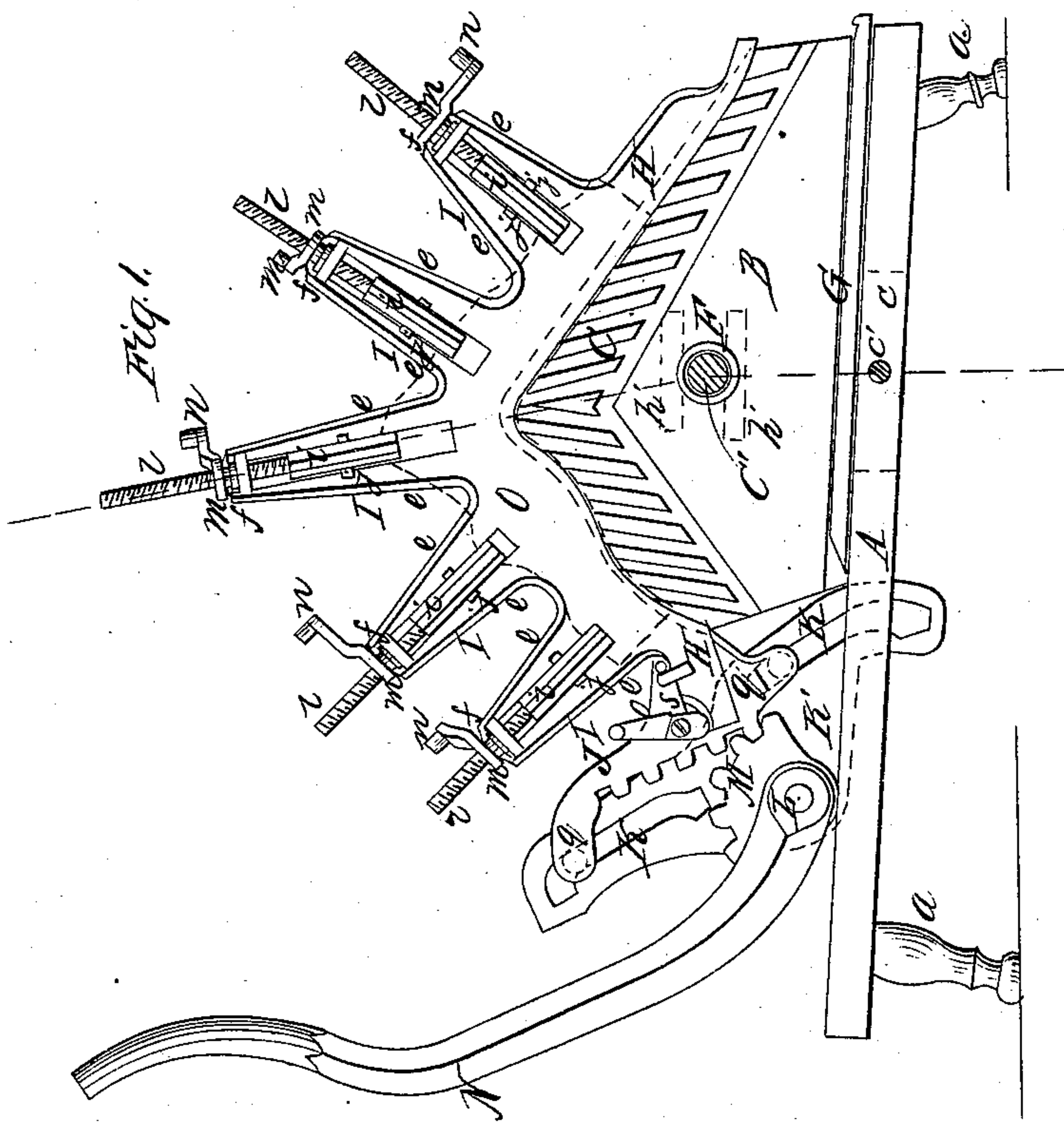
