

(No Model.)

4 Sheets—Sheet 1.

E. PATTEN.  
LASTING MACHINE.

No. 524,489.

Patented Aug. 14, 1894.

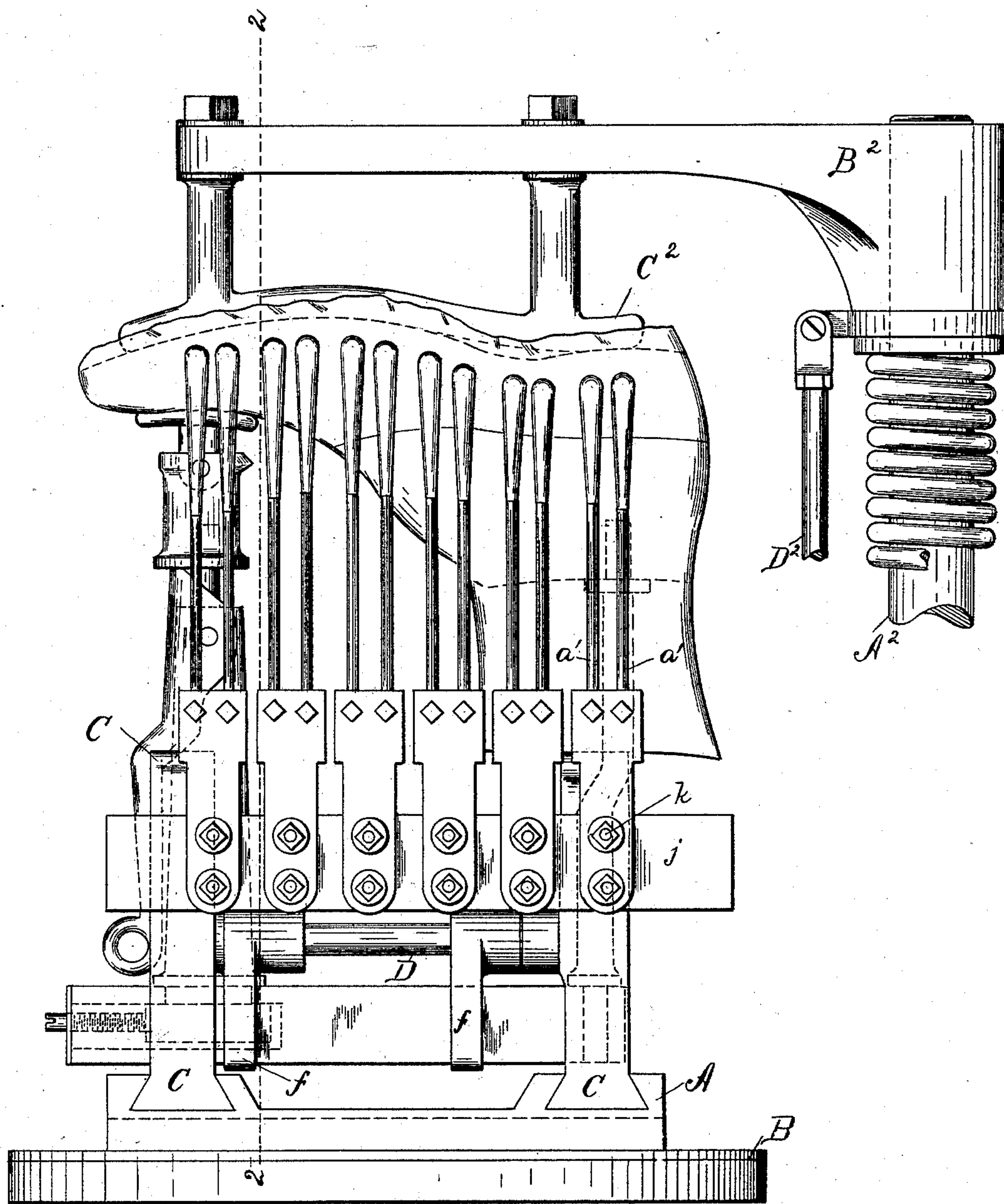


FIG. 1.

