No. 738,068. PATENTED SEPT. 1, 1903.

L. G. REYNOLDS.

BALING PRESS.

APPLICATION FILED JAN. 3, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

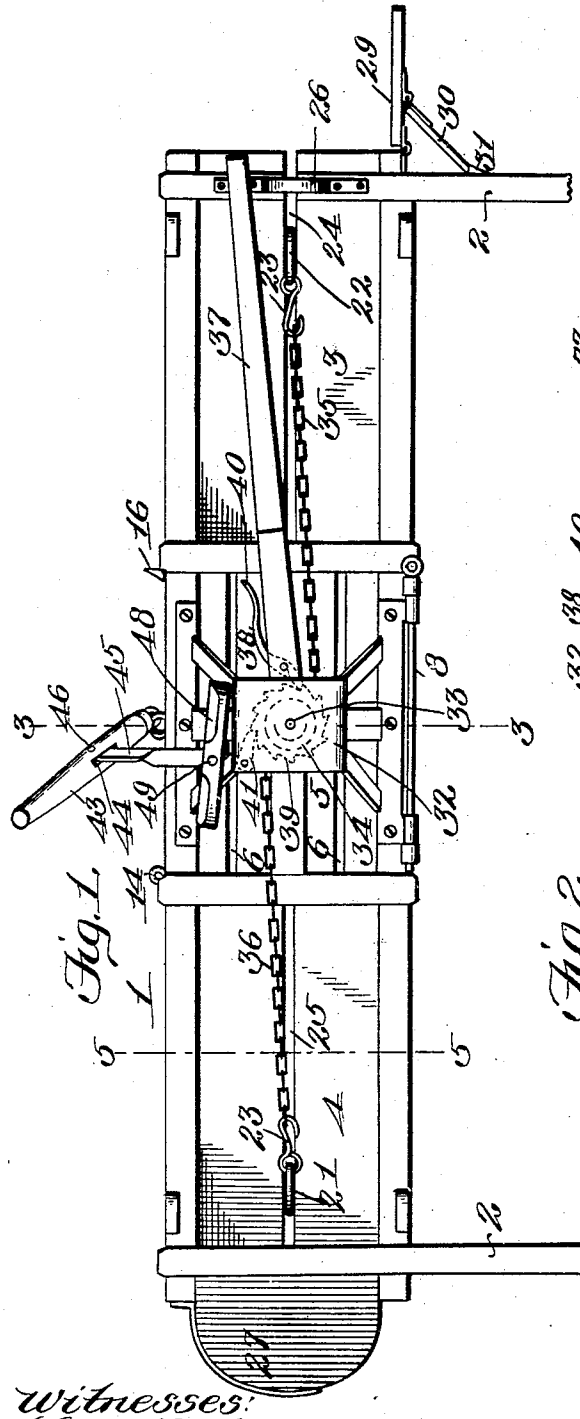


Fig. 1.

