Sept. 15, 1959 R. C. PEARSON 2,903,710

RETRACTABLE AND ADJUSTABLE SHOWER HEAD

Filed March 25, 1955 2 Sheets-Sheet 1

Fig. 1

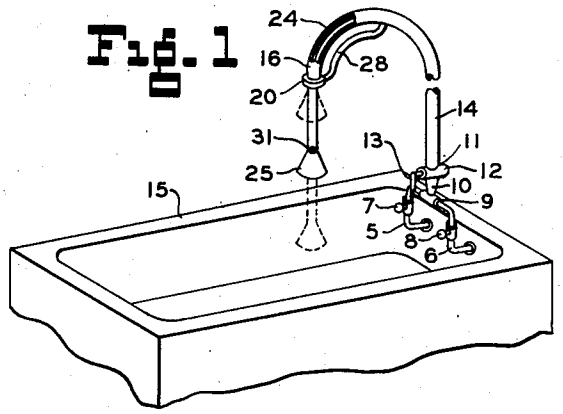


Fig. 2A

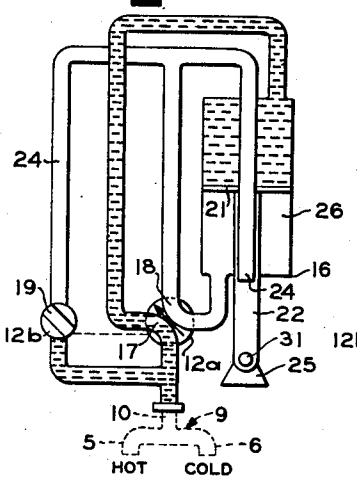


Fig. 2B

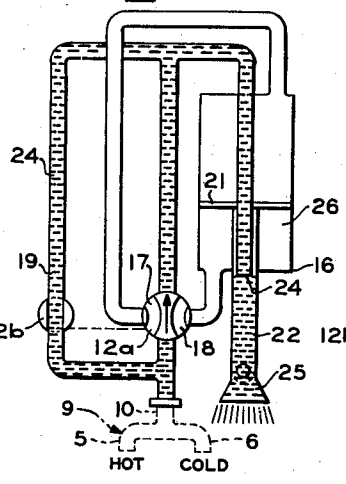


Fig. 2C

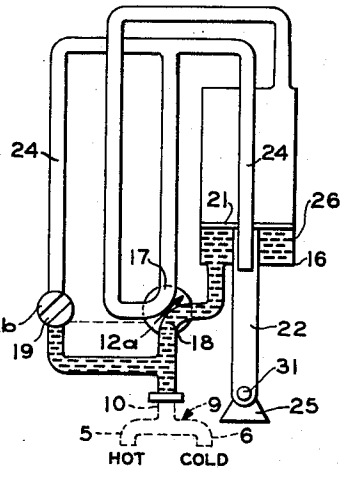
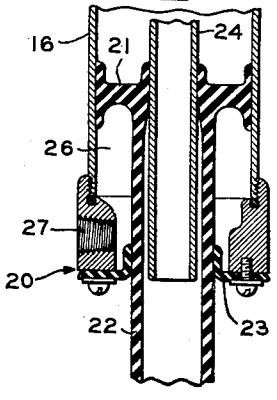


