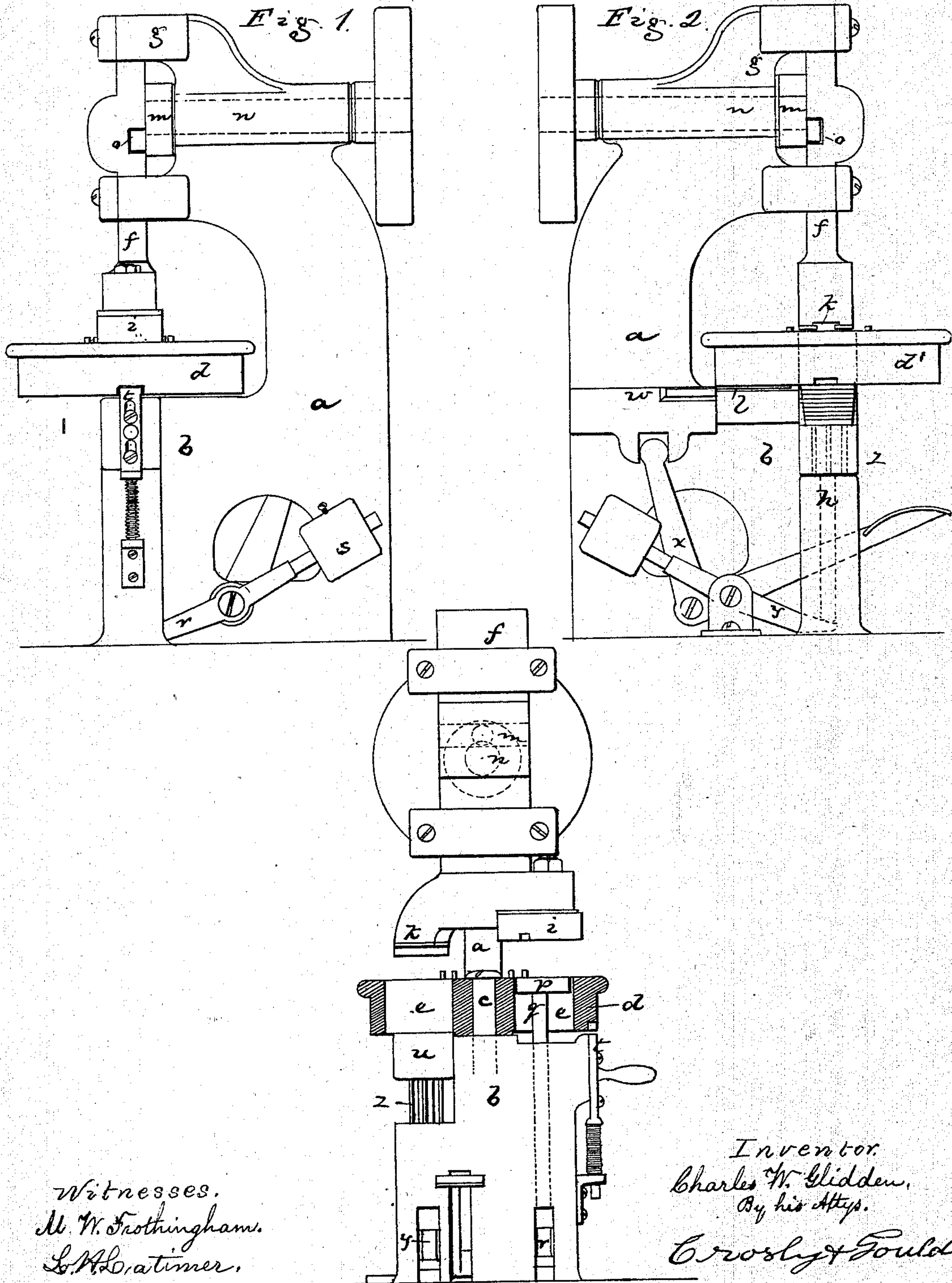


C. W. GLIDDEN.

Machines for Manufacturing Boot and Shoe Heel Blanks.

No. 139,382.

Patented May 27, 1873.



Witnesses.  
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 By his Atty.  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MACHINES FOR MANUFACTURING BOOT AND SHOE HEEL BLANKS.

