July 16, 1940. B. H. LOBDELL 2,208,078

FOOT CORRECTION ARCH SUPPORT

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Fig. 1.

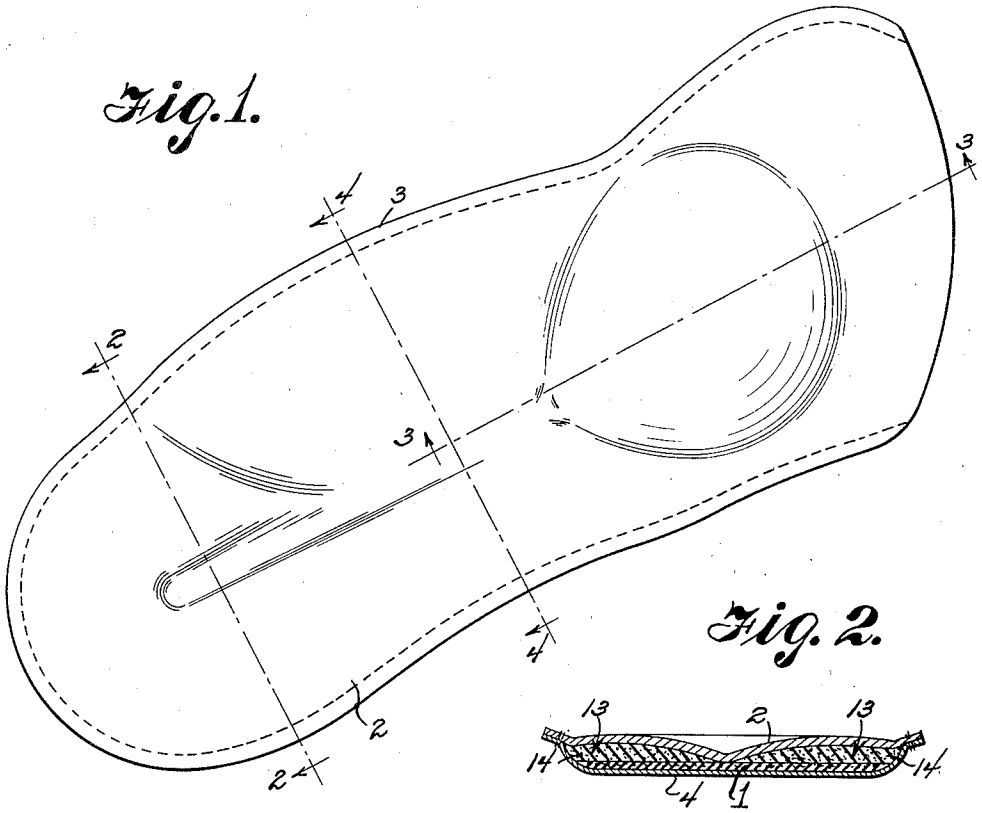


Fig. 2.

Fig. 3.

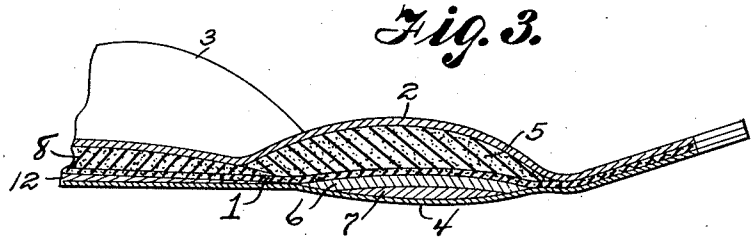
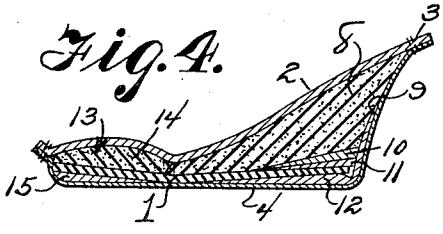


Fig. 4.



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Fig. 5.

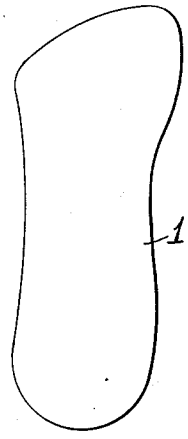


Fig. 6.

