

J. DRAKE.
Baling-Press.

No. 197,619.

Patented Nov. 27, 1877.

Fig: 1.

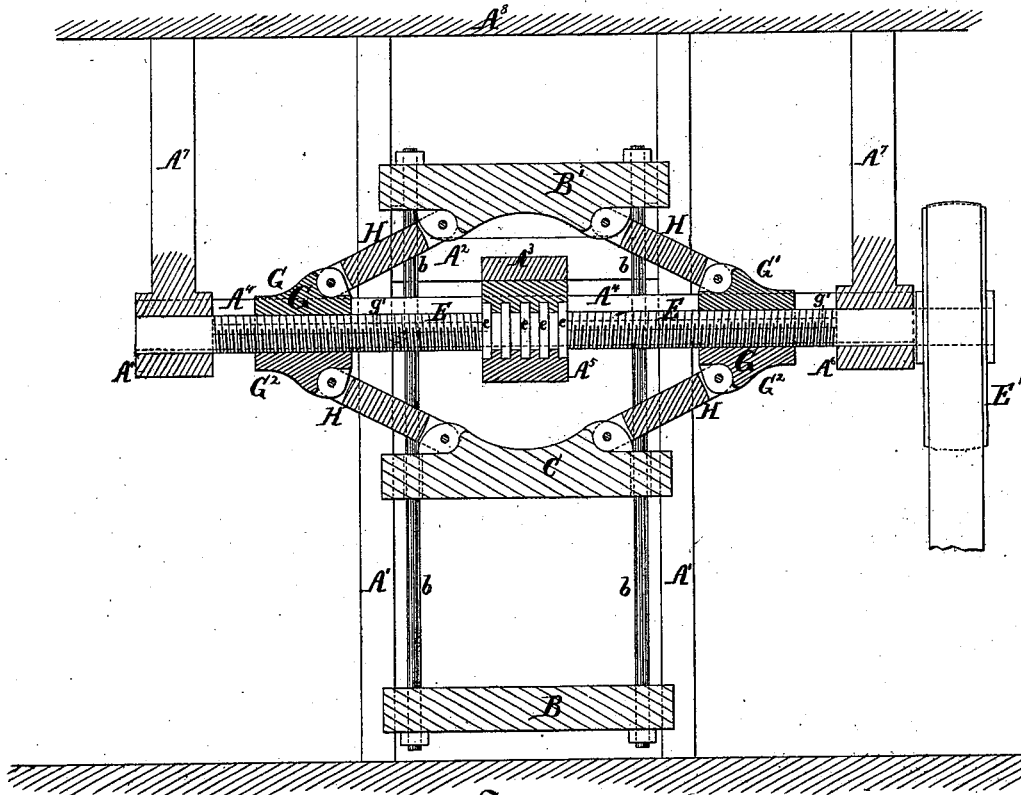
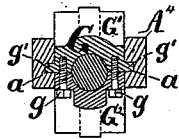


Fig: 2.



Witnesses:

H. A. Johnston.
A. Henry Johnston

Inventor:

John Drake
by his attorney,
J. S. Stearns
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UNITED STATES PATENT OFFICE.

JOHN DRAKE, OF DENISON CITY, TEXAS, ASSIGNOR TO HIMSELF, EDWIN D. CHADICK, AND WILLIAM H. TAYLOR, OF SAME PLACE.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. 197,619, dated November 27, 1877; application filed March 19, 1877.

To all whom it may concern:

Be it known that I, JOHN DRAKE, of Denison City, Grayson county, in the State of Texas, have invented certain new and useful Improvements Relating to Baling-Presses, of which the following is a specification:

My press is of that class wherein two platens, pressing on opposite sides of the bale, are moved toward each other by the force of toggle-levers. I have devised a construction whereby the mechanism is made peculiarly simple and efficient.

My invention consists in the combination of a right and left hand screw and suitable operating means, supported by the framing at a uniform level, with nuts, toggle-levers, and the two platens and their connections; also, in the supporting-frame and a central thrust-bearing, which holds the screw in a uniform position, facilitating the operation thereof by gearing or analogous mechanism, and also takes the weight of all the parts, and guides the platens, as will be fully set forth below; also, in certain guides for the nuts as arranged relatively to the other parts of the framing; also, in the compound construction of the nuts, in combination with the other parts, to facilitate removal when desired.

My invention is more particularly intended for compressing and re-pressing cotton for shipment; but it may be useful in various other situations, and in baling various other materials.

The following is a description of what I consider the best means of carrying out the invention as applied to the baling of cotton.

The accompanying drawings form a part of this specification.

Figure 1 is a central longitudinal section through the entire press, and Fig. 2 is a cross-section through one of the peculiarly compounded and guided nuts employed.

Similar letters of reference indicate like parts in all the figures.

I employ a framing, several separate parts of which will be designated A¹ A², &c. The parts are applied together and firmly bolted so as to form a rigid frame-work. It stands upon the ground or upon a suitable floor.

