

Sept. 4, 1928.

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E. A. WRIGHT

BATHTUB ATTACHMENT

Filed Dec. 8, 1926

FIG. 1.

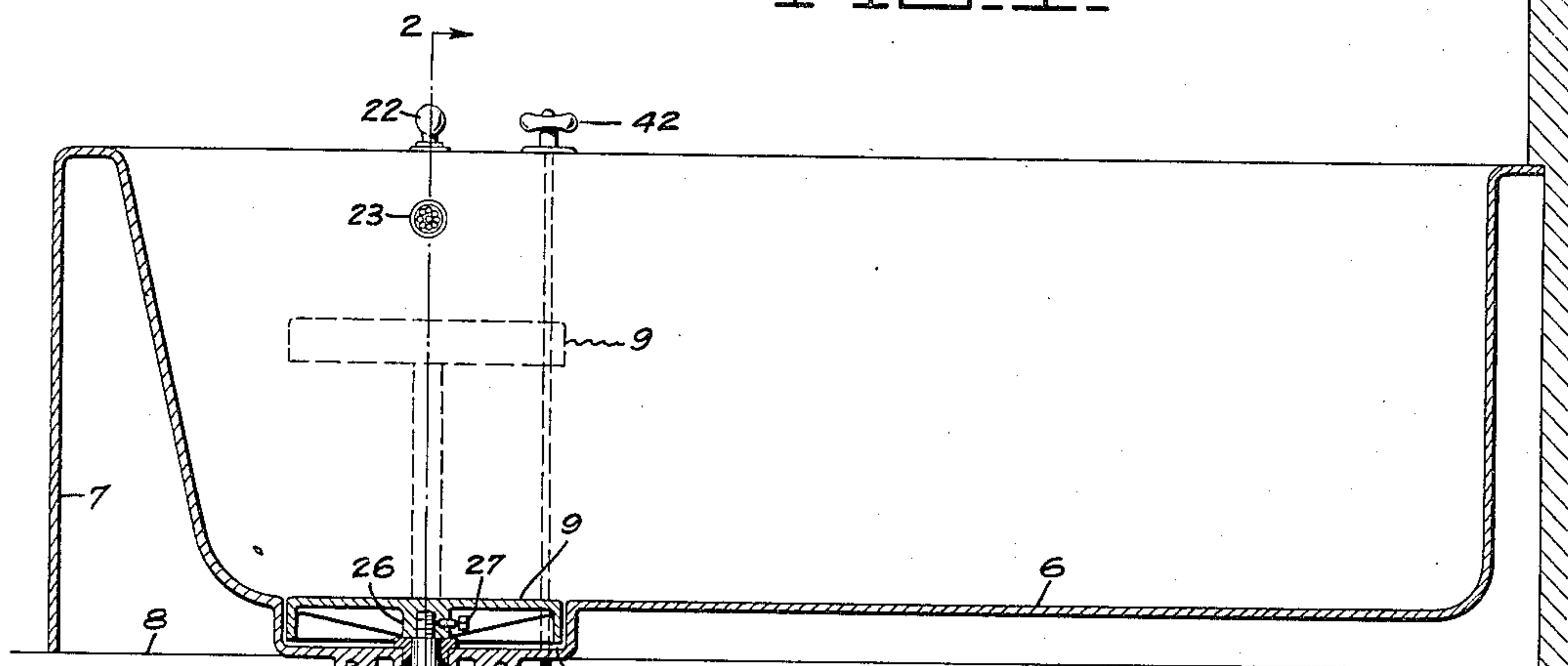


FIG. 2.