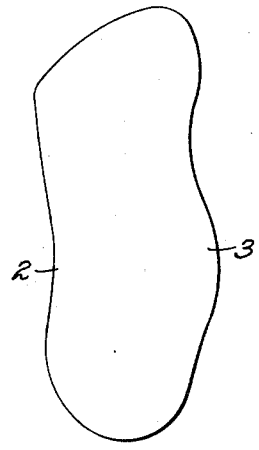


Fig. 7.

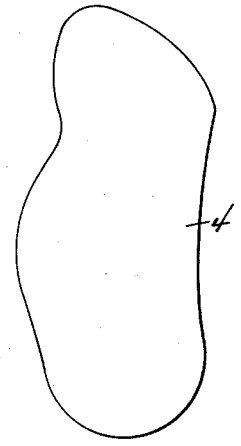


Fig. 8.

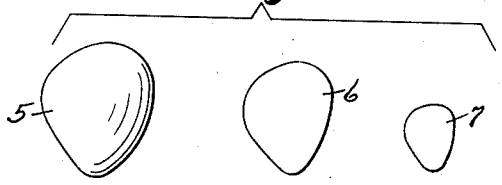


Fig. 10.

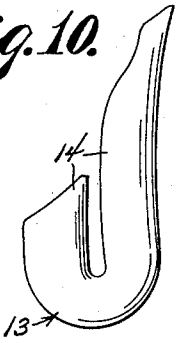


Fig. 9.

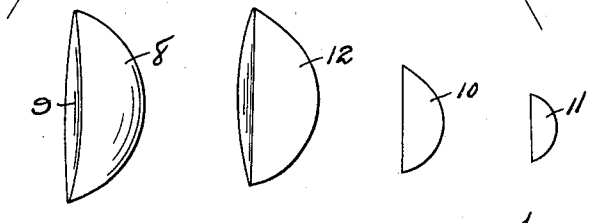


Fig. 11.

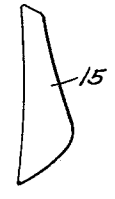
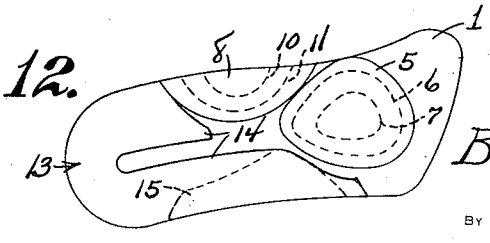


Fig. 12.



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FOOT CORRECTION ARCH SUPPORT

Benjamin H. Lobdell, Pittsburgh, Pa.

Application July 6, 1939, Serial No. 283,075

4 Claims. (Cl. 36—71)

This invention relates to arch supports, and its general object is to provide a complete, proper, comfortable, cushioning, leveling and correcting support for the tarsus and metatarsus sections of the foot, especially for the external and inner longitudinal arches from the heel bone to the distal ends of the first and fifth metatarsal bones, and for the metatarsal or anterior transverse arch.

A further object is to provide a support of the character set forth, that is capable of adjusting and holding flattened and sagging parts of the foot including the heel in normal position and alignment, as well as for relieving excess pressure, thus eliminating and preventing callosities and corns, and at the same time permitting free movement of the tissues and muscles while walking to actively stimulate the same, to bring about proper functioning thereof, for cooperation with the support, so as to restore each affected part to a natural position and to a healthy condition.

Another object is to provide a correcting arch support that is not only capable of performing its function as such, but protects the foot against heat, cold and dampness, thereby eliminating and preventing ailments brought about by those elements.

Another object is to provide a correcting arch support that includes inserts to vary the height and shape of the main supporting and cushioning elements, and the support in its entirety is made to conform to measured requirements of each foot, thereby assuring a perfect fit which of course is necessary to bring about the proper supporting and correcting feature of the appliance.

A still further object is to provide a correcting arch support that is simple in construction, reasonably inexpensive to manufacture, and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a top plan view of the appliance which forms the subject matter of the present invention.

Figure 2 is a sectional view taken approximately on line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is a sectional view taken approximately on line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a sectional view taken approximately on line 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a plan view of the intermediate or foundation member.

Figure 6 is a plan view of the top covering member.

Figure 7 is a plan view of the bottom covering member.

Figure 8 illustrates the anterior transverse arch supporting pad and the inserts or risers therefor.

Figure 9 illustrates the inner longitudinal arch supporting pad, the inserts therefor, as well as the reinforcing and stabilizing member for the pad and foundation member.

