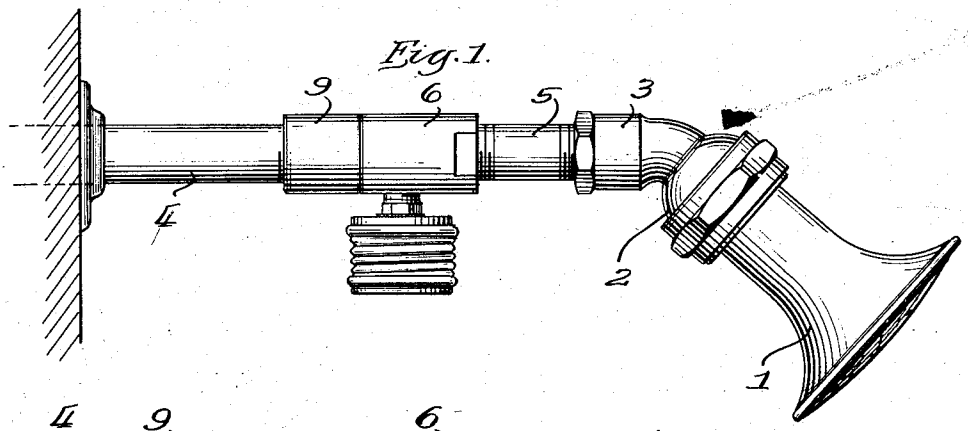
Sept. 17, 1940. S. ISENBERG 2,215,000

APPARATUS FOR TREATING SHOWER SPRAYS

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Fig. 1.



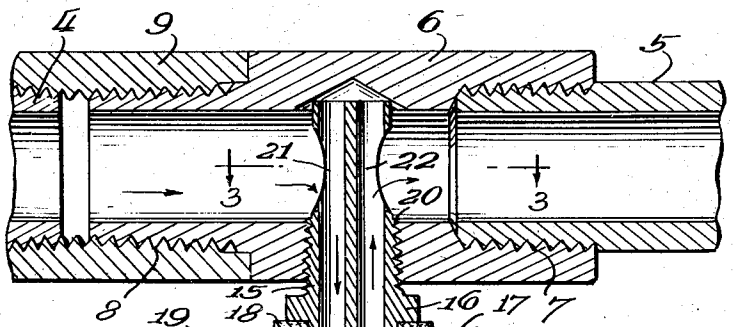


Fig. 2.

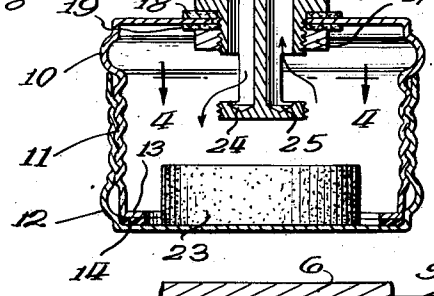


Fig. 5.

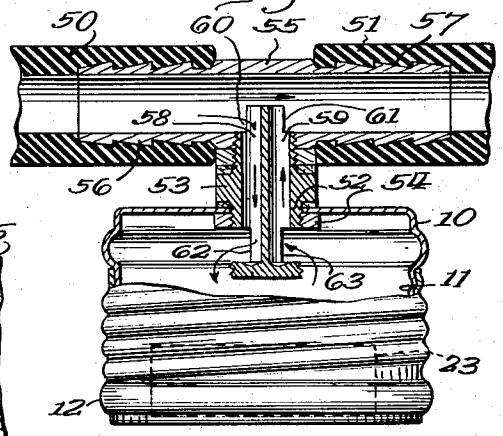


Fig. 3.

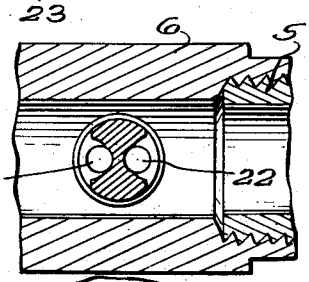
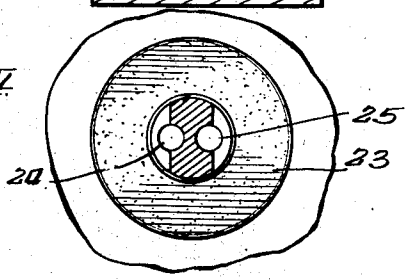


Fig. 4.



