J. M. TICHENOR.

Baling-Press.

No. 213,010 Patented Mar. 4, 1879.

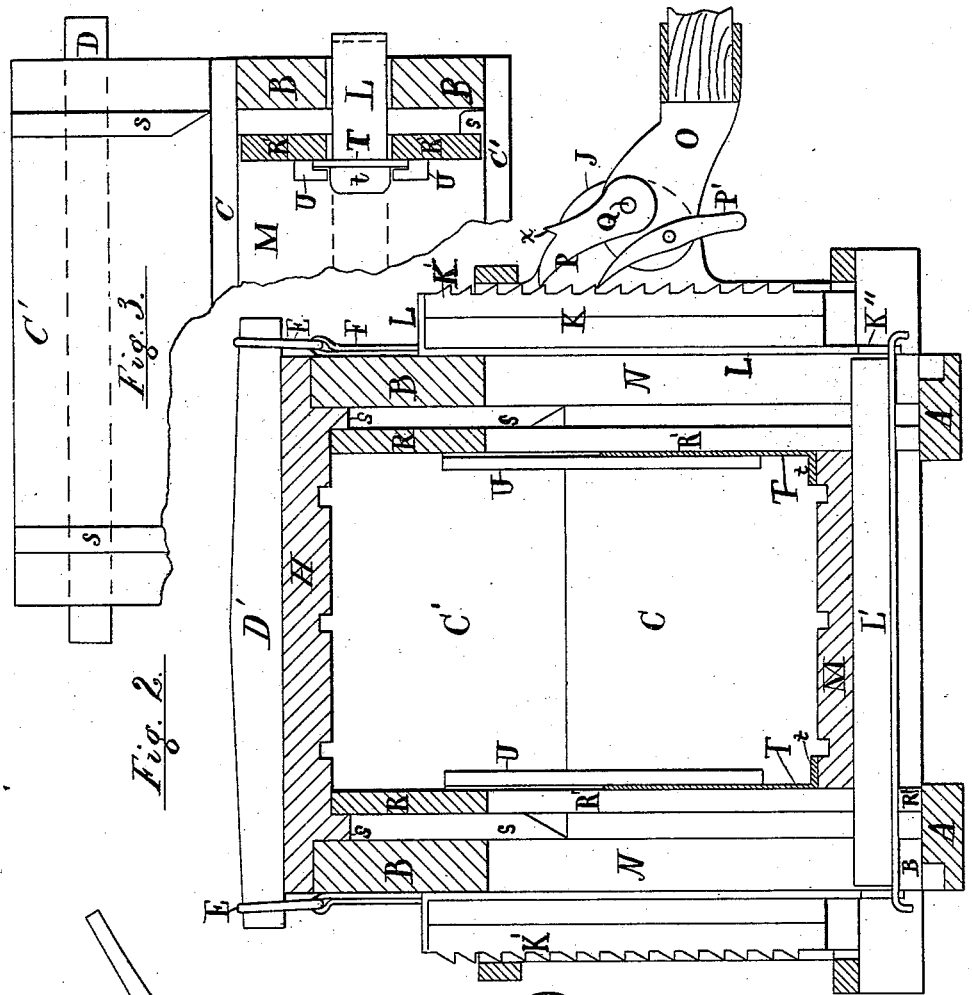

Fig. 3.

Fig. 2.

Fig. 1.

Attest:

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UNITED STATES PATENT OFFICE.

JAMES M. TICHENOR, OF IRVINGTON, NEW JERSEY.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. **213,010**, dated March 4, 1879; application filed October 7, 1878.

To all whom it may concern:

Be it known that I, JAMES M. TICHENOR, of the village of Irvington, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to presses for baling hay, in which the mechanism patented by H. W. Cornell as a lifting-jack, June 30, 1874, No. 152,608, is employed to compress the hay; and my improvements consist in the application of certain plates or boards to the inside of the press, for loosening the bale, when pressed therein, to facilitate its removal.

The operation of the machine will be understood by reference to the drawings, in which—

Figure 1 is an end view or elevation of the press; Fig. 2, a vertical section taken through the center line of Fig. 1; and Fig. 3, a partial plan of the machine with the top door removed.

A represents the sills upon which the press is built; B, the ends secured thereto, and extending to the top of the press. C C are the front and back of the press, the upper halves being formed into doors C′, each of which is strengthened by a batten, D, the ends of which project beyond the body of the press at B, and are secured, when the press is in use, by the iron loops E, held by the eyes F, fastened on the ends B near the batten.