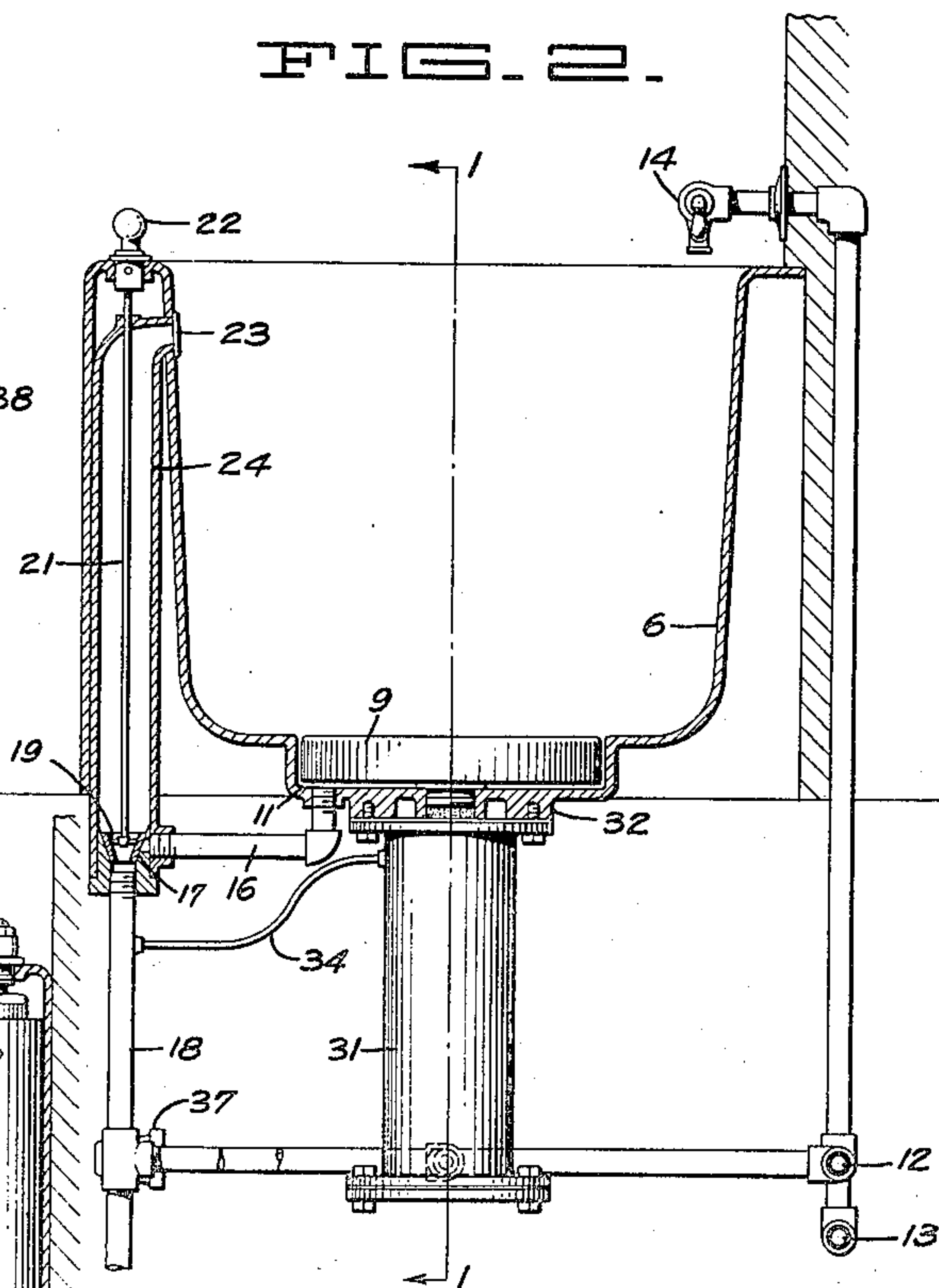