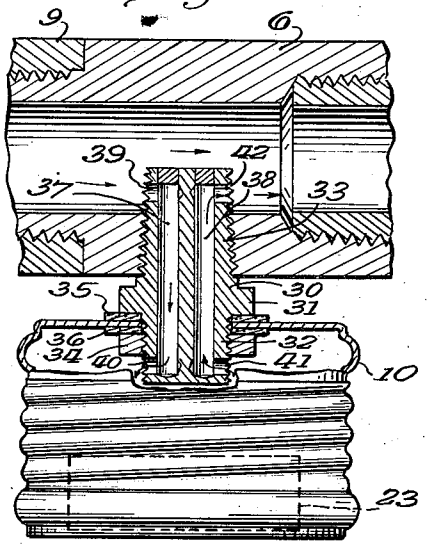
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APPARATUS FOR TREATING SHOWER SPRAYS

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Fig. 6.



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UNITED STATES PATENT OFFICE

2,215,000

APPARATUS FOR TREATING SHOWER SPRAYS

Stanley Isenberg, Chicago, Ill.

Application December 22, 1937, Serial No. 181,079

4 Claims. (Cl. 299—84)

This invention relates generally to improvements in means for conditioning and treating shower sprays, and more particularly to novel and improved apparatus whereby said treating and conditioning may be accomplished in an advantageous manner.

An object of this invention resides in a novel and improved means for treating and conditioning the water supply of a shower spray comprising a container within which the treating or conditioning agent may be disposed, said container being so mounted with relation to the water supply that only a small portion of the water passing to the spray nozzle will be permitted to flow into the said container to be subjected to said conditioning agent, said treated portion of the water then being permitted to flow out of said container to mix with said water supply prior to its discharge from the spray nozzle.

A still further object of this invention is to provide in a device of the character described a receptacle adapted for holding a water treating or conditioning agent and means mounting said receptacle adapted for causing a portion of the main water supply to be by-passed into said receptacle to subject said portion to the action of a said water conditioning agent and to then flow from said receptacle to mix with the main water supply prior to its discharge from the spray nozzle, said means being arranged for preventing the full force of the water supply from striking or coming in contact with the conditioning agent, thereby prolonging the life of said water conditioning agent.

A still further object of this invention is to provide in a device of the character described novel and improved means for receiving and holding a water conditioning or treating medium, said means being connected with the water supply in such a manner as to prevent the full force of the water from striking or contacting the said water conditioning medium while at the same time permitting a sufficient amount of said water to be by-passed for coming in contact with said water conditioning medium so as to effectively treat or condition the entire water supply prior to its discharge from the spray nozzle.

A still further object of this invention is to provide a novel and improved means for effectively treating and conditioning the supply of water of a shower spray which means may be constructed and assembled along lines convenient for low cost manufacture and which may be readily attached to or detached from a shower spray, and which will at the same time be highly efficient for carrying out the purposes for which it is designed.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangement and combination of parts hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings preferred embodiments thereof, from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

Fig. 1 is an elevational view of a shower having an embodiment of my invention associated therewith.

Fig. 2 is a longitudinal sectional view taken through my improved attachment.

Fig. 3 is a sectional view taken substantially on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view taken substantially on the line 4—4 of Fig. 2 and looking in the direction of the arrows.

Fig. 5 is a sectional view through a modified form of my improved attachment, the same being shown connected to a flexible hose of a portable shower.

Fig. 6 is a modified form of the attachment shown in Fig. 2.

Stated generally, the invention comprises novel and improved apparatus for conditioning or treating the supply of water in a spray shower whereby it is possible to soften or scent said water to the desired degree and for a sufficient long period of time to enable its effective use in a shower bath. The main difficulty in accomplishing this purpose heretofore has been due to the fact that the water conditioning agent when subjected to the full force of the flow of water would last only a minute or two, thereby rendering it valueless as a water conditioning means for a shower bath. The average length of time

that one requires in taking a shower bath is approximately ten to fifteen minutes and with my improved apparatus I have found that by using a tablet containing the desired ingredients for either softening the water or effectively scenting or perfuming the same and arranging it in such a manner with reference to the water supply as to avoid the full force of the water from striking the tablet as made possible by my new and improved apparatus, the tablet will last for the required period of time and during that entire period of time will be effective for imparting the desired qualities to the water issuing from the spray nozzle.

