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W. A. LAIDLAW.

BALING PRESS.

No. 365,187. Patented June 21, 1887.

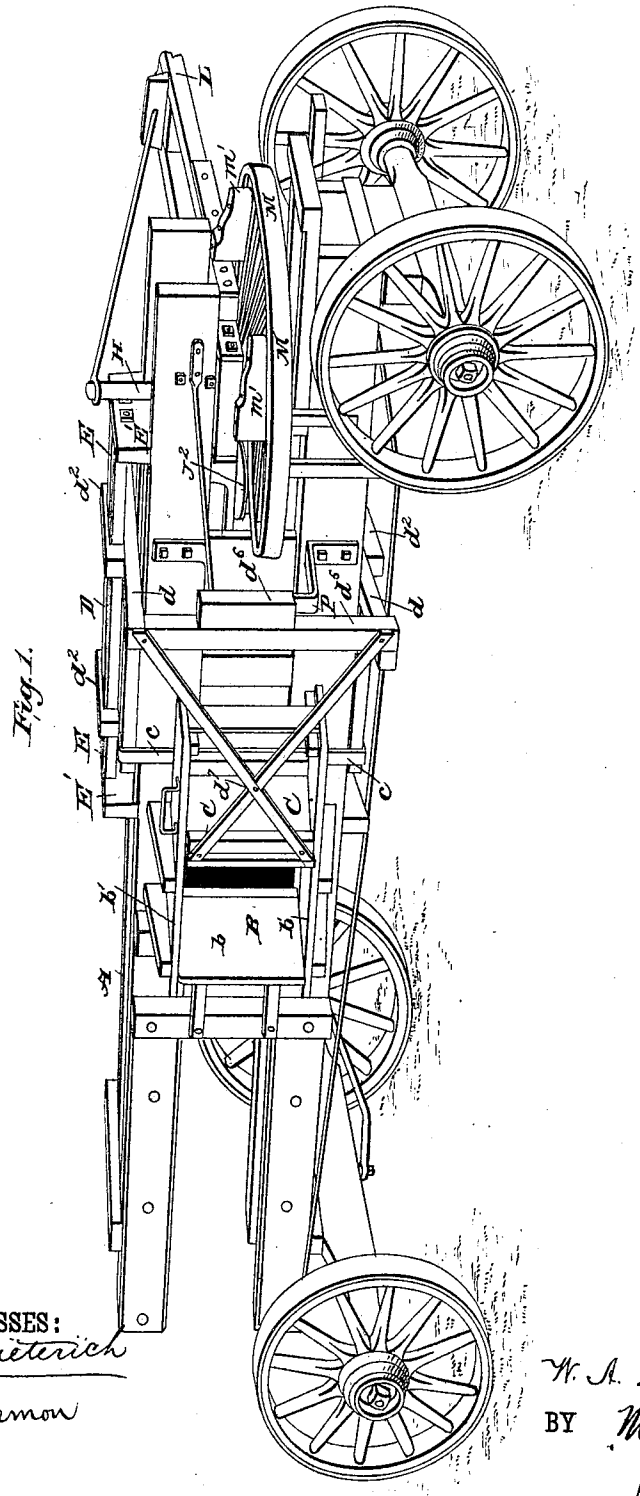


Fig. 1.

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INVENTOR:
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N. PETERS. Photo-Lithographer. Washington, D. C.

