Oct. 26, 1937. G. J. MORRIS 2,096,912

SHOWER HEAD

Filed May 18, 1936

Fig. 1.

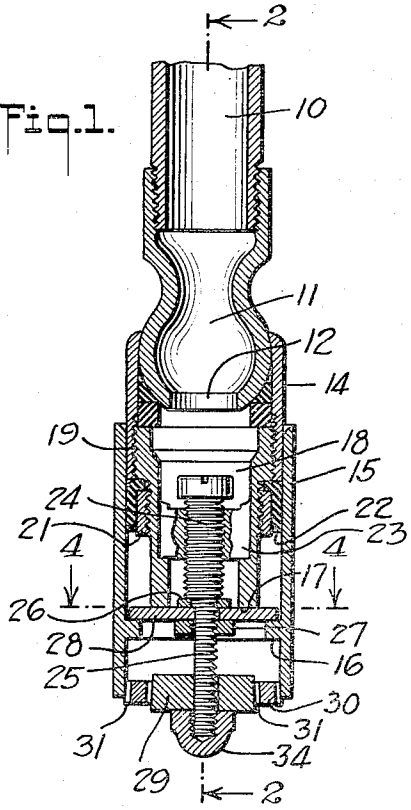


Fig. 2.

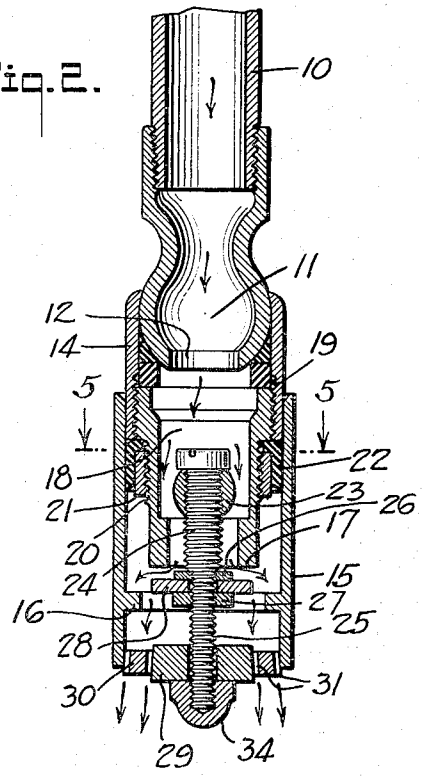


Fig. 3.

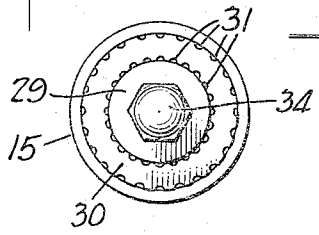


Fig. 6.

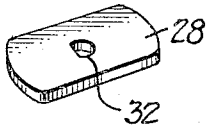


Fig. 5.

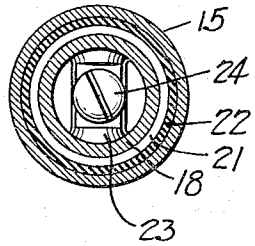


Fig. 4.

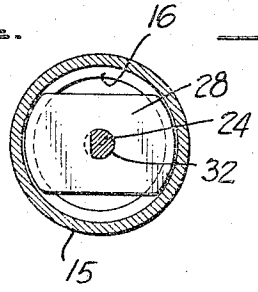
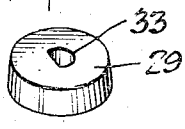


Fig. 7.



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SHOWER HEAD

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5 Claims. (Cl. 299—144)

This invention relates to shower heads for bath equipment and has for an object the provision of new and exceedingly simple means by which any desired adjustment of a spray can be had by simple manipulation of a single element of the device, and the volume and intensity of the spray made to suit various requirements.

A further object is to provide a shower head employing means for controlling the volume and intensity of the spray and in a manner to prevent by-passing of hot water to the cold water line or vice versa, through piping of the plumbing system under certain conditions which are created during use of the system.

With the above and other objects in view, the invention consists in the features of construction, combination and arrangement of parts, as will be hereinafter more fully described in detail, illustrated in the accompanying drawing which discloses a preferred embodiment of the invention, and pointed out more particularly in the appended claims.

In the accompanying drawing,

Figure 1 is a vertical section through the device with the movable valve element closed;

Figure 2 is a view similar to Figure 1 with the movable valve element opened;

Figure 3 is a bottom plan view of the device;

Figure 4 is a transverse section on line 4—4 of Figure 2;

Figure 5 is a transverse section on the line 5—5 of Figure 2;

Figure 6 is a perspective view of the movable valve element;

Figure 7 is a perspective view of the central disk of the spray head.

In carrying the invention into practice, use is made of a supply pipe 10 adapted to be supplied with hot and cold water from the customary service pipes. At its lower end, said pipe is provided with a hollow ball 11 having a water outlet 12. Said base is received in a cylindrical socket member 14 which can be tilted angularly from a vertical position according to the angle at which it is desired to discharge the spray.

Adjustable longitudinally on the member 14 is an elongated sleeve 15, having an internal shoulder 16 adjacent to its lower end, the same disposed just below a valve seat 17 at the lower end of a cylindrical member 18 within said sleeve 15. This member is threadedly attached at 19 to the member 14, and at 20 it has threaded connection with a collar 21 which serves to clamp a portion of a leather packing between the upper edge of the collar and the lower edge of member 19. This packing has an annular skirt 22 which tightly bears against the inner walls of the sleeve 15 to afford a liquid tight connection between the parts.

