March 9, 1943. W. E. BLACKBURN 2,313,314

METHOD OF MAKING ARCH SUPPORTS

Filed June 21, 1941

FIG. 1.

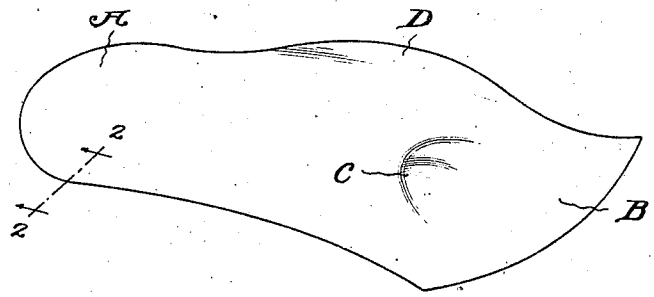


FIG. 2.

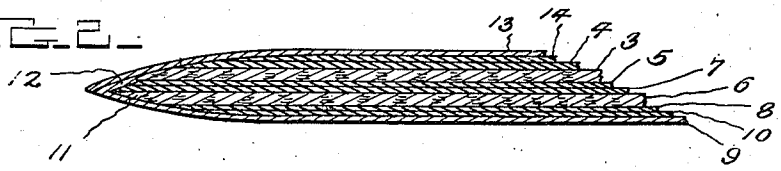


FIG. 3.

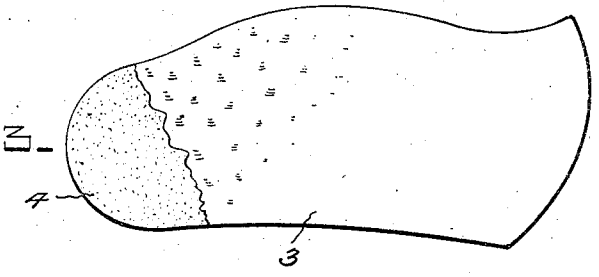


FIG. 4.

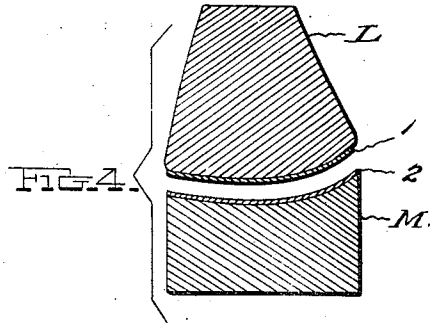


FIG. 5.

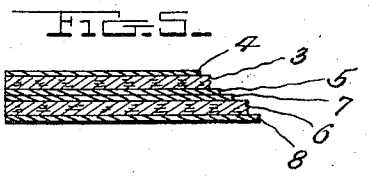


FIG. 6.

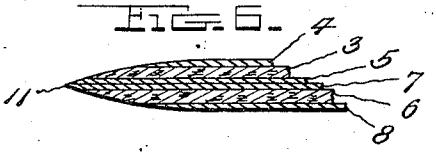




FIG. 7.



FIG. 8.

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METHOD OF MAKING ARCH SUPPORTS

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Application June 21, 1941, Serial No. 399,177

1 Claim. (Cl. 12—146)

This invention relates to a method of making an arch support.

One of the objects of the invention is to provide an arch supporter which is not only inexpensive to manufacture but is also strong, light, and flexible.

A further object is to provide an arch supporter which can be readily washed and which is moisture-resistant.

It is well known to those skilled in the art that when leather is used in the formation of arch supporters, it quickly becomes impregnated with moisture which not only leaves it unsanitary but also tends to render the leather brittle with the result that it soon cracks and become useless.

An object of the present invention is to utilize materials which are easily assembled, will retain the shape into which they are formed and which will resist deterioration due to moisture.

Another object is to provide an arch supporter which can be built up on a last of a shoe best suited to the requirements of the user so that it thus becomes unnecessary to make casts of plaster of Paris, wax or other materials preparatory to forming the supporter and all of which adds greatly to the cost of production.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel steps in the method of producing the article, all of which will be more fully described hereinafter, it being understood that various changes may be made without departing from the spirit of the invention and within the scope of the appended claims.

In the accompanying drawing

Figure 1 is a perspective view of the arch supporter.

Figure 2 is a greatly enlarged and somewhat exaggerated section on line 2—2, Figure 1.

Figure 3 is a plan view of one of the cork layers and showing a portion of one of its rubber cement coatings.

Figure 4 is a transverse section through the mold members, each being shown with a coating of rubber cement.

Figure 5 is a section on an enlarged scale through a portion of the assembled layers of cork forming the core.

Figure 6 is a similar view showing the marginal portion dressed down to a feather edge.

