

(No Model.)

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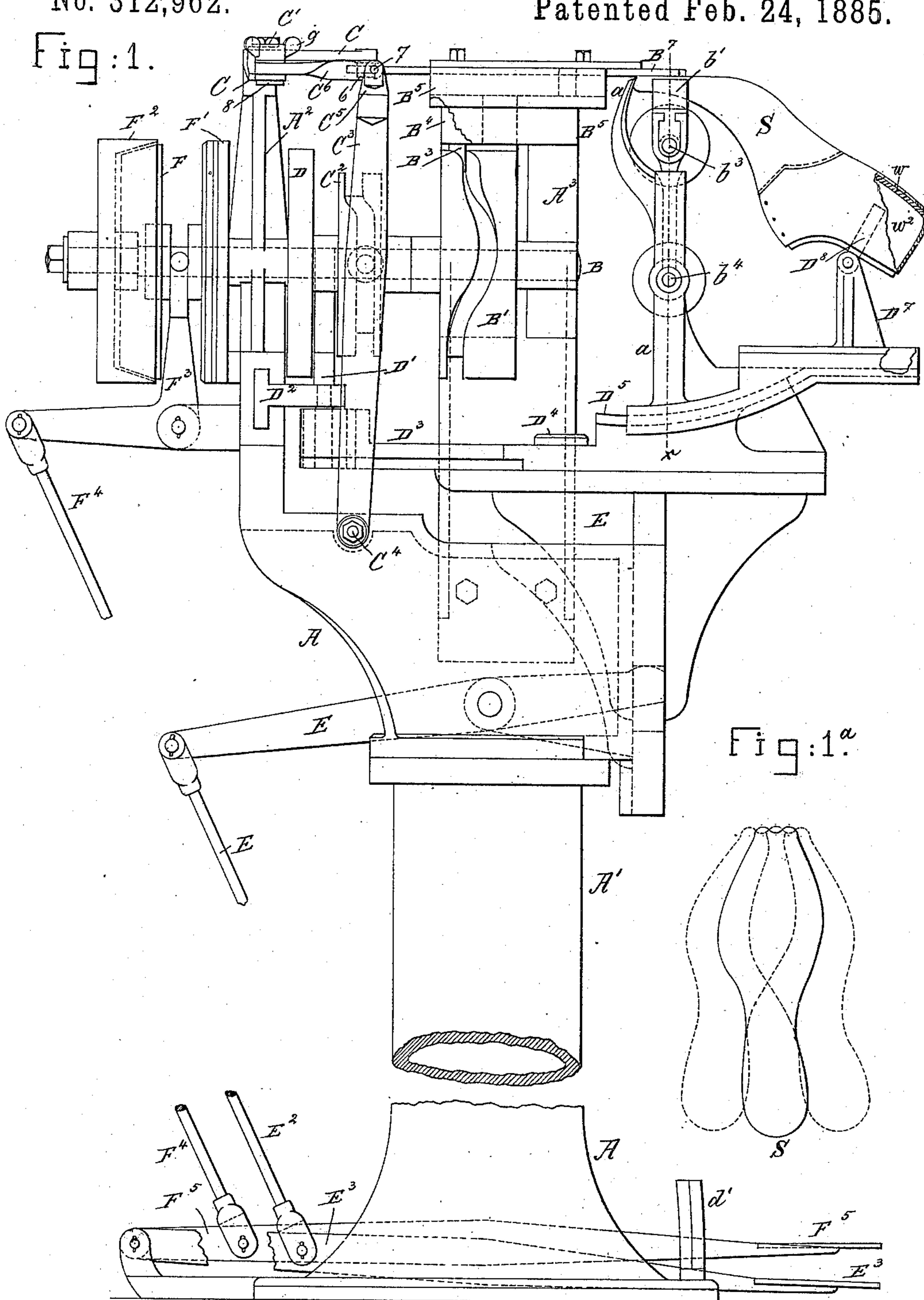
M. BROCK.

LASTING MACHINE.

No. 312,962.

Patented Feb. 24, 1885.

Fig: 1.



Witnesses.

Arthur Lipperlen.

John F. C. Printker

Inventor.

Matthias Brock.

By By Crosby & Gregory attys.

(No Model.)