Passing through a spider 23 in the member 18 is a screw 24, having a reduced lower end 25, one side of which is flat as indicated by the unbroken straight line at the left of Figure 1, and as clearly shown in Figure 4. Clamped between the washer 26 and co-acting nut 27 on screw 24 is a flat valve element 28, the same resting at its ends upon the shoulder 16. It follows that from the relation of this element to the valve seat 17, it can be moved relatively to said seat according as it may be desired to determine the flow of water from the device.

Firmly secured in the lower end of the sleeve 15 are concentric spray disks 29 and 30. These disks are correlated with each other and are formed to provide concentric series of discharge orifices 31 which may be cut at any suitable angle, depending upon the angle of the flare of the spray to be formed. It will be noted that the flattened extremity of the screw 24 passes through a correspondingly formed aperture 32 in valve element 28 and through a similar aperture 33 in the disk 29. A cap nut 34 is in clamping relation to the lower face of disk 34 and is adjustable in the lower end of the screw.

The construction is such that the valve element 28 is carried by sleeve 15 and can be adjusted a desired extent in one direction or another so that the element 28 will be moved relative to the co-acting valve seat 17. This is because the screw 24 is attached to the element 28 and fixed to the disk 29 to compel the screw to turn with the sleeve 15.

When the sleeve 15 is turned to open the element 28 relative to the seat 17 and assuming that the hot and cold water supply pipes (not shown) are opened, water at the desired volume and intensity will be discharged from the orifices 31. The construction provides means whereby the sleeve 15 can be rotated at will by the user any time the user desires to regulate the volume and intensity of the spray. The valve which comprises seat 17 and element 28 is not intended to entirely cut off the discharge of water from the device when element 28 is apparently fully closed against said seat. The effective face of the seat 17 is not ground, and in consequence thereof, when element 28 is apparently fully closed, leakage will occur between same and said seat 17. The reason for this novel construction is to prevent by-passing of water from the hot water line to the cold water line or vice versa. For instance, assume that the ele-

ment 28 and seat 17 were so formed that when fully closed relatively, the valve would be positively sealed against leakage.

Under this condition, should the cold water line be opened at a different fixture in the system, water from the hot water line would be free to by-pass through the piping into the cold water line. Thus should the point in the system at which the cold water line is opened be to discharge water into a porcelain tank or toilet bowl, there exists the danger of breaking one or both of such fixtures by suddenly subjecting them to such a change in water temperatures.

What is claimed is:

1. In a shower bath spray head, a water intake member having a depending cylindrical portion formed with a spider; a screw having threaded connection with the spider such as will enable the screw to be fed axially of said portion; a member adjustable vertically on said portion and adapted to be manually rotated in either direction, an orificed disk at the lower end of the vertically adjustable member, said screw having fixed connection with the disk such as will cause axial feeding of the screw when the member is adjusted vertically; and a valve element fixed to the screw and disposed relative to said depending cylindrical portion to engage and disengage same according as the screw is turned in one direction or the other.

2. A shower head including a water intake member having a valve seat at its lower end; a member adjustable vertically on the intake member and provided at its lower end with an orificed discharged disk; and an element movable with the adjustable member and disposed relative to the seat so as to control flow of water from the intake member when actuating the adjustable member; the construction of the seat being such as will prevent complete stoppage of the flow of water from the intake member when the aforementioned element is tightly engaged with said seat, whereby to provide a constant vent between said intake member and the atmosphere.

3. In a shower bath spray head, a water intake member including a depending cylindrical portion having a valve seat at its lower end; a rotary member adjustable vertically on said depending portion of the spray head and provided with an orificed discharge at its lower end; a valve element; a headed and screw-threaded stud extending through said element axially of said portion and having means co-acting with the rotary member to confine the valve element to rotate with the rotary member and against axial displacement relatively thereto; and a spider bridging said portion of the water intake member interiorly thereof through which the headed end of said stud is threaded for co-action therewith in causing said element to be adjusted axially, relative to said seat in response to rotational movement of said rotary member, whereby to vary the volume and intensity of water discharged from the orificed end of the rotary member.

4. In a shower bath spray head, a water intake member including a depending cylindrical portion having a valve seat at its lower end; a rotary member adjustable vertically on said depending portion of the spray head and provided with an open lower end; a valve element; a headed and screw-threaded stud extending through said element axially of said portion and having means co-acting with the rotary member to confine the valve element to rotate with the rotary member and against axial displacement relatively thereto; a spider bridging said portion of the water intake member interiorly thereof with which said stud has screw threaded connection for co-action therewith in causing said element to be adjusted axially relative to said seat in response to rotational movement of said rotary member, whereby to vary the volume of water discharged into the rotary member; and an orificed spray disk supported by said stud in the open lower end of the rotary member for the discharge of the water through the orifices.

5. In a shower bath spray head, a water intake member including a depending cylindrical portion having a valve seat at its lower end; a rotary member adjustable vertically on said depending portion of the spray head and provided with an internal upwardly facing shoulder and an open lower end; a valve plate spanning the rotary member and bearing against said shoulder while leaving passage for water through the rotary member at opposite sides of the plate; a headed and screw-threaded stud having a reduced and non-circular threaded portion extending through the valve plate axially of said portion; a nut threaded on said non-circular portion of the stud to secure the valve plate thereto; a spider bridging the interior of the water intake member and through which the headed end of said screw is threaded; an orificed spray disk supported by said stud in the open lower end of the rotary member for the discharge of water through the orifices in variable volume in accordance with the adjustment of the rotary member rotatively; and means including a nut on the outer end of said stud coacting with the disk to bind the valve plate to said shoulder; the head of the stud co-acting with the spider to limit the axial movement of the rotary member in a direction to move the valve element away from said portion of the water intake member.

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