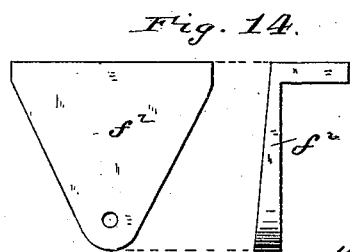
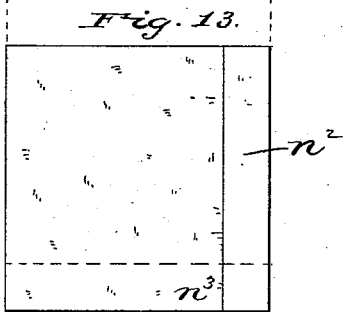
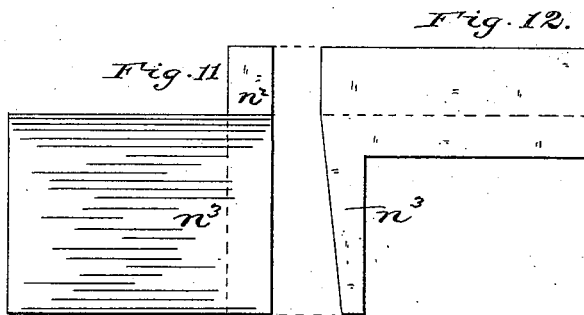
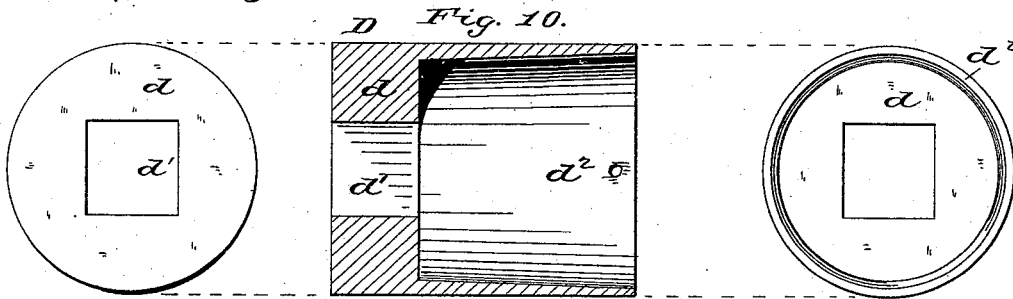
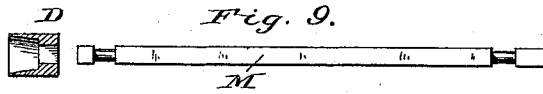
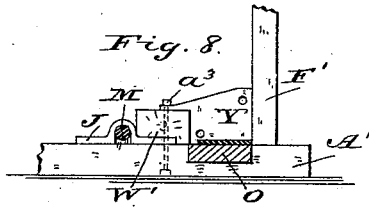
(No Model.)

4 Sheets—Sheet 4.

H. O. KING.  
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No. 307,858.

Patented Nov. 11, 1884.



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by H. N. Low  
att.

# UNITED STATES PATENT OFFICE.

HEZEKIAH O. KING, OF GREENVILLE, SOUTH CAROLINA, ASSIGNOR OF  
ONE-HALF TO BRIGGS, MILLS & CO., OF SAME PLACE.

## COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 307,858, dated November 11, 1884.

Application filed March 25, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, HEZEKIAH O. KING, a citizen of the United States, residing at Greenville, in the county of Greenville and State of South Carolina, have invented certain new and useful Improvements in Cotton-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of cotton-presses in which the follower is drawn down through the press-box by means of winding mechanism situated in the bottom of the press, whereby ropes connected with said follower are wound up.

The objects of my invention are to provide a means for conveniently transporting the cotton-press; to simplify and stiffen the framing of the press at various points where, as hitherto made, it has been found defective; to increase the convenience, efficiency, and strength of the devices for operating the winding-shaft; to improve the construction of devices for removing the follower from the press-box; and to secure other advantages in the details of the construction of the press, as will be explained.

In order to fully describe my invention, I have shown in the accompanying drawings a method of carrying it into effect.