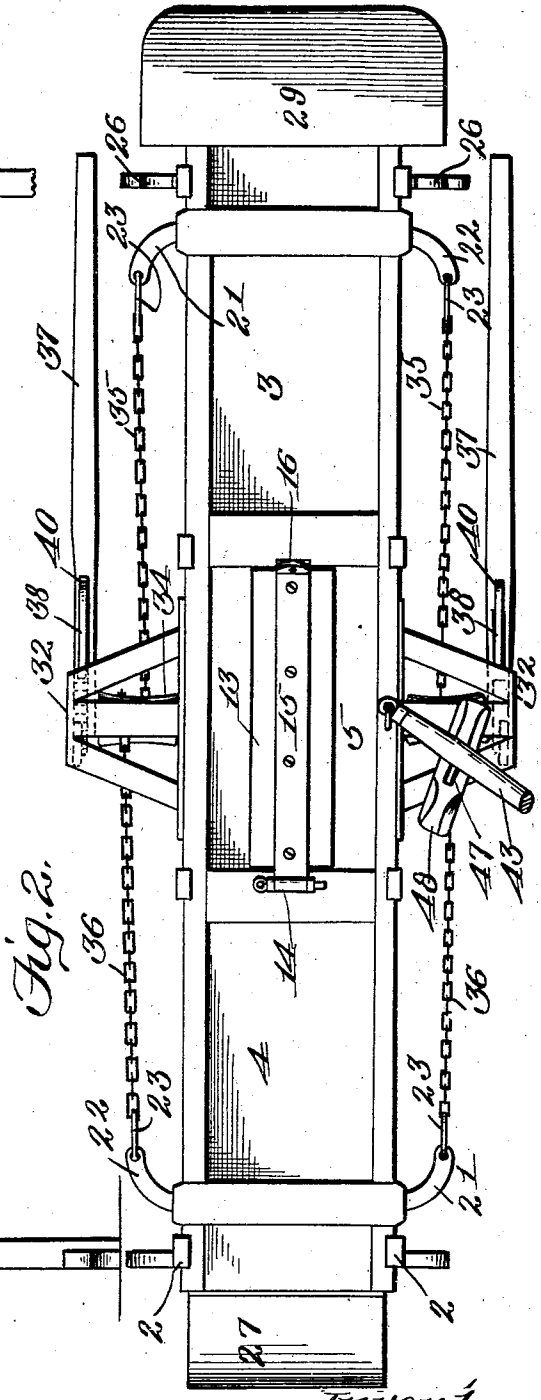


Fig. 2.

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Inventor
Leven G. Reynolds
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 3.

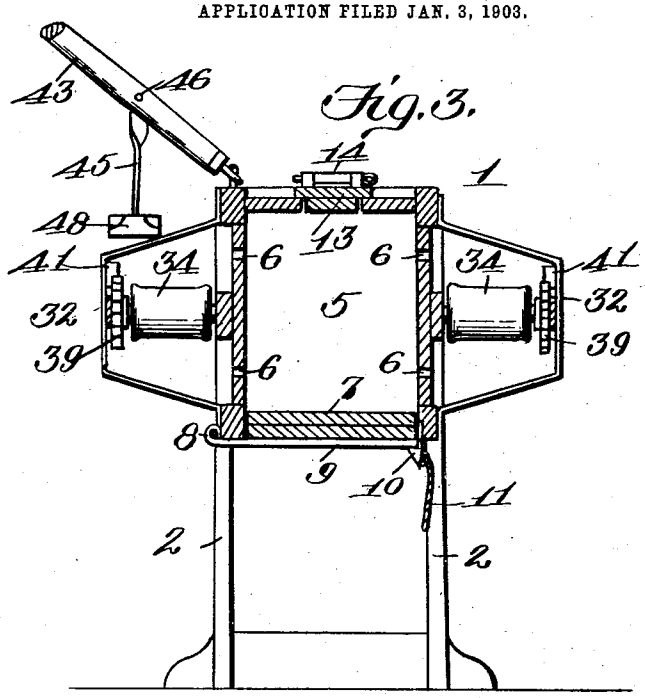


Fig. 4.

