

No. 671,356.

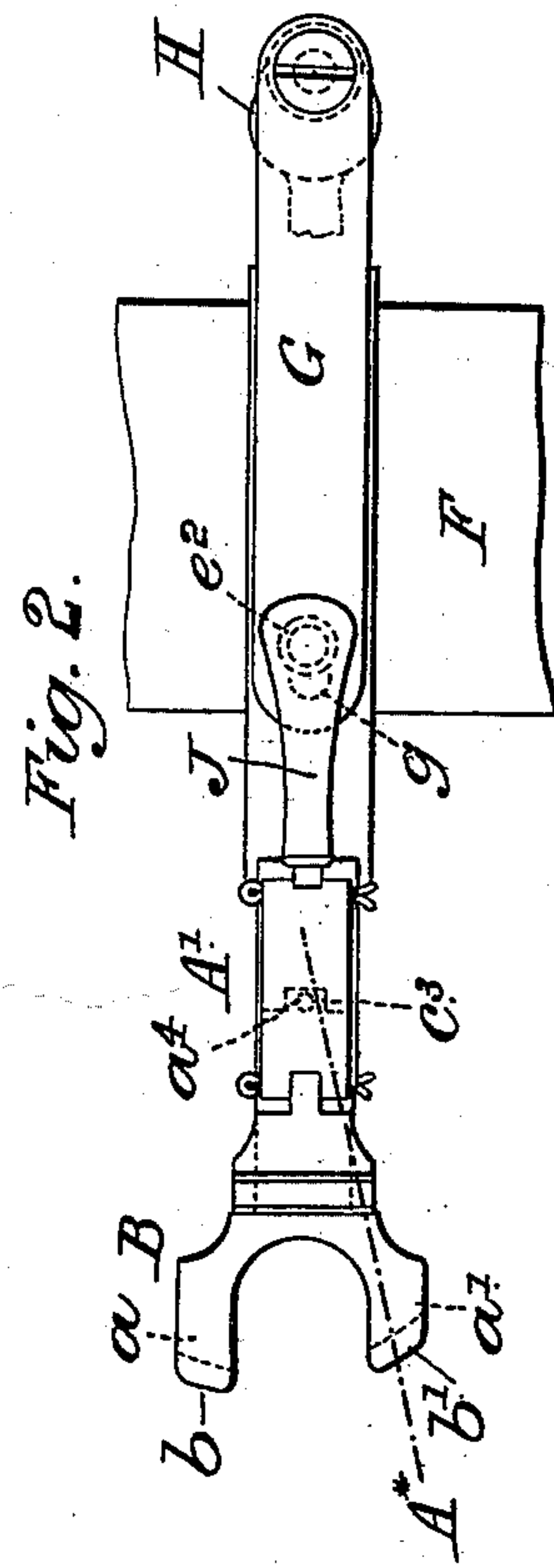