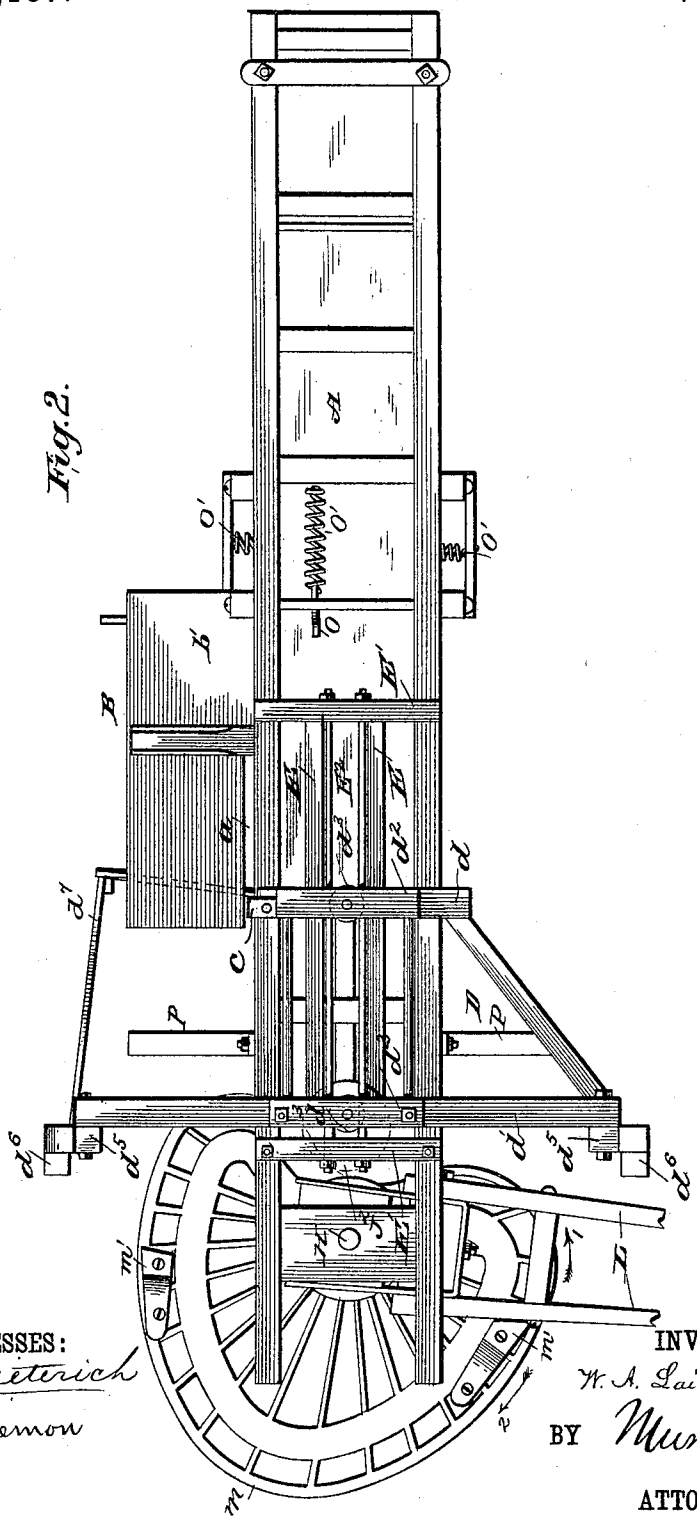
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No. 365,187. Patented June 21, 1887.

Fig. 2.



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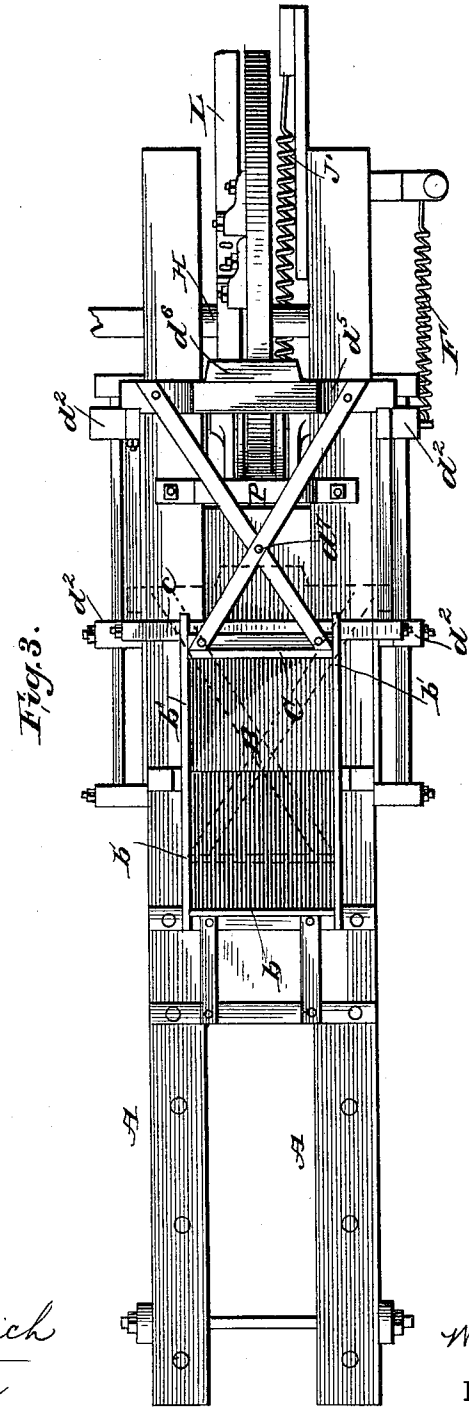


Fig. 3.

