

(No Model.)

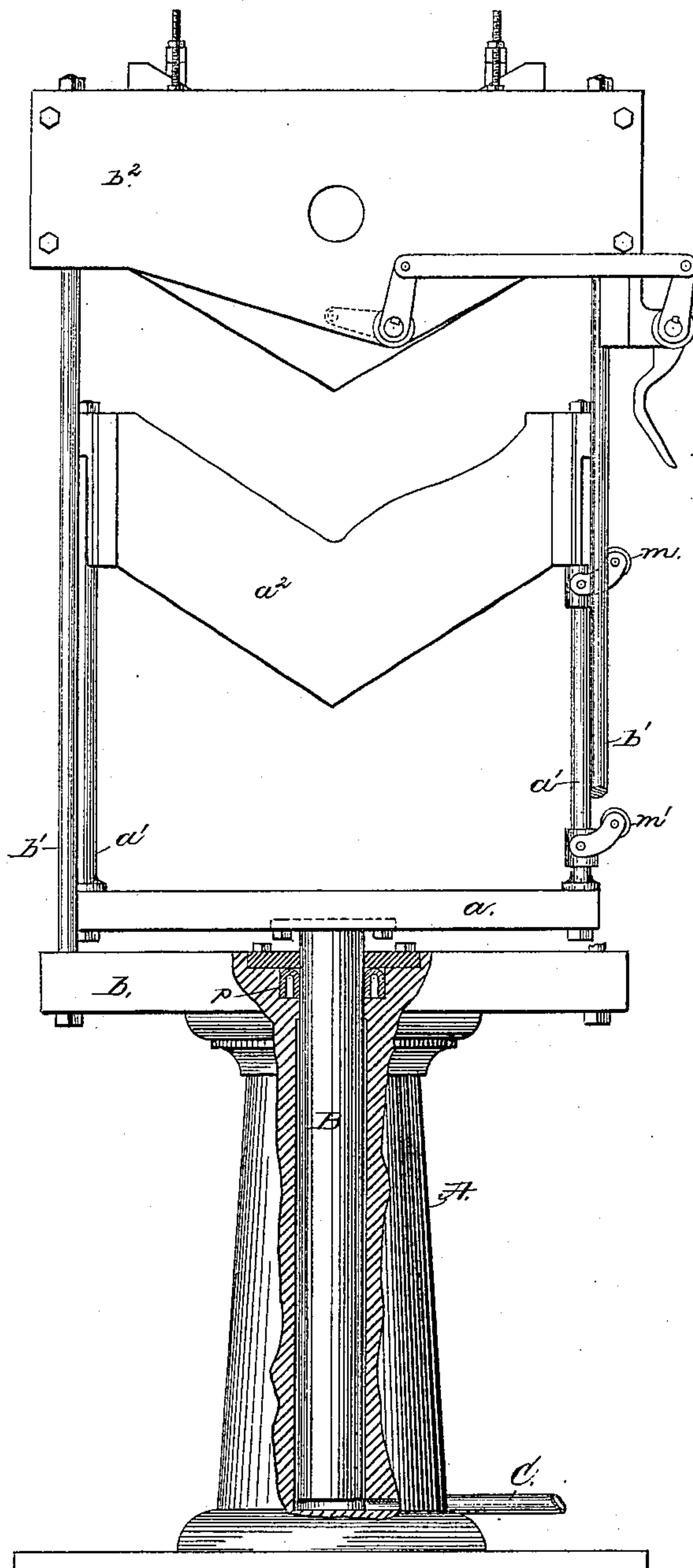
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J. W. D. FIFIELD.  
BOOT CRIMPING MACHINE.

No. 246,303.

Patented Aug. 30, 1881.

FIG. 1.



