

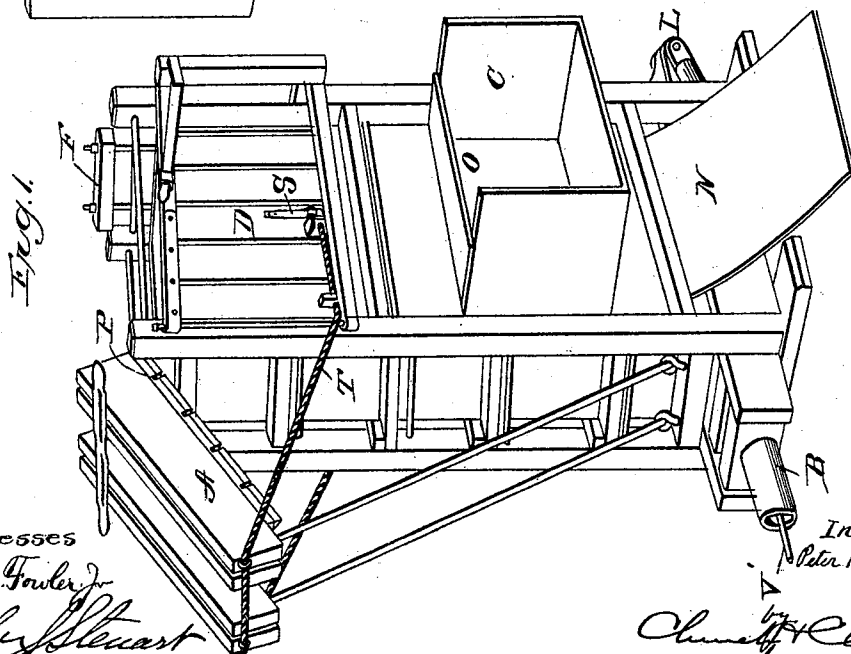
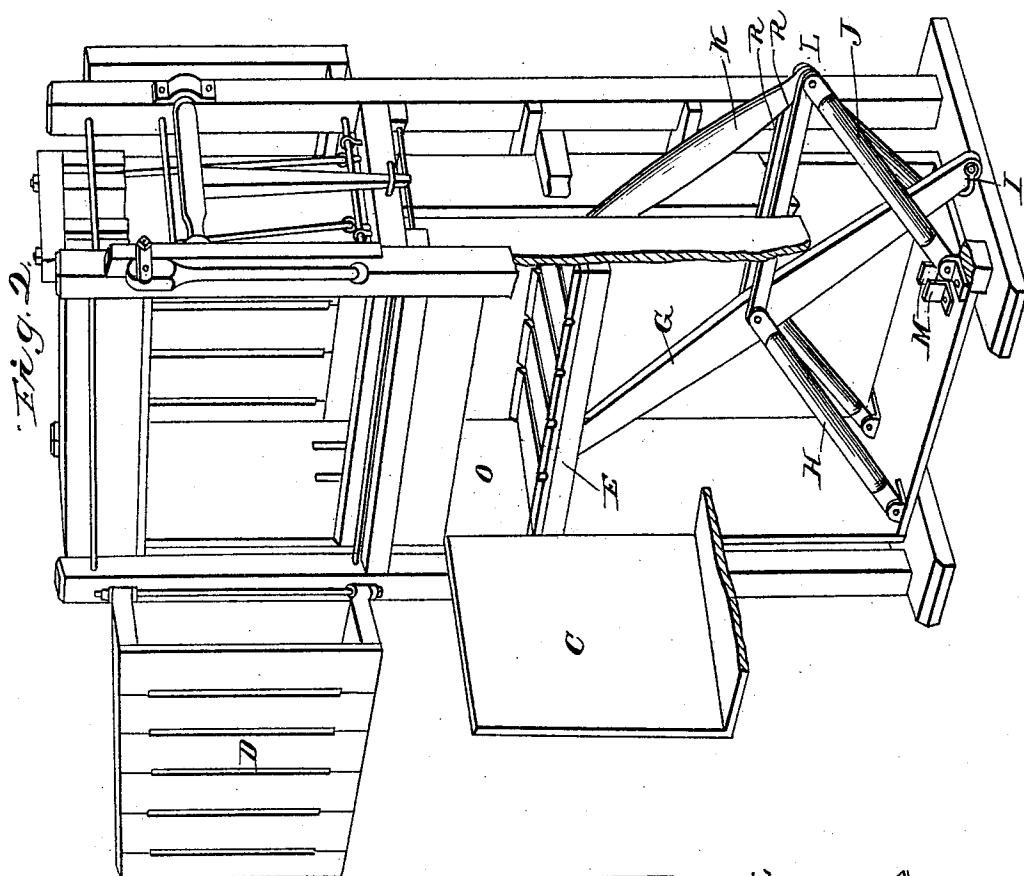
(No Model.)

