Nov. 14, 1944. W. D. MOORE 2,362,497

METAL ARCH SUPPORT

Filed Oct. 29, 1943

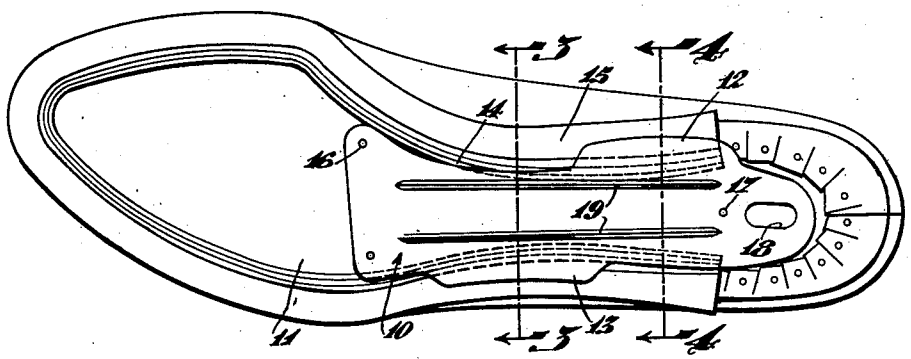


Fig. 1

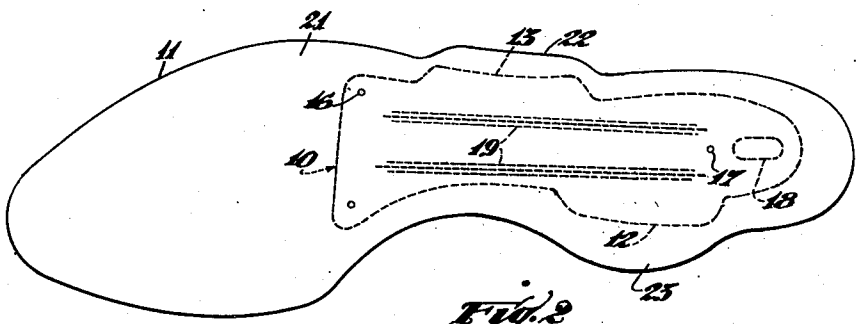


Fig. 2

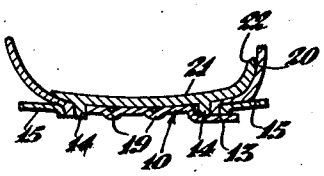


Fig. 3

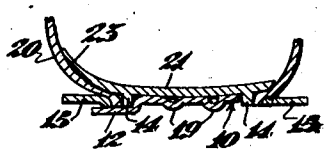


Fig. 4

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Patented Nov. 14, 1944

2,362,497

UNITED STATES PATENT OFFICE

2,362,497

METAL ARCH SUPPORT

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Application October 29, 1943, Serial No. 508,099

5 Claims. (Cl. 36—17)

This invention relates to arch supports for shoes and is particularly concerned with an arch bridge or shank formed from metal or the like of a particular configuration for supporting portions of the foot in shoes of the corrective type.

The use of arch supporting shank members formed from a rigid material such as steel or the like is very conventional in shoe construction, particularly in women's shoes. Many different types of shanks have been provided for the asserted purpose of correcting one or more of the various elements to which the human foot is subjected when its normal position is altered by the use of high heels. Many of these shanks are of the "corrective" type, that is, they are intended to cure or alleviate ailments resulting from the previous use of improper shoes. In this class there are shanks which are of exceedingly complicated construction making them heavy, cumbersome, and difficult to incorporate in the shoe. There are other types which comprise little more than a longitudinal rib which lends rigidity to the arch portion of the shoe but does not perform any appreciable function in supporting those portions of the feet which in high-heeled shoes require support.

One of the objects of the present invention has been to provide a shank which, in addition to supplying general rigidity and support to the arch portion of the shoe, also performs the particular function of supporting those portions of the foot which scientific tests have determined require support, to wit, the scaphoid bone on the inside of the foot and the fifth metatarsal head on the outside.

Another object has been to provide a shank which supports the foot naturally as it would be supported if the person were walking barefoot rather than one which attempts to correct foot ailments resulting from the wear of improper shoes.

Another object has been the provision of a shank which is particularly adapted for use with a welt shoe and one which can be readily incorporated and maintained in this type of shoe.

Another object has been to provide a shank having the requisite supporting characteristics but one which is of comparatively simple construction and sufficiently light in weight to be completely unobtrusive when positioned in the completed shoe.

Other and further objects and advantages will be apparent from the consideration of a further and more detailed description of a preferred embodiment of the invention disclosed also in the drawing in which:

Figure 1 is a bottom plan view of the shank of the invention positioned on the outer side of the insole of a welt type shoe.

Figure 2 is a top plan view of the insole of a similar type of shoe showing the general relationship between the shank piece and the insole.

Figure 3 is a sectional view along the line 3—3, Figure 1.

