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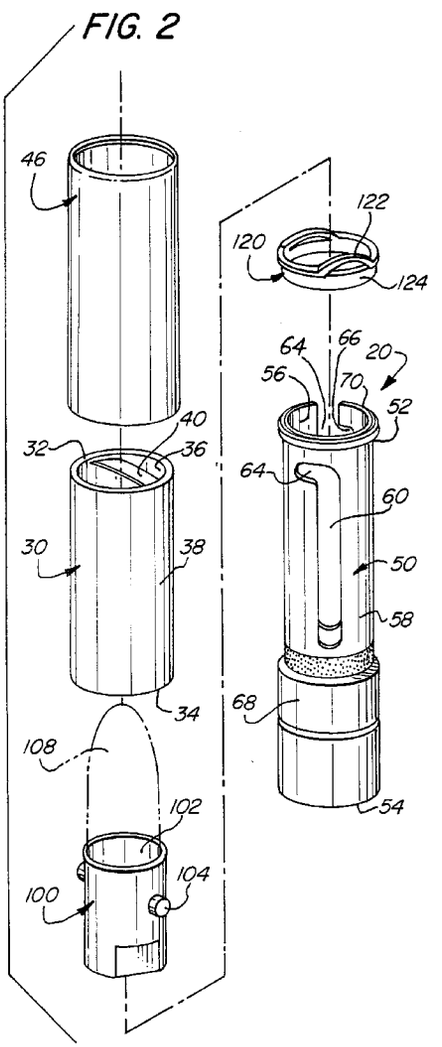
(54) Cosmetic dispenser with flex ring for swivel drag

(57) A cosmetic preparation dispenser (20) is provided that has a flex ring (120) fitted over the innerbody (50) to provide frictional drag between the flex ring (120) and the lower edge (34) of the cam sleeve (30) and/or the upper surface of an innerbody base (68). The flex ring (120) is embodied as a plastic ring with upwardly extending loops (124), or a metal wave washer.

FIG. 2



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Description

The present invention relates to the field of cosmetic and lipstick dispensers, and particularly to a dispenser suited to provide a frictional swivel drag effect during operation of the dispenser.

Conventional propel/repel lipstick dispensers typically have an outer helical cam track sleeve and a longitudinal track innerbody rotatable inside the cam sleeve to axially propel and retract an elevator cup with a lug or lugs that track in the cam track and in the longitudinal track.

It is known in the art to provide cosmetic dispensers such as lipstick cases with a desirable frictional drag "feel" discernable to the consumer operator when the dispenser is operated to extend or retract the cosmetic stick. It is desirable in providing such a feel that the swivel torque needed to rotate the components to dispense the lipstick remain nearly constant, regardless of whether the dispenser is nearly full or exhausted of the cosmetic. The swivel torque should be significant enough to impart a firm feel to the dispenser. Looseness, uneven drag, or inconsistency of torque can be interpreted by the consumer as indicating an inferior quality product.

The prior art has attempted to provide the desired firmness and consistency of swivel torque by a number of devices. United States Patent No. 4,750,501 to Ackermann et al. is an example of one type of cosmetic applicator wherein an objective is to impart an even drag and swivel torque during operation. In other prior art devices, two lugs or tabs are provided on the elevator cup to press against the innerbody or the cam sleeve to provide frictional interference therebetween; in other devices ribs have been provided on the innerbody that frictionally fit against the elevator cup. However, these prior art devices have generally suffered from inconsistent swivel torque along the travel of the elevator cup as it moves from the extended to the retracted position. This problem arises because the effective inner diameter of the innerbody can vary along its length and thereby vary the swivel torque in an undesirable manner. The dispenser can therefore tend to feel looser when the cup is at one end and tighter when the cup is at the other end.

