Nov. 8, 1960 M. L. ESKENAZI ET AL 2,958,871

VERTICALLY ADJUSTABLE HAND BASIN

Filed Sept. 25, 1957

FIG. 1.

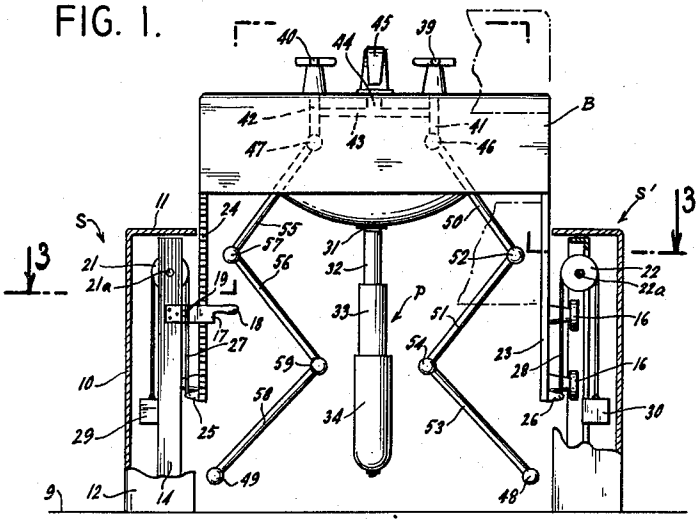


FIG. 4.

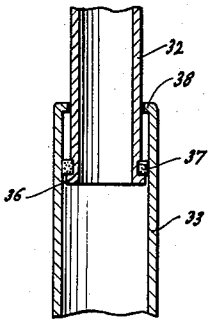


FIG. 2.

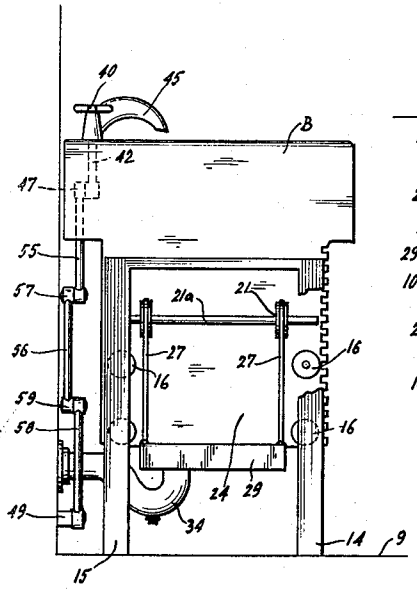
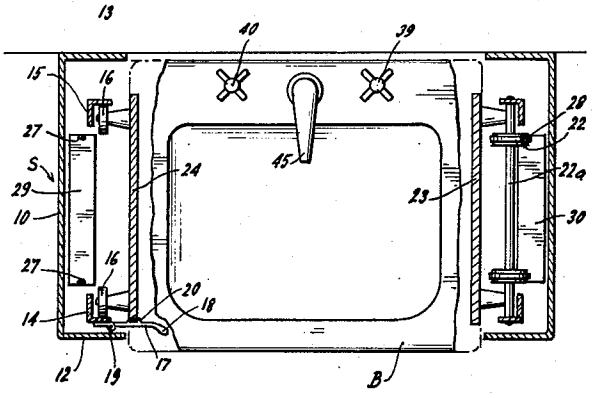


FIG. 3.



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VERTICALLY ADJUSTABLE HAND BASIN

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2 Claims. (Cl. 4—170)

The present invention relates to lavatories and is concerned primarily with a lavatory that is adjustable as to height.

At the present time, lavatories, hand basins and similar plumbing installations are installed in bathrooms and other places where their use is required. Due to the various ages of different members of the family, there are often occasions when one user of a hand basin will require one height for his convenience, whereas another member of the family such as a child, will have need of a different and lower height for his convenience. Thus, a lavatory or hand basin which is adjustable as to height is indicated as being particularly desirable to suit the convenience of the various members of a household.

With the foregoing conditions in mind, the present invention has in view as its foremost objective a provision of an adjustable hand basin or lavatory of the character aforesaid.

From its very nature a hand basin has an appreciable mass which presents an appreciable weight which must be overcome every time the basin is raised and accommodated in some way when the basin is lowered. With this factor in mind, an important object of the present invention is to provide an adjustable hand basin of the character aforesaid which is suitably counterbalanced, so that the only force required to make an adjustment is one that is needed to overcome the frictional resistance to the movement.

Obviously an adjustable hand basin of the type aforesaid should be susceptible of being locked in any position into which it is adjusted. Thus, another object in view, is to provide, in an adjustable lavatory of the character aforesaid, means for holding it in an adjusted position.

