

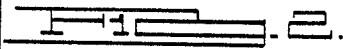
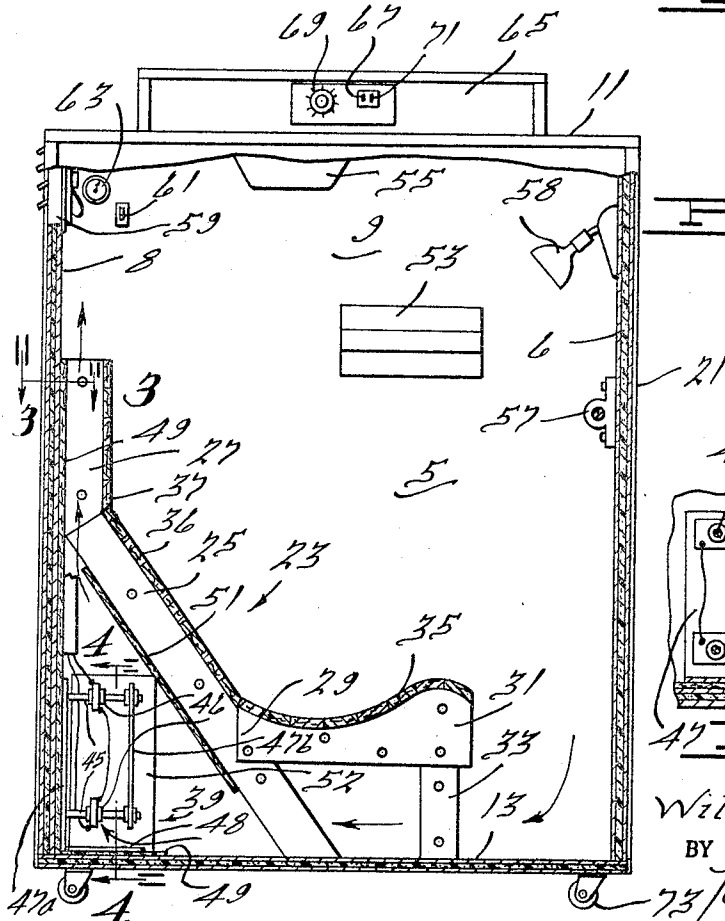
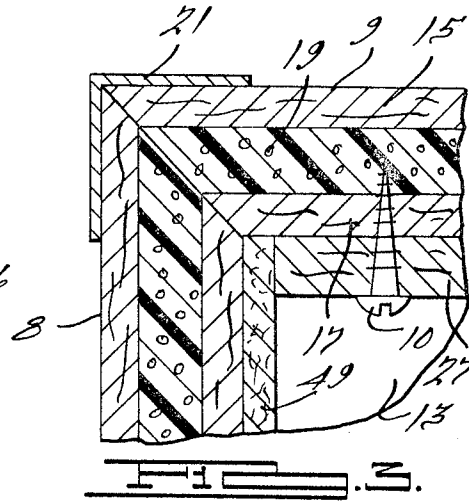
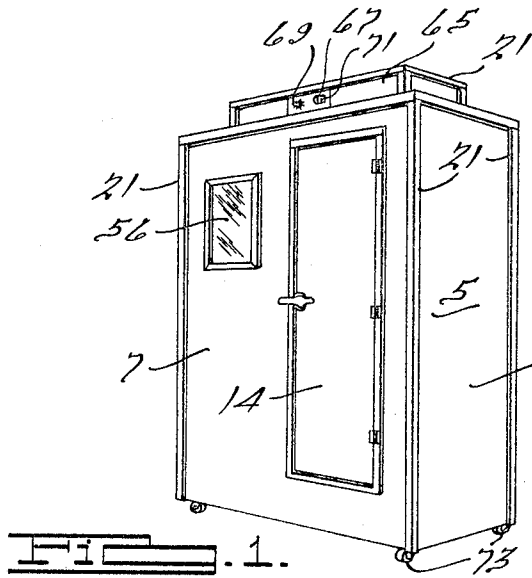
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PORTABLE SAUNA CABINET

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PORTABLE SAUNA CABINET

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This invention relates to an improved portable heating cabinet and, more specifically to an improved portable heating cabinet intended to be occupied by human beings for therapeutic purposes.

