(No Model.) 3 Sheets—Sheet 1.

E. F. GRANDY.

LASTING MACHINE.

No. 595,809. Patented Dec. 21, 1897.

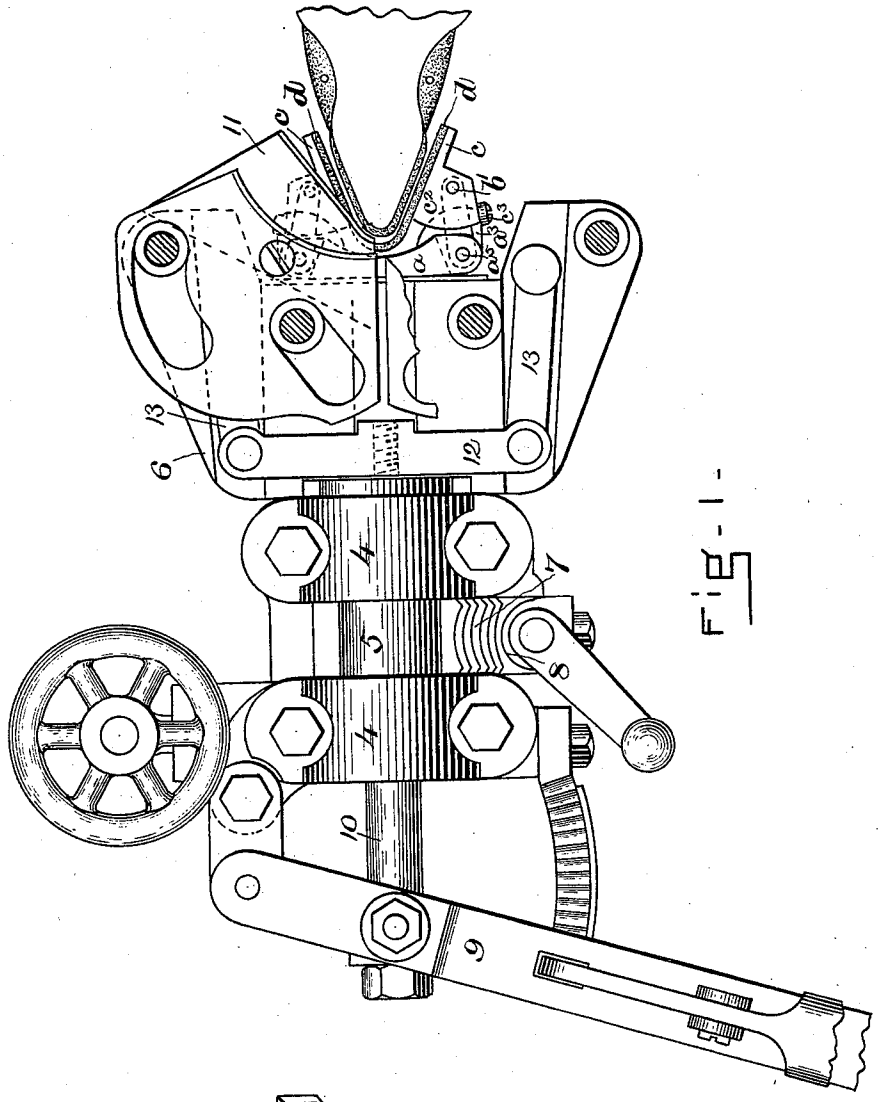


Fig. 1.

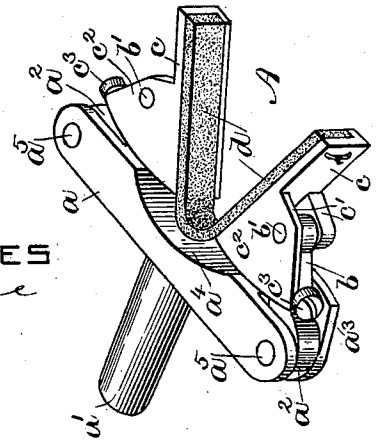


Fig. 4.

WITNESSES

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(No Model.) 3 Sheets—Sheet 2.

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LASTING MACHINE.

