March 13, 1934. W. BURLINGHAM 1,950,968

LATHER PRODUCING DEVICE

Filed July 25, 1931 2 Sheets-Sheet 1

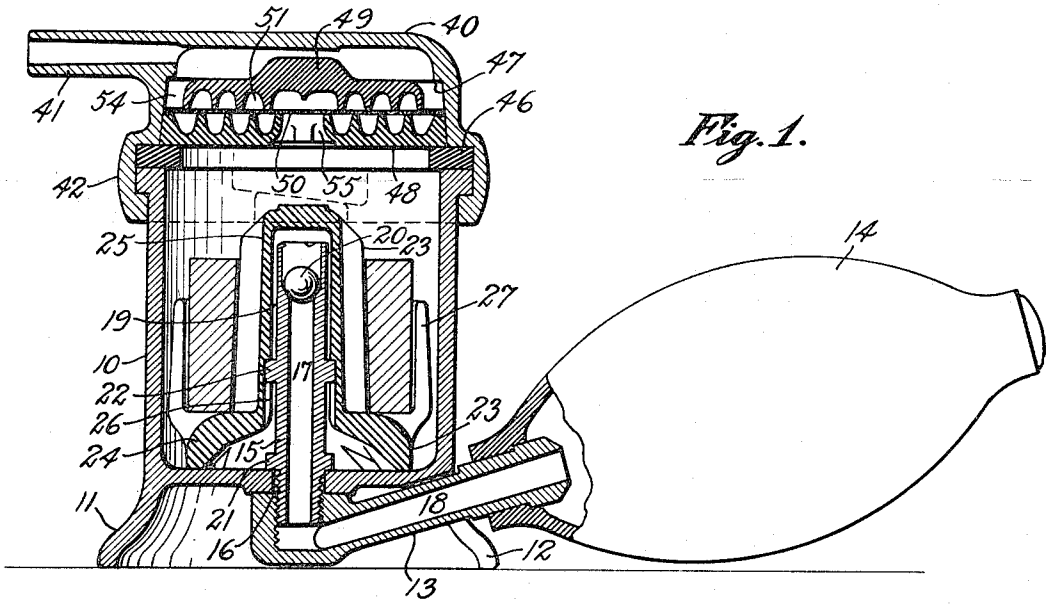


Fig. 1.

Fig. 2.

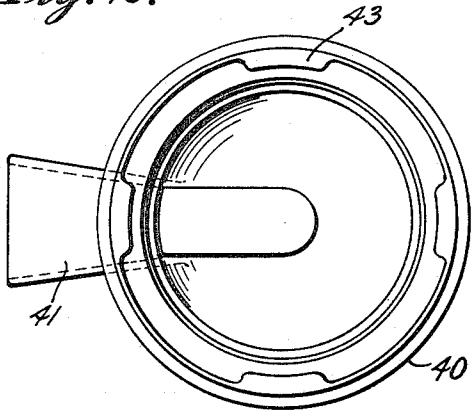


Fig. 3.

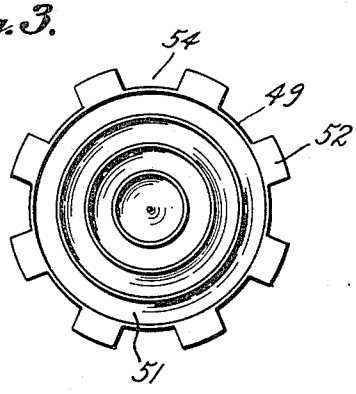
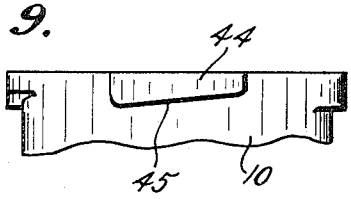


Fig. 9.



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March 13, 1934. W. BURLINGHAM 1,950,968

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Filed July 25, 1931 2 Sheets-Sheet 2

Fig. 4.

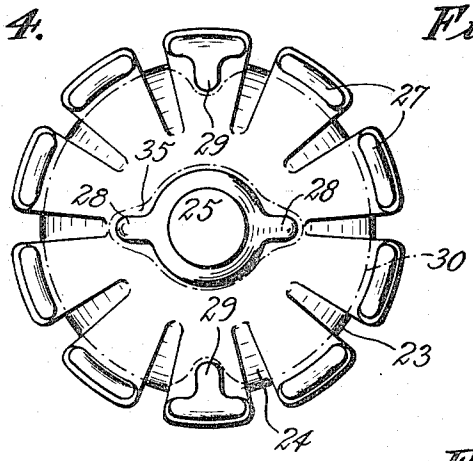


Fig. 7.

