

[54] FLUID TREATING DEVICE

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[58] Field of Search 137/268, 625.29;
239/305, 315, 310

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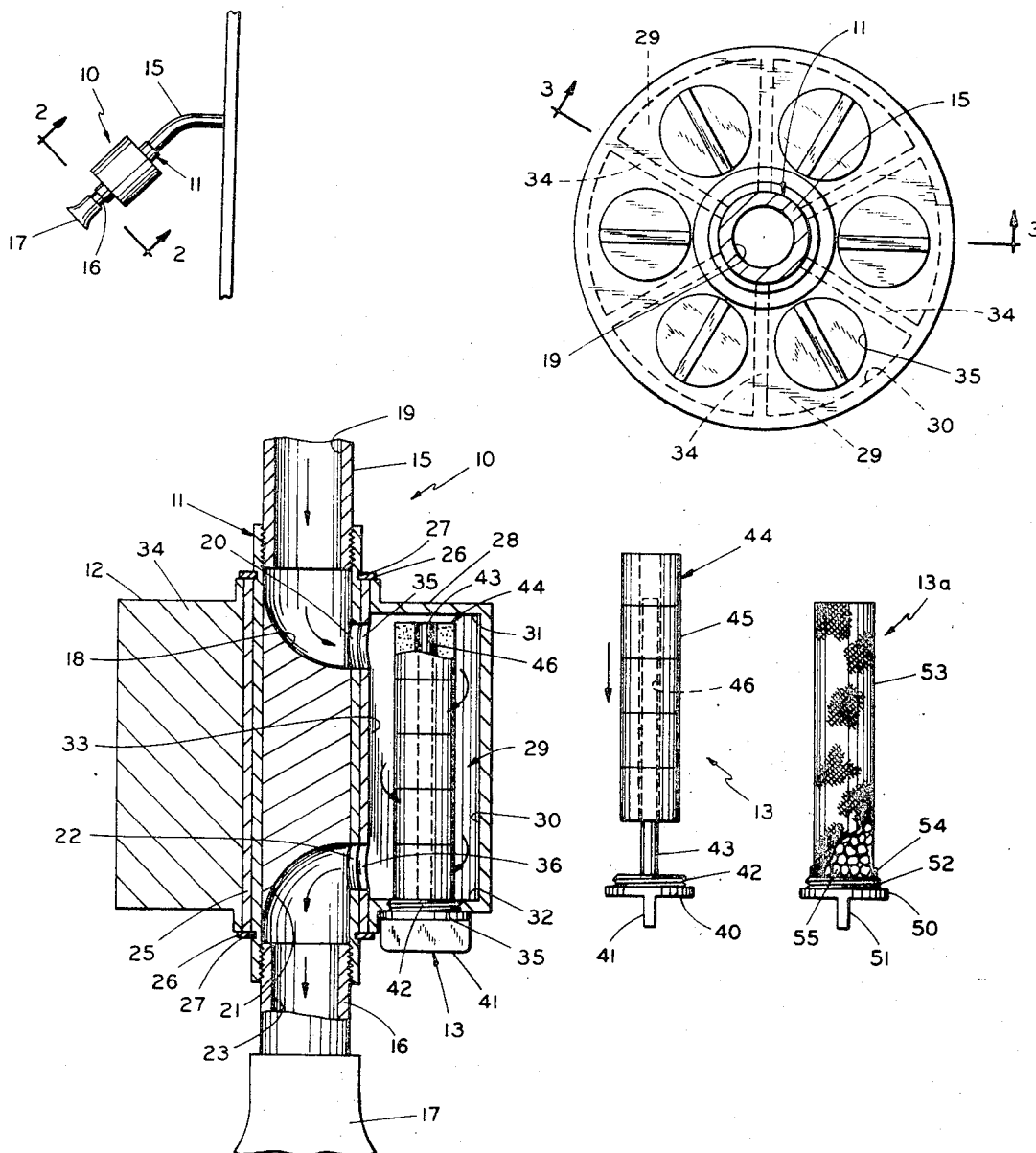
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[57] ABSTRACT

Disclosed herein is a device for treating fluids and is illustrated by structures including a barrel connectable in series in the fluid supply, a body rotatable on the barrel, selectively alignable passages in the barrel and the body for serially passing fluid therethrough, serially water treating means externally insertable in selected passages or chambers in the body.

