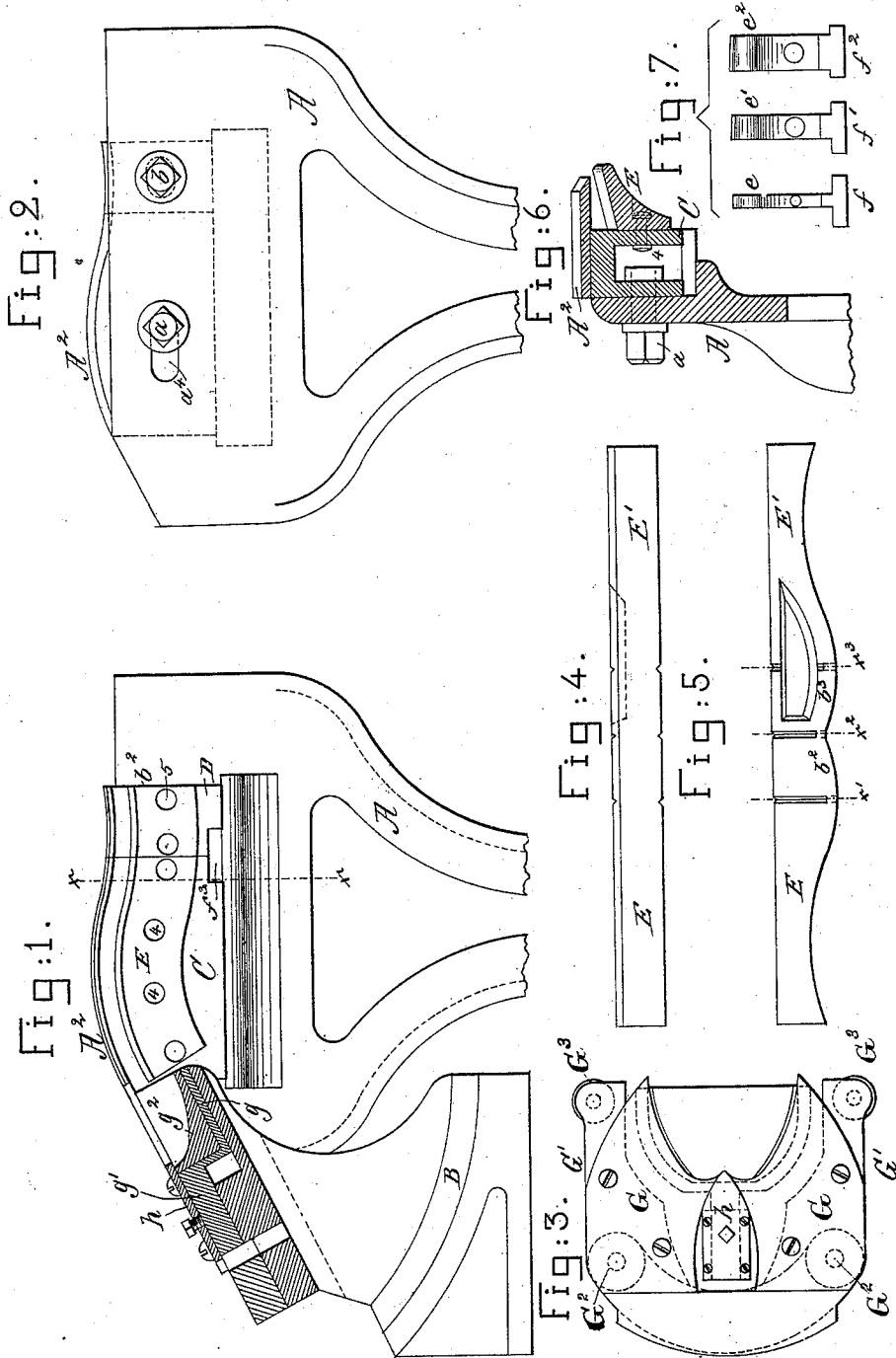


(No Model.)

M. BROCK.  
LASTING MACHINE.

No. 309,519.

Patented Dec. 23, 1884.



