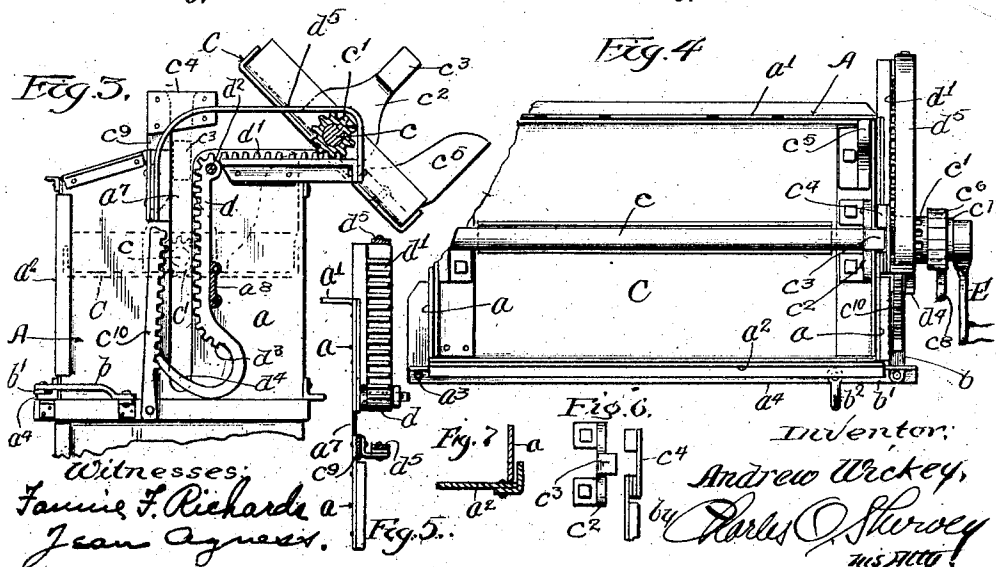


**1,003,224.**



# UNITED STATES PATENT OFFICE.

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BALING-PRESS.

1,003,224.

Specification of Letters Patent.

Patented Sept. 12, 1911.

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*To all whom it may concern:*

Be it known that I, ANDREW WICKEY, a citizen of the United States, residing at East Chicago, county of Lake, and State of Indiana, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to baling presses, and more particularly to that class of baling presses adapted for bailing waste paper and the like.

One of the objects of this invention is to provide an upright press, open at the top and having a plunger and improved plunger actuating means, whereby the plunger may be pressed down upon the contents of the press and raised above and shifted behind the upper end thereof to leave its top open for the reception of the material to be baled.

Another object is to provide plunger actuating mechanism having means whereby it may be lowered from said retracted position to the work, and having independent means for effecting the final compression of the material.

Another object is to provide guiding means for the plunger, arranged to guide the same in its movements in the compression chamber of the press and operating to swing it out of the way, beyond the open top of the compression chamber whenever the plunger is raised out of said chamber.

Other objects and advantages will appear in the course of this specification and with these various objects and advantages in view, the invention consists in the several novel features of construction, arrangement and combination of parts set forth in the specification and particularly defined in the claims.

The invention is clearly illustrated in the drawing, furnished herewith, in which—

Figure 1 is a side elevation of a press embodying one form of my invention, Fig. 2 is a front elevation thereof, Fig. 3 is a side elevation of the upper portion of the press showing the plunger in full lines in its raised and tilted position, and in dotted lines in a partially lowered position, certain parts of the plunger actuating mechanism being removed for the purpose of illustrating parts that would otherwise be hidden from view, Fig. 4 is a plan of the press partly broken away, Fig. 5 is a detail horizontal section

taken on the line 5—5 of Fig. 1, Fig. 6 is a plan of certain plunger guiding means, and Fig. 7 is a detail horizontal section taken on line 7—7 of Fig. 2.

Referring to said drawing A, represents the body of the press, which as shown comprises a base  $A'$ , stationary end and rear walls  $a$ ,  $a'$ , and a door  $a^2$ , hinged to one of the end walls  $a$ , as at  $a^3$ . Said base and walls form the compression chamber of the press. The door may be swung open to expose the contents of the press, and locking mechanism is provided for holding the door in closed position, said locking mechanism being here shown as comprising arms  $b$ , pivoted upon the end walls of the press body and arranged to be swung into notches formed in the ends in angle iron reinforcing members  $a^4$ , secured upon the door  $a^2$ . Links  $b^4$ , are pivotally connected to the outer ends of the arms  $b$ , and connecting the free ends of said links  $b^4$ , is a vertical rod or handle  $b^2$ , by means of which said links and arms may be moved into or out of connection with the door. By swinging the links in front of the angle irons  $a^4$ , with the arms  $b$ , in the notches, the door is securely locked to the remainder of the press body. The walls and door are preferably reinforced by angle irons to strengthen and give rigidity to the same.