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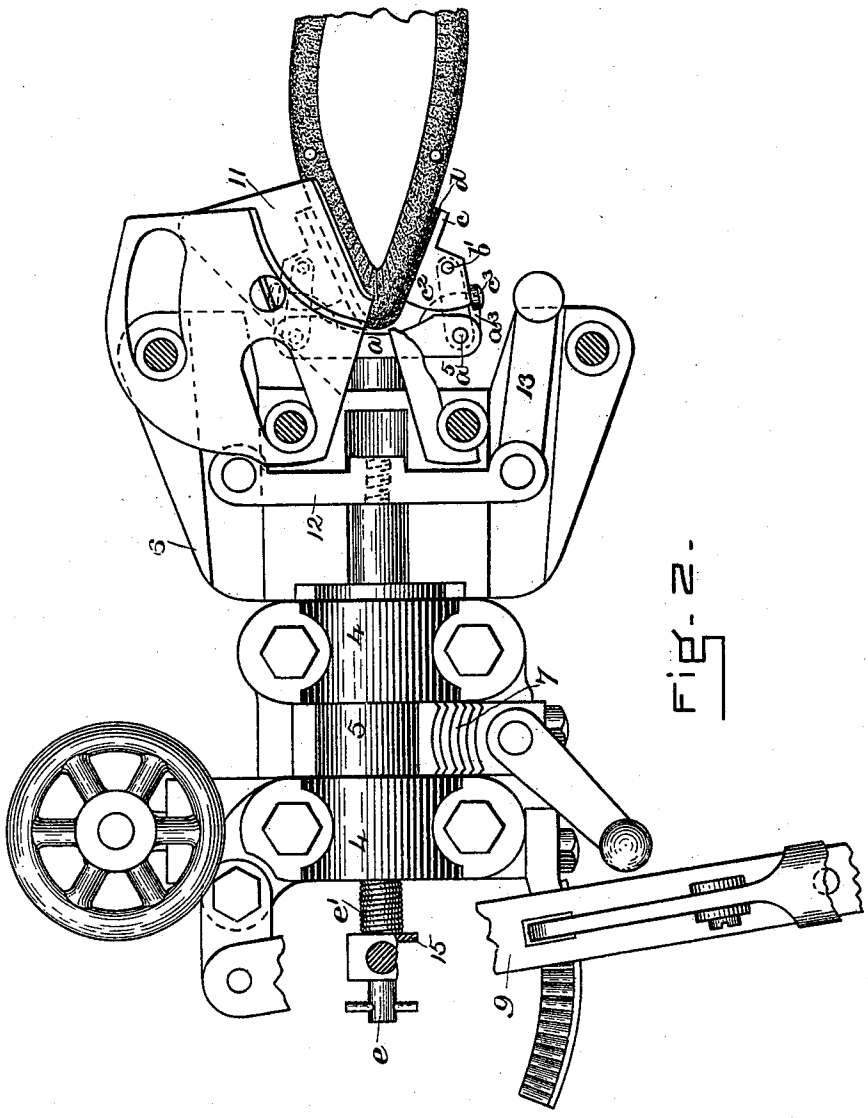


Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

E. F. GRANDY.

LASTING MACHINE.

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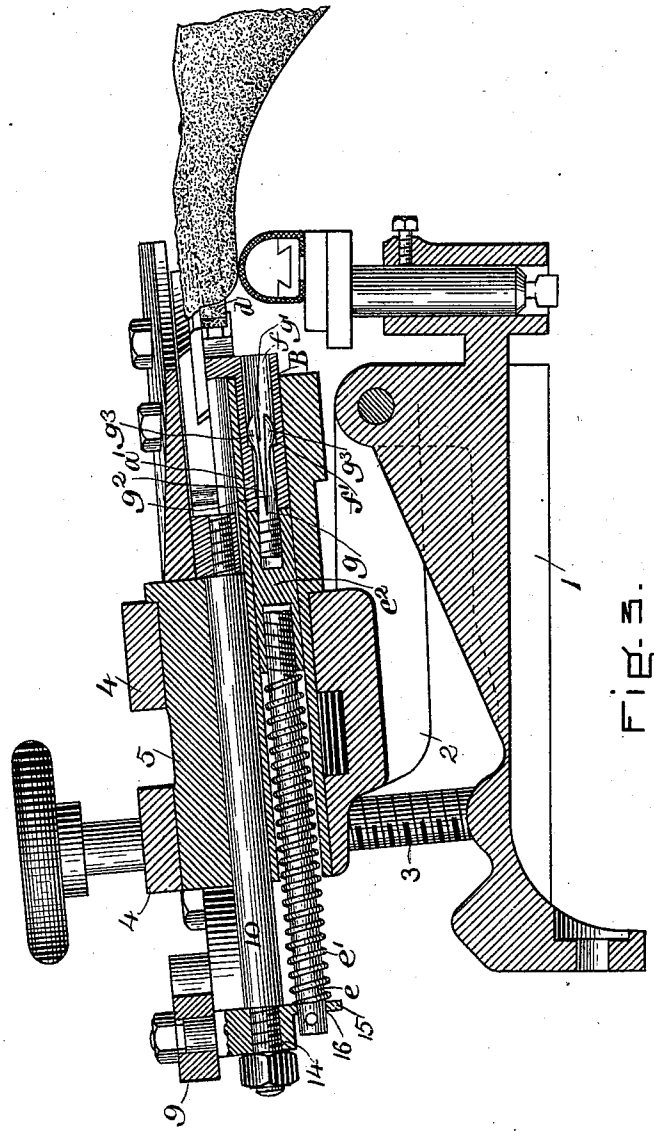


Fig. 3.

