

April 15, 1930.

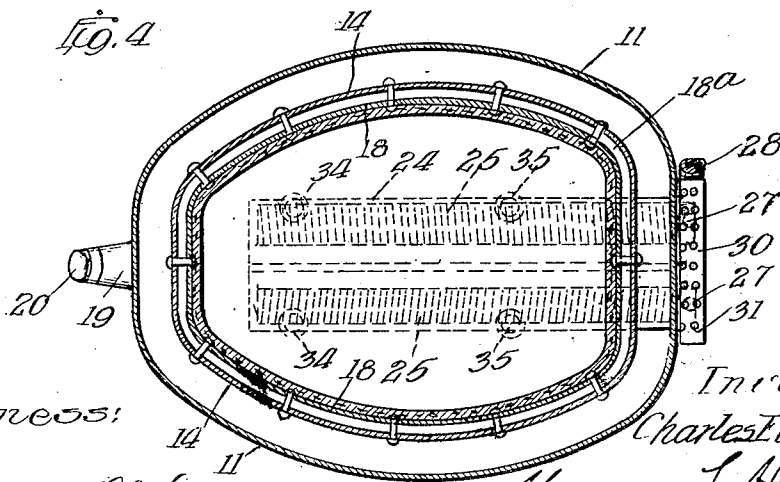
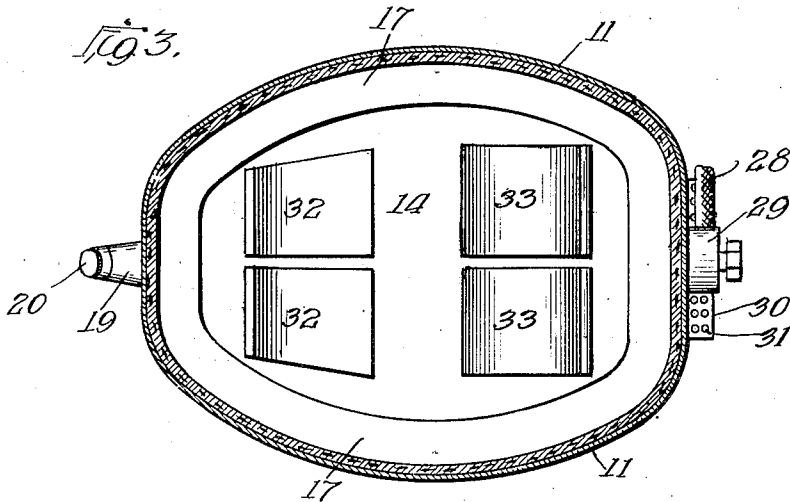
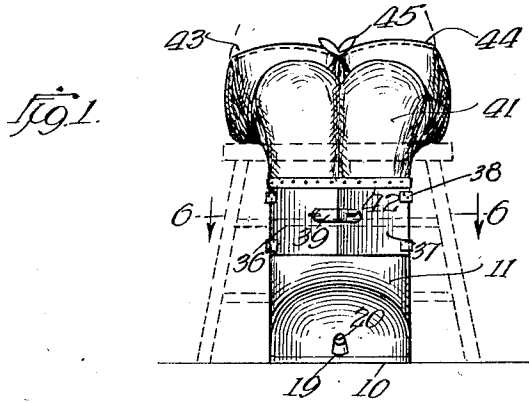
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1,754,971

VAPORIZING APPARATUS OR APPLIANCE

Filed Dec. 12, 1928

3 Sheets-Sheet 1



Witness:

Harry R. L. White

Inventor.

