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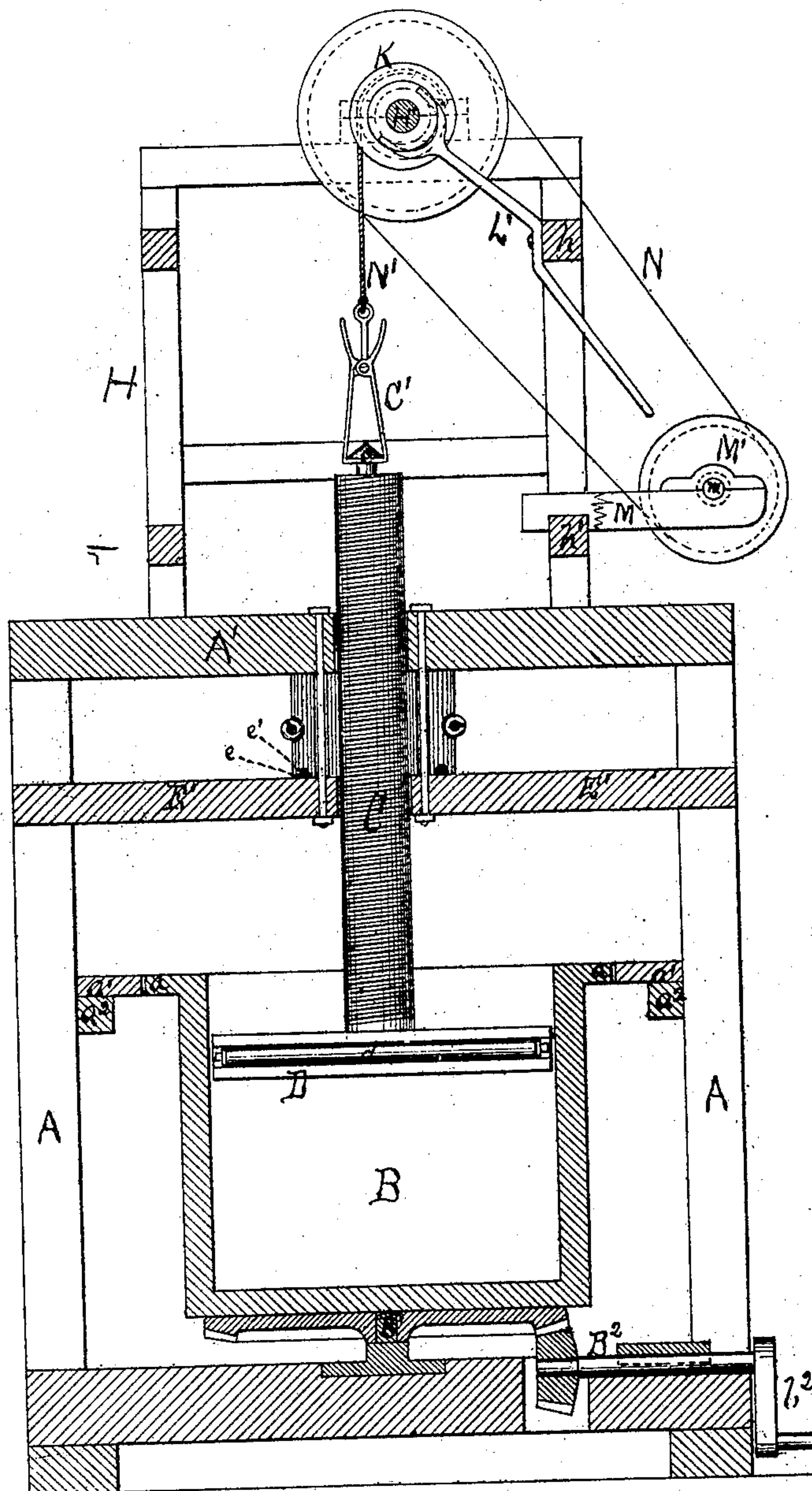
C. K. Marshall,

Cotton Press.