In yet other prior art devices, two lugs or tabs are provided on the innerbody to press against the cam sleeve to provide frictional interference between the two rotating elements of the dispenser. Such a device is shown for example in U.S. Patent No. 5,186,560 issued Feb. 16, 1993 to Holloway, U.S. Patent No. 5,186,561 issued Feb. 16, 1993 to Ackermann and Holloway, and U.S. Patent No. 5,324,126 issued June 28, 1994 to Holloway and Ackermann. These dispensers have been successful in the marketplace, as they solve problems associated with gradual loss of swivel torque over time.

It is an object of the invention to provide an improved cosmetic preparation dispenser having a mechanism to provide a consistent swivel torque. The desirable swivel torque imparts a luxurious feel associated in the perception of the consumer with a higher quality product.

In accordance with the present invention, a cosmetic dispenser includes a cam sleeve, innerbody and elevator cup. A flex ring is provided to create frictional drag between the cam sleeve and innerbody when rotated relative to each other. The flex ring in its preferred embodiment comprises a plastic ring body with loops that fit against and create drag by frictional engagement with the cam sleeve. In an alternative embodiment, the flex ring is an annular metal wave spring.

In order that the invention may be more readily understood, it will now be described in more detail by way of example with reference to the accompanying drawings in which:-

FIG. 1 is a side elevation view of a cosmetic dispenser in accordance with one embodiment of the invention with a loop flex ring.

FIG. 2 is an exploded view of the dispenser of FIG. 1.

FIG. 3 is a top plan view of a loop flex ring.

FIG. 4 is a cross-sectional view along the lines 4-4 of FIG. 1.

FIG. 5 is a perspective view of an embodiment of a metal spring flex ring.

FIG. 6 is a top plan view of the metal spring flex ring of FIG. 5.

FIG. 7 is a side elevation view of the metal spring flex ring of FIG. 5.

FIG. 8 is a side elevation view of a dispenser in accordance with another embodiment of the invention with a metal spring flex ring.

Referring now to FIGS. 1-8, where like elements are identified by like numbers in the drawings, an improved cosmetic dispenser with flex ring for swivel drag is shown generally at 20. Dispenser 20 comprises a cam sleeve 30, an innerbody 50, an elevator cup 100, and a flex ring 120, 220.

Cam sleeve 30 is rigid and tubular and has an upper end 32 and a lower end 34. Cam sleeve 30 has an inner wall 36 and an outer wall 38. At least one and preferably two internal helical tracks 40 and 42 are formed on the inner wall 36. Helical tracks 40 and 42 are located 180 degrees apart and extend along a substantial length of the inner wall 36 of the cam sleeve 30. Preferably, each helical track 40 and 42 provides one 360 degree circle in the inner wall 36 of cam sleeve 30. An ornamental outer shell 46 such as a brass tube may be fitted over the outer wall 38 of the cam sleeve for decoration.

Innerbody 50 is also tubular and has an upper end 52 and a lower end 54. Innerbody 50 has an inner wall 56 and an outer wall 58. Innerbody 50 is fitted into the cam sleeve 30 and has at least one and preferably two longitudinal tracks 60 and 62 which extend along the axial length of the innerbody 50 and which extend through the walls 56, 58 of the innerbody 50 along a substantial length of the innerbody 50. Preferably, one of the longitudinal tracks 60 extends to the upper end 52 of the in-

nerbody 50 so that it is open at its upper end. The other longitudinal track 62 preferably does not so extend so that it is closed at its upper end. This permits easy assembly of the elevator cup 100 into innerbody 50.

The longitudinal tracks 60 and 62 preferably have at their upper ends upper lateral track segments 64 and 66 respectively which preferably extend perpendicularly from the longitudinal tracks 60 and 62. The upper lateral track segments 64 and 66 assist the elevator cup 100 to be locked in an extended position for application of a cosmetic.

