Aug. 22, 1967 J. SARACENI ET AL 3,337,770

SANITARY SHOE WRAPPER

Filed April 13, 1964 4 Sheets-Sheet 1

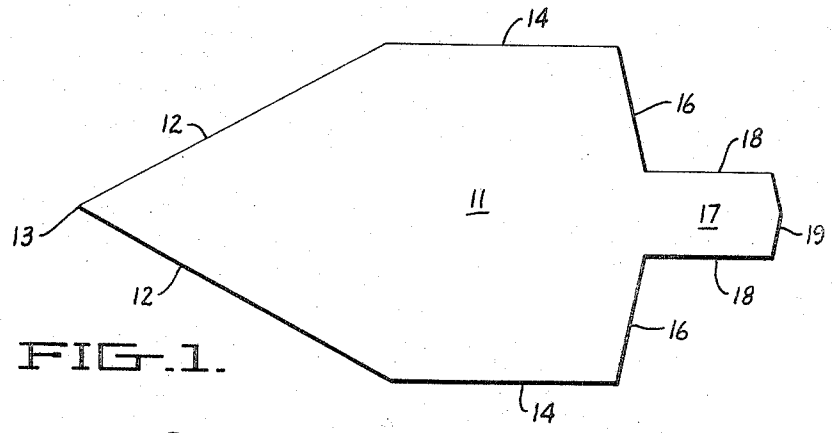


FIG. 1.

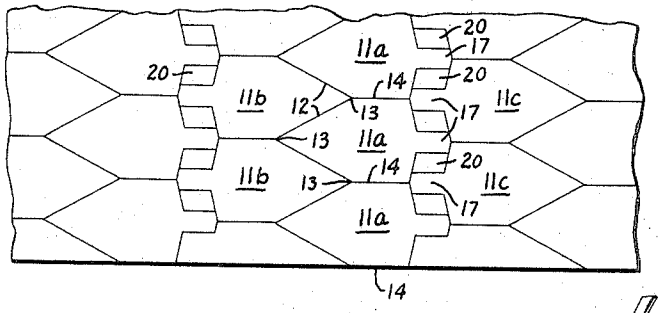


FIG. 2.

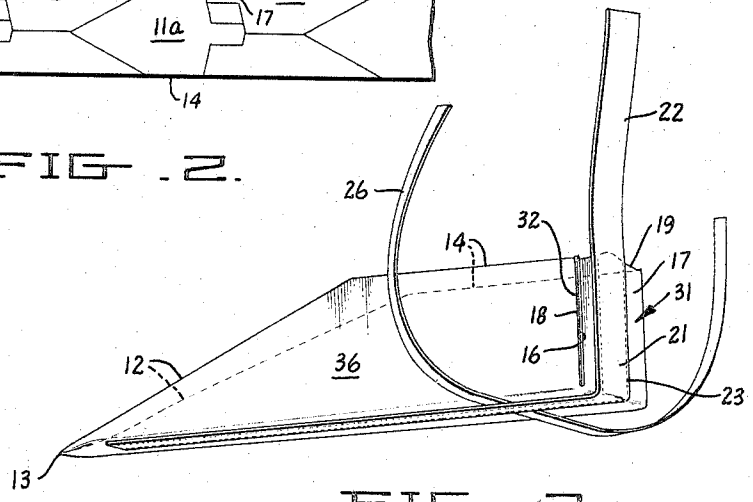


FIG. 3.

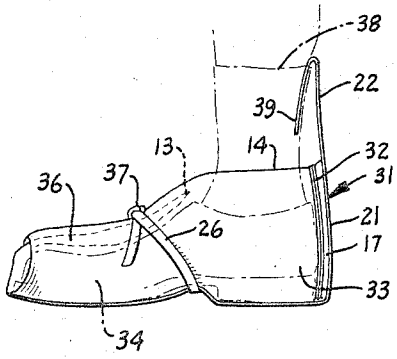


FIG. 4.

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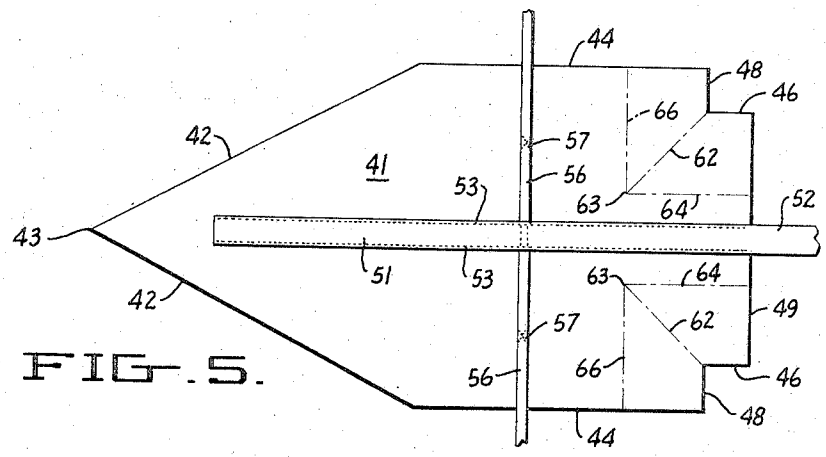


FIG. 5.

