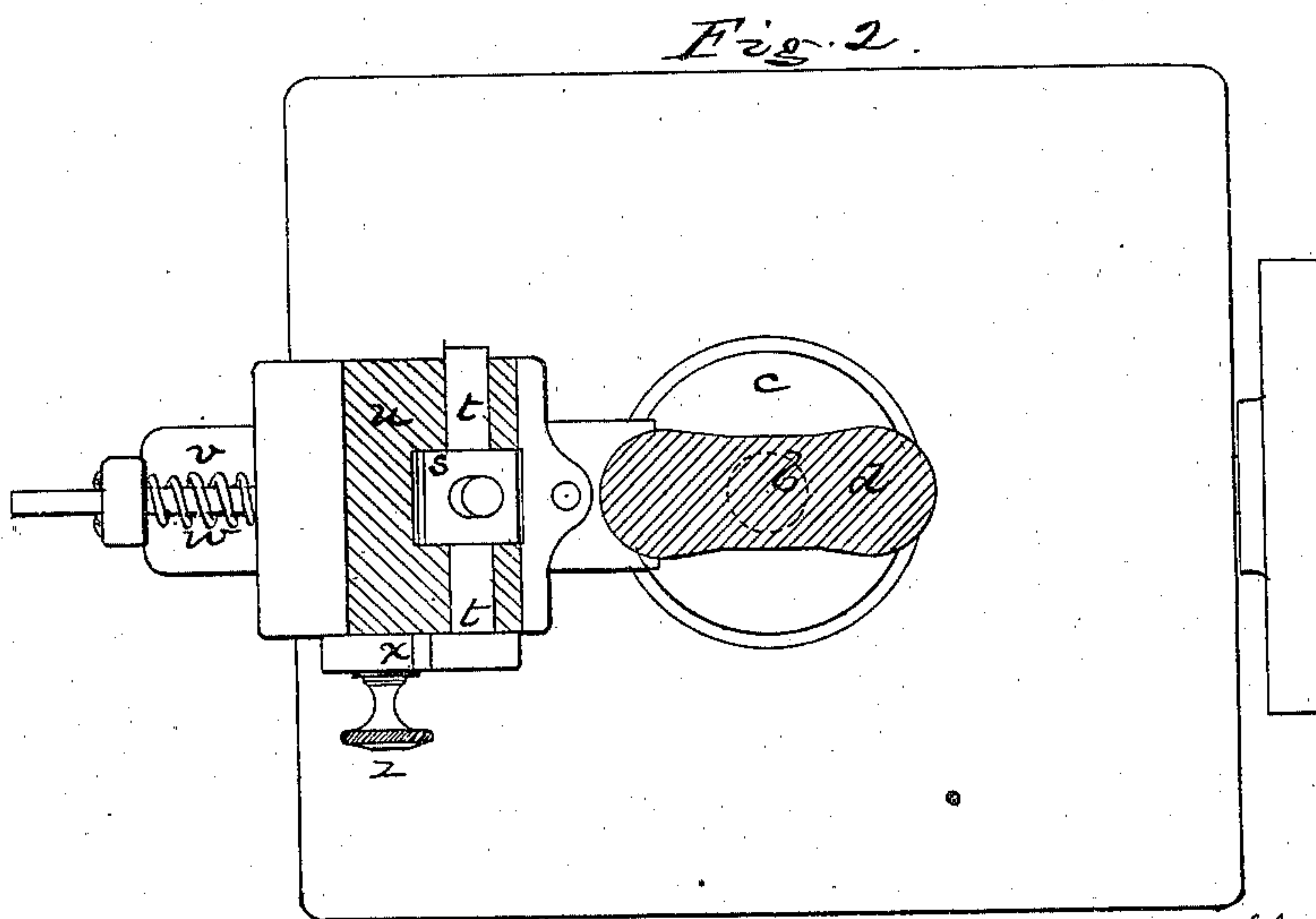
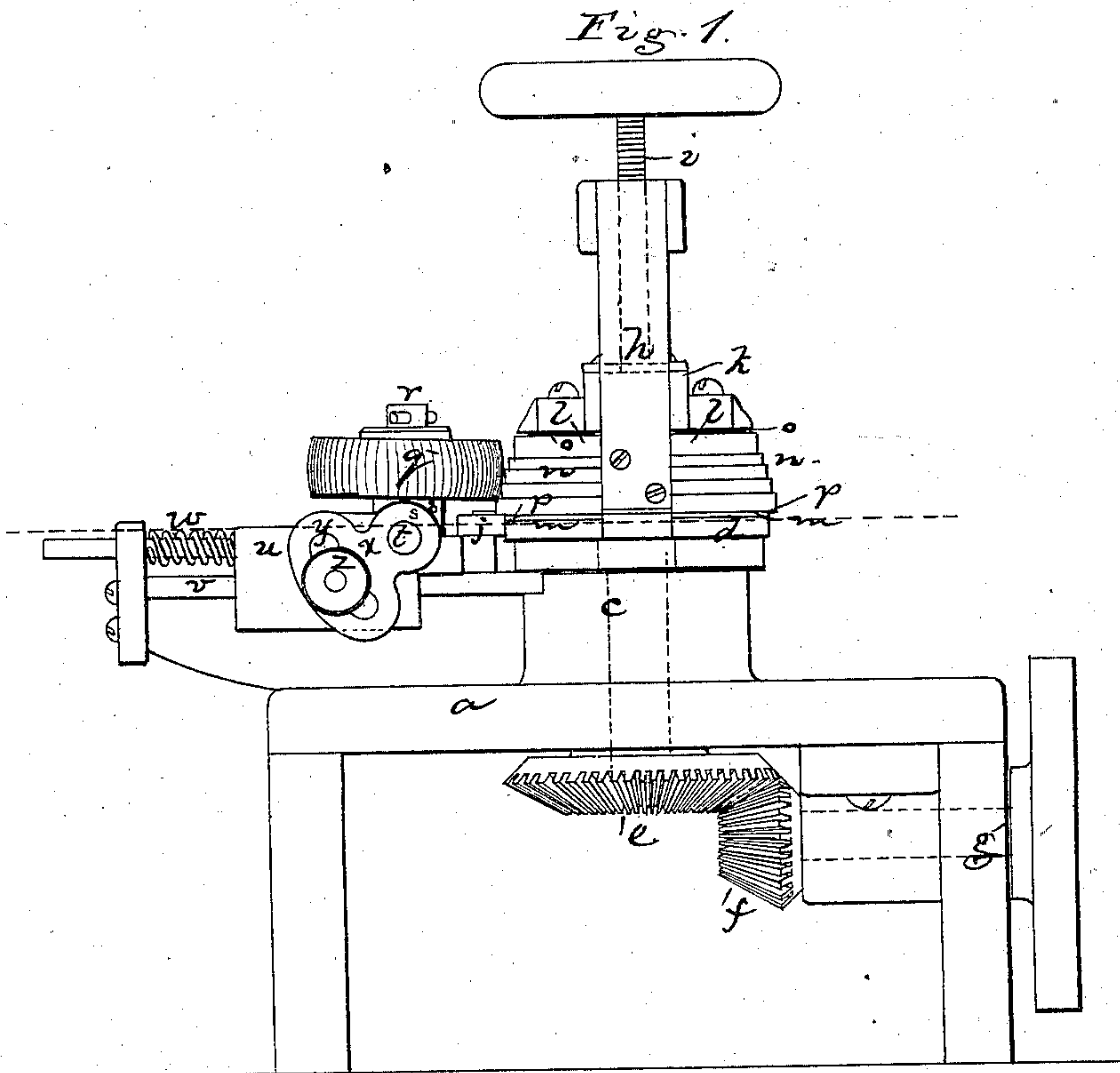


