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3,378,009

FOOT CONDITIONING APPARATUS

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2 Sheets-Sheet 1

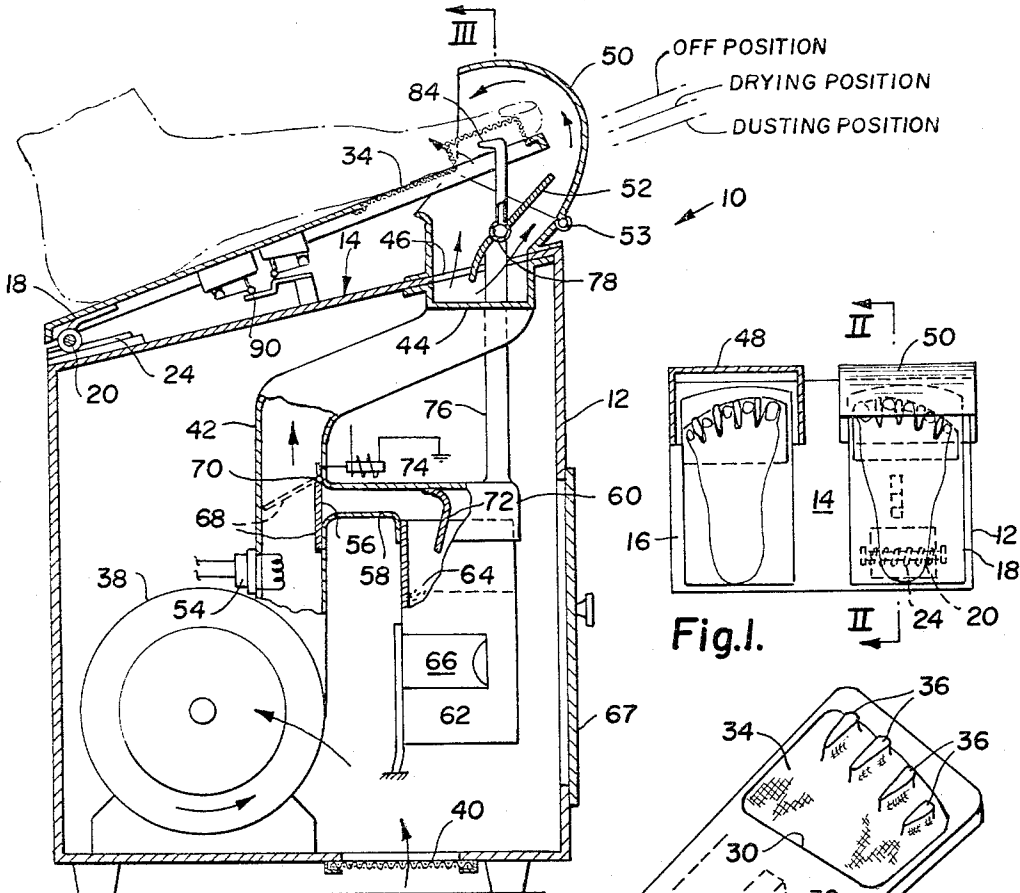


Fig. 2.

Fig. 1.

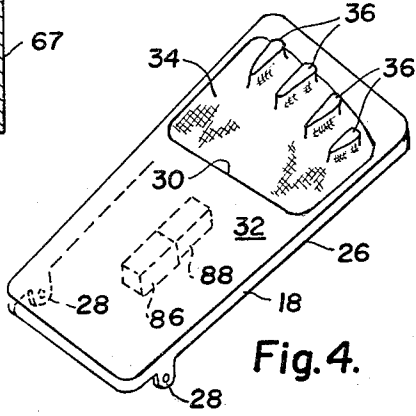


Fig. 4.

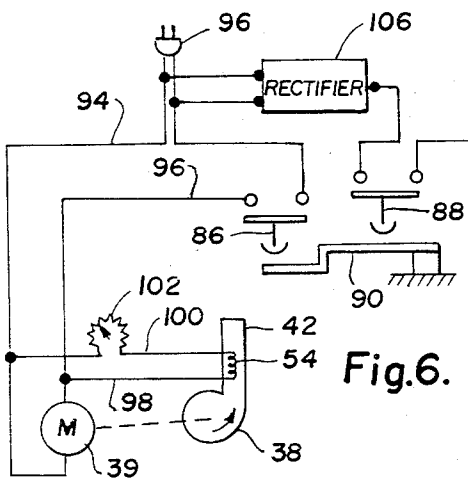


Fig. 6.

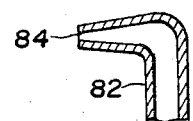


Fig. 5.

