Oct. 27, 1931. R. SATO 1,829,612

AUXILIARY INSOLE

Filed Oct. 8, 1929

Fig. 1.

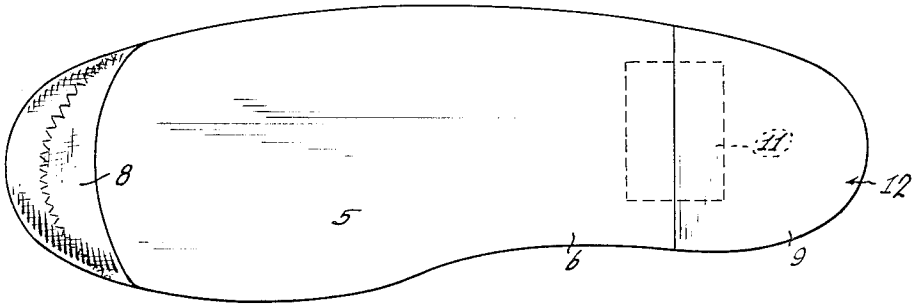


Fig. 2.

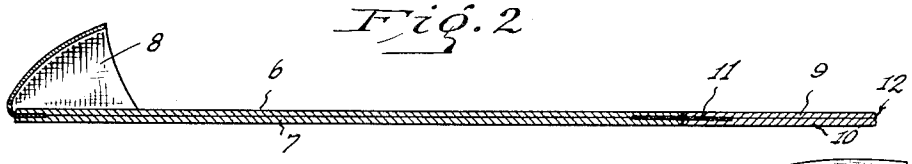


Fig. 5.

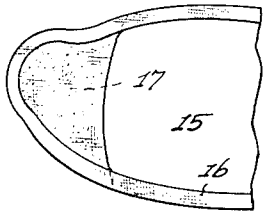


Fig. 3.

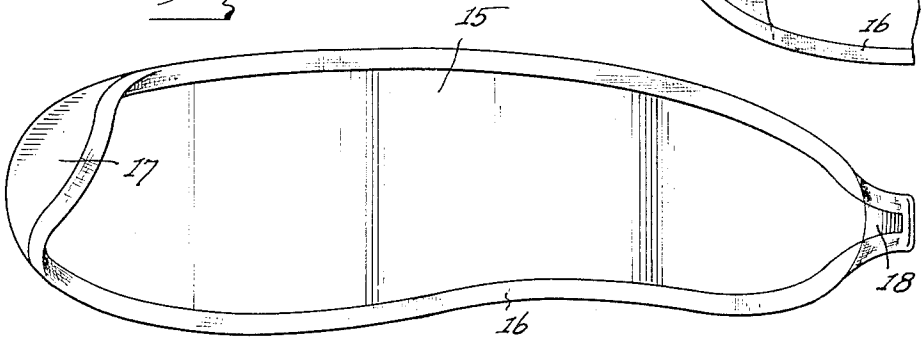
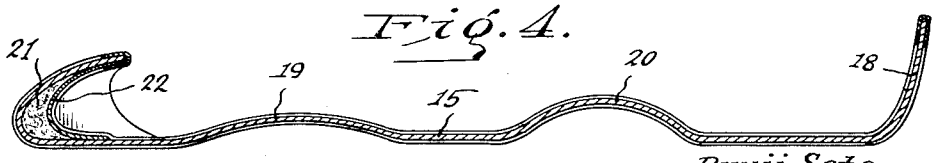


Fig. 4.



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WITNESS

Patented Oct. 27, 1931 1,829,612

UNITED STATES PATENT OFFICE

RYUJI SATO, OF NEW YORK, N. Y.

AUXILIARY INSOLE

Application filed October 8, 1929. Serial No. 398,227.

This invention relates to improvements in stocking protecting insoles, and its leading object is to provide an insertable insole with a toe cup and flexible means on the heel portion thereof adapted to assist the user inserting his or her foot in a shoe.

Another object of the invention is the provision of an insertable insole with transverse waves or convolutions forming resilient arches, so arranged that support will be provided the foot of the user.

A further object of the invention is the provision of an insole with improved means for protecting the toe of the stocking or hose against punctures from foot thrusts, and to reduce the friction between the stocking or hose and the shoe itself, so that wear of the foot of the stocking or hose will be reduced to a minimum.

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 certain novel construction and combinations and arrangement of parts, clearly described in the following specification and fully illustrated in the accompanying drawings, which latter show embodiments of the invention as at present preferred.

