H. TURNER.

Heel-Cutting Die.

No. 213,013 Patented Mar. 4, 1879.

Fig. 1.

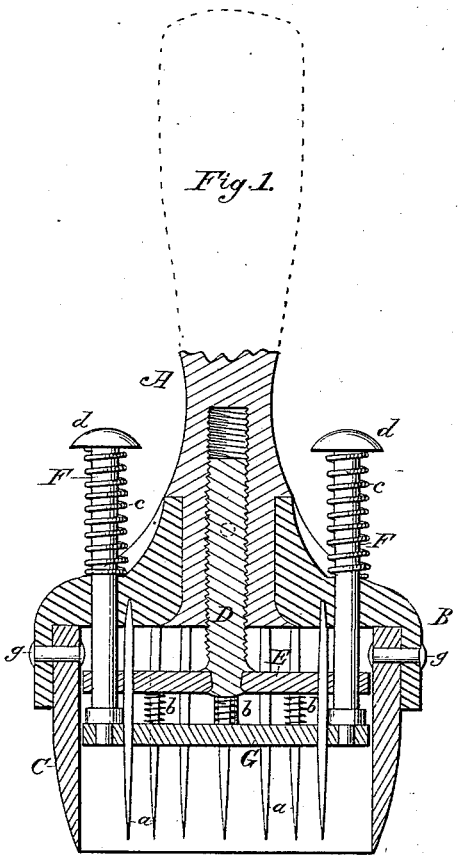


Fig. 2.

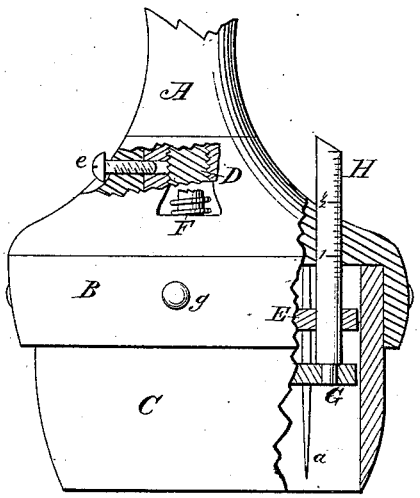
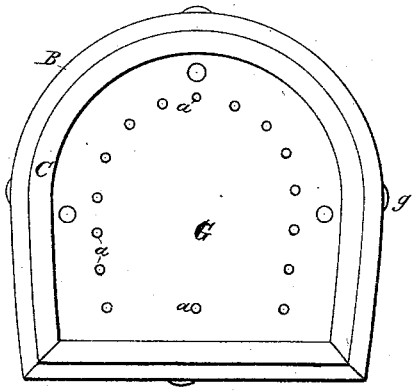


Fig. 3.



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UNITED STATES PATENT OFFICE.

HOWARD TURNER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN HEEL-CUTTING DIES.

Specification forming part of Letters Patent No. **213,013**, dated March 4, 1879; application filed January 22, 1879.

To all whom it may concern:

Be it known that I, HOWARD TURNER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Heel-Cutting Dies; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to produce an improved implement of that class used in the manufacture of boots and shoes commonly called a "heel-maker," which shall be capable of cutting and building the heel complete to any desired thickness before discharging it from the cutting-die; and the invention consists in certain details of construction which will be hereinafter fully described.

In the accompanying drawings, Figure 1 is a vertical section through the handle, cutting-die, and face and gage plates, showing the relative arrangement of the various parts of the implement. Fig. 2 is a side view, partly in section, so as to show the gage-rod and set-screw which secure the parts in position after they have been adjusted to form a heel of the desired thickness. Fig. 3 presents an end view of the tool showing the position of the awls and face-plate with relation to the cutting-die.

The handle A of the implement is provided with an internally screw-threaded opening, which receives the gage-screw D, and is also turned down at its lower end to fit an orifice formed for its reception in the top plate, B, and within which it freely revolves, except when secured in place by the set-screw *e*, which passes through a part of the top plate, and may be made to bear against the journal part of the handle, as shown in Fig. 2 of the drawings. This top plate, B, has an outline approaching that of a boot-heel, and is provided with a downward-projecting flange, within which the cutting-die C is secured by the rivets or screws *g*. This cutting-die has the outline and size of the largest lift of the intended heel, and is of such vertical depth as to receive within it not only the finished heel, but the necessary gage and face plates with their operative mechanism.

A series of awls, *a a*, are secured in the top plate, B, forming a row entirely around, within, and parallel to the cutting-die C, their length being nearly equal to the width of the die, so that they shall pierce every layer of leather as it is forced into the die.

A gage-plate, E, having an external perimeter of similar form, but slightly less than that of the internal face of the cutting-die, is rigidly secured to the lower end of the gage-screw D, and may be moved up and down within the die by rotating the handle A, which, in turn, acts upon the gage-screw, thus regulating the thickness of the heels formed by the tool.

A face-plate, G, similar in form to the gage-plate, is placed within the die below the gage-plate, being separated from the latter by means of spiral springs *b b*, or a layer of india-rubber, which absorbs the shocks which would otherwise be imparted to the handle in forcing the die through the leather. Attached to this face-plate are two or more rods, F, which pass upward through the gage and top plates. Upon the upper ends of these rods are formed buttons *d*, between which and the top plate, B, and surrounding the rods, are placed spiral springs *c*. This construction enables the operator to eject the contents of the die by pressure upon the buttons, which forces the face-plate outward.

A gage-rod, H, marked with suitable graduations, is also attached to the face-plate, and passes upward through orifices in both gage and top plate. By an inspection of this rod the operator is enabled to adjust the gage-plate to form heels of any desired thickness without the use of a rule or other measuring-instrument.

In operating this tool, the awls prick each layer of leather as it is cut by the die C. When the latter is filled by the successive cuts, the last layer is shaved to a level with the cutting-edge of the die, then gaged to fit the shank, after which it is nailed through, the nails clinching against the face-plate. The heel is

then ready to be discharged from the tool and applied to a boot or shoe.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. The rotating handle, in combination with the gage-screw and perforated gage-plate, for adjusting the latter with relation to the cutting-die, as described.

2. The combination of the rotating handle, gage-screw, and gage-plate with the top plate and set-screw *e*, as and for the purpose specified.

3. The face-plate provided with the ejecting spring-rods and gage-rod, as shown and described, in combination with the top plate, B, as and for the purpose stated.

4. The handle A and top plate, B, provided with awls *a a*, as shown and described, in combination with the gage-screw D, plates E and G, and cutting-die C, all arranged for joint operation in the manner specified.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

HOWARD TURNER.

Witnesses:
CHARLES W. TURNER,
GEORGE F. MEARS.