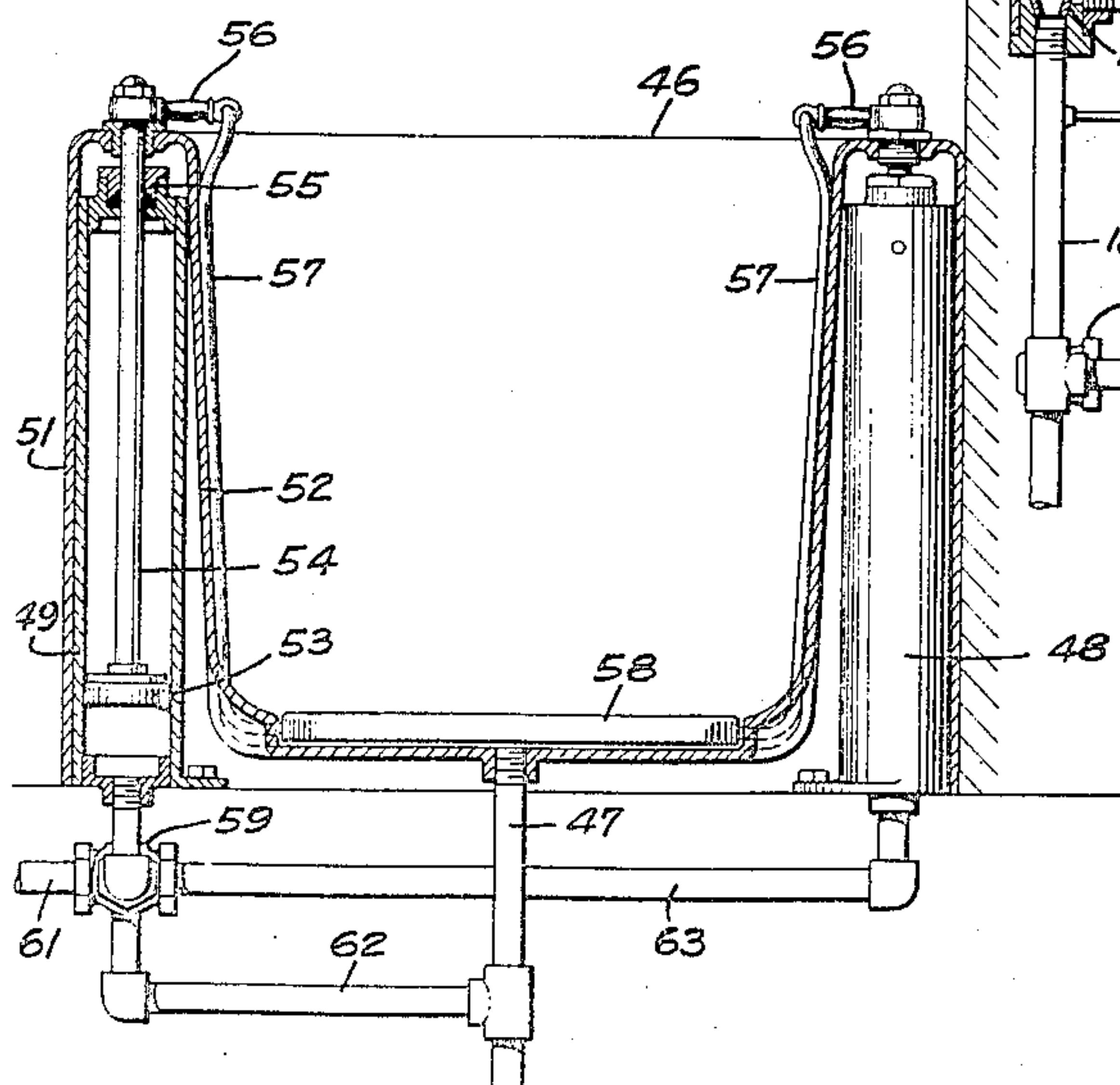


