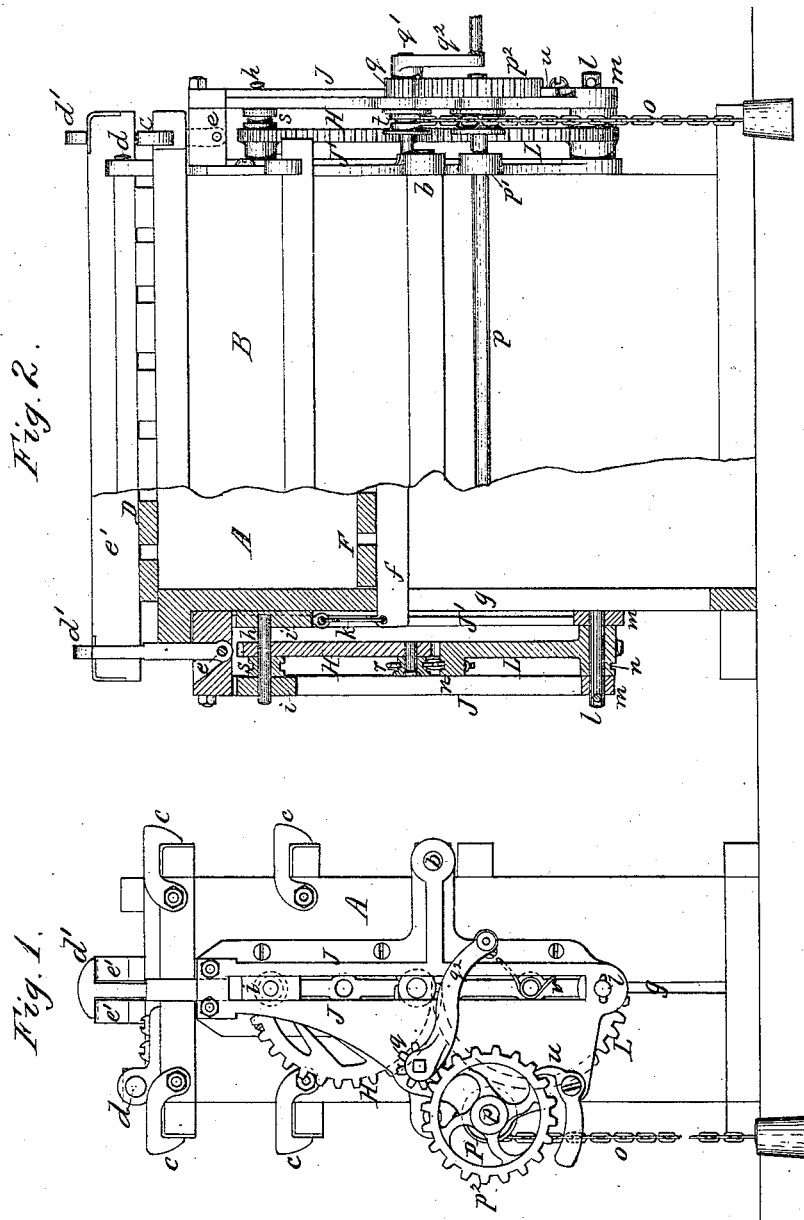


M. LOESER.
Baling-Press.

No. 217,806.

Patented July 22, 1879.



Witnesses:

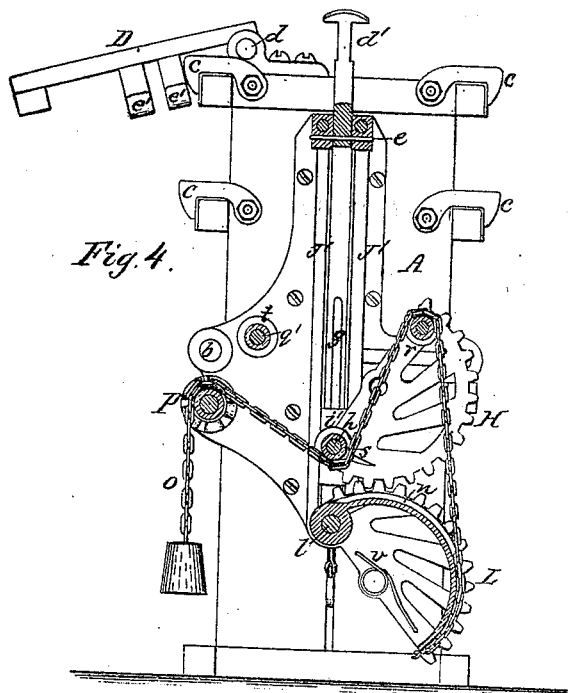
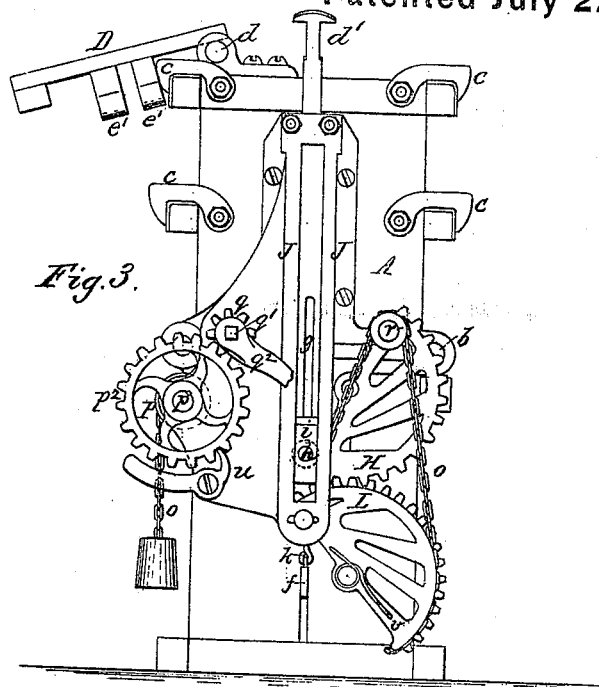
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UNITED STATES PATENT OFFICE.

MOSES LOESER, OF BUFFALO, NEW YORK.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. **217,806**, dated July 22, 1879; application filed June 2, 1879.

To all whom it may concern:

Be it known that I, MOSES LOESER, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Baling-Presses, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of baling-presses which are used for compressing rags, cotton, hay, or similar material, and more particularly to the mechanism by which the follower is operated.

The object of this invention is the construction of a simple compressing mechanism which shall exert its greatest force during the last portion of the movement of the follower, and which is easily operated either by hand or power.

My invention consists principally in combining with the follower two geared toggle-arcs, one of which is connected with the end of the follower and the other pivoted to the stationary frame, both arcs having their geared faces meshing, so that by applying power to the free end of the arc pivoted to the stationary frame the arc connected to the follower is moved, so as to elevate the latter.

It also consists of various details of construction, as will be hereinafter fully set forth.

In the accompanying drawings, consisting of two sheets, Figure 1 is an end elevation of a baling-press provided with my improvements. Fig. 2 is a partly-sectional elevation thereof at right angles to Fig. 1. Fig. 3 is an end elevation, showing the follower in its lowest position. Fig. 4 is a similar view with the outer portion of the guide-bars of the compressing mechanism broken away.

Like letters of reference designate like parts in the several figures.

A represents the body or case of the press, and B B the side doors, hinged to the case A at their lower ends, at *b*, in the usual manner, and held at their upper ends by pivoted hooks *c*.

D is the top cover, hinged to the end pieces of the frame A at *d*, and held in place when closed by T-shaped locking-bars *d'*, pivoted to the end pieces of the frame A at *e*, and engaging between two longitudinal stiffening-pieces, *e' e'*, secured to the upper side of the cover D.

F represents the follower, arranged to move up and down in the case A of the press in the usual manner, and *f* is the stiffening-piece secured to the under side of the follower F, and having its ends to which the elevating mechanism is connected projecting through vertical slots *g* formed in the case of the press in the usual manner.

H is the upper toggle-arc, which is connected with the follower F. It is composed of a circular arc or segment, preferably a semi-circle, and provided at its upper extremity with a short shaft or arbor, *h*, which turns in two sliding boxes, *i i'*, arranged on the front and rear side of the toggle-arc H, between vertical guide-bars J J'.

