April 28, 1964 E. RICH 3,130,726

FOOT POWDER APPLICATOR

Filed March 13, 1961

FIG. 1.

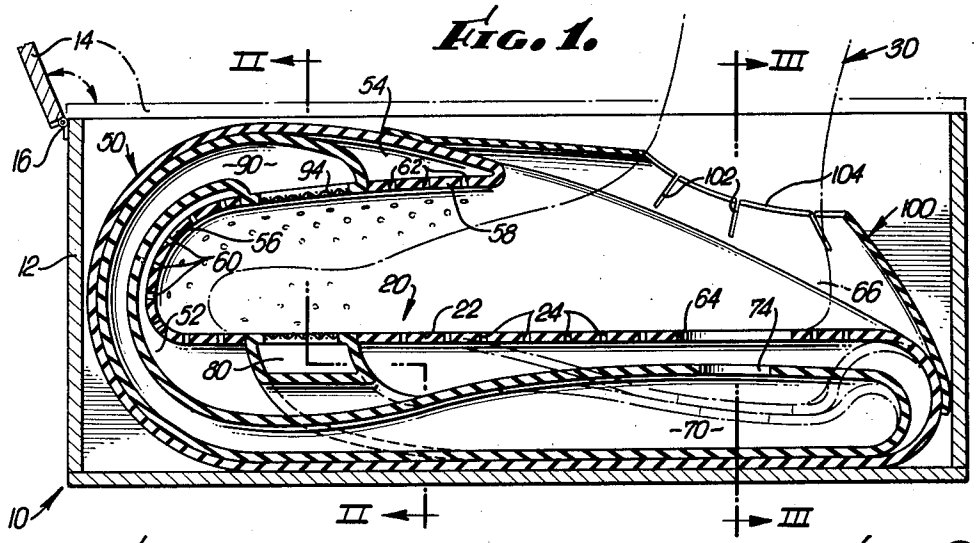


FIG. 2.

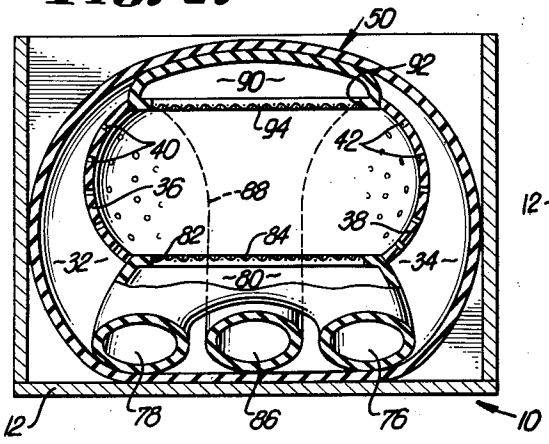


FIG. 3.

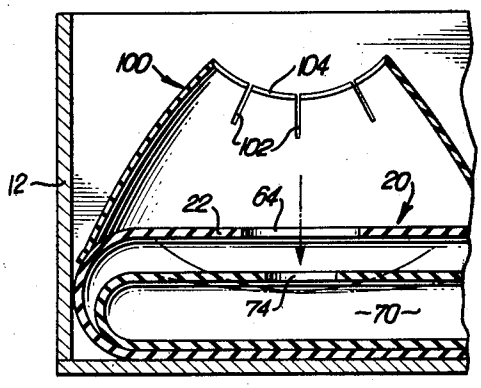
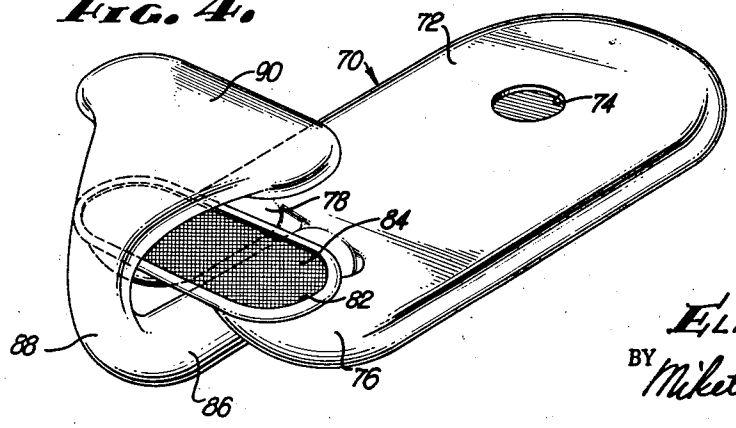


