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PRESSURE-OPERATED ADJUSTABLE SUPPORT FOR A
SANITARY ATTACHMENT OF SINK OR BASIN TYPE

2,514,540

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2 Sheets-Sheet 1

FIG. 1

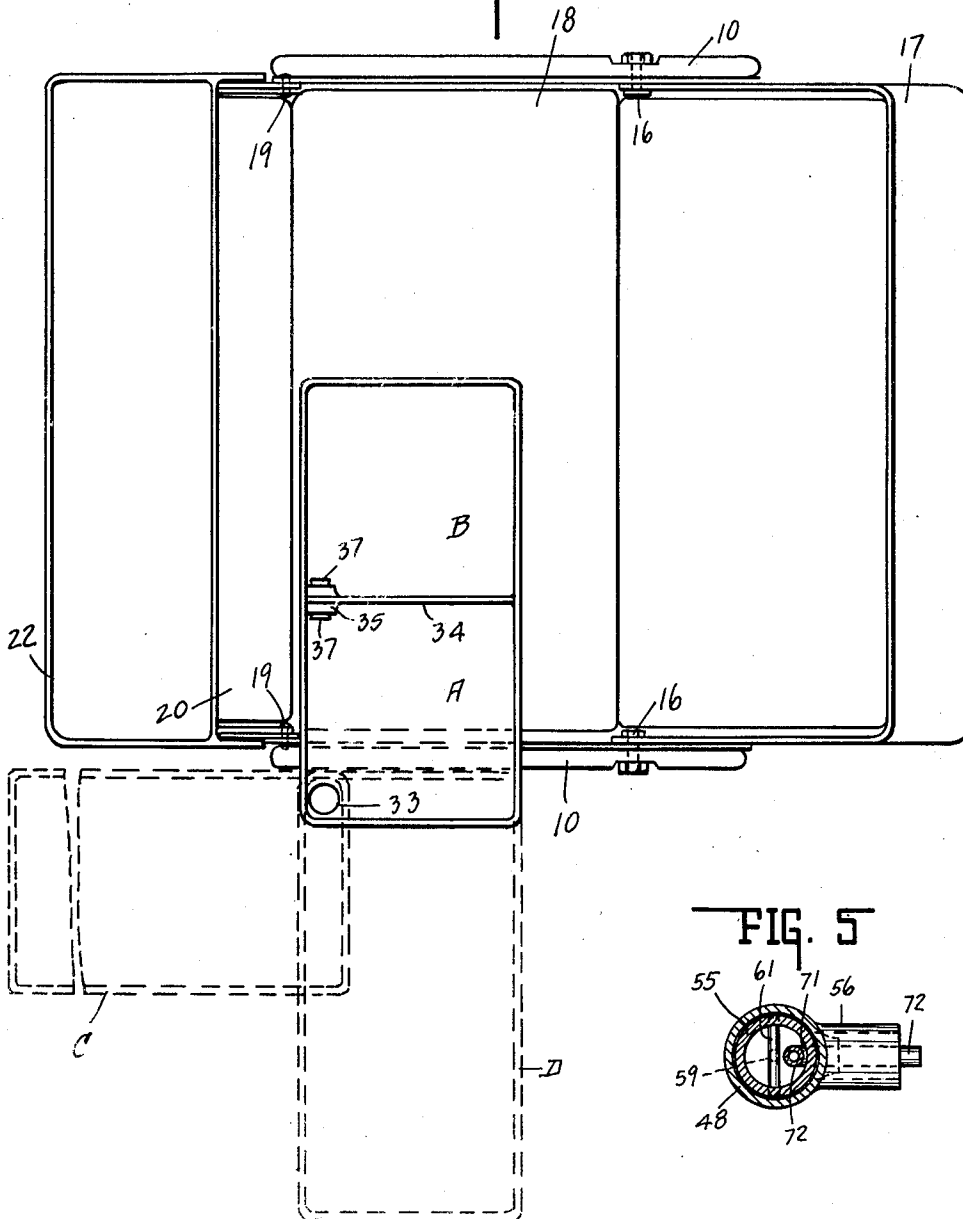
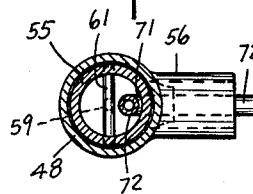