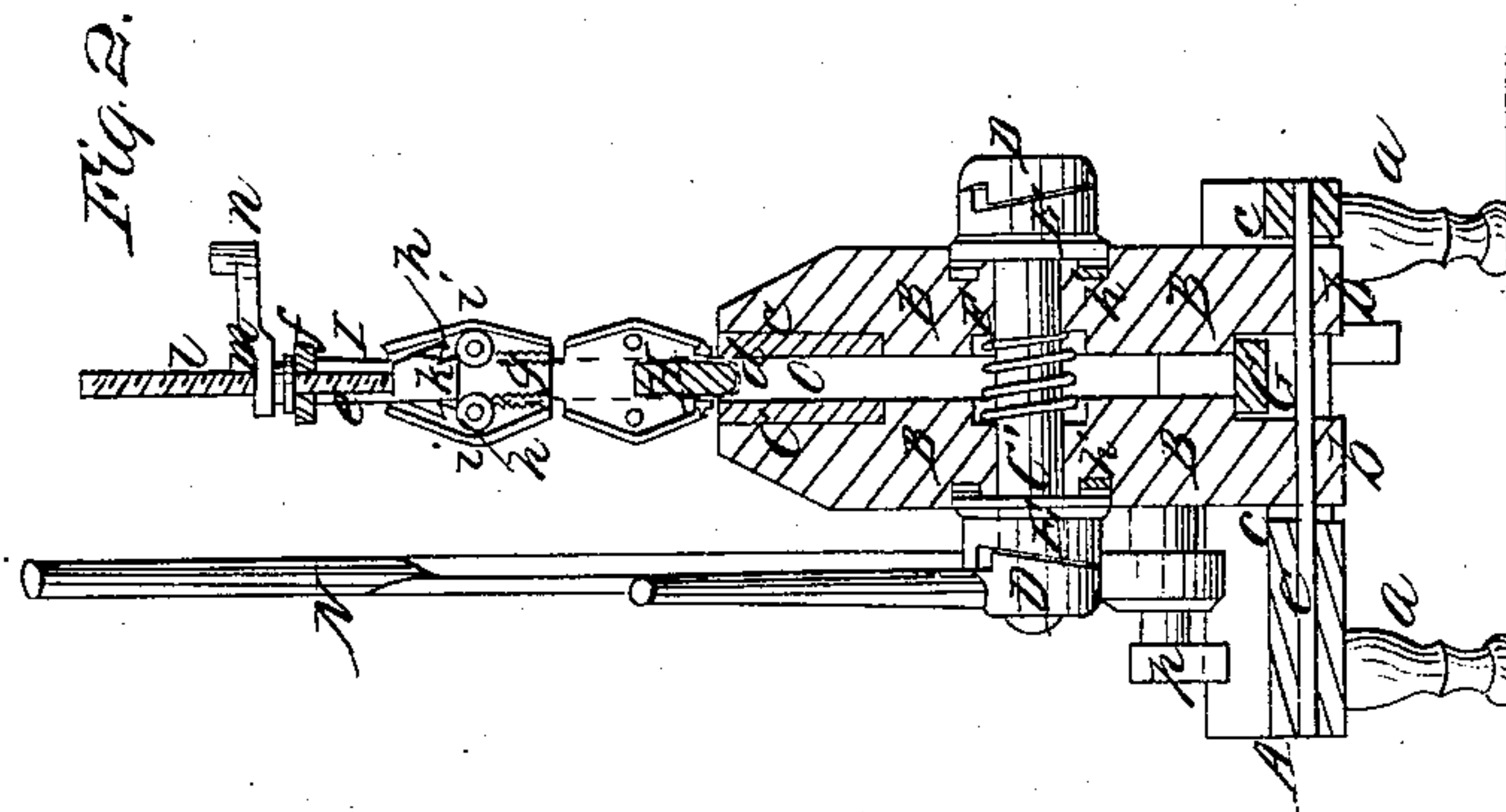


