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PLUMBING FIXTURE

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Fig. 1.

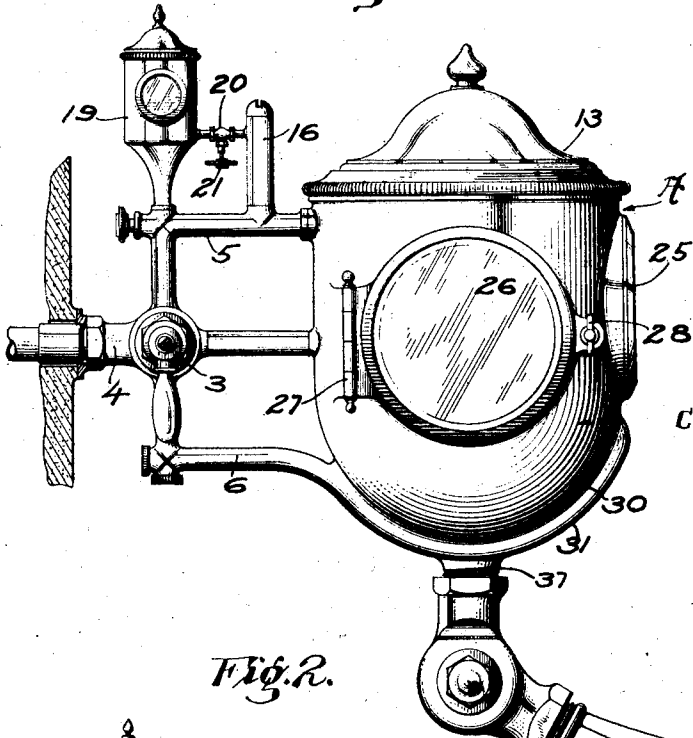
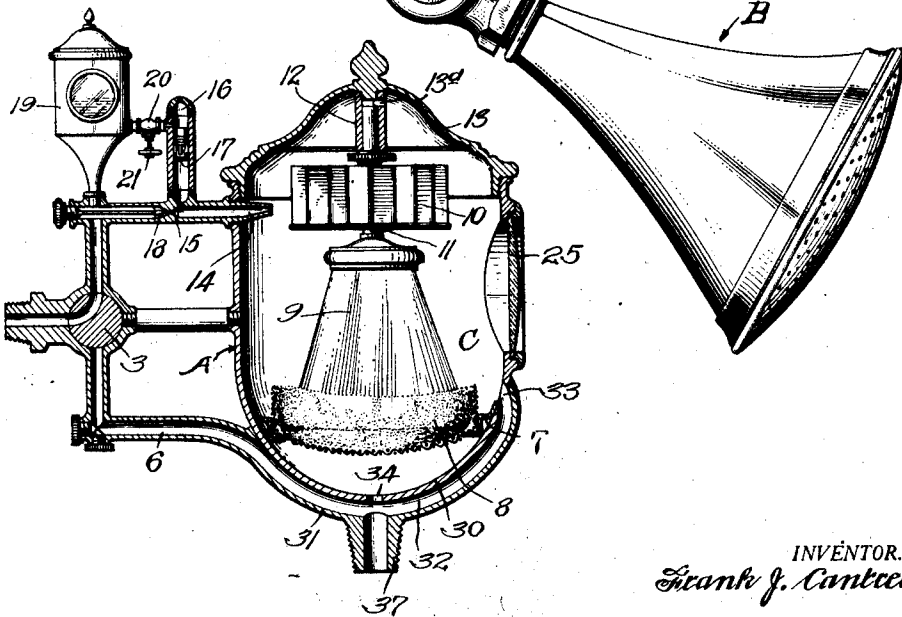


Fig. 2.



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PLUMBING FIXTURE.

