(No Model.) 2 Sheets—Sheet 1.

W. J. PEARCE.

HAY PRESS.

No. 518,965. Patented May 1, 1894.

Fig. 1.

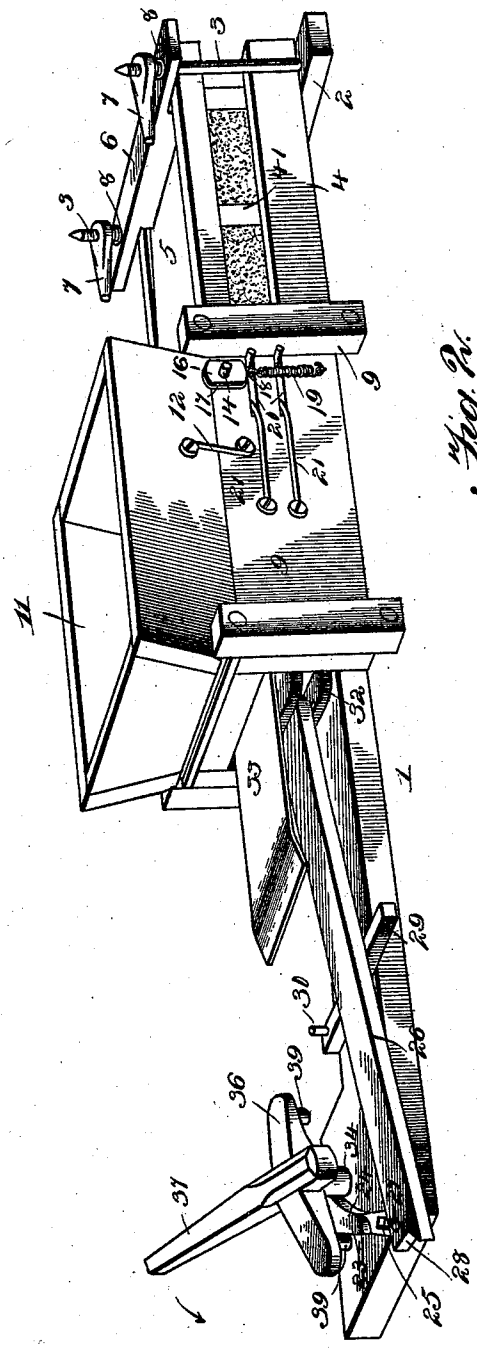
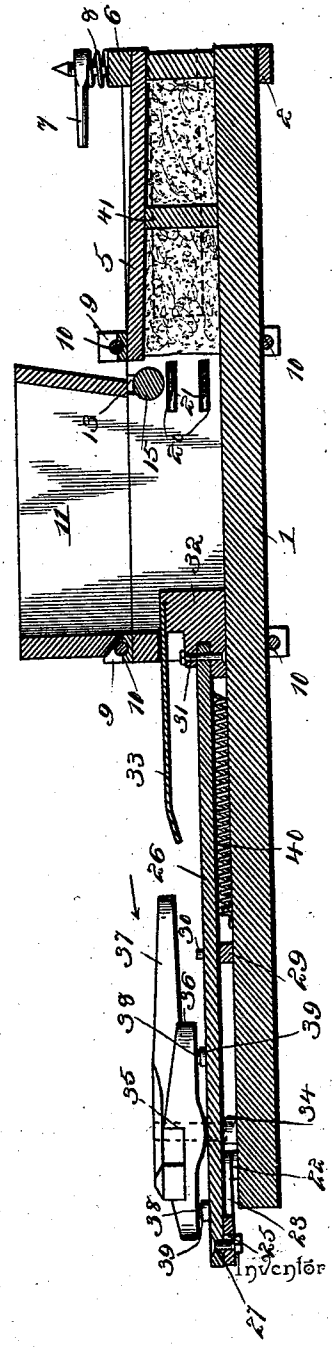


