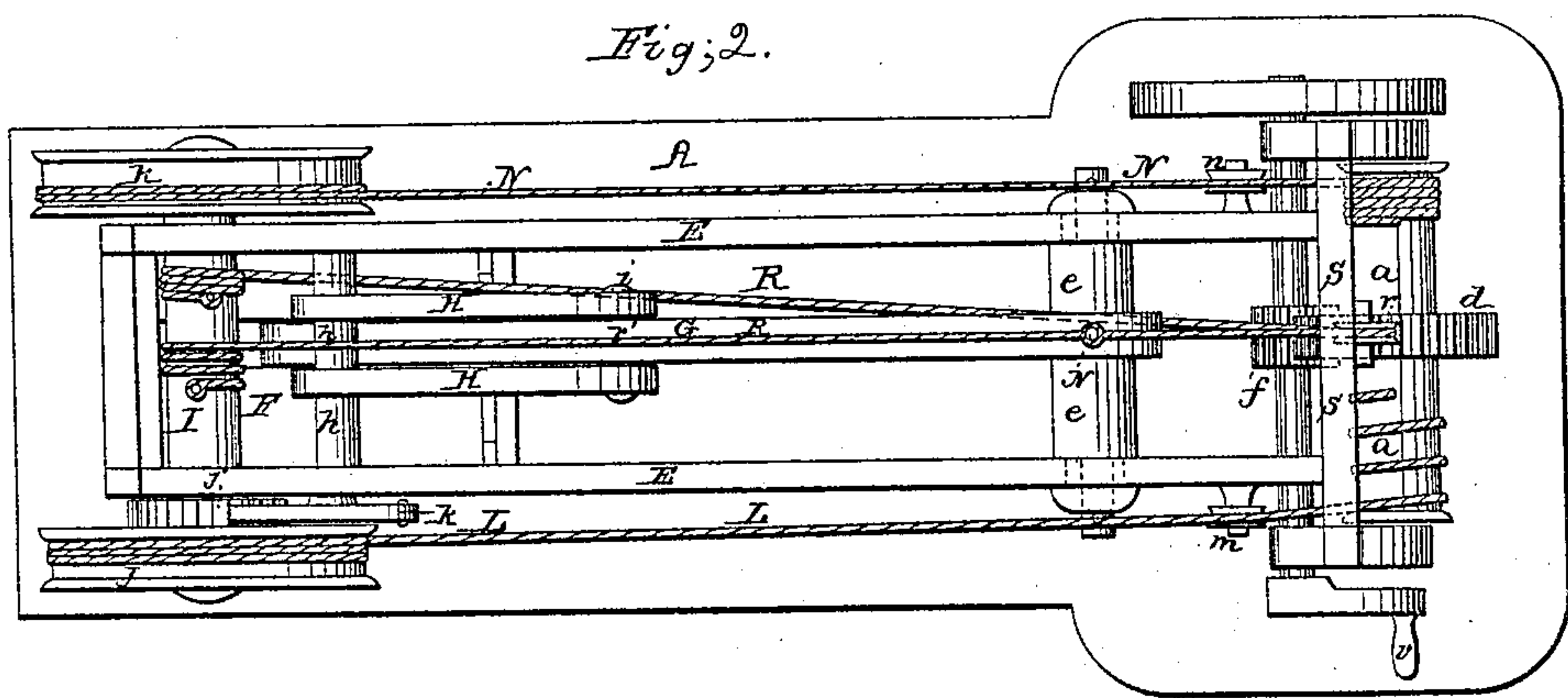
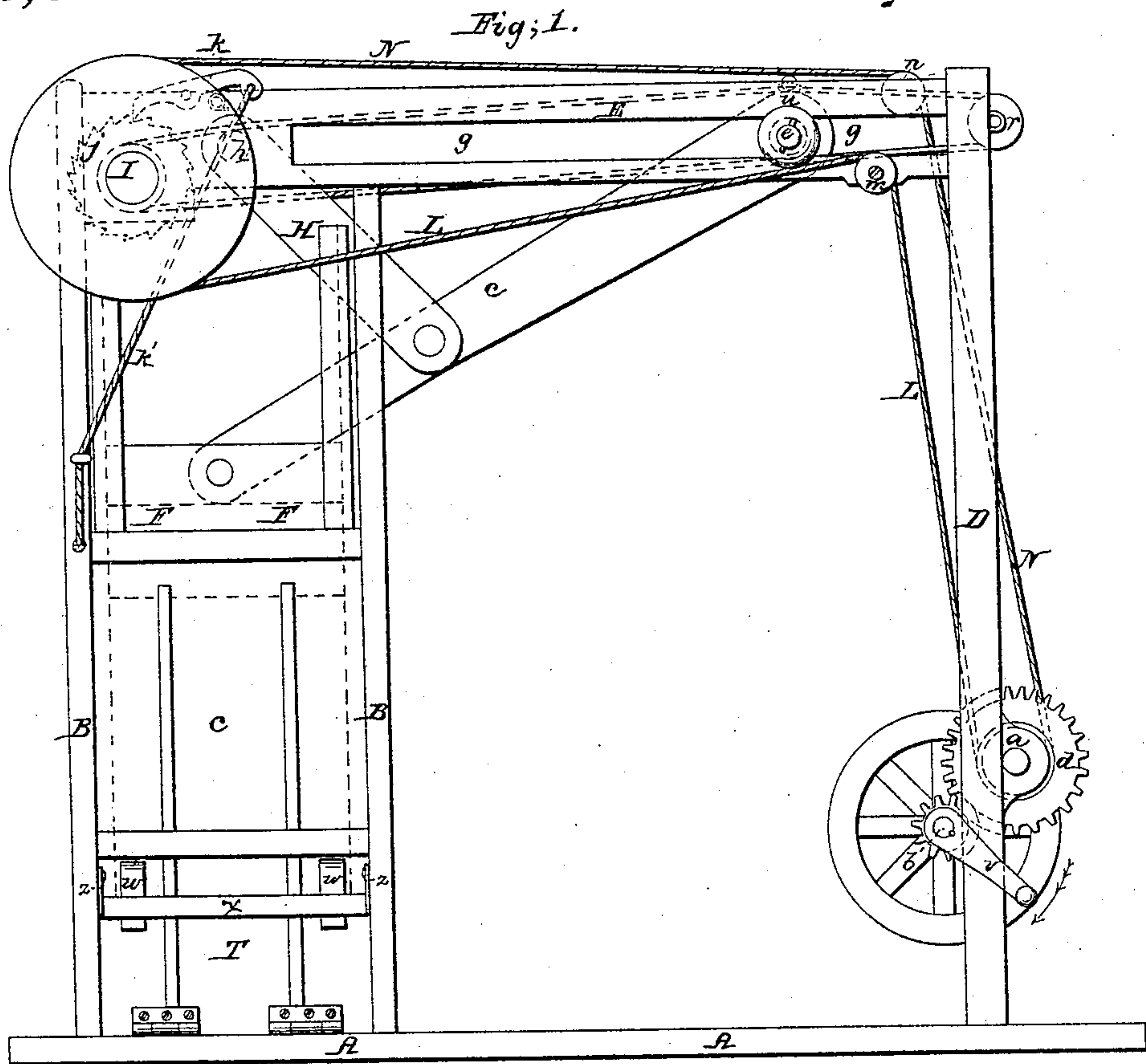


