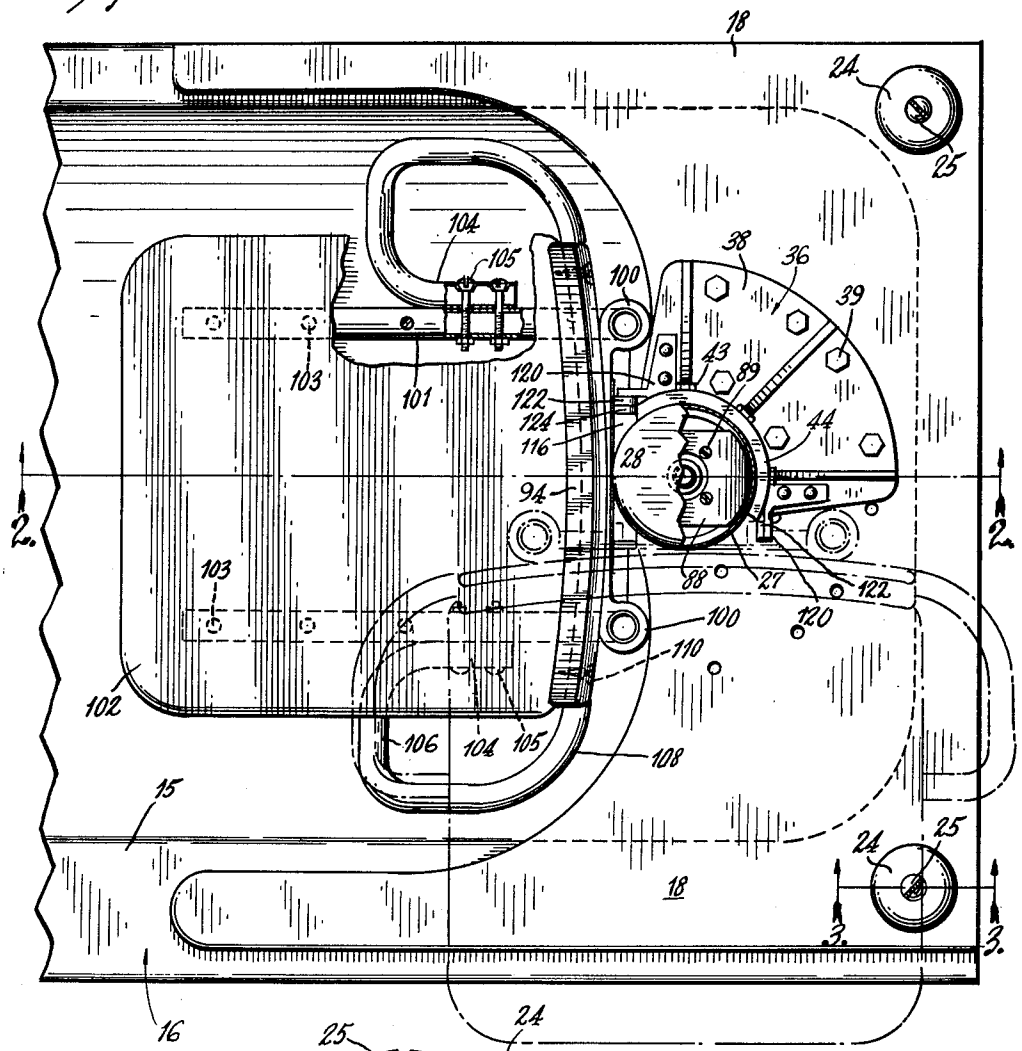
June 15, 1965 J. C. COTNER 3,188,657

LIFT FOR SITZ BATH

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Fig. 1.



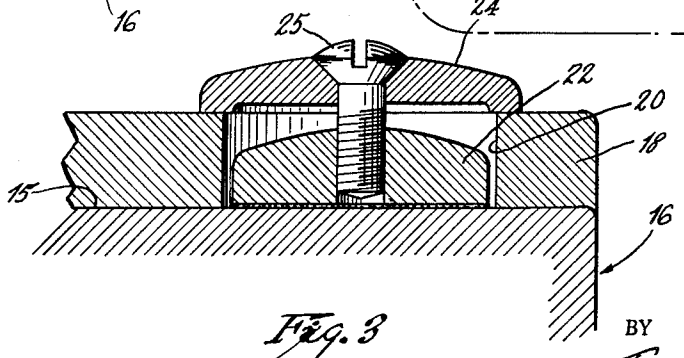


Fig. 3

INVENTOR.
JOHN C. COTNER,
BY
Trask, Jenkins & Hanley
ATTORNEYS.

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LIFT FOR SITZ BATH

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Fig. 2.

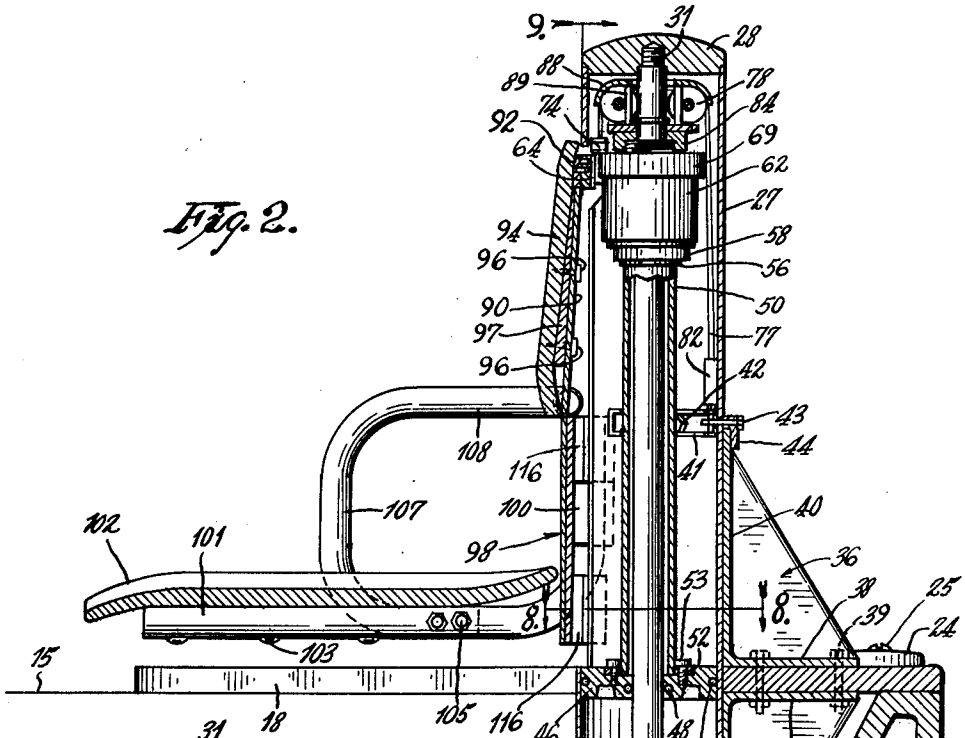


Fig. 4.

