Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention.)
Description

[0001] The present invention relates to the field of lipstick and cosmetic dispensers having a propelling and retracting mechanism for a cosmetic stick contained within the dispenser, as disclosed in US 5 879 093 A.

[0002] There has been a trend in the cosmetics product market towards "non-transferable" lipstick products. These products are heavy, silicone filled lipsticks that do not transfer from the wearers lips, and leave residue, such as on a coffee cup or clothing. These lipstick formulations have a significant quantity of volatile components in their formulations. As such, they must be kept enclosed in an airtight container when not in use. If not enclosed in an airtight container, they will dry out and shrink. They will become unusable to the consumer, particularly if the lipstick shrinks and falls out of the dispenser cup. These products were first introduced to the market in slim lipstick dispensers because these dispensers had the necessary airtight construction. However, these initial slim dispenser designs also have disadvantages. These slim dispenser designs typically include an elevator cup that has a threaded rod extending downwardly into and engaging a threaded base element, and which can be operated with a twisting action to extend the cosmetic stick from a nose member. One such design is shown, for example, in my U.S. Patent No. 5,018,893.

[0003] A disadvantage of these designs is that in order to load the dispenser with a cosmetic stick, the cosmetic stick must be formed and carefully loaded into the dispenser or cast in place in the tubular nose of the dispenser. The elevators of these dispensers cannot be bottom filled with a molten cosmetic product which is allowed to cool, in place, in a mold, so that the cosmetic is molded in place onto an elevator cup. It is to be appreciated that bottom filling of an elevator cup of a cosmetic dispenser is considered a preferred method of loading the cosmetic stick into a lipstick dispenser because it simplifies the cosmetic loading operation and reduces product loss arising from breakage of the cosmetic stick on loading. Such bottom filling methods are used with conventional lipstick dispensers where the cup size is on the order of 12.7 mm (.50 inches) in diameter. Such bottom filling methods are not generally usable in slim dispenser designs because they will use a small diameter solid threaded rod element engaged in a cam or nut element to drive the elevator. In contrast, the conventional dispensers use a combination of an innerbody body with straight tracks working in combination with helical tracks on a cam sleeve to move an elevator cup by engagement with the elevator cup lugs.

[0004] Lastly, the "feel" of the existing slim dispenser designs is sometimes slack; desirably, a cosmetic dispenser should have a sufficient amount of swivel drag to give the dispenser a feel that is smooth and luxurious.

[0005] It is an object of a preferred embodiment of the invention to provide a slim cosmetic dispenser which is capable of being bottom filled with a molten cosmetic product to allow a cosmetic stick to be formed in place in the elevator cup of the dispenser. It is an object of a preferred embodiment of the invention to provide such a dispenser with an enhanced swivel drag. It is an object of the preferred embodiment of the invention to provide such a dispenser which seals to prevent premature drying and deterioration of a cosmetic stick.

[0006] These objects, and other objects which shall become apparent hereafter are accomplished by a cosmetic dispenser in accordance with one embodiment of the invention, comprising a tubular A-shell, an elevator and a base.

[0007] The A-shell is preferably a decorative aluminum A-shell, but has a plurality of longitudinal splines provided with the interior wall of the A-shell, either as ribs formed integrally with the wall, or as part of a plastic insert. Preferably, there are from four to eight of such splines. The elevator has an elevator cup at an upper end and an elevator stem extending down from the cup. The elevator stem is preferably hollow, and open at its lower end.

[0008] The elevator cup is fitted inside the A-shell and has a plurality of notches around its outer wall. The longitudinal splines fit into the notches to keep the elevator cup in a fixed orientation relative to the A-shell. In one preferred embodiment, the elevator cup notches are formed in an annular bead extending around the outer wall of the elevator cup; for ease of manufacture, the bead is deformable, and the elevator cup notches are made by the pressure of the A-shell splines on the bead when the cosmetic dispenser is operated. In another embodiment, the elevator cup notches are molded or otherwise formed in the outer wall of the elevator cup.

