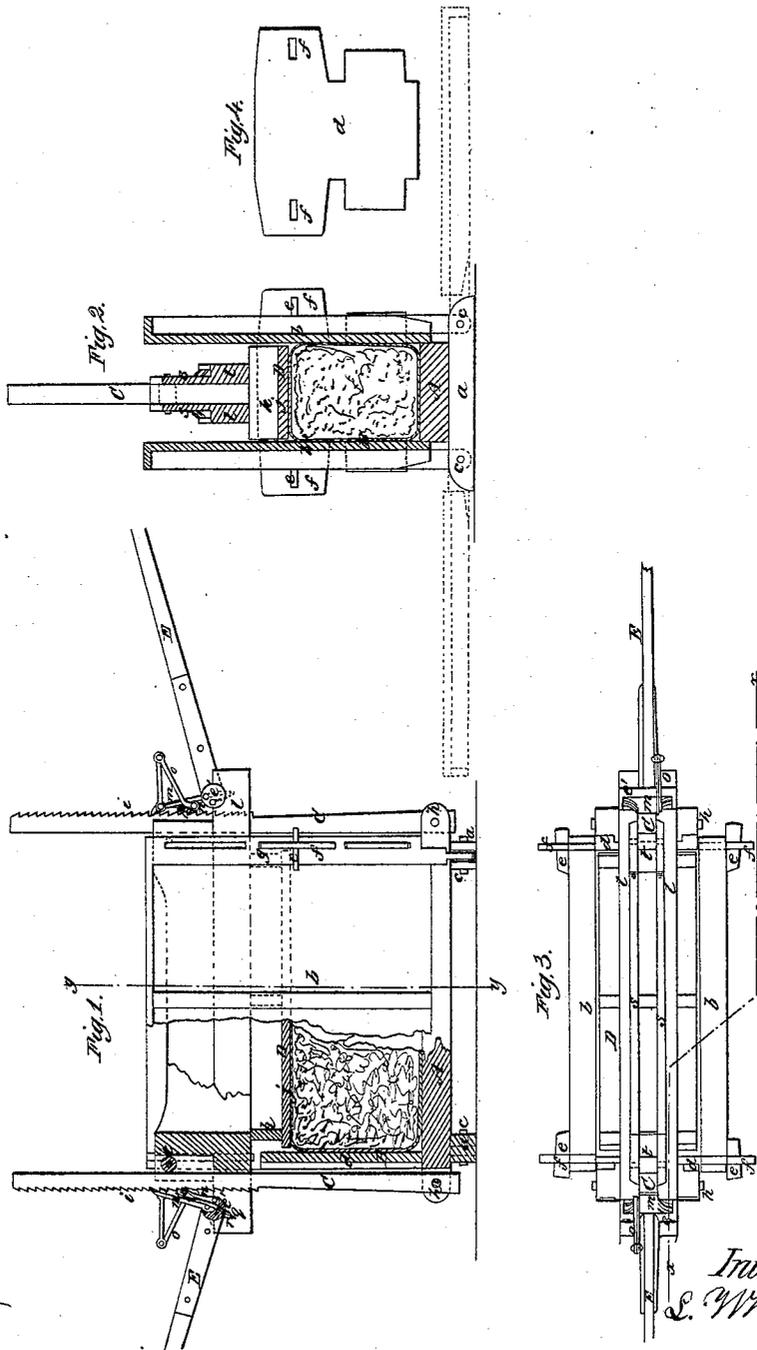


L. W. Harris,

Cotton Press.

N^o 29783.

Patented Aug. 28, 1860.



Witnesses.
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IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. 29,783, dated August 28, 1860.

To all whom it may concern:

Be it known that I, L. W. HARRIS, of Waterville, in the county of Oneida, and State of New York, have invented a new and Improved Press for Compressing Hops and other Substances for Baling; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a front sectional view of my invention, taken in the line *x x*, Fig. 3; Fig. 2, a transverse vertical section of the same, taken in the line *y y*, Fig. 1; Fig. 3, a plan or top view of the same; Fig. 4, a detached view of one of the side pieces of the press-box of the same.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a bed-plate or base which forms the bottom of the press-box B. The bed-plate or base A is secured on two traverse-bars, *a a*, which are near the ends of the bed-plate or base, as shown in Figs. 1 and 3.

To the ends of the traverse-bars *a a* the side pieces, *b b*, of the press-box are connected by joints *c*, and the end pieces, *d*, of the press-box are secured in the side pieces, *b*, by means of wedges or keys *e*, the latter passing through tenons *f* of the end pieces, which tenons pass through slots *g* in the side pieces, *b*, near their edges.

