(No Model.)

M. L. LION & F. CUTLAN.

MANUFACTURE OF BOOTS OR SHOES.

No. 376,411. Patented Jan. 10, 1888.

Fig. 1.

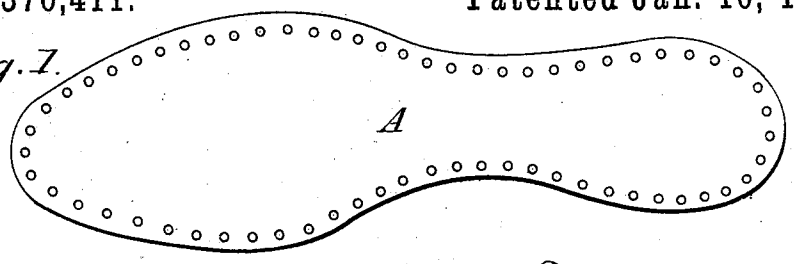


Fig. 2.

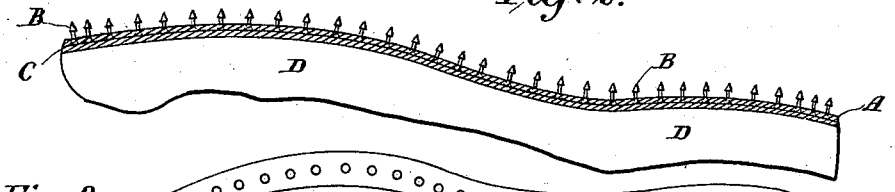


Fig. 3.

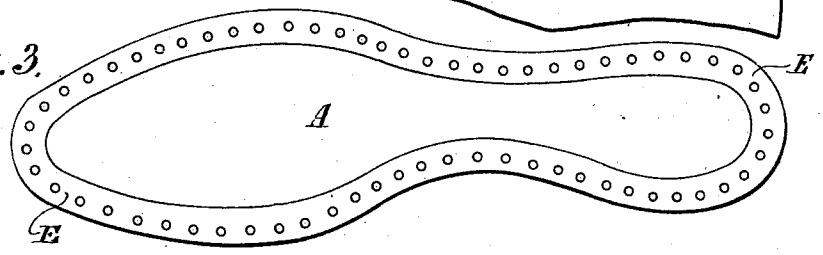


Fig. 4.

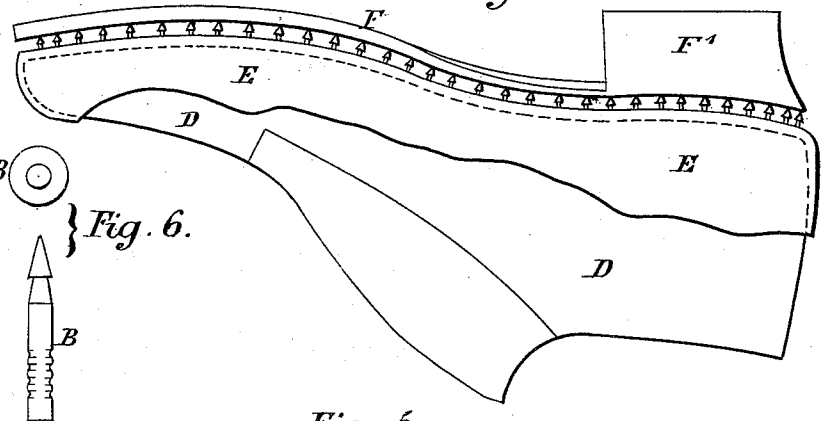
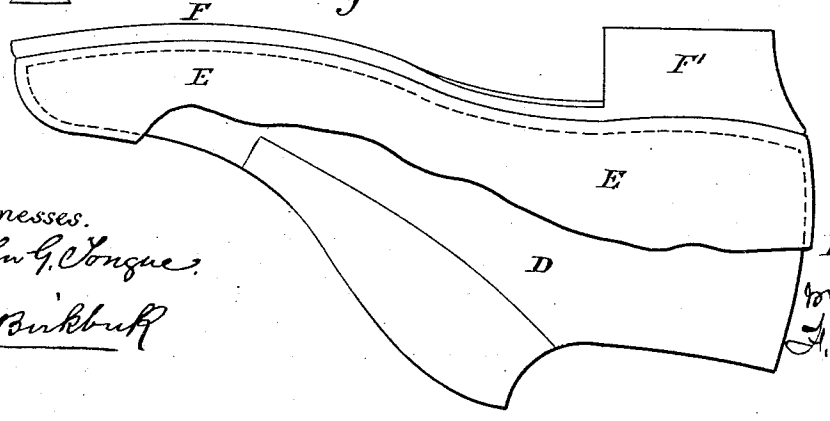


Fig. 6.

Fig. 5.



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UNITED STATES PATENT OFFICE.

MICHEL L. LION, OF LONDON, AND FREDERICK CUTLAN, OF CASTLE HILL, WELLINGBOROUGH, ASSIGNOR TO THE AB-INTRA BOOT MAKING PROCESS COMPANY, (LIMITED,) OF LONDON, ENGLAND.

MANUFACTURE OF BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 376,411, dated January 10, 1888.

Application filed March 31, 1887. Serial No. 233,151. (No model.) Patented in England August 23, 1886, No. 10,754; in France March 17, 1887, No. 182,237; in Germany March 22, 1887, No. 40,915; in Belgium May 12, 1887, No. 77,037; in Italy May 14, 1887, XXI, 21,674, and in Spain July 21, 1887, No. 6,941.