Cabinets of the type involved in the present invention are particularly adaptable for use in the well known Finnish sauna which involves the process of heating the body for a specified length of time and then cooling the body by plunging in icy water or the more recent method of taking a cold shower or the like. One form of prior art bathhouses used for this purpose comprises a small shed or like structure which would accommodate several persons and is usually located outside the main dwelling house. Typically, the lower portion of the shed is supplied with rocks or other heat retaining materials which are heated from some source of fuel such as charcoal, wood or the like and the heat is radiated into the upper portion of the structure. The humidity in the bath is periodically increased in the cabinet by spraying water on the rocks to produce super heated steam which rises into the main chamber of the bathhouse. In other cases, custom installations of sauna rooms have been made in homes and other large buildings. These are quite expensive and have used large fuel burning stoves which must be vented.

There are many shortcomings in the systems described above which are overcome by the instant invention. For example, in order to properly heat the rocks, great quantities of charcoal or other fuel must be burned and care must be taken to isolate the fire to the area where the stones are located. Also, provision must be made for the removal of the ashes left after the fuel is burned. In many units this involves moving the rocks and then replacing them when the burning area has been cleaned. Further, means must be provided to supply the area wherein the rocks are being heated with a source of water spray to produce the steam to periodically raise the humidity in the interior of the bathhouse. This involves complex plumbing, spray heads, etc., all of which increase the cost of the structure. In addition to its cost, a custom-built sauna room occupies a substantial amount of space.

As is noted from the above description of the prior art, there is a lack of portability in these bathhouses or rooms. As stated above, the typical bathhouse was constructed outside the main house, thus making the unit inconvenient to use in private. A need has developed for a heated enclosure which may be used in the privacy of one's own room and may be moved about from room to room for use by different guests of a hotel, lodge or the like. Furthermore, a portable unit may be moved by its owner when he moves to a new home or apartment.

The instant invention is calculated to substantially alleviate the aforementioned problems and provide portability and convenience to the user. Generally, a preferred embodiment of the cabinet of the instant invention comprises means for enclosing a space to be heated and a heating unit which is self-contained except for a source of power. The enclosing means is desirably fabricated of a laminate composed of decorated fiber board for the outside layer such as that sold under the trade name "Masonite" and redwood or other suitable wood which does not retain heat, for the interior. The core is formed of a suitable cellular plastic foam such as polystyrene, polyurethane or the like having certain desirable charac-

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teristics such as substantial rigidity, heat insulation, crush resistance, etc.

Situated within the cabinet is a support means or chair extending the entire width of the cabinet which also serves to provide additional support to the structure by the manner in which the support means is attached to the walls. The seat supporting members of the chair are bolted or otherwise fastened to the interior walls of the cabinet and suitable seat slats are fastened to these supporting members by screws, nails or the like.

Located behind the seat and fastened to one wall of the cabinet is a heating means which operates to heat the air within the cabinet. The heater is located behind the seat so to utilize normally unused space, thus making the cabinet extremely compact. The geometry of the back of the seat creates a chimney effect between the back of the seat and one of the walls thus drawing the heated air upwardly from the heater situated immediately below the back of the chair. In this manner the air is most efficiently circulated and the main compartment of the cabinet is uniformly heated. A suitable access door is provided in the wall to enable the user to service the heating unit from outside the cabinet.

An extremely important feature of the instant invention is the minimal horizontal and vertical dimensions of the cabinet assembly which are presented to the vertical plane of a standard door presently used in residence homes. As was mentioned above, a need has developed for a heating cabinet assembly which may be moved from room to room to the use thereof in different locations. The instant cabinet assembly has been so devised that the minimum horizontal and vertical dimension of the cabinet assembly, which may be presented to a doorway, are no greater than the horizontal and vertical dimensions of the vertical plane defined by that doorway. Thus, with proper dimensioning of the cabinet assembly and suitable low friction sliding or rolling means on the bottom thereof, the assembly may readily be moved from room to room for private use.

