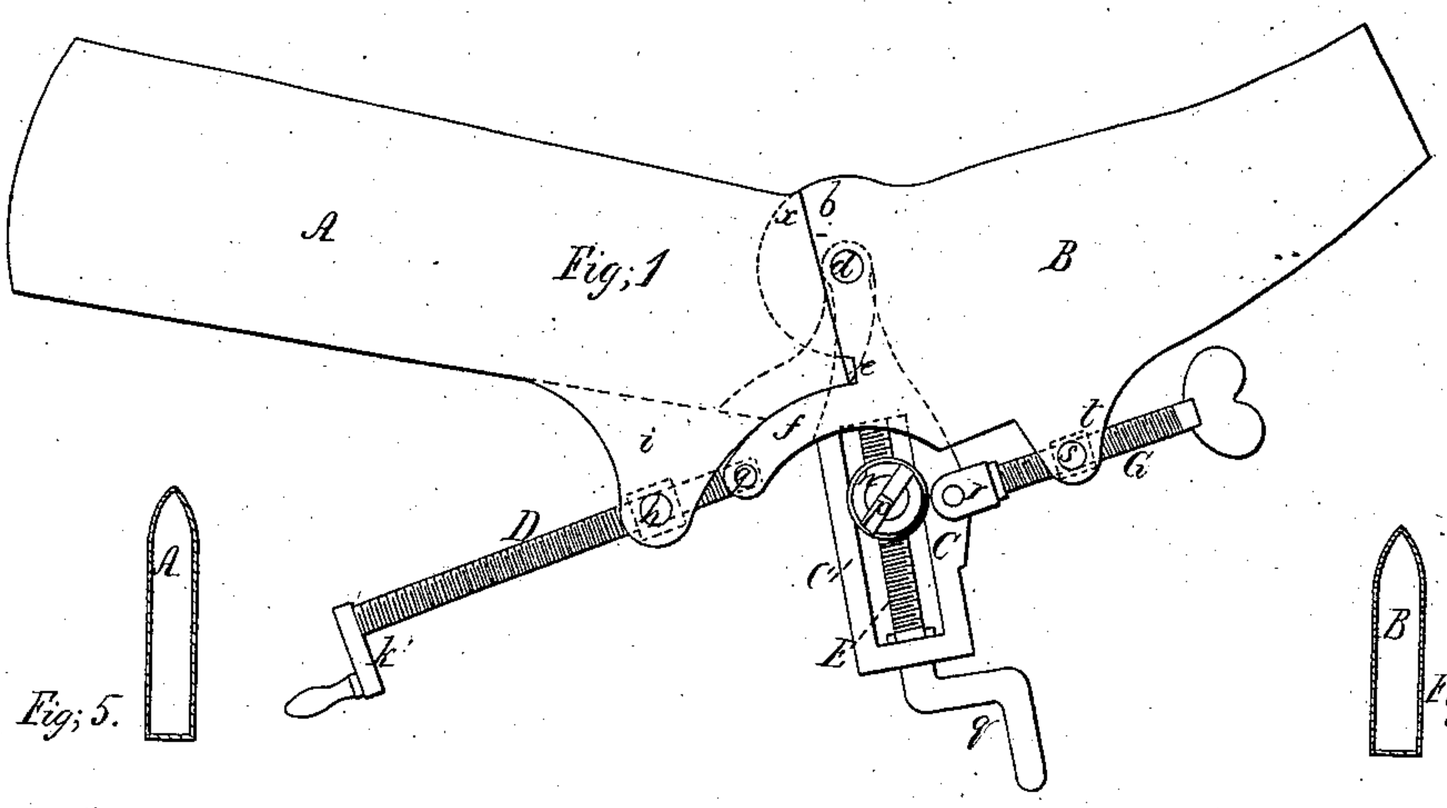
G. Fetter,

Crimping Leather.

