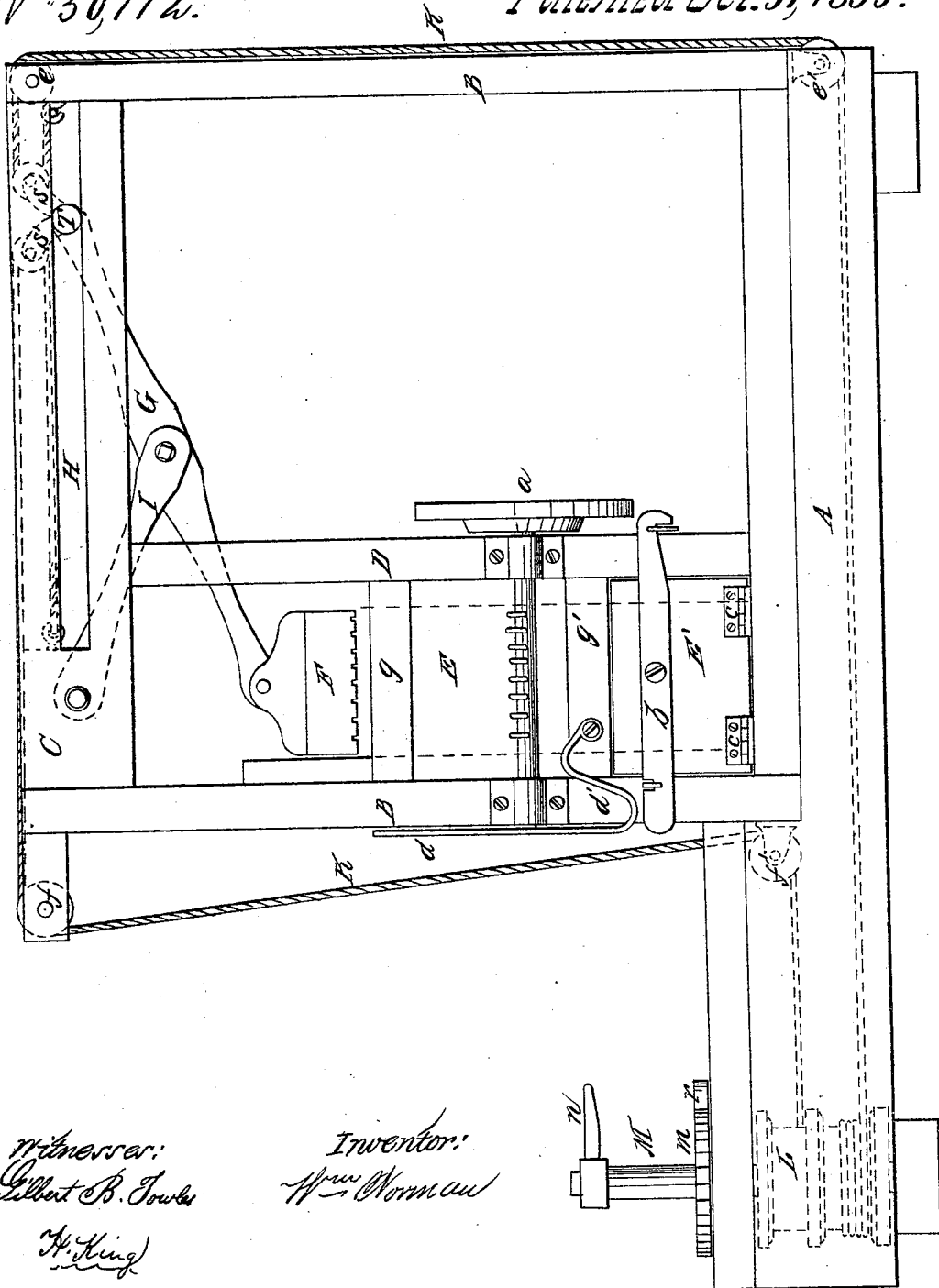


*W. Norman,*

*Cotton Press.*

*N<sup>o</sup> 50772.*

*Patented Oct. 31, 1865.*



*Witness:*  
*Gilbert B. Fowler*  
*H. King*

*Inventor:*  
*Wm. Norman*

# UNITED STATES PATENT OFFICE.

WILLIAM NORMAN, OF VAN BUREN, ARKANSAS, ASSIGNOR TO HIMSELF  
AND JAMES B. STONE, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVED PRESS FOR BALING COTTON.

Specification forming part of Letters Patent No. 50,772, dated October 31, 1865.

*To all whom it may concern:*

Be it known that I, WILLIAM NORMAN, of the town of Van Buren, in the county of Crawford, State of Arkansas, have invented a new and Improved Press for Baling Cotton, Hay, Hemp, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and mode of operation of the same, reference being had to the annexed drawing, constituting a part of this specification.

This drawing is a vertical side view or elevation, showing all the parts in full or dotted lines necessary to understand the arrangement and construction of the machine.

The frame consists of A, one of the bed-plates, another like it behind the one here represented; B and B', upright columns; C, the top plate; each of these parts having corresponding parts, also not shown, because hidden from view by those shown.

D is another upright column, extending from the bed-plates A to the top plate, C, and has also its corresponding column behind and out of view.

E represents one side of the box, between the columns B and D, for the reception of the hay, cotton, or hemp to be baled.

