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M. C. V. FORTIER

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REMOVABLE INSOLE ASSEMBLY FOR FOOTWEAR

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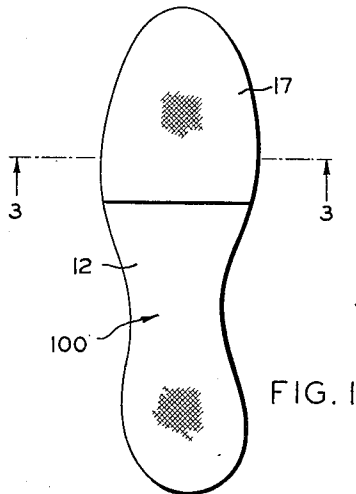


FIG. 1

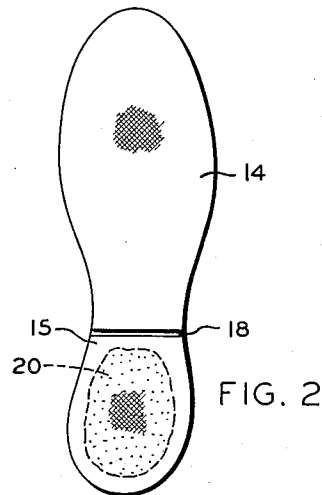


FIG. 2

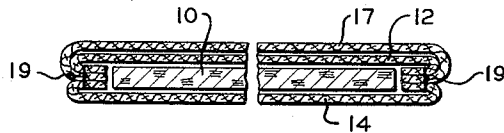


FIG. 3

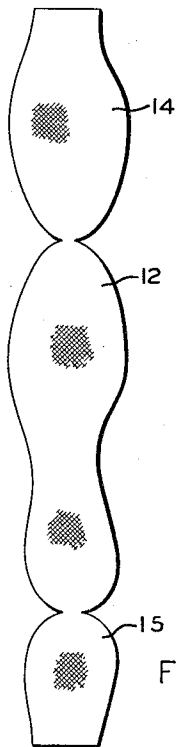


FIG. 4

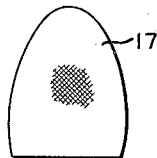


FIG. 5

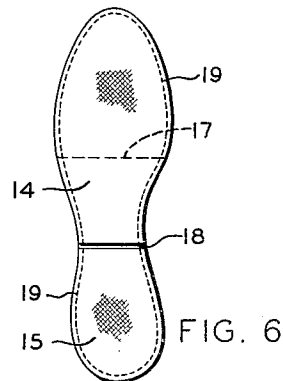


FIG. 6

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UNITED STATES PATENT OFFICE

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REMOVABLE INSOLE ASSEMBLY FOR
FOOTWEAR

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2 Claims. (Cl. 36—44)

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This invention relates to removable inserts for use in footwear, and more particularly has reference to an insole assembly especially designed for use under circumstances of stockingless attire.

Objects of my invention are to provide a removable insert for use in footwear when worn under conditions of stockingless attire whereby the surface offered by the insert for contact with the bare sole of the foot has little or no tendency to stick or cling to the foot and simulates the touch sensation of stocking material to the foot; and especially to provide an insole assembly of this character wherein a thin insole member is enclosed within a removable cover of a washable and pliable material such as cloth and the like which forms a sheath adapted to substantially encase or surround said insole member.

Still further objects of the invention are to provide an insole assembly having an insole member encased within a removable cover of cloth, or the like, provided with a pocket-forming member adapted to receive the toes of a user when the insole assembly is mounted within footwear but turnable upon itself if desired for location over the bottom portion of the cover and into an inoperative position for toe engagement; and to provide, in an insole assembly of the character set forth, means for preventing sliding movement of the insole assembly relative to a shoe in which it is positioned when undergoing use; as well as to provide an article of this character with a cover having a bottom portion in which an opening is formed whereby the insole member is readily engageable within the cover and removable therefrom; and also to provide an article of the nature set forth which is so designed that it will be substantially unobservable when mounted for use within a shoe engaged upon the foot.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the article possessing the features, properties and the relation of components which are exemplified in the following detailed disclosure, and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing wherein:

Figure 1 is a top plan view of the insole assembly forming the subject matter of this invention;

Fig. 2 is a bottom plan view of the insole assembly of Fig. 1;

Fig. 3 is a vertical section on the line 3—3 of Fig. 1;

Fig. 4 is a diagrammatic view in plan showing a blank useful for forming the cover member associated with the article of Figs. 1 and 2;

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Fig. 5 is a plan view of an auxiliary blank used in conjunction with the blank of Fig. 4 for providing a pocket-forming member on the insole assembly; and

5 Fig. 6 is a plan view of the blanks shown in Figs. 4 and 5 in assembled condition to form a cover.

Modern trends for feminine style and comfort dictate stockingless attire in warm weather and about the house. A disadvantage of stockingless attire, encountered after several hours of shoe wear, resides in the fact that the soles of the feet stick to the bottom of the shoes and the shoes become quite uncomfortable.