Charles F. Waigand

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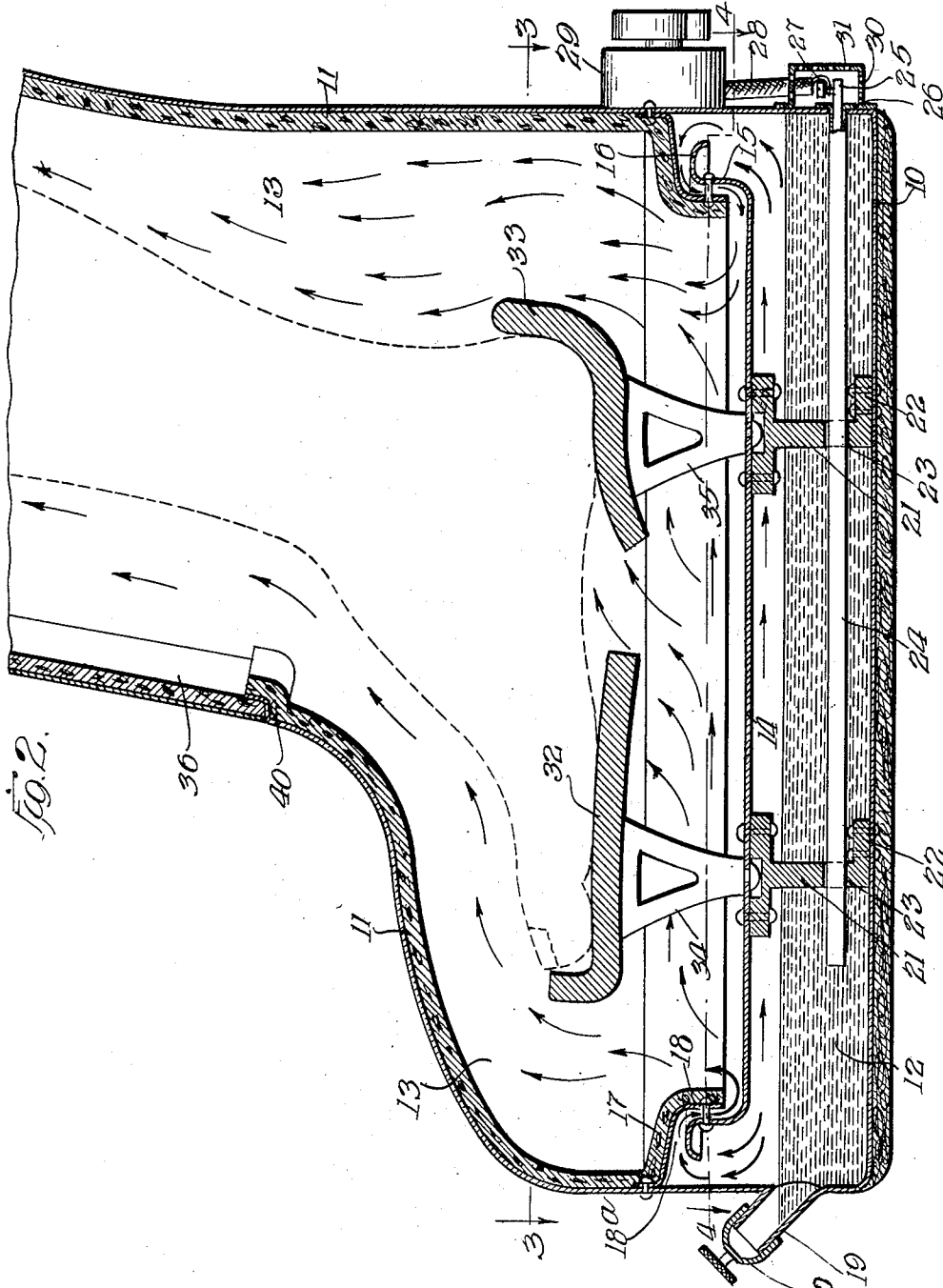
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3 Sheets-Sheet 2