Associated with the compression chamber is a vertically and horizontally movable plunger C, which is adapted to be brought down upon the contents of the compression chamber, or raised up therefrom so as to leave the open top entirely free for the insertion of the material to be baled. Said plunger is carried by a horizontal shaft  $c$ , which projects out through vertical slots  $a^7$ , in the end walls  $a$ , and bears pinions  $c^1$ , upon its ends which travel along and intermesh with the teeth of inverted L shaped rack bars  $d$ ,  $d^1$ , supported on the end walls of the press. A crank E, is secured to the shaft and furnishes means whereby the same may be turned to effect the raising, lowering and lateral shifting of the plunger. The rack bars  $d$ , are shown as pivotally sustained at their upper ends upon pins  $d^2$ , that project out from the press body, and each rack bar is curved back as at  $d^3$ , and then forward into a hook-like formation  $d^4$ . The pinion

in reaching its lowermost position engages this hook-like end and swings the rack bar forward, past its dead center, locking the pinion therein against upward movement. A back stop  $a^3$  confined between the press body and a strap  $a^9$ , secured thereto limits the backward swing of the rack bar  $d$ . It is quite obvious that by turning the crank in the direction of the arrow  $x$ , the pinions  $c^1$ , will be caused to travel down the racks  $d$ , until they reach the curved portions  $d^3$ , thereof, whereupon continuous rotation of the pinions and their engagement with the curved ends  $d^4$ , will cause the racks to be swung from the position shown in Fig. 3 to the position shown in Fig. 1, the racks being thereby swung past the dead center, locking the pinions in their lowermost position. The rack  $d^1$ , forms a continuation of the rack  $d$ , and is shown as lying in a substantially horizontal plane, whereby the pinions  $c^1$ , after they have reached their uppermost position may be caused to travel along said rack to carry the plunger beyond the upper end of the compression chamber so as to expose the same. A guide strip  $d^5$ , is secured upon each end wall and rack  $d^1$ , and overhangs the racks  $d$ ,  $d^1$ , forming a continuation of the slot  $a^7$ , and acting to hold the pinions  $c^1$ , in mesh with the racks  $d^1$ .

The plunger C, is provided upon one or both of its ends with a guide block  $c^2$ , which has an outwardly projecting lug  $c^3$ , adapted to project out through the slot  $a^7$ , in the end wall, and be guided therein so as to assist in maintaining the plunger in horizontal position while moving in the compression chamber. Supported above the top of the end walls, as by posts  $c^9$ , are guides  $c^4$ , having grooves therein in vertical alinement with the slots  $a^7$ , and adapted to receive the lugs  $c^3$ , and guide the plunger just at the time that it is entering or leaving the compression chamber. The plunger carries at either or both ends weighted guide blocks  $c^5$ , that are arranged to bear against the rear wall  $a^1$ , of the press to aid the guide blocks  $c^2$ , in guiding the plunger in the compression chamber back upon its support, after it is raised out of the compression chamber and moved back over the rear end thereof. The effect of this arrangement is that the weight swings the forward edge of the plunger upward so as to leave a free opening in the upper end of the press for the insertion of material to be compressed.

The crank E, is employed to raise and lower the plunger, but when it is desired to put the final compression upon the bale, I employ pawl and ratchet mechanism in connection with the shaft C, and one or more levers for accomplishing this purpose. As shown, the shaft  $c$ , bears at one or both of its ends a ratchet wheel  $c^6$ , which, if desired,

may be formed integral with the pinion  $c^1$ , and adjacent to each ratchet wheel is a lever  $c^7$ , which is fulcrumed upon the shaft and bears a pawl  $c^8$ , adapted for engagement with the ratchet wheel  $c^6$ . By moving the pawl into engagement with the teeth of the ratchet wheel  $c^6$ , and oscillating the lever, the shaft will be turned, the pinions  $c^1$ , caused to rotate and travel down the racks  $d$ , until they reach the curved end of the rack, and are locked therein. It may be found that the elasticity of the compressed material has a tendency to force the plunger upward after the same has been moved part way down to its lowermost position, that is to say, at such times as the lever  $c^7$ , is being swung back to take another hold on the ratchet. To avoid this, I provide a toothed detent  $c^{10}$ , pivotally sustained upon the end wall of the press, and adapted for engagement with the teeth of the pinion  $c^1$ . It is obvious that by swinging said toothed detent  $c^{10}$ , into mesh with the teeth of the pinion  $c^1$ , that retrograde movement thereof will be prevented when the lever  $c^7$ , is being raised to take another hold upon the ratchet. When the bale has been fully compressed, the door  $a^2$ , is opened and the tie wire passed around the bale, after which the plunger may be raised and the bale ejected from the press.