Figure 4 is a sectional view along the line 4—4, Figure 1.

The shank piece of the invention is indicated generally at 10, Figure 1. As shown, it is positioned on the outer or lower side of an insole 11 of a welt type shoe. The front end of the shank is somewhat wider than the middle or rear portions so that its side edges can be placed directly against the inner sides of the inseams. This front end projects forward generally under the forepart of the foot, while the rear portion extends back to cover generally the heel portion of the shoe. An important feature of the shank is the wing extensions 12 and 13, the former extending inwardly and across the inseam lip 14 and welt 15 for the support of the scaphoid bone. The extension 13 disposed forwardly of the extension 12 extends outwardly also across the inseam lip for the support of the fifth metatarsal head. In this way the foot is maintained in generally balanced position and a rigid support is provided for the particular portions which require support. As shown in Figures 3 and 4, the extensions are substantially flat although the shank itself is bent or curved longitudinally to coincide generally with the arch of the instep. The extensions are on a slightly lower plane than the body of the shank as shown also in Figures 3 and 4. This enables them to rest on top of the inseam along the portion where the inseam is crossed and permits the formation of the welt 15 without difficulty.

The shank piece may be secured in position at its forward end by fastening means inserted through the openings 16 and at its rearward end through the opening 17. An aperture 18 is provided at the extreme rearward end for heel attachment. Longitudinal reenforcing ribs 19 may be provided and these tend to increase the general strength and rigidity of the shank.

A particularly advantageous feature of the construction resides in the snug and unobtrusive way in which its contours coincide with the under surface of the insole of an ordinary welt shoe. The forward end and middle of the shank

are configurated so that they will coincide generally with the inner line of the inseam. The extensions extend over the inseam but without interfering with the welt. The rear portion of the shank is disposed generally over the heel portion. Because of this configuration there is such a close fit between the shank and insole that in addition to the other advantages it is possible to dispense with the forward attaching elements which in ordinary constructions tend at times to work loose and to cause an obstruction in the shoe.

In the sectional views **3** and **4** the upper is indicated generally at **20** and the upper surface of the insole at **21**. Wing extensions **22** and **23** may be provided on the insole coinciding generally with the wing extensions on the shank. As will be noted in these views, the configuration of the shank does not interfere in any way with the formation of the welt and attachment of the outsole.

From the above it will be noted that I have provided a shank support which is peculiarly aadpted to support those portions of the foot requiring support in a high-heeled shoe and one which can readily be incorporated in a welt type shoe. At the same time the structure when made of a light but strong metal does not add appreciable weight to the shoe and is completely unobtrusive in the finished construction.

Having described my invention, I claim:

1. A shank support formed of metal or the like for a welt type shoe comprising a flat strip member adapted to be disposed between the insole and outsole and extending generally from the heel to the forepart of the shoe, a wing extension on the inner side of said member toward the rear thereof for supporting the scaphoid bone and a second wing extension on the outer side toward the front for supporting the fifth metatarsal head.

2. An arch bridge for a welt type shoe comprising an unitary strip of metal or the like disposed between the insole and outsole and extending from the heel forward to the metatarsal region, a wing extension on the inner side of the strip toward the rear thereof for supporting the scaphoid bone and a second wing extension on the outer side toward the front for supporting the fifth metatarsal head, said extensions being in a plane below that of the body of the strip and extending outwardly of the inseam.

3. In a welt type shoe a shank iron disposed between the insole and outsole, said shank iron comprising an unitary strip element extending from the heel forward to the metatarsal region, the body of the strip being disposed in the space between the inseams, a wing extension on the inner side of the strip toward the rear thereof for supporting the scaphoid bone and a second wing extension on the outer side toward the front for supporting the fifth metatarsal head, said extensions being in a plane below that of the body of the strip and being seated on the inseam.

4. In a welt type shoe, a shank support comprising an unitary element formed from metal or the like and disposed between the insole and the outsole, said support extending from the heel to the forepart of the shoe and being curved longitudinally to coincide with the lower surface of the shoe, the body of the support being disposed in the space between the inseams, a wing extension on the inner side of the support toward the rear thereof and a second wing extension on the outer side toward the front, said extensions being in a plane below that of the body of the support and extending outwardly beyond the inseams and wing extensions on the insole coinciding with the extensions on the shank.

5. A shank support formed of metal or the like for a welt type shoe comprising a substantially flat strip member adapted to be disposed between the insole and outsole and extending generally from the heel to the forepart of the shoe, said member being curved longitudinally to coincide with the contour of the foot, the forepart of the body portion being wider than the central or rear parts adapting the side edges of said forepart to be disposed adjacent the inner edges of the inseams, a wing extension on the inner side of the strip toward the rear thereof for supporting the scaphoid bone and a second wing extension on the outer side toward the front for supporting the fifth metatarsal head, said extensions being in a plane below that of the body of the strip and being adapted to rest on the inseams and to extend outwardly therefrom.

WILLIAM D. MOORE.