In the embodiments illustrated in the drawings, I have shown a receptacle adapted for holding either a tablet of the above described character or a water conditioning and treating agent which may be in any other form such as crystals, powder or the like, said receptacle being connected to the main water supply line in such a manner that only a very small portion of the water passing through said main line will be deflected and permitted to flow into the receptacle for contact with the water treating medium, there also being means for returning said treated water from said receptacle to the main supply line where it will mix with the main supply of water prior to its discharge from the spray nozzle, with the result that the entire supply of water will be properly treated at the time of its discharge from the spray nozzle.

Referring to the drawings more specifically by characters of reference and more particularly to Figures 1, 2, 3 and 4, the reference character 1 designates a spray head attached in the conventional manner by means of the universal joint 2 to an elbow 3, the latter being connected to the water supply pipe 4. In order to connect my improved device within the pipe 4, I provide a small section of pipe 5, one end of which is connected to the elbow 3 and the other end of which is connected to a section 6 provided adjacent one end with the internal threads 7 and on the other end with the externally threaded extension 8, whereby said section 6 may be secured in operative position by means of a coupling member 9 to the pipe section 4.

The pipe section 6 has associated therewith a receptacle or container 10 made of suitable material such as aluminum or some other non-rusting sheet metal or the like and having its outer surface threaded as shown at 11 for receiving in threaded engagement a suitable cover or cap 12, whereby when said cover is in place it will form with the member 10 a substantially water-tight receptacle. As shown more clearly in Fig. 2, the free end of the receptacle 10 is provided with an inwardly extending annular flange 13 against which is adapted to be arranged a suitable gasket 14, which gasket will be firmly held in place by the cover member 12 when the latter is securely fastened to the member 10.

The member 10 is provided with a central opening in its bottom wall through which is adapted to pass one end of the member 15, said member being provided with a hexagonal shoulder 16 immediately adjacent the portion passing into the member 10, the latter portion being provided with external threads and is adapted for receiving a nut 17 by means of which said bottom wall of said member 10 may be securely locked to the member 15 as shown in Fig. 2. In order to secure a water-tight joint at this connection, suitable gaskets 18 and 19 may be interposed between the shoulder 16 and the nut 17 so that upon the tightening of the latter a substantially water-tight joint will be obtained.

The member 15 is provided with an externally threaded portion 20 which is adapted to be received in a threaded opening provided therefor in one wall of the section 6 and by means of which said member 15 and its associated container may be connected to said section 6. The member 16 extends into the passage of the section 6 and is provided with the longitudinal passages 21 and 22 for establishing communication between the main water supply line and the interior of the receptacle 10. The size of said passage 21 is such as to permit only a small portion of the water flowing through said main supply pipe to be diverted into the receptacle 10. The water from the receptacle 10 is permitted to flow back into the main supply pipe through the passage 22.

The receptacle 10 is adapted to contain or hold a suitable tablet 23 which has been formed from the desired ingredients for imparting to the water supply the desired qualities such as softening the same or scenting or perfuming the same. In order to prevent even the slight force of the water entering the receptacle 10 from striking the tablet, there is provided adjacent the outlet of the passage 21 a stop or abutment 24 which will be effective for discharging the water substantially at right angles to its direction of flow into the passage 21, with the result that the force of the water will be substantially broken by the time it reaches the tablet 23. A similar abutment or stop 25 is provided adjacent the inlet to the passage 22, the purpose of which is to cause a more circuitous flow of the water into the receptacle 10 before the same is permitted to flow out therefrom through the passage 22.

As shown in Fig. 3 and Fig. 4 the passages 21 and 22 are comparatively small in diameter, thus permitting only a small portion of water to flow into the receptacle 10. It will be understood, however, that the amount of water which will be permitted to flow into the receptacle 10 will be sufficient after coming in contact with the tablet 23 and mixing with the main supply of water before it is discharged from the spray nozzle to impart to the entire water supply the desired qualities.

In the embodiment shown in Fig. 6, a somewhat modified form of means for by-passing a portion of the water supply to the container 10 is illustrated.