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This invention relates to plumbing fixtures, and especially to improvements of the structure shown in my co-pending application entitled Plumbing fixture, filed April 26, 1924, Serial Number 709,310. The fixture forming the subject-matter of the invention of my co-pending application is to be interposed between the water pipes and the shower head in a manner so that the water from the turn-out will pass through the fixture before discharging from the shower head. The fixture is provided with two water passages and with a valve whereby the water may be directed therethrough. One passage is provided with a revolving soap-receptacle so that soapsuds will be formed and discharged by the shower head, when water is passed therethrough, and clear water will be discharged when directed through the other passage.

The present invention is particularly directed to means for more efficiently forming soapsuds, and it consists in placing a brush in the fixture, a water-wheel to rotate the same, means for supporting the cake of soap in engagement with the brush, means permitting movement of the brush as the soap wears away, and means for admitting air to further promote the formation of soapsuds.

One form which my invention may assume is exemplified in the accompanying drawings, in which

Fig. 1 is a side elevation of the fixture; and

Fig. 2 is a side elevation of a section thereof.

Referring to the drawings in detail, particularly Fig. 1, A indicates a casing which is adapted to be interposed between the standard form of shower head such as indicated at B and the plumbing or piping of a bathroom. The fixture is provided with a two-way valve generally indicated at 3, the valve being provided with an inlet connection 4 and a pair of discharge connections indicated at 5 and 6. Formed within the casing is a chamber generally indicated at C. Mounted interiorly thereof is a receptacle 7 whereby a cake of soap such as indicated at 8 may be supported. Disposed above the cake of soap is a brush 9, and adapted to rotate the same is a water-wheel 10. The brush is secured upon the shaft 11 and so

is the water-wheel 10. The shaft is journalled in the vertically disposed bearing 12 forming a part of the cover 13 of the casing. The shaft 10, together with the water-wheel and the brush carried thereby, is vertically movable in the bearing 11, and constant engagement may thus be maintained between the brush and the cake of soap as it wears away. A small passage is formed in the upper end of the bearing, as indicated at 13^a. Water under pressure enters through this passage and equalizes the pressure at the opposite ends of the shaft and the brush thus maintains engagement and proper contact between the brush and the soap. The discharge pipe 5 is positioned in alignment with the water-wheel 10 and terminates in a nozzle such as shown at 14, and the water discharging impinges against the blades of the wheel, and thus rotates the same. In actual operation it has been found that the admission of a small amount of air materially increases the formation of soapsuds, and in view thereof means are provided for admitting air. This is accomplished by forming a venturi passage in the pipe 5 as indicated at 15, and connecting an air inlet pipe 16 therewith. This pipe has a check valve formed therein as indicated at 17, said valve merely serving the function of preventing water from discharging through the pipe 16 if back pressure should occur. The amount of water passing through the venturi passage and the pipe 5 is regulated by a needle valve 18. It may also be regulated to more or less extent by the main valve 3. An auxiliary container opposite the discharge pipe 5 is indicated at 19. This container may be filled with a perfume, a disinfectant, or any other suitable liquid. The container is connected with the air inlet tube 16 by means of a pipe 20. The amount of perfume or disinfectant admitted may be controlled by a valve 21. The main casing A is provided with a front window such as shown at 25. It is also provided with a pair of side windows, as indicated at 26. These windows are somewhat similar in construction to the portholes in a ship—that is, they are hingedly supported as at 27, and are secured when in closed position by locking means such as indicated at 28. A watertight joint is formed between the ends of the windows 26 and the casing, and danger of

leakage is thereby obviated. The hinged mounting of these windows permits access to the interior of the casing so that new pieces of soap may be placed therein from time to time as they are worn away or consumed. The main casing is provided with a double bottom as indicated at 30 and 31. A central passage 32 is formed between the bottom sections. This passage communicates with the central chamber C at the point indicated at 33 and 34, and it also communicates with the discharge pipe 6. A discharge pipe is formed at the lower end of the casing as at 37, and the shower head or other fixture indicated at B is attached thereto. The operation will be as follows:

