2 Sheets—Sheet 1.

W. A. WRIGHT.

BALING PRESS.

No. 184,684. Patented Nov. 21, 1876.

Fig. 1.

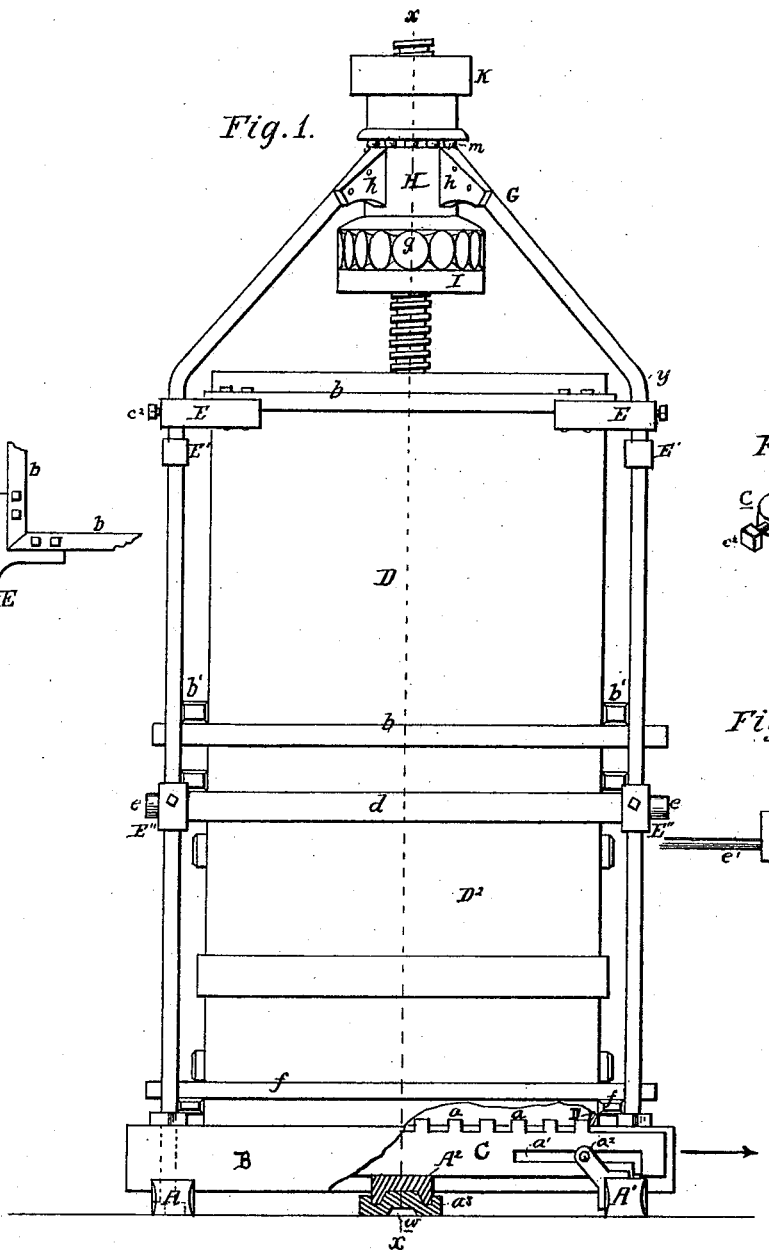


Fig. 4.

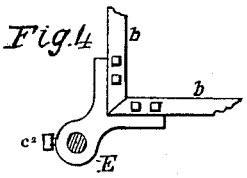


Fig. 5.

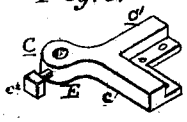
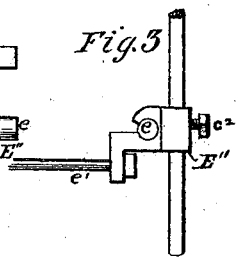


Fig. 3.



Attest:

Courtney A. Cooper.

George Thom.

W. A. Wright

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Charles E. Foster

2 Sheets—Sheet 2.

W. A. WRIGHT.

BALING PRESS.

No. 184,684. Patented Nov. 21, 1876.

Fig. 2.