15 The present invention is designed to overcome these difficulties by the employment of a removable insole assembly adapted to be mounted within a shoe and formed of material which preferably duplicates, as near as possible the characteristics of material employed for stockings. To carry this concept into effect, use is made of an insole assembly comprising an insole or insole member 10 which is substantially entirely encased within a cover designated generally by the reference character 100, preferably of cloth, and com-
25 prehending any pliable fabric which is woven or knitted from any filament including cotton, wool, silk and synthetic plastics, such as rayon or nylon, or the like. Other cover materials include certain sheet plastics and, as a few examples thereof, mention may be made of rubber hydro-
30 chloride plastics and certain vinyl compounds including copolymers having vinyl chloride therein, as well as to sheet materials formed of the plas-
35 tics heretofore mentioned.

In general, a suitable cover material should be pliable, washable and/or spongeable and, in addition, should also be dyeable. Preferably a woven or knitted material which is stretchable, but which displays elastic tendencies, is employed in the formation of all parts of the cover including a toe-receiving pocket to be presently described in detail. At the same time, the material should be relatively thin so as to overcome bulkiness where-
40 by to avoid binding pressure on the foot with consequent foot irritation. As the cover 100 is designed to snugly engage the insole member 10, use of material of the preferred character permits a construction wherein all parts of the cover will be substantially flatly over the surfaces of the insole member. By forming the toe-receiving pocket of material of the character just described, the pocket will conform or shape itself to the configuration of the toes when the pocket is engaged therewith and can do so, because of its elastic tendency, substantially without distortion of the remainder of the cover. A preferred material for this purpose is a woven or knitted material similar to stocking top material used at the
50 top of the leg portion in women's stockings.

Specifically, the insole member 10 may be made

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of any yieldable but sufficiently stiff material for the purpose intended. Such materials include cork, rubber, cardboard sized or unsized, felt and the like, and various combinations thereof. A preferred material for the insole member 10 is cork. The term "cork insole" is intended to comprehend articles of this character which are formed from sheets of cork as well as to shaped articles formed of particles or small pieces of cork held together with a binder to which filler material may be added. Insoles of this nature are well known to the art and are conventionally formed or cut to have an outline similar to that of the foot whereby they may be fitted within a shoe. I have had very satisfactory results with a cork insole having a thickness of about 0.030 inch.

The cover member 100 comprises a top portion and a bottom portion, each of which is shaped to the general configuration of the insole member 10 although each has length and width dimensions which are slightly greater than those of the member 10 whereby the insole may be neatly fitted within the cover. As intimated, the top and bottom portions of the cover 100 overlie each other and are joined together along their common marginal edges. Means for securing the top and bottom portions of the cover together may be by sewing, such as by stitching and the like. In addition, such practices as heat sealing or the use of adhesives are employable for joining purposes in instances where the cover material permits of these procedures.

The top and bottom portions of the cover 100 may each be formed of an individual piece of material secured together in overlying relation along their common marginal edges by any suitable means, such, for example, as those just described. When the cover is formed of two pieces of material, the bottom portion has an opening cut therein whereby to permit the insole 10 to be inserted within the cover and to be withdrawn therefrom. In this instance the cut opening is suitably edged so as to prevent fraying of the adjoining material.

For large scale production it is more desirable to utilize a blank which embodies various elements of the cover in a single piece of material and which is designed to permit the cover to be formed therefrom by appropriately folding the blank and securing the parts thereof in their folded position. A blank of this character suitable for forming a cover comprising a top portion adapted to be joined to a bottom portion, which latter is designed to have an opening therein, is illustrated in Fig. 4.

The part of the blank of Fig. 4, which is adapted to form the top portion of the cover, is indicated at 12 while the bottom portion for the cover is provided by sections 14 and 15 in the form of extensions which project from the opposite ends of top portion 12. The sections 14 and 15 are foldable towards each other and onto the top portion 12. Bottom portion section 14, when folded, is intended to extend from the toe end of the top portion 12 to a location within the region of narrowest width of the top portion, and section 15, when folded, is adapted to extend from the heel end of the top portion 12 of the cover to a location within this same region. In the blank of Fig. 4 the sections 14 and 15 of the bottom portion do not meet when folded onto the top portion 12 but leave a small rectangular space between them which is adapted to provide a parallel edged slit or opening 18

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through which the insole 10 may be inserted within or withdrawn from the cover.

