# United States Patent [19]

**Cosper**

[11] **3,707,732**

[45] **Jan. 2, 1973**


[54] **STEAM BATH CABINET**


[76] Inventor: **Dale L. Cosper,** 1603 E. Hoover Ave., South Bend, Ind. 46615



[22] Filed: **Sept. 14, 1970**

[21] Appl. No.: **71,977**

[52] **U.S. Cl.** ..... **4/164,** 4/160

[51] **Int. Cl.** ..... **A61h 33/06**

[58] **Field of Search** ..... 4/161, 160, 162, 163, 164; 128/366, 374; 292/73



[56] **References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 2,832,622 | 4/1958 | Emanatian | 292/73 |
| 3,290,697 | 12/1966 | Anderson et al. | 4/161 |
| 3,396,411 | 8/1968 | Vieceli | 4/164 |
| 859,198 | 7/1907 | Catlin et al. | 4/164 |
| 2,303,465 | 12/1942 | Howard | 4/164 |
| 2,725,577 | 12/1955 | Howard | 4/164 |
| 2,780,226 | 2/1957 | Taves | 4/164 X |



*Primary Examiner*—Henry K. Artis

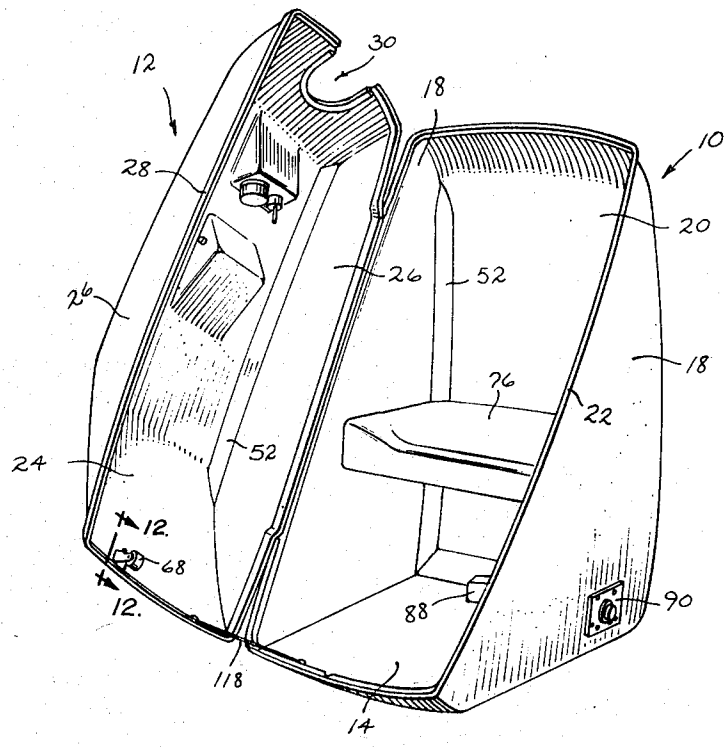
*Attorney*—Oltsch and Knoblock



[57] **ABSTRACT**

A steam bath cabinet including a closet part having an opening thereinto defined by coplanar edge portions. A door hinged to the closet part and including edges adapted to make sealing contact with the coplanar end portions of the closet part of the cabinet. The door of the cabinet is of a generally concavo-convex configuration which protrudes forwardly from the closet part of the cabinet when the door spans the opening of the closet part. The upper edge of the door is interrupted to form a slot into which the neck of the cabinet user is positioned when the door is closed.