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BALING PRESS.

No. 365,187. Patented June 21, 1887.

Fig. 4.

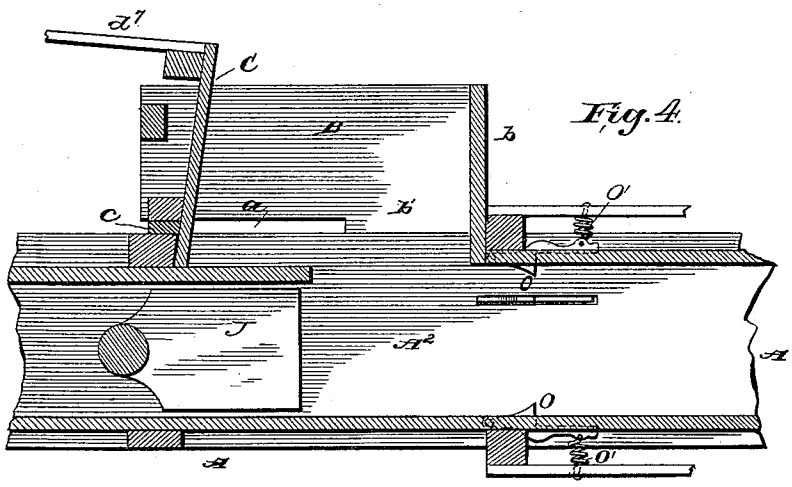
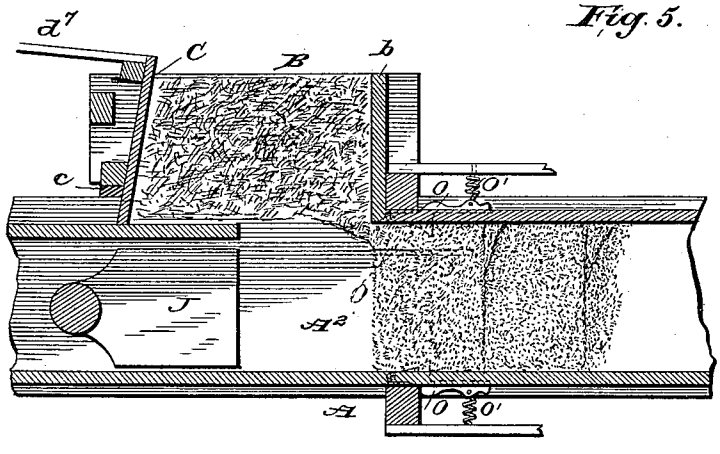


Fig. 5.



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BALING PRESS.

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Fig. 6.

