

(Model.)

M. J. FARMER.
Machine for Making Plug Tobacco.

No. 229,813.

Patented July 13, 1880.

FIG. 1.

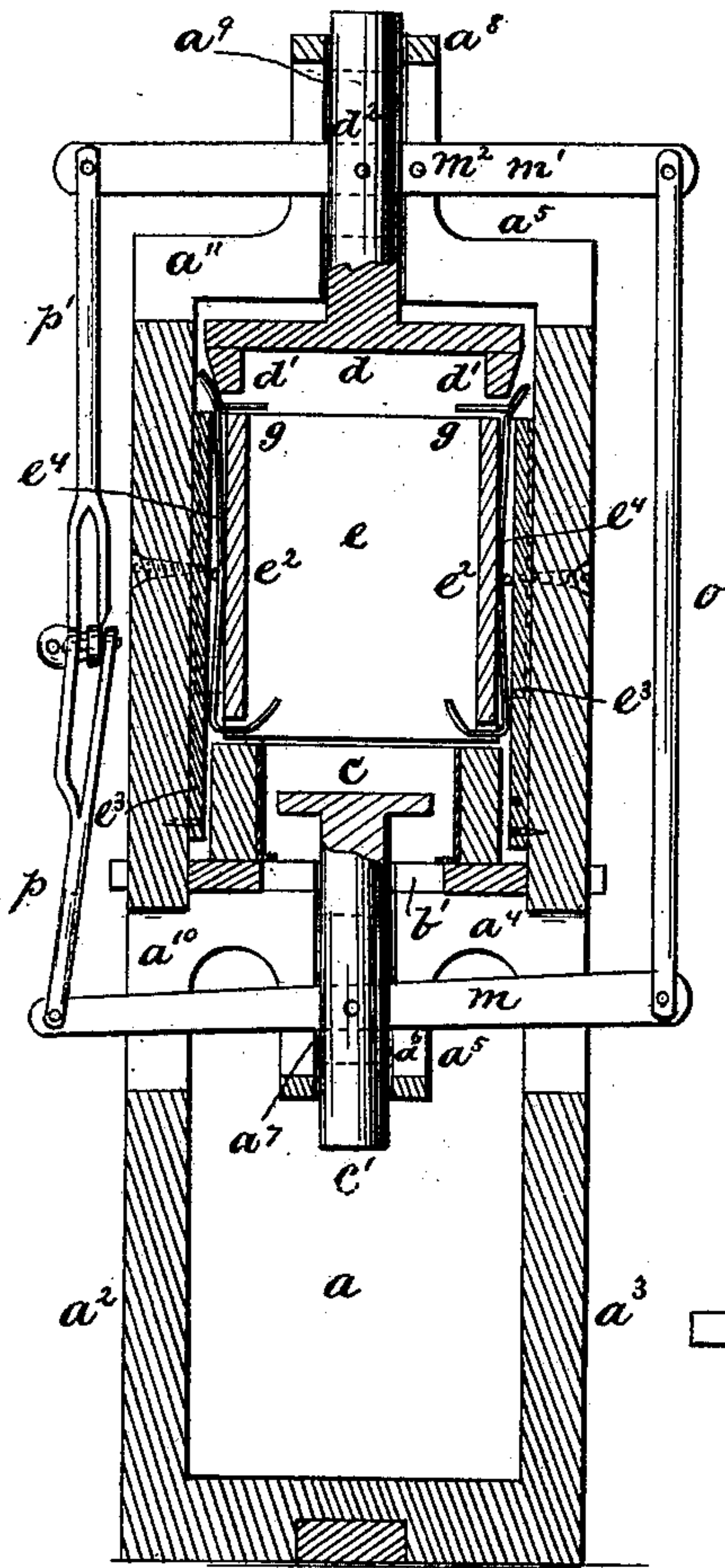


FIG. 2.