**10 Claims, 12 Drawing Figures**



PATENTED JAN 2 1973

3,707,732

SHEET 1 OF 3

Fig. 1

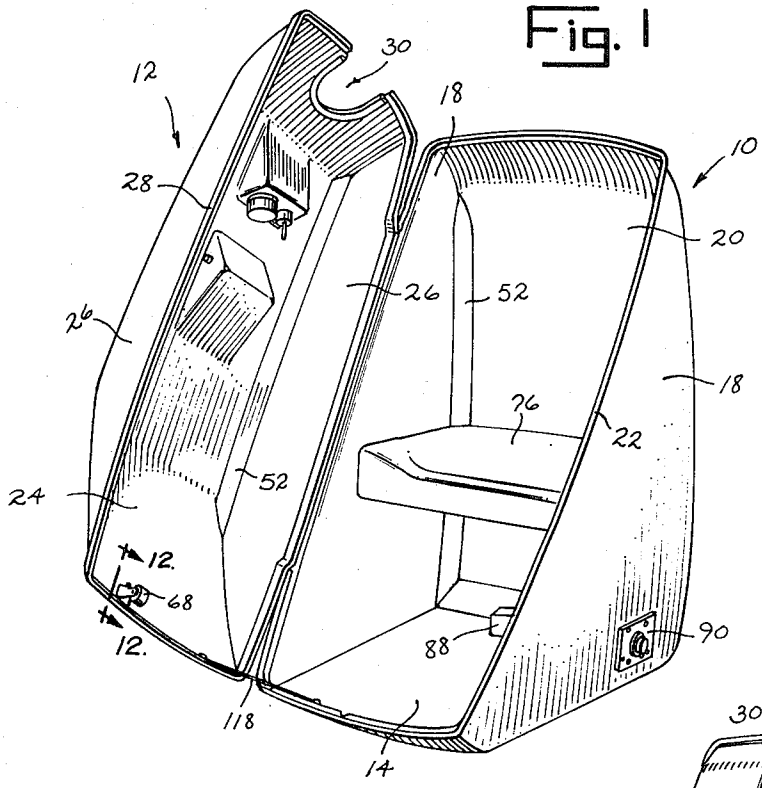



Fig. 2

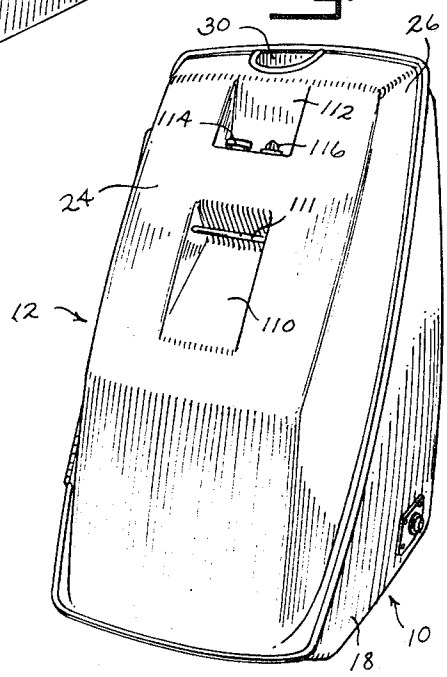
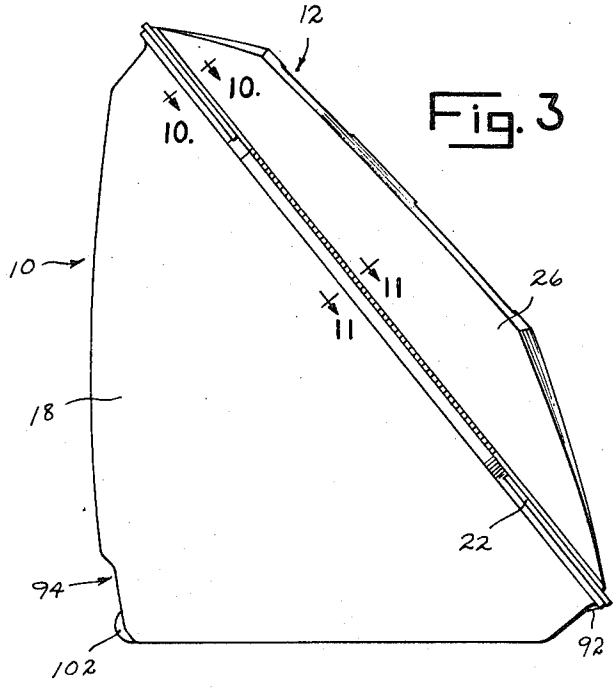



