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THERAPEUTIC BATH

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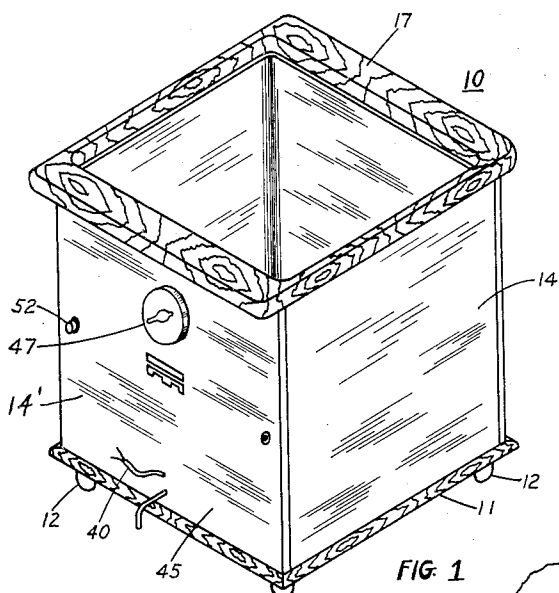


FIG. 1

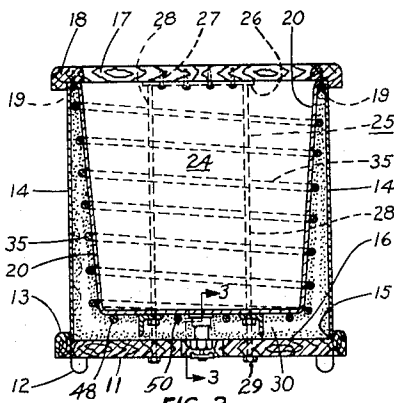


FIG. 2

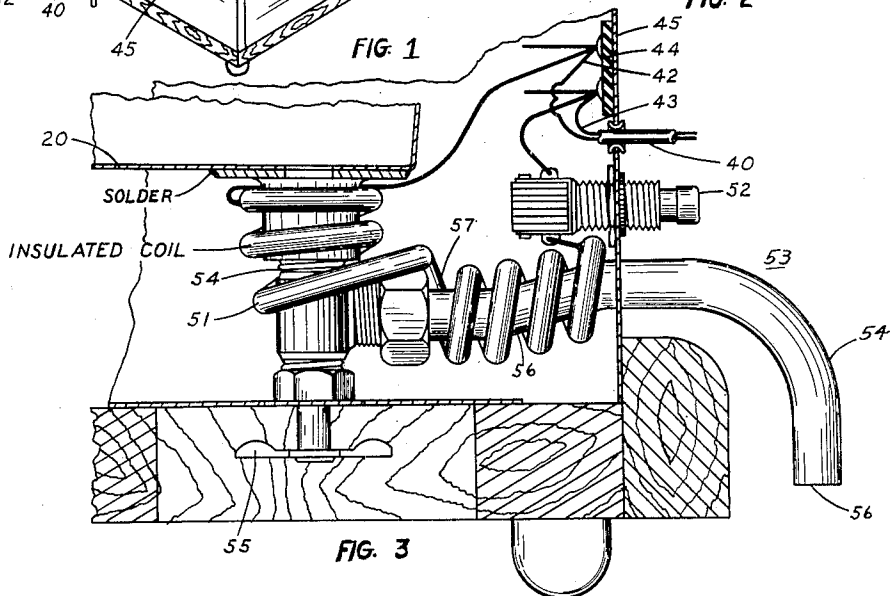


FIG. 3

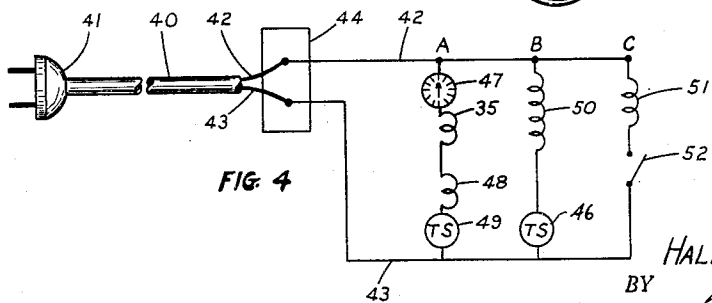


FIG. 4

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THERAPEUTIC BATH

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4 Claims. (Cl. 219—38)

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This invention pertains to a therapeutic paraffin bath, and more particularly to a drain for such a bath.

