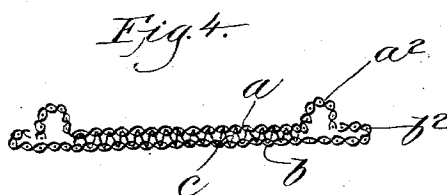
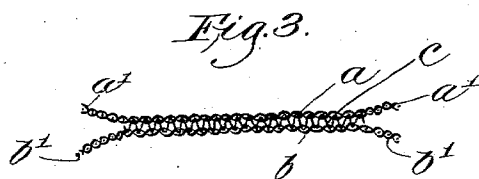
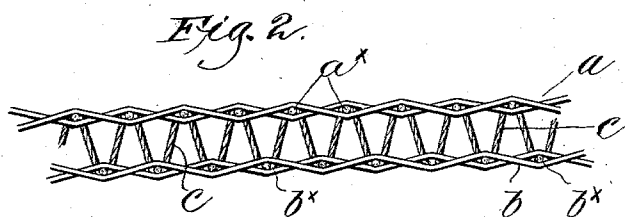
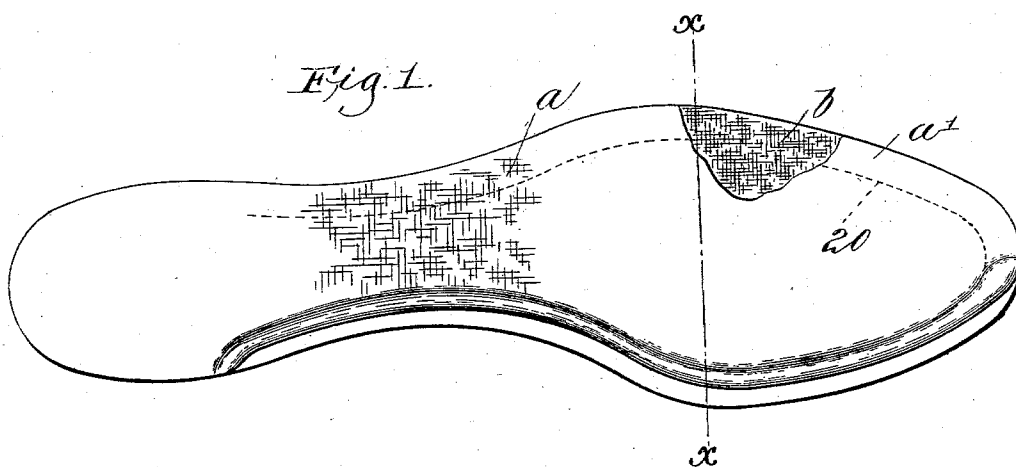


No. 740,351.

PATENTED SEPT. 29, 1903.

W. H. ADAMS.
INNERSOLE FOR BOOTS OR SHOES.
APPLICATION FILED NOV. 2, 1901.

NO MODEL.



Witnesses,
W. C. Sunsford
J. W. Lutton

Inventor
William H. Adams.
By Leroy Gregory, atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. ADAMS, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO
WILLIAM L. BARRELL, OF LAWRENCE, MASSACHUSETTS.

INNER SOLE FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 740,351, dated September 29, 1903.

Application filed November 2, 1901. Serial No. 80,901. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. ADAMS, a citizen of the United States, and a resident of Lawrence, county of Essex, State of Massachusetts, have invented an Improvement in Inner Soles for 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.

Textile inner soles as employed in certain classes of shoes have given great satisfaction, as they possess to a marked degree strength, flexibility, durability, and comfort, acting to hold the shoe together and maintain its shape, and ease of production and economy of manufacture result from their use. Various attempts have been made to attain the same result in a "Goodyear" welt-sewed shoe; but for various reasons these efforts have been commercially unsuccessful. Such innersoles as have been utilized in such shoes have been made of superposed layers of different material—such as leather or leather-board and canvas or tar-felt, buckram, and cord—secured together by stitching or cement and channeled or grooved or provided with some kind of a raised rib or lip to receive the stitches which unite the welt, upper and lining, and inner sole. The canvas ply which receives these stitches largely or entirely furnishes the strength in such compound inner soles, and as they are manifestly non-homogeneous any impairment thereof—as, for instance, separation of the plies—will seriously injure the strength and shape of the shoe. Leather is objectionable for inner soles on account of its high cost and because of its deterioration in use, resulting in hardening, cracking and breaking, and warping, which frequently causes the stitching to break through or curls up the empty shoe at the toe. So, too, the variable character of leather gives rise to more or less difficulty in handling in the various processes, and a higher grade of skill is necessary than is the case when handling textile material.

My invention has for its object the production of a novel, cheap, and highly-efficient inner sole particularly adapted for use in welt-sewed shoes, possessing all of the valuable

features of high-priced inner soles—such as flexibility, durability, and strength—and being entirely free from any of the objectionable features hereinbefore referred to.