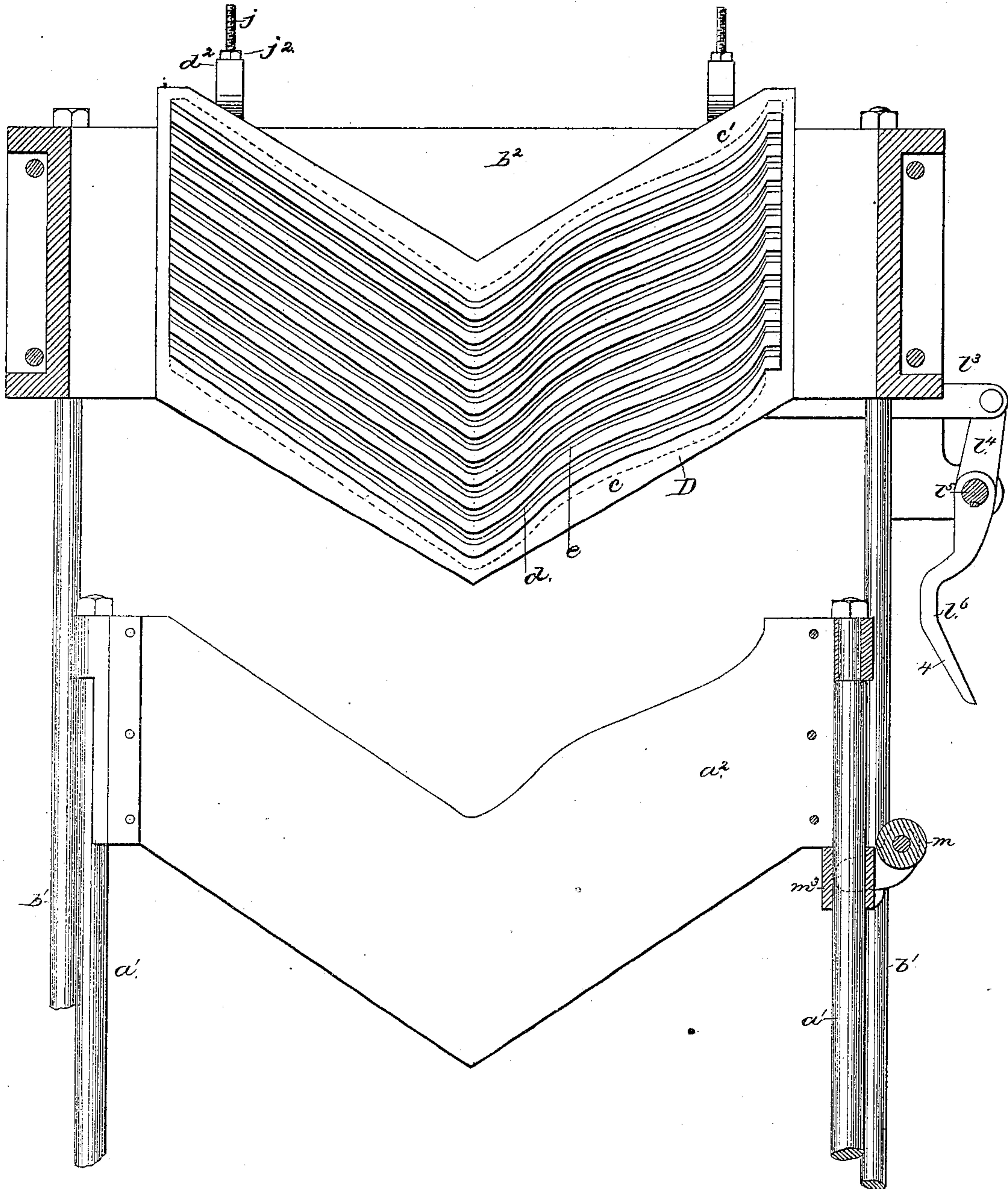
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FIG. 2.



