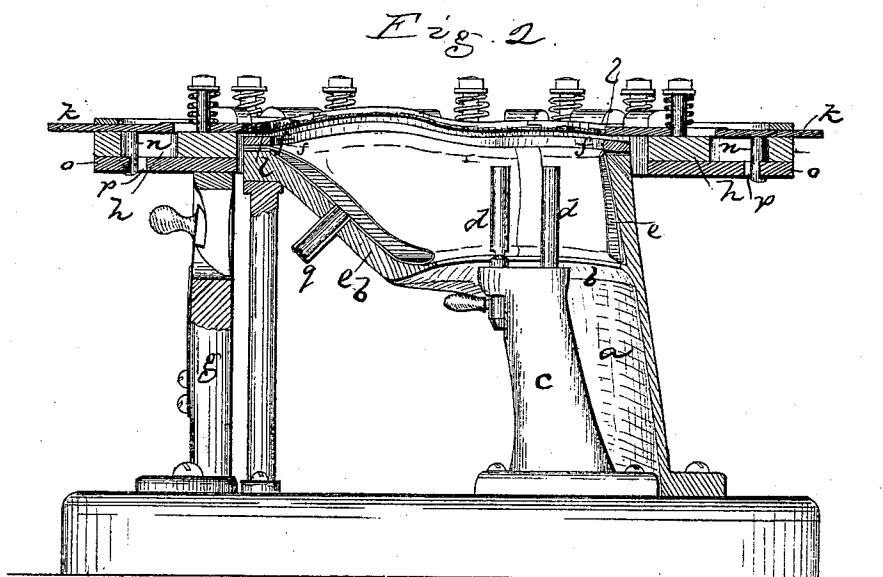
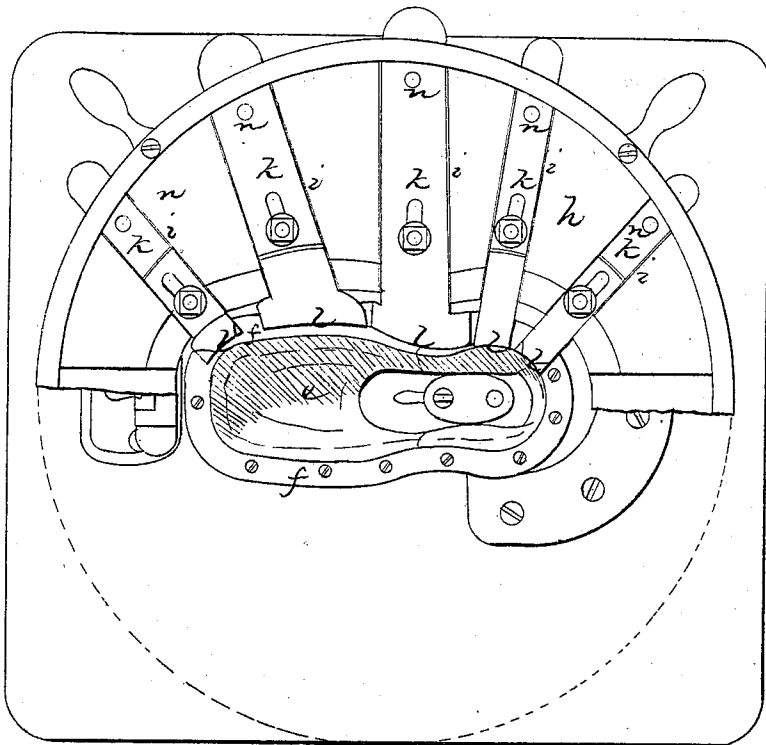


C. W. GLIDDEN.
Machines for Lasting Boots and Shoes.
No. 136,317. *Fig 1.* Patented Feb. 25, 1873.



Witnesses,
M. W. Frothingham,
J. A. Almer.

Inventor,
Charles W. Glidden,
By his attys.
Crosby & Gould

UNITED STATES PATENT OFFICE.

CHARLES W. GLIDDEN, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR LASTING BOOTS AND SHOES.

Specification forming part of Letters Patent No. 136,317, dated February 25, 1873.