FIG. 5



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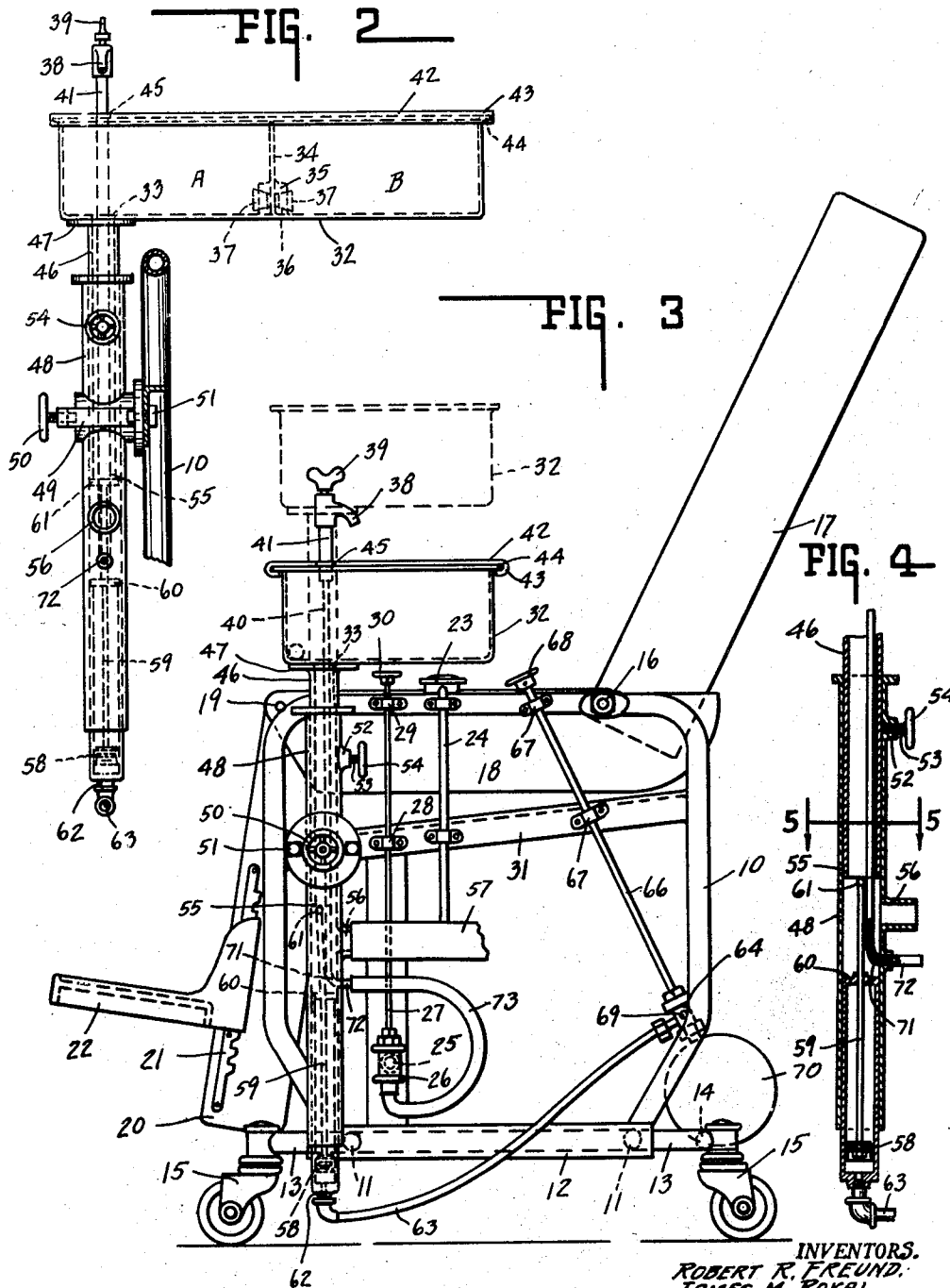
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UNITED STATES PATENT OFFICE

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PRESSURE-OPERATED ADJUSTABLE SUPPORT FOR A SANITARY ATTACHMENT OF SINK OR BASIN TYPE

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8 Claims. (Cl. 4—170)

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This invention relates to an invalid and like bed structure and more particularly to a sanitary attachment for same.

The articulated bed structure is more fully illustrated, described and claimed in copending application Serial No. 537,220, filed May 25, 1944, (now abandoned) and entitled Hospitalization Bed.

