(No Model.)

F. A. WIDGER.

HEEL FORMING APPARATUS.

No. 252,916. Patented Jan. 31, 1882.

Fig: 1.

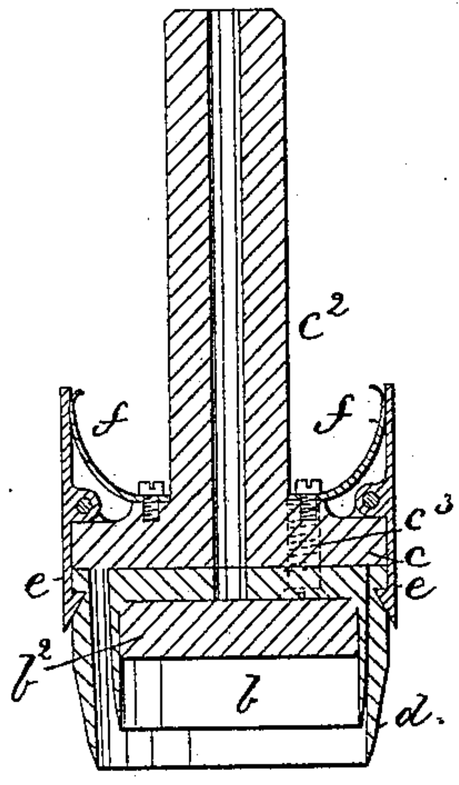


Fig: 2.

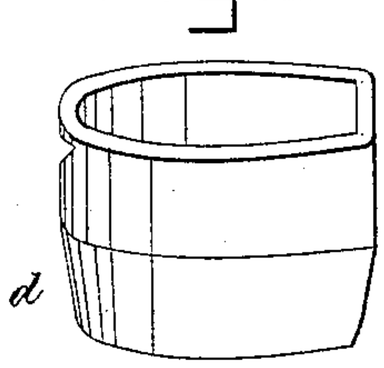


Fig: 4.

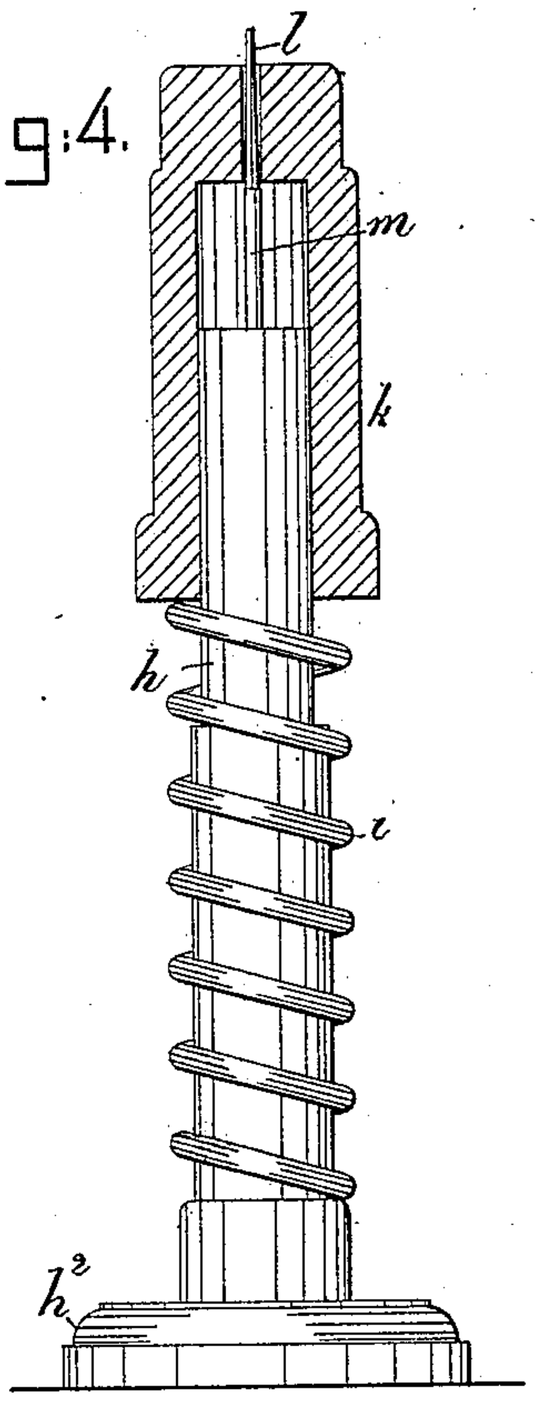


Fig: 3.

