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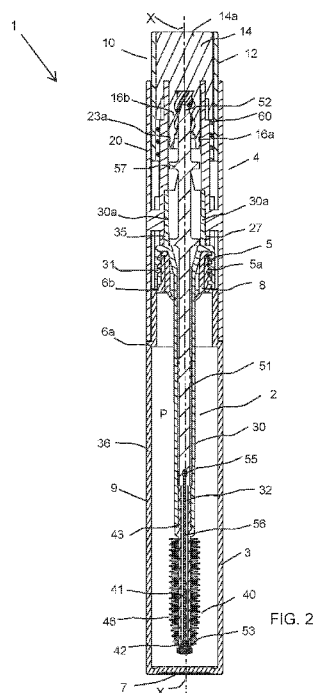


FIG. 2

(54) Title: COSMETIC PACKAGE

(57) Abstract: A cosmetic package includes an application member and a dialer. The dialer is used to transform the shape or profile of the application member for adjusting the application member for application of a cosmetic or a care product. The dialer is inaccessible during a closed position of the cosmetic package and a user is not able to actuate the dialer to transform the shape or profile of the application member. The dialer is accessible only during an open position of the cosmetic package.

COSMETIC PACKAGE

CROSS REFERENCE TO RELATED PATENT APPLICATIONS

The present application claims the benefit of and priority to Indian Patent Application
5 Serial Number 201711005602, filed on February 16, 2017, the disclosure of which is incorporated herein by reference.

TECHNICAL FIELD

The present disclosure generally relates to a cosmetic package including an adjustable
10 applicator for applying a product such as for example mascara, eye shadow, lip-gloss, nail polish, eye liner etc. More particularly, the present disclosure generally relates to a mechanism for preventing undesirable actuation of the actuator of the cosmetic package.

BACKGROUND

Various types of cosmetic packages have been designed and developed in the recent years. Conventionally, cosmetic packages include applicators having a stem, at one end of which is connected an application member and at the other end is provided a cap intended for closing a receptacle. Continuous innovations in this area are being
20 made to provide the user with an applicator that gives him/her a better application and makes the whole application effortless to the consumer. The application member is adapted to apply the product and may be a brush for e.g. a mascara brush or a lip or a face applicator made from sponge, plastic etc. The conventional cosmetic packages further comprise a wiper through which the stem and application member
25 passes on being withdrawn from the receptacle. The wiper is supported by a neck of the receptacle. The wiper serves firstly to wipe the stem and secondly to remove excess cosmetic from the application member.

The application member of most commercial cosmetic packages are static and do
30 not change their shape, however, there have been some cosmetic packages shown in the prior art that have means for adjusting profile of application member. For example in U.S. Pat. No. 4,446,88 to Gueret & Arraudeau, and U.S. Pat. Nos. 3,998,235 and 5,137,038 to Kingsford, several makeup brushes are described where the profile of the brush section is adjustable by either changing their overall diameter, curvature or

spacing between the bristles.

In each of the prior art patents disclosed, adjustments to the brush section can be made by adjusting the dialer of the cap, more specifically they include a rotatable cap.

5 However, none of the prior art patents, provides means for protecting the dialer against accidental actuation or unintentional actuation by the user in the closed position of the cosmetic package. The actuation of the dialer/rotation of the cap in the closed position of the cosmetic package is undesirable as the accidental actuation causes the application member to deform in the storage position. The deformation of the

10 application member, such as increase in diameter thereof or curving thereof may be undesirable because during withdrawal from the receptacle it may cause damage to the application member. Normally wipers employed in such cosmetic packages are designed to function effectively on non-deformed application member and therefore withdrawing of the deformed application member will not provide proper wiping to the

15 application member and hence proper make up effect may not be achieved.

It would therefore be desirable to provide a cosmetic package, such as a mascara package of the general type described above, that mitigates or overcomes the aforementioned problems.

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Accordingly it is desirable to provide a cosmetic package where the actuator like a dialer is not accessible to the user in the closed position of the cosmetic package.

SUMMARY

25 The present disclosure generally relates to a cosmetic package for a product, in particular cosmetic or care product such as for example mascara, eye shadow, lip- gloss, nail polish, eye liner. More particularly, the cosmetic package is used to apply mascara.

According to an embodiment of the present disclosure, there is provided a cosmetic

30 package which includes an application member that can be adjusted as per user's convenience for application of a cosmetic or a care product.

According to an embodiment of the present disclosure, there is provided a cosmetic package which includes an actuator for e.g., a dialer which when actuated/ rotated

initiates a mechanism for transforming profile of an application member of the cosmetic package.

According to another embodiment of the present disclosure, the dialer is not accessible
5 for actuation in a closed state of the cosmetic package and the dialer is only accessible
for actuation in an open position of the cosmetic package.

According to another embodiment of the present disclosure, the cosmetic package is
extended along a longitudinal axis and comprises an applicator and a receptacle.

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According to another embodiment of the present disclosure, the applicator includes a
cap suitable for closing the receptacle; the application member and a stem having a
cavity. The stem may be connected to the application member at one end and to the
cap at another end. The receptacle and the applicator are intended to be fastened to each
15 other by screwing. Alternatively, other methods of fastening the receptacle and the
applicator can be used.

According to another embodiment of the present disclosure, the cap comprises an
upper portion and a lower portion. The lower portion of the cap is elongated along
20 the longitudinal axis of the cosmetic package. The upper portion of the cap comprises
a protective sheath encasing a dialer in such a manner that only top wall of the dialer
is visible in a closed position of the cosmetic package.

According to an embodiment of the present disclosure, the dialer is inaccessible to
25 the user during closed position of the cosmetic package and the user is not able to
actuate the dialer to transform the shape/profile of the application member. The
dialer is accessible for actuation only during open position of the cosmetic package.
When the applicator is removed/ disengaged from the receptacle, the dialer is accessible
for actuation and is rotatable with respect to the lower portion of the cap. Thus, only in
30 the open position of the cosmetic package, the user is able to rotate the dialer to
transform the shape/profile of the application member. So that the dialer is inaccessible
in the closed position and is accessible only in open position, there is provided in the
cap, the protective sheath which forms a part of the upper portion of the cap.

According to another embodiment of the present disclosure, when the applicator is retained on the receptacle, the dialer is encased in the protective sheath and is inaccessible, so the user is unable to rotate the dialer with respect to the lower portion of the cap. Therefore the profile of the application member cannot be changed
5 when the cosmetic package is in closed position.

According to an embodiment of the present disclosure, as the dialer is rotated, an inner rod is lifted or lowered for transforming the shape/profile of the application member. According to an alternate embodiment, the inner rod can be rotated by rotating
10 the dialer for transforming the shape/profile of the application member.

According to another embodiment of the present disclosure, a flexible connector extends through a bore of the application member. The application member is fixedly connected at its distal end by a flanged tip of the flexible connector and at its
15 proximal end by the stem. The flexible connector is arranged to be movable inside the bore of the application member.

Further, a proximal end of the flexible connector is connected to the distal end of the inner rod such that when force is applied on the inner rod by the dialer, it causes
20 tension along an axis of the flexible connector, which results in deformation of the application member. Further, the force applied on the flexible connector is directly proportional to the deformation angle of the application member achieved.

According to a variant embodiment of the present disclosure, the inner rod and
25 flexible connector may be integrally formed as one piece that extends through the stem and the application member.

According to another embodiment of the present disclosure, the receptacle includes a neck extending along the longitudinal axis of the cosmetic package, an end wall
30 and a side wall forming a reservoir for a product. The side wall has a first shoulder and a second shoulder above the first shoulder but offset with respect to the first shoulder.

According to another embodiment of the present disclosure, the lower portion of the

cap comprises two concentric cylindrical members joined together by linking ribs i.e., a larger diameter outer cylindrical member is disposed around a hollow inner cylindrical member and the linking ribs connect an outer surface of the inner cylindrical member to an inner surface of the outer cylindrical member. According to a preferred embodiment, the linking ribs are radially disposed such that there are hollow spaces between the adjacent linking ribs. In a preferred embodiment, there are four linking ribs disposed radially. The inner cylinder further comprises an internal annular protruding portion for attaching to an external annular groove of the dialer. According to another embodiment of the present disclosure, the inner cylindrical member may include longitudinal guide protrusions at its inner surface for guiding axial movement of the inner rod and for preventing inner rod from rotating, when the dialer is twisted.