WITNESSES.

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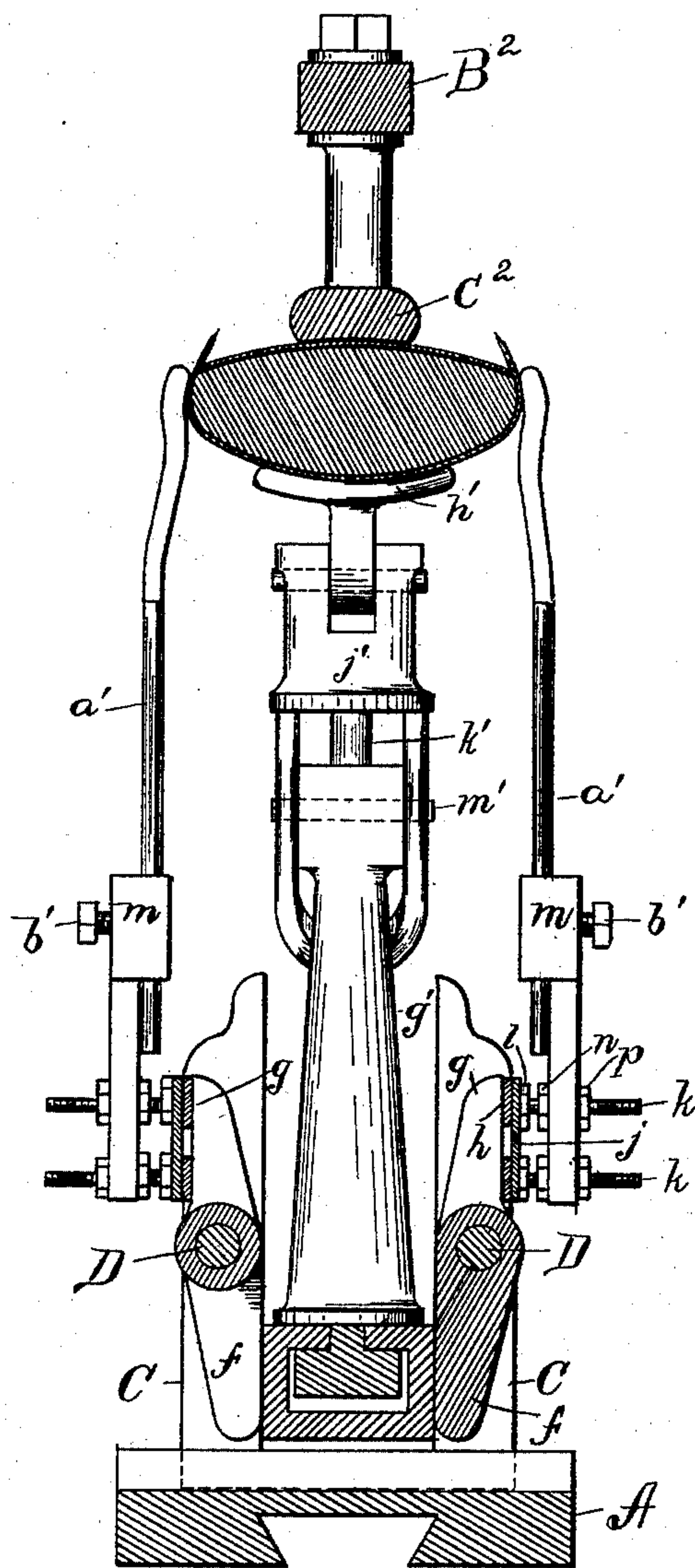


Fig. 2.