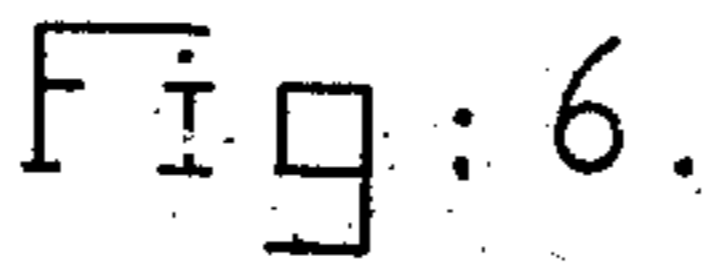
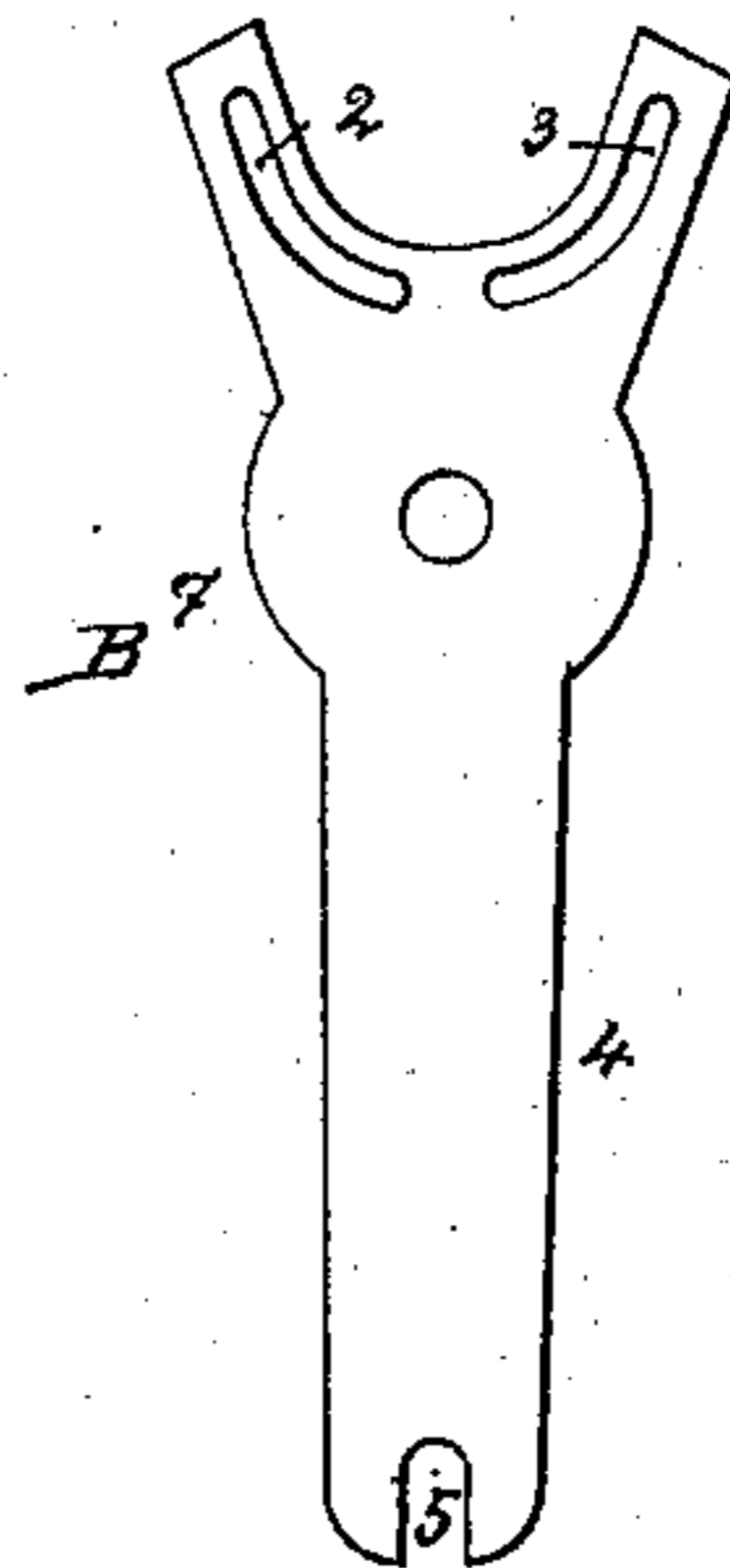