According to another embodiment of the present disclosure, the dialer is structured in cylindrical shape with a closed end formed by the top wall. The dialer further includes an internal annular skirt projecting from an inner surface of a top wall of the dialer, the internal annular skirt extends towards the receptacle. The dialer is attached with the lower portion of the cap such that the dialer is free to rotate relative to the lower portion of the cap for e.g. via a snap-fit system comprising an external annular groove on the internal annular skirt and a complementary annular protrusion on the inner cylindrical member of the lower portion of the cap. The dialer can thus be turned by the user relative to the lower portion of the cap. The inner surface of the internal annular skirt includes an inner profile, such as mating threads capable of interacting with an outer thread of the inner rod mounted axially inside the dialer.

According to an another embodiment, for engaging the stem to lower portion of the cap, an upper tubular portion of the stem is inserted/ received into a portion of inner cylindrical member. The inner surface of the inner cylindrical member has a groove for engaging complementary protrusion present on the outer surface of the upper tubular portion of the stem.

Regardless of the particular application member chosen, the present disclosure provides means adapted to selectively vary the profile of the application member. In the open position of the cosmetic package, when the dialer is rotated with respect to the lower portion, the stem and the inner rod move longitudinally with respect to each other which

cause variation in the profile of the application member. When a suitable adjustment of the profile of the application member has been made it will be retained while the application member is used. The adjustment is retained until the user intentionally rotates the dialer and lower portion with respect to each other once again to
5 achieve a different adjustment. According to an alternate embodiment, the inner rod is rotatable with respect to the stem to cause variation in the profile of the application member.

So that the dialer is inaccessible in the closed state and is accessible only in open
10 position, there is provided in the cap, the protective sheath which forms a part of the upper portion of the cap; and a biasing member.

According to another embodiment, in the closed state of the cosmetic package, the biasing member is in compressed state and the protective sheath is urged in the direction
15 of the upper portion of the cap thereby encasing the actuator, thus making the actuator inaccessible to the user.

In the open position of the cosmetic package, the biasing member is in relaxed state and the protective sheath moves in distal direction into the lower portion of the cap,
20 thus making the actuator accessible for actuation.

According to another embodiment, the protective sheath is structured as an elongated hollow cylinder having an open top end and an open bottom end; and an inner annular rim. Further, the protective sheath comprises at least one cut out extending in
25 longitudinal direction. In the present embodiment, there are four cut outs which extends substantially in lower half of the protective sheath forming four legs.

The protective sheath is introduced from a top end of the lower portion of the cap and assembled in a space between the lower portion of the cap and the dialer such that
30 the legs of a lower portion of the protective sheath extends into the hollow spaces between the ribs of the lower portion of the cap. Thus, the protective sheath is slidable into the hollow spaces.

The biasing member is assembled in a space between the inner cylinder of the lower

portion of the cap and the protective sheath such that a top end of the biasing member is in contact with a bottom end of the dialer and a bottom end of the biasing member is in contact with the inner annular rim of the protective sheath. The biasing member keeps the protective sheath biased in the distal direction of the cosmetic applicator.

When the applicator is screwed on the receptacle, the receptacle shoulder abuts a bottom end of the lower portion of the cap and the receptacle shoulder abuts the bottom end of the protective sheath, and thereby exerts an upward sliding force upon the protective sheath pushing it upward against the downward biasing force of the biasing member and thereby compressing the biasing member. As the applicator is completely screwed on to the receptacle, the protective sheath is moved in the maximum upward direction forming a part of the upper portion of the cap and encasing the dialer, thus making the dialer inaccessible to the user. Thus, the dialer cannot be actuated to change the shape or profile of the application member.

As the user opens the cosmetic package by unscrewing of the cap, the biasing member expands and since the biasing member is biased in downward direction, the biasing member pushes the protective sheath in the downward direction exposing the dialer. The protective sheath is pushed in the downward direction till a proximal end of at least one cut out of the protective sheath comes in contact with the a corresponding rib of the lower portion of the cap. As the cosmetic package is completely opened, the protective sheath travels the maximum downward distance and the dialer is no longer encased by the protective sheath. Thus, the dialer becomes accessible to the user in open position of the cosmetic package. Now, the user can use the dialer, to change the shape or profile of the application member.

To transform the profile of the application member, the dialer is twisted and the rotational movement of the dialer is converted into translational movement of the inner rod by the rotational movement of threads within the inner skirt of the dialer. Therefore, the inner rod is now able to extend or retract towards or away from the distal end of the stem. As the inner rod is extended or retracted, the profile of application member changes due to pressure applied on it by the axial movement of the inner rod. The inner rod can be adjusted to various relative longitudinal positions with

respect to the stem depending on degree of twisting, such that as adjustment is made, profile of the application member varies. Once the adjustment is made, it will be retained without any action by the user, until further adjustment is desired and intentionally made.

5

The materials suitable for forming the receptacle could be polypropylene while the dialer, the lower portion of cap, the inner rod, the stem, and protective sheath could be formed of acrylonitrile butadiene styrene or any other suitable polymeric material. The material of inner rod could be any polymeric material like nylon, TPE, PP or
10 could be a suitable metal. The stem may be formed of polyacetal or any other suitable polymeric material. The biasing member can be a metallic spring or can be made up of polymeric elastomer. The aforementioned materials for forming various parts of the package of the present disclosure are an example, however other suitable materials may also be used.

15

The above and other objects, features and advantages of the present disclosure will become clear from the following description of the preferred embodiments when the same is read in conjunction with the accompanying drawings.

20

BRIEF DESCRIPTION OF THE DRAWINGS

So that the manner in which the above recited features of the present disclosure can be understood in detail, a more particular description of the disclosure, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate
25 only typical embodiments of this disclosure and are therefore not to be considered limiting of its scope, for the disclosure may admit to other equally effective embodiments.

FIG. 1 illustrates a front view of a cosmetic package in closed position according to
30 an embodiment of the present disclosure;

FIG. 2 illustrates a cross-sectional view of the cosmetic package of FIG. 1 according to an embodiment of the present disclosure;

FIG. 3 illustrates an exploded view of an applicator of the cosmetic package of FIG. 1;

FIG. 4a illustrates a top view of a lower portion of a cap of the cosmetic package of FIG. 1;

FIG. 4b illustrates a sectional view of the lower portion of the cap of the cosmetic package of FIG. 1;

5 FIG. 5a illustrates a top view of a protective sheath of an applicator of the cosmetic package of FIG. 1;

FIG. 5b illustrates a sectional view of the protective sheath of the applicator of the cosmetic package of FIG. 1;

10 FIG. 6 illustrates a cross-sectional view of the cosmetic package of FIG. 1 without the receptacle, in an open position,; and

FIG. 7 illustrates a cross sectional view of the cosmetic package of FIG. 1 without the receptacle, in an open position with a deformed shape of an application member of the applicator.

15 To facilitate understanding, identical reference numerals have been used, where possible, to designate identical elements that are common to the FIGS. It is to be noted, however, that the appended drawings illustrate only typical embodiments of this disclosure and are therefore not to be considered limiting of its scope, for the disclosure may admit to other equally effective embodiments.

20

DETAILED DESCRIPTION

FIGS. 1 to 7 show a cosmetic package 1 in accordance with the present disclosure. FIGS. 1 and 2 show a cosmetic package 1 in a closed position. The cosmetic package 1 having a longitudinal axis X--X comprises an applicator 2 and a receptacle 3. The applicator 2 includes an application member 40 having a plurality of application elements 46 extending therefrom. The plurality of application elements 46 may be a plurality of bristles, and in some embodiments, the plurality of bristles may include bristles of different lengths, as shown in FIG. 2. The application member 40 can be adjusted as per user's convenience with a dialer 14, for application of a product including a cosmetic or a care product. The dialer 14 is not accessible to the user in closed position of the cosmetic package 1 as shown in FIGS. 1 and 2. The dialer 14 is accessible only in open position of the cosmetic package 1 as shown in FIGS. 6 and 7.

