

Baling-Presses.

No. 141,622.

Patented August 12, 1873.

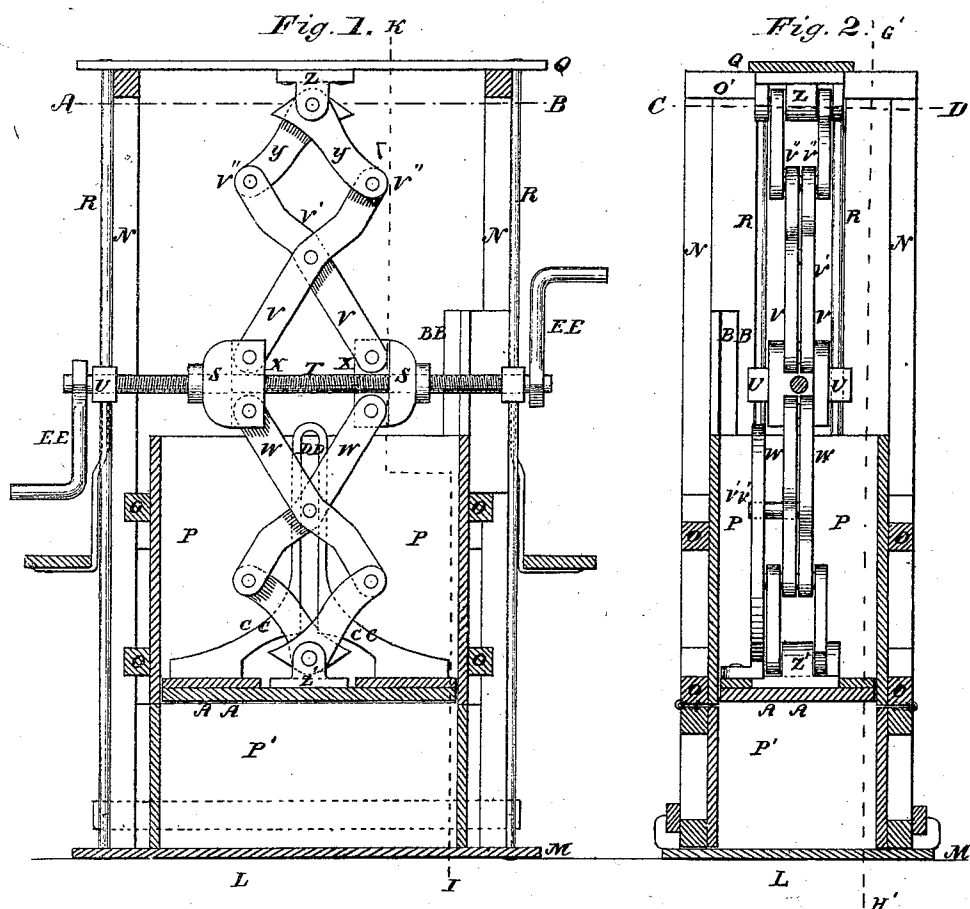
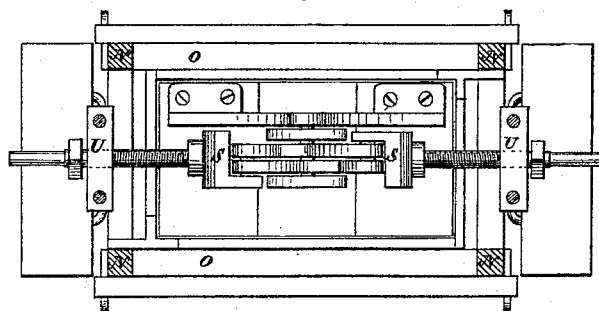


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. 141,622, dated August 12, 1873; application filed August 10, 1872.

To all whom it may concern:

Be it known that I, HENRY W. BAUMANN, of the city of Memphis, in the county of Shelby and State of Tennessee, have invented certain Improvements in Baling-Presses, of which the following is a specification:

My invention relates to that class of presses which employ a system of compound rhombic levers operated by a movable double nut or knuckle-joint actuated by a right and left threaded screw, revolved, preferably, by a crank, or by two cranks, for the purpose of pressing or of compressing cotton, hay, or other produce or material.

Figure 1 is a horizontal section of a machine embodying my invention taken on the line A B of Fig. 2 or C D of Fig. 3, and showing that portion of the machine below the lines. Fig. 2 is a vertical longitudinal section taken on the lines E F of Fig. 1 and G' H' of Fig. 3, and showing that portion of the machine which is at the left of G' H' of Fig. 3, and which is above the line E F of Fig. 1. Fig. 3 is a vertical transverse section taken on the line I K of Fig. 1 and G' H' of Fig. 2, and showing that portion of the machine which is to the left of the lines I K of Fig. 1 and G H of Fig. 2.

