



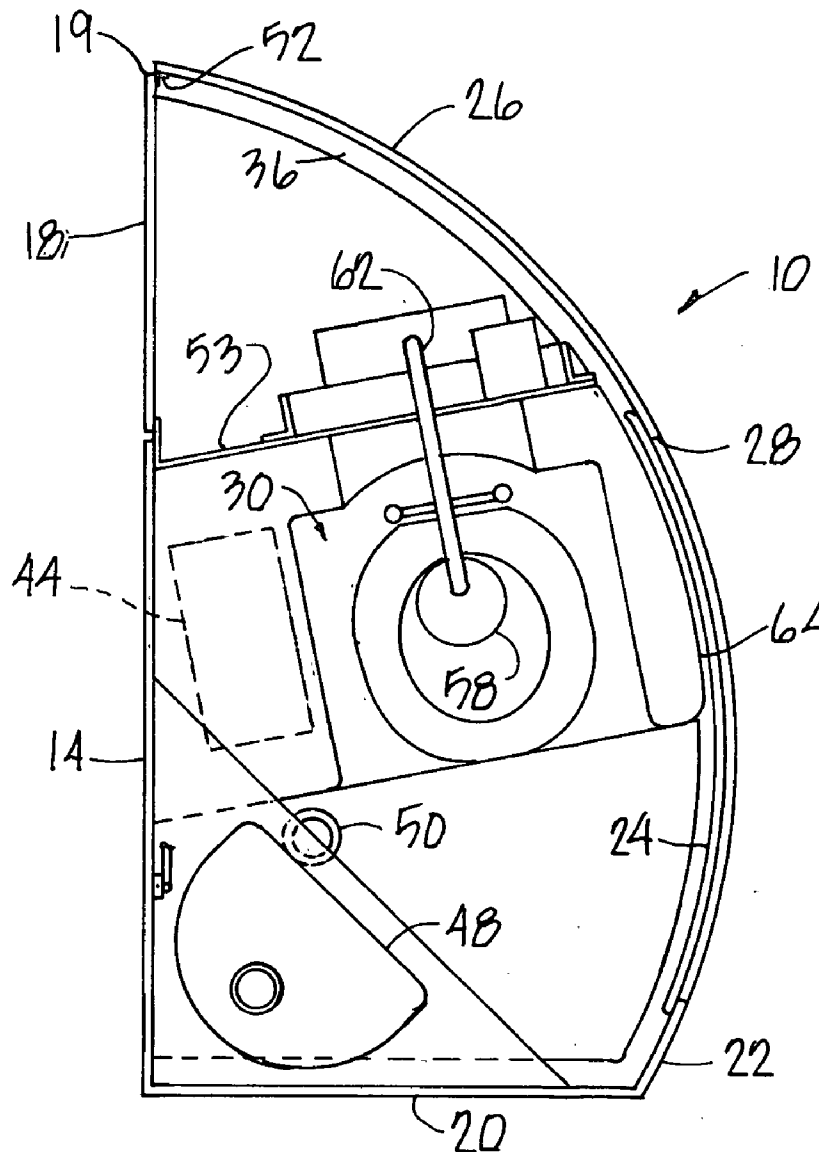
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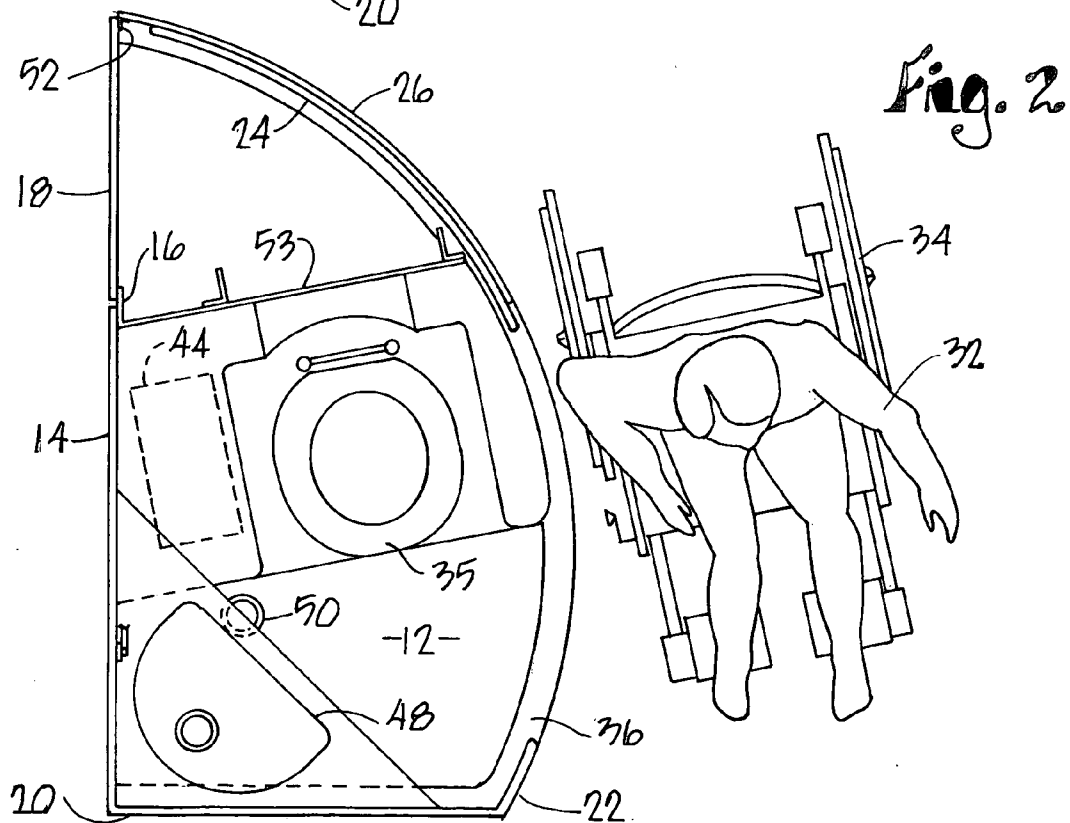
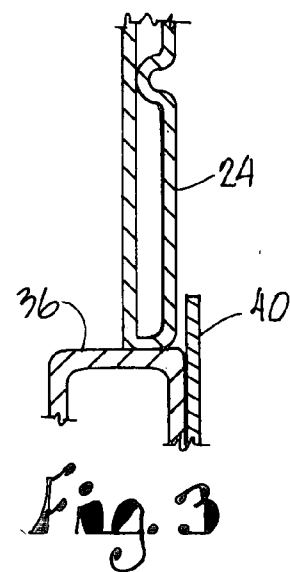
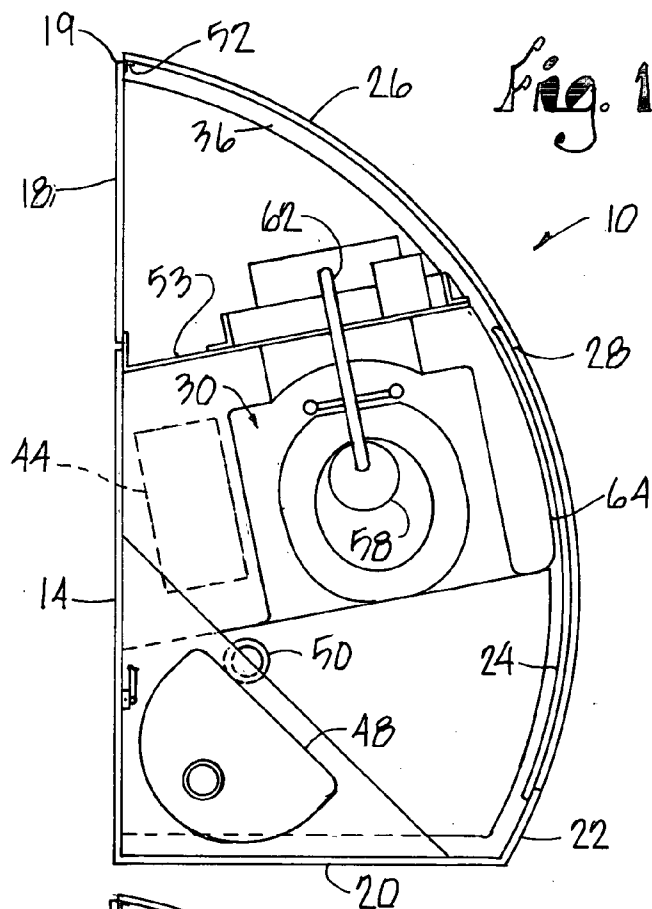
(19) **United States**(12) **Patent Application Publication**
Skinner(10) **Pub. No.: US 2008/0289099 A1**(43) **Pub. Date: Nov. 27, 2008**(54) **PORTABLE DISABILITY BATH****Publication Classification**(76) Inventor: **Jerald P. Skinner**, Topeka, KS
(US)(51) **Int. Cl.**
E03C 1/01 (2006.01)(52) **U.S. Cl.** 4/664(57) **ABSTRACT**