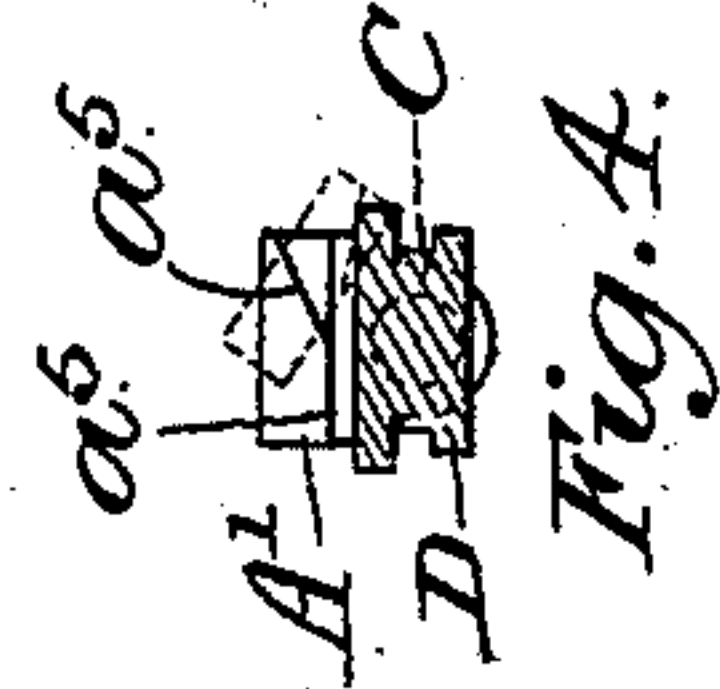
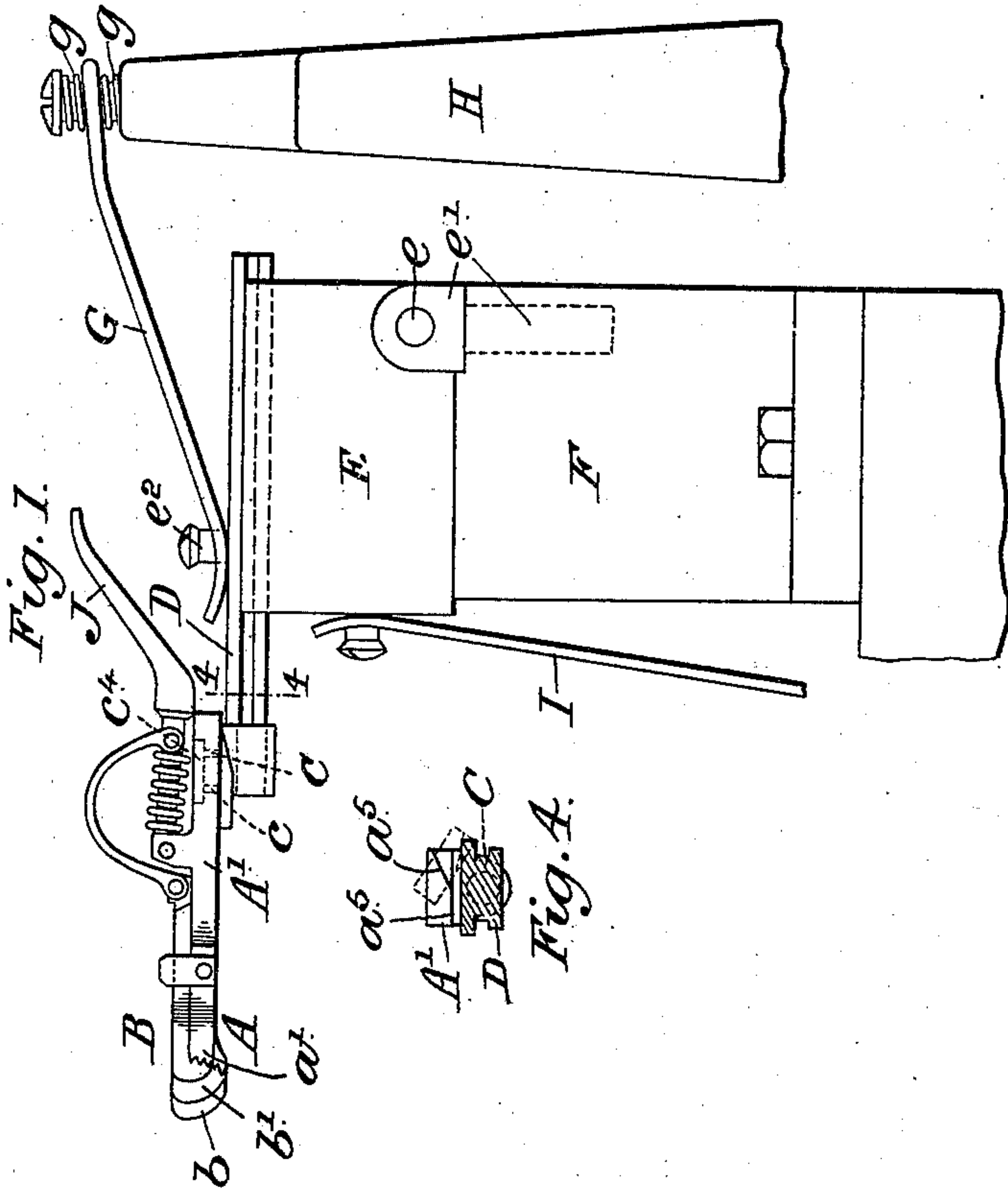