In this embodiment is provided a member generally designated by the reference character 30 being formed with a hexagonal shoulder 31 intermediate its ends and those portions of the member extending beyond either end of said shoulder are externally threaded as shown at 32 and 33, the portion 32 extending into the receptacle 10 and being secured thereto by means of a nut 34, there being interposed the gaskets 35 and 36 between the nut 34 and shoulder 31 to produce a substantially watertight joint. The other end, 33, of said member is threaded into an opening in one wall of said main water supply pipe with the free end of said portion extending into the main water passage leading to the spray head 1. The member 30 is provided with a pair of spaced passages 37 and 38. The passage 38 has an inlet 39 arranged substantially at right angles thereto and an outlet 40 in the receptacle 10 whereby communication is established between the main supply line and said receptacle.

The outlet 40 is also arranged at substantially

right angles to the passage 37. Similarly, the passage 38 is provided with an inlet 41 arranged substantially at right angles to said passage in the receptacle 10 and an outlet 42 arranged substantially at right angles to the passage 38, whereby communication is established between the receptacle 10 and the main supply line. Thus as the water flows in the main supply line past the free end of the member 30, a small portion of the said water will pass into the passage 37 through the inlet 39 and will be discharged into the receptacle 10 where it will come in contact with the water conditioning or treating agent which may be either in the form of a highly compressed tablet or in some other suitable and well known form such as, for example, crystals, powder or the like. When the receptacle 10 has been completely filled up, water will flow therefrom through the passage 38 into the main supply line where the treated water will mix with the rest of the water passing to the spray head with the result that upon the discharge of the water at the spray head it will be sufficiently treated.

In the embodiment shown in Fig. 5, my improved water conditioning means is illustrated as connected in a portable shower having a flexible hose by means of which the shower is connected to a faucet or the like for supplying water thereto. In this form the hose is illustrated by the reference characters 50 and 51 and my receptacle 10 is connected to the member generally designated by the reference character 52, said member being provided intermediate its ends with a substantially hexagonal shoulder 53 and those portions of the member extending on either side of the shoulder are reduced in diameter and are externally threaded. To the forward portion of this member is connected the receptacle 10 by means of a nut 54. The other end of said member is threaded into the member 55 of substantially T-shaped formation and to the ends 56 and 57 of which are adapted to be connected the flexible hose ends 50 and 51 respectively. The member 52 is provided with a pair of longitudinal passages 58 and 59 and the free end of said member extends into the passage of the main water supply.

That portion of the passages 58 and 59 extending within the main water supply line are cut away as shown at 60 and 61 to form an inlet for and passage 58 and an outlet for the passage 59. The passage 58 is also provided with an outlet 62 formed in the receptacle 10 and arranged substantially at right angles to the passage 58 whereby water passing through the said passage will be discharged at said outlet 62 into the receptacle 10. The passage 59 is provided with an inlet 63 in the receptacle 10 and the water entering said passage 59 is discharged at the outlet 61 into the main water supply line. The receptacle 10 in this embodiment is the same as that already described in connection with the other modifications and the construction of the member 52 is such as to permit only a small portion of the water passing through the member 55 to flow into the receptacle 10 through the passage 58 where it will come in contact and be subjected to the water treating or conditioning medium disposed within the receptacle, and said treated water will then flow through the passage 59 into the main water supply line to mix with the water therein prior to its discharge at the spray nozzle.

While I have shown in Fig. 5, an attachment for use in connection with a portable shower, it will be understood that the same could be made a permanent fixture in the pipe line in the conventional shower. Similarly, those modifications which have been shown in Fig. 1 to Fig. 4 inclusive and Fig. 6 which are shown and described in connection with a permanent pipe line in the conventional shower, may also be used with equally satisfactory results in a portable shower.

The operation of the device as hereinbefore described should be readily understood without further description, it being readily apparent that by removing the cap 12 a water conditioning agent or medium may be disposed within the receptacle 10 and secured in place therein by securely fastening the cap 12 to the receptacle 10. Upon the turning on of the faucet, it will be apparent that the main portion of the water will pass through the main supply line and only a very small portion thereof will be directed into the receptacle 10. This small portion, however, will not have sufficient force to break up the water conditioning agent but will gently come into contact therewith to be acted upon thereby and will again reach the main water supply to mix with the same so that the water discharged at the spray head will be sufficiently treated and conditioned to the desired qualities.