Fig. 2.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

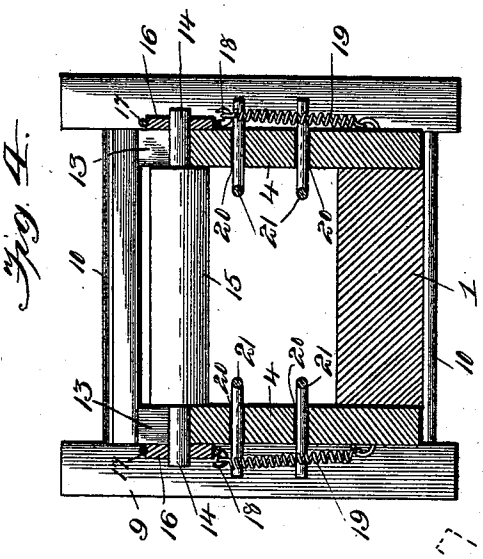


Fig. 5.

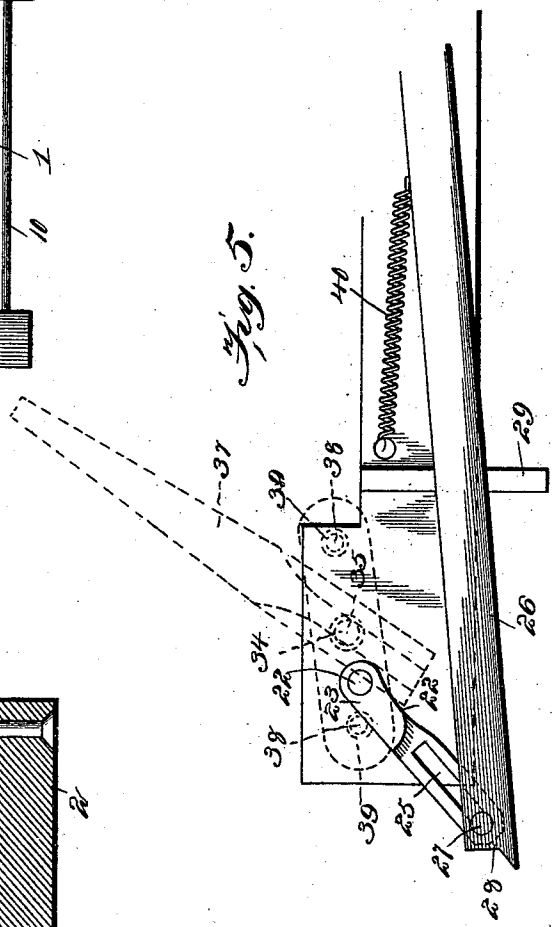
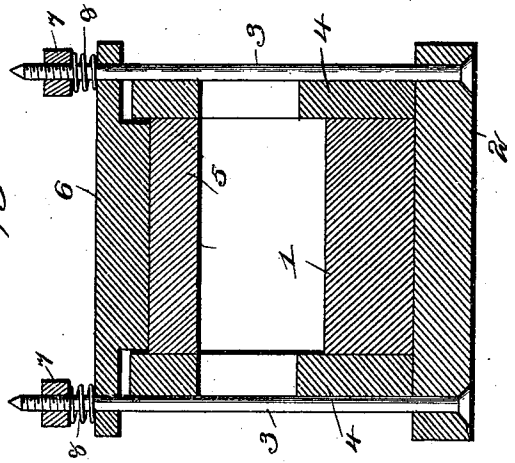


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM J. PEARCE, OF PILOT POINT, TEXAS.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 518,965, dated May 1, 1894.

Application filed September 5, 1893. Serial No. 484,849. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. PEARCE, a citizen of the United States, residing at Pilot Point, in the county of Denton and State of Texas, have invented a new and useful Hay-Press, of which the following is a specification.

My invention relates to hay presses, and to that class thereof operated by a sweep through horse-power.

The objects of my invention are to improve the details of construction of the press, rendering the same cheap and efficient as a whole, and to provide a new and improved plunger-actuating mechanism that will be of simple construction, cheap and durable, and capable of being rapidly operated.

With these and other objects in view the invention consists in certain features of construction hereinafter specified and particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of a press embodying my invention. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a transverse sectional view through the rear end of the press. Fig. 4 is a similar view through the tucker-roll. Fig. 5 is a detail in plan of the end of the plunger bar and its operating arm, the sweep being removed and shown in dotted lines.