[0009] The elevator stem has an exterior wall with a circular cross-section and a first feature in the form of lugs extending radially outwardly therefrom which fit into and follow a second feature in the form of an internal helically threaded track of the base. The base is rotatably attached to the A-shell, preferably by an annular bead extending around a perimeter of the interior wall of the A-shell in snap fit engagement with a channel extending around a perimeter of an outer wall of the base. Accordingly, the cosmetic dispenser is operable to cause the elevator cup to travel longitudinally in the A-shell by rotation of the base element relative to the A-shell, because the rotation causes the lugs to track upwardly in the helically threaded track, with the A-shell splines received in the elevator cup notches maintaining the elevator cup in a fixed orientation relative to the A-shell.

[0010] Alternatively, the elevator stem has a first feature in the form of a screw thread extending radially outwardly therefrom which interacts with a second feature in the form of mating internal screw threading in the base. Accordingly, rotation of the base causes the mating screw threads to propel the elevator upwardly or retract it downwardly.

[0011] In a preferred embodiment, a desired swivel
torque is provided by a plurality of separate tabs formed with and extending upwardly from the base into frictional contact with the interior wall of the A-shell to generate friction between the base and the A-shell upon relative rotation of the base and A-shell.

[0012] The invention reduces the number of parts used in a dispenser by eliminating the innerbody found in most conventional lipstick dispensers. It provides a slender appearance and an airtight option. It provides a desirable feel due to the friction of plastic friction tabs against a metal A-shell.

[0013] Other objects, aspects and features of the invention in addition to those mentioned above will be pointed out in or will be understood from the following detailed description in conjunction with the drawings.

FIG. 1 is a cross-sectional elevation view of a lipstick dispenser in accordance with one embodiment of the invention.
FIG. 2 is a perspective exploded view of a lipstick dispenser in accordance with one embodiment of the invention.
FIG. 3 is a cross-sectional elevation view of an A-shell of a lipstick dispenser in accordance with one embodiment of the invention.
FIG. 4 is a cross-sectional elevation view of an elevator of a lipstick dispenser in accordance with one embodiment of the invention.
FIG. 5 is a cross-sectional elevation view of a cam base of a lipstick dispenser in accordance with one embodiment of the invention.
FIG. 6 is a perspective view of a cosmetic dispenser in accordance with an embodiment of the invention.
FIG. 7 is a cross-sectional elevation view of an A-shell of a lipstick dispenser in accordance with one embodiment of the invention.
FIG. 8 is a perspective view of the insert for an A-shell of a lipstick dispenser in accordance with one embodiment of the invention.
FIG. 9 is a perspective view with partial cross-sectional view of the A-shell of FIG. 7.
FIG. 10 is a perspective view of the lower end of an embodiment of the elevator of the lipstick dispenser of the invention.
FIG. 11 is a top plan cross-sectional view of the lipstick dispenser of FIG. 1 along the line 11-11.
FIG. 12 is a detail of the view of FIG. 11, showing the ribs of the A-shell mating to the bead of the elevator cup.
FIG. 13 is a detail side elevation cross-sectional view of the area within line 13-13 of FIG. 1.
FIG. 14 is a cross-sectional elevation view of a lipstick dispenser in accordance with an alternative embodiment of the invention.
FIG. 15 is a perspective exploded view of a lipstick dispenser in accordance with the alternative embodiment of the invention.
FIG. 16 is a cross-sectional elevation view of an elevator of a lipstick dispenser in accordance with the alternative embodiment of the invention.
FIG. 17 is a cross-sectional elevation view of a cam base of a lipstick dispenser in accordance with the alternative embodiment of the invention.
FIG. 18 is a detail side elevation cross-sectional view of the area within line 18-18 of FIG. 1.