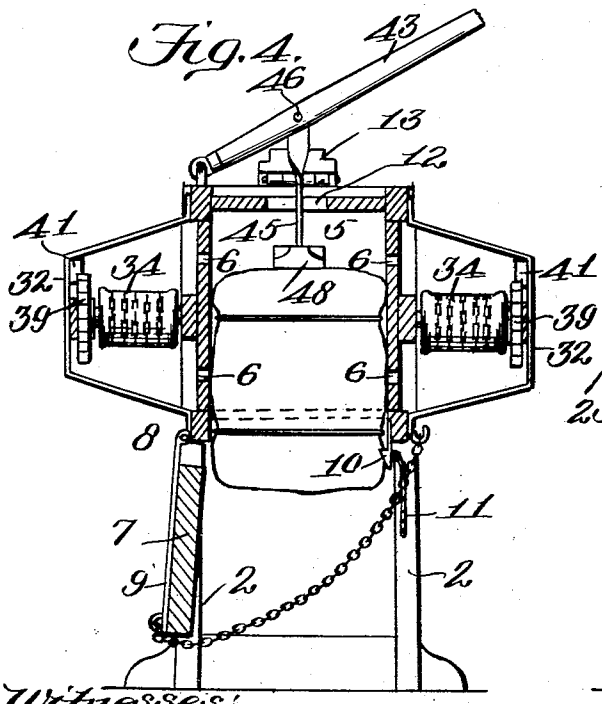
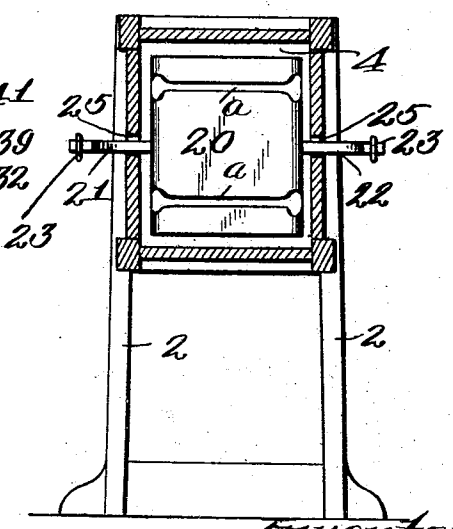


Fig. 5.



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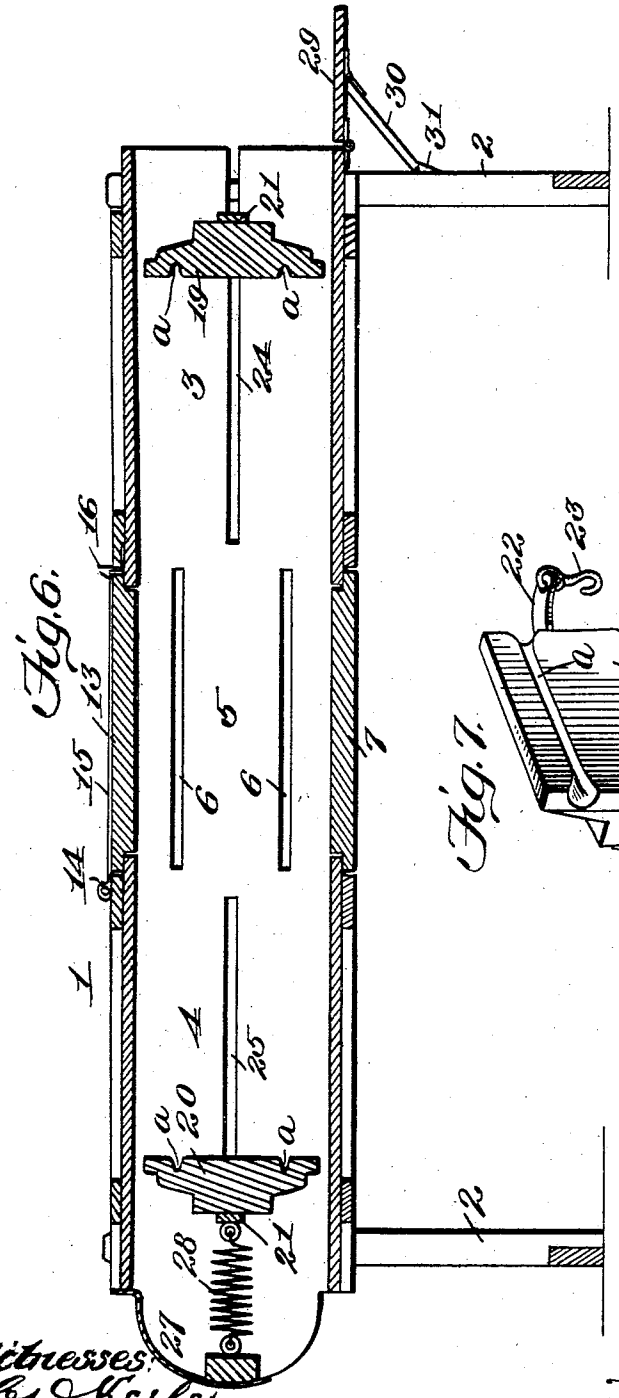


Fig. 6.