For the therapeutic treatment of a person's hands, feet and limbs by the application of heat a number of liquid baths have been designed into which the portion of the body to be treated may be inserted. One of the most effective and popular bath models is the one in which the liquid which surrounds the limb is paraffin. The main reason for its extreme popularity is that such a bath is capable of heating the limb to a greater degree without burning than water, oil baths, radiant heat, hot air and the like. When a portion of the body, for example a hand, is to receive a paraffin heat treatment it is immersed in the melted paraffin and is then quickly removed so that a thin layer of the paraffin adheres to the skin and then congeals to form a thin paraffin glove. This procedure may be repeated several times until there is built up a paraffin glove of sufficient thickness that the patient can keep his hand in the bath continuously without undue discomfort. It has been found that the paraffin can be maintained at a higher temperature than a water bath without burning the patient, and that accordingly more heat is applied to the patient's hand. A further outstanding advantage over the water bath is that the patient's skin does not become wrinkled due to long immersion as it does in a water bath, and consequently it is in better condition for massage which often follows such a heat treatment. An advantage of the paraffin bath over radiant heat or hot air is that the skin is not dried out but remains soft and pliable and is in excellent condition for massage.

During the heat treatment the portion of the patient immersed in the paraffin perspires and this liquid gathers at the bottom of the container. In spite of this and the fact that paraffin costs more than water, the advantages of using paraffin so far outweigh its disadvantages that it has been readily accepted by the medical profession, but because of the expense of the paraffin it is apt to be used repeatedly and usually by a large number of patients before the paraffin is thrown away and a new clean supply added.

An object of this invention is to provide means for easily draining the contents of a paraffin bath.

Still another object of the invention is to provide means for easily cleaning a paraffin bath.

Hot paraffin flows more readily than water and in some instances when the drain valve is slightly

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worn it leaks hot paraffin even though it would not leak water, so it is an object of the invention to provide a drain system for a hot paraffin bath wherein even hot paraffin will not leak out of the drain.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims when they are read in conjunction with the drawing wherein:

10 Figure 1 is an isometric view of a typical paraffin bath.

Figure 2 is a sectional view taken through the bath shown in Figure 1.

15 Figure 3 is a detailed view, partially in cross-section, showing the drain for the bath shown in Figures 1 and 2, and

Figure 4 is a circuit diagram showing the electrical circuit of the bath.

20 With reference to the drawing there is shown in Figures 1 and 2 one model of a paraffin bath 10, and comprising a base 11 formed preferably of wood to which are connected four feet or wheels 12. The wooden base 11 has broad level central portion 16 and an upwardly extending portion 13 around the peripheral edge. A four-sided chromium plated jacket 14 fits within the up-
25 standing edge 13 of the base 11 with the lower edge 15 of the jacket resting against the outer edge of the flat part 16 of the base.

30 Resting on the top of the jacket 14 is a wooden rail 17 having a portion 18 positioned outside of and below the upper edge of the jacket 14. This portion 18 and the upstanding edge 13 of the base 11 prevent the jacket 14 from sliding out of
35 position.

Connected to the lower edge of the rail 17 by a number of screws 19 and hanging downwardly therefrom is a metal container 20 which is adapted to hold paraffin. The rail 17 is held down
40 against the jacket 14 and the jacket is held against the wooden base 11 by means of two connecting frames, one positioned between the front face 14' of the jacket 14 and the front face 45 of the container 20 (shown in Fig. 3) and the other, identified generally by reference character 25, occupying a similar position between the back face of the jacket and the back wall 24 of the container 20. Each of these connecting frames
25 comprises a metal strip 26 preferably about one-eighth of an inch thick and one-half inch wide connected to the underneath side of the rail 17 by screws 27.

Two metal rods 28 are welded or otherwise connected to the metal strip 26, and they extend
55 downwardly between the jacket 14 and the wall

of the metal container 20 through holes in the base 11, and nuts 29 are screwed onto their lower ends thereby tensioning the rods 28 and compressing and holding the rail 17, the jacket 14 and base 11 together. Thus the container 20 is suspended from the rail 17, and it hangs above the base 11 so that insulating material 30, such as rock wool or the like, does not get compressed due to the weight of the container and its contents. The rock wool insulating material also occupies the space between the jacket 14 and the side walls of the container 20 so that radiation and conduction of heat away from the container is kept at a minimum.

In order to apply a large amount of heat to melt the paraffin into a liquid state and to maintain it at a temperature which is not too hot for a person several heating element are utilized, as is schematically shown in Figure 4. A cord 40 is connected at one end to the usual plug 41 for insertion in a 110-volt A. C. current supply, and the two wires 42, 43 which form the cord are connected to an insulated terminal panel 44 mounted on the inside surface of the front wall 45 of the jacket 14. When the plug 41 is connected to a current supply voltage is established across three circuits A, B and C. Circuit A comprises a semi-automatic time switch 47, the heating coil 35 which is wrapped a number of times around the side walls of the container 20, a heating coil 48 which is underneath the container 20, and a thermostatic switch 49. Circuit B is in parallel with circuit A and comprises a single heating element 50 connected across wires 42, 43 and a thermostatic switch 46. Circuit C is in parallel with circuits A and B, and comprises a heating element 51 and a switch 52.

