## (11) EP 2 684 485 A1

(12)

#### **EUROPEAN PATENT APPLICATION**

(43) Date of publication: 15.01.2014 Bulletin 2014/03

(51) Int Cl.: **A45D** 40/26 (2006.01)

(21) Application number: 13163169.9

(22) Date of filing: 10.04.2013

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated Extension States:

**BA ME** 

(30) Priority: 13.07.2012 KR 20120076398

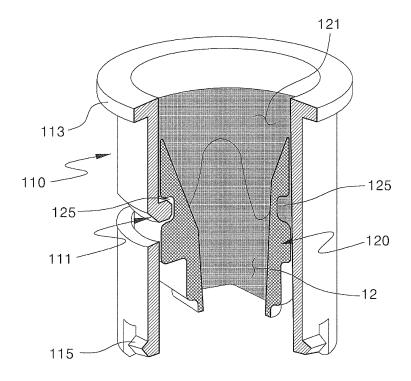
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#### (54) Spinning wiper of cosmetic container

(57) The present invention relates to a spinning wiper of a cosmetic container, including: an outer body detachably mounted on an inlet of a cosmetic container body; and an inner body shaft-coupled to the inner diameter of the outer body in such a manner as to insert a brush rod coupled at one end thereof to an applicator through which a cosmetic liquid is applied thereinto, the inner body being

idle to correspond with the outer shape of the brush rod. According to the spinning wiper of the cosmetic container, even though the brush rod does not have any circular sectional shape, the inner body is rotated to correspond with the outer shape of the brush rod in such a manner as to naturally find the coupling position to the brush rod at the time when the brush rod enters the inner body.





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#### **BACKGROUND OF THE INVENTION**

#### Field of the Invention

**[0001]** The present invention relates to a spinning wiper of a cosmetic container, and more particularly, to a spinning wiper of a cosmetic container that is configured to have an inner body shaft-coupled in idleable manner to the inner diameter of an outer body detachably mounted on an inlet of a cosmetic container body, so that even though a brush rod does not have any circular sectional shape, the inner body is rotated to correspond with the outer shape of the brush rod in such a manner as to naturally find the coupling position to the brush rod at the time when the brush rod enters the inner body.

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#### Background of the Related Art

**[0002]** So as to apply a cosmetic liquid such as lip gloss, eye liner, eye shadow, manicure and so on, generally, a separate brush is used to coat the cosmetic liquid filled into a cosmetic container thereon, and alternatively, a brush and a brush rod, which are formed integrally with a cap, are submerged into the cosmetic liquid at the time when the cap is locked to allow the cosmetic liquid to be coated on the brush.

**[0003]** When the cosmetic liquid coated on the brush is applied, if the quantity of cosmetic liquid coated on the brush is excessive, it may flow along the brush rod or may fall down, thereby making it inconvenient to use.

**[0004]** Accordingly, a wiper is provided to allow the outer diameter of the brush rod to be compressedly passed through the cosmetic container, thereby removing the cosmetic liquid from the brush rod.

**[0005]** FIG.1 is a sectional view showing a cosmetic container in which a wiper is adopted in a conventional practice, and FIG.2 is an enlarged sectional view showing the wiper in the conventional practice.

**[0006]** As shown, the cosmetic container in the conventional practice largely includes a cosmetic container body 20 into which a cosmetic liquid is filled and a cap 30 coupled to the cosmetic container body 20.

**[0007]** The cap 30 has an applicator 33 mounted on the end of a brush rod 31 extended by a given length therefrom, and the cosmetic liquid is applied by means of the applicator 33.

**[0008]** At this time, the cosmetic container body 20 has a wiper 10 mounted on the inlet of the upper end periphery thereof, through which the brush rod 31 of the cap 30 is compressedly passed against the outer peripheral surface thereof, thereby removing the cosmetic liquid from the brush rod 31.

