J. LYTCH.

HAY AND COTTON PRESS.

No. 183,313. Patented Oct. 17, 1876.

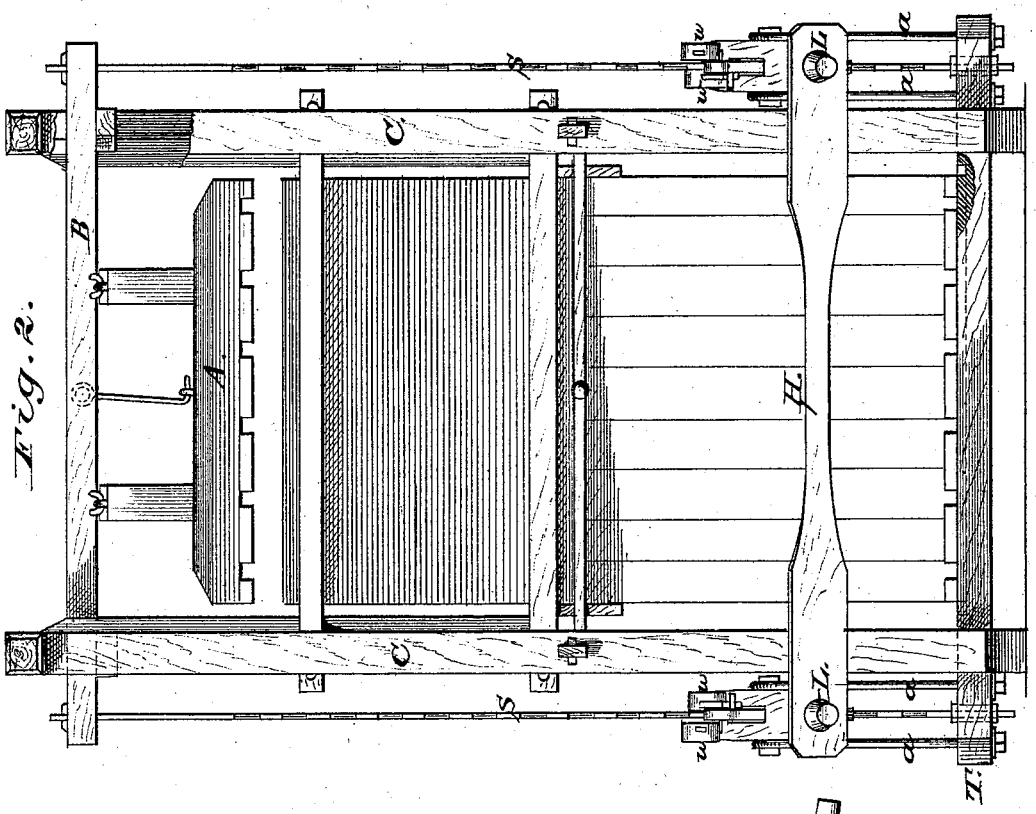

Fig. 2.

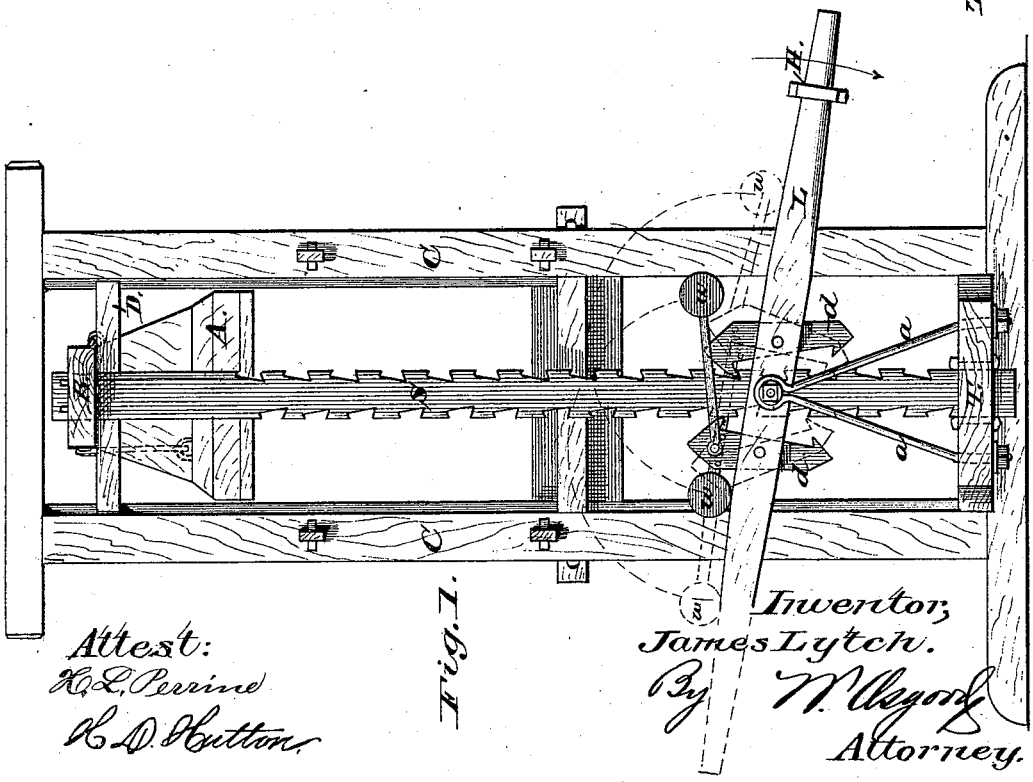

Fig. 1.

