

(No Model.)

3 Sheets—Sheet 1.

J. PRICE.
COTTON PRESS.

No. 474,482.

Patented May 10, 1892.

Fig. 2.

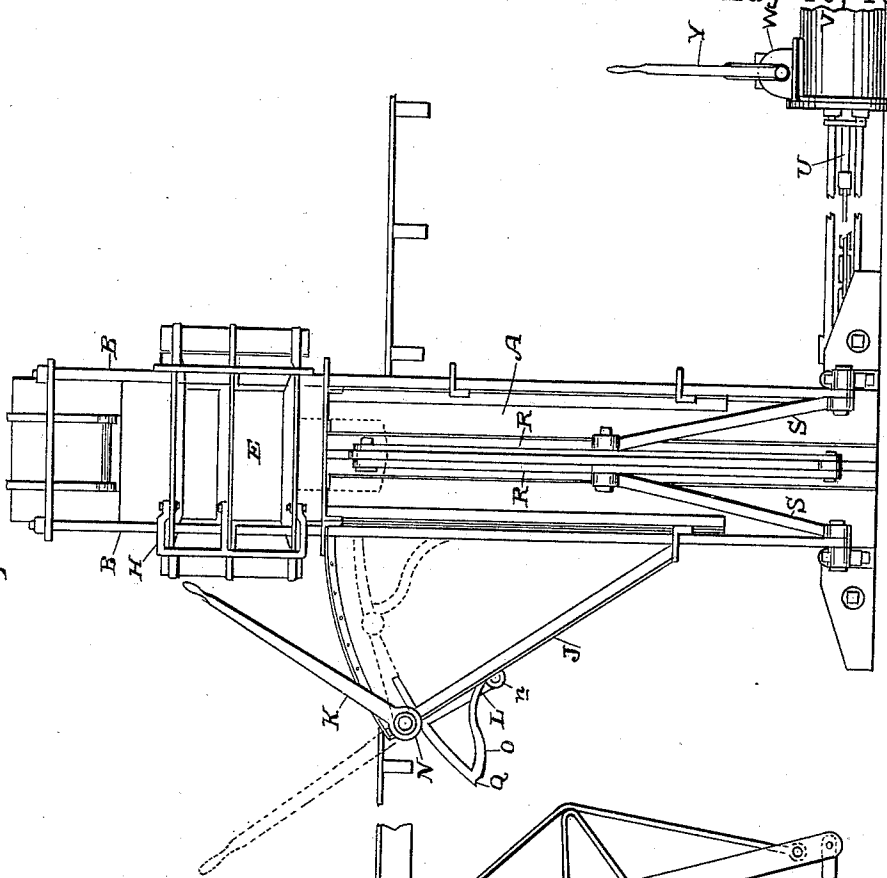
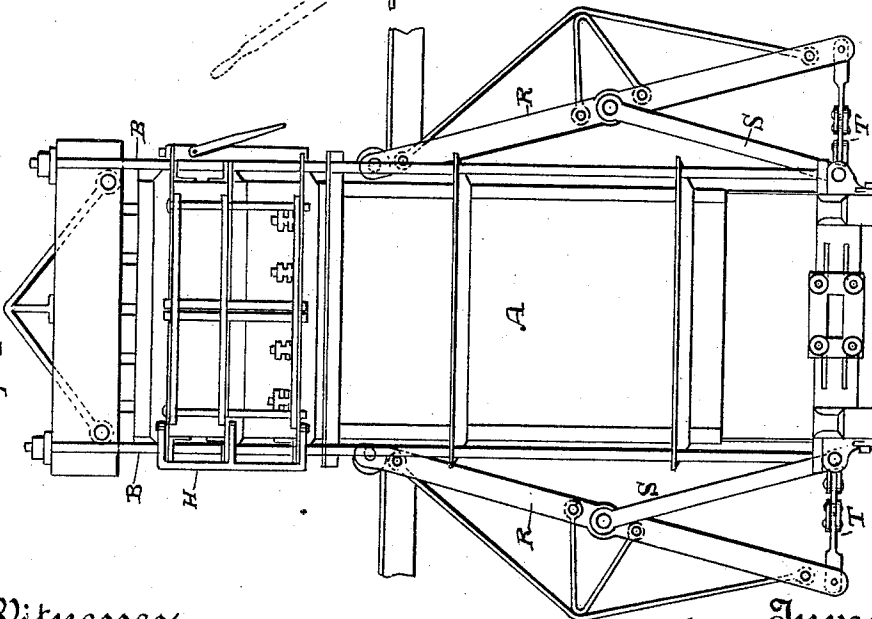


Fig. 1.



