July 9, 1957 M. G. McQUOWN 2,798,229

PORTABLE HOSPITAL BATHTUB APPARATUS

Filed June 24, 1955 3 Sheets-Sheet 1

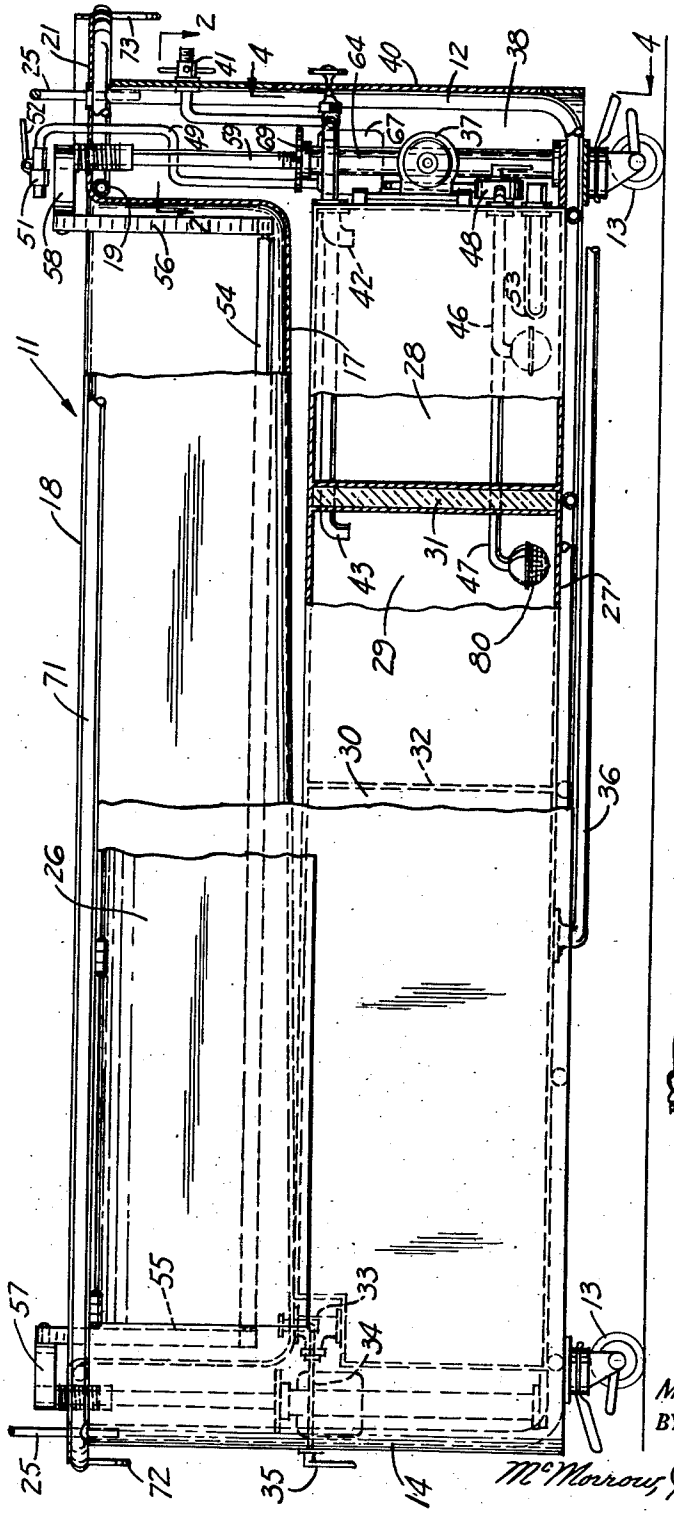


FIG. 1

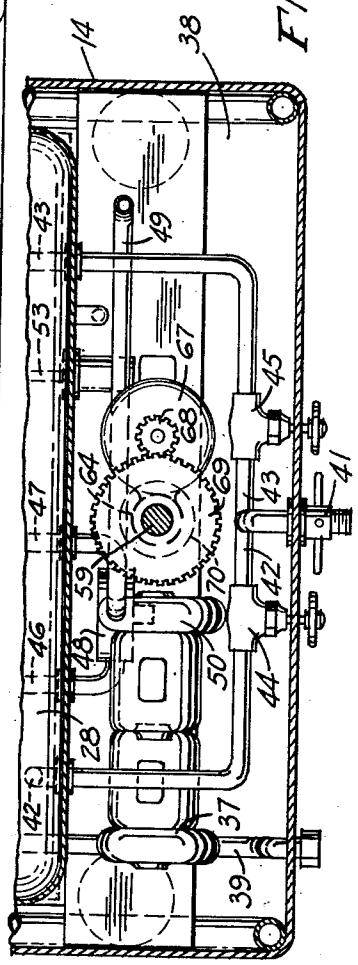


FIG. 2

INVENTOR.
MARSHALL G. McQUOWN