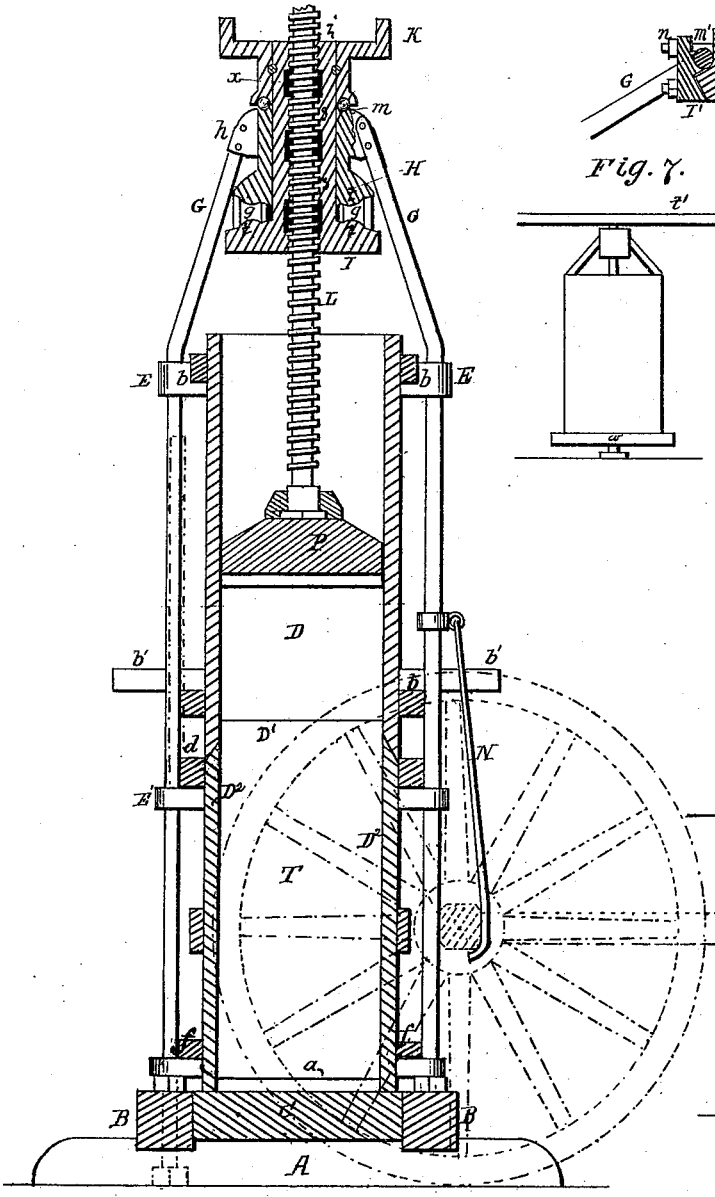


Fig. 6.

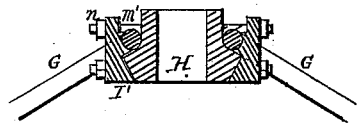


Fig. 7.

Fig. 8.

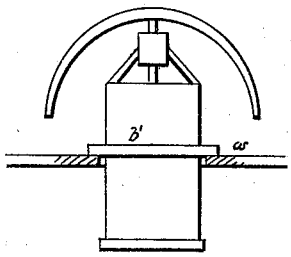


Fig. 9.

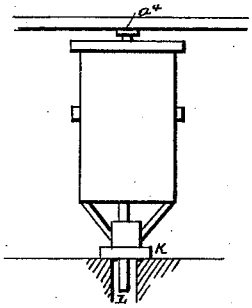
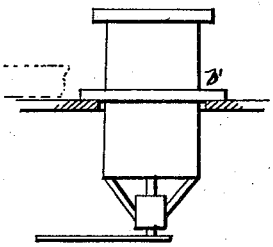


Fig. 10.



Attest:

Courtney A. Cooper.

George Thom

W. A. Wright

By his atty

Charles E. Foster

UNITED STATES PATENT OFFICE.

WILLIAM A. WRIGHT, OF AUGUSTA, GEORGIA, ASSIGNOR TO OSBORNE M. STONE, OF SAME PLACE.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. **184,684**, dated November 21, 1876; application filed April 4, 1876.