Further, as shown in FIGS. 1 and 2, the receptacle 3 and the applicator 2 are intended to be fastened to each other by screwing. Alternatively, other methods of fastening the receptacle 3 and the applicator 2 can be used. The receptacle 3 includes a neck 5 extending along the longitudinal axis X-X, an end wall 7 and a side wall 9 forming a reservoir for a product P. The side wall 9 has a first shoulder 6a and a second shoulder 6b above the first shoulder 6a but offset with respect to the first shoulder 6a.

The applicator 2 includes a cap 4 suitable for closing the receptacle 3; the application member 40 and a stem 30 having a cavity 32. The stem 30 may be connected to the application member 40 at a lower end and to the cap 4 at an upper end.

The neck 5 of the receptacle 3 is provided with an external thread 5a intended for cooperating with a complementary thread 31 carried by the stem 30, allowing the receptacle 3 to be closed by screwing.

For some cosmetic products, such as mascara or a lip gloss, it is preferable to provide a wiper 8 positioned into the neck 5 of the receptacle 3 to wipe excess product P from the applicator 2 as the applicator 2 is withdrawn from the receptacle 3. Wiper 8 is preferably made of an elastomeric plastic material.

As shown in FIGS. 1 and 2, the cap 4 comprises an upper portion 10 and a lower portion 20. The lower portion 20 of the cap 4 is elongated along the longitudinal axis X-X of the cosmetic package. The stem 30 is fixedly and non-rotatably connected to the lower portion 20 of the cap 4. The upper portion 10 of the cap 4 comprises a protective sheath 12 encasing the dialer 14 in such a manner that only top wall 14a of the dialer 14 is visible in a closed position of the cosmetic package 1.

According to an embodiment of the present disclosure, the dialer 14 is inaccessible for actuation to the user during the closed position of the cosmetic package 1 as shown in FIGS. 1 and 2 and the user is not able to rotate the dialer to actuate transformation of the shape/profile of the application member 40 as the dialer 14 is encased by the sheath 12. The dialer 14 is accessible only during the open position of the cosmetic package 1 as shown in FIGS. 6 and 7. When the applicator 2 is removed/ disengaged

from the receptacle 3, the sheath 12 surrounding the dialer 14 is displaced axially and the dialer 14 is made accessible to the user for actuation. The dialer 14 can be actuated by rotation with respect to the lower portion 20 of the cap 4. Thus, only in the open position of the cosmetic package 1, the user is able to rotate the dialer 14 to transform the shape/profile of the application member 40. So that the dialer is inaccessible in the closed position and is accessible only in the open position, there is provided in the cap 4, the protective sheath 12 which forms a part of the upper portion 10 of the cap 4; and a biasing member 60.

According to an embodiment of the present disclosure, as the dialer 14 is rotated, a transmission member such as an inner rod 51 is lifted or lowered for transforming the shape/profile of the application member 40. According to an alternate embodiment, the inner rod 51 can be rotated by rotating the dialer 14 for transforming the shape/profile of the application member 40.

Further, as shown in FIGS. 2, 6 and 7, a flexible connector 56 extends through a bore 41 of the application member 40. The application member 40 is fixedly connected at its distal end 42 by a flanged tip 53 of the flexible connector 56 and at its proximal end 43 by the stem 30, wherein the proximal end 43 of the application member 40 is formed as a bristle-free or application element 46 -free shank for attachment to the hollow stem 30. More specifically, the application member 40 further includes the bore 41 for housing the flexible connector 56. The flexible connector 56 is arranged to be movable inside the bore 41 of the application member 40. The flexible connector 56 is so arranged as to cause progressive deformation of the application member 40.

According to a further aspect of the present disclosure, the flanged tip 53 at a distal of the flexible connector 56 is connected with a distal end 42 of the application member 40 and a proximal end 55 of the flexible connector 56 is connected to the distal end of the inner rod 51.

Further, the proximal end 55 of the flexible connector 56 is connected to the distal end of the inner rod 51 such that when force is applied by the dialer 14 on the inner rod 51 it causes tension along the axis of the flexible connector 56, which results in deformation of the application member 40 as is illustrated in FIG. 7. Further, the

force applied on the flexible connector 56 is directly proportional to the deformation angle of the application member 40 achieved.

According to a variant embodiment of the present disclosure, the inner rod 51 and
5 flexible connector 56 may be integrally formed as one piece that extends through the stem 30 and the application member 40.

The application member 40 may be chosen according to the cosmetic or care product to be applied, be it lipstick, eye liner, eye shadow, mascara, foundation, blusher,
10 ointment etc. More specifically and as shown, the application member 40 includes a plurality of application elements 46 and is used to apply mascara on eyelashes.

When the applicator 2 is retained on the receptacle 3, the dialer 14 is encased in the protective sheath 12 and is inaccessible, so the user is unable to rotate the dialer 14
15 with respect to the lower portion 20 of the cap 4, therefore the profile of the application member 40 does not change when the cosmetic package 1 is in closed position. The mechanism of making the dialer 14 accessible and inaccessible along with the other details of the cosmetic package 1 will be explained fully hereinafter.

20 As shown in FIGS. 4A and 4B, the lower portion 20 of the cap 4 comprises two concentric cylindrical members 22, 23 joined together by linking ribs 24, i.e. a larger diameter outer cylindrical member 22 is disposed around a hollow inner cylindrical member 23 and the linking ribs 24 connect an outer surface of the inner cylindrical member 23 to an inner surface of the outer cylindrical member 22. According to a
25 preferred embodiment, the linking ribs 24 are radially disposed such that there are hollow spaces 25 between the adjacent linking ribs 24. In the embodiment shown in FIG 4a, there are four linking ribs 24 disposed radially. The inner cylinder 23 further comprises an internal annular protruding portion 23a for attaching to an external annular groove 16a of the dialer 14 (shown in FIG. 2). According to an embodiment
30 of the present disclosure the inner cylinder 23 may include longitudinal guide protrusions (not shown) at its inner surface for guiding axial movement of the inner rod 51 and for preventing inner rod 51 from rotating, when the dialer 14 is twisted. According to an alternate embodiment, the inner rod 51 can be rotated by rotating the dialer 14 for transforming the shape/profile of the application member 40.

As shown in FIGS. 2-3, the dialer 14 is structured in cylindrical shape with a closed end formed by the top wall 14a. The dialer 14 further includes an internal annular skirt 16 projecting from an inner surface of a top wall 14a of the dialer 14. The dialer 14 is attached with the lower portion 20 of the cap 4 such that the dialer 14 is free to rotate relative to the lower portion 20 of the cap 4 for e.g. via a snap-fit system comprising an external annular groove 16a on the internal annular skirt 16 and a complementary annular protruding portion 23a on the inner cylindrical member 23 of the lower portion of the cap 4. The dialer 14 can thus be turned by the user relative to the lower portion 20 of the cap 4. The inner surface of the internal annular skirt 16 includes an inner profile, such as mating threads 16b capable of interacting with an outer thread 54 of the inner rod 51 mounted axially inside the dialer 14.

As seen in FIGS. 2 and 3, for engaging the stem 30 to lower portion 20 of the cap 4, an upper tubular portion 30a of the stem 30 is inserted/ received into a portion of inner cylindrical member 23. The inner surface of inner cylindrical member 23 has a groove 27 for engaging complementary protrusion 35 present on the outer surface of the upper tubular portion 30a of the stem 30.

According to an embodiment of the present disclosure, on the interfaces where the stem 30 is joined to the lower portion 20 of the cap 4, the stem 30 and the lower portion 20 of the cap 4 both may have complementary longitudinal protrusions and positioning longitudinal grooves (not shown) that engage with each other for non-rotatably locking the stem 30 and the lower portion 20 of the cap 4 together. However, it is not beyond ambit of the present disclosure that any other non-rotatable engagement known in the art may be employed for locking any relative rotation between the stem 30 and the lower portion 20 of the cap 4.