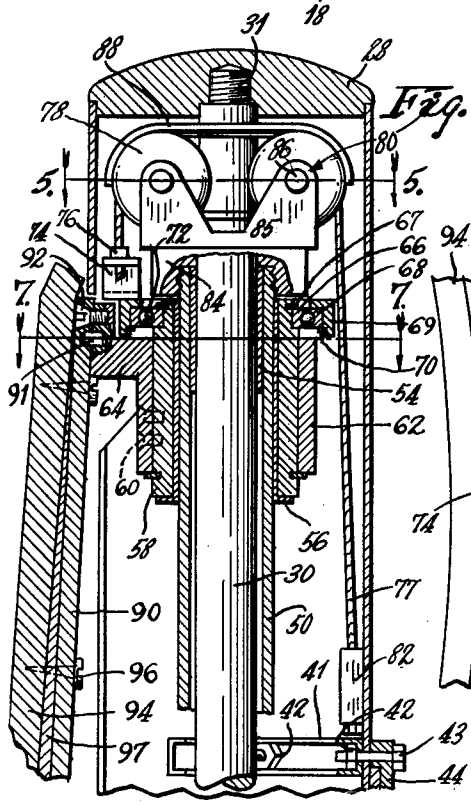
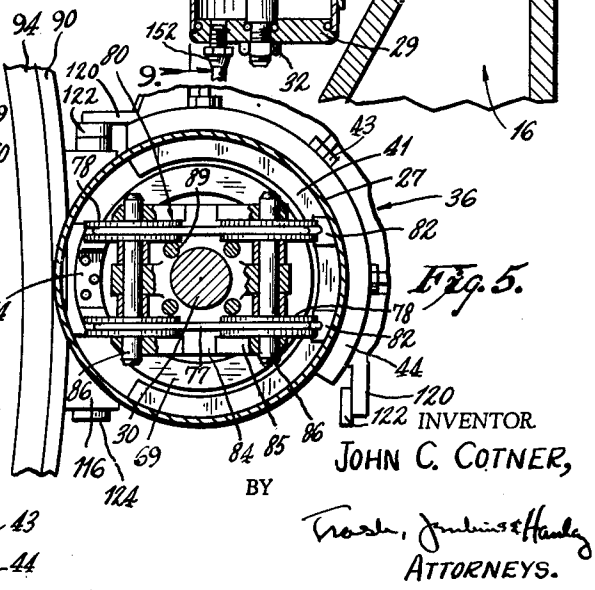


Fig. 5.



INVENTOR.
JOHN C. COTNER,
BY
Fraser, Jenkins & Hanley
ATTORNEYS.

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LIFT FOR SITZ BATH

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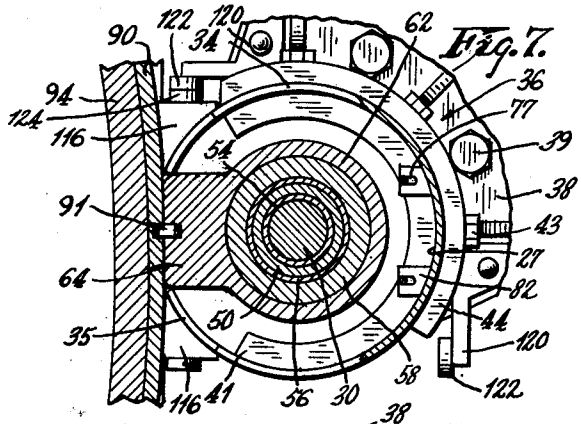


Fig. 7.

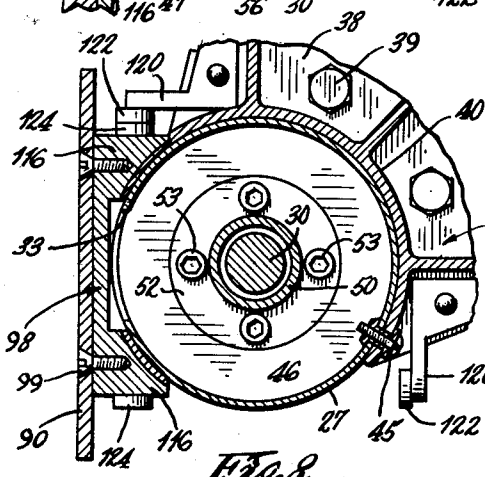


Fig. 8.

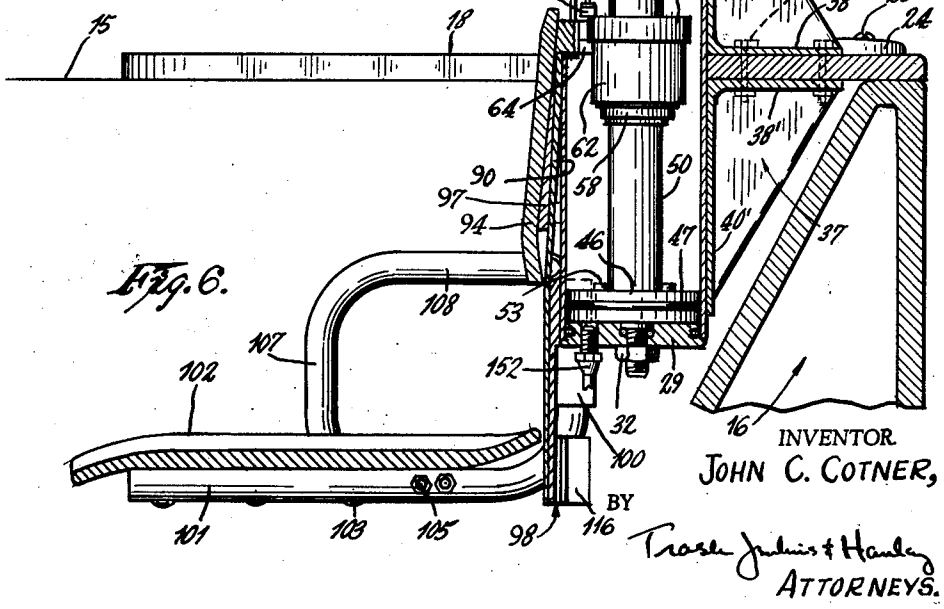


Fig. 6.

