

No. 216,765.

Patented June 24, 1879.

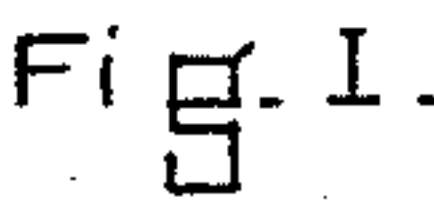


Fig. 4

Fig. 3.

Fig-2-

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UNITED STATES PATENT OFFICE.

JULIUS S. SHAILER, OF BOSTON, MASSACHUSETTS, AND MARTIN R. ETHRIDGE, OF WOODSTOCK, MAINE, ASSIGNORS TO THE COPELAND LASTING MACHINE COMPANY.

IMPROVEMENT IN LASTING-MACHINES.

Specification forming part of Letters Patent No. **216,765**, dated June 24, 1879; application filed April 30, 1879.

To all whom it may concern:

Be it known that we, JULIUS S. SHAILER, of Boston, in the county of Suffolk, in the State of Massachusetts, and MARTIN R. ETHRIDGE, of Woodstock, in the county of Oxford, in the State of Maine, have invented an Improvement in Lasting-Machines, of which the following is a specification.

This invention is an improvement on the machine described in the Patent No. 37,907, granted M. R. Ethridge, one of the applicants, March 17, 1863; and consists in the attachment to the jaws of the machine beneath the folding edges of an elastic girth adapted to exercise its function on that part of the upper between the instep and toe, as hereinafter more fully described; also, in elastic clamping-cushions, extending from the girth on either inner face of the side jaws toward the heel; also, in an elastic cushion at the toe and heel, not attached to the jaws, but supported by curved yielding metallic arms, and adapted to act first as stretching and smoothing pads in fitting the upper at the toe and heel to the last, and then as clamping-pads in holding the upper thus adjusted firmly against the last prior to and during the action of the toe and heel lasting plates; and also in means for presenting the last vertically to said girth, shank-cushions, and heel and toe pads.

In the drawings, Figure 1 is a plan of an Ethridge machine with our girth attached. Fig. 2 is a longitudinal section thereof. Fig. 3 is a cross-section of the same, which also shows an end elevation of the means employed in forcing the last vertically in relation to the girth and clamping-cushions. Fig. 4 is a side elevation of the same.

The miter-edged crimping-jaws A A' are operated by yokes, cams, and springs in the manner described in the above-named patent. The heel-support and toe-piece are each adjusted vertically by thumb-screws, as therein set forth, and each of the side crimping-jaws, in addition to our improvement, is provided with an elastic cushion, B, upon its inner face, extending from the girth toward the heel, and including the shank portions of the jaws.

They are so arranged thereon as to exert an upward stress upon the upper in adjusting it to the last as the jaws are closed horizontally.

The girth C is extended from side jaw to side jaw, and fastened on the inner face of each under the folding projection *a*, and it operates in fitting the upper to the last in that section between instep and toe, as hereinafter set forth. It should be somewhat shorter when unstretched than the distance between the jaws when wide open, as we find it is preferable that it should be under some strain before the last is forced into it.

Arranged at the toe and heel ends of the machine are the curved elastic cushions D, which form, respectively, the toe and heel ends of the machine. These pads or cushions are preferably made of rubber or some yielding flexible material, each having a contour upon its inner face which conforms to that portion of the surface of the last upon which it operates. They are each supported by the curved metal piece *d*, fastened to the end of spring *d*¹, or otherwise suitably held. They each have longitudinal adjustment for varying lengths of lasts by means of the screws *d*², slot *d*³, and carriage *d*⁴, and they are designed to act as stretching and smoothing pads in fitting the upper at the toe and heel to the last. They also serve additionally as abutments in adjusting the position of the last in relation to the girth and the other side-lasting mechanism.

For forcing the last into the girth we employ a plate, E, adapted to bear upon the sole of the last, and having a vertical movement in relation to the girth and other side-lasting mechanism by means of the rod *e*¹, pivoted to the lever *e*² at *e*³, or by any other desirable means.

In operation the jaws are opened sufficiently wide to permit the vertical movement of the last to the side-lasting devices by the vertical movement of the presser E; and by this vertical movement of the last the upper, between the instep and toe, is adjusted to its under surface, and the toe and heel portions smoothed and stretched thereon. By the closing of the jaws a continued movement of the girth along the sides is produced, and the clamping and

lifting action of the shank-cushions against the sides and the simultaneous advance of the folding projections *a* upon the insole effected.

This application is made under Office Rule 61 for the purpose of removing from our application of May 31, 1878, now in interference with the application of Charles W. Glidden, such subject-matter as does not conflict with the said Glidden application, and for presenting it independent of our said application.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a lasting-machine, the combination of the horizontally opening and closing jaws A, girth C, and clamping-cushions B, all arranged to operate substantially as described.

2. In a lasting-machine, the combination of the jaws A, provided with the folding projection *a*, with the girth C, all substantially as described.

3. In a lasting-machine, the combination of the horizontally opening and closing jaws A, provided with the folding projection *a*, girth C, attached to said jaws, as described, and clamping-cushions B, with means for moving a last vertically in relation to said girth, all arranged to operate substantially as set forth.

4. In a lasting-machine, the combination of the horizontally opening and closing jaws A, provided with the folding projection *a*, girth C, attached to the side closing jaws, as described, shank-clamping cushions B, and heel and toe smoothing pads D, with means for moving a last vertically in relation to said girth and pads, all arranged to operate substantially as set forth.

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MARTIN R. ETHRIDGE.

Witnesses:

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