C. W. GLIDDEN.

Machines for Forming Boot Heels.

No. 138,634.

Patented May 6, 1873.



Witnesses.  
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L. H. Latimer.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MACHINES FOR FORMING BOOT-HEELS.

Specification forming part of Letters Patent No. 138,634, dated May 6, 1873; application filed  
April 2, 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-Heels; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms a 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 a new method of shaping the peripheral or curved edge surface of those boot-heels which are made up of layers or lifts, the respective lifts for a heel being each cut to an approximation of its size in accordance with the position it is to occupy in the finished heel, and such lifts being then assembled in accordance with their respective sizes and united by tacks or other fastenings sufficiently to hold them together to form a heel-blank. The curved edges of such lifts jut out in step-like form, one beyond another, and they are generally trimmed off to impart a regular form. In my invention I rub down the edges until they merge and form one curved surface, the operation of rubbing not only bringing the edge of the heel to the required shape for a finished heel, but solidifying, compacting, and hardening the curved surface of the heel. To effect this I roll the edges by means of a wheel, the heel-blank being clamped in position and the wheel and heel occupying such relative positions and having such relative movements that, by bringing the whole length of curved edge to the action of the wheel, the several lift-edges are rolled down until they, by pressure, are brought to one uniform surface. The invention consists, primarily, in this method of shaping heel edges by the rolling pressure of a wheel or wheels.

