

*L. S. Graves,
Shoe Sole Machine,*

Nº 35,874.

Patented July 15, 1862.

Fig. 1.

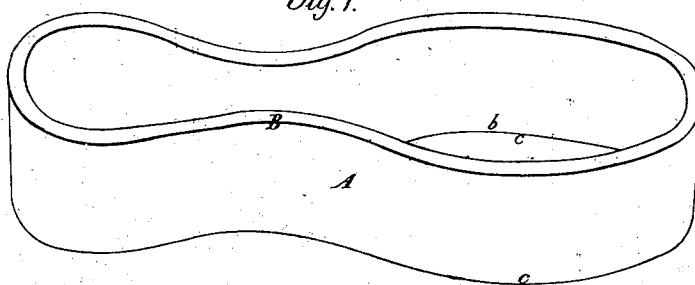


Fig. 2.

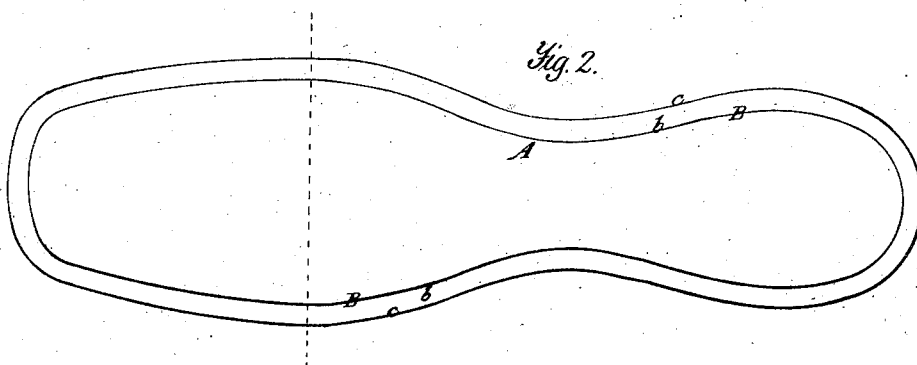


Fig. 3.

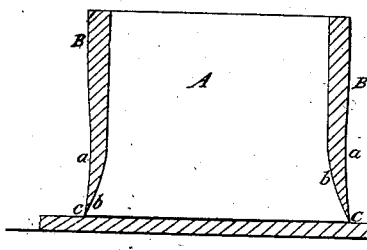
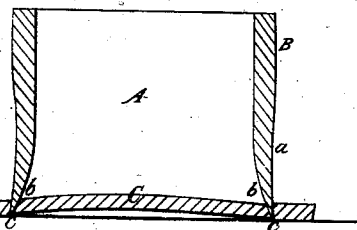


Fig. 4.



Witnesses.

*R. F. Ogden.
D. G. Johnson.*

Inventor.

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by J. M. R. Co. atty.*

UNITED STATES PATENT OFFICE.

LORENZO S. GRAVES, OF ROCHESTER, NEW YORK.

IMPROVED DIE FOR CUTTING BEVELED SOLES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 35,874, dated July 15, 1862.

To all whom it may concern:

Be it known that I, LORENZO S. GRAVES, of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Die for Cutting out Beveled Soles for Boots and Shoes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a perspective view of my improved die; Fig. 2, a plan of the bottom or cutting-edge thereof on an enlarged scale; Fig. 3, a transverse vertical section of the same in the plane indicated by the red line, Fig. 2, and showing the die in the commencement of the act of cutting the leather; Fig. 4, a similar section in the same plane, but showing the die as having cut through the leather and formed the sole.

Like letters designate corresponding parts in all the figures.

In the manufacture of boots and shoes it is desirable in most cases, especially in light work—such as for ladies' use—to have the edges of the sole when applied to a boot or shoe and finished occupy a vertical position instead of beveling outward, or, in other words, occupy a perpendicular position to the horizontal plane of the outer surface of the sole. As the sole when fitted is somewhat convex in cross-section, it is necessary, in order to accomplish the object in view, that the plane sole, when cut out of the leather, have such a bevel of the edges that when fixed to the last the said edges shall assume the proper position without cutting or trimming by the knife or otherwise. The only manner of forming such soles heretofore has been by cutting them out with a knife, or by a die having a follower or former above it, of such form as to bend the leather into the shape it is to have when fixed to the boot or shoe, and between which die and former the sole is cut.

It is the object of my invention to cut out the plane sole with the proper bevel by the simple use of a suitable die alone, without the employment of any other parts, except the necessary press or arrangement for applying the power.

In the ordinary die for cutting out soles the inside of the walls or sides is made plane or vertical from top to bottom, and the outside of the walls is beveled off at the bottom, so as to form the cutting-edge on the inner side of the thickness of the die. By this means the

edges of the sole are cut out vertically instead of beveled, as is the object of my invention. I reverse this arrangement of the die, as follows:

The die A is of the ordinary shape in plan, corresponding with the form of the sole, and may be made of different sizes. The outside of the walls or sides B B are usually made plane or vertical, or nearly so, from top to bottom, or have a slight hollow at *a*, thus giving the cutting-edge a small outward inclination. This inclination is not essential, but may be preferred in some kinds of work. The inside of the walls B B are made beveling outward at the bottom, as represented at *b*, thus forming the cutting-edge *c* of the die at the outside of the said bevel, and preferably at the outside of the thickness of the wall, but not necessarily so. It is only requisite to have a bevel inside to give a proper inclination to the edges of the sole, and therefore a corresponding bevel on the outside of the wall may also be used, if desirable, without impairing the novel effect of the die. The acuteness of the bevel *b* varies with the inclination to be given the edges of the sole, a greater inclination requiring a less acuteness, and vice versa. Thus arranged, as the edge of the die cuts into the leather and the latter is forced up into it, the distance across the die is lessened by reason of the bevel *b* inside, and the sole C is consequently crowded inward from all its sides and closely compressed, (or caused to rise in the middle,) as indicated in Fig. 4. The action is therefore to draw the leather inward, by which means the bevel on the edges is cut. This arrangement is very simple and accomplishes the object perfectly. It is also very cheap, as nothing but the die itself is necessary to cut the perfect sole, which does not require trimming by the knife. The power may be applied to the die by any suitable means.

What I claim as my invention, and desire to secure by Letters Patent, is—

The die A, having the edge of its walls beveled on the inside at *b*, and having the cutting-edge *c* outside the said bevel, so that the die will cut a beveled sole on a plane surface, substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

L. S. GRAVES.

Witnesses:

D. C. JOHNSON,
R. F. OSGOOD.