

Nov. 2, 1965

E. J. MASTERS ETAL

3,214,782

MASCARA APPLICATOR

Filed Jan. 16, 1964

2 Sheets-Sheet 1

Fig. 1.

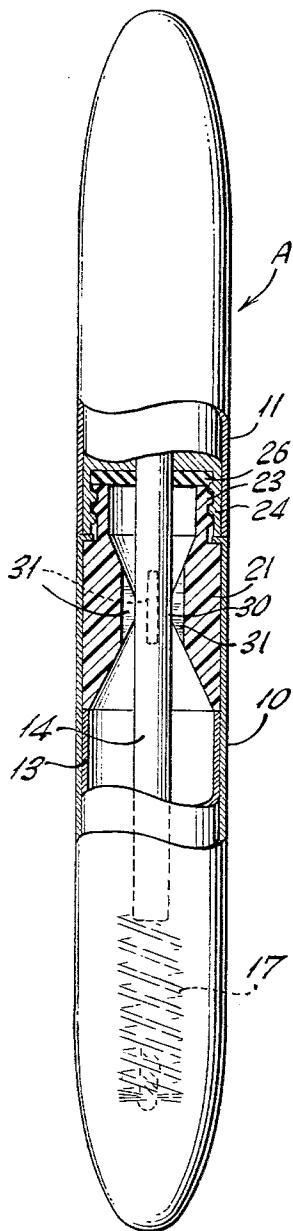


Fig. 2.

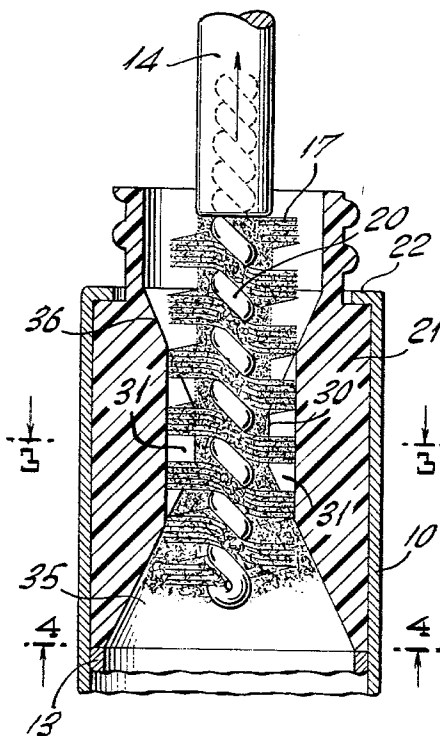
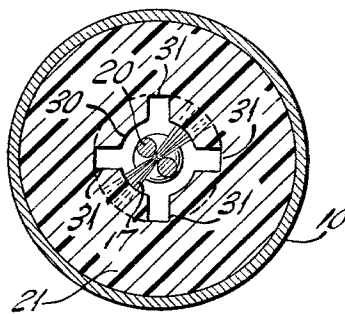


Fig. 3.



INVENTORS
EDWARD J. MASTERS
MARIA PALMERIO
BY VICTOR SILSON
Burgen, Ryan & Hicks
ATTORNEYS

Nov. 2, 1965

E. J. MASTERS ETAL
MASCARA APPLICATOR

3,214,782

Filed Jan. 16, 1964

2 Sheets-Sheet 2

Fig. 4.

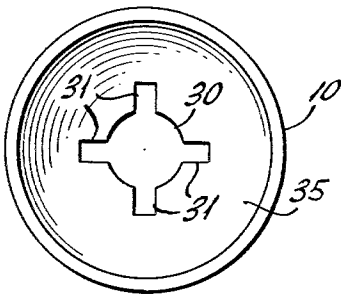


Fig. 5.

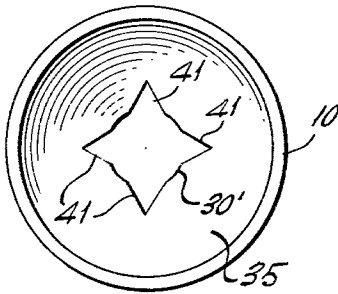


Fig. 6.

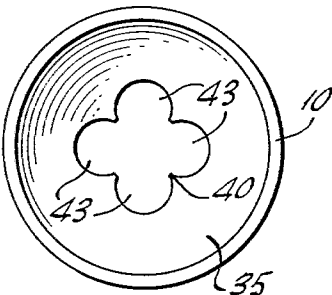


Fig. 7.