Fig. 3




INVENTOR.
DALE L. COSPER
BY Oltsch & Knoblock
ATTORNEYS

Fig. 4

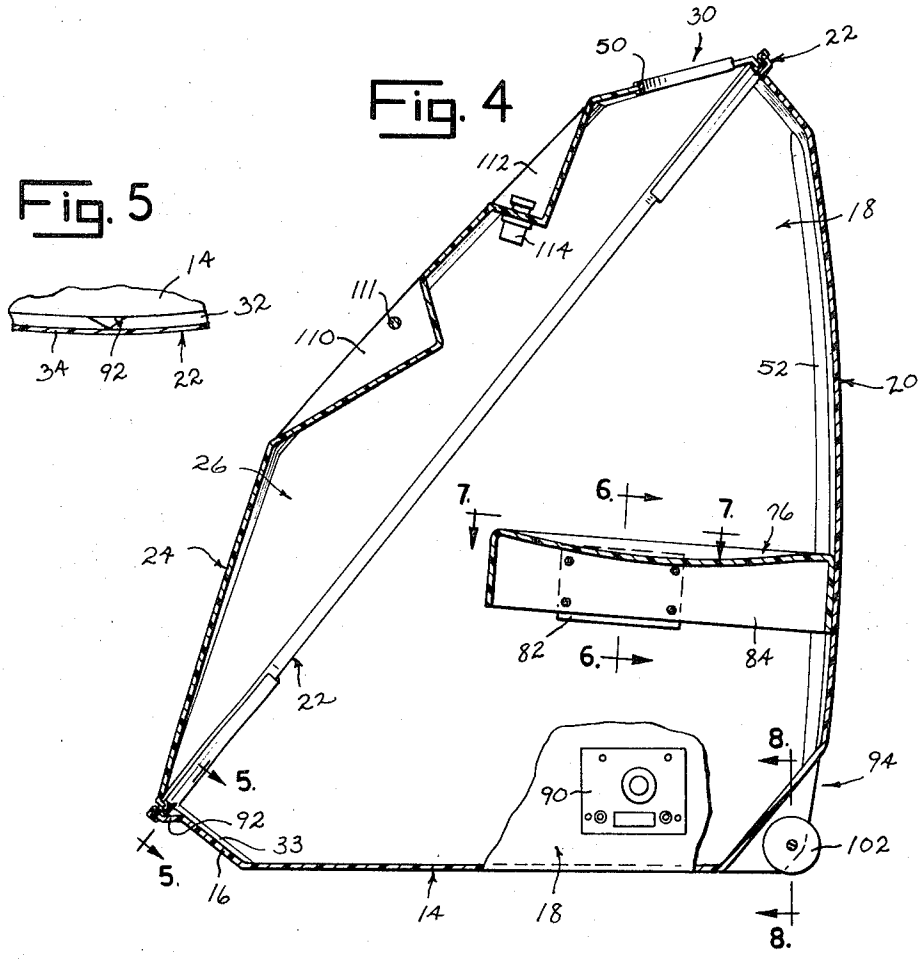



Fig. 5




Fig. 6

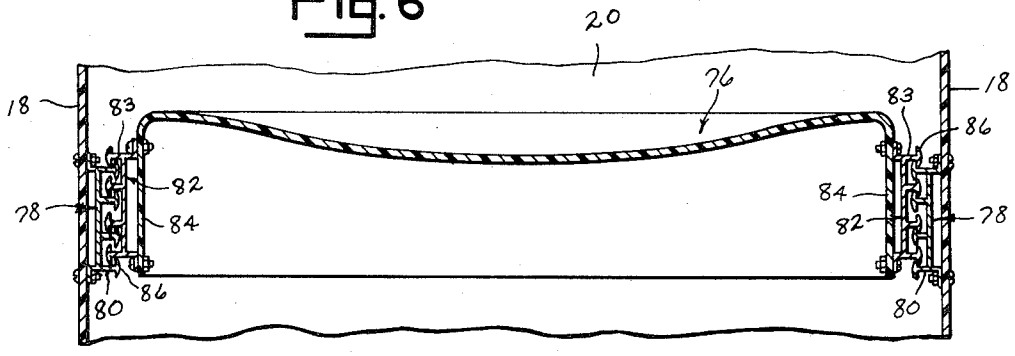
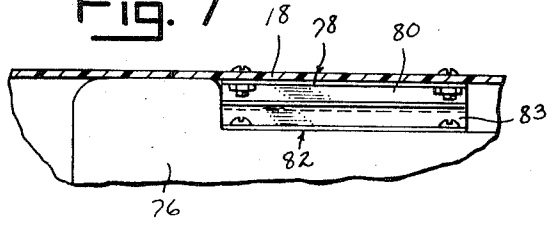