FIG. 4.



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FOOT POWDER APPLICATOR

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The present invention relates generally to a device for dispensing a comminuted or powdery substance and applying it to a desired surface, and more particularly describes an applicator actuated by the user for spraying foot powder upon the user's foot.

In the preferred form of the invention hereinafter described and illustrated, the operative parts of the invention are contained within a suitable box constituting a housing for such parts. Desirably, such housing may be in the form of a wooden box provided with a removable cover so that the top may be opened during use. Normally the box rests upon the floor in use. Within the box and desirably mounted on the bottom thereof is a chamber defined by walls of a flexible, resilient material such as rubber or rubber substitute. The chamber includes an elongated central section having a length and width a little greater than the corresponding dimensions of the foot of the user. In addition to the central section, the chamber also includes a pair of laterally spaced flank sections extending curvilinearly upwardly within the housing box, as well as a front upper section extending curvilinearly upwardly and slightly rearwardly. The upper wall of the central section as well as the concave inner walls of the flank sections and the front upper section are all provided with a number of spaced perforations or small apertures.

In the use of the device, a quantity of foot powder or similar material to be sprayingly applied to the foot is poured into the chamber through an enlarged opening in the rear portion of the central section upper wall. The powder is then distributed throughout the interior of the chamber as by shaking the box slightly. When, now, a user inserts his foot into the pocket formed by the central section, the flank sections and the front upper section and moves his heel downwardly over the enlarged opening in the central section upper wall, the continued downward movement of the heel causes powder to be blown through the perforated apertures above mentioned, directed at the foot resting upon the central section of the chamber.

The preferred form of the invention also includes a smaller chamber formed within the first chamber just mentioned, the second chamber being likewise made of wall portions of rubber or rubber substitute, being flexible and resilient. The inner or second chamber similarly has an opening formed in its upper wall generally in vertical alignment beneath the opening of the central section upper wall of the first chamber. The inner chamber includes communicating channels terminating in a pair of vertically spaced outlet members, desirably provided with a perforated cover of suitable material, disposed above and beneath the position assumed by the toes of the user. As in the case of the first chamber, foot powder or the like is introduced into the interior of the inner chamber also, and downward pressure of the heel of the user closes the enlarged opening in the inner chamber and forces powder outwardly through the outlet members so that the toes of the user receive a specially directed, relatively heavy application of foot powder.

Flexible shield means are desirably provided within the housing box fitting loosely about the ankle of the user so that the possibility of powder being sprayed outwardly of the box is minimized and virtually eliminated. Desirably, the shield means take the form of a number of inwardly directed flexible leaves made of rubber or the like, their inner edges forming an ankle-receiving opening generally aligned above the enlarged openings of the chambers previously described.