The frame may be used to support, or aid in

supporting, the roof of the building in which it stands, if desired.

Four uprights, A¹, serve as guides for the two platens B and C, and also for the cross-head or stout part B' above, which is stoutly connected by rods *b* to the platen B at the base. When the press is open the platen B is down in the base of the framing, and the platen C is elevated to allow a bale to be introduced between the platens or removed therefrom.

It will be understood that the faces of the platens may be slotted, or adapted in any ordinary or suitable manner to allow the application of the bale-ties.

Horizontal pieces A², extending lengthwise between the uprights A¹ at the proper level, support a central cross-piece, A³, which, in its turn, aids to support two long horizontal guides, A⁴, between which is mounted a right and left hand screw, E, through which the power is applied by a belt or gear-wheel from a steam-engine or other suitable motor (not represented) running upon the pulley E'. Between the guides A⁴, at the center, is a stout thrust-bearing, A⁵, grooved, as represented, to match a series of collars, *e*, on the central portion of the screw E. Between the ends of the guides A⁴ are blocks A⁶, which match to the inclosed cylindrical portions of the screws E, and form ordinary bearings therefor. These bearings are supported by connections A⁷ to the overhanging top A⁸ of the frame.

Both the right and the left hand portion of the screw E carry a nut, G. Each nut is formed of two parts, G¹ G², secured together by the bolts *g*, to allow of ready removal when desired. The sides of each nut are matched against the smooth interiors of the parallel guides A⁴, and are each, furthermore, formed with a horizontal wing or projection, nicely finished, and matched in a corresponding longitudinal groove in the inner side of the adjacent guide A⁴, so the only motion of which the nuts are capable is a simple traversing out and back. The projections on the nuts are marked *g'*, and the corresponding grooves in the guides A⁴ are marked *a*. The guides A⁴, by stoutly supporting the nuts against any tendency to turn, relieve the toggles from any oblique and irregular strain.

H H H H are wide toggle-levers, knuckled, respectively, to the upper and lower parts of the nuts and to bearings on the adjacent surfaces, respectively, of the upper platen C and of the cross-head B'.

While the direction of the forces transmitted through the toggles tends to relieve the framing from any severe strain, the construction of my framing is eminently adapted for firm support. The cross-piece A³, to which the thrust-bearing is bolted, extends directly across to the short longitudinal pieces A², and thus transmits any forces directly to the uprights A¹. The thrust-bearing is also strongly and directly connected to the long guides A⁴, which are bolted directly to the side bearings A⁶, connected by the stiff uprights A⁷ to the stout top A⁸.

The arrangement gives both a firm support to the parts and unusual freedom for the necessary movements, and for access for inspection or repairs.

In the operation of my press the screw E is turned by the belt or gear-wheel in the proper direction to move the nuts apart till the press is open and the previously-formed bale removed and a new one introduced. Then the motion of the belt or gear-wheel (and consequently of the screw E) being reversed, the nuts are drawn together, and the toggles H are straightened, forcing the platens C B together with the peculiar efficiency due to the combination. The nuts are perfectly guided, and relieve the toggles from all twisting strain. Any tendency of one pair of toggle-levers to close faster than the other is received by the thrust-bearing A⁵ in the center of the frame-work.

The framing may, by reason of age, severe strains, imperfect workmanship, or by the irregular swelling or warping of material, become considerably distorted and out of line without materially disturbing the position of the important parts.

The end bearings for the screw may and should be longer than the supports, the longitudinal position of the screw being controlled by the central thrust-bearing.

The nuts, being efficiently guided by the longitudinal pieces at the sides, relieve the toggles from any twisting strain. The knuckle-joints, being formed with rounded ends, form very efficient bearings for the thrust of the toggles in compressing the bales, while the knuckle-pins therein form efficient bearings for the slight strain in the opposite direction in opening the press.

In case of any necessity for separation of the parts, the screw need not be dismounted from its efficient bearings in the framing, but the parts may be separated by simply taking out the bolts *g*, and thus separating the two parts of each nut.

I claim as my invention—

1. The central thrust-bearing A⁵, in combination with the right and left screw E, having annular projections or collars *e*, nuts G, and toggles H, and with the two platens and their connections, as specified.

2. The guides A⁴ *a* and nuts G *g'*, in combination with each other and with the screw E, thrust-bearing A⁵, and with the toggles and two platens and connections, as specified.

3. The nuts G¹ G², compounded as specified, in combination with the fastening *g* and projections *g'* and guides A⁴ *a*, and with the right and left screw E, toggles H, and the two platens and their connections, as and for the purposes herein specified.

4. The framing described, having the cross-piece A³, longitudinal pieces A², and uprights A¹, in combination with the guides A⁴, supports A⁷, and top A⁸, adapted to serve with the thrust-bearing A⁵, and with the screw E, nuts G, toggles H, cross-head B', and platens B C, as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand this 26th day of February, 1877, in the presence of two subscribing witnesses.

JOHN DRAKE.

Witnesses:

W. H. TAYLOR,
B. GARDNER.