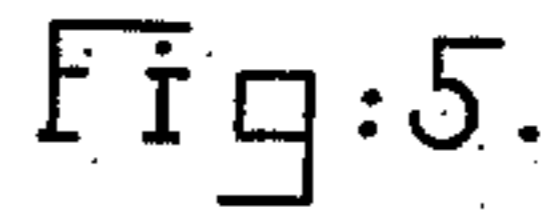
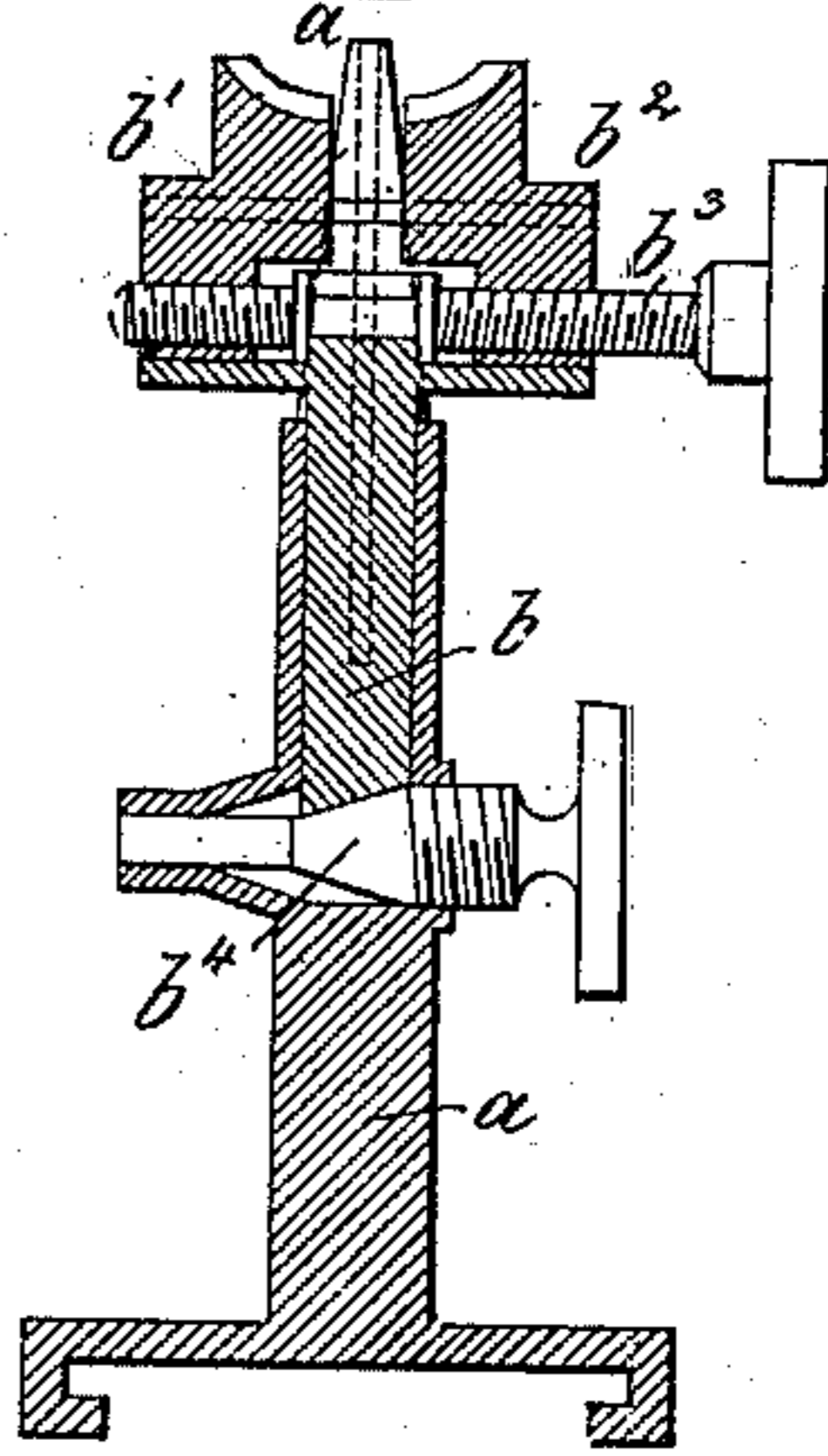
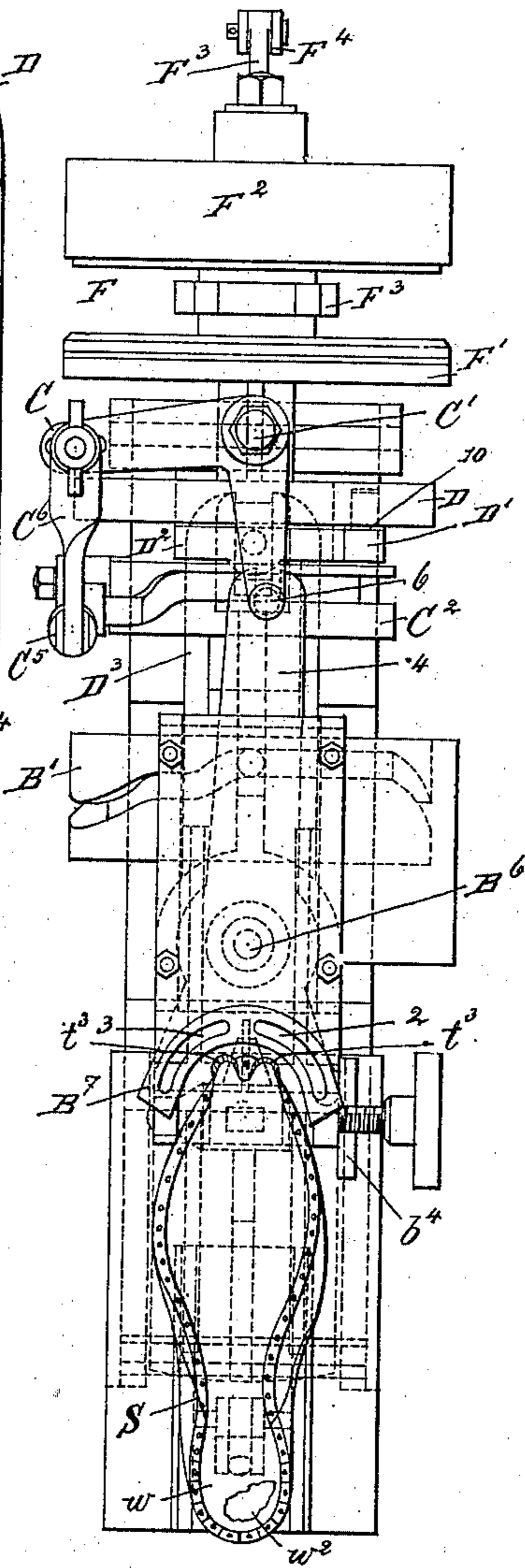
