

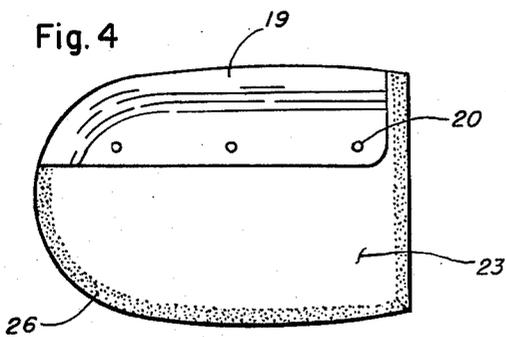
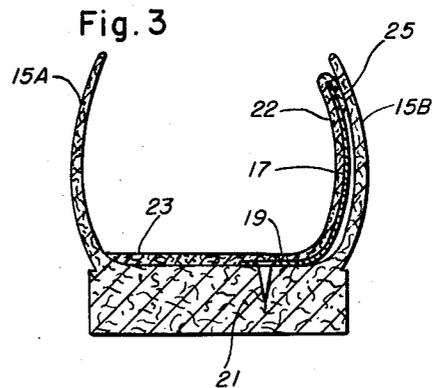
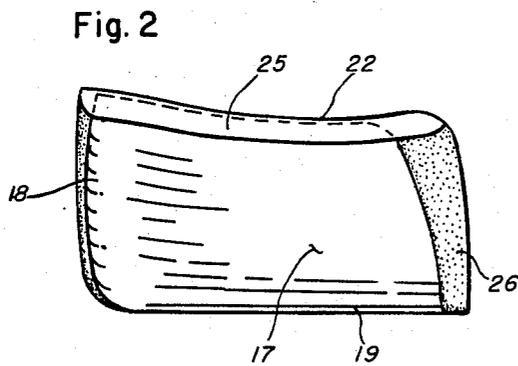
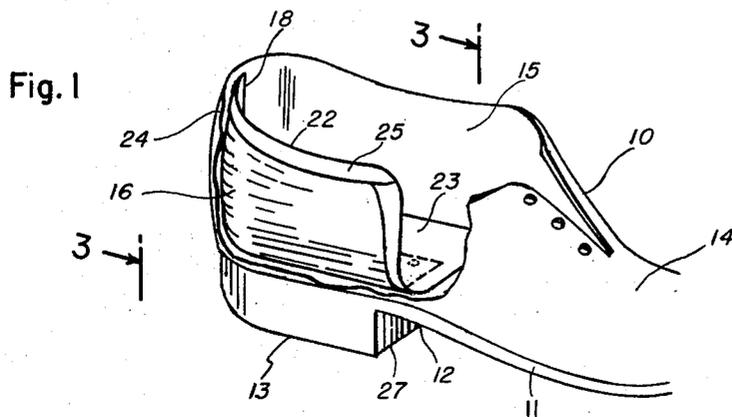
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HEEL SUPPORT

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2,903,802

**HEEL SUPPORT**

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This invention relates to a shoe support and more particularly to a heel support adapted to be secured into the counter portion of a shoe for correction or prevention of the wearing, bending, sagging or outturning of the counter wall of the outer side of a shoe which frequently occurs in normal use.

Many people are bothered by troublesome wearing, bending, sagging, distorting and outturning of the counter portion of their shoes at the outer side, that is the side opposite from the inner or arch side of the shoe. This problem may have many causes. Among these are excessive weight concentration on the outer side of the shoe, insufficient reinforcement at the outer side wall of the shoe, as well as damage from hard objects coming into contact with that portion of the shoe in one manner or another, all of which tend to weaken the shoe and lessen the support which that part of the shoe should give.