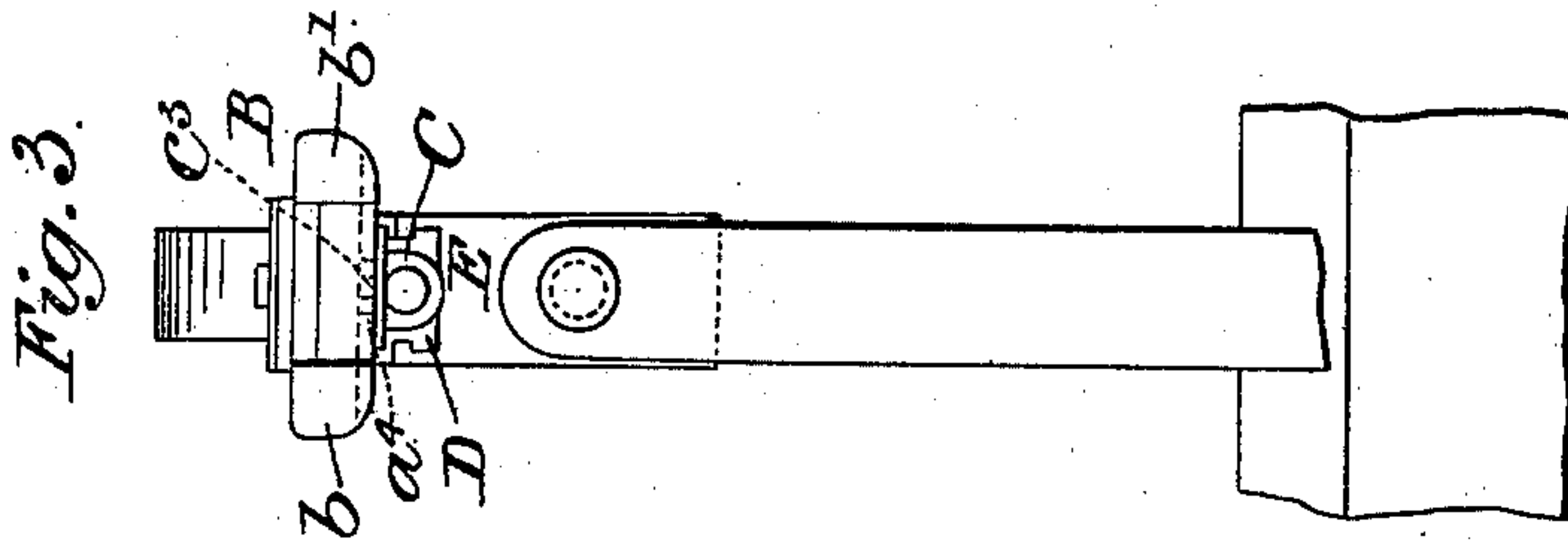
Patented Apr. 2, 1901.

