C. D. BIGELOW.

Sole-Edge Machine.

No. 165,060. Patented June 29, 1875.

FIG. I.

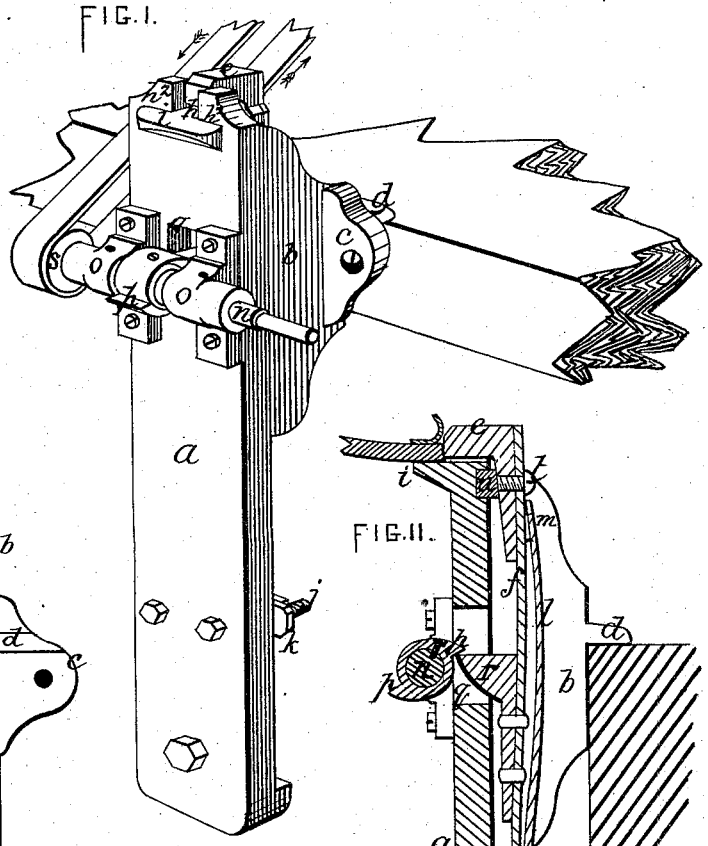


FIG. III

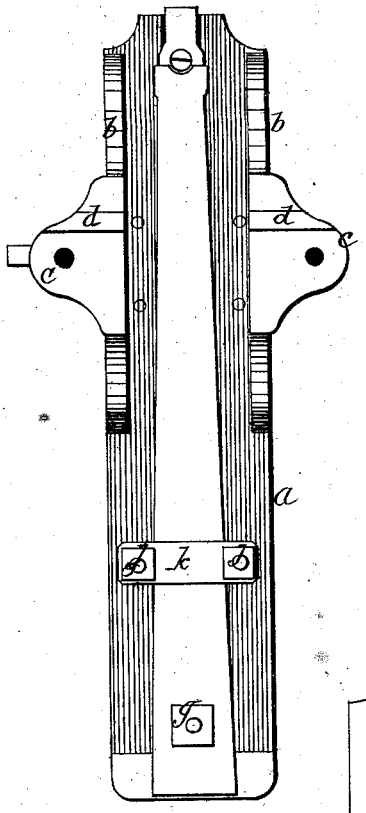


FIG. II.

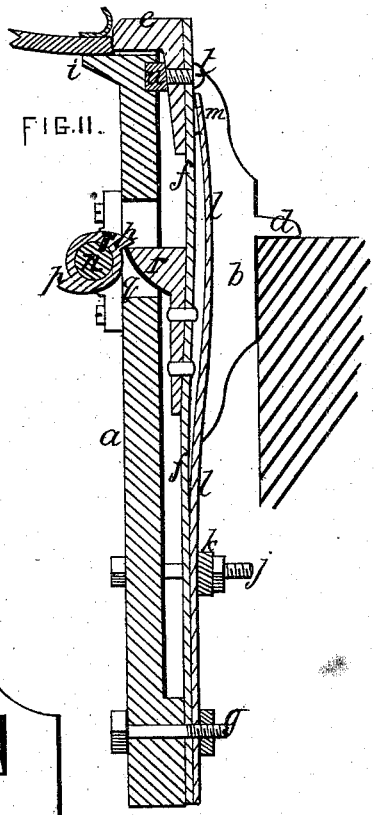
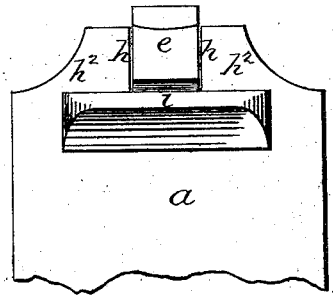


FIG. IV.

Front View



WITNESSES.

F. B. Townsend.

J. A. Ruthe for J.

INVENTOR.

Charles D. Bigelow,

by Johnson and Johnson,

his Attorneys.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

CHARLES D. BIGELOW, OF BROOKLYN, NEW YORK, ASSIGNOR TO BAY STATE SHOE AND LEATHER COMPANY, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN SOLE-EDGE MACHINES.

Specification forming part of Letters Patent No. **165,060**, dated June 29, 1875; application filed June 10, 1875.

To all whom it may concern:

Be it known that I, CHARLES D. BIGELOW, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sole-Edge Hammers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

The edges of boot and shoe soles are hammered up previous to the trimming and finishing of the edge. This, in the trade, is called "pinning up," and has hitherto been done by hand, and which requires much time and considerable labor.