At each end of the bed-plate or base A there is secured by a bolt or pivot, *h*, the lower end of a bar, C. These bars C are allowed to work freely on their bolts or pivots *h*, and each bar has a rack, *i*, on its outer side, as shown clearly in Fig. 1.

D is the follower of the press. This follower is formed of a board or plank, *j*, attached to the under sides of traverse-pieces *k*, which are attached to the under sides of two longitudinal bars, *l l*, which are a trifle longer than the press-box, and project over and beyond its end pieces, *d d*, as shown in Figs. 1 and 3.

On the projecting ends of the bars *l l* there are made recesses to receive the hollow cylinders *e'* of levers E. The cylinders *e'* are attached at right angles to the ends of the levers E, and within each cylinder *e'* there is placed

two pawls, *m n*, the pawls *m* being longer than *n*, as shown clearly in Fig. 1. The two pawls *m n* are connected by a jointed arm, *o*, and to the inner sides of the shorter pawl *n* there is attached two springs, *p q*, the upper springs, *p*, bearing against the upper part of the pawls *m*, and the lower springs, *q*, bearing against projections *r* at the lower parts of the pawls *m*, as shown clearly in Fig. 1. The shorter pawls, *n*, are placed in front of the longer ones, *m*, and the cylinders *e'*, which are the fulera of the levers E, are allowed to turn freely in the recesses at the ends of the bars *l l*, and the distance between the centers or axes of the cylinders *e* and the points of the connection of the pawls *m n*, in connection with the length of the levers E E, constitute the power of the press. The space between the bars *l l* is sufficiently wide to admit the rack-bars C C, and it is by having this open space between the extremities of the follower-bars *l l* that I am enabled to turn down the rack-bars away from the press, so as to give free access to all its parts whenever occasion requires.

To the upper surfaces of the bars *l l* there are attached two upright longitudinal plates, *s s*, between which, near their ends, friction-rollers *t t* are placed. These friction-rollers *t* form bearings for the rack-bars C—that is to say, when the press is not in operation.

The operation of the press is as follows: In the first place, if the press-box B is closed and the follower D within it, the latter is removed and the rack-bars C C thrown outward from the press-box. The canvas that is to inclose the lower part of the bale is then placed in the bottom of the box, the box filled with the substance to be pressed, the upper part of the canvas adjusted on it, and the follower D placed in the box on the substance F. The rack-bars C are then adjusted in a vertical position between the ends of the bars *l l*, and against the rollers *t t*, and the cylinders *e'* of the levers E are fitted in the recesses of the bars *l l*. The levers E are then worked up and down, one operator being at each lever, and the pawls *m n* of each lever engage alternately with the racks *i* of their respective bars C C, and the follower is forced down, compressing the substance within the box B. One of the pawls acts at each stroke of the lever, whether it moves up or down. The upper springs, *p*, keep the smaller pawls *n* engaged with the racks *i*, and the

lower springs, *g*, keep the longer pawls, *m*, engaged with the racks. When the substance within the box B is fully compressed, the keys *e* are removed from the tenons *f* of the end pieces, *d*, of the press-box, and the side pieces, *b*, turned down in a horizontal position, as shown in red, Fig. 2. The bale is then bound, the levers E removed from the bars *l*, and the follower D from the bale, and the latter is then rolled off from the base A with the greatest facility. The jointed arms *o* keep the two pawls *m n* in a proper relative position with each other, and at the same time admit of a free and independent movement of the latter. In order to repeat the pressing operation, the side pieces, *b*, are elevated and the end pieces, *d*, fitted between them, and the box secured in a closed state by the keys *e*. The press-box B is then again filled with the substance to be compressed, the follower D placed in the box, the rack-bars C adjusted in a vertical position, and the levers and pawls applied to them and operated as before.

From the above description it will be seen that the rack-bars C perform the double function of racks and guides. They act as guides for the follower in being fitted between the ends of the bars *l l*. This is an important feature of the invention, as it renders the press very simple, compact, and economical to construct.

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

1. The employment of the open follower-bars *l l*, in combination with the hinged racks C C, attached to the bed, as herein shown and described, so that the said racks will serve as guides to the follower, and so that they readily turn down to a horizontal position away from the press when not required for operation, all as set forth.

2. The combination of the pawls *m n*, when connected by jointed arms *o* with cylinders *e'*, hinged racks C, and open follower-bars *l l*, as herein shown and described, so that one of said pawls will be operated at each movement of either of the levers E, and so that the cylinders *e'* may be removed, together with the pawls and levers E, whenever desired, as set forth.

3. The arrangement of the axes of the pawls *m n* within the circumference of the hollow cylinders *e'*, as and for the purpose herein shown and described.

L. W. HARRIS.

Witnesses:

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M. M. LIVINGSTON.