After folding, the bottom portion of the cover blank of Fig. 4, comprising sections 14 and 15, and the top portion 12 thereof are joined together, by any of the practices heretofore discussed, along their common or overlying marginal edges which are adjacent the marginal edges of the insole 10 when the latter is inserted within the cover. As will be appreciated, this provides a cover in the form of a sheath having an entrance passage thereto formed by the opening 18.

For convenience of illustration, the various parts of the cover are shown as secured together by stitching 19 in Fig. 6 which illustrates the blank of Fig. 4 in plan and as assembled. Stitching 19 is also shown in Fig. 3.

In the blank of Fig. 4 it is only necessary to provide the free ends of the bottom-forming sections 14 and 15 with unfrayable edges. An edge which is unfrayable may be formed from uncut material or by treatment of a cut edge with a suitable bonding compound, of which the art is well aware, or by the overturning and stitching of cut material. Other precautions to prevent fraying in the blank of Fig. 4 are unnecessary as the attachment of the bottom and top portions thereof along their common marginal edges will overcome any tendency of the material to fray.

For convenience of manufacture, the use of a transversely positioned opening in the bottom portion of the cover 100, such as the opening 18, is desired. However, it is possible to employ an opening which extends lengthwise of the cover. For instance, the blank of Fig. 4 may be provided with an opening of this type by making the sections 14 and 15 sufficiently long so that they abut or touch each other when overlying the top portion 12 and by cutting away a part of each section over a location between its outer edges and between said abutting end and the end of the section which merges with the top portion 12 of the blank.

It has been found desirable to provide the cover 100 with a toe-receiving pocket and especially with a pocket of this character which is joined to the cover so that it may be overturned upon itself and located in an inoperative position when not employed. Such a pocket is often desirable in conjunction with open toe shoes and in any event when used it is helpful to prevent sliding movement of the insole assembly in the shoe with which it is associated.

In Fig. 5 I have shown a blank which provides a toe pocket-forming member adapted for use with the blank of Fig. 4 to form a toe-receiving pocket on the cover provided by these blanks. The member 17 is adapted to be secured to the insole cover 100 adjacent the toe end thereof and has a shape which corresponds in outline and size to a section of the cover extending from the toe end thereof towards the heel for a distance sufficient to substantially fully engage with the toes of a user of the insole assembly.

When using the blank shown in Fig. 4, the pocket-forming member 17 is superposed on the top portion 12 of the cover 100 and the sections 14 and 15 of the bottom portion of the cover are then folded over and onto the top portion. This leaves the pocket-forming member 17 positioned intermediately of the portion 12 and the section 14. Fig. 6, which shows the blank of

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Fig. 4 in assembled condition, also includes the pocket-forming member 17 in the assembly there illustrated. The marginal edges of the pocket-forming member 17, common to the marginal edges of the top and bottom portions of the cover, are secured to each other in a manner already described which is illustrated in Fig. 6 as by stitching all overlying common marginal edges together.

To obtain the pocket-forming portion 17 on the outside of the cover, it is necessary to turn the cover, as assembled and illustrated in Fig. 6, inside out. This procedure locates the pocket-forming member on the outside of the top portion 12 of the cover as it is illustrated in Fig. 3. At the same time, this turning procedure for the cover causes any seam, formed in the uniting of the various marginal edges, to become located within the cover whereby it will be out of contact with the foot and the cover will have a smooth outer surface.

As may be observed in Fig. 3, the pocket-forming member 17 is unconnected to any part of the cover except at its marginal edge which is common to those of the cover and consequently this member is able to provide the desired toe-receiving pocket. It may be further noted that this construction allows the pocket-forming member 17 to be overturned upon itself whereby it may be located to lie flat on the bottom portion of the insole cover and in this way is moved to an inoperative position. In this regard, the pocket-forming member 17 is reversible by again turning it upon itself but in the opposite direction from that just noted whereby it may again be located as in Fig. 3 for toe reception.