Accordingly, it is a principal object of the present invention to provide a novel foot powder applicator actuated by the individual to spray a quantity of powder upon the foot within a relatively enclosed space. Other objects are to provide such a device having a chamber formed of flexible, resilient material and provided with an enlarged opening which may be sealed or blocked by the heel of the user during use, the inner wall of such chamber being perforated with a multiplicity of small apertures through which powder is sprayed; to provide such a device wherein a second chamber is contained within the first chamber and similarly provided with an enlarged opening closable by the heel of the user during use, such inner chamber including channel means terminating in a pair of vertically disposed outlets adapted to spray powder from within such inner chamber onto a selected portion of the body of the user; to provide such a device including flexible means for preventing spraying or scattering of the powder outwardly of the device; and for allied objects and purposes as will be understood from a study of the following description of a preferred embodiment of the invention taken in connection with the accompanying drawing in which:

FIG. 1 is a vertical sectional view of a foot powder applicator embodying the present invention, the upper cover being shown in dotted outline in closed position and being fragmentarily shown in full lines in open position, the user's foot and ankle being shown in dotted outline in its initial position, and the flexible upper walls of both chambers being shown in dotted outline in their positions assumed when the user's heel is moved downwardly for actuation of the applicator.

FIG. 2 is a sectional view taken along the broken line II—II of FIG. 1.

FIG. 3 is a vertical sectional view taken along the line III—III of FIG. 1.

FIG. 4 is a perspective view of the inner chamber of the actuator, clarifying the construction of it and its vertically spaced outlet openings.

Referring now in detail to the drawing, there is shown in FIG. 1 a box indicated generally at 10 constituting the housing for the device of the present invention. The box may be made of wood or similar material and includes a rear wall 12 at the upper end of which a cover 14 is hingedly attached at 16. Within the housing 10 means are provided forming a large chamber indicated generally at 20 and including a central section having an upper wall 22 which is perforated with a number of spaced apertures 24 extending therethrough. The central section of the chamber extends virtually the length of the housing 10 and is long enough to accommodate the length of the foot of the user, the foot being indicated generally at 30 and being shown in dotted outline in FIG. 1. In addition to the central section 20, the chamber also includes a pair of laterally spaced flank sections, a left flank section being indicated generally at 32 and a right flank section being indicated generally at 34 in FIG. 2. Each of the flank sections is in communication with the central section 20 and extends generally curvilinearly upwardly therefrom as best seen in FIG. 2. The inner walls 36 and 38 respectively defining the flank sections are perforated with a large number of spaced apertures extending therethrough in a manner similar to the apertures 24 formed in the upper wall 22 previously described, the apertures being indicated at 40 and 42 respectively. Forwardly of the central section 20 the chamber also includes a front upper section indicated generally at 50 and comprising a portion 52 extending generally arcuately upwardly from the

end of the central section and an overlying portion 54 which may project approximately half the length of the foot rearwardly, the portion 54 being spaced substantially above the central section 20 so that such portion, together with the flank sections 32 and 34 form with the central section 20 a pocket within which to loosely receive the foot of the user. The inner walls 56 and 58 respectively of the portions 52 and 54 are perforated with a large number of spaced apertures 60 and 62 respectively communicating the interior of the chamber with the pocket.

The upper wall 22 of the central section 20 is provided in its rear part with an enlarged opening 64, desirably circular in form, which is effectively blocked or closed by the heel 66 of the user when his foot is inserted in the pocket. Keeping in mind that the upper wall 22 defining the central section 20 of the chamber is flexible and resilient, it will be seen that downward movement of the user's heel 66 into the position indicated in FIG. 1 in dotted outline moves the upper wall downwardly, thereby diminishing the internal volume of the chamber. With foot powder or other comminuted material within such chamber, the downward movement just described causes the powder to be expelled or sprayed through the apertures 24 of the central section, 40 and 42 of the flank sections and 60 and 62 of the front upper section. Thus, the powder is sprayed upon the foot in the pocket.

