

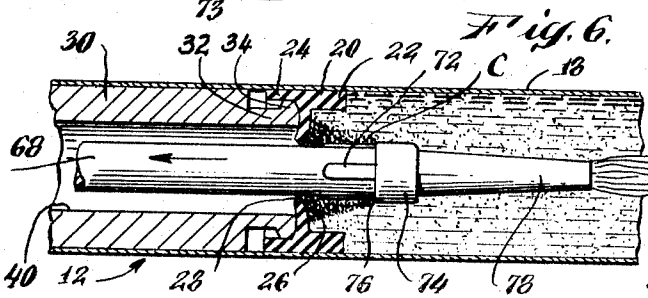
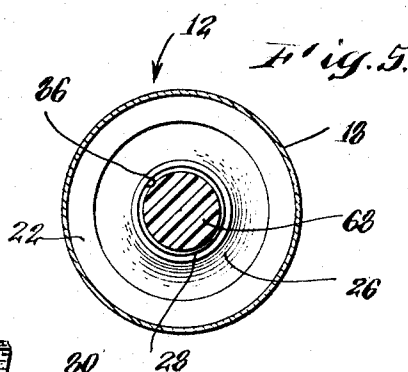
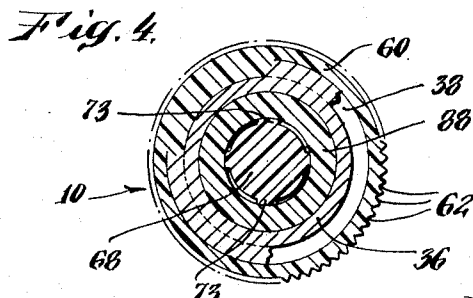
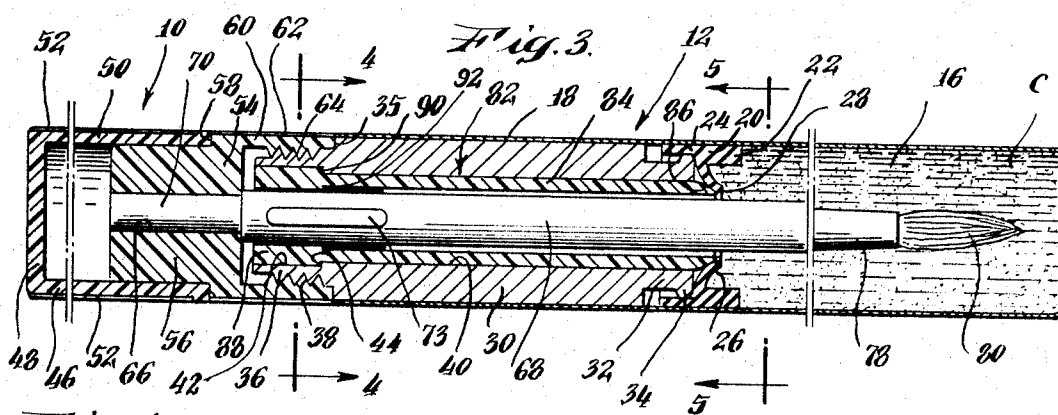
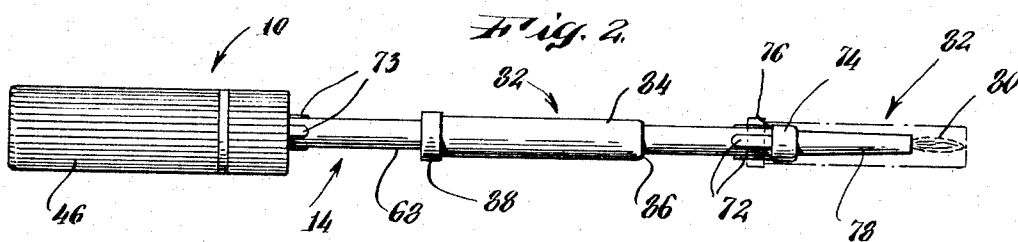
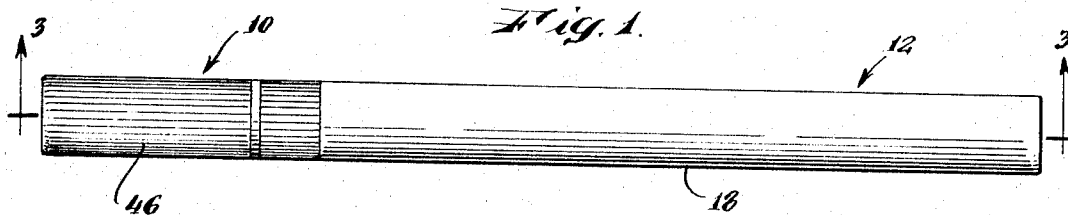
Dec. 10, 1968