Further, as seen in FIGS. 2 and 3, the stem 30 comprises the upper tubular portion 30a, a downward skirt 34, and an elongated hollow shaft 36. The threads 31 are provided on the inner peripheral surface of the downward skirt 34 of the stem 30 to attach the cap 4 to an externally threaded neck 5 of the receptacle 3. The elongated hollow shaft 36 extends beyond the neck 5 in the receptacle 3. Preferably, the elongated hollow shaft 36 of the stem 30 is disposed around at least a portion of the inner rod 51 that is longitudinally movable with respect to the stem 30. According to another

embodiment, the inner rod 51 is rotatable with respect to the stem 30.

Further, the cap 4 includes such features that allow an axial movement of the inner rod 51 but rotation of the inner rod 51 is prevented when the dialer 14 is rotated with respect to the lower portion 20 of the cap 4. For example, as seen in FIGS. 2 and 3, the inner rod 51 includes two annular flanges 57 having two opposing slide cut-outs 58 for receiving corresponding longitudinal guide protrusions (not shown) of the lower portion 20.

Regardless of the particular application member 40 chosen, the present disclosure provides means adapted to selectively vary the profile of the application member 40. In the open position of the cosmetic package 1, when the dialer 14 is rotated with respect to the lower portion 20, the stem 30 and the inner rod 51 move longitudinally with respect to each other which cause variation in the profile of the application member 40. When a suitable adjustment of the profile of the application member 40 has been made it will be retained while the application member 40 is used. The adjustment is retained until the user intentionally rotates the dialer 14 and lower portion 20 with respect to each other once again to achieve a different adjustment. According to an alternate embodiment, the inner rod 51 is rotatable with respect to the stem 30 to cause variation in the profile of the application member 40.

So that the dialer is inaccessible in the closed state and is accessible only in open position, there is provided in the cap 4, the protective sheath 12 which forms a part of the upper portion 10 of the cap 4; and a biasing member 60.

As shown in FIG. 2, in the closed state of the cosmetic package 1, the biasing member 60 is in compressed state and the protective sheath 12 is urged in the proximal direction of the cosmetic applicator 2 for encasing the dialer 14, thus making the actuator/dialer 14 inaccessible to the user.

As shown in FIG. 6, in the open position of the cosmetic package 1, the biasing member 60 is in relaxed state and the protective sheath 12 moves in distal direction into the lower portion 20 of the cap 4, thus making the dialer 14 accessible for actuation.

As seen in FIGS. 5a and 5b, the protective sheath 12 is structured as an elongated hollow cylinder 18 having an open top end 18a and an open bottom end 18b; and an inner annular rim 17. Further, the protective sheath 12 comprises at least one cut out 19 extending in longitudinal direction. In the present embodiment, there are four cut outs 19 which extend substantially in lower half of the protective sheath 12 forming four legs 18d.

As seen in FIGS. 2-5b, the protective sheath 12 is introduced from a top end of the lower portion 20 of the cap 4 and assembled in a space between the lower portion 20 of the cap 4 and the dialer 14 such that the legs 18d of a lower portion of the protective sheath 12 extends into the hollow spaces 25 between the ribs 24 of the lower portion 20 of the cap 4. Thus, the protective sheath 12 is slidable into the hollow spaces 25.

The biasing member 60 is assembled in a space between the inner cylinder 23 of the lower portion 20 of the cap 4 and the protective sheath 12 such that a top end of the biasing member 60 is in contact with a bottom end of the dialer 14 and a bottom end of the biasing member 60 is in contact with the inner annular rim 17 of the protective sheath 12. The biasing member 60 keeps the protective sheath 12 biased in the distal direction of the cosmetic applicator 2.

Referring to FIG. 2, when the applicator 2 is screwed on to the receptacle 3, the first shoulder 6a abuts a bottom end of the lower portion 20 of the cap 4 and the second shoulder 6b abuts the bottom end 18b of the protective sheath 12, and thereby exerts an upward sliding force upon the protective sheath 12 pushing it upward against the downward biasing force of the biasing member 60 and thereby compressing the biasing member 60. As the applicator 2 is completely screwed on to the receptacle 3, the protective sheath 12 is moved in the maximum upward direction forming a part of the upper portion 10 of the cap 4 and encasing the dialer 14, thus making the dialer 14 inaccessible to the user. Thus, the dialer 14 cannot be actuated to change the shape or profile of the application member 40.

Referring now to FIGS. 6 and 7, as the user opens the cosmetic package 1 by unscrewing of the cap 4, the biasing member 60 expands and since the biasing member

60 is biased in downward direction, the biasing member 60 pushes the protective sheath 12 in the downward direction exposing the dialer 14. The protective sheath 12 is pushed in the downward direction till a proximal end 19c of at least one cut out 19 of the protective sheath 12 comes in contact with the a corresponding rib 24 of the lower portion 20 of the cap 4. As the cosmetic package is completely opened, the protective sheath 12 travels the maximum downward distance and the dialer 14 is no longer encased by the protective sheath 12. Thus, the dialer 14 becomes accessible to the user in open position of the cosmetic package 1. Now, the user can use the dialer 14, to change the shape or profile of the application member 40.

To transform the profile of the application member 40 for e.g. as shown in FIG. 7, the dialer 14 is twisted and the rotational movement of the dialer 14 is converted into translational movement of the inner rod 51 by the rotational movement of threads 16b within the internal annular skirt 16 of the dialer 14. Therefore, the inner rod 51 is now able to extend or retract towards or away from the distal end of the stem 30. As the inner rod 51 is extended or retracted, the profile of application member 40 changes due to pressure applied on it by the axial movement of the inner rod 51. The inner rod 51 can be adjusted to various relative longitudinal positions with respect to the stem 30 depending on degree of twisting, such that as adjustment is made, profile of the application member 40 varies. Once the adjustment is made, it will be retained without any action by the user, until further adjustment is desired and intentionally made.

The materials suitable for forming the receptacle 3 could be polypropylene while the dialer 14, the lower portion 20 of the cap 4, the inner rod 51, the stem 30, and protective sheath 12 could be formed of acrylonitrile butadiene styrene or any other suitable polymeric material. The material of inner rod 51 could be any polymeric material like nylon, TPE, PP or could be a suitable metal. The stem 30 may be formed of polyacetal or any other suitable polymeric material. The material for forming wiper 8 could be low-density polyethylene. The biasing member 60 can be a metallic spring or can be made up of polymeric elastomer. The aforementioned materials for forming various parts of the package of the present disclosure are an example; however other suitable materials may also be used.

Depending upon the substance being used in the receptacle, a variety of sizes and shapes of the applicator can be utilized. The application member 40 and/or the application elements 46 may be constructed of a porous or non-porous rubber, fabric mesh, felt material, foamed polymers, sponge material, Hytrel™, low density polyethylene (LDPE), thermoplastic elastomers (TPE), silicone, plastic (e.g. polypropylene (PP)), or any other suitable material. The application member 40 and/or the application elements 46 may be formed integrally (e.g. as unitary structure) with bristles as an injection molded unit, as a series of installed bristles (e.g., like a toothbrush), as a series of tied bristles (e.g., like a pipe cleaner), or other configuration.

Further, various components of the application member 40 and/or the application elements 46 may be over-molded as a single unit. Alternatively, rather than over-molding, instead, another body comprising bristles may be over-molded to an over-molded brush and tip unit without bristles.

Further, while the application member 40 has been generally described as a bristled structure, it is contemplated that the application member 40 may take the form of other applicators including, but not limited to: a sponge, a stick, a synthetic bristle brush (e.g., plastic, silicone, latex or composites thereof), a natural bristle brush (e.g., hair, cellulose fibers, cotton, hemp, flax or composites thereof), a combination of synthetic or natural bristles, a comb, foam, silicone, a doe foot, metallic bristles, flocking, a solid applicator member (e.g., a paddle or spatula), etc.

Also, the application member 40 could have any suitable shape depending on the kind of application required. It could have a shape other than cylindrical such as ovular, tapered or any other suitable shape.

Although the above description and drawings show the package being cylindrical, the shapes and profile cross section thereof are not limited to the same.

While the foregoing is directed to embodiments of the present disclosure, other and further embodiments of the disclosure may be devised without departing from the basic scope thereof, and the scope thereof is determined by the claims that follow.

