May 24, 1938. W. C. HAND 2,118,083

LIQUID COSMETIC APPLICATOR

Filed July 22, 1937 2 Sheets-Sheet 1

Fig. 1,

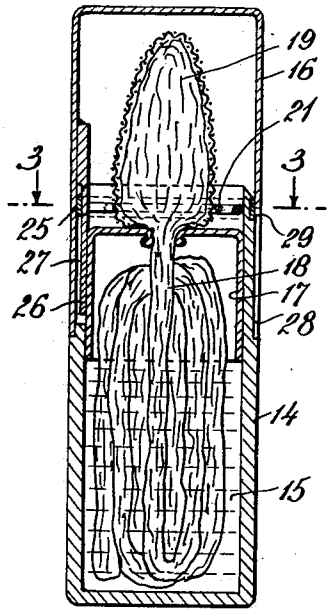


Fig. 2,

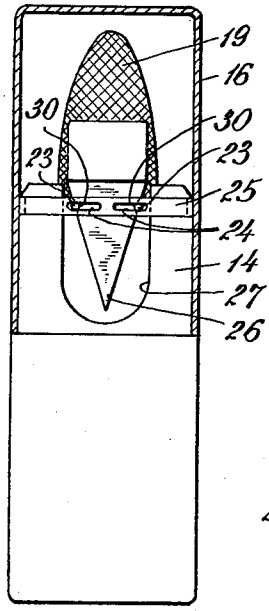


Fig. 3,

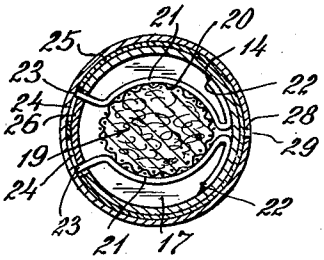


Fig. 4,

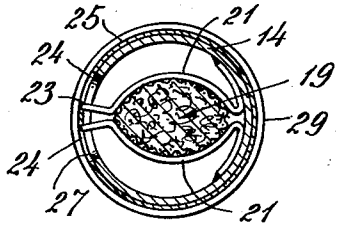


Fig. 5,

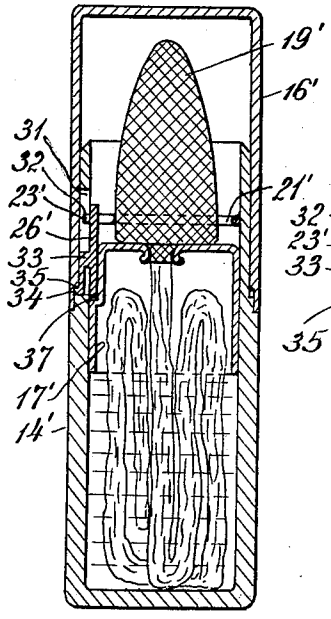
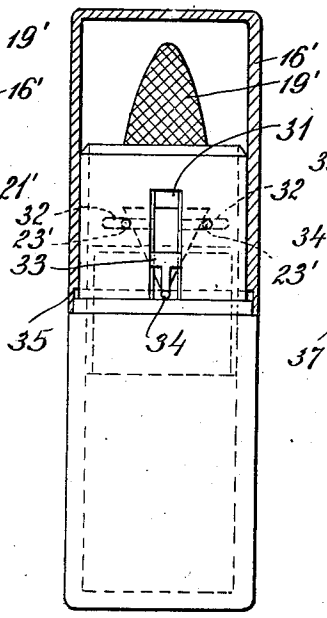


Fig. 6,



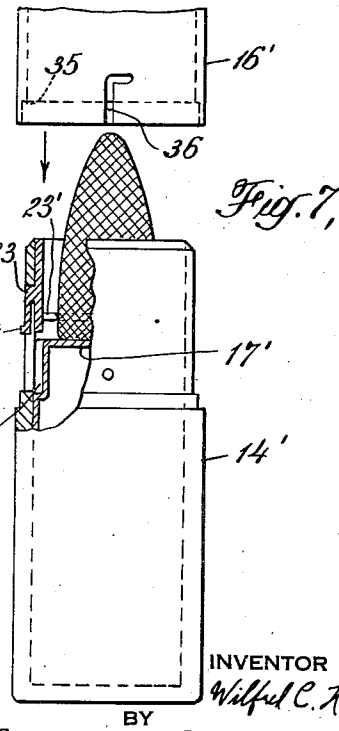


Fig. 7,

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Fig. 8.