The innerbody 50 is interlocked with the cam sleeve 30 so that rotation or application of a swivel torque to the cam sleeve 30 relative to innerbody 50 can be accomplished by gripping an extended base portion 68 on innerbody 50 with one hand and cam sleeve 30 with the other hand to raise or lower elevator cup 100. The cam sleeve 30 and innerbody 50 are preferably secured together by a retaining lip 70 on the upper end 52 of innerbody 50 that retains the upper end 32 of cam sleeve 30 in place on innerbody 50. The base 68 of innerbody 50 has a larger diameter than the lower end 34 of cam sleeve 30 and thereby holds the cam sleeve lower end 34 in place.

The length of cam sleeve 30 is less than the distance between the base 68 and retaining lip 70 of innerbody 50. This permits the lower end 34 of cam sleeve 30 to be spaced apart from base 68.

The elevator cup 100 is generally cylindrical and has a chamber 102 for containing a cosmetic preparation such as lipstick pomade 108. The cup 100 is fitted into the innerbody 50. Cup 100 has at least one and preferably two cam follower lugs 104 for seating in and following in the longitudinal tracks 60 and 62 of the innerbody 50 and the helical tracks 40 and 42 of the cam sleeve 30. The lugs 104 are located 180 degrees apart and have a sufficient length to extend through the longitudinal tracks 60 and 62 to engage the helical tracks 40 and 42. Cup 100 is movable in an axial path in a conventional manner by relative rotation of the innerbody 50 and cam sleeve 30 by virtue of the lugs 104 seating in the helical tracks 40 and 42 of cam sleeve 30 and the longitudinal tracks 60 and 62 of innerbody 50. The relative rotation of the cam sleeve 30 and innerbody 50 causes the cup 100 to move axially to propel the elevator cup 100 to an extended position, and relative rotation in the opposite direction causes the elevator cup 100 to retract to a retracted position. In the preferred embodiment, the helical tracks 40 and 42 are right hand threads in the cam sleeve 30 and have a thread pitch of about 30 degrees so that each makes one complete revolution as the cup 100 traverses the length of the dispenser 20. This is desirable as only a single turn is needed to fully activate the dispenser 20 or to fully retract the dispenser.

The flex ring 120, 220 provides a frictional braking effect against the lower end 34 of cam sleeve 30. Because the frictional engagement takes place around a fixed edge wall in a circumferential path, an even drag is provided that is relatively insensitive to the position of the elevator cup along the innerbody.

Flex ring 120, shown in FIGS. 1-4, comprises a polymeric plastic ring fitted over innerbody 50. Flex ring 120 is preferably formed from styrene and is located in the space between the lower end 34 of cam sleeve 30 and the base 68 of innerbody 50. Flex ring 120 has two resilient loops 122 that extend upwardly from the ring body 124. Loops 122 frictionally engage the lower end 34 of cam sleeve 30 and provide the desired swivel drag. Ring body 124 will typically be held in place against base 68.

Flex ring 220, shown in FIGS. 5-8, comprises a metal wave washer that is fitted over innerbody 50. Flex ring 220 is located in the space between lower end 34 of cam sleeve 30 and the base 68 of innerbody 50. Flex ring 220 will tend to provide frictional contact with both the lower end 34 of cam sleeve 30 and the base 68 of innerbody 50 to provide the desired swivel drag.

It is also possible to locate the flex ring 120, 220 at the upper end 32 of cam sleeve 30, for example, between the retaining lip 70 and the upper end 32.

The innerbody 50 and the cam sleeve 30 are preferably formed by molding from a thermoplastic such as styrene. If desired, ornamental coverings and caps may be provided as are known in the art.

The present invention therefore provides a new and useful cosmetic dispenser with a substantially longer lasting frictional swivel drag effect than has been known in prior art dispensers, which is obtained without creating undesirable side effects.

It is to be appreciated that the foregoing is illustrative and not limiting of the invention, and that various changes and modifications to the preferred embodiments described above will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the present invention, and it is therefore intended that such changes and modifications be covered by the following claims.