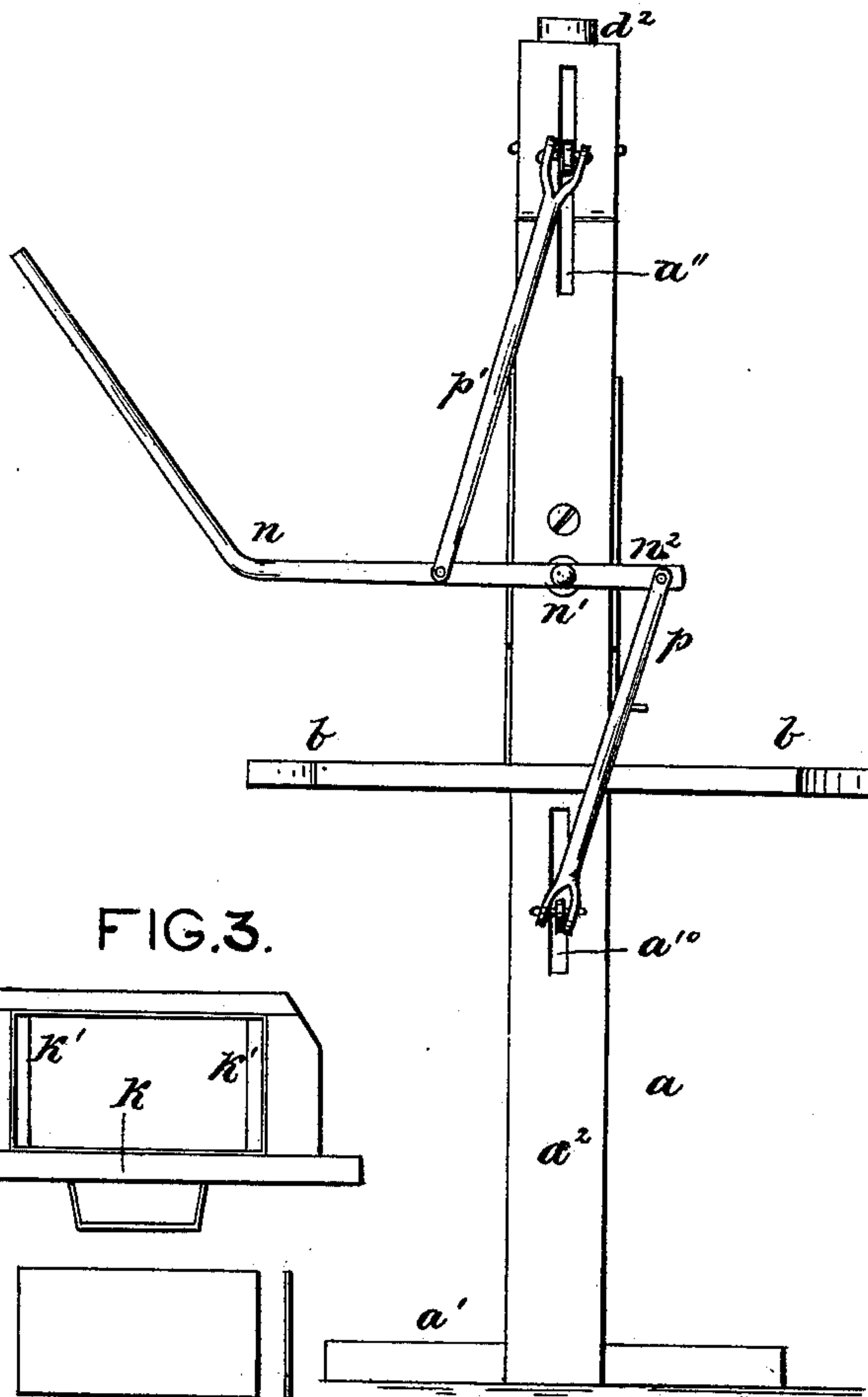


FIG. 3.

