Aug. 27, 1929. J. CARDAMONE 1,726,057

FOOTWEAR CONSTRUCTION

Original Filed May 7, 1927 3 Sheets-Sheet 1

Fig. 1.

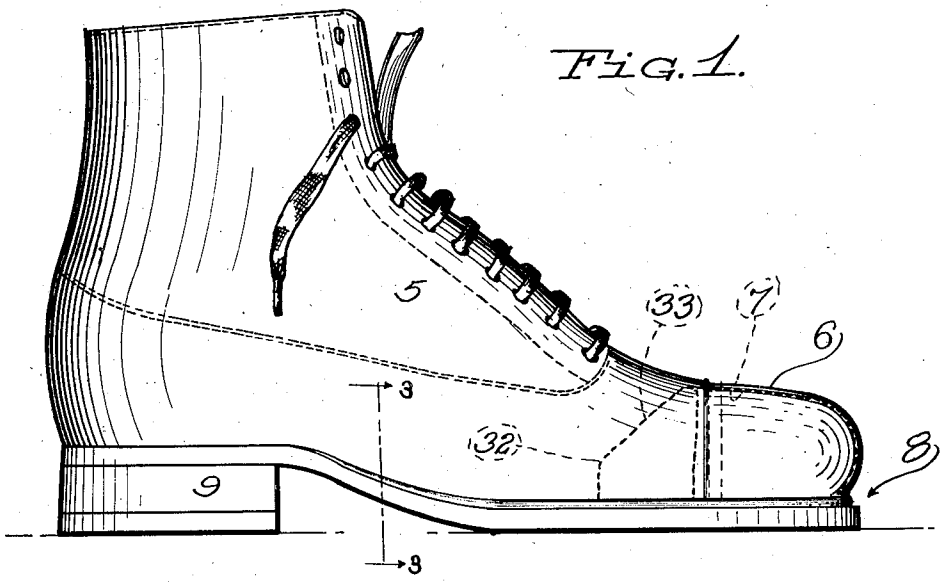
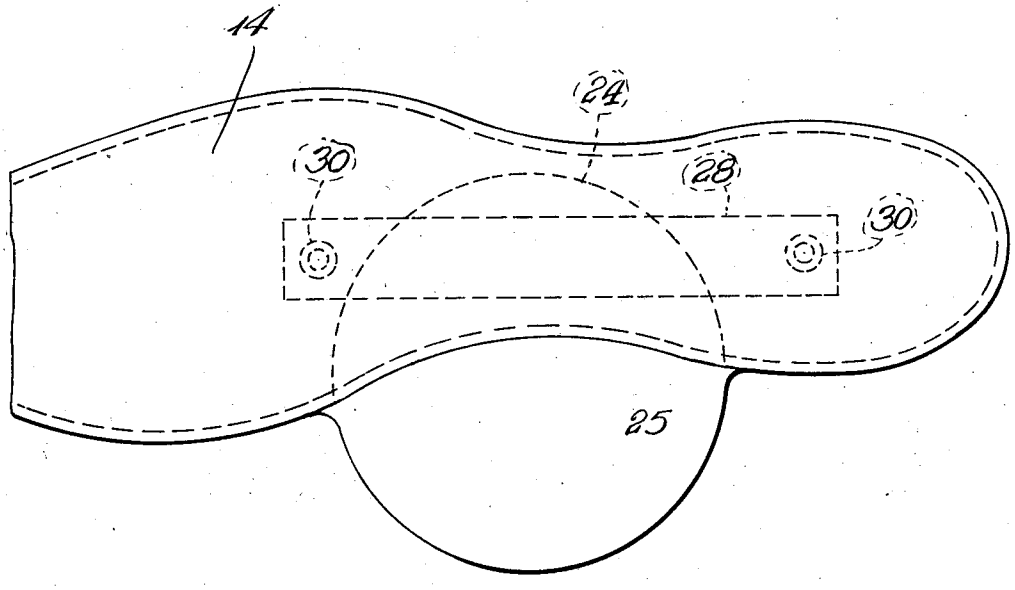


Fig. 2.