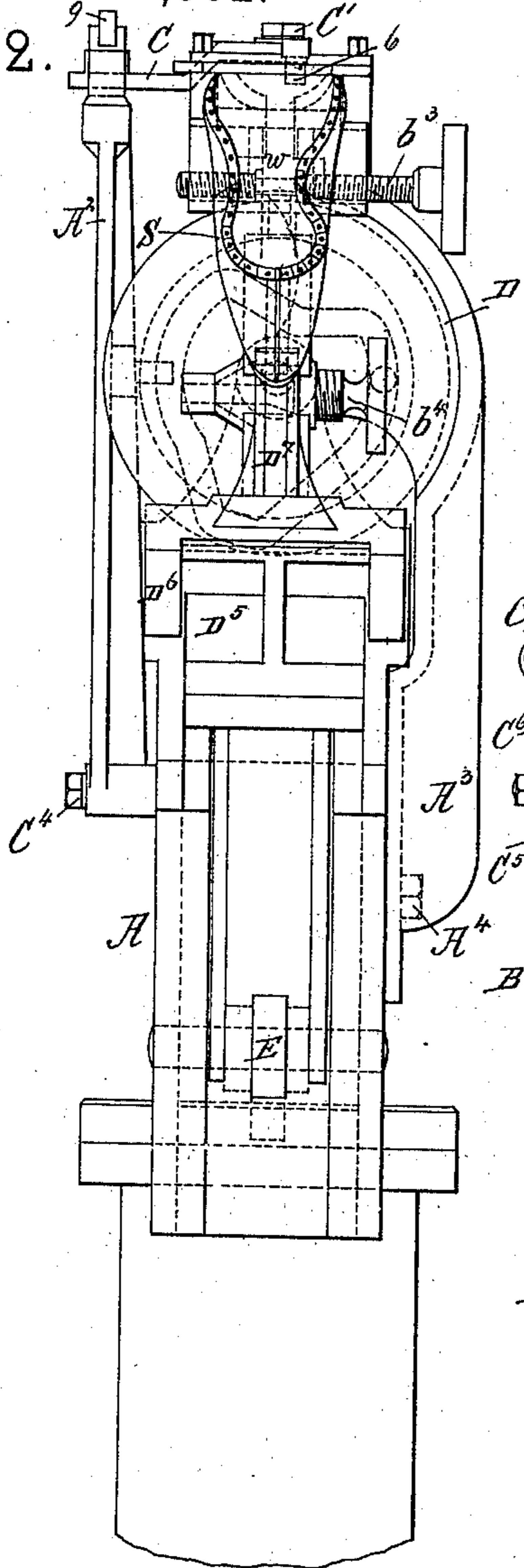
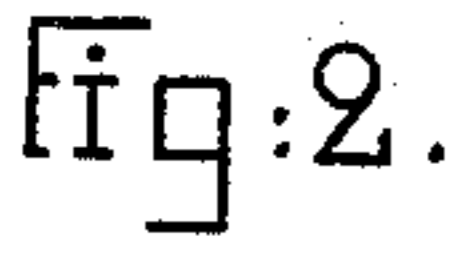
2 Sheets—Sheet 2.