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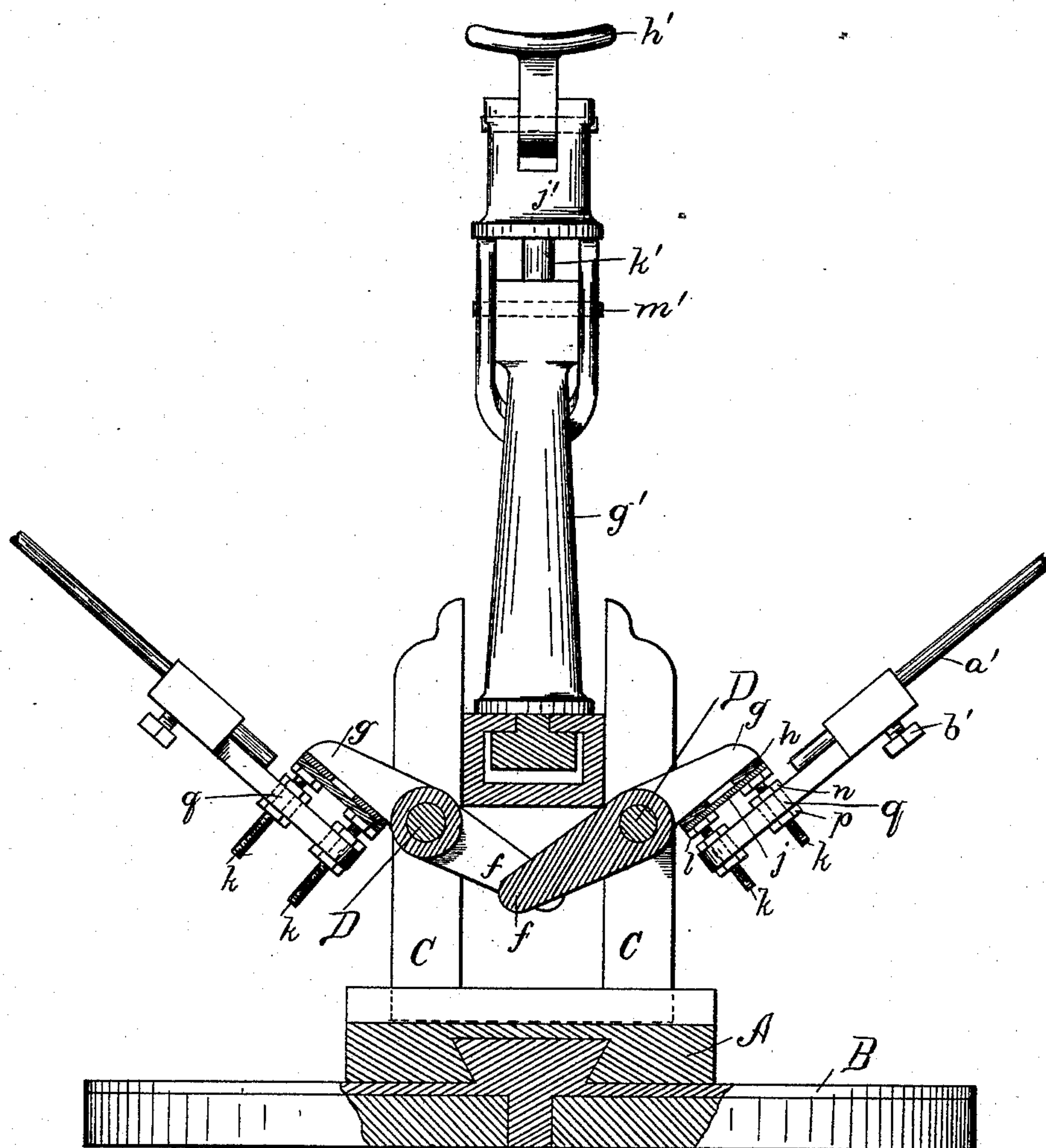


Fig. 3.

