

WILLIAM M. SMITH.

Improvement in Cotton and Hay Presses.

No. 115,126.

Patented May 23, 1871.

Fig. 1.

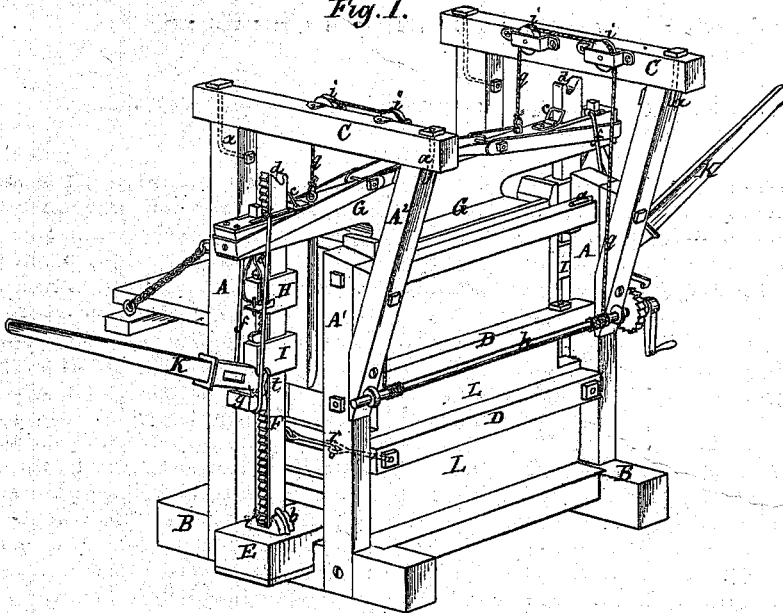


Fig. 2.

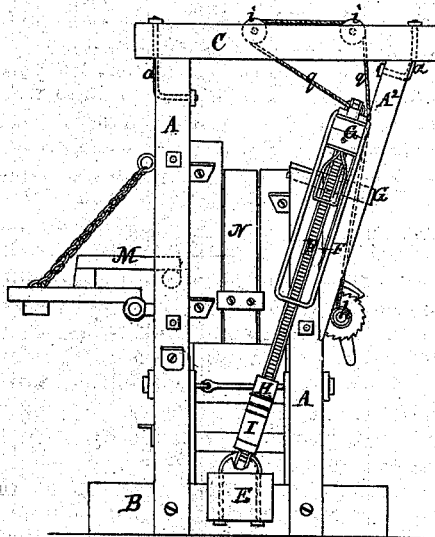


Fig 3

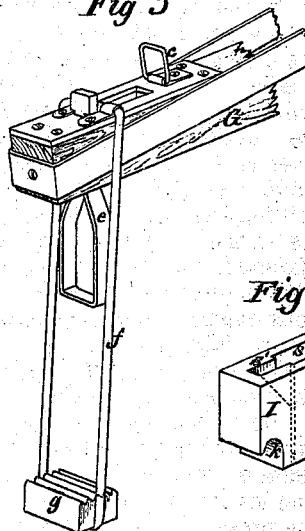
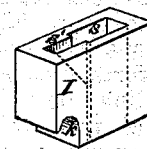


Fig 4



Witnesses.

Edwin F. Brown.

Edmund Masson.

Inventor

William M. Smith

# UNITED STATES PATENT OFFICE.

WILLIAM M. SMITH, OF AUGUSTA, GEORGIA.

## IMPROVEMENT IN COTTON AND HAY PRESSES.

Specification forming part of Letters Patent No. 115,123, dated May 23, 1871.

*To all whom it may concern:*

Be it known that I, WILLIAM M. SMITH, of Augusta, in the county of Richmond and State of Georgia, have invented certain new and useful Improvements in Cotton and Hay Presses; and that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a perspective view of the press with the parts in position for pressing a bale of cotton. Fig. 2 represents an end view of the press with the follower-block raised up and swung to one side, leaving the press open and ready for filling. Figs. 3 and 4 represent parts of the press on an enlarged scale.

Similar letters of reference where they occur denote like parts in all the figures.

My invention consists in the manner in which the frame of the press is constructed, the main upright timbers being connected only at the bottom by the sills of the press, while at the top they are united by a cap-timber by means of a long brace bolted to two of the posts, which are shorter on one side, thus forming a recess for the follower-block to remain out of the way while filling the press. My invention further consists in the manner in which the racks are constructed, with a notch in the top of each, in which a link or hook attached to the follower-block engages itself and supports the follower-block, while it is with the racks swung to one side and out of the way. My invention further consists in the manner in which the links on which the levers operate are provided with corrugated stirrups to obviate the abrasion of the latter, and to make the throw of the levers longer and save time in operating the press. My invention further consists in the manner in which the lower pawl-boxes are provided with a recess into which the corresponding hooked end of the levers is engaged without danger of slipping off.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawing.