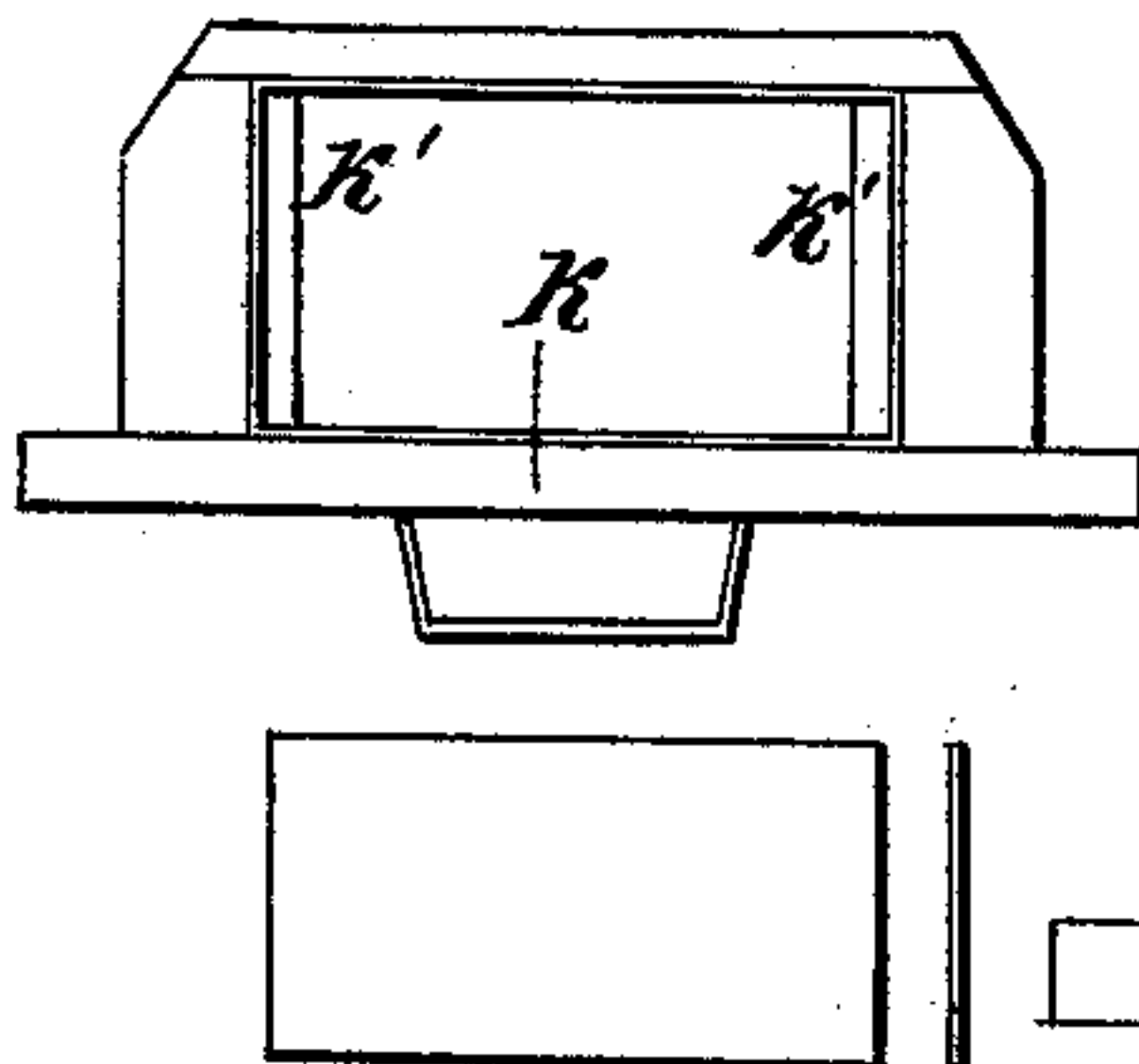


FIG. 4.