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Witnesses.

Arthur Lippertsen,

John F. C. Printers

Inventor.

Matthias Brock.

By Crosby & Gregory attys

UNITED STATES PATENT OFFICE.

MATTHIAS BROCK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE MCKAY
& COPELAND LASTING MACHINE COMPANY, OF PORTLAND, MAINE.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 312,962, dated February 24, 1885.

Application filed January 2, 1885. (No model.)

To all whom it may concern:

Be it known that I, MATTHIAS BROCK, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Lasting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a machine especially devised to last only the toe; but with slight modification the machine herein described is adapted to last a heel.

In the machine herein described the last is pivoted upon a jack which has a movement in the arc of a circle described from at or near the top of a gage, against which the upper covering the toe of the last rests, the said gage being located close to the under side of the crimping-jaw, such adjustment of the jack enabling the tread of the last to be brought into proper line with the lower surface of the crimping-jaw, which has a horizontal movement.

The track on which the jack is adjusted in the arc of a circle is formed as a connected part of a lever pivoted to swing laterally on the frame-work, thus enabling the toe of the last to be swung laterally under first one and then the other extended U-shaped end of the crimping-jaw, in which position the upper on the last at the side of a center line drawn through the last from heel to toe is attached to the inner sole on the last by a fastening device having preferably two or more prongs, or made comb-like, thus enabling each side the toe to be lasted quickly.

The particular features in which my invention consists will be pointed out in the claims at the end of this specification.

Figure 1 of the drawings is a side elevation, partially broken out to save space, of a lasting-machine embodying my improvements. Fig. 1^a is a diagram to be referred to. Fig. 2 is a right-hand end view of Fig. 1, or of the front of the machine. Fig. 3 is a top or plan view of that part of Fig. 1 above its base; Fig. 4, a sectional detail in the line *x*, Fig. 1, of the toe-rest and gage and means for adjusting the former. Fig. 5 shows the jaw separated from

the machine, and Fig. 6 shows one of the strip-like fasteners to be used for holding the toe of the upper.