[0014] Referring now to FIGS. 1-13, where like elements are indicated with the same element numbers, a cosmetic dispenser in accordance with an embodiment of the invention is shown at 20. Dispenser 20 comprises an A-shell 30, an elevator 50, and a base 70. A-shell 30 is a decorative tubular part, preferably formed of metal, most preferably, aluminum. A-shell 30 has an interior wall 32 and an exterior wall 34. A plurality of longitudinal splines 36 are provided on the interior wall 32 of A-shell 30. Preferably, there are from four to eight such longitudinal splines 36. In one preferred embodiment, the splines 36 are integrally formed with the A-shell 30. This can be manufactured by cold forming the A-shell in an appropriate die. Alternately, as can be seen in FIGS. 7-9, A-shell 30 may be a smooth cylinder, and the splines 36 can be incorporated in a metal or plastic insert 38 that fits inside the A-shell 30.

[0015] Elevator 50 is preferably formed from polypropylene and has an elevator cup 52 at an upper end 54 thereof and an elevator stem 56 at a lower end 58 thereof. The elevator cup 52 fits inside the A-shell 30. Elevator cup 52 has a plurality of notches 60 around outer wall 62 of the cup 52. Notches 60 receive the longitudinal splines 36. The splines 36 received in the notches 60 operate to keep the cup 52 fixedly oriented relative to the A-shell 30. Preferably the number of notches 60 is the same as the number of splines 36. The notches 60 may be molded into the outer walls of the elevator cup 52. Preferably, notches 60 are formed in an annular bead 64 extending around the outer wall 62 of the elevator cup. Bead 64 is preferably deformable, and the elevator cup notches 60 can therefore be formed by pressure applied by the splines 36 as they pass over bead 64 when the cosmetic dispenser 20 is first operated. Elevator stem 56 has an exterior wall 65 with a circular cross-section and one or more lugs 66 extending radially outwardly from the wall 65. Preferably, stem 56 is hollow, so that the dispenser 20 may be bottom filled with a cosmetic product.

[0016] Base element 70 has an inner wall 72 with a circular cross-section and at least one, and preferably two internally helically threaded track sections 74. Helically threaded track sections 74 are engaged by the lugs 66 on elevator stem 56. Base 70 is rotatably attached to A-shell 30. In one preferred embodiment, Base 70 is attached to A-shell 30 by a folded over wall section 40 forming an annular bead extending around a perimeter of the interior wall 32 of the A-shell 30 in snap fitting engagement with a channel 76 extending around the perimeter of the outer wall 78 of the base 70. Pref-
erably, as seen in FIG. 13, there is also an external bead 79 in base 70 that fits into a channel 41 in A-shell 30. Accordingly, the cosmetic dispenser 20 is operable to cause the elevator cup 52 to travel longitudinally in the A-shell 30 by rotation of the base element 70 relative to the A-shell 30, because the rotation causes the lugs 66 to track upwardly in the helically threaded track sections 74. While the elevator moves upwardly, the A-shell splines 36 received in the elevator cup notches 60 maintain the elevator cup 52 in a fixed orientation relative to the A-shell 30. [0017] It is to be appreciated that the bead 64 fits tightly against the inner wall 32 of the A-shell 30 to provide the necessary sealing fit that prevents leakage or escape of volatile components in the lipstick when the dispenser is closed with a cap and base. [0018] In a preferred embodiment, a desirable swivel torque is provided by at least one, preferably two, or a plurality of separate tabs 80 formed with and extending upwardly from the base 70 into frictional contact with the interior wall 32 of the A-shell 30 to generate friction between the base 70 and the A-shell 30 upon relative rotation of the base 70 and A-shell 30. To provide the desired swivel friction, the tabs, and typically, the entire base 70 should be formed from a suitable plastic that has low creep characteristic and a good lubricity. In a preferred embodiment, the base is fabricated from Delrin®, a PTFE filled acetal manufactured by E.I. du Pont de Nemours and Company. As can be seen in FIG. 13, the tabs 80 are separated from each other and have an upwardly extending segment 82 and a radially extending segment 84. Although friction tabs 80 are believed preferred, other friction elements may be used, as for example a continuous bead, which would provide a sealing fit between the components to preserve the product and prevent it from drying out. Such a continuous bead could for example connect all the segments 84 to create one annular bead, with segments 82 maintained as separate segments. Alternatively, segments 82 could be a continuous web instead of being segmented, just as segments 84 would be a continuous bead instead of being segmented. [0019] In an alternative embodiment described with reference to Figs. 14 to 18, base element 70 has an inner wall 72 with a circular cross-section and an internally threaded track section 174. Threaded track section 174 is engaged by the exterior screw threading 166 on elevator stem 56. Accordingly, the cosmetic dispenser 20 is operable to cause the elevator cup 52 to travel longitudinally in the A-shell 30 by rotation of the base element 70 relative to the A-shell 30, because the rotation causes the external screw threading 166 to track upwardly in the threaded section 174. As before, while the elevator moves upwardly, the A-shell splines 36 received in the elevator cup notches 60 maintain the elevator cup 52 in a fixed orientation relative to the A-shell 30. [0020] It is to be appreciated that the foregoing is illustrative and not limiting of the invention, and that other modifications of the cosmetic dispenser of the invention may be chosen by persons of ordinary skill in the art, whereby the scope of the invention is defined in the appended claims.