It is obvious that an exceedingly simple, practical and efficient press is thus provided, wherein the plunger may be readily moved out of the way so as to leave an opening in the top of the press through which material, to be baled, may be thrown into the same; that when the compression chamber has been filled with such material, the plunger may be brought down thereupon to compress the same into a small body, by simply turning the crank E, in the proper direction; that the plunger may be returned to its original position and the compression chamber again filled to the top and the new material pressed down upon the first load. In this way a large quantity of material can be baled into compact form.

The device is particularly useful in mercantile houses where a great deal of waste paper accumulates and the same may be baled into compact form and sold or otherwise disposed of more profitably than in its loose state.

I realize that various alterations and modifications of this device are possible without departing from the spirit of my invention, and I do not therefore desire to limit myself to the exact form of construction shown and described.

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

1. In a baling press, the combination of a press body having an upright compression chamber, a plunger movable therein and

capable of being shifted laterally thereof, an angle shaped rack, supported on said press body, a pinion carried by said plunger and intermeshing with said rack, and means for rotating said pinion.

2. In a baling press, the combination of a press body having an upright compression chamber, a plunger movable therein and capable of being shifted laterally thereof, a rack supported on said press body and having a vertical portion terminating at its upper end in a rearwardly extending horizontal portion, a pinion carried by said plunger, and means operatively connected with said pinion for turning the same.

3. In a baling press, the combination of a press body having an upright compression chamber, a plunger movable therein and capable of being shifted laterally thereof, a pair of movable rack bars fulcrumed at their upper ends to the press body and having hook like formations on their lower ends, horizontal rack bars forming continuations of the movable rack bars at their upper ends, a shaft carried by said plunger, pinions secured upon said shaft and intermeshing with said rack bars, and means for rotating said shaft.

4. In a baling press, the combination with a press body having an upright compression chamber, a pair of vertical rack bars, and a pair of horizontal rack bars joining with said vertical rack bars at their upper ends, of a plunger having a weighted guide member at its rear side arranged to guide the plunger in its movements in the compression chamber and to tilt the plunger when moved out of said compression chamber.

5. In a baling press, the combination with a press body having an upright compression chamber and having inverted L shaped guideways formed at the end walls thereof, of a plunger movable into and out of said compression chamber and having a guide block arranged to slide in the vertical portion of said inverted L shaped slots, and weighted guide blocks for tilting said

plunger when it is lifted out of the compression chamber.

6. In a baling press, the combination with a press body having an upright compression chamber, a pair of vertical racks fulcrumed at their upper ends to the press body and having hook like formations at their lower ends, of a plunger movable in said compression chamber, a shaft carried by said plunger, pinions on said shaft and intermeshing with said rack bars and arranged to engage the hook like formations to swing said rack bars past the dead center and lock the pinions in place, and means for rotating said shaft.

7. In a baling press, the combination with a press body having an upright chamber, vertical rack bars secured to the ends of said press body, a plunger movable in said compression chamber, a shaft carried by said plunger, pinions upon said shaft and meshing with said rack bars, a lever fulcrumed upon said shaft, pawl and ratchet mechanism between said lever and shaft, and a toothed detent fulcrumed upon the press body and arranged to engage one of said pinions to lock the same against retrograde movement.

8. In a baling press, the combination of a press body having a compression chamber, inverted L shaped rack bars on the ends of the press body, and inverted L shaped guideways adjacent to said racks, of a plunger movable into and out of said compression chamber, a shaft carried by said plunger, pinions upon the ends of said shaft arranged to intermesh with said rack bars and means for rotating said pinions in either direction.

In witness whereof, I have hereunto signed my name at East Chicago, Lake county, Indiana, this 22 day of June, 1911.

ANDREW WICKEY.

Witnesses:

GEORGE W. LEWIS,  
BESSIE BIGGS.