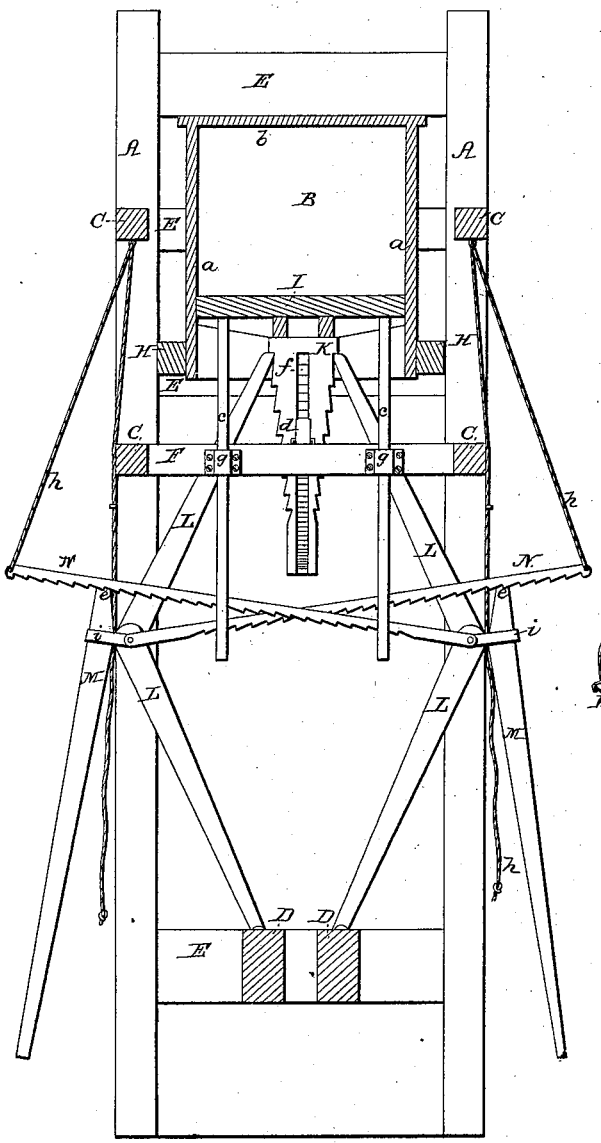
L. Potter,

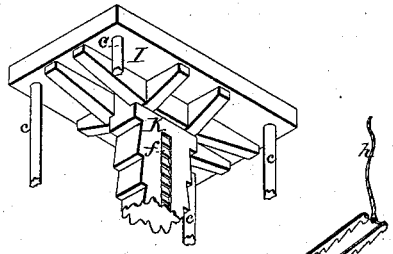
Hay Press.

No. 5,088. Patented Apr. 24, 1847.

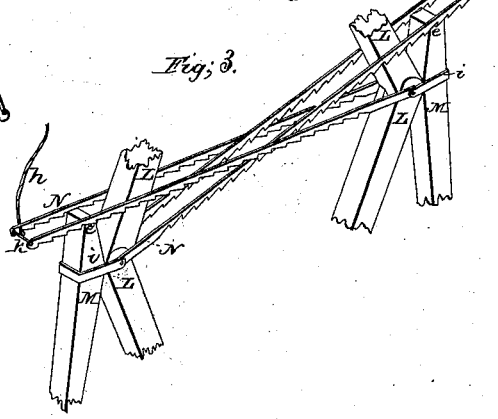
Fig; 1.



Fig; 2.



Fig; 3.



UNITED STATES PATENT OFFICE.

LORENZO POTTER, OF WARREN, OHIO.

IMPROVEMENT IN PRESSES FOR COTTON, HAY, &c.

Specification forming part of Letters Patent No. **5,088**, dated April 24, 1847.

To all whom it may concern:

Be it known that I, LORENZO POTTER, of Warren, in the county of Trumbull and State of Ohio, have invented an Improved Toggle-Joint Lever-Press; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical sectional elevation, and Figs. 2 and 3 are perspective views of parts of the same detached.