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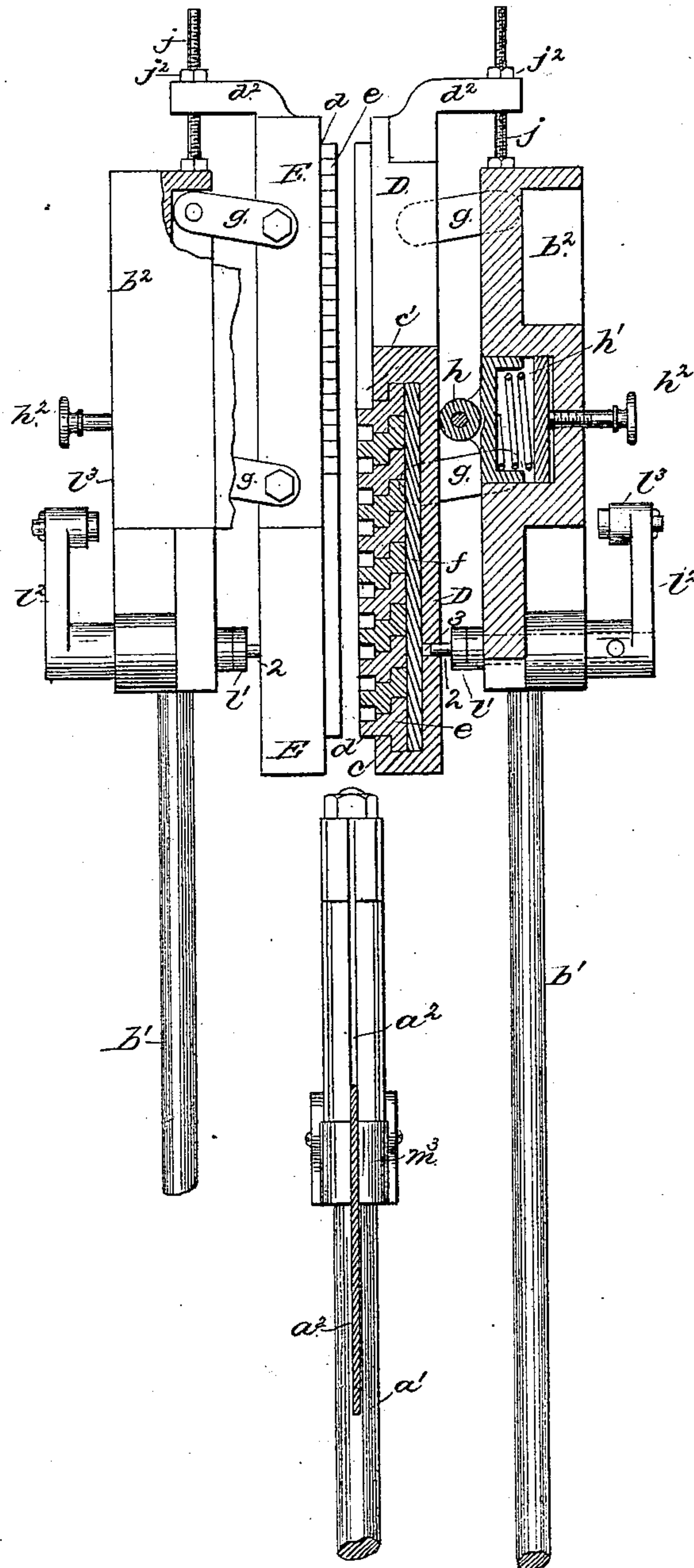
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FIG. 3.



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FIG. 4.