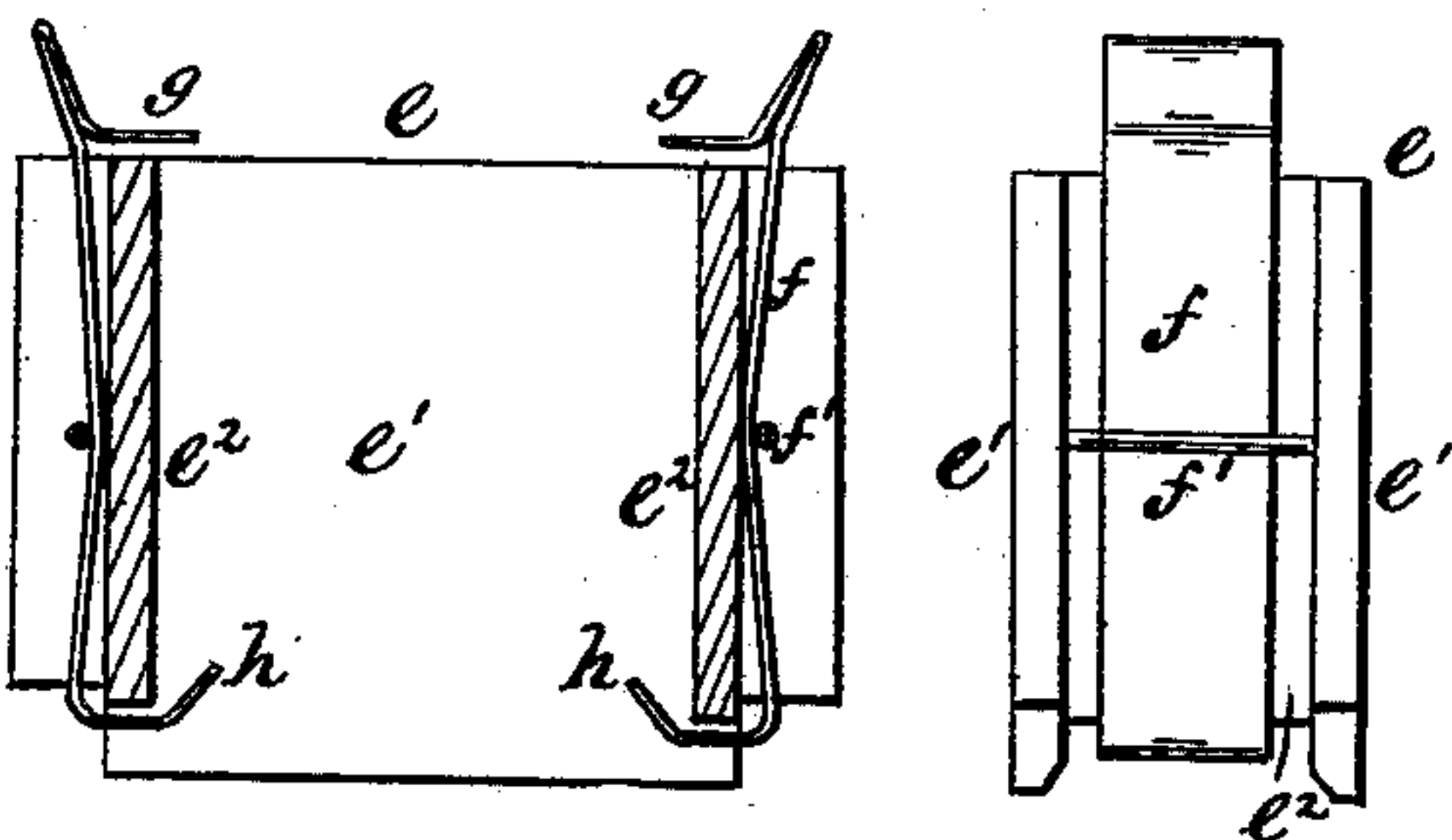


FIG. 5.