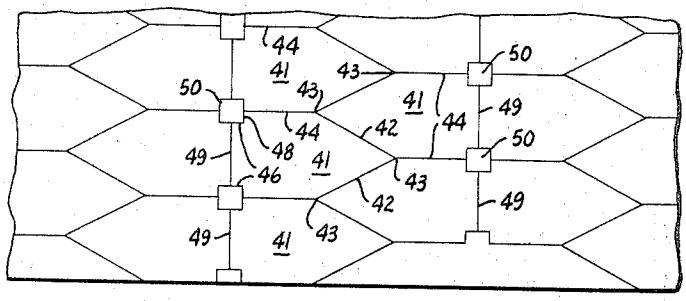


FIG. 6.

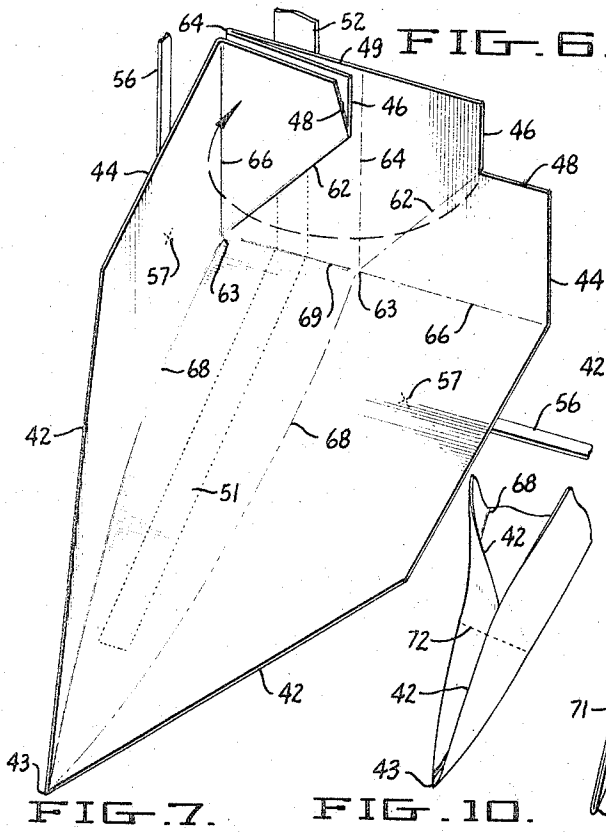


FIG. 7.

FIG. 10.

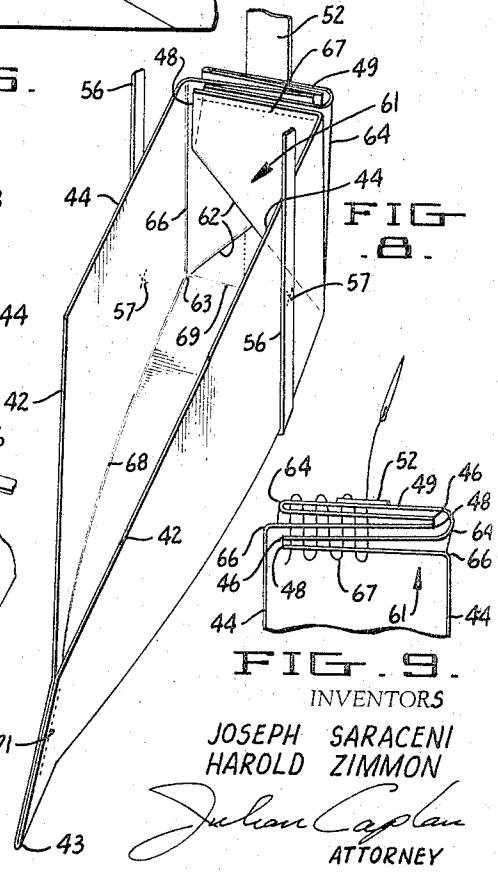


FIG. 8.

FIG. 9.

