Sept. 9, 1941. D. R. BRADY 2,255,099

VISUAL FITTING SHOE

Filed Aug. 4, 1938

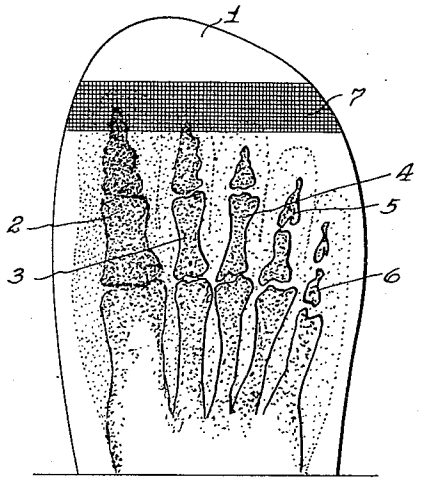


Fig. 1.

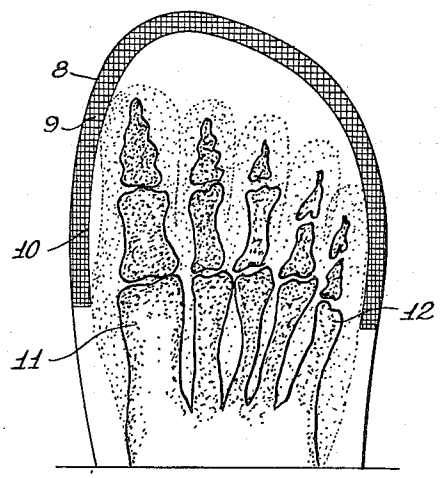


Fig. 2.

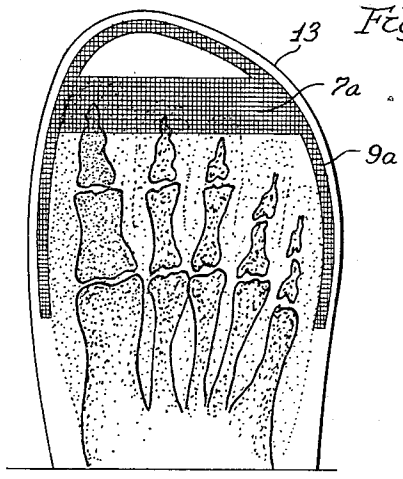


Fig. 3.

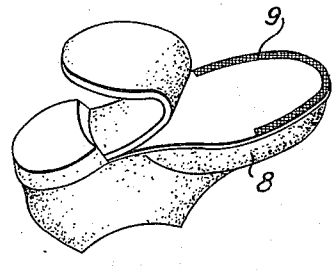


Fig. 4.

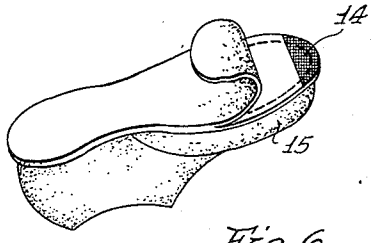


Fig. 6.

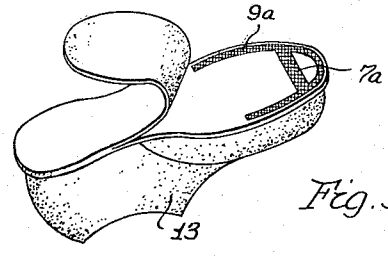


Fig. 5.

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2,255,099

UNITED STATES PATENT OFFICE

2,255,099

VISUAL FITTING SHOE

David R. Brady, Detroit, Mich., assignor to David R. Brady and J. Windsor Davis, as joint trustees for Brady Research Company, Detroit, Mich., a joint-venture company

Application August 4, 1938, Serial No. 223,077

3 Claims. (Cl. 36—1)

The invention relates to the art of fitting shoes by radiographic or fluoroscopic means and has for its object to provide means by which a customer can receive the relation of his foot to the sole and/or insole of the shoe, the relation being illustrated with the aid of material incorporated in the shoe which can be seen in a fluoroscope. This application is a continuation in part of my application Serial No. 82,603, filed May 29, 1936, now Patent No. 2,126,608, granted August 9, 1938.

More particularly it is an object of this invention to provide means indicating the relation of the foot to the shoe which will define a fitting region as for instance the outline of the proper position of the fleshy fore part of the foot or the proper location of the toes for length, or the like, and which will be semi-impervious to the rays employed so that the fitting indicator means and the bones or flesh outline of that part of the foot over the indicator may be viewed simultaneously. In this connection, if an indicator is used to indicate the region over which the big toe must reside for proper fit, for instance, and the bones cannot be seen because they overlie a portion impervious to the rays employed, the indicator does not serve its full purpose of satisfying the customer that the shoes are exactly correct. I have found that it is possible to make an indicator semi-impervious to the rays as, for instance, by mixing barium salts with a vehicle to form an ink or paint, or by mixing finely ground lead with lacquer of other suitable vehicle and then applying it in a thin coating underneath a desired fitting region. The bones overlying the semi-impervious portion may be observed by the customer.

A specific object is to teach the application of my improved fit indicating means to the shoe in the most propitious manner which will hereinafter be explained as consisting in splitting the insoles, in applying the indicating means between the layers thereof and in the sealing the portions together, or in soaking or coating the threads with which the insole is stitched in a solution or mixture as above defined.

