J. J. MOORE.

ATOMIZER COMB.

APPLICATION FILED JUNE 24, 1912.

1,067,051.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

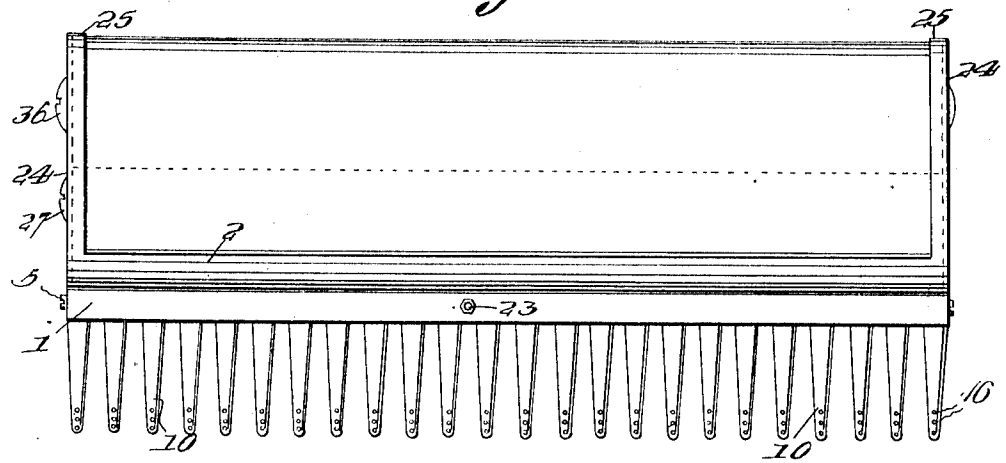
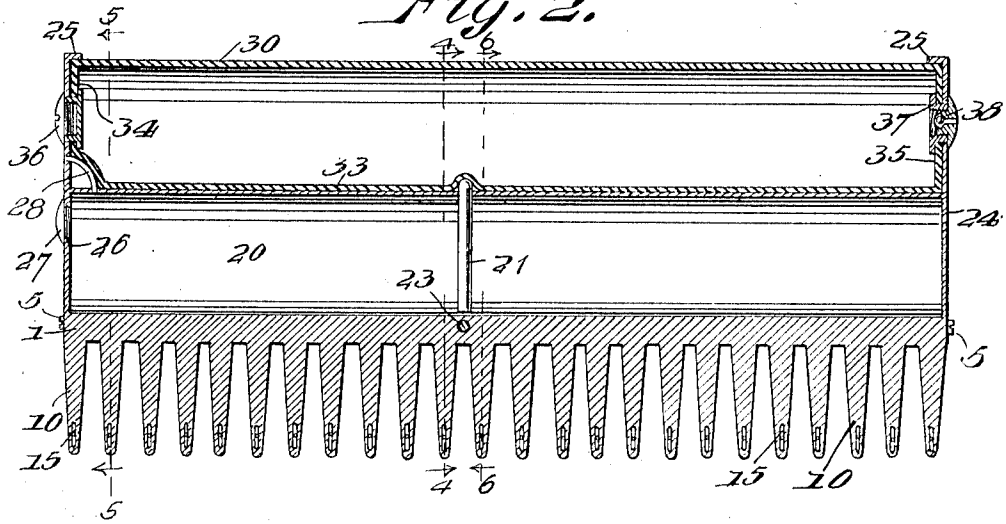


Fig. 2.



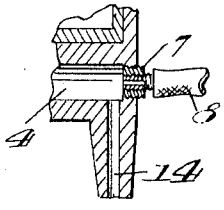


Fig. 9.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

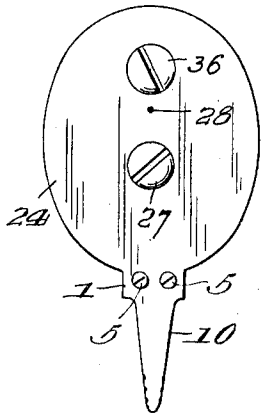


Fig. 4.