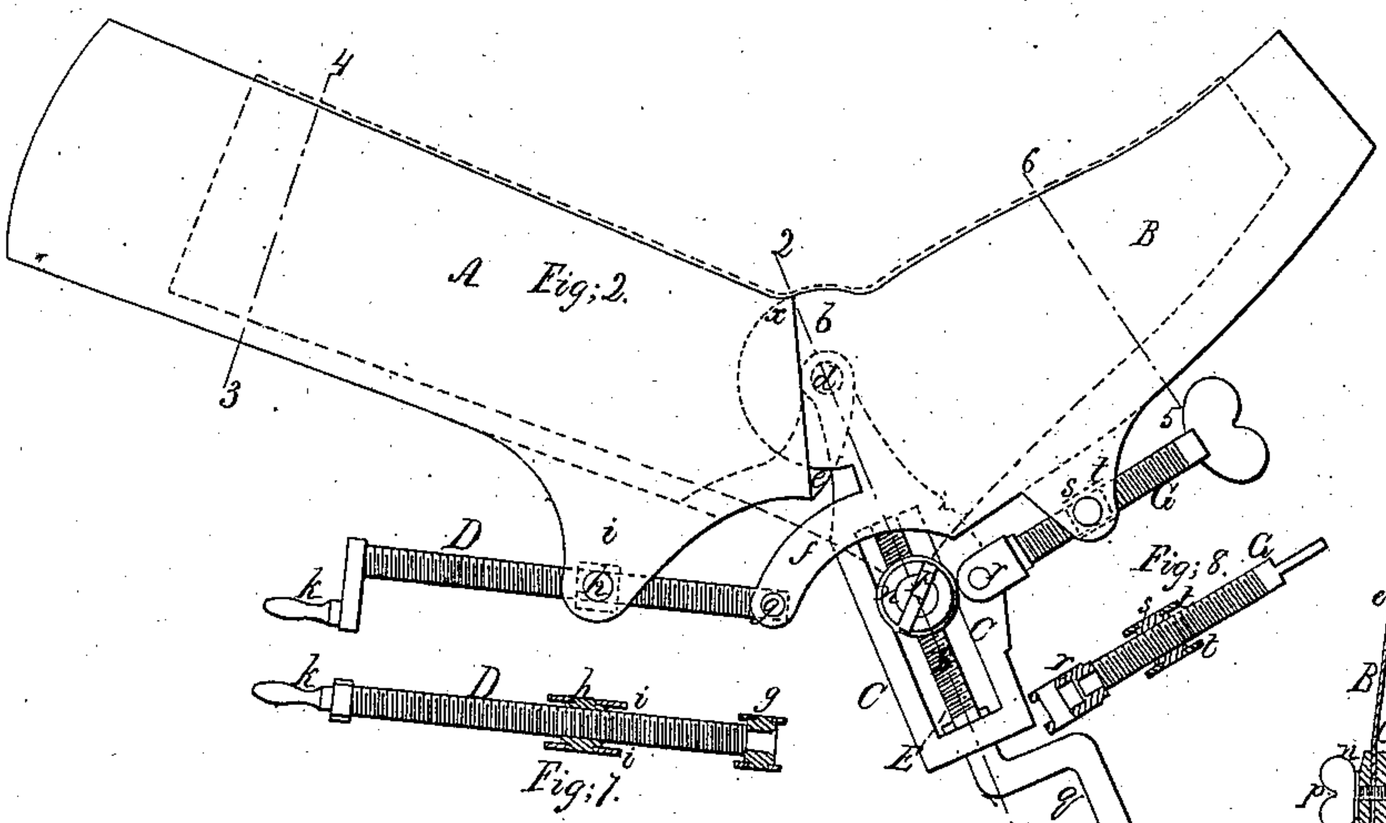
No. 14,353. Patented Mar. 4, 1856.



Fig; 1

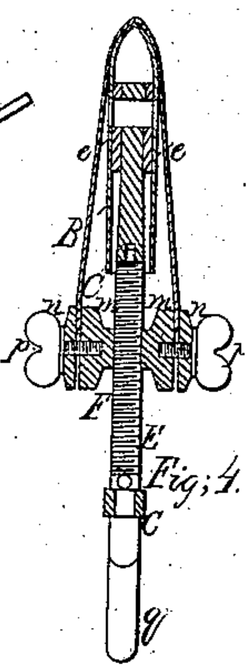
Fig; 5.

