June 27, 1933. J. E. STAGL 1,915,627

RUBBER CUSHION ARCH PROTECTOR

Filed Jan. 28, 1931

Fig. 1.

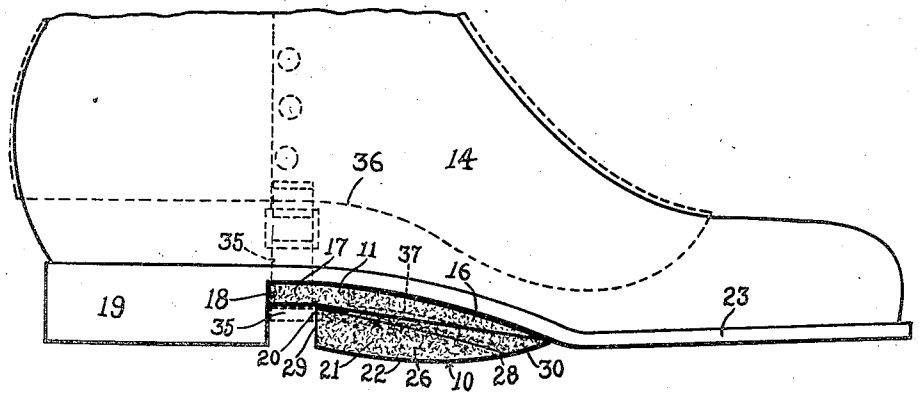



Fig. 2.

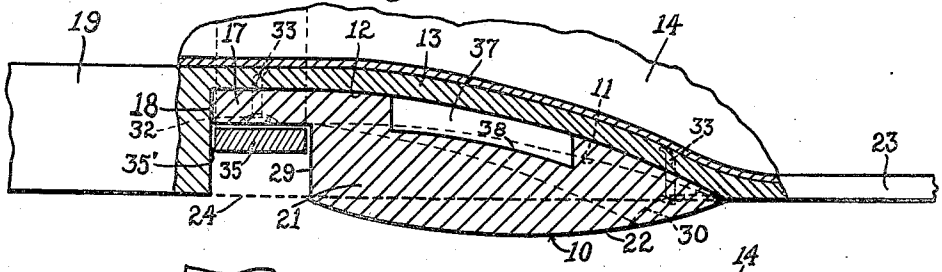



Fig. 3.

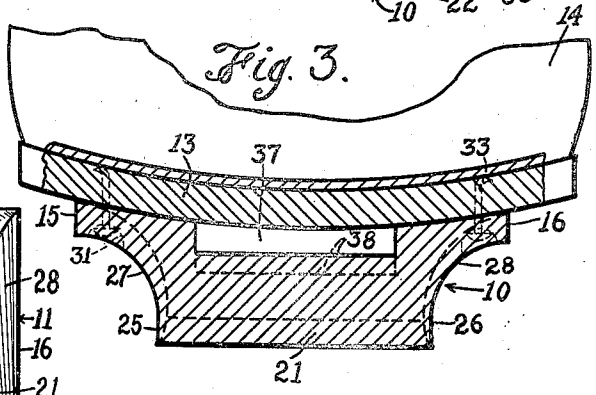
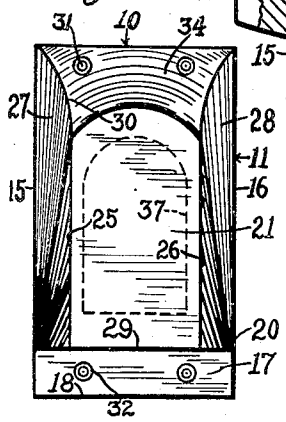



Fig. 4.




Inventor:

Joseph E. Stagl

Patented June 27, 1933 1,915,627

# UNITED STATES PATENT OFFICE

JOSEPH E. STAGL, OF BROOKLYN, NEW YORK

## RUBBER CUSHION ARCH PROTECTOR

Application filed January 28, 1931. Serial No. 511,887.

This invention relates to cushion arch protectors and has particular reference to arch supports for boots or shoes adapted to be attached to the articles of footwear at any time after manufacture as well as during manufacture, the present invention being a continuation in part of and embodying certain improvements in the construction shown, described and claimed in my copending application which since the filing of the instant application has matured into Patent No. 1,792,938 dated February 17th, 1931.

The primary object of the present invention is the provision of an arch support which is easily attachable to the article of footwear by a skilled or unskilled person, and which, when attached to the hollow or shank of a shoe and the like between the heel thereof and the forward tread portion of the sole, provides an auxiliary tread surface spaced from the heel and forward tread portions of the shoe, the tread surface being of substantial area to provide an adequate bearing and supporting surface, which latter also extends below the normal lateral plane of the bases of the heel and sole so that the resilient material of which the auxiliary support is made becomes compressed during the walking movement, thereby to provide continuous support for the arch of the foot and also to compensate for wear and enable the support to remain effective during long continued use.

Another object of the invention is the provision of a resilient auxiliary arch support externally attached to the shank of a shoe and the like so that the bottom of the auxiliary support normally extends below the bottoms of the heel and sole and becomes compressed during walking, whereby to afford continuous support, the body of the auxiliary arch support including an air chamber, which may desirably be sealed, so that the resilient material of the arch support becomes evenly distributed during compression, thereby enabling the arch support to firmly, yet resiliently and comfortably, support the weak or falling arch of the wearer's foot. Another object is the provision of an arch support in which the body of the arch support includes an attaching flange so constructed as to space the same from the heel of the shoe and to provide a socket for the reception and retention of the strap of a legging or spat.

Other objects and advantages of the invention will be hereinafter specifically pointed out, or will become apparent, as the specification proceeds.

