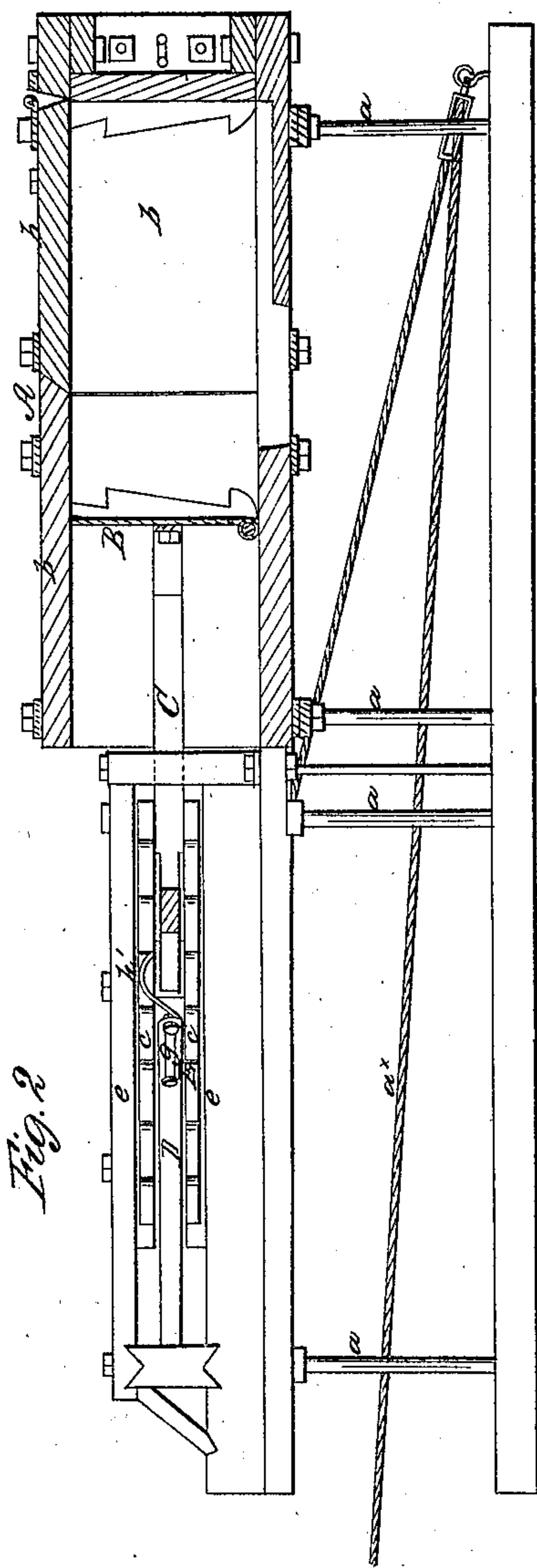
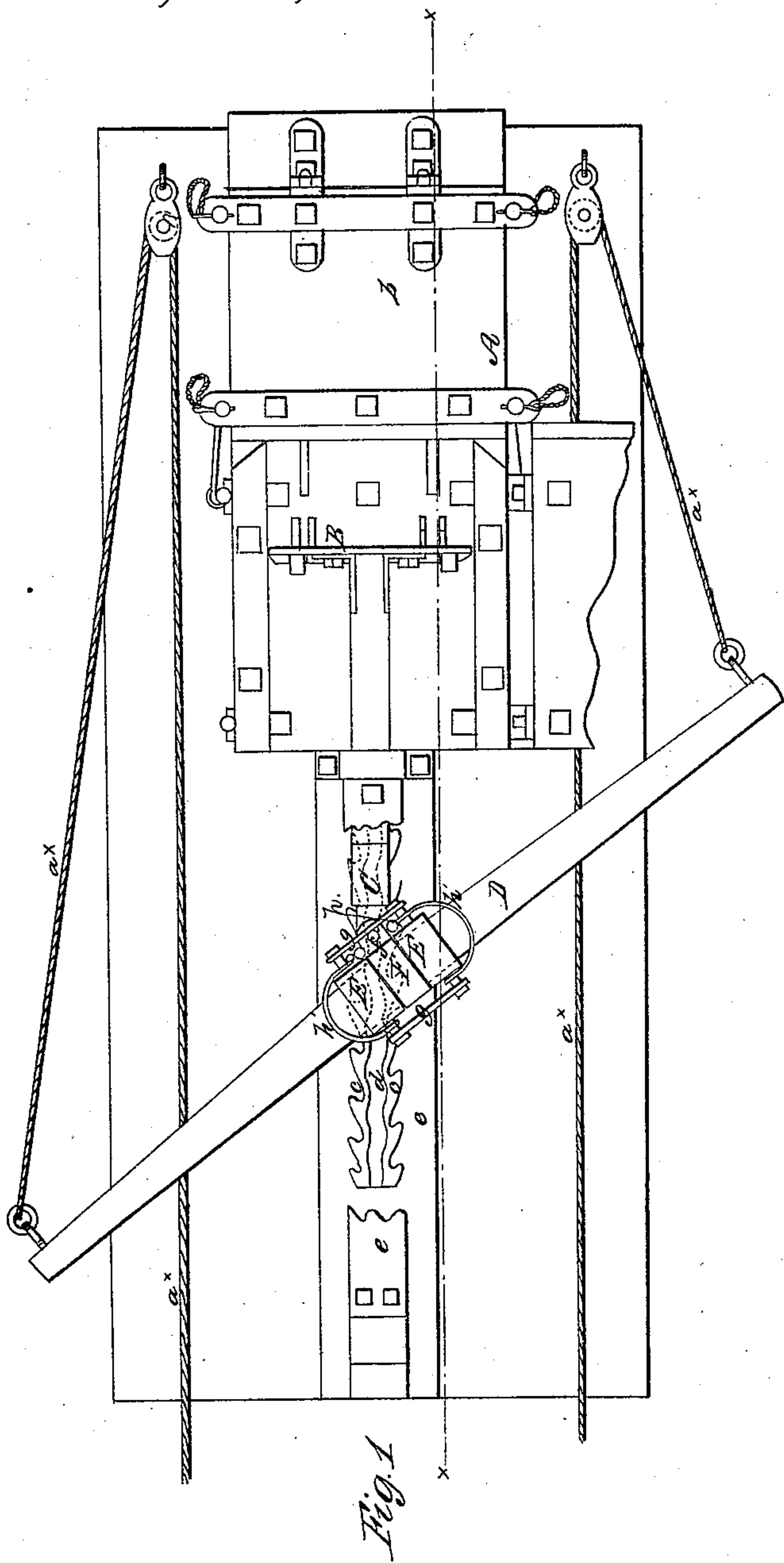