Certain conveniences may be provided within the cabinet for the comfort of the user. These include a magazine rack and dome light to enable the user to read during the heating period. The unit utilizes dry air in the heating of the cabinet, therefore there is no problem of steam to obscure the user's vision or wet the pages of a magazine or book. Also, a vent fan may be provided to quickly vent the cabinet of hot air or lower the temperature within the cabinet and a thermostat to enable the user to determine the temperature within the cabinet. Further, there is provided a hand-hold to facilitate the exit of the user from the chair and it so situated to give the user aid in getting up and out of the chair. Additionally, a sun lamp may be mounted within the unit to tan an occupant while a sauna bath is being taken.

Accordingly, one object of the present invention is to provide an improved heating cabinet.

Another object of the invention is to provide a heating cabinet of the type described that is compact and readily transportable from place to place through various doorways of a building.

Another object of the invention is to provide a heating cabinet of the type described that is completely self-contained with the exception of a power supply.

Still another object of the present invention is to provide a heating cabinet which provides excellent heat insulation characteristics and may be heated to relatively high temperatures with a small heating unit.

A further object of the present invention is to provide a heating cabinet of the type described which produces an even heat, which is comfortable and convenient for the occupant to use, and which permits the simultane-

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ous pursuit of other activities such as sun bathing or reading.

A further object of the present invention is to provide a heating cabinet of the class described, the interior of which is constructed such that the user is not burned on coming in contact with the walls or seat.

A still further object of the invention is to provide a heating cabinet that is strong in construction and durable in use.

Another object of the present invention is to provide a heating cabinet of the class described which is simple and inexpensive to fabricate.

Other objects, features and advantages of the present invention will become apparent from the subsequent description and the appended claims, taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a perspective view of a heating cabinet embodying certain principles of the present invention;

FIGURE 2 is an elevational view partially broken away of the heating unit of FIGURE 1;

FIGURE 3 is a cross-sectional view of the details of the wall construction of the heating cabinet as taken along line 3—3 of FIGURE 2; and

FIGURE 4 is a sectional view of the heating element of the cabinet as taken along line 4—4 of FIGURE 2.

Referring now to FIGURES 1 to 3 of the drawing, there is illustrated generally a heating cabinet assembly 5 of a type adapted to be used in the well known Finnish sauna bath. The cabinet is completely enclosed by four walls, 6-9, a top 11 and bottom 13 and entrance to the cabinet is gained through a suitable door 14. These last named members 6-14 are all constructed of a similar heat insulating laminate such as that described above, with the exception of the hinges and like metal elements.

As best illustrated in FIGURE 3, the laminate consists of a rigid substance 15 on the outside, such as "Masonite," suitably decorated to form an esthetically pleasing outer surface. The inner surface 17 of the cabinet 5 is preferably formed of smoothly finished boards of redwood which are suitably joined as by a tongue-in-groove construction. Redwood is particularly well suited for use in the interior because of its characteristic of heat resistance, i.e. inability to absorb and retain heat. It is to be understood that any substance may be used which may be placed in a heated environment, such as that of cabinets of this type, and the substance will not heat up to the degree that the occupant will feel discomfort if contact with the substance is made. In this manner the user will not be burned by coming in contact with an interior wall which could become heated to a relatively high temperature if other materials were used.

The core 19 of the laminate is formed of a suitable plastic foam which has the characteristics of being substantially rigid and crush proof, a heat insulator and an ability to be interleaved between the inner and outer layer of the wall. As was stated above, two plastic foams which have the requisite characteristics are polystyrene and polyurethane foam. These foams provide the necessary heat insulation to preclude heat loss through the walls, are crush-proof to provide rigidity in the wall and floor structure, are inexpensive to purchase and otherwise are particularly adaptable for this use. Suitable corner supports 21 are provided to hold the walls in position and further rigidize the entire structure. The supports 21 are formed of a metal or the like and may be glued or fastened by screws to the walls 6-9.