What is claimed is:

1. An adjustable applicator for applying a product to a surface, the adjustable applicator comprising:

a cap having an upper portion and a lower portion, the upper portion including an actuator and a sheath slidably encasing the actuator;

a stem having an upper portion coupled to the lower portion of the cap, the stem having a cavity therein;

an application member having a first end coupled to a lower end of the stem;

wherein the actuator is actuatable to initiate a progressive modification of a shape of the application member from a first configuration to a second configuration with a plurality of configurations therebetween; wherein the sheath is configured to move between a first position in which the sheath covers the actuator, rendering the actuator inaccessible for actuation, and a second, retracted position in which the actuator is accessible for actuation.

2. The adjustable applicator of claim 1, further comprising a receptacle configured to contain the product, wherein the cap is configured to removably couple with the receptacle, wherein the cap is configured such that the sheath is in the first position when the cap is coupled with the receptacle and in the second, retracted position when the cap is uncoupled from the receptacle.

3. The adjustable applicator of claim 2, wherein the actuator is a rotatable dialer.

4. The adjustable applicator of claim 3, further comprising a transmission member having an upper end coupled to the upper portion of the cap and a lower end coupled to a second end of the application member, the transmission member slidably disposed with the cavity of the stem.

5. The adjustable applicator of claim 4, wherein the rotatable dialer includes inner threads that mate with outer threads on the upper end of the transmission member, thereby providing longitudinal movement of the transmission member along a longitudinal axis of the stem when the rotatable dialer is rotated.

6. The adjustable applicator of claim 5, wherein rotation of the rotatable dialer in a first direction causes tension along a longitudinal axis of the transmission member, resulting in deformation of the application member.

7. The adjustable applicator of claim 6, wherein the application member is deformed from a linear configuration aligned with the longitudinal axis of the transmission member to an angled configuration in which the second end of the application member is angled back towards the cap by a deformation angle.

8. The adjustable applicator of claim 7, wherein an amount of force applied on the transmission member is directly proportional to a deformation angle of the application member.

9. The adjustable applicator of any one of claims 4-8, wherein the transmission member includes a rod extending through the stem and a flexible connector extending through a bore in the application member, wherein an upper end of the rod is coupled to the upper portion of the cap and a lower end of the rod is coupled to an upper end of the flexible connector, and a lower end of the flexible connector is coupled to the second end of the application member, the flexible connector slidably disposed within the bore in the application member.

10. The adjustable applicator of any one of claims 1-8, further comprising a biasing member, wherein the lower portion of the cap includes outer and inner concentric members spaced apart and joined by one or more linking members, the inner concentric member being coupled to the actuator, wherein the sheath and the biasing member are slidably disposed between the outer and inner concentric members.

11. The adjustable applicator of claim 10, wherein when the cap is coupled to the receptacle, the biasing member is in a compressed state allowing the sheath to assume the first position covering the actuator, wherein when the cap is uncoupled from the receptacle, the biasing member is configured to expand from the compressed state and move the sheath into the second, retracted position, uncovering the actuator.

12. The adjustable applicator of claim 11, wherein the biasing member is disposed

in a space between the inner concentric member of the lower portion of the cap and the sheath, with a lower end of the biasing member engaging an inner annular rim on the sheath and an upper end of the biasing member engaging a lower end of the actuator.

13. The adjustable applicator of claim 11, wherein the receptacle has a first shoulder configured to abut a lower end of the outer concentric member of the lower portion of the cap and a second shoulder configured to abut a lower end of the sheath, thereby exerting an upward sliding force on the sheath, pushing it upward against a downward biasing force of the biasing member, compressing the biasing member and moving the sheath into the first position covering the actuator.

14. The adjustable applicator of claim 13, wherein the receptacle and cap have mating threading such that as the cap is unscrewed off of the receptacle, the biasing member gradually expands, pushing the sheath gradually into the second, retracted position thereby gradually exposing the actuator.

15. A container with an adjustable applicator for applying a product to a surface, the container comprising:

- a receptacle configured to contain the product;

- a cap configured to removably couple with the receptacle, the cap having an upper portion and a lower portion, the upper portion including an actuator and a sheath removably encasing the actuator;

- a stem having an upper portion coupled to the lower portion of the cap;

- an application member having a first end coupled to a lower end of the stem;

- wherein the actuator is actuatable to initiate a progressive modification of a shape of the application member from a first configuration to a second configuration with a plurality of configurations therebetween;

- wherein the sheath is configured to move between a first position when the cap is coupled with the receptacle, in which the sheath covers the actuator, rendering the actuator inaccessible for actuation, and a second, retracted position when the cap is uncoupled from the receptacle, in which the actuator is accessible for actuation.

16. The container of claim 15, further comprising a biasing member, wherein the lower portion of the cap includes outer and inner concentric members spaced apart and

joined by one or more linking members, the inner concentric member being coupled to the actuator, wherein the sheath and the biasing member are slidably disposed between the outer and inner concentric members.

17. The container of claim 16, wherein when the cap is coupled to the receptacle, the biasing member is in a compressed state, thereby biasing the sheath into the first position covering the actuator, wherein when the cap is uncoupled from the receptacle, the biasing member is in a relaxed state, moving the sheath into the second, retracted position, uncovering the actuator.

18. The container of claim 17, wherein the biasing member is disposed in a space between the inner concentric member of the lower portion of the cap and the sheath, with a lower end of the biasing member engaging an inner annular rim on the sheath and an upper end of the biasing member engaging a lower end of the actuator.

19. The adjustable applicator of claim 18, wherein the receptacle has a first shoulder configured to abut a lower end of the outer concentric member of the lower portion of the cap and a second shoulder configured to abut a lower end of the sheath, thereby exerting an upward sliding force on the sheath, pushing it upward against a downward biasing force of the biasing member, compressing the biasing member and moving the sheath into the first position covering the actuator.

20. A method of actuating an adjustable applicator, the method comprising:
removing a cap from a receptacle, the cap comprising:
an upper portion and a lower portion, the upper portion including an actuator and a sheath removably encasing the actuator;
a stem having an upper portion coupled to the lower portion of the cap;
an application member having a first end coupled to a lower end of the stem;
wherein removing the cap from the receptacle moves the sheath from a first position when the cap is coupled with the receptacle, in which the sheath covers the actuator, rendering the actuator inaccessible for actuation, to a second, retracted position when the cap is uncoupled from the receptacle, in which the actuator is accessible for actuation; and

actuating the actuator, causing the application member to move from a first configuration to a second, deformed configuration.