W. S. AHRENS ET AL

3,415,604

COSMETIC APPLICATOR

Filed Sept. 12, 1966



INVENTOR.

BY *Warren S. Ahrens & Daniel A. Viro*
Wooster, Davis & Cipelli
 ATTORNEYS.

1

2

3,415,604

COSMETIC APPLICATOR

Warren S. Ahrens, Milford, and Daniel A. Viera, Monroe, Conn., assignors to The Bridgeport Metal Goods Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut

Filed Sept. 12, 1966, Ser. No. 578,754

10 Claims. (Cl. 401-122)

ABSTRACT OF THE DISCLOSURE

An improved liquid cosmetic container and applicator brush. The applicator brush is provided with a slidable sleeve so that the bristles are protected from splaying and deformation upon insertion of the brush through wiping means positioned at the entrance of the liquid cosmetic container.

This invention relates to a cosmetic applicator device including both a liquid cosmetic container and an applicator brush and, more particularly, to a self-contained liquid eye liner cosmetic applicator. The invention will herein be described with particular reference to an eye liner applicator; however, it is also applicable for use with other types of liquid cosmetics.

Eye liner applicators are utilized to apply variously colored cosmetic pigments about the eyes of the user in order to high-light the shape, size and color of the eyes. One form of prior art eye liner applicator is a marking pencil which is in the form of the usual wood clinched writing pencil differing only in the size and softness of the marking substance. This type of applicator must be periodically sharpened to maintain the desired applicator tip. Another form, considered by many users to be an improvement on the marking pencil, is the combination of a fine applicator brush and a small bottle of liquid cosmetic. This two-element applicator must be carried separately by the user who must perform several operations in order to apply the cosmetic, namely: (1) uncapping the bottle; (2) propping the bottle; (3) inserting the brush into the bottle into the cosmetic; (4) wiping off the excess cosmetic from the brush, and finally (5) applying the cosmetic with the brush. This second form, utilizing a brush, is often preferred, since a fine uniform line of cosmetic may be applied by the user, depending, of course, on the quality of the brush.

Both prior art devices possess disadvantages. The marking pencil type must be sharpened regularly, causing its length to decrease and making it increasingly difficult to handle. Furthermore, since the marking substance in the pencil is solid, it does not always apply smoothly with a minimum of applying pressure, and any increase in pressure may cause irritation of the skin of the user. The brush type, on the other hand, is more comfortable to use, but as its use requires incorporation with a separate bottle of liquid cosmetic, misplacement of the bottle often renders the two-element device inoperative, and accidents often occur due to spillage of the contents from an upset bottle. Furthermore, an accumulation of the liquid cosmetic on the ferrule and shaft of the brush may build up during use of the brush, which can drip onto the soil the clothing of the user.

Accordingly, it is a primary object of this invention to provide an improved cosmetic, such as eye liner, applicator which has significant advantages over both the prior art forms of eye liner applicators, being in the form of a self-controlled decorative unit of elongated shape which includes both an applicator brush and a liquid cosmetic container.

Another object is to provide an improved cosmetic ap-

plicator as set forth in the preceding paragraph with wiping means for removing any accumulation of liquid cosmetic from the shaft and the ferrule of the brush.

Still another object is to provide an improved cosmetic applicator as set forth in the preceding paragraph with a protective means wherein the bristles of the brush are protected and prevented from splaying and being deformed upon insertion of the brush through the wiping means and into the liquid cosmetic container.