**[0009]** According to the conventional practice, however, the wiper 10 is made to correspond with the sectional shape of the brush rod 31, and thus, if the sectional shape of the brush rod 31 is not circular, the brush rod 31 has

a given direction upon the insertion thereof, so that the brush rod 31 is inserted into the cosmetic container body 20 only in the state where the direction of the brush rod 31 corresponds with that of the wiper 10, which causes many inconveniences in use.

**[0010]** So as to suppress the inconveniences in use, accordingly, all kinds of wipers are made uniformly to a circular shape, having no correspondence with the outer shape of the brush rod 31. In this case, however, the cosmetic liquid coated on the outer surface of the brush rod 31 is not completely removed at the time when the brush rod 31 is drawn from the cosmetic container body 20, thereby causing the cosmetic liquid to be unnecessarily consumed or making the outer peripheral surface of the cosmetic container body 20 undesirably unsanitary.

#### **SUMMARY OF THE INVENTION**

**[0011]** Accordingly, the present invention has been made in view of the above-mentioned problems occurring in the prior art, and it is an object of the present invention to provide a spinning wiper of a cosmetic container that is configured to have an inner body shaft-coupled in idleable manner to the inner diameter of an outer body detachably mounted on an inlet of a cosmetic container body, so that even though a brush rod does not have any circular sectional shape, the inner body is rotated to correspond with the outer shape of the brush rod in such a manner as to naturally find the coupling position to the brush rod at the time when the brush rod enters the inner body.

**[0012]** To accomplish the above object, according to a first aspect of the present invention, there is provided a spinning wiper of a cosmetic container, including: an outer body detachably mounted on an inlet of a cosmetic container body; and an inner body shaft-coupled to the inner diameter of the outer body in such a manner as to insert a brush rod coupled at one end thereof to an applicator through which a cosmetic liquid is applied thereinto, the inner body being idle to correspond with the outer shape of the brush rod.

**[0013]** According to the present invention, desirably, the outer body is formed of a tube-shaped body and has a first rotation guiding portion formed thereon in such a manner as to allow the inner body to be rotatably coupled thereto, an upper protruding portion formed on the upper periphery thereof in such a manner as to be mounted on the top end periphery of the inlet of the cosmetic container body, and a lower protruding portion formed on the lower periphery thereof in such a manner as to fixingly compress the inner peripheral surface of the inlet of the cosmetic container body.

**[0014]** According to the present invention, desirably, the first rotation guiding portion is formed on the end portion of an elastic piece made by incising the outer body to a shape of "□".

[0015] According to the present invention, desirably,

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the inner body is formed of a tube-shaped body rotatably shaft-coupled to the inner diameter of the outer body and has a hopper-shaped brush rod entering portion formed on the inner diameter upper portion thereof, a brush rod compressing portion extended from the end of the lower portion of the brush rod entering portion to elastically compress the outer surface of the brush rod, and a second rotation guiding portion formed on the outer peripheral surface thereof in such a manner as to be fittedly coupled to the first rotation guiding portion of the outer body.

**[0016]** According to the present invention, desirably, the sectional shape of the brush rod compressing portion has a plurality of different diameters from the center thereof.

**[0017]** To accomplish the above object, according to a second aspect of the present invention, there is provided a spinning wiper of a cosmetic container, including an inner body shaft-coupled in idleable manner to the inner diameter of an inlet of a cosmetic container body, so that when a brush rod coupled at one end thereof to an applicator through which a cosmetic liquid is applied is passed through the inner body, the inner body is idle to correspond with the outer shape of the brush rod.

[0018] According to the present invention, desirably, the inner body is formed of a tube-shaped body rotatably shaft-coupled to the inner diameter of the inlet of the cosmetic container body and has a hopper-shaped brush rod entering portion formed on the inner diameter upper portion thereof, a brush rod compressing portion extended from the end of the lower portion of the brush rod entering portion to elastically compress the outer surface of the brush rod, and a second rotation guiding portion formed on the outer peripheral surface thereof in such a manner as to be fittedly coupled to a third rotation guiding portion of the inlet of the cosmetic container body.

