

T. B. Webster,

Cotton Press.

N^o 49,046.

Patented July 25, 1865.

Fig. 1.

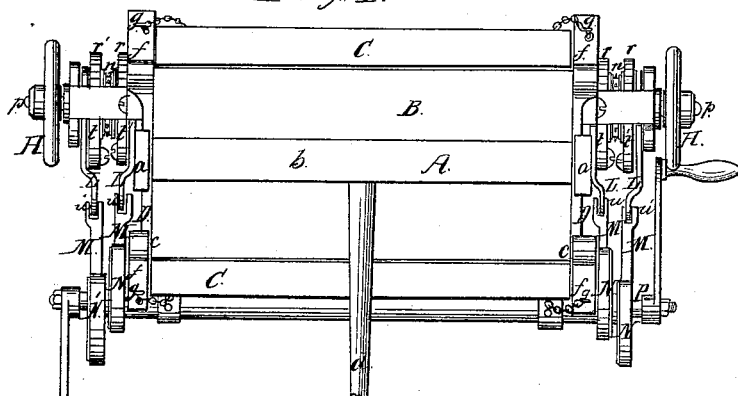


Fig. 2.

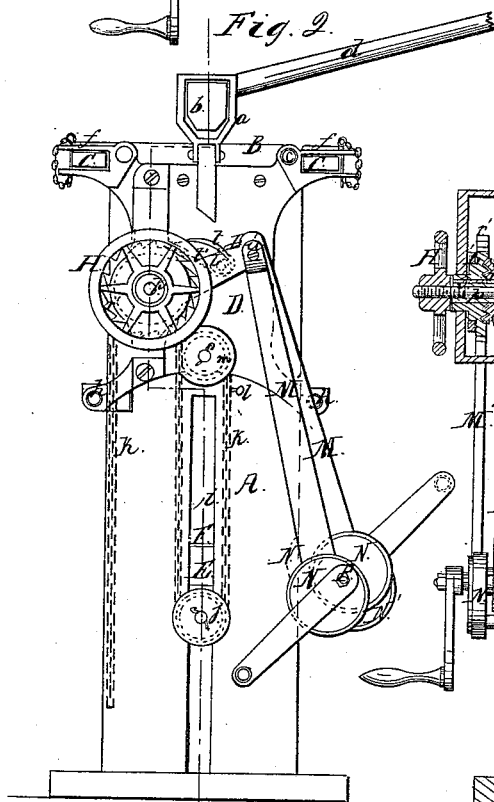
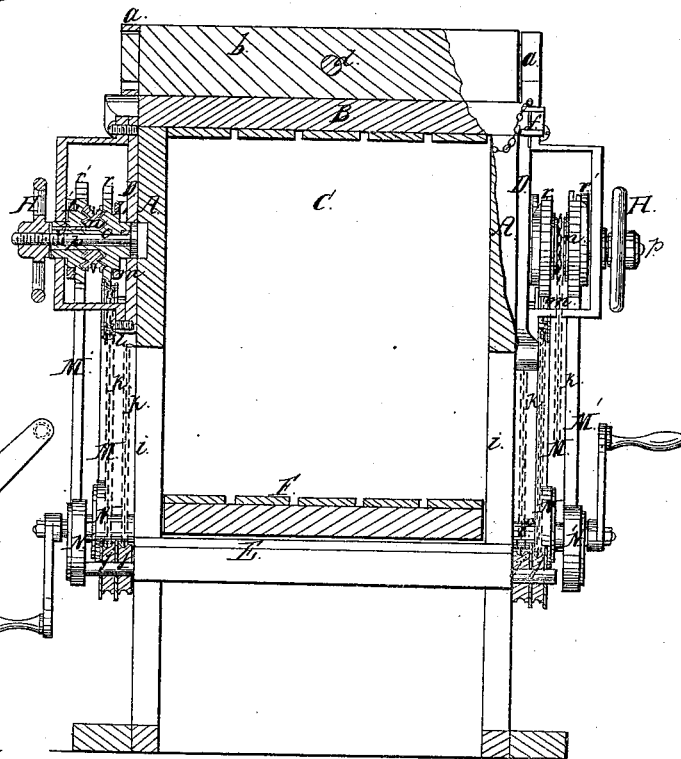


Fig. 3.



Witnesses.

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THOMAS B. WEBSTER, OF NEW YORK, N. Y. ASSIGNOR TO HIMSELF AND
THOMAS GANNON, OF SAME PLACE.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. 49,016, dated July 25, 1865.

To all whom it may concern:

Be it known that I, THOMAS B. WEBSTER, of the city, county, and State of New York, have invented a new and Improved Ratchet-Lever Press; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan or top view of this invention, partly in section. Fig. 2 is an end elevation of the same. Fig. 3 is a transverse vertical section of the same.

Similar letters of reference indicate like parts.

This invention relates to a press in which the follower is actuated by two sets of lever-pawls and eccentrics, in combination with the ratchet-wheels and chains, (or, instead of the chains, racks and pinions or worms or worm-wheels might be substituted,) in such a manner that by the continuous revolution of the driving-shaft an intermittent rectilinear motion is imparted to the follower, and the most powerful pressure can be effected. The driving-eccentrics are placed at right angles to each other, so that if one of the pawls draws back to take a new tooth the other pushes, and the motion of the follower is made as steady and continuous as possible. Said eccentrics are, however, arranged in such a position that the lever-pawls on one end of the press take hold at different times from those on the opposite end, and the follower travels up alternately, first on one end and then on the other, whereby the operation of the press is greatly facilitated and a much more powerful pressure on the material in the press can be effected than in ordinary presses where both ends of the follower move simultaneously. The chain-wheels are so constructed and arranged in relation to the ratchet-wheels and to a hand-wheel on each end of the press that by turning the hand-wheels in one direction the chain-wheels are tightened and rendered rigid with the ratchet-wheels; and, furthermore, the follower can be moved up by hand until the material in the press is compressed to such a state that more than hand-power is requisite to complete the pressing, and when the pressing operation is completed

and the bale tied the follower can be released by simply turning the hand-wheels, whereby the chain-wheels are rendered loose and allowed to turn back independent of the other mechanism. The follower is thus made to descend instantaneously by its own gravity, and no time is lost in working the press back.