INVENTOR.
JOHN C. COTNER,
BY
Fraser Jubien & Hanley
ATTORNEYS.

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LIFT FOR SITZ BATH

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Fig. 9.

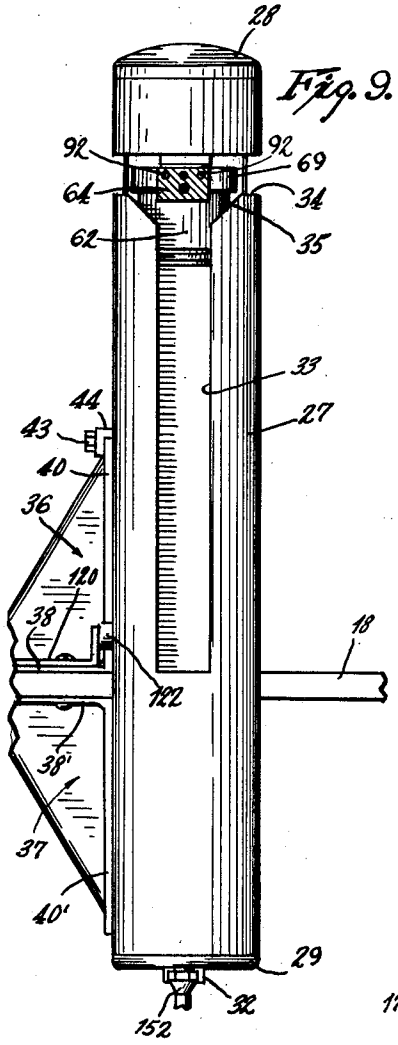
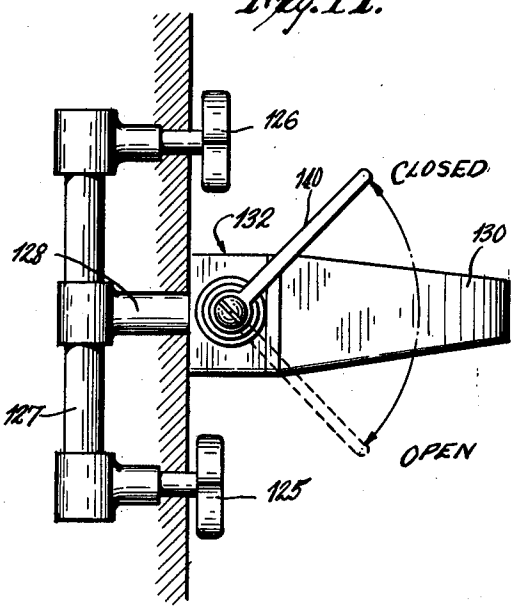


Fig. 11.



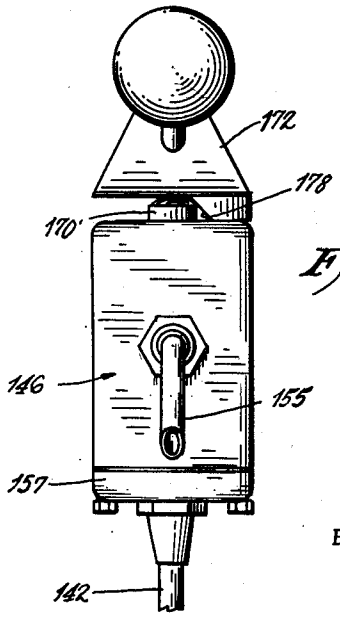


Fig. 12.

INVENTOR.
JOHN C. COTNER,
BY
Treadle, Jenkins & Hanley
ATTORNEYS.

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LIFT FOR SITZ BATH

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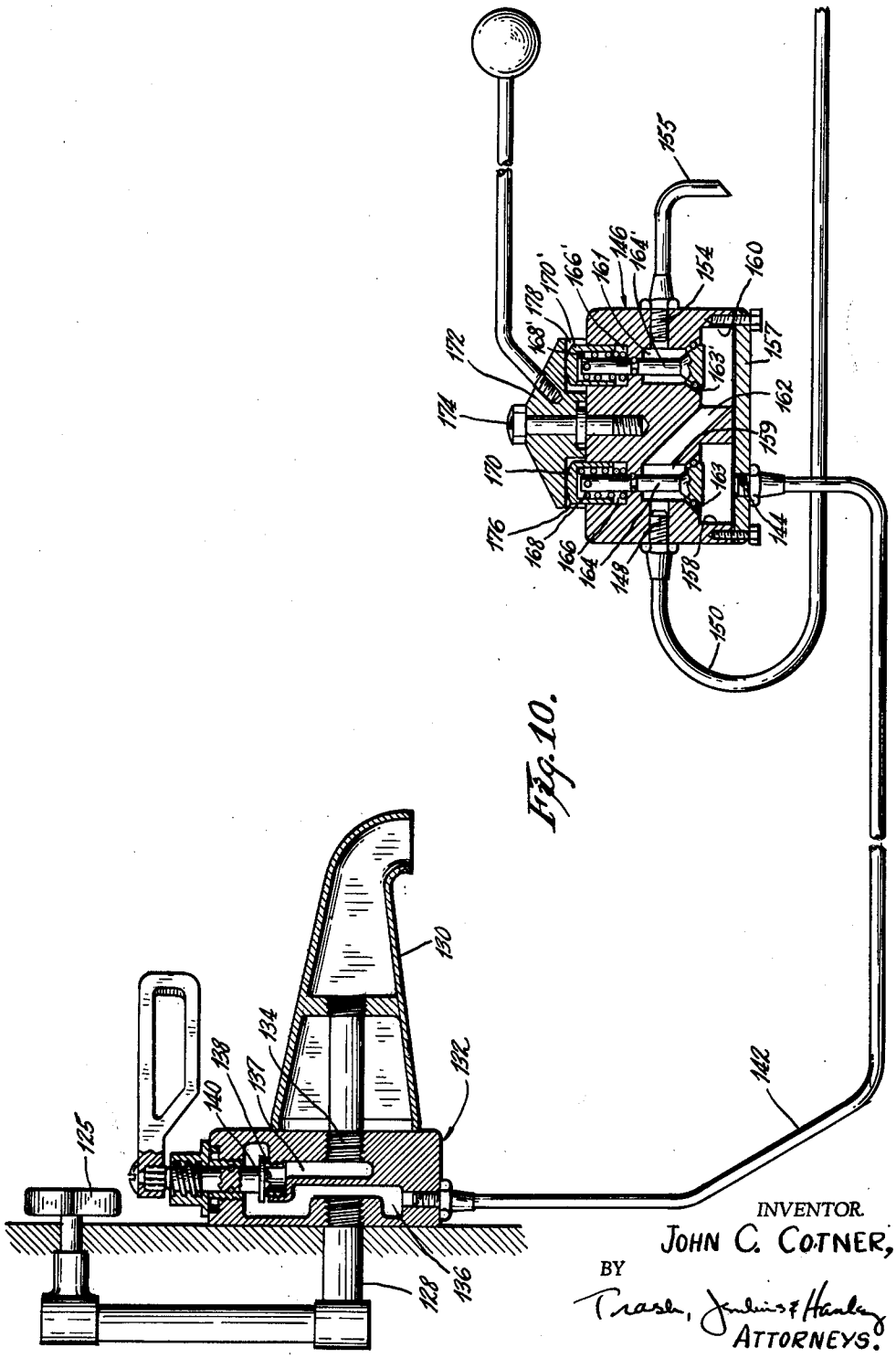