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UNITED STATES PATENT OFFICE.

EDWARD F. GRANDY, OF BOSTON, MASSACHUSETTS.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 595,809, dated December 21, 1897.

Application filed December 21, 1896. Serial No. 616,384. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. GRANDY, a citizen of the United States, residing at Boston, (Dorchester,) in the county of Suffolk 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 to lasting-machines, and more particularly to an improved last band or clamp for a lasting-machine.

The object of the present invention is to produce a last band or clamp which will effectively bind and clamp the upper against the last and correctly position and hold the last and upper during the lasting operation and which can be adjusted to different sizes and shapes of lasts.

To the above end the invention consists of the devices and combination of devices which will be hereinafter described and claimed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 shows in plan view a portion of the toe-lasting head of a lasting-machine with the improved last band or clamp applied thereto, showing the parts in their retracted position, portions of the lasting devices being removed for clearness. Fig. 2 is a similar view showing the parts in their projected or forward position. Fig. 3 is a central longitudinal vertical section showing details of construction, and Fig. 4 is a perspective view of the last band or clamp removed from the machine.

Similar letters and figures of reference refer to similar parts throughout the several views.

In the drawings the invention is shown in connection with toe-lasting devices and in position to clamp and hold the upper at the toe of the last; but it is obvious that it is equally adapted for use as a heel-clamp to clamp and position the upper at the heel portion of a last.

The sliding carriage 1, pivoted table 2, adjusting-screw 3, bearings 4, sleeve 5, head 6, worm-gear 7, worm 8, lever 9, rod 10, lasting-plates 11, and the bar and links 12 and 13, except as hereinafter specified, may be and conveniently are the same as those disclosed in Letters Patent of the United States issued to me January 7, 1896, No. 552,834.

A represents the last band or clamp, which comprises a carrier-head a, from the rear face of which, and at its lower edge, projects a cylindrical shank or stem a', by means of which the carrier-head is fitted to the machine and connected to its actuating mechanism. The carrier-head a is cut out or slotted at each end, as shown at a^2, and is preferably provided with the forwardly-projecting rests or bearings a^3, which insure a free and easy action of the last band or clamp proper and help to support the same against any downward strain. The carrier-head a is also cut away upon its front face, as at a^4, for a purpose to be hereinafter described.

Secured within the slots a^2 by the pivot-pins a^5 are the arms b, which are free to swing laterally, and to the outer end of each arm b is pivoted a pressing-block c by a pin b', which passes through ears c' on the rear face of said block. The pressing-blocks are pivoted centrally to the ends of arms b, and to their inner faces is secured the pad d, which may conveniently be formed of rubber or leather and is preferably continuous, as shown, extending along the face of each pressing-block and spanning the space between their inner ends and free to move laterally along the cut-away portion a^4 of the carrier-head a'.

The upper ears c' of the pressing-blocks c are extended, as shown at c^2, forming stop-shoulders, which contact with suitable stops, such as the screws c^3, carried by the arms b, whereby the pressing-blocks c and the pad d are sustained in proper position when acting upon the upper and last. The stops c^3 are preferably adjustable in order to adjust the inclination of the pressing-block c, in order to enable them to bring the pad d in proper position on the sides of the toe.

The last band or clamp A may be mounted in the machine in any usual or convenient manner, but for the purpose of simultaneously actuating the clamp or band and the lasting devices it is arranged to be actuated by the lever which actuates the lasting-plates, as will now be described.

In the sleeve 5 is formed a bearing B, within

which the cylindrical stem a' of the carrier-head a is adapted to fit and be reciprocated, it being connected to a rod e, by which it is reciprocated. The rod e is actuated by the lever 9, which actuates the lasting-plates 11, and is connected to said lever 9 in such manner that the lever may continue to move forward to actuate the lasting-plates after the last band or clamp has been brought into contact with the upper at the end of the last, the further forward movement of the lever acting to increase the force of contact of the band or clamp against the shoe.

To secure the above-suggested results in the machine of the drawings, the swivel-block 14, carried by lever 9, which is connected to the rod 10 to actuate the lasting-plates 11, has a depending lug 15, provided with a bearing 16, through which the rod e is adapted to freely slide and against which a coiled spring e', surrounding said rod, bears, the other end of said spring bearing upon the end of a plunger e^2, which has a threaded connection with the rod e. The stem a' of the carrier-head a is connected to the plunger e^2, and, as shown, it is so arranged that it may have a swiveling action thereon in order that the last band or clamp may have a laterally-tipping movement to adjust itself to the end of the last as the lateral inclination of the lasting-plates is changed and also in order that the last band or clamp may be removed and replaced by another when desired.