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CHASE LAW FIRM L.C.**4400 COLLEGE BOULEVARD, SUITE 130**
OVERLAND PARK, KS 66211 (US)(21) Appl. No.: **12/151,866**(22) Filed: **May 9, 2008****Related U.S. Application Data**(60) Provisional application No. 60/928,535, filed on May
10, 2007.

A bath stall unit for accommodating a disabled person includes a walled structure having a curved exterior wall portion and a curved access door associated therewith. The door is movable generally horizontally along a curved path defined by the wall portion between open and closed positions to provide access to the unit by lateral transfer, such as from a wheelchair. A toilet in the unit is disposed to receive a person transferred therein, where both a lavatory and shower facilities are provided. The configuration of the unit provides a sufficiently narrow width to permit an assembled unit to be delivered to a home or a facility through an exterior doorway.





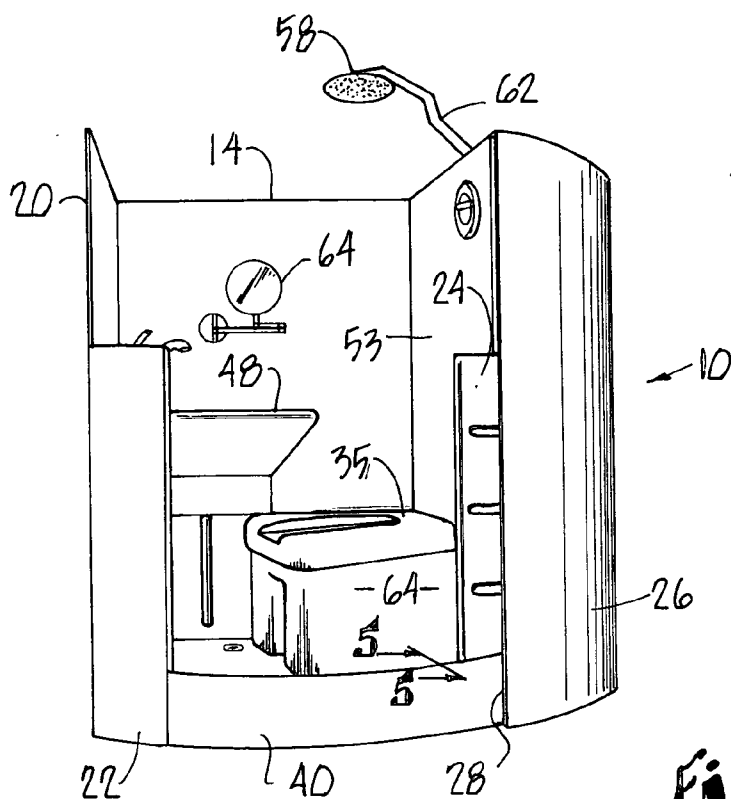


Fig. 4

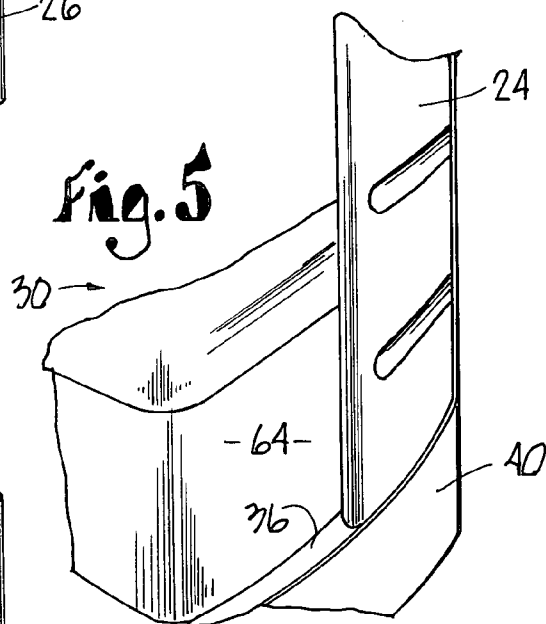


Fig. 5

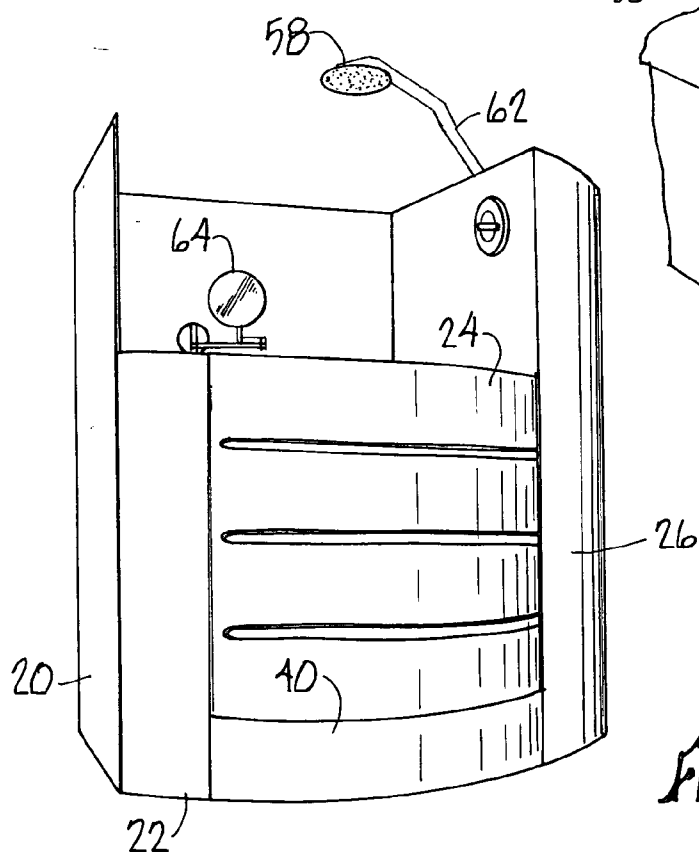


Fig. 6

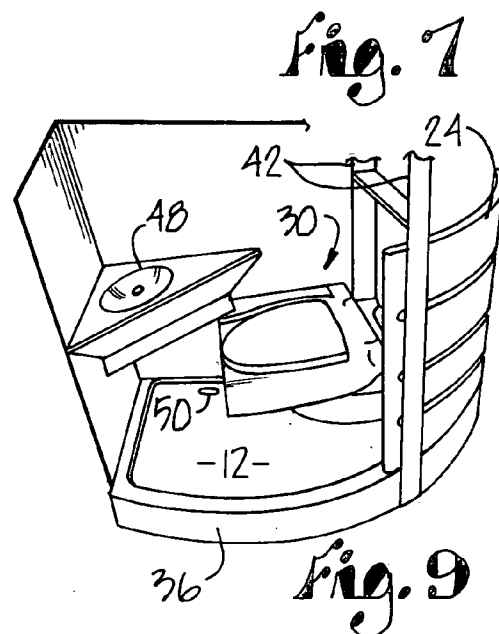
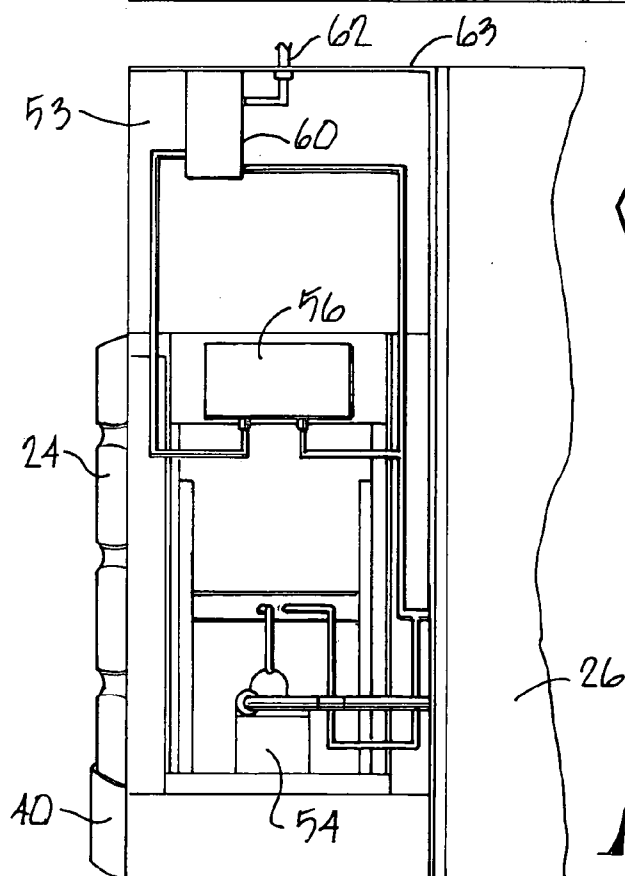
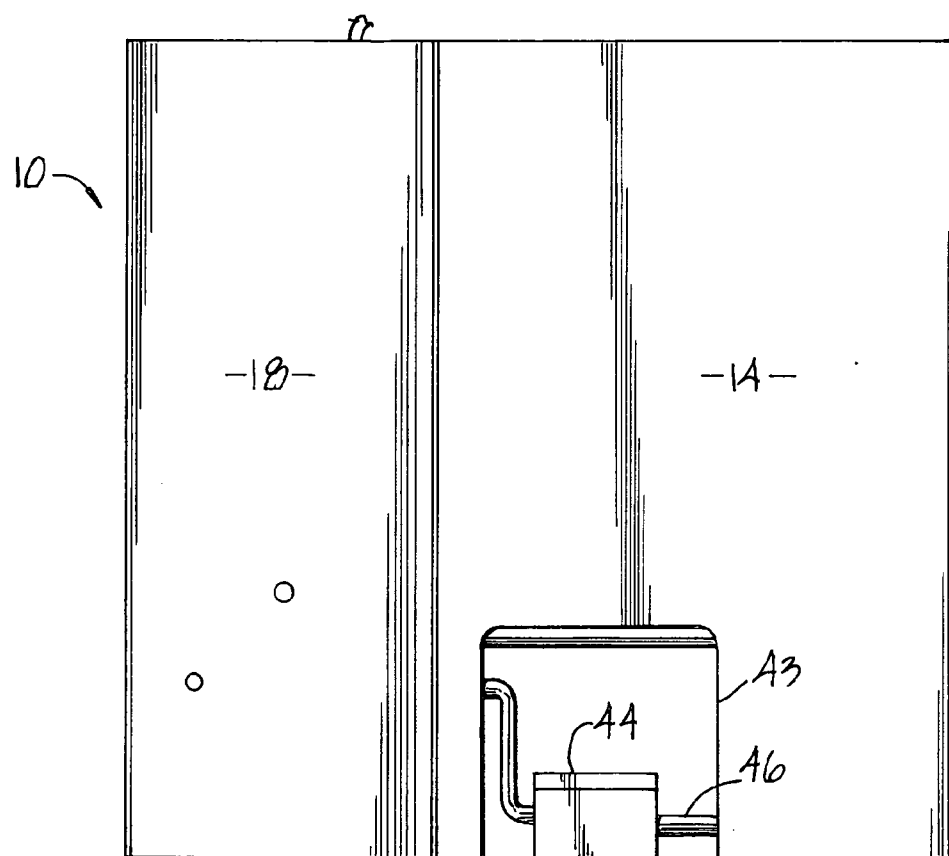