Fig. 10.

INVENTOR.
JOHN C. COTNER,
BY
Trask, Jenkins & Hanley
ATTORNEYS.

United States Patent Office 3,188,657 Patented June 15, 1965

3,188,657

LIFT FOR SITZ BATH

John C. Cotner, 117 E. Roselawn Drive, Logansport, Ind.

Filed Nov. 29, 1962, Ser. No. 240,976
18 Claims. (Cl. 4—185)

This invention relates to a lift for a sitz bath, and more particularly to a lift for assisting invalids, the aged, etc., in getting into and out of a bathtub.

Lifts for sitz baths have long been known in the art, but the lifts heretofore employed have had certain deficiencies. Many such lifts have employed electrical energy as a source of power for actuating the lifts with the attendant danger of shock or electrocution to the user. To overcome this potentially dangerous condition, hydraulic lifts have been employed, but the hydraulic lifts heretofore employed have, for example, required the use of bulky supporting frames disposed both inside and outside the tub, as in Gross et al. U.S. Patent No. 2,714,727; required the use of special tubs, as in Feulner U.S. Patent No. 1,982,245; and required supporting brackets, plates, etc. to be mounted on the walls of the room in which the tub is located, as in Karlsson U.S. Patent No. 2,686,557, Hicks U.S. Patent No. 2,087,286, and Nielsen Patent No. 2,604,-636.

It is therefore the general object of my invention to provide a lift for a sitz bath which will overcome the difficulties and disadvantages of the lifts discussed above. More specifically, it is an object of my invention to provide a lift for a sitz bath which can be simply and easily installed on a conventional tub without disturbing the permanent plumbing of the tub or disturbing the walls of the room in which the tub is placed, which will permit the tub floor and side walls to be easily cleaned, which will be accessible to the user from a position outside the tub, which will safely transport the user vertically into and out of the tub, which can be simply and easily operated, which will be hydraulically operable by the water source at the tub, which will be compact and of an attractive appearance, and which will prove sturdy and durable in use.

In carrying out my invention in its preferred form, I mount a platform on the rim of the tub adjacent one end thereof. A vertically extending lift housing is mounted on said platform with its lower end conveniently disposed in an elevated position above the tub floor. The lift housing is provided with a slot consisting of a first vertical stretch continuous at its upper end with a second horizontal stretch. A vertically movable piston is carried in said lift housing and is connected through a bracket slidable in said slot to a chair having a seat and back rest. The chair is slidably carried against the outer face of said housing for vertical movement of said chair relative to the lift housing along said first slot stretch upon vertical movement of the piston and for rotational movement of said chair relative to the lift housing along said second slot stretch between a loading and unloading position generally normal to the longitudinal axis of the tub and a raising and lowering position generally parallel with the longitudinal tub axis.

Desirably, the piston is actuated by the regular water source for filling the tub. To this end, I provide a fluid control apparatus comprising a valve housing having inlet, outlet, and discharge ports. A first conduit is connected to the inlet port of the valve housing and to an adapter having a control valve and connected to the tub nozzle. A second conduit is connected to the valve housing outlet and to the lift housing. Valve means are provided in the valve housing which are movable between a first position disposing the valve housing inlet and outlet ports in open communication with each other and closing the discharge port for permitting the water to flow from the adapter, through the valve housing, and to the lift housing for raising the piston and chair. Said valve means are movable into a second position disposing the outlet and discharge ports in the valve housing in open communication with each other and blocking flow between said inlet and outlet ports for permitting the water in the lift housing to flow from said lift housing, through the valve housing, and out the discharge port for lowering said piston and chair.

Other objects and features of my invention will become apparent from the more detailed description which follows and from the accompanying drawings, in which:

FIG. 1 is a fragmentary plan view of a tub having a lift embodying my invention mounted thereon;

FIG. 2 is a vertical section taken on the line 2—2 of FIG. 1;

FIG. 3 is an enlarged vertical section taken on the line 3—3 of FIG. 1;

FIG. 4 is an enlarged fragmentary vertical section of the upper portion of the lift shown in FIG. 1;

FIG. 5 is a horizontal section taken on the line 5—5 of FIG. 4;

FIG. 6 is a vertical section of the lift similar to FIG. 2, but showing said lift in a chair-lowered position;

FIG. 7 is a horizontal section taken on the line 7—7 of FIG. 4;

FIG. 8 is an enlarged horizontal section taken on the line 8—8 of FIG. 2;

FIG. 9 is a vertical section taken on the line 9—9 of FIG. 2;

FIG. 10 is a sectional view through the fluid control apparatus for actuating the lift shown in FIG. 1;

FIG. 11 is a plan view of the water inlet for the tub shown in FIG. 10; and

FIG. 12 is an end elevation of the valve housing shown in FIG. 10.

As shown in FIG. 1, my lift is mounted on the rim 15 of a conventional bathtub 16 adjacent the rear of said tub. To effect such mounting, a generally U-shaped platform 18 is disposed on the rim 15 and is provided with a pair of openings 20. A tapped plug 22 is disposed within each of the openings 20 and rigidly bonded to the upper face of the rim 15. A cap 24 extends over each of the openings 20 and is rigidly connected to the underlying plug 22 by a screw 25 for mounting the platform on the tub.

