

J. Gilson,

Keel Machine.

No. 103734.

Patented May 31. 1870.

Fig. 1.

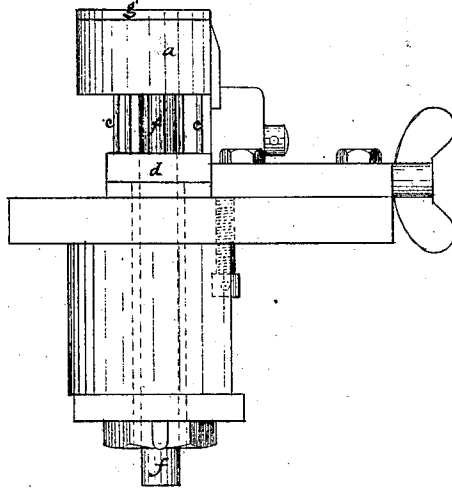


Fig. 2.

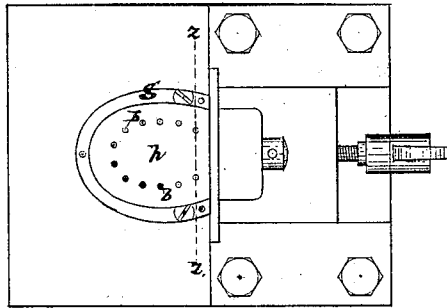


Fig. 3.

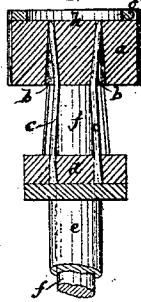


Fig. 4.

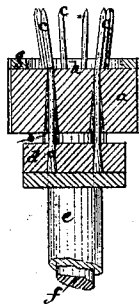
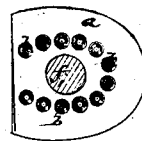


Fig. 5.



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JOHN GILSON, OF STONEHAM, MASSACHUSETTS, ASSIGNOR TO GORDON
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Letters Patent No. 103,734, dated May 31, 1870.

IMPROVEMENT IN MACHINES FOR HEELING BOOTS AND SHOES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN GILSON, of Stoneham, in the county of Essex and State of Massachusetts, have invented an Improvement in Heeling-Machinery; 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.

In preparing heels to be attached to boots and shoes by nails driven from the outside or tread of the heel through the layers of which it is composed into and through the sole, (both outer and inner soles, if an inner sole is used,) it is desirable to make holes for reception of the nails, to guide them, and to make such holes to conform to the rake, bevel, or inclination of the heels, and to make such inclined holes all at one time and operation.

It is not new to make, by one operation with a set of awls, holes in a heel to receive the nails which fasten the layers together and secure the heel to the sole; nor is it new to make hole after hole by hand, with an awl, corresponding with the inclined contour of a heel; but, so far as I am informed, it is new to accomplish what I perform by my invention, viz: making the entire set of nail-holes in a heel, in an inclined direction corresponding with the inclination of the convex outline of the heel, by one operation, with a set or gang of awls, all entering into and withdrawing from the heel together.

It is very desirable to have the nails in a heel quite near to its convex outline, and equally near both at the tread and seat, but as the tread is commonly much smaller than the seat, it follows that, if the heel-nails were driven square to the tread, and at a reasonable distance from the convex outline thereof, the nails would be so distant from the convex outline of the heel at its seat, that the layers, of which a heel is composed, would not be well compressed except near the tread, and the upper part of the heel would shrink and show open cracks, and would not be firm enough to finish well. Moreover, it is an object to fasten the heel to the sole as near to the outline of the sole as possible, for the heel is so held more securely than when the nails are remote from the sole edges.

The drawings show that portion of a heeling-machine in which my invention is embodied,

Figure 1 being a side view of said portion;

Figure 2, a plan; and

Figures 3 and 4, sectional views, taken in the plane of the line *z z*, seen in fig. 2.

Figure 5 is a reversed plan of the perforated block *a*.

a is a block, which is perforated with conical holes, *b*, which block is forced up and down over the awls *c*, which play in said holes, the awls being bent to an

angle, as seen in figs. 3 and 4, and being made fast in a plate, *d*, which is secured to a tube or sleeve, *e*, in which slides the rod *f*, which is attached to the block *a*, so that said block can be forced up over the awls.

On the top of block *a* is fixed a guide, *g*, to receive and properly locate heels by their tread-surfaces.

The heel, made up of layers of leather or other material, slightly held together by a nail through the center, or by cement, or other means, is placed on the surface *h* of block *a*, the block being in the position shown in figs. 1 and 3; a plunger is made to descend on the seat-surface of the heel by any suitable powerful means, and the heel and block are driven downward, causing the protrusion of the awls beyond the surface *h*, and driving the material of the heel upon the awls.

The plunger being removed, the heel is stripped from the awls by elevation of the block *a*, by power applied to the rod *f*.

The permanent bend made in the awls is that shown in fig. 4, where the shanks of the awls are seen as vertical, and the operative ends are inclined outward. But when the block *a* is raised so as to cover the awl-points, they are thereby drawn and temporarily deflected inward, the shanks of the awls being drawn toward each other.

When and as the heel and the block *a* are forced downward, the awl-points spring outward, and, when the surface *h* arrives at the angle made in each awl, they will have assumed their natural inclined or flaring position, and will have made the desired inclined perforations in the heel.

The holes in the block *a*, for the reception of the awls, are made at the surface *h*, equal to or but slightly larger than the diameter of the awls, said holes being enlarged or coned from said surface, as they extend through the thickness of the block.

The extreme end of each awl-shank is made conical where it fits in the piece *d*, so that it is not possible to draw the awls from their holder when the block *a* is raised to strip the heel from the awls, and the ends of the awl-shanks resting against a solid bed or a piece supported thereby, the awls cannot be forced downward.

The arrangement described is that used for perforating a heel from its tread toward its seat, but, if it is desirable to make the perforations in the reverse direction, that is, from the seat toward the tread, the permanent bend given to the awls must be the reverse of that shown in fig. 4, that is, the awl-blade points must be inclined toward each other, instead of outward. This reversed arrangement is used when it is desired to nail heels from the inside of a boot or shoe, instead of from the outside.

The drawings show a knife and its means for adjustment, the purpose of the knife being to cut the front or breast of the heel at the time when it is forced down upon the awls; but, as this forms no part of my invention, further reference to it here is unnecessary.

I claim the combination of bent awls or punches, with a block perforated with holes, which are enlarged

for the purpose specified, when said parts are so arranged as to be capable of movement relative to each other.

JOHN GILSON.

Witnesses:

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