Like numerals of reference indicate like parts in all the figures of the drawings.

In the practice of my invention I preferably mount the operating-mechanism, together with the baling-chamber, upon a longitudinally disposed base or sill 1, the same exceeding in length the baling chamber and having located at its opposite end the plunger-operating mechanism. Under the rear end of the sill a cross-sill 2 is located, and upwardly through the same pass binding-rods 3, which also embrace the opposite sides 4 of the baling-chamber. A roof 5 is interposed between the sides somewhat loosely and extends rearward between the binding-rods, as shown. A binding-cleat 6 is perforated near its ends to receive the upper ends of the aforesaid rods and bears at its under side upon the roof 5 between the side-walls 4. The upper portions of the rods 3 are threaded, and arranged thereon are binding-levers 7 between whose under sides and the upper sides of the aforesaid binding-cleat coiled-springs 8 are arranged upon the rods, so that by running the levers down upon the cleat the roof is compressed so as to make smaller the exit or discharge-end of the press and at the same time the binding pressure is, by reason of the presence of the springs, slightly yielding. The object of this yielding pressure is to avoid breakage of the parts if perchance a block or other foreign substance should secure lodgment in the bale and therefore not yield sufficiently to permit of the discharge of the bale through the exit or discharge-end of the press. The opposite side-walls 4 are at their front ends and near their middles embraced by side standards 9 which project above and below the said side-walls and are connected adjacent to their ends by transverse tie-rods 10. Between the tie-rods 10 the press is open at its upper side and has arranged thereover an ordinary hopper 11, which is removable therefrom, being held in position in this instance by hooks 12 which engage studs on the sides of the press. At the rear end of the hopper the side walls are provided with slots 13 in their upper edges and in the same rest the reduced bearing ends 14 of a tucker-roll 15. This tucker-roll is provided upon its outer side with blocks 16 around which metal frames 17 are arranged, the said frames terminating at their lower ends in hooks 18. The hooks engage the upper ends of opposite coiled springs 19, the lower ends of which are permanently attached to the opposite side walls of the press. The side walls of the press below the tucker-roll are slotted at 20, and in the same take the rear bent ends of spring-detents 21, which serve their usual function, namely, of preventing the hay from returning with the retraction of the plunger. A post 22 is securely fixed to the opposite end of the base-sill 1, and slightly to one side of a central line of the press-chamber. Loosely mounted for oscillation upon this post is an arm 23, the same having at its outer side a widened bearing-space or portion 24 beyond which the arm is reduced upon its upper side and provided with a longitudinal slot 25 that extends from its reduced portion to a point near its outer end. A plunger-rod 26 is, at its outer end through the medium of a stud

27, which passes through the slot of the arm, loosely connected for pivotal and reciprocal movement with said arm, and said plunger-stem, is, beyond the stud 27, provided with an L-shaped notch 28 in its end. A transverse guide-bar 29 is arranged upon the upper side of the sill 1 and supports the plunger-stem in a manner shown, and is provided at its inner end with a stop-pin 30 arranged in the path of the plunger-stem 26. The plunger-stem is pivotally connected by a bolt 31 to the plunger head 32, which is mounted for movement in the chamber, and a cut-off plate 33 is provided upon the upper side of the plunger-head and projects forward therefrom to a point over the stem, the rear end of said plate being bent downward slightly. At one side of the post 22 and slightly in rear thereof there is arranged upon the sill 1 a second post 34, and this post is hollow and receives the bearing-pin 35 located upon the under side of a sweep-head 36. This sweep-head 36 has let into its upper side in a diagonal manner a sweep arm 37 and is provided at its opposite ends with depending studs 38 which carry friction-rollers 39. A coiled spring 40 is connected to the plunger, and at its outer or forward end to the sill adjacent to the guide-bar 28.