When a person is taking a bath in a shower bath it is only necessary to turn the valve 3 to position so that all the water will pass through the pipe 6 and discharge through the shower head, so that the person will become thoroughly rinsed. The valve 3 is next turned to position where the water discharges through the pipe 5. The water thus directed will impinge against the water-wheel and cause this, together with the brush, to rotate at high speed. Air will be introduced at the same time, and the air, together with the action of the brush, will produce foaming soapsuds which will then enter the shower head through the openings 33 and 34. The person taking a bath will thus become covered with suds and will scrub or wash himself or herself in the usual manner, and when the washing operation is completed it is only necessary to reverse the position of the valve 3 so that clear rinsing water will be obtained. If it is desired to perfume the water slightly, it is accomplished by slightly opening the valve 21; and if a disinfectant is desired, it is accomplished by the same means.

The apparatus or fixture is exceedingly practical, convenient, easy to operate, and above all it is sanitary; and it obviates the necessity of handling soap, disinfectant, or any other cleansing medium required in taking a bath. It also does away with soap receptacles and other devices, and the necessity of cleaning the same from time to time. Soapsuds of any richness or consistency desired may be obtained by merely regulating the position of the needle valve 18. Economical use of the soap employed is obtained, as every particle thereof is worn down by the brush, due to the fact that it is held against the soap by pressure, and also due to the fact that it is forced down against the soap as it wears away.

While certain features of the present invention are more or less specifically explained, I wish it understood that various changes may be made within the scope of the appended claims; similarly, that the materials and finish of the several parts em-

ployed may be such as the experience and judgment of the manufacturer may dictate.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A fixture of the character described comprising a casing having a pair of chambers formed therein; to wit, an upper chamber and a lower chamber, said chambers being in communication with each other and the lower chamber having a discharge passage formed therein, a valve adapted to be connected with a source of water supply under pressure, a pair of pipes connected with the valve, one connected with the upper chamber and one with the lower chamber, said valve adapted to direct the water to either of the said pipes, a water wheel in the upper chamber, a vertically movable shaft supporting said wheel, a stationary receptacle below the shaft for a cake of soap, and a brush secured to the shaft and engageable with the soap and adapted to settle by gravity with the shaft against the soap as the soap wears away.

2. A fixture of the character described comprising a casing having a pair of chambers formed therein; to wit, an upper chamber and a lower chamber, said chambers being in communication with each other and the lower chamber having a discharge passage formed therein, a valve adapted to be connected with a source of water supply under pressure, a pair of pipes connected with the valve, one connected with the upper chamber and one with the lower chamber, said valve adapted to direct the water to either of the said pipes, a venturi passage formed in the pipe which is connected with the upper chamber, means for admitting air to said venturi passage, a water wheel within the upper chamber, a vertically movable shaft carrying said wheel, a brush secured on said shaft, means permitting endwise movement of the shaft and the brush, means for equalizing pressure at opposite ends of the shaft to permit the shaft and brush to settle by gravity against a cake of soap and means for supporting a cake of soap at a point below the end of the brush.

3. A fixture of the character described comprising a casing having a pair of chambers formed therein; to wit, an upper chamber and a lower chamber, said chambers being in communication with each other and the lower chamber having a discharge passage formed therein, a valve adapted to be connected with the source of water supply under pressure, a pair of pipes connected with the valve, one connected with the upper chamber and one with the lower chamber, said valve adapted to direct the water to either of the said pipes, a container connected with the pipe which is connected with the upper chamber, said container adapted

to contain a liquid perfume or the like, a valve between the container and the pipe to regulate the flow of perfume to the pipe, a water wheel journalled within the upper chamber and in alignment with said pipe, a vertically disposed shaft to which the water wheel is secured, means permitting vertical movement of said wheel and shaft, a brush secured to lower end of said shaft, means for supporting a cake of soap below the brush, and a closure for the upper chamber through which a cake of soap may be inserted or removed.

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