Dec. 13, 1938. W. C HAND 2,140,009

COSMETIC APPLICATOR

Filed Dec. 15, 1937

Fig. 1,

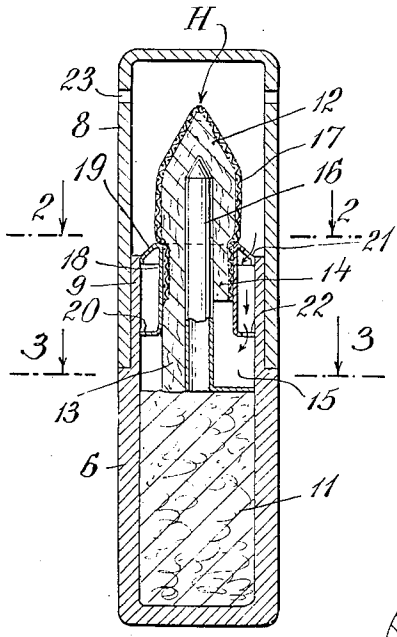


Fig. 4,

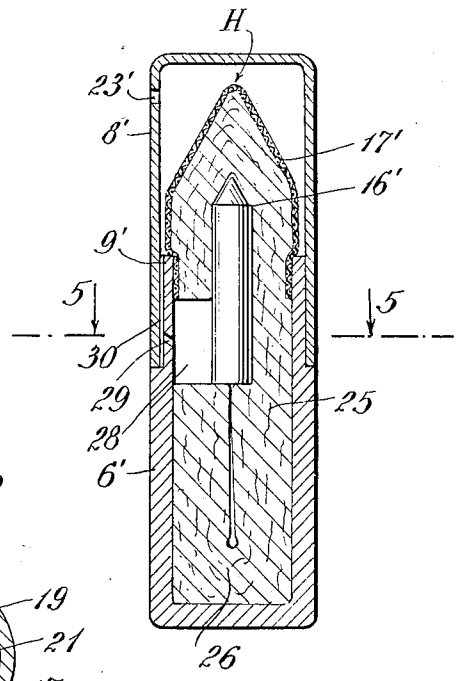


Fig. 2,

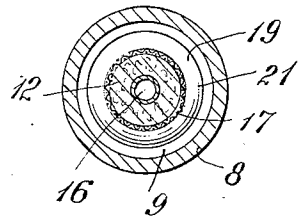


Fig. 3,

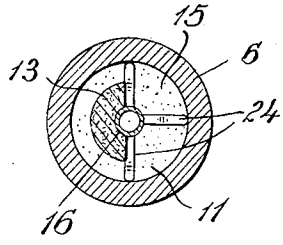
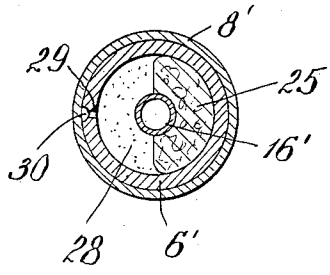


Fig. 5



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Patented Dec. 13, 1938 2,140,009

UNITED STATES PATENT OFFICE

2,140,009

COSMETIC APPLICATOR

Wilfred C. Hand, New York, N. Y.

Application December 15, 1937, Serial No. 179,924

14 Claims. (Cl. 91—67.4)

This invention relates to improvements in applicators and more particularly concerns an improved device suitable for use in the application of liquid cosmetic materials to the lips, skin, hair or other parts of the body.

Cosmetic coloring matter, such as rouge, lipstick, mascara, etc., is customarily furnished in cake, paste or other solid or semisolid form. The mode of application of these cosmetic colors is not wholly satisfactory. Lip coloring, for example, is usually applied by rubbing a wax-like stick on the lips. The consistency of the stick varies greatly with its temperature which results in the application of an excessive amount of the material when the stick is warm and makes application of an adequate amount difficult when it is cold. Further, the distal end of the stick becomes misshapen in use, particularly in warm weather, with the result that it is difficult to apply the material accurately to a limited area such as the lips. The foregoing and other disadvantages of solid and semisolid coloring cosmetics may be overcome by applying a cosmetic coloring in liquid form, and it is the object of the present invention to provide an improved dispenser or applicator for use with cosmetics of this type.

