(No Model.)

C. HERON.

HEEL DIE.

No. 362,380. Patented May 3, 1887.

Fig. 1.

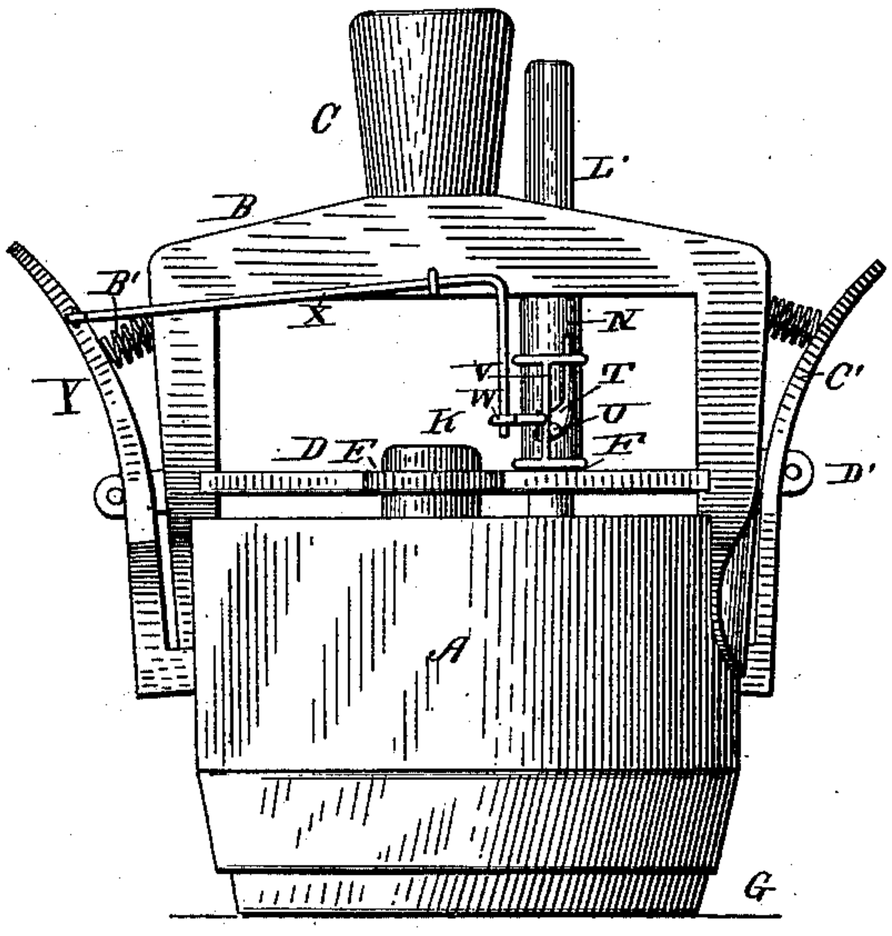


Fig. 2.