3 Sheets—Sheet 1.

P. K. DEDERICK.
BALING PRESS.

No. 583,459.

Patented June 1, 1897.



Witnesses

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(No Model.)

3 Sheets—Sheet 2.

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Fig. 3.

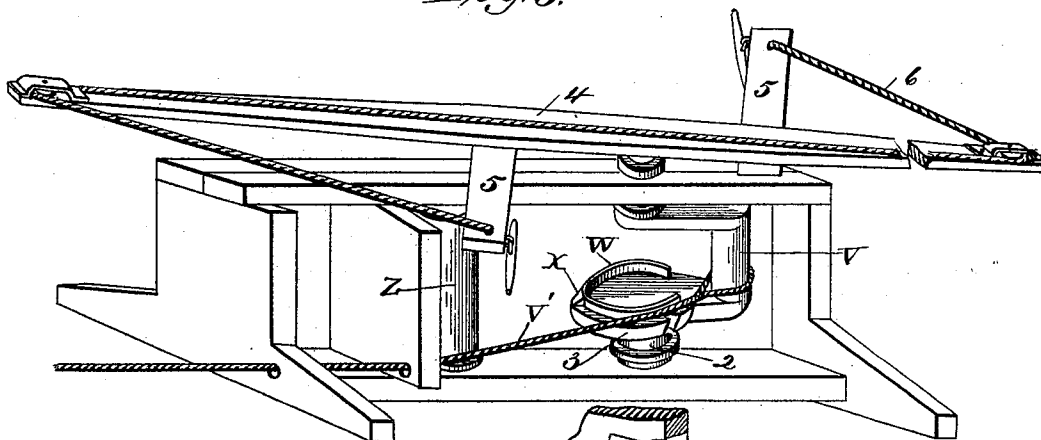


Fig. 5

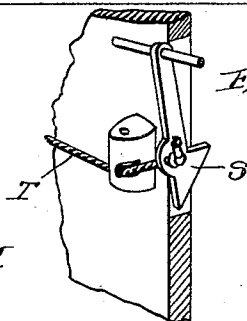


Fig. 4.

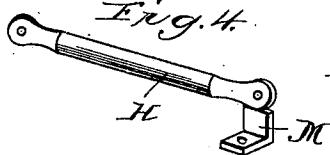
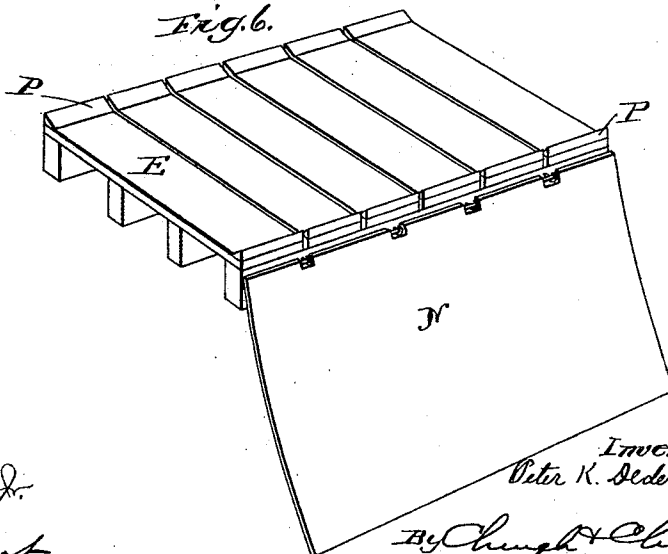


Fig. 6.



