July 5, 1938. F. J. CANTRELL 2,122,636

SOAP DISPENSING DEVICE

Filed July 14, 1937

Fig. 1.

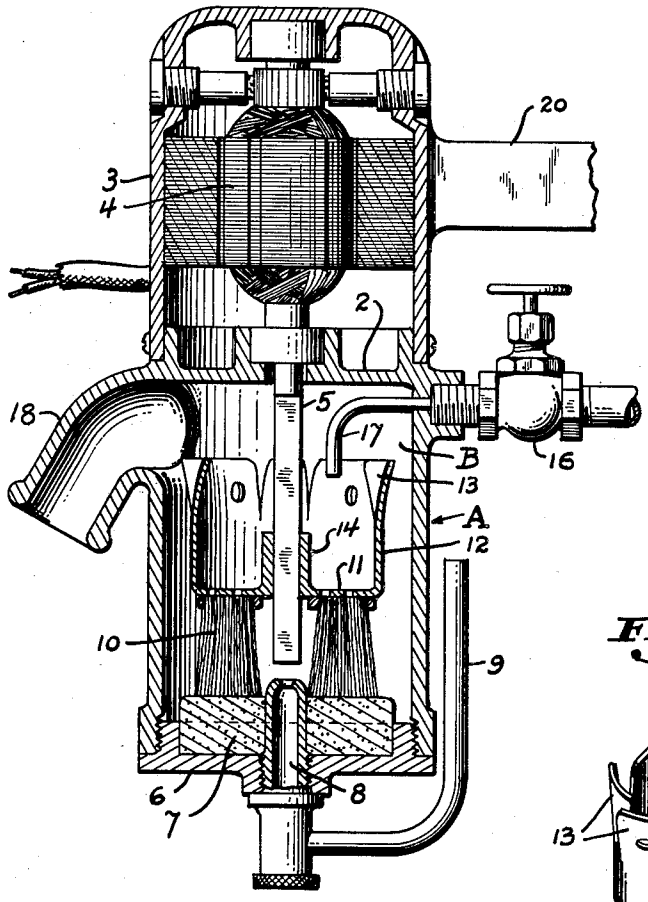
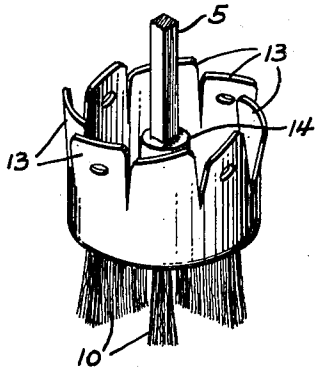



Fig. 2.




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2,122,636

## SOAP DISPENSING DEVICE

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5 Claims. (Cl. 299—83)

This invention relates to a soap dispensing device, and especially to improvements in construction and operation of the soap dispenser disclosed in my former patent entitled "Soap dispensing device", issued June 12, 1928, Patent No. 1,673,228.

The object of the present invention is to generally improve and simplify the construction and operation of soap dispensing devices of the character described, and especially to improve the mechanism whereby air and water are introduced to the chamber wherein the soap lather is formed.

The invention is shown by way of illustration in the accompanying drawing in which—

Fig. 1 is a central vertical longitudinal section of the soap dispenser; and

Fig. 2 is a perspective view of the soap brush and the fan head forming a part thereof.

Referring to the drawing in detail, and particularly Fig. 1, A indicates a cylindrical elongated casing which is closed at its upper end as shown at 2. Secured on top thereof by means of screws or similar fastening means is a motor casing 3, and journaled therein is an armature 4 having a shaft 5 which projects through the closed upper end of the casing downwardly and into a chamber B formed within the same. The lower end of the casing is closed by a screw-cap 6 which forms a support for a cake of soap 7, said soap cake being centrally perforated to slip over an air inlet pipe 8 which is connected with the atmosphere through an upwardly extending exterior pipe 9.

Adapted to rest by gravity on top of the soap cake is a brush consisting of a series of bristles 10 suitably secured to a head member or plate 11. This plate is perforated and is provided with an upwardly extending annular flange 12, said flange being cut vertically, and the cut portions being bent to form a series of fan blades 13. The head or plate 11 of the brush is provided with a hub 14 which may be splined to the motor shaft 5 or, as here shown, provided with a square opening to fit the shaft which also is square. The brush, consisting of the bristles, the head and the fan blades carried thereby, is freely movable up and down the shaft and as such can settle downwardly thereon as the cake of soap wears away.

Connected with the upper portion of the casing is a water inlet pipe controlled by a valve 16, and forming the extension thereof is a small tube 17 which extends over and into the cup or fan head so as to deliver water thereto.