With the above indicated objects in view, the invention resides in a certain novel construction and combination and arrangement of parts, clearly described in the following specification and fully illustrated in the accompanying drawing, which latter show an embodiment of the invention as at present preferred.

In the drawing:

Figure 1 is a side elevation of a shoe having my improved arch support attached thereto.

Figure 2 is an enlarged and slightly modified detail view, in vertical section, through the shank portion of the shoe equipped with the arch support.

Figure 3 is an enlarged transverse vertical sectional view through the portion of the shoe illustrated in Figure 2, looking toward the toe of the shoe.

Figure 4 is a bottom plan view of the arch support.

Referring more particularly to the drawing, the auxiliary arch support is designated generally by the numeral 10, and is preferably formed of rubber, though any equivalent resilient material may be employed. The arch support includes an upper flange portion 11 of general rectangular shape, with a rounded upper surface 12 to fit the under side of the shank 13 of the shoe 14, and vertical sides 15 and 16.

The flange portion 11 includes a rearward extension 17, having a vertical end 18 adapted to abut against the heel 19 of the shoe. This flange portion extension 17 has sides which are continuous with the sides 15 and 16 of the flange portion 11; and these sides 15 and 16 gradually decrease in height toward the front of the arch support, so that the upper and lower surfaces of the flange portion 11 merge as indicated at 20.

Beneath the flange portion 11 I provide a tread portion 21 which includes a rounded lower surface 22 which extends below the normal plane of the bottoms of the heel 19 and sole 23 of the shoe, as indicated by the line 24, and forwardly to a point in proximity to the break line of the shoe sole 23. This tread portion 21 has substantially vertical sides 25 and 26; and the upper part of the

tread portion is provided with concave portions 27 and 28 which initiate at a vertical rear wall 29 extending below the flange extension 17 and gradually flare upwardly and downwardly toward the front of the arch support, as indicated at 30.

The arch support 10 is attached to the under side of the shoe shank 13 by means of nails or other fastening elements 33 which extend through the flange extension 17 at the rear of the arch support and through a forward convex portion 34 provided between the concave portions 27 and 28, suitable apertures 31 and 32 being provided at the front and rear, respectively, of the arch support to receive the nails or other fastenings 33.

The construction of the under side of the flange extension 17 and the vertical rear wall 29, in conjunction with the front of the heel 19, provides a substantially rectangular recess 35′ adapted to receive and retain in place against unintentional dislodgement one of the straps 35 usually provided on leggings or spats 36.

In the upper part of the flange portion 11 I provide a substantially rectangular recess 37, with a convex bottom 38. This recess 37 functions as an air chamber or cushion, into which the body of the tread portion may expand when the material of the tread is compressed during the walking movements of the wearer. This chamber or recess 37 may be sealed by means of adhesive material as commonly employed in attaching external shoe appliances for better securement, the adhesive material being applied to the upper surface of the flange portion 11 prior to attachment to the shoe.

The construction of the arch support herein described is such that the tread portion is convexed downwardly, the tread surface 22 being of substantial area to provide an adequate bearing and supporting surface. Furthermore, the provision of the tread surface 22 below the line 24, and the arrangement of the concave portions 27, 28, and 34, in conjunction with the air chamber 37, enables the tread surface to contact with the ground or other walking surface before the sole 23 meets the ground, thereby affording a positive initial support for the shank 13, so that when the weight of the wearer's body is placed upon the foot, the arch support will contract in height and press upwardly on the shank, affording continuous support for the arch of the wearer's foot.

At the same time, the resilient material of the arch support will expand both laterally and vertically, thereby increasing the tread surface, the resilient material being further cushioned by the air within the chamber 37 as the resilient material expands into the chamber.

In the use of the arch support the same becomes effective without jar or impact, so that except for an added feeling of comfort the presence of the support is not felt by the user. The rounded forward end of the tread portion of the arch support also enables the components of the user's walking movement to merge and impart a smooth rolling engagement with the ground during the walking movements.

By attaching my improved support to the sole of a shoe, arch supports such as have been used by persons with weak or falling arches may be dispensed with. In practice, a support constructed of rubber gives good results, but any other suitable material may be used without departing from the spirit of the invention.

The hereinbefore described construction admits of considerable modification without departing from the invention. Therefore, it is the wish not to be limited to the precise arrangement shown and described, which is, as aforesaid, by way of illustration merely. In other words, the scope of protection contemplated is to be taken solely from the appended claim, interpreted as broadly as is consistent with the prior art.

What I claim is:

An arch support for footwear comprising a supplementary resilient body adapted to be secured directly to the under side of a shoe shank, said body including an upper attaching flange and an integral depending tread portion, said tread portion having a rounded lower tread surface normally extending downwardly appreciably below the lateral base plane of the heel and sole of the shoe to which the support is attached and forwardly in proximity to the break line of the shoe sole said tread portion being concaved at the sides and having a rear wall spaced from the forward part of the shoe heel, said attaching flange having a rearward extension to abut against said heel, said rear wall including a vertical portion beneath said rearward extension and concaved side portions whereby to afford a rectangular recess to receive and positively retain in place the strap of a spat or legging, said resilient body including an air cushion chamber substantially centrally disposed above all said concaved portions and completely enclosed when the support is attached to the shoe, whereby extension of the material of said tread portion into said air cushion chamber and outspreading of said material at the lower boundaries of the tread surface incident to walking affords a continuous broad bearing resilient support for the arch of the wearer's foot, the forward part of said tread surface merging with the sole of the shoe during the components of the walking movement and imparting a smooth rolling engagement with the surface walked upon.

In testimony whereof, I have signed this specification. JOSEPH E. STAGL.