Fig. 7




INVENTOR.
DALE L. COSPER

BY Oltsch & Knoblock

ATTORNEYS

Fig. 8

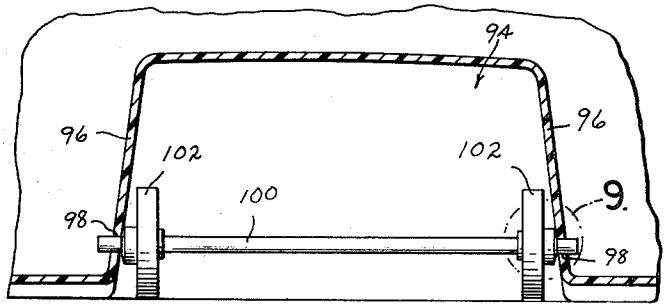



Fig. 9

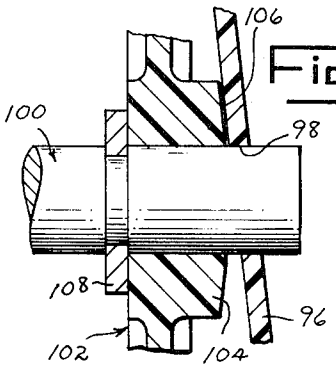



Fig. 11

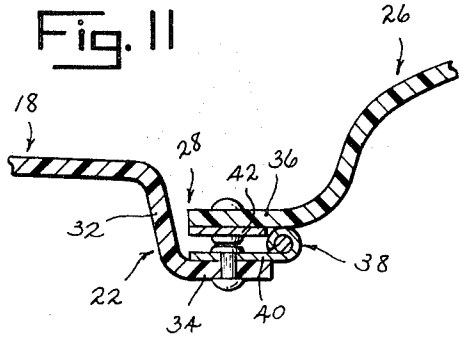



Fig. 10

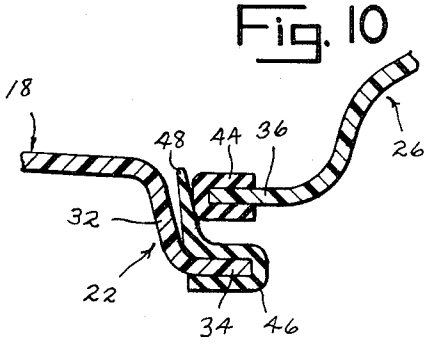
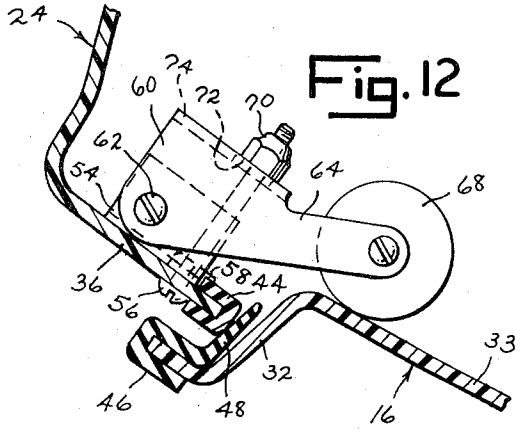



Fig. 12




INVENTOR.
DALE L. COSPER

BY Oltsch & Knoblock

ATTORNEYS

# STEAM BATH CABINET

## SUMMARY OF THE INVENTION

This invention relates to a steam bath cabinet of such a construction that each of the closet part and door of the cabinet can be formed of a one-piece molded construction. The opening into the closet part of the cabinet is defined by a coplanar end edge which not only allows each of the closet part and door to be molded in one integral piece but also permits the fit between the door and closet part to take place in a single plane, thus improving the seal between the door and the closet part. Unlike the prior art constructions of steam bath cabinets in which the neck opening is either wholly within the closet part of the cabinet or partially within both the closet part and door, the neck opening in the steam cabinet of this invention is formed wholly within the door. Wheels are mounted to the closet part of the cabinet and are adapted to permit the cabinet to be tilted and moved from one location to another with ease.

Accordingly, it is an object of this invention to provide a steam bath cabinet which is of economical construction.

Another object of this invention is to provide a steam bath cabinet in which the seal between the closet part and door of the cabinet lies in a single plane and permits each of the closet part and door to be formed or molded in one integral piece.

Still another object of this invention is to provide a steam bath cabinet in which the neck opening for the user of the cabinet is located wholly within the door of the cabinet.