Heretofore, various devices have been developed for orthopedic purposes of one sort or another, but none has been discovered which is capable of achieving the objectives of the present invention. For instance, side supports for the heels of shoes have been used heretofore which, due to their construction, are comparatively sharp, rigid and unyielding. Such devices often prevent proper blood circulation, irritate the skin and flesh of the wearer's heel and lead to the formation of calluses. Often so much metal is required that the shoes in effect become weighty torture chambers of the feet.

Now it has been discovered that marked relief can be afforded to people whose shoes tend to develop the above-mentioned defects by installing therein either during manufacture or subsequently thereto the heel shell device of the present invention. Protection may then be had against the above defects, and pain and strain on the feet is thereby eliminated.

The present invention is not particularly designed for use by people who have orthopedic problems. Rather it is more specifically designed for use by people whose shoes turn out, bulge or sag at the counter wall of the outer side of the shoe causing troublesome pressure which can be very painful.

Briefly, the heel support of the present invention comprises a sturdy, yet resilient, open shell having a floor portion and an integrally formed upstanding wall portion adapted to embrace the outer side of the wearer's heel. The body weight of the wearer which is applied to the floor portion of the shell tends to hold the wall portion upright and thus braces the heel against outward lateral or tilting movements. At its rear, the wall portion extends almost half way around the back of the heel and thus acts as a guide. Means are provided for securing the shell in the counter portion of a shoe and in juxtaposition to the counter wall thereof, either during manufacture of the shoe or as an attachment to a finished shoe.

Accordingly, it is an object of the invention to provide a heel support which may be installed in a shoe

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as a component element during manufacture or as an attachment in a finished shoe.

It is another object of the invention to provide a heel support which may be readily and conveniently installed by the wearer in shoes which already evidence sagging, bending or outturning at the outer side wall portion of the counter without the need for cutting or destroying any part of the shoe, and which may be transferred, furthermore, from one shoe to another with a minimum of effort.

It is a further object of the invention to correct existing defects of the above mentioned nature by employing the heel support as hereinafter described.

It is a still further object of the invention to provide a resilient compatible heel support which may be fashioned to fit into the counter portion of any shoe, positioned against the inside wall surface of the outer side thereof as well as the heel floor surface, so as to render the shoe more comfortable and sturdy, and to correct or prevent the occurrence of shoe deformations as above described.

A still further object of the invention is to provide a shoe support of the aforementioned type which is of simple and durable construction, and economical to manufacture.

Other and further objects and advantages of the invention will be readily apparent from a study of the description which follows.

For a more detailed understanding of some of the more important aspects of the invention, reference may be had to the accompanying drawing in which:

Figure 1 represents a fragmentary perspective view of a shoe embodying the invention, partially broken away to illustrate details of construction;

Figure 2 is a side elevation of the heel support of the invention;

Figure 3 is a transverse section taken on line 3—3 of Figure 1;

Figure 4 is a bottom plan view of the heel support of Figure 3.

In accordance with the present invention, and with specific reference to the accompanying drawing, Figure 1 shows a shoe designated generally as 10 including a sole 11 which merges into shank portion 12, a lower heel 13, a vamp portion 14, and an upper heel or counter portion designated generally as 15. A unilaterally supporting heel shell member 16 is shown disposed within the counter portion of the shoe at its outer side, and in juxtaposition to the inside wall of counter wall 15b. Upper heel or counter wall 15b is located at said outer side as opposed to upper heel or counter wall 15a which is located at the inner or arch side of the shoe as may be seen from Figure 3. When in position, the top edge of shell member 16 is preferably slightly lower than the top edge of counter wall 15b as in a low cut or oxford type shoe.

Heel shell member 16 comprises an arcuately shaped vertical side wall 17 having its axis of curvature directed generally longitudinally of the shoe. Rear wall 18 extends rearwardly and transversely from the rear end of side wall 17 generally to the back of the counter. Horizontal floor plate 19 is connected along the lower edges of side wall 17 and rear wall 18 in an arcuate manner. Side wall 17 is provided with a slight downward curvature along its upper edge in similar configuration to that of the upper edge of counter wall 15b. Shell member 16 is so constructed that it generally conforms to that contour of the heel portion of the foot embracing the area from the back of the heel to the side portion of the heel along the outer side as opposed to the inner or arch side of the foot.

