C. W. GLIDDEN.

Manufacture of Boot and Shoe Heels.

No. 134,538. Patented Jan. 7, 1873.

Fig. 2.

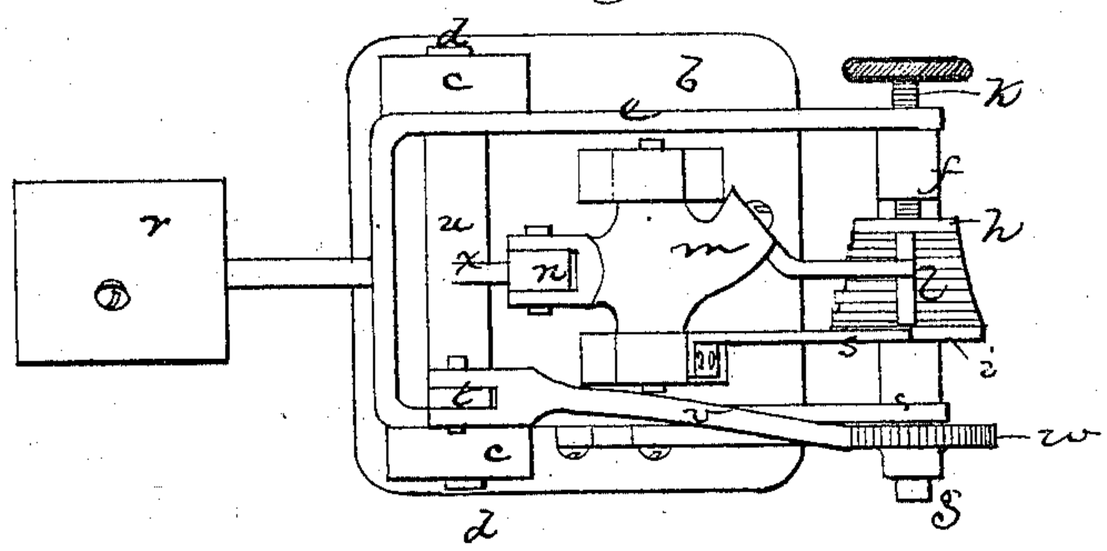


Fig. 3.