My object is to do this work by a device driven by power from the line-shafting of the factory, whereby the work is not only done in much less time, but at greatly less expense and with comparatively little labor.

The device consists of a hanger or bracket piece bolted in a vertical position to the side of a work-bench, a spring trip-hammer being combined therewith, so that its upper or acting face shall operate in a guide in the bracket-piece in position just above a horizontal ledge or rest for the shoe-sole, and so as to be retracted within the guide to give a sharp, strong blow, when liberated, against the sole-edge, which is for that purpose borne hard upon the outer face of the guide end of the bracket in front of the hammer. The shoe is fed along by hand upon the rest as each blow is given the edge, and it is in this way beat up to solidify the edge and set the upper edge of the sole close to the upper to give a neat and even appearance to the work. A short cam-shaft is mounted upon the side of the bracket in position to act upon and operate the hammer with the required rapidity, by means of a belt leading therefrom to the driving-power in any suitable way.

In the accompanying drawings, Figure 1 represents a view in perspective of my shoe-sole-hammering device; Fig. 2, a vertical section; and Fig. 3, a rear view.

The hanger or bracket is a single plate, *a*, of a length sufficient to give proper bearing-fastenings for a suitable plate-spring hammer. Cast with and projecting from the upper portion of the hanger, are right-angled extensions *b b*, which are provided with outwardly-projecting ears *c c*, having on their inner faces strong horizontal lugs *d d*, by which to support the device upon the bench, while screw-bolts, passing through the ears *c c*, clamp the hanger firmly against the side of the bench with sufficient space between the latter and the inner side of the hanger to allow of the required stroke for the hammer. The hammer consists of a spring-plate, which may be either of wood or metal, with the hammer-head *e* formed in one piece with the metal spring *f*, or made separately, and secured thereto in any proper manner. It is arranged on the inner side of the hanger, so as to be between it and the side of the bench, and its lower end is secured by a screw-bolt, *g*, to the hanger, while the hammer-head *e* is carried at the upper end of the spring-plate in position to play within and through a guide-opening, *h*, formed at the upper end of the hanger, and just above a ledge or rest, *i*, projecting from the front side of the hanger, and upon which the work is supported in a manner to allow the edge of the sole to be presented and held for action in front of the hammer-guide, and against the front side of the guide-head h^2 of the hanger, so that the sole-edge will receive the blows of the hammer through the guide *h*, as the stock is moved along upon the hanger-rest, and against the hanger-head, as shown in Fig. 2.

The spring-plate is adjusted to give the required force to the blow of the hammer, by means of adjusting-screws *j j* passing through the hanger, and uniting a cross-strap bearing, *k*, upon the rear side of the spring, a suitable distance from its point of attachment to the hanger.

The spring may be re-enforced by one or more plates, *l*, secured thereon, with lapping-lips *m* at their free ends.

The spring-hammer is operated by a cam-shaft, *n*, secured horizontally to the front side of the hanger, in suitable bearings *o*, with its

cam-projections *p* working through an opening, *q*, in the hanger, against a suitable-shaped projection, *r*, on the inner side of the spring-plate.

In the example shown, the cam *p* has two acting-points; but it may have one or more, as may be found best, and according to the speed with which it is driven. A belt from the line-shaft to a pulley, *s*, on the cam-shaft drives the hammer.

The projection of the hammer *e*, through its guide *h*, may be adjusted, as desired, by means of a set-screw, *t*, passing through the hammer-plate, and bearing upon a rubber cushion, *u*, set in the bracket, which serves also to deaden the noise which would otherwise be made by the hammer upon the metal.

The driving of the cam-shaft operates the hammer *e* with quick sharp blows, which, being delivered directly upon the sole-edges, renders them solid, and gives a proper finish to the work. The workman simply holds the work and moves it along as the hammer strikes its successive blows, and thereby accomplishes by power a very large branch of finishing work hitherto done by hand.

When a wooden spring is employed, the hammer face or head proper may be secured thereto in any suitable manner.

I have described the device for hammering the edges of the soles; but for beating up the edges of the heels I change the hammer head or face for that purpose.

I claim—

1. A device for hammering the sole-edges of boots and shoes, consisting of a bench-bracket hanger, *a*, provided with a support or rest, *i*, for the work, and a spring-hammer, *e*, automatically operating to deliver the blows upon the sole-edge, through a guide, *h*, by means of a power-driven cam-shaft, *n*, attachment to the bracket, substantially as herein specified.

2. The combination, in a power device for hammering the sole-edges of boots and shoes, of a spring trip-hammer, *e f*, with an adjusting-screw, *t*, and rubber cushion *u*, whereby the hammer may be adjusted to project more or less through and beyond its guide, and the noise from the blows avoided, as herein set forth.

3. The combination, in a power device for hammering the sole-edges of boots and shoes, of a spring trip-hammer, *e f*, attached to its carrying bracket-hanger *a*, with screws *j j*, for adjusting the spring to increase or diminish the force of the blow delivered upon the sole-edges, as set forth.

4. The combination, in a power-machine for hammering the sole-edges of boots and shoes, of a rest, *i*, for the sole of the work, a face-support, h^2, in the guide-head, for the edge of the sole, and the hammer *e*, operating through a guide-opening, h^2, upon the sole-edge, substantially as herein set forth.

In testimony that I claim the foregoing I have affixed my signature in presence of two witnesses.

CHAS. D. BIGELOW.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.