BY

McMorrow, Berman & Davidson
ATTORNEYS

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PORTABLE HOSPITAL BATHTUB APPARATUS

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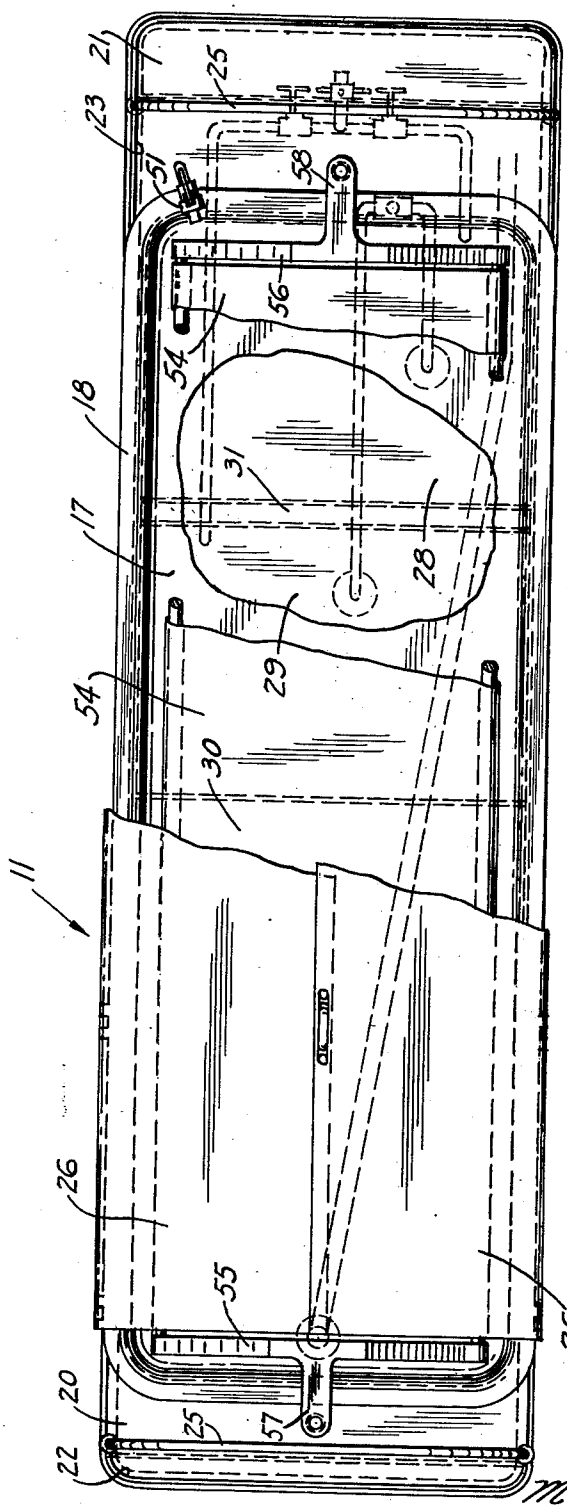