No. 113,900.

Patented Apr. 18 1871.

Fig. 1.



Witnesses:

Edwin James

Horace Brown

Inventor,

Charles K. Marshall

per J. P. J. Holmead

Attorney.

C. K. Marshall,

2. Sheets, Sheet 2.

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Fig. 2.

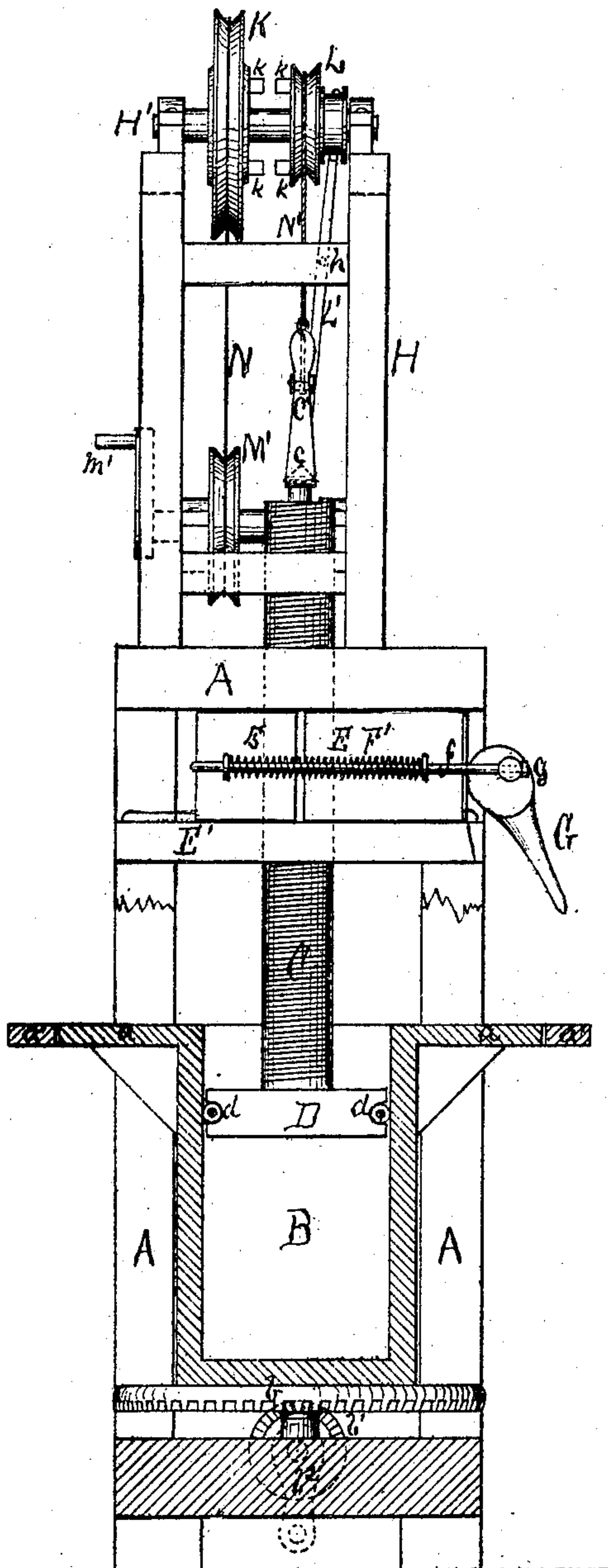


Fig. 3.