More in detail, the invention has as an object the provision of an adjustable lavatory of the character aforesaid, that includes a vertical rack defining a series of teeth and with which cooperates a detent that is adapted to be moved into any one of the teeth of the rack so as to lock or hold the basin in that adjusted position.

From the very nature of its use, a hand basin must have a waste pipe which functions as a drain to accommodate water that is to be drained from the basin. It is obvious that if the basin is to be adjustable as to height, the drain must be susceptible of accommodating this adjustment.

With these factors in mind, a further object in view is to provide, in an adjustable hand basin of the character aforesaid, a telescopic waste pipe including a plurality of sections which telescope one within the other, so as to accommodate the vertical adjustment.

Each hand basin or lavatory ordinarily will include one conduit for supplying hot water thereto and another conduit for supplying cold water thereto. These conduits ordinarily lead into fixed points in the basin proper and come from fixed points from the water supply. In accordance with the present invention, vertical movement of these of the basin proper is accommodated by including in each of the water supply conduit sections in the

nature of toggles which function much in the manner of a toggle to accommodate the vertical movement.

It is evident that if a hand basin is to be vertically adjustable, it must be properly guided during its vertical adjusting movement. An important object of the present invention is to provide a new and improved arrangement for guiding this vertical movement.

Various other more detailed objects and advantages of the invention such as arise in connection with carrying out the above noted ideas in a practical embodiment will in part become apparent and be hereinafter stated as the description of the invention proceeds.

The invention therefore comprises a vertically adjustable hand basin or lavatory which consists essentially of a moving basin proper which is counterbalanced, guided in its vertical movement and provided with a telescopic waste pipe and water supply conduits including toggle sections.

For a full and more complete understanding of the invention, reference may be had to the following description and accompanying drawing wherein:

Figure 1 is a view in front elevation with parts broken away and shown in section of a vertically adjustable hand basin designed in accordance with the precepts of this invention;

Figure 2 is a view taken from the side partly in section and partly in elevation;

Figure 3 is a top plan view with parts broken away and shown in section; and

Figure 4 is a detail taken on a large scale, and is a section through the telescopic sections of the waste pipe.

Referring now to the drawing, wherein like reference characters denote corresponding parts, and first more particularly to Figures 1 and 2, a bathroom floor or similar base is indicated by the reference character 9. Upstanding from this floor of base 9 are two side assemblies, each of which is referred to in its entirety by the reference character S and S′ respectively.

Each of the side assemblies S and S′ includes an outer casing defined by side wall **10**, a top flange **11**, a front flange **12** (see Fig. 3), and a rear flange **13**. Each of these casings enclose two vertical uprights **14** and **15** positioned on floor **9**. Each of said uprights takes the form of an angle bar with the two angle bars defining tracks of run-ways in which operate rollers **16**. These rollers **16** are supported from and carried by the basin proper as will be later described.

As shown in Figures 3 and 1, the upright **14** in the side assembly S is provided with a detent in the form of a lever **17** having a handle **18**, and which is pivotally mounted as shown at **19** on the upright **14**. This lever has a blade portion at **20** for a purpose to be later described.

Each of the side assemblies S and S′ is provided with a pair of pulleys as at **21** on the left hand side in Fig. 1 and at **22** on the right hand side, which pulleys are respectively rotatably carried by forwardly and rearwardly extending axles **21***a* and **22***a* for supporting counterbalancing weights. Thus adjacent to each of the vertical uprights **14** and **15** is provided a sheave or pulley such as shown at **21** and **22**. There is one of these sheaves **21** and **22** adjacent to each of the front uprights **14** and another such pulley adjacent to each of the rear uprights **15**.

The basin proper is referred to in its entirety by the reference character B. The basin B includes depending side walls **23** and **24** such as shown in Figure 1 with the front edge of the wall **24** being formed with a series of teeth presenting a rack. It is these teeth on the front edge of the side wall **24** which cooperate with the blade portion **20** of the detent **17**.

Anchored onto the lower end portion of each of the walls **24** and **23**, as indicated at **25** and **26**, are cables

27 and 28. The cables 27 pass over the sheaves 21 in the side wall assemblies and have their lower ends secured to a counterbalancing weight 29. Likewise the cables 28 pass over the sheaves 22 in the side wall assembly S' and have their other ends connected to a counterbalancing weight 30. It is evident these weights 29 and 30 together substantially equal the weight of the basin proper B, so that the latter may be moved upwardly and downwardly with a force that is only necessary to overcome frictional resistance to this movement. Obviously, the weight of the basin is transmitted to and supported by the axles 21*a* and 22*a*.

An outlet for the basin B as represented at 31 and is formed in the bottom of the basin. Connected to this outlet 31 is a drain pipe referred to in its entirety by the reference character P. The drain pipe P includes three sections 32, 33, and 34, with the lower end of the section 34 connected to the fixed end of a waste conduit.