**[0019]** According to the present invention, desirably, the sectional shape of the brush rod compressing portion has a plurality of different diameters from the center thereof.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

**[0020]** The above and other objects, features and advantages of the present invention will be apparent from the following detailed description of the preferred embodiments of the invention in conjunction with the accompanying drawings, in which:

[0021] FIG.1 is a sectional view showing a cosmetic container in which a wiper is adopted in a conventional practice:

**[0022]** FIG.2 is an enlarged sectional view showing the wiper in the conventional practice;

**[0023]** FIG.3 is an exploded perspective view showing a state where a spinning wiper of a cosmetic container according to a first embodiment of the present invention is coupled to a cosmetic container body;

[0024] FIG.4 is a cutaway sectional view showing the

spinning wiper of the cosmetic container according to the first embodiment of the present invention;

**[0025]** FIG.5 is a cutaway perspective view showing a state where the spinning wiper of the cosmetic container according to the first embodiment of the present invention is coupled to the cosmetic container body;

**[0026]** FIG.6 is a bottom perspective view showing an example where the spinning wiper of the cosmetic container according to the first embodiment of the present invention is coupled to a brush rod;

**[0027]** FIGS.7a to 7c are plan views showing variations of a brush rod compressing portion of the spinning wiper of the cosmetic container according to the first embodiment of the present invention;

5 [0028] FIGS.8a to 8d are plan views showing variations of the brush rod of the spinning wiper of the cosmetic container according to the first embodiment of the present invention; and

**[0029]** FIG.9 is a cutaway perspective view showing a state where a spinning wiper of a cosmetic container according to a second embodiment of the present invention is coupled to a cosmetic container body.

# DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

**[0030]** Hereinafter, an explanation on a spinning wiper of a cosmetic container according to the present invention will be in detail given with reference to the attached drawing.

[0031] FIG.3 is an exploded perspective view showing a state where a spinning wiper of a cosmetic container according to a first embodiment of the present invention is coupled to a cosmetic container body, FIG.4 is a cutaway sectional view showing the spinning wiper of the cosmetic container according to the first embodiment of the present invention, FIG.5 is a cutaway perspective view showing a state where the spinning wiper of the cosmetic container according to the first embodiment of the present invention is coupled to the cosmetic container body, and FIG.6 is a bottom perspective view showing an example where the spinning wiper of the cosmetic container according to the first embodiment of the present invention is coupled to a brush rod.

**[0032]** As shown, a spinning wiper of a cosmetic container according to the present invention is coupled to an inlet 130 of a cosmetic container body. At this time, a cosmetic liquid like a mascara liquid, lip gloss and so on is filled in the cosmetic container body.

**[0033]** The cosmetic liquid filled in the cosmetic container body is applied by means of a brush rod 140 as shown in FIG.6. At this time, an applicator (not shown) such as bristles or sponges is mounted at the end of the brush rod 140, on which the cosmetic liquid is coated for application.

**[0034]** Further, the brush rod 140 is coupled to a cap detachably mounted on the inlet 130 of the cosmetic container body, and the cap serves as a handle for use of

the brush rod 140.

**[0035]** In normal cases, the brush rod 140 and the applicator are kept immersed into the cosmetic liquid contained in the cosmetic container body, but if make-up is needed, they are drawn from the cosmetic container body.

**[0036]** At this time, the brush rod 140 and the applicator are passed through a wiper coupled along the inlet 130 of the cosmetic container body, and in this case, the wiper serves to compress the outer surface of the brush rod 140 and the applicator thereagainst, thereby wiping the cosmetic liquid coated on the brush rod 140 and the applicator.