FIG. 3

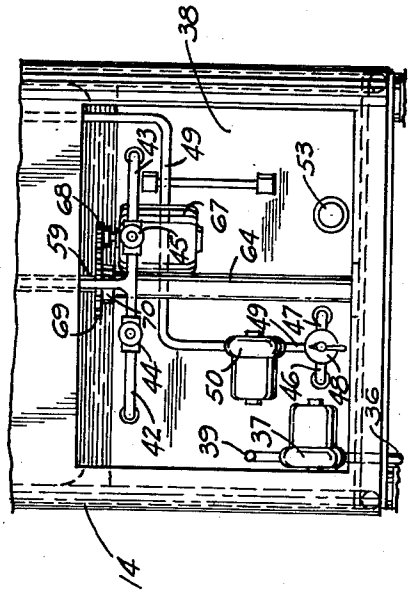


FIG. 4

INVENTOR.
MARSHALL G. McQUOWN
BY

McMorrow, Berman & Davidson
ATTORNEYS

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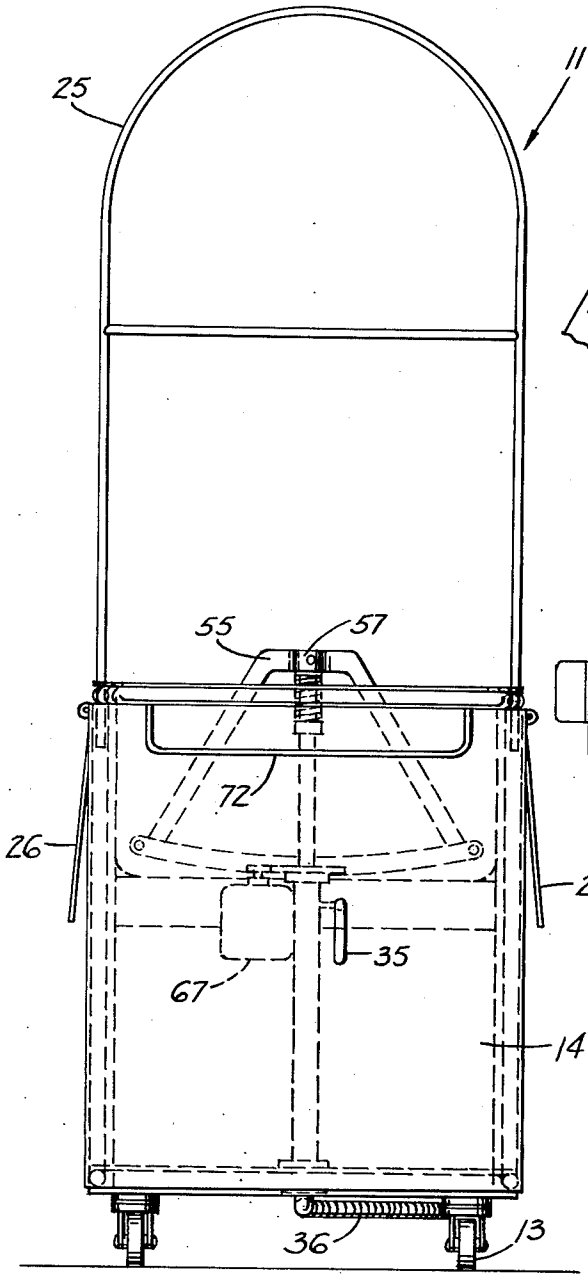


