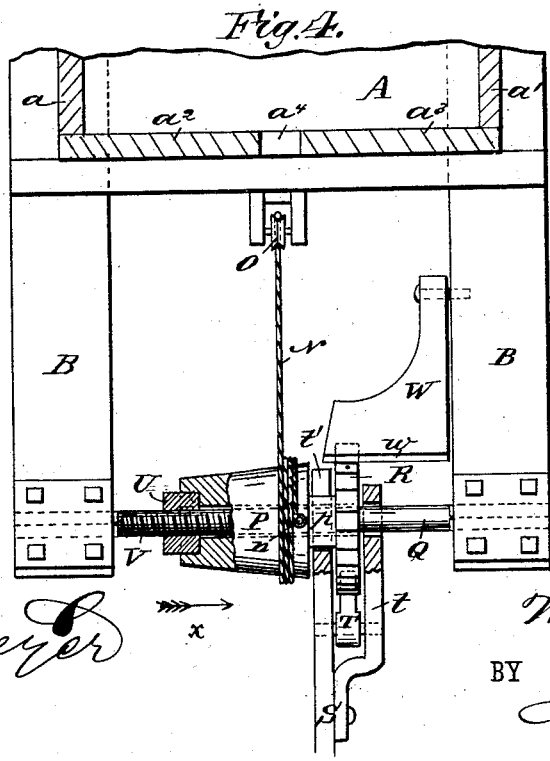
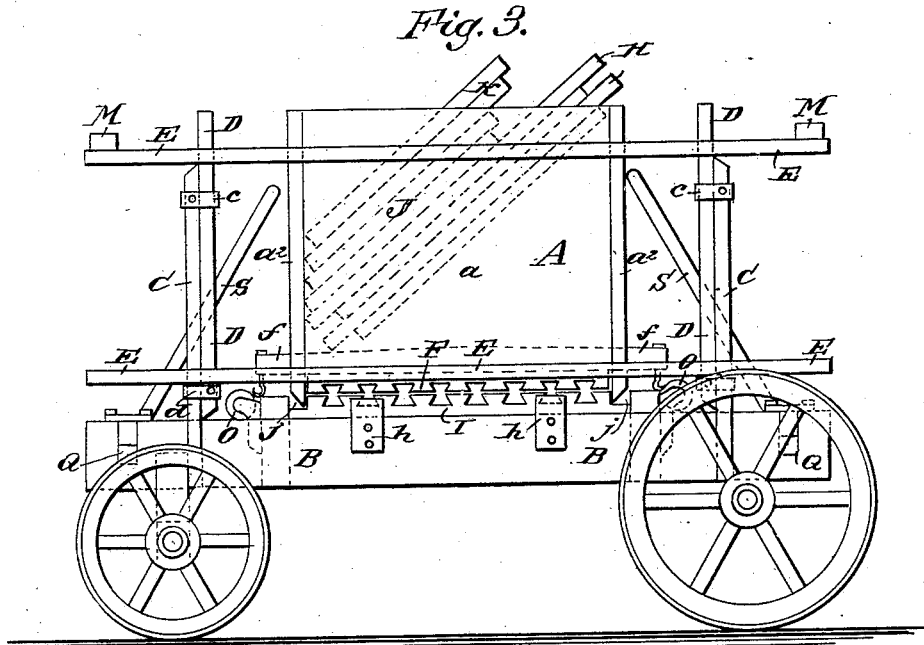


W. T. ANDERSON.

BALING PRESS.

No. 310,357.

Patented Jan. 6, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM T. ANDERSON, OF ROCK HILL, SOUTH CAROLINA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 310,357, dated January 6, 1885.

Application filed October 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. ANDERSON, of Rock Hill, in the county of York and State of South Carolina, have invented a new and Improved Baling-Press, of which the following is a full, clear, and exact description.

The objects of my invention are to facilitate the transportation and housing of baling-presses, and to economize time and labor in pressing bales of hay, straw, cotton, or other substance.

The invention consists in a baling-press constructed with the upper part of its press-box made vertically adjustable, so that it may be extended for use and let down when out of use, and in a separable construction of the upper part of the press-box, allowing easy adjustment of it, and in particular constructions and combinations of parts of the press-box and their supports.