As shown in FIG. 2, the lift comprises a vertical lift housing formed from an elongated tube 27 closed at its ends by end caps 28 and 29 fixedly retained on the ends of said tube by a tie rod 30 extending axially of the tube 27 with one of its ends threadably received in the end cap 28, as at 31, and its opposite end projecting through the end cap 29 and connected thereto as by a nut 32. For reasons that will become more apparent hereinafter, the tube 27 is provided with a slot consisting of a vertical stretch 33 terminating at its upper end in a horizontally extending cross stretch 34. As shown in FIG. 4, the stretch 34 extends partially circumferentially around the tube 27 on opposite sides of the stretch 33, with the upper edges of the stretch 33 conveying downwardly from their juncture with the stretch 34, as at 35.

The housing is connected to the platform 18 by brackets 36 and 37. As shown in FIG. 2, the bracket 36 comprises a base plate 38 connected to the platform 18 by bolts 39 and integrally connected to an upwardly projecting sleeve 40 abutting a generally rearwardly presented arcuate segment of the outer face of the tube 27. An arcuate channel 41 is mounted on the inner face of the tube 27 and carries a plurality of nuts 42 for the reception of bolts 43 projecting through an arcuate angle iron 44 extending around the upper edge of the sleeve 40 for thus interconnecting the bracket 36 to the tube 27. Adjacent its lower end, the sleeve 40 is further interconnected to the tube

27 by a plurality of bolts 45 of the type which have their shanks enclosed within sheet-metal sleeves which expand against the openings in which the bolts are received upon tightening of said bolts.

The bracket 37 is substantially identical to the bracket 36, and comprises a base plate 38' connected to the underside of the platform 18 by the bolts 39 and integrally connected to a downwardly projecting arcuate sleeve 40' abutting an arcuate segment of the tube 27 disposed below the plane of said platform. The bracket 36 is rigidly connected to the lift housing tube 27 above the platform and the bracket 37 abuts said tube over a substantial vertical extent below the said platform to thus rigidly interconnect the housing to the platform 18 and brace said housing both above and below the plane of the platform.

Carried within the tube 27 is a piston having an annular head 46. The outer peripheral edge of the head 46 is slidably carried against the inner face of the tube 27 and is provided with a recess in which an O-ring seal 47 is received, and the inner peripheral edge of said piston head is slidably carried against the tie rod 30 and is provided with a recess in which a second O-ring seal 48 is received. The piston shaft is formed by a tube 50 received around the tie rod 30 and shouldered at its lower end for the reception of a ring 52 connected to the head 46 by screws 53 for thus rigidly interconnecting the piston shaft and head.

As shown in FIG. 4, a sleeve bearing 54 is interposed between the tie rod 30 and the shaft 50 adjacent the upper end of said shaft, whereby the piston is slidably supported on the tie rod 30 at both its head 46 and the upper end of its shaft 50. A second sleeve bearing 56 is disposed around the shaft 50 adjacent its upper end and rotatably carries an elongated sleeve 58 which is rotatable with respect to the shaft 50. Fixedly connected to the sleeve 58, as by screws 60, is a chair mounting bracket having an annular portion 62 disposed around the sleeve 58 and integrally connected to a radially extending projection 64 extending outwardly through the slot 33–35 in tube 27 for connection to the lift chair as will be more fully described hereinafter.

An annular shoulder is formed on the upper end of the sleeve 58 and a ring 66 is retained against said shoulder by a snap ring 67; the ring 66 having an outwardly open recess forming one-half of a ball race. The other half of said race is formed by a ring 68 having an inwardly open recess and supported in an annular collar 69 by a snap ring 70. The ball race formed by the rings 66 and 68 carries a plurality of bearing balls 72 for thus permitting relative rotational movement between the sleeve 58 and the collar 69. Fixedly connected to the collar 69 is an arcuate bracket 74 carrying a pair of adjusting studs 76. Each of the studs 76 is connected to a cable 77, and each of said cables extends over a pair of aligned pulleys 78 rotatably mounted on a platform 80, with the ends of said cables opposite the studs 76 being fixedly connected in a pair of blocks 82 mounted on the inner face of the tube 27 immediately above the channel 41. As shown in FIG. 5, the platform 80 comprises a base 84 threadably mounted on the upper end of the piston tube 50 and supporting upwardly projecting ears 85 in which axles 86 are carried for supporting the pulleys 78 on the platform 80. Conveniently, a cover plate 88 for retaining the cables in the pulleys is mounted on the platform 80 by screws 89 extending through said cover plate and received in the base 84.

Thus, with the platform 80 fixedly connected to the piston tube 50 and the cables 77 carried over said platform being interconnected to the collar 69, the chair bracket, and thus the chair connected thereto, can be rotated with the sleeve 58 relative to the piston tube 50 and lift housing; the bracket projection 64 riding in the slot stretch 34 during such rotation. And with the interconnections between the platform 80 and the piston tube 50 and the cables 77 and sleeve 58, the platform 80 and the sleeve 58 interconnected thereto will be vertically movable with the piston to move the chair connected to the bracket 62 and 64 vertically. Such cable arrangement, however, permits the sleeve and the chair interconnected thereto through the bracket 62 and 64 to move vertically relative to the piston so that the sleeve and chair will move vertically twice the distance that the piston is moved vertically. The cables 77 are fixedly connected to the blocks 82, but the studs 76 provide an adjustable connection for said cables for equally distributing the load therebetween and preventing the bracket projection 64 from binding in the slot 33–35.

As shown in FIG. 2, the chair comprises a back panel 90 rigidly connected to the projection 64 on the lift bracket by a dowel pin 91 and screws 92. Adjacent its upper end, the panel 90 is connected to a back rest 94 by screws 96. Conveniently, a spacer 97 may be interposed between the back rest 94 and panel 90 for giving said back rest a comfortable rearward tilt. A guide bracket 98 is also mounted on the panel 90 on the rearwardly presented face thereof by screws 99. As shown, the bracket 98 has a pair of laterally spaced sleeves 100 in which the upper ends of a pair of generally L-shaped seat supports 101 are fixedly mounted. The seat supports 101 extend forwardly of the panel 90 and are provided with horizontally disposed stretches which are connected to the underside of the chair seat 102 as by screws 103. The chair seat 102 and back rest 94 are further interconnected by a pair of side arms. Each of said side arms is conveniently formed from a length of metal-tubing bent to provide a first stretch 104 connected to one of the seat supports 101 by bolts 105 and continuous with a laterally projecting stretch 106 extending laterally outwardly beyond the seat 102. Adjacent its outer end, each of the stretches 106 is continuous with an upwardly extending stretch 107, which in turn is continuous with a horizontally disposed rearwardly extending stretch 108 bent inwardly at its rearward end and connected to the back rest 94 by screws 110. Thus, the side arms serve to assist a person in getting into and out of the chair and also serve to cross-brace and interconnect the seat 102 and back rest 96.

