

W. G. MERRALL.
BALING PRESS.
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949,656.

Patented Feb. 15, 1910.

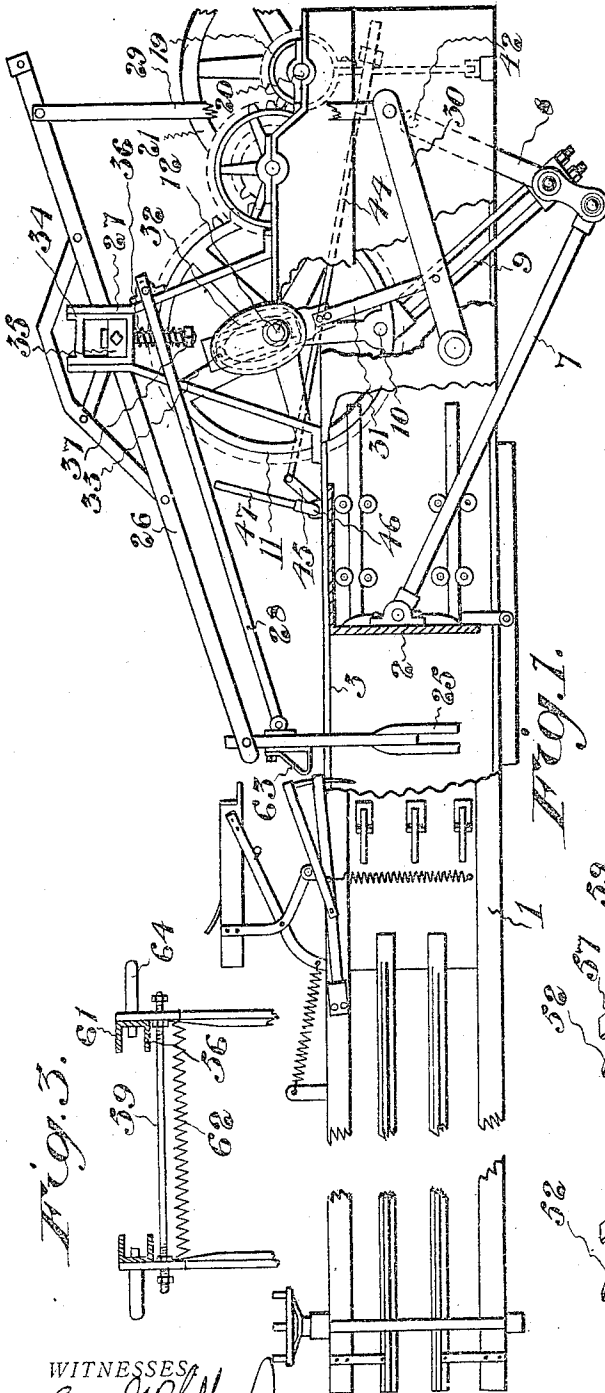


Fig. 3.

WITNESSES
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D. W. Lindick

Fig. 1.

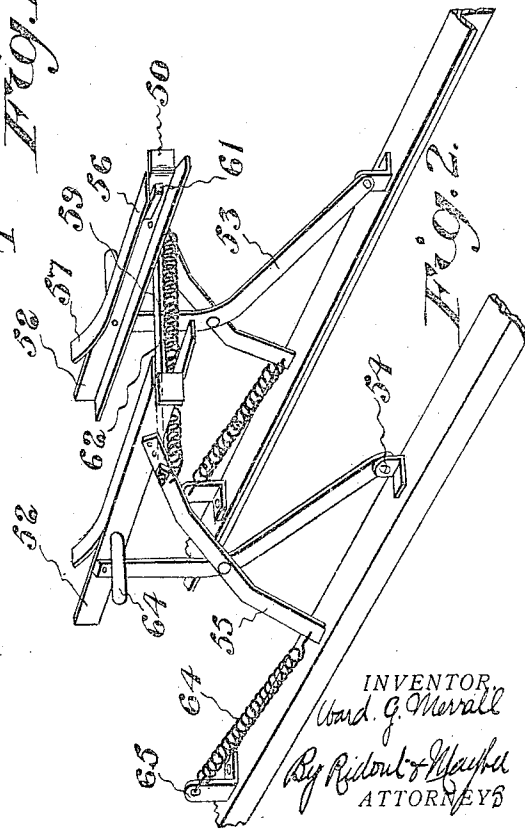


Fig. 2.