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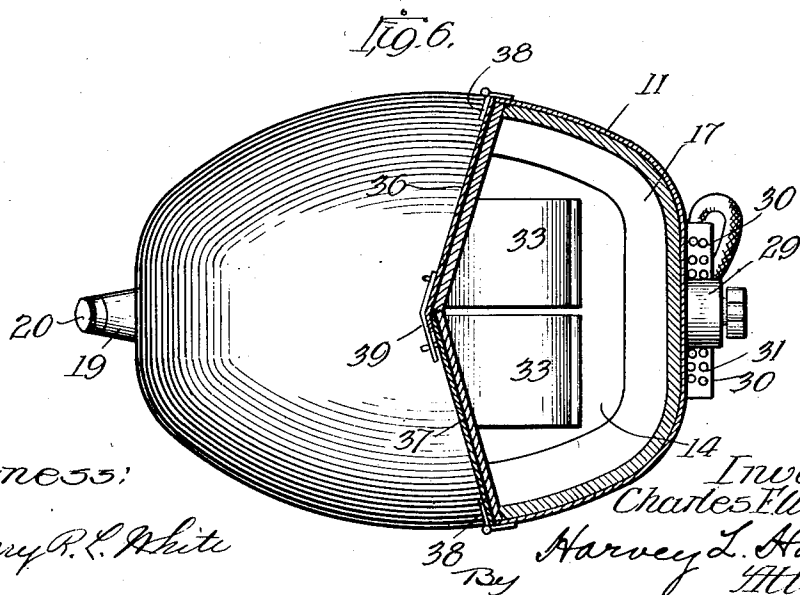
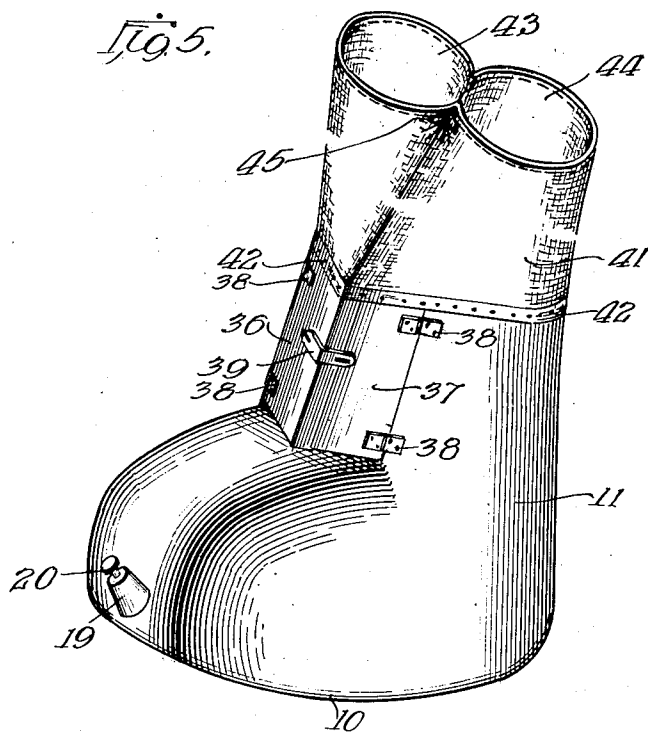
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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VAPORIZING APPARATUS OR APPLIANCE

Application filed December 12, 1928. Serial No. 325,482.

The invention relates to a vaporizing apparatus or appliance, and is designed and intended for treatment of the feet, although it may also be used for treatment of other parts of the body. More particularly it relates to a steam-boot, constructed of light weight materials and adapted to accommodate both feet at the same time. The steam-boot, being of light weight materials, principally aluminum and cork, can easily be carried from place to place.

It is well known that steam vapor is particularly effective in the treatment, relief and cure of various types of foot ailments, such as painful arches, swollen feet, tired foot and leg muscles, cold feet from poor circulation, ankylosis, arthritis, gout, synostosis, rash, rheumatism, and the like, and it is for the treatment and relief of these and other such foot ailments that the steam-boot is especially designed.

Various minerals may be added to the fluid to be vaporized, such as mercury, sulphur, and the like, to give a medicinal effect to the vapor.

It is one of the objects of the invention to provide in combination with the steam-boot an electrical heating element for vaporizing the fluid. The electrical heating element is connected with a three way switch, or rheostat, to regulate the flow of the current through the heating element.

