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2,749,183

SHOWERHEAD FOR SHOWER BATH USE

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Fig. 1.

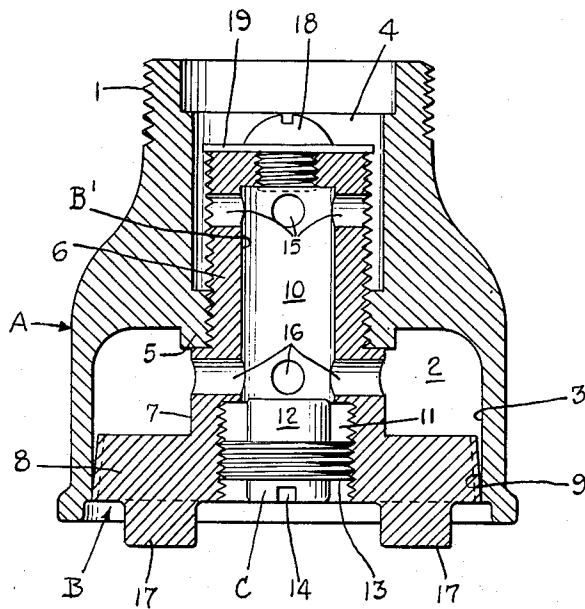


Fig. 2.

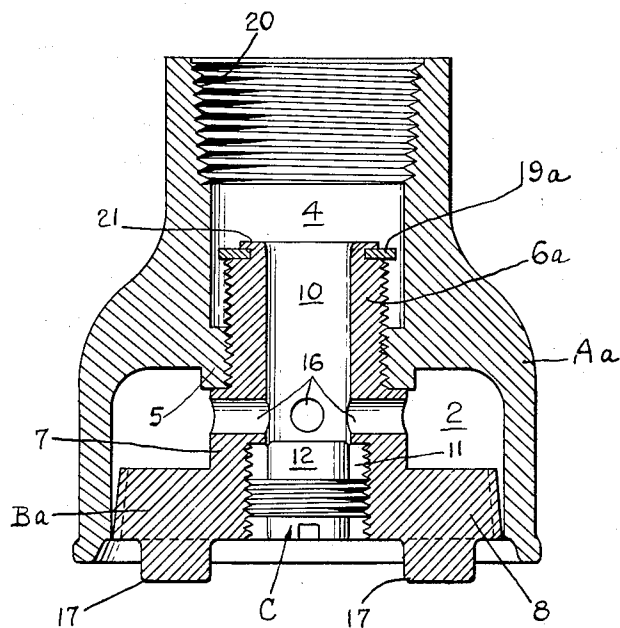
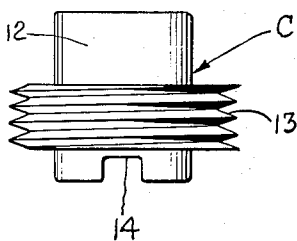


Fig. 3.



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SHOWERHEAD FOR SHOWER BATH USE

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4 Claims. (Cl. 299—141)

The general object of the present invention is to provide an improved and simplified shower or spray head for shower bath use, of the type disclosed in my prior Patent 1,849,517, granted March 15, 1932.

A primary object of the present invention is to provide a showerhead having operative characteristics similar to those of the showerhead of my above mentioned patent, but which is more compact, and of simpler and less expensive construction than the showerhead disclosed in said prior patent.

The various features of novelty which characterize my invention are pointed out with particularity in the claims annexed to and forming a part of this specification. For a better understanding of the invention, however, its advantages, and specific objects attained with its use, reference should be had to the accompanying drawings and descriptive matter in which I have illustrated and described preferred embodiments of the invention.

Of the drawings:

Fig. 1 is a sectional elevation of a desirable form of the present invention;

Fig. 2 is a section similar to Fig. 1 but illustrating a slight modification; and

Fig. 3 is an elevation of an adjustable throttling element for use in each of the showerheads shown in Figs. 1 and 2.

In Fig. 1 I have illustrated a preferred embodiment of the present invention comprising three main elements, A, B and C. The element A is a showerhead shell or body of conventional type. The body A is of conventional bell shape and has an externally threaded upper end portion 1 adapted for conventional use in connecting the showerhead to a supply pipe through a ball joint connection. As shown, the lower end of the member A is enlarged to enclose a discharge chamber 2 having a cylindrical outer wall 3. The upper portion of the shell A surrounds a central passage or chamber 4 coaxial with, but substantially smaller in diameter than the chamber 2. Intermediate the adjacent ends of the chambers 2 and 4, the member A is formed with a wall portion 5 which is internally threaded and somewhat smaller in diameter than the wall surrounding the chamber 4.

The element B comprises a hollow stem portion 6 which is externally threaded for engagement with the internally threaded portion 5 of the element A. The portion 6 is integrally connected by an adjacent portion 7 of the member B to an annular disc portion 8. The peripheral outer edge portion 9 of the disc 8 is tapered and has its larger lower edge diameter nearly equal to the inner diameter of the wall 3 of the member A. As shown, the outer edge 9 of the disc 8 is formed with longitudinal grooves in the general manner illustrated in my prior Patent 1,849,517. The member B is formed with a central upper passage 10 and a lower central passage or chamber 11. The latter is internally threaded and is appreciably larger in its internal diameter than the passage 10.