FIG. 5

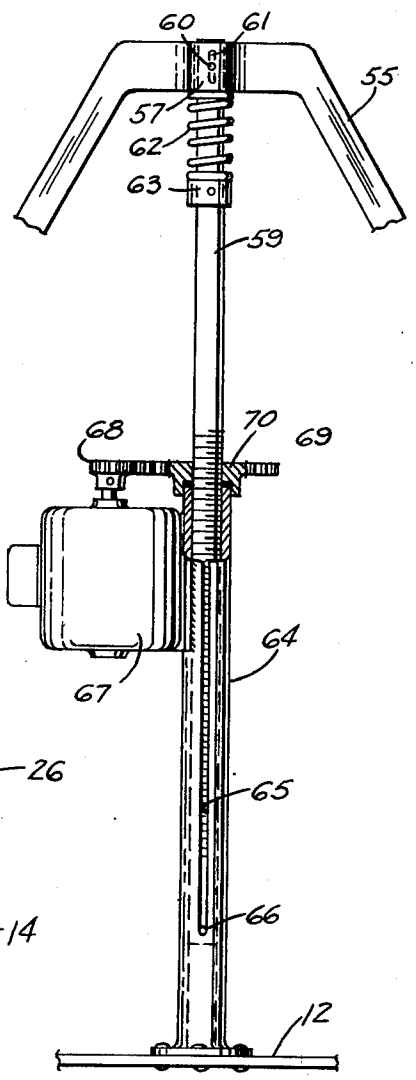


FIG. 6

INVENTOR.
MARSHALL G. McQUOWN
BY

McMorrow, Berman & Davidson
ATTORNEYS

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PORTABLE HOSPITAL BATHTUB APPARATUS

Marshall G. McQuown, Redding, Calif., assignor of one-tenth to Alvin M. Cibula, Redding, Calif.

Application June 24, 1955, Serial No. 517,680

3 Claims. (Cl. 4—179)

This invention relates to improvements in therapeutic bath apparatus, and more particularly to an improved hospital bathtub apparatus of the portable type.

A main object of the invention is to provide a novel and improved hospital bathtub apparatus which is simple in construction, which is readily movable to a desired location, and which is provided with means for raising and lowering a patient into the bathtub tank portion thereof with a minimum amount of exertion on the part of a nurse or other attendant.

A further object of the invention is to provide an improved portable hospital bathtube apparatus which is relatively inexpensive to fabricate, which is durable in construction, which is provided with respective sources of hot and cold water which may be mixed in a desired proportion, which is relatively compact in size, and which is easy to keep in a clean and sanitary condition.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a side elevational view partly in vertical cross section, of an improved portable bathtub apparatus constructed in accordance with the present invention.

Figure 2 is an enlarged horizontal cross sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a top plan view, with parts broken away, of the bathtub apparatus shown in Figure 1.

Figure 4 is a fragmentary end elevational view of the apparatus taken on the line 4—4 of Figure 1, with the end cover panel of the housing of the apparatus removed.

Figure 5 is a front end elevational view of the portable bathtub apparatus of Figure 1.

Figure 6 is an enlarged elevational detail view, partly in vertical cross section, of one of the screw jack devices employed with the stretcher member of the bathtub apparatus of Figures 1 to 5.

Referring to the drawings, the improved portable bathtub apparatus is designated generally at **11** and comprises a frame **12** of any suitable rigid material, such as metal tubing or the like, which is mounted on casters **13**, the frame being generally rectangular in shape and being provided with the covering or housing, shown at **14**, and fabricated from any suitable material, such as sheet metal, or the like.

Designated at **17** is a bathtub tank which is mounted in the upper portion of the frame **12**, for example, by the provision of a horizontal top peripheral flange **18** on the bathtub tank, said flange **18** being engaged over horizontal upper supporting elements **19** of frame **12** and being secured thereto in any suitable manner.

Respective front and rear extensions **20** and **21** are provided at the front and rear end portions of the flange **18**, said extensions serving as supporting surfaces for various objects, such as soap, sponges, and the like. The shelf-like extensions **20** and **21** are provided with upstanding marginal walls **22** and **23** to retain objects on said extensions.

The main frame **12** is provided at its opposite ends

with the respective upstanding canopy supports **25**, **25**, said supports being generally arched in shape, as shown in Figure 5, and being parallel to each other. A suitable covering or canopy of flexible material, such as canvas or the like may be mounted on the supports **25**, **25** to provide a covering for the bathtub apparatus.

Designated at **26**, **26** are respective cover flaps of suitable rigid sheet material which are hinged to the top longitudinal side portions of the main frame **12** and which may be employed to cover the bathtub tank **17** at times when the apparatus is not in use, as shown in Figure 3. When the apparatus is in use, the cover flaps **26**, **26** are in their vertical depending positions, shown in Figure 1, at the respective sides of the apparatus adjacent to the side walls of the housing **14**.