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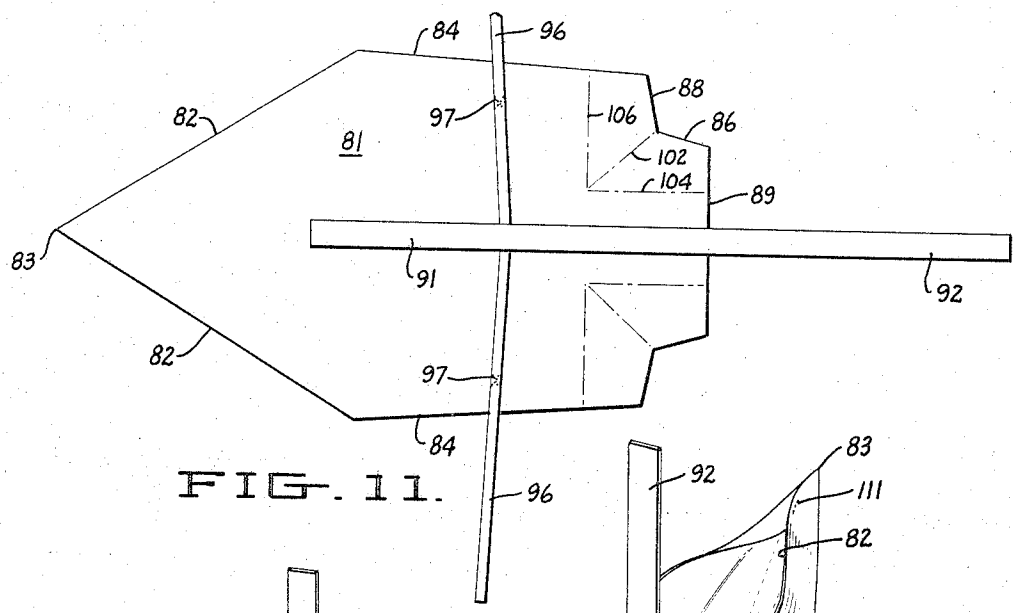


FIG. 11.

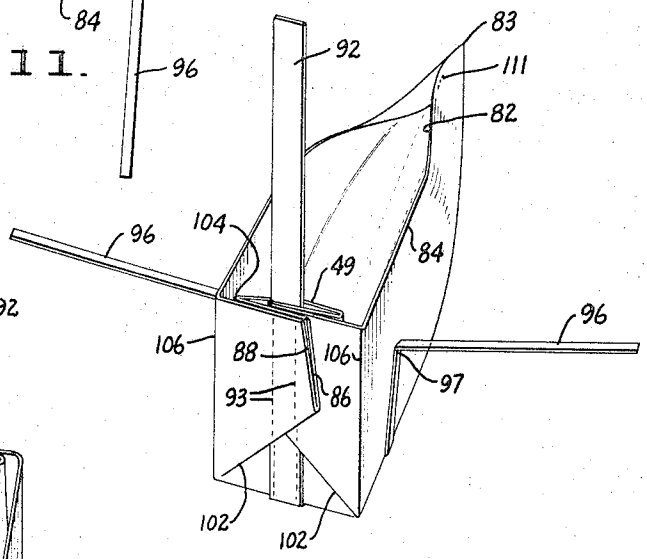


FIG. 13.

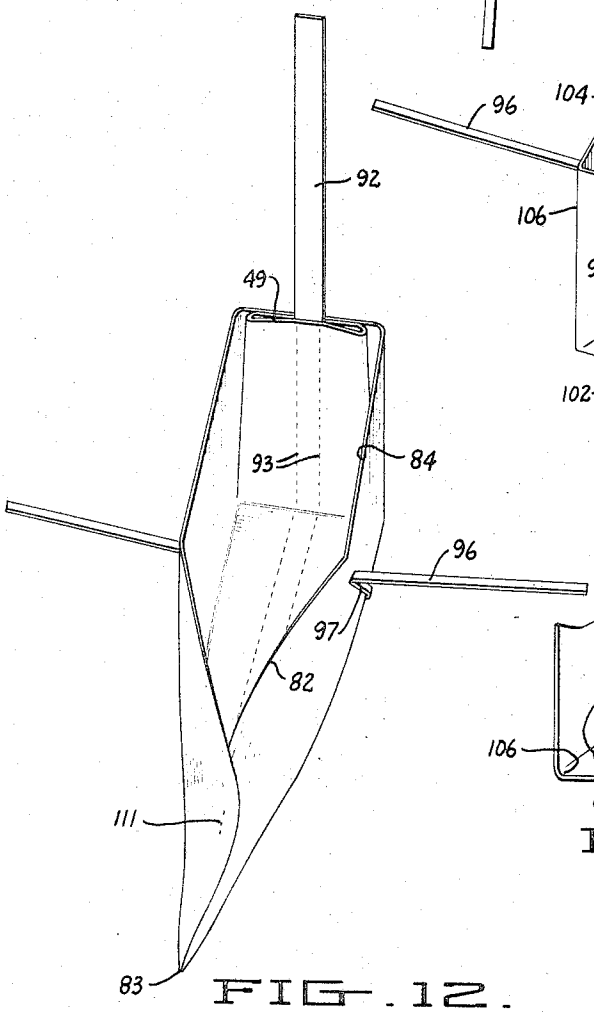


FIG. 12.