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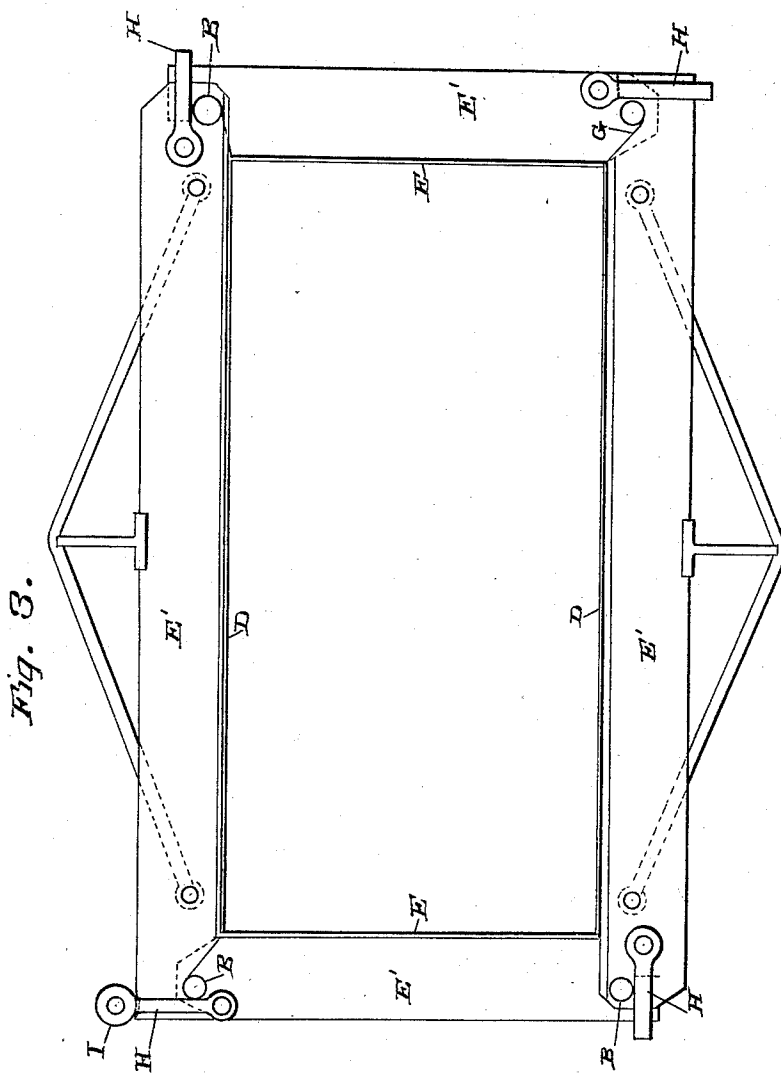
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3 Sheets—Sheet 3.

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Fig. 4.

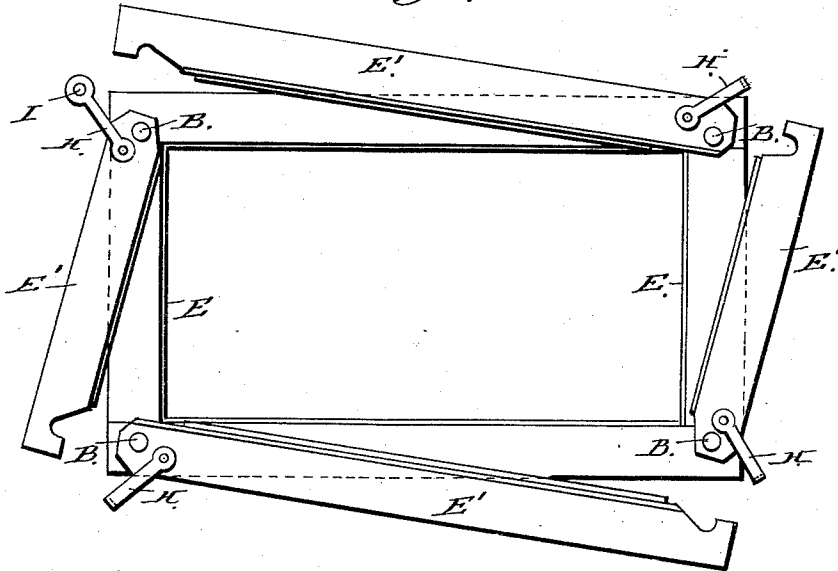
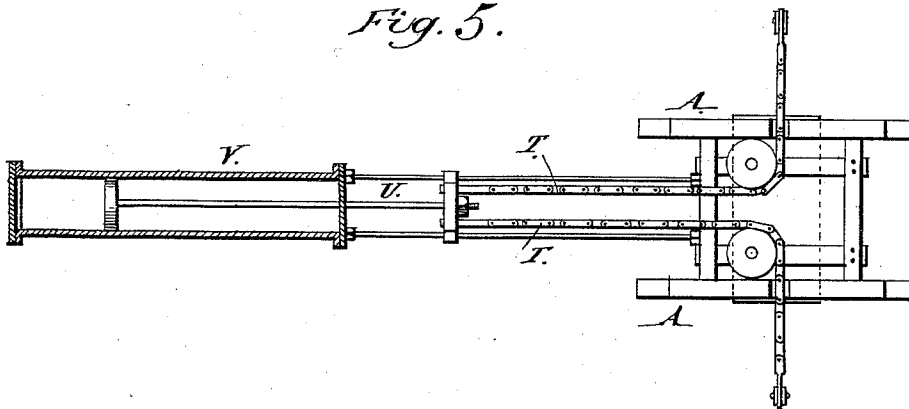