Mounted on the lower portion of the frame **12** below the bath tub tank **17** and enclosed inside the housing **14** is a sheet metal tank structure **27** comprising a hot water compartment **28**, a cold water compartment **29**, and a waste compartment **30**, the hot water compartment **28** being separated from the cold water compartment **29** by a suitably insulated transverse partition **31**, and the cold water compartment **29** being separated from the waste compartment **30** by a transverse partition plate **32**.

The bathtub tank **17** has a sloping bottom wall which is connected at its lowest point, namely, adjacent the forward end of the bathtub tank, to the waste compartment **30** through a conventional conduit **33** including a conventional discharge valve controlled by a shaft **34** extending through the front end wall of the housing **14** and being provided with the operating handle **35**, as shown in Figure. 1.

Connected to the bottom of the waste compartment **30** is a waste conduit **36** which extends rearwardly beneath the apparatus through an electric pump **37** mounted in a rear compartment **38** of the apparatus and connected to a waste discharge conduit **39**, as shown in Figure 4.

The compartment **38** is provided with a removable panel **40** which is normally received in a suitable aperture provided therefor in the rear wall of housing **14** and which is retained in flush relationship with said rear wall in any suitable manner, as by the use of conventional spring catch means. The panel **40** is readily removable whenever access is required to the compartment **38**.

A conventional, valved inlet fitting **41** is mounted in the rear wall of the housing **14** below the shelf-like extension **21**, as shown in Figure 1. Connected to the fitting **41** are the respective branch conduits **42** and **43** leading to the respective hot and cold water compartments **28** and **29** through respective manually operated valves **44** and **45**. Respective outlet conduits **46** and **47** lead from the lower portions of the compartments **28** and **29** through a manually controllable mixing valve **48** of conventional construction to an outlet conduit **49** which is provided with an electric pump **50**. The conduit **49** extends upwardly and terminates in a discharge fitting **51** located just above the rear end portion of the bathtub tank **17**, as shown in Figure 1, whereby water will be discharged therefrom into the tub when the pump **50** is operated, the fitting **51** being provided with suitable valve means controlled by a lever **52**, the fitting **51** being conventional in construction. The fitting **51** is provided with valve structure normally closed but which is operated to open responsive to downward rotation of the lever **52**.

Suitable spray means may be connected to the fitting **51** to provide a spray or shower, if so desired.

The hot water reservoir **28** is provided with a conventional immersion type electric heater **53** which is preferably of the thermostatically controlled type, whereby the water in the hot water compartment **28** will be maintained continuously at a predetermined elevated temperature when the heater **53** is energized. The water

discharged from the reservoirs 28 and 29 will be mixed in a desired proportion, by adjustment of the mixing valve 48, to provide a desired outlet temperature of water at the discharge fitting 51.

Designated at 54 is a stretcher member of generally rectangular shape arranged to fit within the bathtub tank 17. The stretcher member 54 is provided with a suitable frame, and secured to the respective ends of the frame are the upwardly extending, generally arched supported members 55, 56. The top portions of the support members 55 and 56 are respectively formed with horizontal lugs 57 and 58 extending respectively forwardly and rearwardly from the support members 55 and 56, as shown in Figure 1. Each of the top lugs 57 and 58 is provided with a vertical bore which slidably receives the top portion of a vertical jack screw member 59 which is retained in said bore by a transverse pin 60 provided in the lug which engages through a vertical slot 61 formed in the top end of the jack screw member. A coiled spring 62 surrounds the jack screw member below each lug 57 and 58 and bears on a collar 63 secured on the subjacent portion of the associated jack screw.

Each jack screw is slidably received in a respective vertical sleeve member 64 rigidly secured to the lower portion of the frame 12 in alignment with the associated jack screw, each sleeve member 64 being formed with a vertical slot 65 through which extends a transverse pin 66 secured to the lower portion of the associated jack screw to retain the jack screw in the sleeve but to allow the jack screw to move vertically therein.