The invention includes, also, an arrangement of the pull ropes or chains of the follower, to wind on tapering drums fitted to slide transversely of the press-bed, and from the larger toward the smaller ends of the drums to lessen the downward movement of the follower for each successive stroke of the operating-levers as the compression increases in forming the bale, and to correspondingly increase the leverage of the operating-levers, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the press, showing the baling-box partly broken away, and extended as in use. Fig. 2 is a plan view of the press. Fig. 3 is a side elevation of the press, showing the baling-box dismembered and its top let down and ready for transportation or housing, as when out of use; and Fig. 4 is an enlarged plan view, partly broken away, of the follower-operating mechanism, and showing in section a portion of the press-box.

The letter A indicates the press-box or baling-chamber, which is set up on a bed or platform, B, mounted on a wheeled truck of any approved construction, to allow the press to be transported to and from the place of use.

To the bed B are fixed four posts, C, to which are fastened, at their upper ends, the loops or keepers *c*, through which the posts D may slide, and the posts D have loops or keepers *d* fixed to their lower ends, which slide upon the posts C as the upper posts, D, are raised or lowered.

To the posts D are fixed the opposite pairs of longitudinally-ranging side beams or timbers, E E', which are firmly secured to the opposite side walls, *a a'*, of the upper and vertically-movable side sections of the press-box, the ends of which consist of plates or walls *a² a²*, fastened to the end of the side wall, *a*, and plates or walls *a³ a³*, fastened to the ends of the opposite side wall, *a'*, and I prefer to fasten angle-pieces or brackets *e* at the corners of the press-box to brace its end walls strongly to the two pairs of beams E E' and E' E'. (See Figs. 1 and 2.) The side wall, *a*, end walls, *a² a²*, and the beams E E', thus constitute one side part of the upper section of the press-box, and the side wall, *a'*, end walls, *a³ a³*, and the beams E' E', constitute the other side part of the upper section of the press-box, and each of these side parts may be raised on the posts C, as in Fig. 1, or may be lowered, as in Fig. 3, and the adjacent edges of the end walls, *a² a³*, at each end of the press-box have a space between them, as at *a⁴*, to form the guide grooves or slots in which the beam *f* of the follower F moves as the bales are pressed.

In adjusting the press-box for use, each side part or half of its upper section is raised, and pins G are passed through the posts C D, to hold the upper part of the press-box raised to allow the lower side and end walls of the box to be put in place for pressing the bale, and to be removed for discharging the bale.

It is evident that the separate upper side parts of the press-box may much more easily and quickly be handled in adjusting them than would be the upper part of the box when made with its sides and ends rigidly connected.

The letters H H indicate the lower side walls of the press-box, which are set in behind plates or blocks *h*, fixed to the opposite sides of the bed B, and so as to rest against the side edges of the platen I, which is fixed to the bed, and has the usual tie-grooves, *i*, corresponding with those of the follower, and

the upper edges of the walls H H coincide with the lower edges of the opposite side walls, $a a'$, of the upper portions of the press-box. I stand the end walls, J J, of the lower portion of the press-box in grooves $j j$, made in the platen I, and the joints at k of the upper edges of the walls J J, with the lower edges of the end walls, $a^2 a^3$, of the upper parts of the press-box range upward and outward, so that as the hay or other material being baled is forced down by the follower it will not catch in these joints and tend to force its way through them, but will pass smoothly by the joints, which also allow the lower end walls, J J, to fall outward when the bale is pressed, and the notched and loose bars K K are removed from the notches near the ends of the bars L L, which bars are fixed to the side walls, H H. After the upper side sections of the press-box are raised and the pins G are inserted to hold them up, and the lower walls, H H J J, are adjusted and locked by the bars K L, the tie-bars M M, which are pivoted at m to the ends of the upper bar, E', are swung over to engage by their slotted or hooked ends with pins m' , or other suitable fastenings, on the opposite upper side bar, E, to hold the upper side parts of the press-box in place against the outward bursting pressure of forming the bale. It will be seen that when the work is finished the bars K may be removed, the bars M be swung over, the lower walls, H J, taken out, and the pins G removed, when the entire upper parts of the press-box may be lowered until the end walls, $a^2 a^3$, rest on the platen I, on which the follower also may rest, while the parts H J K may be set in the upper press-box, which is lowered sufficiently to allow the machine to be driven through ordinary doorways for placing it under cover when out of use.

