FOOT CORRECTIVE SHOE CONSTRUCTION

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1 Claim. (Cl. 36—71)

This invention relates to foot corrective shoe construction and has particularly to do with the construction of the insole of a shoe during construction.

A great many appliances are employed for insertion in shoes to correct weakness and deficiencies of the foot. These appliances are naturally somewhat cumbersome and do not properly cooperate with a shoe which, in the first place, is not built for such devices. In a great many cases, these appliances are used in an effort to correct the foot but, generally, nothing is employed, with the result that the sole of the shoe is often consistently worn in certain areas and the shoe invariably loses its shape.

It is, therefore, an object of the present invention to so build the shoe in construction to adapt it to naturally correct weakness or deficiencies of the foot and thus obviate consistent wear upon certain areas of the sole and heel to avoid, to a large extent, causing the shoe to lose its shape.

A further object of the invention is to provide a shoe construction which will give greater ease to the wearer.

A further object of the invention is to shape the insole during construction as to correct the deficiencies of the foot and provide shoes which may be properly fitted on the wearer to correct particular troubles.

With these and other objects in view, the invention consists essentially in the shaping of the insole during the construction of the shoe so as to form one side of the insole thicker than the other side, the surface of the sole being tapered from one side to the other to a greater or less degree according to the amount of correction desired.

The insole may be made in the form of a single piece of leather which is skived off to give the desired result or the shaping of the insole may be accomplished by placing substantially wedge-shaped pieces along the side of the insole on which ever side is necessary, the added pieces being of leather, fibre, rubber or any suitable material, applied preferably to the forward part of the sole or to the heel area thereof. On the other hand, to provide a more complete and better finished product, this latter mentioned manner of forming the sole may be improved by splitting the insole to a point in the Shank area thereof and applying the added piece or pieces of material between the split portions, securely fastening them to the lower of these split portions and then cementing the upper section down in place. The forward portion alone of the sole may be split if it is only required to add to the forward area of the shoe and, similarly, the rear end only may be split for an insertion on the heel area, but, on the other hand, both areas may be split to provide additions on the forward portion of the sole and on the heel as well. In any of the constructions, the heel area or the forward area of the sole may be treated in both areas may be treated according to the foot troubles it is desired to correct, as more fully described in the following specification and illustrated in the accompanying drawings which form part of the same.

Referring to the drawings, Figure 1 is a perspective view of an insole employed according to the present invention, wherein the insole is skived off to form a wedge-shaped member.

Figure 2 is a fragmentary cross section of a shoe showing this insole built in the shoe.

Figure 3 is a perspective view of an insole upon which added pieces of leather are secured to correct the foot of the wearer in a similar manner to the first showing.

Figure 4 is a fragmentary cross section showing the insole according to Figure 3 built in the shoe.

Figure 5 is a perspective view of an insole upon which are secured added pieces of leather in a similar manner to Figure 3, the insole being split forwardly and rearwardly up to the shank area, the additions being made between the split portions of the sole.

Figure 6 is a fragmentary cross section showing the insole according to Figure 5.

Figure 7 is a perspective view similar to Figure 5 with split portions of the sole in different position to illustrate the placement of a supporting pad for the metatarsal arch.

Figure 8 is a plan view of a Goodyear welt shoe under construction with the insole applied thereto, carrying an added piece of leather of wedge-shape over which the outsole is to be secured.

Figure 9 is a fragmentary cross section taken through a shoe of this structure, more particularly illustrating the position of the added wedge-shaped piece with relation to the insole and outsole.

Referring more particularly to Figure 1, A indicates an insole for a shoe under construction having the forward area 10, shank area 11 and heel area 12.

According to the invention, this sole is formed thicker on one side 13 than its opposite side 14, as more particularly illustrated in Figure 2. To
provide this structure, the sole is preferably skived off or otherwise processed to form a wedge-shaped piece and this will serve to correspondingly throw back one side of the wedge towards the other side rather than the other to correct certain deficiencies in the foot.

Depending upon the particular weakness or deficiencies to be corrected, the sole is accordingly constructed. For instance, it may be desirable to maintain the thickened portion throughout the length of the sole but, on the other hand, it may only be necessary to maintain this thickened portion either in the forward area or heel area so that, in this case, only the forward area or heel area would be formed with a thickened portion.

A further manner of accomplishing the desired result is illustrated in Figure 3 wherein the sole is provided with added pieces of material applied to the forward area or heel area of the sole. These pieces of material and are formed thicker on one edge than the other and are skived off or processed so as to provide a wedge-shaped structure, as clearly illustrated in Figure 4; the upper area of one edge of the piece gradually merges into the upper surface of the sole.

While the additions have been shown in the drawings as applied to both the sole area and the heel area, it may be necessary in some cases to apply an addition only to the forward area or only to the heel area, in which case one of the additions shown is omitted.

In a structure according to Figure 3 of the drawings, that is one in which additional material is mounted on the upper surface of the sole, a better finished and possibly more durable article will be provided by forming the structure according to that illustrated in Figure 5 of the drawings. In this form of the invention, the insole C is split either in the forward area, the heel area or both these areas. However, it is important to note that the leather is left in one piece in the shank area and that the sole is only split up to the shank area so that the construction is, therefore, a very durable one.