In said drawings, Figure 1 is a vertical cross-section of the press and transporting-truck, the latter being shown in its tilted position for taking up the press. Fig. 2 is an end elevation of the press and truck in position for transportation. Fig. 3 is a plan view of the transporting-truck. Fig. 4 is a side view of the same. Fig. 5 is an end elevation of the press detached. Fig. 6 is an elevation of the opposite end, showing the devices for operating the winding-shaft. Fig. 7 is a side elevation. Fig. 8 is an end view of a portion of the lower part of the frame, showing the bearing of the winding-shaft and fulcrum of the operating-lever. Fig. 9 is a plan view of the winding-shaft, showing one of the drums detached. Fig. 10 illustrates by two end elevations and a section the construction of the winding-drum.

Fig. 11 is a side view of one of the ears or cuffs which assist in holding the walls of the lower section of the press-box together. Figs. 12 and 13 are end and plan views of the same. Fig. 14 shows a side and end view of one of the lugs for holding the pulleys in the ends of the follower. Fig. 15 is a view of the eye or clamp for attaching the ropes to the winding-drums. Fig. 16 is a vertical section of a portion of the winding-lever.

A B P represent the frame, and W the wheels, of the two-wheeled transporting-truck.

S S are brackets projecting upwardly from the rear end of said frame. They become horizontal when the truck is tilted in the position shown in Fig. 1, and are then adapted to be inserted under the lower sill of the press. The upper end of the press is then secured to the frame of the truck, which is constructed to fit that of the press by means of a button, bolt, or other equivalent fastening, *z.* The truck may then be brought down into its normal position, as shown in Fig. 2, and the press transported at will. It will be understood that the truck must be properly proportioned relative to the press—that is to say, the axle of the truck must be so situated upon its frame that after being taken up the press shall be approximately balanced upon the axle. As the lower part of the press is considerably heavier than the upper on account of the weight of the bottom sills, bed-block, and winding-shaft, said axle should be placed at a distance from the rear end of the truck equal to about one-quarter of the height of the press, and the wheels W should be made of a corresponding radius.

A' A<sup>2</sup> are the bottom cross-sills of the press-frame, and W' the central longitudinal sill or bed-block, made in one or more parts, mounted upon the top of the sills A' A<sup>2</sup>, and supporting the bed B', against which the bale is pressed.

O is a supplemental longitudinal sill, situated at one side of the middle line of the press, and firmly mortised into and connecting the sills A' A<sup>2</sup>. This sill O is conveniently situated to afford a hold for the brackets S of the truck above described.

F F' F' are four uprights mortised into the outer faces of the sills A' A<sup>2</sup>, near the ends of

the latter, and connected at their upper ends by the sills  $F^3 F^3 A^4 A^4$ , and intermediately by sills  $F^2$ . By constructing this framing without mortising, as shown, I materially strengthen and simplify the framing and better adapt it to support the press-box and permit the rise and fall of the follower-beam.

K is the follower by which the bale is compressed, adapted to be drawn down through the press-box by means of ropes or chains E, passing over pulleys  $k$  in the projecting ends of the follower-beam  $K'$ , which extends beyond the end walls of the press-box through vertical openings or slots. Lugs  $f^2$  surround the axes of the pulleys  $k$  at the side of the follower-beam, and extend over onto the top thereof, to prevent its splitting under the strain of the ropes E.

I will now describe the winding mechanism by which the ropes E and follower K may be drawn down to compress the bale.

M is a longitudinal shaft mounted in bearings on the sills  $A' A^2$ , a little to one side of the middle of the press, and projecting slightly beyond the ends of the press-frame.

D are winding-drums for taking up the ropes E, mounted securely upon the ends of the shaft M and projecting some distance beyond the frame-work, in order to give sufficient room for the rope to be wound up. In moving the press these drums would be in the way, and it is therefore desirable to make them readily detachable, and at the same time insure that they shall be so firmly secured to the shaft when in use that they shall be capable of resisting the severe strain imposed upon them. Moreover, the shaft M must project but a comparatively short distance beyond the frame-work, that its ends may not be in the way when the drum is removed. To secure these ends the extremities of the shaft are made rectangular, and the drum constructed (see Fig. 10) with the solid portion  $d$ , having an aperture,  $d^1$ , to fit the shaft, and an outwardly-extending hollow portion,  $d^2$ , which gives the extent of winding-surface desired. As the whole strain of pressing the bale is borne by the winding-shaft, it has been found difficult to firmly secure it in its bearings. To obviate this difficulty I place over the top of said shaft bearing-caps J, of ordinary construction, and place upon said caps the bed-block W. The pressure of the bale upon the bed thus serves to most effectually keep the winding-shaft from gradually loosening and forcing its bearings from their sills.