It may be desirable that a selected portion of the foot receive an additional supply of sprayed powder or that such powder be sprayed thereon with additional force. Means are provided in accordance with the present invention for accomplishing this and in the present illustrative embodiment of the invention such means are exemplariiy shown as including an inner chamber contained within the main chamber heretofore described. The preferred configuration of the inner chamber will be best understood by reference first to FIG. 4. As there appears, the inner chamber includes a main section indicated generally at 70 having an upper wall 72 of flexible material and provided in its rear portion with an enlarged opening 74. Projecting forwardly from the main section 70, there is a pair of laterally spaced channels 76 and 78 which curve upwardly and merge in a junction portion 80 (see FIG. 1) and the thus combined channels terminate upwardly in an outlet opening 82 desirably covered by a perforated or foraminous screen or the like 84. Between the two channels 76 and 78 and projecting forwardly from the main section 70 is a third channel 86 in communication with the main section, and this latter-named channel continues forwardly into an upwardly curved portion 88 which continues upwardly and rearwardly to terminate in an enlarged portion 90 provided with a downwardly directed opening 92 (see FIG. 2) covered by a perforated or foraminous screen 94 similar to screen 84 previously described, screen 94 being spaced above screen 84 and in vertical alignment therewith. Desirably, the lower outlet opening 82 and its screen 84 are received in an opening formed in the upper wall 22 of the main chamber central section 20, the screen being substantially flush with such upper wall. Similarly, the upper outlet opening 92 and its associated screen 94 are received in an opening formed in the inner wall 58 previously referred to and desirably the parts are in flush alignment as seen in FIG. 1. The enlarged opening 74 of the inner chamber is itself in substantial vertical alignment beneath the opening 64 formed in the upper wall 22 of the main chamber.

With reference again to FIG. 1, it will be seen that the downward movement of the user's heel 66 previously referred to causes to move downwardly not only the upper wall 22 of the main chamber but also the upper wall 72 of the inner chamber, if the heel is pressed far enough downwardly. Moreover, it is to be noted

that the opening 74 will be effectively sealed or blocked by the user's heel, so that the downward movement of the heel causes a compression of the air including powder distributed therethrough within the inner chamber and such powdery air is therefore expelled through the screens 84 and 94 to deliver an additional supply of foot powder to the toes of the user placed between the screens as seen in FIG. 1.

In order to prevent powder from being blown outwardly of the applicator proper, there may be provided shield means indicated generally at 100 in FIGS. 1 and 3. The shield is made of a flexible resilient material such as rubber or a rubber substitute and projects generally apwardly from the main chamber. By preference the shield 100 has provided therein a number of slits 102 extending inwardly from a central opening 104 adapted to receive the user's foot and to cling closely to the user's ankle when the foot is in place. Thus the shield 100, in the area adjacent the ankle proper, includes in effect a number of flexible leaves which tend to cling closely to the ankle and thereby minimize the expulsion of powder-laden air upwardly past the angle.

Accordingly, it will be seen that there is here provided a foot powder applicator easily actuated by the user and economically made of rubber or similar materials in the main. Modifications and changes from the particular exemplary embodiment of the invention hereinabove described and shown may occur to those skilled in the art and all such modifications and changes not departing from the spirit of the invention are intended to be embraced within the scope of the appended claims.

I claim:

1. A foot-actuated applicator for foot powder or the like comprising:

means forming a chamber including a longitudinally extending central section provided with a horizontally disposed upper wall having a resilient rear portion provided with a relatively large opening and a pair of upwardly turned flank sections on opposite sides of the central section and in communication therewith, the front portion of the chamber forming means being curved upwardly and rearwardly to form an upper section spaced above the forward portion of the central section and in communication therewith, the upper wall of the central section, the inwardly facing walls of the flank sections and the concave inner wall and lower wall of the upper section being perforated by a plurality of relatively small apertures, said flank sections and upper section including imperforate outer walls spaced outwardly from said inwardly facing walls and from said concave inner wall and lower wall respectively;

and means forming a second chamber lying principally within said first chamber, the upper wall of the second chamber including a resilient portion having a relatively large opening spaced beneath said first named large opening, said second chamber forming means including a forwardly projecting channel terminating in an upwardly directed horizontally disposed opening through the central section upper wall, and a second channel projecting forwardly, then upwardly and then rearwardly and terminating in a downwardly directed horizontally disposed opening through said upper section lower wall and spaced above the opening of the first channel.