Still another object of this invention is to provide a steam bath cabinet which is of light weight, economical construction and which includes means for facilitating movement of the cabinet from one location to another.

Still another object of this invention is to provide a steam bath cabinet in which the fit between the closet part of the cabinet and door thereof is adjustable.

Other objects of this invention will become apparent upon a reading of the invention's description.

## BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of this invention has been chosen for purposes of illustration and description wherein:

FIG. 1 is a perspective view of the steam bath cabinet of this invention showing the door thereof open.

FIG. 2 is a perspective view of the steam bath cabinet of this invention showing the door thereof closed.

FIG. 3 is a side elevation of the steam bath cabinet shown in FIG. 2 as viewed from the left thereof.

FIG. 4 is a sectional view taken along the center line of FIG. 2 with a portion of a side wall of the cabinet shown in place to illustrate the position of the heater controls of the cabinet.

FIG. 5 is a fragmentary sectional view taken along line 5—5 of FIG. 4.

FIG. 6 is a sectional view taken along line 6—6 of FIG. 4.

FIG. 7 is a fragmentary sectional view taken along line 7—7 of FIG. 4.

FIG. 8 is a fragmentary enlarged sectional view taken along line 8—8 of FIG. 4.



FIG. 9 is a fragmentary enlarged detail view of that portion of FIG. 8 which is circled and designated by the numeral 9.

FIG. 10 is a sectional view taken along line 10—10 of FIG. 3.

FIG. 11 is a sectional view taken along line 11—11 of FIG. 3.

FIG. 12 is an enlarged detail view as seen along line 12—12 of FIG. 1.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment illustrated is not intended to be exhaustive or to limit the invention to the precise form disclosed. It is chosen and described in order to best explain the principles of the invention and its application and practical use to thereby enable others skilled in the art to best utilize the invention.

The steam bath cabinet illustrated in the drawings includes a closet part 10 and a door 12. Closet part 10 includes a floor 14 having an upwardly inclined front marginal portion 16, side walls 18, and a back or end wall 20. Floor 14, side walls 18, and end wall 20 cooperate to form a continuous edge portion 22 which defines the opening into closet part 10. Door 12 is preferably of a generally concavo-convex or dome-shaped construction and may include a curved three-section center wall 24 bounded on opposite sides by side walls 26. The edge 28 of door 12 is interrupted in the upper section of center wall 24 by an opening 30 which is centered between the planes of side walls 26 of the door.

Edge portion 22 of closet part 10 lies in a single plane and may be defined, as best illustrated in FIGS. 10 and 11, as having an out-turned web part 32 which terminates in an upturned lip 34. Edge 28 of door 12 may be defined by a downturned lip 36 which extends circumferentially from one edge of opening 30 therein along the margins of door center wall 24 and side walls 26 to the other edge of opening 30. Door lip 36 fits complementally and preferably with slight clearance within closet part lip 34 and is secured to the closet part by means of a hinge 38. Hinge 38 extends along one side wall 18 of the closet part and is preferably positioned between lip 34 of the side wall and lip 36 of the adjacent door side wall 26. Plate 40 of hinge 38 is secured, such as by rivets, to the inside surface of the side wall lip 34 and plate 42 of the hinge is likewise secured to the outside surface of lip 36 of door side wall 26. A flexible U-shaped seal 44, which can be of a rubber composition, is fitted around lip 36 of door 12. A flexible U-shaped seal 46, which also may be of a rubber composition, is fitted around lip 34 of closet part 10. Seal 46 includes an inwardly projecting flange 48 which is spaced from web part 32 of edge portion 22. As shown in FIG. 10, flange 48 of seal 46 is contacted by door seal 44 as the door is closed and is flexed slightly inwardly so as to make positive contact with the door. To add to the comfort of the user of the steam bath cabinet, a flexible covering 50 may be applied to the edges of opening 30 in center wall 24 of the door.