Claims

1. A cosmetic dispenser comprising:

- a tubular A-shell (30) having an interior wall (32) and an exterior wall (34);
- an elevator (50) having an elevator cup (52) at an upper end thereof and an elevator stem (56) at a lower end thereof, said elevator cup being fitted inside said A-shell, said elevator stem having an exterior wall (65) with a circular cross-section and a first feature (66, 166) provided thereon;
- a base element (70) having an inner wall (72) with a circular cross-section and a second feature (74, 174) thereon, said first feature being engaged with said second feature, and said base element being rotatably attached to said A-shell; and
- means (80) for generating friction between said base element (70) and said A-shell (30) upon relative rotation of said base and A-shell;

said cosmetic dispenser being operable to cause said elevator cup (52) to travel longitudinally in said A-shell (30) by rotation of said base element (70) relative to said A-shell;

characterised in that

the A-shell (30) has a plurality of longitudinal splines (36) provided on the interior wall (32) of said A-shell; and

the elevator cup (52) has a plurality of notches (60) around an outer wall thereof for receiving said longitudinal splines (36);

wherein on rotation at the base element (70) relative to the A-shell, said A-shell splines (36) received in said elevator cup notches (60) maintain the elevator cup in a fixed orientation relative to the A-shell.

2. A cosmetic dispenser in accordance with claim 1, characterised in that said elevator cup notches (60) are formed in an annular bead (64) extending around said outer wall of said elevator cup.

3. A cosmetic dispenser in accordance with claim 2, characterised in that said bead is deformable, and said elevator cup notches (60) are made by said A-shell splines (36) when said cosmetic dispenser is operated.
4. A cosmetic dispenser in accordance with claim 1, **characterised in that** said elevator cup notches (60) are formed in said outer wall of said elevator cup.

5. A cosmetic dispenser in accordance with any of claims 1 to 4 **characterised in that** said splines (36) are integrally formed with said interior wall (32) of said A-shell.

6. A cosmetic dispenser in accordance with any of claims 1 to 4 **characterised in that** there is an insert (38) fitted inside said A-shell, said splines being provided on said insert.

7. A cosmetic dispenser in accordance with any preceding claim, **characterised in that** there are from 4 to 8 of said splines.

8. A cosmetic dispenser in accordance with any preceding claim, **characterised in that** the first feature on the elevator stem (56) comprises a lug (66) extending radially outwardly therefrom.

9. A cosmetic dispenser in accordance with any preceding claim, **characterised in that** the second feature on the inner wall (72) of the base element (70) comprises an internal helical track section (74).

