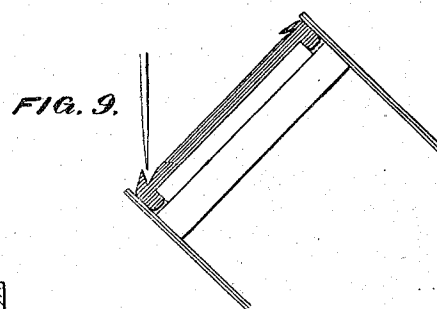
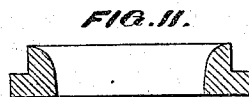
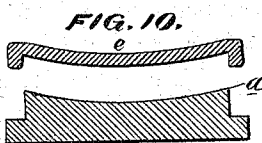
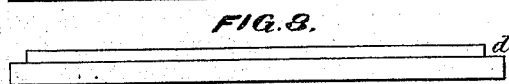
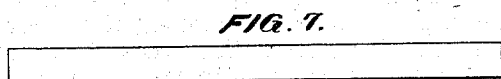
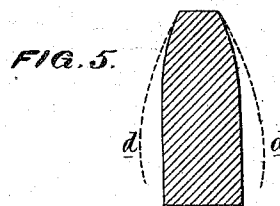
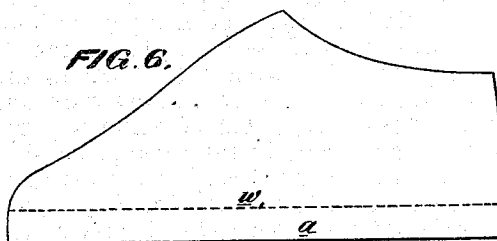
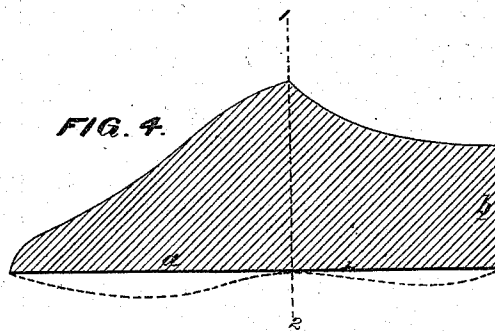
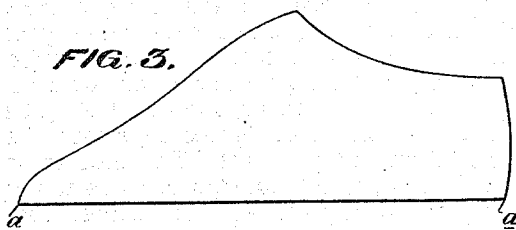
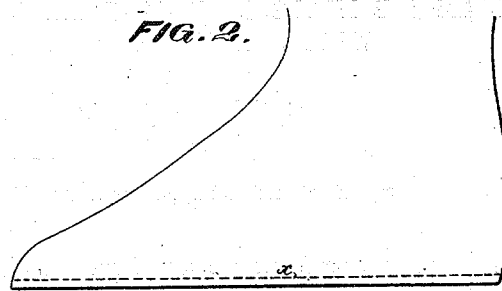
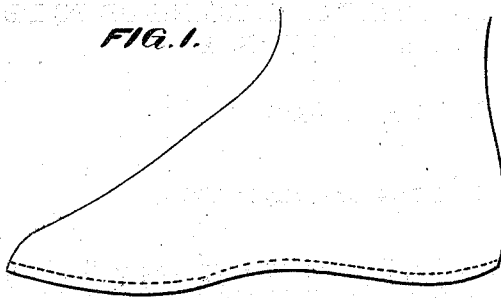


W. J. B. MILLS.
Lasts for Shoes.

No. 126,824.

Patented May 14, 1872.



WITNESSES, *John K. Rupertus*
Thomas McSwain

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by his Atty.
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UNITED STATES PATENT OFFICE.

WILLIAM J. B. MILLS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO DE WITT C. TAYLOR, TRUSTEE, OF NEW YORK, N. Y.

IMPROVEMENT IN LASTS FOR SHOES.

Specification forming part of Letters Patent No. 126,824, dated May 14, 1872.

Specification describing certain Improvements in Lasts for Shoes, invented by WM. J. B. MILLS, of Philadelphia, Pennsylvania,

Improvements in Lasts for Shoes.

My invention consists of a sewing-last, having the edge of its base in the same plane throughout, in order that the sole may be in a condition which permits the line of stitching securing the upper to the sole to be made in the same plane throughout, thereby obviating the necessity of constantly changing the position of the work during the stitching operation of the machine, all of which is fully explained hereafter. My invention also consists of sewing-lasts, in which are combined with the above main features others of importance, which are too fully explained hereafter to need preliminary description.

Figures 1 and 2 are diagrams illustrating the difference between the course of the stitches which are made by the aid of my improved last and that of the stitches made in the usual manner; Fig. 3, a side view, representing one form of my improved last; Figs. 4 and 5, views illustrating the last, Fig. 3, with additional improvements; Figs. 6, 7, and 8, further modifications of my improved last. Figs. 9 and 10 represent another modification; and Fig. 11, a transverse section of a further modification of my improved last.