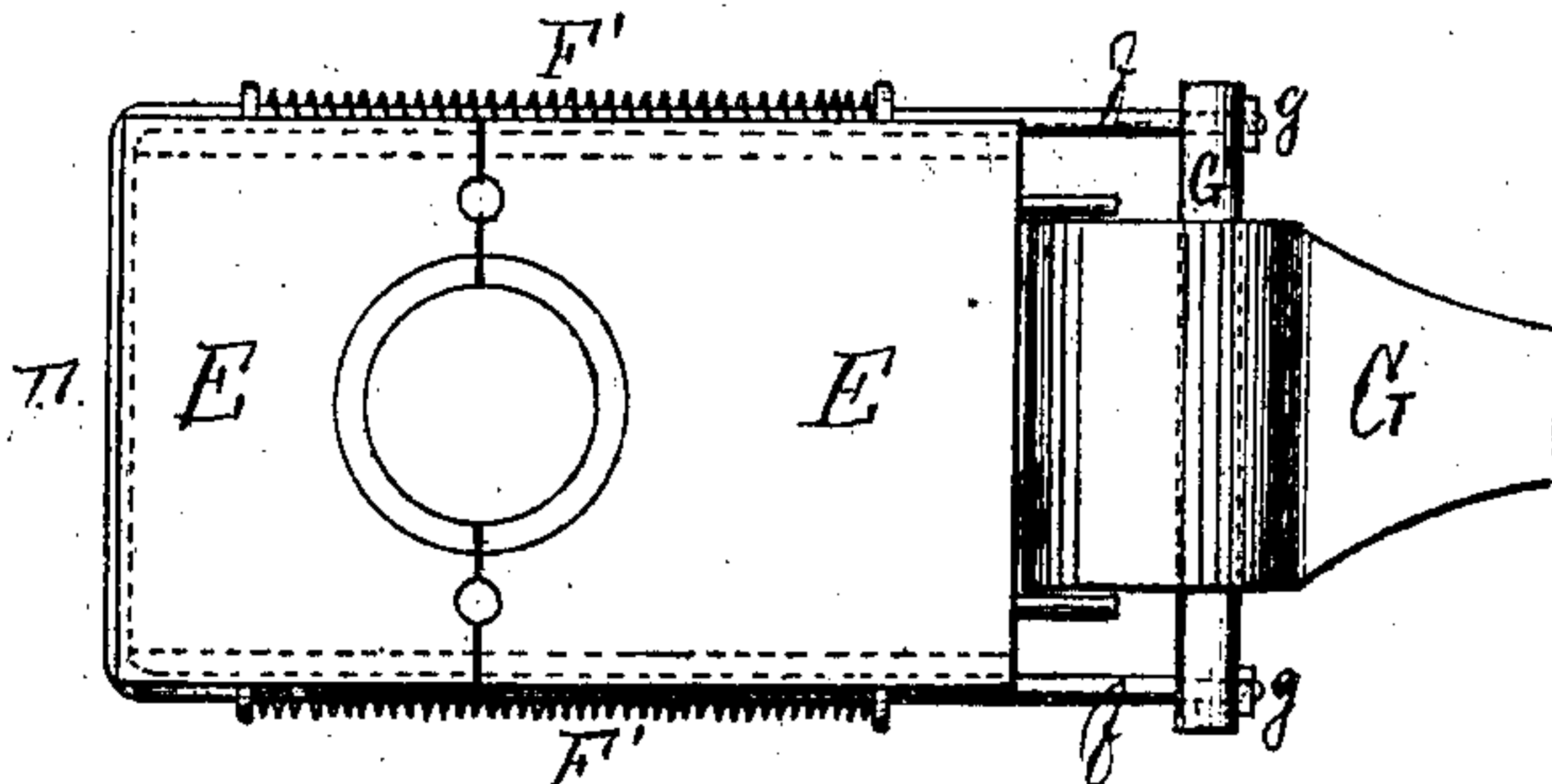


Fig. 4.