The applicator of the present invention comprises generally an absorbent material carrying the coloring cosmetic in liquid form and provided with an exposed applicator head of convenient and permanent size and shape. The features of the invention include a mass of absorbent material including or provided with an applicator head and a housing or container structure, the parts being so organized that the device may be carried in any position and at varying temperatures without danger of leakage and in condition for instant use. Other objects of the invention include the provision of a cosmetic applicator device which is simple in construction and inexpensive to manufacture and assemble, and which carries an ample supply of a liquid cosmetic substance.

In describing the invention in detail, reference will be made to the accompanying drawing in which;

Figure 1 is a sectional elevation of an applicator device embodying the invention;

Figure 2 is a sectional view taken along the line 2—2 of Figure 1 and viewed in the direction of the arrows;

Figure 3 is a sectional view taken along the line 3—3 of Figure 1 and viewed in the direction of the arrows;

Figure 4 is a sectional elevation of a modified form of applicator device embodying certain forms of the invention; and

Figure 5 is a sectional view taken along the line 5—5 of Figure 4 and viewed in the direction of the arrows.

Referring first to the embodiment of the invention illustrated in Figures 1 through 3, this device comprises generally an elongated housing or container 6 having an open upper end through which an applicator head H protrudes. The housing 6 may be formed of any liquid impervious material, such as metal or a plastic composition, and is preferably closed at its lower end as shown. A removable cap or cover 8 is preferably provided and in the disclosed embodiment, the cap frictionally engages a reduced portion 9 at the upper end of the housing 6.

In accordance with the invention, the liquid cosmetic is carried by absorbent material enclosed within the housing 6, and an air space is provided within the housing and is vented to the surrounding atmosphere so that upon a rise in the temperature of the device, the expansion of air in the housing cannot cause leakage of the cosmetic liquid. As shown in Figure 1, the absorbent material may comprise a mass 11 of a fibrous substance such as absorbent cotton which has the property of absorbing liquid in a considerable quantity. The absorbent material 11 is carried within and substantially fills the housing 6 to somewhat above its midpoint. The material 11 is preferably saturated with a liquid coloring material or other cosmetic, the amount of liquid carried thereby being insufficient to supersaturate the material 11 whereby the liquid cannot run by gravity or drip from the surface of the absorbent material.

An applicator head is formed integral with or disposed in contacting relation to the absorbent material 11. In the embodiment of Figure 1, the head comprises an elongated strip 12 of an absorbent material capable of rapidly transmitting liquid and readily giving up this liquid to surfaces with which it is brought in contact. The material of the strip 12 may be wool felt which transmits liquids quickly by capillary action, although wool felt is not capable of holding as much total liquid per unit volume as other absorbents, such as cotton. The strip 12 may be variously supported, and as shown, is doubled upon itself and so disposed that the doubled end extends outwardly through the upper opening of the housing 6. One leg 13 of the strip 12 extends downwardly into contact with the absorbent material 11 forming the liquid cosmetic reservoir

while the other leg 14 is preferably somewhat shorter, as shown. This arrangement leaves an air space 15 between the lower end of the leg 14 and the upper end of the reservoir absorbent material 11, the air space also extending about the lower end of the long leg 13.

The applicator head H may be formed by the reversely bent strip 12 alone but I generally prefer to employ a core or mandrel 16 within the strip to reinforce it and to give it the desired tapered shape at its distal end. The core 16 may be formed of any fairly rigid material and as shown, is a hollow metal rod with a pointed upper end. If desirable or necessary, the exposed portion of the absorbent material 12 forming the applicator head H may be enclosed in a liquid pervious envelope of silk, satin, leather or like material. Such an envelope has been shown at 17 in the drawing.

Various means may be employed to fix the applicator head in position in the opening of the housing 6. In the embodiment of Figure 1, this means comprises a sleeve 18 having outwardly extending flanges 19 and 20 at its upper and lower ends respectively. The applicator head H, comprising the absorbent strip 12 surrounding the core 16 and covered by the envelope 17, may be passed through the sleeve 18, and the sleeve then forced within the upper end of the housing 6, the edges of the flanges 19 and 20 tightly engaging the inner wall of the housing and firmly holding the head in place. In this assembled position of the parts, the long leg 13 of the strip 12 engages the upper surface of the absorbent material 11 so that the liquid is drawn therefrom into the absorbent material of the head H by capillary attraction.

