Jan. 6, 1953 J. P. MAGOS ET AL 2,624,625

SHOWER HEAD

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Fig. 1.

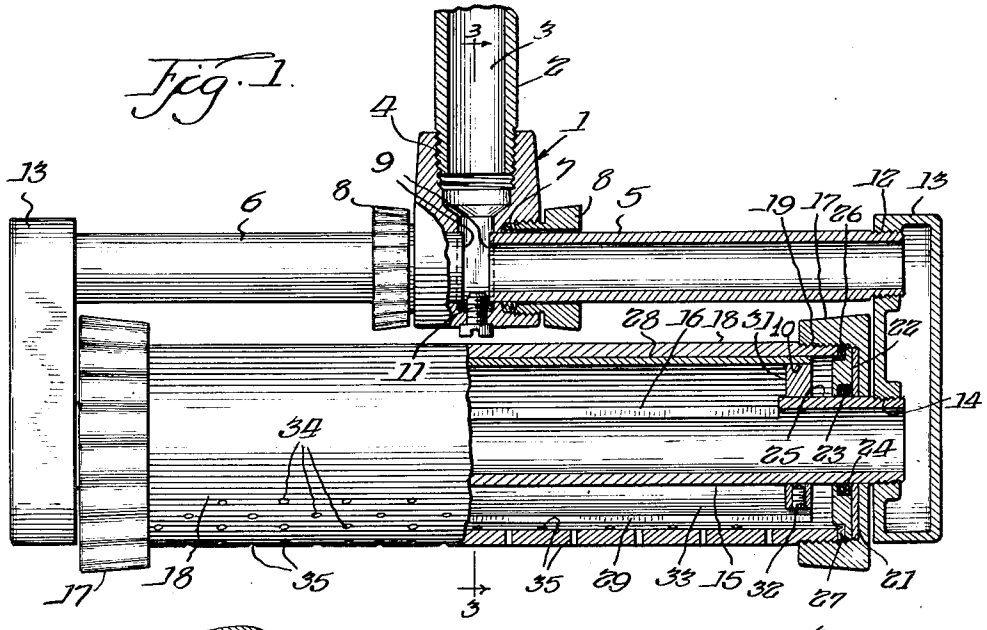

Fig. 2.

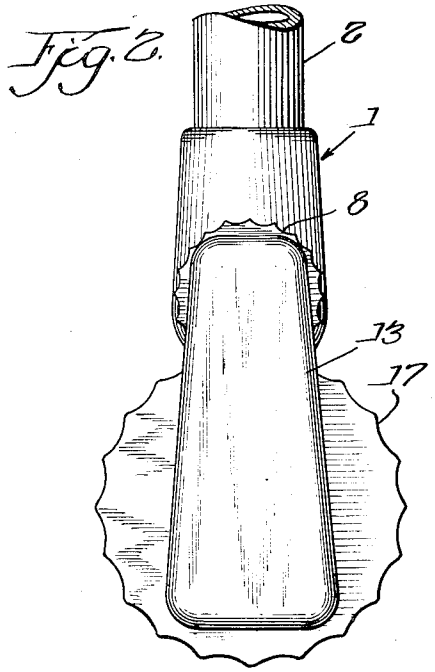

Fig. 3.

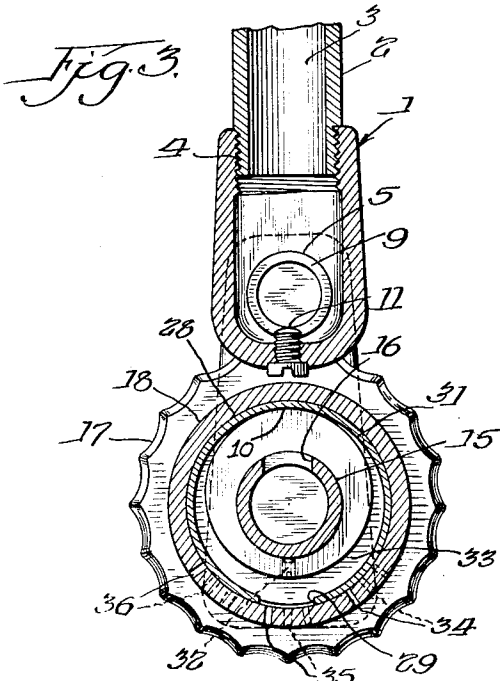

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Fig. 4.