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FIG. 3.

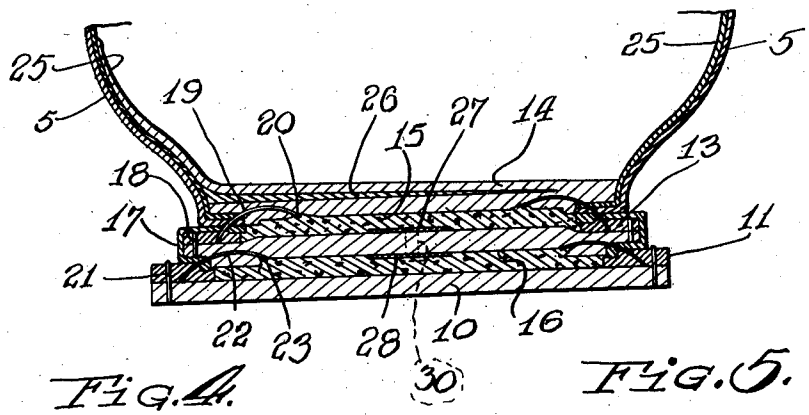
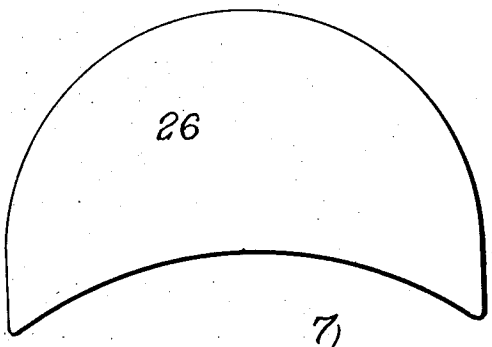


FIG. 4.

FIG. 5.



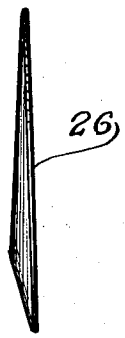


FIG. 6.

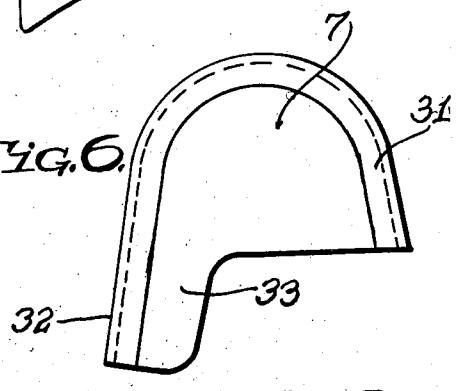


FIG. 7.

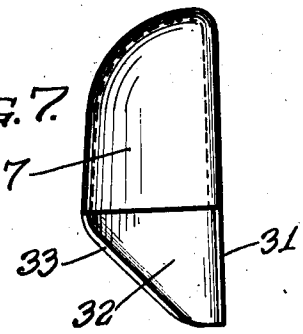
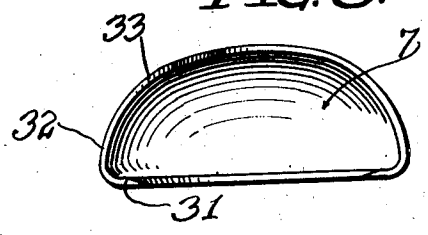


FIG. 8.



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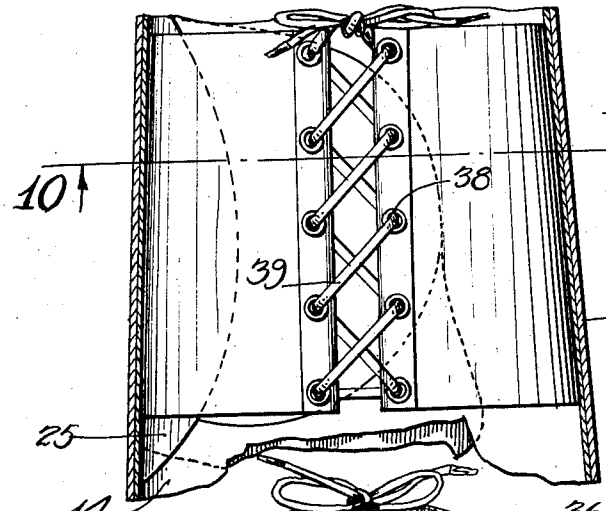


Fig. 9.

