W. ADAIR.

Cotton and Hay Press.

No. 220,328. Patented Oct. 7, 1879.

Fig. 1.

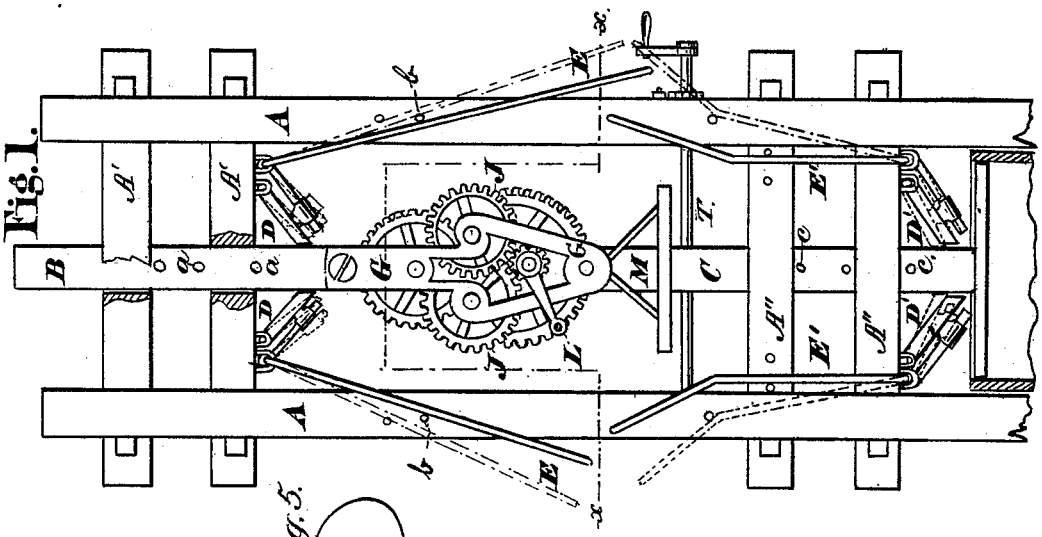


Fig. 5.

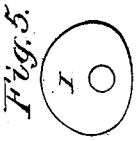


Fig. 2.

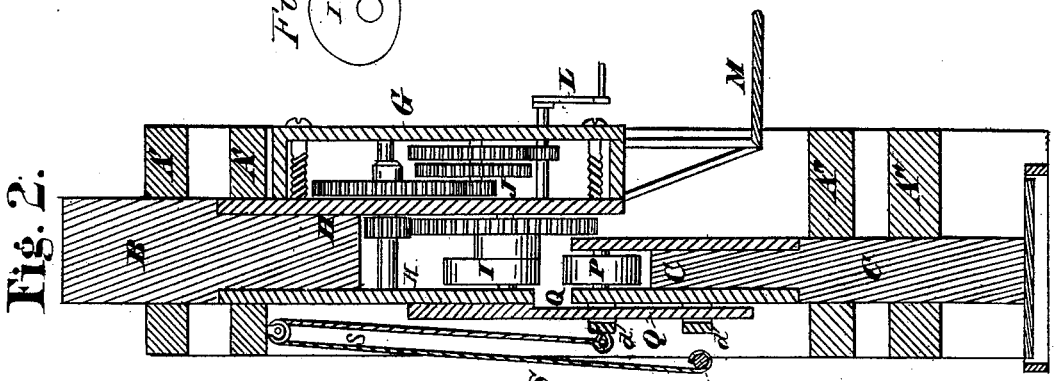


Fig. 3.

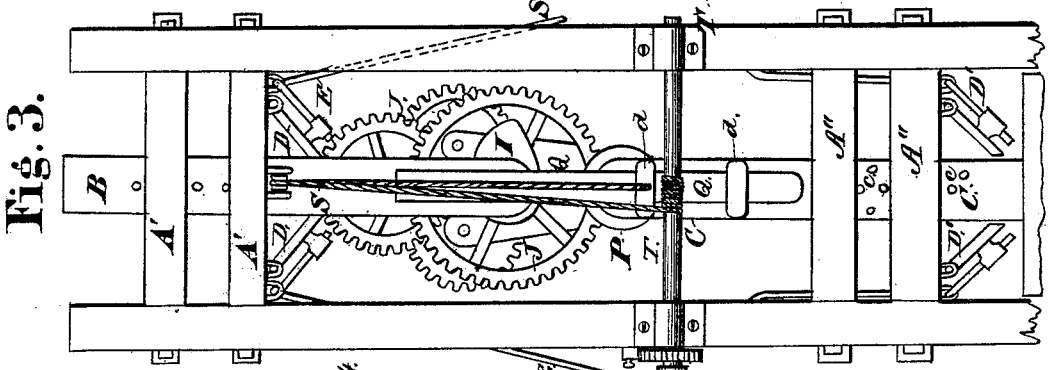
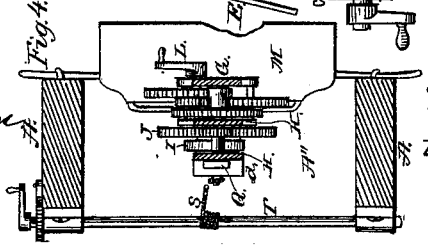


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILL ADAIR, OF CANMER, KENTUCKY.