Closet part 10 and door 12 are so constructed that each may be formed in one integral piece. In the preferred embodiment, the closet part and door are formed of molded fiber glass. To add rigidity to closet

part 10 and door 12, strips of reinforcing material 52 may be secured internally between walls at selected junctions thereof in the closet part and door to thus form what is known as a torque-box. To compensate for any sag or misalignment of door 12 and to improve the fit of the door, a door adjustment means, such as the camming device illustrated in FIG. 12, may be connected to either closet part 10 or door 12. The illustrated camming device includes an internal anchor bracket 54. Bracket 54 is preferably secured by screw 56 and nut 58 to the inside surface of lip 36 at the bottom edge of door 12 adjacent its hinge-free side edge. An inverted generally U-shaped pivot bracket 60 is positioned over bracket 54 and connected thereto by a pivot pin 62. Bracket 60 includes arm parts 64 which protrude beyond the edge of door 12 and which have a roller 68 journalled thereto. Bracket 60 is shiftable about pin 62 in a plane generally perpendicular to lip 36 and is limited in its movement by stop nut 70 which is threaded onto the free end of screw 56 which protrudes upwardly with clearance through an aperture 72 in web 74 of bracket 60. When door 12 is being closed, roller 68, which is preferably of a nylon composition, contacts web part 32 of the front marginal portion 16 of closet part floor 14 and rides upwardly thereover onto the sloping part 33 of floor portion 16. As roller 68 rides upwardly over web part 32 of floor portion 16, bracket 60 moves upwardly relative to the door until the web 74 of the bracket engages stop nut 70. Thereafter, continued upward movement of roller 68 as the top of web part 32 is approached causes an upwardly movement of door 12 to provide a good interfit between the door and closet part 10. As roller 68 reaches the top of web part 32 and rides slightly downwardly onto sloping part 33, door seal 44 is caused to be firmly seated against flange 48 of closet part seal 46. Adjustment of the fit of door 12 is accomplished by turning stop nut 70 which varies the extent of movement of bracket 60 about its pivot pin 62.

Disposed within closet part 10 is a seat 76. Seat 76 is preferably removably mounted to the closet part and is adjustable in height so as to accommodate users of different sizes. A bracket 78 is secured by suitable means to each side wall 18 of the closet part. Each bracket 78 includes a plurality of horizontal parallel rails 80. A similar bracket 82 is secured to each side flange 84 of seat 76. Brackets 82 contain parallel flanges or rails 83 which are so positioned that seat 76 can be slid inwardly and outwardly of closet part 10 with at least one rail 83 of each seat bracket 82 overlapping and resting upon a rail 80 of a closet part bracket 78. Thus, the distance of seat 76 from the bottom of floor 14 of the closet part can be varied by adjusting seat 76 and causing a lapping of selected rails 80 and 83 of brackets 78 and 82. To limit appreciable side movement of seat 76, each rail 80 and 83 of brackets 78 and 82 may include a cap part 86.

Located below seat 76 is a steam generating unit 88. Steam generating unit 88 includes a reservoir pan and heating coils which are of standard construction in the art and which are activated by various switches and thermostatic controls contained in plate 90 which is secured to one side wall 18 of closet part 10. To facilitate removal of the condensation which collects on the inner surface of door 12 during operation of the steam bath cabinet, the edge portion 22 at floor front portion 16 is preferably designed with a slight arcuate configuration and has a trough 92 formed in its web part 32 at approximately the center of the edge portion which drains onto sloping part 33 of front portion 16. Thus the condensation forming on the inner surface of the door will drain to the lower edge of the door, onto web part 32 or seal flange 48 which is preferably notched above trough 92, down trough 92 and onto the bottom of the closet part where it is sponged up after use of the cabinet.

In order to facilitate movement of the assembled steam cabinet from one location to another, a cove 94 is formed in end wall 20 of the closet part adjacent the rear edge of floor 14. Cove 94 is preferably located midway between side walls 18 of the closet part and is defined in part by spaced sides 96 as best illustrated in FIG. 8. Each side 96 includes an aperture 98 into which one end portion of an axle member 100 is inserted. A wheel 102 is journaled about each end portion of axle member 100 and is positioned next tc the adjacent cove side 96. Each wheel 102 is positioned adjacent its cove side 96, with the hub 104 of the wheel making surface-to-surface bearing contact at 106 with the cove side as best illustrated in FIG. 9, by a snap ring 108 which is seated within a groove in axle member 100. Wheels 102 project beyond the outline of closet part end wall 20 at its junction with floor 14 so as to permit the assembled cabinet to be tilted rearwardly with the weight of the cabinet being placed upon the wheels and the cabinet moved in wheelbarrow fashion. The outer periphery of wheels 102 preferably do not extend beyond the plane of the lowermost portion of floor 14 so as to enable the cabinet part to set evenly upon the floor.