Fig. 3



INVENTOR.
RAYMOND C. PEARSON
BY
ATTORNEY

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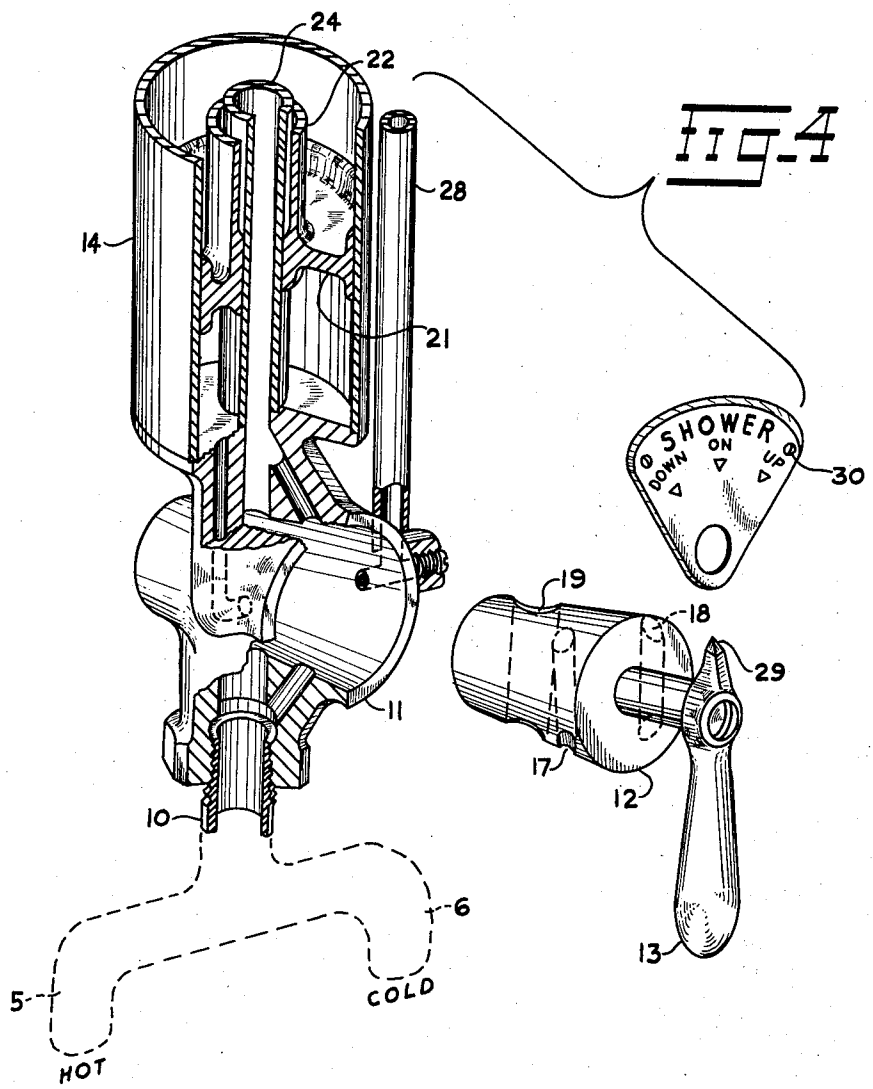


FIG. 4

INVENTOR.
RAYMOND C. PEARSON
BY Marvin Labiner
ATTORNEY

United States Patent Office 2,903,710 Patented Sept. 15, 1959

2,903,710

RETRACTABLE AND ADJUSTABLE SHOWER HEAD

Raymond C. Pearson, Mount Vernon, N.Y.

Application March 25, 1955, Serial No. 496,706

1 Claim. (Cl. 4—145)

This invention relates to domestic shower devices and the like, and particularly to an adjustable and retractable shower head.

The main object of my invention is to provide a bath room with a shower device or head that is adjustable to various heights in order to accommodate children and adults, and old or infirm people sitting in a bath tub, and adapted to be adjustable in a flexible manner to allow free manipulation of the same.

A related important object of this invention is to have such a shower head that has a shiftable extension of flexible character which may be turned, twisted and moved about as desired for making the shower more effective as a type of bath.

Another object of the invention is to have a shower head that has a useful range of operative positions, from an upper high position for tall people or for merely rinsing the hair, to an extreme low position suitable for a child's shower.

It is also an object to include means for conveniently locking the shower head in position at any selected level.

It is even an object, withal to have the shower head quickly and conveniently lowered to position and locked in attained position and also the water turned on without further ado, and the water turned off, the head raised or retracted to original high position above the bath tub when finished.