10. A cosmetic dispenser in accordance with any of claims 1 to 7, **characterised in that** the first feature on the elevator stem (56) comprises a screw thread (174) provided thereon.

11. A cosmetic dispenser in accordance with claim 10, **characterised in that** the second feature on the inner wall (72) of the base element (70) comprises an internally threaded section (166).

**Revendications**

1. Distributeur de produit cosmétique comprenant :

   une enveloppe extérieure tubulaire (30) comportant une paroi intérieure (32) et une paroi externe (34) ;
   un élévateur (50) comportant une coupelle d'élévateur (52) à une extrémité supérieure et une tige d'élévateur (56) à une extrémité inférieure, ladite coupelle d'élévateur étant engagée avec l'élément de base (70) et ladite enveloppe extérieure (30) lors d'une rotation relative de ladite base et de ladite enveloppe extérieure ;
   ledit distributeur de produit cosmétique étant adapté à amener ladite coupelle d'élévateur (52) à se déplacer longitudinalement dans ladite enveloppe extérieure (30) par rotation dudit élément de base (70) relativement à ladite enveloppe extérieure ;
   caractérisé en ce que
   l'enveloppe extérieure (30) comporte une pluralité de cannelures longitudinales (36) situées sur la paroi intérieure (32) de ladite enveloppe extérieure ;
   et
   la coupelle d'élévateur (52) comporte une pluralité d'encoches (60) autour de sa paroi externe pour recevoir lesdites cannelures longitudinales (36) ;
   dans lequel lors de la rotation à l'élément de base (70) par rapport à l'enveloppe extérieure, lesdites cannelures (36) d'enveloppe extérieure reçoivent lesdites encoches (60) de coupelle d'élévateur gardant la coupelle d'élévateur dans une orientation fixe par rapport à l'enveloppe extérieure.

2. Distributeur de produit cosmétique selon la revendication 1, **caractérisé en ce que** lesdites encoches (60) de coupelle d'élévateur sont formées dans une nervure annulaire (64) s'étendant autour de ladite paroi externe de ladite coupelle d'élévateur.

3. Distributeur de produit cosmétique selon la revendication 2, **caractérisé en ce que** ladite nervure est déformable, et lesdites encoches (60) de coupelle d'élévateur sont formées par lesdites cannelures (36) d'enveloppe extérieure lorsque ledit distributeur cosmétique est actionné.

4. Distributeur de produit cosmétique selon la revendication 1, **caractérisé en ce que** lesdites encoches (60) de coupelle d'élévateur sont formées dans ladite paroi externe de ladite coupelle d'élévateur.

5. Distributeur de produit cosmétique selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** lesdites cannelures (36) sont formées d'un seul tenant avec ladite paroi intérieure (32) de ladite enveloppe extérieure.
6. Distributeur de produit cosmétique selon l’une quelconque des revendications 1 à 4, caractérisé en ce qu’un insert (38) est ajusté à l’intérieur de ladite enveloppe extérieure, lesdites cannelures étant situées sur ledit insert.

7. Distributeur de produit cosmétique selon l’une quelconque des revendications précédentes, caractérisé en ce qu’il comporte 4 à 8 cannelures.

8. Distributeur de produit cosmétique selon l’une quelconque des revendications précédentes, caractérisé en ce que le premier élément caractéristique sur la tige d’élévateur (56) comprend un ergot (66) s’étendant radialement vers l’extérieur de la tige.

9. Distributeur de produit cosmétique selon l’une quelconque des revendications précédentes, caractérisé en ce que le deuxième élément caractéristique sur la paroi interne (72) de l’élément de base (70) comprend une section de voie hélicoïdale interne (74).

10. Distributeur de produit cosmétique selon l’une quelconque des revendications 1 à 7, caractérisé en ce que le premier élément caractéristique sur la tige d’élévateur (56) comprend un filet de vis (174) sur celle-ci.