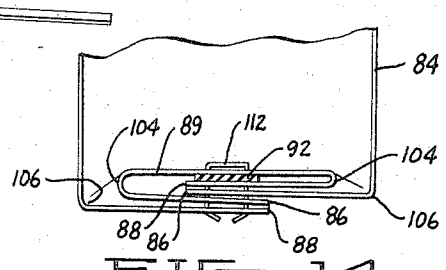


FIG. 14

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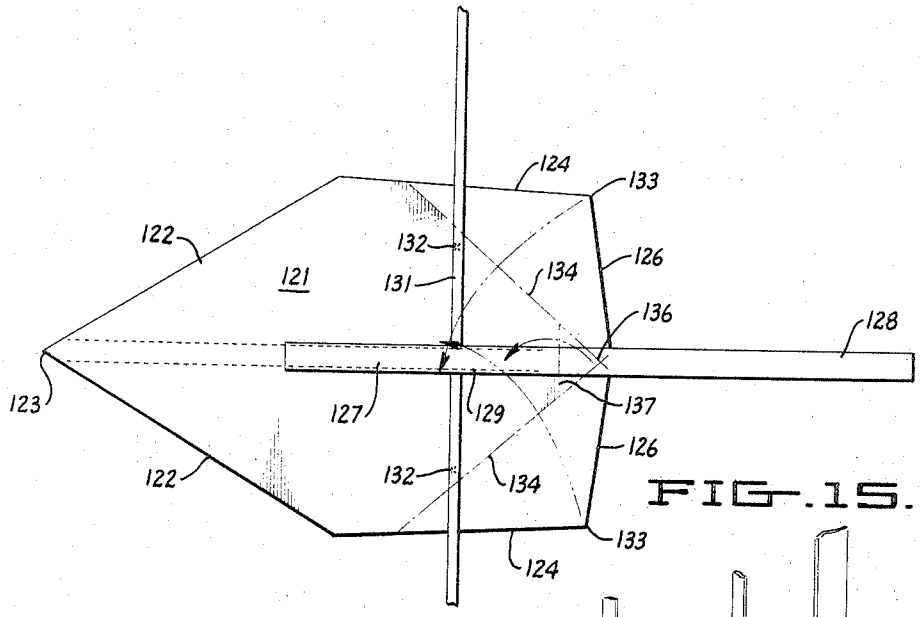


FIG. 15.

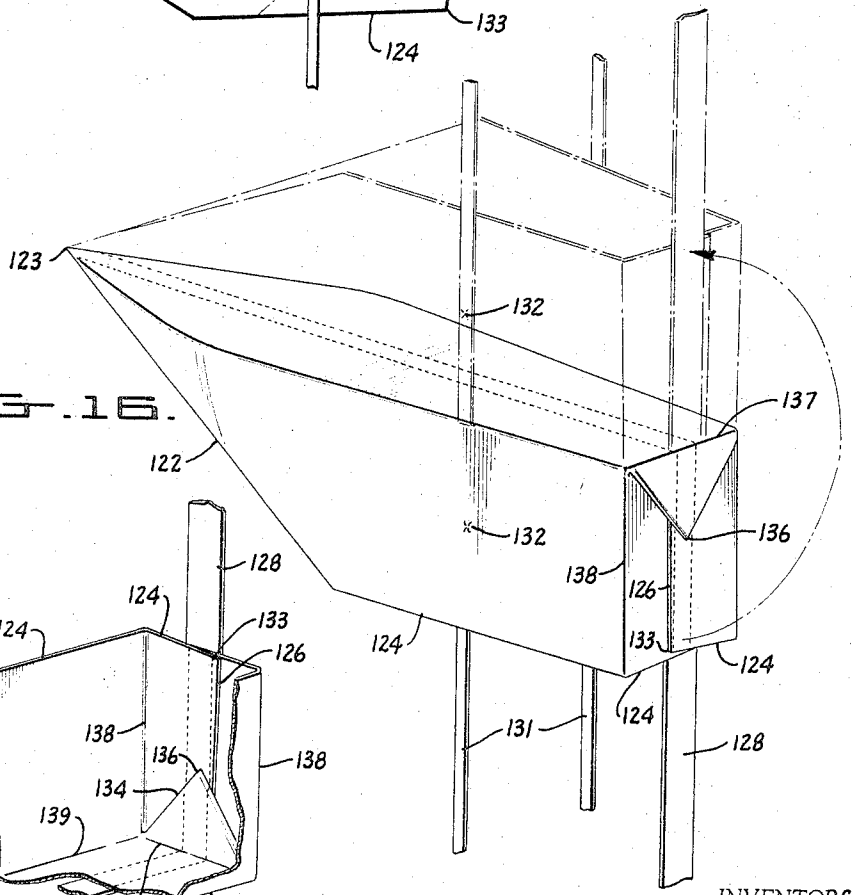


FIG. 16.

FIG. 17.