In accordance with the invention, an air vent is provided connecting the space 15 with the surrounding atmosphere. In the embodiment shown in Figures 1 to 3, this is accomplished by forming openings 21 and 22 through the flanges 19 and 20 of the sleeve 18. As shown, particularly in Figure 2, these openings 21 and 22 may comprise semicircular or crescent shaped notches in the edges of the sleeve flanges 19 and 20 respectively. This arrangement permits air to escape from and enter the space 15 as the air is heated or cooled. Accordingly, the expansion of air accompanying a rise in temperature of the device cannot act to force the cosmetic liquid out of the applicator head H, and leakage of the liquid is prevented. To ensure proper venting of the housing when the cap 8 is in place, one or more breather holes 23 or equivalent openings may be provided through the cap.

It is preferred in some cases to provide means to ensure the maintenance of a free air space within the housing adjacent the vent openings thereof, and thus to prevent accidental blocking of these openings by the absorbent material. This may be accomplished by using absorbent cotton or similar material in the form of a cylindrical roll or an otherwise pre-formed mass as the reservoir absorbent 11. Another expedient is to employ the head core 16 or extensions thereof to hold the absorbent material 11 away from the vent openings 22 and such an arrangement is shown in Figures 1 and 3. Integral horizontally extending lugs or feet 24 are shown at the lower end of the core 16, these lugs extending over the upper end of the absorbent material 11 and holding it away from the vent opening 22.

A somewhat simplified form of device embodying the invention is shown in Figures 4 and 5. In this embodiment, a single strip of absorbent material 25, bent upon itself at both ends, forms both the absorbent reservoir and the applicator head of the device. The absorbent material used may be wool felt, absorbent cotton or the like. The lower doubled portion 26 of the strip 25 fits snugly within the lower part of the housing 6' and upper doubled end 27, forming the applicator head, protrudes from the upper open end of the housing and is preferably enclosed in a liquid pervious envelope 17'. A core 16' of solid or hollow construction is held between the doubled parts of the strip 25 at the head portion 27 thereof, and acts to reinforce the head and to wedge the strip in firm gripping contact with the inner wall of the housing 6' at its upper end. The ends of the strip 25 are spaced apart as shown to provide an air space 28 within the housing 6', and a vent opening 29 through the reduced portion 9' of the housing wall communicates with this space. The outer end of the opening 29 is connected to the space within the cap 8' by suitable means, such as the groove 30, and the cap 8' is provided with one or more breather holes or equivalent openings 23'. The lower end of the core 16' preferably rests against the upturned end of the lower portion 26 of the absorbent strip 25, thereby preventing the blocking of the vent hole 29 by this material.

In all forms of the device, the absorbent material, including the applicator head, is supplied with an amount of cosmetic liquid sufficient to saturate or substantially saturate the material as assembled in the housing, the amount of liquid being insufficient to drip or run from the surface of the absorbent material. When the device is carried and used, its temperature frequently increases. This temperature rise makes no appreciable change in the volume of the cosmetic liquid, but expands the air within the housing to a considerable extent. The expanding air finds a ready avenue of escape through the air space and vent openings described and the expulsion of liquid from the absorbent mass by air expansion is thus avoided.

The present invention may be applied to various forms of cosmetic applicators including the mascara type applicator described and claimed in my copending application, Serial No. 154,959, filed July 22, 1937.

I claim:

1. A liquid applicator device comprising a housing, a mass of liquid absorbent material enclosed in said housing and protruding therefrom, an air vent connecting the interior of said housing with the surrounding atmosphere, and means in said housing for holding said absorbent material away from said air vent.

2. A liquid applicator device comprising a housing having an opening therein, a mass of liquid absorbent material partly enclosed in said housing and partly protruding through and filling said housing opening, said protruding part of said absorbent material acting as an applicator head and the absorbent material within said housing substantially but incompletely filling the same, whereby an air space is provided within said housing, and means providing an air vent between the air space in said housing and the surrounding atmosphere.

3. A liquid applicator device comprising an elongated housing having an opening at one end thereof, a mass of liquid absorbent material in said housing and partly protruding through and filling said opening, a reinforcing core disposed

within said outwardly protruding mass of absorbent material and extending through said housing opening and into the interior of said housing, said core engaging the absorbent material within said housing and holding said material out of contact with a portion of the wall of said housing whereby a free air space is formed, and an air vent connecting said air space with the exterior of said housing.