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WARD G. MERRALL, OF ONONDAGA, ONTARIO, CANADA.

BALING-PRESS.

949,656.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed April 30, 1909. Serial No. 493,175.

To all whom it may concern:

Be it known that I, WARD G. MERRALL, of the village of Onondaga, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to improvements in a press described and claimed in my prior U. S. patent No. 879,292 dated Feb. 18, 1908 and Canadian patent No. 104,540, dated April 9th, 1907, and my object is, 1: to simplify the construction of the abutment board holder and to eliminate as much as possible of the labor of operating the holder: 2: to improve the construction of the clutch forming the connection between the driving pinion and the driving pulley shaft.

With these objects in view my invention consists essentially of the constructions hereinafter specifically described and then definitely claimed.

Figure 1 is a side elevation partly in section of my improved press. Fig. 2 is a perspective detail of the abutment board holder. Fig. 3 is a cross-section of part of the same.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

The press is in its main features identical with that described in the prior patent, hereinbefore referred to, but it will be necessary to describe certain of the parts to enable the new features to be properly understood.

1 is the frame of the press shaped to form a compression chamber. Within this chamber the plunger 2 is horizontally movable under the opening 3 to which the hay is fed.

The plunger is operated by a toggle lever comprising the two parts 7 and 8 pivoted together, the free end of the part 7 being pivoted to the rear of the plunger and the free end of the part 8 pivoted on the axle 42 extending transversely of the frame.

The lower end of the connecting rod 9 is pivotally connected to the part 8, the other end being pivoted on the wrist pin 10 on the gear wheel 11. This gear wheel derives its motion by means of a train of gearing from the pinion 19 loose on the shaft 20 carrying the pulley 21. The pinion 19 is suitably connected with clutch members (not shown) so that it may be given a driving connection with the shaft.

The feeder 25 operates through the opening 3 and is pivotally connected to the forward end of the lever 26. This lever is piv-

oted intermediate its ends on the brackets 27 extending up from the frame. A link 28, pivotally connected to the brackets and to the feeder, serves to give the latter a parallel motion.

It will be noted that the feeder lever or arm is pivotally connected to the upper end of the link 29. The lower end of this link is pivotally connected to one end of the rock-arm 30 pivoted on the frame of the machine. The rock-arm 30 is pivotally connected with the lower end of the slide-rod 31, the upper end of which embraces the shaft 12. On this shaft, adjacent to the slide rod, is secured a cam 32 provided with a suitable cam groove engaging the pin 33 projecting from the slide-rod 31. Thus the rotation of the shaft 12 through the slide-rod 31, rock-arm 30, link 29 and feeder lever 26 imparts a vertical reciprocating motion of the feeder 25.

It is desirable that a certain amount of yield should be permitted to the feeder in case it comes into contact with a quantity of material to be baled of extra thickness or of a greater compactness than ordinary. To provide this yielding action I provide on the brackets 27 the guides 34 in which the bearing blocks 35 for the feeder-lever 26 are vertically movable. From each bearing block a bolt 36 extends down through the bottom of the guide. A coil spring engages the bottom of the guide, and a nut 37 on the bolt. These springs provide the necessary tension to hold the bearing blocks 35 down under any ordinary strain but will yield under the extraordinary conditions already referred to. The tension of the springs is of course readily adjustable by means of the nuts. The other parts of the press, with the exception of the abutment board holder and feeder are old in the art and need no description.

The abutment board holder comprises a pair of parallel guides 52 connected to side frames 53. The side frames are each pivoted at 54 on the frame of the machine and each side frame has a rearwardly extending portion 55 which normally rests on top of the frame of the machine or other suitable stationary part. Each of the guides 52 comprises a U angle bar 56, the U's facing inwardly toward each other. The forward ends 57 of the U angle bars are partly severed from the bar and curved upwardly as shown to facilitate the slipping of the abutment boards into place between them and

the lower portions of the angle bars. The rearward ends of the guides are held in proper relations to one another by means of a cross bar 59 which passes through the side frames adjacent to the rearward ends of the guides. Nuts are screwed on the ends of this cross bar in such a manner that the side frames may play a little on the cross bar between the nuts. A coil spring 62 tends to draw the guides toward one another. The rearward end of each of the U angle bars 56 has the end of its bottom portion partly severed from the bar and bent outwardly. The upper side of each U angle bar at the rear end is cut off substantially at the points where the parts 50 are bent outwardly. The lower end of each U extends rearwardly from this point as shown.

