

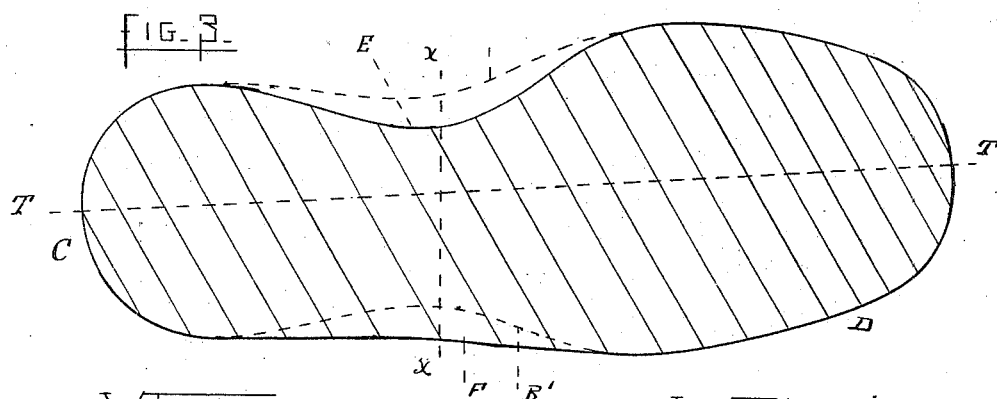
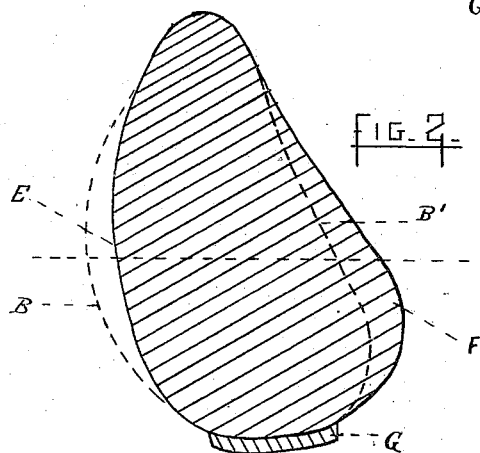
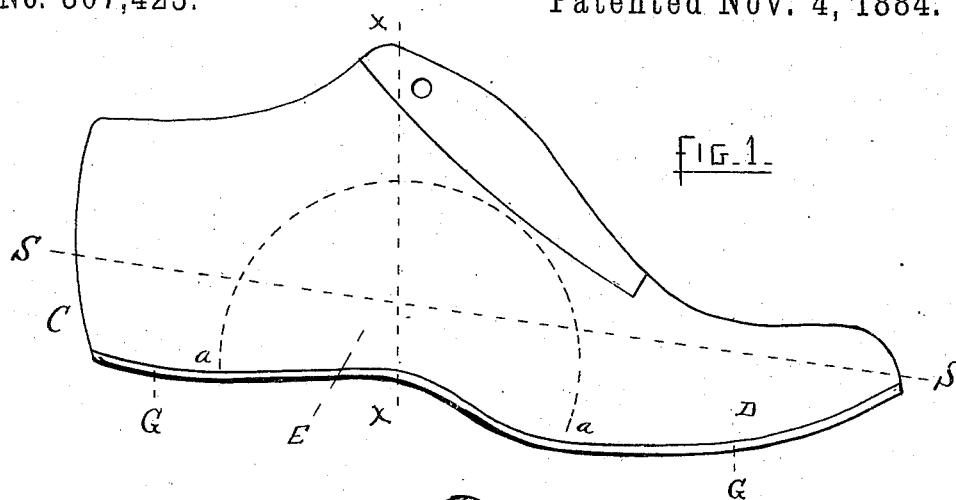
(No Model.)

B. BEMIS.

SHOE LAST.

No. 307,423.

Patented Nov. 4, 1884.



WITNESSES.

H. H. Ellis.  
H. M. Fowler.

INVENTOR.

Barnes Bemis.  
By Rufus Bennett Fowler  
his atty.

# UNITED STATES PATENT OFFICE.

BARNA BEMIS, OF WORCESTER, MASSACHUSETTS.

## SHOE-LAST.

SPECIFICATION forming part of Letters Patent No. 307,423, dated November 4, 1884.

Application filed May 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, BARNA BEMIS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Lasts, of which the following is a specification, reference being had to the accompanying drawings, illustrating my invention, and in which—

Figure 1 represents a side elevation of a last, showing the inside of foot. Fig. 2 represents a sectional view of the last on line X X, Fig. 1, and Fig. 3 shows a sectional view on line S S.

Similar letters refer to similar parts in the several views.

My invention relates to the conformation of the last, whereby a better fit of the shoe upon the foot is secured; and it consists in cutting the last away on the inside at the "shank" and building it up on the outside, so as to throw the axial line of the shoe at its central section out of line with the axial line of the foot, and thereby secure a pressure of the foot against the upper on the inside of the foot, as herein-after set forth.

My improved last is designed for and is especially adapted to the manufacture of shoes having what are known as "whole-cut" uppers—that is, having no seam in the upper upon the inside of the foot, but having the quarters and vamps formed in one piece. In the manufacture of this class of shoes great difficulty has always been experienced from the wrinkling or "bagging" of the upper on the inside of the foot, beneath the instep, or what is termed the "shank." My invention entirely obviates this difficulty and enables me to secure a perfect fit of the shoe to the shank of the foot.

Fig. 2 shows a sectional view of the last, taken at that part of the foot where the above-named difficulty is experienced, the broken line B B showing the outline of the last as commonly used and the sectional surface A the form of my improved last. I form a concavity on the inside of the last at that portion termed the "shank," and indicated in area by the broken line *a a*, Fig. 1, and on the opposite side I increase the size, so as to preserve

the girth of the last. The line B shows the usual contour of the last upon the inside of the foot at the shank or central section of the last, and B' indicates the usual contour of the outside of this portion of the last. The line T T indicates the axial line of the last passing through the center of the heel and toe, and also corresponding with the axial line of the foot. By forming the concavity at E and adding correspondingly to the outside, as at F, it will be seen that the central section of the last is carried outward. It has been customary to hollow the inner side of the last at the shank to adapt it to the form of the foot. The essential feature of my invention consists, however, in forming such a concavity on the inner side of the last and a convex portion, substantially as described, on the outer side and opposite to the concavity as to carry the axial line of the last at its central section outward, so the contour of the last will not correspond with the foot, and as the foot will occupy the same position relatively to the shoe as before the change in the last, it will readily be seen that the inside of the foot will press harder against the upper at the part bounded by the line *a a* than at the heel C and foot D, causing the surplus stock, if there be any, to be taken up by the pressure of the foot, constant wear gradually stretching the upper at this part, if too tight, causing a perfect fit in the shank of the shoe. It has also been found by experience that a saving in the stock of the upper is effected, shoes of any certain size requiring only an upper of the next smaller size.

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

An improved last adapted to the manufacture of shoes having whole-cut uppers, said last having a concavity on the inner side at the shank or central section of the last, and a convex portion, substantially as described, upon the outer side opposite said concavity, whereby the axial line of the last at its central section is carried outward, substantially as described, and for the purpose set forth.

BARNA BEMIS.

Witnesses:

RUFUS B. FOWLER,  
GEO. E. SMITH.