5 Claims, 5 Drawing Figures



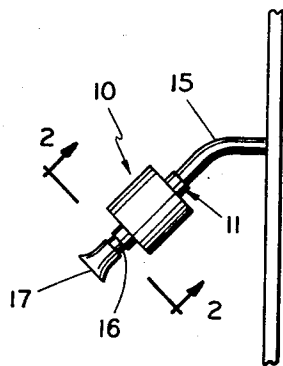


FIG. 1

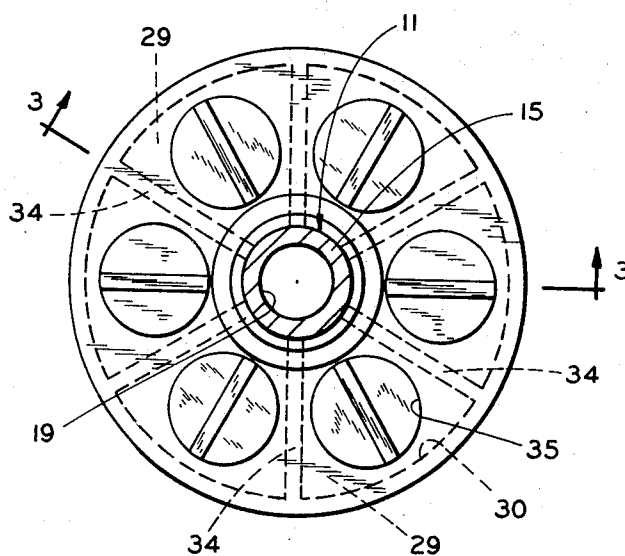


FIG. 2

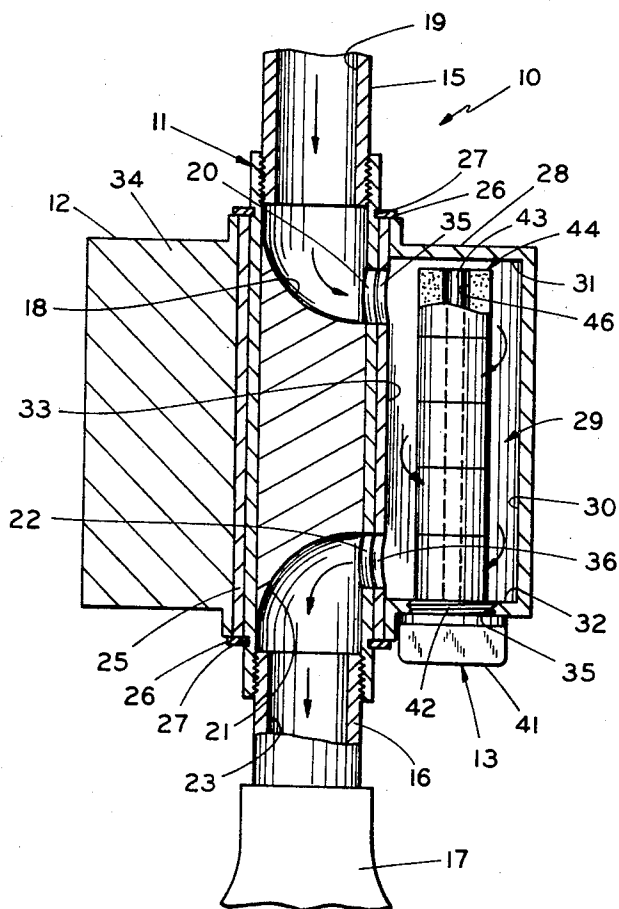


FIG. 3

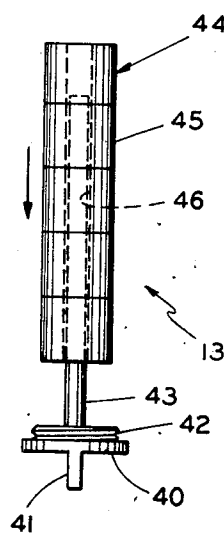


FIG. 4

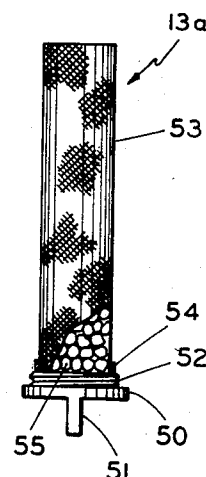


FIG. 5

FLUID TREATING DEVICE

SUMMARY OF THE INVENTION

This invention relates to a device, the object of which is, to treat fluids, and particularly the treating of bathroom shower water.

Another object of this invention is to provide a fluid treating device which is readily installed in existing shower heads or the like.

A further object of this invention is to provide a device to facilitate selective multiple treatment of fluids without significant interruption in fluid flow.

A still further object of this invention is to provide a fluid treating device having selectively externally replaceable fluid treating means.

Other objects, advantages and novel aspects of the invention will become apparent upon consideration of the following detailed description in conjunction with the accompanying drawing wherein:

FIG. 1 is a side view of a shower head assembly with the fluid treating device of this invention installed therein;

FIG. 2 is a sectional view of the fluid treating device of this invention taken along line 2—2 of FIG. 1 and showing the configuration and interrelation of the elements thereof;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 2 showing a selected path of fluid flow adjacent the fluid treating means and through one of the multiple treating chambers;

FIG. 4 is a side view of fluid treating material being installed in one illustrative fluid treating means prior to insertions thereof in the body of the fluid treating device of this invention, and

FIG. 5 is a side view of a second illustrative fluid treating means with treating material therein prior to insertion thereof in the body of the fluid treating device of this invention.

