

J. M. BETHUNE.
Hay and Cotton Presses.

No. 157,486.

Patented Dec. 8, 1874.

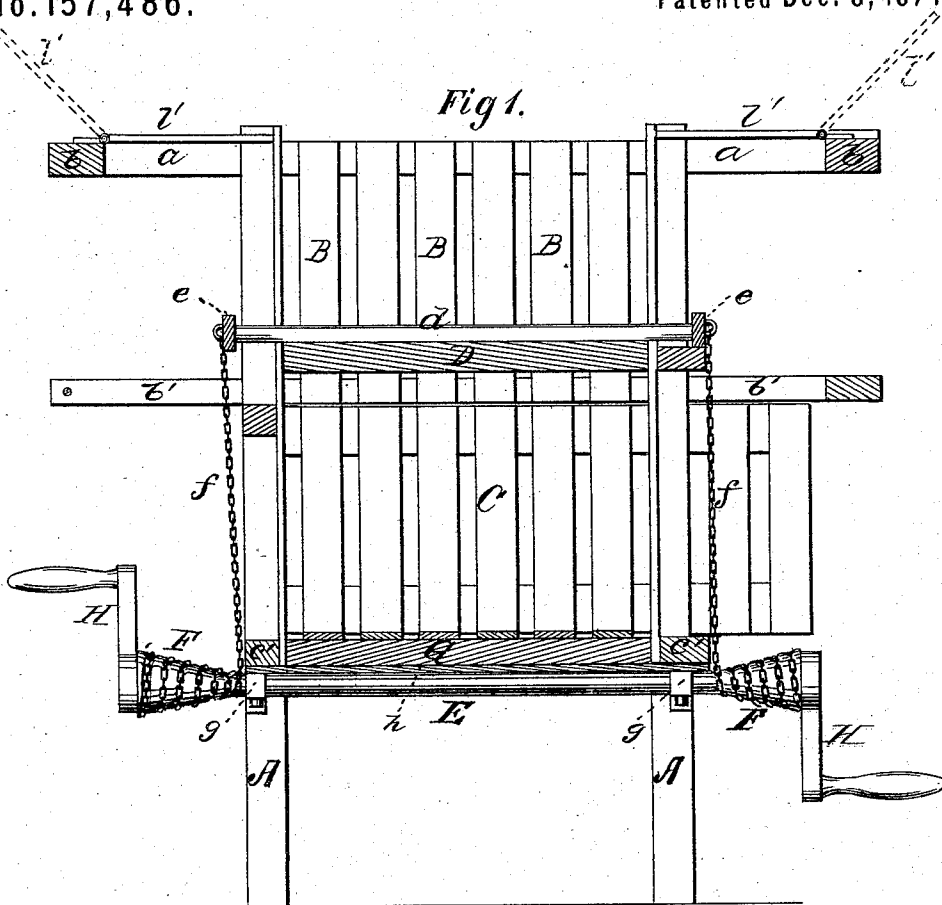
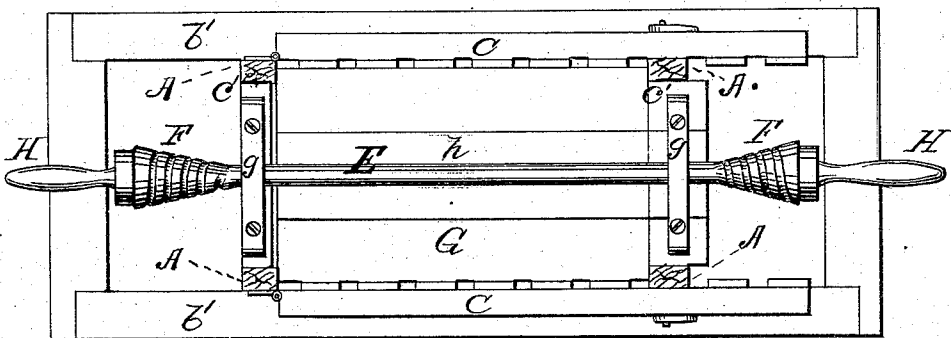


Fig 2.



Witnesses:
Frank J. Masi
Robert Everett

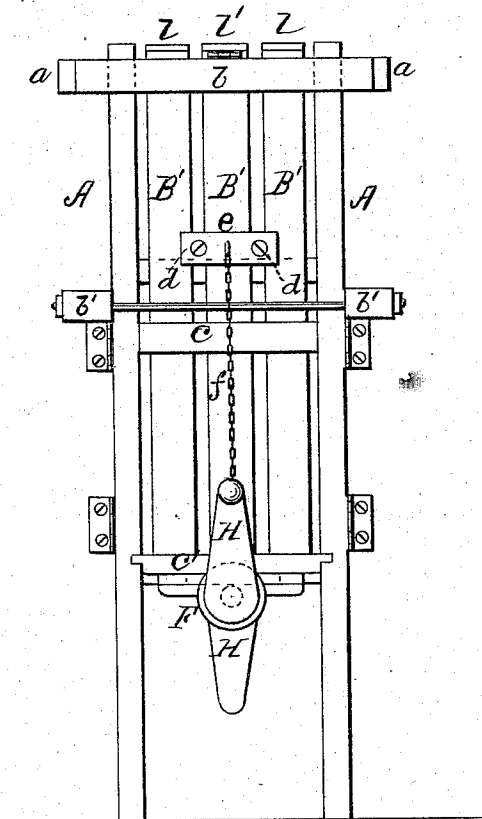
Inventor:
James M. Bethune
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Fig 3.