Witnesses.  
*Arthur Lipperton.*  
*Jos. P. Livermore*

Inventor.  
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*by Crosby & Gregory Attys.*

# UNITED STATES PATENT OFFICE.

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## LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 309,519, dated December 23, 1884.

Application filed September 5, 1884. (No mod. l.)

*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 for Boots and Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In that class of lasting-machines known to the trade as the "American," and substantially such as represented in United States Patents No. 44,916 and No. 251,205, granted to William E. Fischer, the side levers are provided at their upper ends with plates, which are curved to conform to the curve of the bottom of the last, and below these plates the levers are provided with cheek-pieces composed of strips of india-rubber, which come in contact with the upper at the sides of and near the bottom of the last, the purpose of the india-rubber cheeks being, by their pressure and friction on the upper, to keep the latter close to the last while the plates act upon and lay the edges of the upper over upon the inner sole upon the bottom of the last. It is well understood that the lines of the sides of a last next its bottom are both convex and concave, that the lines at the opposite sides of each last are unlike, and that the lines of lasts of different sizes vary in their convexity and concavity in accordance with the length of the last. The cheek-pieces referred to have been made of uniform width, and to enable their edges to bear properly upon the upper on the last the said levers have been provided with blocks curved in accordance with the last to be used, and different-shaped blocks have been required for each sized shoe, thus necessitating a change in the blocks when shoes of different shapes or sizes were to be lasted.

To obviate the use of the great number of blocks required and the great waste of time in changing them, I have made the rubber cheeks of varying shape or thickness in cross-section, to thereby enable their working faces or edges to conform to the contour of the side of the last. Giving to the rubber its ultimate shape by molding or casting, instead of, as heretofore, by bending it to conform in shape with a

metal block, as stated, results in better work and the rubber cheek is made more durable.

In this my invention I have made the toe-rest, which receives the toe of the last, adjustable in the toe-rest carriage, the latter in practice being adjustable on the frame of the lasting-machine, all as usual.

My invention consists, essentially, in rubber cheek-pieces for lasting-machines, the said cheek-pieces being both concaved and convexed at the acting-edge to conform in shape substantially with the shape of the side of the last, and, also, in the combination of such a cheek-piece with a jaw and lever in a lasting-machine.

Other features of my invention will be hereinafter fully described, and specifically mentioned in the claims at the end of this specification.

Figure 1 is an inner side view of one of the side levers, such as commonly used in lasting-machines of the class referred to, together with the toe-rest carriage, toe-rest, and toe jaws or plates, the top of the carriage and toe-rest being in section. Fig. 2 is an outside elevation of the like opposed side lever with cheek-piece attached. Fig. 3 is a top or plan view of the toe-rest carriage. Fig. 4 is an inner side view of one of the cheek-pieces. Fig. 5 is a plan or top view thereof. Fig. 6 is a section of Fig. 1 in the dotted line *x x*; and Fig. 7 represents in elevation and plan three different-sized filling-pieces or supplemental sections employed to lengthen the cheek-pieces for lasts of different lengths.

The side levers, *A*, the attached plate *A'*, and toe-rest *B* are substantially the same as in the patents referred to, and in practice may be supported and actuated in like manner. The side lever, *A*, at its inner side has attached to it, by screws *a b*, the blocks *C D*, which for lightness are made hollow, and are of substantially equal thickness from end to end, instead of, as heretofore, of unequal thickness. The india-rubber cheek-pieces (shown separately in Figs. 4 and 5) are made in pairs, the cheek-piece for one jaw being marked *E*, while that for the other or opposite jaw is marked *E'*, the cheek-pieces being divisible in the line *x*, Fig. 5. The part *E* of the cheek-