E' represents a gate for removing the bale and for obtaining access to the interior of the box for applying the baling ropes or bands.

a is a wheel, attached to a shaft or spindle, a', having a row of hooks along its face for the attachment and tightening of the bale-rope around the bale.

There are three gates similar to the one shown at E—that is, one on the back part of the box E behind E', making two, the third below the wheel a, and on the same end. These gates are all attached to the box by means of hinges, as shown at c c.

When these gates are lifted up to their place for receiving the material to be pressed they are supported and sustained against the interior pressure necessary to form the bale by sufficiently-strong cross-bars, as represented at b. These bars are freed from each other by means of the lever d.

The pressing-block or follower F has on its lower surface a series of grooves, shown,

through which the ropes or bands are passed. A corresponding system of grooves is made on the upper face of the bottom of the box.

G is a connecting-rod, having one end attached by a pin to the pressing-block or follower F, and the other to the cross-bar or cross-head T, which is in the slot H of the top plate, C. This cross-head should be made to move on friction-rollers, to lessen friction, though this is not absolutely necessary.

I is a link, connected at one end to the connecting-rod G by a pin, and at the other to the top plate, C.

The two shackles S and S' play freely upon the cross-head T, and should be provided with grooved pulleys to receive the cords K and K'.

e and e' are pulleys over which the cord K runs, and f and f' are pulleys for the cord K'. These cords K and K' are operated by the roller or capstan L, as shown in dotted lines.

From the axis of this roller or capstan there rises a shaft, M, on the lower part of which is a notched pinion-wheel, m, and at the top an arm or lever, n.

The letter r designates the ratchet or dog that catches into the teeth or notches on the pinion-wheel.

g and g' are cross-beams connecting the uprights B and D. Similar cross-beams connect B and its fellow and D and its fellow. These cross-beams, besides connecting these uprights together, also give support to box E.

Mode of operation: When the machine is prepared for operation, the three gates, one of which is seen at E', are all lifted up and secured in their places, and the cross-bars b brought down and locked with each other, the front one, b, and its fellow behind passing under a catch on the column B, and the other end, with a hook, catching into a notch in the bar below the wheel a, heretofore referred to, as seen in the drawing. The pressing-block or follower is at the same time raised up to its full extent by the action of the cord K and capstan L, a free space being thereby obtained to introduce the material into the upper and open end of the box E. When this box is filled the pressing-block or follower F is brought down upon it (the material) by reversing the motion of the capstan, and the pressure re-

quired given by bringing forward the end of the connecting-rod G, through the motion of the cross-head T, by the winding up of the cord K' upon the capstan L. Of course this reversal of the motion of the capstan allows the cord K to unwind as the other cord, K', is wound up. When the pressure of the pressing-block or follower has carried or compressed the material below the level of the tops of the gates it is secured there by locking the dog *r* into the notches of the pinion *m*. The gates are then opened and the rope passed through the grooves in the pressing-block and those in the bottom of box. They are then attached to the hooks on the spindle *a'*, tightened up by means of the wheel *a*. The cross-bar *b* and the other cross-bars are freed from each other and the upright post by means of the crooked lever *d d*. As the drawing shows the machine just prepared for operation, this lever is shown with its outer arm thrown up, and its lower arm free from contact with the end of the bar; but when these bars are to be disengaged from each other to open the gates the upper end or limb, *d*, of this lever is brought down, near or quite to a horizontal line, and thus cause the lower or crooked end to come in contact with the end of the bar *b*, pressing it downward, which detaches it from the catch on the upright column B, while it raises the other end upward and frees it from the cross-bar below the wheel *a*. The ropes, after having been sufficiently tightened by the wheel and spindle *a* and *a'*, are cut and tied or otherwise secured. The baling being completed, the bale is removed from the box through one of the gates, and the same process repeated as often as required.

One of the most important peculiarities of this machine is the arrangement of the parts for giving a powerful vertical pressure to the materials operated upon by a combination of the most simple elements of mechanical power. By causing the one end of the connecting-bar G to move along a horizontal line in the slot H the other end is obliged to assume a verti-

cal motion by the link I, to which the vertical bar G is fastened, and by this arrangement the compressing power is gradually increased in the same ratio as the resisting power of elasticity in the compressed material increases, and this arises from the fact that as the point of leverage advances toward the axis of motion this also advances toward the line of pressure itself, and finally, if necessary, the point of leverage, the axis of motion, and the line of motion or pressure become a vertical unit. It will be seen that this involves no use of screws, cog-gearing, or complicated appliances.

Although ropes are figured and referred to as the means of giving motion to the parts required in the compressing process, chains may be substituted for them, and it is probable that it would be better to use them, at least for K', when great power and consequent friction over the pulleys must necessarily occur.

Manual, horse, or steam power may be used to drive this machine.

It is proper to state that all portions of this machine shown in dotted lines may be considered as a representation in section, or as if seen through a transparent medium, forming a part thereof.

Having thus fully set forth the construction and operation of my machine, what I claim therein, and desire to secure by Letters Patent of the United States, is as follows:

1. The connecting-rod G, link I, pressing-block F, cross-head T, and slot H, in combination with the cord or chain K, for raising and relieving from pressure the block F, when arranged and constructed substantially in the manner set forth.

2. The cross-bars *b*, with their notches and catches, in combination with the liberating-lever *d d'*, for fastening and freeing the gates E, substantially as set forth.

WM. NORMAN.

Witnesses:

H. KING,

GILBERT B. TOWLES.