A further object of the invention is to provide means within the steam-boot for supporting the feet in such a manner that the feet will not contact with the metallic parts within. These foot rests are adapted to support any sized foot.

Another object of the invention is to provide doors in the front wall of the steam-boot which may be opened or closed, as desired, for ventilation.

It is a further object of the invention to so construct the steam-boot that the inlet for the steam or vapor from the fluid chamber into the foot chamber of the steam boot is through a curved passageway. This prevents scalding of the feet by the hot fluid in case of an accidental jarring of the boot. The special means provided for introducing the steam

vapor within the foot chamber is also important in that the steam vapor is more properly distributed throughout the foot chamber.

Another object is to provide the upper portion of the steam-boot with a hood having two openings at the top thereof, adapted to receive the patient's legs and which may be pulled above the knees and secured in place by a drawstring.

It will be seen that the steam-boot of the construction disclosed is useful and practical, is light in weight, is portable, readily and inexpensively manufactured, is comfortable and presents a neat appearance.

The invention has the above and other objects, all of which will be explained and more thoroughly understood when read in conjunction with the accompanying drawings which illustrate one embodiment of the invention, it being obvious that changes and modifications thereof may be made without departing from the spirit of the appended claims forming a part hereof.

In the drawings:

Figure 1 is a front elevational view of the steam-boot showing the manner in which the hood may be drawn above the knees and secured in place by a draw string.

Figure 2 is a central vertical sectional view of the steam-boot showing particularly the fluid and foot chambers.

Figure 3 is a horizontal sectional view taken on the line 3—3 of Figure 2 showing the foot rests.

Figure 4 is a horizontal sectional view taken on the line 4—4 of Figure 2 showing particularly the vapor inlet and the heating elements.

Figure 5 is a perspective view of the steam-boot, and

Figure 6 is a horizontal sectional view taken on the line 6—6 of Figure 1 and showing the doors in their closed position.

The steam-boot is constructed large enough to comfortably accommodate both feet. The casing of the steam-boot is made of a light weight material, such as aluminum, and is lined with a protective material, such as cork.

The structure comprises the base portion and the side walls 11. The base portion is provided with a felt pad so that the boot

will not injure the floor when it is being used. The side walls 11 are lined with cork so as to prevent the feet from contacting with the metallic parts within the boot, and also to absorb heat from the metallic casing and to prevent as much as possible upward travel of the heat in the casing walls. The cork is affixed to the side walls 11 in any suitable manner, such as by riveting or cementing.

The inside of the boot is divided into two parts, a fluid chamber 12 and a foot chamber 13. A metallic plate 14, having an upturned portion 15, separates the two chambers one from another. The upturned portion 15 of the metallic plate 14 has an annular rim 16. The periphery of the rim 16 is bent downwardly forming a dependent wall portion or lip. The purpose of the annular rim 16 and the dependent wall portion or lip is to prevent the hot fluid from entering the foot chamber by reason of any splashing of the fluid caused by jarring of the steam-boot. The lip of the rim 16 acts as a drip for the splashed fluid and any condensation formed from the fluid.

An annular metallic flange 17 extends inwardly into the foot chamber 13 from the side walls 11 and has a dependent wall portion 18 which extends a short distance within the basin formed by the upturned portion 15 of the metallic separating plate 14. The dependent wall portion 18 of the flange 17 is held in its proper relative position to the upturned portion 15 of the metallic separating plate 14 by spacing bolts or rivets. The passage-way between the dependent wall portion 18 and the upturned portion 15 of the metallic plate 14 forms a vapor inlet 18^a into the foot chamber. The flange 17 is fastened to the side walls 11 by rivets or other suitable means.

A spout 19 is situated in the forward wall of the toe of the steam-boot and connects with the fluid chamber 12. A cap 20 is provided on the spout 19 to prevent overflowing of the fluid from the fluid chamber 12 and to prevent escape of steam from the said chamber. The cap 20 on the spout 19 may be removed to allow the steam to escape in case the pressure within the fluid chamber 12 becomes excessive.