Claims

1. A cosmetic dispenser, comprising:

a tubular cam sleeve having upper and lower ends and inner and outer walls and having an internal first track extending along a substantial length of the inner wall of said cam sleeve, said cam sleeve having a lower end;

a tubular innerbody having upper and lower ends, said innerbody being fitted into said tubular cam sleeve and being provided with a second track extending through the wall of said innerbody along a substantial length of said innerbody, said innerbody having a base at a lower end thereof, and a retaining lip at an upper end thereof, said base and lip, retaining

said cam sleeve on said innerbody, said cam sleeve having a length which is less than a distance between said retaining lip and said base;
a resilient flex ring fitted over said innerbody and frictionally engaging and bearing against said cam sleeve to provide a swivel drag when said innerbody and cam sleeve are rotated relative to each other;
a generally cylindrical elevator cup for containing a cosmetic preparation, fitted into said innerbody and having a cam follower lug extending through said second track to engage said first track, said elevator cup being movable in an axial path by relative rotation of said innerbody and cam sleeve.

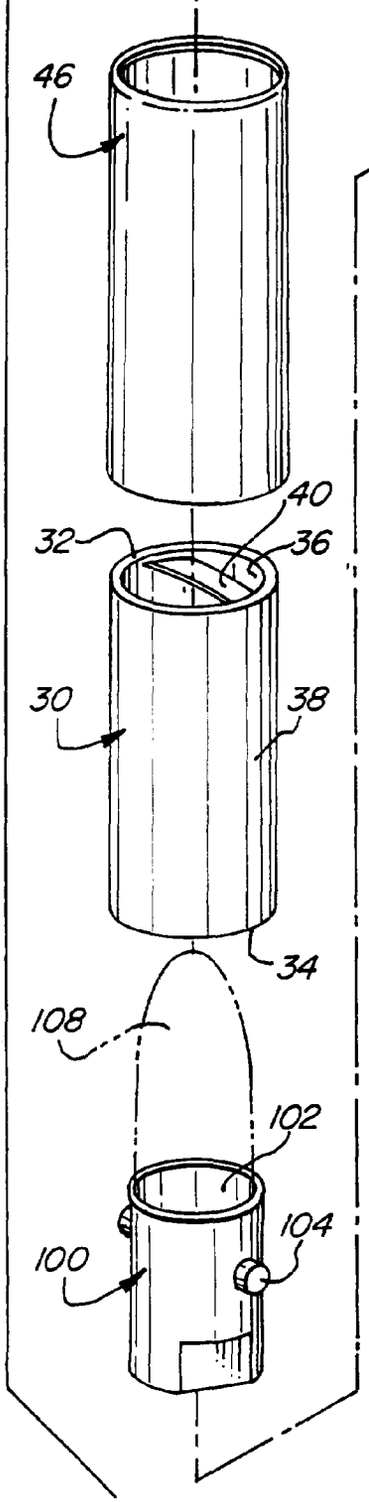
2. A cosmetic dispenser in accordance with claim 1, wherein said flex ring comprises a polymeric ring with two resilient loops for bearing against said cam sleeve.

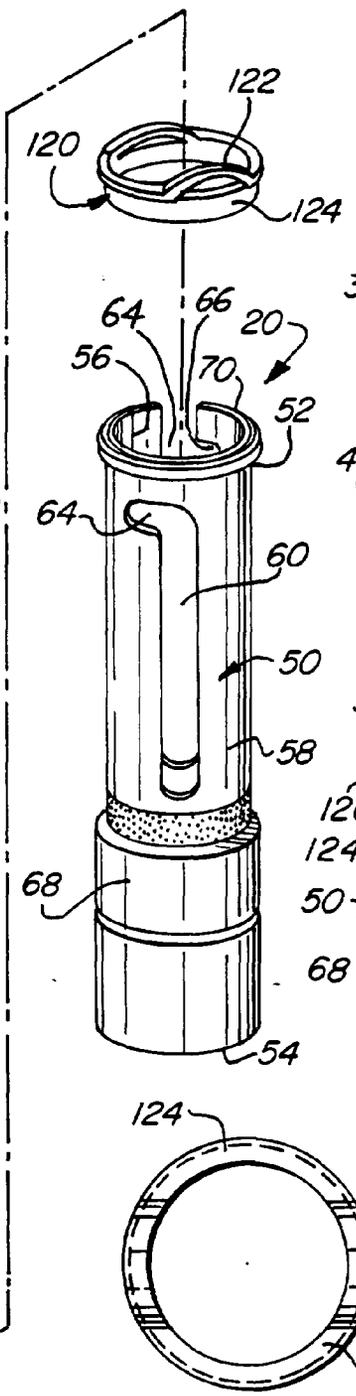
3. A cosmetic dispenser in accordance with claim 1, wherein said flex ring comprises a metal wave washer.

