Aug. 20, 1946. B. HOWARD 2,406,222

HEALTH CABINET

Filed Jan. 24, 1944 2 Sheets-Sheet 1

Fig. 1

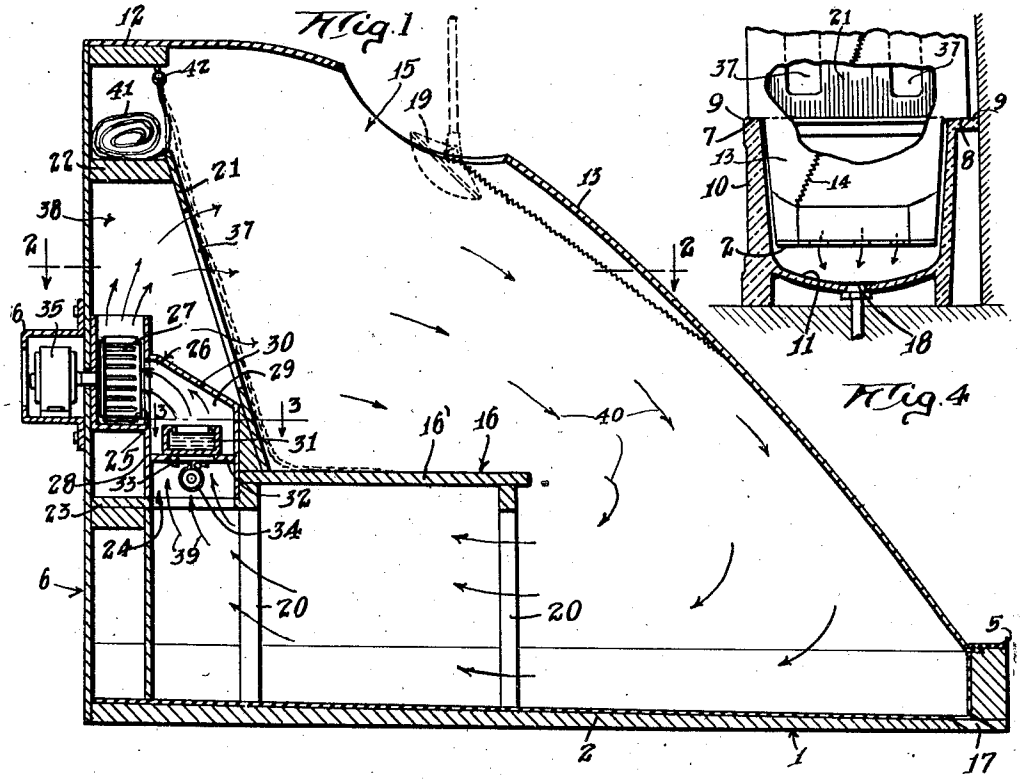


Fig. 4

Fig. 2

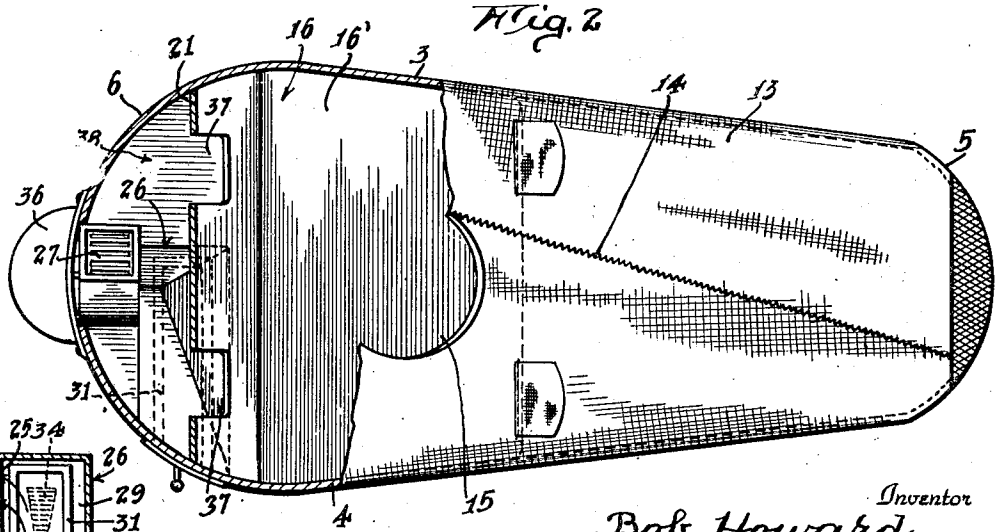
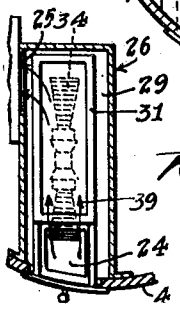