The chair lift bracket projection 64 is slidably carried in the tube slot stretches 33 and 34 to permit the chair to be moved both vertically and rotatably with respect to the tube 27. The chair is further slidably supported on the housing tube 27 by a pair of vertically spaced arcuate guides 116 projecting rearwardly from the bracket 98 and slidably engaging the outer face of the tube 27 for thus supporting the lower end of the chair against said tube. As shown in FIG. 2, when the chair is in its raised position, the guides 116 engage the tube 27 on opposite sides of the slot stretch 33 for slidably supporting the lower end of the chair during its rotational movements along slot stretch 34 and its vertical movements along the stretch 33. And when said chair is in its lowered position shown in FIG. 6, the upper of the guides 116 will still be in sliding bearing relationship with the outer face of said tube.

When the weight of the user is applied to the chair, the cantilever forces of the chair are supported through the tube 27 to platform 18. The forces adjacent the bottom of the chair are directed rearwardly and are supported by the guides 116 bearing against the outer tube face. The forces adjacent the upper end of the chair are directed forwardly, however, and are supported interiorly of the tube by the tie rod 30 and the piston and bearing assembly (FIG. 4) carried thereon. Thus, the tube 27 and the components carried therein provide a dual support for the top and bottom of the chair to insure its safety and prevent its binding against the tube 27 during its movements on said tube.

As shown in FIG. 1, the chair is rotatable in the slot stretch 34 from a raising and lowering position in which it is parallel with the longitudinal axis of the tub 16 to a loading and unloading position in which it is gen-

erally normal to said longitudinal tub axis as hown in chain link lines in FIG. 1. In its loading and unloading position, a person can get into and out of a chair from a position outside the extent of the tub. The chair is then rotated with the sleeve 58 about the axis of the piston tube 50 until it is disposed in alignment with the slot stretch 33. As the chair bracket projection approaches the slot stretch 33, the converging edges 35 of the slot will insure that said projection enters the stretch 33 for raising and lowering the chair. In order to limit the rotational movements of the chair and releasably retain the chair in the desired position with respect to the tub axis, a pair of brackets 120 are mounted on the base plate 38 and are provided with magnets 122 engageable with metallic stops 124 on the lower bracket guide 116. As shown in FIG. 1, the brackets 120 are mounted on the base plate 38 in positions such that the chair is swingable through an angle of 90° between its loading and unloading position and its raising and lowering position.

Bathtubs are normally located in bathrooms such that only one of their sides is open for access, the opposite side normally abutting one of the bathroom walls. My invention is illustrated in FIG. 1 for use in a left-handed tub (the left tub side being in open position of access), but to permit my invention to be employed in a right-handed tub wherein the right hand side is open, the slot stretch 34 extends on opposite sides of the slot stretch 33. As will be appearent from FIG. 1, rotation of the chair in a clockwise position to a loading and unloading position would be prevented by the magnet 122 on the bracket 120 and by the vertically extending ribs interconnecting the base plate 38 and sleeve 40. Therefore, to permit the device to be used on such a right-handed tub, the platform 18 is provided with two sets of openings through which the bolts 39 may extend. To convert the lift shown in FIG. 1 from a lift adapted for use with a left-handed tub to a lift adapted to be used with a right-handed tub, it is merely necessary to remove the bolts 39, 43, and 45 and rotate the brackets 36 and 37 90° in a clockwise direction as viewed in FIG. 1, and then reinsert said bolts in the appropriate platform openings and nuts, nuts 42 and tube 27, respectively.

One of the advantages in my invention resides in the ability of the chair to be raised and lowered by the water source already available at the tub. A conventional tub faucet normally comprises a hot water valve 125 and a cold water valve 126 for controlling the flow of water into a mixing manifold 127. A nipple 128 is connected to the manifold 127 and extends outwardly therefrom for connection to a nozzle 130. To adapt my device for use in combination with such a water source, it is merely necessary to connect an adapter 132 to the nipple 128 and to the nipple connection 134 on the nozzle 130. As shown in FIG. 10, the adapter 132 is provided with a pair of chambers 136 and 137 disposed in open communication with the nipple 128 and nozzle 130, respectively. One end of the chamber 137 defines a valve seat 138 against which a valve 140 mounted on the adapter is receivable. Thus, by adjustment of the valves 125 and 126, the desired water temperature can be achieved, and by opening the valve 140, the water may flow from the manifold 127 through the nipple 128 and chambers 136 and 137 for discharge out the nozzle 130 for filling the tub. Upon closing the valve 140 against the valve seat 138, the flow of water out the nozzle 130 will be stopped.

A conduit 142 is connected to the chamber 136 and to the inlet port 144 of a valve housing 146. Said valve housing 146 is also provided with an outlet port 148 which is connected to a second conduit 150 extending between the outlet port 148 and a fluid inlet 152 formed in the lift housing end cap 29. The valve housing 146 is also provided with a discharge port 154 conveniently fitted with a discharge conduit 155. As shown in FIG. 10, the valve housing 146 has a pair of recesses formed therein which are closed by an end plate 157. One of said recesses defines an inlet chamber 158 in communication with the inlet port 144 and communicating with the outlet port 148 by a passage 159, and the other of said recesses defines an outlet chamber 160 disposed in communication with the discharge port 154 by a passage 161 and communicating with the outlet port 148 by a passage 162. A valve seat 163 is provided at one end of the inlet chamber 158 against which a valve 164 is received. The stem of the valve 164 projects through the passage 159 and is carried in an opening 166 formed in the housing 146. The upper valve stem end is received in a spring 168 acting between the base of the opening 166 and a cam follower 170 extending over the valve 164 and projecting above the top of the housing 146, said spring retaining the valve 164 in a normally closed position against the seat 163. Similarly, a valve seat 163' is formed at one end of the discharge chamber 160 against which a valve 164' is received. The stem of the valve 164' projects upwardly through the passage 161 and is carried in an opening 166' formed in the valve housing 146. The upper valve stem end is carried in a spring 168' having one of its ends disposed against the base of the opening 166' and its opposite end against a cam follower 170' projecting above the top of the housing 146. A valve actuator 172 is rotatably mounted on the valve housing 146 by a bolt 174. As shown in FIG. 12, the valve actuator 172 is provided with cam faces 176 and 178 engageable with the cam followers 170 and 170', respectively, upon rotation of the actuator 172 for thus selectively opening the valves 164 and 164'.