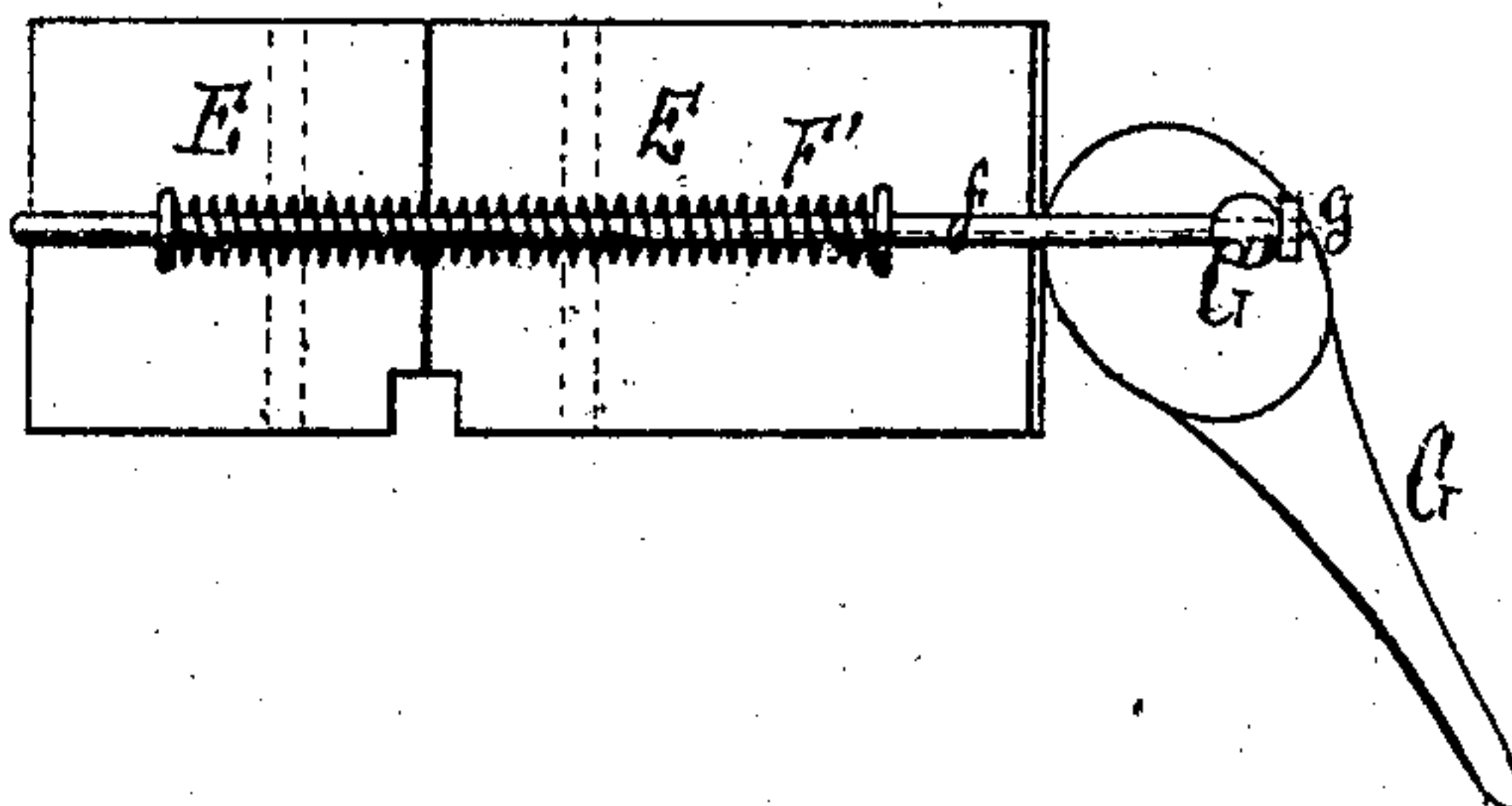
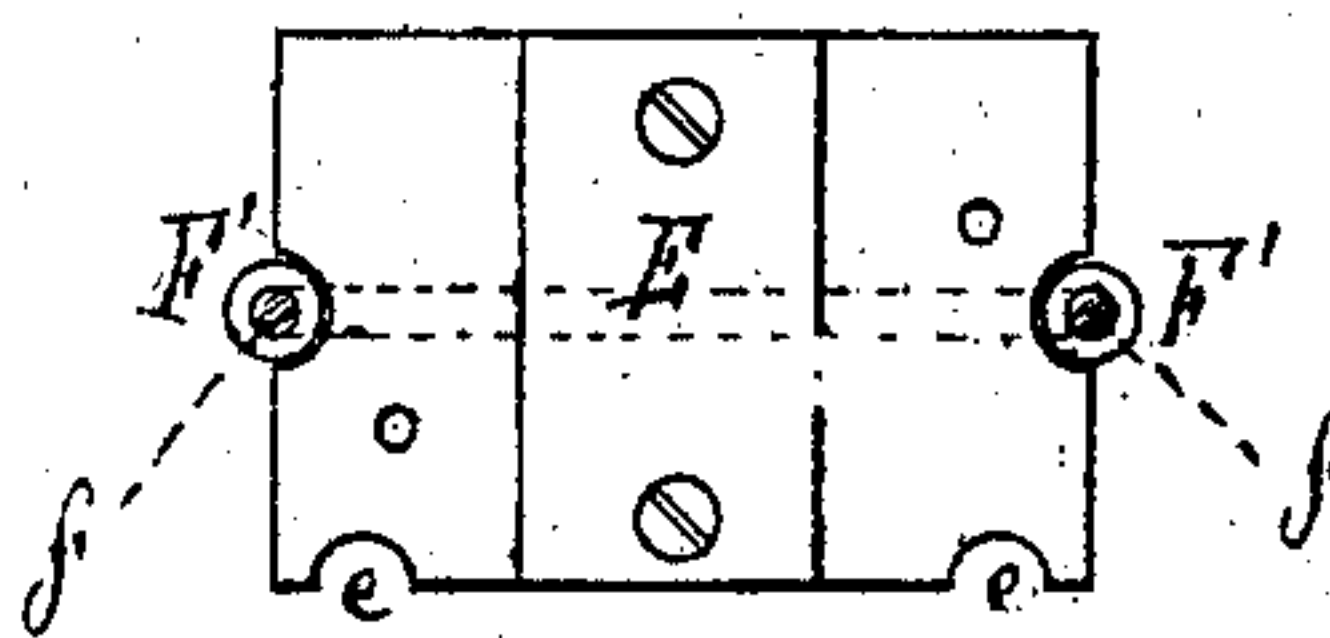