Other objects and advantages will be come more fully apparent as reference is made to the accompanying drawing, wherein my invention is illustrated and in which

Fig. 1 shows the application of my invention to a shoe to indicate fit as to length,

Fig. 2 is a view similar to Fig. 1 and shows the application of my invention to a shoe to indicate fit as to width,

Fig. 3 is a view similar to Figs. 1 and 2 showing my invention indicating fit as to length and width,

Fig. 4 is a perspective view of a shoe in the course of manufacture with my invention applied thereto as indicated in Figs. 2 and 3 respectively,

Fig. 5 is a perspective view of a shoe in the course of manufacture showing my invention applied thereto, and

Fig. 6 is a view similar to Fig. 5 showing the application of a modified type of indicator.

More particularly, 1 indicates the outline of a shoe into which a foot has been inserted, the bones 2, 3, 4, 5 and 6 of the toes being clearly visible and the fleshy part of the foot being faintly visible, as it might be seen when the fore-part of the shoe and foot are viewed in a fluoroscope or radiograph. Also seen is a bar 7 of some material semi-impervious to the rays of the machine. This bar, by its width (longitudinally of the shoe) defines the region in which the forward end of the big toe must reside for proper fit. If the forward end of the big toe 2 does not enter the region the shoe is too long and if it extends entirely through the region the shoe is too short. In order that the extent to which the toe extends may be seen by the wearer it is highly desirable that the forward end of the toe and the bar be viewed simultaneously and hence the material of which the bar is made must be semi-impervious to the rays.

Fig. 2 illustrates a foot inserted in a shoe 8 in which an indicator 9 follows the contour of the inner sole of the shoe and thereby defines by its inner edge 10 the proper position of the fleshy part of the foot on both sides thereof. This indicator by its terminal points or lines also indicates the width of the foot and the position for proper fitting with respect to the bunion zones at each side of the foot, that is, one end of the marker terminates at the proper position for the region of greatest bulge of the fleshy part of the foot opposite the first metatarsal 11 while the other end terminates at the proper position for the region of greatest bulge of the fleshy part opposite the fifth metatarsal 12. The exactness with which the fleshy part of the foot conforms to the inside contour of this indicator will, obviously, depend a good deal on the amount of fat on the foot of the wearer, but the outer contour of the foot should not materially overpass the inside contour of the marker at any point.

Fig. 3 illustrates a shoe 13 in which is placed a combination of the two indicators of Figs. 1

and 2, the indicator 9a extending as described for the indicator 9 and the bar 7a being placed as described for the bar 7.

Figs. 4 and 5 illustrate the shoes 8 and 13, respectively having the outsole thereof split and with my improved indicators applied thereto. While metallic foil may be used, particularly for the indicators 9 and 9a, I prefer that all indicators be made of finely ground lead or zinc mixed with a lacquer as a suitable vehicle and spread sufficiently thin to be only partially impervious to fluoroscopic rays. While the indicators are preferably installed by incorporation within the insole, the indicators may be installed between the outsole and the insole. The indicators may also be installed as taught in my co-pending application Serial No. 82,603, previously referred to.

Fig. 6 is similar to Fig. 5 in that the outsole is split, and illustrates an indicator 14, applied to a shoe 15, the indicator being placed at the toe of the shoe in such position as will indicate that if any toe of the wearer lies thereover the shoe is too short. It is made preferably of metallic foil and applied between the portions of the split sole. In order to indicate fit as to width the stitching of a portion of the base of the shoe, here indicated by dash lines as being near the edge of the insole, is made with threads which have been immersed in or otherwise coated with a solution or mixture of barium salts and a vehicle as above described.

What is claimed is:

1. A shoe having therein means for indicating the fit of a foot in the shoe when in the presence of fluoroscopic or radiographic rays, comprising a marker affixed to the sole of the shoe and composed of material semi-impervious to X-rays, the degree of imperviousness of the marker being so correlated to the combined degree of imperviousness of the shoe plus the flesh and the bones of the foot that the marker and any bones of the foot or parts thereof that may be in overlying relation to the marker may be viewed simultaneously when exposed to X-rays.

2. A shoe having therein means for indicating the fit of a foot in the shoe when in the presence of fluoroscopic or radiographic rays, comprising a marker affixed to the sole of the shoe and composed of a material comprising finely divided metal in a suitable binder such as lacquer whose imperviousness to X-rays increases with increasing thickness of the material, said material being of a thickness such that its imperviousness when combined with the imperviousness of the shoe plush the flesh and the bones of the foot is such that the outline of the marker and the outline of any bones that may be in overlying relation to the marker may be viewed simultaneously when exposed to X-rays.

3. A shoe having therein means for indicating the fit of a foot in the shoe when in the presence of fluoroscopic or radiographic rays, comprising a marker affixed to the sole of the shoe and composed of a material comprised of metal foil whose imperviousness to X-rays increases with increasing thickness of the material, said material being of a thickness such that its imperviousness when combined with the imperviousness of the shoe plus the flesh and the bones of the foot is such that the outline of the marker and the outline of any bones that may be in overlying relation to the marker may be viewed simultaneously when exposed to X-rays.

DAVID R. BRADY.