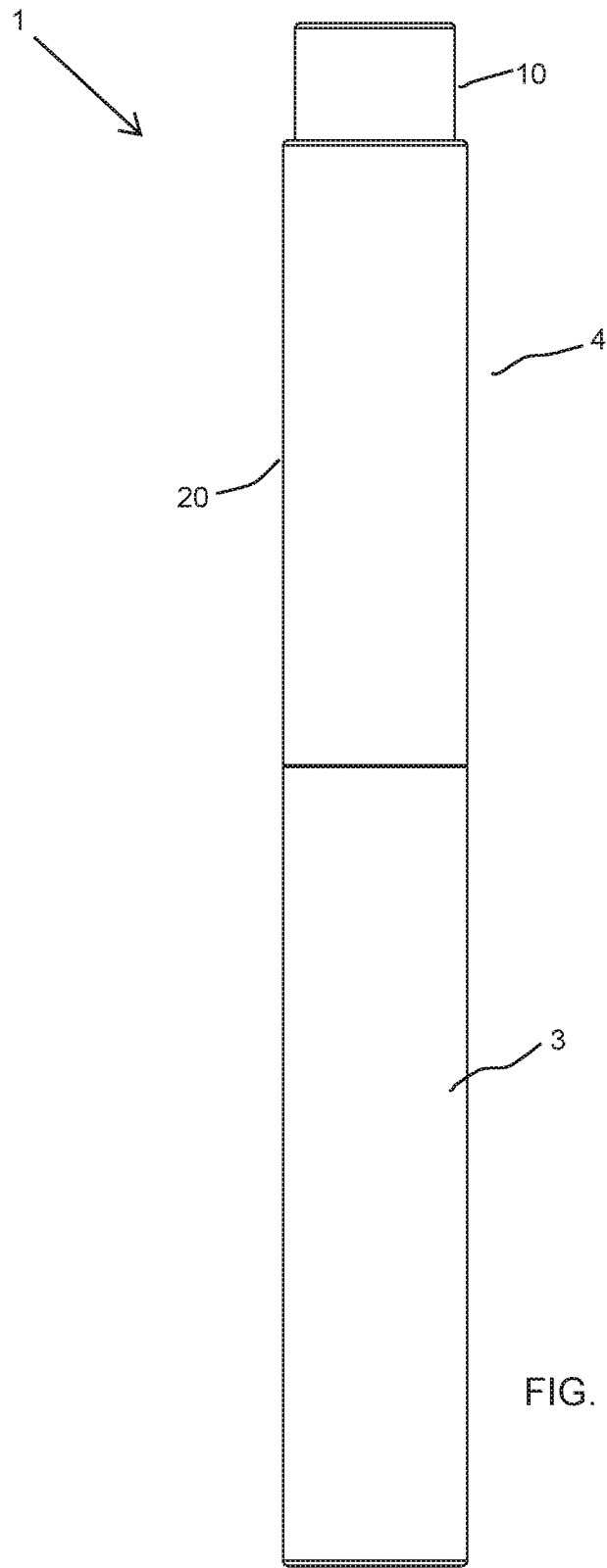
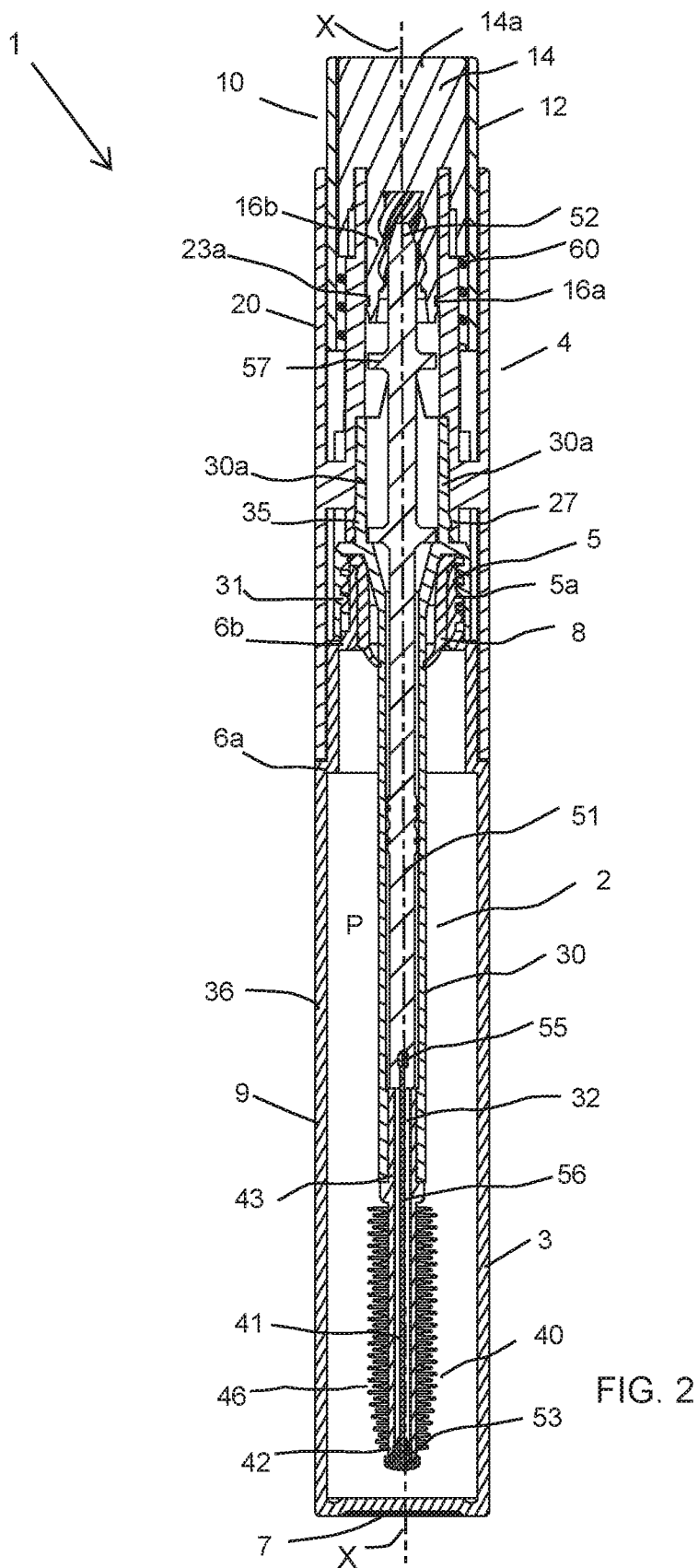