In the drawings:—

Fig. 1 is a plan view of one form of the invention.

Fig. 2 is a central longitudinal sectional view thereof.

Fig. 3 is a plan view of a modified form.

Fig. 4 is a longitudinal sectional view thereof.

Fig. 5 is a detail plan view of the partially complete blank from which the modified form is constructed.

Referring to the drawings in detail 5 designates the flat body of the insertable insole, which is shown to consist of companion layers or plies 6 and 7. These layers or plies are attached to each other, by means of any suitable adhesive, by stitching or the equivalent, so that the two compose one solid blank or multi layer sheet.

The body 5 is shaped to fit snugly within a shoe, and is provided on its forward end with a toe cup 8, of soft fabric or material, such as flannel, adapted to receive the forward part of the stocking or hose and the foot of the user thereof. The bottom edge portion of the toe cup is secured between the forward end portions of the layers or plies 6 and 7. The inner face of this toe cup has a soft lining adapted to cushion the foot of the wearer, and to form a moulded support therefor.

The heel part of the insertable insole consists of the companion layers 9 and 10, which are attached to each other. Between these layers a hinge strip 11 of flexible material is secured at its rear end portion, and its forward end portion is secured between the rear end portions of the layers 6 and 7. This flexible hinge strip 11 forms the means for uniting the rear portion of the insole to the forward portion or body thereof, and also permits the heel part 12 to freely bend upon the forward or body part when the user is forcing his or her foot into the shoe.

The insertable insole is placed partly in the shoe and the user then inserts his or her foot, so that the toes enter the toe pocket or cup 8 and as the pressure of the foot is applied upon the insole, the hinged rear heel part will bend, thus forming a sliding spacer between the user's foot and the shoe itself, which will reduce the friction resistance usually offered to the insertion of the foot in the shoe. The insole will be forced to enter the shoe fully, because of the pressure of the foot of the user against the toe cup or pocket.

In Figs. 3, 4, and 5 I show the details of an insertable insole, which embodies a cut blank 15, formed of celluloid, or similar plastic material, and providing polished and slippery, or friction minimizing surfaces on both faces thereof. This blank or body is molded from the flat blank form, indicated in Fig. 5.

The blank is reinforced with a marginal binding tape 16, of adhesive fabric, which is folded upon both side edge faces of the body of the blank, so as to be coextensive with

said edges. The toe cup or pocket 17 is formed by moulding the stock of the body, under heat, either after the binding tape has been applied to the edges, or before this has been done, by the application of suitable pressure under heat. The binding tape extends along the edge of the overhanging wall of the toe cup or pocket.

The rear end of the blank or body 15 is formed with a small bendable shoe horn forming tongue 18, which is shown to be considerably narrower than the rear part of the insole, so that it will not crowd the foot too much when it is being inserted in the shoe. But this insole is designed to normally lie between the heel of the user's foot and the shoe itself, and thus forms an additional stocking protecting element.

The blank or body 15 is formed with an upset flexible portion or arch 19, designed to lie under the forward transverse arch of the wearer's foot. Rearwardly of this arch a second upset portion is provided to form the arch 20, which is designed to lie under and support the main arch of the wearer's foot. These arches are of flexible material, so that a yielding support is provided for the foot.

The construction shown in Figs. 1 and 2 is composed of any material having a highly polished, or treated surface, calculated to reduce friction, and promote sliding both against the foot and against the shoe, so that frictional resistance between the stocking or hose and the shoe, at the points of greatest foot pressure, will be reduced to a minimum.

The toe cup or pocket is provided with a filling or padding 21, which is composed of soft cotton, and is backed by a protecting facing 22, suitably secured in place to the sides of the toe cup, by any practical means.

The padding naturally assumes the profile of the user's toes, which press against the same, and cushions the forward thrusts of the user's foot. This tends to reduce toe puncturing and breaking of the stockings or hose, and adds greatly to the life thereof.

The hereinbefore described construction admits of considerable modifications without departing from the invention; therefore, I do not wish to be limited to the precise arrangements shown and described, which are, 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.

I claim as new:

An insertable insole for protecting hose and reducing foot friction with a shoe, consisting of a blank formed of highly polished and friction reducing plastic material and formed on the forward end thereof with a molded toe cup having soft moldable padding therein and on its rear end with a terminal tongue forming shoe horn means, said blank being also formed with a plurality of upset wavy portions forming yielding foot arch supports and provided with an edge binding coextensive with the blank, the toe cup and the terminal tongue.

In testimony whereof I hereby affix my signature.

RYUJI SATO.