(No Model.) 2 Sheets—Sheet 1.

T. TEBOW.

BALING PRESS.

No. 428,976. Patented May 27, 1890.

Fig. 1.

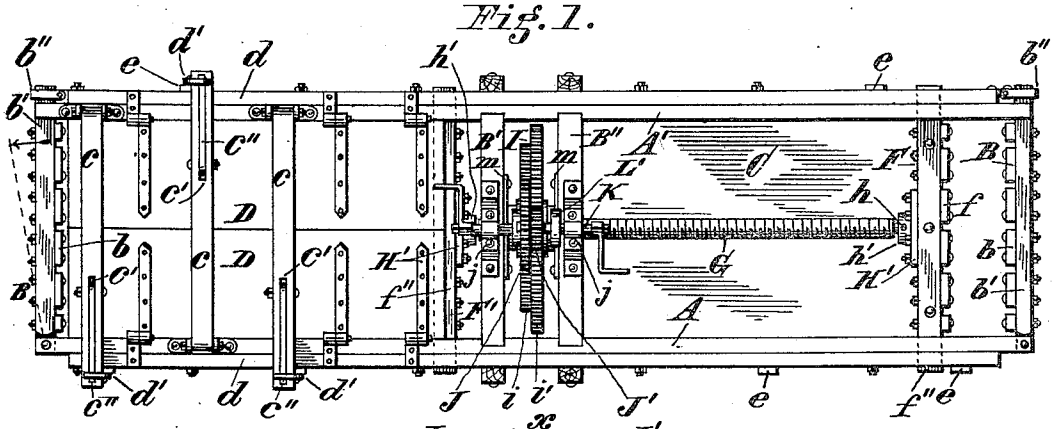


Fig. 2.

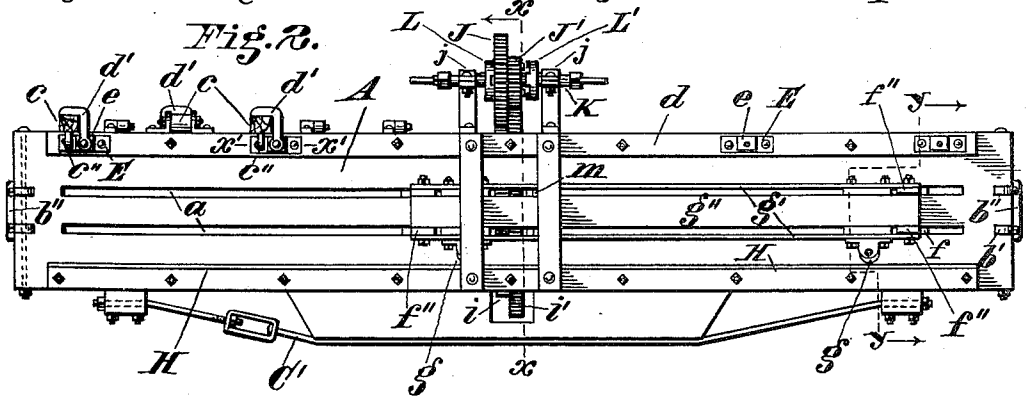


Fig. 3.

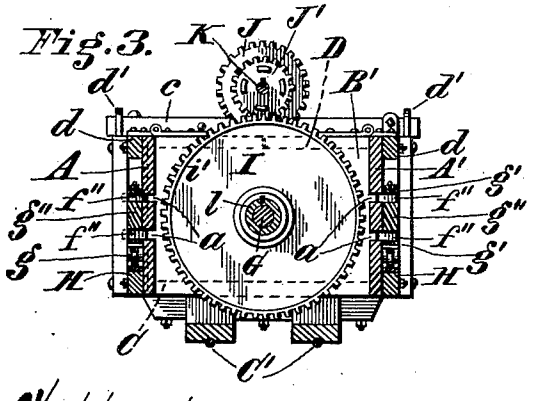
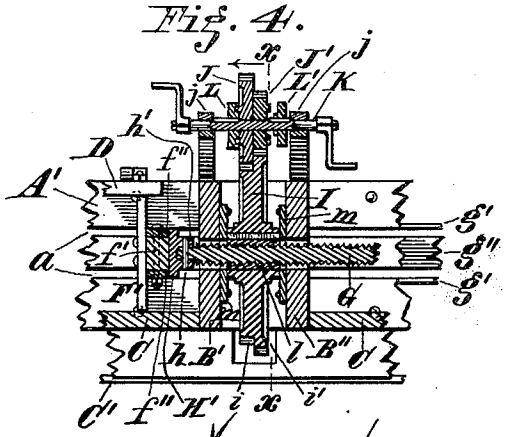


Fig. 4.



