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W. R. McGRATH
SOAP MIXING DEVICE
Filed June 20, 1923

Fig. 1.

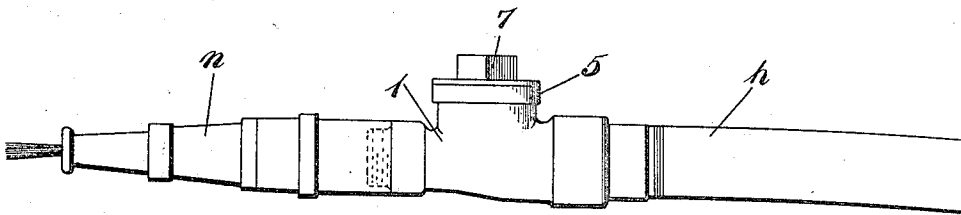


Fig. 2.

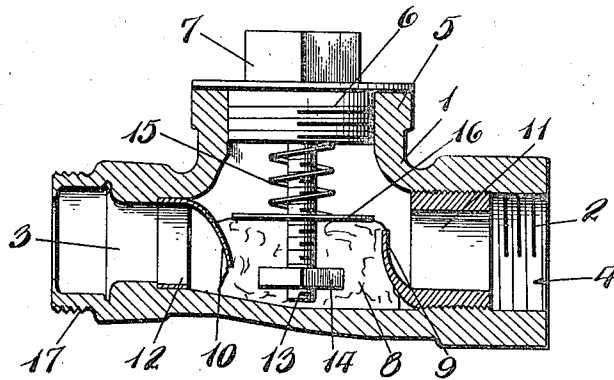
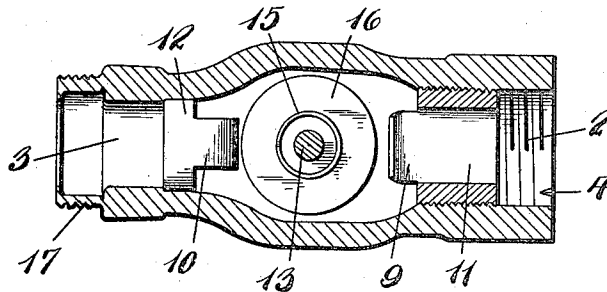


Fig. 3.



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WILLIAM R. McGRATH, OF ATLANTA, GEORGIA.

SOAP-MIXING DEVICE.

Application filed June 20, 1923. Serial No. 646,642.

To all whom it may concern:

Beitknown that I, WILLIAM R. McGRATH, a citizen of the United States of America, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Soap-Mixing Devices; and I do hereby declare that the following is a full, clear, concise, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in soap mixing devices and has for an object to provide a soap mixing device especially adapted for use in connection with hose nozzles and the like, whereby that water passing through the hose and into and through the nozzle will have soap in a sufficient quantity admixed therewith to produce an effectual cleansing solution, thus rendering the same advantageous for use in the washing of automobiles, windows, et cetera.

It is likewise an object of the invention to provide the improved device with means for causing the circulation of the water passing therethrough directly about and in contact with the soap contained in the storage chamber for producing the cleaning solution and yet, will not in any way interfere with the proper flow of water from the nozzle.

Yet another object of the invention is to provide the device with means for exerting a continuous pressure upon the soap contained within the storage chamber in order that it will be, at all times, properly positioned in such chamber for contact with the water flow and also, to so compactly retain the soap as to avoid waste thereof by the admixture of an excessive quantity of the same with the water.

Other objects will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by persons skilled in the art, I have in the accompanying illustrative drawings, and in the detailed following description based thereon, set out one possible embodiment of the same.

In these drawings:

Figure 1 is a side elevation of the improved device showing it connected to a hose nozzle;

Figure 2 is an enlarged vertical longitu-

dinal section through the improved device; and,

Figure 3 is a horizontal longitudinal section therethrough.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the improved device may be stated to comprise a conduit-like metal body indicated in its entirety by the numeral 1, having inlet and outlet ways 2 and 3 formed in the longitudinally aligned and opposed ends thereof; the inlet portion 2 being internally screw-threaded as indicated at 4 for a purpose which will be subsequently obvious. A neck-like extension 5 is formed integral with the upper intermediate portion of the body 1, as shown in the Figure 2, and is internally screw-threaded whereby to receive a closure cap 6 therein, said closure cap carrying a nut or similar device 7 upon its upper side whereby engagement with the same for turning it into and out of engagement with the internally disposed screw-threads 6 may be facilitated.

The intermediate internal portion of the body 1 provides an effectual soap storage chamber into which a quantity of soap as indicated by the numeral 8 is placed. The positioning of this soap is such as to place the same in the longitudinally arranged path of travel of the water flow into the inlet 2 and through the body from the outlet way 3 thereof.