J. Harder,
Hay Press,
No 39,230, *Patented July 14, 1863.*



Witnesses;
J. W. Coombs
G. W. Reed

Inventor;
Jacob Harder
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attorneys

UNITED STATES PATENT OFFICE.

JACOB HARDER, OF LOCK HAVEN, PENNSYLVANIA.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. 39,230, dated July 14, 1863.

To all whom it may concern:

Be it known that I, JACOB HARDER, of Lock Haven, in the county of Clinton and State of Pennsylvania, have invented a new and Improved Press for Compressing Articles for Baling Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of my invention; Fig. 2, a side sectional view of the same, taken in the line *z z*, Fig. 1.

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

This invention consists in operating the follower of a press-box through the medium of two double racks with sinuous grooves between them, in connection with a lever provided with two sliding pawls arranged with springs and connected to the outer end of the follower-rod by a hinge or joint, the pintle of which works in the sinuous grooves between the racks, all being arranged, as hereinafter shown and described, whereby a good leverage power is obtained and one that may be operated with facility.

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

A represents a horizontal press-box, which is supported at a proper height by legs *a* or any proper framing, and provided with doors *b* both at its sides and top.

B is a follower which is in the box A, and has a rod, C, attached to it, which is fitted and works between two double racks, *c c*, each having a sinuous groove, *d*, between them, as shown clearly in Fig. 1. These racks are attached to two parallel bars, *e e*, placed one over the other, the upper racks being attached to the under side of the upper bar, *e*, and the lower racks being attached to the upper surface of the lower bar, *e*, as shown in Fig. 2.

To the outer end of the rod C there is attached by a joint a lever, D, and the pintle *f* of this joint has its ends fitted in the sinuous grooves *d d* between the racks *c c*. On this lever D there are placed two slides, E E, which are connected by springs *g*, constructed of india-rubber or other suitable elastic material. These springs have a tendency to keep the inner ends of the slides E E in contact with a metal collar, F, placed centrally on the lever D and secured permanently thereto in any proper way.

To each slide E there is attached a vertical pin, *h*, the ends of which work in the racks *c* at top and bottom, the spring *g* having a tendency to keep the pins engaged with the racks. The teeth of the two racks of each pair are not in line with each other, the ends of the teeth of one rack being in line with the centers of the teeth of the other, as shown clearly in Fig. 1. By this arrangement it will be seen that by working or oscillating the lever D the pins *h h*, which are pawls, will alternately engage with the racks *c*, and force the follower B inward, so that the article within the press-box will be compressed, the pintle *f* following the sinuosities of the grooves *d d*, so as to enable the pawls to engage properly with the racks. When the article within the press-box is fully compressed, the doors *b* are opened, the bale bound, the follower B drawn back to its original position by drawing out the pawls *h* from the racks, which is done by pulling the slides E E outward from the racks by means of handles *h'*, thus leaving the lever D free to move.

I would remark that the lever D is designed to be operated chiefly by hand, except when the bale is nearly compressed and additional power required. A horse may then be attached to one end of the lever D, in order to move or oscillate it once or twice to complete the movement of the follower. ropes *a'* being attached to the ends of the lever D for that purpose.

In operating the lever D by hand a person may be at each end of it; but one horse will probably be sufficient to operate the lever D, for but one or two oscillations of the same will be all that will be most generally required under the horse-power.

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

Operating the follower B through the medium of the lever D, provided with the sliding pawls *h h*, and connected to the follower-rod C by a joint, the pintle *f* of which works in sinuous grooves *d d* between racks *c c*, arranged one above and the other below the follower-rod C, substantially as and for the purpose herein set forth.

JACOB HARDER.

Witnesses:

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