**[0037]** The cosmetic liquid on the outer surface of the brush rod 140 after passing through the wiper is cleanly removed to permit only a quantity of cosmetic liquid adequate to the make-up to remain on the applicator.

[0038] Through the formation of the wiper, like this, the pollution of the cosmetic container as well as the unnecessary consumption of the cosmetic liquid are prevented.
[0039] Now, an explanation on a configuration of a spinning wiper according to the present invention will be given.

**[0040]** As shown in FIGS.3 to 7, the spinning wiper according to the present invention includes a double coupling structure in which an outer body 110 is detachably mounted on the inlet 130 of the cosmetic container body and an inner body 120 is shaft-coupled in idleable manner to the inner diameter of the outer body 110.

**[0041]** The outer body 110 will be first explained. The outer body 110 is formed of a tube-shaped body having a first rotation guiding portion 111 formed thereon.

**[0042]** At this time, the first rotation guiding portion 111 is formed of a round groove or protrusion formed along the inner peripheral surface of the outer body 110.

**[0043]** Further, as shown in FIGS.3 to 7, the first rotation guiding portion 111 is formed to have a protruded structure on the end portion of an elastic piece made by incising the outer body 110 to a shape of " $\square$ ". At this time, the protruded structure may be a hook-shaped protrusion.

**[0044]** As a result, the first rotation guiding portion 111 is elastically deformed and pushed when the inner body 120 is shaft-coupled to the inner diameter of the outer body 110.

**[0045]** The first rotation guiding portion 111 being pushed is facingly coupled to a second rotation guiding portion 125 formed on the inner body 120, thereby returning to its original position, guiding a rotation motion path of the inner body 120, and preventing the axial deviation of the inner body 120.

**[0046]** At this time, the second rotation guiding portion 125 coupled facingly to the first rotation guiding portion 111 has a round groove or protrusion, and the round groove type second rotation guiding portion 125 is formed in FIGS.3 to 7.

**[0047]** Further, the outer body 110 has an upper protruding portion 113 formed on the upper periphery thereof

in such a manner as to be mounted on the top end periphery of the inlet 130 of the cosmetic container body. The upper protruding portion 113 is formed of a round band to prevent the outer body 110 from being further inserted into the inlet 130 of the cosmetic container body and also to form a boundary point at which the outer body 110 is separated from the inlet 130 of the cosmetic container body.

**[0048]** Furthermore, the outer body 110 has a lower protruding portion 115 formed on the lower periphery thereof in such a manner as to fixingly compress the inner peripheral surface of the inlet 130 of the cosmetic container body.

**[0049]** At this time, the lower protruding portion 115 is formed of a plurality of elastic pieces made by incising the lower peripheral surface of the outer body 110 in a vertical direction, and the elastic pieces have a protruded structure. At this time, the protruded structure may be a hook-shaped protrusion.

**[0050]** The lower protruding portion 115 is elastically deformed and pushed when the outer body 110 is coupled to the inner diameter of the inlet 130 of the cosmetic container body.

**[0051]** The lower protruding portion 115 continuously pressurizes the inner peripheral surface of the inlet 130 of the cosmetic container body to provide a fixing force by which the outer body 110 is not easily escaped from the inlet 130 of the cosmetic container body.

**[0052]** The inner body 120 is idle to correspond with the outer shape of the brush rod 140 at the time when the brush rod 140 is inserted.

**[0053]** The inner body 120 has a tube-shaped body rotatably shaft-coupled to the inner diameter of the outer body 110 and has a hopper-shaped brush rod entering portion 121 formed on the inner diameter upper portion thereof.

**[0054]** The brush rod entering portion 121 has a larger diameter than the diameters of the brush rod 140 and the applicator, thereby stably guiding their initial entering. Further, a brush rod compressing portion 123 is extended from the end of the lower portion of the brush rod entering portion 121.

**[0055]** The brush rod compressing portion 123 elastically compresses the outer surface of the brush rod 140 to wash the cosmetic liquid coated on the brush rod 140 and the applicator.