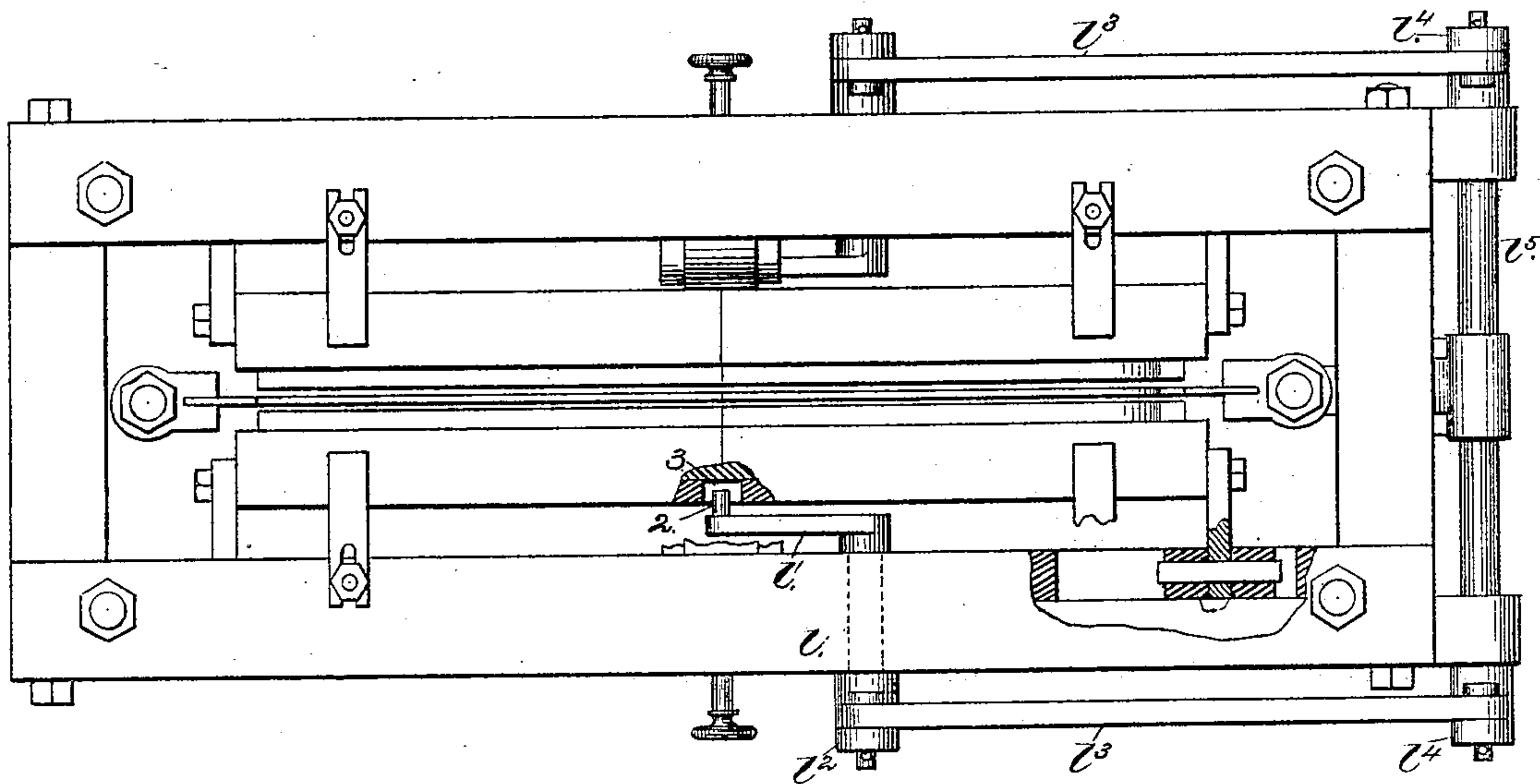
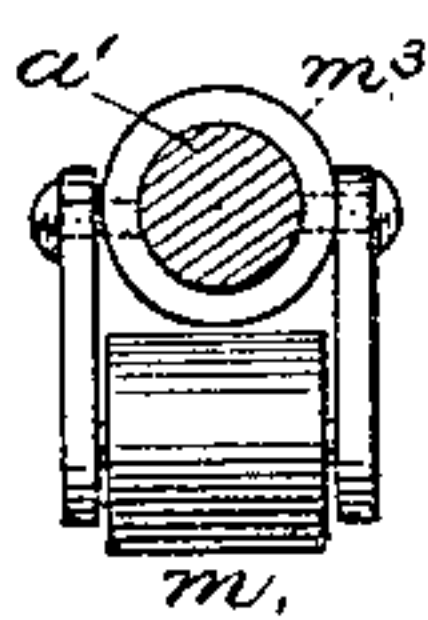


FIG. 5.



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# UNITED STATES PATENT OFFICE.

JOHN W. D. FIFIELD, OF NORTH BROOKFIELD, MASSACHUSETTS.

## BOOT-CRIMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 246,303, dated August 30, 1881.

Application filed April 30, 1881. (No. model.)

*To all whom it may concern:*

Be it known that I, JOHN W. D. FIFIELD, of North Brookfield, county of Worcester, State of Massachusetts, have invented an Improvement in Boot-Crimping Machines, of which the following description, in connection with the accompanying drawings, is a specification.

This my invention in boot-crimping machines has for its object to operate the follower by means of a fluid or gas under pressure; also, to improve the construction of the jaws, and provide means to automatically open or separate the jaws as the follower and jaws meet to receive the leather between them, to thus avoid injuring the leather at the commencement of the crimping operation.

In this embodiment of my invention I have shown the follower-carrier as provided with a piston actuated at the proper times by a fluid or gas, and have combined it with jaws secured to plates at the upper ends of vertical guide-rods, as hereinafter described; also, in the combination, with the follower and jaw-carrier, of means to partially open or temporarily relax the inward pressure of the jaws just as the follower is entering the boot-front carried by it between the jaws, to thus avoid tearing the leather; also, in a jaw composed of a series of independent tongued blocks having a yielding backing and held in a recess of the said jaws.

Figure 1 represents, in side elevation and partial section, a boot-crimping machine embodying my invention in one form. Fig. 2 is an enlarged detail, showing the follower and the inner face of one of the jaws. Fig. 3 is an enlarged detail of the follower and jaws, partially in vertical cross-section, to better illustrate the novel construction of parts. Fig. 4 is a top view, and Fig. 5 a detail to be referred to.