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2 Sheets-Sheet 2

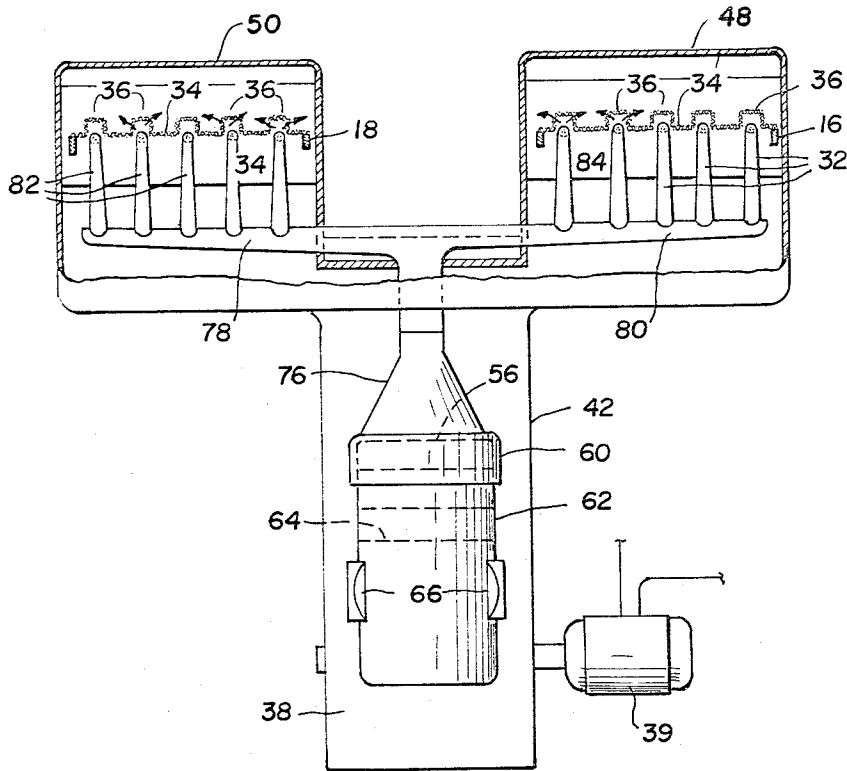


Fig.3.

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1

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FOOT CONDITIONING APPARATUS

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4 Claims. (Cl. 128-266)

ABSTRACT OF THE DISCLOSURE

This patent discloses foot conditioning apparatus comprising air-permeable toe-separating means and means for sequentially directing first air and then medicated powder to the vicinity of the toes through the air-permeable toe-separating means.

This invention relates to foot conditioning apparatus, and more particularly to foot conditioning apparatus wherein the toes are sequentially dried and then dusted with a powder.

As is known, there is a considerable amount of athlete's foot and other allied foot diseases or irritants which require treatment. Most of these afflictions are fungus of one form or another whose growth is enhanced by moisture remaining between the toes after bathing or showering. Perspiration also enhances the growth of these fungi.

The conventional methods of treatment include applying an ointment at bedtime which is washed off in the morning, the foot dried as thoroughly as possible, followed by dusting with a medicated foot powder of various kinds. As is known, the foot cannot be completely dried, especially between the toes, and the moisture remaining nullifies, at least in part, the power of the foot powder in combating the fungus growth. Furthermore, the foot powder cannot be applied without spillage which, of course, is very undesirable.

Accordingly, as an overall object, the present invention seeks to provide apparatus for conditioning the feet, especially the area between the toes.

Another object of the invention is to provide apparatus whereby the foot, especially the area between the toes, is dried thoroughly and thereafter dusted with a powder.

A further object of the invention is to provide foot conditioning apparatus wherein the toes are maintained in a spread condition exposing the area therebetween for conditioning.

In accordance with the present invention, a foot conditioner is provided comprising a housing having at least one and preferably two foot rests adapted to support the feet of a person. Means is provided on each of the foot rests for maintaining the toes in a spread condition whereby the areas between the toes are exposed for conditioning. While in the spread condition, the toes are subjected to a stream of heated air for a period of time sufficiently to dry the same. Thereafter, a powder, medicated or otherwise, is sprayed onto the toes.

In the apparatus of the invention, the above-described sequence of operation is controlled by the person conditioning his feet. That is to say, by depressing one of the foot rests, means is activated for directing the stream of hot air onto the toes. Thereafter, by further depressing the same foot rest, second means is activated for spraying a powder onto the toes. The present apparatus is provided with circuit means operable by depressing the foot rest

2

for sequentially activating the warm air directing means and the powder spraying means. The depressable foot rest is, of course, biased in a raised or off position in which the apparatus is deactivated.