To all whom it may concern:

Be it known that I, WILLIAM A. WRIGHT, of Augusta, Richmond county, Georgia, have invented Improvements in Baling-Presses, of which the following is the specification:

My invention relates to certain improvements in screw baling-presses, whereby the strength and stability of the same are increased, the introduction and withdrawal of the material facilitated, and the apparatus rendered easily convertible, so as to operate in any of the various modes which circumstances may render desirable.

In the accompanying drawing, Figure 1 is a side elevation, partly in section, of the improved press; Fig. 2, a sectional elevation on the line *x x*, Fig. 1; Figs. 3, 4, and 5, detached views of parts of the press; Fig. 6, a modification; and Figs. 7 to 10, diagrams, representing different modes in which the press may be used.

The base of the press consists of parallel beams B B, and cross-pieces A A^1 bolted together. To the four corners of the base are securely bolted the lower ends of four metal rods, G G G G, which are parallel to the sides of the baling-chest, but at the points *y*, opposite the upper end of the chest, are bent and converge from the narrow sides, at an angle of about seventy degrees, toward the center of the head-block H, each rod G being bolted to one of four radiating arms, *h*, of the said head-block. The upper half of the baling-chest consists of a box, D, strengthened externally by cross-bars *b b'*, the latter being bolted to the narrow sides, and extending beyond the rods G, as shown in Fig. 2, for a purpose described hereafter. The portion D of the baling-chest is suspended between the rods G by means of brackets E, each secured by a set-screw, c^2, to one of the rods, and consisting of a hub, *c*, and arms c^1 c^1, at right angles, recessed to receive the ends of the adjacent cross-bars *b b*, where they meet, and bolted to the latter, as shown in Figs. 1 and 4. The lower portion of the baling-chest consists of detachable end pieces D^1 and side pieces D^2, the latter being hung to the frame of the apparatus, so as to be turned outward to the position shown in dotted lines, Fig. 2. In the present instance the hinges for the side pieces D^2 are formed by rounding the projecting ends *e e* of a cross-piece, *d*, on each side piece D^2, to fit sockets in adjustable brackets E″, sliding on the rods G, Fig. 3. The said brackets are secured after adjustment, by set-screws c^2, and the opposite brackets are connected by a tie-bolt, *e'*. Between the beams B B fits the movable pressing-block C, having at the upper side the usual transverse ribs *a*, against the ends of which the hinged sides D^2 bear when closed, as shown in Fig. 2, and into slots a^1 in the sides of the pressing-block project pins a^2, extending from brackets on the frame of the machine. The slots a^1 are of such a length that the block C can be moved lengthwise in the direction of the arrow, Fig. 1, until its inner end is free from the cross-bar A, when it may be turned to a position at right angles to the beams B, exposing the end of the baling-chamber. A detachable cross-bar, A^2, is bolted to the under sides of the beams B, and has in the center a bearing-plate, a^3, for the purpose described hereafter. To the usual screw L of the follower P is fitted the nut I, the hollow threaded sleeve *i* of which fits nicely, but so as to turn freely, in the head-block H, recesses *x* being formed by cutting away the threads within the nut, so as to leave two or more threaded bearings, *s*, thus reducing the frictional surfaces, and affording chambers for the retention of the lubricant. The head-block H and nut I have annular inclined ribbed bearing-faces *t*, between which intervene a series of conical grooved rollers, *g*, which reduce the friction between the surfaces, while the annular ribs *t*, upon or forming a part of the bearing-faces, retain the rollers in their positions without interfering with the freedom of their movements. A detachable flanged ring, K, incloses and is bolted to, so as to form part of, the sleeve of the nut at the upper end, and in grooves formed in the said ring, and in the adjacent end of the head-block H are confined friction-balls *m*. Strips of wood *f* are passed between the sides of the baling-box and the rods G, to hold the sides in position. The cross-beam or yoke by which the nut I is turned is secured to the flange of the ring K, and the screw and follower are elevated, as usual, to expose the

mouth of the chamber into which the material to be pressed is thrown, the balls *m* reducing the friction between the head-block and the nut, as the latter is turned in elevating the follower.

