June 6, 1950 J. E. MALBERG 2,510,315

SHOE DISINFECTANT DEVICE

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FIG. 1

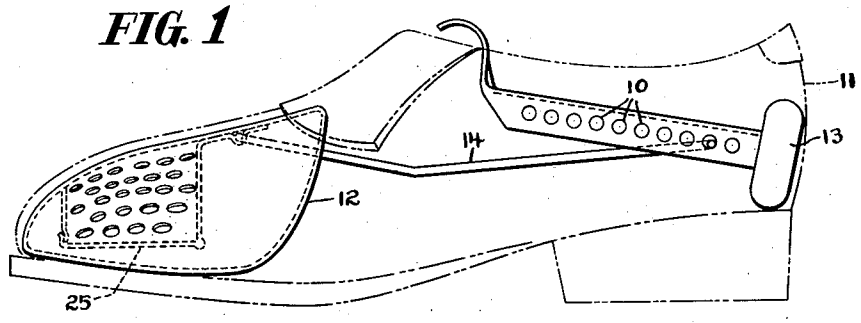


FIG. 2

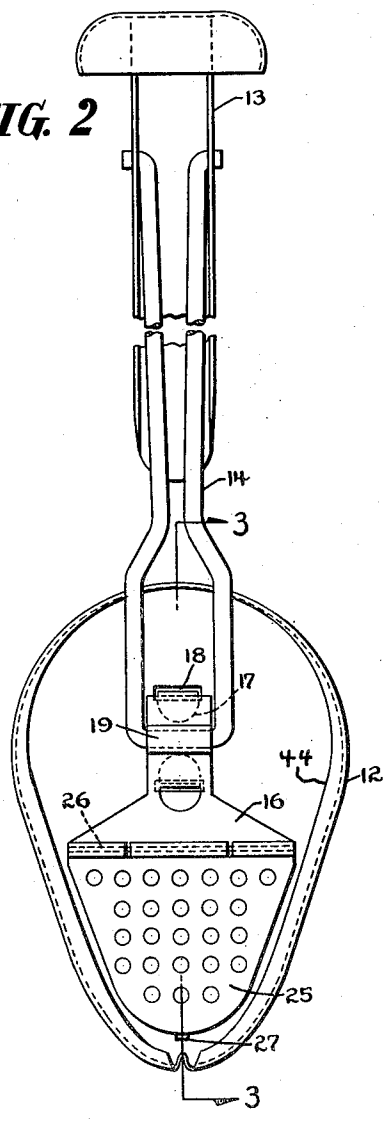


FIG. 5

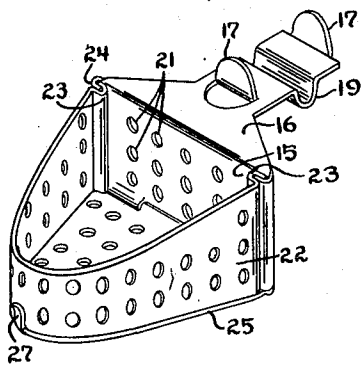


FIG. 3

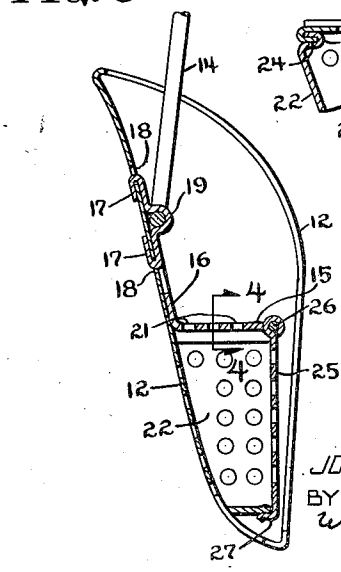
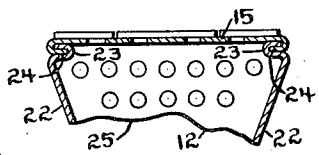