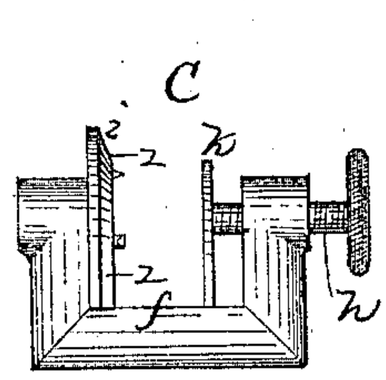
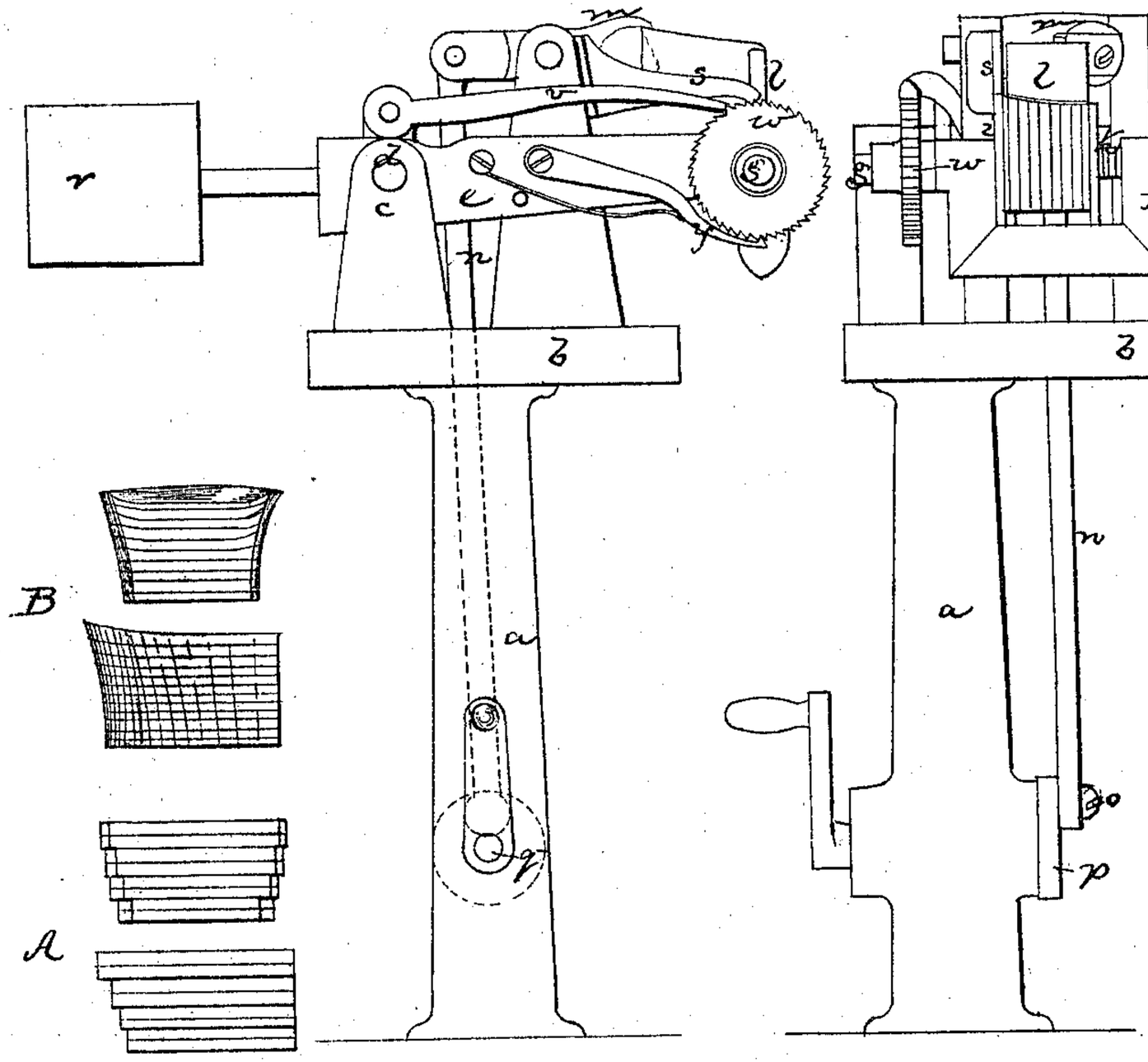


Fig. 1.



Witnesses.
M. W. Knothingham.
L. A. Coatimer.

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UNITED STATES PATENT OFFICE.

CHARLES W. GLIDDEN, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF BOOT AND SHOE HEELS.

Specification forming part of Letters Patent No. **134,538**, dated January 7, 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 the Manufacture of Boot and Shoe Heels; 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 invention relates to a new method of shaping and solidifying the edges of boot and shoe heels.

Heretofore such heels have generally been made up of flat lifts compressed, compacted, and fastened together, the edge of the heel-blank being trimmed to bring it to shape for the action of the burnisher, and the edges not being compressed or solidified laterally prior to the action of the burnisher. Sometimes, however, in connection with pressure applied to compact the lifts together, they have been forced into a tapering mold that, to a greater or less extent, shaped the edges.

In my invention I clamp the assembled heel-lifts between two clamp-plates and then hammer the edges of the lifts to edge-shape the heel, the result being that I obtain a heel with a very hard edge-surface that will not crack or open between the lifts, and that is in perfect condition (after a slight trimming) for the action of a burnishing-tool, the labor of burnishing being very much lessened, as no solidification has to be effected by the burnisher.

My invention consists, primarily, in this method of edge-shaping a boot or shoe heel and in such a heel so shaped.

The drawing represents a machine for edge-shaping boot and shoe heels in accordance with my invention.