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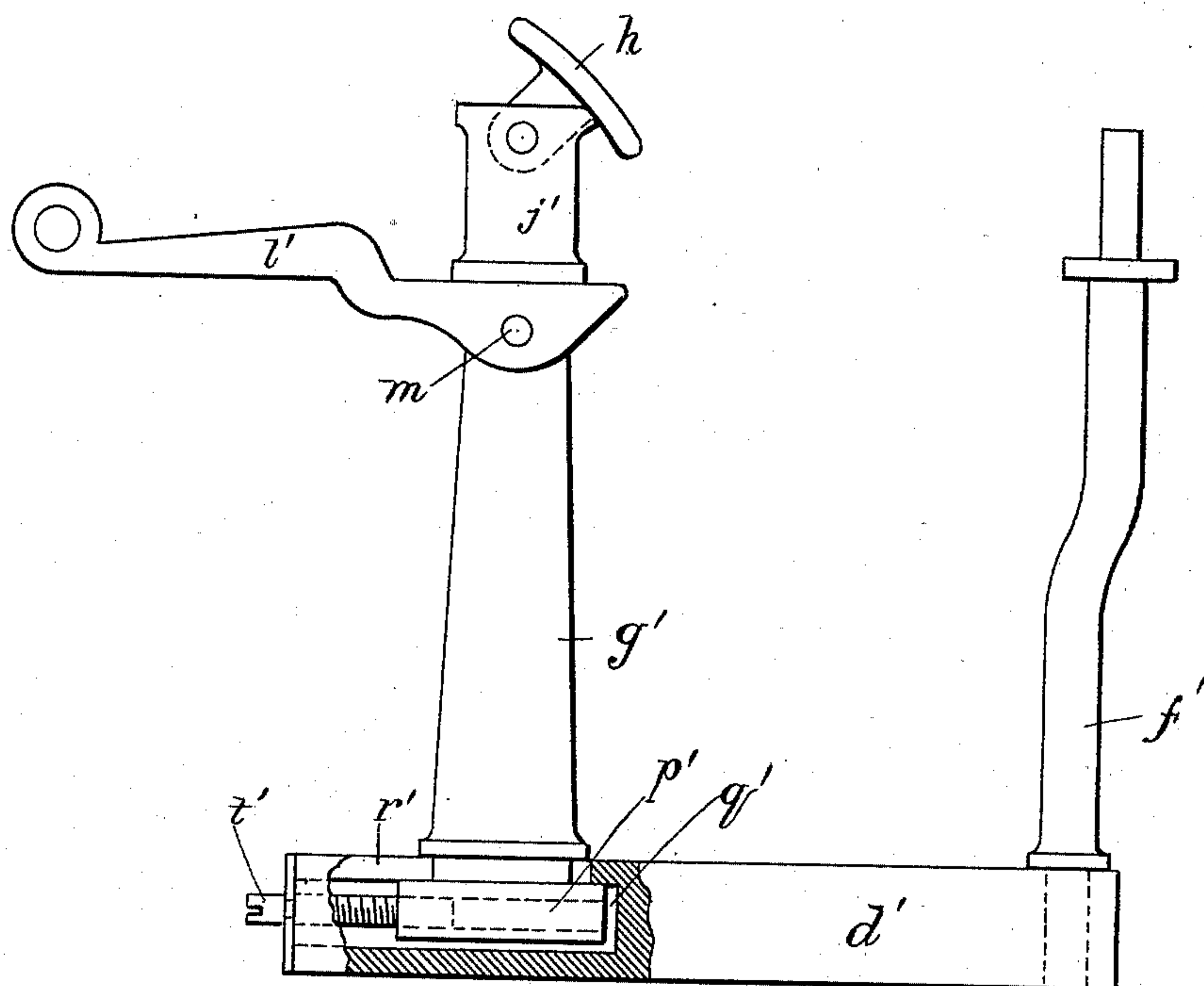


FIG. 4.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

ENOS PATTEN, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE AUTOMATIC LASTING MACHINE COMPANY, OF SACO, MAINE.

## LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 524,489, dated August 14, 1894.

Application filed June 3, 1892. Serial No. 435,430. (No model.)

*To all whom it may concern:*

Be it known that I, ENOS PATTEN, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Lasting-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In the process of lasting a shoe, the upper, or upper and lining, and the insole are applied to the last and carefully "centered" that is brought to their proper position with reference to the last. It then remains to stretch the sides of the upper smoothly over the sides of the last and secure the edges of the upper in place on the insole.

