

No. 673,623.

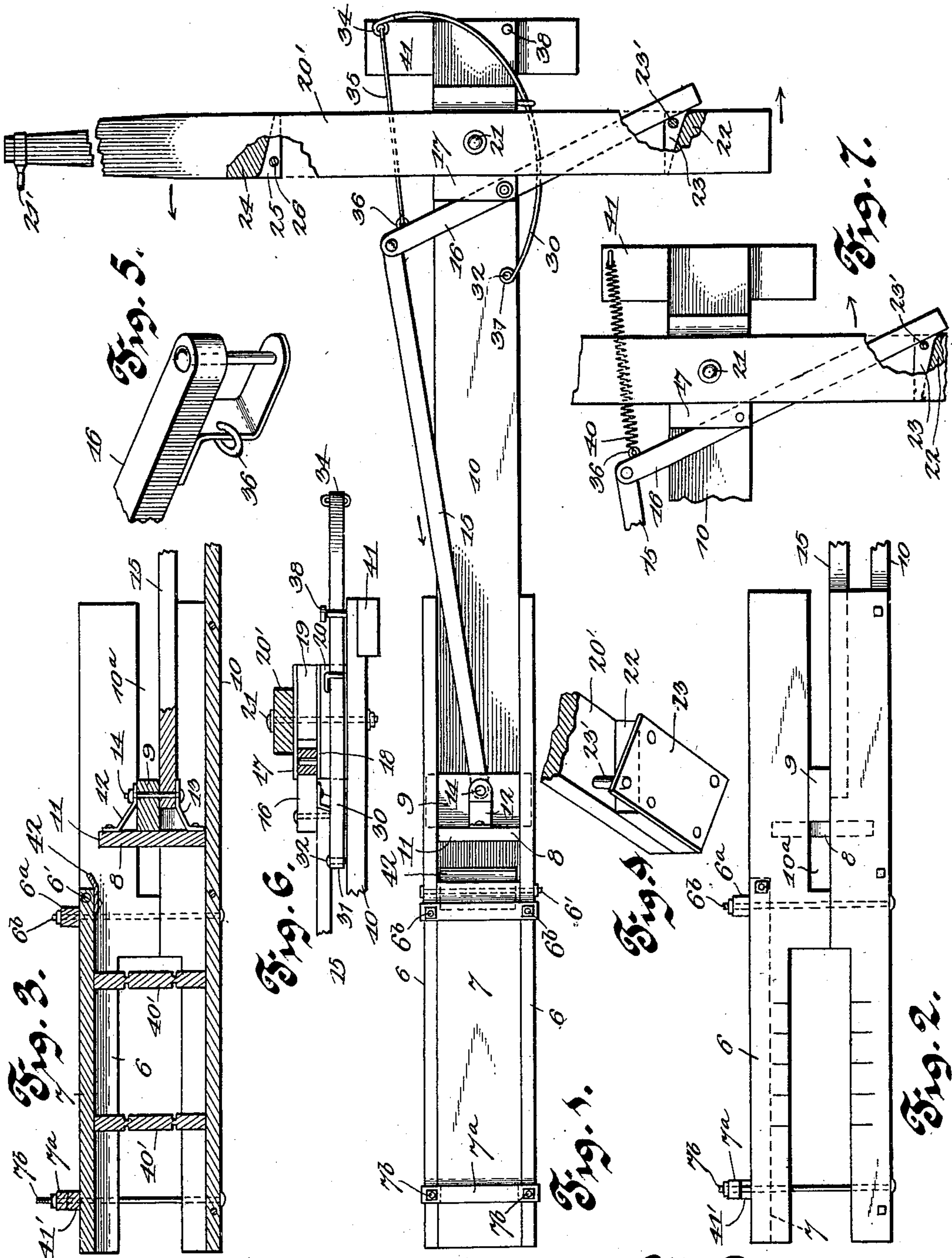
Patented May 7, 1901.

J. A. McRAE.

HAY PRESS.