Braces or brackets 21 are provided within the fluid chamber 12 and extend between the metallic separating plate 14 and the base portion 10 of the steam-boot. The lower part of the said braces or brackets 21 are provided with enlarged portions or flanges 22 which are secured to the base 10 by rivets, or other suitable fastening means. The upper part of the braces or brackets 21 are provided with enlarged portions or arms upon which the metallic separating plate 14 rests or to which it may be suitably secured. The metallic plate 14 may or may not be secured to the braces or brackets 21 as desired. The en-

larged portions or the arms of the braces extend laterally therefrom. Intermediate the arms and in the top of the brace or bracket a depression or indenture is formed into which the head of the screw or other fastening means which secures the foot rest to the separating plate may be located and received.

An aperture 23 is provided in the central portion of the braces or brackets 21 through which the metallic container 24 of the electrical heating elements 25 passes. The metallic box or container 24 for the electrical heating elements 25, is rectangular in shape and has its central longitudinal portion depressed forming two pockets for the electrical heating elements 25. The box or container 24 is flanged at its outer end and is riveted or otherwise suitably secured to the wall 11 of the steam-boot at 26.

The electrical heating elements 25 extend a short distance beyond the wall 11 of the steam-boot and are provided with binding posts 27. Conductors 28 are fastened to the binding posts 27 of the electrical heating elements 25 and are connected at their other end with a three way switch 29 for regulating current to pass through the electrical heating elements. A rheostatic control may, of course, be substituted for the three way switch.

A guard box 30 which is suitably secured to the wall 11 of the steam-boot encases the terminals of the heating elements 25 and forms a protection for them. The guard box 30 has perforations 31 in the walls to allow air to circulate through the guard box and thus cool the terminals of the heating elements 25. The heating elements 25 with their associated parts are so arranged that by removing the guard box 30, which is held in place by screws, the heating elements 25 may be withdrawn from the pocket in the heating element box or container 24 for repair or replacing.

Foot rests 32 and 33 are located within the foot chamber 13. They are preferably made of wood and they may be of any size or shape. They are so constructed, however, as to be comfortable for the feet. Foot rests 32 and 33 are held in their proper position by supports 34 and 35, respectively, which are riveted to the metallic separating plate 14. The rear foot rest 33 is located far enough away from the forward foot rest 32 so as to accommodate any sized foot.

The doors 36 and 37 are provided in the front wall of the steam-boot. They are secured to the side walls 11 of the steam-boot by the hinges 38. The doors are adapted to be opened or closed according to the desire of the user of the steam-boot to regulate the temperature and circulation within the boot. A locking means 39 is provided on the doors so that if desired the doors may be kept in as near a steam tight position as possible. An inset 40 in the front wall of the steam-boot

allows the doors to close flush with the walls of the steam-boot.

A hood 41 made of oiled cloth, or other suitable material, which is preferably non-porous, is fastened to the upper part of the steam-boot by snap fasteners 42 provided on the walls 11 of the steam-boot. The hood 41 is provided with openings 43 and 44 to receive the user's legs. The hood 41 is of such length that it may be drawn above the knees of the user and then secured in place by a draw string 45. The doors 36 and 37 are also provided with snap fasteners 42 so that when the doors are in a closed position the hood may be snapped into place over the doors.

To use the steam-boot the fluid chamber is first filled with water to which minerals or medicants have or have not been added, as desired, and then the electric current is turned on. The user then inserts his legs through the openings 43 and 44 of the hood 41 into the steam-boot, the feet resting on the foot rests 32 and 33. As the fluid begins to vaporize the steam or vapor passes through the passage-way 18^a formed between the dependent wall portion 18 of the flange 17 and the upturned portion 15 of the metallic separating plate 14. The vapor being introduced from the side of the foot chamber will rapidly pass throughout the chamber and contact with the feet. If the user finds that the heat from the vaporized fluid within the foot chamber is too great he may open the doors.