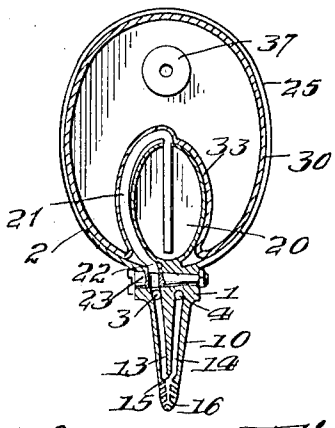


Fig. 5.

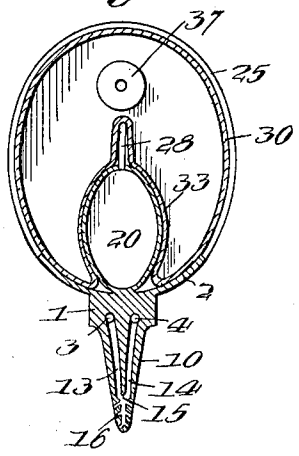


Fig. 6.

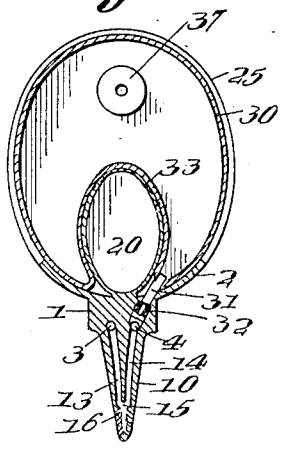


Fig. 7.

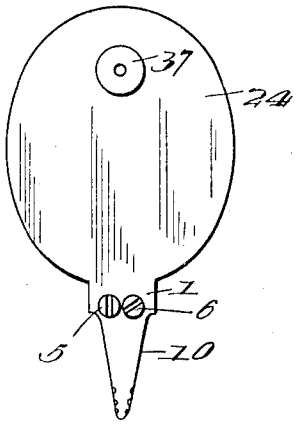
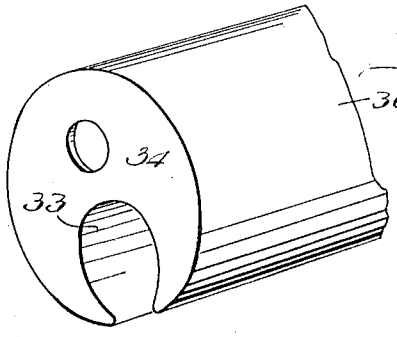


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

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ATOMIZER-COMB.

1,067,051. Specification of Letters Patent. Patented July 8, 1913.

Application filed June 24, 1912. Serial No. 705,567.

To all whom it may concern:

Be it known that I, JOHN J. MOORE, a citizen of the United States, residing at South Charleston, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Atomizer-Combs; and I do declare the following to be a full, clear, 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 the toilet, and more especially to combs for personal use; and the object of the same is to produce a comb having a liquid reservoir so that it becomes in effect a fountain comb and also having means for ejecting the liquid by jets of air so that the device becomes in effect an atomizer comb. These objects are accomplished by constructing the comb and all its parts as hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a side elevation, and Fig. 2 a central vertical longitudinal sectional view of this device; Fig. 3 is an elevation of the left end; Figs. 4, 5 and 6 are cross sections on the lines 4—4, 5—5 and 6—6 respectively of Fig. 2; Fig. 7 is an elevation of the right end; Fig. 8 is a perspective detail of one end of the air bulb; Fig. 9 is an enlarged sectional detail showing the coupling for attaching a hose from a source of air supply.

The comb proper comprises a back or frame 1 from which project a number of teeth 10, and the back by preference has side flanges 2 for a purpose to be set forth below and is bored longitudinally with passages 3 and 4 for liquid and air respectively, the extremities of these passages being by preference closed by removable plugs 5 which can be withdrawn when it is desired to clean out the passages. I may here say that the air passage 4 may have a vent closed by a screw plug 6 which can be removed when desired so that a threaded nipple 7 may be engaged with said vent or opening, which nipple is connected by a hose 8 with a tank or some other source of air supply, as will be further explained below. The teeth 10 are alike and extend rigidly from the back 1, and each is formed with a liquid duct 13 leading down from the liquid passage 3 in the back and an air duct 14 leading downward from the air passage 4 in the back, these ducts uniting at the point 15 near the lower end or tip of the tooth, below which said tooth is hollow and its walls pierced with a number of fine outlets 16 through which the liquid admitted down the duct 13 is driven in the form of a spray or vapor by air forced down the duct 14. Irrespective of the details of construction which follow, such a comb combined with any means for feeding liquid to the passage 3 and air to the passage 4 constitutes an atomizer comb, and when used the water or other liquid will be sprayed or atomized to the hair and upon the scalp or skin to an extent depending upon the force of the air pressure.