G. W. Zeigler,
Crimping Leather,
No 13,023, *Patented June 5, 1855.*



UNITED STATES PATENT OFFICE.

G. W. ZEIGLER, OF TIFFIN, OHIO.

BOOT-CRIMPING MACHINE.

Specification of Letters Patent No. 13,023, dated June 5, 1855.

To all whom it may concern:

Be it known that I, GEORGE W. ZEIGLER, of Tiffin, in the county of Seneca and State of Ohio, have invented a new, useful, and
5 Improved Boot-Crimping Machine; and I do hereby declare that the same is described and represented in the following specifications and drawings.

To enable others skilled in the art to
10 make and use my improved machine I will proceed to describe its construction, use, and operation, referring to the drawings in which the same letters indicate like parts in each of the figures.

15 Figure 1 is an elevation of the machine without one of the jaws B Fig. 2. Fig. 2 is a vertical section representing the machine cut crosswise through the shaft C' Fig. 1.

The nature of my invention consists in so
20 constructing and arranging the devices which operate the crimping iron, as to carry it in between the jaws with a compound motion. Also in corrugating the jaws so as to work the leather away from the angle of
25 the crimping iron and into the foot and leg of the boot.

In the above mentioned drawings a table or bench is represented at A, supported by the legs *a a*, and provided with mortises *c c*,
30 for the tenons *b b* of the jaws B, B, see Fig. 2. The upper edges of the jaws B, B are faced with plates of metal. I prefer to use malleable iron, as I find it does not stain the leather so much as cast iron. These plates
35 C, C, are corrugated on their working surfaces, or provided with ribs which are not parallel with the edges of the jaws but are made in the direction represented in Fig. 1, so as to work the leather away from the
40 angle of the crimping iron more effectually, than it ever has been done before, so as to make the boots far more comfortable to the wearer than if they were crimped in any other machine, or by any other process. The
45 angle of these ribs may be varied to adapt them to the motion given to the crimping iron. But I consider the angles at which they are represented in the drawings, are best suited to the motion given to the crimp-
50 ing iron by my machine. The upper edges of the plates C C should be chamfered or rounded off, so that the crimping iron can carry the leather in between them with facility without injuring it in the operation
55 of crimping.

The wedge G is made so as to hold the

jaws a little more open for the foot than for the leg, and I make the faces of the jaws fuller or higher at and near the angle between the foot and leg so as to work the
60 leather thinner there than elsewhere. The jaws B B are secured to the table A by the rod *c'* as represented so as to vibrate freely, and the wedge G, which lies on the table between them may be moved either way, so as
65 to adjust the distance between them to the work as required. The cams E, E, are secured to the jaws B, B, by screws which allow the springs *h'*, *h'*, which are interposed between the cams and jaws, to hold
70 the former a little distance from the latter, so that the cams act on the springs and the springs against the jaws, so as not to hold them so rigid, as to injure the leather. The
75 springs *h'*, *h'*, are represented in dotted lines in Fig. 1, and their ends are shown in Fig. 2. The cams E, E, are acted upon so as to close the jaws by the cams D, D, fastened to the
80 shaft C', which shaft extends through the jaws as represented, and the lever D', extends from one of the cams so as to operate the shaft and cams to close the jaws, which
85 are forced open by the spring F, on the shaft C', when the cams are turned back to release them.

The plate K', is permanently fastened to the table A in the position represented and provided with slots K, K, which are made in the form represented, so as to give the
90 crimping iron a proper and a compound motion as it is carried in between the jaws.

The rack J may be made in the form represented or otherwise and provided with two pivots *q, q*, which traverse in the slots *k k* when the rack is traversed by the segment
95 gear M fastened to the shaft I', which turns in the plate K' and stand *p* (fastened to the table A) when it is operated by the lever N fastened to said shaft for that purpose. The rack J is provided with a score for the shank
100 H, of the crimping iron H', which shank is fitted to said score, and provided with a projection S, which catches behind a pin in the rack, and the button O, is turned down over the projection so as to hold the shank in the
105 score while the crimping iron is operated by the rack to crimp the front of a boot.

The crimping iron H' is made nearly in the form of a right angle as represented and it is made thicker at and near the angle
110 where the leg joins the foot than in the leg or foot, and thicker in the foot than in the

leg, and its front edge is rounded as shown at *d* Fig. 2, and its back or rear edge is provided with a series of radial frames I, I, consisting of the bars *e*, *e*, and top *f*. There is a block *g* Fig. 2, fitted to traverse in each of the frames I, I, provided with eyes at its upper end, which eyes in conjunction with the eyes upon the clamps *i*, *i*, form hinges for said clamps to vibrate on, and the sides of the block and the insides of the clamps are corrugated where they come together, like shoemakers pincers as represented in Fig. 2, so as to hold the leather firmly. The tops *f* are perforated for the screws *l*, *l*, which are operated by the nuts *m*, turned by the handles *n*, *n*. There are some projections on the top pieces *f* fitted to the scores in the nuts *m* to hold the nuts against the top pieces, so as to make them force the screws in as well as draw them out when the nuts are turned for that purpose.