FIG. 3.



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UNITED STATES PATENT OFFICE.

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BATHTUB ATTACHMENT.

Application filed December 8, 1926. Serial No. 153,317.

My invention relates to devices for assisting elderly and infirm people into and out of bath tubs of the usual kind. Persons who are well along in years or who are handicapped physically often have difficulty in entering and leaving the type of bath tub now in use. I have provided my invention to render easy and safe the acts of getting into and out of a bath tub.

10 An object of my invention is to provide a device for assisting persons to enter and leave bath tubs.

Another object of my invention is to provide such a device which is operative on the 15 water pressure ordinarily available in a residence.

My invention possesses other advantageous features, some of which with the foregoing will be set forth at length in the following description where I shall outline in full that 20 form of the bath tub attachment of my invention, which I have selected for illustration in the drawings accompanying and forming part of the present specification. In said 25 drawings, I have shown one form of bath tub attachment embodying my invention, but it is to be understood that I do not limit myself to such form since the invention as set forth in the claims, may be embodied in a plurality of 30 forms.

In the drawings:

Fig. 1 is a transverse section of a bath tub with my invention attached thereto, the plane of section being indicated by the line 1—1 35 of Fig. 2.

Fig. 2 is a cross section on the line 2—2 of Fig. 1 showing a bath tub with my invention installed therein.

Fig. 3 is a modified form of tub shown in 40 transverse section.

My invention preferably comprises a bath tub having a seat therein power operated by manually regulated means and adapted to ascend and descend between the top and bottom of the tub. 45

In its preferred form, the bath tub of my invention preferably comprises a tub 6 made of enameled metal in the conventional manner and provided on the exterior with an apron 7 extending from the rim of the tub to the floor 8. A seat 9 is provided which is adapted to convey persons from a seated position adjacent the top of the tub to a seated position adjacent the bottom of the tub. Preferably the seat in its lower position lies flush 55 with the bottom of the tub and to accommo-

date the seat the tub is countersunk. The bottom of the tub slopes toward the depression 11 which is the lowest point. The usual hot and cold water are supplied thru pipes 12 and 13 respectively which lead to a faucet 14 at one side of the tub. Drainage from the tub is taken care of by means of a drain pipe 16 which opens into the depression 11 and leads to a valve seat 17 surrounding the waste 65 pipe 18. A conical valve 19 is seated on the valve seat and seals the outlet of the pipe 16. The valve is conveniently unseated by means of a rod 21 extending to the rim of the tub and provided with a handle 22 conveniently located for manual operation. 70 When the handle is lifted, the valve 19 is raised from the seat 17 and the water may flow from the tub thru the drain pipe 16 and the waste pipe 18. An overflow outlet 23 is 75 provided adjacent the top of the tub and opens into a conduit 24 surrounding the rod 21 which communicates thru the conical valve 19 with the waste pipe 18. As thus far described, the bath tub is substantially of 80 standard construction, although it is somewhat modified in shape to accommodate the attachment of my invention.

In order to assist a person into and out of the tub, I have provided a seat which can be 85 raised and lowered between the top and bottom of the tub. The seat 9 is preferably an enameled metal casting similar to the tub 6 and is of such size and shape as to rest within the depression 11 and lie flush with 90 the bottom of the tub. The seat is preferably provided with a peripheral downturned flange which is connected with a central hub 26 by means of intermediate webs. The hub 26 is internally threaded and secured by 95 means of a set screw 27 to the upper threaded end of a piston rod 28. The seat may be given any axial adjusted position with respect to the piston rod by simply rotating it on the threaded portion and subsequently 100 locking it with the set screw. The piston rod connects with a piston 29 slidably mounted within a cylinder 31 secured to an annular boss 32 cast in the bottom of the tub. A packing gland 33 is seated in the lower portion 105 of the depression 11 and effectively prevents leakage of fluid in either direction along the piston rod. A bleeder pipe 34 connects the upper portion of the cylinder 31 with the waste pipe 18 to remove any collected liquid. 110 Beneath the piston 29, a conduit 36 is provided to permit the entrance and exit of pres-

sure fluid to the cylinder 31. The conduit 36 is connected thru a three way valve 37 with a supply of water under pressure entering thru the pipe 38 from the pipe 13 and also with a pipe 39 connected to the waste pipe 18. By suitably manipulating the three way cock 37, the supply and discharge of pressure fluid from beneath the piston 29 is effectively controlled and the position of the piston and the seat is easily regulated. The control of the three-way valve is facilitated by an elongation of the operating stem which comprises a rod 41 extending to the rim of the tub and provided with a convenient hand wheel 42.

In the operation of my device, it is intended that the conical valve 19 first be closed by the handle 22, and that the faucet 14 be operated to fill the tub with water to the requisite level. The handle 42 is then rotated to permit the flow of pressure fluid thru the three-way cock 37 into the cylinder. The piston 29 then lifts the seat 39 from its position flush with the bottom of the tub into its extended position adjacent the top of the tub. The person using the apparatus enters the tub and seats himself upon the seat. He then rotates the handle 42 in the opposite direction to permit the discharge of the pressure fluid from the cylinder into the waste pipe 18. His weight causes the plunger of the hydraulic cylinder 31 to lower until the seat 39 is in lowermost position. The reverse procedure is followed when the bather leaves the tub.