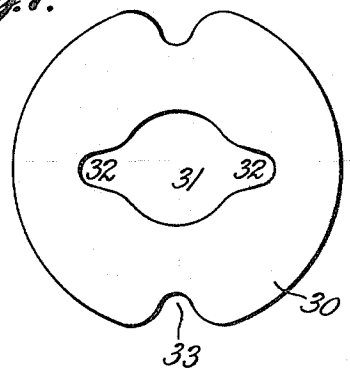


Fig. 8.

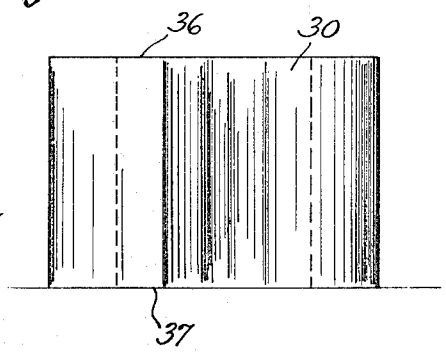


Fig. 5.

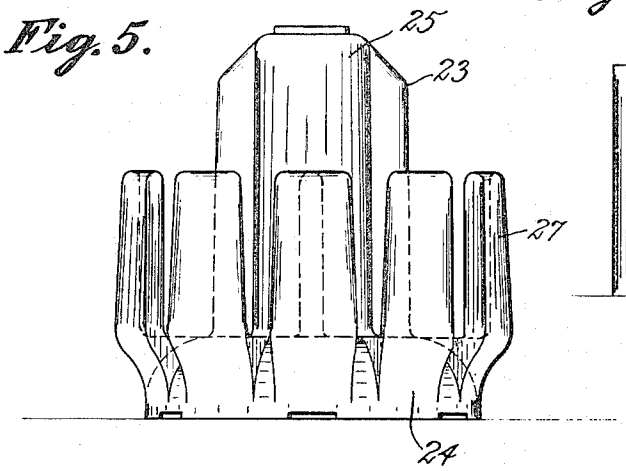
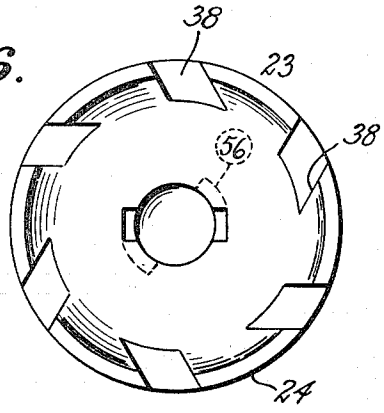


Fig. 6.



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UNITED STATES PATENT OFFICE

1,950,968

LATHER PRODUCING DEVICE

William Burlingham, Englewood, N. J., assignor, by mesne assignments, to The Latherizer Sales Company, Inc., New York, N. Y., a corporation of Delaware

Application July 25, 1931, Serial No. 553,042

7 Claims. (Cl. 299—83)

My invention relates to lather forming devices and more specifically to lather forming devices of the type wherein a soap holder and bubble condensing means are contained in a liquid holding container into which air is pumped by a hand bulb.

One of the objects of the present invention is to provide an improved soap holder for a lather forming device. It has been found advantageous in such devices to provide lateral soap retaining means at the outside of the soap holder. Such soap retaining means has been made separately from the soap holder proper and has been made of various substances, principally metal. It has been found that the previous devices of this sort have interfered with most efficient operation and have deteriorated due, among other causes, to corrosion. In accordance with the present invention the soap retaining means is formed integral with the soap holder and the whole soap holder including the retaining means is made of a material which will withstand the alkaline nature of the fluid, such as a suitable phenol condensation product or enameled aluminum.

A further object of the invention is to provide a novel cooperation between the soap holder and the cake of soap. The soap holder is formed with projections and the cake of soap is recessed to fit the projections, the form of the parts being such that passageway for gas is provided internally of the soap cake as well as the exterior thereof.

A still further object of the invention is to provide a novel soap cake for a lather forming device. Still another object is to improve bubble condensing means in a lather forming device. It is also an object of the invention to improve the means for securing the cover to the receptacle, of a lather forming device.

The nature of the invention will become apparent by consideration of the following description taken in conjunction with the accompanying drawings forming a part hereof and with respect to which:

Fig. 1 is a cross-sectional view, partly in full, of a lather forming device embodying the invention;

Fig. 2 is a bottom view of the cover of the lather forming device;

Fig. 3 is a bottom view of a plate of the condensing means of the lather forming device;

Fig. 4 is a top view of the soap holder of the lather forming device;

Fig. 5 is an elevational view of the soap holder;

Fig. 6 is a bottom view of the soap holder;

Fig. 7 is a top view of the cake of soap forming part of the lather forming device;

Fig. 8 is an elevational view of the cake of soap; and

Fig. 9 is an outside view of part of the receptacle showing cover retaining means.