Attest

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

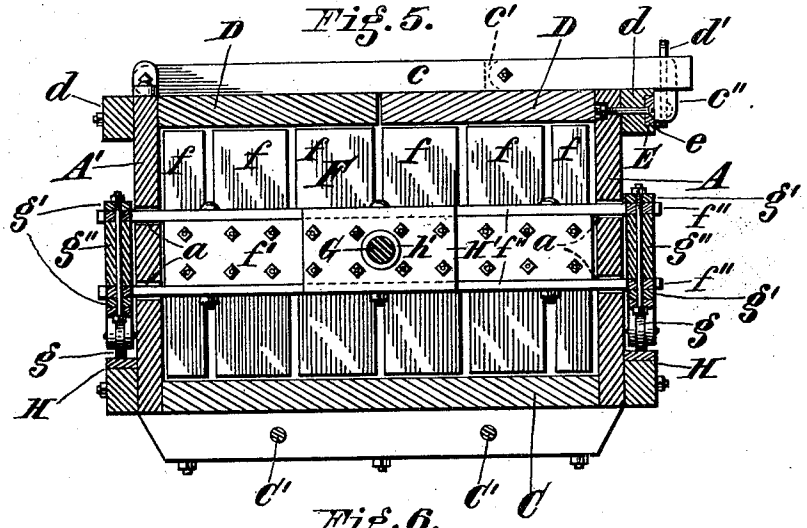


Fig. 6.

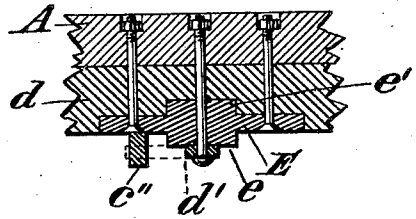


Fig. 7.

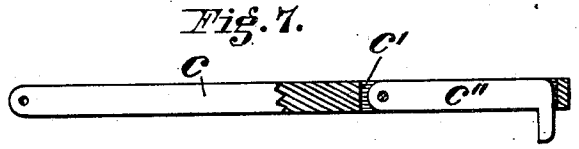
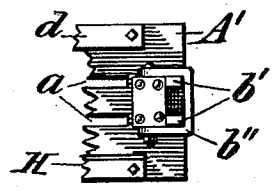


Fig. 8.



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UNITED STATES PATENT OFFICE.

THEODORE TEBOW, OF NICHOLASVILLE, KENTUCKY.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 428,976, dated May 27, 1890.

Application filed November 14, 1889. Serial No. 330,357. (No model.)

To all whom it may concern:

Be it known that I, THEODORE TEBOW, a citizen of the United States, residing at Nicholasville, in the county of Jessamine and State of Kentucky, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

My invention relates to that class of baling-presses known as "double-acting presses," in which two boxes or chambers for the compression of the material are provided, and the follower devices caused to act alternately on said material, whereby bales may be made continuously, a compressed bale being tied and discharged while another is being formed, all of which will be fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the machine embodying my invention, the closing doors over one of the press-chambers being omitted to permit a view of its interior; Fig. 2, a longitudinal side elevation of the same; Fig. 3, a transverse sectional elevation on line $x\ x$ of Figs. 2 and 4, the elevation being in the direction indicated by the arrow adjacent the upper end of said line; Fig. 4, a broken central sectional elevation of the interior of the press, showing one of the followers, the screw, and operating mechanism; Fig. 5, an enlarged transverse sectional elevation of my press on line $y\ y$, Fig. 2, the elevation being in the direction indicated by the arrows adjacent both ends of said line, and adding to said Fig. 2 the doors and brace or lock-bars, (omitted therein and in Fig. 1, as above stated;) Fig. 6, an enlarged sectional plan of one of the door-locking devices on line $x'\ x'$, Fig. 2; Fig. 7, a longitudinal elevation of one of the door-locking bars, showing a part of it broken and in section to display the auxiliary locking-hook; and Fig. 8, a broken side elevation of one end of the press, showing the locking device for the free end of each one of the tail-gates.