For actuating the winding-shaft, I provide it with a wheel having peripheral projections, such as the ratchet-wheel I, with which an operating-lever,  $S'$ , may be connected. During the first part of the descent of the follower the resistance of the cotton is much less than during the latter part, and to save time it is desirable to move the follower faster at the beginning than when near the end of the operation. The stroke of the hand-lever being

limited by the distance for which the operator can advantageously work it, and of practically uniform length, I have accomplished the desired end by devices by which, with a uniform stroke of the operating-lever, I can obtain greater speed of the winding-shaft with less power at the first part of the operation of pressing, and less speed with greater power when toward the end of said operation. The devices mentioned consist of a plurality of notches or hooks or equivalent points of attachment upon the operating-lever  $S'$  at various distances from its fulcrum, and a link,  $l$ , whereby one or the other of them may be connected with the periphery of the wheel I. Said wheel being provided with a retaining dog or pawl  $P'$ , at the end of each downward stroke of the lever  $S'$  the wheel is held thereby, while the lever is carried up to give the link  $l$  another hold upon the periphery of the wheel I.

In releasing the bale after it is pressed, by tripping the dog  $P'$ , difficulty has been met from the fact that said dog, as usually constructed, is out of the reach of the operator, who must force down the lever  $S'$ , and so hold it till the dog has been tripped, thus necessitating that another person should disengage the dog. To obviate this I have provided said dog with an outwardly-extending handle, R, within convenient reach of the foot of a man holding the lever  $S'$ . This handle may be made to act as a counter-balance for the dog  $P'$ , which, if mounted upon the same side of the ratchet-wheel I as the lever  $S'$ , must, on account of the direction in which the teeth of said wheel point, bear inwardly and upwardly against its lower surface. A counter-balance or spring to so hold the dog is therefore necessary, as its own gravity cannot be availed of. I have, however, devised another means for releasing the finished bale, consisting of a clamping-eye, H, (see Fig. 15,) adapted to surround the rope E closely, and having a projection which may be inserted in the aperture in the drum D. When said device is in the position shown in Fig. 15, the strain upon the rope in the direction of the arrow 1 causes it to be held the more tightly by said eye, while the rope may be easily drawn through the eye in the direction of the arrow 2, to take up the slack before beginning the process of winding; or the position of the eye upon the rope may be adjusted before it is attached to the drum. On account of the subsequent coils of the rope E upon the drum, that portion of the coiled rope which is next to the eye H, and which was first wound upon the drum while the strain was comparatively slight, may be gradually worked through the eye in the direction of the arrow 1, to ease off the pressure upon the bale and release it without tripping the dog  $P'$ .

In operating the lever  $S'$  a severe strain is brought upon its fulcrum and upon the lower part of the press-frame to which said fulcrum is secured. This often results in a racking of

the frame and a loosening of the lever-fulcrum. To obviate this I place the casting Y, constructed with two vertical webs and a horizontal portion connecting them, in the inner angle of the press-frame, between the upright F' and the sill A', to which latter parts it is bolted by means of laterally-extending ears. A bolt,  $a^3$ , (see Fig. 8,) is also passed vertically through the fulcrum-casting Y, the bed-block, the winding-shaft cap, and the sill A'. All movement of the lever-fulcrum relative to the winding-shaft is thus prevented. The mortised sill O, which is firmly held from lateral movement by its mortised connection with the sills A' A<sup>2</sup>, is extended at one end beyond the face of the frame to furnish a solid additional support for the casting Y.

The press-box is formed with the usual upper and lower sections, the side walls, N', of the lower section being detachably held together by the connecting-bars N<sup>2</sup> in a well-known manner, and the end walls being held through said connecting-bars by brackets or cuffs  $n^2$  upon the side walls. Said brackets have cast with them downwardly-projecting side pieces,  $n^3$ , which are beveled, as shown, for the more secure engagement with the connecting-bars N<sup>2</sup>, but particularly to give opportunity to knock up the ends of said bars with a hammer to open the press-box.