My invention has for its object to provide a lasting machine or appliance by means of which after the upper and sole are centered on the last, the sides of the upper may be stretched or drawn smoothly over the sides of the last and held in that position preparatory to tacking or otherwise securing the edges of the upper to the insole.

25 The invention further consists of a suitable support or supports for the last mounted upon a block, and a base provided with vertical standards supporting lasting arms, the upper ends of which are adapted to yield as they come in contact with the upper on the last, the stretching of the upper over the last being effected by the movement of the last and its supports relatively to said lasting arms all as hereinafter more particularly set forth.

30 The novel features of my device are pointed out in the claims which are appended hereto and made a part hereof.

My invention is more particularly designed for use in connection with a machine for tacking or otherwise securing the upper in place but it will be obvious that it may be effectively employed when the tacking or securing of the upper is done by hand.

45 I have shown my invention in the best form now known to me in the accompanying drawings, in which—

Figure 1 is a side elevation showing a shoe in the position which it occupies after the upper has been stretched and drawn into position and showing also a device for pressing the last downwardly to effect this result. Fig. 2 is a section on line 2—2 Fig. 1. Fig. 3 is a section on line 2—2 Fig. 1, looking toward the left from said line, with the last removed and showing the last supporting block raised and the lasting arms thrown back. Fig. 4 is a side elevation of the last support and last supporting block detached.

The device is comparatively simple and will be readily understood from the following description.

The base or bed is shown at A and is provided with a dove tailed groove which adapts it to be slid into position on a dove tail on the support B which may form part of a lasting machine or if the upper is to be tacked or secured by hand, the base or bed A may be simply placed on a bench or table.

C are uprights which are preferably connected by a cross piece at their lower ends and which are secured in the base A by means of dove tailed grooves crosswise thereof. There are preferably four uprights C, two at either end of the base A as shown at Fig. 1. At each side of the base A in the uprights C is journaled a rock shaft D and rigidly secured to said shaft D and extending downwardly therefrom are four arms *f* one toward each end of each of said shafts D.

Four upwardly extending arms *g* are in like manner rigidly secured to said rock shaft D and to these arms *g* are secured horizontal plates or pieces *h* one on each side of the device. The pieces *h* are slotted centrally in the direction of their length and to them are secured plates *j* by means of screw threaded studs which project through the slots in the pieces *h* and thus permit of the horizontal adjustment of the plates *j*. In the plates *j* are screwed outwardly projecting screw threaded studs *k* which are held in place by check nuts *l*. On the studs *k* are set lasting arm holders *m*, said holders being secured in place on said



studs  $k$  by means of check nuts  $n$   $p$ . The holders  $m$  are slotted vertically as shown at  $q$  to permit of their vertical adjustment relatively to the studs  $k$ . The upper ends of the holders  $m$  are provided with two vertical sockets or apertures to receive the shanks of the yielding arms  $a'$ , said arms  $a'$  being held in said sockets by means of set screws  $b'$  so that the said arms may be adjusted vertically as desired. The upper ends of the yielding or flexible arms  $a'$  are curved inwardly and preferably covered with leather or similar material in order to prevent their injuring the upper when they are in contact therewith. The precise number of yielding arms  $a'$  employed is not essential and the number may be varied as desired. It is necessary, however, for the best results that a sufficient number of yielding arms be employed to engage the upper at frequent points along its entire length from toe to heel. The construction of arms  $a'$  and their connected parts is the same, as will be clear, on both sides of the device.

The last is supported on a jack which is shown at  $d'$ . This jack consists of a bar of metal of rectangular cross section which carries two standards one shown at  $f'$  upon which the heel of the last rests and which is spring tempered and capable of yielding and the other shown at  $g'$  which carries at its upper end a pivoted toe rest  $h'$ . The toe rest  $h'$  is pivoted transversely in a block  $j'$  which is provided with a socket to receive a pin  $k'$  see Fig. 3 which projects upwardly from the top of the standard  $g'$ . By this arrangement the block  $j'$  may be raised or lowered to cramp the last on the spring heel support  $f'$ , and thus hold it securely in position. For the purpose of raising the block  $j'$  a lever  $l'$  is provided which is Y-shaped at its upper end and is pivoted at  $m'$  to the upright  $g'$ . By depressing the handle of the lever  $l'$  the block  $j'$  is raised and locked in its raised position as shown in Fig. 3.