The lather forming device comprises a receptacle 10 adapted to contain liquid. The receptacle has a depending skirt or supporting portion 11 notched at 12 to receive a gas tube 13 connected to a hand bulb 14. Centrally disposed within the receptacle 10 is a gas admission column 15 which passes through an opening 16 in the bottom of the receptacle 10 and is screwed into the gas tube 13. The gas admission column 15 is provided with a longitudinal passageway 17 connecting with a passageway 18 in gas tube 13. A valve seat is provided at 19 within column 15 and a valve ball 20 is adapted to seat on seat 19, the ball and the seat constituting a check valve permitting passage of gas upwardly through column 15, but preventing passage of gas downwardly therethrough. The hand bulb is equipped with a suitable inlet check valve as is common with hand bulb pumps. Column 15 is flanged at 21 to seat against the bottom of the receptacle. Cement or other material may be used to make a tight joint between the flange 21 and the bottom of receptacle 10. Two lateral projections 22 are provided on column 15 constituting part of a bayonet connection.

Surrounding column 15 is a soap holder 23 shown in section in Fig. 1 and also shown in Figs. 4, 5 and 6. The soap holder has a base portion 24 having a central upwardly projecting post 25. The post 25 is hollow and closed at the top and surrounds the gas admission column 15. The inside of the post 25 is spaced from the column 15 in order to provide a passage for gas flow downwardly between members 15 and 25. The inside of post 25 is provided with longitudinal bayonet slots 26 and suitable cross slots 56 (Fig. 6) cooperating with the projections 22 so that the member 23 may be inserted over member 15 and turned to be locked in position.

The soap holder 23 also comprises upwardly projecting lateral soap retaining arms 27. It will be seen that the general shape of the soap holder is circular and that the arms 27 are arranged peripherally thereof. Arms 27 and post 25 and the base portion 24 are all integrally formed as by being moulded or cast in one piece. The soap holder is preferably made of a suitable non-corrosive material such as hard rubber

or phenol condensation product or suitably coated metal such as enamelled aluminum.

Post 25 is provided with outwardly extending vertical flanges or projections 28 which are diametrically oppositely disposed. At 90° with respect to the projections 28, two of the arms 27 are provided with inward vertical projections 29.

The soap holder is adapted to hold a cake of soap designated generally by reference character 30 and shown in Figs. 7 and 8. The cake of soap is in general circular. It is hollowed out centrally at 31, the central passageway having recesses 32 which mate with the projections 28. The periphery of the soap cake is recessed at 33, which recesses 33 mate with the projections 29. The position of the cake of soap within the holder is shown in dash-and-dot lines in Fig. 4. It will be seen that the recesses 32 are greater than is necessary for exactly matching the projections 28 so that vertical passages 35 are formed between the inner surface of the soap and the projections 28. These passages serve for the upward passage of gas within the soap cake. The soap cake has flat top and bottom surfaces 36 and 37. It will be seen that a horizontal transverse section through the soap cake and a horizontal section through post 25 are of irregular cross-section limiting the positioning of the soap cake in the holder.

The base portion 24 is conically hollowed interiorly as shown in Fig. 6 and is provided with oblique slots 38 in the bottom thereof to give a whirling action to gas passing therethrough.

The lather forming device is provided with a cover 40 having a discharge spout 41. The cover is formed with a ring 42 having four inwardly projecting lugs 43 (Fig. 2). The receptacle 10 is provided with four projections 44 having under-sides 45 inclined or oblique to the horizontal top edge of the receptacle. The upper surfaces of the lugs 43 are similarly inclined. The cover is fitted into position by placing the same so that the lugs 43 are between the projections 44. The cover is then turned so that the lugs 43 pass under the projections 44 and are wedged due to the wedging action of the surfaces 45. A gasket 46 is interposed between the receptacle and the cover, which gasket may be made of rubber and which serves to tighten the parts together by providing a resilient resistance to the cam action of the lugs 43 and projections 44. It will be seen that the ring 42 is integral with the cover 40. The device is easy to assemble, simple in construction, and yet affords a tight connection between the cover and the receptacle and operates to correctly position the spout 41.