Figure 7 is a section through a portion of the bottom covering and its film of rubber cement.

Figure 8 is a section through the top covering and its film of rubber cement.

As shown in Figure 1 the arch supporter includes, in addition to the heel portion A, a toe portion B including a metatarsal elevation C which is an integral part of the support and is shaped to hold all metatarsal heads in proper relationship to each other. At one side the supporter has a high flange D which serves to support the internal cuniform and scaphoid bones.

As before stated this supporter is adapted to be fashioned on the last of a shoe which meets the requirements of the user. A portion of such a last has been shown at L in Figure 4 and constitutes one-half of a mold while the other half of the mold, which has been indicated at M, is shaped to cooperate properly with the mold member L in the compression and shaping of the supporter. Both of the parts L and M are formed of wood so that rubber cement, after drying thereon, can be readily stripped therefrom, wood having the peculiar characteristic of offering little resistance to the removal of dried rubber cement which has been applied to it.

After mold members L and M of the proper contours have been selected, a coating of rubber cement shown at 1 is applied to the working face of the member L while another coating of rubber cement indicated at 2 is applied to the active surface of the other member M.

A thin strip of cork, approximately one-eighth of an inch thick, is cut to the proper shape as shown, for example, at 3 in Figure 3 after which a layer of rubber cement 4 is applied to one surface thereof and another layer of rubber cement 5 is applied to the opposite surface thereof. After the coatings of cement on the mold members have dried and the coatings of cement on the cork have also dried, said cork with its cement coatings is heated with dry air, steam or hot water after which the cork and its adhering coatings is placed between the mold members and placed under pressure thereby. A second strip of cork corresponding in shape and size to the piece already used and which has been indicated at 6, is also coated on both sides with rubber cement as indicated at 7 and 8. See Figure 2. This cement is permitted to dry and thereafter it is heated with dry air, steam or hot water and the mold members L and M are moved apart so that one of them will strip off of the material previously placed between them. The second layer of coated cork is then placed against the first layer between the mold members and said members are again pressed together so that both thicknesses of cork together with the rubber cement thereon, will be pressed together and brought to the desired configuration.

A thickness of moisture-resisting material

which is both wider and longer than the cork strip, is provided for the bottom side of the supporter and has been indicated at 9. This is provided on its upper surface with a coating of rubber cement shown at 10.

While this film 10 of rubber cement is drying, the shaped thicknesses 1 to 8 inclusive are removed from between the mold members and the edges of the structure are dressed down with an abrading wheel or the like until brought to a feather edge as indicated at 11 in Figure 2. Thereafter the material 9 is applied to the bottom of the formed structure and its edge portion 12 turned over the feather edge 11. A top layer 13 of moisture-resisting material having on one side a coating of rubber cement, shown at 14, is applied to the top surface of the formed structure and to the inturned edge portion 12. Thereafter the entire article is placed between the mold members L and M and subjected to final pressure after which any projecting edge portions of the material 13 are trimmed off and the formation of the arch supporter is thus completed.

It will be noted that the elevations in the arch supporter are built up from the initial compressing operation and that all of the material constituting the main portion of the supporter consists solely of layers of cork and rubber cement. The outer coverings 9 and 13 can be of any desired kinds of moisture-resisting material. For example the part 9 can consist of deer skin or rubberized fabric while the top layer 13 can be formed of "Russialoid" or a similar moisture-resisting sheet material.

It has been found in practice that arch supporters produced as herein described have many advantages over other articles heretofore produced of a similar nature. Among its advantages is its ability to resist moisture and thus be readily cleaned or washed and retained in a sanitary condition. It will not harden and crack as a result of moisture absorption. While it retains its shape, it nevertheless has desired flexibility. It is cheap to manufacture but is very efficient.

What is claimed is:

The method of producing an arch supporter including the step of selecting a last to meet the requirements of the user of the supporter, shaping a mold for cooperation with the last, shaping separate thicknesses of sheet cork, applying rubber cement to both sides of each sheet and permitting it to dry, applying rubber cement to the last and mold, thereafter softening one of said layers and its cement with heat and shaping it between last and mold coated with rubber cement, thereafter applying the other thickness to the shaped thickness and subjecting both thicknesses to pressure between the last and mold, removing the shaped thicknesses from between the last and mold and trimming the margin to a feather edge, applying to the bottom surface of the formed thicknesses a layer of moisture-resisting material, inturning the edge portion of said bottom layer to overlie portions of the joined layers, thereafter applying a top layer of moisture-resisting material, thereby to overlie the inturned edge portion, trimming the edge of said top layer, and finally subjecting all of the layers to pressure between the last and mold.

WELLINGTON E. BLACKBURN.