The fluid treating device of this invention, generally designated by the numeral 10, is illustrated (FIG. 1) in conjunction with a bathroom shower head as a water treating device for selectively treating the shower water. Treating device 10 (FIGS. 1-3) includes, generally, a barrel 11, a body 12 and water treating means 13 (FIG. 4).

Barrel 11 (FIGS. 1 and 3) is threadably attached between a shower outlet 15 and an extension pipe 16 of a shower nozzle head 17. A first passage 18 is provided in one end of barrel 11 adjacent shower outlet 15 to receive water from a passage 19 in outlet 15 (upper arrows FIG. 3) and opens laterally through a first barrel aperture 20. A second passage 21 is provided in the other end of barrel 11 adjacent shower head extension 16 to pass water from a second laterally opening aperture 22 to passage 23 in extension 16 (lower arrows FIG. 3).

Body 12 (FIG. 3) includes, generally, a central bearing tube 25 rotatably and complementally mounted on barrel 11 and retained against longitudinal movement therealong by retaining rings 26 positioned in external grooves 27. A body chamber 28 is rigidly secured to tube 25 and is provided with discrete chambers 29 each of which is defined by inner barrel surface 30, upper or entrance wall 31, lower or exit wall 32, tube surface 33 and longitudinal partitions 34 (FIGS. 2 and 3). Each chamber 29 is provided with a threaded aperture 35 in lower surface 32, and inlet and outlet apertures 36 and

37 in tube surface 33 which are respectively alignable with first and second barrel apertures 20 and 22.

A first embodiment of water treating means 13 (FIGS. 3 and 4) includes, generally, a removable plug 40 having a finger twist grip 41 and threaded portion 42, shaft 43 and treating material 44. Threads 42 are adapted to threadably engage threaded aperture 32 and material 44 is comprised of stacked pellet segments 45 having apertures 46 adapted to receive shaft 43.