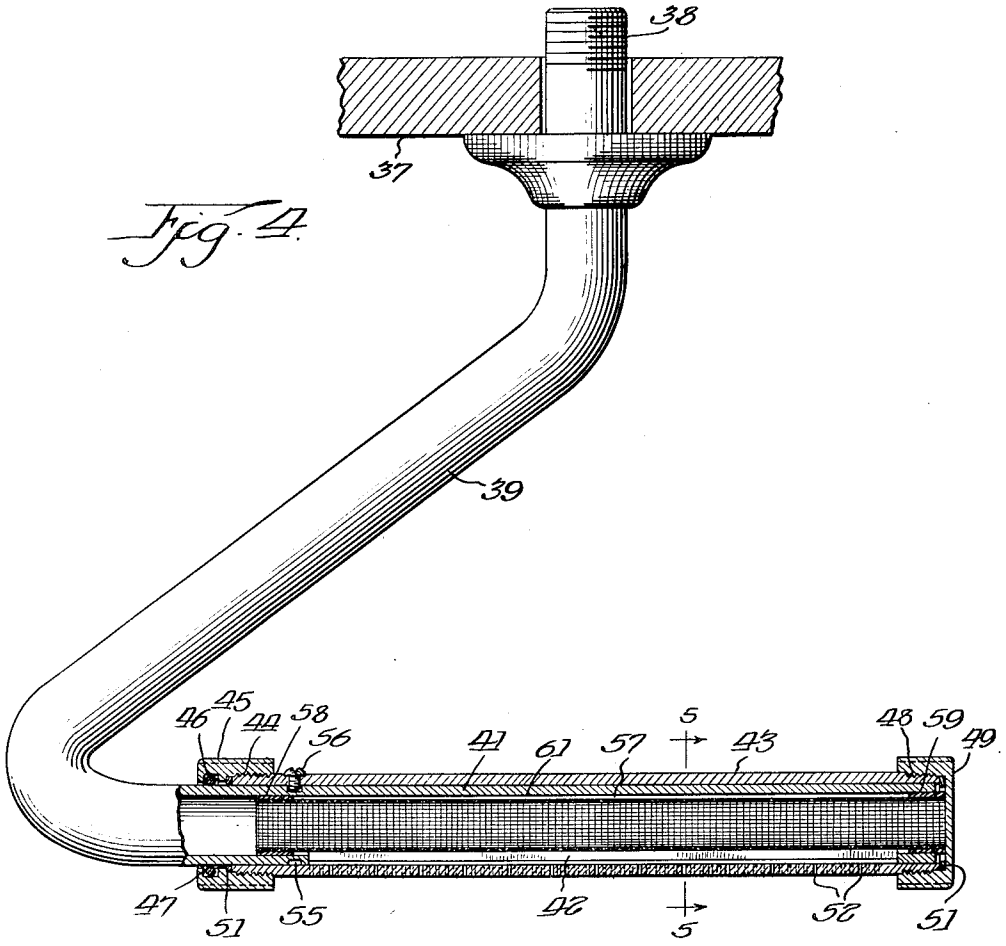
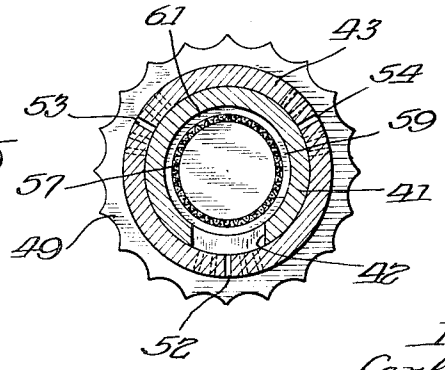


Fig. 5.



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SHOWER HEAD

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3 Claims. (Cl. 299—144)

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This invention relates to a shower head and more particularly it is concerned with a novel form of head in which the structure features a substantially elongated tubular casing preferably having several sets of discharge apertures in which the said apertures may be of different sizes so that by rotating the tubular casing selectively either one of the sets of apertures may be so positioned as to permit fluid flow therethrough at will, thereby making the shower head desirably adjustable for fine, medium, or coarse streams.

Another important object is to provide for a shower head construction in which the tendency to clog will be substantially minimized.

A further object is to provide a structure in which the spread of the discharge streams remains substantially constant insofar as the length of the head is concerned and increases in its transverse spread proportionate to the distance from the head, thereby producing a shower pattern substantially of body width.

