M. BAILEY.

MANUFACTURE OF FELTED SHOES, SLIPPERS AND OTHER ARTICLES.

No. 194,400. Patented Aug. 21, 1877.

Fig. 1.

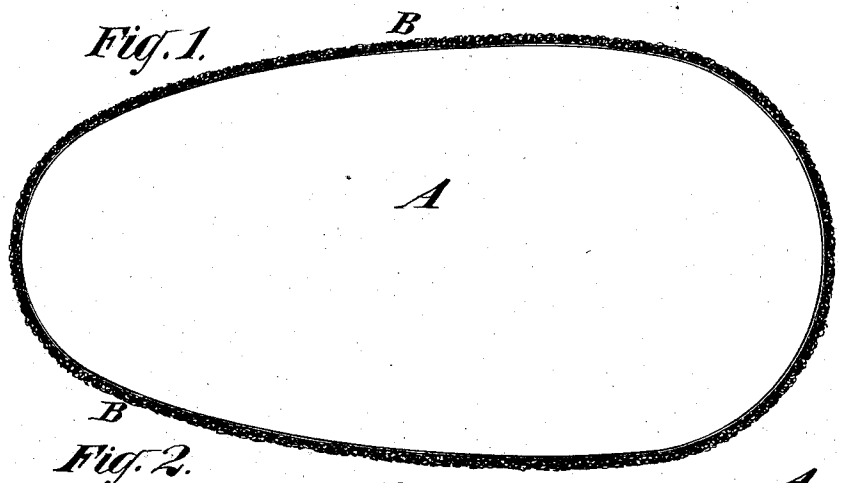


Fig. 2.

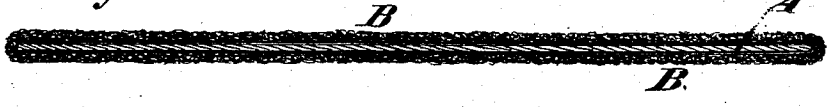


Fig. 3.

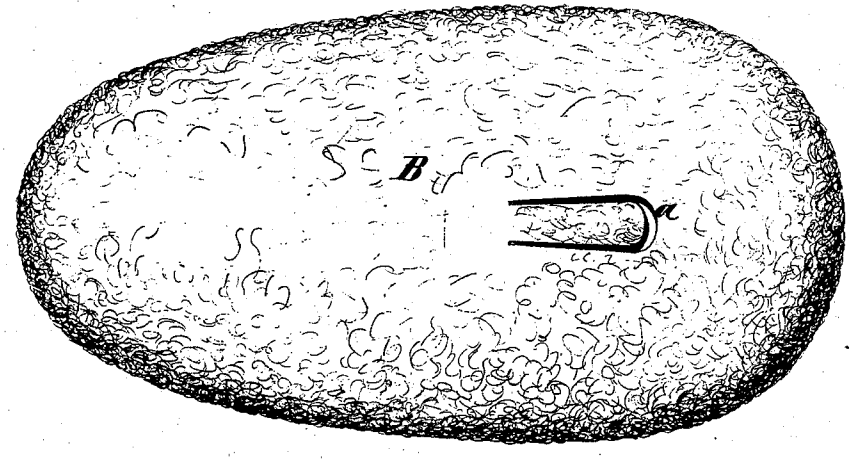
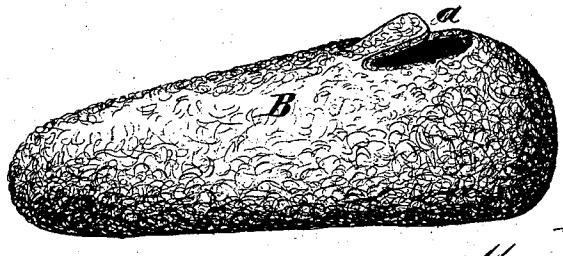


Fig. 4.