The chief object of the present invention is to provide a bed of the aforesaid character with a sanitary attachment that may be used by the patient for toilet purposes, such as hand and face washing, brushing of teeth, gargling, and the like, and which may be used by the examining or attending physician for tray and like purposes, or which may be positioned so that it is laterally positioned relative to the bed as distinguished from overlying the same or lying parallel thereto for the two preceding purposes.

The chief feature of the present invention consists in providing a bed structure of the character set forth in the aforesaid application with an attachment that is of sanitary sink or basin type and which is provided with a drain, and which is further provided with a water supply for respective use when desired. Other objects and features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

In the drawings Fig. 1 is a top plan view of a bed of the character set forth in the copending application. This articulated bed is shown with the foot and leg section lowered, the seat section substantially horizontally positioned, and the back and head section partially erected, that is, tilted upwardly about 60° as will appear more fully from an inspection of Fig. 3. This Fig. 1 also shows in top plan view the dual compartment sink structure and its support, and two dotted line representations thereof illustrate two alternative positions, one wherein the sink structure extends forwardly and parallel to the bed, and the other wherein the tray structure extends laterally of the bed.

Fig. 2 is a side elevational view of the sink structure, its mounting, water supply and drain, together with a portion of the bed to which it is attached.

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Fig. 3 is a side elevational view of the bed and associated parts carried thereby together with the sink structure, the latter being shown in full lines in a position corresponding to that illustrated in Fig. 1 by full lines, and the dotted lines indicating a second or elevated position of said sink structure.

Fig. 4 is a vertical sectional view of the central column structure.

Fig. 5 is an enlarged transverse section taken on line 5—5 of Fig. 4 of the drawings and in the directions of the arrows.

In the drawings 10 indicates a pair of side frames which are suitably connected at the base by members 11, and the base portion of said side frames are provided with tubular sockets 12 that are horizontally directed to receive the tubular members 13 transversely connected as at 14 and mounting swiveling casters 15.

Herein upon a common pivot 16 there is pivotally supported a back or head rest section 17 and a seat section 18 pivotally connected thereto; and at the forward end thereof as at 19 is the foot and leg section 20 upon which is mounted at each side a rack 21 for detachably and adjustably supporting a foot rest portion 22. The latter is manually adjustable upon the leg section. It is not essential that the seat section and back section have a common pivot. All of the adjacent is more fully illustrated, described and claimed in the copending application aforementioned.

Herein line 25 indicates the line that is selectively connected to the household water supply or to the pressure water supply as before mentioned and for the purpose of this invention. It does not appear necessary to illustrate either of these two supplies, nor further describe the same. This supply 25 communicates with a valve 26 controlled by a stem 27 guided in brackets 28 and 29 and mounting the regulating handle 30 adjacent the seat section. The bracket 28 is mounted upon a substantially transverse member 31 of the side frame portion shown in Fig. 3 and bracket 29 is mounted on the frame above bracket 28.

Now referring more particularly to Figs. 2 and 3, it will be noted that there is provided an elongated rectangular sink structure 32 which has at one corner an opening 33 and herein there

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is provided a transverse partition 34 providing compartments A and B within the sink structure. The partition 34 includes a fixture 35 with a reversely tapered aperture 36 therethrough for selective reception of a cork or stopper 37.

Now compartment "A" may be used for hand and face washing, water being supplied from the faucet 38 to which reference will be had hereinafter. This faucet is controlled by the conventional hand valve operating member 39. The water supplied by said faucet is utilized as it flows therefrom and wastes from compartment "A" at opening or outlet 33. This compartment, in other words, serves merely as a sink structure.

Whenever it is desired to have a basin effect, the faucet 38 is positioned so as to discharge into compartment "B" and with the plug 37 in the aperture 36, the required amount of water may be supplied to compartment "B" and then the hands, face and utensils, etc., can be washed, using compartment "B." For allowing such use the stopper 37 is removed and the water in compartment "B" wastes to compartment "A" and then therefrom by way of outlet 33. Extending centrally of and upwardly through the outlet is a water supply pipe 40 and this is connected by a flexible connection 41 to the faucet 38. This somewhat rigid but yet somewhat flexible connection permits the faucet to be moved from its position shown in Figs. 2 and 3 so that it can discharge into compartment "B" when desired.

Normally there is provided upon this sink structure aforesaid a cover generally indicated by the numeral 42, the handle therefor being omitted. This cover is dished or the like so as to set in the sink structure, the edge 43 of the cover resting upon the out-turned rim 44 of the sink structure 32. This cover, of necessity, is longitudinally slotted as at 45 so that the faucet may project thereabove. When in patient use, the compartment "B" may retain the various toilet accessories including tooth brush, soap dish and the like, and yet permit normal use of compartment "A" as a sink when the cover is removed by the patient or nurse.

