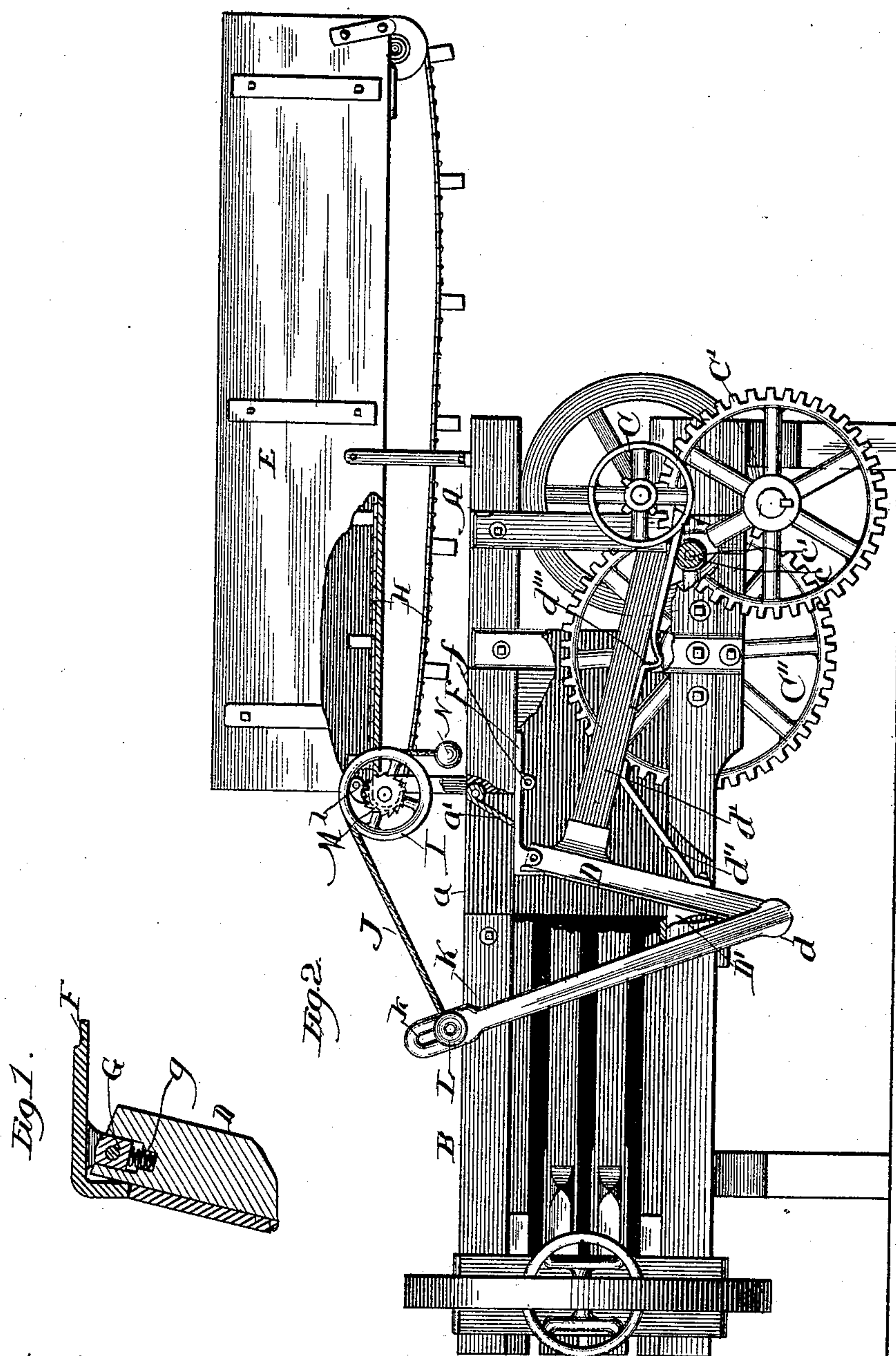


(No Model.)

A. WICKEY.  
BALING PRESS.

No. 459,503.

Patented Sept. 15, 1891.



Witnesses:

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# UNITED STATES PATENT OFFICE.

ANDREW WICKEY, OF CHICAGO, ILLINOIS.

## BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 459,503, dated September 15, 1891.

Application filed October 3, 1890. Serial No. 366,972. (No model.)

*To all whom it may concern:*

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

My invention relates to a press designed to bale such materials as shavings, cut hay, manure, &c., which consists of small and finely-divided particles, and are hence unfit for baling with the ordinary presses used for loose hay, straw, &c. The latter presses are impracticable, except when the material to be fed is comparatively loose and bulky and requires great plunger travel to put it into the desired form. To properly "tuck" the upper part of the bale and insure an even density in the product, the beater must be forced at each stroke some distance into the bale-chamber, as otherwise a portion of the charge would lodge on the front and upper edge of the said chamber and prevent the close packing of the top of the bale. Furthermore, to properly bale such stuff as shavings, especially those cut by a planing-machine, which are comparatively fine and compact when fed to the press, it is necessary to take very small charges to enable the machine to do its work without straining. When the ordinary baling-press is so adjusted that the plunger is drawn back at each stroke only far enough to receive the proper charge of such loose material, it is found that its throw is not sufficient to tuck the upper edge of the bale. On the other hand, if the machine be adjusted to give the beater proper range more room will be left between it and the bale than the charge will fill and the latter will fall upon the bottom of the machine, where, when the beater advances, it will be packed chiefly into the bottom of the bale, leaving the top loose and shaky.

It is the purpose of my invention to produce a machine which shall be free from the objections above stated and which shall be strong, compact, and at once simple in construction and efficient in operation.

