F. E. DARROW & O. E. WAIT.

Heel Stiffenings for Boots and Shoes.

No. 138,010. Patented April 22, 1873.

Fig. 1.

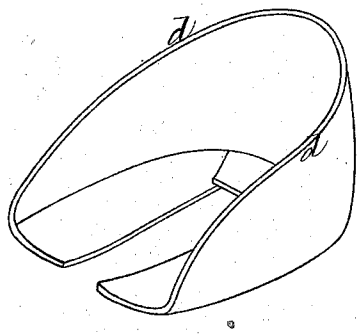


Fig. 2.

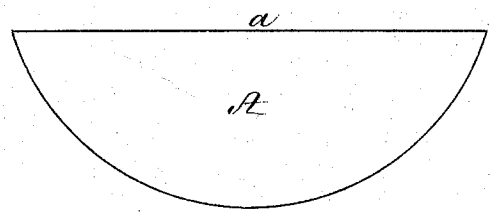


Fig. 3.

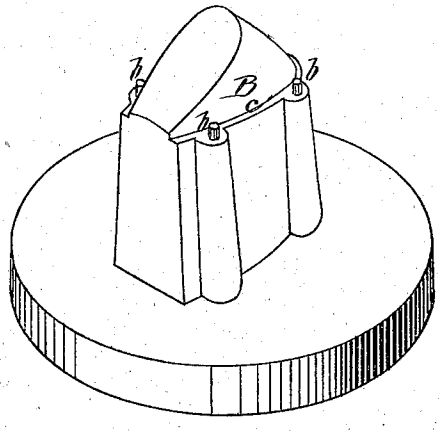


Fig. 4.

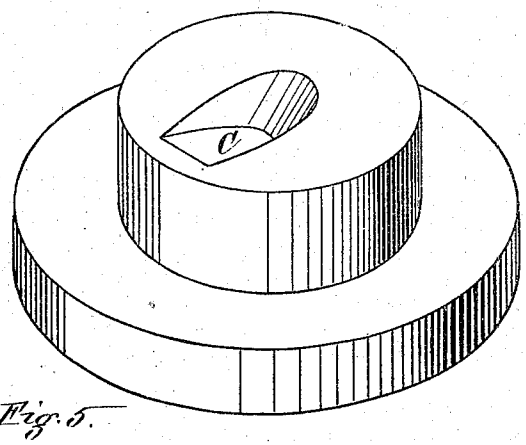
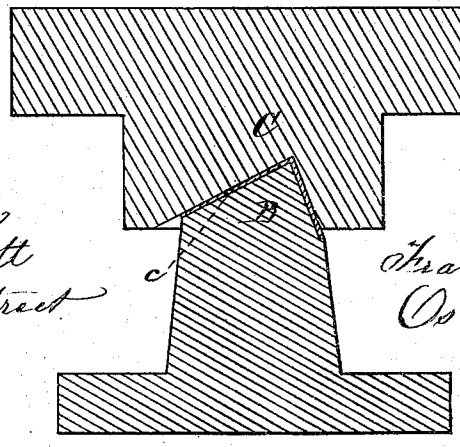


Fig. 5.



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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

FRANKLIN E. DARROW AND OSCAR E. WAIT, OF ROCKPORT, MASS.

IMPROVEMENT IN HEEL-STIFFENINGS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **138,010**, dated April 22, 1873; application filed January 13, 1873.

To all whom it may concern:

Be it known that we, FRANKLIN E. DARROW and OSCAR E. WAIT, both of Rockport, in the county of Essex and State of Massachusetts, have invented an Improved Heel-Stiffener or Counter for Boots and Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of our improved heel-stiffener or counter. Fig. 2 is a plan of a piece of rawhide of the form required for making our improved counter. Figs. 3 and 4 are perspective views of the two portions of the die which we employ for molding or shaping our improved counter. Fig. 5 is a section through the two portions of the die with the counter in place between them.

Our invention relates to certain improvements in counters or heel-stiffeners for boots and shoes; and consists in a heel-stiffener of rawhide, molded or shaped by pressure applied thereto when placed within a heated die, the action of heat serving to melt or soften the gelatine contained in the hide, which, when cooled or properly set permanently retains the desired shape given it.

To enable others skilled in the art to understand and use our invention we will proceed to describe the manner in which we have carried it out.

We take a piece, A, of dry rawhide, either split or not, of the form shown in Fig. 2, and place it in a crimping-machine suited for the purpose, with the straight edge *a* of the piece A projecting therefrom a distance sufficient to allow of its being upset or flattened down to form the lower turned or heel portion of the counter, the flattening or "breaking down" of the edge *a* being performed by a pair of jaws which embrace it or by any other suitable device or means. The heel-stiffener is thus given the form intended, being that shown in Fig. 1, after which it is removed from the crimping-machine and placed upon the male portion B, Fig. 3, of a die of corresponding form, heated by steam or otherwise, and provided with a series of spring guide-pins, *b*, which project above the lower line *c* of this portion B of the die, the object of these pins being to keep the curved edge *d* of the counter snugly up to the male portion B, and prevent it from spreading outwardly during the descent of the female portion C of the die, Fig. 4, which presses upon the pins and causes them to recede against the resistance of springs (not shown) which are intended to be placed around the pins.

When subjected to the pressure of the female portion C of the die, which may also be heated, the action of the heat will soften or partially melt the gelatine in the hide, and the portion C will keep the heel-stiffener securely in place till it becomes cool and is properly "set," by which means the original form given it is permanently retained. On removal from the die a coating of shellac is applied to the counter, which is thereby given a hard, smooth surface, capable of resisting the action of moisture.

By using our rawhide stiffener in the heel of a boot or shoe an economy of leather is effected on account of its being thinner and occupying less space, as the quantity of leather required for the quarter of a shoe of a given size where a rubber, composition, or leather stiffener is employed will be sufficient to make the quarter of a shoe one-half a size larger where our rawhide stiffener is used.

We are aware that rawhide stiffeners have been made and used, and therefore we do not claim, broadly, the use of rawhide for such a purpose, but the article of manufacture when produced by the method set forth.

Claim.

What we claim as our invention, and desire to secure by Letters Patent as a new article of manufacture, is—

A molded or shaped heel-stiffener made entirely of rawhide, and by means of heated dies, substantially as described.

Witness our hands this 11th day of January, 1873.

FRANKLIN E. DARROW.
OSCAR E. WAIT.

In presence of—
ADDISON GALT,
E. BRADSTREET.