I describe the follower-operating mechanism as follows: Ropes or chains N N are connected by hooks or otherwise with the opposite ends of the follower-beam f , and extend downward and beneath guide pulleys or rollers O O, journaled to the bed B, and thence outward to the tapering winding-drums or cone-pulleys P P, which are placed on the shafts Q Q, and the shafts are held by their ends in the bed B, so as not to rotate. To the drums P are made fast the ratchet-wheels R, and levers S, carrying pawls T, are fitted loosely to the shafts by arms t , secured to the levers, and by the forked inner ends, t' , of the main lever-bars entering circumferential grooves between the drums P and their fixed ratchet-wheels R, and resting on the necks η , which connect the ratchet-wheels to the drums. Nuts U are fixed in the cone ends of the drums P and fit screw-threads V on the shafts Q. I connect the lower ends of the ropes or chains N at n to the largest parts or ends of the tapering drums P, so that as the levers are worked up and down and their pawls T act to rotate the drums P on the shafts Q, the drums, by

the nuts U, will be moved along the shafts in direction of the arrow x , Fig. 4, or toward the larger ends of the drums. The pitch of the screw-threads V equals the diameter of the ropes or chains N, so that the movement of the drums by the screws V will keep the ropes N always in a straight or direct line longitudinally of the press to allow the pull on the follower-beam to more easily be given, and so that the ropes N will coil truly and closely around the drums as the drums move along their shafts. This regular and even coil of the ropes N on the drums P, in connection with the taper of the drums, secures a gradually-decreasing down-pull of the follower for each succeeding revolution of the drums, as the ropes N wind first upon the larger ends of the drums, which will move the follower down faster at the commencement of the downstroke of the follower, when the material being baled offers the least resistance to compression, and as the pressing progresses the follower will move downward a less distance for every downstroke of the levers S, thereby increasing their leverage as the bale is approaching completion, and enabling the power to be applied to the best advantage, and securing economy of time in the work. The holding-pawls W W, which engage the ratchet-wheels R R to hold them from turning back while the levers are being raised for the next stroke, have broad edges w , which will engage the ratchets in any position they may occupy along the drum-shafts.

When the machine is not in use, the levers S are thrown inward against the lowered press-box, as shown in Fig. 3 of the drawings.

The machine may be made of any desired size for special uses, and of suitable materials combining lightness and strength.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A baling-press constructed with the upper part of its press-box made vertically adjustable, so as to be extended for use and let down when out of use, substantially as herein set forth.

2. A baling press constructed with the upper part of its press-box made vertically adjustable, so as to be extended for use and let down when out of use, and said upper part of the press-box being made in two separate side sections, in combination with means for supporting said side sections, substantially as herein set forth.

3. A baling-press constructed with the upper part of its press-box made vertically adjustable, and with lower walls, which may be placed below the upper walls of the press-box when pressing a bale, and may be removed to discharge the bale, substantially as herein set forth.

4. The combination, in a baling-press, of the upper side sections, $a' a^2 a^3$ and $a^2 a^2 a^2$, of the press-box, connected to opposite beams, E E', to which posts D are fixed, and the posts C, on

which the posts D slide vertically, the pins G, for holding up the sections, and the tie-beams M, substantially as herein set forth.

5 5. The combination, in a baling-press, of the upper side sections, $a' a' a'$ and $a a' a'$, of the press-box, connected to opposite beams, E E', braced by beams M, and the supporting-posts C D, and pins G, substantially as specified, and the lower press-box walls, H J, adapted
10 to be locked in place beneath the upper press-box sections while pressing the bale, and to be removed for discharging the bale, substantially as herein set forth.

15 6. A baling-press constructed with a pull rope or chain connected to its follower, and said rope arranged to wind on a tapering drum fitted to move transversely of the press-bed, and so that the pull-rope shall wind on the drum from its larger toward its smaller
20 end, and with means for rotating the drum, substantially as herein set forth.

7. The combination, in a baling-press, and with the follower pull rope or chain N, of the tapering drum P, moved along a shaft, Q, by a nut, U, fixed to the drum, engaging screw-threads V on the shaft, and said rope N being
25 connected to the drum at its larger end and winding on the drum toward its smaller end, and means for rotating the drum, substantially as herein set forth.

30 8. The combination, in a baling-press, and with the follower pull-rope N, of the tapering drum P, moved along a shaft, Q, by a nut, U, fixed to the drum, engaging screw-threads V on the shaft, and said drum P having a ratchet-wheel, R, secured to it and operated by lever-and-pawl devices engaging the ratchet-wheel, substantially as herein set forth.

WILLIAM T. ANDERSON.

Witnesses:

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J. R. BUTTON.