A. E. STIRCKLER.
LASTING MACHINE.

(Application filed Aug. 28, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
Jesse L. Linn
Chas. B. Fiskum

Inventor:
Albert Edward Stirckler
by Philip Mauro
his atty.

No. 671,356.

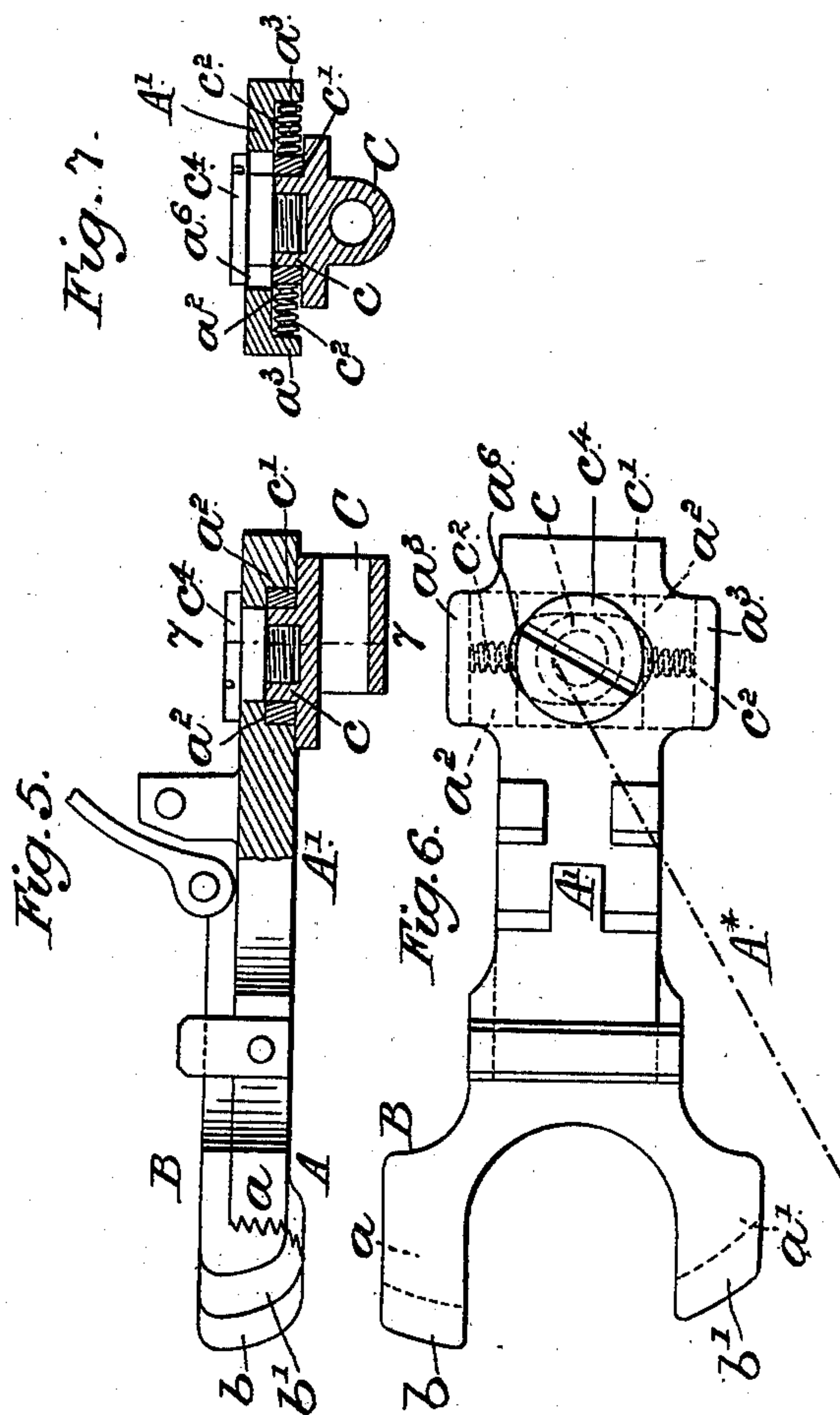
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2 Sheets—Sheet 2.



Wilmeses:—
Herr Zuercher
Herr B. Herrmann.

Inventor:-
Albert Edward Tucker
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UNITED STATES PATENT OFFICE.

ALBERT EDWARD STIRCKLER, OF NORTHAMPTON, ENGLAND.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 671,356, dated April 2, 1901.

Application filed August 28, 1900. Serial No. 28,307. (No model.)

To all whom it may concern:

Be it known that I, ALBERT EDWARD STIRCKLER, engineer, a citizen of the United States of America, residing at 26 Billingstreet, Northampton, in the county of Northampton, England, have invented certain new and useful Improvements in or Relating to Machines for Lasting Boots or Shoes; 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.

My invention relates to machinery or apparatus for lasting boots and shoes, particularly machinery or apparatus of the type described in the specifications of Letters Patent No. 17,581* of 1887, No. 14,586* of 1888, and No. 422 of 1896, granted to me, and has especial reference to the "nipper-wipers" which are employed for pulling the leather of the "upper" over onto the sole of the last at or near the waist, one of the principal objects of my present invention being to construct and operate the nipper-wipers so as to render each capable of doing the work for which two or more nipper-wipers have hitherto been necessary and to dispense with the equalizing-levers which have been employed for equalizing the power applied to the various nipper-wipers, and generally to improve, simplify, and facilitate the operation of the machine.

I will describe my present invention with reference to the accompanying drawings, in which—

Figure 1 is an elevation showing one of my improved nipper-wipers and sufficient of the apparatus at one side of a lasting-machine to illustrate my present improvements, the apparatus here shown for one side of the machine being of course duplicated at the other side of the machine. Fig. 2 is a plan of Fig. 1. Fig. 3 is an elevation at right angles to Fig. 1 of the left-hand end of that figure. Fig. 4 is a transverse vertical section on the line 4 4 of Fig. 1. Fig. 5 is an elevation, partly in section, and Fig. 6 a plan, showing a modified arrangement of the nipper-wiper; and Fig. 7 is a transverse vertical section on the line 7 7 of Fig. 5. Figs. 5, 6, and 7 are drawn to a scale larger than that to which Figs. 1, 2, 3, and 4 are drawn.

