(No Model.)

E. F. GRANDY.

LASTING MACHINE.

No. 588,569. Patented Aug. 24, 1897.

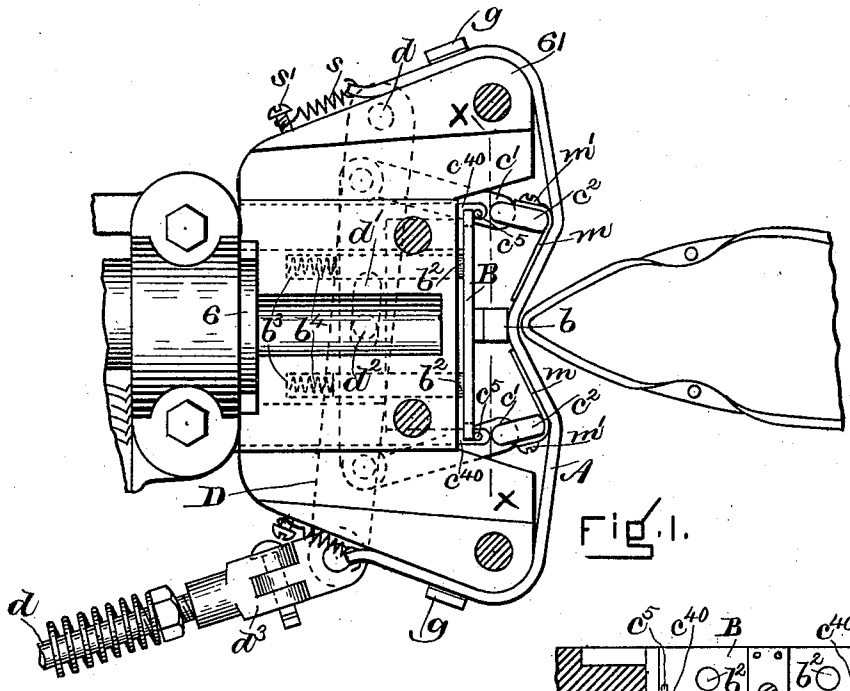


Fig. 1.

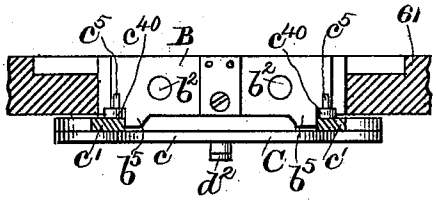


Fig. 3.

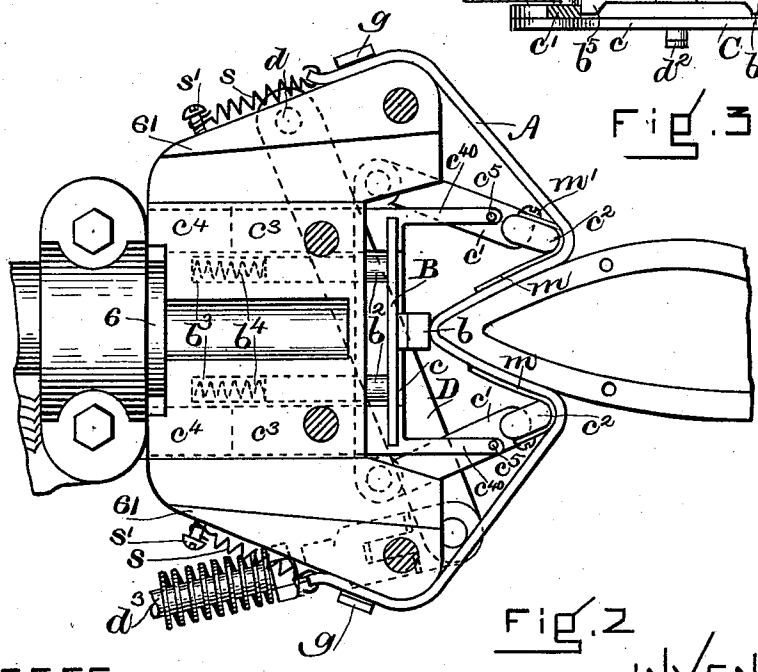


Fig. 2.