Fig. 3



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Aug. 20, 1946. B. HOWARD 2,406,222

HEALTH CABINET

Filed Jan. 24, 1944 2 Sheets-Sheet 2

Fig. 5

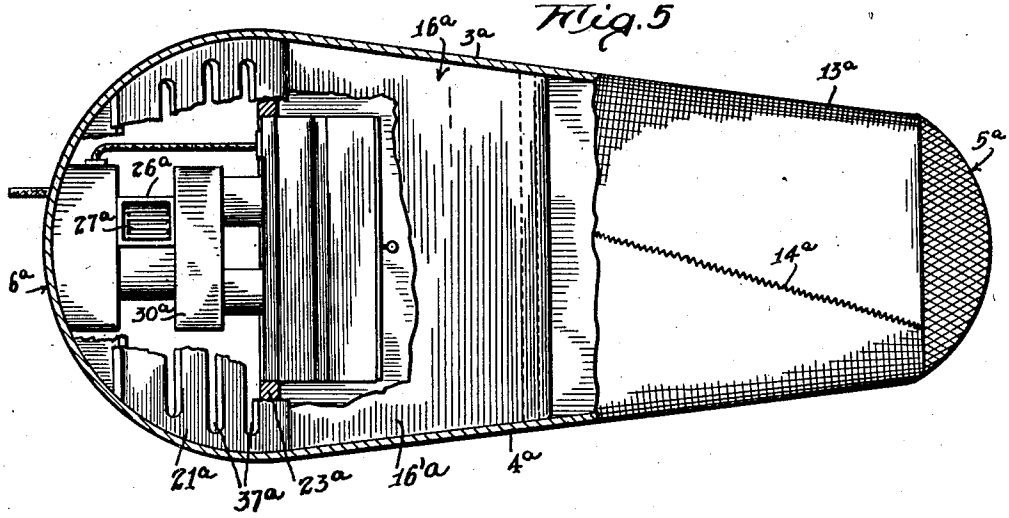
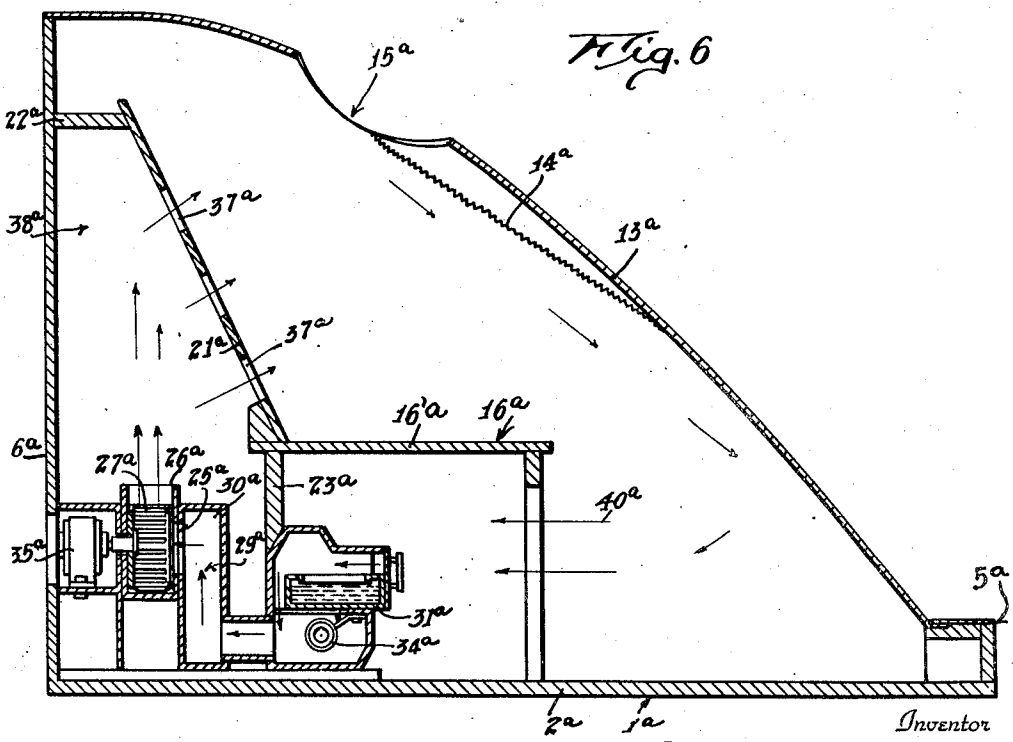


Fig. 6



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HEALTH CABINET

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Application January 24, 1944, Serial No. 519,502

5 Claims. (Cl. 4—164)

1

This invention relates to health cabinets and more particularly to a cabinet wherein there is maintained an uninterrupted circulation of moist, warm air.