2. The invention as defined in claim 1 wherein the second chamber forming means includes a third forwardly projecting channel spaced from the first named channel and merging therewith in a junction portion adjacent said upwardly directed horizontally disposed opening.

3. A foot-actuated applicator for foot powder or the like comprising:

means forming a chamber including a longitudinally extending central section provided with a horizontally disposed upper wall having a resilient rear

portion provided with a relatively large upwardly facing opening blockable by a user's heel extending thereacross and a pair of upwardly turned flank sections on opposite sides of the central section and in communication therewith, said flank sections including inwardly facing walls perforated by a plurality of relatively small apertures and imperfortate outer walls spaced outwardly therefrom;

and second chamber forming means disposed within said first chamber and having a resilient upper wall provided with an enlarged opening disposed beneath the first named enlarged opening, and a channel terminating in a horizontally disposed upwardly facing opening through said central section upper wall substantially forward of said enlarged openings.

4. The invention as defined in claim 3 wherein said first named chamber includes a front upper section in communication with the central section and comprising an arcuately upwardly extending portion and a portion overlying the front part of the central section and spaced thereabove to receive therebetween the front part of the user's foot, said overlying portion including a lower wall perforated by a plurality of apertures substantially smaller than said enlarged opening and an imperforate upper wall spaced from said perforated lower wall.

5. A foot-actuated applicator for foot powder of the like comprising:

means forming a powder-containing chamber having a generally horizontal upper wall shaped to underlie a user's foot and including a resilient heel-receiving rear portion provided with an upwardly facing opening blockable by the bottom of the user's heel extending thereacross,

said chamber including a central section bounded upwardly by said upper wall and another section extending curvilinearly upwardly therefrom and in communication therewith, including an upwardly facing wall perforated by a plurality of apertures substantially smaller than said opening and an imperforate outer wall spaced from said inwardly facing wall.

6. The invention as defined in claim 5 wherein said chamber includes a pair of flank sections, one constituting said other section, in communication with the central section and extending curvilinearly laterally and upwardly from opposite sides thereof, the flank sections including concave inner walls perforated by a plurality of apertures substantially smaller than said opening and imperforate outer walls spaced outwardly from said concave inner walls.

7. The invention as stated in claim 5 wherein said chamber also includes a front upper section in communication with said central section and comprising an arcuately upwardly extending portion and a portion overlying the front part of the user's foot, the overlying portion including a lower wall perforated by a plurality of apertures substantially smaller than said opening and an imperforate upper wall spaced from said overlying portion lower wall.

8. The invention as stated in claim 5 wherein said other section constitutes a front upper section in communication with said central section and comprising an arcuately upwardly extending portion and a portion overlying the front part of the central section and spaced thereabove to receive therebetween the front part of the user's foot, the overlying portion including a lower wall perforated by a plurality of apertures substantially smaller than said opening and an imperforate upper wall spaced outwardly from said overlying portion lower wall.

9. The invention as stated in claim 8 including second chamber forming means disposed within said first chamber and having a resilient generally horizontal upper wall provided with an upwardly facing opening spaced beneath said first named opening, said second chamber including a channel projecting forwardly, then upwardly and then rearwardly and terminating in a downwardly directed opening through the lower wall of said overlying portion substantially forward of the first two named openings.

10. The invention as stated in claim 5 including second chamber forming means disposed within said first chamber and having a resilient generally horizontal upper wall provided with an upwardly facing opening spaced beneath said first named opening, said second chamber including a forwardly extending channel terminating in an upwardly directed opening through the upper wall of the first chamber forming means substantially forward of the first two named openings.

References Cited in the file of this patent

UNITED STATES PATENTS

2,484,659	Swerdlow et al.	Oct. 11, 1949
2,911,973	Chieffo	Nov. 10, 1959