The device as a whole may be used when bathing in a tub, taking a shower, or otherwise, and may be attached by means of a bracket 20 or any other suitable means to the wall or other support which may be within convenient reach. Inasmuch as an electric motor is employed for operation of the device, the switch for controlling the circuit thereto should also be placed within convenient reach.

In actual operation, when soap is to be dispensed, valve 16 is slightly open so as to permit water to drip on top of the perforated head of the brush where it will drain downwardly through the perforations into the bristles of the brush, so as to wet these together with the soap sufficiently to permit the formation of lather. If the circuit to the motor is closed by means of the switch, the brush will revolve at a high speed, and so will the fan blades 13 carried thereby. As the bristles rub against the upper surface of the soap, lather will be formed, air will at the same time be introduced between the bristles by means of the pipes 9 and 8 and will be whipped into foam or lather first by the bristles, and secondly by the fan blades. Light creamy foam or lather is thus formed which will overflow and discharge through a spout such as shown at 18. The fan blades produce the vacuum required to introduce the air through the pipes 9 and 8, and they also serve a secondary function, to-wit, that of further beating up the foam or lather and discharging it through the outlet.

When the desired quantity of soap in the form of foam or lather has been dispensed, the motor circuit is opened and the water flow is closed by shutting off the valve 16.

A new cake of soap may be introduced at any time by merely unscrewing the bottom cap 6, and the new cake of soap may be readily applied by slipping it over the outwardly extending end of the pipe 8 and then screwing the cover back onto the lower end of the casing.

The efficiency of the device as regards the formation of foam or lather is remarkable, this very probably being due to the fact that the air is introduced between the bristles and whipped into a lather by the same, and later by the fan blades. A thick or thin foam may be produced by merely regulating the water supply through the valve 16.

While these and other features of the present invention have been more or less specifically described and illustrated, I wish it understood that various changes may be resorted to within the scope of the appended claims, and that the materials and finish of the several parts employed may be such as the judgment and ex-

perience of the manufacturer may dictate or other conditions may demand.

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

1. A device of the character described comprising a casing having a chamber formed therein, a soap receptacle in the chamber to contain a cake of soap, a revolving brush engaging the cake of soap, means for introducing water to form a lather, means for directing air upwardly between the bristles of the brush to be beaten into the lather by the bristles as they rotate, and a discharge outlet for the lather.

2. A device of the character described comprising a casing having a chamber formed therein, a soap receptacle in the chamber to contain a cake of soap, a motor disposed above the casing, said motor having a shaft extending downwardly into the casing, a brush adapted to be supported by the cake of soap and driven by the shaft, said brush being splined and slidable on the shaft to settle downwardly as the soap wears away, means for delivering water to the bristles of the brush, means for introducing and directing air upwardly between the bristles of the brush to form a lather and a discharge outlet for the lather.

3. A device of the character described comprising a casing having a chamber formed therein, a soap receptacle in the chamber to contain a cake of soap, a motor disposed above the casing, said motor having a shaft extending downwardly into the casing, a brush adapted to be supported by the cake of soap and driven by the shaft, said brush being splined and slidable on the shaft to settle downwardly as the soap wears away, means for introducing water between the bristles of the brush, an air inlet pipe extending upwardly between the bristles, said air and water together with the soap forming a lather, a discharge outlet for the lather, and means actuated by the motor shaft for simultaneously introducing air through the tube and for discharging the lather through the discharge outlet.

4. A device of the character described comprising a casing having a chamber formed therein, a soap receptacle in the chamber to contain a cake of soap, a motor disposed above the casing, said motor having a shaft extending downwardly into the casing, a brush adapted to be supported by the cake of soap and driven by the shaft, said brush being splined and slidable on the shaft to settle downwardly as the soap wears away, a perforated head member on the brush, an annular flange on said head member, said flange and head functioning as a receptacle to receive water, means for regulating and introducing water to said receptacle, said water passing through the perforations into the bristles of the brush, a tube extending through the bottom of the receptacle upwardly between the bristles of the brush, a plurality of fan blades formed on the flange of the head member, said blades producing a suction action to introduce air through the bottom tube, and said air and the water delivered to the bristles forming together with the soap a lather, and a discharge outlet on the casing for the lather.

5. A device of the character described comprising a casing having a chamber formed therein, a soap receptacle in the chamber to contain a cake of soap, a motor disposed above the casing, said motor having a shaft extending downwardly into the casing, a brush adapted to be supported by the cake of soap and driven by the shaft, said brush being splined and slidable on the shaft to settle downwardly as the soap wears away, an air inlet pipe extending through the bottom of the casing and upwardly between the bristles of the brush, a fan head carried by the brush to produce a sufficient suction action to cause air to enter the tube between the bristles of the brush, means for delivering water to the bristles of the brush to form together with the air and soap a lather, and a discharge outlet for the lather.

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