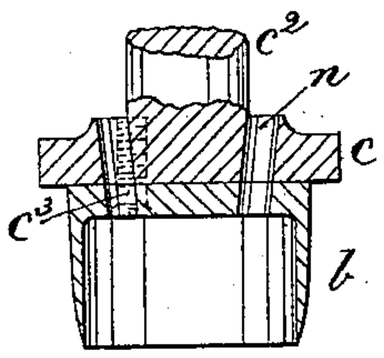
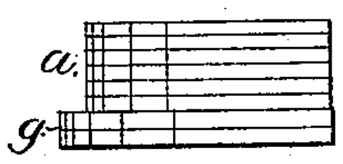


Fig: 5.



Witnesses.

L. F. Connor.

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by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE.

FRANK A. WIDGER, OF LYNN, MASSACHUSETTS.

HEEL-FORMING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 252,916, dated January 31, 1882.

Application filed October 6, 1881. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. WIDGER, of Lynn, Essex county, State of Massachusetts, have invented an Improvement in Heel-Forming Apparatus, of which the following description, in connection with the accompanying drawings, is a specification.

This invention has for its object the production of a set of tools by which a heel of the proper length, composed of lifts of different sizes, may be readily cut and united by a nail, after which the heel may be discharged from the dies in which it was made.

Figure 1 represents, in vertical section, the compound cutting-die for the heel-lifts; Fig. 2, a perspective view of the external or larger cutting-die, detached; Fig. 3, a vertical section of the inner and smaller cutting-die; Fig. 4, the nail-holder to contain the nail to be driven into the heel, and Fig. 5 a perspective view of a heel such as will be produced by the compound die.

The lifts composing the main or body part *a* of the heel (see Fig. 5) are cut from leather by means of the inner die, *b*, removably attached to the plate *c* of the handle, stock, or spindle c^2 by suitable screws, c^3. The die is made long enough to insure a heel-body of the maximum length to be produced; but to produce heels with bodies of less length I have placed in the interior of the said die a movable gage, b^2, which will be more or less thick, and in practice will preferably be of metal properly fitted within the die.

The outer or larger die, *d*, (shown in Fig. 1 and detached in Fig. 2,) is placed outside the die *b*, and secured thereto in any suitable manner, preferably by catches *e*, operated upon by springs *f*, as soon as the die *b* has been filled with lifts, and then one or more larger lifts are cut out by the larger or longer die *d*, sufficient to produce the larger part *g* of the heel, as in Fig. 5. In this way it will be understood that the compound die contains a series of superimposed lifts of different sizes, those at bottom being the largest. In order to nail these lifts together before they are discharged from the compound die, I have provided the simple contrivance shown in Fig. 4, in which *h* represents a stationary upright or post, which, by its foot h^2, will be properly secured to a bench or the floor. A spiral spring, *i*, placed about this post, is made to sustain a sleeve, *k*, having its upper end perforated for the reception of a nail, *l*, as in Fig. 4, the said nail being supported at its large end by a driver, *m*, secured to the end of the upright *h*.

With the parts as in Fig. 4, and the compound die filled with heel-lifts, it is only necessary to throw or jam the heel material in the dies down upon the end of the sleeve and nail therein, and as the sleeve yields the heel-lifts will be forced or driven onto the said nail *l*, the latter passing through the pile of heel-lifts, the point of the nail emerging through the upper lift of the pile of lifts within the inner die, *b*, and being clinched upon the metallic face of gage b^2. To discharge the heel so made from the cutting-dies, I have provided the head or plate *c* with one or more holes, *n*, to receive a rod, which, acting on the gage, removes it from the die *b*, the gage acting to crowd out the heel.

If desired, I might make the handle c^2 hollow, as in Fig. 1.

I claim—

1. The inner die, *b*, having the handle c^2 and head *c*, combined with the outer and larger die, *d*, detachably connected therewith, whereby both dies are made movable with the handle to place the dies on the leather to cut heel-lifts of different sizes, substantially as described.

2. The inner die, *b*, and external die, *d*, combined with catches to hold the two dies together, substantially as described.

3. The nail-holder composed of the post, the driver *m*, and the surrounding spring-supported sleeve, provided with a hole to receive and steady the nail, the end of which is supported by or made to rest on the driver, combined with the inner die, *b*, and the outer die, *d*, and means to hold the two dies together, and a handle common to both dies to jam the lifts held within the dies by friction down upon the nail set up in the sleeve, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK A. WIDGER.

Witnesses:

G. W. GREGORY,

W. H. SIGSTON.