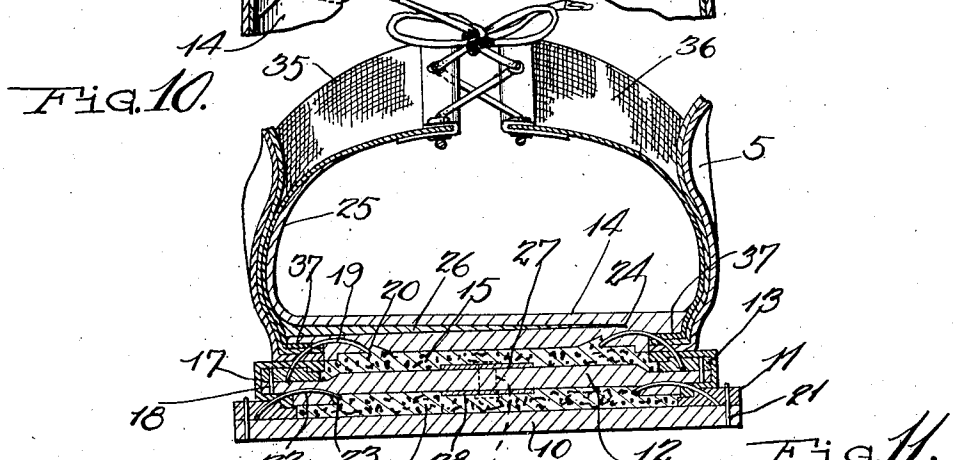
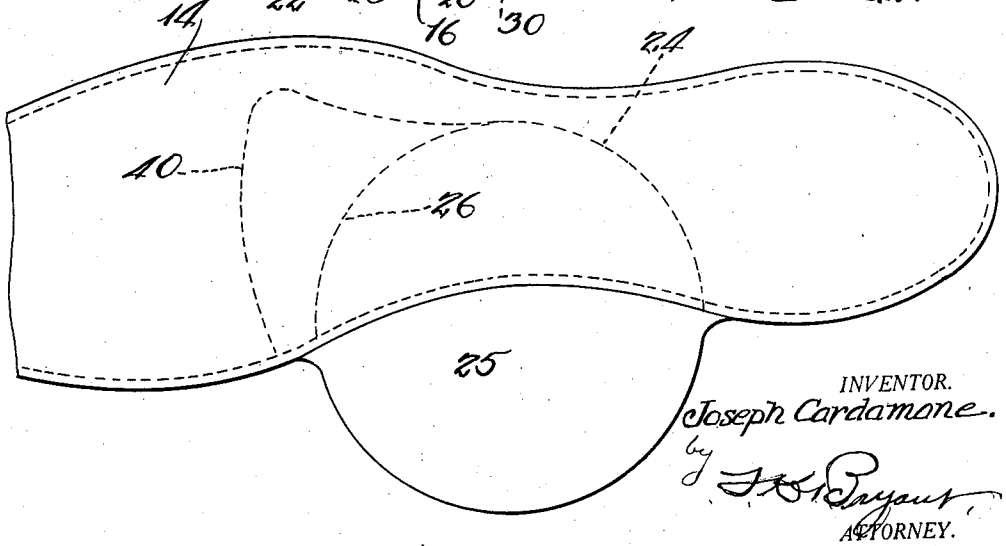


Fig. 10.

Fig. 11.



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Patented Aug. 27, 1929. 1,726,057

UNITED STATES PATENT OFFICE.

JOSEPH CARDAMONE, OF BATH, NEW YORK.

FOOTWEAR CONSTRUCTION.

Application filed May 7, 1927, Serial No. 189,653. Renewed March 26, 1929.