A represents a box, which is covered by a movable top, B. This top is held down by straps *a*, which are hinged to the end pieces of the box, and which, when turned up, catch over the ends of the longitudinal top bar, *b*. Said top is hung on gudgeons *c*, and a hand-lever, *d*, extending from the top bar, *b*, serves to turn the same open after the straps *a* have been thrown off from the ends of the top bar, *b*. The upper parts, C, of the sides of the box A are made to fold down, so that free access can be had to the interior of the box, and when closed the ends of their top bars, *e*, pass between forked brackets *f*, and are held there by pins *g* or other suitable mechanism. These side wings are hung on gudgeons *h*, which have their bearings in plates D, that are secured to the ends of the box A, and which form the supports or bars of the straps *a*, the gudgeons *c*, and the forked brackets *f*, so that all the working parts of the box are rigidly connected to them.

In the lower part of the box A moves the follower F, which is supported by a longitudinal beam, E, the ends of which extend through slots *i* in the ends of the box and form the bearings for pulleys *j j'*, two on either end. Round these pulleys winds a chain, *k*, one end of which is secured to an eyebolt, *l*, that projects from the end of the box. From this eyebolt the chain passes down under the pulley *j*, thence up over a pulley, *m*, and down again under the pulley *j'*, and thence up over the chain-wheel *n*, as shown particularly in Fig. 2. This chain-wheel revolves loosely on the hub *o* of a ratchet-wheel, *r*, which has its bearings on a stationary axle, *p*, as shown in Fig. 3. Said hub passes through the chain-wheel *n*, and a second ratchet-wheel, *r'*, is fitted on it by means of a feather-key, *s*, which compels the same to revolve with the hub *o*, but allows it to move thereon in a longitudinal direction. By forcing the ratchet-wheel *r'* toward the ratchet-wheel *r* the chain-wheel *n* is firmly

clamped between them, and rendered rigid with the same, so that by turning either of the ratchet-wheels a rotary motion is imparted to the chain-wheel. The two ratchet-wheels are compressed by the action of a hand-wheel, H, which screws on the outer end of the axle p , and the hub of which bears on the outer end of the hub of the ratchet-wheel r' , whereas the inner end of said axle is provided with a head which bears against the inner end of the hub of the ratchet-wheel r , as clearly shown in Fig. 3. When the hand-wheel is drawn up tight the whole system of wheels turns together, and they can be turned by hand or by power. When the hand-wheel is unscrewed the chain-wheel is released and allowed to turn independent of the ratchet-wheels, and in this case the follower descends by its own gravity.

Power is applied to the ratchet-wheels $r r'$ by means of lever-pawls $t t'$, the levers L L' of which are strapped round the hubs of the ratchet-wheels $r r'$, and connect by pivots $u u'$ with arms M M', extending from straps fitted round eccentric disks N N' mounted on the driving-shaft P. The eccentric disks N N' are set at right angles to each other, so that they cause the lever-pawls to take alternate action on the ratchet-wheels $r r'$, and that while one pawl moves back to take a fresh hold the other moves forward and turns the system of wheels, causing the follower to rise.

It will be noticed, by referring to Figs. 1 and 3, that either end of the press is provided with the same system of ratchet and chain wheels, lever-pawls, and eccentrics, so that both ends of the follower are moved up by turning the driving-shaft P; but it must be remarked that the eccentrics on one end of the shaft are placed at right angles to those on the other end—that is to say, if the lines drawn through the centers and highest parts of one pair of eccentrics coincide with the direction of the cranks shown in Fig. 2, the corresponding line of the other set of eccentrics will be at right angles with said cranks, or vice versa. By this ar-

range ment the lever-pawls on both ends of the press take action at different periods, and the follower moves up alternately on one side and then on the other, whereby the strain on the press is considerably reduced, and a much greater pressure can be effected than with an ordinary press, where both ends of the follower are brought up simultaneously.

It will be readily understood that by suitable gearing the power of this press can be increased to any desired extent, and, if desired, the chains and chain-wheels can be replaced by racks and pinions, or even worms and worm-wheels might be applied.

The principal advantages of this press are that in its mechanism the friction is reduced to a minimum, the power is applied alternately to the ends of the follower, and consequently to the best possible advantage, and the follower can be worked back without loss of time. The whole press is light and simple in its construction, and all its parts are so constructed that they are not liable to get out of order.

I claim as new and desire to secure by Letters Patent—

1. The arrangement of the eccentrics N N' on the driving-shaft P, in combination with the lever-pawls $t t'$, ratchet-wheels $r r'$, and with the chain-wheels and chains or their equivalents, constructed and operating substantially as and for the purpose set forth.

2. Placing the two sets of eccentrics N N' at the opposite ends of the shaft P at right angles to each other, substantially as described, so as to impart to the follower an alternate rising motion.

3. The hand-wheels H, applied in combination with the axles p , ratchet-wheels $r r'$, and chain-wheels n , substantially as and for the purpose specified.

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Witnesses:

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