(Application filed July 24, 1900.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES ARMSTRONG McRAE, OF CEDARPARK, TEXAS.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 673,623, dated May 7, 1901.

Application filed July 24, 1900. Serial No. 24,720. (No model.)

To all whom it may concern:

Be it known that I, JAMES ARMSTRONG McRAE, a citizen of the United States, residing at Cedar park, in the county of Williamson and State of Texas, have invented a new and useful Hay-Press, of which the following is a specification.

This invention relates to baling-presses in general, and more particularly to that class designed for baling hay, straw, and similar materials and which are operated by horsepower, the object of the invention being to provide a construction which will be efficient in its operation and will be cheap and simple of manufacture, further objects and advantages of the invention being evident from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a plan view of the complete machine, parts thereof being broken away. Fig. 2 is a side elevation of the rear portion or press-box of the machine. Fig. 3 is a vertical longitudinal section of the press-box and showing the plunger therein. Fig. 4 is a detail perspective view showing one end of the sweep with the wear-pin carried thereby. Fig. 5 is a detail perspective view showing the pivoted end of the operating-lever where it is attached to the plunger-rod. Fig. 6 is a side elevation showing the forward portion of the base of the machine, with the sweep and operating-lever in section. Fig. 7 is a plan view showing portions of the sweep and plunger-rod with the operating-lever and a modified form of return-spring.

Referring now to the drawings, the hay-press comprises a base 10, upon which is mounted a box comprising sides 6 and top 7 of usual form and arrangement, and in which box operates a plunger 8, consisting of a cross-piece 9, having its ends disposed in longitudinal slots 10^a in the sides of the box, and to which cross-piece is secured a head 11, braced by means of upper and lower irons 12 and 13. Through the cross-piece and the bracing-irons is passed a pivot-bolt 14, which forms a pivot for the plunger-rod 15, which is disposed with its forward end between the

lower brace-iron 13 and the under side of the cross-piece, as shown in Fig. 3 of the drawings.

In order to operate the plunger-rod to reciprocate the plunger, a lever 16 is pivoted between its ends to lie between plates 17 and 18, which are held spaced by a block 19, the lower plate 18 being supported upon a block 20 upon the forward extension of the base 5. One end of the lever 16 is pivoted to the outer end of the plunger-rod 15, so that when the opposite end of the lever is moved the plunger will be moved into the press-box to perform the usual pressing operation, and when said lever is released the plunger may be withdrawn.

In order to operate the lever 16 to move the plunger-rod inwardly, a sweep 20' is pivoted to the front extension of the base 5 by means of a pivot-bolt 21, which is passed through the blocks 19 and 20 and the plates 17 and 18, the sweep and lever being thus pivoted eccentrically. The sweep 20' has a clevis 21' at one end for attachment of a team, and at its opposite end and on the under side thereof is secured a block 22, having its inner end cut slantingly, said block having a plate 23 secured to its under face and projecting beyond the slantingly-cut end of the block, this projecting portion having a wear-pin 23' engaged therewith and which is engaged also with the sweep. A second block 24 is secured to the under side of the sweep and at the opposite side of its pivot from the block 22, and secured thereto is a plate 25, with which is engaged a second wear-pin 26, passed through the material of the sweep and beyond the inner slantingly-cut end of the block 24. These wear-pins are so positioned that as the sweep is rotated the pins will successively engage the lever 16 and will operate it to move the plunger-rod and force the plunger into the press-box. When the plunger is forced into the press-box to the limit of its movement, the engaged wear-pin slides over the outer end of the lever 16 and releases the latter to permit withdrawal of the plunger. The withdrawal of the plunger is effected by means of a spring-strap 30, one end of which is provided with an eye 31, engaged with a pin 32 in the base 5 at the opposite side thereof from the plunger-rod, said

spring being taken past the pivot of the sweep and lever at the opposite side thereof from the pivotal connection of the lever and plunger-rod and is bent into arc shape, so as to extend to the opposite side of said pivots. This free end of the spring has an eye 34 formed therein, and with which is engaged a flexible connection 35, engaged with an eye 36 upon the lever 16 adjacent to its pivotal connection with the plunger-rod. Thus when the plunger is forced inwardly the spring is bent and when the lever 16 is released by a wear-pin the spring by its resiliency acts to draw the plunger-rod rearwardly, and therewith the plunger. Thus as the sweep is rotated the plunger is reciprocated twice for each rotation of the sweep.

