

June 5, 1951

F. J. FARRELLY ET AL

2,555,686

WHIRLPOOL BATH

Filed June 12, 1946

Fig. 1.

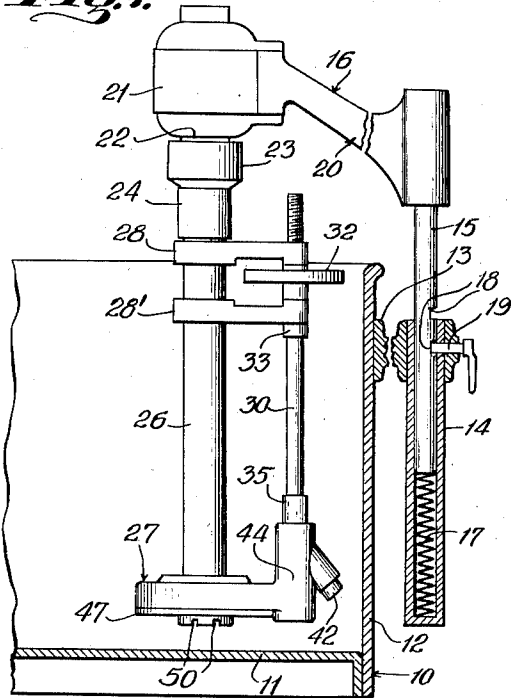


Fig. 2.

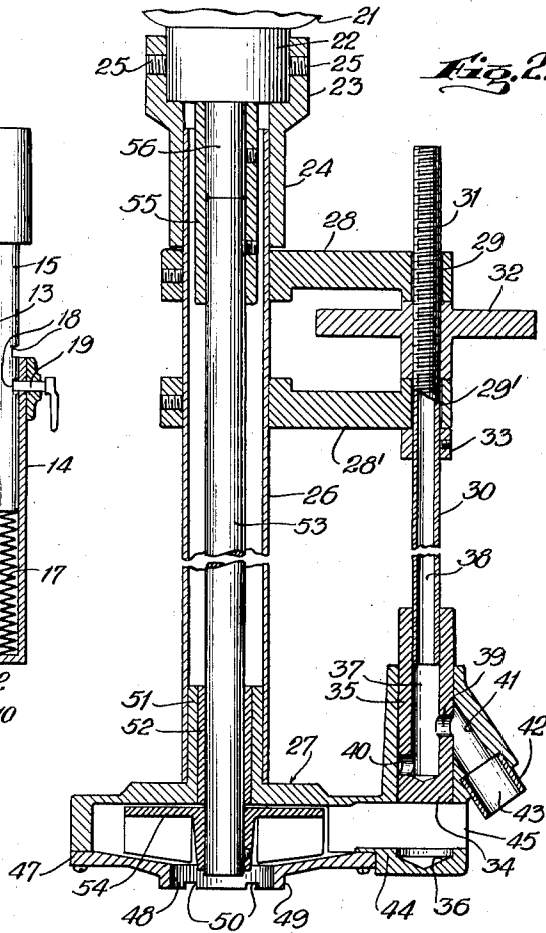
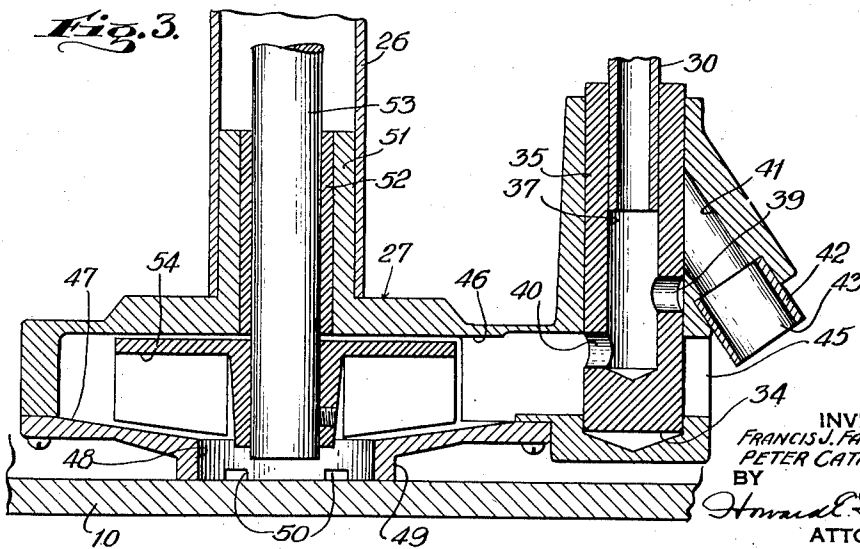