Figure 1 shows the machine in end elevation. Fig. 2 is a plan of it; Fig. 3, a side elevation.

a denotes a post, upon the top of which is a plate, *b*, having bearings *c* that support the journals of a shaft, *d*, carrying a tilting-frame, *e*. At the front end of this frame is a clamp, *f*, pivoted to the frame by a journal, *g*, and a screw-pin, *h*, this clamp having a clamp-plate, *i*, (stationary with respect to the clamp,) and a movable clamp-plate, *k*, which is forced toward the plate *i* by the screw *h*. The peripheral edge of one of the plates *i k* is of the shape to be imparted to the edge of the heel at the top, and the edge of the other plate is of the shape to be imparted to the edge of the heel at the bottom, the plate *i* being shown in the drawing as the large plate and the plate *k* as the small plate. Between these two plates the assembled heel-lifts (tacked together) are clamped, the blank, when placed in the clamp, being formed of heel-lifts piled together with their irregular edges in the condition shown at A, which represents in side view and in front view a blank to be shaped, such blank, when shaped, having the appearance shown at B, which represents similar views of the shaped heel. Over the clamp is a hammer, *l*, the face of which is of the shape to be imparted to the edge of the heel in radial planes for the curved part, and in planes parallel to the breast for the straight parts. This hammer is on the end of one arm of a lever, *m*, whose other arm is connected by a link, *n*, to a crank-pin, *o*, of a crank-wheel, *p*, on a driving-shaft, *q*, journaled in the post *a*, the percussive blows of the hammer being effected by the rotation of the shaft. The clamp *f* may be raised by a weight, *r*, on the rear end of the frame *e*, its rise being arrested by a suitable stop, *s*, and the heel yielding slightly against the stress of the weight under the action of the hammer.

The clamp is moved rotatively to bring the whole surface of the heel to the action of the hammer, and this rotative movement may be intermittently effected as follows: To an arm, *t*, of a rocker-sleeve, *u*, (upon the shaft *d*,) a pawl, *v*, is jointed, this pawl engaging with the teeth of a ratchet-wheel, *w*, on the clamp-journal *g*. An arm, *x*, extends from the sleeve through a slot in the link *n*, and at each descent of the link the pawl is thrown forward and turns the ratchet, thereby effecting the intermittent rotative movement of the clamp and the heel held by it, the pawl being moved back by the rise of the link, and the ratchet being then held by a suitable detaining-pawl, *y*.

I have thus described an organization, (constituting part of my invention,) but although such organization is effective, it may be greatly modified so long as it embraces a hammer, as described, and mechanism for operating it to subject the heel-edge to its percussive blows.

In the common method of making the shaped heel from the blank shown at A, the edge is simply trimmed, the thickness of the heel remaining as in the blank, and the heel being built up to form the sole-receiving concavity, by tacking upon its upper surface around the edge a split lift or rand.

In my method of edge-shaping the heel I increase the thickness of the heel-edge by the hammering process, the excess of edge leather at the edges of the respective lifts being not only compacted and solidified, but also driven upward, as seen at B, thereby securing the concavity without adding the rand or split lift, and producing a heel of greater height than is obtained by or due to the mere thickness of the lifts.

To effect this in the machine, I make the clamping-surface of the large plate about equal to the surface of the clamp-plate *k*, and chamfer the surface of the large plate from such clamping-surface to the edge, as seen at C, the leather as it is hammered gradually turning toward this chamfer and finally filling up to it.

I claim—

1. The method of edge-shaping boot and shoe heels by clamping each heel in a machine and subjecting the edge to the action of an automatic hammer, substantially as described.

2. A boot or shoe heel which is edge-shaped by clamping the heel-lifts together and subjecting the edge of the blank to the automatic treatment, substantially as described.

3. A boot or shoe heel in which the edges of the lifts are driven upward (by the automatic hammering process while the heel is clamped) to form the concave seat, substantially as shown and described.

4. The combination of the rotative heel-clamp with the hammer, formed and operated substantially as described.

5. The heel-clamp, having the clamp-plate *k* formed with the chamfer *z*, substantially as and for the purpose set forth.

6. In combination with the heel-clamp, the tilting-frame *e* for holding the heel to the action of the hammer, substantially as described.

C. W. GLIDDEN.

Witnesses:

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M. W. FROTHINGHAM.