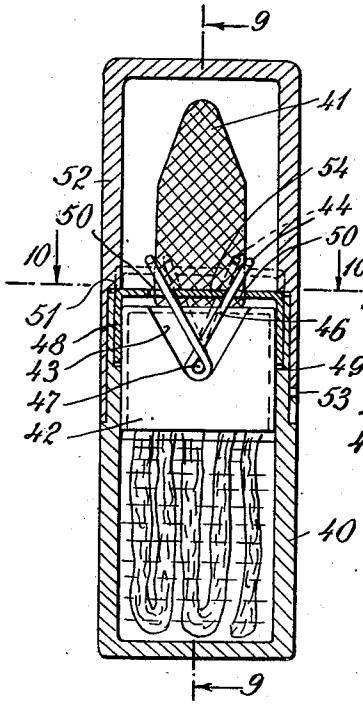


Fig. 9.

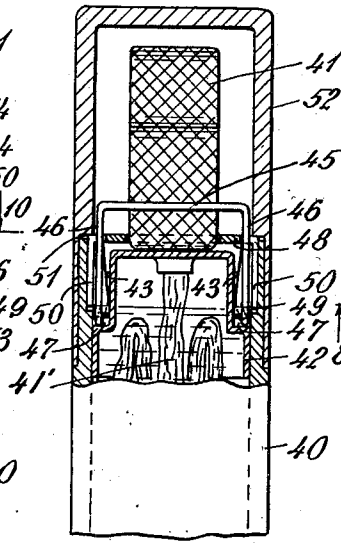


Fig. 10.

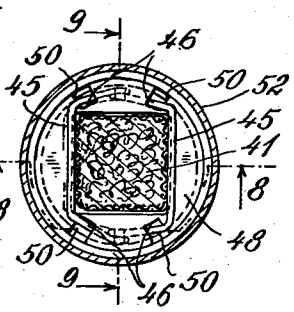


Fig. 12.

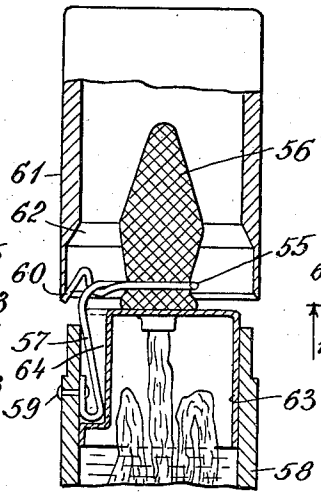


Fig. 11

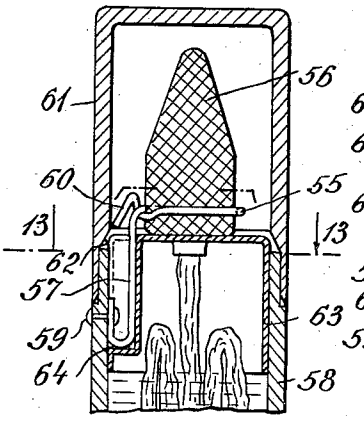
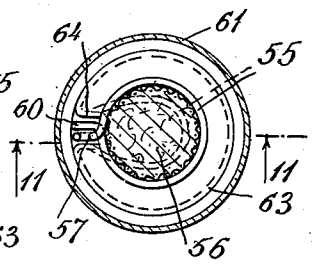


Fig. 13.



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Patented May 24, 1938

2,118,083

UNITED STATES PATENT OFFICE

2,118,083

LIQUID COSMETIC APPLICATOR

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

Application July 22, 1937, Serial No. 154,959

12 Claims. (Cl. 91—67.4)

This invention relates to liquid cosmetic applicators and more particularly concerns an improved device for readily applying cosmetic liquids to the hair, skin or other parts or appendages of the human body.

Coloring matter, such as mascara or dye, is customarily applied to the eyelashes and eyebrows by means of a brush or other moisture-absorbent implement. The cosmetic material carried by the implement is usually in the form of a viscous liquid or paste, a typical mascara comprising a solid block of carbon black or other pigment which is moistened and so placed in heavy suspension on a wet brush or dauber. Due to the flexibility of the hair and the tenacity with which the cosmetic composition adheres to the applying implement, it is quite difficult to apply the desired quantity of the material to the eyelashes or brows without at the same time smearing or spotting the mascara on the adjacent skin surfaces.

The present invention has for its object the provision of an improved type of liquid cosmetic dispenser and applicator by means of which the cosmetic may be quickly and accurately applied to the hair in the desired amounts without smearing the cosmetic on the skin. A further object of the invention is to provide a unitary applicator of the type indicated which carries a considerable supply of the cosmetic, which may be readily carried in the handbag or pocket without danger of leakage, and which is at all times ready for use without moistening or other preliminary operation.