Fig. 8

Fig. 7

Fig. 9

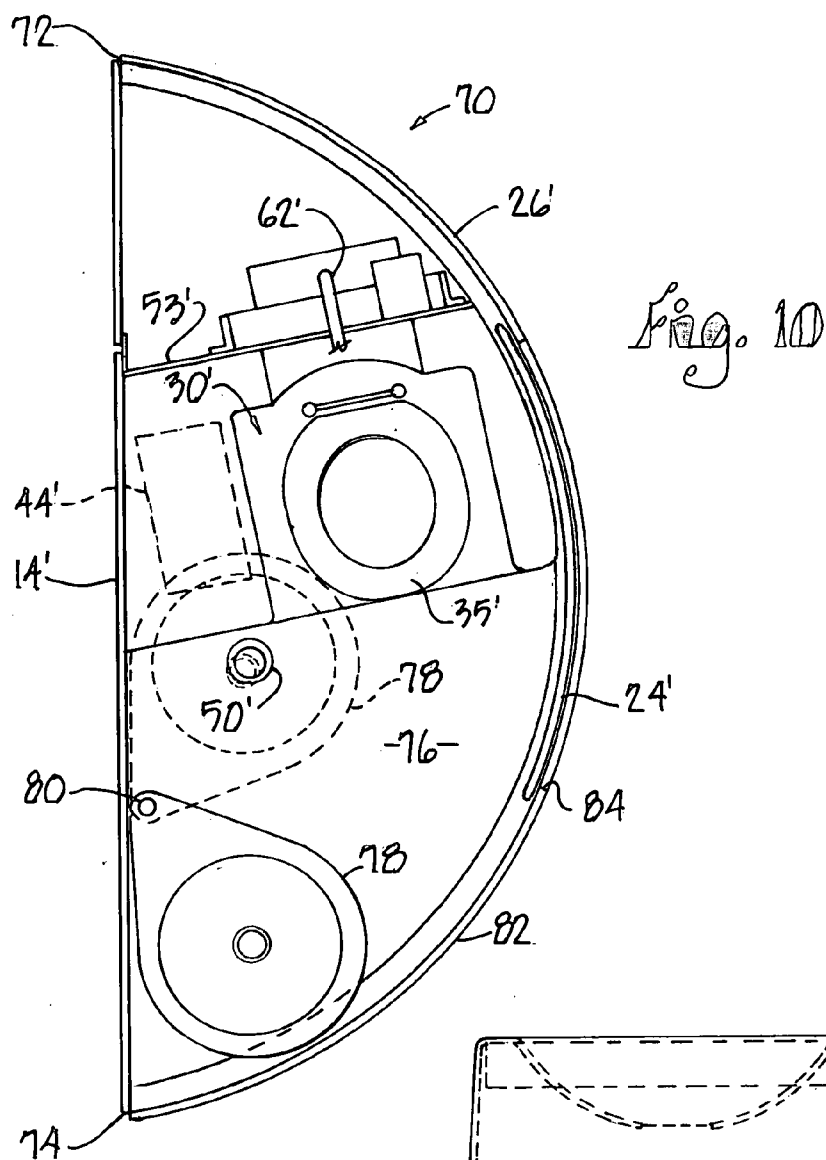


Fig. 12

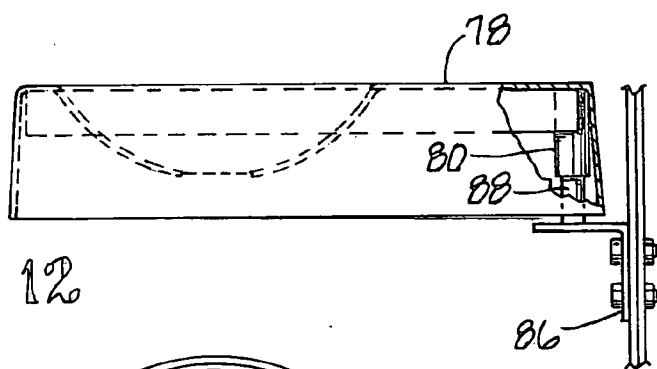
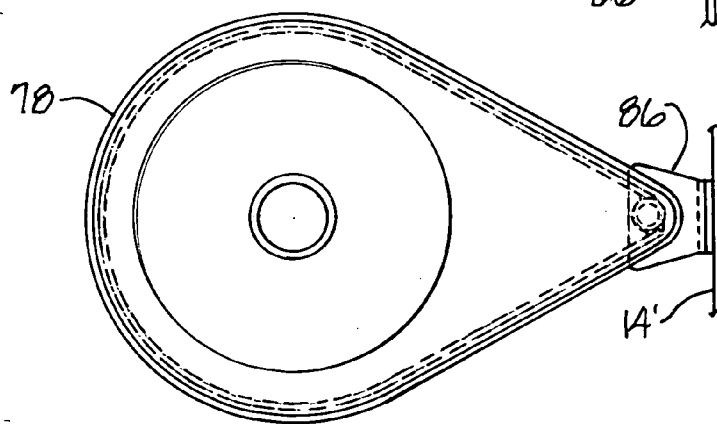


Fig. 11



PORTABLE DISABILITY BATH

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of a prior filed, co-pending provisional application Ser. No. 60/928,535, filed May 10, 2007, entitled PORTABLE DISABILITY BATH.

