A. J. F. HOWARD.

LEATHER CRIMPING MACHINE.

No. 190,143. Patented May 1, 1877.

Fig. 1.

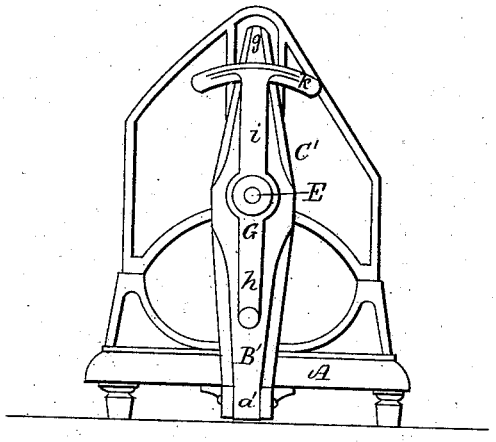


Fig. 2.

Enlarged.

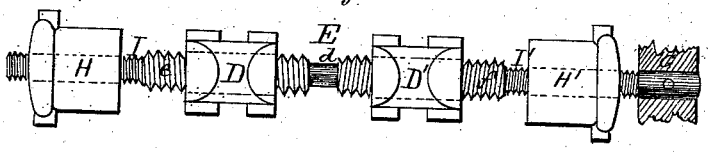


Fig. 3.

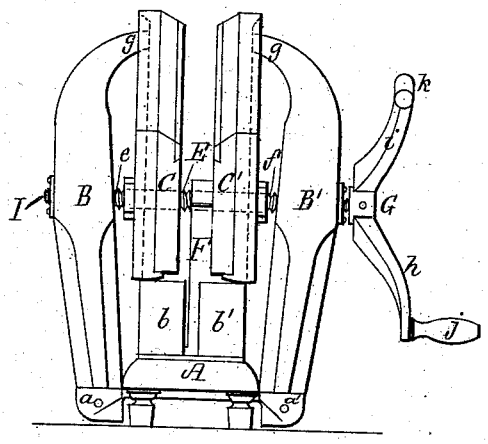
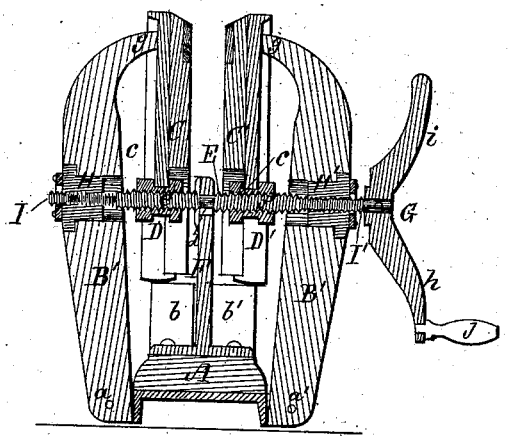


Fig. 4.



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Inventor:
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Howtes. Atty.

UNITED STATES PATENT OFFICE.

ALONZO J. F. HOWARD, OF MILFORD, MASSACHUSETTS, ASSIGNOR TO ELBRIDGE MANN, OF SAME PLACE.

IMPROVEMENT IN LEATHER-CRIMPING MACHINES.

Specification forming part of Letters Patent No. **190,143**, dated May 1, 1877; application filed March 19, 1877.

To all whom it may concern:

Be it known that I, ALONZO J. F. HOWARD, of Milford, Worcester county, Massachusetts, have invented certain Improvements in Boot-Crimping Machines, of which the following is a specification:

The machine comprising the subject of this invention may be said to be an improvement upon that for which Letters Patent of the United States were issued to J. Austin Eldridge on the 1st day of June, 1869, No. 90,828, for similar purposes, since, as in said patented machine, my present machine embraces two upright flat clamping or pressing plates or jaws, supported upon a suitable table or base, face to face, and caused to approach or recede with respect to each other by the use of a single right-and-left screw.

A marked difference between the two machines, however, will be seen in the arrangement of the clamp-plates, which, in the Eldridge machine, are at all times parallel, and exerting an equal draft upon the boot-upper, while, in my present machine, the clamp-plates, so far as their parallelism is concerned, are independent of each other, and susceptible of change or adjustment, in order to exert greater draft upon one portion of the upper than another.

The novel features in my present machine consist in a combination of the clamping or pressing plates or jaws, a compound operating-screw, and a pair of levers, all as hereinafter explained, the central portion of the compound screw serving, through the agency of nuts, to act upon the middle portion of the clamping-jaws, to crowd them together or apart, while the outer portions of the screw serve to advance or retract the upper portion of said jaws, and prevent springing or spreading apart of the latter, the whole being as hereinafter explained, the two nuts which operate the central portion of the jaws being adjustable on the screw with respect to each other, in order that the said jaws may be thrown out of parallelism in one or the other direction, as before premised.

The drawings accompanying this specification represent, in Figure 1, a side elevation, in Fig. 2 an edge elevation, and in Fig. 3 a vertical section of so much of a machine for crimping boot-fronts as is essential to show the embodiment of my improvements. Fig. 4 is a view, upon an enlarged scale, of the compound screw and the nuts by which it operates upon the jaws.