It is an object of this invention to provide a health cabinet of limited dimensions and which is substantially fully enclosed and within which an individual may be seated and within which the air is heated, circulated over a pan of heated water, and forced to circulate in a direction so that the heated air will first pass over the upper portion of the body of the person receiving the treatment and will be returned downwardly over the person in the seated position and will return for recirculation.

Another object of this invention is to provide a health treating cabinet in which the air within the substantially enclosed cabinet is under continuous forced circulation over a pan of heated water and within which cabinet there is a substantial division or separation so that the circulation is maintained and wherein the air laden with water is circulated in a direction to first pass over the body of the person within the cabinet at the upper portion of the body and to follow the body downwardly during its circulation.

This invention is directed to an improvement over the health or humid air cabinet as set forth in the patent issued to me December 1, 1942, No. 2,303,465.

Other objects and advantages of this invention it is believed will be apparent from the following detailed description of an embodiment thereof as illustrated in the accompanying drawings.

In the drawings

Figure 1 is a side elevation partly in vertical section of the health cabinet embodying my invention.

Figure 2 is a top plan view thereof partially in horizontal section, taken on line 2—2 of Fig. 1.

Figure 3 is a sectional plan view taken substantially on the line 3—3 of Figure 1.

Figure 4 is a sectional end elevation illustrating the health cabinet of my invention as positioned within a bath tub.

Figure 5 is a top plan view partly in horizontal section of a modified form of construction embodying my invention.

Figure 6 is a side elevation partly in vertical section of the structure as illustrated in Figure 5.

In the form of my invention illustrated in Figures 1 to 4, inclusive, the cabinet is composed of a frame 1 which may be made of any suitable or desirable material and the frame 1 includes a

2

base plate 2, spaced vertically extending side walls 3 and 4, and appropriately curved foot and head sections 5 and 6. The side walls 3 and 4 are formed as illustrated in Figure 4 of stepped construction to provide shoulders 7 and 8 by which the frame may be supported upon the rims 9 of the bathtub 10 with the bottom plate 2 raised from the bottom 11 of the tube 10. A top plate 12 which extends over the foot section 6 completes the frame structure. Over this frame structure there is stretched, to complete the enclosure, a fabric top 13. The fabric top 13 is divided on a diagonal line and is normally closed by means of a suitable fastener indicated at 14 which may be of the type of a "Talon" fastener.

The fabric covering is provided with an opening 15 which is adapted to extend around the neck of an individual seated upon the chair 16 within the enclosure when the fastener is closed, thereby completing the enclosure. Formed through the base plate 2 are a plurality of drain openings 17 which permit the draining of water or moisture from within the cabinet into the bathtub 10 and hence through the drain outlet 18 thereof.

In order to permit the entire health treatment to be given without the necessity of the individual getting out of the cabinet, a shower head 19 is mounted with reference to the cabinet so that when the treatment within the cabinet is concluded, the fastening 14 may be opened and the shower head brought over the individual so that the patient may be given a shower within the cabinet without being exposed to the varying temperatures which would be occasioned by getting out of the cabinet. The patient therefore may take the shower while still in position upon the seat 16' and the water would drain through the opening 17 and out through the bathtub drain 18.

In the proper heat treatment of the individual within the cabinet, I have found that in order to obtain uniform or even distribution of the heat, that it is preferable that the air within the cabinet be circulated continuously in the cabinet in such manner that the air after it has been heated and has picked up the requisite quantity of moisture by passing over a pan of water be circulated upwardly within the cabinet so as to first engage the individual receiving the treatment at the upper portion of the body and then be circulated downwardly over the person within the cabinet passing over the feet and legs thereof and then be returned for recirculation. In this manner the heat transmitted to the body from

the heated air and moisture content thereof is more evenly distributed when care is taken to maintain continuous circulation of the air without permitting formation of dead air pockets within the cabinet from which there is no circulation.