WITNESSES

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EDWARD FRANKLIN GRANDY, OF EVERETT, MASSACHUSETTS.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 588,569, dated August 24, 1897.

Application filed July 29, 1896. Serial No. 600,891. (No model.)

To all whom it may concern:

Be it known that I, EDWARD FRANKLIN GRANDY, a citizen of the United States, residing at Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Lasting-Machines; 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.

The present invention relates generally to machines of the above class, and more particularly to such types of lasting-machines as embody in their structure a last band or clamp which embraces the toe or heel of the last, and by means of which the upper is held in position on the last during the lasting operation.

The object of the present invention is to secure a more perfect conformity of the band or clamp at the toe and heel, and, further, to prevent any liability of the upper becoming creased or wrinkled under the band or clamp by subjecting it to a smoothing or rubbing action as the band or clamp closes upon it.

To the above end the present invention consists of improvements in the form and arrangement of the band or clamp and its actuating and controlling mechanism, hereinafter described in this specification and pointed out in the claims.

The present invention is illustrated in the accompanying drawings, in which similar letters and figures of reference designate similar parts in the several views, and in which—

Figure 1 shows a portion of the toe-lasting head, the upper plate and lasting plates or wipers being removed to more clearly show the mechanism for actuating the last band or clamp, the parts being in their retracted position. Fig. 2 is a similar view showing the last band or clamp and the actuating mechanism therefor in the position which they occupy when the band or clamp is in close contact with the shoe-upper. Fig. 3 is a section taken upon line $x\,x$ in Fig. 1, showing the means for retracting the yielding follower or support for the central portion of the last band or clamp.

The present invention is illustrated as applied to the lasting devices which are disclosed in Letters Patent of the United States issued to me January 7, 1896, No. 552,834; but I do not desire to limit the present invention to such application, as it is evident that with slight modifications involving no departure therefrom it may be applied to other lasting-machines of a similar type; and, further, while I have illustrated my present invention in connection with toe-lasting devices, I desire to say that it may be used in connection with heel-lasting devices and that such use would be clearly within the scope thereof.

In the drawings, 6 represents a sleeve, and 61 a plate projected from the forward end thereof, upon which is carried the toe-lasting plates or wipers, (not shown,) all of which may be and conveniently are the same as similar parts in the machine of the patent above referred to.

A represents the last band or clamp, which may be of leather or any other suitable flexible material, and which is supported and operated by the following mechanism:

The band A is connected at its ends by means of suitable extensible connections, such as springs s, to the plate 61 or some other fixed portion of the toe-lasting head, each of the springs s in the machine of the drawings being secured at one end to the band or clamp A and at the other end to a suitable stud or screw s', fixed in the sides of plate 61, the construction being such that the band or clamp in its retracted position will be drawn around the rounded corners of plate 61 and held open in position to receive the end of the last.

The band or clamp A at its central portion is supported, preferably, by a spring-actuated follower or support B, to which it may be secured at b.

The follower B comprises a plate which extends nearly across the opening formed in the front of plate 61 and which upon the rear side is provided with suitable guiding and supporting rods b^2, which are fitted to be reciprocated in suitable bearings b^3, formed in the plate 61, springs b^4 in the bearings b^3 acting upon the ends of guide-rods b^2 to force them forward and thus to give a forward yielding movement to the follower B.

For the purpose of actuating the band or

clamp to cause it to embrace and clamp the upper on the end of the last I have provided the following mechanism.

C represents a frame or carrier comprising the cross-bar c, to the ends of which are pivoted the arms c', which at their free ends are provided with the preferably-rounded blocks or abutments c^2, which bear upon the back of the band or clamp A intermediate of its points of support and which are movable along said band or clamp for the purposes hereinafter set forth. The frame or carrier C is adapted to be reciprocated toward and from the last and is provided with suitable guides, such as the arms or bars c^3, (shown in dotted lines, Figs. 1 and 2,) which are fitted to and guided in suitable bearings c^4 in the plate 61. The frame or carrier C may be reciprocated by any suitable means, such as the lever D, pivoted at d to the plate 61, and which is provided with a slot d' at its center, in which works a stud d^2, mounted on the bar c of frame or carrier C, the lever D at its other end being connected by a universal coupling d^3 with a rod d^4, which in turn is connected with the lever (not shown) which actuates the lasting plates or wipers.