Upon the lower section of the split forward area of the sole an additional piece of material is mounted in the same manner as applied in the section with the showing in Figure 3. The upper section of the split forward area of the shoe is then returned to its normal position overlying the section and it is secured to the section and the additional piece of material by a suitable cement. This leaves the insole of practically the same appearance as if it had not been processed, while, on the other hand, apart from its advantages in appearance, the structure is more durable in that there is no direct contact between the foot and the additional piece of material. At the same time, the possibility of the section being displaced due to the action of the foot of the wearer is largely avoided since the sole is left integral in the shank area and, therefore, the section is retained in position not only by the cement but also through its integral connection with the shank area.

In the case where the addition is only to be made in the heel area of the shoe or where it is to be made in addition to an added piece of material on the forward area of the sole, the heel area of the sole is split to provide the lower section and upper section, the splitting of the heel area being up to the shank area, as clearly illustrated in Figure 5.

The same remarks therefore apply to this construction as that described in connection with the forward area.

This split sole structure particularly lends itself to shoe construction wherein deficiencies or weakness in the foot may be corrected as described or wherein additional support may be readily given to the arch. For instance, as indicated in dotted lines in Figure 5, apart from the added material placed in the heel area of the shoe, an arch supporting pad may be positioned on a section of the area of the arch to provide a built-in arch support for the shoe and the pad used may be varied to suit the amount of support required. Similarly, as illustrated in Figure 7, the supporting pad may be positioned on the section in the area of the metatarsal arch to provide a metatarsal arch support. This support may be varied according to the amount of support required and, when the upper section or sections of the split insole are returned to normal position and cemented there, the shoe embodies the required supports but has the general finished appearance of the ordinary shoe.

As described, it may be only necessary to split the insole in the heel area or in the forward area thereof but it will be seen that the insole can be readily split from both ends even though no support of any kind is placed upon one of the sections so that in fitting the shoe it would only be necessary for the retailer to upwardly turn one of the cemented sections or both of these sections to apply a foot correcting pad on either side to meet the requirements of the wearer. This mode of fitting could be readily taken care of through the keeping of a stock of appropriate pads to be inserted in the shoes and the splitting of the insole in the manner described therefore permits the insertion of these additions at the time the shoe is being fitted, with the advantage that the section or sections of the insole lifted for the insertion of the pad may be immediately returned to normal position to retain the finished appearance of the shoe which is in no way mutilated or made unsightly.

The cross sections shown in the drawings illustrate the application of the invention to a welt shoe. However, it is quite apparent that the improvements described are equally applicable to other types of shoes and it must be noted that the skiving or the placing on the sole of wedge-shaped additions may be effected from the lower surface of the insole as well as the upper surface and therefore it should be understood that the invention had a wide application. As clearly illustrated in Figures 2, 4, 6 and 9, it is readily apparent that the foot will be corrected from the interior of the shoe and from a shoe which has been initially constructed for such correction. It is obvious, therefore, that the invention will serve not only to ease the foot of the wearer but it will obviate constant wear in certain areas of the shoe and will avoid the misshaping of the shoe due to wear in the sole and heel areas.

A further specific mode of applying the principle of the present invention, particularly in the case of a Goodyear welt shoe construction, is illustrated in Figure 8 wherein a wedge-shaped pad is applied to the outer surface of the insole, the outer edge of the pad, which includes the thick portion of the wedge, abutting the lip of the channel member employed in Goodyear welt shoe construction extending up to the shank area. As illustrated in Figure 9 the thickened portion
of the pad 20, abutting the lip 21, projects slightly above the edge of the lip, as at 22, and the remaining area of the outer surface of the insole between the lips of the channel member is filled with the usual filler 23, so that when the outsole is applied a similar result is obtained as in the case of the other methods of applying the invention illustrated in Figures 1 to 6.

This form of structure also completely conceals the corrective wedge and in addition provides a construction of strengthened character, the pad being applicable to either side of the sole to throw the foot toward the inside or outside of the shoe as required.

In the case of the Goodyear turned construction a similar method would be followed inasmuch as the wedge-shaped pad 20 is applied to the inner surface of the outsole, the outer edge of the pad, which includes the thickened portion of the wedge, abutting the lip of the channel member.

The appended claim defines the invention as applied to an insole. It is to be understood, however, that this embraces the turned shoe construction wherein the wedge-shaped pads or thickened sole construction are applied to the inner side of the outsole, there being no insole in shoes of this construction.

Various modifications may be made in the invention without departing from the spirit thereof or the scope of the claim and therefore the exact forms shown are to be taken as illustrative only and not in a limiting sense and we desire that only such limitations shall be placed thereon as are imposed by the prior art or are specifically set forth in the appended claim.

We claim:

Improved shoe construction comprising in combination a shoe constructed with a built in insole, said insole being split from the toe and from the heel over an area up to the shank portion of the insole, to provide upper and lower sections, the shank of the insole being unitary, and individual wedge-shaped leather pads secured to the lower sections of the insole to provide thicknesses in the sole and heel area on one side of the shoe greater than the thickness on the opposite side forming a sloping surface terminating adjacent to the longitudinal centre line of the sole, said upper sections being secured to overlie the lower sections and pads to provide a smooth sloping upper surface for the insole co-operating with the shoe construction to correct deficiencies of the foot.

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