piece will be attached to the block C, which is fastened to that one of the side levers, A, which will in operation be at the inner side of the last; but the cheek-piece E' will be secured to a like block secured to the side lever next the outer side of the last. It will be noticed that the acting-edges of these cheek-pieces are both convex and concave, the convex portions being adapted to come in contact with the upper at the shank of the last, while the concave portions come against the upper about the fore part of the last. These cheek-pieces, shaped at their working-edges to conform in curvature substantially with the side curvature of the last, are made straight at their backs and are attached by suitable rivets, 4, to the blocks C. The cheek-piece E, that acts upon the upper at the outer side of the last, is provided with a recess at its wide portion, which is to come against the upper near the shank of the last, so that the said cheek-piece at such point is free to yield to conform to the contour of the outside of the shoe at or near the shank, such curvature varying very much in different lasts. The cheek-pieces E E' are subdivided in the lines  $x^3 x^3$ , forming short sections  $b^2 b^2$ , which are attached by rivets 5 to the blocks D, secured, respectively, to the jaws next the inner and outer sides of the last, as stated. The blocks D, with the short sections  $b^2 b^2$  attached to them, may in practice remain stationary; but the blocks C, to which the portions E E' are secured, will be made adjustable on the side levers by the screw  $a$  and slot  $a^1$  in the said lever. (See Fig. 2.) To enable the same jaws and blocks to be employed for lasting boots and shoes of different sizes or lengths, I have cut up portions of an india-rubber cheek-piece to form filling-pieces or supplemental sections  $e e' e^2$ , differing from each other only in width, each attached to a short section of block  $f f' f^2$ , shaped to be fitted into the recess  $f^3$ , left between the blocks D and C. (See Fig. 1.) Either of the said supplemental sections may be inserted between the blocks D and C after loosening the screw  $a$  and removing the block C away from the block D, the particular section taken depending upon the length of the last. The acting-edges of these filling-pieces are preferably substantially straight, or so as to substantially coincide with the curve of the acting-face of the cheek portions at the right and left. The cheek-pieces are preferably cast in pairs, as shown, in a mold, and when severed, as described, and employed with the filling-pieces, the same cheek-pieces may be used for several sizes of boots and shoes. The heel-pin and heel-jaw (not shown) occupy the same position for lasts of different length, but, as described, the cheek-pieces are filled in, and thereby extended or elongated as may be required. The longer the last the farther its toe from the heel-pin and the more it is extended into the toe-rest carriage, and to en-

able the toe of the upper on the last to be properly held as lasts of greater length are employed, I have placed the usual gutta-percha seat,  $g^2$ , in the toe-rest  $g$ , provided with a sleeve or shank,  $g'$ , which is made adjustable in a chamber in the toe-rest carriage, a set-screw,  $h$ , holding the said toe-rest in adjusted position. The toe-lasting plates G are attached by suitable screws to the levers G', having their fulcra at G<sup>2</sup>, as shown in dotted lines, each lever having attached to its outer end a roll, G<sup>3</sup>, which is acted upon by the inner face of one of the side levers when the latter are closed together, the said toe-plate levers being all as usual.

Having described my invention, what I claim is—

1. India-rubber molded cheek-pieces having their acting-faces curved, as described, to conform substantially to the shape of the side of the last and upper thereon, against which the said cheek-pieces are adapted to operate, substantially as set forth.
2. The side levers and cheek-piece-carrying blocks, combined with molded india-rubber cheek-pieces having their acting-faces both concave and convex to conform to the shape of the last.
3. The side levers, plates A<sup>2</sup>, and block D, combined with the adjustable block C, and molded cheek-pieces having concave and convex acting-faces, and secured to the said blocks, substantially as described.
4. In a lasting-machine, the side lever, block D, provided with the attached cheek portion  $b^2$ , and the adjustable block C, provided with the cheek-piece E, combined with a filling piece or section adapted to be placed between the said blocks, as and for the purpose set forth.
5. The toe-rest carriage, combined with the longitudinally-adjustable toe-rest provided with the seat  $g^2$  for the toe of the upper, all being and operating substantially as described.
6. The side levers, blocks, and attached molded india-rubber cheek-pieces having their acting-faces both concave and convex at portions of their length, and made adjustable on the said levers, combined with the toe-rest carriage, and the longitudinally-adjustable toe-rest therein, to operate all substantially as described.
7. The molded india-rubber cheek-piece having a convex-shaped acting-edge, and provided with a recess to enable the said cheek-piece to yield to conform to the different degrees of fullness at the outside edge of the last, substantially as described.

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

MATTHIAS BROCK.

Witnesses:

G. W. GREGORY,  
B. J. NOYES.