To all whom it may concern:

Be it known that I, CHARLES W. GLIDDEN, of Lynn, in the county of Essex, and State of Massachusetts, have invented an Improvement in Lasting Boots and Shoes; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My present invention relates to that class of lasting-machines in which a rubber or flexible bag is used to receive the last, said bag being in a rigid frame or receiver, and being charged with water under pressure, and expanding as the pressure increases, and by expansion pressing the upper closely to the surface of the last, the rubber bag being free to move upward, and by its upward movement crowding the upper with it, and (as the bag projects beyond the upper surface of the last) pressing the projecting upper edges over upon the top of the last.

In my invention I use, in connection with such a bag mounted in a receiver, and arranged so that there is ample space between the receiver and the last for expansion and movement of the bag by pressure of water flowing into the bag, a series of radially or laterally moving slides or sliding crimper bars or jaws, by means of which the edges of the upper, when sufficiently pressed up by the expanding bag, may be crimped over upon the sole (laid upon the last) where they will be held by the jaws or crimper-bars, until secured by the lasting-tacks. These slides may be made in large number, arranged to slide automatically or in the form of fingers extending from side bars, (which slide,) or as slide-plates; in each case the slides moving inward to gripe and crimp the upper edges projected above the last by the movement of the inflating-bag.

I prefer to use a series of radially or radially and laterally moving slides, arranged around an opening in a circular plate placed in the plane of the top of the last, and arranged to be simultaneously moved against the upper; and I show in the drawing such an arrangement of slides, in combination with a flexible bag, to be inflated by water to create the pressure against the upper.

My invention consists in combining with a

flexible bag, placed in a suitable metal frame, and arranged to receive the last, (with the upper upon it,) the last being supported by suitable pins extending up from a stationary post, sliding plates, jaws, or bars, that by inward movement will crimp over the edges of the upper, pressed up by the expansion and upward movement of the bag against the upper, by the pressure of the water or other fluid with which the bag may be charged.

In the drawing, Figure 1 shows in plan one-half of the slide-containing ring or plate, and the last-receiving bag beneath such plate. Fig. 2 is a vertical central section of the machine.

a denotes a stationary post or hollow pillar, formed at top into a hollow frame or case, *b*; the stationary last-post *c* extending through the pillar, and having projecting from its top the pins *d* for supporting the last.

Lining the case *b* is the flexible and elastic bag *e*, which may be formed in one or more parts, but is preferably made as one bag—the form of this bag being preferably such that when placed in the case and confined at the top under a plate, *f*, it assumes an approximation to the general form of the last, or of a receiver for the last.

Hinged to the post *a* at one side, and resting upon another post, *g*, at its opposite side, is a circular plate or wheel, *h*, in which are radial or approximately-radial slots *i*, for receiving slide-bars *k*, the inner end *l* of each of which forms a jaw or crimper-bar, whose edge is directly over the plate *f*, leaving a space between the last and such edges, through which space the edge of the shoe-upper and the adjacent portion of the expanding bag can rise. The slides may be pressed down by suitable springs, against the stress of which they can rise; and they are preferably all connected by pins *n* to a rotative ring, *o*, the pins entering slots *p* in the ring, so that by turning the ring all the slides are automatically and simultaneously moved forward.

The last with the upper upon it being placed in the empty bag, and the plate *f* being in position, water is forced into the bag through a suitable pipe, *q*, filling which it presses the inner side of the bag against the upper, and the upper against the last. Then, as the pressure of the water continues the bag expands,

and as it can move only in an upward direction its expansion causes it to press up the upper with it, the edges of the upper rising beyond the edges of the slides. While the pressure of the bag is still upon the upper to hold its edges in this position, the slides *k* are moved inward, thereby crimping the upper edges over upon the sole, (lying upon the last,) and holding them there until they can be secured by lasting tacks.

By varying the thickness of the bag in different parts thereof, the expansion of the parts may be regulated so as to attain the greatest

upward pressure where wanted, and a minimum of pressure where no upward strain or but little strain is required.

I claim—

In combination with the flexible and elastic bag or bags, to be filled and expanded as described, a series of slide-plates, bars, or jaws, for crimping and holding the edges of the upper, substantially as described.

CHARLES W. GLIDDEN.

Witnesses:

FRANCIS GOULD,
M. W. FROTHINGHAM.