To accomplish these objects, in one form, an eye liner cosmetic applicator is provided which comprises: a casing open at one end and closed at the other, within which is contained a liquid pigmented cosmetic; a resilient annular closure-wiping means firmly secured within the casing and arranged to retain the cosmetic adjacent the closed end of the casing; a detachable cap for threaded engagement with the open end of the casing; a shaft secured to the cap and extending therefrom and including brush bristles at its end; and a protective sleeve-like shield reciprocally mounted on the shaft for protecting the brush bristles in such a manner that the brush bristles may be shielded from interfering contact with the resilient annular closure-wiping means when the brush is inserted into the liquid cosmetic.

Other objects and further details of that which we believe to be novel and our invention will be clear from the following description and claims taken with the accompanying drawing, wherein:

FIG. 1 is a side elevational view of a unitized eye liner applicator incorporating the present invention;

FIG. 2 is a side elevational view of the cap of the eye liner applicator of the present invention showing the integral applicator brush;

FIG. 3 is an enlarged sectional view taken substantially along the line 3-3 of FIG. 1 and showing the cap attached to the casing, with the brush inserted into the liquid cosmetic chamber;

FIG. 4 is a sectional view taken substantially along the line 4-4 of FIG. 3 and showing the friction ribs upon which the protective sleeve-like shield is mounted;

FIG. 5 is a sectional view taken substantially along the line 5-5 of FIG. 3;

FIG. 6 is a fragmentary side elevational view showing the wiping action of the resilient annular closure means as the applicator brush is withdrawn from the liquid cosmetic chamber.

With particular reference to the drawing there is illustrated a decorative eye liner applicator which incorporates the present invention, comprising a cap 10 and a casing 12. The cap 10 carries the brush 14, which comprises a shaft that is integral therewith and supports brush bristles. The casing 12 includes a chamber 16 for containing the liquid cosmetic C. The cap and the casing are arranged to be selectively mated, as shown in FIGS. 1 and 3, causing the brush bristles of brush 14 to be disposed within the chamber 16.

The casing 12 includes a thin-walled metal cylindrical member 18 open at one end and closed at the other. The chamber 16 is defined by the closed end of the member 18, approximately 75% of the length of member 18 adjacent thereto and a resilient annular closure 20. Closure 20, made of a resilient material, such as natural or synthetic rubber, comprises an annular member having a thick annular portion 22 facing the closed end of the casing and a thin annular portion 24 facing the open end. Intermediate these portions is an inwardly disposed flange or wafer-like wiper 26 having a small central aperture 28 passing therethrough which is substantially smaller than the diameter of the brush shaft or the diametral outline of the aggregate brush bristles. The closure permits passage of the forward portion of brush 14 into

the chamber 16 while preventing spillage of the contents from the chamber.

Also located within the cylindrical member 18 is a cylindrical plug 30, preferably constructed of metal, having a reduced diameter cylindrical boss 32 at one end thereof which terminates in an outwardly extending circumferential flange 34. At the other end of the plug 30 is another reduced diameter cylindrical boss 36 which is externally threaded at 38. An annular shoulder 35 extends inwardly from the outer diameter of the plug 30 to the cylindrical boss 36. The plug 30 is provided with a central passage 40 extending through substantially the entire length of the plug 30. Internally of the boss 36, the passage 40 communicates with an enlarged bore 42, and an annular shoulder 44 extends from the bore 42 to the passage 40.

The cylindrical plug 30 is securely maintained within the cylindrical member 18 by the resilient annular closure 20. To assemble these parts, the thin annular portion 24 of closure 20 is placed over the circumferential flange 34 of plug 30 so that the end of the plug 30 is contiguous with the wiper 26, and these two parts are inserted into the member 18 by the application of a great pressure so that the annular closure 20 is press fit within the member 18, securing along with it the plug 30.

The cap 10 comprises a cup-shaped member 46, made of a suitable plastic material, having an end wall 48 and a cylindrical wall portion 50. The exterior surface of the wall 50 has a knurled portion 52 for ease in handling. A cap plug 54 having a cylindrical extension 56 is press fit into the open end of the cap 46 or secured therein in some other suitable manner. Engagement of the cap plug 54 and the member 46 is limited by a shoulder 58, which extends from the cylindrical extension 56 to its outer cylindrical surface 60 which is of the same outer diameter as the cap 46 and is also provided with a knurled surface 62 so as to give the appearance of being an extension of the cup-shaped member 46. The cap plug is internally threaded at its leading end 64, for selective threaded engagement with the cylindrical plug 30 of the casing 12 in operation. The cap plug 54 is further provided with an axial bore 66 for receiving and anchoring an end of the brush 14.