A A′ represent the longitudinal side walls of the press, each having two longitudinal parallel slots or guideways $a\ a$.

B B represent the two end abutment-walls of the press, composed of strong vertical slats or bars b, bolted (with spaces between, as usual) upon horizontal transverse binding-bars b'. I prefer to pivotally connect each of the abutment-frames B B at one of its ends to the side wall A, and lock its other end, when closed, by means of a pivotal strap or loop b'', which is mounted on the side wall A′, and engages the laterally-projecting ends or extensions of bars b', as very clearly shown in Figs. 1 and 8, thus forming hinged tail-gates at both ends of the press for the ready removal of the bales as soon as they are compacted and tied.

B′ B″ represent two partitions at the middle of the press, having a suitable opening or space between them for the reception of the operating mechanism, fully hereinafter described.

The press is divided into two compartments or compacting press-chambers, one at either side the central hollow partition B′ B″, as clearly shown in Figs. 1 and 4.

C represents the bed or bottom of each press-chamber, and C′ C′ are longitudinal tie-rods stretching along the bottom of the machine to properly strengthen the press in the usual manner and prevent its sagging in the middle.

D D represent the upper horizontal doors of the press-chambers, hinged as usual to the side walls and preferably held tightly closed and braced for the pressing operation by means of strong transverse bars c. Bars c are each pivotally connected at one of their ends to the side walls and provided at their opposite ends with long slots c', in which are pivotally mounted the horizontal auxiliary hooks c'', which latter engage the outer faces of the longitudinal strengthening-bars $d\ d$ on the upper edges of both the side walls.

d' represents each one of the several vertical hooks which are pivoted to bearing-plates E on the outer faces of the said strengthening-bars $d\ d$ and engage (at right angles thereto) the projecting ends of the cross-bars c immediately over the outer hook ends of the auxiliary hooks c''. Hooks c'' serve to lessen the tendency of the side walls to bulge or spread out laterally when great pressure is applied to the material within, and hooks d' serve as holdfasts for said lock-bars c, and simultaneously prevent said auxiliary hooks c'' from accidentally springing upward out of locking or bracing engagement.

Bearing-plates E are preferably counter-

sunk in the strengthening-bars *d* to prevent displacement, as clearly shown in Fig. 6, and are made quite heavy at their central portions to form bosses *e* and *e'*, which project outwardly and inwardly, respectively, therefrom. Said bosses or thickened portions impart to the bearing-plates E the requisite strength for counteracting the strain on hooks *d'* and furnish long substantial bearings for the bolts upon which said hooks are pivoted. The outer bosses *e* bring or arrange the hooks *d'* away from contact with the face of the press-wall and said strengthening-bars *d*, thereby facilitating their manipulation either before or after a pressing operation.