For the purpose of retracting the follower B against the tension of springs b^4 at the same time that frame C is retracted frame C is provided with the forwardly-extending arms c^{40}, which at their ends are provided with suitable stops or projections c^5, which upon a retraction of the frame or carrier C will engage the follower B and bring the same into its retracted position. (See Fig. 1.) Suitable shoulders b^5 are formed upon the lower edge of the follower B, against which arms c' bear and slide upon the backward movement of the frame or carrier C, which cause said arms c' to swing outwardly and assume the position shown in Fig. 1 when the frame or carrier C is retracted.

For the purpose of keeping the band A in place on the plate 61 I provide the guide-clips g, through which the band or clamp A is movable when drawn along the plate 61, as hereinafter described.

The blocks or abutments c^2 may be conveniently provided with the flat springs m, which are secured thereto by means such as the screws m' and which extend along the rear face of the band or clamp A, substantially as shown, bearing upon the band or clamp A with a yielding or elastic pressure, thereby causing the band or clamp A to conform more accurately to the curvatures of the last and facilitating the rubbing or smoothing operation hereinafter described.

In connection with the above-described feature I desire to say that I do not consider the same an essential feature of the present invention, as in practice I have been able to secure good results without the use of the same.

The operation of my invention is as follows: The upper having been drawn onto the last and the last jacked in the usual manner the lasting devices are moved forward by a lever, (not shown,) as in the patented machine hereinbefore referred to, and through the connecting-rod d^4 and lever D the frame or carrier C is moved toward the last, the springs b^4 at the same time acting to move forward the follower B, thus bringing the central portion of band or clamp A in contact with the upper at the extreme toe portion of the last. The forward movement of follower B having been arrested by the last the continued forward movement of frame C will advance the blocks or abutments c^2, which by means of the springs m brings that portion of the band or clamp A which is in front of the inner ends of the springs m in contact with the upper on opposite sides of the toe and adjacent to the end of the toe with a yielding and elastic pressure, and the continued forward movement of the frame C will cause the springs m to advance along the band or clamp A, bringing the band or clamp A into close conformity with the curvature of the last and smoothing the upper as the band or clamp closes upon it, so that any creases or wrinkles are removed from the upper before it is confined in a fixed position by the band or clamp. The springs s, while the blocks or abutments c^2 are being advanced, as above described, yield to allow the band or clamp A to be drawn through the guides g and brought into position around the last. The blocks or abutments c^2 being mounted on the pivoted arms c', as hereinbefore described, are forced inward by the band or clamp A toward the sides of the last during the forward motion of the frame C, causing the springs m to hold the band firmly against the upper.

In constructions in which the springs m are omitted the blocks or abutments c^2 bear directly upon the band or clamp A, and with the exception of the yielding or elastic feature the operation of the device is the same.

When the frame C is retracted, the blocks or abutments c^2 are drawn back, the follower B is retracted, and the band or clamp A, acted upon by springs s, is brought into the position substantially as shown in Fig. 1.

Having thus described my invention and its mode of operation, I claim as novel and desire to secure by Letters Patent of the United States—

1. In a lasting-machine a last band or clamp supported at or near its center, in combination with movable abutments arranged to bear upon and slide along the band or clamp upon opposite sides of its point of support, substantially as described.

2. In a lasting-machine the combination with a flexible last band or clamp supported at or near its center and opposite ends, and movable abutments arranged to bear on the band or clamp between its points of support, substantially as described.

3. In a lasting-machine the combination

with a last band or clamp of extensible supports for the ends thereof, and movable abutments arranged to bear upon the band or clamp between its points of support, substantially as described.

4. In a lasting-machine, the combination with a head carrying lasting devices, of a last band or clamp, and spring connected directly to the ends of the band or clamp and to said head, substantially as described.

5. In a lasting-machine the combination with a last band or clamp, of elastic pressing devices arranged to bear against and move along the band or clamp, substantially as described.

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

EDWARD FRANKLIN GRANDY.

Witnesses:
T. HART ANDERSON,
A. G. CLIFFORD.