As shown in Figure 6, secured to each sleeve 64 is an electric motor 67, the motor 67 being arranged with its shaft parallel to the sleeve 64 and being provided with a pinion gear 68 on its shaft meshing with a large gear 69 integrally formed on a nut member 70 meshing with the associated jack screw 59 and rotatably supported on the top end of the associated sleeve 64.

Thus, when the motors 67 are energized, the jack screws 59 are simultaneously moved vertically, moving the stretcher member 54 similarly. The motors 67 are preferably of the reversible type, and are connected in the conventional manner so that they may be energized either in a direction to raise the stretcher member 54 or in the opposite direction, to lower said stretcher member, whereby the stretcher member may be raised or lowered with respect to the bathtub tank 17, as desired.

Rigidly secured to the frame 12 is a top external marginal railing member 71 which extends subjacent to the top flange 18 of the bathtub tank and which has secured to its opposite end portions the respective towel rack members 72 and 73, as shown in Figure 1.

As will be readily understood, the tanks 28 and 29 may be filled with water from a suitable source, and the device may be moved to the location of the patient requiring its use. By suitably energizing the heating element 53, the water in the tank 28 is raised to the desired temperature, and by adjusting the mixing valve 48, the water discharged from the outlet fitting 51 may be set at the desired temperature. The stretcher member 54 may be elevated by energizing the motors 67, to facilitate the placement of the patient thereon, after which, the stretcher member 54 may be lowered into the bathtub tank 17 with the patient supported on the stretcher member. After the patient has been bathed, the patient may be lifted out of the bathub tank by elevating the stretcher member 54. The waste water may be discharged into the waste receptacle 30. When the apparatus is returned to its normal location, the waste receptacle 30 may be emptied by connecting the discharge conduit 39 to a suitable drain and by energizing the pump 37.

Suitable filter screens 80 are provided on the intake ends of the conduits 46 and 47 to prevent foreign material

from being transferred from the water reservoirs 28 and 29 into the bathtub tank.

While a specific embodiment of an improved portable bathtub apparatus has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Theerfore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a portable bathtub apparatus, a frame, a bathtub tank mounted on said frame, respective hot and cold water reservoirs mounted on said frame subjacent said tank, an electrical heating element in said hot water reservoir, a supply conduit communicating with said tank, respective conduits connecting said hot and cold water reservoirs to said supply conduit and including regulating valve means arranged to regulate the relative proportions of hot and cold water admitted to said supply conduit, pump means in said supply conduit arranged to discharge water from said supply conduit into said tank, a waste reservoir mounted on said frame below said tank, conduit means connecting said tank to said waste reservoir, a stretcher member, and electrically operated jack means mounted on opposite ends of the frame and supporting said stretcher member over said tank, said jack means being arranged to at times lower said stretcher member into said tank and at other times to elevate said stretcher member in said tank.

2. In a portable bathtub apparatus, a wheeled frame, a bathtub tank mounted horizontally on an upper portion of said frame, a water supply reservoir mounted on said frame, conduit means connecting said supply reservoir to said tank, a waste reservoir mounted on said frame below said tank, conduit means connecting said tank to said waste reservoir, respective vertical jack screws movably mounted on said frame adjacent opposite ends of said tank, a stretcher member disposed over said tank, respective nut elements journaled on said frame at the end portions of said stretcher member and threadedly engaged with said jack screws, and means drivingly coupled to and arranged to rotate said nut elements for raising and lowering said stretcher member with respect to said tank.

3. In a portable bathtub apparatus, a wheeled frame, a bathtub tank mounted horizontally on an upper portion of said frame, a water supply reservoir mounted on said frame, conduit means connecting said supply reservoir to said tank, a waste reservoir mounted on said frame below said tank, conduit means connecting said tank to said waste reservoir, an electric heater in said water supply reservoir, respective vertical jack screws movably mounted on said frame at opposite ends of said tank, a stretcher member disposed over said tank, respective nut elements journaled on said frame at the end portions of said stretcher member and threadedly engaged with said jack screws, and respective electric motors drivingly coupled to and arranged to rotate said nut elements for raising and lowering said stretcher member with respect to said tank.

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