When the paraffin within the container is cold and an operator wishes to heat it he inserts plug 41 into a current supply line. Due to the paraffin within the container being cold the thermostatic switches 46 and 49 are closed. The time switch 47 is, however, usually open. Thus heater coil 50 is the only heating element energized. The semi-automatic time switch is then turned to the 60 minute (or less) position thus closing circuit A and energizing coils 35 and 48 for the length of time set on the face of the time switch 47. The time switch automatically opens circuit A when the time is satisfied whether or not the paraffin is completely melted. The operation of circuit A for one hour with circuit B also being on usually will melt all the paraffin. In the event of a failure of the time switch 47 to operate at the end of the designated time the thermostatic switch 49 breaks circuit A to prevent overheating. Ordinarily the heat supplied by circuit A is controlled by the time switch 47 and the thermostatic switch is used only in an emergency. Once the paraffin is brought up to heat circuit A is open and the heater coil 50, under control by the thermostat 46, alone maintains the bath at proper temperature.

Another parallel circuit C is connected across wires 42, 43, and comprises heater coil 51 and a manually operated switch 52. The heater coil is wrapped about a drain spigot 53 which extends from the bottom of the container 20. The spigot consists of a downwardly extending portion 54 which contains a standard valve and valve actuating handle 55, and a portion 56 which extends horizontally out of the downwardly extending portion 54 then slightly upwardly and then turns down to an opening 56. It has been found when the container 20 is to be drained to remove the

accumulated perspiration that a paraffin plug in the drain usually prevents free flow of the liquid. In order to melt this plug and permit the water to flow out the operator opens valve 55 then pushes the push button switch 52 thereby energizing heater coil 51. The button is kept down until liquid flows out of the opening 56, and it is then released to open circuit C. When the water has drained valve 55 is closed to stop the flow, but by this time a small amount of paraffin usually has lodged in the horizontal part 57 of the tube 56. This paraffin does not flow out of the spigot due to its upwardly extending portion, and when it hardens it helps to prevent leakage of paraffin from the container 20. This is of importance because for the sake of economy the valve used is designed for use with water and the like, and hot paraffin is apt to slowly leak out after the valve has been worn slightly. By establishing a paraffin plug in the spigot 53 there is provided added assurance against leaking and the valve need not be replaced so long as it functions sufficiently well to slow the hot paraffin to an extent that the plug will form.

While the invention has been described with a certain degree of particularity it is to be understood that changes can be made in the parts and their arrangement without departing from the spirit and scope of the invention as hereafter claimed.

I claim as my invention:

1. A drain system for a therapeutic paraffin bath including a paraffin container having an opening in the bottom thereof, drain pipe means sealingly connected to the bottom of said container at said opening, said drain pipe means near said opening extending in a substantially horizontal direction thence upwardly and thence downwardly to the discharge end of said drain pipe, a valve in said drain pipe means, and electric heating means positioned in heat transfer relationship with at least said valve and the said upwardly extending portion of said drain pipe, said heating means including switch means for switching on and off the electric current through said heating means.

2. A drain system for a therapeutic paraffin bath including a paraffin container having an opening in the bottom thereof, drain pipe means sealingly connected to the bottom of said container at said opening, said drain pipe means including a downwardly extending portion one end of which is connected to said container and a horizontal spigot; said spigot comprising a horizontally extending portion connected to the other end of said downwardly extending portion, an upwardly extending portion connected to said horizontally extending portion and a downwardly turned discharge portion; a valve in drain pipe means, and electric heating means in heat transfer relationship with said valve and with the upwardly extending portion of said spigot, and switch means in said electric heating means.

3. In an electrically heated therapeutic paraffin bath device, a paraffin container having an opening in the bottom thereof, drain pipe means connected to said opening, three parallel connected electric circuits for heating said bath, the first and second of said three circuits each comprising heating element means in heat transfer relationship with said container and a thermostatic switch for automatically opening and closing the circuit for controlling the amount of heat applied to said container by the circuit, said third circuit comprising a heating element in

heat transfer relationship with said drain pipe means and a manually operated switch, whereby the operator can selectively energize the heating element in said third circuit independent of the energization of the heating element means in said first and second circuits. 3

4. An electrically heated paraffin bath device as set forth in claim 3, further characterized by a manually adjustable timer switch in said first circuit. 10

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,381,500	Reader	June 14, 1921
1,652,409	Moulthrop	Dec. 13, 1927
1,706,997	Davis, Jr.	Mar. 26, 1929
1,744,598	Wait	Jan. 21, 1930
1,936,391	Harrower	Nov. 21, 1933