Figure 10 is a plan view of the shock absorbing or cushioning member for the heel and that section of the foot supported by the cuboid and fifth metatarsal bones.

Figure 11 is a plan view of the reinforcing member that cooperates with the reinforcing member of Figure 9 to minimize undue stretching of the intermediate or foundation member.

Figure 12 is a bottom plan view of the foundation member, with the cushioning and supporting members secured thereto and shown in full and dotted lines.

Referring to the drawings in detail, and particularly to Figure 1, it will be noted that my appliance is of the insert type, to fit within the shoe from the heel to the forward portion thereof and the intermediate or foundation member 1 which is preferably made from sheet sponge rubber is reduced in curved formation from adjacent its heel end to its forward end and the latter is inclined from its outer to its inner side to enlarge the forward end accordingly, as clearly shown in Figure 5. The upper or top covering member 2 is reduced on its outer side, while its inner side is enlarged as at 3 and the remaining portion of the member 2 is shaped to conform to that of the foundation member 1. The member 2 is preferably made from smooth soft saddle leather and the lower or bottom covering member 4 which is shaped to conform to that of the top covering member 2, is preferably made from suede leather. Each of the members 1, 2 and 4 are skived about certain of the edges thereof and the covering members 2 and 4 are secured together about their side and rear edges by suit-

able stitching as shown in Figure 1, while the forward edges are preferably cemented together. In any event the intermediate or foundation member 1 is disposed between the members 2 and 4, so that the said members will be arranged in superimposed relation with respect to each other, as will be apparent.

Mounted on and adhesively secured to the forward portion of the foundation member 1 is the flat underside of the metatarsal or anterior transverse arch support pad 5 which is made from any suitable soft material, such as sponge rubber or felt into various sizes and thicknesses, but in any event is provided with a convexed upper surface and is of substantially oval shape in outline, as well as slightly reduced toward its rear end, as best shown in Figure 1. The convexed upper surface is adhesively secured to the underside of the top covering member 2, while secured to the undersurface of the foundation member 1 directly below the pad 5 are superimposed inserts or risers 6 and 7 made from stiff leather and having skived edges. Any number of the inserts may be employed for adjusting the height of the pad 5 and the pads are adhesively secured to each other, while the lowermost pad is adhesively secured to the bottom covering member 4.

Adhesively secured to the underside of the covering member 2 and having its inner curved edge portion adhesively secured to the upper side of the foundation member 1, is a wedge shaped inner longitudinal arch support pad 8 made from cushioning material, such as sponge rubber or felt into substantially semi-circular formation and provided with a beveled wall portion 9 on the outer side thereof, the lower edge of the beveled wall portion following the inner or corresponding edge of the foundation member 1 for the disposal of the beveled wall portion 9 laterally and outwardly beyond said edge, as best shown in Figure 4. Adhesively secured to each other and to the underside of the pad 8 as well as to the upper side of the foundation member 1 are relatively stiff leather inserts or risers 10 and 11 to vary the height of the pad 8, as will be apparent upon inspection of Figure 4. Any number of inserts or risers 10 and 11 may be employed, and adhesively secured to the underside of the foundation member 1, as well as to the beveled wall portion 9 of the pad 8, is a reinforcing strip member 12 having an outline similar to that of the pad 8. The inserts 10 and 11 and the reinforcing member 12 are provided with skived edges.

Mounted between the foundation member 1 and the top covering member 2 as well as adhesively secured thereto, is what I term a shock arrester pad 13 which is of substantially hook formation, as best shown in Figure 10, with its rear or hook portion following the shape of the heel portion of the member 1, while the tongue portion 14 extends forwardly from the heel along the outer longitudinal portion of the member 1, to provide a cushioning supporting means for the external longitudinal arch, as will be apparent upon inspection of Figure 12. The pad 13 is made from any suitable cushioning material, such as sponge rubber or felt and is provided with beveled edges for disposal flush with the member 1.

Adhesively secured to the underside of the foundation member 1, as well as to the upper side of the bottom covering member 4 is a substantially V-shaped reinforcing strip 15 enlarged toward its forward end and is preferably made from soft smooth sheet saddle leather. The strip 15 is disposed directly below the tongue portion 14, along the length thereof, and cooperates with the reinforcing member 12 to prevent undue stretching of the foundation member, as will be apparent.