This invention relates to footwear construction, and has more particular reference to an improved shoe adapted for use by persons suffering from fallen arches, bunions and rheumatism.

It is a well known fact that invalids suffering from foot ailments are generally affected with more than one foot defect, and that the defects most commonly known are fallen arches, and enlarged joints, known as bunions. Persons with fet so deformed or persons suffering from ailments as above specified, are generally rheumatic, and in view of these facts, I have provided several improved features of construction which are intended to be embodied in one and the same shoe.

The principal objects of my invention are, broadly, to provide an improved and simplified water-proof shoe sole construction as required by persons suffering from rheumatism, to provide an improved means for readily building up the arch portion of a shoe to suit the requirements of fallen arches, and to provide an extension on the toe cap stiffener of the shoe for bunion protection.

The sole construction embodies a double welt with a strip sealed around the welt of the intermediate sole and the margin of said intermediate sole, the strip being stitched and cemented in position and so arranged as to give a double sole constructed shoe with a single sole storm welt appearance.

The construction, objects and advantages of the invention will become more clearly apparent from the following description taken in connection with the accompanying drawings.

In the drawings, wherein like reference characters indicate corresponding parts throughout the several views,

Figure 1 is a side elevational view, looking at the outer side of a shoe, constructed in accordance with the present invention;

Figure 2 is a bottom plan view of the inner sole of the shoe shown in Figure 1, partly broken away;

Figure 3 is an enlarged fragmentary transverse section taken substantially upon line 3—3 of Figure 1;

Figure 4 is a plan view of a form of insert which may be employed in the pocket of the inner sole to form part of the arch supporter construction constituting a feature of the shoe shown in Figure 1;

Figure 5 is an edge elevational view of the insert shown in Figure 4;

Figure 6 is a bottom plan view of the toe box or stiffener forming part of the shoe shown in Figure 1;

Figure 7 is a side elevational view of the toe box shown in Figure 6;

Figure 8 is a rear elevational view of said toe box;

Figure 9 is a fragmentary view, partly in top plan and partly in horizontal section, and illustrating a modification of the shoe shown in Figure 1;

Figure 10 is a vertical transverse section taken substantially upon line 10—10 of Figure 9; and

Figure 11 is a view similar to Figure 2 showing an insole provided with a modified form of pocket for receiving the arch supporting pads.

Referring more in detail to the drawings, the present shoe broadly embodies an upper 5 of the usual form and preferably lined as shown in Figure 3, said upper having the usual toe cap 6 provided with a special form of toe cap box or stiffener 7, a sole construction generally indicated at 8 of special construction, and a conventional form of heel 9.

The sole construction embodies a main or outer leather sole 10, a main or outer sole welt 11, a light or thin intermediate or slip sole 12, a light or thin secondary or slip sole welt 13, an insole 14, cork or like filler strips 15 and 16 respectively disposed between the inner sole 14 and intermediate sole 12 and between the intermediate sole 12 and the outer sole 10, and a sealing or water proofing strip or ribbon 17 placed and secured around the edges and over the margin of the intermediate sole 12 and the associated welt 13, the sealing strip and upper being inseamed between the inner sole and the welt 13, and the sealing strip 17 being further inseamed between the main welt 11 and the intermediate sole 12. The welt 13 and intermediate sole 12 are secured together by stitching through and through at the margin of the latter as indicated at 18, the stitching however not passing through the sealing strip 17, and the welt 13, upper 5 and inner sole 14 are secured together by stitching as at 19 through the upper and the welt but only partly through the inner sole, the stitching being concealed at the under surface of the inner sole by suit-

ably slitting the latter in a well known manner as indicated at 20. In a like manner, the welt 11 is fastened upon the margin of the outer sole 10 by stitching through and through as at 21, and the welt 11, strip 17 and intermediate sole 12 are secured together by stitching as at 22 through the welt and strip 17 but only partly through the intermediate sole 12 with the stitching concealed by slitting the underside of the intermediate sole in the well known manner indicated at 23. By inseaming the upper and the strip 17 in the manner described, entrance of moisture is effectively prevented without the use of rubber sealing strips or lifts.