Within the cover 40 and clamped between a shoulder 47 and the gasket 46 is a bubble condensing unit comprising a lower plate 48 and an upper plate 49 between which is interposed a screen 50. Each of the plates 48 and 49 is provided with circumferential groves 51 (see Fig. 3). The arrangement is such that ribs between grooves on one member are opposite grooves on the other member. This provides a continuous tortuous passage through the condensing unit in the path of which are interposed various sections of the screen 50. In order to provide a free outlet area, I provide the member 49 with outstanding lugs 52 as shown in Fig. 3. These lugs 52 abut against the cover. The peripheral spaces 54 between these lugs extend from the outermost rib to the cover and provide adequate discharge area for the lather.

In operating the device, the soap cage is placed in the soap holder and the receptacle 10 is filled to, or substantially to, the brim with water, preferably warm water. The cover is then secured in the manner above described. Upon squeezing the hand bulb, air is forced through passage 18, thence upwardly through passage 17, thence downwardly between member 15 and member 23, and thence outwardly through the oblique or tangential channels 38 and into the vicinity of the soap. The air passes upwardly both outside the soap and through the internal passageways 35, thus agitating the liquid and forming soap bubbles. The soap bubbles are forced upwardly to the condensing unit and through the central opening 55 of the lower plate 48, and thence tortuously through the channel formed by the grooves 51 and out through the spaces or passages 54 between the lugs 52 and thence to the hand or brush of the user.

While I have described only one form of apparatus embodying the invention it will be understood that the invention is susceptible of embodiment in a variety of structures.

What I claim is:

1. A lather forming device comprising a receptacle, a cover for said receptacle, means to supply air to an inlet at the lower part of said receptacle, bubble condensing means, a soap holder within said receptacle above said inlet, means for securing said holder to said receptacle so that it is retained in place against the action of the air supplied below it, said soap holder having a centrally disposed post and lateral retaining arms, said post having lateral projections thereon, and a soap cake adapted to rest in said soap holder, said soap cake being centrally apertured and having inner recesses mating with said lateral projections.

2. A lather forming device comprising a receptacle, a cover for said receptacle, means to supply air to an inlet at the lower part of said receptacle, bubble condensing means, a soap holder within said receptacle above said inlet, said soap holder having a centrally disposed post, said post having lateral projections thereon, and a soap cake adapted to rest in said soap holder, said soap cake being centrally apertured and having inner recesses mating with said lateral projections, said recesses being formed to provide gas passageways between the recess surfaces and the projections.

3. A lather forming device comprising a receptacle, a cover for said receptacle, means to supply air to an inlet at the lower part of said receptacle, bubble condensing means, a soap holder within said receptacle above said inlet having a base portion, a centrally disposed post, and upwardly projecting lateral retaining arms integral with said base portion, said post having outwardly extending projections thereon, some of said arms having inwardly extending projections thereon, the projections on the post being out of alignment with the projections on the arms, and a soap cake adapted to rest in said soap holder, said soap cake being recessed to fit said projections and providing passage for gas inwardly as well as outwardly of the soap cake.

4. In a lather forming device, the combination with a container having an inlet in the lower part thereof and an outlet in the upper part thereof, air supply means connected to the inlet and bubble condensing means in the container, of a soap holder fitting within said container above said inlet and having a projecting mem-

ber of irregular transverse cross-section, and a soap cake having an opening of irregular transverse cross-section for mounting the soap cake on the holder, the opening in the soap cake being of greater area than the cross-section of the projecting member to provide a gas passageway between the projecting member and the soap cake.

5. In a lather forming device, the combination with a container having an inlet in the lower part thereof and an outlet in the upper part thereof, air supply means connected to the inlet and bubble condensing means in the container, of a soap holder fitting within said container above said inlet and comprising a central, vertical post and lateral retaining arms, and means for securing said holder to said container so that it is retained in place against the action of the air supplied below it.

6. In a lather forming device, the combination with a container having an inlet in the lower part thereof and an outlet in the upper part thereof, air supply means connected to the inlet and bubble condensing means in the container, of a soap holder fitting within said container above said inlet and having lateral projections thereon, and a soap cake adapted to rest in said soap holder, said soap cake being centrally apertured and having inner recesses mating with said lateral projections, and said recesses providing for passage of gas between the projections and the soap cake.

7. In a lather forming device, the combination with a container having an inlet in the lower part thereof and an outlet in the upper part thereof, air supply means connected to the inlet and bubble condensing means in the container, of a soap holder fitting within said container above said inlet and having lateral projections thereon, and a soap cake adapted to rest in said soap holder, said soap cake being centrally apertured and having inner recesses mating with said lateral projections, said recesses providing for passage of gas between the projections and the soap cake, and said soap holder having a base portion, and lateral retaining arms integral with the base portion.

WILLIAM BURLINGHAM.