IMPROVEMENT IN COTTON AND HAY PRESSES.

Specification forming part of Letters Patent No. **220,328**, dated October 7, 1879; application filed July 29, 1878.

To all whom it may concern:

Be it known that I, WILL ADAIR, of Canmer, in the county of Hart and State of Kentucky, have invented a new and useful Improvement in Cotton and Hay Presses, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to provide an improved form of press for use in baling cotton, hay, &c., or pressing and packing other commodities. The platen is attached to a sliding beam, and the mechanism for actuating it is attached to another sliding beam, which is arranged in alignment with the platen-beam, which is allowed to move downward alternately with the platen. Said mechanism consists of a train of gears and an involute wheel or eccentric, which is operated thereby and acts intermittently on the head of the platen beam or stem to force the follower downward. The construction and operation of the press will be understood from the following description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is, mainly, a side elevation, parts being broken away. Fig. 2 is a central vertical section. Fig. 3 is a side elevation. Fig. 4 is a cross-section on line *x x*, Fig. 1. Fig. 5 is a side view of one form of involute wheel detached.

The press-frame A is rectangular and oblong, and placed in vertical position. The mechanism for operating the platen or follower is attached to the beam B, and the platen is secured to the beam C. Said beams B C slide vertically in the respective upper and lower cross-beams, A′ A″, of the frame A, and are placed in alignment, so that the involute wheel I, which is attached to the lower end of the upper beam, B, will act directly on the end of the lower beam, C, for the purpose of forcing it downward, and thus causing the follower to exert the desired pressure on the cotton, hay, or other substance. To lessen the friction between the wheel I and beam C, a roller, P, is affixed to the head of the latter.

The mechanism to operate the wheel I consists of a train of meshing gears, J, large and small, to which rotary motion is imparted by means of a crank, L, keyed on the lower pinion shaft or axis. Said gears have their bearings in a metal casing or frame, G H, attached to the lower end of beam B. The pinion on the crank-shaft L is the first of the series or train, and from it power is transmitted through the others to the shaft of the eccentric, on which latter shaft a large gear is fixed. By this arrangement of gears comparatively slight force applied to the crank L will be multiplied many times in the eccentric I, so that a man operating the crank L is able to apply to the follower all the force required for the purpose of ordinary baling.

The operator stands on the small platform M, which is located below the crank L and forms an attachment of the frame G H.

In using the press, the beam B is secured by means of pins *a* and hinged pawl-plates D, having rods E attached, which constitute levers for operating them, and which are held in different positions by pins *b*.

As shown in full lines, Fig. 1, the pawls D are clamped against the sides of the beam B, and the latter is held immovable. The eccentric I rests on the roller P, and by now rotating the crank L the eccentric will be caused to make a complete revolution, and thus, acting on the principle of the inclined plane, it will exert a continuous pressure as its point of contact with beam C passes from the point of least to greatest radius. Thus the follower will be forced down to the distance of the largest radius of the eccentric. The follower-beam C is then secured by the hinged pawls, D′, which are arranged like the upper pawls D, and pins *c* may also be inserted in the beam below the cross-bars A″, if necessary, to assist the pawls in holding the follower. Said pawls D′ and pins *c* will hold the follower fixed in the position to which it has been advanced, and the upper pawls, D, are then unlocked and pins *a* removed, to allow the beam B and its attachments to slide downward by the effect of gravity until the eccentric I again rests on the roller P, when the crank L is rotated as before, and the pawls D′ being simul-

taneously released, the action of the eccentric forces the follower farther down, and thus the operation goes on until the desired pressure has been applied.

As shown in full lines, Fig. 1, the upper beam, B, is fixed and the lower beam, C, is free to slide, while the dotted lines indicate the position of the respective sets of pawls D D′ when the upper beam is free to move and the lower beam is clamped immovably.

In order to assist in keeping the beams B C in alignment and holding them steady, I attach a bar, Q, to the upper beam, B, and confine its lower end by keepers *d* on the beam C.

For the purpose of raising the beams and their attachments to the required height for beginning the pressing operation, I employ a windlass or rope, S, and ratchet crank-shaft T. The rope is attached to one of the keepers *d* on the lower beam, C, and passes over a pulley attached to the upper cross-beams, A′.

What I claim is—

1. The combination, with a press-follower, of a sliding beam and mechanism attached thereto for actuating the follower, and devices for clamping or securing said beam and follower, so that one may be advanced or moved downward while the other is held immovable, as shown and described.

2. The combination of the train of gearing and the involute wheel with the beam B and follower-beam C, substantially as shown and described, to operate as specified.

3. The combination of the hinged pawls and their levers with the sliding gear-carrying beam and follower-beam, as shown and described.

4. The combination of the guide-bar Q with the sliding gear-carrying beam and follower-beam, the latter having keepers attached, as shown and described.

5. The combination of the windlass S and T with the sliding beams and their attachments, as and for the purpose specified.

WILL ADAIR.

Witnesses:

FRANK PARDON,

C. HEWITT.