4. A liquid applicator device comprising an elongated housing having an opening at one end thereof, a mass of liquid absorbent material substantially filling said housing and partly protruding through and filling said opening, a reinforcing core disposed within said outwardly protruding mass of absorbent material and extending through said housing opening and into the interior of said housing, said core engaging the absorbent material within said housing and holding said material out of contact with a portion of the wall of said housing whereby a free air space is formed, an air vent connecting said air space with the exterior of said housing and a cap removably secured to said housing over said air vent and enclosing said outwardly protruding absorbent material, said cap having a vent opening therethrough.

5. A liquid applicator comprising an elongated housing having an opening at one end thereof, a mass of absorbent material in said housing and extending outwardly through said opening to form an applicator head, a sleeve frictionally engaged between said absorbent material and said housing at said opening, said sleeve having a vent opening therethrough connecting the interior of said housing with the surrounding atmosphere, and means in said housing for holding the absorbent material therein away from the vent opening in said sleeve.

6. A liquid applicator comprising an elongated housing having an opening at one end thereof, a mass of absorbent material in said housing and extending outwardly through said opening to form an applicator head, sleeve means compressively engaged between said absorbent material and said housing at said opening, said sleeve means having a vent opening therethrough connecting the interior of said housing with the surrounding atmosphere, a reinforcing core within said absorbent material and extending through said housing opening, and means on said core within said housing for holding said absorbent material out of contact with the vent opening in said sleeve means.

7. A liquid applicator comprising an elongated housing having an opening at one end thereof, a mass of absorbent material in said housing and extending outwardly through said opening to form an applicator head, a reinforcing core extending within said absorbent material through said housing opening, laterally extending means on said core within said housing for holding said absorbent material out of contact with a portion of the housing wall whereby an air space is formed in said housing, and means forming a vent opening connecting said air space to the outside of said housing.

8. A liquid applicator comprising a housing having an opening therein, a reservoir mass of absorbent material of high liquid absorptive capacity in said housing, a mass of liquid absorbent material of lower liquid absorptive capacity and higher liquid transmitting capacity than said reservoir material extending from said reservoir mass through said housing opening and protruding therefrom to form an applicator head and a liquid substantially saturating said masses of absorbent material.

9. A liquid applicator comprising a housing having an opening therein, a reservoir mass of absorbent material of high liquid absorptive capacity in said housing, a mass of liquid absorbent material of lower liquid absorptive capacity and higher liquid transmitting capacity than said reservoir material extending from said reservoir mass through said housing opening and protruding therefrom to form an applicator head, means forming an air space within said housing and an air vent connecting such air space with the surrounding atmosphere.

10. A liquid applicator comprising a housing having an opening therein, a mass of absorbent cotton within said housing, a mass of wool felt extending from said absorbent cotton mass through said housing opening and protruding therefrom to form an applicator head, and a liquid substantially saturating said masses of absorbent cotton and wool felt.

11. A liquid applicator comprising a housing having an opening therein, a mass of absorbent cotton within said housing, a mass of wool felt extending from said absorbent cotton mass through said housing opening and protruding therefrom to form an applicator head, means forming an air space within said housing and an air vent connecting said air space with the surrounding atmosphere.

12. A liquid applicator comprising a housing having an opening therein, a strip of liquid absorbent material in said housing having a reversely bent end protruding through said opening and filling the same and a reversely bent end within said housing, the ends of said strip being spaced apart within said housing to form an air space therebetween and an air vent in said housing connecting said air space with the surrounding atmosphere.

13. A liquid applicator comprising a housing having an opening therein, a strip of liquid absorbent material in said housing having a reversely bent end protruding through said opening and filling the same and a reversely bent end within said housing, the ends of said strip being spaced apart within said housing to form an air space therebetween, reinforcing means passing through said housing opening within said protruding reversely bent end of said strip and engaging the inner end of said strip within said housing, and an air vent in said housing connecting said air space with the surrouding atmosphere.

14. A liquid applicator comprising a housing having an opening therein, a strip of liquid absorbent material in said housing having a reversely bent end protruding through said opening, reinforcing means passing through said housing opening within said protruding reversely bent end of said strip, said reinforcing means extending within said housing and engaging a portion of said absorbent material therein whereby said material is held out of contact with a portion of said housing wall, and an air vent connecting the interior of said housing with the surrounding atmosphere at the point where said absorbent material is held away from said housing wall.

WILFRED C. HAND.