I have further found that circulation within such a cabinet can only be induced and maintained by proper division of the cabinet through the use of a partition as will enable a circulating means to draw air through an outlet in the partition and freely discharge the air within the cabinet in a direction where the discharge does not encounter an obstruction which will result in the formation of a back pressure. Therefore, in accordance with my invention as the same is illustrated in Figures 1 to 4, inclusive, the seat 16' of the chair 16 extends horizontally across the entire enclosure and is supported upon the legs 20 in position elevated from the base 2. The back 21 is connected with the seat 16' and likewise extends for the full seat of the enclosure and is supported at its upper end by spaced bars 22 which are connected with the rear section 6.

Extending from the rear of the seat 16' and to the rear section is a partition 23 which partition has an air inlet 24 formed therein and at one side of the cabinet, the opening 24 being of substantially the same size as the inlet 25 formed in the housing 26 of the circulating fan 27 in which the inlet 25 is formed in a vertical partition 28 at the side of the structure opposite that of the inlet 24. Between these inlets there is formed a chamber 29 by means of the enclosing partitions 30. Within this chamber there is mounted a water pan 31. The water pan 31 is supported upon a plate 32 which has an opening 33 formed therein. Below the opening 33 there is positioned an electrical heating element 34 of the infra red hot-wire type.

The fan 27 is driven by an electric motor 35 which is housed within an enclosing housing 36 secured to the rear section 6 and exterior to the enclosure formed within the cabinet so that the motor 35 may operate within the colder air outside of the cabinet.

It will be observed that the side walls 3 and 4 slope from the top plate 12 downwardly to the relatively short front section 5 and lie closely adjacent the seat 16', thereby leaving a very small space within the cabinet through which the air is circulated.

It will be observed that the back 21 is formed with two spaced openings 37 through which air from the mixing chamber 38 formed above the fan 27 passes. These openings are formed at the sides of the chair back so that the heated air will pass around the body of the person seated upon the chair 16.

With the patient upon the chair 16 and the fastening 14 closed, the motor 35 and heating element 34 are set in operation. The air is drawn by the fan 27 from the chamber 29 above the water pan 31. Air from below the chair 16 is drawn through the partition 23 through the opening 24 therein and passes in the direction of the arrows 39 (Figure 3) over the surface of the water within the pan 31, evaporating water from the pan and this heated moisture-laden air then passes through the fan 27 and into the mixing chamber 38 where the moist air is thoroughly mixed before it passes out through the openings 37 and over the top of the chair back 21. The air then follows in its forced circulation drawn

over the body of the person seated upon the seat 16' following the curved inclination of the closure formed by the fabric top elements 13 down over the legs and feet of the individual and then passes in the direction of the arrows 40 (Figure 1) under the chair 16 and is again recirculated. As this moist air is recirculated, it deposits moisture upon the individual and the combination of the hot air and the moisture quickly heats the body of the person upon the chair 16. As the air deposits its moisture, it continues to pick up further moisture from the water within the pan 31 until a point is reached where the body is sufficiently heated to cause the same to perspire after which substantially no further water is evaporated from the pan 31. The depositing of the hot moisture upon the body in combination with the hot air, quickly raises the temperature of the body to the point of perspiration.

In the modified form of my invention illustrated in Figures 5 and 6, the structure is substantially the same as hereinabve defined with the exception that the cabinet herein illustrated is of the portable type not adapted for mounting within a bathtub and the circulation unit is mounted below the chair and the air is drawn horizontally from withunder the chair rather than vertically from within the space provided to the rear of the chair.

In this modification similar parts have been indicated by similar numerals with the addition of an exponent "*a*" thereto and the structure differs essentially in that the dividing partition 23*a* extends vertically across the cabinet under the seat 16'*a* of the chair 16*a*, and the water pan 31*a* and heating element 34*a* are mounted under the chair in advance of the partition 23*a* while the fan 27*a*, motor 35*a* and eduction conduit 39*a* are mounted upon the rearward side of the partition 23*a*.

In this modification the water pan is withdrawn from under the chair so that it may be filled with water while in the modification of Figures 1 to 4 the water pan is withdrawn from the side of the rear section 6*a* from the exterior of the cabinet. In other respects the structure is substantially similar as is the method or circulation.