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James M. Bethune
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UNITED STATES PATENT OFFICE.

JAMES N. BETHUNE, OF WARRENTON, VIRGINIA.

IMPROVEMENT IN HAY AND COTTON PRESSES.

Specification forming part of Letters Patent No. 157,486, dated December 8, 1874; application filed October 24, 1874.

To all whom it may concern:

Be it known that I, JAMES N. BETHUNE, of Warrenton, in the county of Fauquier and State of Virginia, have invented a new and valuable Improvement in Hay and Cotton Presses; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical section of my press. Fig. 2 is a plan view of the same, and Fig. 3 is an end view.

This invention has relation to presses of the upright kind, which are especially designed for baling cotton, hay, moss, and other like substances; and the nature of the invention consists in a frame rigidly secured to the rectangularly-arranged uprights of the press-frame at or near the upper part of the press-box, and extending some distance beyond the press-frame, to the transverse end bars of which are hinged vertically-vibrating arms, which, when they are thrown up, will permit the follower to be taken out of the press-box, and, when vibrated inward toward each other, will abut against the vertical ends of the press-box, confining the follower in the same, and effectually preventing outward displacement of the said ends when they are being subjected to strain occurring when cotton is being pressed. It furthermore consists in the ends of the said press-box, which are composed of vertical slats spaced a suitable distance apart, whereby a follower, having upon its upper surface longitudinal bars projecting through the spaces between the said vertical slats, is positively guided in the press-box, and a means is afforded for attaching to the said follower the chains whereby it is actuated, as will be hereinafter more fully explained.

In the annexed drawings, A designates the four uprights of a press structure, arranged, preferably, at the four angles of an oblong rectangle, which are suitably braced, and which are provided at their upper ends with a rectangular frame, the longitudinal bars *a* of which extend some distance beyond the uprights, and are mortised into end bars *b*. The sides of the

press-box of my improved baling-press are composed of strips or slats B, rigidly secured to the inner surfaces of the bars *a*, and of a longitudinal brace, *b'*, and are terminated by a hinged slatted door, C, through which access is given to the interior of the box for the purpose of spreading bagging upon the floor thereof, and of removing a completed bale, while its ends are likewise slatted, but continuous—that is to say, the slats B' extend from the top to the bottom of the press-box, and are rigidly secured to a central brace, *c*, and a lower brace, *c'*, as shown in Fig. 3 of the drawing, there being no brace at the upper ends of these slats. This absence of the slat-brace permits of the application of two or more longitudinal bars, *d*, to the upper surface of a vertically-movable follower, D, and of extending these bars through the spaces of the said slats, thereby obtaining a means of positively guiding the said follower in its box, and yet allowing it to be removed therefrom at will; but, as in the absence of any means of bracing the upper end of the box the pressure of the mass would be liable to cause outward displacement of the said end slats, I use strong boards, *l*, the former hinged to vibrate vertically upon the bar *b* of the upper frame, the latter rigidly secured thereto, and the inner free ends of both abutting against the upper ends of the slats B'. The ends of the bars *d*, which project through the bars B', are connected by means of a tie, *e*, to which are secured chains *f*, passing thence downwardly to a winch-shaft, E, to which they are rigidly secured in any suitable manner. This shaft is supported in bearings upon hangers *g*, which are rigidly secured to a brace, *c'*, at the lower end of the press-box, and it is continuous, extending through from end to end of the press structure, both ends being provided with a tapering or spirally-grooved cone, F, which is part of the winch E, and which are applied thereon, with their larger ends outward, as seen in Fig. 1.

The bottom G of the press-box may be made to rest directly upon the winch E, or a strip, *h*, may be interposed, and by this means the downward strain produced in compressing will, in great measure, fall upon the winch-shaft.

As the said shaft is continuous, it is evident

that power may be applied at either end thereof by means of a crank-arm, H, or at both ends; also, that when steam or any other motor is applied it is only necessary to connect it with one end of the winch, when both ends of the follower will be brought down evenly, a quick descent thereof being produced at the beginning of the act, which becomes slower as the full strain is received, consequent upon the increasing resistance to further compression of the mass.

It will also be seen that, when the hinged boards *l'* are thrown up into the position shown in dotted lines, Fig. 1, the follower, with its longitudinal bars *d* and transverse ties *e*, may be removed from the press-box in one piece; or that, by removing the ties, the follower, with its bars, may be taken out without throwing up the boards *l'*.

What I claim as new, and desire to secure by Letters Patent, is—

1. The brace-boards *l*, hinged to the end bars *b* of the upper frame, for the purpose of permitting the follower to be removed from the press-box, substantially as specified.

2. The combination, with the spaced slats *B'* of a press-box and the frame *a b*, of the brace-boards *l l'*, as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES N. BETHUNE.

Witnesses:

JOHN B. CORLISS,
GEO. E. UPHAM.