W. H. EDDY.

BOOT-CRIMPER.

No. 169,971. Patented Nov. 16, 1875.

Fig. 1

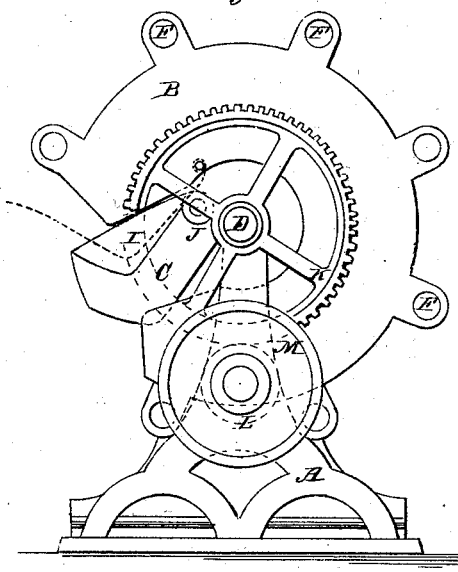


Fig. 2

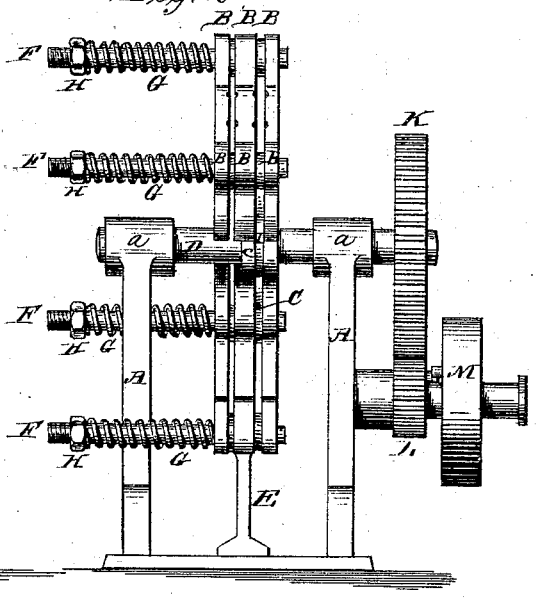


Fig. 3

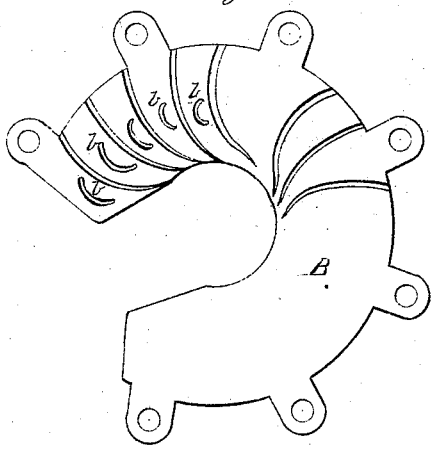
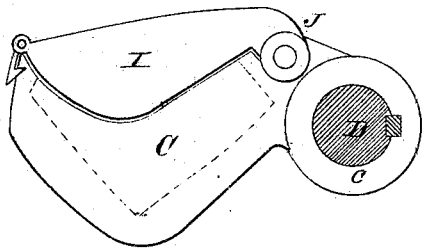


Fig. 4



Witnesses:

Chas. H. Burleigh

S. E. Barton

Inventor:

William H. Eddy

UNITED STATES PATENT OFFICE.

WILLIAM H. EDDY, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN BOOT-CRIMPERS.

Specification forming part of Letters Patent No. **169,971**, dated November 16, 1875; application filed January 30, 1875.

To all whom it may concern:

Be it known that I, WILLIAM H. EDDY, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Boot-Crimping Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings which form a part of this specification, and in which—

Figure 1 represents a side view of my improved boot-crimping machine. Fig. 2 represents a front view of the same. Fig. 3 represents a view of the inner side of one of the circular jaws, and Fig. 4 represents a side view of the former and clamping-piece.

The first part of my invention consists in the employment of a crimping follower or former, working on a central axis with a rotary movement, and capable of independent lateral movement, in combination with circular or annular shaped jaws, as hereinafter described.

The second part of my invention consists in the combination, with the former and jaws in a boot-crimping machine, of a clamping mechanism for holding the leather in position against said former, and preventing it from being carried to either side by the action of the jaws.