The interior of the cabinet 5 is provided with a chair 23 which is so designed as to serve several purposes which will be pointed out as the description proceeds. Both sides of the chair 23 are similarly constructed and, for simplicity, only one side will be described herein. The chair 23 is formed with a frame member 25 which is fastened to the side wall 9 by screws 10 or the like. Formed in side member 25 is a notch 29 which is so located as to receive a side member 31, which, along

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with a leg member 33, is positioned to support a seat at a comfortable height from floor 13. Fastened to and supported by members 27, 29 and 31 are a plurality of slats 35, 36 and 37 which are so contoured by the members 25, 27 and 31 as to comfortably conform to the human form in a semi-reclining seated position. The slats 35 form the seat portion of the chair 23 supporting the major portion of the users weight. The slats 36 support the back of the occupant and the slots 37 form a headrest. It is seen that the slats 35, 36 and 37 are so attached to the side walls 7, 9 by means of members 25, 27, 29 and 31 that the seat forms an extremely rigid support for the side walls 7, 9. Also, this arrangement of the seat structure provides a simple method of supporting the seat and the two assemblies interact to enhance the support characteristics of each other.

All the members 27, 29, 31 and 33 and seat forming slats 35, 36 and 37 are also fabricated of redwood or a wood having similar characteristics to insure that the user will not be burned by any heat retention ability of other types of wood which could be used. As was stated above, redwood does not absorb or retain heat and thus precludes this problem. It is to be noted that the slats 27 attached to the members 27 form a chimney like chamber with members 27 and back wall 8 for a purpose to be hereinafter explained.

Immediately to the rear of the chair 23 between members 25 and back wall 8 is a space which normally would remain empty. It has been discovered by applicant that this space is particularly suited for the location of a heating unit 39 due to certain unique geometric characteristics of the chair structure 23 with respect to the wall 8 and floor 13.

Referring particularly to FIGURES 2 and 4, there is illustrated therein the heating unit 39 which supplies the necessary heat for the interior of the cabinet 5. The unit 39 comprises a pair of heating elements 41 which are energized through conductors 43 by a suitable source of electrical energy (not shown) such as the 115 volt service normally supplied a residence. The two heating elements 41 are supported by a pair of rods 45 which are suitably insulated from the heating elements 41 as by insulators 46 and spaced from each other by a pair of sheet metal support plates 47a and 47b. The plate 47a is formed with an integral base 48 supported on the floor. The lower edge of the support plate 47b is spaced above the base 48 thereby leaving an opening for the circulating of air past the heating elements 41. The space between the plates 47a and 47b may be termed a heating chamber and it will be seen that this chamber is open at its top as well as at its lower end. The heating unit 39 is suitably heat insulated from the wall 8 and floor 13 by means of asbestos sheets 49 and from chair structure 23 by an asbestos sheet 51. An access door 52 is provided closely adjacent the heating unit 39 so that the unit may easily be serviced from the exterior of the cabinet 5. Thus, it is seen that the cabinet 5 is provided with a heating unit that is self-contained in all respects with the exception of a source of electrical energy.

As was stated above, members 27, rear wall 8 and slats 37 form a chimney like chamber immediately above the heating unit 39. As the air immediately adjacent the heating unit 39 is heated, it rises through the chimney like chamber to a main interior chamber above and in front of the seat 23. The coolest air in the cabinet will be near the floor 13 and it will flow under the seat slats 35 and under the plate 47b to the space between the plates 47a and 47b where it is warmed. It will, therefore, be seen that the cabinet is heated by convection with the air following a recirculating path from the main interior of the cabinet, under the seat slats 35, under the lower edge of the outer support plate 47b, through heating unit 39, up through the chimney like chamber and back to the main interior chamber.

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The circulatory flow of air established by convection heating provides a most efficient and uniform heating of the main interior chamber. It is to be further noted that the apparatus contemplates using heated dry air rather than the steam as used by the prior art devices. With the dry air, the occupant may more comfortably withstand higher temperatures and occupy the time spent in the cabinet by reading or other like diversions without having the steam obscuring his vision or moisten the pages of the book or magazine. Further, experience has shown that steam heat may have an enervating effect upon the user rather than the restful, invigorating result produced by the dry heat of the herein disclosed cabinet.

