TILTABLE TUB ASSEMBLY FOR BATHING INVALIDS

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ABSTRACT

A tub assembly for bathing invalids or the like is provided which is tiltable between a generally horizontal bathing position and a generally upright patient ingress and egress position. A reservoir compartment is presented at one end of the elongated tub in order that the same may be tilted from one position to the other without first draining the water therefrom when the tub is to be placed in an upright position. The normally bottom wall of the tub is contoured in a manner to support the invalid as well as to reduce the volume of water required to properly bathe the individual; the reservoir and the tub, when in its horizontal position, holding approximately the same volume of water. The tub end wall opposite the reservoir compartment supports the invalid in a semi-reclined or supine position and is provided with a spine-receiving channel therein in order that the back of the patient may be properly supported during bathing.

5 Claims, 6 Drawing Figures
TILTABLE TUB ASSEMBLY FOR BATHING INVALIDS

This invention relates to a tub assembly for bathing invalids or the like who are unable to make use of conventional bathing facilities and who generally are in need of assistance during bathing. The tub is of a type normally employed for bedside bathing where the patient or invalid is unable to leave the room or at least it is inconvenient for them to do so.

In bathing individuals of this nature, the matters of safe ingress into and safe egress from the tub by the patient and the inconvenience of having to place the patient in the tub before the water is added and having to remove the water from the tub before the patient is removed therefrom are the most serious. In those instances where it is possible to transfer the patient while the water remains in the tub, the mechanical linkages and other apparatus needed to accomplish handling of the patient results in a tub that is expensive, cumbersome and not as reliable as would be a tub not dependent on mechanical action.

It is, therefore, a very important object of my invention to provide a tiltable tub assembly for bathing invalids which may be easily transported to a bedside or the like, and which is adapted for safe ingress and egress of the patient.

Yet another very important object of the invention is to provide a tub assembly devoid of mechanical lift devices for the patient in which water or the like can be put into the tub before ingress of the patient and which may then remain in the tub until after the patient has egressed therefrom.

Yet another important object of the invention is to provide a tub assembly that may be tilted between a horizontal patient bathing position and an upright patient ingress and egress position, while the water remains in the tub.

Yet another important object of the invention is to provide a tub assembly in which the water may be put into the tub when the same is in an upright position and which can hold an adequate supply of water for proper bathing of the occupant when the tub is in its normally horizontal position.

Another object of the invention is to provide a portable tub assembly which can be easily moved from one location to another and which may be stored in an upright position when not in use.

Yet another object of the invention is to provide a tub assembly which will comfortably receive and support the invalid in a semi-reclined or supine position in a manner to relieve direct pressure on the spine of the patient while bathing.

In the drawings:

FIG. 1 is a side elevational view showing a tiltable tub assembly made in accordance with the present invention, the vessel being disposed in its normally horizontal bathing position;

FIG. 2 is a plan view of the tub assembly;

FIG. 3 is a fragmentary, end elevational view of the tub assembly looking from the head end toward the foot end of the vessel;

FIG. 4 is a side elevational view of the tub assembly showing the same in its upright patient ingress and egress position;

FIG. 5 is a vertical, longitudinal, cross-sectional view taken along line 5—5 of FIG. 2 illustrating the tub assembly as it would appear when occupied and disposed in the normal bathing position; and

FIG. 6 is a fragmentary detailed view taken along line 6—6 of FIG. 4 showing the bottom wall of the vessel and one drain and the interconnection of the vessel portion of the tub assembly with a supporting frame structure.

A tub assembly for bathing invalids, patients and the like is broadly designated by the numeral 10 and includes an elongated vessel 12 having a bottom wall 14, opposed end walls 16 and 18, sidewalls 20 and 22, and a partial top wall 24 adjacent the end wall 18; the bottom wall 14, end wall 18, sidewalls 20 and 22, and top wall 24 presenting a reservoir compartment 26 at what is normally considered to be the foot end of the vessel 12. A frame structure 28 supports the vessel 12 in a manner rendering it tiltable about a transverse axis between a longitudinally, generally horizontal bathing position as best seen in FIGS. 1 and 5, and a generally longitudinally upright patient ingress and egress position as shown in FIG. 4.

The frame structure 28 may be constructed of any suitable material such as lightweight metal tubing to present a pair of transversely spaced-apart, elongated runner-like base members 30 which underlie the vessel 12 in longitudinal parallelism therewith to support the same in an elevated condition at or somewhat near a convenient working height when disposed in its bathing position. The members 30 include longitudinally arcuate upturned sections 32 as the end 18 of the vessel 12 is approached, the sections 32 terminating in substantially straight lengths 34 which are generally parallel to the end wall 18 and in an underlying relationship thereto when the vessel 12 is in its upright patient ingress and egress position.

