E. N. HIGLEY.

Machine for Constucting Boot and Shoe Heels.

No. 161,511. Patented March 30, 1875.

Fig. 1.

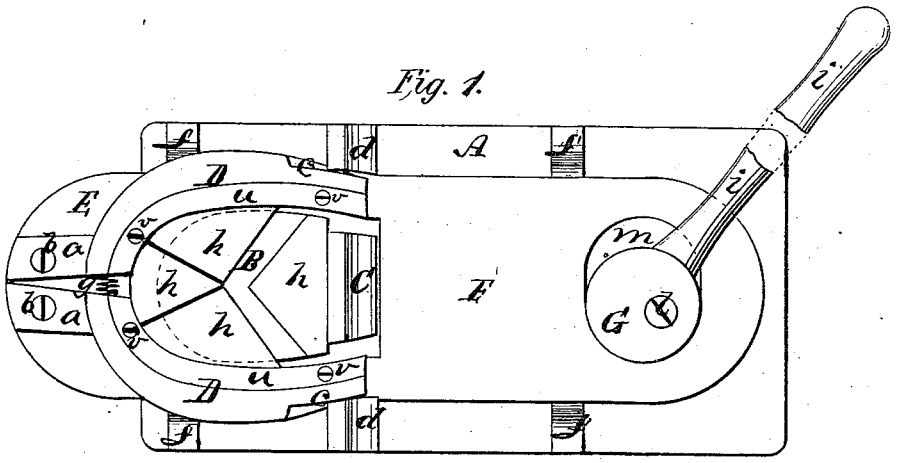


Fig. 2.

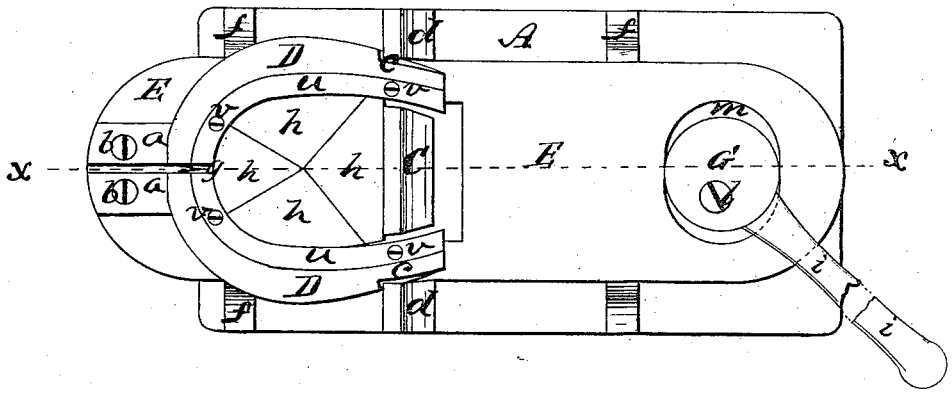
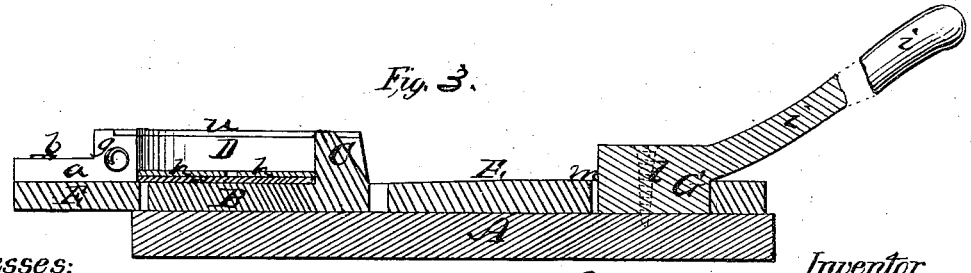


Fig. 3.



Witnesses:
Geo. H. Graham.
Frank D. Thomason

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UNITED STATES PATENT OFFICE.

EBEN N. HIGLEY, OF GREAT FALLS, NEW HAMPSHIRE.

IMPROVEMENT IN MACHINES FOR CONSTRUCTING BOOT AND SHOE HEELS.

Specification forming part of Letters Patent No. **161,511**, dated March 30, 1875; application filed July 20, 1874.