In general, the above and other objects of the invention are carried out by providing an absorbent wick-type applicator, fixed to and supplied with liquid cosmetic from a suitable reservoir, and employing suitable means for compressing or squeezing the applicator head at a point adjacent its distal end whereby a droplet of the liquid with which it is saturated is exuded on its surface and is readily transferable to the hair without bending the hair down in contact with the adjacent skin. The applicator may take various forms but preferably comprises a mass of absorbent material such as cotton wicking enclosed in an envelope of textile fabric or other moisture-permeable material. The means for compressing the absorbent applicator may be controlled by the closure member or cap of the device so that the applicator is automatically compressed when the cap is removed. Other features of the invention will be apparent from the following description.

In describing the invention in detail, reference will be made to the accompanying drawings in which certain embodiments of the invention have been illustrated. In the drawings:

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

Figure 2 is a side elevation of the apparatus shown in Figure 1, with the cap shown in section;

Figure 3 is a cross section of the applicator taken along the line 3—3 of Figure 1, the applicator head-compressing means being shown in the inactive position;

Figure 4 is a cross section similar to Figure 3, showing applicator head-compressing means in the active or compressing position;

Figure 5 is a sectional elevation of a modified form of applicator device embodying the invention;

Figure 6 is a side elevation of the device of Figure 5;

Figure 7 is a front elevation of the device of Figure 5 with the cap removed, certain parts being shown in section;

Figure 8 is a sectional elevation of another modification of my improved applicator; taken along line 8—8 of Figure 10;

Figure 9 is a sectional side elevation of the applicator of Figure 8;

Figure 10 is a cross section of the device, taken along the line 10—10 of Figure 8;

Figures 11 and 12 are respectively sectional elevations of another modification of my improved applicator device, showing the compressing means in the active and inactive positions; and

Figure 13 is a cross sectional view of the applicator, taken along the line 13—13 of Figure 11.

Referring to Figures 1 through 4, the embodiment of the invention there illustrated comprises a base portion 14 forming a reservoir for the liquid cosmetic 15 and a cap 16 frictionally engaging a reduced end of the base portion. A closure 17 is pressed in or otherwise tightly secured to the upper end of the base 14, and an absorbent wick 18 passes through a central opening in this closure and is enlarged above the closure to form an applicator head 19. The lower end of the wick 18 is submerged in the liquid cosmetic 15 within the base reservoir 14. The applicator head is preferably formed by enclosing the enlarged upper end of the wick 18 in an envelope 20 of textile fabric or other moisture permeable absorbent material. The envelope 20 may be shaped as desired to form a rounded point at the distal end of the applicator head, as shown.

Suitable means are provided for compressing or squeezing the applicator head 19 at a point

below but adjacent its distal end whereby a quantity of the liquid cosmetic with which it is saturated may be exuded in a droplet on the surface thereof for ready application. In the form of the invention illustrated in Figures 1 through 4, this means is arranged to be automatically operated by the removal and replacement of the cap 16. To this end, a pair of springs 21 are respectively disposed on opposite sides of the applicator head 19 adjacent its base and are arranged as shown to move toward each other and so compress the head therebetween when the free ends of the springs are released. One end of each spring is reversely bent and secured to the inner surface of the base 14 by suitable means, such as soldering, as shown at 22. Each spring 21 has a free end 23 bent to extend substantially radially outward through a slot 24 in a band 25 which is fixed about the base 14 adjacent its upper edge.

The springs 21 are operated by a wedge 26 secured to the cap 16. A recess 27 is providcd in the base portion 14 to accommodate the wedge 26 when the cap is in place, as shown in Figure 2. The wedge 26 is integral with or fixed to the inner surface of the cap 16, the pointed end of the wedge being disposed downwardly as shown.

When the cap 16 is applied to the base 14, the wedge 26 engages and separates the free ends 22 of the springs 21 and so moves these springs apart, releasing the squeezing pressure on the applicator head 19. Upon removal of the cap 16 from the base 14, the wedge 26 releases the spring ends 22 and the springs 21 move toward each other and compress the applicator head 19 therebetween, whereupon liquid is exuded on the surface of the applicator head.

A slot 28 is preferably cut in the cap 16 for engagement with a pin 29 on the band 25, the arrangement of these parts being such that the cap can only be slipped on the base in the position in which the point of the wedge 26 passes between the spring ends 23. If desirable or necessary, notches 30 may be formed in the edges of the wedge 26 for engagement by the spring ends 23 when the cap is in the fully applied position. Such notches prevent the movement of the cap by the compressive action of the springs.