4. A cosmetic dispenser in accordance with claim 1, 2 or 3, wherein said cam sleeve lower end is spaced apart from said base; and said resilient flex ring is located between said cam sleeve lower end and said innerbody base, such that said flex ring frictionally engages and bears against said lower end of said cam sleeve.

5. A cosmetic dispenser in accordance with claims 2 and 4, wherein said two resilient loops are arranged to bear against said cam sleeve lower end.

FIG. 2





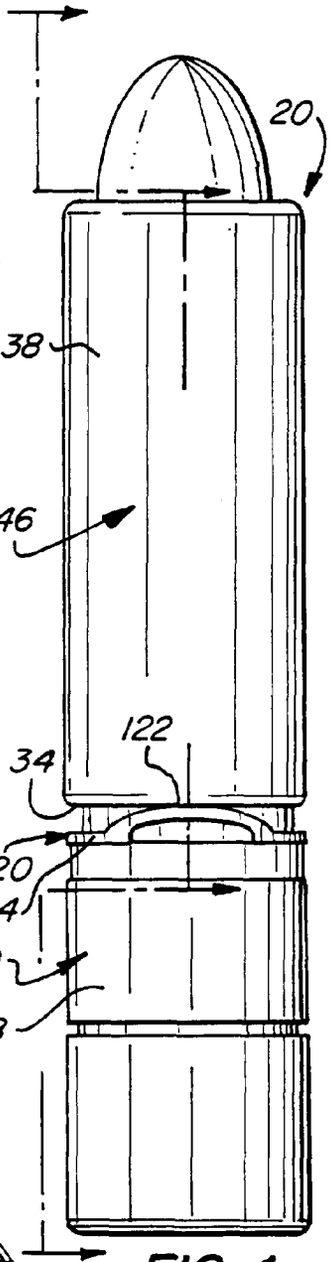


FIG. 1

FIG. 3

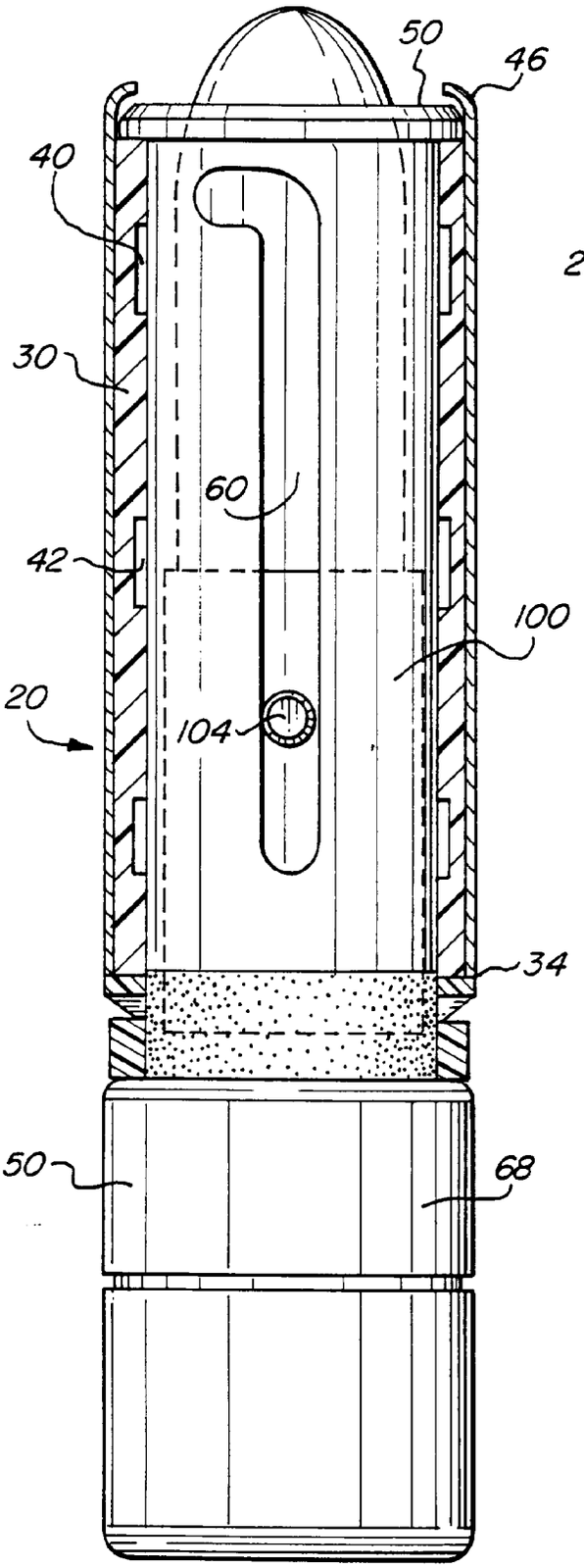
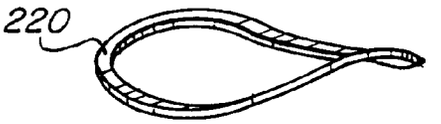