In forming a bale it is desirable to carry the bottom of the follower some distance below the upper edge of the lower section of the press-box, in order that after the ties have been buckled and the bale released it may not by its expansion become caught between the bed and the upper section of the press-box. In order to effect this the end walls, N, of said lower section are slotted for the follower-beam, as shown at  $n$ ; but it is desirable to remove said end walls, N, of the lower section before raising the follower to close up the bale-covering at the ends, while the bale is under pressure, by sewing or by tucking it under the last tie while the latter is slack. The walls N are therefore divided vertically, whereby one division may be removed laterally from each side of the follower-beam before it is raised. The bed occupies a position raised above the upper surfaces of the bottom sills of the press-frame, and the side walls, N', of the lower press-box section have a longitudinal beam,  $n'$ , along their lower edges, the ends of which beam project beyond the uprights F' F' and rest on the bottom sills, A' A<sup>2</sup>. There is thus formed between the bed, the uprights F' F', and the beam  $n'$  what is practically a hinge-joint, on which said side walls, N', may be turned up and down, and which at the same time is very strong.

I am aware that supplemental blocks or cleats have been used to hold the lower edges of the side walls from outward movement, and I do not claim such construction.

The upper section of the press-box is made in two parts in the usual way, the side walls,

Q, being secured to the sills F<sup>2</sup> F<sup>3</sup>, and slots  $q$  being left in the end walls for the rise and fall of the follower-beam. In supporting the end walls, however, I prefer to secure them to pieces  $d^3$ , which are bolted vertically to the sills F<sup>2</sup> F<sup>3</sup> and horizontally to the uprights F' F', and extend therefrom inwardly to the slot  $q$ . I have also devised certain improvements in the devices whereby the follower may be hoisted to the mouth of the press-box and removed therefrom to admit a fresh supply of cotton.

L L are swinging arms pivoted to the ends of the press-frame, near the top, and extending upward above the mouth of the press-box.

L' is a longitudinal bearing-piece, preferably a roller, connecting the upper ends of said arms, over which piece L' ropes  $l$  are passed from the follower to a windlass, L<sup>2</sup>, secured to the side of the press-frame. By means of this windlass the follower may be hoisted from the press-box and then swung to one side, the arms L L being oscillated by a downwardly-extending lever or levers, as shown in Fig. 5. Preferably I provide the lever with a fastening, T, by which it may be held in the desired position. When in the position shown in said figure, the follower acts as a shield to prevent the escape of the cotton as the press is filled from the opposite side. Before swinging said follower to one side it may be hung to the piece L' independently of the ropes  $l$  by means of hangers  $h$ , which may be suspended upon the piece L' and passed in the form of a loop over the ends of the follower-beam, as shown, or connected therewith in some other equivalent manner.

What I claim is—

1. The combination, with a cotton-press, of a two-wheeled truck, constructed substantially as set forth, to engage with the sills of said press when tilted upon its axle into an upright position, and devices, substantially as described, for securing the upper end of said press to the truck, as set forth.

2. In a cotton-press, the combination, with the press-box, the follower, and the winding-shaft, of a wheel with peripheral projections mounted on said shaft, and a pivoted lever having hooks or notches at various distances from the fulcrum, adapted to be connected by means of a detachable link and one or the other of said notches with the periphery of said wheel, substantially as set forth.

3. In a cotton-press, the combination, with the press-box, the follower, and the winding-shaft, of a ratchet-wheel on said shaft, a pivoted lever, devices, substantially as described, for communicating the motion of said lever to the wheel, and a dog for holding said ratchet-wheel, having an outwardly-extending arm within reach of the operator, whereby it may be tripped to release the bale by an operator holding the lever, substantially as set forth.

4. In a cotton-press, the combination, with the press-box, the follower, and the winding-

shaft, of a ratchet-wheel on said shaft, a pivoted lever, a link adapted to connect said lever and wheel, and a dog for holding said ratchet-wheel, having an outwardly-extending arm, whereby it may be tripped to release the bale by an operator holding the lever, and means for holding said dog in engagement with the ratchet, substantially as set forth.

5. In a cotton-press, the combination, with the end frame, the press-box, the follower, and the winding-shaft, of a ratchet-wheel on said shaft, the casting Y, having a horizontal and two vertical webs, and secured in the inner angle of the frame near said ratchet-wheel, to stiffen the former and act as a bearing for the pivoted lever which actuates the latter, substantially as set forth.

6. In a cotton-press, the combination, with the lower cross-sills, the winding-shaft, and the bed-block mounted centrally upon the top of said sills, of the longitudinal beam O, mortised into said cross-sills at one side of the center, to brace the same, and extending beyond the end of the frame to support the fulcrum of the winding-lever, substantially as set forth.