Fig. 3.



INVENTORS
FRANCIS J. FARRELLY
PETER CATANZARO
BY
Howard E. Thompson
ATTORNEY

UNITED STATES PATENT OFFICE

2,555,686

WHIRLPOOL BATH

Francis J. Farrelly, New York, and Peter Cantanzaro, Brooklyn, N. Y.; Mary Farrelly, executrix of said Francis J. Farrelly, deceased, assignor to said Cantanzaro and Peter Guba, Ridgefield, N. J.

Application June 12, 1946, Serial No. 676,320

6 Claims. (Cl. 261—36)

1

This invention relates to apparatus commonly referred to as baths, of the type and kind where water is agitated in a tank or vessel, and still further, where air is introduced into the water. Baths of this type and kind have been utilized by the medical profession in the treatment of injuries to the body, or in treatment of other body ailments. More particularly, the invention deals in the provision of an apparatus for controlling the discharge of water from the bath and utilizing this means also in introducing air into the bath and in agitating the water in the vessel. Still more particularly, the invention deals in a unit which is readily attachable and detachable with respect to the tank and adjustable to control positioning of the unit in the tank. The novel features of the invention will be best understood from the following description when taken together with the accompanying drawing in which certain embodiments of the invention are disclosed, and in which, the separate parts are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a sectional view through a portion of a tank showing one of my improved units in a partially raised position in the tank, and with part of the support of said unit shown in section.

Fig. 2 is an enlarged sectional view of part of the unit, as seen in Fig. 1, with parts broken away; and

Fig. 3 is an enlarged view of the lower end portion of the structure shown in Fig. 2, showing parts in a different position.

In Fig. 1 of the drawing, shown at 10, is part of a tank or vessel of a whirlpool bath; 11 showing a part of the bottom wall and 12 part of one side wall. On the side wall 12 is an outwardly extending bracket portion 13 in which is secured an elongated sleeve 14, which forms a guide and support for a rod 15 of one of the improved units 16. The rod 15 operates upon a spring 17 in the sleeve 14 to normally support the unit in raised position in the tank 10. The rod 14 has two or more notches 18 therein adapted to be engaged by a key pin 19 supported in the bracket 13 to retain the unit 16 in a partially or fully lowered position in the tank, as shown in Figs. 1 and 3 respectively, the unit being held in this position against the action of the spring 17.

On the upper end of the rod 15 is a motor supporting bracket arm 20 on which is suitably supported an electric motor 21. The lower portion of the motor has a reduced extension 22 which is adapted to fit in and be secured in an enlarged upper portion 23 of a sleeve 24, set screws 25 being

2

employed to secure the motor in position. Fixedly secured in the sleeve 24 is a downwardly extending tubular frame 26, to the lower end of which is secured a fan casing or housing 27. Secured to the tubular frame is a pair of bracket arms 28—28' having apertured ends, as at 29—29' in which is freely mounted a tubular valve shaft 30. Arranged between the brackets 28—28' and on the threaded portion 31 of the shaft 30 is a feed nut or disc 32, so that in the rotation of said disc, the shaft 30 may be raised and lowered. Upward movement of the shaft 30 is controlled by a stop collar 33 engaging the lower arm 28' and lower movement of the shaft is controlled by the end 34 of the valve head 35 striking the bottom of the recess 36 in the fan casing 27, as seen in Fig. 3 of the drawing.