**[0056]** Moreover, the inner body 120 has the second rotation guiding portion 125 formed on the outer peripheral surface thereof in such a manner as to be fittedly coupled to the first rotation guiding portion 111. The second rotation guiding portion 125 may be formed of a round groove or protrusion.

**[0057]** The brush rod compressing portion 123 is made to a round shape or other shapes in accordance with the outer shapes of the brush rod 140.

**[0058]** The sectional shapes of the brush rod 140 and the brush rod compressing portion 123 may be formed to have a plurality of different diameters from the center

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of the section.

**[0059]** FIGS.7a to 7c are plan views showing variations of a brush rod compressing portion of the spinning wiper of the cosmetic container according to the first embodiment of the present invention.

**[0060]** As shown, the brush rod compressing portion 123 of the inner body 120 of the spinning wiper according to the present invention may have rectangular, square, and oval shapes.

**[0061]** FIGS.8a to 8d are plan views showing variations of the brush rod of the spinning wiper of the cosmetic container according to the first embodiment of the present invention, wherein FIG.8a shows the brush rod 140 having a square section, FIG.8b shows the brush rod 140 having a rectangular section, FIG.8c shows the brush rod 140 having a triangular section, and FIG.8d shows the brush rod 140 having a section of a polygon whose each side is curved.

**[0062]** According to the present invention, the inner body 120 is shaft-coupled in the idleable manner to the inner diameter of the outer body 110 detachably mounted on the inlet 130 of the cosmetic container body, so that even though the brush rod 140 does not have any circular sectional shape, the inner body 120 is rotated to correspond with the outer shape of the brush rod 140 in such a manner as to naturally find the coupling position to the brush rod 140 at the time when the brush rod 140 enters the inner body 120.

**[0063]** According to the present invention, accordingly, there is no inconvenience caused by the insertion of the brush rod only in the state where the outer shape of the brush rod corresponds with that of the wiper in the conventional practice, thereby providing many conveniences in use.

**[0064]** FIG.9 is a cutaway perspective view showing a state where a spinning wiper of a cosmetic container according to a second embodiment of the present invention is coupled to a cosmetic container body, and as shown, an inner body 120 is shaft-coupled in idleable manner to the inner diameter of an inlet 130 of a cosmetic container body, so that when a brush rod 140 coupled at one end thereof to an applicator through which a cosmetic liquid is applied is passed through the inner body 120, the inner body 120 is idle to correspond with the outer shape of the brush rod 140.

**[0065]** At this time, the inner body 120 is formed of a tube-shaped body rotatably shaft-coupled to the inner diameter of the inlet 130 of the cosmetic container body and has a hopper-shaped brush rod entering portion 121 formed on the inner diameter upper portion thereof. Further, the inner body 120 has a brush rod compressing portion 123 extended from the end of the lower portion of the brush rod entering portion 121 to elastically compress the outer surface of the brush rod 140 and a second rotation guiding portion 125 formed on the outer peripheral surface thereof in such a manner as to be fittedly coupled to a third rotation guiding portion 131 of the inlet 130 of the cosmetic container body.

**[0066]** At this time, the second rotation guiding portion 125 may be formed of a round groove or protrusion, and the round groove structure is shown in FIG.9.

**[0067]** Moreover, the third rotation guiding portion 131 is formed along the inner peripheral surface of the inlet 130 of the cosmetic container body, which may be formed of a round groove or protrusion. FIG.9 shows the third rotation guiding portion 131 having the round groove structure.

**[0068]** The sectional shape of the brush rod compressing portion 123 may be formed of a triangular, square, rectangular, or oval shape having a plurality of different diameters from the center thereof.