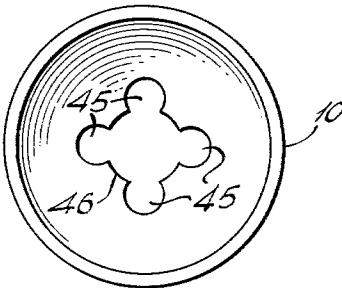
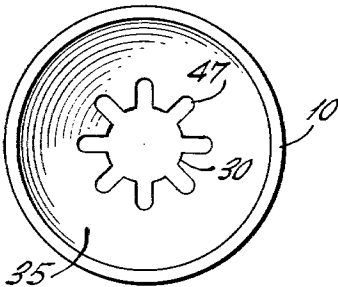


Fig. 8.



INVENTORS
EDWARD J. MASTERS
MARIA PALMERIO
BY VICTOR SILSON
Burgess, Ryan & Hicks
ATTORNEYS

1

3,214,782

MASCARA APPLICATOR

Edward J. Masters, Roslyn, and Maria A. Palmerio and Victor Silson, New York, N.Y., assignors to Helen Rubinstein, Inc., New York, N.Y., a corporation of New York

Filed Jan. 16, 1964, Ser. No. 338,180

10 Claims. (Cl. 15—521)

The present invention has to do with a cosmetic storage and applying device equipped with a reservoir for storing a fluent cosmetic, a brush for applying the cosmetic, and a stripping or metering device at the top of the reservoir for metering the amount of cosmetic permitted to remain on the brush as the brush is drawn through the metering device in removing it from the reservoir.

Heretofore it has been known to use a metering device for a threaded applicator rod or a brush which device consists of an annular insert, bushing or washer. Such devices are usually made of flexible material, such as rubber or rubber-like plastic, although they also may be made of metal where the applicator is a brush. One of the shortcomings of the prior art type of metering device when used with a brush applicator, is that it strips or removes the fluid from the outer ends of substantially all of the bristles of the brush. This is not desirable because some of the fluent cosmetic should be on the ends of some of the bristles in order to most easily, readily and properly apply the cosmetic. If the cosmetic is only embedded in the brush somewhere between the periphery of the bristles and the hub or center of the brush, the brush cannot act in the most efficient manner. It will have to be used so as to extract the cosmetic from the inner portion of the brush and this is not desirable because it means that the periphery of the bristles have to dig into the eyelashes or to whatever part of the anatomy it is desired to apply the cosmetic. It is much better if a metered quantity of the cosmetic is on the outer ends of some of the bristles so that a light and delicate touch may be used in the application of the cosmetic.

More particularly, the present invention is applicable to what is known as mascara applicator which is a device for storing mascara in fluent form and in applying it to the eyelashes.

The present invention is directed to a mascara applicator equipped with a brush for the application of the mascara and particularly to a metering device for metering the amount of mascara permitted to remain on the bristles of the brush after removal of the brush from the storage chamber of the device.

The metering device for the applicator brush consists of a central opening designed to accommodate the central or hub portion of the brush and radial slots or openings on the periphery of this main central opening which slots are designed to permit the removal of the brush through the stripping means without removing the mascara from the ends of all the bristles of the brush. Those bristles which pass up through the peripheral radial slots will not be stripped of mascara even at the outer ends thereof whereas those bristles which make contact with the periphery of the central opening of the stripping device will be stripped of the mascara on the outer end of the bristles.

Various additional objects, features and advantages of the invention will become apparent upon reading the

2

following specification together with the accompanying drawing forming a part hereof.

Looking at the drawing,

FIG. 1 is a side elevation, partly in section, of a mascara storage and applying device sometimes known as a mascara applicator;

FIG. 2 is an enlarged fragmentary sectional view showing the metering device and a brush passing therethrough;

FIG. 3 is a section taken through 3—3 of FIG. 2;

FIG. 4 is a section taken through 4—4 of FIG. 2 but with the brush omitted for the sake of clarity; and

FIGS. 5—8 are views similar to FIG. 4 but showing alternative designs for the central cutout portion of the metering bushing or insert.

Looking at the figures, A is an applicator comprising a reservoir or storage section 10 and a cap portion 11. The storage section 10 is equipped with a lining member 13, the top of which is spaced from the top edge of the storage section 10. The members 10, 11 and 13 or either of them, may be made of metal or plastic. They are shown in the drawing as made of metal. If plastic is used for the member 10 then the metering device 21, to be hereafter described, can be adhesively secured in place and liner 13 can be dispensed with. The cap 11 carries an applicator rod 14, on the lower end of which is a brush 17, using a twisted wire which is a well known manner of making a brush of this character. The wire is shown at 20.