The head A, mounted on a suitable column, A', has an upright, A², forming part of it, which sustains one of the bearings for the main shaft B, the other bearing therefor being sustained by a ribbed or other upright, A³, bolted to the head by bolts A⁴. The shaft B has fast on it a cam, B', which receives in its groove a roller or other stud, B³, projected from the lower side of a slide, B⁴, adapted to slide in grooves in a guideway-block, B⁵, the said slide having pivoted on it at B⁶ the crimping-jaw B⁷, the latter having, as herein shown, a U-shaped front end provided with two elongated openings, 2 3, and having a tail-piece, 4, provided with a slot, 5, for the reception of a roller-stud, 6, (shown in dotted lines, Figs. 1, 2, and 3,) carried at one end of an elbow-lever, C, pivoted at C' on the upright A². The groove of the cam B' is of such shape as to move the slide B⁴ for two full strokes during each rotation of the shaft B. The main shaft has a second-cam, C², which receives in its groove a roller or other stud extended from the inner side of a lever, C³, pivoted on the head at C⁴, the said lever at its upper end having a swivel-pin, C⁵, the ears of which receive a pin, 7, which is also extended through a link, C⁶, which is attached by bolt 8 and thumb-nut 9 to the end of and vibrates the lever C, referred to, so that its pin 6 in the slot 5 of the crimping-jaw is enabled to cause the said jaw to be swung on its pivot to one or the other side. The groove of the cam C² is of such shape as to vibrate lever C³ two full strokes for each complete rotation of the main shaft B. The shaft B has fast on it a cam, D, (shown in full line, Figs. 1 and 3, and in dotted line, Fig. 2,) the said cam having at one side a groove, (shown in dotted lines, Fig. 2,) which receives a roller or other stud, 10, extended therein from an upright arm, D', of a horizontally-movable slide, D², the latter at its under side having a pin and anvil block of usual construction to enter a slot (see dotted line, Fig. 3) at the rear end of the track-carrying lever D³, pivoted at D⁴ on the track-lifting slide E, the

said lever having at its outer end the circular track D^5 , on which is mounted the toe-carriage D^6 in a dovetailed slot, in which is adjustably placed the dovetailed foot of the standard D^7 , on which the heel-pin D^8 is pivoted, the said heel-pin receiving the last, as usual, and the standard being moved longitudinally according to the length of the last. The curve of the track D^5 is struck from at or near the upper end of the toe-gage a , a rigid upright yet curved arm extended upwardly from this carriage, (the upper end of the said gage terminating close to the under side of the crimping-jaw B^7 , as shown in Fig. 1,) so that the toe-carriage may be adjusted more or less in the arc of a circle, to enable the tread of the last, from its toe back to its ball, to be placed in the plane of the horizontal movement of the under side of the jaw. The lever D^3 and the toe-carriage thereon are raised and lowered, to place the upper at the toe of the last against the under side of the jaw before the latter is moved forward to last one side or half of the toe, by the track-lifting slide E , the shank of which is fitted into a guideway in the head A of the frame-work, the said slide being raised and lowered by a lever, E^1 , link E^2 , and lever E^3 . The shaft B has keyed upon it a two-faced hub, F , one face of which at the proper time is forced into a conical seat of the driving-pulley F^2 , loose on and thereby effecting the rotation of the shaft B , the other face of the hub, when forced against the plate F^1 , serving as a check or brake to restrain the rotation of the said shaft. The treadle E^3 has a dog, d , at one side, (see Fig. 2,) which engages a toothed rack, d' , to thereby enable the slide E to be locked in elevated position, as in Figs. 1 and 2. The two-faced hub is moved longitudinally on the shaft B by means of the elbow-lever F^3 , joined by links F^4 . The upright a of the toe-carriage is slotted longitudinally for the reception of the standard b of the toe-rest carriers b^1 b^2 , which are placed in a cross-groove of the head of the said standard, the latter containing a right and left threaded screw, b^3 , by which to spread or to contract the width of the top of the toe-rest according to the size of the shoe. The standard and consequently the toe-rest are made vertically adjustable by the taper screw b^4 .

The drawings show the shoe S in position ready to have its toe lasted. In such condition of the parts the operator will put his foot upon the treadle F^5 , and will cause the outer end of the hub F to be pressed into engagement with the loose pulley, which, driven by power in usual manner, will start the shaft B slowly. The shaft B in its rotation will first cause the slide B^4 to be moved forward sufficiently to place the inner curved edges of the U-shaped jaw up to and against the upper at the toe of the last, when, if desired, the operator, by removing his foot from the treadle F^5 , may cause the shaft to be stopped until the toe part of the upper may be drawn up snugly by