In a modified form of the device illustrated in Figures 5 through 7, the wedge is carried by the base member. As shown in Figures 5 and 6, the base member 14' is provided with a vertical slot 31 and inner horizontal grooves 32. The ends 23' of the springs 21' ride in the grooves 32, and a wedge 26' is slidably carried by a part 33 extending through and slidably carried in the vertical slot 31. The sliding part 33, which may be integral with or secured to the wedge 26', is preferably provided with outwardly diverging side edges which engage the diverging walls of the slot 31 and so hold the wedge 26' in place. A small lug 34 on the slider 33 lies in the path of a shoulder 35 near the lower edge of the cap 16'. A recess 37 is formed in the side of the base reservoir closure 17' for the reception of the wedge 26' as shown.

In operation of the device of Figures 5 through 7, the removal of the cap 16' releases the wedge 26' which is then moved upward by the force of the spring ends 23' on the tapered edges of the wedge. The springs 21' move together and squeeze the applicator head 19', whereby liquid cosmetic is exuded on its surface. When the cap 16' is replaced, its shoulder 35 engages the lug 34 and so moves the wedge 26' downward between the spring ends 23', whereby the springs 21' are separated and the squeezing pressure on the applicator head 19' is released. The cap 16' may be held in place on the base 14' by suitable means such as a bayonet joint 36 in Figure 7. Such bayonet joint connection may in some cases be necessary so that the action of the springs 21' on the wedge 26' cannot force the cap off.

In a further modification of the invention, shown in Figures 8 through 10, a spring which embraces the applicator head is employed. The base reservoid 40 carries a wick fed absorbent applicator head 41 of substantially rectangular cross section. The applicator head is supported on a closure member 42 having upwardly divergent opposite side wall recesses 43. As in the previously described modification, the applicator head 41 is supplied with liquid cosmetic from the base reservoir 40 through a suitable wick 41'. The spring member 44 is bent to provide horizontal arms 45 engaging opposite sides of the applicator head 41, and downwardly extending portions 46 which are looped over trunnion pins 47 near the lower ends of the recesses 43, as shown. The spring 44 is so biased that its horizontal arms 45 tend to resiliently compress the applicator head 41 therebetween.

A cup-shaped operating member 48 is slidably mounted in a recess 49 within the upper end of the base 40, and the vertical portions 46 of the spring 44 extend through slots 50 in the member 48, as shown. With this arrangement, the portions 54 of the operating member 48 lying between each pair of divergent spring arms 46 act as wedges to separate these arms and so move the horizontal spring arms 45 apart when the member 48 is pressed downwardly.

The operating member 48 is engaged by a shoulder 51 on the cap 52 and is pressed down when the cap is applied to the base 40. A bayonet joint 53 is preferably provided to hold the cap 52 in place. With the cap 52 in place, the spring arms 45 are separated as described and assume the positions shown in full lines in Figure 8, relieving the applicator head 41 of squeezing pressure. When the cap 52 is removed, the vertical spring arms 46 move toward each other, moving the wedge part 54 of the member 48 upwardly, and the horizontal spring arms 45 move together to the positions shown in dotted lines in Figure 8. This squeezes the applicator head 41 and causes it to exude the liquid cosmetic with which it is saturated, whereby the cosmetic can be easily applied to the eyelashes or elsewhere.

In the form of the invention illustrated in Figures 11 through 13, the spring-compressing means is released by lateral pressure and accordingly, removal of the cap by the spring is obviated. The spring employed in this embodiment comprises a loop 55 encircling the applicator head 56 and having a depending end 57 which is reversely bent and secured to the wall of the base member 58 by a rivet 59 or other suitable means. The free end 60 of the spring terminates in a downwardly inclined portion extending horizontally outward to a point in the path of the lower edge of the cap 61. The cap 61 is provided with an inclined shoulder 62 on its inner surface which engages the free spring end 60 and moves it inwardly when the cap is applied. In this position of the cap 61 and spring end 60, which is shown in Figure 11 and by the full lines in Figure 13, the spring loop 55 is distended and no squeezing compression is applied to the applicator head 56. When the cap 61 is removed, the spring end

60 moves laterally outward and the loop 55 is reduced in diameter as shown by the dotted lines in Figure 12. This compresses the applicator head 56 and exudes on its surface a droplet of the cosmetic with which it is saturated. The closure member 63 for the base reservoir 58 is provided with a side recess 64 to accommodate the fixed spring end 57.