Attest:
H. L. Perrine
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Inventor;
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By Munn & Co
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UNITED STATES PATENT OFFICE.

JAMES LYTCH, OF LAURINBURG, NORTH CAROLINA.

IMPROVEMENT IN HAY AND COTTON PRESSES.

Specification forming part of Letters Patent No. **183,313**, dated October 17, 1876; application filed August 17, 1876.

To all whom it may concern:

Be it known that I, JAMES LYTCH, of Laurinburg, Richmond county, North Carolina, have invented certain new and useful Improvements in Hay and Cotton Presses, of which the following, in connection with the accompanying drawings, is a full, clear, and exact description:

Figure 1 is a side elevation, showing the gravitating-pawls and their attached weights in position to force the follower downwardly, the dotted lines indicating their position when arranged to elevate the follower. Fig. 2 is a front elevation of the press, showing the lever-connecting bar in position to operate the levers simultaneously.

The follower A is hinged or otherwise suitably attached to the bar B, which moves up and down between the frame-timbers C C, being suitably guided in its vertical motion by the cross-piece D, traveling between said frame-timbers C C. The bar B and its attached follower are caused to move up and down, as occasion may require, by the swords S S, one at each end, which are firmly secured to said bar, and properly guided at the lower portion of the press. These swords are provided with notches upon each edge for the engagement of the pawl therewith, being both undercut and overcut, to enable the follower to be either elevated or depressed. In lieu of the single sword with serrations upon each edge, I may substitute two swords, each having one edge properly serrated, which modification will give a trifle wider space between the operating-pawls. The levers L L are slotted to permit the movement of the swords and to receive the pawls, which are pivoted therein. The fulcrums are sufficiently elevated above the base of the press to admit of the requisite play of the levers, and consist, essentially, of the heavy rods *a a*, bolted to the timbers T, which form a portion of the frame of the press. Upon these fulcrums the levers are hung at about their longitudinal centers. The pawls *d d* are provided each with a projecting hook at both their upper and lower extremities, which is adapted to engage with the teeth upon the swords, and, in order that this engagement may be automatic, are each provided with a swinging weight capable of holding them in contact with the swords. These weights *w* are hinged to the upper ends of the pawls, as shown at Fig. 1, and are prevented from swinging too far by suitable stop-pins on each side of the pivot.

The upper and lower faces of the pawls being beveled, as shown, and the indentations upon one side of the sword being opposite the projections upon the other, it will be observed that when the levers are elevated and depressed alternately the motion of the swords will be very nearly continuous downward, when the weights are arranged as shown by the full lines, and upward when arranged as indicated by the dotted lines.

In order that a single hand may operate the press, as is desirable in elevating the follower, or in applying the first pressure, or in small presses wherein the desired pressure can be exerted by one man, I connect the two levers by a bar, H, by means of which the operator can move said levers in unison.

By depending the swords from the follower, as shown, they may be made of lighter material than when projecting above the same, as has heretofore been done, for the greatest strain during the operation of pressing the material is, by this arrangement, caused to be one of extension upon the swords. The follower is easily elevated without danger of bending the swords out of line, since it requires but little power to move it.

It is obvious that instead of the weights *w* being applied to the pawls I could substitute springs therefor, which, being properly attached to the levers or to said pawls, would accomplish the desired automatic engagement with the swords, both in their ascending and descending movement.

The arrangement of the operating mechanism herein shown and described affords a hand-press, which may be manipulated by any desired number of hands, simple and convenient in construction, and very effective in producing the requisite pressure with little loss of time in elevating the follower.

I am aware that serrated swords have before been employed in connection with the followers of presses, and not desire to be understood as laying any claim thereto; but,

Having now described my invention, what

I do claim, and desire to secure by Letters Patent, is—

1. In a press of the character herein specified, the combination of the follower, having the doubly-serrated swords attached thereto and depending therefrom, and the operating-levers carrying the automatic pawls, adapted to force the swords both upwardly and downwardly, as set forth.

2. The combination, with the swords, having the indentations on one side opposite the projections on the other, of the gravitating-pawls, having hooks and inclined faces at each end thereof, adapted to move the swords continuously in either direction, as specified.

3. The combination, as before set forth, of the doubly-serrated swords, attached to and depending from the follower, the levers carrying the automatically-gravitating pawls, and the fulcrum composed of the rods *a a*, bolted to timbers T, as and for the purpose described.

4. The combination, as before set forth, of the levers, carrying the automatic pawls, and the connecting-bar H, by means of which both levers may be simultaneously operated, as described.

5. The combination of the fulcrums *a a*, levers L, bevel-faced pawls *d d*, provided with weights *w*, (or their described equivalents,) serrated swords S, and follower A B, all adapted to operate as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of August, 1876.

JAMES LYTCH.

Witnesses:

W. A. GILL,

J. C. MORGAN.