The brush 14 comprises a shaft 68 made of a suitable plastic material and of uniform diameter having a smaller diameter extension 70 at one end which is firmly secured, in any suitable manner, in the axial bore 66 of the cap plug 54. As can be readily seen in FIGS. 2 and 3, the shaft 68 is provided with two longitudinally spaced sets of integrally formed, raised, friction ribs 72 and 73, each comprising four longitudinal ribs circumferentially spaced approximately 90° apart. It is, of course, apparent that fewer or more ribs may be present in each set. Located at the forward end of the shaft 68 is an integral collar 74 defining a shoulder 76 extending from the outer diameter of the collar to the uniform diameter portion of shaft 68. Secured on the forward end of the shaft 68 is a ferrule 78 mounted thereon in any suitable manner, as by crimping or friction fit, for securing the brush bristles 80 to the shaft.

A protective sleeve-like shield 82, mounted upon the shaft 68 for longitudinal reciprocation thereon, includes a tubular body portion 84 having an inner diameter which is slightly larger than the uniform diameter portion of the shaft 68, and an outer diameter which is slightly smaller than the passage 40 through the cylindrical plug 30. The sleeve 82 is provided with a rounded leading end 86, and a radially enlarged collar 88 at its trailing end. The collar 88 has both a larger outer diameter and a smaller inner diameter than the tubular body 84, thus providing an outer motion-limiting shoulder 90 and an inner motion-limiting shoulder 92. Furthermore, it should be appreciated that the inner diameter of the collar 88 is of a size as to allow the collar to frictionally engage the friction ribs 72 and 73 for enabling the protective

shield 82 to be seated in one of two longitudinally spaced positions, i.e. at the rear of the shaft 68 as shown in FIG. 3, or at the forward end of the shaft 68 as shown in dot-dash lines in FIG. 2. The length of the protective shield 82 is selected to be such that, when it is in position within the plug body 30, with the outer motion-limiting shoulder 90 abutting the shoulder 44, the rounded leading end 86 will displace the wiper 26 as shown in FIG. 3, allowing the brush bristles 80 to be freely inserted into the chamber 16.

Having described our invention as incorporated in an eye liner applicator, it will be readily appreciated that when the brush 14 is inserted into the casing 12, it is possible to damage the brush bristles 80 by forcing them through the small aperture 28 in the wiper 26, which is smaller in diameter than the outline of the brush bristles. For this reason, we have provided the reciprocable protective sleeve-like shield 82 for protecting the brush bristles 80. In operation, immediately prior to inserting the brush 14 into the casing 12, the user advances the shield 82 to its forwardmost position on shaft 68 as limited by the interference of the inner motion-limiting shoulder 92 and the shoulder 76 on collar 74 (shown in dot-dash lines in FIG. 2) where it surrounds the brush bristles and will be retained upon the friction ribs 72. In this manner, when the brush 14 is inserted into the open end of casing 12, the shield 82 will also be jointly inserted therewith in an overlying and protective relationship to the brush bristles 80. The advance of the shield 82 into the casing 12 will be limited by engaging interference of the casing plug shoulder 44 and shield shoulder 90, at which point the leading end 86 of the sleeve will have engaged and displaced the central portion of the wiper 26 sufficiently for the brush bristles, thereafter, to be inserted into the liquid cosmetic without being damaged. Continued advancing of the brush 14, until limited by the complete engagement of the cap 10 and the casing 12, causes shaft 68 to move within shield 82 and the shield to be moved off of the forward friction ribs 72 and slid along the shaft 68 until it is seated on the rearward friction ribs 73. Thus, it is apparent that the shield will be in its rearwardmost position, as shown in FIG. 3, when the brush is fully inserted into the casing, hence at the time it is removed from the casing. The shield is retained there against sliding upon the shaft when in use, thereby being out of the way and free of the brush bristles when it is desired to use the brush to apply the cosmetic. Prior to reinserting the brush into the casing, it is necessary to manually slide the shield 82 to its forwardmost position on the shaft 68 onto the forward friction ribs 72.