There are some blocks fitted to turn freely on the ends of the screws *l* *l*, one of these blocks is represented at *t* Fig. 2, and its edges are beveled off so as to act on the upper ends of the clamps *i*, *i*, which are inclined toward each other, so that when the block is drawn out by the nut it closes the jaws square upon the leather without chafing it, and if the nut *m* is turned after the clamps are closed upon the leather, the leather is drawn out and stretched as represented in the drawing Fig. 1. There are some projections *k* on the clamps *i* *i* which are acted on by the block *t* (when it is forced in by the screw) so as to open the clamps and release the leather after it has been crimped and stretched.

The lever D' is represented in the drawing on the same side with the lever N but it may be arranged on the opposite side if preferred. I make several crimping irons to fit the same rack so as to partially dry the leather after it is crimped and stretched before it is removed from the iron.

The machine having been constructed and completed as above described, and the piece of leather to be crimped properly soaked in water is laid across the jaws; when the operator seizes the lever N, with one hand, and the lever D', with the other, so as to adjust the jaws B, B, and press them against the leather with one hand, while he forces the crimping iron H' with the leather in between the jaws to crimp it. After the crimping iron with the leather has been forced in, the edges of the leather are placed in the clamps *i*, *i*, and the nuts *m* *m* are turned so as to close the clamps upon the leather and drawn them back, so as to stretch it upon the crimping iron; the lever D' is then vibrated so as to release the jaws from the leather, while it is raised from between them by the crimping iron, when the jaws may be closed and the leather forced in again

by the crimping iron as before; and this operation may be repeated as many times as may be necessary to crimp the leather properly and effectually; the operator turning the nuts *m* *m* as often as he finds it expedient during the process of crimping, so as to stretch the leather upon the crimping iron.

As the operator vibrates one of the levers with each hand at the same time he can adjust the jaws upon the leather, as it is forced in between them, so as to work it gradually into the desired condition, and as the jaws are released every time the leather is drawn back it is worked all the time in the same direction, and the ribs and grooves or corrugations on the jaws are formed in such directions, as to work the leather away from the angle, where the leg joins the foot and work it into the foot and leg, so as to leave the leather thinner at and near the angle than in the foot or leg, and thinner in the leg than in the foot; so that the boots crimped on my machine are far more comfortable to the wearer than when crimped upon other machines which work the leather into and toward the angle, so as to leave it far thicker at and near the angle making the boot very uncomfortable to the wearer as most of the people have experienced who have worn boots.

The slots in the plate K', are so constructed and arranged as to move the foot of the crimping iron into or between the jaws, twice as fast as it does the leg, and to give it a compound motion, which motion in combination with the corrugations in the jaws work the leather in the required direction to crimp it properly, and to do it far better and more effectually than it is done in any machine heretofore made.

Although I have described the faces of the jaws B B as being made fuller or higher at the angle, and the crimping iron as being made thicker in the angle than in the foot or leg so as to work the leather thinner at and near the angle than in the leg or foot, and thinner in the leg than in the foot, I contemplate that the faces of the jaws may be made parallel and the thickness of the crimping iron varied in its several parts; or that the crimping iron may be made of a uniform thickness, and the faces of the jaws varied to produce the same effect, that is work the leather thin at and near the angle, &c, as heretofore described.

Some of the advantages of my improved machine may be enumerated as follows, viz: It works the leather crimped thinner at and near the angle or joining of the leg and foot than in the leg or foot; and it works the leather thinner in the leg than in the foot, which is just the reverse of what is effected by most of the machines heretofore used. A light or thin piece of leather can be crimped with it which could not be crimped upon

any other machine. A smaller pattern of leather will answer for a boot of a given size when crimped in my machine. The jaws are released from the leather when it is
5 drawn back (which is not done in any other machine) so that the leather is constantly worked one way. The jaws of the clamps operated by the screws close square upon the leather and do not chafe it in stretching.

10 I believe that I have described the construction, operation and use of my improved machine for crimping the fronts of boots so as to enable any person skilled in the art to make and use the same. I will
15 now particularly specify the parts I claim, viz.

1. I claim the segment gear M, and rack

J, or their equivalents in combination with the slots K, K, or their equivalents for the purpose of giving to the plate H, the above
20 described motion for the purposes set forth substantially as described.

2. I am aware that the jaws of boot crimping machines have been corrugated, and the ribs and grooves made parallel with
25 their edges; therefore I make no claim to such corrugations, but what I do claim is, corrugating them substantially as above described for the purposes set forth.

GEORGE W. ZEIGLER.

Witnesses:

B. H. MORSELL,
J. DENNIS, Jr.