It is, of course an important object of the invention to provide a special shower head device that not only is safe and convenient to use, but allows feeble and infirm people to sit in the tub and rinse off even the last vestiges of soap and suds so that afterwards they may stand and step out of the tub with a sure footing, while an additional safety feature is found in the complete retraction or upward withdrawal of the shower head when it is no longer to be used, so that a clear path without any obstruction is had for getting out of the tub when done with the shower and/or bath.

Other objects and advantages will become apparent as the specification proceeds.

In order to facilitate ready comprehension of this invention for a proper appreciation of the salient features thereof, the invention is illustrated on the accompanying drawing forming part hereof, and in which:

Figure 1 is a perspective view of a bath tub provided with a shower device or system made according to the invention and embodying the same in a practical form;

Figure 2A is a diagrammatic or schematic layout of the shower device as a whole showing the same in one condition of operation or adjustment;

Figure 2B is another similar diagrammatic layout or view of the same shower device showing the head is locked in position with the shower turned on;

Figure 2C is still another layout or view of the same showing the shower head in the process of being raised;

Figure 3 is an enlarged fragmentary vertical section of the depending forward portion of the stationary part of the shower head of Figure 1 immediately below the curve thereof from which the shower nozzle depends; and

Figure 4 is a perspective view of the valve cylinder of the shower control valve of the device with an indicating chart to indicate the effect of the various positions of rotation of the valve.

Throughout the views, the same reference numerals indicate the same or like parts and features.

Bathrooms are often provided with shower devices of various kinds, some adjustable after a sort, but mostly set rigidly at a fixed height and only capable of angular adjustment to a limited extent if at all. To be sure, some shower devices can be adjusted manually by means of various expedients that are frequently unsightly or unwieldy, and more or less inconvenient and messy. Any height adjustment of the shower head is notoriously absent, and automatic vertical adjustment that should be desirable is unheard of. In fact, overall convenience in connection with a shower bath and the use of a shower device of any improved character is scarcely to be expected in conventional bath rooms and baths.

Upon considering this problem, it has occurred to me that a shower installation should be vertically adjustable in substantially automatic manner for any selected height adjustment, should be convenient to operate and easily retracted or raised out of the way into idle position when finished with. As a result, I have succeeded in producing a special shower device or system along the lines already alluded to, as will now be set forth in detail in the following.

Hence, in the practice of my invention, and referring also again to the drawing, as shown in Figure 1, the two water connections **5** and **6** to the hot and cold water supply of the house involved have the individual control valves **7** and **8**. In addition, these connections merge into a fixture **9** having an upwardly extending single nipple **10** to which is connected a control valve housing or casing **11** within which the valve cylinder **12** is partly rotatable into three different positions, as will be explained, and provided with a manual handle or lever **13** by which to turn the valve cylinder to desired position. As will specifically appear, this handle or lever is the exclusive and entire control for the shower device, and is therefore of great importance herein.

Into the upper portion of the valve casing **11** is fitted securely an upwardly extending pipe structure **14** which is curved over forwardly toward the tub **15** at **16**, and is preferably of multiple tube construction so that it contains three substantially parallel passages therethrough. In Figures 2A, 2B 2C these passages with the valve control therefor are diagrammatically shown together with the shower head or nozzle in such fashion as to facilitate noting the operation. Thus, the valve **12** is represented by the valve member **12***a* and **12***b* for including the passages of said valve **12**, the two curved forward passages **17** and **18** and the vertical rear passage **19** that naturally are all simultaneously controlled by valve **12**.

Within the extreme end **20** of spout or head member **16** is slidably fitted a piston head **21**, best seen in Figure 3, which is provided with a smooth tube **22** of plastic, semi-hard rubber or even metal, but rubber or partially flexible plastic are preferred. At the lower end, this head end **20** has a flexible cup washer **23** wiping externally upon tube **22** to allow it to slide therethrough without leakage when the piston head **21** slides or reciprocates within tube member **16**.