FIELD OF THE INVENTION

[0002] This invention relates to a portable bathing and sanitary system for catastrophically injured persons or those confined to a wheelchair.

BACKGROUND OF THE INVENTION

[0003] United States Patent Application Publication No. US 2006/0230526 A1 discloses a catastrophic disability bath that comprises a bath stall formed by a system of panels including a front panel having an access door mounted thereon that is rotatable about a horizontal axis and is swung vertically upwardly from a closed to an open position to permit entry by a disabled person by a single lateral transfer from a wheelchair. The stall includes a toilet, a shower and a lavatory and is preferably approximately 15 square feet (1.4 square meters) in total area, thus enabling the bath unit to be utilized in a home care environment. As expensive modifications to the home are not required, family home care at modest cost is possible. The stall can be shipped in modular form and easily assembled in the home or a care facility.

[0004] However, it is more desirable to provide a portable, preassembled system that has a sufficiently narrow width that it can be moved into a home through the front door and installed therein at a desired location. The access door to the unit is preferably open and closed by horizontal movement to provide ease of operation and eliminate any possible problem of overhead clearance. The ability to connect to the available sewer system whether upstream or downstream from the unit location is also desired.

SUMMARY OF THE INVENTION

[0005] In an embodiment of the present invention, the aforementioned requirements are addressed by providing a portable bath stall unit for accommodating a disabled, non-walking person comprising a walled structure having a floor therein and which includes a curved wall portion that minimizes the length of the unit and provides an access way for ingress and egress by the user. A curved door associated with the curved wall portion provides a pocket door arrangement and is mounted for movement generally horizontally along a curvilinear path between an open position providing access to the unit and a closed position cooperating with the curved wall portion to close the unit. A toilet on the floor is disposed adjacent the wall portion for lateral transfer of a person into the unit and onto the toilet when the door is in its open position.

[0006] In another aspect of the invention, the wall portion and the door have substantially the same curvature thereby providing a pocket door that slides back into the cavity provided by the pocket and permits lateral transfer of a person from a wheelchair into the unit and onto a toilet therein when the door is in its open position.

[0007] Another aspect of the invention is the provision of a curved curb at the access way presenting a guideway for the door and also preventing escape of water that may collect on

the floor of the unit. The door has a lower edge in sliding contact with the curb as the door is opened and closed.

[0008] In another embodiment of the present invention, first and second spaced, curved wall portions are utilized which define an opening therebetween to provide access to the unit and present opposed end portions of the walled structure, thereby presenting the front side and opposed end portions of the bath stall unit.

[0009] A further aspect of the invention is the ability to limit the width of the unit to less than the standard width of an exterior door of a home, thereby permitting a finished unit, fully assembled, to be delivered to the home via an exterior doorway in a completely assembled condition.

[0010] An additional aspect is to provide a portable bath stall unit having an access door to the toilet and bath movable horizontally between open and closed positions along a path that shortens the required length of the unit so it can be readily accommodated in a home of modest size or a mobile home.

[0011] Also, a further aspect of the invention is to provide an embodiment of a portable bath stall unit having a curved exterior wall structure extending from one end of the unit to the other to increase the area of the bath stall, and wherein a lavatory is mounted in the stall for movement between a first position spaced from the toilet and a second position adjacent the toilet within reach of a person seated thereon, thereby accommodating an immobile person seated on the toilet by movement of the lavatory to the second position.

[0012] Other advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings, wherein embodiments of the present invention are set forth by way of illustration and example.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 is a plan view of a first embodiment of the disability bath with the access door in its closed position, a top panel above and behind the toilet being omitted to show the configuration of the side panel and curb, a fender component of the door track being omitted for clarity.

[0014] FIG. 2 is a plan view similar to FIG. 1 but with the door in its open position, showing an individual in a wheelchair prior to lateral transfer into the unit onto the toilet.

[0015] FIG. 3 is an enlarged detail view showing a cross-section of the curb on which the lower edge of the access door is in sliding contact, and shows the fender component.

[0016] FIG. 4 is a frontal perspective view of the unit with the door open.

[0017] FIG. 5 is an enlarged, detail, cross-sectional view taken along line 5-5 in FIG. 4 and showing the curb, fender and adjacent side of the toilet.

[0018] FIG. 6 is a frontal perspective view showing the door closed.

[0019] FIG. 7 is a rear elevational view of the unit, i.e., as seen from the left side of FIGS. 1 and 2.

[0020] FIG. 8 is a side elevation as viewed from the right side in FIG. 6 but with the hinged, curved side wall shown fragmentarily in an open position to reveal mechanical and plumbing components behind the toilet.

[0021] FIG. 9 is a partial, detail, perspective view looking downwardly through the access opening to reveal interior components, the door being shown in its open position.

[0022] FIG. 10 is a plan view similar to FIG. 1 but showing a second embodiment of the disability bath having an entirely

curved front side, and a lavatory in the bathroom area rotatable between the full and broken line positions illustrated.

[0023] FIG. 11 is a fragmentary, plan view of the lavatory shown in FIG. 10.