Like letters of reference indicate like parts throughout the drawings.

The nipper-wipers constructed according to my present invention are as regards their general construction and the mode of operating the movable jaws preferably, though not necessarily, of the type described in the specification of Letters Patent No. 19,528 of 1897; but in place of forming each nipper-wiper with a single pair of nipping-jaws I provide the nipper-wiper with a bifurcated fixed jaw A and a corresponding bifurcated movable jaw B, each of the pairs of bifurcations $a b$ and $a' b'$, respectively, constituting a separate nipper for engaging the leather of the upper at two different parts. The engaging faces of the bifurcations $a b$ and $a' b'$, as shown in dotted lines in Fig. 2, and the under surfaces of the said nippers, as shown in Fig. 3, are curved or shaped to conform with the general curves of those portions of the last over which the nippers are to work.

The rear end of the plate A' of the fixed jaw A is pivoted so as to be capable of turning in a horizontal or approximately horizontal plane on a boss c , formed on a block C, which is pivoted, so as to be capable of turning in a vertical or approximately vertical plane, as shown in Fig. 4, on the end of a bar D, capable of sliding in a block E in a direction perpendicular or approximately perpendicular to the longitudinal axis or center line of the last. The jaw-plate A' is retained on the boss c by a screw c^4 . The block E is pivoted by a pin e to a pivot-pin e' , so that it is free to turn in a vertical plane on the said pin e' , which is itself mounted in a block F in such a manner as to allow the block E, together with the said pivot-pin e' , to turn in a horizontal or approximately horizontal plane. The block F may be secured to or mounted on the fixed frame of the lasting-machine in any suitable manner.

The horizontal and vertical or substantially horizontal and vertical movements of the jaw-plate A' in relation to the bar D may, if desired, be restricted to the necessary working limits by any suitable stop arrangement. For example, a pin a^4 in the plate A', engaging with a recess c^3 in the block C, may limit the

horizontal movement, and shoulders a^5 , engaging with the bar D, as shown in Fig. 4, as regards the turning in one direction, may limit the vertical movement.

5 The bar D is connected by a stud or screw e^2 and slot g , Fig. 2, to the inner end of a link G, whose outer end is pivoted to the upper end of a lever H, which serves for moving the nipper-wipers inward and outward in relation to the last. The connection of the link G to the top of the lever H is made a loose connection, with a spring above and below bearing on the link in both directions, so as to hold it normally in position, but allow it to yield when the nipper-wipers are in their raised position during the operation of lasting.

The front or inner end of the block E is connected by a link I to a vertically-sliding block (not shown in the drawings) operated by a treadle. The two levers H for moving the nipper-wipers inward and outward at the opposite sides of the machine are operated in unison by cams or wedges, and the two links I for raising and lowering the said nipper-wipers are connected to the same treadle, so that this motion is similarly in unison, all of which may be as described in the specifications of the aforesaid Letters Patent.

In lasting with the improved nipper-wipers the bars D and the blocks E (while the nipper-wipers are in their withdrawn and lowered positions) are adjusted on their pivots e' in a horizontal or approximately horizontal plane, (and, if desired, the blocks F can also be adjusted,) so that the nipper-wipers are more or less perpendicular to the upstanding portion of the leather of the upper on which the nipper-wipers are to operate. The nipper-wipers are then, through the levers H and the cam or wedge operating mechanism, moved inward sufficiently to enable the nipper-jaws $a b a' b'$ (which are then open) to engage with the leather, and if either of the nipper-wipers does not reach the leather that nipper-wiper, owing to the provision of the slot g in the link G, can be moved forward until its jaws can engage with the leather. By then depressing the levers J the jaws of the nipper-wipers are closed to grip the leather, and the nipper-wipers are then forced upward by the treadle and forward by the cam or wedge mechanism, so as to tightly draw the leather over the last, any difference in the stretching qualities of the two portions of leather seized by the respective jaws $a b a' b'$ being compensated for by the nipper-wiper at each side of the machine turning horizontally or vertically or both horizontally and vertically in relation to the bar D, the strain on the leather being in this manner equalized in the same manner as that effected by the equalizing-levers described in specifications of the aforesaid Letters Patent. After the leather of the upper has been tacked to the last between and outside the jaws $a b$ and $a' b'$ the nipper-wipers are released from the upper and withdrawn from over the last. To