The doors C′ are hinged in the usual way at G, and close at their upper edge beneath the top door, H, which is hinged by one edge at I, and kept closed when in use by loops E, secured to the ends B near the top of the press, passing over the ends of the batten D′. The loops for the doors C′ are shown hinged in a single piece of metal, an eye, F, being formed at each end for one loop. By this construction the loops strain against one another, the metal receiving the tension and wholly relieving the wood to which it is attached.

If desired, the loop for the batten D′ in the top door can be secured to the same piece of metal as the other two, thus removing the tension somewhat from the wood.

The lifting device formerly patented, as above stated, is shown attached by brackets J to the end B in Fig. 1, and is employed at each end of the press, two operators being employed to work the two lifters simultaneously.

Only the lifting-rack K′ is shown at the left end of the view in Fig. 2; but the lever and pawls are fully illustrated at the right side of the same figure. The lifting-rack consists of a wooden bar, K, to the outer side of which a cast-iron ratchet-plate, K′, is fastened, while a wrought-iron strap, L, is attached to its inside and fitted at its lower end to receive the batten L′, which extends beneath the movable follower M, and projects through the slot N in the end of the press, to engage in the slot K″ in the end of the strap L, attached to wooden bar K and rack K′.

A lever, O, is pivoted between the brackets J at each end of the press, and carries two pawls pivoted in a fork formed in the end of the lever. The pawl P is pivoted in the slot upon the center or fulcrum Q of the lever, while the pawl P′ is pivoted below the fulcrum Q, and therefore moves with the lever-head. As the lever is worked up and down by the operator, one of the pawls sustains the rack, while the other lifts. By the projection *x* on the pawl P, it can be thrown out of gear with the rack K′, and by pressing a lower extension of the pawl P′ its upper end is drawn out of the rack and the bed is free to fall.

To loosen the bale when pressed and properly secured, I construct the press of greater width than the required size of the bale to be pressed, and insert inside the ends B B two false sides or looseners, R, which serve to support the hay while being pressed, but relax their pressure upon the bale as soon as the doors C′ and H are opened. This effect I produce by securing strips *s* to the inside of the said doors transversely near their ends, the strips fitting lengthwise against the ends B B and supporting the looseners R R at a distance from the ends equal to the breadth of the strips *s*, leaving a space between the ends B and the looseners R of about two inches.

The space between the two looseners is equal

to the required size of the bale, and when the doors C′ and H are opened after the bale is pressed the removal thereby of the strips from behind the looseners permits them to fall back about two inches, thus enlarging the cavity of the press about four inches and permitting the ready removal of the finished bale.

The strips S S are tapered or beveled at the part which is first crowded between the ends B and the looseners when the doors C′ are closed, thus enabling them to push the looseners to their proper positions for pressing a bale, and as these strips are secured to the doors C′ and H, they cannot get lost or out of place.

In Fig. 3 one of the doors C′ is shown closed, with the strip *s* fitting between the end B and the loosener R, and the other door C′ being shown open, the beveled end of the strip *s*, above referred to, attached to it, as plainly shown. The follower M fits the space between the looseners R R, and its lifting-batten L′ requires a slot formed in the middle of each loosener from the bottom upward, for the same purpose as the slots N in the ends B B. These slots are marked R′, and in order to keep the hay from crowding into them when the press is filled, I place over each slot a self-adjusting plate or slide, T, having its lower end, *t*, resting upon the follower M, and kept close against the loosener R by cleats U. These plates T are made long enough to cover the slots R′ in the looseners R when the follower M is in its lowest position, and slide upward in the cleats U as the follower rises when pressing a bale. It may here be observed that the looseners R do not move at the bottom of the press, but are kept in position by cleats or other appropriate means.

In Fig. 3 the plate T is shown in place, and the foot is seen resting on the follower M, that it may be pushed upward as the follower advances. The foot of the plate is shown in Fig. 2 as bent to give it a bearing on the bed.

From the above description it will be seen that the appliances I have shown constitute a complete and effective machine for the purpose intended.

The lifting devices being already patented, I claim them for the present machine merely in combination with the follower of the press.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The looseners R′, having central slots, in combination with the ends B and doors, as set forth.

2. The combination, with the looseners R′, arranged as described, of doors carrying strips *s*, as set forth.

3. The combination, with the looseners having slots, of self-adjusting plates, arranged, as described, to prevent the access of hay, &c., to said slots, as specified.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

JAMES M. TICHENOR.

Witnesses:

OLIVER DRAKE,

P. J. INSLEE.