The movement of the nut I is reversed, after filling the chamber, so as to condense the material between the follower P and the pressing-block C, the head-block resisting the upward thrust of the screw, the rollers *g* reducing the friction between the head-block and the revolving nut, and the rods G so distributing the strain between the head-block and the base as to prevent any undue pressure upon any part of the apparatus.

By bending the rods G so that their upper ends converge toward the axis of the screw, the strains are brought in a direct line, and all torsional strains thereby avoided, and, by bending rods at an angle of seventy degrees, or thereabout, I prevent the tendency to force the rods inward against the box, without unduly increasing the height of the machine.

In order to facilitate the transportation of the machine, hooked rods N are hung to studs on the rods G, so as to hook beneath the axle of a truck, as shown in dotted lines, Fig. 2. On drawing the truck forward the press is tilted until it falls in a nearly-balanced position upon the axle, when a slight pressure will lift its base free from the ground.

Owing to the manner above described of constructing a press, it may, by a simple adjustment of its parts, be adapted for use in various positions, as circumstances may require. If, for instance, a rotating box-press is required, the cross-bar A^2 is secured in position, a suitable bearing is placed beneath the block a^4, elevating the base from the ground, and the ring K is bolted to a stationary cross-piece, *t'*, as in diagram, Fig. 7. The box may then be rotated on its vertical axis, the lower bearing being at the point *w*.

If hand-power is to be used, the press is suspended with its bearings or cross-pieces *b'* resting upon the floor of the gin-house, as shown in Fig. 8.

In order to press upward, the press is inverted, the lower bearing being upon the ring K, and the plate a^4 forming the upper bearing, as shown in Fig. 9, when the box may be revolved; or the inverted press may rest in a stationary position, with the bearings or cross-pieces *b'* upon the floor of the gin-house, as shown in Fig. 10. In the latter case the press is fed from the top, the pressure-block C being slid to one side and turned upward to expose the mouth of the baling-chamber, as before described.

When the press is to be used in an inverted position the brackets E are applied to the opposite edges of the cross-bars *b*, so as to support the latter from beneath.

While the bars G support the base, head-block, and the portion D of the baling-chest in their proper relative positions, they permit the hinged sides D^2 to be turned outward and the detachable sides D^1 to be removed, so as to allow free access to the material compressed between the follower and the pressure-block, completely exposing the pressing-chamber T at all sides.

Instead of bolting the upper ends of the rods G directly to the head-block, the rods at each end of the press may consist of a single continuous bar, bent to form a loop which is passed around a block, I', bolted to the head-block, as shown in Fig. 6.

Although the bars b^1 have been referred to as constituting the center bearing of the press, it will be apparent that lugs or brackets or staples or openings may be arranged so as to secure a rest or bearing, on which the press may be supported at or near its center. Other means, also, may be adopted for securing a proper central bearing at the point *w*.

The brackets E not only support the baling-box, but also serve to prevent the rods G from spreading. Cross-bars E' may, however, be employed to give increased rigidity to the structure.

I do not claim, broadly, rollers arranged between the head-block and the flange of the nut, as this is old; but

I claim—

1. The combination, with the baling-chest, of a pressure-block, C, hung to the frame so that it may be turned outward to expose the end of the baling-chamber, substantially as specified.

2. The head-block, provided with an annular rib, *t*, on its lower face, in combination with the flange of the nut I, having a similar rib, and with intervening tapering grooved rollers, as set forth.

3. The nut I, recessed to form detached threaded bearings and intermediate oil-chambers *x*, as described.

4. A baling-press, provided with side bearings at b^1 and with an end bearing at *w*, whereby it may be supported with either end uppermost, either in a stationary position or so as to revolve on its vertical axis, as specified.

5. The combination of the press and the hooked arms or rods N, as and for the purpose set forth.

6. The brackets E, secured to the rods G, and having forked ends bolted to the baling-chest, as specified.

7. The brackets E'', having bearings for the journals of the doors or sides D^2, and connected by tie-rods *e'*, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

W. A. WRIGHT.

Witnesses:

WILLIAM E. JACKSON, Jr.,

FRANK W. MILLER.