FIG. 1



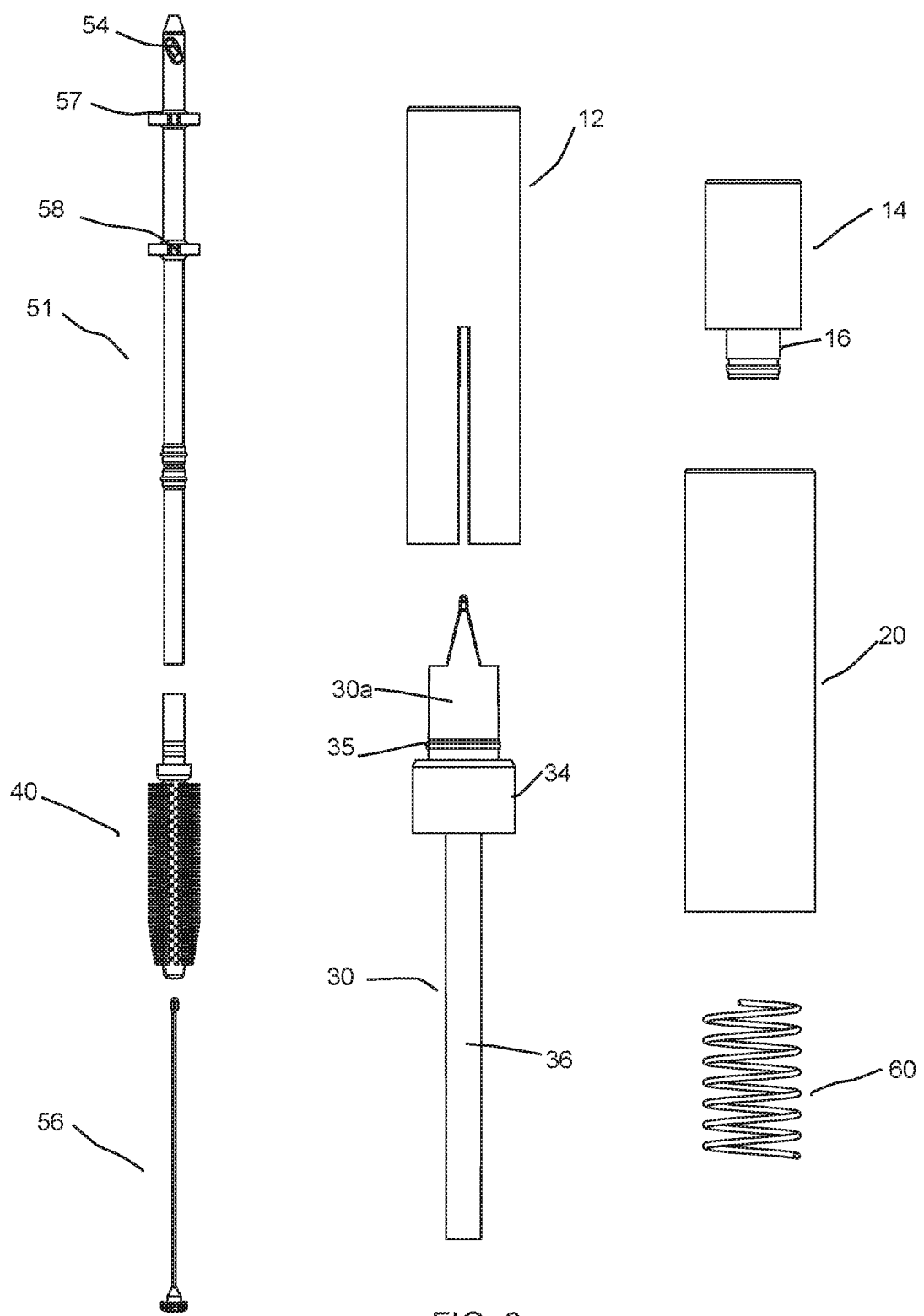


FIG. 3

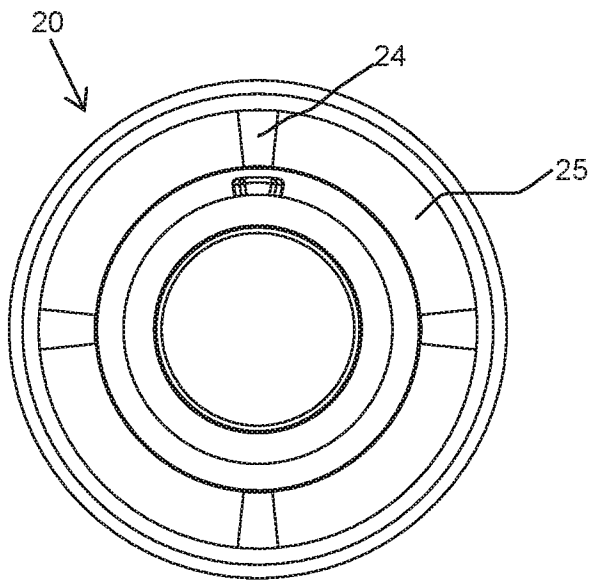


FIG. 4a

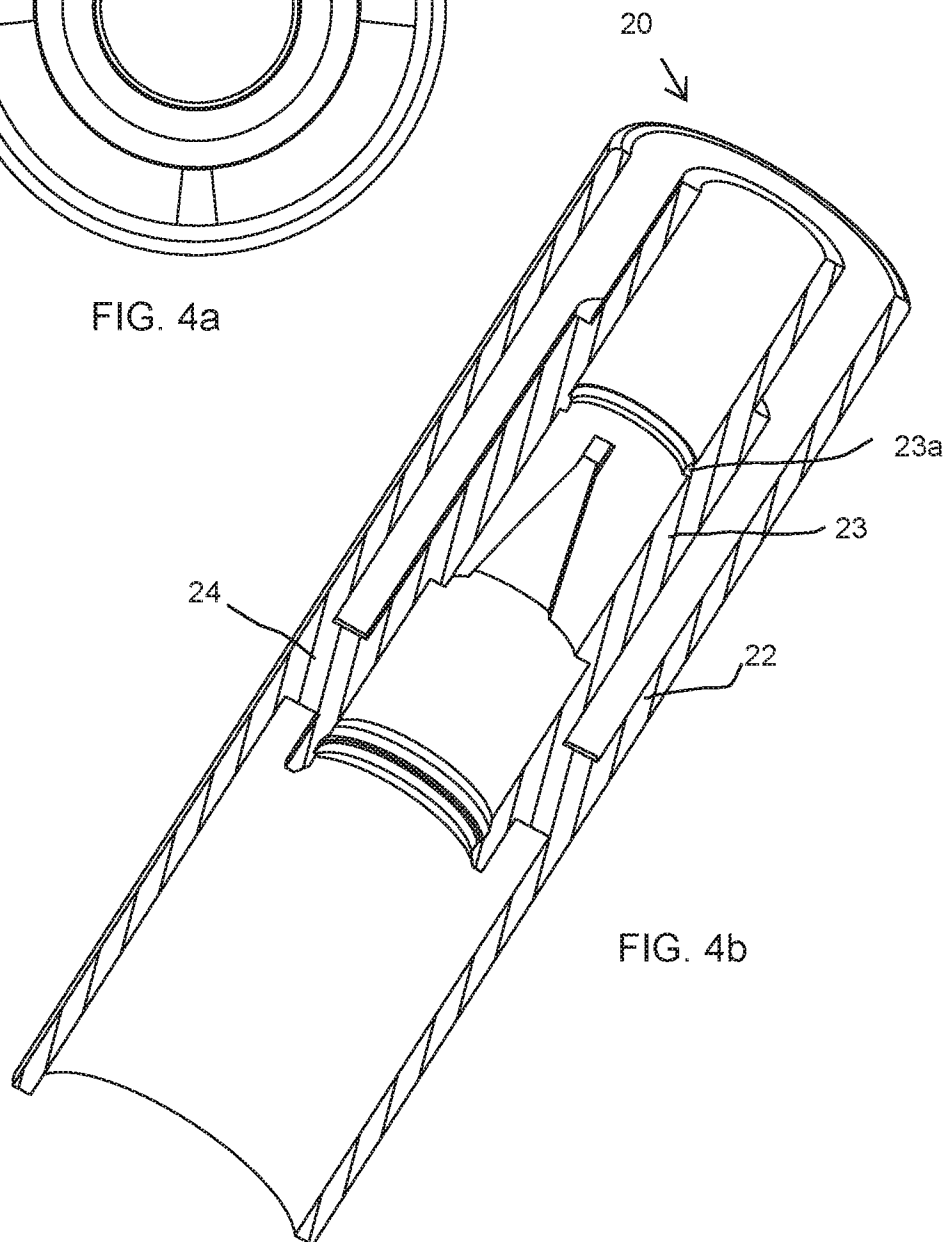


FIG. 4b

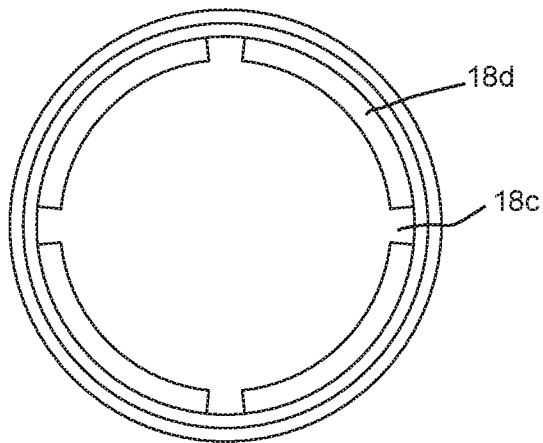


FIG. 5a

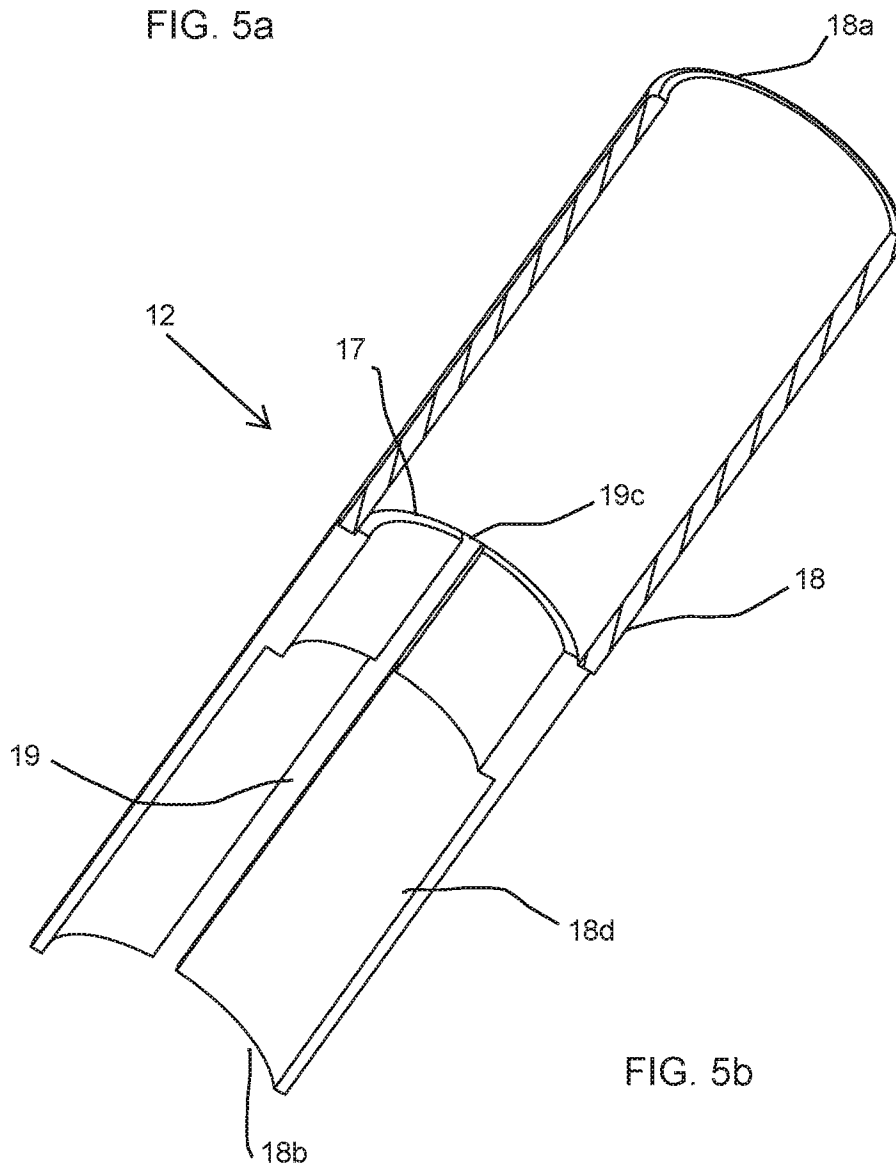


FIG. 5b

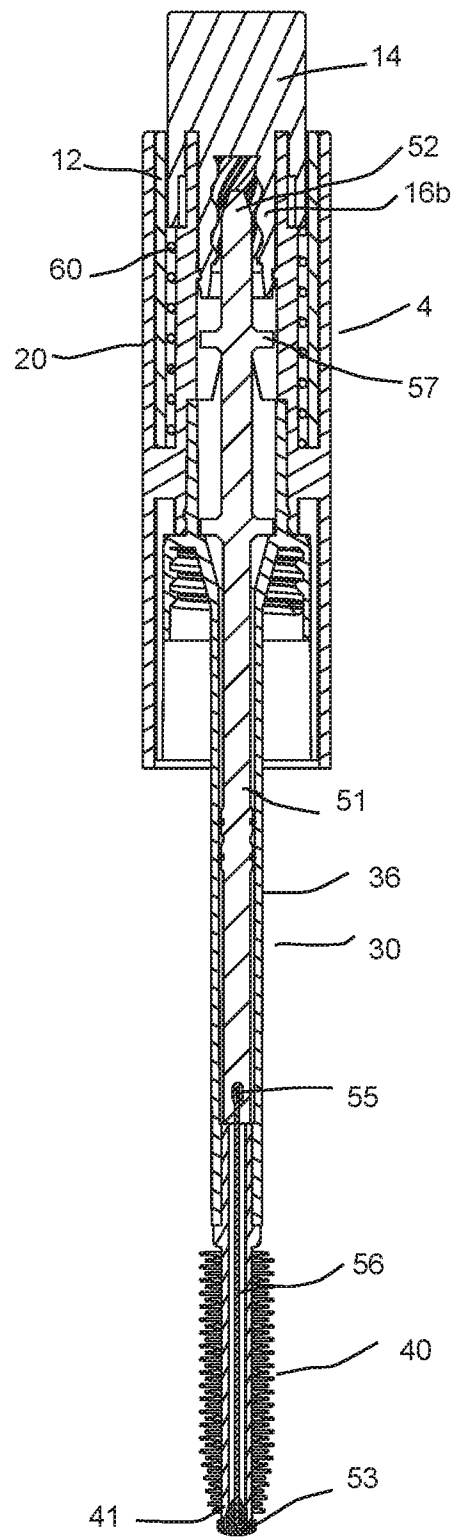


FIG. 6

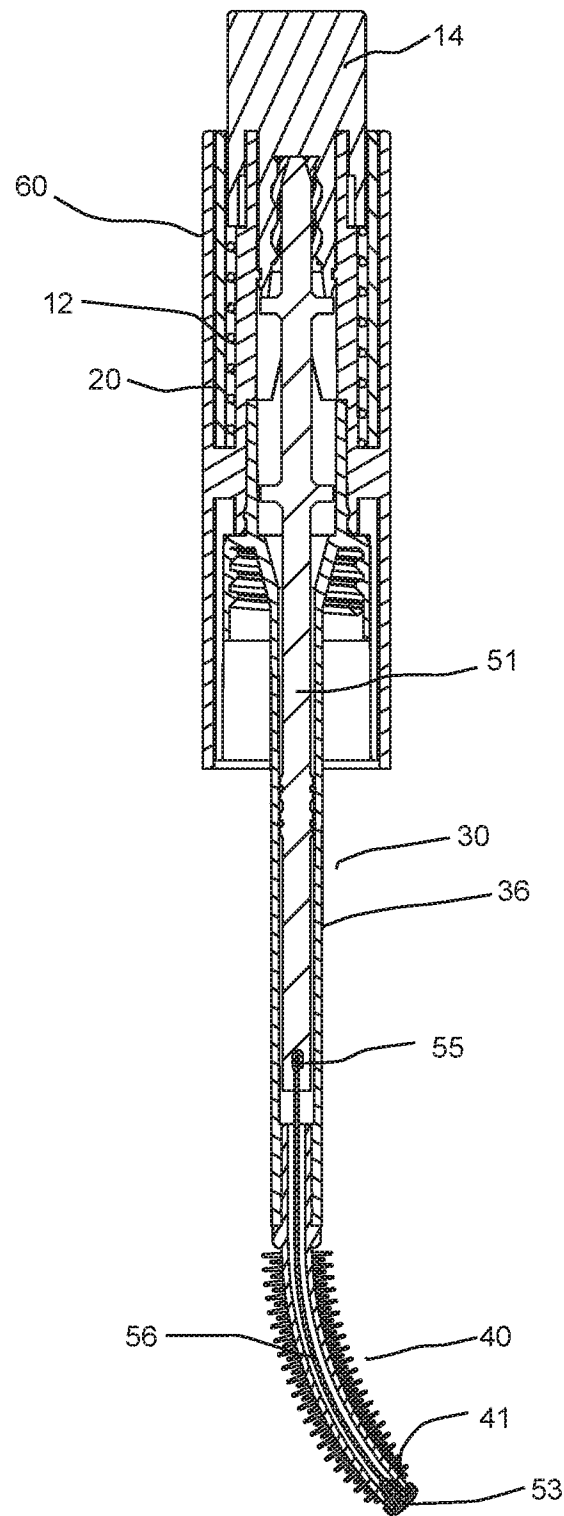


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/018153**A. CLASSIFICATION OF SUBJECT MATTER****A45D 34/04(2006.01)i, A45D 40/26(2006.01)i, B65D 51/32(2006.01)i, A45D 40/00(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A45D 34/04; A45D 40/26; A46B 11/00; A46B 7/02; B65D 51/32; A45D 40/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: cosmetic, applicator, mascara, adjustable, brush, sheath, movable, actuator, rotate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2010-0200013 A1 (KIM, H.) 12 August 2010 See paragraphs [0039]-[0045]; claims 1-4; and figures 1-3.	1-20
Y	KR 10-2013-0025549 A (COWAY CO., LTD.) 12 March 2013 See paragraphs [0033]-[0035]; and figures 1-6.	1-20
Y	US 2010-0224208 A1 (THORPE, J. et al.) 09 September 2010 See paragraphs [0022], [0025]; and figures 2, 3, 5, 6.	9
A	US 2010-0212682 A1 (PIRES, L. C. et al.) 26 August 2010 See the whole document.	1-20
A	KR 10-1257563 B1 (CHANEL PARFUMS BEAUTE) 02 May 2013 See the whole document.	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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Date of mailing of the international search report

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Name and mailing address of the ISA/KR

International Application Division

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2018/018153

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