FIG. 4

FIG. 5



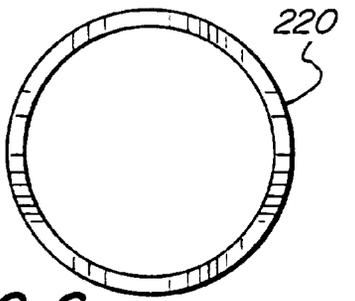


FIG. 6

FIG. 7

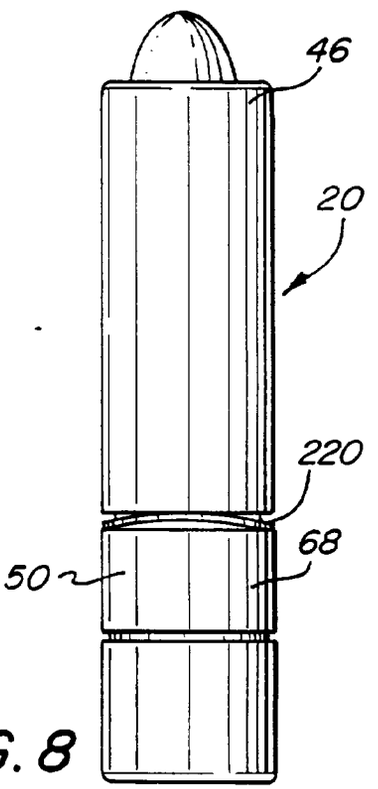


FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 7511

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	WO-A-86 03658 (GUERET) * the whole document *	1,4	A45D40/06
A	* claim 7 *	2,5	
A	US-A-2 840 229 (HOPGOOD) * the whole document *	1	
A	US-A-5 348 410 (YUKIO SHOZI) * the whole document *	1	
A	EP-A-0 491 579 (GUERET)		

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	6 February 1996	Riegel, R

CATEGORY OF CITED DOCUMENTS

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