The liquid reservoir 20 is shown as oval in cross section although it may have any shape desired and of a length equal with that of the comb back or frame, to which it may be secured integrally or otherwise, and an outlet pipe 21 leads from a low point within the reservoir through its wall and to a feed duct 22 passing downward in the back 1 of the comb and communicating with the passage 3. In said duct is located a rotatable stop cock 23 which may be turned to regulate or entirely cut off the flow of liquid. The end walls 24 of the reservoir body are enlarged and flanged toward each other as at 25 for a purpose to appear, and through one of said ends is formed a feed opening 26 closed by a cap 27 which may screw into the opening or otherwise as desired, and when the cap is removed the reservoir may be filled with water or other liquid. A fine air duct 28 opens from the interior of the reservoir through one of the heads or ends 24, through which air escapes as liquid is supplied to the reservoir or through which air is admitted as liquid is drawn out of the reservoir and fed to the comb in the manner set forth below.

The air bulb has a body which may be of any shape desired but is shown as substantially cylindrical and somewhat larger than that of the reservoir but of about the same length, and is by preference made of soft rubber so that it may be compressed by the hand of the operator as this improved comb is used. Its outer wall 30 will therefore be nearly cylindrical when the bulb is expanded, and at a proper point it is pierced with a hole which carries a nipple 31 adapted for detachable connection with an air feed duct 32 formed in the back 1 of the comb and communicating with the air passage 4; the inner wall 33 of the bulb is oval and of a

size and shape to rather closely inclose the body 20 of the reservoir, its lower edges uniting with the lower edges of the outer wall as shown; and the ends 34 and 35 of said bulb fit inside the ends 24 of the reservoir and inside the flanges 25 on said ends, one of the ends 34 having an opening registering with a similar opening in the end 24 so that a two-part coupling 36 may be passed through these registering openings and its parts connected to hold said ends together, while the other end 35 of the bulb has a similar opening registering with another opening in the other end wall 24 for a two-part coupling 37 which contains an outwardly closing check valve 38 as best seen in Fig. 2. This coupling holds the ends together and its valve permits the inlet of air as the bulb is allowed to expand, while the other coupling 36 is a blind fastening device although air tight and water tight. These couplings attach the ends of the bulbs to the end walls 24 at points above the body of the reservoir as illustrated, and in use the operator grasps the cylindrical body of the bulb between its extremities and compresses it in a manner which will be clear.

In barber shops, manicure parlors, and similar places where means are present for supplying compressed air, a hose 8 may be led from the air tank or other device to a nipple 7 and the latter connected with the vent disclosed by removing the plug 6 in the air passage 4; and when this construction is employed the bulb will not be necessary, or if it is not removed from the comb it may be used simply as a handle, or possibly it could be used in addition to the supply of air.

It will not be necessary for the purposes of this specification to amplify the uses to which such a comb may be put. Suffice it to say that the cap 27 is removed and the reservoir filled with any liquid desired; the cap 27 is then replaced and the device is ready for use. The operator grasps the air bulb in his hand and compresses it, and air therein is forced out of the nipple 31 and along the air passage 4 and down the air duct 14 in each tooth to the point 15. Here it creates suction on the liquid passing down the duct 13, and the result is that the liquid is ejected through the outlets 16 in the form of a spray, mist, or vapor depending upon the fluidity of the liquid used and the pressure applied to the air, as well as to the size of the openings 16 and their number. The same result follows if the air bulb is not used, but air is fed through the hose 8 from a suitable source of air supply; but when the bulb is used the lower edge of its outer wall 3 is by preference anchored inside the flanges 2 so that the bulb, the reservoir, and the comb become a unitary hand article. The stop cock is used to regulate the quantity of liquid admitted to the teeth and atomized; or if closed entirely, it permits air alone to be jetted from the teeth so that the comb can be used for dry shampooing or drying the hair when it has been washed.