**[0069]** As described above, according to the present invention, the inner body is shaft-coupled in idleable manner to the inner diameter of the outer body detachably mounted on the inlet of the cosmetic container body, so that even though the brush rod does not have any circular sectional shape, the inner body is rotated to correspond with the outer shape of the brush rod in such a manner as to naturally find the coupling position to the brush rod at the time when the brush rod enters the inner body, thereby avoiding inconveniences caused by inserting the brush rod only in the state where the outer shape of the brush rod corresponds with that of the wiper in the conventional practice and thus providing many conveniences in use.

**[0070]** While the present invention has been described with reference to the particular illustrative embodiments, it is not to be restricted by the embodiments but only by the appended claims. It is to be appreciated that those skilled in the art can change or modify the embodiments without departing from the scope and spirit of the present invention.

#### Claims

**1.** A spinning wiper of a cosmetic container, comprising:

an outer body (110) detachably mounted on an inlet (130) of a cosmetic container body; and an inner body (120) shaft-coupled to the inner diameter of the outer body (110) in such a manner as to insert a brush rod (140) coupled at one end thereof to an applicator through which a cosmetic liquid is applied thereinto, the inner body (120) being idle to correspond with the outer shape of the brush rod (140).

2. The spinning wiper of a cosmetic container according to claim 1, wherein the outer body (110) is formed of a tube-shaped body and has a first rotation guiding portion (111) formed thereon in such a manner as to allow the inner body (120) to be rotatably coupled thereto, an upper protruding portion (113) formed on the upper periphery thereof in such a manner as to

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be mounted on the top end periphery of the inlet (130) of the cosmetic container body, and a lower protruding portion (115) formed on the lower periphery thereof in such a manner as to fixingly compress the inner peripheral surface of the inlet (130) of the cosmetic container body.

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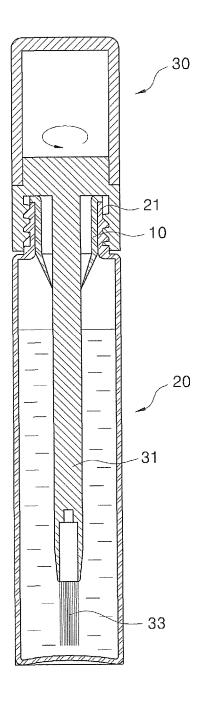
3. The spinning wiper of a cosmetic container according to claim 2, wherein the first rotation guiding portion (111) is formed on the end portion of an elastic piece made by incising the outer body (110) to a

shape of "□".

- 4. The spinning wiper of a cosmetic container according to claim 1, wherein the inner body (120) is formed of a tube-shaped body rotatably shaft-coupled to the inner diameter of the outer body (110) and has a hopper-shaped brush rod entering portion (121) formed on the inner diameter upper portion thereof, a brush rod compressing portion (123) extended from the end of the lower portion of the brush rod entering portion(121) to elastically compress the outer surface of the brush rod (140), and a second rotation guiding portion (125) formed on the outer peripheral surface thereof in such a manner as to be fittedly coupled to the first rotation guiding portion (111) of the outer body (110).
- The spinning wiper of a cosmetic container according to claim 4, wherein the sectional shape of the brush rod compressing portion (123) has a plurality of different diameters from the center thereof.
- 6. A spinning wiper of a cosmetic container, comprising an inner body (120) shaft-coupled in idleable manner to the inner diameter of an inlet (130) of a cosmetic container body, so that when a brush rod (140) coupled at one end thereof to an applicator through which a cosmetic liquid is applied is passed through the inner body (120), the inner body (120) is idle to correspond with the outer shape of the brush rod (140).
- 7. The spinning wiper of a cosmetic container according to claim 6, wherein the inner body (120) is formed of a tube-shaped body rotatably shaft-coupled to the inner diameter of the inlet (130) of the cosmetic container body and has a hopper-shaped brush rod entering portion (121) formed on the inner diameter upper portion thereof, a brush rod compressing portion (123) extended from the end of the lower portion of the brush rod entering portion (121) to elastically compress the outer surface of the brush rod (140), and a second rotation guiding portion (125) formed on the outer peripheral surface thereof in such a manner as to be fittedly coupled to a third rotation guiding portion (131) of the inlet (130) of the cosmetic container body.