Floor plate 19 in a preferred embodiment of the in-

vention which is shown in Figure 4, is provided with a plurality of openings 20 disposed therein which serve as appropriate screw or nail holes for receiving countersink screws or nails 21, or other similar fastening means. These countersink screws or nails 21 may be employed to fixedly or removably secure floor plate 19 into a shoe as shown in Figure 3.

Furthermore, as may be seen from Figure 3, the entire inside wall surface of shell member 16 is covered with a soft cushion-like lining 22, advantageously by means of strong adhesive cement or glue. Lining 22 may be made of suitable leather, plastic, foam rubber or other material having similar characteristics. Floor plate 19 is likewise covered with heel cushion 23 of similar lining material, which extends across the entire floor area of the heel of the shoe. Lining 22 and heel cushion 23 may or may not be integral with one another.

The portion of cushion 23 which covers floor plate 19 is constructed of material having a thickness less than that which extends across the remaining heel floor area, so that when shell member 16 is secured in place, the remaining thickness of the portion of cushion 23 which covers floor plate 19 is contributed by floor plate 19 itself. The combined assembly of cushion 23 and floor plate 19 is therefore constructed to achieve an even thickness and surface throughout. Hence, when the shoe is worn, the floor surface of the upper heel portion of the shoe remains even and without ridges or depressions, as the thickness of floor plate 19 is compensated by the corresponding differences in thickness of cushion 23.

As shown in Figure 2, lining 22 preferably extends laterally in both directions preferably about one-quarter to one-half inch past the front and rear edges of shell member 16. Consequently, sufficient area is available for securing or bonding shell member 16 in any conventional manner, as for example by any suitable cement or glue, to the inside wall of the upper heel wall 15b as well as to the back wall portion 24 of the shoe.

Additionally, the upper edge of lining 22 preferably extends beyond the top edge of shell member 16 about one-quarter to one-half inch, so that it may be advantageously turned over to form a flap 25. Upon bonding the undersurface of flap 25 to the outside top edge of side wall 17, the outside surface of flap 25 may then serve as a similar bonding area for securing the top portion of shell member 16 to the top edge of counter wall 15b as above mentioned. The top edge of shell member 16 is constructed so that when it is placed in the shoe it is preferably about one-quarter to one-half inch below said top edge of counter wall 15b as in a low cut or oxford shoe. Flap 25 may also be constructed of a separate piece of lining material suitably secured to said top edge of shell member 16 as aforesaid.

Heel cushion 23 in like manner may be secured to the floor of the upper heel portion of the shoe by any appropriate means such as cement. In all cases, the surface area of the lining, cushion or flap to be bonded or secured to the corresponding shoe wall or floor is advantageously scored or grated as shown at 26, so that a slightly coarse surface is formed. A more efficient and lasting adhesion will then be found to take place upon cementing.

Shell member 16 advantageously extends in a forward direction beyond the transverse edge 27 of lower heel 13. In this manner, shell member 16 further serves to reinforce shank 12 of the shoe, and affords additional comfort to the wearer.

While shell member 16 may be secured in position as aforementioned, in the situation where counter wall 15b is already outturned or sags, the defect can be readily corrected in the following manner. Flap 25 is bonded along the top edge of the inside wall of counter 15b slightly below said top edge and the portions of lining 22 which extend laterally beyond the shell member 16 are bonded to the corresponding inside wall surfaces of counter portion 15 at counter wall 15b and back wall

portion 24. This is accomplished while shell member 16 is correctly positioned in the shoe as hereinbefore described. After suitable time has elapsed for the bonding to have been completed, counter wall 15b is forced back to its former shape and while held in this position, suitable fastening means such as countersink screws or nails 21 may be inserted into openings 20 and driven into the heel floor so as to permanently hold counter wall 15b in its correct position and shape. If desired, heel cushion 23 may then be bonded to the floor lining of the shoe. Since countersink screws or nails are employed in fastening floor plate 19 to the shoe floor, there is no danger that an uneven surface will ensue to cause discomfort while wearing the shoe.