It will also be understood that the modifications shown and described in Fig. 5 and Fig. 6 as well as the other modifications shown and described may be used with equally satisfactory results in a vaginal douche or the like for holding a disinfectant or antiseptic tablet to properly treat the water discharged at the douche nozzle. By reason of my improved mechanism, it will be obvious that the action of such a disinfectant or antiseptic tablet will be more satisfactory than one placed directly in the water supply line where it will quickly and readily disintegrate and break up and thus lose its effect only after a very short period of use.

From the above it should be apparent that I have provided a novel and improved apparatus for conditioning or treating the water supply of a shower spray. It will also be noted that the mechanism may be readily and quickly attached to or detached from the pipe line in the conventional shower and when once assembled therewith may be readily operated with the utmost convenience for replacing the water conditioning agent whenever it becomes necessary or desirable to do so. Similarly the device is equally capable of use with equally satisfactory results in connection with a portable shower.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description and it should also be manifest that while preferred embodiments of the invention have been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. In an attachment for a shower spray comprising a receptacle adapted for holding a water conditioning agent, a cap for detachably closing said receptacle to make the same substantially water tight, a member secured to the closed end of said receptacle and having a portion extending inwardly of said receptacle and a second portion extending outwardly from said receptacle, said member being provided with longitudinal passages terminating in inlet and outlet openings

adjacent each end thereof, that portion of the member extending outwardly from the casing being adapted for disposition within the main water supply to the shower head whereby the portion of the water passing through said main water supply may be diverted to the receptacle, and means formed integral with said member adjacent the inlet and outlet openings provided therein and disposed within the receptacle for causing the water discharged into the receptacle to enter the same substantially at right angles to the direction of entry and to be discharged from the receptacle only after it has traversed substantially the entire inner surface of the receptacle, said means comprising abutments directly in the paths of said inlet and said outlet for directing water away from said inlet and acting to direct water away from said outlet.

2. A device of the character described, comprising a casing having an open end, a removable closure for said open end, a member fixedly secured to the closed end of said casing, said member having a pair of passages extending longitudinally therethrough, each of said passages being provided with openings adjacent their ends, one of said openings being disposed within the receptacle and the other outside of the receptacle whereby communication may be established between the receptacle and a source of fluid under pressure, the size of said passages being such with relation to the source of fluid under pressure that only a small portion of the fluid will be diverted to the receptacle, and means provided adjacent the openings of the longitudinal passages disposed within the receptacle for causing the fluid entering the receptacle to be discharged into the receptacle substantially at right angles to its direction of entry, said last mentioned means being formed integral with said member and comprising abutments directly in the paths of said inlet and said outlet.

3. A device of the character described, comprising a casing having an open end, a removable closure for said open end, a member fixedly secured to the closed end of said casing, said member having a pair of passages extending longitudinally therethrough, each of said passages being provided with openings adjacent their ends, one of said openings being disposed within the receptacle and the other outside of the receptacle whereby communication may be established between the receptacle and a source of fluid under pressure, the size of said passages being such with relation to the source of fluid under pressure that only a small portion of the fluid will be diverted to the receptacle, the openings of said longitudinal passages disposed within the receptacle forming an inlet and outlet for fluid in the receptacle, said inlet and outlet openings being so arranged that fluid entering the receptacle will traverse substantially the entire inner surface of the receptacle prior to its discharge therefrom and abutments arranged directly in the paths of said inlet and said outlet for directing water away from said inlet and acting to direct water away from said outlet.

4. A device of the character described comprising a casing having an open end, a removable closure for said open end, a member secured to the opposite end of said casing and having longitudinal passages extending therethrough, one of said passages being adapted for establishing communication between the casing and a source of fluid under pressure, whereby fluid may enter said casing from said source, the other of said passages also establishing communication between the said casing and said source of fluid whereby fluid entering said casing through said first mentioned passage may be discharged back to the source through said second mentioned passage, and means provided on the end of said member disposed within said casing for causing the fluid entering the casing to be discharged thereinto substantially at right angles to its direction of entry and to cause said fluid to traverse substantially the entire inner surface of the casing prior to its discharge therefrom, said means comprising abutments directly in the paths of said inlet and said outlet for directing water away from said inlet and acting to direct water away from said outlet.

STANLEY ISENBERG.