(No Model.)

W. B. ARNOLD.

BOOT OR SHOE.

No. 418,779. Patented Jan. 7, 1890.

Fig: 1.

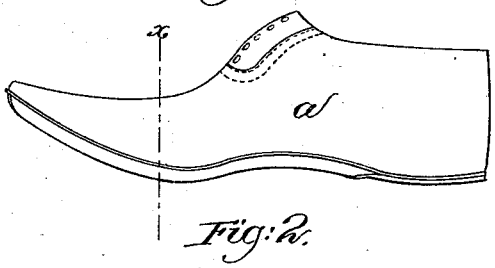


Fig: 2.

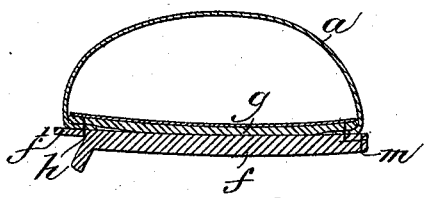


Fig: 3.

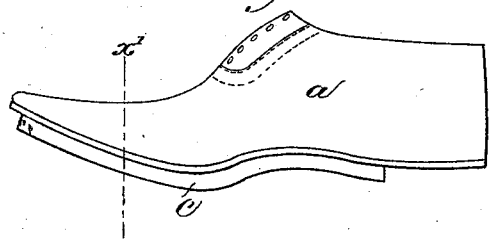
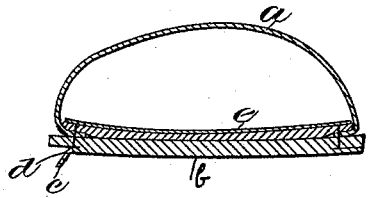


Fig: 4.



Witnesses.
Edgar A. Goddin.
Frederick L. Emery.

Inventor.
William B. Arnold,
by Crosby & Gregory
Attys

UNITED STATES PATENT OFFICE.

WILLIAM B. ARNOLD, OF NORTH ABINGTON, MASSACHUSETTS.

BOOT OR SHOE.

SPECIFICATION forming part of Letters Patent No. 418,779, dated January 7, 1890.

Application filed July 23, 1888. Serial No. 280,693. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. ARNOLD, of North Abington, county of Plymouth, State of Massachusetts, have invented an Improvement in Boots or Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of sewed boots and shoes on the McKay and other machines wherein the needle passes through the outer sole, upper, and inner sole, and is supplied with thread from a thread-carrier in the horn or support for the shoe, the stitch being a single thread-chain with the loops in the channel of the outer sole, it is customary to cut the outer sole from its edge inwardly for a short distance near its outer face, to leave a thin lip or flap, which is subsequently pasted down over and to conceal the looped part of the chain-stitch.

The class of shoe referred to constitutes a large majority of those made and sold in shoe stores; but they have well-recognized objections which cause customers to dislike machine-made shoes, and therefore many expedients have been resorted to to change the appearance of the shoe, but without really overcoming their real objections.

One of the chief objections to a machine-made shoe is the stiffness of the sole, and another is that the stitch-covering lip at the face of the outer sole soon wears off, leaving an unsightly streak about the bottom of the sole, and soon thereafter the chain of the stitches, previously covered by the lip and lying in the channel of the sole, are worn off, leaving staple-like loops, which alone are depended upon to keep the inner sole, upper, and outer sole together, and as the shoe is worn these staples pull out and the shoe rips.

In my efforts to improve this well-known form of machine-sewed shoe I have found, first, that the portion of the leather of the outer sole engaged by the thread forming the stitch need not be stronger than the thread; second, that the stiffness of the shoe depends upon the extent of its surface through which the stitch passes, and, thirdly, that the integrity of the seam uniting the upper and outer sole is preserved by protecting as long as possible the chain of the stitch.

In my improved shoe the channel in the outer sole for the reception of the stitch to unite it to the upper is formed at the inner rather than at the outer side of the sole; or, in other words, the stitch to unite the sole and upper is taken through the substance of only the lip of the sole and not through the substance of the sole below the lip, the lip being preferably of about one-third the thickness of the sole, and consequently of less thickness than the remaining portion of the outer sole below the said lip, whereas heretofore this has been just the reverse, the stitch passing through the main body of the sole and not through the lip, the latter acting only as a cover, and not as that portion of the sole depended upon for the reception of the stitch made to unite and keep the sole and upper together.