8. The spinning wiper of a cosmetic container according to claim 7, wherein the sectional shape of the brush rod compressing portion (123) has a plurality of different diameters from the center thereof.

FIG. 1





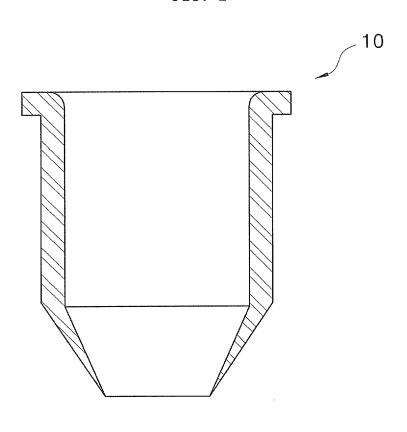


FIG. 3

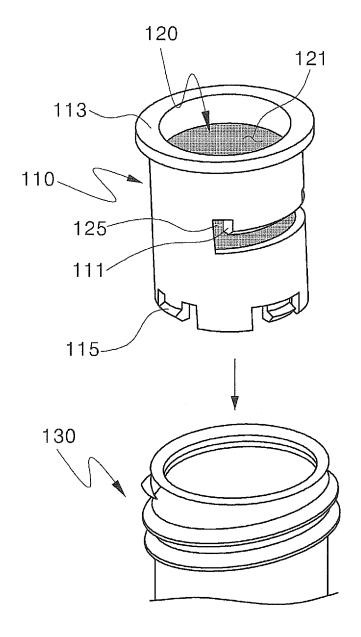
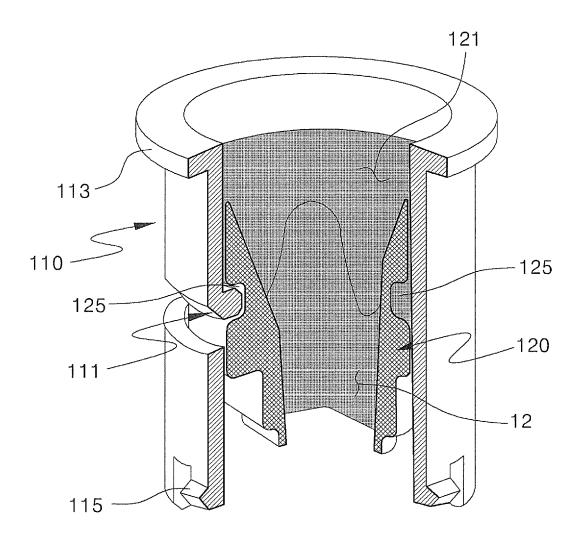