*W. Norman,
Cotton Press,*

No 53,657.

Patented Apr. 3, 1866.



Witnesses;

*J. W. Combs
Attorney*

Inventor;

Wm. Norman

UNITED STATES PATENT OFFICE.

WILLIAM NORMAN, OF NEW YORK, N. Y.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. 53,657, dated April 3, 1866.

To all whom it may concern:

Be it known that I, WILLIAM NORMAN, of the city, county, and State of New York, have invented certain new and useful Improvements in Presses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a side elevation of a press constructed according to my invention. Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention is designed for pressing cotton, hay, hemp, or other similar substances into bales, and also for pressing apples in the manufacture of cider; and it consists in a novel arrangement of parts, by which a great compressing force may be exerted by means of hand-power upon the material to be pressed.

To enable those skilled in the art to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

A represents a broad flat base, of plank or other suitable material, which supports the press itself. B B are vertical posts, of which there are four, situated at one end of the base A, and between which is placed the pressing-box C, formed in the usual manner. At the opposite end of the base A are two other vertical posts, D, near the lower ends of which are situated the transverse axles *a b*, turning in suitable bearings in the said posts, and connected by spur-wheels *d f*. The posts B and D, at each side of the base A, are connected together at their upper ends by a longitudinal top piece, E. These top pieces, E, support the greatest portion of the working-parts of the press, and, with the vertical posts B D, may be strengthened by suitable braces or cross-pieces.

F is the follower, which moves up and down in the pressing-box C, and is pivoted at its upper side to the lower end of a bar, G, the upper end of this bar G being provided with a cross-piece, *e*, the ends of which are cylindrical in shape, and pass through and work in long slots or guides *g* formed lengthwise in the top piece, E.

H represents two parallel bars pivoted at their upper ends to a transverse shaft, *h*, and

having their lower ends pivoted to the bar G, at or near the center thereof, as shown at *i'*, the bars G and H, as thus combined, constituting a toggle-joint.