It will be understood that blanks varying in construction from those of Figs. 4 and 5 are employable for carrying out my invention. For example, the toe pocket-forming blank of Fig. 5 may be substituted for the bottom portion cover section 14 as an integral part of the blank of Fig. 4 and the section 14 may be employed as an auxiliary blank to be superposed on the blank of Fig. 4. Also, the toe pocket-forming blank of Fig. 5 may be formed as an integral part of the blank of Fig. 4 by being joined thereto at one side of the top portion 12 adjacent the toe end of said top portion whereby to embody in a single piece of material all of the elements of the cover 100. Similarly, the bottom portion sections 14 and 15 may be formed of a single piece of material which is an integral part of the blank of Fig. 4 and which is joined thereto adjacent one side of the portion 12, and under these circumstances, if desired, the pocket-forming member 17 may be joined to the other side of the top portion 12 in the manner just noted in the foregoing.

In a preferred embodiment of the invention, means are provided on at least one area of the bottom portion of the cover 100 for developing friction between the cover and a surface, adapted to support the footwear insert and with which the bottom portion thereof is in bearing, upon the pressure contact of the insert with the support surface. In this manner, sliding movement of the footwear insert or insole assembly, when mounted within a shoe, is resisted. An adhesive material engageable with a surface upon pressure contact therewith may be used for this purpose. Such an adhesive should be able to withstand repeated washings of the insole cover. Many pressure-sensitive adhesives suitable for this use are known to the art. The friction-

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creating material may be coated on or otherwise applied to the area of the bottom portion of the cover 100 to be treated before the bottom portion is assembled and will penetrate into or impregnate the part of the cover material to which it is applied.

I have found that a rubber latex, vulcanized in liquid form and applied from solution, is an excellent adhesive or friction-creating material of the character desired. Latex of this character, having a low modulus, has worked successfully. In using latex, I have applied the same to the inner surface of the bottom portion of the finished cover 100, i. e., the article shown in Figs. 1 through 3. If a stronger bond to the shoe support surface is desired, the latex or other material may be applied to the outer surface of the bottom portion of the finished cover 100. Of course, the latex may be applied to both surfaces of the bottom portion of the cover.

A treated area of the character just described is shown at 20 in Fig. 2 as located adjacent the heel of the bottom portion of the cover. Under some conditions it may be desirable to provide a friction-creating area adjacent the toe end of the insole cover. Location of a friction-creating area at either or both ends of the insole cover is deemed to be within the scope of the invention.

It is also to be noted that the treated area or areas are intended for employment whereby to resist tendencies of the cover to turn or twist or otherwise move relative to the insole member 10 when the assembly is in use, and it is consequently desirable to have the latex or other material located adjacent the inner surface of the bottom portion of the cover 100. In this regard, as well as in causing the insole assembly to resist movement in a shoe, it is of course possible to apply latex or other similar material over substantially the entire bottom portion of the cover.

The insole assembly is adapted to be positioned within a shoe with the bottom portion of the cover facing towards the insole of the shoe. In this way a smooth and even surface is presented for contact with the foot. Conveniently, the insole assembly may by reason of the toe pocket-forming member 17 be engaged upon the foot when the member 17 is in operating position and the foot with the insole assembly engaged thereon may be placed in the shoe. Being shaped to conform to the inside of a shoe, the insole assembly is readily mounted and removed from a shoe. Preparation of the cover for washing is easily effected by withdrawal of the insole 10 through the opening 18 in the bottom portion of the cover. As the cover is formed of cloth or similar material, it is easily washed and is readily mounted over the insole 10 by merely inserting the latter within the cover.

It will, of course, be understood that the insole assemblies of my invention are intended to be made in pairs for left and right wear, and also are intended to be made in various lengths and widths to accommodate variations in shoe size. A feature of the invention resides in the provision of an insole assembly which is of a relatively thin character whereby it becomes substantially unobservable when mounted within a shoe. The ability of my insole assembly to remain substantially unobservable is enhanced by dyeing the cover member with a suitably fast dye of a color which will match the shoe. However, if desired, the insole assembly may be dyed

in a contrasting color with respect to a shoe or it may be dyed in several colors.

It will be appreciated by those skilled in the art that a number of variations may be evolved from the design which I have shown. For example, the insole assembly may omit the toe-receiving portion 17 and, at the sacrifice of removal of the cover 100 from the insole for washing purposes, the opening 18 may be omitted and the cover may be permanently attached to the insole. Likewise, it is possible to omit the friction-creating impregnant and, of course, the pocket-forming portion 17 may be located in operative or inoperative position as desired. These and other variations are comprehended as within the scope of the invention.

From the foregoing, it will be appreciated that I have attained the aims and objects of my invention and that I have provided an insole assembly for stockingless attire which is sanitary in that it is provided with a readily washable cover as well as a cover which will retain the assembly in a shoe substantially without slippage. Furthermore, I have provided an insole assembly of a simple and inexpensive character which is capable of providing considerable foot comfort and is of a design and construction which prevents its observation and hence does not detract from the style or appearance of the shoe when it is worn.