The standard or upright  $g'$  is mounted on a block  $p'$  which is adapted to slide in a recess  $q'$  lengthwise of the block  $d'$ , a slot  $r'$  being provided in the block  $d'$  above the recess  $q'$  to accommodate the upright  $g'$  see Fig. 4. The block  $p'$  is secured in a given position and is made adjustable in the recess  $q'$  by means of an adjusting screw  $t'$ . In this way the upright  $g'$  may be adjusted relatively to the upright  $f'$  to accommodate lasts of different lengths.

The parts of the shoe being assembled and centered on the last the last is placed on the jack shown in Fig. 4, and firmly secured thereon by depressing the lever  $l'$ . The last and its support including the block  $d'$  are then inserted between the standards C as shown Fig. 3, the lasting arms being in their outward position as there shown. The last and its support are then pressed downwardly, the block  $d'$  coming in contact with the arms

$f$  forcing them outwardly, causing the rock shafts D to be rocked and throwing the lasting arms inwardly under the sides of the upper. The shoe and its supports are then pressed still further downward until they reach the base of the standards C thus bringing the upper ends of the yielding lasting arms  $a'$  into contact with the sides of the upper and smoothing and rubbing and stretching the upper over the sides of the last and securely holding the upper in place in its stretched and smoothed position. When the block  $d'$  is down between the lower portions of the standards C and between the arms  $f$  the parts are locked and the upper is held firmly in place.

The last and its support may be pressed downwardly between the standards C to effect the stretching and smoothing down of the upper against the sides of the last by hand, but it is preferable to provide a simple device for doing this work by foot power. Such a device is shown in Fig. 1 and it consists of a standard  $A^2$  which may be set on the bench and which is provided at its upper end with a sliding head  $B^2$  which projects over the last and is provided with a plate or contact piece  $C^2$  which may be curved to correspond with the sole of the last and which is bolted to the projecting portion of the head  $B^2$  in any suitable manner. The head  $B^2$  is connected with a treadle (not shown) by means of a pivoted connecting rod  $D^2$ . A spiral spring on the standard  $A^2$  will serve after the treadle has been depressed to force the last and its supports downwardly between the lasting arms  $a'$ , to again raise the head  $B^2$  upon the release of the treadle. This device renders the operation of lasting the shoe less fatiguing to the workman and also leaves him free to use his hands in adjusting the parts of the shoe or otherwise assisting in the operation of lasting the upper evenly and properly.

As will be obvious instead of moving the last and shoe toward the lasting arms, the last may be stationary and the lasting arms moved without departing from my invention.

What I claim is—

1. The combination in a lasting machine with a suitable support or jack for the shoe of yielding lasting arms for engaging the sides of the upper, said arms being mounted on rock shafts provided with arms for engaging the said support or jack, whereby as the latter is forced downwardly between said shafts, the lasting arms will be moved into operative position and locked in said position, substantially as set forth.

2. The combination with the jack  $d'$ , of the shafts D located at opposite sides of said jack, the inwardly projecting arms  $f$  mounted on said shafts, the outwardly projecting arms  $g$  on said shafts, holders  $m$  carried by the said arms  $g$ , and yielding arms  $a'$  carried by said holders  $m$ , substantially as set forth.

3. The combination with the yielding arms



5  $a'$  of the holders  $m$  means for vertically adjusting the said arms in said holders the projections  $g$ , and means for adjusting said holders relatively to said projections  $g$ , substantially as set forth.

4. The combination with the pivoted arms  $g$  of the slotted plates  $h$ , carried by said arms plates  $j$ , secured to said plates  $h$ , arms  $a'$  and

their holders  $m$ , secured to said plates  $j$ , substantially as set forth. 10

In testimony whereof I affix my signature in presence of two witnesses.

ENOS PATTEN.

Witnesses:

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ROBERT WALLACE.