5 The above and other objects and advantages of the present invention will become apparent from the following detailed description by reference to the accompanying drawings, in which:

FIGURE 1 is a plan view of the foot conditioning apparatus of the invention;

10 FIG. 2 is a cross-sectional view taken along the line II—II of FIG. 1;

FIG. 3 is a cross-sectional view taken along the line III—III of FIG. 2;

15 FIG. 4 is an isometric view of a foot rest;

FIG. 5 is a fragmentary cross-sectional view of a nozzle employed to spray a powder; and

20 FIG. 6 is a schematic representation of a control circuit suitable for controlling the apparatus of the invention.

Referring now to FIGS. 1 to 5, there is shown a foot conditioning apparatus 10 comprising a housing 12 including, in part, a sloped upper wall 14. Supported on the upper wall 14 are foot rests 16, 18 which are adapted to support a left foot and a right foot, as shown. The foot rest 16 is rigidly secured to the upper wall 14. The foot rest 18, however, is pivotally supported at its lower end on a pin 20 so that it may be depressed by a foot 22, shown in dash-dot outline. A spring 24, coiled about the pin 20, has its opposite ends engaged with the foot rest 18 and the upper wall 14. The spring 24 biases the foot rest 18 into a raised position which, as will be described, corresponds to the off position wherein the apparatus is deactivated.

35 The preferred construction of the foot rest 18 will now be described with reference to FIGS. 2 and 4. It is to be understood that the foot rest 16 is similarly constructed except for those elements noted. The foot rest 18 is preferably formed in a one-piece cast body 26 having perforated ears 28 (not provided on the foot rest 16) adapted to receive the pin 20 and an opening 30 cut in its upper wall 32.

A perforated member 34 underlies the opening 30 and is secured to the upper wall 32. The perforate member 34 is formed with upwardly extending projections 36 spaced so that the projections will fit between the toes of a foot and thereby maintain the toes in a spread condition as best shown in FIG. 1. The projections 36 serve to expose the areas between the toes to the drying action of the heated air and for dusting with a powder. The perforate member 34 as well as the projections 36 are adapted to pass heated air and powder (as will be described) and, therefore, are preferably formed from a wire mesh material having good corrosion resistance.

45 The air is preferably supplied by a blower 38 driven by a motor 39, both of which are disposed within the housing 12. Alternatively, the air could, instead, be provided by a cylinder of compressed air. A grille 40 provided, for example, in the lower wall of the housing 12, supplies air from exteriorly of the housing 12 to the blower 38. Connected to the outlet of the blower 38 is a conduit 42 including a horizontal section 44, best shown in FIG. 3, which conveys the air to openings 46 (FIG. 2) in the upper wall 14. The air then passes through the opening 46 into hoods 48, 50 which direct the air above and below the

foot rests 16, 18. Each of the hoods 48, 50 is provided with a baffle 52 which directs a portion of the air to the upper region of the baffles 48, 50 as shown by the arrows. Furthermore, each of the hoods 48, 50 is preferably formed in sections and hinged, as at 53, whereby the upper section of the hoods 48, 50 may be pivoted backward out of the way to permit thorough cleaning of the foot rests 16, 18.

The air discharged by the blower 38 is heated, for example, by a heater element 54, schematically illustrated in FIG. 2. The heater element 54 is preferably of the variable type so that the temperature of the air may be set in accordance with the desires of the person using the apparatus 10.

The conduit 42 is provided with an opening 56 which is preferably located downstream of the heater element 54. A branch conduit 58 communicates with the opening 56 and terminates in a cap-like member 60 which is adapted to receive, in sealed relation, a container 62 having a supply of powder 64 therein. The container 62 is supported by a spring clip 66 after first being inserted into the cap-like member 60. A door 67 secured to the rear wall of the housing 12 permits entrance into the interior of the housing 12 for replenishing the supply of powder 64.

Within the conduit 42, there is provided a flapper 68 which is hinged as at 70 to the conduit 42. The flapper 68 is pivotal between a first position wherein it overlies and blocks the opening 56 leading to the branch conduit 58 and a second position, shown in dotted lines, wherein it redirects the air from the blower 38 into the branch conduit 58 and thence into contact with a baffle 72 secured to the cap-like member 60, which directs the air downwardly onto the powder 64. The flapper 68 may be mechanically operated, that is, by linkage means connected to the foot rest 18. However, it is preferred that the flapper 68 be operated by a solenoid 74, schematically illustrated in FIG. 2, of the type which is spring loaded to position the flapper 68 in the aforesaid first position.

The powder 64 is conveyed by the air up through a conduit 76 and into branch conduits 78, 80. Each of the branch conduits 78, 80 conveys the powder to a plurality of secondary conduits 82 each of which terminate in a nozzle 84. The nozzles 84 will, of course, spray the powder onto the areas between the toes.