The inner sole 14 is slit between its surfaces at the intermediate or arch portion thereof and from the inner edge of the same to a point adjacent but inwardly of the outer edge of the same to provide a pocket generally indicated at 24 above the stitching 19, and provided on the inner edge of the portion of the inner sole above this slit is an extension or projection 25 that is shaped and directed upwardly to contact with the adjacent portion of the upper 5 as shown in Figure 3. It will thus be seen that the pocket 24 is permanently open and that access may be had to the same by lifting the extension 25, to facilitate removal or insertion of suitable pads or inserts whereby the arch portion of the sole may be readily built up to suit requirements or accommodate the patient's deformity. The extension 25 is an integral part of the relatively stiff leather inner sole and lies at the inner side of the arch of the foot to additionally aid in supporting the arch and to maintain the proper and neat shape of the adjacent portion of the upper. Various forms of inserts may be employed in the pocket 24, and one form thereof is illustrated in Figures 4 and 5 and consists of a crescent-shaped piece of leather 26 conforming to the shape of the pocket 24 as well as tapering thinner from the transverse center of the same toward its ends and outer edge as illustrated in Figure 5. Naturally, the number and form of inserts will be governed by the conditions met with, and the inserts may be changed from time to time to gradually accommodate the arch support to the changing conditions as the arch regains its proper condition.

Resilient steel shanks 27 and 28 are disposed centrally and longitudinally of the intermediate sole 12, respectively upon the upper and lower surfaces of the latter, and these shanks are secured together by rivets 30 extending through the ends thereof and through the intermediate sole 12. By this specific arrangement of a plurality of spring steel shanks, the arch will be doubly resiliently supported and the usual leather shank will be eliminated. Moreover, by reason of the heads of the rivets engaging the respective metal shanks, danger of the rivets pulling loose or pulling through a leather part is obviated and a durable construction is consequently had.

The toe cap box or stiffener 7 comprises a body portion of the usual well known form consisting of a piece of stiff and suitably shaped leather skived thin at the edges and having its lower marginal portion inturned for ready attachment as at 8. In accordance with the present invention, the body portion of the toe cap stiffener 7 is formed with an integral rearward extension at its inner side as at 32 of a length to extend rearwardly along side the big toe joint to effectively resist pulling strains upon the upper such as would cause pressure upon such joint and consequent pain in the event of bunion trouble or deformity. The extension 32 is also shaped to extend upwardly over the adjacent portion of the toe joint as at 33 to further enhance the bunion protection afforded.

The manner of constructing the shoe sole is as follows:

First, the upper is lasted in the usual way, and with the insole attached thereto after lasting the upper and insole, the sealing strip is placed around the shoe. The sealing strip and upper are next inseamed and the light welt strip 13 is then attached thereto with the inner sole. The thin cork filling is then provided as usual to prepare for the intermediate or slip sole which is skived and grooved as shown in the generally well known manner. The intermediate sole is next cemented in position, the welt 13 being sewed to the slip sole 12, and then they are trimmed to give the required appearance. The sealing strip 17 is next cemented over the edge and the underside of the margin of the slip sole 3 and over the edge and upper surface of the welt 13, and lasted in position, thus forming a substantially water-proof seal. The welt 11 is then applied and strip 17 is inseamed and fastened by stitching through the slip sole and the welt 11, making the water-proof seal complete. The second cork filler strip 16 is then applied and the outer sole is then assembled to the structure in the usual way, completing the sole.

From the foregoing description it will be seen that the sole construction is light and of a minimum number of parts, and has a double sole construction with the appearance of a single sole with a storm welt. Further, the sole construction is substantially weather proof for the desired protection to rheumatic patients and to prevent rapid deterioration of the shoe due to rotting out of the stitching and the like.

Further, simple and effective means is provided for elevating the arch to accommodate the patient's deformity, and ample protection for enlarged joints or bunions is provided in a simple way.

Minor changes may be made without de-

parting from the spirit and scope of the invention as claimed.