With the valves 125 and 126 in their open position, and the valve 140 in its closed position, the water will be free to flow from the manifold 127 and nipple 128 through the chamber 136 to the conduit 142 where it is carried to the inlet port 144 in the valve housing 146. To raise the chair, it is merely necesary to rotate the valve actuator 172 to cause the cam face 176 to bear against the cam follower 170 for opening the valve 164 to thus permit the water to flow through the chamber 158 and passage 159 into the conduit 150 where it is carried to the bottom of the tube 27 for causing the piston therein to raise for effecting a raising of the chair. When the valve 164 is opened, the cam face 178 on the actuator 172 will be backed away from the cam follower 170' so that the valve 164' remains closed to prevent water entering the inlet port 144 from flowing through the passages 159, 162 and 161 for discharge through the port 154. When the chair is in its raised position, the actuator 172 is moved back into its neutral position shown in FIG. 10 wherein both valves 164 and 164' are in their closed positions to prevent the water carried in the tube 27 under the piston from exiting said tube.

To lower the chair, the valve actuator 172 is rotated to cause the cam face 178 to bear against the cam follower 170' to open the valve 164'. The downward force applied to the piston by the chair and/or by a person sitting in said chair will cause said piston to move downwardly to thus force the water carried within the tube to flow outwardly from said tube through the conduit 150, whereupon it enters the valve housing 146 through the outlet port 148 and flows through the passage 162, discharge chamber 160, and passage 161 for discharge out the discharge port 154 and conduit 155. As will be understood, the actuator 172 may also be moved into its neutral position shown in FIG. 10 when the chair is in any desired vertical position along the tube 27 whereupon the chair will be supported in such position by the fluid column between the piston read 46 and the valve housing.

The conduits 142 and 150 may be of any desired length to dispose the cam actuator 172 in a position of ready access to a person sitting in the lift chair.

I claim:

1. A lift for a sitz bath, comprising

(a) supporting means mountable on a tub rim and

constituting the sole means of mounting the lift in operative position,

(b) a vertically extending housing carried from said supporting means within the longitudinal extent of the tub cavity and having a slot formed therein consisting of a first vertical stretch continuous at its upper end with a second horizontal stretch,

(c) a vertically movable piston carried in said housing,

(d) a chair having a seat and back rest and slidably carried against the outer face of said housing,

(e) means extending through said slot operatively interconnecting said chair and piston for vertical movement of said chair relative to the housing along said first stretch upon vertical movement of said piston and rotational movement of said chair relative to the housing along said second stretch between a loading and unloading position generally normal to the longitudinal tub axis and a raising and lowering position generally parallel with the longitudinal tub axis, and

(f) means connecting said housing to a power source for effecting vertical movement of said piston.

2. A lift for a sitz bath as set forth in claim **1** in which said chair comprises

(a) a seat frame having laterally spaced members connected to the underside of said seat,

(b) a panel operatively connected to said laterally spaced members and extending upwardly from said seat with its upper end operatively interconnected to said piston,

(c) said back rest being connected to said panel adjacent the upper end thereof,

(d) brace means interconnecting said spaced members and said back rest adjacent said back rest, and

(e) means projecting rearwardly from said panel adjacent the lower end thereof in sliding engagement with said housing.

3. A lift for a sitz bath as set forth in claim **2** in which said brace means comprises

(a) a pair of side arms each of which is formed from a length of metal-tubing having one of its ends connected to the back face of said back rest and its opposite end connected to one of said laterally spaced members,

(b) said lengths of tubing being bent intermediate their ends to provide a pair of horizontally disposed stretches disposed outwardly beyond the lateral extent of said seat.

4. A lift for a sitz bath as set forth in claim **2** with the addition that

(a) said laterally spaced members comprise a pair of L-shaped lengths of metal-tubing each having a horizontal stretch connected to said seat and a vertical stretch projecting upwardly from the rear of said seat, and

(b) said means projecting rearwardly from said panel comprises a pair of rearwardly projecting guides mounted on a bracket on said panel,

(c) said bracket having a pair of sleeves connected to the vertical stretches of said laterally spaced members for mounting said seat on said panel.

5. A lift for a sitz bath as set forth in claim **1** in which

(a) said slot in said housing has a general T-shape and the lateral edges of said first stretch angle outwardly to define a pair of downwardly converging slot edges at the juncture of said first and second stretches, and

(b) means limiting the rotational movement of said chair along said second stretch whereby upon rotation of said chair toward its raising and lowering position said chair will be disposed in alignment with said first stretch.

6. A lift for a sitz bath as set forth in claim **1** in which said supporting means comprises

(a) a generally U-shaped platform rigidly mounted on the tub rim, and

(b) a bracket rigidly mounted on said platform and projecting upwardly therefrom and connected to said housing for supporting said housing on said platform.

7. A lift chair for a sitz bath as set forth in claim **6** with the addition that

(a) said housing has a circular cross-section and said bracket has an elongated sleeve abutting an arcuate segment of the outer housing face,

(b) means connecting said sleeve to said housing, and

(c) a pair of magnets mounted on said bracket in circumferentially spaced relation for limiting the rotational movements of said chair and releasably retaining the same in its loading and unloading position and its raising and lowering position.

8. A lift chair for a sitz bath as set forth in claim **7** in which

(a) said bracket is adjustably connected to said housing and platform for adjusting its circumferential positioning around said housing.

9. A lift chair for a sitz bath as set forth in claim **6** with the addition that

(a) said housing has a circular cross-section,

(b) a second bracket is mounted on said platform and projects downwardly therefrom,

(c) each of said brackets having elongated sleeves abutting arcuate segments of said housing above and below the plane of said platform, and

(d) at least one of said sleeves is fixedly connected to said housing.

10. A lift for a sitz bath, comprising

(a) supporting means mountable on a tub rim and constituting the sole means of mounting the lift in operative position,

(b) a vertically extending housing carried from said supporting means within the longitudinal extent of the tub cavity and having a tube closed at its ends by a pair of end plates,

(c) a tie-rod carried within said tube interconnecting said end plates,

(d) a vertically movable piston having a head and shaft slidably carried on said tie-rod,

(e) a chair having a seat and back rest and slidably carried against the outer face of said tube,

(f) said tube having a slot formed therein consisting of a first vertical stretch continuous at its upper end with a second horizontal stretch,

(g) means extending through said slot operatively interconnecting said chair and piston for vertical movement of said chair relative to the housing along said first stretch upon vertical movement of said piston and rotational movement of said chair relative to the housing along said second stretch between a loading and unloading position generally normal to the longitudinal tub axis and a raising and lowering position generally parallel with the longitudinal tub axis, and

(h) means connecting said housing to a power source for effecting vertical movement of said piston.