Means for transporting the assembly 10 from one location to another is provided through the use of two pairs of casters 36 and 38 which are affixed in a conventional manner to the lengths 34 of the members 30. Each length 34 receives a spherical-type caster 36 at its free end while a conventional locking-type wheeled caster 38 is attached in the approximate vicinity of the juncture of the length 34 and the arcuate section 32.

The vessel 12 may be molded using a fiber glass or plastic material to present a one-piece construction thereby avoiding the problems associated with sealing the joints of a plurality of pieces and which also permits the incorporation of a smooth, rolled upper edge 39 as well as providing radii between the various walls to permit a smooth surface throughout the entire inner area of the vessel 12. The fiber glass or plastic construction makes it easy to clean the vessel 12 by eliminating crevices where germs and dirt could collect creating health and maintenance problems and the smooth edge 39 affords a convenient hand grip to aid the patient when entering or leaving vessel 12.

The bottom wall 14 is contoured to present a transverse raised portion 40 when the vessel 12 is disposed in its horizontal position. The portion 40 with its inclined surfaces 41 and 43 not only supports the legs and thighs respectively of the occupant, but also serves to reduce the volume of water needed to provide the proper depth thereof for bathing purposes, it being understood that the volume capacity of the reservoir compartment 26 is at least as great as the volume of water required for bathing in the vessel 12 when the assembly
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10 is disposed in its bathing position with a patient therein. A pair of drain openings 42 and 44 are provided in the lowermost regions 46 and 48 of the bottom wall 14 and are in communication with respective conduits 50 and 51 integrally molded on the underlying side of the bottom wall 14. Suitable tubing 53 is provided for receiving the water from the conduits 50 and 51 and a shutoff valve 52 with a flexible hose 54 downstream from the tubing 51 is provided for controlling and directing the flow of the water to a drain or other disposal receptacle when the vessel 12 is to be drained.

The end wall 16 which is opposite the reservoir compartment 26 defines the head end of the vessel 12 and presents an inclined, inner face 56 which extends upwardly and rearwardly from the bottom wall 14 to define a transversely arcuate back support for the occupant of the vessel 12 when the same is in its horizontal disposition. An elongated channel 58 in the inner face 56 and the lower region 48 is disposed along the longitudinal axis of the vessel 12 and extends from the upper edge 39 to a point of termination in the vicinity of the drain opening 44. The sidewalls 20 and 22 have outwardly bowed sections 59 and 61 respectively adjacent their junctures with the end wall 16 to present an enlarged, oval area having a flared configuration as best being seen in FIG. 2.

It is contemplated that the vessel 12 and the frame structure 28 would be separable with the vessel 12 being attached to a pair of longitudinal upper rail supports 60 having essentially the same contour as that of the bottom wall 14. A cross member 62 of the support 60 is provided with a series of notches 64 which receive a pair of retaining hooks 66 molded on and projecting from the under surface of the bottom wall 14, one of the notches 64 also providing clearance for the conduit 51. Positioning brackets 68 affixed to the lengths 34 cooperate with the hooks 66 and the notches 64 to retain the vessel 12 properly positioned on the frame structure 28.

In use, the tub 10 is tilted to a longitudinally upright position and the reservoir compartment 26 is filled with water or such other solution as may be desired to within a few inches of the top of the reservoir as best seen in FIG. 4 and indicated by the broken line 70. The tub is then rolled, by means of the casters 36 and 38, to the bedridden patient and the lockable casters 38 placed in their locked conditions to prevent movement of the tub 10 during ingress thereinto of the patient. With the patient sitting on the edge of the bed in a position facing the tub, the feet are placed in the reservoir 26 after which he stands or is assisted in standing and turning around to sit against the inclined surface 43 of the raised portion 40 as the tub assembly 10 and patient are tilted back to where the vessel 12 is in its normal horizontal bathing position. The patient is then supported by the end wall 16 with its arcuate inner face 56, his spine being received in the channel 58. The patient is now disposed in a position as shown in FIG. 5 with the water level as indicated by broken lines 72. The frame structure 28 supports the vessel 12 at a sufficient height for an attendant to easily and conveniently bathe the patient without unnecessary stooping or bending and the oval shaped end 16 affords adequate space for the maneuvering of the patient.