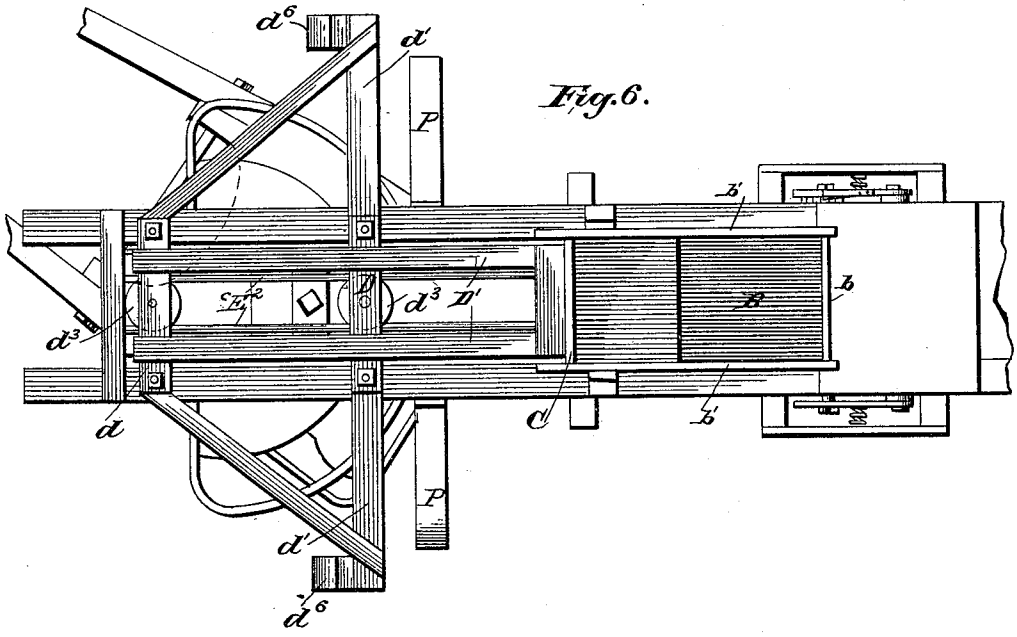
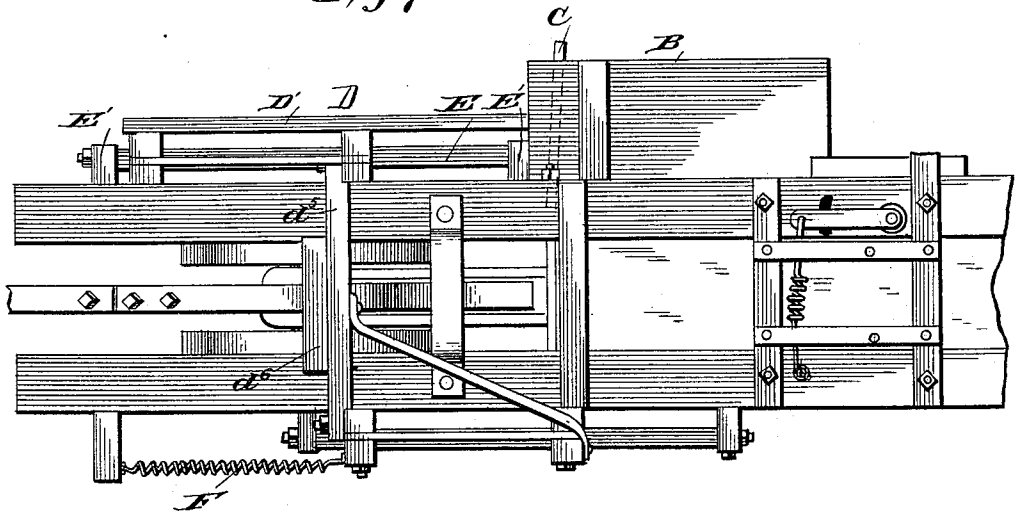


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM A. LAIDLAW, OF CHEROKEE, KANSAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 365,187, dated June 21, 1887.

Application filed March 26, 1887. Serial No. 232,509. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LAIDLAW, a citizen of the United States, residing at Cherokee, in the county of Crawford and State of Kansas, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view showing a baling-press with my improvements attached, the feed-opening being on the side. Fig. 2 is a plan of the same. Fig. 3 is a side elevation of the same on the feed side. Fig. 4 is a horizontal sectional view of a portion of the press through the baling-chamber and feed-chamber. Fig. 5 is a similar view, but showing charges of hay in the baling and feed chambers and the relative positions of the follower and the feed-compressor. Fig. 6 is a plan view of a modification, part of the baling-chamber being broken away. Fig. 7 is a side elevation of same.

The object of my invention is to provide a compressor for compressing the hay to one-half of its bulk before delivering it into the bale-chamber, thereby dispensing with the usual door and catches necessary thereto.

The invention will be first described, and then particularly pointed out in the claims.

In the drawings, Figs. 1 to 5, inclusive, I have shown my improvements applied to a press for which Letters Patent of the United States No. 347,811 were granted to me on the 24th day of August, 1886. I have shown only so much of the press as will be necessary to a clear understanding of my improvements.

A represents the frame of the machine suitably braced by cross-pieces, and having a feed-opening in one side adjacent to the baling-chamber.

B represents the feed-chamber at the side of the frame in front of the feed-opening, the said chamber being about twice the length of the feed-opening. The feed-chamber B is formed of an end piece, *b*, at right angles to the rear end of the feed-opening, and top and bottom pieces, *b' b'*, between which the feed-compressor C slides. The compressor C is secured at its inner end to a vertical bar, *c*, working in the opening *a* between the chamber B and the side of the frame A, and connected at its outer corners to a sliding frame, D, working under parallel guide-bars E E, secured at their ends to cross-pieces E' E' on the top and bottom of the frame A. The cross-pieces E' E' are also connected by the long rods E^2 E^2, extending along the inner adjacent sides of the guide-bars E and secured in place by nuts. The transverse bars *d d'* of the frames D are each provided with a cleat, d^2, extending across the guide-bars E E, and friction-rollers d^3 are journaled between the bars *d d'* and their cleats d^2, with their peripheries engaging the inner faces of the guide-rods E^2, so as to hold the frame perfectly steady and lessen friction. To the cleats d^2, or other part of the sliding frame, one or more springs, F, are secured, which spring or springs is or are connected to the main frame A, so that the sliding frame D and its compressor C will be returned to their normal positions. The cross-bars *d'* of frame D project beyond the sides of the main frame and are connected by vertical strips d^5, provided with buffers or contact-pieces d^6. The outer edge of the compressor C is connected with the ends of the front vertical bar, d^5, by means of the crossed brace d^7, to strengthen the compressor at that point against the strain exerted upon it. The baling-chamber is made wider in front of its feed-opening, as shown at A^2, so that when the compressor C has compressed a charge, as shown in Fig. 5, and the same has been pushed into the bale-chamber, the follower J may the more readily move the same toward the delivery end away from the feed-opening. The compressor C is inclined, as shown best in Figs. 2, 4, and 5, so that the feed-chamber will be widest at its end adjacent to the feed-opening, and thereby allow the compressed charge to be more readily pushed into the baling-chamber. It will be noticed that any loose hay projecting from the charge in the chamber across the forward side of the feed-opening will be folded down by the next compressed charge entering the baling-chamber, as shown in Fig. 5.