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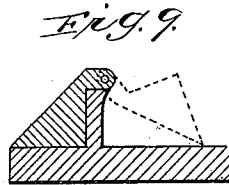
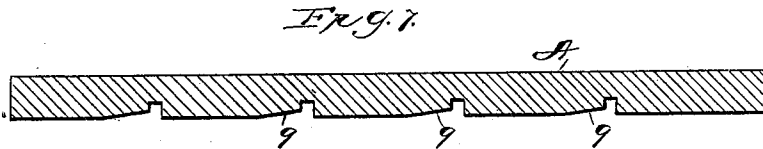
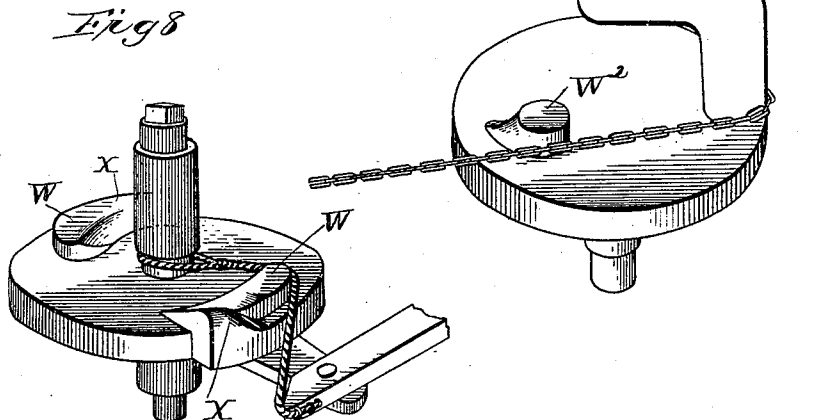


Fig. 10.



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UNITED STATES PATENT OFFICE.

PETER K. DEDERICK, OF LOUDONVILLE, NEW YORK.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 583,459, dated June 1, 1897.

Application filed December 20, 1893. Serial No. 494,243. (No model.)

To all whom it may concern:

Be it known that I, PETER K. DEDERICK, of Loudonville, county of Albany, State of New York, have made certain Improvements in
5 Baling-Presses, of which the following is a specification, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon.

Figure 1 is a perspective view of my improved baling-press. Fig. 2 is a view disclosing the pressing power and connections; Fig. 3, a view of the horse-power attachment. Figs. 4, 5, 6, 7, 8, 9, and 10 are detail views.

Similar letters and figures represent similar
15 parts.

Fig. 1 represents the press and upright frame with the power down and head A thrown back ready for filling and with the horse-power connected by a pipe B to the
20 press.

At the side of the press a hopper C is provided when it is desired to operate as a repeater, and which is removed and the opening closed when to be operated as a box-press, by filling in and tramping from the top. Doors D, one at each side, are provided for removing the finished bale. When replaced for pressing, the head A is secured by means of yoke F, as shown in Fig. 2.

30 The power is constructed with a follower E, moving within the box, to the inner end of which is pivoted a lever G, provided with fulcrum-arms H, and the power from the capstan is applied by chain, rope, or rod to the extended end of lever G at I.

35 A pair of fulcrum-arms J, similar to arms H, are located at the bottom of the press at the opposite end, with arms K pivoted to them at the top and the upper end of arm K passing through the lining of the press-box and pivoted to the follower E within the press, and arms J K are connected to lever G by connections R. This arm K may be formed of a flat bar of steel, so as to require but a
40 small slot in the box-lining, and the joint L, formed by pivoting J and K together, will vibrate and remain wholly outside of the box, and thus there will be a tight box in a press of ordinary dimensions, excepting the small
45 slot through which the upper end of arm K passes.