Fig; 6.



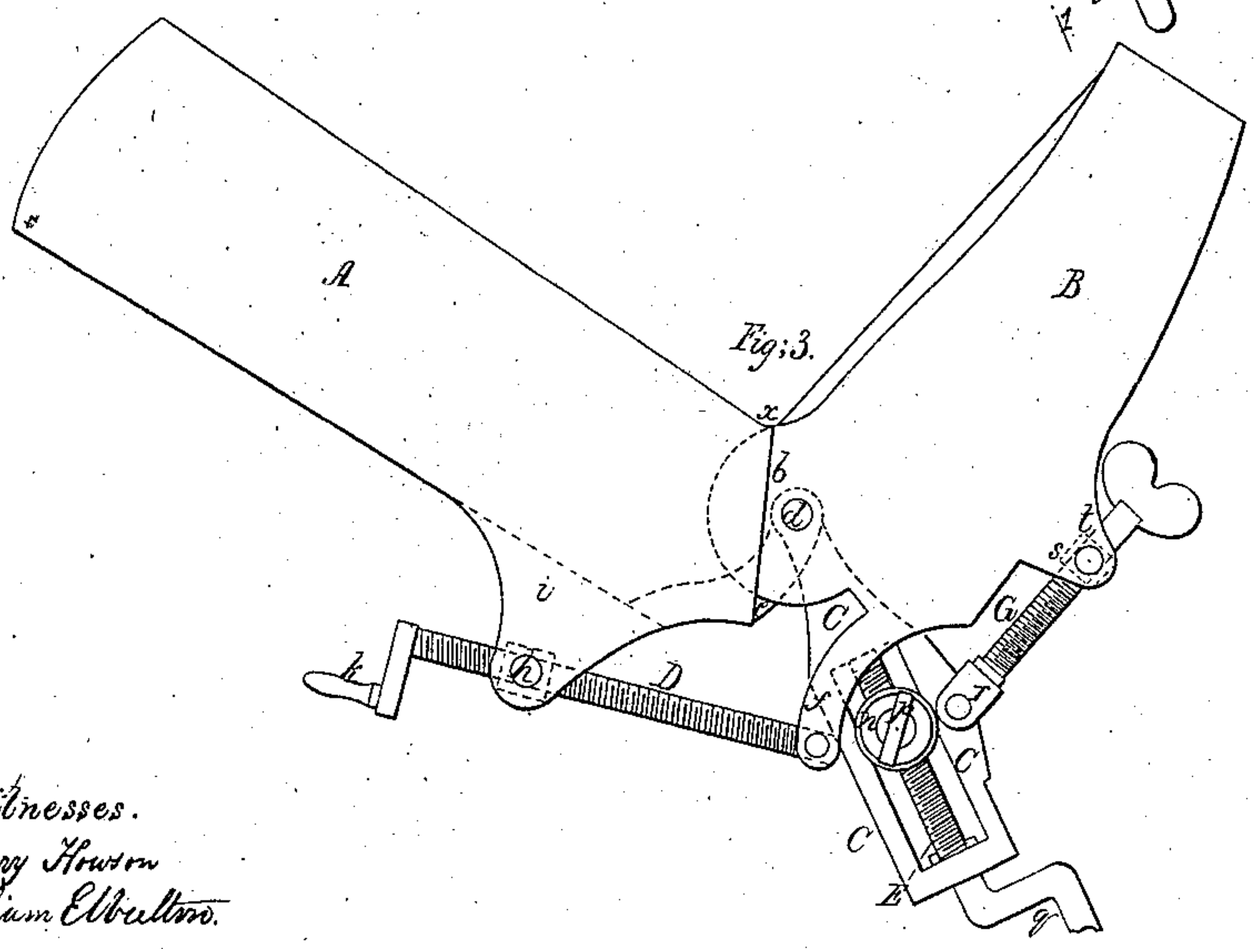
Fig; 2.