To secure the above result, the stem a' is bored out, as shown at f, the chamber thus formed being of different diameters, forming an interior shoulder f'.

Within a threaded bearing in the plunger e^2 is fitted a pin g, which is split at g', forming the spring members g^2, the end of each being slightly rounded or headed, as shown at g^3, and upon which the stem a' is adapted to be forced, causing the headed ends g^3 to engage the shoulder f' to connect the stem a' to the plunger e^2, the arrangement being such that the carrier and band may be moved with the plunger and rod and yet have an independent swiveling movement thereon and readily be removed therefrom and replaced when desired.

The operation of my invention is as follows: The upper having been drawn onto the last and placed in position with the toe resting upon the usual toe-rest, the operator takes hold of lever 9 and moves it forward from the position shown in Fig. 1 to the position shown in Fig. 2, thus, through the rod 10, moving forward the lasting-plates 11 and, through its connection with rod e, causing the last band or clamp to move forward to bind or clamp the upper against the toe of the last, and, because of the lost motion caused by the lasting-plates moving in an inclined direction, controlled by the inclined slots and pins, as is usual in these devices, while the last band or clamp travels straight forward, the band or clamp is caused to travel toward the upper and last faster than the lasting-plates and will come into contact with the upper in advance of the lasting-plates. The continued forward movement of the lever 9 to complete the turning over of the upper around the toe will cause the last band or clamp to firmly press and hold the upper against the last, the swiveling block 14 moving along the rod e and compressing the spring e', to thus provide for a complete forward movement of the lasting-plates 11 after the last band or clamp A has been brought to a stop by contact with the toe of the last.

It will be noted that the pivoted connection of the arms b and the pressing-blocks c enables the pad d to readily conform to the toe of the last.

I claim—

1. In a lasting-machine, the combination with a carrier-head, of laterally-movable arms mounted thereon at each end, pressing-blocks pivotally mounted upon the laterally-movable arms, and a pad secured along the inner faces of the pressing-blocks, substantially as described.

2. In a lasting-machine, the combination with a carrier-head, of laterally-movable arms mounted thereon at each end, pressing-blocks mounted on said arms to move therewith and to have an independent movement on said arms, and a pad secured along the inner faces of said blocks, substantially as described.

3. In a lasting-machine, the combination with a carrier-head, of laterally-movable arms mounted thereon, at each end, pressing-blocks carried by said arms, and a continuous pad secured along the inner faces of said blocks, substantially as described.

4. In a lasting-machine the combination with the pivoted pressing-blocks and the pad secured thereto, of stops to limit the movement of said blocks, substantially as described.

5. In a lasting-machine, the combination with the pivoted pressing-blocks and the pad secured thereto, of adjustable stops to limit the movement of said blocks, substantially as described.

6. In a lasting-machine, the combination with the laterally-movable arms, of the pivoted pressure-blocks and pad mounted thereon and suitable-placed stops carried by the arms to limit the movement of the pressure-blocks, substantially as described.

7. In a lasting-machine, the combination with the carrier-head of the pad-carrying arms movably connected thereto, and extended rests or bearings on said head over which the arms are movable, substantially as described.

8. In a lasting-machine, the combination with a last band or clamp, its carrier and actuating mechanism therefor, of a positively-interlocking coupling device for removably connecting the last band or clamp and its carrier to the actuating mechanism, substantially as described.

9. In a lasting-machine, the combination

with the carrier-head having a supporting-stem, of an actuating-rod for said carrier-head and a spring-controlled coupling connecting said rod and stem, substantially as described.

10. In a lasting-machine, the combination with the lasting-plates or wipers, and a last band or clamp, of reciprocating rods to actuate the lasting-plates or wipers and the last band or clamp, and connected mechanism to impart a positive reciprocation to one rod and a yielding reciprocation to the other rod, substantially as described.

11. In a lasting-machine, the combination with the lasting-plates or wipers, of a last band or clamp and a reciprocating rod to actuate the same, of connected mechanism to actuate the lasting-plates or wipers and the reciprocating rod, arranged to impart a rapid movement to said rod relatively to the lasting-plates or wipers, substantially as described.

12. In a lasting-machine, the combination with the lasting-plates or wipers, of a last band or clamp and connected mechanism for actuating the lasting-plates or wipers and the last band or clamp, acting to impart a relatively rapid movement to the last band or clamp, substantially as described.

13. In a lasting-machine, the combination with the last, band or clamp and its actuating mechanism, of a detachable spring connection between the same, substantially as described.

14. In a lasting-machine, the combination with the last band or clamp comprising a carrier-head provided with a hollow cylindrical stem, of an actuating-rod therefor having a split pin engaging the stem, substantially as described.

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

EDWARD F. GRANDY.

Witnesses:

A. E. WHYTE,

T. HART ANDERSON.