I have developed the form of the invention shown in Fig. 3 for installation in places having but a scant amount of room. In this modified form, the tub 46 is of substantially the same contour as the tub 6 and is likewise provided with the usual hot and cold water supply, not shown, and a drain 47 similar to the described drain. In place of the single cylinder shown in Fig. 1, the tub of Fig. 3 is provided with a pair of cylinders 48 and 49 which are nested between the apron 51 and the interior walls 52. Each of the cylinders is provided with a piston 53 connected to a piston rod 54 passing thru a stuffing box 55 at the upper end of the cylinder. A handle 56 secured to the top of each piston rod furnishes a convenient gripping point for the user of the device and supports one of two rods 57 which extend from the upper part of the tub to the seat 58 countersunk in the tub bottom. A suitable three-way valve 59 is connected thru a pipe 61 to the source of fluid under pressure and also to the drain 47 by means of a pipe 62. An extended operating handle, not shown, similar to the handle 42, is preferably provided in the rim of the tub for controlling the valve 59.

The two cylinders 48 and 49 are intercommunicating thru a pipe 63, and their respective pistons ascend simultaneously when the valve 59 is operated to admit pressure fluid.

As the pistons ascend they lift the seat 58 from the depression in the bottom of the tub to its position adjacent the top of the tub. The person using the device then seats himself on the seat in its raised position and holding onto the handles 56 for support manipulates the three-way valve 59 in the opposite direction to permit the discharge of the pressure fluid from the cylinders 48 and 49. The weight of the seated person forces the pistons 53 downwardly and the pressure fluid discharges thru the pipes 63, 62 and 47 until the seat 58 is again in the countersunk portion of the tub.

It will be appreciated that with either modification of my invention, a person is greatly assisted in entering and leaving the bath tub.

I claim:

1. In a bath tub, a seat adapted to rest on the bottom thereof, a cylinder adjacent said bath tub, a piston in said cylinder directly connected to said seat for raising said seat from the bottom of said tub, and manually operated means for controlling the flow of fluid to and from said cylinder.

2. In a bath tub, a seat countersunk in the bottom of said tub, a fluid pressure cylinder vertically disposed adjacent said seat, a piston in said cylinder, means directly connecting said piston to said seat, a source of fluid under pressure, and means governing the flow of pressure fluid to and from said cylinder.

3. In a bath tub having a countersunk portion, a drain in said countersunk portion, a seat disposed in one position in said countersunk portion and in another position adjacent the top of said tub, means for moving said seat from the first position to the second position, said means including a hydraulic cylinder having a piston connected to said seat.

4. In a bath tub having a bottom sloping to a common low point, a drain at said low point, a seat adjacent said low point, a hydraulic cylinder for lifting said seat from said low point, a source of liquid under pressure, means for conducting said liquid into said tub, and means connected to said conducting means for supplying fluid to said cylinder.

5. In a bath tub adapted to drain toward a depression in the bottom thereof, means for supplying pressure fluid to said tub, a drain in said depression for draining said fluid from said tub, a seat located in said depression, a hydraulic device for raising said seat from said depression, means connecting said hydraulic device to said supply of pressure fluid, and means adjacent said seat for controlling the flow of pressure fluid to and from said hydraulic device.

6. In a bath tub, a seat, a hydraulic cylinder for raising said seat, a source of water

under pressure, means for admitting water from said source to said tub, and means for causing water from said source to actuate said cylinder.

5 7. In a bath tub, a seat, a piston unitarily connected to said seat, a cylinder in which said piston operates, and means for conducting a pressure fluid to said cylinder for actuating said piston.

10 8. In a bath tub, a hydraulic cylinder mounted below the upper rim of said tub, a piston in said cylinder, a seat connected to said piston and adapted to be raised and lowered between the bottom of said tub and the

upper rim thereof, and means for supplying 15 pressure hydraulically to said cylinder to actuate said piston.

9. In a bath tub, a hydraulic cylinder mounted below the upper rim of said tub, a piston in said cylinder, a seat unitarily connected to said piston, and manually operable 20 means for controlling the influx to and efflux from said cylinder of hydraulic fluid under pressure.

In testimony whereof, I have hereunto set 25 my hand.

EDWARD A. WRIGHT.