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3,337,770

SANITARY SHOE WRAPPER

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Filed Apr. 13, 1964, Ser. No. 359,356
10 Claims. (Cl. 317—2)

This invention relates to a new and improved sanitary shoe wrapper. More particularly, the invention relates to a wrapper fitting around the shoe of the wearer for sanitary and safety precautions primarily for use in hospitals, industrial and commercial installations, and the like, wherein the problem of contamination of the atmosphere or the floor from dirt on shoes is to be avoided. Conversely the wrapping may protect the shoes from the atmosphere or dirt on the floor.

In a preferred embodiment of the present invention, the wrapper is made either wholly or partially of electrically conductive material and is further so constructed as to provide for contact of a portion of the conductive material with the skin of the wearer. In this manner, charges of static electricity may be grounded to reduce danger of explosion.

In a still another preferred embodiment of the invention, the wrapping is disposable so that it may be used once, or a few times, and discarded.

An important use of the present invention is to provide a wrapping for the shoes of surgeons and other hospital operating room personnel. For the purpose of maintaining cleanliness in the operating room, it is desirable that dirt on the shoes be prevented from reaching the patient, a function which the wrapper of the present invention performs effectively. Another problem in such use is to prevent charges of static electricity from igniting anesthetic and other explosive atmospheres which may be present in the operating room. The present invention provides a means for skin contact of the surgeon, and a further means for grounding the contact to the floor. It will be understood that some industrial and commercial installations have similar problems, such as where there are explosive materials, such as paint, pharmaceuticals, and the like.

Show window dressers conventionally remove the shoes, or place a covering over the shoes, so that the floor of the show-window is not marked by dirt on the shoes of the dresser. The present invention provides a wrapper to accomplish the same result.

Heretofore, most devices for the foregoing purposes have been of a slipper, shoe or boot-shape, in that they are formed with more or less conventional heels and toes. The present invention is not conventional in the formation of the toe, which simplifies manufacture and makes the device less expensive.

By reason of the low expense in manufacturing the present invention, which is occasioned at least in part by the elimination of conventional heels and toes, there is provided a low priced protective covering for the shoe. Thus the present invention provides a simple wrapping for the shoe as distinguished from prior coverings, the wrapping being uniquely designed.

Because of the simplicity of design and low cost of manufacture, it is possible to provide an efficient conductive or non-conductive wrapping for the shoes of great value which can be made so cheaply as to be disposable, thereby eliminating the laundry or cleaning problems of prior devices for the same purposes.

A further feature of the invention is the fact that its simple construction does not require separate wrapping for right and left feet, but a single wrapping will fit either foot. Additionally, the device is adjustable for size of the shoe over avery wide range, thereby reducing the inventory or stock of wrappings which must be maintained to fit different shoe sizes.

A further advantage of the invention is the fact that it is so constructed that it can be applied to the shoe conveniently with little time or effort consumed. The construction of the device is such that unskilled users cannot through misapplication of the device fasten the same on the shoe in an improper manner.

Another feature of the invention is the fact that it is possible to use very low cost material in certain versions of the device with the result that the wrapping is inexpensive and is disposable.

Still another feature of the invention is the fact that its manufacture is economical in use of material by reason of inter-fitting of the patterns in a web of material and the manufacture of the completed device may be to a large extent automated.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

FIG. 1 is a plan view of a blank or pattern for the device, in accordance with the invention.

FIG. 2 is a schematic view showing the inter-fitting of a plurality of patterns or blanks in a web of material illustrating economy of material of the pattern.

FIG. 3 is a perspective view of the device prior to installation on the shoe.

FIG. 4 is a side elevational view showing the device wrapped about a shoe.

FIG. 5 is a plan view of a blank for a modified device.

FIG. 6 is a view similar to FIG. 2 of patterns of the type of FIG. 5.

FIG. 7 is a perspective view of a partially assembled blank of the type of FIG. 5.

FIG. 8 is a view similar to FIG. 7, showing completion of assembly.

FIG. 9 is a fragmentary top plan showing schematically assembly of the heel.

FIG. 10 is a fragmentary perspective of a modified toe construction.

FIG. 11 is a plan view similar to FIG. 1, of a still further modification.

FIGS. 12 and 13 are perspective views of assembled wrappings in accordance with FIG. 11 view from front and rear, respectively.

FIG. 14 is an enlarged fragmentary plan view of a further modified heel construction.

FIG. 15 is a plan of a blank for another modification showing schematically steps in the folding operation for erection of the wrapping.

FIG. 16 is a perspective view showing in solid lines the wrapping at one stage of erection and in dot-and-dash lines the manner in which the wrapping is turned inside-out for completion of the erection.

FIG. 17 is a fragmentary perspective view of the heel portion partially broken away to reveal construction.

The present invention provides a wrapping of a sanitary or non-contaminating nature of simple and inexpensive construction. The body of the device may be formed of a wide variety of materials. Non-woven materials, such as paper or yarn—reinforced cellulose material, and non-woven fabrics are particularly suitable for the present invention, such materials being received from their manufacturer in webs or rolls of extended widths and lengths from which a plurality of blanks may be interfitted with economy of material. Cloth, such as light canvas, muslin, or almost any fabric may be used to construct the device.