L is the base or bed sill, as ordinarily found in baling-presses, to which is preferably fixed a metal bed-plate, M, from or through which rise the four posts N, composing, with the necessary or usual cross-pieces O, the usual frame of the ordinary baling-press with the usual bale-box P and bale-bed or bed-box P', doors, and other essential parts, as heretofore constructed and arranged, and too well known to experts to require minute description, the posts bearing on their top cross-pieces O'; the top plate Q, preferably of metal, secured tight and rigid to the bed-plate M by the four rods R, passing two through each end of the top plate and the bed-plate, and provided with heads at one end; and at the other with screw-threads working directly in the plate itself, whereby, by the revolution of the rod itself, the two plates are drawn tightly together, or having screw-nuts on the outer or upper side of the top plate, whereby to produce the same effect. These rods R serve also a purpose, more essential to the operation of my invention, in acting as guide-rods, on which are

placed the traveling nuts U, through which passes the right-and-left-threaded screw T, which is the means by which power is applied to my system of compound levers. Upon the power-screw T, and upon the right and left of its middle, and consequently, respectively, on a right and a left threaded screw, are the double nuts or knuckle-joints S, made, by reason of the female screw within them, and the revolution of the power-screw T working therein, to slide or travel upon the screw toward or from the middle, according to the direction of the revolution of the screw. Upon a flange on each side of these knuckle-joints S, and both above and below the power-screw T, are pivoted the levers V and W. The levers V, rising above the knuckle, cross each other, and are pivoted together at their point of intersection V', which point is, for the obvious advantage of an increased leverage, considerably nearer to the ends V'' of the levers V most distant from the knuckle-pivot X than to the knuckle-pivot itself. At the remote end of each lever V'' is pivoted a short lever or half lever, Y, its other end pivoted again in a stirrup-nut, Z, fixed securely, by bolts or otherwise, to the top plate Q, the supporting-pivot coinciding vertically with the middle pivot V' of the levers V.

The arrangement of this system of levers may be more easily understood by reference to what is known to experts as "lazy-tongs."

Below the power-screw T this system of levers is exactly repeated, but in a vertically reversed position—that is, the long arm of the main lever V is upward from the center pivot instead of downward, and still nearest to the power-screw—and the stirrup-nut Z is changed in its character to a standing nut, Z', affixed to the "follower" or packing-block A A, as found in ordinary baling-presses. The parts B B, extending up above the top of the bale-box, serve as guides to the follower in its passage down into the box, and may be dispensed with. Upon the top of the follower is a "straddler" or guide, C C, its feet resting, respectively, upon either end of the follower, and secured thereto, while its central portion, rising considerably above the follower, is provided with a slot, D D, running vertically or at right angles with the base of the guide and

with the under side of the follower, through which slot extends the lower central pivot V' , elongated for this purpose, by which means the straddler, rising or falling with the follower to which it is affixed, is, by reason of this pivot pressing on one side or the other of the slot, kept in its normal upright position, thereby controlling the desirable horizontal position of the follower for the purpose of producing a shapely bale. $E E$ are cranks by which to revolve the power-screw T , operated by hand; and suspended from the traveling nuts U by the rods $F F$ are the platforms $G G$, on which stand the operators, which platforms or carriages, traveling up or down with the nut from which suspended, together with the screw T passing through the nut, and the crank attached to and revolving the screw, the operator is kept always in his same proper relative position to his crank.

I use preferably the crank, as shown, but it is evident that the revolution of the power-screw may be effected by a windlass, or by a pendulous lever operated by hand, or by any well-known suitable power applied in any suitable well-known manner.

To prepare to operate my machine, I revolve the power-screw T in such direction as to raise the follower-block until it shall clear the bale-box and leave free access at its top. Then, having arranged the bagging or other covering or protection of the bale to be made, I place within the bale-box, at its top, the cotton or other matter to be packed, which, during the placing therein, I cause to be properly distributed within the box, and, in a preliminary way, packed and tramped under foot until a supposed sufficient quantity shall have been tramped within the top line of the box or thereabout, when I place thereon or arrange about the bottom and sides of the follower the top cloth, all as is now ordinarily done in baling cotton. The material and its cover being arranged, I revolve the power-screw in its operative direction, which is the reverse of the

progressive direction of its screw-threads, indicated by the direction of the arrow in Fig. 3. By this revolution the knuckle-joints S are acted on by the threads of the power-screw T working therein, and are forced toward the middle of the screw T . The levers, closing on the center pivot V' , are pressed together horizontally and reciprocally elongated vertically, and the consequent vertical thrust, resisted by the stationary fixed top plate Q , is expended below upon the follower-block $A A$ so as to press or to compress down through the bale-box, and compactly in the bale-bed or bed-box P' , where it is secured in the usual manner, and the bale so completed. I now reverse the motion of the screw so as to raise the follower from the bale for its removal, which motion I continue until the follower, raised from the box, clears its top so as to give access thereto for placing other material for a second bale.

I do not claim as my invention a system of compound rhombic levers, or of levers arranged in a manner similar to lazy-tongs, for I am aware that this is not new; but

I claim as my invention—

1. The combination, in a baling-press, of a follower, toggle-levers, a right-and-left-hand screw, the cross-head, and a platform suspended from the cross-head so that the operator can travel up or down with the screw and operate it with greater facility, substantially as described.

2. The combination, in a baling-press, of a right-and-left-hand screw, the double toggle-levers, the follower, and the slotted guide attached at its base rigidly to the follower, and guided trim by an elongated pivot of the toggle-levers, which it straddles, all these parts being constructed and combined to operate substantially as described.

H. W. BAUMANN.

Witnesses:

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