To all whom it may concern:

Be it known that I, EBEN N. HIGLEY, of Great Falls, in the county of Strafford and State of New Hampshire, have invented an Improved Machine for Constructing Boot and Shoe Heels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a top view of the machine, the parts thereof being in position as open, for inserting the pieces of leather to compose a heel; Fig. 2, a top view of the machine, the parts being in position as closed, to clamp the pieces of leather for nailing together; Fig. 3, a longitudinal vertical section thereof, in a plane indicated by the line *x x*, Fig. 2.

Like letters designate corresponding parts in all of the figures.

This machine is designed for the purpose of building up boot and shoe heels from small pieces of leather, whereof two, three, or four pieces are required for each lift, except the bottom and top lifts, which are made from single pieces of leather. The pieces are previously cut out by dies of various shapes, to make two-piece, three-piece, and four-piece lifts, thereby utilizing pieces of leather otherwise of little or no value. But, in order to make a good, solid, and close heel from these pieces, they require to be firmly clamped together edgewise of the lifts, while the same are being nailed together, and this compression of the pieces requires to be in all directions.

I employ a base or bed piece, A, upon which is secured or formed a block, B, having nearly the form of a heel, and being of a size as small as, or a little smaller than, the smallest heel to be constructed thereon. At the straight instep end of this block is a vertical projection or jaw, C, as high as any heel is required to be constructed thereon. In connection with this jaw, two movable jaws, D D, are employed, each embracing one side and one-half of the rear end of the heel, substantially as shown. The rear end of each jaw has a backward extension, *a*, which is pivoted at *b* to a carrier, E, underneath it, the two jaws being close or near together at that part, but separated sufficiently to allow a lateral outward and inward movement of the jaws on the said pivots. The front ends of the jaws D D are free to swing in and out, and have inclined or wedge-acting outer surfaces *c c*, which move in contact with stationary cams *d d*, projecting upward from the base A of the machine. The carrier E rests on the bed A, has a thickness about the same as the block B, which it embraces, and has a longitudinal movement in ways or between guides *f f f f* of the bed. When the carrier E is slid back, as shown in Fig. 1, the jaws D D are separated by a coiled spring, *g*, between them, or by equivalent means, as far as the cams *d d* permit. They thus leave sufficient open space around the form-block B to allow the pieces *h h h h*, composing the heel-lifts, to be easily and loosely inserted, and the formed heels to be withdrawn. The lifts are composed, one after another, till a heel is built up, when the carrier E is drawn forward, and the jaws D D are closed around the lifts, compressing them laterally edgewise, as the cams *d d* force the jaws inward, and finally compressing them fully from the rear, as they are brought up against the fixed jaw C. The heel is confined in this position until the lifts are nailed or otherwise fastened together, after which they remain very close and compact.

In order to produce the sliding movement of the carrier E, and the consequent opening and closing movement of the jaws D D, I ordinarily employ an eccentric, G, provided with a handle, *i*, and pivoted at *l* to the base A. This eccentric turns in a transverse cam-slot, *m*, in the carrier E, Figs. 1 and 2, showing, repectively, the positions of the eccentric when the jaws are open and closed. In the latter position, also, the eccentric holds the jaws locked in the closed position.

This device for operating the jaws D D is quite suitable for machines used in large manufactories, where a different machine may be employed for each size of boot and shoe heel.

The whole machine may be made of iron; but, to protect the jaws D D from the blows of the hammer in nailing the heels, and to soften any blows given thereby, the upper inner surfaces of the said jaws are shielded by

strips of leather *u u*, secured thereto by screws *v v*. These strips can be removed and replaced, as found necessary.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for clamping and holding the lifts of boot and shoe heels, the combination of clamping-jaws D D, adapted to receive a lateral closing movement, and, simultaneous therewith, a longitudinal motion toward a fixed jaw or stop, C, with the said stop, for the purpose of producing compression against the entire edges of the heel-lifts, substantially as herein specified.

2. The combination of the movable jaws D D, having inclined or cam-acting surfaces *c c* thereon, the fixed studs or cams *d d*, and the stationary jaw C, substantially as and for the purpose herein specified.

3. In a machine for clamping and holding pieced lifts of boots and shoe heels, the combination of a base, A, fixed jaw C, pivoted movable jaws D D, sliding carrier E, and stationary cams *d d*, substantially as and for the purpose herein specified.

Specification of my improved machine for constructing boot and shoe heels signed by me this 14th day of July, 1874.

EBEN N. HIGLEY.

Witnesses:

JOS. L. HANSON,

MARVIN W. LIBBEY.