A second embodiment of the water treating means is generally designated by the numeral 13a (FIG. 5) and includes, generally, a removable plug 50 having a finger twist grip 51 and threaded portion 52, screen container 53, screen retainer 54 and treating granules 55 within container 53.

In operation, the water treating device 10 of this invention is installed in a water or other fluid system such as a bathroom shower (FIGS. 1 and 2) between shower outlet 15 and shower head 17 by threading one end of barrel 11 over outlet 15, and the other end of the barrel 11 over an extension 16 which is threaded into shower head 17. Treating pellet segments 45, to collectively provide the treating material 44, are selected from a variety of compositions such as soap, shampoo, water softener, soap rinse, baby oil, skin medication materials and similar materials.

The selected pellets 45, such as soap, are stacked on plug 40, (FIGS. 3 and 4) of water treating means 13 with apertures 46 over shaft 43. Water treating means 13, along with other similarly stacked water treating means 13 are respectively threaded into selected threaded apertures 35 of respective discrete chambers 29 (FIGS. 2 and 3).

When the shower is turned on (FIG. 3) the water will pass from passage 19 of outlet 15, through first passage 18, selectively aligned apertures 20 and 35, chamber 29, around treating material 44, aligned apertures 22 and 36, second passage 21, passage 23 of extension 16, and out through shower head 17 for the benefit of the person using the shower. As the water passes through chamber 29 around treating material 44, the water will be conditioned or treated by the particular selected material 44 of whichever chamber 29 is rotated to a position on barrel 11 with its apertures 35 and 36 thereof aligned with barrel apertures 20 and 22.

The second embodiment of water treating means 13a (FIG. 5) is used in an identical fashion with that of water treating means 13 (FIG. 4) as explained above. However in treating means 13a, granules 55 are loaded into screen container 53 which is then frictionally or similarly secured in retainer 54 of the plug 50 in preparation for insertion into a selected chamber 29 for use as described above for means 13.

It is to be understood that the invention is not to be limited to the specific constructions and arrangements shown and described, as it will be understood to those skilled in the art that changes may be made without departing from the principles of the invention.

What is claimed is:

1. A fluid treating device comprising a barrel connectable with a fluid source and having separate first and second axially spaced passages therein respectively adapted for passing the fluid therethrough, said first passage having an outlet opening adapted to pass the fluid from said barrel, said second passage having an inlet opening adapted to receive the fluid into said barrel, a body mounted on said barrel for selective rotation

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thereon in fixed axial relation thereto, said body having discrete chambers with inlet and outlet openings adapted to be respectively selectively connected with said first and second passage outlet and inlet to complete a fluid passage therebetween through any selected one of said discrete chambers, and fluid treating means respectively externally positionable into said chambers and into the fluid path in said chambers for conditioning the fluid passing therethrough.

2. A fluid treating device as claimed in claim 1 wherein said chambers are provided with external openings therein adapted to respectively removably receive said water treating means.

3. A fluid treating device as defined in claim 2 wherein said fluid treating means comprises a retainer removably securable in a selected external chamber opening and adapted to retain a fluid treating material in the fluid path in said chamber for treating the fluid.

4. A fluid treating device as defined in claim 3

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wherein said retainer comprises a removable plug having a rod adapted to extend into said chamber when said plug is positioned in said external chamber opening, and said fluid treating material is provided with an aperture for receiving said retainer rod to position said treating material on said rod in the fluid path of said chamber.

5. A fluid treating device as defined in claim 3 wherein said retainer comprised a removable plug having a water permeable retaining basket detachably securable thereto and extending into said chamber when secured to said plug and said plug is positioned in said external opening, and said fluid treating material is insertable in said basket when said basket is detached from said plug whereby said treating material is positioned within said basket in the fluid path of said chamber.

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