The valve head 35 is fixedly secured to the lower end of the shaft 30 and this head has a bore 37 with which the passage 38 of the shaft 30 communicates, and the wall of the valve head has on opposite sides thereof, and at different vertical levels, discharge ports 39 and 40. The port 39 is adapted to be brought into registering position with an air discharge passage 41 in the casing 27 and with a tube extension 42 secured in said casing, the tube extension preferably has a larger diameter bore 43 than the passage 41.

The main portion of the casing 27 is dish-shaped in form, and this casing has a side tubular extension 44 discharging outwardly through one side of the casing, as seen at 45. The valve head 35 is adapted to transverse the extension 44 to block off and seal the discharge 45 when the head 35 is in the lowered position, as seen in Fig. 3 of the drawing, in which position the port 40 of the valve head registers with the interior 46 of the casing.

The lower part of the casing 27 is open and adapted to be closed by a cover plate 47. This plate has a central tubular opening 48 at the lower portion thereof, partially formed by a circumferential flange 49 and this flange has a series of circumferentially spaced openings 50 through which water in the tank 10 can be discharged.

The casing 27 has an upwardly extending tubular portion 51 to which the tubular frame 26 is secured and within the extension 51 is a bushing or bearing 52, for a coupling shaft 53, the lower end of the shaft extending into the chamber 43 of the casing 27, and secured thereto is a fan or propeller 54. The shaft 53 has a coupling sleeve 55 secured to the upper end thereof, the sleeve 55 projecting above the upper end of the shaft 53 to receive the downwardly extending

3

motor shaft 56 to which the sleeve 55 is also secured or keyed.

From the foregoing it will be apparent that in the operation of the motor 21, the shaft 53 together with the fan or propeller 54 are rotated and water can be drawn into the chamber 46 of the casing from the tank and passed out through the discharge 45 in agitating or whirling the water in the tank, and at the same time, air from a suitable source of supply can be passed downwardly through the shaft 30 and out through the tubular discharge 43 adjacent the discharge of the water at 45. It will be understood that a flexible air hose or the like is attached to the upper end of the shaft 30, but this hose has been omitted, as it forms no direct part of the present invention.

The above operation takes place with the valve head 35 in the position shown in Fig. 2. In lowering the valve head to the position shown in Fig. 3, the unit may be utilized to discharge the water from the tank, in which event, the water will pass from the chamber 46 into the valve head and up through the shaft 30 and out through a hose connected with the upper end of said shaft. In such event, connection with the air supply has been detached and the water discharge hose substituted. This hose may be also utilized for the purpose of filling the tank by introducing water downwardly through the tube 30 and into the tank through the casing 27 and the opening 48, particularly when the unit is in a raised position, for example, as shown in Fig. 1 of the drawing. In this last operation, the motor is, of course, not operated.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In baths of the kind defined, an attachment comprising a casing, a propeller in the casing, an electric motor, a shaft for coupling the motor shaft with said propeller, said casing having an opening centrally with respect to the propeller in the casing, the periphery of said casing having a side extension, a discharge passage in said extension, an adjustable valve controlling the discharge passage of said casing, manual means for adjusting said valve in control of said discharge passage, said valve having a passage therein, a tubular shaft supporting and operating said valve, said shaft forming an air admission passage, and said extension of the casing having an air discharge passage adjacent and angularly to the first named discharge passage of said casing.

2. In baths of the kind defined, an attachment comprising a casing, a propeller in the casing, an electric motor, a shaft for coupling the motor shaft with said propeller, said casing having an opening centrally with respect to the propeller in the casing, the periphery of said casing having a side extension, a discharge passage in said extension, an adjustable valve controlling the discharge passage of said casing, manual means for adjusting said valve in control of said discharge passage, said valve having a passage therein, a tubular shaft supporting and operating said valve, said shaft forming an air admission passage, said extension of the casing having an air discharge passage adjacent and angularly to the first named discharge passage of said casing, and said valve having a passage adapted to place the discharge passage of said casing in communication with the interior of said valve supporting

4

shaft to discharge fluid from the bath through said shaft.