Plastics may be used, depending upon the end use of the wrapper.

In many of the installations, as has heretofore been explained, where such coverings may be used, it is desirable to ground the wearer to the floor. For such purpose, the entire device may be formed of a conductive material. Alternatively, as shown in the accompanying drawings, a strip is sewn, glued, stapled or otherwise attached to the wrapping and is formed of a conductive material. A preferred conductive material is a conductive polyolefin of a thickness of two to three mils, one such product being known as "valostat" manufactured by Custom Materials, Inc. of Chelmsford, Mass. Aluminum foil tape is also suitable.

Turning to the accompanying drawings in the form shown in FIGS. 1 to 4, blank **11** has forwardly converging front edges **12** meeting at a point **13** at the front. Edges **12** extend about half the length of the blank **4**. Rearwardly thereof are substantially parallel rearward extending side edges **14**. Oblique rear edges **16** extend inward from the rearward ends of sides **14** to a central rear tongue **17**, formed with parallel rearward extending side edges **18** and a rear end **19**. The blank **11**, illustrated in FIG. 1, is particularly advantageous because of its economical use of material. As best shown in FIG. 2, a plurality of blanks **11***a* may be placed with side edges **14** adjacent and with points **13**, all in the same direction. Inter-fitting between points **13** of blanks **11***a* are the corresponding points of blanks **11***b*, which are in reverse direction. Blanks **11***c* on the opposite end of blanks **11***a* are turned in the same direction as blanks **11***b*, but tongues **17** of these blanks are staggered between tongues **17** of blanks **11***a*. Only small trapezoidal pieces **20** between tongues **17** are scrap. The number of blanks which may be cut from a web of material is only dependent upon the width and length of the web, only a fragment thereof being shown in FIG. 2. The individual blanks may be cut from the web by various means. Die cutting is one means of forming the individual blanks. Alternatively, layers of webs may be cut, as well understood in the garment industry. The waste of material in this arrangement of the blank is quite insignificant.

Where conductivity is of importance, as in end uses where an explosive atmosphere prevails, a narrow tape **21** may be sewn to the blank **11**, extending longitudinally of the blank from a point adjacent the end **13** medially of the blank to the heel portion **17**, and extending beyond end **19** in a tongue **22** of extended length. The material of which the tape **21** is formed has heretofore been described. The tape may be applied to blank **11** by means of stitching **23**, as illustrated, or may be applied by various adhesives, or staples or other attachment, or may be heat adhering. Ties **26** are applied to the blank **11**, extending generally transversely of the blank. In the form shown in FIGS. 3 and 4, ties **26** are secured only at the center of the bottom of the wrapping. In other modifications, ties **26** are adhered to the blank partially up the sides by means of stitching **57**, glue, stapling, or other means of attachment. The ties **26** are of extended length so that they may be knotted to hold the wrapping on the shoe when it is in use (FIG. 4).

Assembly of the wrapping to form the heel portion **31** may be accomplished by gluing adjacent edges **16** and **18** together in a seam **32**, or by means of stitching or other attachment means, thereby providing a box-like heel of a width substantially equal to that of tongue **17**. With the completion of this operation, the device is in shape for shipment from the factory. It may be folded for compactness, or pluralities of wrappings may be nested together.

In use, the heel **33** of the shoe is positioned nesting into the heel **31** of the wrapping. The point **13** is folded up over the instep of the shoe, the distance which the point is folded back being determined by the length of the shoe **34** of the wearer. Thereupon, the sides **36** on either side

making up the fullness of blank **11** are folded over, one side over the other. Ties **26** are brought together and formed in a knot **37** over the instep. Although the foregoing sequence is preferable, nevertheless, it is apparent that the sides **36** may be folded inwardly first and tip **13** folded back and held on by ties **26**. The extended length of conductive material **22** may be tucked into the upper end **38** of the sock of the wearer to establish skin contact of the tab **39** on the end of the conductive tape. Since the tape **21** extends down the back of the heel **31** to the bottom of the wrapping, electrical contact with the floor is achieved.

It is apparent from the foregoing description, that the device may be installed rapidly and likewise removed rapidly. The shoes of the wearer are covered so that dirt on the shoes does not contaminate the surrounding atmosphere or floor covering. Alternatively, if the surrounding atmosphere is contaminated, the shoes are not contaminated. Where conductive material is used, the body of the wearer is grounded.

After use, the device may be discarded if its cost is not a prime consideration. However, where the device is constructed in a substantial manner, it may be reused and even laundered between uses.