The heel shell of the invention is adaptable to certain variations of use, one of which is the prevention of corns and calluses which may occur along the outer side of the foot. Often, the little toe rubs against the abutting side wall of the shoe and calluses and corns result. If the little toe is kept from rubbing against the side of the shoe, it is possible that these corns and calluses may be eliminated. In this connection, if floor plate 19 is positioned in the normal manner in the shoe, but by means of a screw or nail in the rearmost opening 20 only, shell member 16 may then be pivoted along its front portion a very slight distance away from counter wall 15b. Thus, upon fastening the remainder of the shell member 16 in place, the wearer will find his foot guided inwardly at a very slight angle, so that the little toe does not rub against the side wall, yet the foot remains harmoniously and comfortably in place.

In the event the heel shell is to be placed in shoes during manufacture, it will be obvious that the corresponding counter portion will be so constructed as to accommodate the heel shell member under the shoe lining of counter wall 15b. This may be accomplished so as to avoid any bulges or pronounced ridges which might be annoying to the wearer by omitting so much of the thickness and area of counter wall 15b and the heel floor as corresponds in area and thickness to that of the heel shell inserted therewithin. In most cases, since the heel shell is constructed of material of comparatively negligible thickness, no problem should arise in this regard. It will be obvious that in this embodiment, the lining, cushion and flap may be modified or omitted as the purpose of these elements will be served by appropriate permanent shoe linings.

The material of which the heel shell is constructed, may comprise generally any metal such as that of extremely thin gauge, as for example metal having 20 to 45 gauge thickness, which has the properties of being sturdy and unbendable so as to maintain its shape, yet resilient enough to flex to some extent when pressure is applied during normal walking. Steel having a gauge within the range of 35 to 40 is preferred, however. Accordingly, while proper support may be achieved, the structure comprising such material is not so stiff, rigid or bulky as to injure the foot or make the wearing of the shoe tight or uncomfortable. The metal which may be used is advantageously made of the rust-resistant or stainless variety for obviously reasons.

While Figure 1 illustrates the device of the invention as used in a man's right low cut or oxford shoe, it can be seen readily that the device may be used in any shoe, right or left, man's or woman's, and in any size to fit any shoe or foot. It will be obvious that the heel support shell may be taken from one shoe with a minimum of effort and placed in another by merely detaching the shell from the former shoe and securing it into the latter in the above described manner. While the preferred embodiment has been shown and described, it will be understood that various changes and modifications may be made without departing from the spirit and scope of the invention which is to be limited only by the appended claims.

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What is claimed is:

1. A support member for insertion against the inside of the lateral portion of the counter of a shoe, which comprises an arcuately shaped side wall portion having its axis of curvature directed longitudinally of the shoe, a rear wall portion extending rearwardly and transversely from the rear end of said side wall portion, and a floor plate portion joined to the lower edges of said side wall and said rear wall portion, all of said portions forming a shell to conform to the configuration of the inner portion of the counter portion of a shoe.

2. A heel shell support for insertion against the inside of the lateral portion of the counter of a shoe, said shell having an arcuately shaped unilateral side wall, a rearwardly and transversely extending curved portion integrally connected to the rear edge of said side wall, a floor plate integral with said side wall and said portion along the lower edges thereof, said shell extending from

the back of the counter to the shank portion of the shoe along the inside of the outward lateral side of the shoe, the inner side of said shell having a soft lining disposed thereon, said lining extending beyond the front and rear edges of said shell, and extending over the upper edge of said shell, a lining extending across the floor plate of said shell and means for securing said shell to said shoe.

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