As shown in Figures 9 and 10, a flexible band may be anchored to the inner sole 14 for being extended upwardly and around the foot at the arch for bracing purposes. This band preferably comprises a pair of flexible elastic strips or sections 35 and 36 having their outer ends stitched by the stitching at 19 against the under side of the marginal portions of the inner sole 14 between the latter and the adjacent attached edges of the upper 5, as indicated at 37 in Figure 10. The inner edges or ends of the elastic strips or band sections 35 and 36 are suitably reinforced and provided with eyelets 38 for restriction of a lace 39 whereby the band sections are adjustably connected for being readily drawn into snug engagement with the foot. As the band section 35 is disposed outwardly of the inner edge of the insert 26 and outwardly of the extension 25, the band will further effectively retain the insert within the pocket 24 and at the same time will brace the extension 25 in proper engagement with the foot. Obviously, this construction may be embodied in the shoe of Figures 1 to 3 inclusive with little difficulty during the manufacture of the shoe.

As shown in Figure 11, the pocket 24 may be extended at its forward end as indicated at 40 for receiving a supplemental insert in position to support the metatarsal arch, the supplemental insert being of course of proper form to fit the extended portion of the pocket.

What I claim as new is:—

1. In footwear construction, an inner sole, an intermediate sole, a light welt secured upon the margin of said intermediate sole, a sealing ribbon extending around the edges of said welt and intermediate sole, an upper, said upper and the upper edge portion of the sealing ribbon being inturned and secured between the margin of the inner sole and the upper surface of said welt, a filler strip within said welt between said inner and intermediate soles, an outer sole, a main welt secured upon the margin of said outer sole, the lower edge portion of said sealing ribbon being inturned and secured between the margin of the intermediate sole and said main welt, and a second filler strip within the main welt between the intermediate and outer soles.

2. In a footwear construction, an inner sole, an intermediate sole, a light welt secured upon the margin of said intermediate sole, a sealing ribbon extending around the edges of said welt and intermediate sole, an upper, said upper and the upper edge portion of the sealing ribbon being inturned and secured between the margin of the inner sole and the upper surface of said welt, a filler strip within said welt between said inner and intermediate soles, an outer sole, a main welt secured upon the margin of said outer sole, the lower edge portion of said sealing ribbon being inturned and secured between the margin of the intermediate sole and said main welt, a second filler strip within the main welt between the intermediate and outer soles, and resilient metallic shanks upon the upper and lower surfaces of the intermediate sole riveted together through the latter.

3. In footwear construction, an inner sole, an intermediate sole, a light welt secured upon the margin of said intermediate sole, a sealing ribbon extending around the edges of said welt and intermediate sole, an upper, said upper and the upper edge portion of the sealing ribbon being inturned and secured between the margin of the inner sole and the upper surface of said welt, a filler strip within said welt between said inner and intermediate soles, an outer sole, a main welt secured upon the margin of said outer sole, the lower edge portion of said sealing ribbon being inturned and secured between the margin of the intermediate sole and said main welt, and a second filler strip within the main welt between the intermediate and outer soles, said light welt being secured to the inner sole by stitching extending through said welt and the inturned upper and sealing ribbon and extending partly through and indented in the under side of said inner sole.

4. In footwear construction, an inner sole, an intermediate sole, a light welt secured upon the margin of said intermediate sole, a sealing ribbon extending around the edges of said welt and intermediate sole, an upper, said upper and the upper edge portion of the sealing ribbon being inturned and secured between the margin of the inner sole and the upper surface of said welt, a filler strip within said welt between said inner and intermediate soles, an outer sole, a main welt secured upon the margin of said outer sole, the lower edge portion of said sealing ribbon being inturned and secured between the margin of the intermediate sole and said main welt, a second filler strip within the main welt between the intermediate and outer soles, said light welt being secured to the inner sole by stitching extending through said welt and the inturned upper and sealing ribbon and extending partly through and indented in the under side of said inner sole, and said main welt being secured to the intermediate sole by stitching extending through said main welt and the inturned sealing ribbon and extending partly through and indented in the under side of said intermediate sole.

In testimony whereof I affix my signature.

JOSEPH CARDAMONE.