In the drawings, A represents a cylinder, in which is fitted the piston B, the lower end of the cylinder having connected with it a pipe, C, for the introduction into the cylinder of water or other fluid or gas or compressed air to lift the said piston at the proper times and to let it fall, the said cylinder and pipe C being provided with suitable valves and devices common to hydraulic jacks and elevators to control the admission and exit of the fluid or gas used. The piston has a cross-head, a,

rising from which are rods  $a'$ , which serve as carriers for the follower  $a^2$ , made as a plate of metal, the said follower, of usual shape, being secured to the said rods. The cylinder has a cross-bar,  $b$ , rising from which are rods  $b'$ , which serve as carriers or supports for the plates  $b^2$ , with which are secured the jaws D E. The jaws are composed of metal shells having flanges  $c c'$ . In the space of each jaw I place a series of independent tongued blocks,  $d e$ , shaped as shown in the sectional view, Fig. 3, each block, by reason of its overlapping shoulder, (see sectional view, Fig. 3,) acting to hold an intermediate block in place, the flanges  $c c'$  holding the rows of blocks  $d$  at the extreme ends of the series, thus preventing them from being drawn out from the jaws. The flange  $c'$  will be removable, or will be held in place by suitable screws. These blocks are seated on an elastic backing or seat,  $f$ , so that they may yield a little to any inequalities of the leather being crimped. These jaws are joined with the plates  $b^2$  by the short links  $g$ , thus permitting the jaws to be moved toward or from each other, their inner faces always, however, remaining parallel, provided the links  $g$  are of equal length.

Each jaw is acted upon, preferably, by a roller,  $h$ , of a suitable block pressed outward against the rear side of the said jaw by a spring,  $h'$ , the resistance of which may be increased or diminished by a suitable screw,  $h^2$ . The springs  $h'$ , acting on the jaws, would move them toward each other far enough to straighten the links  $g$  were not the upward movement of the jaws checked. This I have done by means of adjustable jaw-stops composed, as herein shown, of screw-rods  $j$ , attached to the plates  $b^2$ , and provided with adjustable nuts  $j^2$ , against which the projecting slotted ears  $d^2$  of the jaws strike, as shown in Figs. 1 and 3.

To avoid the liability of tearing the upper as it is being introduced between the lower ends of the jaws by the follower, I have provided means whereby the jaws are temporarily separated to permit the boot-front to get started between the jaws. To accomplish this I have provided each plate  $b^2$  with a rock-shaft,  $l$ , (shown in dotted lines, Fig. 4,) it having two cranks or arms,  $l'$ . Each crank  $l'$  has a pin, 2, which is entered into a small slot, 3, at the rear side of the jaw opposite it.



Each crank  $P$  is joined by a link,  $l^3$ , with the arm  $l^4$  of one rock-shaft,  $l^5$ , having a cam-shaped leg  $l^6$ , (see Figs. 1 and 2,) which is struck by the roller  $m$ , or it might be a stud attached to one of the follower carrier-rods  $a'$ . This roller  $m$  meets and travels up the incline 4 of the leg  $l^6$  just before the upper edge of the follower is to enter between the jaws, and turns the leg and rock-shaft  $l^5$  in such direction that the pins 2 of the arms  $l'$  lower or move the jaws downward a little, causing them, owing to the pivoted links  $g$ , to separate a little; but as soon as the boot-front has been entered between the jaws the roller  $m$  passes above the part 4 of the leg  $l^6$ , and permits the springs  $h'$  to force the jaws toward each other and hold them in such position with a yielding pressure until the follower rises nearly high enough above the jaws to discharge the crimped boot-front, when a second roller or stud,  $m'$ , meets the leg  $l^6$  and again separates the jaws, permitting the boot-front to be readily removed. The rollers  $m$   $m'$  will be held in ears pivoted at their upper ends upon the collars  $m^3$ , as fully shown in Fig. 5, so that as the follower descends the said roller will not operate the leg  $l^6$ . The piston is packed at  $p$ .

I claim—

1. In a boot-crimping machine, the vertically-reciprocating carrier and the follower or jaws connected therewith, and a piston and cylinder in communication with fluid or gas under pressure, to operate the said carrier, combined with the rods  $b'$ , their support  $b$ , plates  $b^2$ , and crimping-jaws carried thereby, substantially as described.

2. The jaws composed of shells, provided with independent shouldered blocks  $e$ , overlapping each other, as shown, and a yielding backing, substantially as described.

3. The follower, and the jaws, and the two links  $g$ , and plates with which they are connected, combined with the rock-shafts, and suitable means, substantially as described, to operate the rock-shaft intermittingly to separate the jaws, substantially as and for the purpose described.

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

JOHN W. D. FIFIELD.

Witnesses:

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