My improved apparatus is extremely effective in applying mascara or similar cosmetic material to the eyebrows and eyelashes. The formation of a droplet of liquid on the surface of the applicator head permits the application of the cosmetic to the hair in the desired quantity without appreciable pressure, and flattening of the hair on the skin surface or smearing the cosmetic on the skin is avoided. In the preferred forms of the invention illustrated, the applicator head compressing means operates automatically when the cap is removed, and automatically releases the applicator head to reabsorb the liquid when the cap is replaced, and in this manner, leakage of the cosmetic is avoided.

Although my invention is particularly useful in the application of mascara to eyelashes and eyebrows, it may, of course, be used for the application of other liquids to other surfaces or objects. Further, the applicator head compressing means may be operated manually rather than automatically by the cap of the device.

I claim:

1. A cosmetic dispensing applicator comprising a liquid absorbent applicator head, means for saturating said head with a cosmetic liquid and releasable means for constricting said head whereby said liquid cosmetic may be exuded on the surface of said head.

2. A cosmetic dispensing applicator comprising a liquid absorbent applicator head, means for saturating said head with a cosmetic liquid, spring means for resiliently constricting said head whereby liquid is exuded on the surface thereof, and means for releasing said spring-constricting means whereby the liquid is reabsorbed by said head.

3. A cosmetic dispensing applicator comprising a reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said reservoir, wick means for supplying liquid cosmetic from said reservoir to said head, and releasable means for constricting said head whereby the liquid cosmetic with which it is saturated may be selectively exuded on the surface thereof and absorbed into the interior thereof.

4. A cosmetic dispensing applicator comprising a reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said reservoir, wick means for supplying liquid cosmetic from said reservoir to said head, spring means biased to resiliently squeeze said applicator head whereby a liquid is exuded on the surface thereof, and means for releasing said spring means whereby said head may expand and reabsorb the liquid from its surface.

5. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, means for feeding liquid cosmetic from said base reservoir to said applicator head, and means operated by said cap for constricting said head when said cap is removed whereby liquid cosmetic is exuded on the surface of said head and for releasing said head when said cap is in place whereby the liquid on the surface of said head is reabsorbed.

6. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, wick means for supplying liquid cosmetic from said base reservoir to said applicator head, spring means biased to constrict said applicator head whereby liquid is exuded on the surface thereof, and means operated by said cap when applied to said base reservoir for releasing said spring means whereby liquid exuded on the surface of said head may be reabsorbed.

7. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, means for feeding cosmetic liquid from said base reservoir to said applicator head, oppositely disposed spring means on said base reservoir biased to resiliently constrict said applicator head therebetween and wedge means operated by the application of said cap to said base reservoir for separating said spring means and so releasing the constriction of said head.

8. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, means for feeding cosmetic liquid from said base reservoir to said applicator head, oppositely disposed spring means on said base reservoir biased to resiliently constrict said applicator head therebetween and wedge means on said cap for separating said spring means and so releasing the constricting on said head when said cap is applied to said base reservoir.

9. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, means for feeding cosmetic liquid from said base reservoir to said applicator head, oppositely disposed spring means on said base reservoir biased to resiliently constrict said applicator head therebetween, movable wedge means carried by said base reservoir for separating said spring means and so releasing the constriction on said head, and means on said cap for operating said wedge means to release said constriction when said cap is applied to said base reservoir.

10. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, means for feeding cosmetic liquid from said base reservoir to said applicator head, spring means carried by said base reservoir disposed on opposite sides of said applicator head and biased toward each other to constrict said applicator head therebetween, wedge means movably supported on said base reservoir and disposed between said spring means and means on said cap for engaging and

moving said wedge means to separate said spring means when said cap is applied to said base reservoir, whereby said head is compressed and exudes liquid on the surface thereof when said cap is removed and such compression is released and said head reabsorbs the exuded liquid when said cap is applied.

11. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, means for feeding cosmetic liquid from said base reservoir to said applicator head, a spring loop carried by said base reservoir surrounding said applicator head and biased to resiliently constrict said head at a point spaced from the distal end thereof and means on said cap for distending said spring loop and thus releasing the constriction of said head when said cap is applied to said base reservoir.

12. A cosmetic dispensing applicator device comprising a base reservoir for liquid cosmetic, a liquid absorbent applicator head carried by and extending from said base reservoir, a cap removably engageable with said base reservoir for enclosing said applicator head, means for feeding cosmetic liquid from said base reservoir to said applicator head, a spring loop carried by said base reservoir surrounding said applicator head and biased to resiliently constrict said head whereby liquid is exuded on the surface of said head and means on said cap for distending said spring loop by lateral movement of one end thereof and thus releasing the constriction of said head when said cap is applied to said base reservoir.

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