The parts 50 are intended to engage the sides of the frame of the machine to limit the forward tilt of the holder. On each U angle bar 56 is formed an inwardly and rearwardly inclined projection 61. As the abutment boards fit fairly closely between the sides of the angle bars these projections under the tension of the coil spring 62 prevent the abutment boards from sliding too freely from the guides when the holder is tilted. Normally the abutment board holder lies in the position shown in Figs. 1 and 2. When an abutment board is placed in position in the holder its rearward end is in contact with the projections 61. At the proper time the holder is tilted until the parts 50 contact with the frame of the machine. Although the guides are now in a vertical position the abutment board will not fall through them owing to the frictional engagement of the abutment board with the projections 61. I provide, however a projecting lug 63 on the feeder 25. As the feeder descends this lug strikes the upper edge of the abutment board and forces it down through the guides into the interior of the press, and against this abutment board the next charge of hay or other material is forced. For convenience in tipping the abutment board holder I provide handles 64 one on each angle bar 56.

As the abutment boards are heavy and the holder itself has considerable weight they tend to drop with considerable force, jarring the frame of the machine. A good deal of labor is also caused the operator due to having to tilt the abutment board holder back to its normal position. I therefore provide at each side of the apparatus a coil spring 64 which is connected to the side frame 55 as close as possible to the lower end of the latter. The forward ends of these springs are connected to the brackets 65 preferably some distance above the point of connection of the spring to the side frame 55. The springs 64 are strong enough to materially ease the jar caused by the stoppage of the forward move-

ment of the tilting holder, and they are strong enough to return the holder toward its normal position. Owing to the arrangement and method of connection of these springs they are least stretched when the holder occupies a position intermediate to the normal position shown and the tilted position the holder assumes when an abutment board is being discharged. Consequently the springs serve to ease the shock when the side frames of the abutment board holder on its return to its normal position strike the sides of the frame of the machine.

From the above description it will be seen that I have devised an abutment board holder which is simpler and cheaper to construct and which is much better in operation than that shown in prior patents referred to, and the saving in labor to the operator is especially noticeable.

What I claim as my invention is:

1. In a baling press the combination of a compression chamber having an opening in its upper side; an abutment board holder pivoted on the chamber and adapted to carry a board, and adapted when tilted on its pivot to present the abutment board in a substantially vertical position to the opening in the chamber; and a feeder vertically movable through the said opening and adapted to draw the abutment board from its holder, and a spring adapted to return the holder toward its normal position.

2. In a baling press the combination of a compression chamber having an opening in its upper side; an abutment board holder pivoted on the chamber and adapted to carry a board, and adapted when tilted on its pivot to present the abutment board in a substantially vertical position to the opening in the chamber; and a feeder vertically movable through the said opening and adapted to draw the abutment board from its holder, and a spring tending to draw the holder toward a position intermediate its normal and tilted forward position.

3. In a baling press a tiltable abutment board holder in combination with a spring adapted to return the holder toward its normal position after it has been tilted to discharge a board.

4. In a baling press a tiltable abutment board holder in combination with a spring tending to draw the holder toward a position intermediate its tilted and normal positions.

5. In a baling press an abutment board holder comprising pivoted side frames; a pair of parallel inwardly facing guides each formed of an integral U-angle bar cut and bent to form an upwardly curved guide at its forward end and a laterally bent lug at its rearward end.

6. In a baling press an abutment board holder comprising pivoted side frames; a

pair of parallel inwardly facing guides each formed of an integral U-angle bar cut and bent to form an upwardly curved guide at its forward end.

5 7. In a baling press an abutment board holder comprising pivoted side frames; a pair of parallel inwardly facing guides each formed of an integral U-angle bar cut and

bent to form a laterally bent lug at its rear-ward end. 10

Onondaga, this 22nd day of April 1909.

WARD G. MERRALL.

Signed in the presence of—

KATHLEEN OGRADY,
GRACE CHISHOLM.