My improvement in the toggle-joint lever-press consists in an improved manner of operating the levers by means of ratchet-bridles and hand-levers combined with the toggle-joints. The supporting-frame of my improved press is composed of the corner-posts A, transverse beams D, C, E, and F united by tenon and mortise in any well-known or usual manner. B is the box, in which the substances to be pressed are placed. *a a* are the sides, and *b* is the top of the same. I is the platen, working in the pressing-box. K is a conical-sided feeding-follower connected to and descending vertically from the center of the platen I. The feeding-follower K has shoulders on its sides for the reception of the upper ends of the upper toggle-joint levers, L L, the distance between which (shoulders) gradually diminish from the upper to the lower end of the follower. The feeding-follower K descends between, and its sides are guided by two central beams, F, (only one of which is shown in Fig. 1,) having their ends secured by mortise-and-tenon joints to the transverse beams C C. Graduated ratchets *f* are let into each side of the feeding-follower K, which receive pawls *d*, attached to the upper sides of the beams F. The pawls *d* catch and retain the platen after it has been elevated by the action of the toggle-joint levers L. The platen I is guided and kept in a horizontal position by the four rods *c c*, attached to and descending vertically from the lower side of the same, passing through and working freely in loops *g g*, secured to the outer sides of the central beams, F. The toggle-joint levers L are constructed and connected in the usual manner. Their lower bearings are upon the beams D D. Their upper bearings are against the shoulders on the follower K. The joint-pin of each toggle-joint passes through the ends of bridle ratchet-pieces N N, placed on each side of the same, and extending beyond and on each side of the opposite toggle-joint levers, where their ends are united by a cross-bar, *k*. The joint-pin of each toggle-joint also passes through the ends, and secures to the same a metallic strap or clevis, *i*, which embraces and is made fast to a hand-lever, M, its upper end extending a short distance above the joint, which serves as a fulcrum for the lever. On both sides of the upper end of each hand-lever M there projects a pin, *e*, upon which the extended ends of the bridle ratchet-pieces N rest. Power is applied to the toggle-joint levers L L through the medium of the hand-levers M and the ratchet bridle-pieces N, as follows: As the lower ends of the hand-levers are carried outward, the pins *e* on their upper ends glide freely under the inclined sides of the teeth on the under edge of the ratchet bridle-pieces. As they (the lower ends of the levers) are drawn inward, the pins *e* take hold of the vertical sides of the ratchet-teeth on the bridle-pieces, and draw upon the toggle-joints to which they (the bridle-pieces) are connected, the levers at the same time reacting upon the toggle-joints to which they are connected, and thus simultaneously draw both toggle-joints nearer to each other. This movement of the hand-levers is continued till the levers L are brought to a vertical position. The extended ends of the bridle-pieces are then elevated by the hand-ropes *h h*, (the pawls *d* retaining the platen.) The toggle-joints are then drawn outward by the hand-levers, and their upper ends are reset against lower shoulders on the follower K, when they are again brought to a vertical position by the hand-levers and ratchet-bridles, as above set forth. In this manner the operation is continued until the platen has been elevated to a sufficient height to produce the requisite amount of pressure. I shall generally apply the power for working the press to one of the hand-levers M, and allow the other hand-lever to hang loosely—attaching a weight to it, if necessary—for the purpose of enabling the pins *e* at its upper end, which catch into

the ratchet-bridles resting upon them, to retain the toggle-joint levers L L and prevent their falling apart, while the operating-lever is drawn back for the pins at its upper end to reset themselves in another notch of the operating ratchet-bridles resting upon the same. The sides of the feeding-follower K descending from the center of the platen are of a conical form, as herein described, for the purpose of allowing the shoulders in the same for the reception of the upper ends of the toggle-joint levers to project over each other a sufficient distance to enable the levers to be brought to a vertical position without losing their hold upon the same.

It will be perceived that each hand-lever M acts simultaneously upon both toggle-joints by the aid of the ratchet bridle-pieces resting upon its pins *e e*, and that the levers act independently of each other; consequently both toggle-joint levers can be operated by one or both hand-levers, as shall be found to be most convenient.

Having thus fully described my improved toggle-joint lever-press, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The manner of operating and retaining the toggle-joint levers L L by means of the hand-levers M M and the ratchet-bridles N N, combined with each other and with the toggle-joints, in such a manner that each hand-lever acts equally upon both toggle-joints, substantially as herein set forth.

2. The combining the toggle-joint levers with the platen through the medium of the conical-sided notched feeding-follower K, substantially in the manner and for the purpose herein set forth.

LORENZO POTTER.

Witnesses:
Z. C. ROBBINS,
T. C. DONN.