At the bottom of the press I locate two

studs or stops M, Figs. 2 and 4, in such position that one will form a rest and stop for each fulcrum-arm H when the power is entirely down. This prevents sag of the joint, 55 and as a result the lever will start upward with one-half the power applied on the horse-lever and lever end I, and thus I am able to run the press very much lower down and start. In order that this point may be more clearly comprehended, I would state that these levers are very heavy, and when dropped as low as contemplated by me it is almost impossible to prevent the joint of the toggle 65 from crowding past the center, so that when the power is applied the tendency would be to draw down on the toggle-arm. The ordinary looseness of the joints occasioned by a very slight wear would be sufficient to permit this movement, and it would take place even though the traverser itself were arrested; but what is of greater importance, by locating the stops M at or near the fulcrum of the extended lever they operate in a measure as the fulcrum when the power is first applied and assist materially in initiating the upward movement of the upper end of the lever. 75

To the follower E, Figs. 1 and 6, I hinge a 80 piece of sheet metal N, so that its surface is flush with the side of the follower and its lower end projects down, so that as the follower is lowered it passes through an opening in the side of the press, as shown in Fig. 85 1, N being the sheet of metal, and the power being shown nearly or quite down. This sheet metal forms an apron to close the opening O as the follower passes up, and another charge may be pitched in the hopper C against it, so as to be ready to shove in when the follower again falls back. 90

It should be observed that with open-feed orifice O shown the follower next the feed-orifice does not fill the box by the amount of 95 room required for the overlap, and this also allows more room for the play of sheet N.

To the upper side of the traverser edges, as shown in Fig. 6, I attach two angular strips P P, one at each side, through which the tie- 100 slots are cut, and similar pieces are put on the under side of the head A at the edges, as shown in Fig. 1, the object being to remove the sharp corners of the bale and allow the

use of bands several inches shorter, and thus hold the bale closer, as the tie cuts in the sharp corner if left on. The follower might be provided with a raised projection at each side of the tie-slots instead of a continuous strip with same result as regards shorter ties and without removing the corner, but the head must have a continuous strip to prevent catching in the hay at the top. As the head swings over the press with a downward motion the edges of the planking are liable to catch, particularly if slats are used on the bale, and to obviate this I bevel the planking between the slots either part or all of the way, as shown at 9 9, Fig. 7.

At each side of the press-box I provide one or more retainers to prevent the hay falling back with the traverser when reversed. In Fig. 1 I have shown one retainer S at a side, (more clearly illustrated in Fig. 5,) being in the form of a hook pivoted to the side or door, and its hook end projected within the press by means of a spring behind the retainer. To this retainer I attach the rope T, which sustains the head A when thrown back, as shown in Fig. 1. The rope passes from each side of the head through a hole (see Fig. 5) to turn the corner and is attached direct to the retainer or retainers. Thus when the head is removed from the press top to tramp in hay its weight pulls back the retainers, as they must necessarily be, to allow the hay to be tramped past them, and when the head is replaced the retainers at once resume their position again.

The connection from end I of the lever is attached to the crank-wrist V by passing the cable V' around it, as shown, or it may be attached to a band on the wrist. Flange W, Fig. 3, or pin or stud W², Fig. 10, projecting upward, forms a cam or drum around which the cable winds until reaching a trip X, by which it is run off over the top of the flange, and the power of the press falls back until stopped by the crank and cable, and the horse continuing lets the power down slowly the balance of the way. Thus at the start, when but little power is required, as when forming bales by repeating and feeding the loose material through the feed-opening O, then the crank moves the power up most of the way quickly, and when more power is required it is secured by the cable winding on the small cam or drum W, thus utilizing the power of the horse three-fourths of the way around when the power is reversed by tripping the cable, and instead of drawing the horse now holds back and lets the power down slowly in moving the other quarter-turn. Thus each round of horse draws the power up and lets it back slowly.

If desired, friction on the crank or horse lever will relieve the crowd on the horse when the cable slips off the cam, but it is not essential.

The trip is preferably located to trip before the power is drawn entirely up, and to com-

plete the pressing operation the cable is wound on the drum 2 by passing it under the flange 3 through the break in it shown. This drum 2 is smaller, and with increased power. Hinging the trip to turn it out of the way, as in Fig. 9, would allow completion of the bale on the cam W, but there would be no increase of power, as with drum 2.

In very light work the use of drum 2 may be dispensed with and the bale bound just before the cable is tripped, but would be some larger by reason of not having been condensed as close, or a loose follower for filling to reduce the bale might be inserted to complete it, the same being provided with slots for binding the bale.

Drum Z is required to turn the cable and prevent chafing where it enters the pipe.