In Fig. 7 of the drawings there is shown a modification wherein a helical spring 40 is connected at one end with the lever 16 and at the opposite end with a cross-piece 41 upon the outer end of the base 5 to withdraw the plunger when the lever 16 is released.

It will be noted that a pin 38, engaged with the outer end of the base 5, acts as a stop for the spring 30, so that it may lie at all times in proper position for operation.

In practice various other modifications of the specific construction may be made and any suitable materials and proportions may be used without departing from the spirit of the invention.

In order that the solidity of the bales may be varied, it is necessary to vary the friction between the gates 40' and the contacting portions of the press-box, and for this purpose the top 7 of the box is pivotally mounted at its forward end between the sides 6 upon a pivot-bolt 6', which has also the function of preventing spreading of the sides of the box at this point, and slightly in the rear of the pivot-bolt is disposed a cross-brace 6^a, connected with the bottom 10 of the press by means of tie-bolts 6^b. In order to move the rear end of the top 7 downwardly to narrow the passage through the box, an additional cross-piece 7^a is provided, and which has a central depending portion 41', adapted to enter between the sides 6 of the box and by engaging the top 7 to move it downwardly, the position of the cross-piece 7^a being adjusted by means of tie-bolts 7^b. Thus if the top be slanted by depressing its rear end the friction between the gates and the box will be increased, requiring additional pressure upon the bale to force it through, and thus the bale will be more solidly formed.

A plate 42 is fixed to the under side of the forward end of the top 7 and projects forwardly and upwardly therefrom, so that the plunger may be passed readily into the in-

closure of the top, bottom, and sides of the box and the material to be baled will readily enter.

Upon reference to the dotted-line position of the lever 16 in Fig. 1 it will be noted that when said lever is released from the sweep its work end is drawn back until it strikes against the block 19, which acts as a stop for it. In order to bring out this function of the block 19, it is necessary to pivot the sweep to one side of the base 10 and out of line with the pivot of the sweep, so that the stop will not be spaced too far from the pivot of the lever. Furthermore, with this arrangement the connection 35 may be attached to the work end of the lever near its extremity to increase the effective force of the spring 30.

What is claimed is—

1. In a baling-press, the combination with a press-box and a plunger therein, of a rod pivoted to the plunger, a lever pivoted to the rod, a sweep rotatably mounted eccentric to the fulcrum of the lever, wear-pins carried by the sweep for successive engagement with the lever to operate it and move the plunger in one direction, a strap-spring connected with the base of the press and passed around the pivot of the sweep at the opposite side from the connection of the plunger-rod and lever, the free end of the spring being extended beyond the pivot, and a connection between the free end of the spring and the lever to retract it and therewith the plunger.

2. In a baling-press the combination with the box having an extended base, of a plunger for the box and having a rod, a block upon the base, a plate upon the block and extending therebeyond in the direction of the box, a lever pivoted between the plate and base at one side of the latter, said lever extending beyond the opposite side of the base and having pivotal connection with the plunger-rod, a spring-plate secured to the base beyond the pivot of the lever from its point of attachment to the plunger-rod, said spring having connection with the end of the lever adjacent to the rod to hold the plunger normally retracted with the lever against the block upon the base, and a sweep pivoted upon said plate upon the block, and centrally of the base, said sweep being adapted for engagement with the free end of the lever to move it against the tendency of the spring to force the plunger into the press-box.

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

JAMES ARMSTRONG McRAE.

Witnesses:

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