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G. LILIENFELDT

DETACHABLE SHOE SOLE AND HEEL

Filed Feb. 3, 1921

Fig. 1.

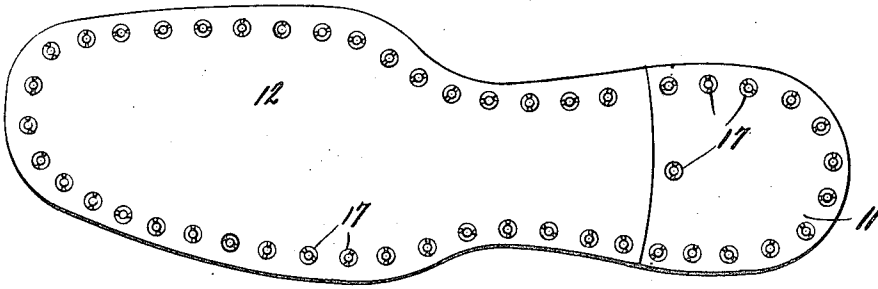


Fig. 2.

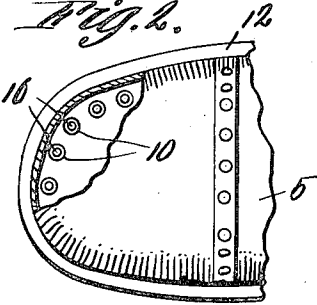


Fig. 3.

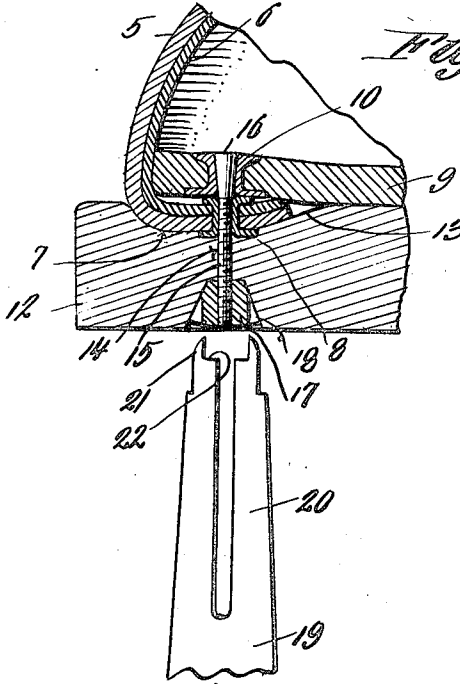
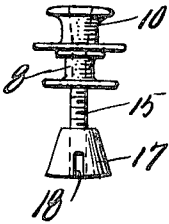


Fig. 4.



WITNESSES

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DETACHABLE SHOE SOLE AND HEEL.

Application filed February 3, 1921. Serial No. 442,090.

To all whom it may concern:

Be it known that I, GUSTAV LILIENFELDT, a citizen of the Republic of Russia (he having filed his declaration of intention to become a citizen of the United States on the 27th day of September, 1920), residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Detachable Shoe Soles and Heels, of which the following is a specification.

This invention relates to new and useful improvements in shoes and more particularly to means for detachably connecting the sole and heel to the shoe upper.

An important object of the invention is to provide improved means for detachably connecting the sole and heel to the shoe upper in a secure manner and whereby the means will be embedded to protect the same from wear and from causing the wearer of the shoe discomfort.

Another important object of the invention is to provide means for preventing the upper from ripping away from the sole, and improved fastening elements associated with said means and being so constructed as to securely bind together the parts of the shoe with which they are associated.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the accompanying drawings forming a part of the application and wherein like numerals are employed to designate like parts throughout the several views,

Figure 1 is a plan of the bottom of a shoe with the invention applied thereto,

Figure 2 is a plan of the toe portion of a shoe having the invention applied thereto.

Figure 3 is an enlarged fragmentary section of a portion of a shoe toe with the invention applied thereto, and

Figure 4 is a side elevation of my improved fastening element.

Referring now more particularly to the drawing and wherein the preferred embodiment of my invention is illustrated, the numeral 5 designates a portion of the ordinary shoe upper having a suitable lining fabric secured to the inner surface thereof. The lower marginal edge 7 of the upper is turned inwardly in the well known manner as clearly shown in Figure 3, and is provided throughout and entirely around the mar-

ginal edge with a plurality of spaced openings in which are secured metallic eyelets 8. Opposite ends of these eyelets are flanged to overlap and grip the edges of the openings whereby they are prevented from displacement.

An insole 9 is provided for the shoe and arranged around its marginal edge are a plurality of spaced openings having secured in each a metallic eyelet 10. These eyelets 10 are adapted to align with those of the inturned marginal edge of the upper and are likewise provided at opposite ends with flanges which are adapted to overlap the edges of the openings for securely fastening the eyelets in place. The eyelets 8 and 10 prior to being associated with the insole and upper, each are conical in configuration and provided at one end with a flange. The end of each eyelet which is not originally flanged, is flanged after being associated with the inner sole or shoe upper. Referring more particularly to Figure 3, it is to be particularly noted that the bore through each eyelet 10 in the shoe is provided with a conical or downwardly tapered bore for a purpose which will presently be described.