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

JACOB PRICE, OF SAN LEANDRO, CALIFORNIA.

COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 474,482, dated May 10, 1892.

Application filed September 27, 1889. Serial No. 325,278. (No model.)

To all whom it may concern:

Be it known that I, JACOB PRICE, a citizen of the United States, residing at San Leandro, Alameda county, State of California, have invented an Improvement in Cotton-Presses; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in presses, and is especially applicable to apparatus for compressing cotton into bales; and it consists of the constructions and combinations of devices which I shall hereinafter fully describe and claim.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side view of the press. Fig. 2 is an end elevation. Fig. 3 is a transverse section of the upper portion or doors of the press, showing the locking devices. Fig. 4 is a detail showing the hooks G. Fig. 5 is a detail showing the chains leading from the toggle-levers around pulleys to the pressure-cylinder.

A is the case or body of the press, which is preferably made of sheet-steel, the top and bottom being connected by four vertical rods or posts B, one at each corner or angle. To each one of these rods, at the upper end, is hinged a door, there being two side and two end doors D and E, as shown. These doors are made of steel plates having strong angle-steel beams or cleats upon the outer sides, which give them a sufficient rigidity to resist any pressure that may be brought to bear upon them. These angle-plates E' are bolted or riveted to the doors, the flanges which are bolted to the doors standing alternately upward and downward—that is to say, if the flange upon the side door projects downwardly from the horizontal flange of the angle-iron beam the flanges which are bolted to the end doors would project upwardly, which would allow the horizontal angle-plates to lie one above the other, and when the doors are opened or closed these horizontal plates would move over each other without interfering in any way. These angle-beams are pivoted or hinged, as before described, upon the vertical rods B, and their opposite ends are formed with strong hooks G, which engage with the vertical rods B, adjacent to them. Commencing at one side of the press, the side door is hinged upon

the vertical rod B, and the opposite end of this door, having the hook, engages with a rod upon that corner. The end door is hinged to that rod and has its hook formed to engage the rod upon the next corner, against which the door closes. The opposite side door is hinged upon a rod, against which this end door closes, and its hook end engages upon the next corner rod upon which in like manner the other end door is hinged, so that its hook engages with the rod, upon which the first-described side door is hinged. Each of these doors has a strong link H, pivoted to the horizontal portion of the angle-iron braces near the hinges, so that the link or yoke turns in a horizontal plane about its vertical pivot-pin. The outer end of each of these links swings over the adjacent end of the door, which closes against this hinge-rod, so that when these links have all been swung into place all the doors are held closed, each by the link upon the next adjacent one, as is plainly shown in the horizontal section, Fig. 3. One of these links H is preferably provided with an anti-friction roller I, which is journaled in its outer end, and a sufficient concavity or depression may be made in the edge of the angle-plate so that when the doors are closed this roller will lie in the depression just sufficiently to prevent its opening by accident. After a bale has been compressed and it is desirable to open those doors it is only necessary to disengage the link having the roller, which is easily done by swinging it until it is disengaged from the end of the door, which closes against the hinge-rod at that point, when that door will fly open by reason of the elasticity of the compressed bale, and as it swings about its hinge it carries the fulcrumed point of the link near its hinge outwardly, so as to allow the latter to slip off to the succeeding door, which is allowed to open in the same manner, and thus all the doors will be opened successively. The doors all depending upon each other for their fastenings, whenever any one of them is released all of them will swing open together. By hanging these doors upon vertical tension-rods B it will be seen that they form a strong brace and support for the rods when the doors are closed and while pressure is being exerted upon the contained material; but as soon as

the bale is completed the doors may be opened and a freed space left, exposing all sides of the bale, so as to allow the sacking in which it is to be inclosed to be placed around and

5 sewed upon it.