After bathing of the patient is completed, the vessel 12 and the patient are tilted back to the upright position at which time the water returns to the reservoir compartment 26 and the patient is turned around and returned to the bed or the like. In tilting the vessel between the two positions it is to be noted that the weight of the water acts as a counterbalance as the assembly 10 is "rocked" on the arcuate sections 32 of the runners 30.

After the patient has been removed from the vessel 12, it is but a simple matter to release the locked condition of the casters 38 and roll the assembly 10 to a convenient drain at which time the vessel is returned to its horizontal position and the shutoff valve 52 is opened to drain the water from the vessel 12 through the openings 42 and 44 via the conduits 50 and 51, tubing 53 and flexible hose 54. Further, in referring to FIG. 4, it is to be noted that the runners 30 serve as convenient handgrips for rocking the vessel 12 from one position to the other and for pushing the assembly 10 from one location to another.

From the foregoing description, it will be readily appreciated that a portable, tiltable tub has been provided which permits the giving of conventional baths to individuals who would not normally otherwise be able to receive the benefit of the tub baths. The ease with which a patient may be placed into or removed from the vessel eliminates much of the burden that the attendants would otherwise have in transferring a patient from the bed to the vessel.

The raised portion 40 not only reduces the volume of water required for bathing but also, by virtue of its support of the legs and thighs of the patient, prevents the patient from sliding down into the vessel while reclining against the surface 56 of the end wall 58, thus eliminating yet another troublesome burden for the attendant who may otherwise have to support the patient while in the tub.

Of perhaps greatest significance, however, is the further convenience to the patient as well as the attendant of the facts that the tub may be filled prior to the patient entering the vessel 12 and, once the bath has been completed, the patient may be immediately removed from the vessel 12 without waiting for the draining of the water therefrom before placing the vessel 12 in a condition permitting egress of the patient therefrom. This is particularly helpful in those situations where plumbing facilities for both the placing of water in the vessel as well as the subsequent removal therefrom are not readily available in the room in which the patient is located. The use of this tub assembly 10 permits the water to be placed in the vessel at some other location after which the assembly can be transported to the room, the patient bathed, and returned to his bed and the assembly then transported back to where proper drain facilities are located.

It is to be understood that minor modifications may be made in the invention as described and illustrated without departing from the true spirit of this invention. Accordingly, the invention is to be deemed limited only by the fair scope of the following claims.

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

1. A tub for bathing invalids comprising: an elongate support frame tiltable between a normal bathing position and an ingress-egress position, said frame having a lower, substantially straight section for engaging a floor when the tub is in its nor-
mal position, a substantially straight end section positioned at an angle relative to said lower section for engaging a floor when the tub is in its ingress-egress position, and an intermediate arcuate section for engaging a floor during tilting of the tub between said positions thereof;

an elongate vessel mounted upon said frame and having a bottom, a pair of opposed ends and a pair of opposed sides,
said vessel being supported by said frame at an elevated level spaced above a floor when said tub is in its bathing position,
said frame supporting said vessel with one end of the latter in a lowered disposition proximate a floor and substantially parallel thereto when the tub is in its ingress-egress position and with said bottom of said vessel being upright but inclined away from vertical when said tub is in its ingress-egress position,
said bottom, ends and sides of said vessel being contoured to hold a predetermined volume of water for satisfactorily bathing an invalid when said tub is in its bathing position; and

a partial top wall on the vessel adjacent said one end thereof for presenting a water receiving and storing chamber when said tub is in its ingress-egress position,
said chamber being bounded by said top wall, said one end of the vessel and portions of the bottom and said sides of the vessel adjacent said one end of the latter,
said chamber being open to the remainder of said vessel.

2. A tub as claimed in claim 1 wherein said opposed ends and bottom of said vessel are contoured to support an invalid, said opposed ends being angularly disposed relative to the bottom and in a converging relationship as the said bottom is approached, said bottom including a substantially centrally located, transverse, raised portion having a pair of generally oppositely facing, inclined, upper surfaces disposed to support the legs and thighs of an invalid when the tub is in said bathing position.

3. A tub as claimed in claim 2 wherein said end opposite said one end includes an inner face having an elongated channel disposed along the longitudinal axis of said vessel for providing clearance for the spine of an invalid whereby a major area of an invalid's back is in engagement with and supported by said surface.

4. A tub as claimed in claim 2 wherein said bottom includes a lowermost region proximal each opposed end with said raised portion being disposed between said regions, there being a drain means in communication with the interior of said vessel through said bottom at each of said regions.

5. A tub as claimed in claim 1 wherein rotatable means are mounted on said end surface section of said frame for rendering said tub mobile when it is in said ingress-egress position.