From the disclosure of Figures 1 and 4, it is evident that the two sections 32 and 33 are relatively telescopic as are the sections 33 and 34. Thus, this telescopic movement readily accommodates vertical adjustment of the basin B.

Figure 4 illustrates in detail one of the joints between two telescopic sections. Thus the section 32 is shown as formed with an out-turned flange 36. Anchored to this flange 36 is a gasket or packing ring 37 which engages the bore or inner surface of the section 33. The latter is shown with an in-turned flange 38 at the top which limits the relative movement of the two sections. It is evident that this packing ring 37 provides for a fluid tight sliding seal between these two sections, which joint further serves to prevent disconnection of the pipe sections. A similar joint is provided between the two sections 33 and 34.

Cold and hot water control valves are indicated at 39 and 40 respectively. Extending to the cold water control valve 39 is a stub conduit 41. A similar stub conduit 42 extends to the hot water control valve 40. These stub conduits are shown in broken lines in Figure 1. Two conduits 41 and 42 are connected by a T-shaped conduit 43, the stem 44 of which extends to the faucet 45. Construction of these control valves and conduits as such is well known in plumbing arts.

It is evident that the conduit 41 presents a fixed point 46 in the basin proper, and the conduit 42 presents a correspondingly fixed point at 47 in the basin proper. A terminal, such as the fixed terminal of a cold water supply conduit is represented at 48, and a similar fixed terminal of a hot water supply conduit is indicated at 49.

It is evident that the conduit terminals at 46 and 48 must be connected in such a manner as to accommodate vertical adjustment of the basin B. This is equally true of the terminals 47 and 49.

As shown in Figure 1, a conduit section 50 is pivotally connected to the end of the conduit 41 by a leak-proof or fluid tight swivel connection at the point 46. Another conduit section 51 has a similar swivel connection at the end of the conduit section 50 at 52. Still another conduit section 53 has a similar swivel connection at one end with the conduit section 51 as indicated at 54, and another similar swivel connection with the cold water supply conduit at 48.

It is evident that the toggle sections 50, 51 and 53 function in the manner of a toggle, swiveling on points 46, 52, 54 and 48. Suitable swivel joints are of course employed which have sufficient rigidity to resist distortion when in use and insure leak-proof operation at all basin levels.

In a similar manner a conduit section 55 has one end swivelly connected at the terminal 47 of the conduit 42. The other end of a conduit section 55 is connected to a similar conduit section 56 by swivel connection 57. Still another conduit section 58 is connected to the other end of the conduit section 56 by swivel connection 59, with the other end of the conduit section 58 being swivelly connected to the fixed terminal 49. These sections 55, 56 and 58 also function in the manner of a toggle in accommodating vertical movement of the basin B relative to the floor 9.

While the mode of operation and the manner of using the adjustable basin in this invention are believed to be obvious from the illustration of the drawing and description of parts given, they may be briefly outlined as follows:

A person desirous of making an adjustment of height of the basin proper B first avails of the handle 18 of the detent 17 to remove the blade portion 20 thereof from the particular tooth on the edge of the side wall 24 in which it is engaged. After the detent has been so removed the basin may be either raised or lowered as occasion demands with the movement being readily facilitated by the counterweights 29 and 30. After the desired height has been achieved, the detent is again moved into holding position with the respective tooth on the edge of the wall 24. As this adjustment takes place, the several sections 32, 33 and 34 of the drain pipe P will move relative to one another to accommodate the vertical movement. Likewise the several sections 50, 51 and 53 on one side, and sections 55, 56 and 58 on the other side of the water supply conduits, will swivel and function in the manner of a toggle to accommodate the vertical movement. It will be noted that during the vertical movement the rollers 16, which are pivotally mounted on the side walls 23 and 24 respectively, will ride in the tracks provided by the angle irons 14 and 15, thus preventing lateral movement.

While a preferred, specific embodiment of the invention is hereinbefore set forth, it is to be clearly understood that the invention is not to be limited to the exact construction, mechanisms, and devices illustrated and described because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

What is claimed is:

1. In a vertically adjustable hand basin, a pair of complemental side assemblies adapted to be mounted in spaced relation on a supporting surface, each of said side assemblies including a pair of spaced confronting upright angle irons defining tracks, a sheave at the upper end of each upright, a cable passing over each sheave, a counterweight connected to one end of each cable, and a casing inclosing said angle irons and mechanism carried thereby with the casings opening inwardly; and a basin proper disposed over and between said side assemblies, said basin including depending side walls arranged adjacent to respective side assemblies and connected to the adjacent other ends of said cables, and rollers carried by said side walls and in rolling engagement with said angle irons.

2. The combination set forth in claim 1 in which there are four rollers rotatable about laterally extending horizontal axes and arranged in vertically spaced pairs on each side wall, with each pair of rollers riding on one of said angle irons.

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