When the sweep L is in the position shown in Fig. 2, and a charge is in the feed-chamber B, the sweep is first moved in the direction shown by the arrow 1, Fig. 2, to operate the compressor C. After the charge has been compressed it is pushed by the operator into the baling-chamber, and the sweep is moved in

the direction of the arrow 2, and strikes the block m' and turns the cam M, which, acting on the friction-wheel J^2, forces the follower J forward to fully compress the charge in the baling-chamber. The movement of the sweep is continued to the opposite side of the press, and as soon as the point m of the cam M passes the friction-wheel J^2 the force of the spring J', which returns the follower, will cause the said friction-wheel to press on the inclined rim of the cam and complete its revolution, whereby the opposite block, m', will be thrown against the opposite side of the sweep, so that the sweep can operate the cam by reversing its movement. The rearward movement of the sweep at both sides of the frame A is limited by the stops P.

The same hay-retainers O and their springs O' are used as in said prior patent; but I also place one in the top and one in the bottom, as well as in the sides of the baling-chamber, so as to hold the front side of the charge.

It is obvious that instead of having the rollers on the frame D sliding between the guide-rods E^2 the longitudinal bars of the frame might slide between guide-rollers, which would be the mere reversal of the present construction. By compressing the charges before delivering them to the bale-chamber the hay will not bulge out when the follower or plunger is retracted, as do charges of loose hay.

In Figs. 6 and 7 my improvements are shown applied to the machine for which Letters Patent No. 359,081 were granted to me March 8, 1887. The feed opening and chamber B are at the top of the press instead of the side. The sliding frame D is operated by the sweep in the same manner as in the side feed, and the compressor C is connected to the frame D by means of the two longitudinal bars D'. The cam, sweep, and follower are the same as in the patented machine last referred to, and need not be described nor further illustrated, as their operation will be readily understood by reference thereto.

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

1. The combination of the main frame, widened in front of its feed-opening in advance of the retracted position of the follower, with the feed-chamber adjacent to the feed-opening, and the longitudinally-sliding compressor working in said feed-chamber, and inclined from its inner end outward toward the closed end of the said chamber, substantially as set forth.

2. The combination, with the main frame having a feed-opening in its baling-chamber, a follower, and the sweep for operating the same, of a feed-chamber at the feed-opening, a compressor working within the said chamber, and a sliding frame connected to said compressor and extending into the path of the sweep at opposite sides of the main frame, substantially as set forth.

3. The combination, with the main frame, the baling-chamber having a feed-opening, and the follower, of a feed-chamber adjacent to the feed-opening, and being provided with an opening between the inner side of the chamber and the frame, a compressor within said feed-chamber, guide-bars on top and bottom of the main frame, a sliding frame under said bars and having a bar to which the compressor is secured working in said opening, cleats on the sliding frame having anti-friction rollers acting on the inner edge of the guide-bars, cross-bars at the rear ends of the sliding frame, vertical strips connecting the ends of the cross-pieces, and the cross-brace connecting the outer edge of the compressor and one of said vertical strips, and the sweep adapted to strike said vertical strips, substantially as set forth.

4. In a baling-press, the combination, with the main frame, the follower, a retracting-spring therefor, the heart-shaped cam having opposite blocks, and the sweep mounted on the axis of the cam between the blocks, of the feed-chamber, the compressor in the feed-chamber, and the sliding frame connected to the compressor and operated by the sweep in its rearward movement, substantially as set forth.

WILLIAM A. LAIDLAW.

Witnesses:
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JAMES LA RUE.