FIG. 4



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FIG. 6

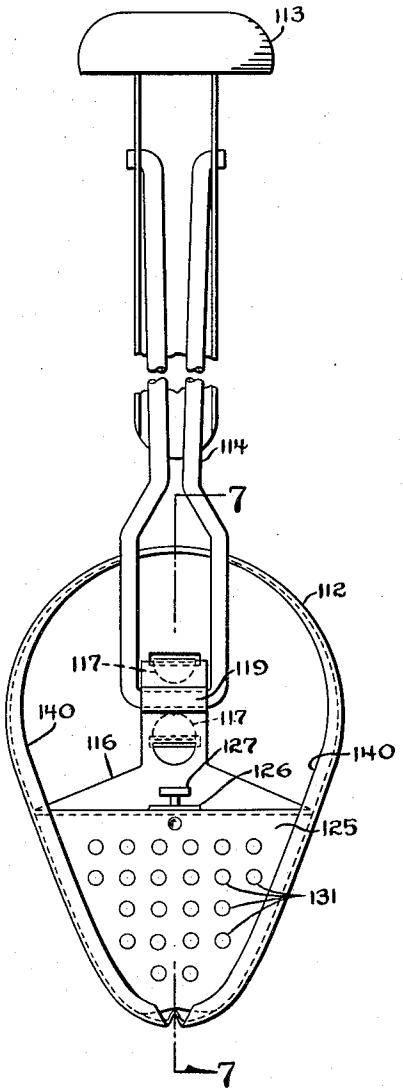


FIG. 8

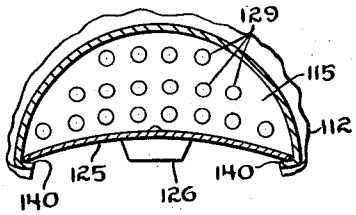
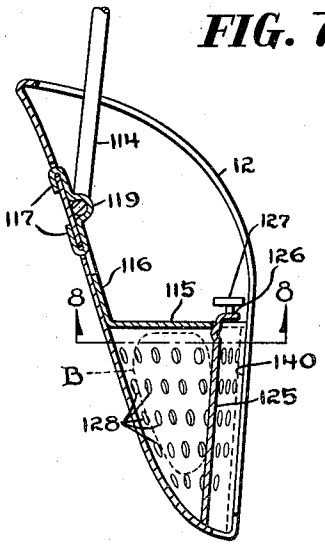


FIG. 7



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SHOE DISINFECTANT DEVICE

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6 Claims. (Cl. 12—128.6)

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This application relates to shoe disinfectant devices, especially devices of such type as are adapted to be inserted into a shoe to aid in retaining same in a desired shape and to function simultaneously as a carrier or storage receptacle for a disinfectant material.

Heretofore there have been one or two crude suggestions regarding the use of disinfectant materials in association with shoe trees or similar articles, such as shoe pads. These previous types of constructions have not been satisfactory for any of a number of reasons among which are that special types of shoe trees were required, the difficulty in replacing or inserting the disinfectant material into the shoe tree, the high cost of the construction, etc.

The general object of the present invention is to provide a new and improved type of a shoe disinfectant device which is characterized by its ability to be made by minor adjustment of a conventional shoe tree device.

Another object of the invention is to provide a low cost shoe disinfectant device which can easily have disinfectant material associated therewith.

A further object of the invention is to provide a shoe disinfectant device which is adapted to have air circulate freely within the shoe and by the disinfectant material contained in the device.

The foregoing and other objects and advantages of the invention will be made apparent as the specification proceeds.

Reference is now made to the accompanying drawings, wherein:

Fig. 1 is an elevation of a shoe disinfectant device embodying the principles of the invention, showing such a device associated with the shoe;

Fig. 2 is a bottom plan of the device of Fig. 1;

Fig. 3 is a vertical section of the device of Fig. 2 taken on the line 3—3 thereof;

Fig. 4 is a fragmentary horizontal section taken on the line 4—4 of Fig. 3;

Fig. 5 is a perspective view of the disinfectant containing means of the invention;

Fig. 6 is a bottom plan of a modification of the invention;

Fig. 7 is a vertical section taken on the line 7—7 of Fig. 6; and

Fig. 8 is a vertical section taken on the line 8—8 of Fig. 7.

Attention is now directed to the details of the structure shown in the accompanying drawings, wherein a conventional shoe tree is shown in association with a shoe 11. The shoe tree shown

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comprises a conventional toe engaging member 12, which is usually formed from sheet material and is of generally arcuate contour in transverse section, a heel engaging member 13 and a wire connector member 14 that is pivotally secured between the toe engaging member 12 and the heel engaging member 13. Fig. 1 best shows that a plurality of holes 10 are provided in the heel engaging member 13 to provide a plurality of connector holes by which the connector member 14 engages with the heel engaging member 13 to vary the length of the shoe tree. Figs. 2 and 3 of the drawing best show that the toe engaging member 12 has a flange 44 formed at its lower edge and this flange is turned inwardly of the member. These figures also show that the foremost portion of the toe engaging member 12 is of gradually reducing width and height so as to provide a closed or solid portion of such member that smoothly blends in with the contour of the remainder of the member.