At the upper end of the storage chamber or reservoir 10 is a stripping bushing or insert 21 which may be made in one piece of some suitable plastic and may be force-fitted into the top of the reservoir 10 so that the bottom of the insert, as viewed in FIGS. 1 and 2, for instance, rests on the top of the lining 13. The metering device is in the form of an insert or bushing 21 and is held in place by the turned over upper edge of the casing 10, as shown at 22. An upper portion of the bushing or insert 21 has a threaded neck 23 designed to receive complementary threads 24 in the cap 11. A sealing washer 26 serves to seal the storage chamber when the cap is screwed in place. The insert 21 may be made of other materials than plastic and may be made in more than one piece, if that is more convenient or more economical. The metering or stripping insert has a centrally shaped opening like a double funnel, wherein the narrow ends of the two funnels face each other at or near the center of the stripping device. A central circular opening through the stripping device is shown at 30. This is of such diameter as to accommodate the rod 14 and the central portions of the brush 17. Radially disposed and projecting from the central opening 30 are a plurality of slots or openings through the insert as shown at 31. These slots extend longitudinally of the insert as shown in FIGS. 2 and 3. The number of these slots can be varied depending upon the metering results required.

The upper and lower central portions of the insert (as seen in FIG. 1) are each shaped like a funnel. The lower funnel-shaped surface is shown at 35 and the upper one at 36. The slots 31 are cut through the surfaces 35 and 36 to make continuous openings from one side of the constricted neck 30 to the other side thereof. The funnel-shaped upper portion 36 of the insert is desirable. Should any mascara collect in this upper portion it will be readily pushed or brushed back into the reservoir while inserting the brush in order to close the unit. Also, the large end of the funnel-shaped upper portion 36 avoids the smearing

of mascara on the upper lip of the insert 21. These funnel-shaped surfaces 35 and 36 also allow for a certain amount of lateral movement of the rod 14, which is most desirable to dispense mascara without losing part of the filaments incorporated therein. If the mascara is allowed to collect on the insert, the filaments may be filtered out of the "mass" which is undesirable because they should be more or less evenly distributed throughout the mascara carrier. The funnel-shape of the insert further allows one to use up most of the contents of the container without loss of a caked-up portion underneath the stripping section of the insert. The permissive lateral movement of the rod 14 allows the brush to reach the inner walls of the reservoir, thus helping to empty the container more or less completely.

FIG. 5 shows a modification of the radial slots 31 of FIG. 2, 3 and 4. The slots in FIG. 5 are shown at 41 and are very similar to those shown in FIG. 4 except that the slots are pointed so that each one comes to a point at its outer end. In cross section each slot resembles a triangle as illustrated in FIG. 5. The central opening through the insert, which is circular in cross section, is shown at 30'.

FIG. 6 is another modification of the metering device and disclosed an axial opening through the center of the insert having a quarterfoil section comprising a basic central opening 40 similar to the openings 30 and 35. The radial openings have a cross section somewhat similar to a semi-circle. These are shown at 43.

FIG. 7 shows an opening through the central portion of the insert 21 very much like the quarterfoil insert shown in FIG. 6, except that the radially disposed openings are somewhat smaller in diameter as shown at 45. The central opening shown at 46 may be substantially the same as that shown at 30.

FIG. 8 shows still another cross section of a modification for the central opening through the metering insert and it consists of the basic circular central opening 30 with eight radial slots, one of which is shown at 47. The cross section of the opening through the insert is very similar to FIG. 4, except that there are eight slots instead of four slots.

In operation the applicator carries a fluent form of mascara which in practice is rather viscous but nevertheless fluent. The mascara may be mixed with short fibers or hairs, or other solids. The mascara is stored in the reservoir 10 which is lined with the lining 13, and with the screw cap screwed down in place, as can be seen from FIG. 1, the mascara is sealed to avoid evaporation or leakage. When it is desired to apply the mascara the cap 11 is unscrewed and the applicator rod withdrawn. The rod is approximately the same size as the central circular opening 30 through the insert 21 and some of the mascara is stripped off the rod as it passes through the neck of the stripping device 21. Obviously, not all the mascara will be stripped from the rod but enough will be taken off so there is no chance of dripping. When the top bristles of the brush 17 reach the underside of the constricted neck portion of the insert 21, excess mascara will be stripped off the end portions of those bristles which engage the walls of the opening 30 but those bristles which pass through the slots 31 will have very little mascara removed from the ends of the bristles, or from any part of the bristles. The result is that some of the bristles will carry mascara near the ends thereof and the percentage of the bristles which are permitted to do so, will depend on the nature of the cross sectional area of the constricted portion of the insert 21. Obviously with a cross section like that shown in FIGS. 4 and 5 only a small percentage of the bristles will carry the mascara at the outer ends. With a cross section such as that shown in FIGS. 6 and 7 a relatively large portion of the bristles will carry the mascara on the outer ends. With the cross section shown in FIG. 8, there probably would be a condition part way between the result accomplished with the section shown in FIG. 6 and that shown in FIG. 4.