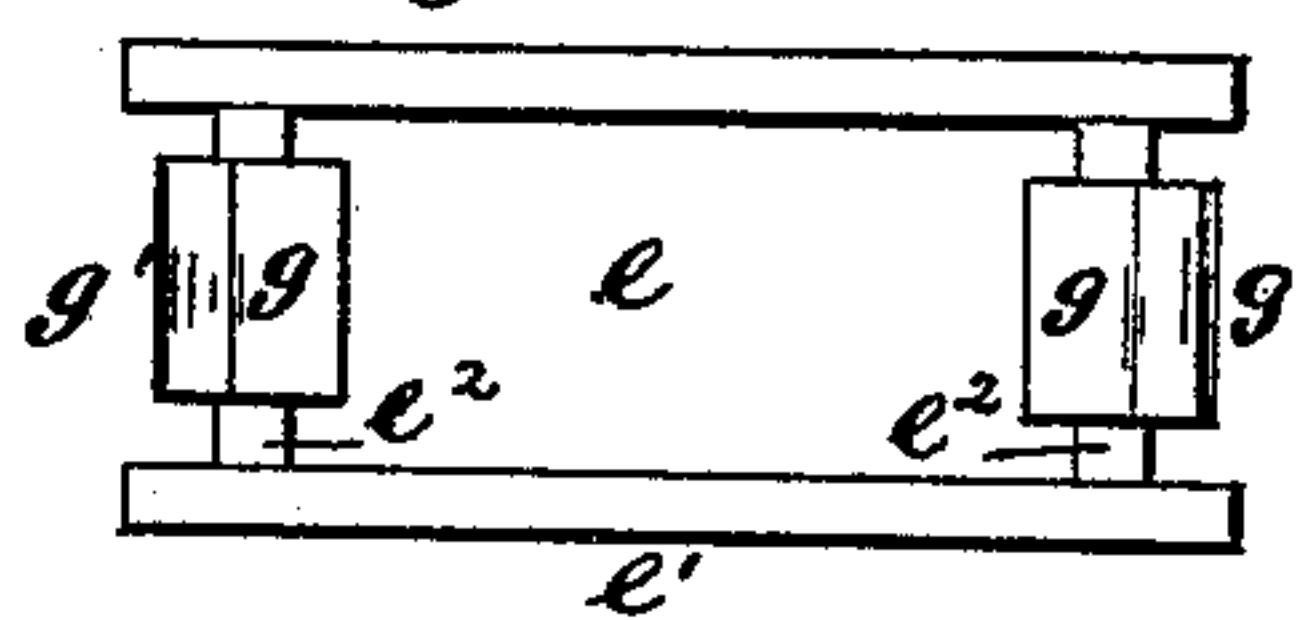
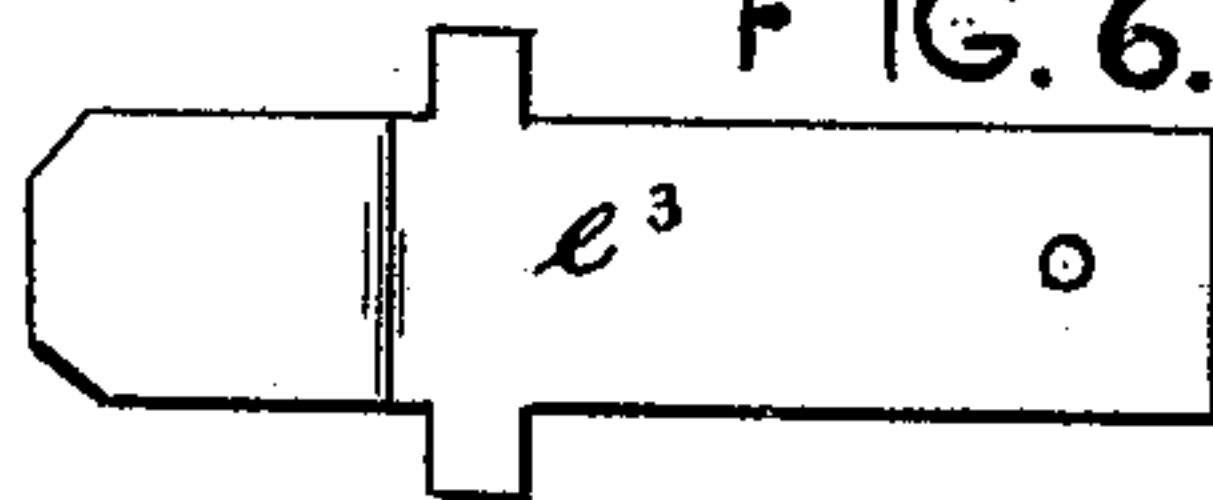


FIG. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

MARCELLUS J. FARMER, OF LYNCHBURG, VIRGINIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO HARRISON W. HOLLEY, OF SAME PLACE.

MACHINE FOR MAKING PLUG-TOBACCO.

SPECIFICATION forming part of Letters Patent No. 229,813, dated July 13, 1880.

Application filed April 30, 1880. (Model.)