The material to be pressed is placed in the press, when the follower is at its lowest point, through an inclined swinging feed door or opening J. In order to close this door, I employ a lever K, fixed to a rock-shaft N, having short arms or levers L projecting from it. This rock-shaft is journaled between the stationary triangular sides, between which the feed-door swings upwardly and inwardly. At the end of the short arms or levers L are journaled anti-friction rollers *n*, and upon the side of the feed-door are curved projecting brackets O, against which the rollers travel when the lever-arm is moved. It will be seen that when the hand-lever K is pushed inwardly the feed-door will be allowed to drop outward, following the movements of the levers L, and when the door is to be closed by pulling the hand-lever K outwardly the anti-friction rollers upon the short levers L will traverse the curved brackets, thus forcing the feed-door into a vertical position, which closes the side of the press, and the rollers will drop into the slight concavity Q in the upper edge of each curved bracket, thus acting as a lock to prevent the door from swinging open after it is closed. The follower is forced upward, after the charge has been placed in the press, by means of the levers R and S and the chains T, connected with said levers, and passing beneath the bottom of the press, thence around friction-pulleys, and out at right angles through the side of the press, and the outer ends of the chains are connected with a cross-head upon the piston-rod U, which is connected with the piston within a steam, air, hydraulic, or other cylinder, (see Fig. 5,) which is fixed horizontally and at a suitable distance from the side of the press. Any known or desired medium may be employed for actuating a piston within this cylinder, so that its operation will act through the chains and levers and follower of the press to compress the bale.

The feed-door and the lever mechanism and chains by which the follower is operated are shown in a former patent issued to me, No. 302,355, dated July 22, 1884, and I do not claim these mechanisms in this specification; but the action of the pressure-cylinder whereby these mechanisms are operated is important, because after the bale has been compressed if the chains were suddenly released, as by the movement of a cam or lever, the elasticity of the bale would cause the parts to fly back with such velocity as to endanger them. By means of the pressure-cylinder I am enabled to let the piston move back slowly and

gradually without any sudden motions, and the follower, connected levers, and chains are thus led to resume their position in readiness for a new bale without being thrown back violently, as above described.

The admission and discharge of the medium used to produce a pressure within the cylinder is controlled by means of any suitable valve at W and an actuating-lever or other device Y.

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

1. In a vertical baling-press, the vertical tension-rods connecting the top and bottom of the press and the doors hinged at one of their ends to said rods and having hooks at their opposite ends, which hook over the tension-rods, substantially as described.

2. In a baling-press, the vertical tension-rods uniting the top and bottom of the press, doors hinged upon each of said rods and having hooks that close and hook upon the next rods in succession around the press, and the links or yokes pivoted near the hinges of each of the doors, so as to swing over the ends of the following doors and lock them when closed, substantially as herein described.

3. In a baling-press, the doors having the angle metal cleats or braces upon the outside, those upon the adjacent doors being so placed as to allow the horizontal flanges to slide by and over each other, and links or yokes pivoted upon the horizontal flanges at the hinge ends of each of the doors and adapted to swing over the corresponding flanges of the adjacent door when the latter is closed against the hinge-rod of the preceding door, substantially as herein described.

4. In a baling-press, the inclined feed-door swinging between the triangular sides and having the curved brackets or plates fixed upon it, in combination with a hand-lever, a rock-shaft to which it is fixed, and arms upon said rock-shaft, having friction-rollers at the ends, which engage and travel upon the edge of the brackets, so as to close the door, substantially as herein described.

5. In a baling-press, the hinged swinging door moving between the triangular sides, a hand-lever fixed to a rock-shaft journaled to these sides, and anti-friction rollers journaled to arms that are fixed to the rock-shaft, and curved brackets or plates fixed upon the door so that the rollers engage the edges thereof to close the door and lock the same, substantially as herein described.

In witness whereof I have hereunto set my hand.

JACOB PRICE.

Witnesses:

GEO. H. STRONG,
S. H. NOURSE.