The inner box, *i'*, is connected by a rod or link, *k*, with the end of the lower stiffening-piece of the follower, so that the latter will follow the movement of the box *i'*.

L is the lower toggle-arc, similar in form to the upper arc, H, and provided at its lower extremity with a short shaft or arbor, *l*, which turns in bearings *m*, arranged at the lower ends of the guide-bars J J'.

The contiguous curved faces of the toggle-arcs H L are provided with cogs or teeth, whereby both arcs are geared together and the motion of one arc is transmitted to the other. A pair of arcs, H L, is arranged at each end of the follower.

n is a grooved concentric rim secured to the outer side of the lower arc, L, and *o* is a chain or rope secured to the outer end of the arc L, so as to rest in the grooved rim *n*.

P is the chain-drum mounted on the shaft *p*, which turns in bearings *p¹*, and *p²* is a gear-wheel secured to the outer end of the shaft *p*.

q is a pinion mounted on a shaft, *q¹*, so as to gear with the wheel *p²* on the shaft of the drum. *q²* is a hand-crank mounted on the outer end of the shaft *q¹* for turning the pinion *q* and imparting motion to the chain-drum.

The shafts *q¹* and *p*, upon which the driving-pinions and the chain-drums are mounted, preferably extend through the entire length of the machine, so that both chain-drums and both driving-pinions are mounted upon the same shafts and operated simultaneously.

r is a sheave or pulley attached to the outer end of the upper arc, H, and *s* is a similar pul-

ley mounted loosely on the arbor of the arc H, both pulleys *r* and *s* being arranged in the same vertical plane with the grooved rim *n* of the lower arc, L. The chain or rope *o* runs from the outer end of the lower arc, L, over the pulley *r* at the outer end of the upper arc, H, thence under the pulley *s* at the arbor of the arc H, and thence to the chain-drum P, upon which it is wound, or around which it is passed in such manner that the lower arc, L, is raised or lowered by operating the drum P in one or the other direction.

t is a pulley mounted loosely on the pinion-shaft *q*¹ to prevent the chain or rope from rubbing against the shaft when the follower approaches its highest position. *u* is a detent-pawl arranged with the gear-wheels *p*², so as to prevent any retrograde movement of the elevating mechanism. *v* is a spring attached to the lower arc, L, on its outside, so as to come in contact with one of the guide-bars J before the lower arc has finished its movement, so that by the final movement of the arc the spring *v* is deflected. Upon releasing the chain or rope the reaction of the spring *v* forces the arcs out of their vertical position into an inclined position, when the further backward movement of the arcs will be caused by the weight of the follower.

When the follower is in its lowest position, as shown in Figs. 3 and 4, and power is applied to the chain *o*, the lower arc, L, is raised or swung upward on its pivot, and the two arcs H and L being geared together, a rotary movement is imparted to the upper arc, H, whereby the pivot of the upper arc is forced upward between the ways J J' and the follower is ele-

vated. During the latter part of the movement of the follower the two arcs operate in the manner of two toggle-bars, and exert a very powerful pressure upon the material contained in the press.

The rope *o*, passing from the end of the lower arc over the pulley at the end of the upper arc, prevents disengagement of the two arcs and exerts a powerful pressure in the proper direction during the latter part of the motion of the follower.

Instead of the hand-crank *q*², a suitable pulley may be mounted upon the pinion-shaft when it is desired to operate the press by power.

I claim as my invention—

1. The combination, with the follower F, of two geared toggle-arcs, H L, one connected with the follower and the other pivoted to the stationary frame, substantially as set forth.

2. The combination, with the follower F, of the upper geared arc, H, provided with pulley *r*, and the lower geared arc, L, provided with concentric grooved rim *n*, the chain or rope *o*, and drum P, substantially as set forth.

3. The combination, with the press-case A and follower F, of the geared arcs H L, ways or guides J J', grooved rim *n*, pulleys *r s*, chain or rope *o*, and drum P, substantially as set forth.

4. The combination, with the geared arcs H L and guides J J', of the spring *v*, substantially as set forth.

MOSES LOESER.

Witnesses:

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JNO. J. BONNER.