I is an axle extending transversely through the top pieces, E, at the rear ends thereof, as clearly shown in the drawings. Two pulleys, J and K, are secured one upon each end of this axle I, which has also at one end, contiguous to the pulley J, a ratchet-wheel, *j*, which, in connection with the pawl *k*, causes the follower to be held down upon the pressed cotton or other material, when desired. This pawl may be brought out of contact with the ratchet-wheel by pulling downward the cord *k'* attached to its outer end.

m and *n* are two friction-pulleys, situated one upon the outer side of each top piece, E, near the front ends of the said top-pieces. *r* is also a small pulley pivoted near the center of the cross-piece *s*, which connects the upper ends of the posts D, and also the forward ends of the top piece, E.

L is a strong cord or rope, one end of which is secured to the periphery of the pulley J, around which the said cord is wound several times, the said cord being then passed forward over the small friction-pulley *m*, and thence downward to one end of the axle *a*, around which it is wound in the same manner as its opposite end is wound upon the pulley J, and is then secured to the said axle *a*. A similar cord or rope, N, has one end secured in like manner to the pulley K; but this cord N is wound upon its pulley K in a direction opposite to that in which the rope L is wound upon the pulley J, passing forward over the friction-pulley *n* and downward to the axle *a*, is wound upon the end of the said axle in a direction contrary to that in which the rope L is wound upon the opposite end thereof, in such a way that when the said axle is rotated one of the said cords will be wound upon the same while the other is unwound therefrom.

R is another cord or rope, both ends of which are secured to the axle I, and wound thereon, but in opposite directions, so that one end will unwind as fast as the other is wound upon the said axle, the rope R passing forward over the pulley *r*, and being firmly connected or attached to the rounded upper end of the bar G by a staple, screw, or other suitable means, as shown at *u*.

In order to secure the proper multiplication of power the pulleys J K are made much larger than the axle *a*, and the spur-wheel *d* larger than the spur-wheel *f'*, the axle *b* being furnished with a crank, *v*, at one or both ends, by means of which the said axle is rotated in working the press.

The lower portion of each side of the pressing-box C consists of a gate, T, which is pivoted at its lower edge to the base A in such a way that it can be turned outward and downward to allow the finished bale to be removed from the press. Near the upper edge of each gate are two projecting ears, *w*.

x is a longitudinal bar, attached to the inner side of the posts E, or directly to the side of the box C, by means of links *z*, in such a way that it can be dropped down over and across the ears *w*, as shown in Fig. 1, thus firmly holding the gate in a vertical position against the outward pressure of the material contained in the box C during the operation of pressing.

By simply raising the bars *x* above the ears *w* the gates may be easily opened or let down to permit the removal of the pressed material from the box, there being one of these bars *x* to each gate.

The operation of the invention is as follows: The gate T being first secured in a closed position by means of the bars *x*, as just herein described, and the follower F raised to a sufficient height to allow the cotton or other material which it is desired to press to be passed into the box C at the top thereof, and any desired quantity of such material being placed in the said box, the axle B is rotated by its crank in the direction indicated by the arrow in Fig. 1, and, acting through the spur-wheels *d f*, turns the axle *a* and winds the cord L upon the same, and, as a consequence unwinds the said cord from the pulley J, and causes the said pulley J, together with the axle I and the pulley K, to revolve, so that the portion *r'* of the cord R, between the axle I and the upper end of the bar G, is wound upon the said axle I, thus drawing the upper end of the bar

G back toward the said axle, the bar H forcing or guiding the lower or rearmost end of the bar G downward so as to operate the follower in a downward direction, the pressure increasing in proportion as the bar G approaches a vertical position, the bars H and G forming, in fact, a simple toggle-joint, while the part *r'* of the cord R is drawing the upper end of the bar G back, as just described. The cord N is unwound from the axle *a* in order to provide for raising the follower preparatory to pressing the succeeding bale. The rotation of the crank being continued until the bar G is brought nearly to a vertical position, the pawl *k* is allowed to drop into the teeth of the ratchet-wheel *j*, which, by preventing the rotation of the axle I, holds the bar G in a stationary position while the operation of hooping the bale, as required in pressing cotton, hemp, and similar substances, is being performed. This being done the bars *x* are raised clear of the ears *w*, and the gates T are let down and the pressed bale is pushed out sidewise from the box C through one of the openings thus formed. When this is done the motion of the crank *v* is reversed, which, unwinding the cord N from the pulley K and winding it upon the axle *a*, causes the rope R to move the upper end of the bar G forward and thus raise the follower F, the cord L being at the same time unwound from the axle *a* and wound upon the pulley J, thus bringing the several parts of the press back to their first position in order to press the succeeding bale.

What I claim as new, and desire to secure by Letters Patent, is—

The toggle-joint H G, slots or guides *g*, pulleys J K, axles I and *a*, spur-wheels *d f*, and cords or ropes L N R, all arranged with reference to each other and to the pressing-box C, substantially as herein set forth, for the purpose specified.

WILLIAM NORMAN.

Witnesses:

J. W. COOMBS,
A. LEClerc.