3. In devices of the character described, a propeller casing having inlet and outlet passages, a tubular frame extending from said casing, a coupling sleeve secured to the free end of the frame and having an outer enlarged portion forming a seat for an electric motor, means detachably coupling the motor with respect to the enlarged portion of said sleeve, the motor having a shaft extending into said frame, said propeller having a shaft arranged axially of the frame, means within the frame for coupling the motor shaft with the propeller shaft, a pair of bracket arms secured to the frame adjacent said sleeve, means adjustably supporting a tubular valve shaft in said arms, a valve casing adjacent the discharge of the first named casing, and a valve on said valve shaft and operating in said casing in control of the discharge from said propeller casing.

4. In attachments for apparatus of the class described, a casing having intake and discharge passages, means within the casing drawing fluid into the casing through said intake passage and discharging the same from said discharge passage, a ported tubular plunger valve adjustably slidable in said casing to move into and out of said discharge passage, said valve in one position controlling discharge of fluid through said discharge passage into the apparatus and in another passage through said tubular valve, a tubular shaft extending from and supporting and operating said plunger valve, said casing having an outwardly and downwardly directed tubular extension with a discharge at a point adjacent and angularly to the fluid discharged from the passage of said casing, and said valve having a port placing the tubular shaft in communication with said tubular extension through the valve in the first named position of said valve, whereby air introduced into the tubular shaft may be discharged through said tubular extension angularly to the fluid discharged from said casing.

5. In attachments for apparatus of the class described, a casing having intake and discharge passages, means within the casing drawing fluid into the casing through said intake passage and discharging the same from said discharge passage, a ported tubular plunger valve adjustably slidable in said casing to move into and out of said discharge passage, said valve in one position controlling discharge of fluid through said discharge passage into the apparatus and in another passage through said tubular valve, a tubular shaft extending from and supporting and operating said plunger valve, said casing having an outwardly and downwardly directed tubular extension with a discharge at a point adjacent and angularly to the fluid discharged from the passage of said casing, said valve having a port placing the tubular shaft in communication with said tubular extension through the valve in the first named position of said valve, whereby air introduced into the tubular shaft may be discharged through said tubular extension angularly to the fluid discharged from said casing, said valve port being closed in the second named position of the valve, and discharge of fluid through the valve in said second named position being through another port in said valve.

6. In attachments for apparatus of the class described, a casing having intake and discharge

5

passages, means within the casing drawing fluid into the casing through said intake passage and discharging the same from said discharge passage, a ported tubular plunger valve adjustably slidable in said casing to move into and out of said discharge passage, said valve in one position controlling discharge of fluid through said discharge passage into the apparatus and in another passage through said tubular valve, a tubular shaft extending from and supporting and operating said plunger valve, said casing having an outwardly and downwardly directed tubular extension with a discharge at a point adjacent and angularly to the fluid discharged from the passage of said casing, said valve having a port placing the tubular shaft in communication with said tubular extension through the valve in the first named position of said valve, whereby air introduced into the tubular shaft may be discharged through said tubular extension angularly to the fluid discharged from said casing, said valve port being closed in the second named position of the valve, discharge of fluid through the valve in said second named position being through another port in said valve, the intake passage of said casing being partially formed by an outwardly projecting narrow circumferential flange, and said flange having circumferentially spaced notches in the outer edge portion thereof.

6

tion of the valve, discharge of fluid through the valve in said second named position being through another port in said valve, the intake passage of said casing being partially formed by an outwardly projecting narrow circumferential flange, and said flange having circumferentially spaced notches in the outer edge portion thereof.

FRANCIS J. FARRELLY.
PETER CATANZARO.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
885,011	Bergens	Apr. 21, 1908
905,818	Langford	Dec. 1, 1908
1,453,513	Metz	May 1, 1923
2,280,979	Rocke	Apr. 28, 1942