[0024] FIG. 12 is a side view of the lavatory of FIG. 11 with parts broken away to show the swivel components.

DETAILED DESCRIPTION

[0025] Referring to the drawings, initially to FIGS. 1-7 and 9, a disability bath unit 10 includes specially shaped and positioned panels secured to an aluminum frame. The panels are preferably made from flat sheet ABS thermoplastic, vacuum formed to the required configuration. The panel elements include a base panel 12 presenting the floor of the bath unit, a long rear panel 14 secured at its inner edge to a stud 16 (FIGS. 1 and 2), a shorter rear panel 18 in the same vertical plane as panel 14 extending from stud 16 to a corner 19 of the unit, a left side panel 20, a narrow front wall panel 22 at the left side of the entrance to the bath unit (FIGS. 4 and 6), a curved, sliding pocket door 24 shown closed in FIGS. 1 and 6 and extending to the height of the front panel 22, a curved right front and side wall panel 26 extending the entire vertical height of the bath unit 10 and having a terminal, vertical edge 28 adjacent the backside of a toilet 30 within the walled unit. The curved pocket door 24 is shown closed in FIG. 1 and open in FIG. 2 to permit the lateral transfer of a disabled person 32 (FIG. 2) from a wheelchair 34 to a toilet seat 35.

[0026] FIG. 9 shows the front access to the toilet 30 (and other facilities in the unit to be discussed) with the wall panels removed to reveal that the floor 12 is formed with a curb 36 having an arcuate configuration at the front of the bath unit conforming to the curvature of the door 24 (shown open in FIG. 9) and the wall panel 26 (see FIGS. 1 and 2). As shown in detail in FIG. 3, the door 24 slides on the upper surface of the curb 36 and is prevented from shifting outwardly off of the curb by a fender strip 40 which projects above the top surface of curb 36. It should be noted that for clarity the fender 40 is not shown in FIGS. 1, 2 and 9. Also, the curved outer wall 26 is not shown in FIG. 9 in order to reveal door 24 in its fully open position. A pair of aluminum studs 42 shown in FIG. 9 form part of the inner frame of the bath unit and are removable to permit the door 24 to be removed for service.

[0027] FIG. 7 reveals that the rear panel 14 has an opening 43 at the bottom thereof to permit access to a macerator 44 in a drain line 46 from a lavatory 48 at the interior corner of the unit formed by rear panel 14 and left side panel 20. As may be appreciated from FIGS. 2 and 9, a person on the toilet seat 35 has access to the lavatory 48 while seated as the lavatory is immediately in front and to the right of the seated individual. Accidental overflow from lavatory 48 or toilet 30 flows readily to a floor drain 50. Any escape of wastewater is precluded by the curb 36.

[0028] Referring to FIG. 8, the side panel 26 is shown fragmentarily swung to an open position about a vertical axis defined by a piano hinge 52 that joins the vertical rear edge of panel 26 to the outer edge of rear panel 18 at corner 19. In FIG. 8, door 24 is in its closed position as seen in FIGS. 1 and 6 and thus provides access to the plumbing and mechanical components seen in FIG. 8. A vertical panel 53 behind toilet 30 presents an interior wall and separates the toilet and bath stall from the plumbing and mechanical components, which in the unit illustrated include a macerator 54 for the toilet, a tankless water heater 56 for the lavatory 48 and a showerhead 58 which, in operation, directs water downwardly on an indi-

vidual on toilet seat 35. A mixer valve 60 receiving both hot and cold water is shown in FIG. 8 upstream from a pipe 62 extending through a top panel 63 of the unit 10 to the showerhead 58. Other bathroom components for convenience and use include items as desired such as an adjustable, wall-mounted mirror 64.

[0029] In use, the curvilinear pocket door 24 slides at its lower edge on the curb 36 between the closed position shown in FIG. 1 and the open position thereof shown in FIG. 2. The door 24 is guided along its path by the complimentary curvilinear outer wall 26, curb 36, an outer side surface 64 (FIG. 5) presented by the toilet 30, and fender 40. Accordingly, door 24 is confined to a curvilinear path and its stability is further maintained by its curvilinear configuration that precludes inner movement of the door 24 off of the track established by the curb 36 and wall 26.

[0030] Additionally, it should be appreciated that the curvilinear configuration of the access door 24 and related components limits the length of travel of the door 24 in a lateral direction (to the right as viewed in FIGS. 4 and 6) thereby minimizing the overall lateral length of the bath stall unit. This facilitates accommodation of the unit in small dwellings where space is limited.

[0031] Furthermore, the maximum front to rear dimension of the unit necessary to accommodate the toilet 30, lavatory 48 and related components may be limited to approximately 34 inches (86 cm.) and thus enable a completely assembled unit to be delivered to a dwelling through a standard 36-inch wide exterior door. Accordingly, the unit of the present invention may be delivered to the user preassembled and ready to be connected to water and sewer lines. The macerators do not require a downstream sewage connection and thus additional flexibility is provided with respect to selection of a suitable location of the unit within the dwelling.