Referring more particularly to Figs. 2 and 3, it will be observed that a tubular member 46 is provided with a comparatively large flange 47 at its upper end, and the bottom of the tray structure is rigidly secured to said flange in any suitable manner as by welding or the like, but in such position that outlet 33 registers with the open end of tubular member 46. This tubular member 46 is telescopically received by another tubular member 48, the latter being received by a clamp 49.

This clamp structure is manually controlled as at 50 and for initial positioning the tube 48 may be raised or lowered in the clamp and locked in that position. This clamp structure 49 is suitably secured as at 51 to the side frame auxiliary member 31. If desired, in view of the limited 20° tilting movement of seat section 18, and in view of the flexible connections to the tray elevating piston and cylinder structure and water supply pipe before mentioned and a waste structure to be described, it will be quite obvious that the clamp 49 may be mounted directly upon the seat section providing the side frame 10 does not interfere therewith. The preferred mounting, however, is upon the side frame as illustrated.

The tube 48 has a lateral enlargement 52 suitably threaded to receive a threaded stem 53 terminating in a hand wheel or knob 54 and by this means the intermediate tube 46 may be rigidly

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clamped in position within the tube 48 whenever that is desired. It will also be obvious from the foregoing that when the tray structure is positioned above the bed as shown by the full lines in Fig. 1, the structure when covered will serve as a table, and, if desired, when elevated, can serve as a book rest, etc. See dotted lines Fig. 3.

When the sink structure is not to be positioned across the bed, it may be otherwise positioned as shown by the dotted lines in Fig. 1. When positioned as indicated by the dotted lines designated by the letter "C," this sink structure may serve as a receptacle for used instruments and the like used by the examining physician or nurse, since it is entirely out of the way of any of the bed sections and the bed sections can be adjusted by the patient, nurse or physician, as desired or required. Whenever it is desired to position the sink structure for side table use, it may be swung to the position shown and indicated by the dotted lines "D" in Fig. 1.

The lower end of the tube 46 is indicated by the numeral 55. The lowest possible position of said end is above an outlet 55 approximately midway in the tube 48 and this lateral outlet is a waste and is connected by flexible hose or conduit 57 to a suitable waste receiving receptacle. Positioned in the lower end of the tube 48 is a piston 58 mounting a stem 59 that extends through a partition 60 in the tube 48. The upper end of said stem includes a transverse portion 61 upon which rests the lower open end 55 of the tube 46.

In the extreme lower end of the tube 48 is a connection and closure 62 connected by a flexible conduit 63 to a three-way valve 64 communicating with a pressure tank 70. The stem of this valve is indicated at 66 and is slidably supported in guide 67 and terminates in a hand operable member 68. Now this valve 64 includes a release port 69. This valve is so arranged that when it is turned for the pressure tank 70 to be in communication with the conduit 63, pressure will be applied to the cylinder formed at the lower end of the tube 48 causing the piston 58 to rise therein. This through the rod 59 raises the tube 46 together with the tray carried thereby. When the desired elevation is reached, the handle 68 is turned to position the valve in the cutoff position. Thus the sink structure is held in the desired elevated position. It will be noted that the sink structure and tube can be rotated independently of the elevating mechanism so that at any time, so long as the hand wheel 54 is not tightened, the sink structure may be swung into any one of the aforementioned lateral positions or any position intermediate to same.

Now, whenever it is desired to lower the sink structure, the handle 68 is rotated so as to completely cut off the reservoir 70 and simultaneously connect the flexible conduit 63 with the release port 69. The weight of the sink structure, etc., gradually exhausts the pressure fluid which has been the power elevating medium, and when the sink structure has lowered to the desired position, the valve is closed to the first mentioned position. Of course, when the sink structure is to be completely lowered, the valve may be retained in the pressure releasing position.

It will be remembered that the water supply pipe 40 extends coextensively with the tube 46 and projects above the same and terminates below the same for substantially all elevations of the sink. As shown, the tube 40 at its lower end is turned angularly at 71 and passes out

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through the tube 48 as at 72 immediately above the partition 60 and below the waste 55.

As shown in Fig. 3 the power means for elevating the sink structure is not interfered with by the water supply pipe within the tube 46 or vice versa. The exposed end 72 is connected by a flexible hose 73 to the valve body 26 having the valve therein controlled by the rod 27 in turn controlled by the handle 30 initially described.