As an important feature of the invention, a perforate partition member 15 with a tongue 16 formed thereon is secured to the top inner surface of the toe engaging member 12 in a fixed manner. The specific means shown for engaging the partition member 15 to the toe engaging member comprises a pair of lips 17 that are struck up from the tongue 16 and which are adapted to be folded over through holes 18 formed in the toe engaging member. A saddle 19 is also formed on the tongue 16 intermediate the lip 17 for journaled engagement with the connector member 14 to secure the connector member pivotally to the assembly formed of the toe engaging member 12 and the partition member 15. It will be observed that the partition member 15 is received within the lateral margin of the toe engaging member 12 and that a plurality of holes 21 are formed in the partition member to permit circulation of air therethrough. So as to form a portion of an enclosure within the toe engaging member 12, a side member 22 is positioned within the toe engaging member 12. The side member 22 usually is formed from a suitable length of strip material and is of substantially C-shape in horizontal section when in proper shape for engagement with the toe engaging member 12. The side member 22 is adapted to be positioned within the toe engaging member 12 with the open ends of the side member extending rearwardly of the shoe disinfectant device. These end sections of the side member may be engaged with the partition member 15 in any desired manner and abut

there against for this purpose. The side member 22 is shown as having substantially U-shaped end sections 23 which are open outwardly of the toe engaging member 12. These end sections 23 are adapted to receive therein inwardly turned flanges 24 formed along the vertical edges of the partition member 15. Of course, the upper edge of the side member 22 is adapted to abut against, or lie closely adjacent to, the inner surface of the toe engaging member 12.

So as to close the partial enclosure formed by the side member 22 and partition member 15 when associated with the toe engaging member 12, a perforate cover 25 is hingedly secured to the lower edge of the partition member 15. The cover 25 may be engaged with the partition member in any desired manner and a hinge pintle 26 is shown provided for this purpose, which pintle engages with integral hinge sections formed on complementary portions of the partition member and side member. The front end of the cover 25 is provided with an upwardly directed locking lip 27 which is of general arcuate shape and extends inwardly of the cover 25 a short distance so as to engage in a releasable manner with the lower edge of the front portion of the side member 22. If desired, a slight recess may be formed in such portion of the side member so as to facilitate its engagement with the lip 27.

A modified form of the device of the invention is shown in Figs. 6 through 8 where even less change is required in a conventional shoe tree device than with the structure shown in the other figures of the invention. In these figures, a toe engaging member 112, a heel engaging member 113 and a connector member 114 are provided. The toe engaging member 112 has an inwardly turned flange 140 formed around its lower edge. This flange 140 is of maximum width along the lateral and forward portions of the member 112. A partition member 115 is provided and is received within the margins of the member 112 and has a tongue 116 extending therefrom and lying against the inner surface of the member 112. The tongue 116 has lips 117 formed thereon by which the tongue and partition member are secured to the member 112. A saddle 119 is formed on the tongue 116, as in the previous embodiment of the invention to facilitate engagement of the member 116 with the connector member 114. In this instance, the lower surface of the partition member 115 is of arcuate contour extending transversely of the member 112 and the lower edge portions of the partition member 115 are immediately adjacent and above the flanges 140, being slidably carried thereon. In order to form a closure for the partition member 115 and the toe engaging member 112, a cover plate 125 is provided for releasable engagement with these portions of the shoe disinfectant device. The cover plate 125 is of an arcuate contour transversely of the member 112 and is formed of complementary shape to the inner sruface of the member 112 with which the cover engages. The cover 125 may have a downwardly directed flange 126 formed on the rear portion thereof and a control button or knob 127 may be associated with the flange 126 to facilitate withdrawal of the cover plate from engagement with the toe engaging member 112 and partition member 115.

As indicated, the cover 125, partition member 115 and toe engaging member 112 cooperate to form an enclosure which is adapted to receive a solid disinfectant member therein. As such disinfectant volatilizes and disappears with the passage of time, the cover 125 may be easily removed for insertion of an new block of disinfectant material into the shoe disinfectant device. The toe engaging member 112 may have holes 128 formed therein, the partition member has holes 129 formed therein, and the cover plate 125 has holes 131 formed therein, all of which holes cooperate to permit free air circulation around the block of disinfectant material positioned within the device of the invention. One of such blocks is indicated at B in Fig. 7. Circulation of air around the disinfectant block is facilitated due to the arcuate contour of the cover plate 125 so that even when such toe engaging device is in snug engagement with the inside of the toe portion of the shoe, the cover plate 125 is spaced from the shoe at the bridging portion of the cover plate.

