

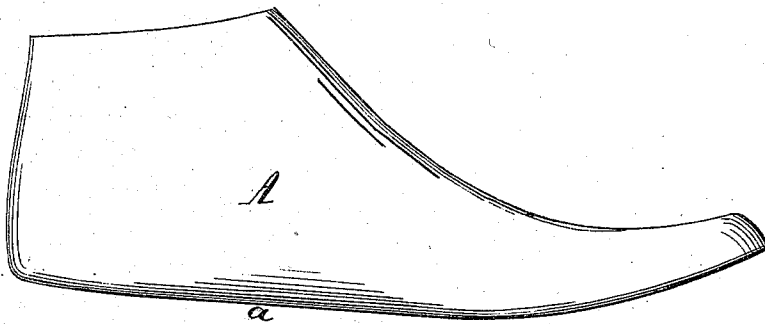
P. WARE, Jr.

Manufacture of Boots and Shoes.

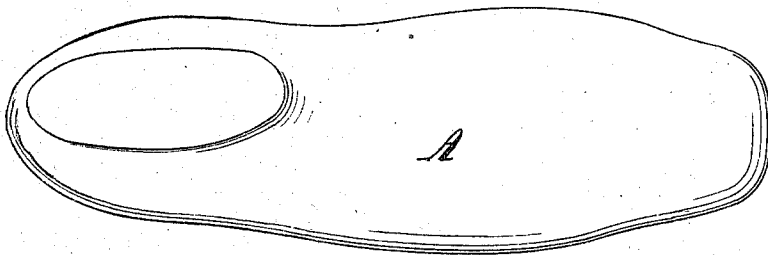
No. 142,538.

Patented September 2, 1873.

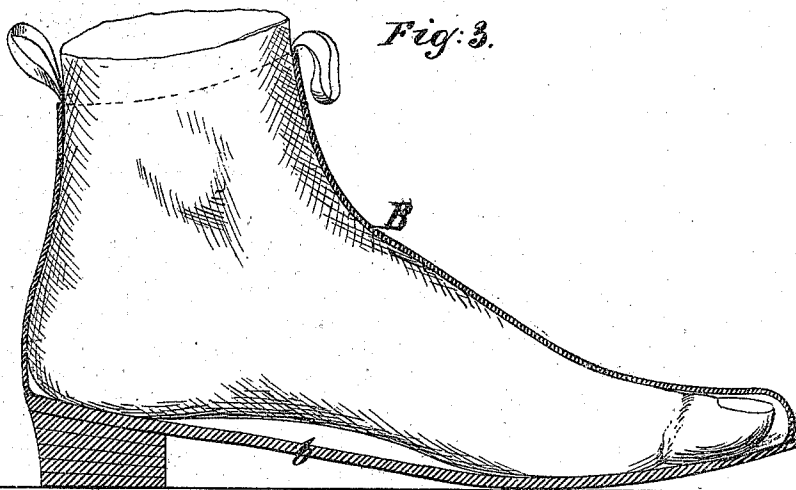
*Fig: 1*



*Fig: 2.*



*Fig: 3.*



Witnesses:  
Ernst Bilhuber  
Chas. Wakers.

Inventor:  
Preston Ware Jr  
per  
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Attys

# UNITED STATES PATENT OFFICE.

PRESTON WARE, JR., OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN THE MANUFACTURE OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. 142,538, dated September 2, 1873; application filed May 10, 1873.

*To all whom it may concern:*

Be it known that I, PRESTON WARE, JR., of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Boots and Shoes; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a side view of the last which I use. Fig. 2 is a plan or top view of the same. Fig. 3 is a longitudinal section of a gaiter-boot made according to my invention.

Similar letters indicate corresponding parts.

The object of this invention is to produce a boot or shoe, the shape of which conforms to the shape which the foot assumes, when the same supports a portion of the weight of the body in walking or standing, and at the same time the sole of my boot or shoe is made flat, so as to leave the cords and muscles of the bottom of the foot free to act.

In carrying out my invention I first get a cast of any well-shaped foot with stockings on, in plaster paris, the foot being in position which it assumes when one-half of the body rests thereon, the person standing in an erect position. From this plaster-paris cast I get an iron cast, which forms the pattern by which I turn my boot or shoe last A. In turning my last I can commence at the heel or at the toe, putting on such style to the toe as fashion, comfort, or inclination may dictate.

From the last thus prepared I make my mathematical gradations of widths and sizes, so that all the different sizes of lasts will be in exact conformity of every bone and muscle of the human foot, and all well-shaped feet can be readily fitted.

Previous to turning my last, however, I fill up the cavity in the bottom of the cast-iron pattern, so that the bottom surface of the sole *a* of my last will become level or flat. (See Fig. 1.)

A boot or shoe, B, made on my lasts, therefore, will have a flat sole, *b*, (see Fig. 3,) leav-

ing the cords and muscles at the bottom of the foot entirely free to act and without being pressed up against the inside of the boot or shoe.

My experience is that boots or shoes made upon my lasts are easier to the feet and will fit better than those made over an ordinary last. While ordinary lasts conform to the shape of the foot when the same is not acted on by the weight of the body, or any part thereof, my last corresponds to the shape of the foot, which the same assumes in walking or standing, and consequently a boot or shoe made over such last is already in the shape required for the foot when walking or standing, while boots or shoes made over ordinary lasts have to be "broken in" before they feel comfortable on the foot, and on account of the flat sole of my boots and shoes the muscles and cords in the concave at the bottom of the foot are not depressed upon the inner sole of the boot or shoe, and they are entirely free to act in all positions into which the foot may be brought. This will be readily seen by referring to Fig. 3 of the drawing, where the sole *b* is flat from the heel forward to the balls of the toes, so that the same does not come in contact with the muscles or cords in the cavity of the foot, which important feature is solely due to the fact that the cast is produced when the foot is in the position it assumes when one-half of the body rests thereon.

Furthermore, I find by actual experiment that boots and shoes made upon my lasts require a counter of a much less rigid or stiff texture than boots and shoes made upon lasts now in use, and the expense of such counters, in custom or first-class work, is only about one-third to one-half of those ordinarily used, thus making a greater saving in the cost of manufacturing, besides being much more easy and comfortable to the heel of the wearer. The reason of this is that my boots and shoes are in the proper and exact shape to receive the feet when the weight of the body is upon them. Whereas, when boots and shoes are made to fit the feet, when the weight of the body is not upon

them, they receive a stiff counter to resist the pressure of the body while standing or walking, and even then will run over. Mine never run over, but, on the contrary, tread absolutely even and square.

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

A boot or shoe having the flat sole produced by means of a last corresponding in

shape to that assumed by the foot when a portion of the body rests thereon, as herein shown and described, for the purpose specified.

P. WARE, JR.

Witnesses:

FRED. B. TOWNE,  
FRANCIS A. WARE.