To all whom it may concern:

Be it known that I, MARCELLUS J. FARMER, a citizen of the United States, resident at Lynchburg, in the county of Campbell and State of Virginia, have invented certain new and useful Improvements in Machines for Making Plug-Tobacco; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has for its object to furnish a machine for making plug-tobacco; and it consists in the construction and arrangement of the several parts, hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a vertical section. Fig. 2 is a side elevation, and Figs. 3, 4, 5, and 6 are detail views of parts of my invention.

a is the upright frame, supported on a suitable base, *a'*, and it is composed of the side posts, *a² a³*, the central cross-beam, *a⁴*, and a top cross-beam, *a⁵*. The cross-beam *a⁴* is provided with a central arm, *a⁶*, which projects downward, and is provided with a vertical opening or guide-channel, *a⁷*, in which the shaft of the piston slides. The upper cross-beam, *a⁵*, is constructed with the upward-projecting arm *a⁸*, in which the shaft of the reciprocating piston slides, as hereinafter described. The frame *a* has formed through its side posts *a² a³*, and through the cross-beams *a⁴ a⁵* the vertical slots or mortises *a¹⁰ a¹¹*, in which the levers work which move the piston and compressor.

b is the platform, projecting outward on both sides of the frame and resting on the top of the central cross-beam, *a⁴*. It has a central recess, *b'*, surrounding the upper end of the vertical opening *a⁷*, which permits the piston to fall flush with its upper surface. *c* is the piston, supported on its shaft *c'*. The shaft *c'* slides in the vertical guide-channel *a⁷*.

d is a compressor-head placed just below the upper cross-beam, *a⁵*, and it has a width equal to the press-box placed between it and the pis-

ton *c*. At its outer ends it has the short downward-projecting flanges *d'*, which are beveled slightly on their outer sides, and are adapted to hold the plug of tobacco steadily in its place while being pressed and to actuate the retaining-slide fixed on the press-box.

The compressor is supported on and moved by a shaft, *d²*, which moves in the vertical guide-channel *a⁹* in the upper cross-beam, *a⁵*, and acts in opposition to the piston *c*, so that the plugs of tobacco are pressed between it and said piston, as will be hereinafter explained.

e is the press-box, made of the required width and length to give proper size to the plug of tobacco. Its side boards, *e'*, project slightly past the end boards, *e²*, and it is held in the frame by suitable retaining-strips *e³*, fixed to the posts *a² a³*, and between which and the end boards, *e² e²*, there are numerous spaces, *e⁴*, in which are placed the flexible rods *f*. The press-box is made vertically deep enough to hold a number of plugs of tobacco at the same time.

The flexible rods *f* extend from the upper to the lower end of the press-box, and are fixed by a rod, pin, or other suitable fastenings, *f'*, at a point about equidistant between the said upper and lower ends.

On the upper ends of the rods *f* there are formed the horizontal flanges or slides *g*, which project inward over the edges of the top of the box *e* just far enough to pass under the ends of the plug of tobacco, which is above the top of the box and next the compressor-head *d*. These rods are also provided with the outwardly-inclined lips *g'*, which are arranged to be engaged by the flanges *d'* on the head *d* the moment the latter begins to descend, and thus throw back the slides, so that the next following plug of tobacco will not be interfered with as it is pressed upward and out of the box against the said head *d*.

The under portions of the rods *f* are provided with short hooked ends *h*, which pass under the lower open end of the box *e* and prevent the plugs from dropping downward when the piston *c* is lowered for the purpose of bringing up a new supply of tobacco.

The inner ends of the lips *h* are slightly

turned up, so that they are more easily pressed outward by the new-formed plugs which are being forced upward from the feed-drawer *k*.

The press-box *e* is supported in the frame *a* in such position that the feed-drawer *k* can be slipped between its lower end and the platform *b*.

The feed-drawer *k* has no fixed bottom, but is open above and below, so that the piston *c* passes through it in the operation of the machine. A loose bottom is provided, which is laid on the ledges or lips *k'*, and on this loose bottom is laid the necessary quantity of tobacco for making a plug.