11. Distributeur de produit cosmétique selon la revendication 10, caractérisé en ce que le deuxième élément caractéristique sur la paroi interne (72) de l’élément de base (70) comprend une section taraudée (166).

Patentansprüche

1. Kosmetisches Gehäuse mit einer röhrenförmigen äußeren Hülle (30) welche eine Innenwandung (32) und eine Außenwandung (34) aufweist, einem Förderer (50), der an seinem oberen Ende einen Förderbecher (52) und an seinem unteren Ende einen Vorschubschaft (56) aufweist, wobei der genannte Förderbecher in die genannte äußere Hülle eingepasst ist, wobei der genannte Vorschubschaft eine Außenwandung (65) mit einem kreisförmigen Querschnitt und einem ersten, auf diesem angebrachten Teil (66,166) aufweist, einem Unterteil (70), das eine Innenwandung (72) mit einem kreisförmigen Querschnitt und ein auf diesem angebrachtes zweites Teil (74,174) aufweist, wobei das genannte erste Teil mit dem genannten zweiten Teil im Eingriff steht und wobei das genannte Unterteil drehbar mit der genannten äußeren Hülle in Verbindung steht und Mitteln (80) zur Erzeugung eines Reibschlusses zwischen dem genannten Unterteil (70) und der genannten äußeren Hülle (30) bei Relativdrehung des Unterteils und der äußeren Hülle, wobei das Kosmetikgehäuse dahingehend betätigbar ist, dass der genannte Förderbecher (52) durch Drehung des genannten Unterteils (70) relativ zu der genannten äußeren Hülle in Längsrichtung der äußeren Hülle bewegt werden kann, dadurch gekennzeichnet.

2. Kosmetikgehäuse nach Anspruch 1, dadurch gekennzeichnet, dass die Kerben (60) des genannten Förderbechers in eine Ringsicke (64) eingeformt sind, die sich entlang der Außenwandung des genannten Förderbechers erstreckt.

3. Kosmetikgehäuse nach Anspruch 2, dadurch gekennzeichnet, dass die genannte Sicke verformbar ist und dass die Kerben (60) des genannten Förderbechers durch die genannten Stege (36) der äußeren Hülle geformt werden, sobald das genannte Kosmetikgehäuse betätigt wird.

4. Kosmetikgehäuse nach Anspruch 1, dadurch gekennzeichnet, dass die genannten Kerben (60) des Förderbechers in die genannte Außenwandung des genannten Förderbechers eingeformt sind.

5. Kosmetikgehäuse nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, dass die genannten Stege (36) einstündig mit der genannten Innenwandung (32) der genannten äußeren Hülle geformt sind.

6. Kosmetikgehäuse nach einem der vorangegangenen Ansprüche 1 bis 4, dadurch gekennzeichnet, dass innerhalb der äußeren Hülle ein Einsatz (38) eingepasst ist, wobei die genannten Stege auf dem genannten Einsatz angeordnet sind.

8. Kosmetikgehäuse nach einem der vorangegangenen Ansprüche, **dadurch gekennzeichnet, dass** das erste Teil auf den Vorschubschaft (56) aus einem Ansatz (66) besteht, der sich ausgehend von dem Schaft in radial auswärtiger Richtung erstreckt.

9. Kosmetikgehäuse nach einem der vorangegangenen Ansprüche, **dadurch gekennzeichnet, dass** das zweite Teil auf der Innenwandung (72) des Unterteils (70) aus einem schraubenlinienförmigen innerseitigen Spurabschnitt (74) besteht.

10. Kosmetikgehäuse nach einem der vorangegangenen Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** das erste Teil auf dem Vorschubschaft (56) aus einem auf diesem befindlichen Schraubgewinde (174) besteht.

11. Kosmetikgehäuse nach Anspruch 10, **dadurch gekennzeichnet, dass** das zweite Teil auf der Innenwandung (72) des Unterteils (70) aus einem innerseitigen Gewindeabschnitt (166) besteht.