The cabinet also contains certain convenience features to further enhance the comfort of the user. Thus, a magazine rack 53 is provided to store magazines for ready access to the user. To provide the light necessary to read the magazines or books during the period in the cabinet, a suitable dome light 55 is provided to aid the natural light provided by a window 56 (FIGURE 1) situated above the chair 23. To aid the user in getting in and out of the chair 23, a hand-hold 57 is provided. The hand-hold 57 is so positioned in height as to help the occupant raise himself to the upright position and sufficiently in front of the chair 23 to help him pull himself horizontally out of the chair 23. Also, the hand-hold 57 may be used as a towel rack to support a towel which may be used in the cabinet.

A sun lamp 58 is shown as being mounted on the interior of the front wall 6 so as to shine on the face or other parts of the body of the occupant. The lamp 58, which incorporates its own off-on control, permits the user to take a sun bath simultaneously while taking a sauna bath.

Situated over the chimney like chamber is an exhaust fan 59 to rapidly exhaust the heated air from the interior of the cabinet. This feature is particularly useful when the user has allowed the temperature in the cabinet to become too hot or the perspiration of the user has introduced too much moisture into the air in the cabinet. The exhaust fan 59 is controlled by on-off switch 61 mounted above the chair 23. A thermostat 63 is mounted within the cabinet in easy reach of the user and is adapted to be set to any desired temperature for controlling the operation of the heating unit 39.

Mounted atop the cabinet 5 is a suitable control chamber 65 containing all the necessary controls for the cabinet. Mounted on one face thereof is an on-off switch 67 with an indicating light 69 mounted adjacent thereto which is illuminated at such time as the heater 39 is turned on. Also mounted on the face of the housing 65 is an on-off switch 71 to control the dome light 55. It is to be understood that chamber 65 may contain suitable automatic temperature controls such as the type which control the amount of electrical energy to heater 39 in response to the sensed temperature in the cabinet 5 as by thermostat 63. The thermostat 63 is adjustable and the occupant may choose any desired operating temperature which is consistent with personal comfort. Such control systems are well known in the art and need not be further discussed here. It is to be further understood that a control system may be provided which raises the temperature in the cabinet to the desired operating temperature by steps which are preselected in both duration and magnitude.

The base of the cabinet 5 is provided with wheels 73 mounted in casters to facilitate the movement of the unit from place to place. In order to move the unit from room to room of a dwelling, the walls 6, 8 are so dimensioned as to pass through the standard doorway found in the majority of homes or buildings. In this manner, the unit is readily moved from room to room to enable the successive use of the unit in different rooms of a hotel, lodge or the like. Nothing, other than a source of electrical energy, is required to operate the unit as it is entirely

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self-contained. Thus, the only limitation on where the unit may be used is the limitation of available power.

While it will be apparent that the preferred embodiment of the invention disclosed is well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modification, variation and change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. A portable, self-contained heating cabinet for the therapeutic treatment of a human comprising:

a plurality of wall members defining an interior chamber within said cabinet assembly, means for supporting a human within the interior chamber,

vertical means supported spaced from one of said walls and cooperating therewith to form a vertical chimney like chamber in pneumatic communication with said interior chamber, and

a heating chamber having electrical heating means contained therein for convection heating air in said heating chamber,

said heating chamber being positioned below said chimney like chamber and in pneumatic communication with both said interior chamber and said chimney like chamber,

establishing a flow of air from said interior chamber, through said heating chamber and through said chimney like chamber.