This completes the construction of the press and the operation thereof is as follows:—The hay may be fed into the press by any suitable means, either manually or mechanically as may be desired, such forming no part of my invention. In any event it is cast into the hopper in suitable quantities, and falls from the same when the plunger-head is retracted into the baling-chamber, it being first undersoood that a space-board, as 41, has been introduced into the chamber in advance of the deposit of hay. The horse being started, the sweep-arm 37 is revolved in the direction indicated by the arrow and its pin 38 arrives in contact with the face 24 of the plunger-actuating arm, and causes said arm to revolve or swing toward the baling-press, the plunger-stem being partially supported and guided by the transverse guide-bar 28. During the rearward swinging of the arm 23 the deposit of hay is being carried by the plunger-head back under the tucker-roll and beyond the detents. When the arm 23 has reached a point approaching an alignment with the stem 26 the return-spring 40 serves to retract said stem slightly and it is caught at its outer notched end by the aforesaid pin and the sweep-head, and from thence on all pressure by the plunger is through the medium of this pin acting directly against the plunger-stem. This rotary motion upon the part of the sweep is continued until the plunger-stem arrives in contact with the stop-pin 30 by which time the final pressure will have been given the deposit of hay. The lateral movement of the stem is here arrested and the sweep continuing passes beyond the end of the stem, which being released, is immediately retracted by the spring 40 and is again operated by the succeeding pin of the sweep-head so that at each revolution of the sweep-arm and head the plunger will be operated twice. It will be seen that I provide a most efficient power-mechanism in that the initial pressure is light, and the final pressure takes place at the termination of contact between the sweep-head and plunger-stem and where the greatest power is exerted. The cut-off plate 32 serves to prevent hay from falling back of the plunger-head, while the tucker-roll serves to tuck the hay on the top of the bale and the detents prevent the return of the same at each retraction of the plunger-head.

From the foregoing description in connection with the accompanying drawings it will be seen that I have provided a very simple construction of press, the same being designed to be manufactured at a minimum cost and to rapidly operate.

I do not limit my invention to the precise details of construction herein shown and described, but hold that I may vary the same to any degree and extent within the knowledge of the skilled mechanic.

It will be obvious that the press may be operated by power other than horse, and in such case I would substitute for the sweep-head and its arm a gear wheel carrying the pins for engaging with the plunger-stem operating arm, the same being connected with the source of power through any desired well known gearing.

Having described my invention, what I claim is—

1. In a press, the combination with the opposite side walls having vertical recesses, of the interposed tucker-roll having reduced ends passing through and beyond the recesses, blocks arranged on the tucker-roll, metal rings arranged upon and encircling the blocks and terminating at their lower ends in hooks, and coiled springs connected at their upper ends to the hooks and at their lower ends to the sides of the press, substantially as specified.

2. In a baling press, the combination with a baling-chamber, a stud arranged beyond the chamber, an arm mounted upon the stud, adapted to swing, and having a longitudinal slot, of a sweep-head having a depending pin for engaging against the outer side of the arm, a plunger arranged in the baling-chamber, a stem connected pivotally with the plunger and at its outer end having a notch, a stud connecting the plunger-stem with the slot of the arm, and a stop arranged at one side of the plunger-stem, substantially as specified.

3. In a press, the combination with the baling chamber, a stud arranged beyond the same, a slotted arm mounted loosely upon the stud, a bearing-post at one side of the arm, a sweep-head swiveled on the post and having depending roller-carrying pins, and a sweep arranged upon the sweep-head, of a plunger arranged in the press, a stem pivoted to the

press and having at its outer end an L-shaped recess, a stud passing through the stem and the slot in the arm, and a stop arranged at one side of the stem, substantially as specified.

4. In a press, the combination with the baling-chamber, a stud arranged beyond the same, a slotted arm mounted loosely upon the stud, a bearing-post at one side of the arm, a sweep-head swiveled on the post and having depending roller carrying pins, and a sweep arranged upon the sweep-head, of a plunger arranged in the press, a stem pivoted to the plunger and having at its outer end an L-shaped recess, a stud passing through the stem and a slot in the arm, a transverse guide-bar arranged under the stem and projecting at one side thereof, and a stop-pin rising from the guide-bar and located in the path of the plunger-stem, substantially as specified.

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

WILLIAM J. PEARCE.

Witnesses:
W. B. CARSON,
S. W. BARTON.