Fig. 7.

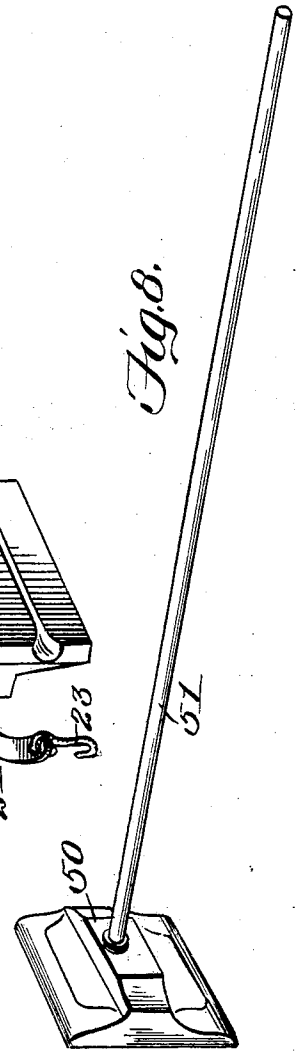


Fig. 8.

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No. 738,068. Patented September 1, 1903.

UNITED STATES PATENT OFFICE.

LEVEN G. REYNOLDS, OF UNIONTOWN, KENTUCKY.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 738,068, dated September 1, 1903.

Application filed January 3, 1903. Serial No. 137,726. (No model.)

To all whom it may concern:

Be it known that I, LEVEN G. REYNOLDS, a citizen of the United States, residing at Uniontown, in the county of Union and State of Kentucky, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to baling-presses, and particularly to that class of such presses designed for baling hay and similar materials; and it has for its object to provide a press of the type referred to which will be simple, durable, and inexpensive in construction and efficient in operation.

To these ends my invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, wherein—

Figure 1 is a view in side elevation of my improved baling-press. Fig. 2 is a top plan view thereof. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a similar view after the bale has been completed, the bottom being shown lowered and the ejector in position for ejecting the bale. Fig. 5 is a transverse sectional view taken on the line 5 5 of Fig. 1. Fig. 6 is a vertical longitudinal sectional view of the press. Fig. 7 is a detail perspective view of one of the plungers, and Fig. 8 is a similar view of the implement employed for feeding the hay to the press.

The numeral 1 indicates the main body or frame of my improved press, consisting of a horizontal box rectangular in cross-section and mounted at its ends upon supports 2. The box 1 comprises practically three different boxes, the end boxes 3 and 4 being the boxes in which the baling-plungers operate, and hence are termed by me "plunger-boxes," and the central box 5 constitutes the chamber in which the complete bale is finally formed, and hence is termed by me the "baling-box." The opposite sides of the baling-box have formed therein horizontal slots 6, as usual, for the purpose of applying the bale-ties in the well-known manner. The bottom 7 of the bale-box is hinged at one edge, as at 8, to said box and is provided at its other edge with a metal strap 9, the end of which projects slightly beyond the edge of the bale-box and is adapted to engage a spring-catch 10, attached to one edge of the bale-box, the said catch being provided with a chain, cord, or similar device 11 by means of which the catch may be withdrawn to release the metallic strap and permit the bottom of the box to drop down vertically.

Formed in the top of the bale-box is a longitudinal aperture 12, which is adapted to be closed by a cover 13, one end of which is hinged, as at 14, to the top of the box. One member 15 of the hinge extends longitudinally from end to end of said cover, and opposite the hinged end projects slightly beyond the end of the cover in order to engage a spring-catch 16, attached to one end of the top of the box, the arrangement being such that when the cover is closed the extended end of the member 15 of the hinge will snap past the spring-catch 16 and will automatically lock the cover in place.

Arranged in the plunger-boxes 3 and 4 are plungers 19 and 20, each consisting of a rectangular block of wood adapted to fit loosely within the said boxes and to freely move therein.

Attached to the rear side of the blocks 19 and 20 are yokes 21 and 22, each consisting of a bow-shaped piece of metal which is rigidly secured to the rear side of the plunger and is provided at its ends with pivoted hooks 23.