Witnesses.
John Becker
Fred Haynes

Inventor
Mark Bailey
by his Attorneys
Brown & Allen

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MARK BAILEY, OF HUDDERSFIELD, ASSIGNOR TO JOHN BATLEY, OF KENSINGTON PARK GARDENS, ENGLAND.

IMPROVEMENT IN THE MANUFACTURE OF FELTED SHOES, SLIPPERS, AND OTHER ARTICLES.

Specification forming part of Letters Patent No. **194,406**, dated August 21, 1877; application filed June 13, 1877. Patented in England June 3, 1875, for fourteen years.

To all whom it may concern:

Be it known that I, MARK BAILEY, of Huddersfield, in the county of York, England, have invented certain new and useful Improvements in the Manufacture of Slippers, Shoes, and other coverings for the feet, of felted fibrous material; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

In carrying out the manufacture of seamless felted slippers, shoes, and other coverings for the feet, made of felted fibers, according to my invention, I first cap or wind a bat or sliver of carded wool, or other felting-fiber, upon a thin, flat, or plate-like "former" of flexible material, of a form approximating to that of such section of the foot as presents the greatest or nearly the greatest area. This former, being then entirely covered with a web or bat of wool or fiber, is placed in a hardening-machine of the kind commonly used for hardening sheet-felt, or flat felted goods, and by the rubbing or jigging action of said machine, the fibrous covering-web is hardened while upon the former. After hardening, a suitable opening is cut in the web, and the former is removed therefrom through the said opening, which afterward forms the opening for the admission of the foot into the slipper or shoe.

When the former has been removed the partly-felted web is ready for being milled or "fulled" by suitable machinery, until it is reduced to the proper size and consistency for the slipper or shoe, and the slipper or shoe is afterward, while wet or moist, put on a last of proper size and shape, and thereon allowed to dry.

In the accompanying drawing, Figure 1 exhibits a plan or face view of the pliable plate-like former, with a section of the covering-web, of which a slipper is to be formed. Fig. 2 is a longitudinal section of the former and web perpendicular to the face of the former. Fig. 3 is a plan of the web, showing the opening *a*, through which the former has been removed. Fig. 4 is a side view of the slipper, fulled, but not lasted.

The former A represented is of a form approximating to that of a section of the foot, parallel with the sole, and of a suitable size to provide for the shrinkage of the covering-web in the felting process. This former may be made of india-rubber, or other pliable material.

The web B may be formed by taking a flat sheet or bat of carded wool and lapping or wrapping it round the said former, or taking a sliver from a carding-engine and winding it on the said former; and when it has been formed it is placed in a flat state with the former inclosed within it between the plates or working surfaces of the hardening-machine, wherein it is subjected to the hardening process, such as is commonly practiced in the manufacture of other felted goods.

In the hardening process the pliable former may be, and is preferably entirely inclosed within the web, there being no need of any opening in the latter to permit the hardening. The former, in such case, holds the web in every direction against being pulled out of shape, as it might be if hardened on a former while open in any part.

After the hardening process the slit or opening *a* is made in the web, and the former is removed through the said opening. The web may then be fulled and finished in the manner commonly practiced in the manufacture of felted goods.

By the use of the pliable flat or plate-like former, two very great advantages are obtained, viz: First, the slipper or other article may be hardened to a very considerable degree while upon the former; second, greater facility is afforded for removing the former through a small opening in the web without disturbing the fibers of the web.

What I claim as my invention is—

1. In the process of manufacturing seamless slippers, shoes, and other coverings for the feet, of felted fibers, forming a web of a shape approximating to that of the slipper, shoe, or other article on a flat pliable former,

and subjecting such web while on said former to the action of a hardening-machine, substantially as herein described.

2. In the process of manufacturing seamless slippers and other similar articles, the hardening of the hollow web while there is no opening in it, upon a former which it entirely incloses, substantially as herein described.

In testimony whereof I hereunto sign my name in the presence of two subscribing witnesses.

MARK BAILEY.

Witnesses:
C. LEWIS BATLEY,
ALFRED HEWITT.