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES K. MARSHALL, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN COTTON AND HAY PRESSES.

Specification forming part of Letters Patent No. **113,900**, dated April 18, 1871.

To all whom it may concern:

Be it known that I, CHARLES K. MARSHALL, of New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Cotton and Hay Presses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a vertical sectional view of the press and its entire operating mechanism. Fig. 2 is a vertical sectional view, the transverse of Fig. 1. Fig. 3 is a plan view of the sectional nut, clearly showing the arrangement of spring-yoke and cam-lever, whereby the nut is opened and closed at pleasure. Fig. 4 is a side view of Fig. 3. Fig. 5 is a view of the head of the nut against which the cam-lever operates.

The present, like my former improvement in presses, the claims on which were allowed by the Patent Office, October 10, 1870, has for its primary or chief object the so arranging of the screw-rod and the follower-head or platen and their operating mechanism, in connection with the packing-box, that all the advantages common in the ordinary screw-packing press are not only secured, but, in addition, the rod and platen are enabled to act as a tramper, thus providing a press in which the entire operation of tramping the cotton or hay, and then packing or pressing it into a bale, is performed by machinery.

All who are familiar with the various duties and work which the plantation hands or employés are called upon to perform in connection with the cotton-crop well know that the most distasteful, laborious, irksome, and, at the same time, unhealthy of all, is one which requires the entering of the packing-box to tramp the cotton. In my present press, like in my former application, this entire labor is performed by the screw and platen, and this it is in each case, as has been said, that constitutes their chief value and great superiority over any of the ordinary screw and lever presses now in use.