7. In a cotton-press, the combination, with the press-box, the follower, the lower sills of the frame, and the winding-shaft mounted thereon, of bearing-caps extending over the top of said shaft, and the bed-block mounted on said sills and resting on said bearing caps, substantially as set forth.

8. In a cotton-press, the combination, with the press-box, the follower, and the winding-shaft having square or rectangular ends, of the winding-drums D, made with a solid inner end,  $d$ , and adapted to fit said shaft, and having a hollow portion,  $d^2$ , extending outwardly therefrom, said drums being detachable to facilitate the transportation of the press, substantially as set forth.

9. In a cotton-press, the combination, with the press-box, the follower, and the winding-shaft, of a drum on said shaft, having an aperture and an eye adapted to surround the compressing-rope, and having a hook or projection adapted to be inserted in said aperture, whereby said rope may be held to the drum by friction at any point of its length, substantially as set forth.

10. In a cotton-press, the combination, with the follower, having a longitudinal beam projecting through the ends of the press-box, of the lower section of said press-box, having end walls constructed with a slot in their upper ends, to permit said beam to be carried below the upper line of the lower section of the press-box, said end walls being vertically divided to permit their being withdrawn while said follower-beam is in its lowest position, substantially as set forth.

11. In a cotton-press, the combination, with the bottom sills and the four uprights of the main frame, the upper section of the press-box, and the follower, of the lower section of

the press-box, having a bed raised above the top of said bottom sills, and side pieces, the lower edges of which are provided with longitudinal beams extending beyond the inner faces of said uprights, and adapted to be held from lateral movement between the side of said bed and the uprights, substantially as set forth.

12. In a cotton-press, the combination, with the follower having a longitudinal beam, of pulleys pivoted in the ends of said beam, and metallic lugs having a horizontal portion resting upon the top of said beam, and downwardly-extending eyes encircling the axes of the pulleys, substantially as set forth.

13. In a cotton-press, the combination, with the side and end pieces of the lower section of the press-box, of metallic brackets or cuffs secured to the upper corners of the side pieces, said cuffs having an upwardly-extending end portion at the outer end, and a downwardly-extending outer side portion, beveled as described, for the engagement of the downwardly-turned end of the holding-bar, and to facilitate its disengagement, substantially as set forth.

14. In a cotton-press, the combination, with the upper section of the slotted press-box, and the follower having a longitudinal beam projecting through the slots, of the four uprights  $F F F F'$ , the horizontal sills  $F^2 F^2$ , and the transverse supports  $f$ , bolted horizontally to the inner faces of the uprights and vertically to said sills, whereby the end walls of the two portions of the upper section of the press-box are supported and the rise and fall of said follower permitted, substantially as set forth.

15. In a cotton-press, the combination, with the upper section of the slotted press-box, and the follower having a longitudinal beam projecting through the slots, of the four uprights  $F F F F'$ , the longitudinal sills  $F^3 F^3$ , secured to the inner faces of the uprights and to the sides of the upper section of the press-box, and the transverse sills  $A^4 A^4$ , bolted vertically to the faces of the sills  $F^3 F^3$ , and bolted horizontally to the outer surfaces of the uprights, whereby the two parts of the upper section of the press-box are supported, the upper end of the frame braced, and the rise and fall of the follower permitted, substantially as set forth.

16. In a cotton-press, the combination, with the main frame, the press-box, and the follower, of two swinging arms pivoted to the ends of said frame at its top, and a horizontal longitudinal piece connecting the upper ends of said arms and adapted to act as a bearing for the ropes for hoisting the follower, one or both of said arms having a downwardly-extending handle by which they may be operated, substantially as set forth.

17. In a cotton-press, the combination, with the main frame, the press-box, and the follower, of two swinging arms pivoted to the



ends of said frame at its top, a horizontal longitudinal piece connecting the upper ends of said arms and adapted to act as a bearing for the ropes for hoisting the follower, one or both  
5 of said arms having a downwardly-extending handle by which they may be oscillated, and hangers suspended upon said horizontal piece, and adapted, substantially as described, to be

connected with the follower to suspend the same, substantially as set forth. to

In testimony whereof I affix my signature in presence of two witnesses.

HEZEKIAH O. KING.

Witnesses:

EWELL A. DICK,  
H. N. Low.