F F' represent the several followers or pressure-exerting platens mounted, respectively, at both ends of a central driving-screw G and composed of the usual spaced slats *f*, secured to a transverse binding bar or timber *f'*, as most clearly shown in Fig. 5. Both the followers are provided with transverse plates or bars *f'' f''*, whose ends project through the guideways *a a* in the side walls of the press and connect the said followers with a pair of suitable travelers or carriages mounted on rollers *g g*, adjacent the outer faces of said side walls at both sides of the press. Said travelers or carriages are composed, preferably, of longitudinal draw bars or rods *g' g'*, having intermediate stiffening timbers or bars *g''* and the said supporting or riding rollers *g*, the latter being mounted in suitable boxes or bearings at both ends of each traveler and riding on metal-faced tracks or bars H, secured at the lower edges of said side walls, as clearly shown in Figs. 2 and 5. These roller-supported travelers and their draw-bars are provided to uphold or support the weight of the followers and driving-screw, thereby reducing the friction of all the moving parts connected therewith to a minimum, and also relieving the said screw of any lateral strain that might result from irregularities in the arrangement or packing of the material in the press-chambers or otherwise. In thus relieving the driving-screw of lateral strain, the said travelers permit the use of a much lighter and less costly screw than heretofore, and at the same time distribute and exert a more uniform pressure on the material in the compacting operation. The driving-screw is connected with the followers at both its ends by means of pins or bolts *h*, which are passed through and fit holes in the bosses *h'* of the coupling-plates H' and the socketed plain ends of said screw, as shown in Figs. 1 and 4. The driving-screw is thus a non-revolving one, and simply reciprocates back and forth toward either press-chamber, pushing one follower before it to compact the material in the chamber at one end of the press and simultaneously drawing the other follower after it to leave the chamber at the other end of the press clear for the reception of material to form another bale on the return-stroke of said parts.

The motive power I prefer to use for reciprocating said screw and followers I shall now describe, and it is clearly shown in the first four views of the drawings.

I represents a master gear-wheel mounted on the driving-screw in the opening between the partitions B' B'', which divide the two press-chambers, as hereinbefore described. The periphery of this wheel is shouldered, so as to form two diameters *i* and *i'*, both of which are properly milled or toothed and intermesh the two small gears or pinions J and J', which latter are loosely mounted upon a horizontal shaft K, journaling in the elevated bearings *j j* upon the said partitions.

L L' are two ordinary movable clutch members feathered on shaft K, one at each side the said loosely-mounted pinions J and J', and respectively designed to be readily thrown into or out of engagement with either of said pinions for driving the master gear-wheel I at a fast or slow speed, the larger pinion being used at the beginning of the pressing for speed, and the smaller one at the close of the pressing for power. The shaft K is provided with suitable driving-handles at both its ends, as shown; or in lieu thereof it may be driven by means of belt and pulleys or other power, as desired.

I prefer to provide within the hub of the master gear-wheel I a bushing or box *l*, which is keyed in place and internally threaded to engage the threads of the driving-screw G, and cause it and the followers to reciprocate in the press-chambers for operation on the material to be compacted and baled. It is obvious, however, that the bore of the master gear-wheel could be threaded to engage the screw G and the said bushing dispensed with; but, as stated above, I prefer to use the keyed and internally-threaded bushing, because when worn it can be more readily and cheaply replaced than can an entirely new gear-wheel.

m m are two vertical friction-plates on the inner faces of partitions B' B'', having central openings for the free passage of screw G, and designed to protect the said partitions (which are wooden ones) from wear caused by the revolutions of the master gear-wheel and its bushing.

In the operation of the machine, while the follower at one end of the reciprocating screw is pressing the material into bale shape in one chamber, the other press-chamber is open and being filled with material, so that the other follower can compact it on the return-stroke of said screw, thereby permitting a continuous compacting of material by means of the said screw and its operating mechanism.

The return-stroke of the follower driving-screw is accomplished by reversing the motion of the handles on the shaft K, as is obvious. It is also obvious that more than one driving-screw can be used to operate the followers, if desired, by merely furnishing additional wheels in the train of gear in the opening between the two press-chambers, with but little

and no material change in the arrangement already shown and described herein.

I claim—

1. In a baling-press having a press-chamber at each end, a pair of followers operating therein, said followers being mounted one at each end of a reciprocating non-revolving screw, in combination with transverse bars whose ends project outwardly from said followers through guideways in the side walls, and longitudinal draw-bars mounted on rollers and connecting or coupling the said projecting ends of the transverse bars of both followers, substantially as and for the purpose specified.

2. In a baling-press, the combination, with the press-chamber doors and side walls, of the transverse lock-bars having horizontal auxiliary hooks c'' mounted in slots c', and vertical lock-hooks d', substantially as and for the purpose specified.

In testimony of which invention I have hereunto set my hand.

THEODORE TEBOW.

Witnesses:
JOHN E. JONES,
C. B. DONALDSON.