The bristles of the brush are shown as of the same radial length as the slots 31. The bristles may be somewhat longer or shorter depending on the stripping or metering action desired at the end of the bristles. If the bristles are longer than the slots some of the mascara near the ends will be removed. If the bristles are shorter than the slots mascara will remain on the ends of the bristles.

In practice, a mascara is used which is so viscous that there is little or no possibility that it will flow from the reservoir through the constricted slots or opening in the metering device into the upper funnel shaped space when the device is in normal use and the cover in place with the rod 14 sealing most of the opening through the constricted opening in the insert.

While there have been shown what are believed to be the best embodiments of the invention, it will be apparent to those skilled in the art that changes and modifications can be made therein without departing from the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir, said device having a constricted opening therein disposed intermediate the length thereof, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed slots projecting from said central opening so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device.

2. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir, said device having a constricted opening therein disposed intermediate the length thereof, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed slots projecting from said central opening of such length measured from the center of the central opening so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device.

3. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said top is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir with a constricted opening therein disposed intermediate the length of said device, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed openings projecting from said central opening and of a radial length measured from the center of the central opening equal to or more than the radial length of the bristles of said brush so as to permit some of the bristles of the brush to pass through the

radial openings without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device, and said central and radial openings being open at each end thereof to make continuous passage through the constricted neck of said metering device.

4. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir with a constricted opening therein disposed intermediate the length of said device, said constricted opening having a central opening of sufficient diameter to accommodate said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed slots projecting from said central opening of such length measured radially from the center axis of the central opening so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device, and said central and radial openings in said constricted portion of said device passing therethrough and being open at each end thereof.

5. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator brush having bristles extending radially with respect to the longitudinal axis thereof mounted on the end of a rod attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device disposed at the open end of said reservoir with a constricted opening therein substantially midway of the length of said metering device, said opening comprising a central portion adapted to permit passage through said opening of said rod, and radially disposed slots projecting from and communicating with said central opening and also adapted to pass through the constricted portion of the metering device from one end thereof to the other, said slots being of such length measured from the center of said central portion as to permit bristles passing therethrough to retain most of the fluent material thereon near the outer end of said bristles, and conical funnel shaped openings extending from the ends of said metering device to the constricted central portion thereof with the wide end of one funnel shaped opening near the open end of said reservoir and with the wide end of the other funnel shaped opening facing toward the interior of the reservoir.

6. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir, said device having a constricted opening therein disposed intermediate the length thereof, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed slots projecting from said central opening of a length measured from the center of the central opening equal to or greater than the length of the bristles of said brush so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device.

7. In a metering dispenser for fluent materials, com-

prising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir, said device having a constricted opening therein disposed intermediate the length thereof, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed slots each with side walls parallel to each other and parallel to the longitudinal axis of said device, said slots projecting from said central opening of such length measured from the center of the central opening so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device.

8. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir, said device having a constricted opening therein disposed intermediate the length thereof, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed slots each of partial circular cross section as viewed in a plane at right angles to the longitudinal axis of said device, projecting from said central opening of such length measured from the center of the central opening so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device.

9. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir, said device having a constricted opening therein disposed intermediate the length thereof, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles of the brush, and radially disposed slots, each of triangular cross section as viewed in a plane at right angles to the longitudinal axis of said device, projecting from said central opening of such length measured from the center of the central opening so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device.

10. In a metering dispenser for fluent materials, comprising a storage reservoir for said material open at one end, a cap for said reservoir and an applicator bristle brush having bristles extending radially with respect to the longitudinal axis thereof attached to said cap and adapted to project into said reservoir when said cap is screwed onto said reservoir, the improvement which consists of a metering device in and near the open end of said reservoir, said device having a constricted opening therein disposed intermediate the length thereof, said constricted opening having a central opening of sufficient diameter to accommodate the passage of said applicator brush but of less diameter than the diameter of the bristles

of the brush, and radially disposed slots each with side walls parallel to each other and parallel to the longitudinal axis of said device, said slots projecting from said central opening of a length measured from the center of the central opening equal to or greater than the length of the bristles of said brush so as to permit some of the bristles of the brush to pass through the slots without removal of the fluent material from the outer ends of said bristles when said brush is moved through said device.

5

References Cited by the Examiner

UNITED STATES PATENTS

1,181,253 5/16 Ritz ----- 15—521

FOREIGN PATENTS

10,237 10/14 Great Britain.

CHARLES A. WILLMUTH, *Primary Examiner*.