Since the central aperture 28 through the wiper 26 is substantially smaller than the shaft 68, it will be apparent that the rim of the hole will tightly engage the shaft upon retraction of the brush 14 from the casing 12. As illustrated in FIG. 6, the wiper 26 is caused to buckle rearwardly when the brush 14 is withdrawn from the casing, and the tightly engaging rim of the deformed central portion of the wiper serves to remove any accumulation of liquid cosmetic C off of the shaft and brush bristles, causing the latter to be compressed into a sharply pointed brush point.

It should be understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the true spirit and scope of the invention, as hereinafter claimed.

What we claim as new and desire to secure by Letters Patent of the United States is:

1. A liquid cosmetic applicator comprising: a tubular casing having an open end and a closed end; a resilient closure having a central aperture therethrough firmly secured within said casing intermediate its ends and defining therewith a liquid cosmetic chamber for retaining

5

and storing liquid cosmetic; a detachable cap for closing the open end of said casing; a shaft, one end of which is secured to said cap and having brush bristles secured at the other end arranged for insertion through said resilient closure and into said liquid cosmetic chamber; and selectively operable reciprocable protecting means mounted on said shaft and positionable for shielding said brush bristles when they are passed through said resilient closure into said liquid cosmetic chamber.

2. The liquid cosmetic applicator defined in claim 1 wherein said resilient closure comprises an annular ring and a wafer-like wiper portion depending therefrom and defining said central aperture therethrough, said aperture, when said wiper portion is undeformed, being smaller than the diameter of said shaft and the outline of said brush bristles.

3. The liquid cosmetic applicator defined in claim 1 wherein said shaft includes friction means for selectively seating said reciprocable protecting means in either one of two longitudinally spaced positions on said shaft, so that in one of the positions said protecting means surrounds and protects said brush bristles and in the alternative position said protecting means is retracted to allow free application by said brush bristles of the liquid cosmetic.

4. The liquid cosmetic applicator defined in claim 3 wherein said friction means comprises a plurality of longitudinal ribs formed on and spaced about the circumference of said shaft at each of the two positions.

5. The liquid cosmetic applicator defined in claim 1 wherein said shaft includes an enlarged collar at its forward end for limiting the forward longitudinal motion of said protecting means when said protecting means is moved to its forwardmost position to protect said brush bristles.

6. The liquid cosmetic applicator defined in claim 5 wherein said protecting means comprises a cylindrical shield having a motion-limiting shoulder at its trailing end for coaction with said enlarged collar for limiting the forward movement of said shield on said shaft.

7. The liquid cosmetic applicator defined in claim 1 wherein said protecting means comprises a cylindrical shield selectively reciprocably mounted upon said shaft.

6

8. The liquid cosmetic applicator defined in claim 7 wherein: said shaft includes friction means for seating said cylindrical shield in one of two longitudinally spaced positions, and said shaft is further provided with an enlarged collar at its forward end for limiting the forward movement of said cylindrical shield, so that in its forwardmost position, as limited by said collar, said cylindrical shield surrounds and protects said brush bristles, and in the alternative position the cylindrical shield is retracted to allow free application of the liquid cosmetic by said brush bristles.

9. The liquid cosmetic applicator defined in claim 1 further including a cylindrical plug having a portion disposed within said casing and engaging said resilient closure cooperating to mount both said plug and closure in said casing, said plug having a central axial passage therethrough being large enough to receive said shaft with said protecting means seated thereon, and including means for limiting the entrance of said protecting means into said casing.

10. The liquid cosmetic applicator defined in claim 9 wherein: said cylindrical plug includes an enlarged central bore adjacent the open end of said casing and said limiting means includes a shoulder extending from said bore to said central axial passage; and said protecting means includes a cylindrical shield having a motion-limiting collar at its rearward end for interfering with said shoulder to limit entry of said shield into said cylindrical plug, the parts being dimensioned so that in this position the forward end of said sleeve causes said resilient closure to be displaced to allow entry of said shaft and said brush bristles into the liquid cosmetic chamber.

References Cited

UNITED STATES PATENTS

2,736,050	2/1956	Lee	401—122
2,774,093	12/1956	King	401—122
3,084,374	4/1963	Ziegler	401—122
3,280,421	10/1966	Davidson	401—122

LAWRENCE CHARLES, *Primary Examiner.*