Simultaneously, within the tube **22** extends the outer end of a central water tube or pipe **24** that extends throughout pipe **14**, **16** to valve casing **11** wherein it connects with water supply fixture **9** through rear vertical passage **19** of valve **12** in intermediate position thereof. In other words, tube **24** remains stationary at all times

and piston 21 with its depending tube 22 is movable externally of this tube 24 within tubular member 16. At its lower end, member 22 is widened into a shower nozzle 25 of any desired form, and as tube 22 is semi soft, it allows this nozzle to be swung about manually during the shower.

On the other hand, the head chamber 26 between the head end 20 and piston at 26 has a connection at 27 for a tube or pipe 28 (Figure 1) that extends partly externally of tube member 16 and may enter the side of tube or pipe 14, and whether partly or wholly located within outer pipe 14 non-the-less connects with either passage 17 or 18 of valve 12 within valve casing 11. The internal chamber of pipe 14, 16 connects with either of these two valve passages independently of tube 24 or tube 28, while tube 24 connects independently with the valve by rear passage 19 as already intimated. The passages of these tubes are independent but may be interconnected or crossed by manipulation of valve 12 by means of handle 13, and their purpose is now to be noted.

Referring now more directly to Figures 2A, 2B and 2C, the chambers and passages in or accompanying pipes 14 and 16, etc., are indicated together with valve 12 as valve portions 12*a* and 12*b*. Noting Figure 2A, when lever 13 is swung to the right so that pointer 29 points to "Down" at the left as per chart 30, valve 12 by its passage 17 connects fixture 9 with pipe 14, 16 and causes water to force piston 21 down to lower the shower nozzle 25 to the low position indicated at 31 in Figure 1. As soon as the desired position of this nozzle is reached, the lever 13 is turned down to locate pointer 29 at "On" when the channels 17 and 18 in valve 12 will be idle but rear passage 19 will connect fixture 9 with pipe 24 and thus supply water to shower tube 22 and nozzle 25, the cold or hot water being controlled as to proportions of each by faucets 7 and 8. Meanwhile, the nozzle 25 is hydraulically locked in position by the neutral position of valve 12 so that piston 21 can neither rise nor fall in tube 16.

When the shower is no longer required, turning lever 13 to the left so that pointer 29 is located at "Up" will immediately cause water from fixture 9 to rise through passage 18 in valve 12 nto pipe chamber 26 beneath piston 21 and instantly begin to raise it and thereby retract the nozzle upwards to the uppermost position thereof indicated at 32. The faucets 7 and 8 may then be turned off and the entire apparatus will be idle until again required. When the piston is raised or lowered, in each case the water on the opposite side of the same is released through pipes 24 and 22. In any event, the operation is thus automatic by control from valve 12.

Manifestly, variations may be resorted to, and parts and features may be modified or used without others within the scope of the appended claim.

Having now fully described my invention, I claim:

A retractable and adjustable shower head having individually operable means connecting hot and cold water supply to the same, said means merging into a fixture having an upwardly connected nipple connected with a valve housing having a valve cylinder with a plurality of openings rotatable within a plurality of fixed positions, a curved pipe structure extending upwardly from said housing, said structure containing a plurality of pipes selectively connectible with said openings to control water supply thereto, said pipes including a pipe within a pipe and a third pipe outside of the said first two pipes and connected to the space between said first two pipes at the free end of the latter, a piston sealingly slidable in said space, a flexible tube joined to the piston and sliding over said free end of said first pipe, means sealing said end of said second pipe with said tube, access of water to said pipes being provided by turning to a predetermined position a handle on said valve cylinder, said tube terminating in a shower nozzle, one of said pipes in said pipe structure responsive to an opening in said valve cylinder to allow passage of water to actuate said piston and thereby lower said flexible tube relative to a bath tub, another of said pipes responsive to a second opening of said valve cylinder to supply water to said flexible tube, another of said pipes responsive to a third opening of said valve cylinder to actuate said piston to hydraulically raise said flexible tube.

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