The sides of the plunger-boxes 3 and 4 are longitudinally slotted, as at 24 and 25, the slots 24 in the plunger-box 3 extending completely through the outer end of said box. The ends of the yokes 21 and 22 project through said slots and are movable therein. By causing the slots in the plunger-box 3 to extend entirely through the outer end of said box the plunger 19 may be entirely removed to feed the material to the box, and the rear end of the box 3 is strengthened by U-shaped brackets 26, which are secured at their ends to the sides of the box above and below the slots, the U-shaped portion of said brackets permitting of the passage therethrough of the curved ends of the yoke 21.

The outer end of the plunger-box 4 is provided with an extension 27, and a contracted spring 28 is attached at one end centrally to

the yoke 22, and its opposite end is attached to said extension 27, said spring operating to withdraw the plunger 20 to the outer end of the box 4 when the power mechanism is released after having finished a bale.

To the lower edge of the front end of the bottom of the plunger-box 3 is hinged one edge of a drop-table 29, and to the under side of said drop-table is hinged a bail 30, which when the table is swung up into a horizontal position is adapted to rest against projections 31 in the supports 2 and thus hold the table in a horizontal position.

Fixed to the opposite sides of the bale-box 5 are brackets 32, in each of which is journaled one end of the axis 33 of a winding-drum 34, the other end of said axis being journaled in a suitable bearing in the side of the bale-box. Attached to and wound about said drums in opposite directions are chains 35 and 36, the free ends of said chains being each loosely connected to the hooks 23 on the ends of the yokes 21 and 22. On the outer end portions of each of said axes of the winding-drums is loosely mounted one end of a hand-lever 37, which is bifurcated at its pivoted end, and passing through said bifurcated portion of each of the hand-levers is a pawl 38, one end of which is arranged to engage the teeth of a ratchet-wheel 39, fixed on the axis of the drum. Said pawl is provided with a tailpiece 40, by means of which said pawl may be thrown out of engagement with the teeth of the ratchet-wheel. Pivoted to the bracket in which the drum is rotatably mounted is a pivoted pawl 41, which is adapted at its free end to engage said ratchet-wheel and hold it against backward movement. The arrangement of the hand-levers and their pawls is such that when said levers are raised the pawls carried thereby ride idly over the ratchet-wheels, but when the side levers are depressed said pawls engage the teeth of the ratchet-wheels and operate to rotate the drum.

Loosely connected to the top of one side of the bale-box is a lever 43, which is slotted, as at 44, intermediate its ends, and loosely arranged in said slot is one end of a link 45, which is pivotally secured therein by a pin 46, which passes through said slotted portion of the lever and through the end of the link. The link preferably consists of a metallic strap, which is torsionally twisted intermediate its ends, and at its lower end said strap is loosely mounted in a slot 47, formed in an ejector-block 48, and is pivotally secured therein by a pin 49, which passes transversely through the slotted portion of the ejector-block and through the corresponding end of the link.

The operation of my improved press is as follows: The hinged bottom 7 is raised and locked in place and the top 13 is closed and also locked in place. The chains are unhooked from the yoke 21 and the plunger 19 is removed, after which the table 29 is raised to a horizontal position and fixed in place by its pendent bail before described. The plunger 20 will be thrown to the extreme outer end of the plunger-box 4 by means of the spring 28. The hay is now pitched upon the table 29, and by means of a plunger 50, provided with a rigid rod 51, the hay is pushed into the box 1 until both plunger-boxes and the bale-box are filled. The plunger 19 is now inserted in the box 3 and the chains 35 are connected to the hooks 23 on the ends of the yoke 21. The hand-levers on the opposite sides of the machine are now simultaneously raised and lowered, and by said movement the two drums are rotated, winding about them the chains 35 and 36, drawing the plungers 19 and 20 toward one another, thus pressing the hay between them. When the hay between the plungers has been pressed within the bale-box 5, the bale-ties are then connected together in the well-known manner, after which the catch holding the bottom 7 is released, permitting said bottom to fall to a vertical position. The pawls 38 are next raised up to a vertical position to cause them to disengage the ratchet-wheels, after which the pawls 41 are disengaged from said ratchet-wheels, permitting the drums to rotate. As soon as this has been done the spring 28 retracts the plunger 20 to the outer end of its box, and the plunger 19 is at the same time partially forced back into its box 3 by the pressure of the bale. The cover 13 is then raised and thrown back, and the lever 43 is swung around over the top of the bale-box until the ejector-block 48 rests over the opening in the top of the box. Then by forcing down the free end of the lever said lever causes the ejector-block to press against the upper side of the bale and push the latter out of the bale-box, the bale dropping through the lower open end of the bale-box. Then by removing the plunger 19 the operation may be repeated in the manner before described.