usual pinchers between the said jaw and the toe of the last. Then the shaft B is again started, and as the jaw is again started forward the cam D , operating upon the slide D^2 and lever D^3 , swings the latter about its pivot D^4 , so that one arm of the U-shaped jaw acts upon the upper, and that at one side of the center line thereof, and such movement is continued until the edge of the upper about one half the toe is laid over upon the inner sole, w , on the last w^2 , in which condition a strip-fastener, t , substantially such as shown in Fig. 6, is driven down into the upper and inner sole through the curved slot 2, and this done, the slide B^4 is vibrated, and the lever D^3 is again moved back, so as to leave the last and shoe thereon in its central position, Fig. 3. This done, cam C^2 acts by the devices before described, which are moved by it to swing the crimping-jaw about its pivot B^6 and hold it in its second position while the slide B^4 is again moved forward and the lever D^3 is again vibrated to turn the last into angular position; but at this second forward movement of the shoe and crimping-jaw the lever D^3 is moved in the opposite direction, so as to swing the heel of the last in the opposite direction from that in which it was moved during the first forward movement of the crimping-jaw, thus enabling the crimping-jaw at its second forward movement to be presented diagonally to the toe of the shoe on the last, so that the second half of the toe of the upper may be lasted and be fastened in place by a strip-fastener, or by nails driven down through the slot 3 of the jaws, and thereafter the jaw is retracted and the lever D moved to place the last and toe-carriage in central position, as shown in Fig. 2, and the lever E^3 is released to lower the toe-carriage and for the removal of the shoe.

To effect a greater or less vibration of the crimping-jaw preparatory to acting upon the upper to lay its edges upon the inner sole, and thus accommodate for different widths of shoes, I have slotted the lever C for the reception and adjustment therein of the bolt 8.

In Fig. 1^a by full lines I have shown the bottom of the shoe the toe of which is to be lasted, the said shoe and the last on which it is mounted being in its central position, and by dotted lines I have shown the said shoe as turned aside into the position it will occupy as each half of the toe of the upper is being lasted. The upper of the shoe, when placed in position to have its toe lasted, has its edges nailed to the inner sole along the ball of the last up to the curved part of the toe, and the center of the toe is caught by at least one nail, thus leaving only the lips t^3 (see Fig. 3) to be laid over on the inner sole and plaited or crimped.

I claim—

1. In a lasting-machine, a crimping-jaw and a gage below it for the reception against it of the toe of the upper on the last, and a circu-

larly-movable toe-carriage and toe-rest carried thereby, and combined with a circular track, the course of which is described from at or near the upper end of the said gage, substantially as described, whereby the toe-carriage may be adjusted in the arc of a circle, and always place the bottom of the last from its toe to its ball, substantially in the plane of movement of the crimping-jaws, as and for the purpose set forth.

2. The pivoted horizontally-swinging toe-carriage and jack thereon to support the last and the crimping-jaw and the slide to move it forward, combined with means, substantially as described, to turn the said jaw on its pivot and retain it in position to enable but one arm of the said jaw to operate against and turn over upon the inner sole of the last but one half of the toe of the upper, substantially as described.

3. In a lasting-machine, the vibrating lever having the curved track for the toe-carriage, and the toe-carriage mounted thereon, combined with the vertically-movable slide E, on which the said lever has its fulcrum, as and for the purpose set forth.

4. In a lasting-machine, the lever having upon it the track for the toe-carriage, combined with the toe-carriage, and with means, substantially as described, to vibrate the said lever to place the toe-carriage in central position and in positions at each side of the said central position, substantially as set forth.

5. In a lasting-machine, the circularly-movable toe-carriage provided with the adjustable

toe-rest, and suitable means for supporting a boot or shoe, to operate substantially as described.

6. The circularly-movable toe-carriage provided with a toe-rest, combined with the independently-movable standard D' thereon, to support the heel-pin, substantially as described.

7. The circularly-movable carriage and its attached gage, combined with the adjustable toe-rest, substantially as described.

8. In a lasting-machine, the toe-carriage and the toe-rest composed of the standard and blocks b' b^2 , combined with the right and left threaded screw to adjust the said blocks, substantially as described.

9. In a lasting-machine, the toe-carriage and the toe-rest composed of the standard and blocks b' b^2 , combined with the right and left threaded screw to adjust the said blocks, substantially as described.

10. The horizontally-movable slide and the toe-crimping jaw pivoted thereon and having a backwardly-extended shank, combined with the elbow-lever, the lever C³, and with means, substantially as described, to adjustably connect the said levers, as and for the purposes set forth.

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

MATTHIAS BROCK.

Witnesses:

G. W. GREGORY,
W. H. SIGSTON.