Figure 1 is a top or plan view, partly broken out, of an inner sole embodying my invention, the stitch-receiving wale or rib being shown completed along one edge only. Fig. 2 is an enlarged cross-sectional view of the double-ply fabric which forms the inner sole. Fig. 3 is a transverse section on the line *xx*, Fig. 1, showing the separation of the two plies of the fabric at the edges thereof. Fig. 4 illustrates the formation of the stitch-receiving lip or wale and the feather from the separate edges of the plies.

In accordance with my invention I make the inner sole of a strongly-woven fabric consisting of two or more plies, preferably two, the superposed plies being closely connected and firmly bound together by suitable binding-threads, so that the plies are united into a homogeneous structure and mutually support and strengthen each other.

In the double-ply textile fabric herein illustrated the superposed plies *a* and *b* are united by suitable binder-warps *c*, which are carried about the weft-threads *a' b'* of the plies, respectively, as clearly shown in the enlarged section, Fig. 2, the plies being widely separated therein to more clearly show the structure. The inner sole is cut, stamped, or died out of such a fabric in any suitable manner to the required shape and size, and the plies are separated uniformly along their edges by severing the binder-threads *c* for a suitable distance inward, such separation of the plies being shown at *a' b'*, Fig. 3, and the separation preferably extends from the shank at one side of the inner sole forward to and around the toe to the shank at the opposite side, as indicated by the dotted line 20, Fig. 1. This splitting or separation of the plies may be effected in any suitable manner and forms no part of my present invention. The stitch or inseam receiving lip, rib, or wale is formed by bending, crimping, tucking, or turning the outer edge of one of the plies at an angle to the body portion of the insole and folding the same back and in contact with itself, and a feather is formed by turning the outer edge

of another of said plies back upon and in contact with itself, said body portion, lip, and feather all being of the same thickness.

In Fig. 4 the ply a is bent, turned, or folded back upon and in contact with itself and upturned at an angle to the body portion, presenting an upturned double thickness a^2 , which forms the lip or wale to receive the stitches of the inseam.

The ply b is formed by turning the outer edge thereof back upon and in contact with itself, as shown clearly in Fig. 4.

In order to allow the plies to be folded or turned into the desired forms, it is necessary that such plies be of substantially equal weight and of similar construction, and in order that each ply shall fold or crimp uniformly around the curved portions of the inner sole it is preferable to have each ply of substantially similar construction in the warp and filling.

The fabric is preferably sized or stiffened before being cut into shape in order that the threads may be readily cut or channeled around the outer edge of the body portion of the insole, the channeling being effected between the two plies of the fabric; but this stiffening forms no part of the present invention.

Whatever the particular formation of the lip or inseam-receiving portion of the inner sole and the feather portion, it will be manifest that they are integral parts of the body portion and that the superposed plies of the main or body portion are closely and firmly united by the binder-threads in a homogeneous fabric.

My invention is not restricted to the precise construction herein described, as the same may be modified in various particulars, the gist of my invention consisting of an inner sole formed of a single piece of sheet material comprising a body portion of multi-ply fabric, channeled around the outer edge thereof between two plies of said fabric, a lip being formed by turning up the outer edge of one of said plies at an angle to said body portion and folding the same back and in contact with itself and the feather formed by turning the outer edge of another of said plies back upon and in contact with itself, said body portion, lip, and feather being of the same thickness.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. As an article of manufacture, an insole formed of a single piece of sheet material, comprising a body portion of multi-ply fabric channeled around the outer edge thereof between two plies of said fabric, a lip formed by turning up the outer edge of one of said plies at an angle to said body portion and folding the same back and in contact with itself, and a feather formed by turning the outer edge of another of said plies back upon and in contact with itself, said body portion, lip and feather all being of the same thickness.

2. As an article of manufacture, an insole formed of a single piece of homogeneous multi-ply woven textile fabric, comprising a body portion of such fabric, the plies whereof are united uniformly by integrally-woven binder-threads and channeled around its outer edge between two plies, the outer edge of one ply being turned up and folded back upon itself to form a stitch-receiving lip and wale, and the outer edge of another ply being turned back upon and in contact with itself to form a feather, the body portion, lip and feather being of substantially the same thickness.

3. As an article of manufacture, an insole formed of a homogeneous, woven two-ply sheet of textile fabric, having the two plies of the same thickness and construction in the warp and filling, said plies being united uniformly over their adjacent surfaces by suitable integrally-woven binder-threads, the insole being channeled around the outer edge between the two plies of said fabric, a lip or wale formed by turning up the outer edge of one of said plies at an angle to the body portion of the fabric, and folding the same back and in contact with itself, and a feather formed by turning the outer edge of the other ply back upon and in contact with itself, the body portion of the fabric, lip and feather all being of substantially the same thickness.

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

WILLIAM H. ADAMS.

Witnesses:

JOHN C. EDWARDS,
ELIZABETH R. MORRISON.