To avoid the direct application of stress or pressure of the inflowing water upon the body of soap 8 contained within the storage chamber of the body 1, I arrange within said chamber of the body oppositely disposed curved baffle plates or arms 9 and 10, forming or otherwise arranging such baffles upon circular retaining rings 11 and 12; the ring 11 being screw-threaded and passed into engagement with the innermost screw-threads 4 of the inlet way 2, while the ring 12 of the baffle 10 is plain and is adapted to have snug fit or engagement in the seat portion provided by the specific formation of the outlet way 3 of the device, as shown in the Figure 2, whereupon said ring 12 may be secured to adjacent portions of the way by soldering, welding, or other process common in the art. In this connection, it is to be noted that the lengths of the opposed

curved baffles 9 and 10 are such as to permit of free passage or flow of water above the same, while the widths of such baffles are less than the widths of the soap storage chamber adjacent the inlet and outlet ways 2 and 3. Hence, material interruption or deflection of the passage of the water flow into and from the device will be avoided and in consequence, proper flow of water from the outlet way 3 will at all times be ensured. Furthermore, it is to be noted that the curved baffle 9 extends upwardly, whereas the baffle 10 extends downwardly; although, if desired, this arrangement may be varied, such as conditions or preference may dictate.

By reason of the arrangement of the opposed curved baffles 9 and 10 internally of the body 1, it will be understood that the flow of water into and through the device will be diverted and that during such flow of water through the device, the same will come in positive contact with the mass of soap 8 in a manner sufficient to permit of admixture of a proper quantity thereof with the water, whereby when it leaves the device by way of the outlet way 3, an effectual cleansing solution will have been produced. However, because of the fact that direct stress of the water flow upon the soap 8 will be lessened by the interpositioning of the baffle 9 in the device, the breaking up of the soapy mass 8, together with wastage thereof by reason of excessive admixture of the same with the water flow will be obviated.

As a further means for ensuring proper positioning of the soap 8 in the chamber of the device 1 and likewise, to avoid excessive admixture of the same with the water flow, I may and preferably do provide the inner side of the screw-threaded closure cap 6 with a depending screw-threaded shank 13, arranging a nut or other suitable form of stop 14 upon the lower end thereof, while engaged about the upper portion of said shank is an expansible coiled spring 15, one end of which bears upon an adjacent portion of the closure cap 6, while the opposite end thereof has bearing upon a circular follower plate 16, which follower plate engages over the upper portion of the mass of soap 8 and with exertion of pressure thereon from the coiled spring 15, will cause said soap to remain in a compact mass and ensures proper positioning with respect to the water flow. The pressure of the follower plate 16 upon the mass of soap 8, it is to be understood, while being sufficient to retain the same in compact form, will not, in any way, detract from the efficiency with which the device will permit of the admixture of the soap with the water flow.

Also, by effecting vertical adjustment of the stop 14 upon the screw-threaded shank 13, it will be understood that vertical move-

ment of the spring pressed follower plate with relation to said shank 13 may be varied, as may be required.

In using the improved device, the screw-threaded inlet way 2 thereof is engaged with a suitable hose fitting arranged upon the hose *h*, whereas a suitable form of nozzle *n* is engaged with the screw threaded end or nipple portion 17 of the body 1 of the device, in the manner indicated in the Figure 1. It is assumed in this connection, that a proper quantity of soap 8 has been placed within the soap storage chamber of the device and likewise, that proper adjustment of the spring pressed follower plate 16 has been effected in order that the latter will engage said soap and retain the same in a compact mass. With the admittance of water to the hose *h*, the same will pass through the inlet way 2 of the device and will continue thereon through upwardly over and by the sides of the upwardly curved baffle 9, thus coming directly in contact with the soap mass 8 and causing a portion of the same to be admixed therewith. With continued flow of the water through the device, the same will pass the downwardly disposed curved baffle 10 and will leave the device by way of the outlet way 3, passing into the nozzle *n* from whence, it will be discharged onto the desired object. Because of the arrangement of the downwardly disposed curved baffle 10, dislodgment of materially sized particles of the soapy mass 8 will be avoided and likewise, any tendency of the pressure of the water flow through the device to dislodge or effect wastage of the soap 8 will be avoided. Yet, however, admixture of a quantity of soap sufficient to produce an effectual cleansing solution will be provided.

The supply of soap within the storage chamber of the body 1 of the device may of course be replenished as required merely by removing the closure cap 6 and the shank 13 carrying the spring pressed follower plate 16 thereon. Also, as heretofore stated, by adjusting the vertical positioning of the stop nut 14 upon the screw threaded shank 13, the extent of movement of the spring pressed follower plate 16 with respect to the shank may be varied, as may be required.

Manifestly, the construction shown is capable of considerable modification and such modification as is within the scope of my claim, I consider within the spirit of my invention.

I claim:

A device of the character described comprising a body having inlet and outlet ways therein, a soap receiving and storage chamber within the intermediate portion of said body, oppositely disposed curved baffles fixedly mounted within the chamber adjacent the inlet and outlet ways and adja-

cent the opposite sides of said chamber, said baffles being of lengths and widths less than the internal area of said chamber and inlet and outlet ways, the upper intermediate
5 portion of the body having a neck-like extension formed integral therewith, a closure plug for the open end of said neck-like extension, a shank depending from the inner

side of said closure, an adjustable stop engaged with said shank, and a spring pressed 10 follower plate movably engaged with said shank and adapted to have engagement with the soap within said chamber.

In witness whereof I have hereunto set my hand.

WILLIAM R. McGRATH.