Other objects and advantages will become more readily apparent upon proceeding with the specification read in light of the accompanying drawings, in which

Fig. 1 is a fragmentary sectional assembly view of a preferred embodiment of our invention, while Fig. 2 is an end exterior view.

Fig. 3 is a transverse sectional assembly view taken on the line 3—3 of Fig. 1.

Fig. 4 is a transverse fragmentary sectional assembly view in a modified form, and Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 4.

Referring now to Fig. 1, a T fitting, generally designated 1, is provided having the usual inlet tubing 2 connected with a source of water supply (not shown) and with the flow passage 3 suitably connected, as at 4, to the said fitting. Oppositely disposed and preferably, although not necessarily, in axial alignment, the discharge tubes 5 and 6 are provided. For ease of assembly, the said tubes are maintained in suitable leakproof relation to the fitting 1 by means of the threaded gland 8. In order to maintain the end portions 9 of the tubes 5 and 6 in spaced-apart flow-permitting relation after assembly with the fitting, a suitable set screw 11 or other spacer member is positioned therebetween to function as a stop, as indicated. At the opposite end portions, the tubes 5 and 6 are threaded as at 12 to the respective end heads 13, the heads being of substantially elongated form as shown more clearly in Fig. 2. Each head member is tapped as at 14 with the threads as shown to

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thereby receive in leakproof relation the non-rotatable slotted inner tubing or pipe 15, the latter member being slotted for substantially its entire length, as at 16, except for that portion necessary to provide a leakproof connection and to receive the end closure members 17 as hereinafter referred to in more detail.

Snugly fitted around the slotted tube 15 at each end portion thereof are the said end closures suitably attached in non-rotatable relation to the outer apertured sleeve 18, as indicated at 19. An end thrust washer 21 is received within each threaded end closure member 17 thus serving as an end bearing for the packed bushing or spacer 22, the latter member preferably being recessed as at 23 to receive the packing 24 thereby to effectively seal the tubing periphery 25 against the escape of liquids outwardly beyond the end portion of the rotatable end closures or caps 17. Preferably also on its outer periphery, the packed member 22 is annularly recessed, as at 26, thereby to provide for an annular chamber between an end portion of the outer sleeve 18 and the member 22 to receive the packing 27, thus holding the member 22 in relatively fixed axial position, and rotatable with the outer sleeve 18 and the end closure 17.

Fitted within the interior periphery of the sleeve 18 is the sleeve 28 which being split for its entire length, as more clearly shown at 29 in Fig. 3, allows for the member 28 to be sprung slightly outwardly and therefore relatively snugly received within the sleeve 18. The inner slotted tube 15 being non-rotatably mounted relative to the sleeve 18 permits the split tubular member 28 to be held non-rotatably also by means of the eccentric ring 31 which is held non-rotatably upon the tube 15 by means of the headless set screw 32. It is also attached as at 10 by solder or other suitable means to the interior surface of the split sleeve 28. The eccentricity of the member 31 and such method of attachment permits ease of assembly and adjustability in positioning it fixedly relative to the stationary members 15 and 28. It also allows for the member 28 having the inner chamber 33 to be outwardly sprung without being adversely affected by the ring 31.

As shown more clearly in Fig. 3, the outer sleeve member 18 is suitably apertured with three sets of holes, each set preferably having a different size of hole as indicated at 34, 35, and 36, respectively. The size, shape, and the manner of providing for such apertures is optional depending upon the service conditions for which the shower head is

ultimately intended. Thus, the discharge of liquids from the chamber 33 is easily controlled by predetermined rotation of the end threaded closure heads 17 relative to and upon the split tube 28, the outer sleeve 18 being rotatable in either direction to permit the desired flow through the respective sets of apertures as elected.

Referring now to the modified form of the invention shown in Figs. 4 and 5, in which a relatively more simple arrangement is shown of a novel tubular shower head.

The head may be mounted in the usual manner to the wall generally designated 37 and being connected to the usual source of fresh water supply (not shown) by means of the threads 38, the tubing 39 being suitably formed in the desired manner to accommodate the head assembly as hereinafter described in greater detail.

It will be noticed that the tubing 39 is provided with the straight portion generally designated 41, and the straight tubular section at its lower portion is slotted as at 42, which is shown more clearly in Fig. 5. Snugly fitting around the outer periphery of the straight portion 41 of the tubing 39 is the outer sleeve 43, one end of the tubing being threaded as at 44 to receive the tapped member 45, the latter having the inner annular recess 46 to receive the O-ring 47, the latter member serving the purpose of providing a fluid tight seal against any escape of water from the end of the sleeve 43.