It will be advisable in the outset to refer to an improvement in the manufacture of shoes, which forms the subject of a separate application for a patent, as my improvement in lasts has been designed with the view of facilitating the carrying out of that invention. My said improvement in the manufacture of shoes consists in making the stitches *a*, which secure the upper to the sole, in the same plane throughout, as shown in the diagram, Fig. 2, instead of in the usual curved course, as shown in Fig. 1, so that the operator may be relieved from the duty of constantly changing the position of his work during the stitching operation of the machine, a duty which requires tedious and careful manipulation. Fig. 3 represents a simple form of my improved last, which, in this instance, is similar in all respects to an ordinary last, excepting that the edge *a* of the last is made in the same plane through-

out, so that the sole, when applied to the last, may be controlled by this edge and maintained in the same plane where the line of stitching has to be made, the stitches themselves being consequently made in the same plane throughout. In addition to this, the essential feature of my improved last, I prefer to depart from the usual form in a manner and for a purpose which I will now proceed to describe, reference being had to Figs. 4 and 5, the latter being a vertical section on the line 1 2. The dotted lines in these figures represent the shape of an ordinary last. The base is so formed as to present an edge, *a*, made in the same plane throughout, as in the former case; but in the present instance the rounded heel is cut away, as shown by the line *b*, and the protuberances *d d*, which are present at the shank of an ordinary last, are removed, either as represented in Fig. 4, or in any other way, providing no part of the last is thicker than it is at the base. The advantage of making the edge of the base of the last in the same plane throughout—namely, that of permitting the stitching to be made in the same plane—has been referred to above; but in addition to this important advantage, that of readily fitting the border of the upper to the border of the sole may be mentioned. The plane-edged base, together with the absence of the protuberances *b b*, insure this ready fitting of the upper to the last. Moreover, the usual puckering of the upper, which interferes with the uniformity of the stitching, is obviated by the same features. By the plane-edged base of the sole also the constant play of the pressure-foot of the sewing-machine in the channel of the soles is insured, the channel itself being in the same plane throughout. In the modification, Fig. 6, the sides of the last are straight from the plane edge *a* of the base to the dotted line *w*. The angle of this portion of the sides of the last in respect to the plane edge *a* may vary in different lasts, but throughout the same last should be invariably the same. This straight portion of the sides of the last permits the work to be passed smoothly over a fixed rest-plate, and also aids the other feature in preventing the packing of the upper during the sewing. It is not essential, however, that the ordinary bulky last should be

adhered to, or even approximated; for instance, if the last, Fig. 6, be bisected on the dotted line *w* and the upper portion be discarded the remaining portion is not only an available, but a preferable last, possessing all the advantages above described, and the further advantage of preventing that straining of the upper which results by its application to an ordinary last. The thin last, too, is far more easily withdrawn from the upper than the more bulky last. The thin last, Fig. 7, may have a rabbet formed entirely round its edge, as shown in Fig. 8. In fact the rabbet may be formed on any last having the important feature of my invention, namely, the plane edge of the base. The rabbet is intended for the reception of the turned border of a sole, the outside of the said border being flush with the outside of the last, as shown in Fig. 9, which represents a rabbeted thin last with the sole and upper as the whole appears when presented to a sewing-machine. I prefer the rabbet in all cases, as, in conjunction with the plane edge *a* of the base, it insures the retention of the sole in a steady condition during the process of the sewing. Throughout every modification of my invention I prefer to make the portion of the base within or bounded by the plane edge concave, as shown in Fig. 10, so as to receive the convex face *c* of the sole; for the convexity of the sole facilitates the turning of the shoe, and is of the desired shape after the shoe has been turned. The last may consist of a simple and light metal frame, a cross-section of which is shown in Fig. 11, the open middle of the frame being equivalent to the

concavity described in reference to other modifications, and otherwise made to embrace all the most important features of my invention, and especially the most prominent feature, which appears in all the modifications, and which, as before remarked, consists in making the edge *a* of the base of the last in one plane throughout, whatever shape may be imparted to the sole within this edge.

I claim as my invention—

1. A sewing last having the edge of its base in the same plane throughout, as set forth, for the purpose specified.

2. A sewing-last having a base with its edge in the same plane throughout, and having its shank and heel shaped all substantially as described, and as illustrated in Figs. 4 and 5.

3. A sewing-last having a base with its edge in the same plane, and a part or the whole of its sides at an unvarying angle throughout in respect to the said plane edge, as described, and as shown in Figs. 6 and 7.

4. A sewing-last, having a base with its edge on the same plane throughout, and a rabbet, substantially as specified, and as illustrated in Figs. 9, 10, and 11.

5. A last made concave or open, within a plane-edged base, as set forth.

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

WILLIAM J. B. MILLS.

Witnesses:

WM. A. STEEL,
HARRY SMITH.