Fig; 7.



Fig; 4.

Fig; 8.



Fig; 3.

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UNITED STATES PATENT OFFICE.

GEO. FETTER, OF PHILADELPHIA, PENNSYLVANIA.

BOOT-CRIMP.

Specification of Letters Patent No. 14,353, dated March 4, 1856.

To all whom it may concern:

Be it known that I, GEORGE FETTER, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved Mode of Crimping Boots; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to the crimping of the upper leathers of boots and consists in submitting the leather (when wet and cut to the required shape) to the action of a crimping apparatus composed of a leg and foot shaped like an ordinary crimping board but jointed together at the point which represents the instep, and caused by a regulating screw fully described hereafter to assume different positions in respect to each other, namely from a position in which both leg and foot are stretched out comparatively straight to a position in which they are bent together so that the outer edges of both combined may form an outline similar to that presented by the top of the human foot and front of the leg; this being the shape to which it is necessary to reduce the leather in crimping.

Onto the pin which connects the leg and foot of my crimping apparatus together I hang a guide which is caused, by a screw in connection with the foot, to radiate and assume different positions. This guide is furnished with a slide on the opposite sides of which are pincers, the slide with its pincers being caused to traverse the guide by means of a handled screw.

When the leg and foot of my apparatus have been bent by means of the regulating screw to their straightest position, I bend the leather over their front edges in such a manner that each corner (left in cutting the leather to the required shape) may be secured to one of the pair of pincers, on each side of the traversing slide, and then move the latter in the radial guide so as to stretch the leather comparatively tight over that point of my apparatus which represents the instep. I then by means of the above mentioned regulating screw bend the foot of the apparatus until it assumes the desired position in respect to the leg, stopping at intervals during the operation in order to rub down with the peen of a hammer or other hard and smooth instrument the creases which collect in uniform regularity at the instep, and occasionally to stretch the leather tighter over the latter by means of the traversing pincers, or to vary the direction of the stretch by regulating the position of the radial guide.

The whole is so arranged and constructed that the condensation of one part of the leather and the stretching of other parts (necessarily involved in crimping) is accomplished with such regularity and precision that no wounding, cracking, or other deterioration of the said leather takes place as in ordinary crimping machines, thus enabling me to crimp the upper leathers of boots of the finest quality which have been hitherto effected by the old and well known hand process.

In order to enable others skilled in the art to make and use my invention I will now proceed to describe its construction and operation.

On reference to the drawing which forms a part of this specification Figures 1, 2 and 3 are views of my improved boot-crimping apparatus, showing the different positions which it may be brought to assume. Fig. 4 a transverse section of the apparatus on the line 1, 2 and showing the construction of the radial guide and traversing pincers. Fig. 5 a transverse section of the leg on the line 3, 4. Fig. 6 a transverse section of the foot on the line 5, 6. Fig. 7 a detached view of the regulating screw and its swivel nut as connected with the foot and leg. Fig. 8 a detached view of the screw and its nut for regulating the position of the radial guide.

The same letters of reference allude to similar parts throughout the several views.

A is the leg and B the foot of my improved crimping apparatus represented in the present instance as constructed hollow of thin metal (see sectional views Figs. 5 and 6). This leg and foot are jointed at the instep in the following manner. The rounded portions *b* of the two plates which form the sides of the foot fit between the ends of the plates which form the sides of the leg A, the latter overlapping the former but having their edges beveled off in such a manner that the exterior may present as smooth and unbroken a surface as possible.

To the inside of the plates which compose the sides of the leg A are secured the brackets *e e* the ends of which penetrate into

the space between, and fit against the inside of the plates which form the foot B. Between the brackets *e*, *e* fits the end of the radial guide C and through the whole, that is through the plates which compose the foot through the brackets *e e* and through the end of the radial guide passes the pin *d* so as to joint the leg and foot together in such a manner that whatever position they are caused to assume in respect to each other the extreme point *x* of the leg is always in close and immediate contact with the edge of the round portion *b* of the foot. It should be understood that although the pin *d* serves to connect the guide C to the foot and leg its radial movement is entirely independent.