At its opposite end, the sleeve member is threaded as at 48 to receive the combined cap and rotating handle 49, the latter forming in connection with the gasket 51 a fluid tight seal with the ends of the sleeve 43. Rotation of the member 49 rotates the sleeve 43 to place the latter in desired relation to the slot 42 for reasons previously referred to.

As indicated in Fig. 4, at its lower end portion and preferably in spaced apart relation thereto as shown in Fig. 5, the sleeve 43 is provided with a series of discharge apertures 52, 53, and 54 respectively, which upon predetermined rotation of the outer sleeve 43 may be brought into suitable registration with the elongated slot 42 of the straight portion 41 of the tubing 39 to result in the desired discharge spray or stream.

In order to secure the outer sleeve 43 to the straight portion 41 of the tubing 39 more effectually, a groove 55 is provided in the tubing straight portion 41 engageable by the set screw 56 threadedly received within the straight tubing 41 as indicated and projecting within said annular recess 55 to permit rotation while inhibiting longitudinal movement of the sleeve 43 and its assembly upon water pressure being applied to the interior of the tubing 39.

Preferably, but not necessarily, a screen 57 may be used which is attached to the interior of the tubing at opposite ends of the slotted portions as indicated at 58 and 59, respectively, by means of a conventional soldered or sweated connection or any other form of fluid tight arrangement. It has been found that under certain conditions of installation that positioning the screen 57 between the annular space thereof, as at 61, improves the form of the discharge fluid through the respective apertures 52, 53, and 54 apparently due to the breaking up of the body of water into particles to aid in their passage while moving through the said apertures of the sleeve 43.

Thus, it should be apparent that a relatively simple and efficient shower head has been provided, having a high degree of flexibility in its performance and capable of covering a desirably shaped area in the surface defined by the discharging streams.

It should also be understood that only a pair of preferred embodiments of our invention have been shown and described, and it is, therefore, obvious that substantial changes and modifications may be made falling within the scope of the appended claims.

We claim:

1. In a shower head comprising a rotatable substantially cylindrical member having longitudinally extending rows of selectively positioned apertures, a substantially T-formed fitting spaced-apart from the cylindrical member and having an inlet and a plurality of diverging outlets therefrom, the latter including portions of tubular form rotatably mounted in the ends of the T-formed fitting, an inner longitudinally slotted tubular member cooperating with an inner peripheral surface of the said cylindrical member, a hollow multiported fitting mounted at each end of the said tubular portions in communication with the said tubular outlets, the latter hollow fitting having common bearing means to permit rotation of the said cylindrical member relative to the inner slotted tubular member whereby the rows of apertures of the cylindrical member are selectively in communication with the longitudinal slot of the inner slotted tubular member upon predetermined rotation of the cylindrical member.

2. A shower head construction comprising an inlet fitting having a pair of rotatable outlets therefrom of substantially tubular form, multiported hollow fittings cooperating with each of the tubular outlets and with passages therein defining the end limits of the said outlets, a hollow substantially cylindrical head having rows of apertures for fluid discharge and mounted for rotation relative to the said hollow fittings, the said cylindrical member having a chamber for receiving a plurality of slotted tubular members in telescopic relation and journally mounted within the said hollow fittings, the inner one of said tubular members in telescopic relation being non-rotatably mounted relative to the said hollow fittings, and the outer one of said tubular members being non-rotatably mounted relative to the inner tubular slotted member whereby upon rotation of the said cylindrical member at least a row of the apertures thereof is selectively in communication with a slotted portion of the outer one of the two telescopically positioned slotted members.

3. A shower head, an inlet fitting connected to a supply means and having a pair of axially aligned rotatable outlets, hollow end fittings defining the end limits of the said rotatable outlets, slotted tubular members in concentric telescoped relation, a hollow substantially cylindrical apertured head mounted for rotation relative to the said hollow end fittings, the said cylindrical member having a chamber to contain said slotted tubular members, the slot of the inner one of said tubular members communicating with the interior of the outer tubular member in telescoped relation, the inner one of the latter tubular members being sealed within the said hollow fitting, the outer one of said tubular members being non-rotatably mounted relative to the inner tubular member whereby upon suitable rotation of the said cylindrical head the apertures thereof are predeterminately in communication

simultaneously with inner chambers of the said slotted tubular members.

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