It will readily be understood that to accomplish the results aimed to be attained—that is,

to enable this screw and platen to effectively work as a plunger-tramper—they must be so arranged, in connection with the nut, that at the desired moment they shall be freed from contact therewith, and their movement no longer controlled through the action of the thread on the shank-arm of the screw and that of the nut. To accomplish this, as in my former application, instead of the ordinary nut, having a continuous or unbroken wall or surface, I use a halved or sectional nut, in connection with a suitable mechanism, to rapidly elevate the screw, and arranged in such manner that at the desired instant it can be released, so as to utilize the entire weight or gravity in tramping the cotton.

The nature of my invention consists, first, in so uniting the halves or sections of the nut by coiled springs and a U-shaped rod or yoke, or equivalent spring attachment, that the nut shall be held open, or its sections so parted while in its normal condition as to allow of the free passage of the screw through or between the same, but at the same time the sections of the nut shall be so secured in relation to a cam-lever or eccentric-arm that at any moment, simply by depressing the lever or arm, the nut can be closed around the screw and locked thereon, preventing any movement of the screw save that communicated to the same through its thread and that of the nut, as in the ordinary screw-press.

My invention also consists in providing the tramping-platen with friction-rollers, so as to prevent the sides of the same from impinging against the interior walls of the box. This adds much to the effective working of the press, insuring always a smooth, uniform, and even descent of the platen into the box.

My invention also consists in so combining on the same axle a stationary and loose pulley, in connection with an endless belt, elevating cord or chain, and tongs, that the screw-rod and platen can readily and rapidly be elevated to the highest altitude required, and at the same time, owing to the novel arrangement of the mechanism, released at pleasure. This not only facilitates the working of the press, saving, as it does, the tedious operation of unwinding the screw when the platen is to be elevated, but it is of the highest importance,

and indeed positively essential in this style of press, as the effective and successful working of the tramper-platen depends on its free and unobstructed fall.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

A is an ordinary rectangular frame, on the base of which is the socket bearing or step B^1 , in which is seated the revolving packing-box B. This box is of the ordinary form, and is constructed in the usual manner.

There is firmly bolted to or otherwise secured on the bottom of this box B a circular ratchet-rack or ratchet-ring plate, b , the teeth of which mesh with a beveled pinion or gear-wheel, b^1 , attached to a horizontal axle, B^2 , which is secured in suitable bearings in the base of the frame A, as clearly shown in Fig. 1.

b^2 is a crank handle or arm, secured to the axle B^2 , and through which the necessary power to revolve the box is communicated. This arrangement is especially desirable when the press is to be operated by steam.

Around the upper face of the box B is a ring-flange, a , which fits in the circular recess of the guide-plate a^1 . This plate, by means of suitable bearings a^2 , is secured in the frame A on a line with the upper face of the box B. This plate a^1 thus serves, as will be clearly seen by reference to Fig. 1, to retain the box B in a vertical position during its revolution, and which is essential to the successful operation of the press.

C is the follower or plunger, and may be cut with a thread of uniform pitch, like the ordinary screw, or with a varying pitch, as in my former application. c is a tapering or cone-shaped button, and is firmly embedded in the head of the screw C, and under the flat or flanged face of which the jaws of the tongs C' gripe or catch when the screw is to be elevated. D is the platen or follower-head, and is of the ordinary flat-plate form, and is provided with friction-rollers $d d$, which are secured on a suitable axle in the recessed sides of the platen. These friction-rollers $d d$ may extend the entire length of the platen, as shown in Figs. 1 and 2; or, if desired, they may be made much shorter than the platen, as the result desired—that is, the preventing of the platen impinging against the interior walls of the box—can be secured with exceedingly small rollers, both in regard to length and diameter.

E E is the nut, and consists of two sections or halves, and is divided as is the nut in my former application—that is, directly through its center opening, around which is cut the female thread. This nut E E has horizontal grooves on its under surface.

E' is a platform, and is secured in the frame A, between the plate a^1 and its top A' . On this frame E' rests and works the nut E E, the grooves $e e$ on its under surface fitting over the parallel guide-rods $e' e'$, which are secured

on the platform E', and on which the sections of the nut travel.