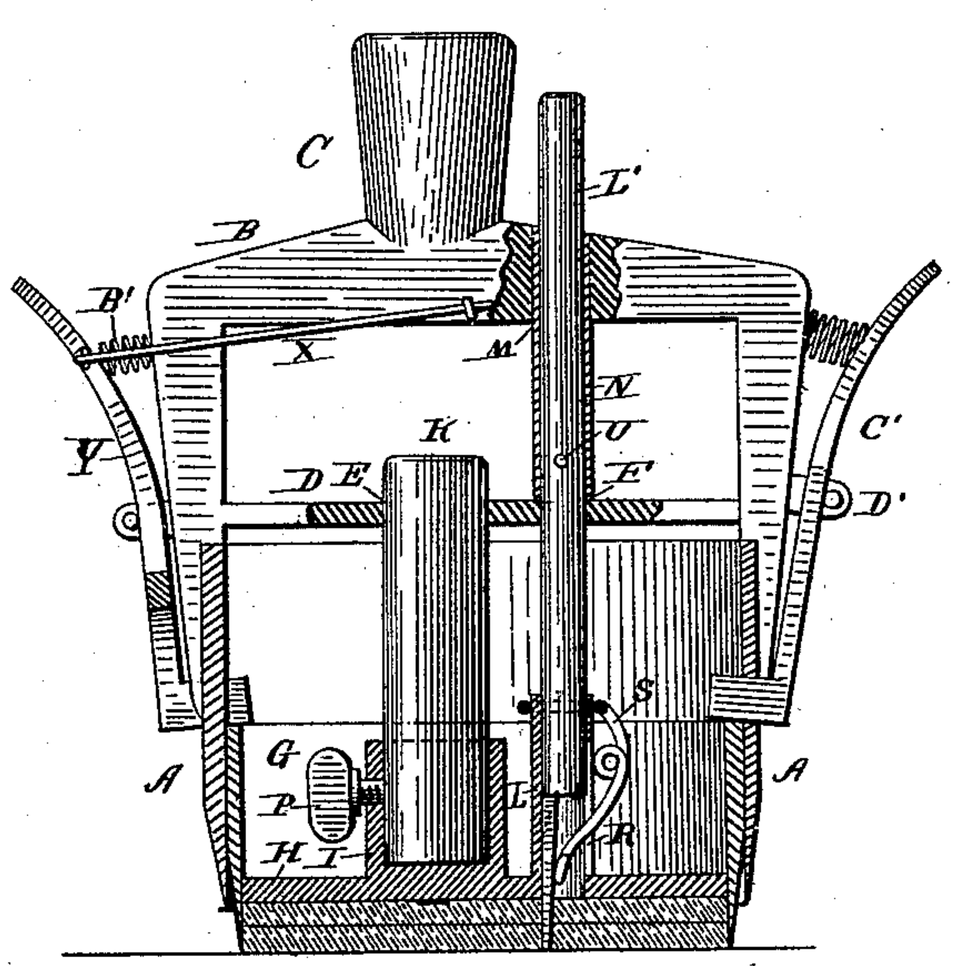


Fig. 3.