In addition to this main improvement I

have invented a new automatic-feeding device adapted to use in connection with my improved plunger, and also certain minor structural improvements all more or less designed to aid and supplement the main elements of my invention above referred to.

I shall first describe fully and specifically the preferred form in which I have embodied my improvements, not, however, intending to limit myself to such specific devices, and shall thereafter clearly point out and claim such portions of said devices as I deem essential to the accomplishment of the various improvements that my invention is designed to effect.

Referring to the drawings, Figure 1 shows a side elevation of a baling-press with portions wherein no change from the common construction has been made broken away to disclose the novel features; and Fig. 2 is a section of the upper part of the plunger, taken vertically through said plunger and longitudinally of the press to show a part of the construction that cannot be seen in Fig. 1.

In the figures, the letter A is applied to the frame of the press, B to the bale-chamber, C C' C'' to the power-driven gearing, D to the beater or plunger, and E to the automatic feeder. The beater D is pivoted at *d* to a bracket secured to the frame A, and has a rigidly-fastened arm *d'*, strengthened by a brace *d''*, extending forward between the last two of the gear-wheels C''. Only one of these wheels is shown, as the other would hide more important parts. The two wheels are alike and rigidly connected, and the arm *d'*, extending between them, rests upon a spool-shaped roller *c*, mounted between the wheels upon the pin *c'*. As the wheels C'' are rotated, the roller *c* carries the arm *d'* upward, swinging the beater A upon the pivot *d* toward the bale-chamber. A heavy steel strap *d'''*, curving downward from the arm *d'*, aids the raising of the arm, and has also a further advantage in that its abrupt return to the arm allows the latter to drop quickly after the charge has been pressed home, which gives the machine a slight jar and facilitates the dropping of the next charge into place.

Upon the face of the plunger in place to



slide closely under the steel bottom of the bale-chamber is a casting D', which closes the gap between said bottom and the plunger as the latter recedes and passes out of the way as it advances. At the top of the plunger is a plate F sliding between the top of the press and rollers *f*, which is bent down over the face of the plunger a short distance, and also pivoted thereto by means of a block G let into the top of the plunger and resting upon a spring *g*. The latter forces the plate F up against the top of the press as the plunger falls away therefrom in swinging backward. The feed-opening *a* is directly over this plate, and the latter serves as a sliding door or gate to close the opening when the beater advances to press the charge. To insure a tight joint with the plate F, and also to keep it clean, the forward edge of the feed-opening bears a hinged scraper *a'*, resting by its own weight upon the top of the plate F.

The shavings are delivered from the conveyer E upon the plate F at each stroke of the beater by the automatic action of the conveyer. The latter contains the chain H, driven by the wheel I, rotated through the rope J by the arm K, rigidly connected with the oscillating plunger D. As the plunger advances the arm K also swings forward, rotating the wheel I to draw the portion of the chain in the conveyer-box toward the wheel. This discharges enough shavings from the conveyer to make up one charge for the press. The amount is determined by the adjustment of the cord, which is preferably effected by means of a slot *k* in the end of the arm K, and binding-screw L, adapted to slide back and forth therein. The wheel I is loose upon its shaft and rotates it through a pawl *i*, pivoted to the wheel and engaging with a ratchet-wheel M, fast upon the shaft, the two being arranged to engage in the direction which advances the conveyer-chain, but not in the opposite direction. The pull of the rope J is resisted by a weighted rope N upon the opposite side to return the wheel I to its former position, when the arm K swings back. The pawl and ratchet above described enable this to be done without running the conveyer backward, so that the latter has an intermittent forward motion, so adjusted as to drop the desired charge at each stroke of the plunger upon the plate F, where, as the plate slides back with the plunger, it will fall into the chamber below.

My different improvements, while designed and employed together, are yet capable of separate use, and I do not desire to limit myself to their combination, except as specified in the following claims, wherein I point out

what I believe to be new and desire to secure by Letters Patent.

I claim—

1. In a baling-press, the combination, with the frame, of a beater D, pivoted to the frame beneath the floor of the bale-chamber, and a projection D', secured to the face of the beater, adapted to close the gap between the edge of the floor and the beater as the latter recedes on the back stroke, substantially as described.

2. In combination with the frame of a baling-press and suitable driving mechanism, a beater D, pivoted to the bottom of the bale-chamber and having a rearwardly-extending arm *d'*, bearing a strap *d''*, and the driven wheel C<sup>2</sup>, connected with the driving mechanism and carrying the roller *c*, substantially as described.

3. In combination with the frame of a baling-press and a reciprocating beater, a conveyer containing a device for moving the contents thereof toward the feed-opening, and a suitable connecting device between said conveyer and the beater adapted to operate said conveyer when the beater moves in one direction, but not when it moves in the opposite direction, substantially as described.

4. In combination with the frame of a baling-press, a reciprocating beater, a conveyer E, containing a chain H, running over suitable pulleys at the opposite ends of the conveyer, a wheel I, loose upon one of the shafts which carry these pulleys, a rope J, connected with the beater at one end, passing over the wheel I, and carrying the weight N at the other end, the ratchet-wheel M, fast upon the shaft of the wheel I, and the pawl *i* upon the latter, arranged to engage the ratchet-wheel M in the direction which will advance the chain of the conveyer, but not in the opposite direction, substantially as described.

5. In a baling-press, and in combination with suitable driving mechanism, the pivoted beater D, carrying the arm K, the rope J, the wheel I, the rope N, the pawl and ratchet *i* M, the conveyer E, and conveyer-chain H, substantially as described.

6. In a baling-press, the arm K, oscillating back and forth with the beater, having at its free end the slot *k*, the rope J, attached thereto by the binding-screw L, the wheel I, bearing the pawl *i*, the ratchet-wheel M, and the conveyer-chain H, carried by the shaft thereof, substantially as described.

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Witnesses:

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