The cam or drum W might be dispensed with and the material be packed in by the crank and cable alone and the bale completed by the drum 2.

Trip-cam X might be arranged to make two strokes to a round of the horse by substituting another cam X, located at opposite sides of a shaft, as shown in Fig. 8, and for light work would constitute a rapid operation, and the power with either one or two cams might be applied to the lever of any press.

To equalize the draft when two horses are used on separate levers, I pivot to the main lever 4 sway-bars 5 5, Fig. 3, to the end of each of which the horse-whiffletree is attached. These sway-bars I connect together at their outer ends by a line 6, passing back and through both ends of main lever 4, so that each horse must draw against the other, the same as on an eveners. If one horse moves faster, he must stop when he reaches the end of main lever 4 before him, and it is impossible for the horses to move at all without each doing his share of the work; hence a perfect equalizer.

Having thus fully described my improvements in baling-presses, what I claim, and desire to secure by Letters Patent, is—

1. A power mechanism for baling-presses, &c., consisting of the crank, the flexible connection loosely connected with the crank and a projection connected and moving in unison with the crank and in a plane intersecting the flexible connection, whereby the flexible connection is wound about the projection by the rotation of the crank, with means for releasing the flexible connection from the projection at predetermined intervals, whereby the traverser or load may retreat rapidly, and whereby the crank may arrest the same and allow it to retreat more slowly throughout the latter portion of its rearward movement, substantially as described.

2. In a power mechanism for baling-presses, &c., the combination with the crank and drum or projection connected therewith, of a flexible connection loosely connected with the crank and extending in the plane of the drum or projection and adapted to be wound about

the latter by the rotation of the crank and a tripping-incline moved by the crank and co-operating with the flexible connection to deflect the same and release it from the projection or drum; substantially as described.

3. In a power mechanism for baling-presses, the combination with the rotary power-shaft and a drum or projection moving in unison therewith, of a flexible connection loosely connected with the power-shaft to permit of the rotation of the latter without being wound thereon and extending in a line intersecting the path of travel of the drum or projection, whereby it is wound about the latter by the rotation of the shaft, and a trip or cast-off for disengaging the flexible connection from the drum or projection; substantially as described.

4. In a power mechanism for baling-presses, the combination with the rotary power-shaft and a drum or projection moving in unison therewith, of a flexible connection loosely connected with the power-shaft to permit of the rotation of the latter without being wound thereon and extending in a line intersecting the path of travel of the drum or projection whereby it is wound about the latter by the rotation of the shaft and an incline moving in unison with the power-shaft and co-operating with the flexible connection to deflect the same and release it from the drum or projection; substantially as described.

5. In a power mechanism for baling-presses, the combination with the power-shaft having the drum 2 thereon, a drum or projection W and tripping-incline X connected to and moving in unison with said shaft, of a flexible connection loosely connected with the shaft and adapted to permit of the rotation of the latter without winding the flexible connection, said flexible connection when wound on

the drum or projection W extending in a line intersecting the path of the incline, whereby it is tripped to permit the load to retreat, but when wound on the drum 2, such tripping action is prevented and the load advanced continuously; substantially as described.

6. In a baling-press, the combination with the upright press-case having the feed-opening in one side thereof near the bottom, of the reciprocatory traverser moving vertically in said press and the guard N flexibly connected with the traverser and adapted when the traverser is lowered to turn out of the line of the side of the press and permit the traverser to descend below the feed-opening and when the traverser is elevated to bridge the feed-opening and close the same; substantially as described.

7. In a baling-press, the combination with the vertical press-case, the traverser working therein, of the extended toggle-lever pivotally connected with the traverser, the fulcrum-arms pivotally connected with said toggle-lever and the stops M co-operating with the toggle at or near the fulcrum of the extended lever to arrest the downward movement of the levers before the joint of the toggle passes below its center, and operating as a fulcrum for initiating the upward movement of the toggle when the power is first applied; substantially as described.

8. In a baling-press, the combination with the press-case reciprocatory traverser and retainers of the movable head for the press-case and a connection between said head and retainers for releasing the latter when the head is moved; substantially as described.

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Witnesses:

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W. A. SKINKLE.