provide for a maximum variation in the stretching qualities of the two portions of the leather seized by the jaws $a b a' b'$ and a consequent greater angling (in a horizontal or approximately horizontal plane) of the nipper-wipers in relation to the bar D than is provided for by the before-described arrangement, I may pivot the plate A' and block C together in the manner shown in Figs. 5, 6, and 7. In this arrangement the block C is provided with a circular boss c , over which fits a rectangular block c' , the said block fitting so as to be capable of sliding in a transverse recess a^2 , formed in the under side of the plate A' , which plate is transversely slotted at a^6 to allow it to slide on the screw c^4 , just below the head thereof. Springs c^2 , acting between lugs a^3 on the jaw-plate A' and opposite sides of the block c' , return the said jaw after deflection to its central position in relation to the bar D. With this arrangement the nipper-wiper (when the limit of the angular movement on the boss c is reached) would, as indicated by the dotted center line A^* , Fig. 6, turn to a still greater angle in relation to the bar D should the resistance to the advance of the two pairs of jaws $a b a' b'$ be unequal, the jaw-plate A' during this further angular movement sliding transversely on the block c' . When the nipper-wipers are released from the upper, they will be returned by the springs c^2 to their normal central position in relation to the block c' .

The before-described nipper-wipers are of such arrangement, shape, and construction that each such device serves for the lasting of boots and shoes of widely-varying sizes—say from what are known as “children’s fives” upward.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

1. In machinery or apparatus for lasting boots and shoes, a bifurcated nipper-wiper, a slidable bar, and a connection between said bar and bifurcated nipper-wiper allowing the latter to move in approximately horizontal and vertical planes in relation to the bar.

2. In machinery or apparatus for lasting boots and shoes, a bifurcated nipper-wiper, a slidable bar, and a connection between said bar and bifurcated nipper-wiper allowing the latter to move pivotally in horizontal and vertical planes in relation to the bar and permitting the nipper-wiper to move transversely in a horizontal plane at its point of connection to the bar.

3. In a boot and shoe lasting machine, a nipper-wiper, a sliding bar to which the nipper-wiper is connected, an operating-lever, a link connecting the lever and bar, and a stud or screw passing through a slot in the link for adjustably attaching the same to the bar.

4. In a boot and shoe lasting machine, a nipper-wiper, a sliding bar to which the nipper is connected, an operating-lever, a link

extending from the lever to the bar, an adjustable connection between the link and bar, and springs interposed above and below the link at its point of connection to the lever.

- 5 5. In machinery or apparatus for lasting boots and shoes, a nipper-wiper having two pairs of nipping-jaws, said pairs being separated by an intervening space and the gripping-surfaces of the jaws being curved in a lateral direction to approximately correspond to the curvature of the outline of the portion of the last over which they are to operate, a slidable bar, and a connection between said bar and nipper-wiper allowing the latter to move in approximately horizontal and vertical planes in relation to the bar.

15 6. In machinery or apparatus for lasting boots and shoes, a nipper-wiper having two pairs of nipping-jaws, said pairs being separated by an intervening space and the gripping-surfaces of the jaws being curved in a lateral direction to approximately correspond to the curvature of the outline of the portion of the last over which they are to operate, a slidable bar, and a connection between said bar and nipper-wiper allowing the latter to move in approximately horizontal and vertical planes in relation to the bar.

rated by an intervening space and the gripping-surfaces of the jaws being curved in a lateral direction to approximately correspond with the curvature of the outline of the portion of the last over which they are to operate, a slidable bar, and a connection between said bar and nipper-wiper allowing the latter to move pivotally in horizontal and vertical planes in relation to the bar and permitting the nipper-wiper to move transversely in a horizontal plane at its point of connection to the bar.

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

ALBERT EDWARD STIRCKLER.

Witnesses:

A. M. TROUP,
W. MAY.