Specification forming part of Letters Patent No. **139,382**, dated May 27, 1873; application filed May 6, 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 Heels for Boots and Shoes; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to an improved method of forming boot and shoe heels, and in this method I use a horizontal rotatory wheel, having a series of dies and die-spaces or molds for receiving the heel-forming material, which material may be, more or less, made of scrap-leather or leather-board. Over the wheel are two followers or plungers standing over two opposite dies or molds, and one of these followers forces the heel-forming material down into the die beneath it, and against a piston which is held up by a strong spring or a weighted lever, the material being compressed by the plunger and compacted against the sides of the die, and as it is compressed and fills the die-space, crowding down the piston until the top face of the piston is just below the plane of the bottom of the wheel, at which point the piston is stopped. While this filling and compressing progresses the wheel is locked, but when the die is filled the wheel is unfastened and may then be turned to bring the next die under the plunger and over the piston, when the piston will fly up into the recess to resist the filling of the die, and, by its resistance and the action of the follower, insure its compression. When the filled die (as the wheel is turned) is brought under the other follower the descent of the follower into the top of the die forces down through the die enough of the material to form a lift, and a cutter-blade, sliding in the plane of the bottom of the wheel, is then advanced and slices off such lift-forming portion. Beneath the die is a nail-block having vertical holes charged with nails, and this block is supported by a pin upon a lever weighted to throw the block up against or toward the wheel. Under the block is a driver-block having suitable stationary drivers that enter the

nail-holes, so that as the lifts are pressed down upon the nail-block the nails in the block are driven through the lifts. The several dies are respectively shaped to form, in succession, lifts of variable size to make up a heel, and by bringing the dies in succession over the nail-block and slicing from each in succession the lift forced down by the plunger upon the impaling-nails, heels may be readily formed. It is in the organization thus generally described, and in the details thereof to be described, that my invention consists.

The drawing represents a machine embodying my invention.

Figures 1 and 2 represent opposite side elevations. Fig. 3 shows a front and sectional elevation.

*a* denotes a stand, to the front piece *b* of which is pivoted by a pin, *c*, the horizontal die-wheel *d*. Said wheel has four or any other suitable number of dies or molds, *e*, preferably made of variable size, as before stated. Over this wheel is a slide-plate, *f*, sliding in the head *g*, and having at its foot a follower, *i*, that presses the heel-forming material into the die beneath it, and a plunger, *k*, that forces the compressed heel-lift blank down through the die beneath it, far enough to enable the knife *l* to slice from its end a heel-lift. The slide *f* is shown as operated from a crank-wheel, *m*, on the end of a shaft, *n*, the crank-pin working in a slot, *o*, of the slide. The die under the follower *i* is the lift-forming or compressing die, and is to be filled in any suitable manner with blank lifts, or with scraps charged with cementitious matter to insure their adhesion, and into this die enters a piston, *p*, which is fixed to the top of a rod, *q*, pressed up by a lever, *r*, at the outer end of which is a weight, *s*, the follower compressing the material upon the top of this piston until the die filled with the compacted material presses the piston below the plane of the bottom of the wheel, when the wheel will be free to move by unlocking a bolt, *t*, that holds the wheel in position. Each die is thus charged in turn, and as the first and smallest one comes under the plunger *k*, this plunger, as it descends, enters the top of the die and forces the blank down so that its bottom end projects beyond the bot-



tom of the wheel, it being pressed against and pressing down a nail-block, *u*, having holes in which are placed suitable nails to unite the successive lifts. In the plane of the bottom of the wheel is a blade, *l*, fixed to a slide, *w*, moving on a suitable guide-rail, and pressed forward by a foot-lever, *x*, said lever or a suitable spring also drawing it back. When the plunger has pressed the lift-blank down (which it does to an extent equal to the thickness of the plunger) the cutter is driven forward and slices from the bottom of the blank a heel-lift. The nail-block is supported by means of a suitable rod or pin on a weighted lever, *y*, and extending into the nail-holes is a series of drivers, *z*, projecting from a stationary driver-block, *h*, and when the nail-block is against the wheel the nails resting upon the driver extend to the top of the nail-block. Therefore, as the plunger drives down the lift and the lift drives down the block, the lift is impaled upon the nails, which are held in position by the drivers. One lift being thus sliced off and impaled, the wheel is turned and another lift is similarly forced down, impaled, and sliced off until, each of the dies having thus furnished a lift, the heel will be completed. By making the plunger *k* removable plungers of different thicknesses may be used to make heels of varying height. As each die, after passing

the plunger *k*, reaches the follower *i* it will be filled up with the lift-forming material, compressed, compacted, and united by cement under the action of the follower. The dies may be made flaring from the bottom to aid in the compression and formation of the heel-lifts, the bottom or delivery end of each die being the gage that controls its size.

I claim—

1. The die-wheel *d*, follower *i*, piston *p*, plunger *k*, and nail-block *u*, combined and operating substantially as shown and described.

2. In combination with the plunger *k*, the dies *e*, block *u*, and cutter *v*, operating substantially as described.

3. The combination of the plunger *k*, nail-block *u*, cutter *v*, driver-block *h*, and drivers *z*, operating to cut, assemble, and nail the successive lifts, substantially as described.

4. The improved method of making boot and shoe heels, consisting in forming material for the various lifts in successive dies, cutting the respective lifts in succession, and assembling and uniting them by means substantially as described.

Executed this 12th day of April, A. D., 1873.  
C. W. GLIDDEN.

Witnesses:

FRANCIS GOULD.

M. W. FROTHINGHAM.