Having fully described my invention, what I desire to claim and secure by Letters Patent is:

1. In a vaporizing apparatus, the combination of a metallic boot, a metallic plate separating the inside portion of the boot into a foot chamber and a fluid chamber, said separating plate having an upturned portion at its periphery, an annular rim integral with the said upturned portion, said annular rim having a peripheral dependent portion, an annular flange extending inwardly from the walls of said boot, said flange having a dependent wall portion, said flange and dependent wall portion of said flange being spaced relatively to the upturned portion of said separating plate and integral rim to form a vapor inlet from the said fluid chamber to the said foot chamber, spacing members between the said flange and the said metallic separating plate, an electrical heating element within the said fluid chamber, a foot rest within the said foot chamber, a door in the upper portion of the boot adapted to be opened for ventilation, and a hood removably secured to the upper portion of the said boot, said hood having two openings at its top portion.

2. In a vaporizing apparatus, the combination of a metallic boot, said boot having a foot chamber and a fluid chamber, said fluid chamber being in communication with said

foot chamber, a metallic container within said fluid chamber having longitudinal pockets, electrical heating elements within said longitudinal pockets, said heating elements projecting beyond the wall of said boot, a guard box encasing said electrical heating element projections, said guard box having perforations in its wall, a foot rest within the foot chamber and a hood removably secured to the upper portion of the boot adapted to receive the part of the body to be treated.

3. In a vaporizing apparatus, the combination of a boot shaped receptacle, having a base portion and side walls, a horizontal plate within the receptacle dividing it into a foot chamber and a fluid chamber, said horizontal plate having an upturned peripheral flange, said peripheral flange having an annular integral rim with a dependent wall portion, an annular flange affixed to the said receptacle and extending inwardly, a dependent wall portion integral with the said flange, said flange and integral wall portion forming a passage-way with the said flange and rim of the said horizontal plate for the passage of vapor to the foot chamber, spacing members between the said annular flange and horizontal separating plate, an electrical heating element within the said fluid chamber, means for regulating the flow of current through the said heating element, a spout in the said receptacle for introducing fluid into the fluid chamber, a foot rest in the said foot chamber, said foot rest being shaped to fit the human foot, a door in the said receptacle for regulating the temperature within and a hood removably secured to the upper portion of the said receptacle adapted to be pulled above the patient's knees and secured in place by a draw string.

4. In a vaporizing apparatus, the combination of a metallic boot, a metallic plate separating the inside portion of the boot into a foot chamber and a fluid chamber, said separating plate having an upturned portion at its periphery, an annular rim integral with the said upturned portion, said annular rim having a peripheral dependent portion, an annular flange extending inwardly from the walls of said boot, said flange having a dependent wall portion, said flange and dependent wall portion of said flange being spaced relatively to the upturned portion of said separating plate and integral rim to form a vapor inlet from the said fluid chamber to the said foot chamber, an electrical heating element within the said fluid chamber and a foot rest within the said foot chamber, a brace in said fluid chamber to support said metallic plate and said foot rest, said brace being apertured to receive said electrical heating element.

5. In a vaporizing apparatus, the combination of a metallic boot, a metallic plate separating the inside portion of the boot into a

foot chamber and a fluid chamber, said separating plate having an upturned portion at its periphery, an annular rim integral with the said upturned portion, said annular rim having a peripheral dependent portion, an annular flange extending inwardly from the walls of said boot, said flange having a dependent wall portion, said flange and dependent wall portion of said flange being spaced relatively to the upturned portion of said separating plate and integral rim to form a vapor inlet from the said fluid chamber to the said foot chamber, an electrical heating element within the said fluid chamber and a foot rest within the said foot chamber, a brace in said fluid chamber to support said metallic plate and said foot rest, said foot rest being secured to said metallic separating plate, said brace having extending arms at its upper end with a depression intermediate said arms to locate and receive the fastening means of the foot rest, said brace being apertured to receive said electrical heating element.

25 In witness whereof, I hereunto subscribe my name this nineteenth day of November, A. D. 1928.

CHARLES F. WAIGAND.

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