Since certain changes may be made in the above article without departing from the scope of the invention herein involved, it is intended that all matter contained in the above description, or shown in the accompanying drawing, shall be interpreted as illustrative and not in a limiting sense.

What I claim is:

1. An insert for footwear adapted to be removably mounted in a shoe and comprising a flexible insole member, a cover of a pliable material engaging said insole member and provided with a top portion and a bottom portion having common marginal edges which are joined together and which are so shaped as to provide said cover with an outline similar to that of said insole member whereby said cover is snugly engageable around said insole member with the top and bottom cover portions on opposite sides thereof and at least partially encasing said insole member, the top portion of said cover defining the part of the cover adapted to be contacted by a foot of a user of the insert and being in overlying relation with respect to said bottom portion, a pocket-forming member mounted and located over said cover at the toe part thereof for receiving and engaging the toes of the foot and being generally coextensive with having an outline similar to the part of the cover which the toes are adapted to overlie, the common marginal edges of said cover and said pocket-forming member being joined together whereby said pocket-forming member is overturnable independently of said cover between a position adjacent the top portion of said cover where it is operative for receiving the toes of a user of the insert and a position adjacent the bottom portion of said cover where it is inoperative, said pocket-forming member comprising a pliable material and lying in a generally flat condition over said cover except when in operative toe engagement and when undergoing turning to locate it as desired adjacent one of said portions of said cover, said cover being provided with an opening therein through which said insole member is insertable within the cover and removable therefrom whereby said cover, including the pocket-forming member joined thereto, is separable from engagement with said insole member.

2. An insert for footwear adapted to be removably mounted in a shoe and comprising a flexible insole member, a cover of a pliable material engaging said insole member and provided with a top portion and a bottom portion having common marginal edges which are joined together and which are so shaped as to provide said cover with an outline similar to that of said insole member whereby said cover is snugly engageable around said insole member with the top and bottom cover portions on opposite sides thereof and at least partially encasing said insole member, the top portion of said cover defining the part of the cover adapted to be contacted by a foot of a user of the insert and being in overlying relation with respect to said bottom portion, a pocket-forming member mounted and located over said cover at the toe part thereof for receiving and engaging the toes of the foot and being generally coextensive with and having an outline similar to the part of the cover which the toes are adapted to overlie, the common marginal edges of said cover and said pocket-forming member being joined together whereby said pocket-forming member is overturnable independently of said cover between a position adjacent the top portion of said cover where it is operative for receiving the toes of a user of the insert and a position adjacent the bottom portion of said cover where it is inoperative, said pocket-forming member comprising a pliable material and lying in a generally flat condition over said cover except when in operative toe engagement and when undergoing turning to locate it as desired adjacent one of said portions of said cover, said cover being provided with an opening therein through which said insole member is insertable within the cover and removable therefrom whereby said cover, including the pocket-forming member joined thereto, is separable from engagement with said insole member.

3. An insert for footwear adapted to be removably mounted in a shoe and comprising a flexible insole member, a cover of a pliable material engaging said insole member and provided with a top portion and a bottom portion having common marginal edges which are joined together and which are so shaped as to provide said cover with an outline similar to that of said insole member whereby said cover is snugly engageable around said insole member with the top and bottom cover portions on opposite sides thereof and at least partially encasing said insole member, the top portion of said cover defining the part of the cover adapted to be contacted by a foot of a user of the insert and being in overlying relation with respect to said bottom portion, a pocket-forming member mounted and located over said cover at the toe part thereof for receiving and engaging the toes of the foot and being generally coextensive with and having an outline similar to the part of the cover which the toes are adapted to overlie, the common marginal edges of said cover and said pocket-forming member being joined together whereby said pocket-forming member is overturnable independently of said cover between a position adjacent the top portion of said cover where it is operative for receiving the toes of a user of the insert and a position adjacent the bottom portion of said cover where it is inoperative, said pocket-forming member comprising a pliable material and lying in a generally flat condition over said cover except when in operative toe engagement and when undergoing turning to locate it as desired adjacent one of said portions of said cover, said cover being provided with an opening therein through which said insole member is insertable within the cover and removable therefrom whereby said cover, including the pocket-forming member joined thereto, is separable from engagement with said insole member, and a pressure-sensitive adhesive material impregnated into the bottom portion of said cover over at least one area thereof, said impregnated area providing means for developing friction between the bottom portion of said cover and a surface in pressure contact therewith.

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