In the drawings, A denotes the supporting-frame. B B indicate the circular crimping-jaws; C, the former or follower, and D the operating-shaft. The shaft D is supported and turns in bearings *a a* on the frame A, preferably in a horizontal position, while the jaws B B, which I make in annular form, embracing about three quarters of a circle, more or less, with an opening at one side, are arranged around the shaft concentric therewith, and in planes perpendicular to its axis, as shown, said jaws B B being supported firmly in position by a suitable frame-work or standard, E. The jaws B are held to each other by bolts or rods F, provided with coiled-wire springs G for pressing the jaws together, and having nuts H for regulating the force of the springs. Washers are arranged on the rods F, between the faces of the jaws B, to prevent the springs from closing them completely against each other. The former C is attached to a hub, *c*, keyed to the shaft D by a suitable spline, so that the former C will stand out radially from said shaft in such position that the revolution of the shaft D will carry around the former C between the annular jaws B B. The hub *c* is allowed sufficient looseness to slide laterally on the shaft, whereby side strain on the former is prevented and the parts rendered self-adjusting, so that the former C will pass between the jaws B B with an equal pressure from each. The operating-shaft D is turned for carrying the former C between the jaws, by means of the gear K and pinion L, the latter being driven by a belt on the pulley M, and a suitable automatic clutch-device may be arranged with the pulley M and pinion L for starting and stopping the machine when the former C is at the opening of the jaws or in position for feeding and discharging.

I combine with the former C a clamping-piece, I, for retaining the work in proper relative position. This clamping-piece is made of about the same thickness as the former, preferably slightly thicker, and its edge is grooved and curved to match the front edge of the former C, so that when closed down against the latter the leather of the boot-front will be firmly held between the two edges along its central line, or at the position where it is folded to form the crimp, and as the shaft and former move forward the friction of the jaws B B upon the clamp-piece I forces the latter firmly down upon the leather, and thus obviates any liability of its being drawn to one side as it enters between the jaws. The clamp-piece I, being somewhat thicker than the edge of the former, also prevents tearing the leather at the part where it is folded, while its front edge serves as a leader for opening the jaws B. The clamp-piece may, if desired, be made with spring sides to insure friction against the faces of the jaws when the latter are distended by the thickness of the leather passing between them. In the present instance the clamp-piece I is connected to the former C by a pivot-joint, J, near the hub *c*, so that its outer end can swing upward to release or receive the leather or boot-fronts, which are fed into and discharged from the machine as the former passes the opening or space between

the ends of the jaws. If preferred, the clamp mechanism can be arranged for opening and closing in other manner, and mechanism may be combined therewith for accomplishing the operation automatically, if desired. The inner faces of the jaws B are provided near their front ends with a series of curved or crescent shaped grooves, *b b b*, the edges of which serve to stretch the leather and to work down and outward the corners of the boot-fronts to the proper and desired form. The jaws B being made in annular shape, and the former C being operated with a rotary movement around a central axis concentric therewith, gives a greater amount of movement and friction near the periphery than near the center, consequently the leather of the foot part of the boot, which is outward, is subjected to a greater amount of stretch, thereby drawing back the rear corners and imparting the desired form and crimp in a very perfect and satisfactory manner, while the rear ends of the jaws, being made with smooth faces, press down the surface of the leather and leave it in a neat and finished condition.

A second former may be attached to the shaft D to work between the jaws B B when desired, the formers being placed at opposite sides, so that the two will feed and discharge alternately, and can be tended by a single operator, or, if desired, a greater number of formers and jaws can be used, since the lateral movement of the formers C on the shaft D enables the whole series to conform automatically to the positions of their several jaws as the latter are pressed apart by the passage of the leather, or set together by the springs G, thus rendering the machine capable of very rapid execution.

The clamping device for holding the leather to the former or brake may be applied to crimping-machines of other construction than that herein shown with good result.

I intend to employ guiding mechanism in combination with the front of the jaws B B, where indicated by dotted lines *x*, to assist in accurately feeding the leather into the machine, the construction and arrangement of said guiding mechanism to form the subject-matter of future application for Letters Patent.

Having described my improved boot-crimping machine, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination, with the carrier or operating shaft D and annular jaws B B, of a former or formers, C, attached to the shaft and arranged to rotate between said jaws, and capable of independent lateral adjustment, substantially as and for the purpose set forth.

2. In a machine for crimping boots and shoes, the combination, with the jaws B, of a former, C, adjustably attached to a rotating shaft, working with a constant forward action, and a clamping device, I, operated against the edge of said former by the friction of the jaws against said clamp, substantially as and for the purpose set forth.

3. In a boot-crimping machine, annular or curved jaws B B, provided with crescent-shaped grooves *b b*, in combination with a former or brake, C, mounted upon and operated by a rotating shaft and a clamp or guard mechanism for holding and protecting the leather along the front edge of said former, substantially as herein set forth.

WILLIAM H. EDDY.

Witnesses:

CHAS. H. BURLEIGH,

S. E. BARTON.