F is a U-shaped guide-rod or yoke, and which encircles three sides of the nut E E and fits in recessed grooves, which are cut or countersunk thereon. $F' F'$ are two coil-springs, and are secured on the parallel arms $f f$ of the U-shaped rod or yoke F, as clearly shown in Figs. 3 and 4. The head of the yoke is closed by the free ends of its arms $f f$ passing through the axle-shaft G' of the cam-lever or eccentric-rod G, where they are firmly held by means of nuts $g g$.

H is the elevating-frame, and is firmly seated on the top A' of the frame A. On the upper section of this frame H is secured in suitable bearings a revolving shaft or axle-shaft, H' . On this shaft are secured the stationary pulley K and the loose pulley L. To this pulley L is secured a shifting-lever, L' , and by means of which the pulley is caused to slide or move to and fro on the axle H' . This lever L is secured by a pivot-bearing to one of the cross-bars h of the frame H.

$k k$ are stumps or projecting pins on the pulleys K L, and by means of which, when the pulleys are thrown together through the action of the lever L' , the loose pulley L is caused to revolve with the axle H' . M M are two horizontal arms, and are secured to the lower cross-bar, h' , of the frame H, as clearly shown in Fig. 1. In the outer end of these arms, in suitable bearings, is secured the axle m , which carries the driving-pulley M' .

m' is a crank-handle, and is secured to the axle m .

N is an endless power-belt, and is fitted over the grooved peripheries of the pulleys K M' . N' is a cord or chain, and is attached to and connects the pulley L and the tongs C' .

Of course, the press in its various features, as herein described, may be modified, and still in no manner would the invention be affected or altered. For instance, for the spring and yoke an equivalent spring attachment might readily be substituted; and, also, the tongs C' might be dispensed with, although the screw and follower-head are more effective as a tramper when they are used; and, besides, all danger of breaking the cord by the rapid and sudden descent of the screw is securely guarded against; and, also, the press may be constructed without the ratchet, the ratchet-plate b , and the pinion b^1 , and operated in the usual manner.

From the foregoing description the operation can readily be understood.

For the purpose of illustration we will presume that the various features of the operating mechanism are in the position shown in Figs. 1 and 2. Through the lever L' the loose pulley L is pushed toward the pulley K, so that the pins or stumps $k k$ on the two wheels shall strike. The cam-lever G is now elevated, when instantly the springs $F' F'$ will part the sections E E or open the nut. The screw is

now entirely free of the nut, and is readily elevated through the power communicated from the endless belt N to the pulley K, it, of course, as it revolves, carrying with it the loose pulley L, as stated, and it winding the cord N', to which the tongs C' are attached.

When the platen or follower-head has nearly approached the platform E', the nut E E is closed, which is done simply by depressing the cam-lever G, which, grasping the screw, securely retains it, the nut now acting as a clamping-brake.

The box B being now entirely unobstructed, cotton or hay is supplied in the usual manner, when the tongs C' are loosened from the cone-cap c, and on the instant the nut is opened the screw C and follower-head D, acting as a tramping-platen, will fall. This operation is repeated until the box is filled with properly-tramped cotton, when the nut is closed for the final operation, and then the press acts as an ordinary screw-press. The platen descends or is driven down to form the bale through the revolution of the box.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent of the United States, is—

1. The sectional or halved nut E E, yoke F, springs F' F', and cam-lever G, combined and arranged to operate substantially as described.

2. The combination of the screw C and follower-head D with the nut E E, springs F F', and cam or eccentric lever G, substantially as described.

3. The screw C, having a cone-shaped head, c, tongs C', and the cord N', when the latter is so connected with a pulley as to furnish a detachable elevating mechanism for the screw and platen, substantially as described.

4. The arrangement of the pulleys K L, provided with pins k k, on the axle H', the pulley M', endless belt N, cord N', the tongs C', and screw C, when the whole are combined and arranged substantially as described.

5. The tramping-platen consisting of the screw C and follower-head D, when the latter is provided with rollers d d, substantially as described.

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

C. K. MARSHALL.

Witnesses:

EDWIN JAMES,
FRED. KOONES.