As stated above, the foot rest 18 is pivotally supported so that it may be depressed from a normally elevated position corresponding to an off position; to a drying position wherein the blower 38 and the heater element 54 are activated to dry the feet; and then to a dusting position wherein the air is directed into the container 62 for conveying the powder 64 to the nozzles 84 and thence onto the feet. A suitable control circuit for operating the apparatus 10 is illustrated in FIG. 6.

Referring now to FIGS. 2 and 6, two switches 86, 88 are mounted on the underside of the foot rest 18 and positioned for successive actuation by a spring arm 90 supported by the upper wall 14. It should be understood at this time, that the switch 86 energizes the blower motor 39 while the switch 88 energizes the solenoid 74.

In FIG. 6, a plug 92 is shown having power conductors 94, 96 electrically connected to the blower motor 39. The switch 86 is provided in the conductor 96, for example, to control the energization and deenergization of the blower motor 39. The heater element 54 is electrically connected by conductors 98, 100 to the conductors 94, 96. A rheostat 102 is provided in conductor 100, for example, for controlling the heat output of the heater element 54. Energization of the blower motor 39 is accompanied by simultaneous energization of the heater element 54.

The switch 88 is provided in a conductor 104 which is connected to the solenoid 74 and to a rectifier 106 which, in turn, is connected to the power conductors 94, 96. The

switch 88 is closed by the spring arm 90 after the closing of the switch 86.

In operation, a person places his foot on the foot rests 16, 18 with the projections 36 inserted between his toes. The foot rest 18 is depressed until the switch 86 is closed, thereby energizing the blower motor 39 and the heater element 54. A gentle stream of heated air will issue from the conduit 42 and be directed by the hoods 48, 50 onto his toes.

When the user feels that his toes are dry, he further depresses the foot rest 18 so as to close the switch 88. This action energizes the solenoid 74 which, in turn, pivots the flapper 68 into the dotted-line position shown in FIG. 2, whereupon the air is directed into the container 62. The stream of air is directed downwardly onto the powder 64 causing a turbulent action to be produced. The powder is thus picked up by the air and conveyed to the nozzles 84 and thence onto the toes. When a sufficient amount of the powder has been applied, the user releases the foot rest 18, causing the solenoid 74 to be deenergized and thereby immediately return the flapper 68 to block the conduit 56. No further powder will be sprayed. Upon releasing the foot rest 18, the blower motor 39 is also deenergized.

It should be evident that the apparatus 10 of the invention could be provided with push-button control switches as an alternative to the foot operated switches 86 and 88.

Although the invention has been shown in connection with one specific embodiment, it will be readily apparent to those skilled in the art that various changes in form and arrangement of parts may be made to suit requirements without departing from the spirit and scope of the invention.

I claim:

1. A combined toe drying and powder applying apparatus comprising a housing, a pair of foot rests supported atop said housing, means supporting one of said foot rests for movement by depressing the foot supported thereon, a plurality of projections on each of said foot rests positioned to be inserted between the toes whereby said toes are spread exposing the areas therebetween, said projections and at least those portions of the foot rest beneath the toes being formed from perforated material, first means for conveying a stream of heated drying fluid through said foot rest onto said toes, comprising a blower, first conduit means connected to the outlet of said blower and extending through openings in said upper wall beneath said foot rest, and means adjacent said conduit means for heating the drying fluid as it flows through said conduit means, hood means surrounding said openings in said upper wall for directing a portion of said heated drying fluid onto the top of the toes, a container carried within said housing, a supply of powder in said container, said conduit means communicating at one of its ends with the interior of said container and terminating at its opposite ends in a plurality of nozzles residing in said projections, means for directing said drying fluid into said container whereby said powder is conveyed through said second conduit means to said nozzles for spraying onto said toes, and circuit means including switch means operable by depressing said foot rest for sequentially activating said blower and said directing means as desired whereby the toes are initially dried and then dusted with said powder.

2. Apparatus for drying and medicating a foot comprising, in combination, a footrest having air-permeable projections serving to separate the toes of the foot, means for directing heated air through said air-permeable projections to a portion of said foot in the vicinity of said toes, and means operable after the operation of said means for directing heated air for directing a medication in the

5

form of a powder suspended in air to said portion of said foot.

3. Apparatus as defined in claim 2, said combination further comprising switch means for actuating sequentially first the said means for directing heated air and then the said means for directing a medication. 5

4. Apparatus as defined in claim 3, characterized in that said switch means is operated by motion of said foot-rest about a pivot from a first position in which both said means for directing heated air and said means for directing a medication are inoperative to a second position in 10

6

which only said means for directing heated air is operative and then to a third position in which said means for directing a medication is operative.

References Cited

UNITED STATES PATENTS

881,238	3/1908	Hasbrouck	-----	128—264
2,740,207	4/1956	Starensier	-----	128—81
3,130,726	4/1964	Rich	-----	128—265

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