In the modification of Figures 5 and 6 the air passes under the chair 16*a* in the direction of the arrows 40*a*, passes over the water within the pan 31*a* down around the heating elements 34*a* which likewise act to heat the water in the pan 31*a*, out through the conduit 30*a*, which provides a mixing chamber 29*a*, and into the inlet 25*a* formed in the fan housing 26*a*. The air is exhausted by the fan vertically to the rear and back of the back 21*a* of the chair 16*a* over the top of this back and through the openings 37*a* formed therein and circulated downwardly over the individual seated upon the seat 16'*a* and under the fabric covering 13*a* and it is returned for circulation.

It will be observed that in the modification of Figures 1 to 4 that there is provided a curtain 41 which is carried upon a common form of curtain roller 42. When the cabinet is opened for the purpose of permitting the person receiving the treatment to take a shower, this curtain is drawn over the seat back 21 so as to prevent the spray of water passing into the mixing chamber 38 and hence into the fan, etc.

The structure of the cabinet as herein defined lends itself admirably for fabrication to a mold-

ed plastic construction so that the entire framework may be constructed of any desired color of plastic material which lends itself to the producing of a very desirable structure.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details herein set forth, but my invention is of the full scope of the appended claims.

I claim:

1. In a device of the class described, the combination of a base member having spaced supporting sections for supporting the same within a tub with the bottom elevated from the bottom of the tub, side and rear sections, and a flexible downwardly inclined front closure means forming an enclosed cabinet, a seat mounted within the cabinet, means for maintaining a forced circulation of moist air within the cabinet, said latter means including a water pan, means for heating the water within the pan, means for directing air over the water in the pan, a fan for circulating the air within the cabinet, and a partition member mounted within the cabinet, said partition member having an opening therethrough through which the air circulated by the fan is drawn.

2. A health cabinet, comprising: a housing, including a base frame, side walls and a sloping cover member, a partition structure dividing said housing into a forward and rearward compartment, said partition forming support means, a seat thereon, a back for said seat and a shelf above said back, said back and support means having therein circulation openings connecting said forward and rearward compartments; means in said rear compartment for maintaining a forced circulation of air into said forward compartment through said back openings said means receiving air through said support means; and a flexible closure means for said back openings adapted to be carried on said shelf and adapted to be extended therefrom over said back member to prevent reverse flow of fluids into said rearward compartment through said back member.

3. In a health cabinet apparatus for use in bathtubs, the combination of: a housing including a base section, a sloping top and front wall, and substantially vertical side and back walls, all cooperating to form a substantially complete enclosure for said base section, said side walls being stepped to form shoulders adapted to rest on the opposite sides of a bathtub and suspend the lower portion of the housing within the bathtub, the interior of the housing being isolated from the bathtub except for drain means provided in said base section; a seat mounted in said housing; a horizontal partition mounted within the cabinet to the rear of said seat; and a fan adapted to draw air through an opening in the partition and to circulate the same over the back of the seat, down the sloping front and top wall and return the same over the seat.

4. A health cabinet for use in bathtubs comprising: a housing including a base frame, side walls and a sloping front cover member, the side walls forming shoulders whereby the lower portion of the housing may be suspended in a bathtub, the interior of said housing being isolated from the bathtub except for drain openings in the base frame of the housing; a partition structure dividing said housing into a forward and a rearward compartment, said partition forming support means, a seat thereon, a back for said seat and a shelf above said back, said back and support means having thereon circulation openings connecting said forward and rearward compartments, means in said rearward compartment for maintaining a forced circulation of air into said forward compartment through said back openings, said means receiving air through said support means; and a flexible closure means for said back openings adapted to be carried on said shelf and adapted to be extended therefrom over said back member to prevent reverse flow of fluids into said rearward compartment through said back member.

5. A health cabinet for use in bathtubs comprising: a housing including a base frame, side walls and a sloping front cover member, the side walls forming shoulders whereby the lower portion of the housing may be suspended in a bathtub, the interior of said housing being isolated from the bathtub except for drain openings in the base frame of the housing; a partition structure dividing said housing into a forward and a rearward compartment, said partition forming support means, a seat thereon, a back for said seat and a shelf above said back, said back and support means having thereon circulation openings connecting said forward and rearward compartments, means in said rearward compartment for maintaining a forced circulation of air into said forward compartment through said back openings, said means receiving air through said support means; a flexible closure adapted to be rolled on said shelf and accessible to a person seated in said housing for extension over said back member whereby fluids may be sprayed into and around the forward compartment and its occupant without reverse flow into the rearward compartment through said back member; the sloping front wall of said housing having an opening for the head of a person seated within the housing, said opening being sufficiently large to admit in front of the occupant a spray head.

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