To assist in the closing of door 12, an indentation 110 may be formed in center wall 24 of the door and a handlebar 111 may be inserted across indentation 110 and anchored into center wall 24. Additionally, another indentation 112 may be formed in center wall 24 just below the neck opening 30. Indentation 112 is provided with a bottom wall into which a thermostat 114 and timer 116 may be inserted and directed toward the view of the user of the cabinet so as to indicate the inside temperature of the steam bath cabinet and the duration of the steam bath. A flexible door stop 118 which limits the extent to which door 12 can be opened extends between the door and closet part 10.

It is to be understood that the invention is not to be limited to the details herein given but that it may be modified within the scope of the appended claims.

What I claim is:

1. In a steam bath cabinet including a closet part and a door; said closet part having an opening thereinto through which a user enters the cabinet, a floor, spaced side walls extending upwardly from said floor, an end wall extending upwardly from said floor and interconnecting said side walls; said door hinged to said closet part and adapted to span said closet part opening; the improvement wherein the forward margins of said floor and side walls and the upper margin of said end wall cooperate to form an edge portion defining said closet part opening; said door being of a generally dome-shaped configuration and having an edge adapted to engage the edge portion of said closet part opening

when spanning said opening; said edge portion of the closet part opening lying in a single plane, said door having an opening formed therein; said door opening interrupting said door edge to define the sole space for receiving the neck of the cabinet user during operation of the cabinet.

2. In a steam bath cabinet including a closet part and a door; said closet part having an opening thereinto through which a user enters the cabinet, a floor, spaced side walls extending upwardly from said floor, an end wall extending upwardly from said floor and interconnecting said side walls; said door hinged to said closet part and adapted to span said closet part opening; the improvement wherein the forward margin of said floor and side walls and the upper margin of said end wall cooperate to form an edge portion defining said closet part opening; said door being of a generally dome-shaped configuration and having an edge adapted to engage the edge portion of said closet part opening when spanning said opening; said edge portion of the closet part opening lying in a single plane, said door being interrupted to form an opening; said door opening cooperating with the edge portion of the cabinet part opening to form the only space for receiving the neck of the cabinet user when the door spans the closet part opening.

3. The cabinet of claim 2 and means carried by one of said door and closet part and engageable with the other of said door and closet part for shifting the door relative to the closet part to assure a seal fit between the edge of said door and the edge portion of said closet part opening.

4. The cabinet of claim 3 wherein said door edge fits within the closet part opening; said door shifting means including a cam member carried by said door at the edge thereof; said cam member adapted to engage the inner surface of said edge portion of the closet part opening as said door is closed to span said closet part opening.

5. The cabinet of claim 4 wherein said cam member is a roller journaled at the bottom of said door.

6. The cabinet of claim 5 wherein that part of said edge portion of the closet part opening at the closet part floor is defined by a downturned web which terminates in a forwardly projecting lip; said roller engaging said web and being cammed upwardly thereover causing a vertical shifting of said door relative to said closet part as said door is closed.

7. The cabinet of claim 6 wherein said roller is vertically adjustable relative to said door to vary the fit of said door within said closet part opening.

8. The cabinet of claim 2 and wheel means carried by said closet part adjacent the lower edge of its end wall; said wheel means adapted to support the weight of said cabinet when the closet part thereof is tilted rearwardly so as to facilitate movement of the cabinet from one location to another.

9. The cabinet of claim 2 including a seat positioned within said closet part between the side walls thereof; means carried by each side wall for supporting said seat; each seat supporting means including spaced parallel support rails; said seat including means overlapping and resting upon selected rails wherein said seat is supported a selected distance from the floor.

10. The cabinet of claim 2 wherein said door edge fits within the closet part opening; that part of said closet opening edge portion along said closet part floor having sloping portions terminating in a lower drain point; said edge portion part defined by a downturned web which terminates in a forwardly projecting lip; said web defining a trough at the lower drain point of said edge portion part; said trough being inclined toward the floor of said closet part and being adapted to receive the condensation which forms during use of the cabinet on the inside surface of said door and which drains downwardly onto the lip and web of said edge portion part; whereby said condensation upon entering the trough drains onto the floor of the closet part.

* * * * *