I would by preference make the comb and reservoir and its end-pieces of hard rubber or similar material, while the bulb will by preference be made of soft rubber, although the materials and proportions of parts and the exact details of construction are not essential to the principle of this invention.

What is claimed as new is:—

1. The herein described comb whereof each tooth has two inlet ducts and outlet openings for the spray, and means for supplying liquid to one duct and air under pressure to the other.

2. The herein described comb whereof each tooth has two inlet ducts and outlet openings for the spray, a liquid reservoir carried by the comb and connected with one of said ducts in the various teeth, and means for supplying air under pressure to the other of said ducts in the teeth.

3. The herein described comb whereof each tooth has inlet ducts for liquid and for air and outlet openings near its tip for spray, a liquid reservoir carried by the comb frame and in communication with the liquid inlet duct of each tooth, and an air bulb carried by the comb frame around said reservoir and in communication with the air inlet duct of each tooth.

4. The herein described comb whereof each tooth has inlet ducts for liquid and for air and outlet openings near its tip for spray, a liquid reservoir extending along the back of the comb and in communication with the liquid duct of each tooth, an air bulb also extending longitudinally of the back of the comb and inclosing said reservoir on all sides excepting where it is connected with the comb-back, said bulb being in communication with the air-ducts in the teeth, one end of said reservoir having a liquid-filling opening, and means for closing said opening.

5. The herein described comb whereof each tooth has an air inlet duct and a liquid inlet duct uniting with each other near its tip and a spray outlet opening at its tip, said ducts diverging toward the back of the comb and the latter being provided with two longitudinal passages communicating with the liquid and air ducts respectively, a liquid reservoir mounted on the back of the comb, an outlet pipe connecting it with the liquid passage, a stop cock in this pipe, an air bulb mounted on and partly inclosing said reservoir, and an outlet pipe connecting said bulb with said air passage.

6. In an atomizer comb, the combination with the comb frame having independent liquid and air passages therein, and the teeth each rigidly connected with said frame and having a liquid duct communicating with said liquid passage and an air duct communicating with said air passage, the ducts uniting at a point near the tip of the tooth and the latter having outlets, of a liquid reservoir carried by the frame and having an outlet pipe, said comb frame having a feed duct communicating with its liquid passage and with which said duct outlet pipe communicates and a feed duct communicating with its air passage, and an air bulb mounted on said frame and connected with the air passage by said last-named feed duct, for the purpose set forth.

7. In an atomizer comb, the combination with the comb frame having independent liquid and air passages therein, and the teeth each connected with said frame and having a liquid duct communicating with said liquid passage and an air duct communicating with said air passage, the ducts uniting at a point near the tip of the tooth and the latter having outlets; of a liquid reservoir carried by the frame and having an outlet pipe, said frame having a feed duct communicating with its liquid passage and with which duct said outlet pipe communicates, a stop cock rotatably mounted across said duct, the frame also having a feed duct communicating with its air passage and flanges projecting upward from its body, an air bulb with the outer and inner walls and whose inner wall surrounds said reservoir and whose outer wall surrounds its inner wall and rests within said flanges and is pierced with an opening, and a nipple connected with said opening and engaging the air feed duct, for the purpose set forth.

8. The combination with a comb having a liquid passage and an air passage extending longitudinally through its frame, each tooth having liquid and air ducts communicating respectively with said passages and uniting near its tip, and each tooth being also provided with outlets; of a liquid reservoir fixedly mounted on the comb and communicating with the liquid passage, the end walls of said reservoir being larger than its body and having flanges around their peripheries projecting toward each other and a filling opening and air vent through one end communicating with said reservoir, a compressible bulb whose body surrounds said reservoir and whose interior communicates with said air passage, its end walls standing against the end walls of the reservoir and within their flanges and said walls having registering openings, a blind coupling connecting the openings in one pair of walls, another coupling connecting the openings in the other pair of walls, and an outwardly-closing check valve in the last-named coupling, for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN J. MOORE.

Witnesses:
WILLIAM O. ROBE,
V. E. BUSLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."