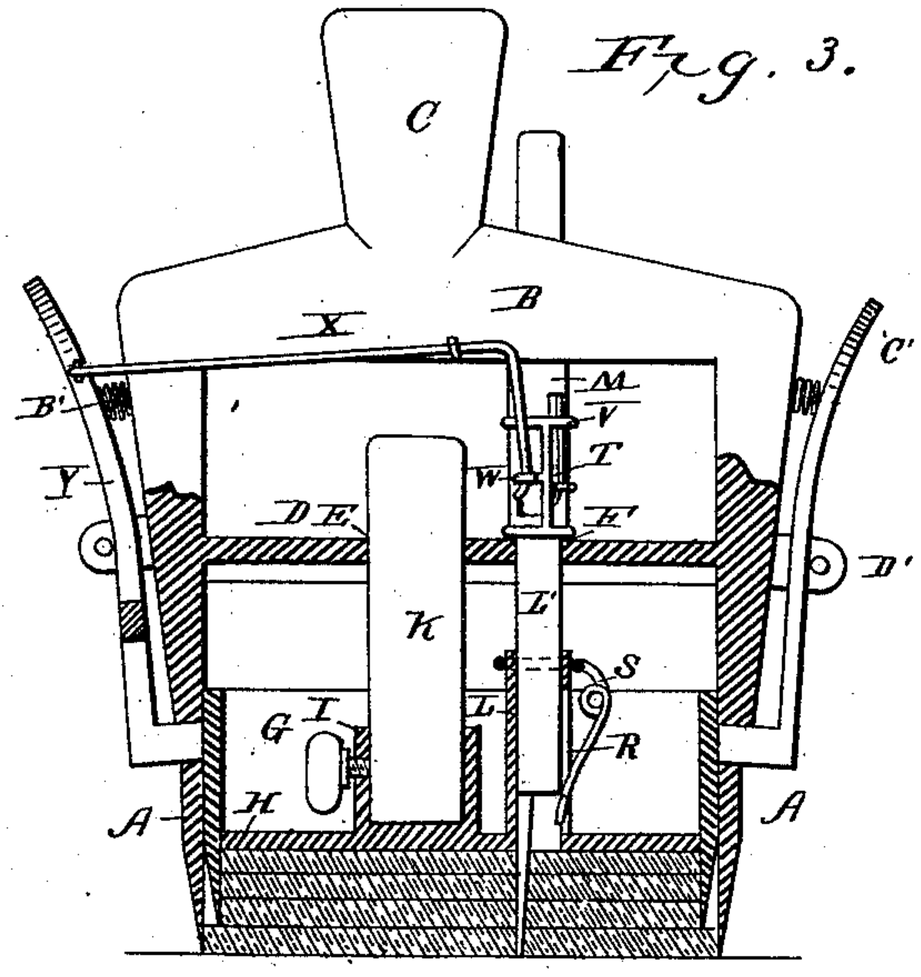


Fig. 4.

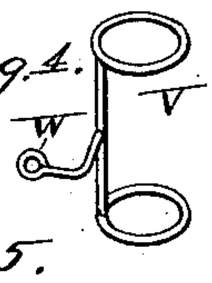


Fig. 5.

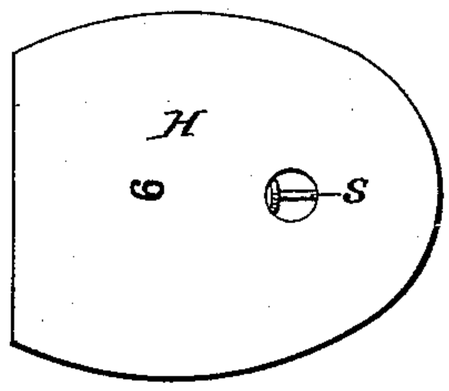
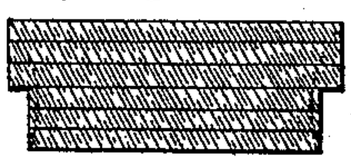


Fig. 6.



Witnesses:
C. A. Davis
John S. Finch

Inventor:
Christopher Heron
By his Attorney
C. A. Alexander

UNITED STATES PATENT OFFICE.

CHRISTOPHER HERON, OF GALENA, ILLINOIS, ASSIGNOR OF ONE-HALF TO WILLIAM RIDD, OF SAME PLACE.

HEEL-DIE.

SPECIFICATION forming part of Letters Patent No. 362,380, dated May 3, 1887.

Application filed December 2, 1886. Serial No. 220,447. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER HERON, a citizen of the United States, residing at Galena, in the county of Jo Daviess and State of Illinois, have invented certain new and useful Improvements in Heel-Dies, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of devices by means of which the successive layers of the heel are cut into proper shape by means of a suitable die or dies driven by a hammer or mallet.

The object of the invention is to provide for cutting the layers, successively building up the same, so as to form heels having the proper taper and of uniform and determined height, nailing the layers together, and finally stamping the number of the shoe to which the heel is to be applied upon said heel, as more fully hereinafter set forth. These objects I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a die constructed according to my invention; Fig. 2, a view, partly in section and partly in side elevation, of my improved die, showing the parts in position for cutting the lower heel-layers; Fig. 3, a similar view showing the parts of the die in position for cutting the upper heel-layers; Fig. 4, a detached view, in perspective, of a portion of the mechanism for shifting the parts of the die; Fig. 5, a bottom view of a follower operating within the die; and Fig. 6, a sectional view of a series of heel-layers as cut by the die, connected together and ready for trimming.

The letter A indicates a hollow die, of the general configuration in plan of one of the heel-layers to be cut. The die is preferably made of steel, with its lower edge sharpened in order to cut readily. The die is provided with the usual yoke, B, and shank C, to receive the stroke of the hammer and for handling. Across the yoke just above the die extends a flat cross-bar, D, which has a central opening, E, and an opening, F, at one side thereof, for the purpose more fully hereinafter explained.