My invention consists, essentially, of a boot or shoe comprising an inner sole, an upper having its edge laid over the inner sole, an outer sole cut at its edge to form a thin lip upon the side next the upper, against which the said lip is laid, the said lip only receiving through it the stitches employed to unite the outer sole to the upper and to the inner sole, and the edge of the outer sole being united by fastening means which do not enter the upper, substantially as will be described.

Figure 1, in side elevation, represents a shoe embodying my invention, the sole edge being turned down for a part of its length to show the fastenings in the channel. Fig. 2 is a cross-section of Fig. 1 in the dotted line x, looking to the left. Fig. 3 is a like side elevation of a McKay or machine-made shoe, of usual construction; and Fig. 4, a section thereof in the line x', looking to the left.

In the drawings, let a represent an upper of any desired and usual shape and material for the boot or shoe to be made.

Referring to Figs. 3 and 4, showing the common McKay shoe, it will be seen that the outer sole b is cut into nearest its outer face to form a thin lip or flap c, and that the fastenings d, employed to unite the usual inner sole e, upper, and outer sole, terminate short of the lip or flap c, the latter being thereafter turned and pasted or otherwise secured to the thicker body of the sole b, as at the right in Fig. 4, to cover the chain of the

stitches. When worn for a few days, the thin lip or flap *c* becomes loosened and is worn off, leaving the chain of the stitches exposed in an unsightly manner, and soon the chain of the stitches is worn off, leaving a series of staple-like loops, which let the shoe rip or give. The stitch, passing through the main body of the sole and through nearly the entire substance thereof, acts to stiffen the sole, so that it does not bend as readily and is not so elastic as desired.

In my improved shoe (shown in Figs. 1 and 2) the outer sole *f* is channeled or cut into at its edges next its upper side, leaving a lip, as *f'*, next the upper, which is preferably about half as thick as the part of the sole below the said lip; or, in other words, about one-third the thickness of the entire sole.

In the manufacture of a shoe embodying my invention the inner sole *g* is laid upon a last and the upper is drawn or lasted over upon it in usual manner, after which the outer sole, slitted at its edge to form the lip *f'*, is bent or flanged to throw the edge of the sole *f* out or over, as shown at the left of Fig. 2, and the lip *f'* is placed against the upper, the latter being between the two soles. In this condition, as at the left of Fig. 2, the stitches *h*, to unite the outer sole to the upper and inner sole, are made through only the lip *f'* and then through the upper and inner sole, and not through the thicker portion of the sole, as is now the practice. After this the edge of the sole, previously out-turned to enable the stitches *h* to be inserted through the lip, is laid back or into its normal position, as at the right of Fig. 2, and the edge of the sole and the lip *f'* are united by suitable fastening means, (herein shown as a line of stitches *m*, as at the right of Fig. 2.) In this way the stitches employed to connect the outer sole to the upper and to the inner sole are made in and through only the lip and not through the main or thicker body of the outer sole, and as a result the sole is left in a condition of greater flexibility than in usual McKay-sewed shoes, and the stitches being farther removed from the tread of the outer sole the sole may be worn nearly out or through at its center before the said stitches are exposed to abrasion on the street, and less thread is required, which in a factory making many shoes is a very material saving.

If desired, the outer sole may be channeled in usual manner at its tread-face for the reception of the stitches *m*.

Throughout the foregoing specification and in the claim I have used the word "lip" to indicate the thinner portion of the sole formed by the channel.

I claim—

In a boot or shoe, an inner sole, an upper having its edge laid over the inner sole, and an outer sole cut at at its edges to form a lip thin upon the side next the upper, against which the said lip is laid, the said lip only receiving through it the stitches employed to unite the outer sole to the upper and to the inner sole, the said stitches passing through the said lip of the outer sole at or near its edge, and the edge of the outer sole being united by fastening means which do not enter the upper, substantially as described.

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

WILLIAM B. ARNOLD.

Witnesses:
G. W. GREGORY,
B. DEWAR.