I have shown the press mounted on fixed supports, but I may in some instances mount it on wheels. I have also shown the plungers provided with slots or grooves *a* for the reception of the baling-wires, as usual, and instead of forming said grooves horizontal, as shown most clearly in Fig. 7, it will be obvious that they may be made vertical or disposed in any suitable manner.

Having described the invention, what I claim is—

1. In a baling-press, the combination with a horizontal rectangular box, the central portion of which constitutes a baling-box and the end portions plunger-boxes, of plungers movably arranged in the plunger-boxes, one of the latter being open at its outer end, the plunger therein being removable for the reception of the material to be baled, a table hinged to the open end of the plunger-box containing the removable plunger, a swinging bail hinged to the under side of the table and adapted to engage fixed projections and hold the table in a horizontal position, and mechanism for moving the plungers toward each other to bale the material, substantially as described.

2. In a baling-press, the combination with a horizontal rectangular box, the central portion of which constitutes a baling-box and the end portions plunger-boxes, of plungers movably arranged in the plunger-boxes and provided with yokes which extend through slots formed in the sides of the plunger-boxes, one of said plunger-boxes being open at its outer end and the slots in the sides of said box extending through the outer end of the latter whereby the plunger therein may be removed, U-shaped yokes straddling the ends of the slots in said open-ended plunger-box and rigidly secured to the sides thereof on opposite sides of the slots, each of said yokes comprising a single metallic strap and means for drawing the plungers toward each other to bale the material, substantially as described.

3. In a baling-press, the combination with a horizontal rectangular box, the central portion of which constitutes a baling-box and the end portions plunger-boxes, of plungers movably arranged in the plunger-boxes and provided with yokes which extend through slots formed in the sides of the plunger-boxes, one of said plunger-boxes being open at its outer end and the slots in the sides of said box extending through the outer end of the latter whereby the plunger therein may be removed, a contractile spring for retracting the other plunger, chains detachably connected to the ends of said yokes, and means for winding up said chains to draw the plungers toward each other to bale the material, substantially as described.

4. In a baling-press, the combination with a horizontal rectangular box, the central portion of which constitutes a baling-box and the end portions plunger-boxes, of plungers movably arranged in the plunger-boxes and provided with yokes which extend through slots formed in the sides of the plunger-boxes, brackets attached to the opposite sides of the baling-box, drums journaled in said brackets and in the sides of the baling-box, chains wound in opposite directions about said drums and detachably connected to the ends of said yokes, ratchet-wheels fixed on the axes of the drums, pivoted pawls for holding the ratchet-wheels and drums against back movement, and hand-levers pivoted at their ends on the said axes and provided with pivoted pawls for engaging said ratchet-wheels, substantially as described.

5. In a baling-press, the combination with a horizontal rectangular box, the central portion of which constitutes a baling-box and the end portions plunger-boxes, of plungers movably arranged in the plunger-boxes, means for moving the plungers toward each other to press the material in the baling-box, a hinged cover closing the bottom of the baling-box, a hinged cover for closing an aperture in the top of the baling-box, a hand-lever loosely connected to one edge of the top of the baling-box and provided with a freely-suspended ejector-block for ejecting the finished bale from the baling-box, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEVEN G. REYNOLDS.

Witnesses:
WILLIAM TEARS,
JAMES SNAPE.