11. A lift for a sitz bath, comprising

(a) supporting means mountable on a tub rim and constituting the sole means of mounting the lift in operative position,

(b) a vertically extending housing carried from said supporting means within the longitudinal extent of the tub cavity and having a slot formed therein consisting of a first vertical stretch continuous at its upper end with a second horizontal stretch,

(c) a vertically movable piston carried in said housing,

(d) a chair having a seat and back rest and slidably carried against the outer face of said housing,

(e) bearing means carried on said piston adjacent the upper end thereof,

(f) a bracket extending through said slot and interconnecting said chair and bearing means for rotational

movement of said chair about the axis of said piston with respect to said housing between a loading and unloading position generally normal to the longitudinal tub axis and a raising and lowering position generally parallel with the longitudinal tub axis,

(g) pulley means fixedly mounted on said piston for vertical movement therewith and having cable means extending thereover, said cable means being fixedly interconnected at one of its ends to said housing and at its opposite end to said bearing means for moving said chair vertically with respect to said housing and piston upon vertical movement of said piston and pulley means, and

(h) means connecting said housing to a power source for effecting vertical movement of said piston.

12. A lift for a sitz bath, comprising

(a) supporting means mountable on a tub rim and constituting the sole means of mounting the lift in operative position,

(b) a vertically extending housing carried from said supporting means within the longitudinal extent of the tub cavity and having a slot formed therein consisting of a first vertical stretch continuous at its upper end with a second horizontal stretch,

(c) a vertically movable piston carried in said housing,

(d) a chair having a seat and back rest and slidably carried against the outer face of said housing,

(e) a sleeve rotatably carried on said piston adjacent the upper end thereof,

(f) a collar disposed around said sleeve,

(g) said sleeve and collar supporting cooperative means forming a ball race in which a plurality of balls are carried for relative rotational movement of said sleeve and collar,

(h) a bracket extending through said slot and interconnecting said chair and sleeve for rotational movement of said chair about the axis of the piston with respect to said housing between a loading and unloading position generally normal to the longitudinal tub axis and a raising and lowering position generally parallel with the longitudinal tub axis,

(i) pulley means fixedly mounted on said piston for vertical movement therewith and having cable means extending thereover, said cable means being fixedly interconnected at one of its ends to said housing and at its opposite end to said collar for moving said chair vertically with respect to said housing and piston upon vertical movement of said piston and pulley means, and

(j) means connecting said housing to a power source for effecting vertical movement of said piston.

13. A lift chair for sitz bath as set forth in claim **12** in which

(a) said pulley means comprises two pairs of aligned pulleys rotatably carried on a block fixedly mounted on the upper end of said piston, and

(b) said cable means comprises a pair of cables each of which is carried over a pair of said pulleys with one of its ends connected to a block mounted on said housing and its opposite end interconnected to said collar.

14. A lift for a sitz bath, comprising

(a) supporting means mountable on a tub rim and constituting the sole means of mounting the lift in operative position,

(b) a vertically extending housing carried from said supporting means within the longitudinal extent of the tub cavity and having a slot formed therein consisting of a first vertical stretch continuous at its upper end with a second horizontal stretch,

(c) a vertically movable piston carried in said housing,

(d) means supporting said piston in said housing for movement in a fixed vertical plane,

(e) a chair having a seat and back rest and slidably supported adjacent its lower end against the outer face of said housing,

(f) means extending through said slot operatively interconnecting said piston and the upper end of said chair for vertical movement of said chair relative to the housing along said first stretch upon vertical movement of said piston and rotational movement of said chair relative to the housing along said second stretch between a loading and unloading position generally normal to the tub axis and a raising and lowering position generally parallel with the longitudinal tub axis, and

(g) means connecting said housing to a power source for effecting vertical movement of said piston.

15. In combination with a lift for a sitz bath comprising a lift housing supported from a tub and having vertically movable, fluid actuated pistons operatively connected to a chair movable therewith; a fluid control apparatus, comprising,

(a) a pair of valves connected to a manifold for controlling the flow of a pair of liquids into said manifold,

(b) an adapter interconnected to said manifold and a nozzle for discharging said pair of liquids into said tub,

(c) a third valve on said adapter for controlling the discharge of said liquids from the nozzle,

(d) a valve housing having inlet, outlet, and discharge ports,

(e) a first conduit connected to said inlet port and said adapter upstream from said third valve,

(f) a second conduit connected to said outlet port and said lift housing, and

(g) valve means in said valve housing movable between a first position disposing said inlet and outlet ports in open communication with each other and closing said discharge port for permitting said fluids to flow to said lift housing for raising said piston and chair and a second position disposing said outlet and discharge ports in open communication with each other and blocking flow between said inlet and outlet ports for permitting the fluids in said lift housing to flow to said valve housing and out said discharge port for lowering said piston and chair.

16. The invention as set forth in claim **15** in which

(a) said valve housing has inlet and discharge chambers adjacent said inlet and discharge ports, respectively and provided with valve seats,

(b) passages interconnecting said inlet chamber and outlet port, outlet port and discharge chamber, and

(c) said valve means comprises a fourth valve carried in said inlet chamber in a normally closed position against the valve seat therein, a fifth valve carried in said discharge chamber in a normally closed position against the valve seat therein, and actuating means mounted on said housing for selectively opening said fourth and fifth valves.

17. The invention as set forth in claim **16** in which

(a) each of said fourth and fifth valves has a valve stem projecting outwardly from said valve casing, and

(b) said actuating means comprises a block movably mounted on said valve housing and provided with a pair of cam faces operatively engageable with said valve stems upon movement of said block relative to said valve housing for selectively moving said fourth and fifth valves into open position.

18. The invention as set forth in claim **15** in which

(a) said adapter has a pair of chambers one of which is in open communication with said manifold and said first conduit and the other of which is in open communication with said nozzle, and

(b) said third valve selectively controls the flow between said pair of chambers for selectively blocking

the flow of said liquids through said chambers for discharge out said nozzle.

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EDWARD V. BENHAM, *Primary Examiner.*

FRANK H. BRONAUGH, *Examiner.*