As shown, the member C comprises a cylindrical body 12 which includes an enlarged, externally threaded portion 13 which may be, and as shown, is an integral portion

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of the member 12. The portion 13 is externally threaded for engagement with the threads of the internally threaded wall 11 of the member B. The body 12 is adapted to extend into the upper passage 10 of the member B for a variable distance and has a diameter which may well be only 0.003 or 0.004 inch less than the diameter of the passage 10. The member 12 is formed with a kerf 14 for engagement by a screw driver or analogous device which may be employed to rotate the member 12 and thereby regulate the extent to which the upper end of the member 12 extends into the passage 10. As the member 12 is moved up into the passage 10, it restricts the flow of water into the chamber 2 through the passage 10. In the apparatus shown in Fig. 1, water is ordinarily supplied to the showerhead by a valve control pipe through which water under pressure is passed into the central passage 4. In Fig. 1, water passes from the passage 4 into the passage 10 through a plurality, four as shown, radial inlets 15, and passes out of the passage 10 and into the chamber 2 through a similar plurality of radial outlets 16. The effective flow capacity of the passages 16 may be decreased and increased by moving the element 12 up and down in the lower end portion of the passage 10.

In Fig. 1, the member B is shown in its most elevated position relative to the member A. The member B may be rotated to lower it relative to the body A. As shown, the outer side of the disc 8 has projections 17 through which the disc 8 may be rotated. Such rotation of the disc 8 relative to the member A effects an axial adjustment of the disc 8 as a result of the threaded connection between the parts 5 and 6. The purpose and effect of such adjustment of the disc 8 is a regulation of the volume rate at which water is passed through the space between the peripheral wall of the disc 8 and the wall 3. The axial adjustment of the disc 8 tends to modify the water pressure in the chamber 2, but has no direct effect on the rate at which water can pass through the passage 10. That rate is regulated by the vertical adjustment of the element 12.

In Fig. 1, the upper end of the passage 10 is closed by a disc 19 and a screw 18 by which said disc is detachably secured to the member 6 by the screw 18 which has its threaded portion received in an internally threaded opening in the end wall of the chamber or passage 10. The disc 19 is formed with a central aperture through which the threaded portion of the member 18 extends. The disc 19 has a radial extent greater than that of the externally threaded portion of the wall 6, and thus prevents movement of the member B out of engagement with the member A, unless the screw 18 is removed.

The modified showerhead shell Aa shown in Fig. 2, differs from the showerhead shell A shown in Fig. 1 only in respect to the manner in which water is passed into the passage 10 of the member Ba of Fig. 2. The member Ba differs from the member B of Fig. 1 in the omission of the upper inlet ports 15. In effect, the portion above the inlet ports 15 of Fig. 1 is cut away in Fig. 2. In consequence, the portion 6a of Fig. 2, corresponding generally to the portion 6 of Fig. 1, is shorter than the portion 6, and the upper end of the passage 10 of Fig. 2 opens directly into the chamber 4. The upper end of the showerhead shell Aa is not externally threaded as in Fig. 1, but is formed with internal threads 20 for engagement with the externally threaded end of a water supply pipe which may be of conventional form and is not illustrated. The member C, best shown in Fig. 3, is usable in Fig. 2 as in Fig. 1.

In the construction shown in Fig. 2, the movement of the member 6 out of engagement with the internally threaded portion 5, is normally prevented by a disc or ring-like member 19a which extends beyond the threaded periphery of the portion 6 and thus is adapted to engage

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the upper end of the portion 5. In Fig. 2, the ring-like member 19a is normally anchored to the member 6 by a burred portion 21.

As those skilled in the art will recognize, the described differences between the showerhead structures shown in Figs. 1 and 2 simplify the showerhead structure and slightly reduces the construction cost of the latter. Moreover, with a relatively rapid flow of water into the chamber 2 through the passage 10, the pressure drop in the showerhead may be slightly reduced, and the water supply rate may be desirable slightly increased as may be in some cases.

While in accordance with the provisions of the statutes, I have illustrated and described the best forms of embodiment of my invention now known to me, it will be apparent to those skilled in the art that changes may be made in the forms of the apparatus disclosed without departing from the spirit of my invention as set forth in the appended claims and that in some cases certain features of my invention may be used to advantage without a corresponding use of other features.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a showerhead operative to receive water under pressure at one end and to discharge water at its opposite end, the combination of a hollow body formed intermediate its ends with an internally threaded portion, an element telescopically mounted in said body and having a central passage and an externally threaded portion intermediate its ends and in threaded engagement with said internally threaded portion, whereby said element may be axially adjusted by rotation relative to said body, said element having at its end adjacent the showerhead outlet a radial disc portion with its peripheral edge extending into close proximity with the surrounding peripheral portion of said body, said body and element being relatively shaped and proportioned to form an annular chamber for water

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discharged from said chamber through the space between the peripheral edge of said element and the adjacent wall portion of said body, said element having outlet means for the passage of water into said annular chamber from said central passage, and the hollow interior of said element being adapted to receive water adjacent its upper end from said inlet and to pass the water so received into said annular chamber through said central passage and outlet means, and means mounted in said element for adjustment axially of said element to variably throttle the outflow of water into said annular chamber through said outlet means.

2. A combination as specified in claim 1, in which the intermediate portion of said hollow body is thickened to increase the axial extent of said annular chamber and the radial extent of the top wall of said chamber.

3. A combination as specified in claim 1, in which the throttling means mounted in said element comprises a cylinder axially movable in the central passage of said member to thereby variably throttle said outlet means, and in which the lower portion of said central passage is internally threaded, and in which the adjustment means mounted in said element includes an externally threaded portion in threaded engagement with the internally threaded portion of said central passage.

4. A combination as specified in claim 1, in which means attached to said tubular element adjacent the water receiving end of said showerhead is adapted to engage a portion of said hollow body and thereby prevents movement of said tubular element out of threaded engagement with said body.

References Cited in the file of this patent

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