It will be recalled that line 25 connected to a valve 26 is intended to be a pressure line. Now if the line 25 is directly connected to a household pressure system, then the degree of valve opening determines the rate of flow from the faucet 38 when the handle 39 thereof is fully opened. Whenever the supply pipe 25 connects to a bed carried water reservoir, this reservoir is under pressure and that pressure is indicated by gauge 23 connected by line 24 to such reservoir.

The pressure cylinder 70 can be used to apply such pressure to such reservoir and maintain the desired pressure therein. In any event water under pressure is supplied by pipe 25 to faucet 38. It may be here noted that pressure tank 70 may be a compressed air cylinder of large size or a smaller compressed oxygen cylinder readily available upon the open market.

From the foregoing it will be noted that the sink structure may be positioned at will by the patient, the sink structure may be manually positioned and locked in that position by the hand wheel 54, and the sink structure may be utilized for any and all the purposes hereinbefore set forth in any one or more of the several positions set forth.

While the invention has been illustrated and described in great detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein, as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. In combination a sink structure and supporting means, said means being of longitudinally extensible and relatively transversely rotatable character for sink structure adjustment, said means including an outer tubular member, and an inner tubular member, the latter projecting above the top of the former, the inner member terminating at its lower end within the outer tubular member, the opposite ends of the inner member being open, the upper end of the inner member communicating with the sink structure interior for drainage purposes, the outer tubular member having a closed lower end, and a waste outlet in the outer tubular member below the lowest position of the inner member lower end.

2. In combination a sink structure and supporting means, said means being of longitudinally extensible and relatively transversely rotatable character for sink structure adjustment, said means including an outer tubular member, and an inner tubular member, the latter projecting above the top of the former, the inner member terminating at its lower end within the outer tubular member, the opposite ends of the inner member being open, the upper end of the inner member communicating with the sink structure interior for drainage purposes, the outer

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tubular member having a closed lower end, a waste outlet in the outer tubular member below the lowest position of the inner member lower end, a water supply pipe within the inner member and projecting beyond same at opposite ends of the inner member, the lower end of said pipe below the lowest position of the inner member extending outwardly through the outer tube for water supply connection.

3. In combination a sink structure and supporting means, said means being of longitudinally extensible and relatively transversely rotatable character for sink structure adjustment, said means including an outer tubular member, and an inner member therein and rigid with the sink structure at the upper end and terminating at its lower end within the outer member, piston means below the said lower end and operatively connected thereto, said outer member forming a cylinder for said piston means, and means supplying pressure fluid to the cylinder for sink structure elevation.

4. In combination a sink structure and supporting means, said means being of longitudinally extensible and relatively transversely rotatable character for sink structure adjustment, said means including an outer tubular member, and an inner tubular member, the latter projecting above the top of the former, the inner member terminating at its lower end within the outer tubular member, the opposite ends of the inner member being open, the upper end of the inner member communicating with the sink structure interior for drainage purposes, the outer tubular member having a closed lower end, a waste outlet in the outer tubular member below the lowest position of the inner member lower end, partition means in the sink structure forming a plurality of compartments therein, the partition means being apertured near the bottom thereof for successive compartment drainage, and aperture closing removable means.

5. A sink structure support and supply including in combination a pair of telescopically associated tubular members consisting of an outermost and an intermediate tubular member, an innermost tubular member therein of greater length than that of the intermediate tubular member, the outermost and innermost members being relatively stationary, the outermost member having an outlet intermediate the ends thereof for sink drainage, the innermost member having connection to a water supply and a discharge to the sink, mechanism below the intermediate member and operatively connected thereto for movement thereof, said mechanism comprising a cylinder having a piston therein in connection with a source of fluid under pressure.

6. In combination a sink structure, a clamping support including two relatively pivotal parts, a tube longitudinally adjustable on the support for sink positioning at different levels, a member telescopically and rotatably supported in said tube and having its upper end extending above the upper end of the tube and secured to the sink for support thereof, and means for clamping said member and tube together in adjusted position for selective positioning of the sink.

7. Mechanism as defined by claim 6 wherein piston and cylinder means is provided and same is of pressure fluid operable type for sink elevation purposes.

8. Mechanism as defined by claim 6 wherein

piston and cylinder means is provided and same is of pressure fluid operable type for sink elevation purposes, the cylinder portion of said means consisting of the lower portion of the tube, and the piston portion being enclosed thereby.

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