As the construction of both the heel 11 and sole 12 are the same in so far as concerns my present invention, a description of one will suffice both. In order to cause the inner sole to lie perfectly flat and not to bulge adjacent the inturned marginal edge of the upper, both the sole and heel are provided in their upper surface with a channel or groove 13 as clearly shown in Figure 3 which groove extends around the sole and heel adjacent the marginal edge thereof. This groove is provided to receive the inturned marginal edge of the upper whereby the inner sole may lie perfectly flat upon the outer sole and marginal edge of the upper.

It will of course be understood that both the heel and sole may be constructed from rubber, leather or any other material desired. Both the outer sole and the heel are provided adjacent their marginal edges with a plurality of spaced openings 14 which extend transversely through the sole or heel from the bottom of the groove 13 to the bottom or outer surface of the sole or heel. These openings 14 are adapted to align with the metallic eyelets 8 and 10 when the sole and heel are properly associated with the upper. As best seen in Figure 3, the lower

ends of the openings 14 are enlarged and flare downwardly, or in other words their lower ends are counter-sunk.

A removable, two part separable fastener 5 is associated with each set of aligned eyelets and openings. Each fastener consists of two parts one of which assumes the form of a threaded stem 15, having one end 16 enlarged and formed into a tapered head adapted to snugly fit within the conical bore of its eyelet 10. The other part 17 of each fastener assumes the form of a frusto-conical shaped nut which is adapted to be screwed upon the threaded end of the stem 15 to snugly seat within the counter-sunk of its respective opening in the outer sole. Each nut 17 is provided with a pair of diametrically disposed kerfs or recesses in its outer end to provide means whereby a tool 20 may be engaged with the nuts for associating them with the threaded stems 15.

The tool, 19, the shank of which is shown in the drawings, assumes the form of a screw driver having a pair of spaced parallel spring arms 20, the free end of each being provided with a forwardly projecting finger 21. The inner edge of each finger at the free end thereof is cut away as at 22 whereby the fingers may extend down into the grooves or kerfs 18 of the nuts 17. The fingers 21 of the tool are spaced such a distance apart that the arms 20 of the tool must be flexed outwardly in order for the fingers to pass into the kerfs of the nuts so that the tool may hold the nuts independently thereby obviating the necessity of the operator holding the nuts while using the screw driver.

From the drawing, it will be obvious that the threaded stems of the separable fasteners are passed through the aligning eyelets from the interior of the shoe so that their free threaded ends will extend into the counter-sunk ends of the openings 14 in the sole and heel, and the tapered heads of the stems will snugly fit within the eyelets 10 of the insole 9. It will also be understood that the threaded stems extend through the eyelets 8 of the inturned marginal edge of the upper so that the upper may be securely fastened to the sole and heel. After the stems have been passed through the aligning eyelets and openings, the nuts are then screwed upon the ends of the stems projecting into the counter-sunk openings in the sole and heel and turned until they begin to bind. When such binding action occurs, the nuts 17 will be disposed well within the countersunk of the openings in the sole and heel so as not to protrude beyond the bottom surfaces thereof. However, if it is desired to provide

a shoe with hobs, the outer ends of the nuts may be made semi-circular or in any other desired configuration so that they will project beyond the sole and heel.

After the nuts have been screwed upon the threaded stems as far as they will go, it will be seen that the inner sole will have been pulled tightly down upon the inturned marginal edge of the upper and the latter down into the groove 13 due to the configuration of the heads 16 and the cooperating eyelets of the inner sole 9. After a sole or heel has become worn and it is desired to replace the same, it will be obvious that the nuts 17 may be unscrewed from the threaded stems and the sole or heel removed with very little trouble. A new sole or heel having the proper openings therein is then positioned upon the shoe so that the threaded stems project through the opening, after which the nuts are applied in the manner heretofore mentioned and the shoe is again ready for further use. It is of course understood that I do not desire to limit myself to the exact arrangement of the openings extending around the sole and heel, for they may be arranged directly or diagonally across the sole and heel or in any other manner found desirable.

The foregoing description and accompanying drawings have reference to what might be considered to be the approved or preferred form of my invention. I desire it to be understood that I may make such changes in the construction, combination and arrangement of parts, materials, dimensions, et cetera, as may prove expedient and fall within the scope of the claim.

Having thus fully described my invention what I claim as new is:—

In a shoe, the combination with an upper and inner sole each having its marginal edge equipped with a plurality of metallic eyelets, each eyelet having its ends clamped to lap over both surfaces of the member in which is fastened, an outer sole having openings therein to align with the eyelets in the inner sole and upper, the marginal edge of the upper being disposed between the inner and outer soles whereby the metallic eyelets of the upper abut the eyelets of the inner sole, and removable fastening elements extending through the aligned eyelets and openings, and means associated with the fasteners for drawing the metallic eyelets together to cause their flanges to be pressed more firmly into engagement with the inner sole and upper.

In testimony whereof I affix my signature.

GUSTAV LILIENFELDT.