Within the die A is arranged a smaller die, G, of similar shape, which is capable of being moved vertically in said die A, and within the die G is arranged a follower, H, which is also capable of a vertical movement. The follower is provided with a central boss, I, which is adapted to receive a vertical gage-bar, K, which extends upward through the aperture E and is adapted to move therein. The follower is also provided with a vertical tubular extension, L, in which slides a rod, L′, extending upward through the aperture F and through a tube, M, located in an aperture, N, in the breast of the yoke. The boss I is provided with a set-screw, P, by means of which the rod K may be temporarily confined. The extension L is provided with a vertical slot, R, through which extends a spring, S, the object of which is to hold the nail in position to be driven into the layers as cut, in order to bind them together. The tube N has a cam-slot, T, at one side, in which is adapted to work a pin, U, on the rod L, in order to elevate the rod when required.

V indicates a wire frame, having rings at the upper and lower ends, which encircle the tube M, and the vertical portion of the frame is provided with an arm, W, which is bent at right angles and connects with a bent arm or rod, X, secured to a bifurcated lever, Y, fulcrumed on the flat side of the die A and held normally by means of a spiral spring, B′. C′ also indicates a spring-actuated lever fulcrumed to a bearing, D′, at the opposite curved side of the die. These levers at their lower ends are turned inward at right angles and enter apertures in the walls of the die, projecting through the same to the inside thereof.

The operation of my invention is as follows: The parts being in the position shown in Fig. 2, it will be seen that the lower edge of the inner die projects below the lower edge of the outer die, the inner die being held in position by means of the inwardly-projecting ends of the levers above mentioned. In this position a series of layers or laps are cut by driving the die with a hammer or mallet, the nail being driven into each successive layer by striking the rod L′. When a sufficient number (say three layers) are cut by the inner die, the upper ends of the levers are pressed inward or toward each other, withdrawing the in-

wardly-projecting ends of the levers, releasing the inner die and permitting it to fall back at the subsequent cuttings. The outer die now commences its work, and the subsequent layers are cut as before, but in this instance by the outer die, and larger than those previously cut. Upon pressing in the levers the wire frame surrounding the tube turns the rod by means of its pin in the cam-groove, so as to elevate the rod to the proper position to drive the nail successively through the layers last cut. The height of the heel is regulated by the length of the bar H, which is interchangeable, as before mentioned. When the layers are fully and finally cut, the number-die on the follower makes the proper impression upon the last layer, to indicate the size of the shoe to which the heel is to be applied. The layers when removed are joined together, and are of two different sizes, so that when trimmed off, as indicated by the dotted lines in Fig. 6, the proper taper is given to the heel.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a device for forming heels for boots or shoes, of a cutting-die, a movable follower having a secondary cutting-die, a gage-bar, K, a nail-tube, and driving-bar, the whole arranged to operate substantially in the manner specified.

2. The combination, in a device for forming heels for boots or shoes, of the inner and outer dies and mechanism for holding the same and changing their relative positions, and the gage-bar K, nail-holding tube, and driving-bar, arranged to operate substantially in the manner specified.

3. The combination, with the cutting-dies and the mechanism for holding and releasing the inner die, of the nail-holding tube, the driving-bar and its pin, the cam-slotted tube, in which said pin is adapted to work, and the shifting frame connecting with the bifurcated lever, forming part of the mechanism for holding and releasing the inner die, substantially as and for the purposes specified.

4. The combination of the outer and inner dies, the holding and releasing mechanism, the follower and interchangeable gage-bar K, the nail-holding tube and spring, the driving-bar and its pin, the cam-slotted tube, and the shifting frame connected with the bifurcated lever, forming part of the holding and releasing mechanism, the whole adapted to operate substantially as and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTOPHER HERON.

Witnesses:
WILLIAM RIDD,
JACOB FAWCETT.