In the form of the invention shown in FIGS. 5 to 9, blank **41** has forwardly converging front edges **42** meeting at a front point **43**. Edges **42** extend about half the length of the blank and the front point is approximately an equilateral triangle. Side edges **44** are about parallel to each other. Rear end **49** is square and of a width about two-thirds the overall width of the blank and about three times the eventual heel width. Each corner is formed with perpendicular longitudinal and transverse cuts **46**, **48** of equal length. How pluralities of blanks interfit to conserve material is illustrated in FIG. 6. Only square pieces **50** are scrap.

Narrow longitudinally extending conductive tape **51** is adhered, glued, sewn, stapled or otherwise attached to blank **41** as by stitching **53**, preferably commencing at a point spaced back from point **43** and continuing beyond end **49** in an extended tongue **52**. Transverse tape ties **56** are preferably formed of a unitary piece of material under tape **51** and tacked by tacks **57** of glue or stitching partially up the sides, so that the extended lengths of ties are conveniently at hand when the covering is to be tied in place.

In assembling the wrapping to form heel **61**, diagonal folds **62** are formed on either side extending inward at about 45° from the intersection of cuts **46**, **48**, to a point **63**. Longitudinal folds **64** extend rearward from point **63** to end **49** and transverse folds **66** from point **63** to side edge **44**. The material is folded inward and overlapped as shown in FIGS. 7 and 8. Horizontal transverse stitching **67** across the top of the heel **61** holds the folds in assembled position, as best shown in FIG. 9. Longitudinally forwardly converging 90° bends **68** extend from points **63** to point **42** and transverse bend **69** interconnects points **63** at the heel.

As an optional feature of the invention, to facilitate insertion of the toe of the shoe in the wrapper, a partial toe may be formed. Thus in FIG. 8*a*, short stretches of front edges **42** are joined together as by stitching **71**, cement or glue, staples or other means of attachment.

As shown in FIG. 10, front edges **42** are partially overlapped and a transverse tack **72** applied to hold the toe together. Tack **72** may likewise be by stitching, gluing, stapling, or other means of attachment.

In either of the forms of FIGS. 8 and 10, the shoe toe is first inserted and then the heel. The toe is folded forward and the sides up and over and ties **56** applied substantially as shown in FIG. 4 of the preceding modification. Tongue **52** is tucked into the sock as previously explained.

The materials of construction in the modification of FIGS. 1 to 4 are the same as for corresponding parts of

the form described with reference to FIGS. 5 to 10, as well as the further modification of FIGS. 11 to 14 which follows.

In the form shown in FIGS. 11 to 14, blank **81** has forwardly converging front edges **82** meeting at front point **83**. Side edges **84** converge rearwardly, but are close to parallel. Rear end **89** is square and of a width about one-half the maximum width of the blank but approximately three times the assembled heel width. Each corner is formed by a generally transverse but rearwardly slanted cut **88** extending inwardly from the back end of side **84** and a generally longitudinal but inward-rearward slanting cut **86** which interconnects end **89** and cut **88**; cuts **86** and **88** are of about equal length.

Conductive tape **81** is adhered, glued, sewn, stapled, or otherwise attached, to blank **81** as by stitching **93**, preferably commencing at a point spaced back from point **83** and extending beyond end **89** in an extended tongue **92**. Transverse tape ties **96** are formed of a unitary piece of material under tape **91** and tacked by glue at locations indicated by reference numeral **97** or adhered by other means, as in the preceding modification.

Assembly of the wrapping is generally similar to the modification of FIG. 5. However, folds **104**, **106**, **102** are folded to the outside of the heel rather than the inside. Further, edges **96**, **98** are relatively close to the centerline of the heel and only slightly displaced from the side edges of tape **92**. Hence stitching **93** not only holds tape **92** in place on the blank, but also holds the folds forming the heel in assembled condition. It will be understood, however, that instead of stitching **93** other fastening means may be used, as has been previously explained. This eliminates the need for stitching similar to reference numeral **67** in FIG. 9.

In FIGS. 12 and 13, the front edges of the sides are partially overlapped adjacent point **83** and held with adhesive **111**.

Use of the device is similar to the preceding modification.

FIG. 14 illustrates a still further modification of the structure of FIGS. 11 to 13. Stitching **93** is eliminated and a wire staple **112** used to hold the folds in assembled position.

In the modification of FIGS. 15–17 the formation of the heel is somewhat changed over previous modifications. Blank **121** has forwardly-converging front edges **122** meeting at a point **123** at the front. Edges **122** extend about half the length of blank **121**. Rearwardly thereof are slightly rearwardly-converging but substantially parallel rearwardly-extending side edges **124**. Rear edges **126** extend obliquely, although almost transversely, inward to meet at the center. In this form of the invention, a tongue, corresponding to tongue **17** of FIG. 1, is not used. Hence the overall length of the blank is less than in previous forms described.