The drawer is made deep enough to hold the tobacco for several plugs, the several quantities being separated by pieces of tin or other suitable material until drawer is full to its top. When full the drawer is pushed into place below the box *e*, and the tobacco is forced by the piston *c* upward into the box *e*. The piston is then lowered and the drawer refilled and put in place below the box, and the contents forced upward as before. That which was first forced into the box *e* is forced still farther upward, and the top plug is pressed out at the upper end and against the presser-head *d*. The piston and presser-head, acting in opposition, press the several layers of tobacco into form. When sufficiently pressed, the top plug, which is now above the top of the box *e*, is removed laterally from below the presser-head, and the process of filling the drawer and pressing is repeated.

When all the tobacco is pressed into plugs the box *e* can be cleared by having a few blocks of wood in forms of plugs of tobacco, which may be placed in the drawer *k* and pressed upward, thus forcing all the tobacco out at the top.

The piston and presser-head are operated by a lifting-lever, *m*, a pivoted lever, *m'*, a hand-lever, *n*, and connecting-rods *o*, *p*, and *p'*.

The lifting-lever *m* is passed horizontally through the seat *a'* and through a slot in the stem *c'* of piston *c*. Its ends project slightly outward from the posts *a''* *a'''*, and it is fixed to the stem *c'* by a suitable pin or bolt. The lever *m'* is put through the slot *a''* in the upper cross-beam, *a''*, and through a slot in the stem *d'* of the presser-head *d*. It is fixed to the stem *d'* by a suitable pin, and it is pivoted on a pin or fulcrum, *m''*. It has the same length of the lever *m*, and it has one of its ends connected thereto by the vertical rod *o*. The fulcrum *m''* is placed between the point of attachment to the shaft *d''* and the end to which the rod *o* is connected, so that the shaft *d''* will be moved upward at the same time that the rod *o* is moved downward, and vice versa. The hand-lever *n* is fulcrumed at *n'* to the side post, *a''*, and is provided with a projecting end, *n''*, as shown.

p is a link or rod which connects the outer end of the projection *n''* with the end of the lifting-lever *m*, and *p'* is a link or rod which

connects the lever *n* with the end of the pivoted lever *m'*. The rods *p* and *p'* are connected on opposite sides of the fulcrum *n'*, so that they will move in opposite directions when the lever *n* is raised or lowered.

The rod *o* is on the opposite side of the frame *a* from the rods *p* *p'* and lever *n*. When the lever *n* is moved the lifting-lever or bar *m* is lifted, and is preserved in a horizontal position while the lever *m'* turns on its fulcrum.

By the arrangement herein shown and described a long stroke is given to the piston *c*, which pushes it entirely through the drawer *k* and slightly into the lower end of the box *e*. At the same time the presser-head *d* is only slightly depressed. By reason of the short distance between the fulcrum *m''* and the point of attachment to the shaft *d''* great force is exerted by the lever *m'* on the presser-head.

This machine is simple in its construction and can be manufactured at very slight cost. It is efficient and rapid in its operation.

It will be understood, also, that when the first tobacco is placed in the drawer the press-box is filled with false blocks. This is done in order that the pressing shall commence at the outset. As the tobacco is forced upward the blocks are pressed out at the upper end of the press-box and removed, the same as though they were plugs of tobacco.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for the manufacture of plug-tobacco, the combination, with the piston *c* and the presser-head *d*, arranged in opposition to each other, of the lifting-lever *m*, fixed to the shaft *c'* of piston *c*, the lever *m'*, fulcrumed at *m''* to the frame *a*, and having the stem *d''* of the presser *d* fixed thereto, the rod *o*, connecting the ends of the levers *m* and *m'*, the links *p* and *p'*, having one of their ends attached to the ends of the levers *m* and *m'* and their opposite ends pivoted to the hand-lever *n* on opposite sides of the fulcrum *n'*, substantially as and for the purposes set forth.

2. In a machine for making plug-tobacco, having a piston, *c*, and a presser-head, *d*, provided with lips or flanges *d'*, arranged as described, the press-box *e*, supported in the frame *a* between the piston *c* and presser *d*, and provided with the flexible bars *f*, having the projections *g* and outward-inclined lips *g'* on their upper ends and the hooked ends *h* on their lower ends, and the feed-box *k*, having an open top and bottom and provided with ledges *k'*, all arranged to operate substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 29th day of April, 1880.

MARCELLUS J. FARMER. [L. S.]

Witnesses:

K. OTEY,

WM. E. HOLLEY.