In the said drawings, A represents a flat bed or base-plate, which constitutes part of the frame of the main machine, upon opposite sides of which bed I dispose two twin-shaped upright levers, B B′, the lower ends of such levers being pivoted to the bed, as shown at *a a′*.

C C′ denote two upright twin-shaped pressing-jaws or clamp-plates, resting at bottom upon the top of the bed A or pedestals *b b′*, erected upon the latter, each of said jaws at its lower part being notched, as shown at *c*, and straddling by such notch a nut, D or D′, in such manner that the movements of the nut in a linear direction compel corresponding movements of the central or lower portion of the jaw.

E, in the drawings, represents a long rod or shaft, supported and steadied at or near its center *d* in part by a post, F, erected upon the base A, while upon each side of such center *d* I cut upon the shaft E a short double-threaded screw, *e* or *f*, the former being a right, and the latter a left, threaded screw, and each working in one of the nuts D D′, the two screws being of like pitch, and so operating upon the nuts as to cause the central or lower portion of the jaws C C′ to approach or recede, the screw being rotated by a crank, G, affixed to one extremity of it.

H H′, in the accompanying drawings, represent a second pair of twin nuts, swiveled one within each lever B B′, while working in these nuts are twin screws I I′, cut upon opposite ends of the shaft E, these screws being preferably single-threaded, owing to the throw of the top of the levers, and being right-and-left threaded, to correspond with the screws *e f*, before described, the arrangement of these last-named screws and the nuts H H′ being such that, as the shaft E is turned in one direction, the upper portions of the jaws are forced toward one another, and when turned in the reverse direction the jaws are separated.

It will be seen that the upper end of each lever B B′ terminates in a horn, *g*, which bears

against the upper end of the adjacent jaw C or C′; and it will also be seen that as the rotations of the shaft E are to actuate the nuts D and D′, which act upon the center portion of the jaws, and also the nuts H and H′, which act upon the levers, and that the horns of the levers move faster than the nuts, it is essential that the screws which effect these movements should be of different speed, and should be so timed that the jaws and levers shall move in unison, and I prefer to make one pair single, and the other double, threaded.

It will be seen that, if the positions of the nuts D D′ are changed upon the screw in one or the other direction, the clamp-plates C C′ will be thrown out of parallelism in a corresponding direction.

As a rule, I prefer that said clamp-plates shall be farther apart at the bottom than at the top, in order that the greatest amount of drag may be exerted upon the corners of the boot-front, to obtain a uniformly-smooth crimp, and the arrangement of the nuts D D′, with the operating jaws or plates, enables me to adjust the plates to any desired position.

The crank G is of peculiar construction—that is to say, it has two arms, *h i*, to the end of the former of which a handle, *j*, is secured, while the extremity of the opposite arm *i* terminates in a T, the lateral portion *k* of which is a segment of a circle, of which the shaft E is the center. By means of the segmental portion *k* of the crank, which is, in reality, a section of a hand-wheel, the operator is enabled to apply both hands to great advantage when considerable power is required, and it also provides a counter-balance to the crank.

The arm *k* possesses, in effect, all the advantages due to a continuous hand-wheel, while it does not, as in the case of the latter, obstruct at times a portion of the machine.

As the upper ends of the levers B B′ bear upon the upper portions of the jaws and crowd the latter toward one another, while the nuts D D′ act upon the center portion of such jaws, it will be seen that a powerful pressure is exerted at both, and spreading of the upper portion of the jaws prevented.

This is an important result, as I am enabled to powerfully stretch or draw the corner of a boot-upper, which has heretofore been imperfectly accomplished. The jaws or clamp-plates C C′ may be readily removed from the machine by simply lifting them from their positions, should it be desirable to do so.

My present arrangement of adjustable clamp plates, nuts, and operating-screw may be adapted, with slight modifications, to machines heretofore in use.

I claim—

1. In a leather-crimping machine, the combination of the jaws or clamp-plates C C′ and levers B B′ with the compound screw-shaft E and nuts D D′ and H H′, the arrangement being such that the upper ends of the levers act upon the upper portions of the jaws simultaneously, or thereabout, with the action of the nuts D D′ upon the central portion of such jaws, substantially as and for purposes stated.

2. In a leather-crimping machine, the compound screw-shaft E, as formed with the twin pairs of right-and-left screws *e f* and I I′, in combination with and adapted for operating the jaws C C′ and levers B B′, substantially as and for purposes stated.

3. In a leather-crimping machine, the combination of the clamp-plates C C′, screw-shaft E, and nuts D D′ and H H′, as arranged, so that the position of one or both pairs of nuts, with respect to each other and to said plates, may be varied upon the screw, to adjust the relative vertical positions of the said plates, essentially as and for purposes stated.

4. In a leather-crimping machine, the combination of the compound screw-shaft E and nuts D D′ and H H′, substantially as herein described, whereby the relative positions of the nuts upon their respective screw-threads may be varied, essentially as and for purposes stated.

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