Tape **127** is sewn, glued or otherwise adhered to blank **121** commencing at about the middle of the blank and extending rearwardly and projecting beyond the rearward edges **126** in an extended tab **128**. In the preliminary assembly step shown in solid lines in FIG. 15, tape **127** is sewn to blank **121** only about to position **129**. Ties **131** consist of a single transverse length of material considerably wider than the blank which underlies tape **127** and is stitched or otherwise adhered to the blank by the same means as tape **127**. Bar tacks **132** may be used, as in previous forms.

The rearward corners **133** at the juncture of edges **124**, **126** are folded diagonally inward toward the center of the blank along fold lines **134** so that the corners **133** slightly overlap at the center. Lines **134** intersect edges **124** about one-quarter of the length thereof rearward of intersection with edges **122** and cross immediately forward of the center of the rear end of the blank. Which corner **133** underlies the other is immaterial. Upon completion of the first two folds the rear end of the blank

is triangular having a rear apex at **136**. The next step in assembly is to fold apex **136** forward along transverse fold line **137** which has a length equal to the eventual width of the heel. Stitching or other adhering of tape **127** rearward of position **129** is then completed and this operation secures folds **134**, **137** in permanent relation. Preferably the wrapping is turned inside out, as shown in FIG. 16, so that apex **136** is inside rather than outside. The heel forms along parallel folds **138** transverse to fold **137** and said folds continue longitudinaly along the bottom in folds **139**.

The materials of construction, means for joining the parts and application of the device are essentially the same as in prior forms described.

Although the foregoing invention has been described in some detail, by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be practiced within the spirit of the invention and scope of the appended claims.

What is claimed is:

1. A sanitary and protective covering wrapping for a conventional shoe inserted in said wrapping comprising an elongated body of a single layer of highly flexible, paper-like, foldable and disposable material, having front edges converging forward toward a point at the front, substantially longitudinal side edges and a heel portion at the rear of lesser width than the distance between said side edges, said body shaped to conform generally to the shape of the sole, heel, toe, instep and sides of said conventional shoe and formed with sole, side and back portions, said side and back portions erected upright relative to said sole portion to define a heel pocket at one end to receive the heel of said conventional shoe, means permanently securing said back to said sides to maintain said heel pocket, said body having a longitudinally extending toe forming portion at the end opposite said heel pocket, said toe forming portion flexible to enable said toe forming portion to be drawn up over the instep of the wearer to seat said heel in said heel pocket and then to conform said wrapping snugly to the length of said shoe and means on said body engaging the drawn up part of said toe forming portion to hold the latter in place and maintain said wrapping in place on said shoe to entirely encase said shoe and lower leg of the user to prevent cross-contamination of the conventional shoe and atmosphere.

2. A wrapping according to claim **1**, in which said body portion is under the shoe of the wearer with the shoe heel within said heel of said wrapping, said toe forming portion folded upward forward of the toe of said shoe and over the top of said shoe, said body portion drawn up around both sides of said shoe, said ties holding said wrapping in place.

3. A wrapping according to claim **2**, which further comprises an electrically conductive strip adhered to the underneath side of said body portion and behind said heel and having an extended tab externally of said wrapping beyond said heel and formed to be placed in contact with the skin of the wearer.

4. A shoe wrapping formed of foldable material comprising an elongated body portion having front edges converging at the front toward a point, substantially longitudinal side edges, and a heel portion at the rear of lesser width than the distance between said side edges, said heel portion and the rearward portions of said body portion being folded and adhered together to provide a heel pocket with said heel portion folded upwardly relative to said body portion, the side edges of said heel portion and the rearward ends of said side edges being notched out at opposite corners, the notched-out edges at said corners abutting, and means adhering said corners together in substantially vertical seams.

5. A wrapping according to claim **4**, in which said corners are folded in V-shaped folds and said folds are overlapped relative to said heel portion.

6. A wrapping according to claim 4, which further comprises an elongated conductive strip on the bottom of said body portion and up the back of said heel forming portion.

7. A wrapping according to claim 6, which further comprises fastening means adhering said strip to said heel forming portion and also retaining said folds in place relative to said heel portion.

8. A shoe wrapping formed of foldable material comprising an elongated body portion having front edges converging at the front, longitudinal side edges and a rear edge, said body portion folded in a first diagonal fold intersecting near the front of one side edge and about the center of said rear edge, a first portion of the rear edge extending approximately along the longitudinal center line of said body, said body portion folded in a second diagonal fold intersecting near the front of the opposite side edge and about the center of said rear edge, a second portion of the rear edge overlapping said first portion and extending approximately parallel said longitudinal center line, said body portion folded in a third fold transversely forwardly of the juncture of said first and second

folds, and means fastening said wrapping in folded position.

9. A wrapping according to claim 8, which further comprises an elongated conductive strip on the bottom of said body portion and up the back of said wrapping overlying the overlapping first and second portions of said rear edges.

10. A wrapping according to claim 9, which further comprises means securing said strip to said body portion, said last-mentioned means comprising in part said means fastening said wrapping in folded position.

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