From the above description and disclosure of the drawings, it will be obvious that the shock absorber pad 13 not only provides a cushioning support for the heel, but also for the external longitudinal arch on the outer side of the foot beginning with the calcaneum or heel bone and terminating at the distal end of the fifth metatarsal bone. The free end of the hook portion of the pad 13 underlies the adjacent end of the wedge shaped pad 8 and cooperates therewith together with the inserts 10 and 11 to provide a cushioning support for the inner longitudinal arch between the heel bone and the distal end of the first metatarsal bone, while the pad 5 and its inserts provide a cushioning support for the metatarsal or anterior transverse arch, that is located transversely between the distal ends of the first and fifth metatarsal bones. All of the supports cooperate to not only hold the respective parts of the foot in proper position, but they set up a gentle realigning and leveling action thereon, while walking, thus stimulating the tissues and muscles to bring about proper functioning thereof, so as to restore the supported parts of the foot to normal position and health.

It may be further mentioned that the heel portion of the pad 13 provides an effective shock absorber for the leg muscles and joints, as well as for the entire nervous system, and the cushioning supports also cooperate with each other to properly hold the anterior transverse arch in a manner to relieve excess pressure on the distal ends of the metatarsal bones, thus eliminating and preventing callosities and the like.

It is also important, in order to bring about the desired results by the use of my appliance, that each appliance be made to conform to the measured requirements of the particular foot under consideration, thereby assuring accuracy as to fit and in the distribution of weight to the foot bones and muscles, as the wide range of foot measurements relative to different individuals preclude the likelihood that any stock article of this character could provide the desired and necessary support to the affected parts of the foot.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A foot correction arch support comprising upper and lower covering members formed from soft sheet leather, an intermediate member formed from sheet sponge rubber, said members being secured together in superimposed relation and being of a length to extend from the heel portion of a shoe to adjacent the forward end thereof, metatarsal and inner longitudinal arch supporting means including pads formed from sponge rubber and disposed between said members, heel cushioning means formed from sponge rubber and disposed between said members, and external longitudinal arch supporting means formed on the heel cushioning means and ex-

tending forwardly beyond the inner longitudinal arch supporting means.

2. A foot correction arch support comprising upper, lower and intermediate members formed from soft sheet material and secured together in superimposed relation, a metatarsal arch supporting pad secured between the intermediate and upper member, means for adjusting the height of said pad and disposed between the lower and intermediate members, an inner longitudinal arch supporting pad secured between the upper and intermediate members, heel cushioning means between the upper and intermediate members, external longitudinal arch supporting means formed on the heel cushioning means and extending beyond the forward end of the inner longitudinal arch supporting pad, and means for reinforcing the intermediate member and secured to the underside thereof and to the inner longitudinal arch supporting pad respectively.

3. A foot correction arch support comprising upper, lower, and intermediate members formed from soft sheet material and secured together in superimposed relation, said members being shaped to fit within a shoe for disposal between the heel portion thereof and adjacent to its forward end, a substantially oval shaped metatarsal arch supporting pad having a flat lower surface and a convexed upper surface and secured to and between the upper and intermediate members, inserts providing adjusting means for the metatarsal arch supporting pad and secured between the lower and intermediate members, a wedge shaped inner longitudinal arch supporting pad of substantially semi-circular formation and secured between the upper and intermediate members, a beveled outer wall for the latter pad and extending laterally beyond the intermediate member, said upper and lower members being laterally enlarged to enclose the laterally extending portion of the pad, and heel cushioning and external longitudinal arch supporting means secured between the upper and intermediate members.

4. A foot correction arch support comprising upper, lower and intermediate members formed from soft sheet material and secured together in superimposed relation, said members being shaped to fit within a shoe for disposal between the heel portion thereof and adjacent to its forward end, adjustable metatarsal arch supporting means secured to and between the upper and intermediate members, a wedge shaped inner longitudinal arch supporting pad of substantially semi-circular formation and having its rounded edge secured to the intermediate member and its upper wall to the upper member, a beveled outer wall for said pad and extending laterally beyond the intermediate member, means for adjusting the height of the pad, said upper and lower members being laterally enlarged to enclose the laterally extending portion of the pad, reinforcing means for the intermediate member and secured to the underside thereof and to the beveled outer wall, and heel cushioning and external longitudinal arch supporting means secured between the upper and intermediate members.

BENJAMIN H. LOBDELL.