[0032] It should be appreciated that the aluminum frame that supports the panels and other components of the unit is only partially shown. In particular, utilization of a stable frame construction behind the panel 53 is important for both structural support and to provide sufficient weight to offset any tendency of the unit to become unstable when the weight of a disabled person is added to the stall during use.

[0033] Referring to FIGS. 10-12, a second embodiment of the present invention is illustrated and has the same components as the embodiment of FIGS. 1-9 except as described below. Components shown which are utilized by the embodiment of FIGS. 1-9 are designated by the same reference numerals with the addition of the prime (') notation. As is evident from the plan view of FIG. 10, the second embodiment has a curved wall structure 70 which, as viewed in plan, defines a continuous curvilinear configuration from a rear corner 72 of the bath unit 70 to an opposite corner 74 thereof. A base panel 76 of generally semi-circular configuration presents the floor of the bath unit 70 and provides additional floor area from the front of toilet seat 35' to corner 74. A lavatory 78 is mounted on a pivot 80 described in detail below, for movement between the full line position shown in FIG. 10 remote from the toilet 30', to a position adjacent the toilet 30' illustrated in broken lines. As in the first embodiment, the floor drain 50' receives discharge from the lavatory 78, irrespective of its position within the bath unit.

[0034] Access to the toilet seat 35', lavatory 78 and the shower is via the curved, sliding pocket door 24' shown in its closed position in FIG. 10. However, as compared with the embodiment of FIGS. 1-9, a curved wall member 82 extends

from rear corner 74 outwardly in an arc to an outer vertical edge 84 whereby, in the closed position of pocket door 24' shown in FIG. 10, a three-component, entirely arcuate side-wall is presented comprising wall panel 26', pocket door 24', and the curved wall member 82. Accordingly, without increasing the depth of the bath unit 70 from door 24' to the rear wall 14', additional space is provided in the lavatory area in front of the toilet seat 35' and, as in the embodiment of FIGS. 1-9, a preassembled unit may be delivered through a standard 36-inch wide exterior door.

[0035] Furthermore, the embodiment of FIGS. 10-12 provides an immobile person with the option of easily using the lavatory 78 from the toilet seat 35'. Referring to FIGS. 11 and 12, an angle member 86 is bolted to wall panel 14' and presents a horizontal surface to which an upstanding pivot rod 88 is welded to provide a vertical axis. A tube 80 depending from a rear projection of the lavatory 78 receives rod 88 to provide a vertical axis about which the lavatory 78 may be rotated between the full line position thereof at the end of the stall shown in full lines in FIG. 10, and a second operational position shown in broken lines where the lavatory 78 partially overlies the toilet 30' for easy access by a person seated thereon. Therefore, in addition to being positioned directly under the showerhead 58 as illustrated, for example, in FIG. 4, a immobile user may have access to the lavatory 78 without assistance.

[0036] It is to be understood that while certain forms of this invention have been illustrated and described, it is not limited thereto except insofar as such limitations are included in the following claims and equivalents thereof.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A bath stall unit for accommodating a disabled person, said unit comprising:

- a walled structure having a floor therein and including a curved wall portion providing an access way,
- a curved door associated with said wall portion and mounted on said structure for movement generally horizontally along a curved path defined by said wall portion between an open position providing access to said unit and a closed position cooperating with said wall portion to close said unit, and
- a toilet on said floor adjacent said wall portion disposed for lateral transfer of a person into said unit and onto said toilet when said door is in its open position.

2. The bath stall unit as claimed in claim 1, wherein said wall portion and said door have substantially the same curvature.

3. The bath stall unit as claimed in claim 2, wherein said door comprises a curved, sliding pocket door movable along said path.

4. The bath stall unit as claimed in claim 2, wherein said floor includes a curved curb at said access way presenting a guideway for said door and extending upwardly from said floor to prevent water escape from said unit.

5. The bath stall unit as claimed in claim 4, wherein said door has a lower edge in sliding contact with said curb as said door is opened and closed.

6. A disability bath unit comprising:

- a walled structure including first and second spaced, curved wall portions defining an opening therebetween providing access to the unit, and presenting opposed end portions of said structure,

said structure further having an interior wall and a floor cooperating with said curved wall portions to define a bath stall accessible through said opening,

- a curved door associated with said first curved wall portion and mounted on said structure for movement generally horizontally along said first curved wall portion in a curved path between an open position providing access to said stall and a closed position cooperating with said first and second curved wall portions to close said stall, and

a toilet in said stall disposed for lateral transfer of a person into said unit and onto said toilet when said door is in its open position.

7. The bath unit as claimed in claim 6, wherein said door comprises curved, sliding pocket door movable along said path.

8. The bath unit as claimed in claim 6, wherein said first and second curved wall portions present a front side and said opposed end portions of said structure to thereby define said stall, said bath unit further comprising a lavatory in said stall mounted for movement between a first position spaced from said toilet and a second position adjacent said toilet within reach of a person on the toilet, whereby to accommodate an immobile person seated on the toilet by movement of the lavatory to said second position.

9. The bath unit as claimed in claim 8, wherein said first position of the lavatory is at a corner of the stall defined by said second curved wall portion at one of said end portions of the structure.

10. The bath unit as claimed in claim 8, further comprising a swivel supporting said lavatory for movement between said first and second positions.

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