From the plates of the foot B project two curved brackets *f*, *f*, between the ends of which swivels the block *g* (see Fig. 7) and into this block is riveted the end of the screw D in such a manner as to easily turn therein. This screw passes through a nut *h* which is situated between and allowed to swivel in the ends of the brackets *i*, *i*, which project from the plates forming the sides of the leg A, the end of the screw being furnished with a handle *k* on turning which, in one direction or the other, the leg and foot may be made to assume different positions in respect to each other.

In the radial guide C is an oblong slot, in the opposite ends of which the screw E has its bearings, this screw passes through the nut F which is arranged to slide in the oblong slot and which (on each side of the guide) is furnished with a circular disk *m*, the external faces of the disks being grooved or serrated. In contiguity with the disks *m m* of the sliding nut F are the washers *n n* which have also grooved or serrated faces. Between these washers and the disks are secured by the thumb-screws *p*, *p*, the corners of the leather to be crimped, (see Fig. 4) so that by operating the handle *q* of the screw E they become the traversing pincers above alluded to, and as such serve the purpose of drawing the leather more or less tight over the instep. To one side of the radial guide C is connected the joint *r* into which the end of the screw G is so riveted as to turn freely therein. This screw passes through a nut *s* which swivels in the brackets *t*, *t*, projecting from the plates forming the sides of the foot B, so that by turning this screw the position of the radial guide in respect to the foot B may be varied at pleasure.

Operation: The apparatus above described being stretched out to its utmost extent by the regulating screw D assumes the position shown in Fig. 1. The leather previously cut to the required shape is now bent over the beveled edge of the leg and foot, and the corners of the leather (left by the cutting) secured one on each side of the apparatus between the washers *n*, *n*, and disks *m m* of the sliding nut F which is traversed, by the screw E, in the guide C so as to stretch the leather moderately tight over the instep. The screw D is now brought into operation so that the foot B may be bent partially upward which causes the leather to collect in small regular and uniform folds or curves at the instep, these are now readily rubbed down with the peer of a hammer or other smooth instrument. The bending upward of the foot and rubbing out of the creases is continued until the instrument assumes the position shown in Fig. 3 when the leather has been reduced to the required shape.

During the above operation the leather is occasionally stretched tighter over the instep by the traversing pincers and should the pull of the latter on the leather be found to take an unsuitable direction it is easily regulated by turning the screw G which alters the radial guide C so that its traversing pincers may act more advantageously on the leather.

In crimping boots it is absolutely necessary that the leather in order to assume the form required must in some parts be stretched or expanded and in other parts condensed and to accomplish this expansion and condensation with such regularity and uniformity as to avoid the wounding of the fibers or other deterioration of the leather has been my aim in designing the above apparatus.

In the various machines for crimping boots it is usual to force the leather over a crimping board permanently formed to the shape required and such is the effect of this operation on the leather that the best class of boots are at present crimped by the old fashioned process of hand labor.

The gradual bending of the foot and leg of my apparatus, with its overlaid leather, together with the gradual stretching of the same over the instep, and the facility of giving this stretching in the most advantageous direction cause the expansion and condensation to take place with such regularity that the leather will assume the required shape without any deterioration to its fibers.

Although I have shown the instrument as constructed entirely of metal it will be easily seen that the greater portion of both the foot and leg may be made of hard wood with joints and screws and other parts made of metal.

I do not desire to claim the method herein described of changing the relative position of the foot and leg by the regulating screw D and its appendages, as other mechanical devices for accomplishing the same end might be substituted, but

What I claim and desire to secure by Letters Patent is—

1. The crimping of the upper leathers of

boots by confining and submitting them to the action of the leg A and foot B, the said leg and foot being jointed together at the instep and operated in the manner set forth or any equivalent to the same.

2. The radial adjustable guide C with its traversing pincers in combination with the leg A and foot B the whole being arranged and constructed substantially in the manner and for the purpose herein set forth.

GEORGE FETTER.

Witnesses:

HENRY HOWSON,

WILLIAM E. WALTON.