It will be seen that the partition members 15 and 115 may be secured within the toe engaging member in any desired manner but that formation of integral tongues on these members simplifies the method of attachment of such partition members to the remainder of the device when such tongues are used both to secure the partition members to the toe engaging members and also to attach the toe engaging members to the connector members of the shoe disinfectant device.

Any desired disinfectant may be used and generally the disinfectant should have a small amount of suitable perfume, such as pine oil, mixed therewith to make its odor more pleasant. Disinfectants, such as formaldehyde gas disks, paradichlorobenzene, and di-isobutyl cresoxy ethoxy ethyl dimethyl benzyl ammonium chloride ("Hyamine 10–X") are examples of suitable materials that could be used with the shoe disinfectant device of the invention.

Normally the shoe tree portion of the device of the invention will be formed from conventional material, such as sheet metal and wire and the partition members, covers, etc., are also formed from sheet metal. However, the partition members, sides, covers, etc., may be formed in any desired manner and plastic material or other substances could be used to form these portions of the device since they do not carry any great stress thereon.

By use of the construction of the invention, shoes can be kept clean and free from objectionable germs without wetting the shoe by a disinfectant.

While two complete embodiments of the invention have been disclosed herein, it will be appreciated that modification of these particular embodiments of the invention may be resorted to without departing from the scope of the invention as defined by the appended claims.

Having thus described my invention, what I claim is:

1. A shoe tree comprising a toe engaging member, a heel engaging member, means pivotally connecting said members together, said toe engaging member being of substantially inverted U-shape in section and having an inwardly extending flange formed at its lower edges, a vertically extending partition member secured to said toe engaging member at the rear portion thereof, and a removable plate member adapted to engage slidably with said flanges and form an enclosure with said toe engaging member and said partition member.

2. A shoe tree comprising a heel engag-

ing member, a toe engaging member having substantially arcuate upper and lower surfaces, a wire member pivotally secured to said heel engaging member, a partition member fixedly associated with said toe engaging member and extending from the lower arcuate surface thereof but lying within the confines of such member, said partition member having a tongue formed thereon, said tongue being pivotally engaged with said wire member, and a cover plate slidably engaged with said partition member and toe engaging member for forming an enclosure therewith for the reception of disinfectant material, said cover plate being of arcuate shape in transverse section to space the center section thereof from a shoe with which it is engaged.

3. A shoe tree comprising a heel engaging member, a toe engaging member having substantially arcuate upper and lower surfaces, a connector member pivotally secured to said heel engaging member, a partition member fixedly associated with said toe engaging member and extending from the lower arcuate surface thereof but lying within the confines of such member, said partition member being pivotally engaged with said connector member, and a cover plate removably engaged with said partition member and toe engaging member for forming an enclosure therewith for the reception of disinfectant material, said cover plate having apertures therein for air and gas flow therethrough.

4. A shoe tree comprising a heel engaging member, a toe engaging member having substantially arcuate upper and lower surfaces, a connector member pivotally secured to said heel engaging member, a partition member fixedly associated with said toe engaging member on the lower arcuate surface thereof but lying within the confines of such member, said partition member and said toe engaging member forming a downwardly open enclosure, said partition member being pivotally engaged with said connector member, and a cover plate associated with the lower edge of said partition member for closing the bottom of the enclosure and adapting it to receive disinfectant material therein.

5. In a shoe disinfectant device, a toe engaging member insertable within a shoe, said toe engaging member being of substantially inverted U-shape in section, a vertically extending partition member secured to and within said toe engaging member, a cover plate hingedly secured to the lower end of said partition member, and a side member of substantially C-shape in horizontal section, the ends of said side member being engaged with said partition member, the upper edges of said side member being substantially adjacent the lower surface of said toe engaging member, said cover plate being of such size as to engage with the lower edge of said side member and form an enclosure therewith.

6. In a shoe disinfectant device, a toe engaging member insertable within a shoe, said toe engaging member being of substantially inverted U-shape in section, a vertically extending partition member secured to said toe engaging member, a cover plate associated with the lower end of said partition member, and a side member of substantially C-shape in horizontal section and being secured to said partition member to form part of an enclosure therewith, said cover plate being of such size and being adapted to engage with the lower edge of said side member and form an enclosure therewith.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,086,705	Havener	Feb. 10, 1914
1,552,082	Riley	Sept. 1, 1925
2,230,469	Salin	Feb. 4, 1941