2. A portable, self-contained heating cabinet for the therapeutic treatment of humans comprising:

a plurality of wall members and a floor member forming a heating chamber in said cabinet assembly, chair means supported in said heating chamber having a substantially vertical portion and a substantially horizontal portion,

said vertical portion being spaced closely adjacent one of said wall members and forming a chimney like chamber therewith,

said horizontal portion being spaced closely adjacent said floor member and forming an air flow chamber therewith, and

a heating chamber having electrical heating means contained therein for convection heating air in the cabinet, said heating chamber being positioned intermediate said chimney like chamber and said air flow chamber and in pneumatic communication therewith,

said heater establishing a flow of air which proceeds from said air flow chamber, through said heating chamber and through said chimney like chamber.

3. A portable, self-contained heating cabinet assembly comprising:

a pair of spaced parallel walls, a chair interposed between said parallel walls and attached thereto having a back portion and a seat portion,

a back wall in abutting relation to said parallel walls and spaced closely adjacent said back portion and forming a chimney like chamber therewith,

a heating chamber having electrical heating means contained therein for heating air in the cabinet,

said heating chamber being positioned immediately below said chimney like chamber and in pneumatic communication therewith, and

floor means downwardly spaced from said seat portion and forming an air flow chamber therewith in pneumatic communication with said heating chamber and horizontally spaced therefrom,

said heater establishing a flow of air which proceeds from said air flow chamber, through said heating chamber and through said chimney like chamber.

4. The heating cabinet of claim 1 wherein said human support means includes chair means, said chair means comprising a plurality of support means attached to at least two of said wall members defining a generally chair

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shaped contour to conform to the seated human, and means fastened to said support means at an upper edge thereof for providing a seating surface and rigidize the spacing between said at least two of said wall members.

5. The heating cabinet of claim 1 wherein said human support means includes a chair means, said chair means comprising a plurality of frame members attached to at least two of said wall members defining a generally chair shaped contour having a back portion and a seat portion, slats fastened to one edge of said frame members to form back and seat supports for said chair means and form supports for said at least two wall members.

6. The heating cabinet of claim 1 further including artificial sunlight means supported within said interior chamber and adapted to shine on the face and other parts of the body of the human for permitting sunbathing of the human within said interior chamber.

7. The heating cabinet of claim 1 further including means mounted on said cabinet for providing a substantially frictionless contact area whereby said cabinet may be slid from room to room.

8. The portable, self-contained heating cabinet assembly of claim 1, said cabinet being adapted to be moved from room to room of a building by advancing said cabinet through a doorway defining a vertical plane having a horizontal and a vertical dimension, said cabinet further comprising means mounted on said cabinet for providing a substantially frictionless contact area whereby said cabinet may be slid from room to room, said enclosing means being so dimensioned when in its upright position as to present a maximum horizontal dimension that is less than the horizontal dimension of the vertical plane and a maximum vertical dimension that is less than the vertical dimension of the vertical plane as said enclosing means is moved through the vertical plane.

9. The portable, self-contained heating cabinet assembly of claim 1, said cabinet being adapted to be moved from room to room of a building by advancing said cabinet through a doorway defining a vertical plane having a horizontal and a vertical dimension, said cabinet further comprising means mounted on said cabinet for providing a substantially frictionless contact area whereby said cabinet may be slid from room to room, said enclosing means having a minimum horizontal dimension that is less than the horizontal dimension of the vertical plane and a minimum vertical dimension that is less than

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the vertical dimension of the vertical plane to enable said cabinet assembly to be moved through the doorway when in its upright position.

10. The heating cabinet assembly of claim 1 wherein said walls being formed of a laminate comprising, a layer of rigid, pressed fiber forming one outside surface of said laminate, a layer of heat resistant, rigid wood forming the other outside surface of said laminate, and a core layer of heat insulating fire resistant, crush proof foamed plastic interleaved between said fiber layer and said wood layer.

11. The heating cabinet assembly of claim 1 wherein said walls being formed of a laminate comprising a layer of rigid, pressed fiber forming one outside surface of said laminate, a layer of heat resistant, rigid wood forming the other outside surface of said laminate, and a core layer of heating insulating fire resistant, crush proof formed plastic interleaved between said fiber layer and said wood layer, said support means being formed of a like material as said other outside surface of said laminate.

12. The cabinet assembly of claim 11 wherein said wood layer is redwood.

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