The drawing represents a machine embodying my construction.

Figure 1 shows the machine in side elevation. Fig. 2 is a sectional plan on the line *x x*.

*a* denotes the frame of the machine. *b* is a vertical spindle, extending through a block or boss, *c*, and having fixed on its top a plate, *d*. At the foot of the spindle is a bevel-gear, *e*, into which meshes a bevel-gear, *f*, on a hori-

zontal driving-shaft, *g*, rotation of the shaft *g* effecting rotation of the plate *d*. From the center of the plate *d* a vertical post, *h*, rises, this post being slotted, and having a screw, *i*, working through a nut-thread in the head of the post down into the slot. On the foot of the screw is a block, *k*, sliding vertically in the slot and guided by it, and from opposite ends of this block extend two clamp-plates, *l*. The top of the plate *d* is made with seat-pieces or surfaces *m*, and between each piece *m* and the clamp-plate *l*, above it, the heel-blank *n* is placed, the breast of the blank against the post. By turning down the screw the clamps *l* are forced down, and clamp a heel between each plate *l* and the faces *m* of the plate *d*. An elastic washer, *o*, may be placed between each plate *l* and the ear, extending from the block *k*, to which the plate is fastened, these washers permitting the respective plates *l* to accommodate themselves to slight inequalities in the thickness of different heel-blanks. Each face *m* may be slightly chamfered at its edge, as seen at *p*, to enable the compressed lifts to move upward at their edges, thereby forming the hollow or concave heel-seat. The edge of each piece *m* constitutes a pattern for guiding and controlling the extent of pressure of the wheel. *q* denotes the edge-shaping wheel. This wheel is preferably formed with peripheral teeth or serrations, and it turns on a pin, *r*, extending through its center, the pin extending from a block, *s*, made fast upon a shaft, *t*, extending through a slide or carriage, *u*, which slides on a guide-rail, *v*. The carriage is pressed toward the heel-blanks by a suitable spring, *w*, to bring the wheel against the edges of the respective blanks as the plate *d* is rotated. Upon the end of the shaft *t* is an arm, *x*, in which is a curved slot, *y*, a clamp-pin, *z*, passing through the slot. By means of the slot and pin the wheel is tipped so as to bring its edge in proper position to form the taper of the heel edge. At the inner end of the carriage *u* is a guide-roll, *j*, and as the wheel by its pressure condenses the lift-edges this roll finally reaches and rolls against the curved pattern-edge of the plate, thereby determining the extent of inward movement of the leather by the pressure of the wheel and the form to



be imparted to the curved heel edge or surface. The wheel turns by friction of the rotating lift-edges against it and the carriage yields back and moves forward in accordance with the form of the heel-blanks and their position in relation to the center of rotation of the frame in which they are clamped.

The wheel may be arranged to rotate around the heel-blanks, they being held stationary; but it will be obvious that the arrangement shown is the preferable one.

By making the wheel with the peripheral serrations the lift-edges more readily yield as the teeth act intermittently or upon intermittent spaces.

I claim—

1. In combination with a clamp for holding an assemblage of heel-lifts, a wheel operating to compress the heel lift-edges and shape the heel-edge, substantially as described.

2. In combination with the clamp, the wheel having the peripheral serrations, substantially as described.

3. The combination of the rotating clamp for holding the heel-blanks with the wheel attached to the carriage *u* and moved forward by the pressure of a spring, the wheel being in inclined position and the extent of compression of the lifts being determined by the pattern-plate *d* and roll *j*, substantially as described.

4. In combination with the clamp, the wheel made adjustable as to inclination, substantially as described.

5. The improved mode of shaping the edges of boot and shoe heels, consisting in subjecting the edges of the lifts to the rolling pressure of a wheel, by means substantially as described.

Executed this 15th day of March, A. D. 1873.

C. W. GLIDDEN.

Witnesses:

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