The frame of the press is formed of two upright timbers, A, securely fastened to the sills B, and two upright timbers, A<sup>1</sup>, also fastened to the sills B, but shorter than the uprights

A. The four uprights are united together at their upper portion in the following manner: From the top of the timber A, and at right angles to it, the cap-timber C is fastened, and extends a couple of feet in length beyond the shorter uprights A<sup>1</sup>, and to connect the latter to the cap-timber C the long brace A<sup>2</sup> is bolted to the uprights A<sup>1</sup>, but at an angle so as to incline outwardly from the body of the press and leave a space large enough to allow the follower-block to be swung to one side while filling up the body of the press. The timbers A and A<sup>1</sup> of one side of the press are united to similar timbers on the other side by means of horizontal timbers D, and bolted by means of angular bent bolts *a*. The sills B are united by a strong piece of timber, E, which supports the bottom slats of the press. To each end of this timber E is bolted a socket-piece, *b*, on which rests the rack F, which is made of wrought-iron or steel. This rack F is secured to the timber E by passing the bent bolt which secures the socket-piece *b* through a hole near its lower extremity, and allows the rack to be inclined to one side, as will be described hereafter. G is the follower-block, formed of a single piece of timber properly braced. It is provided with an opening near each end, through which one of the racks F passes. Close to these openings is pivoted or hinged to the top of the follower-block the hook or link *c*, so as to engage at the proper moment into a notch, *d*, formed into the top of each rack. H and I are two pawl-boxes, which are formed with a square opening so as to slide freely up and down the rack F without abrading the points of the teeth of the rack, by having inside projections corresponding with the recesses or check-pieces formed on each side of the teeth of the rack. The inside of each pawl-box is also formed with an inclined plane, to allow the pawls to slide down toward the teeth of the rack and engage with them. The pawl-box H is connected to the follower-block by means of an iron strap, *e*, and a pawl fitting into the rack F, and pawl-box I holds the follower-block down, while the pawl-box I is operated by the hooked point of the lever K, which engages under it in the recess *k*, the fulcrum of the lever K pressing on the long iron link *f* attached to the follower-block G. This link *f* can be provided with a corrugated

stirrup, *g*, to modify the speed in working the press down at the same time that it preserves the long link *f* from abrasion. The follower-block *G* is raised up to the top of the box of the press by means of two ropes, *q*, attached to it, the ropes passing over guide-pulleys *i* to the windlass *h*, which is provided with a hand-crank and ratchet-wheel. *L* are the lower doors of the press; they are hinged to the sills *B* in the usual manner, and held together closed, near each end, by a hook and staple, made preferably of square iron to secure a better gripe between the hook and the staple. The racks *F* are to be made of wrought-iron or steel, rolled out with recesses or cheek-pieces on each side of the teeth, to act as guides against the inside of the pawl-boxes and the cap-plate of the follower-block, and reducing the friction and wear of the teeth of the racks.

The operation of packing a bale of cotton with this press is as follows: The follower-block *G* being inclined to one side, as shown in Fig. 2, the upper door *M* is opened and boards *N* put up temporarily; bagging is then spread out on the bottom and sides, and the box of the press is filled with cotton; the door *M* is then closed, and the press is filled up to the top, over which bagging is spread out and the boards *N* removed. The windlass *h* is then revolved so as to bring the follower-block *G* over the cotton, and the links *c* are removed from the notches *d* in the top of the racks. The pawl-boxes *H* and *I* are raised up, as shown in Fig. 1, the pawl *H* engaging with the iron strap *e*, and the pawl-box *I* resting on the hooked end of the lever *K*; the triangular toothed pawls are then introduced into their respective boxes, the pawl of the windlass having been disengaged from its ratchet-wheel; the follower-block *G* is worked down until the cotton is pressed to the required size, when the hooks which retain the lower doors *L* are released from their staples, releasing the doors at the same time. The cotton-bale bands and ties are then applied to the bale,

and the follower-block released either slowly by gradually raising up the pawls and pawl-boxes, or more speedily by removing the levers *K* from the pawl-boxes *I* and pushing off the strap *e* from its seat in the pawl-box *H*; the follower-block is then raised up, by means of the windlass *h* and ropes *q*, until the hooks or links *c* drop into the notch *d* in the upper part of the racks; the windlass *h* is then released of its pawl, and the follower-block, by its own gravity, swings to one side in the recess formed by the long brace *A*<sup>2</sup>, where it remains out of the way until the press is filled up again.

Having thus fully described the construction and operation of my press, what I claim therein as new, and desire to secure by Letters Patent, is—

1. In combination with the upright timbers *A* of a cotton-press, the long brace *A*<sup>2</sup>, when used to form a recess for the reception of the follower-block out of the way of the box of the press, the timbers being united only at the top and bottom, substantially as and for the purpose set forth.

2. The arrangement herein shown of the follower-block *G*, hinged link *c*, and notched head *d* of rack-bar *F*, as and for the purpose set forth.

3. The combination of the pawl-box *I*, provided with rectangular openings *s s'* and recess *k*, with the lever *K*, when provided with beak *t* and corrugated bearing *u*, as and for the purpose set forth.

4. The combination of the follower-block *G* with the long links *f*, the levers *K*, and the corrugated stirrup *g*, as and for the purpose set forth.

5. The arrangement of the racks *F*, provided with guide-ways and projecting teeth, with the pawl-boxes *H* and *I* having rectangular slots *s s'*, when constructed substantially as shown, for the purpose set forth.

WILLIAM M. SMITH.

Witnesses:

EDMUND MASSON,  
EDM. F. BROWN.