To all whom it may concern:

Be it known that we, MICHEL LION LION, of 32 Chiswell Street, London, England, boot-manufacturer, and FREDERICK CUTLAN, of Castle Hill, Wellingborough, England, engineer, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in the Manufacture of Boots and Shoes, (for which Letters Patent have heretofore been granted to us by the Government of Great Britain, dated August 23, 1886; France, dated March 17, 1887, No. 182,237; Germany, dated March 22, 1887; Belgium, dated May 12, 1887, No. 77,037; Spain, dated July 21, 1887, and Italy, dated May 14, 1887, Vol. 21, No. 21,674,) of which the following is a specification.

This invention has for its object improvements in the manufacture of boots and shoes, whereby they can be made more readily and economically than heretofore, of a better shape and finish, and also more durable and comfortable in wear. For this purpose, according to our present improvements, we manufacture boots and shoes by lasting the upper of the boot or shoe to the inner sole, and attaching the outer sole by means of nails, rivets, or screws, or other suitable fasteners, in the following manner: First, we prepare a headed barbed fastener (nail, rivet, or screw) a little less in length than the total thickness of materials or substances into which it is to be driven. This fastener may be made of iron or other suitable material, flanged and terminating with a cone at its point. We then, without previously punching holes, drive or force these barbed fasteners or nails through the inner sole, about a quarter of an inch from the edge all round, by means of suitable machinery, and the fasteners, thus forcibly driven through the material of the inner soles, are firmly and rigidly retained thereby, the flat heads of the nails being flush with the surface of the face side of the inner sole and toward the wearer's feet. The lining or sock is then solutioned, or affixed in any convenient manner, to the face side of the inner sole over the heads of the fasteners. The inner sole, thus prepared with fasteners and sock, is then inverted and placed on an ordinary iron last, the heads of the nails or fasteners being against or toward the last and the points standing up. The upper is now put over the last and drawn tight upon the said last by means of a suitable tool, and the edges of the upper are forced down over the inverted points of the fasteners, one at a time, by means of a hammer and hollow tool or punch, with which the operator presses down the leather by placing it over the point of each nail or fastener separately, and then hammers it down, and thus forces each such nail to pierce through the upper, and presses the latter right down against the inner sole without bending or impairing the nail, which, passing up the center of the hollow tool or punch, need not be touched thereby, thus leaving the said nail still rigid and firmly embedded in the inner sole with upper attached and the points still rigidly projecting upward, of sufficient length to receive the outer sole thereon. The upper is thus made to take the exact shape of the last, and is held in this position at all points by the said nails or fasteners only until the sole is fixed down thereon and the boot or shoe completed. The outer sole and the heel are prepared and finished complete, and the outer sole with heel attached is then placed in position on the points of the fasteners and forced down by a press or hammer tight against the upper. All the parts are thus securely fastened together, and the boot or shoe is now complete and may be removed from the last.

It will be obvious that the precise process of manufacture hereinbefore described may be varied in some of the minor details—as, for instance, the outer sole can be attached without the heel and the boot or shoe completed, save the heel, which can be attached and finished subsequently in the ordinary way; also, in some cases the barbed nails or fasteners are not used round the heel part, the upper being affixed to the inner sole at such part of the heel in the ordinary manner.

And in order that our invention may be the more easily understood and readily carried

into practice we will proceed to describe the same with reference to the accompanying drawings.

In the drawings, Figure 1 is a plan of the under side of the inner sole A, with nails or fasteners driven by a suitable nail-driving machine directly through such inner sole (without previously punching or piercing holes therefor) and projecting upward. Fig. 2 shows side view of last D, the inner sole A, with fasteners B, and the lining or sock C, solutioned on, being inverted on the last D. Fig. 3 is same view as Fig. 1, with the edges of the upper E drawn over and forced down, as before described, upon the points of the fasteners B, which pierce through. Fig. 4 is a similar view to Fig. 2, showing the upper E lasted to the inner sole, A, and the points of the fasteners B projecting sufficiently to receive the outer sole, F, and heel F', attached thereto. The outer sole, F, and heel F' are finished and completed before being fixed or closed down onto the upper and inner sole. Fig. 5 shows the outer sole, F, and heel F', attached thereto, closed down on the points of the fasteners B', which thus hold the outer sole securely without coming through. The outer sole, F, and heel F' are closed down by hammering or pressing, and the boot or shoe is now complete and may be removed from the last D. Fig. 6 shows, on a larger scale in elevation and plan, the form of barbed nail or fastener B which we find it advantageous to employ.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we would remark that we are aware that barb-pointed nails and staples have previously been used in the manufacture of boots and shoes, but in a very different manner, and the attempts hitherto to use such fasteners have been impracticable, or these previous methods could not be adapted for the kind of work we can produce by our process; that therefore we make no claim, separately, to the barbing of fasteners; but

What we do claim as novel and as our own invention is—

The process herein described of manufacturing boots and shoes, which consists of the following steps: first, driving metallic fasteners, with barbed hooks or points, through the inner sole near the edge thereof; secondly, fastening the lining or sock on the inner sole over the heads of the fasteners; thirdly, placing the inner sole, with the fasteners and lining, on an iron last; fourthly, drawing the edge of the upper over the points of the fasteners, and, finally, pressing or hammering the finished sole onto the points of the fasteners, substantially as set forth.

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