FIG. 4





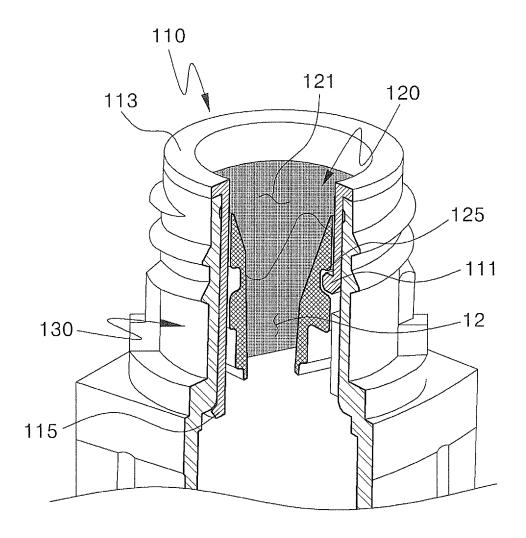


FIG. 6

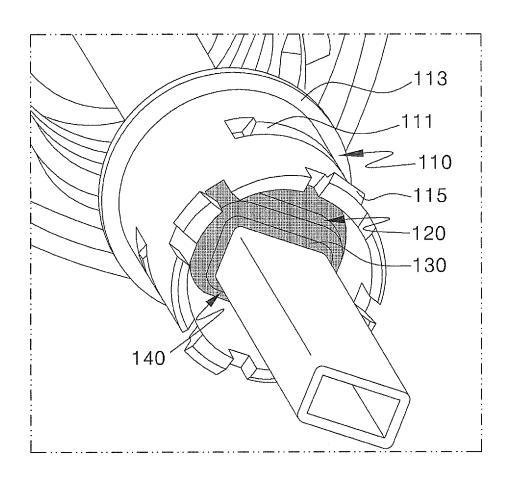


FIG. 7a

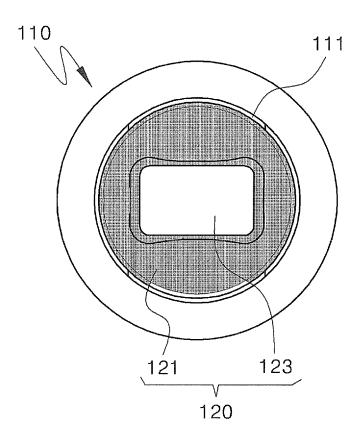


FIG. 7b

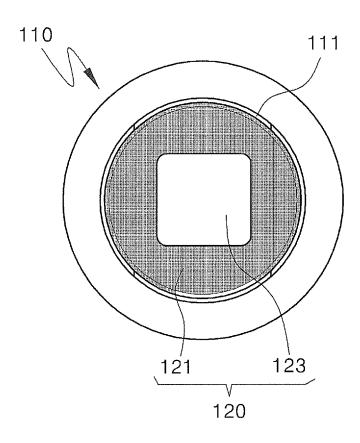


FIG. 7c

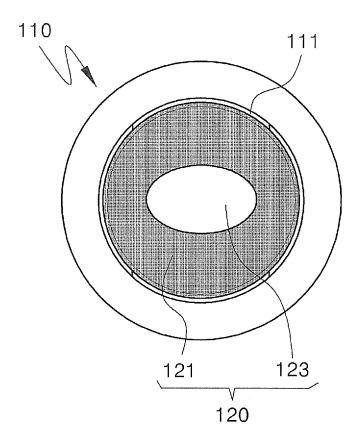
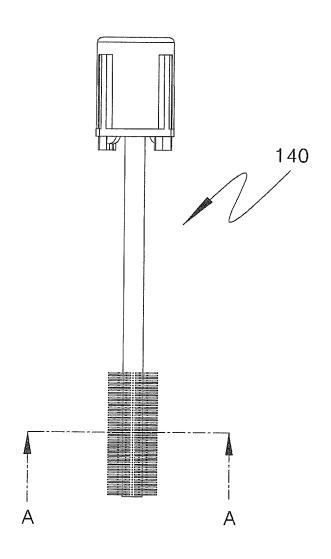
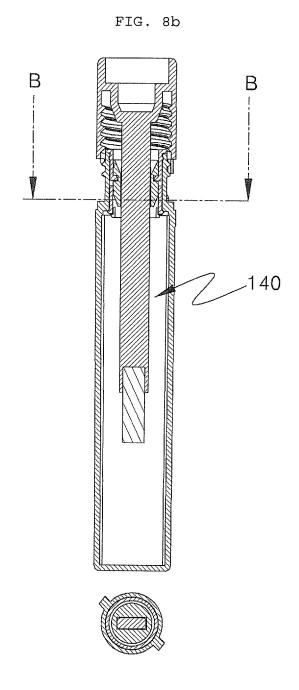


FIG. 8a









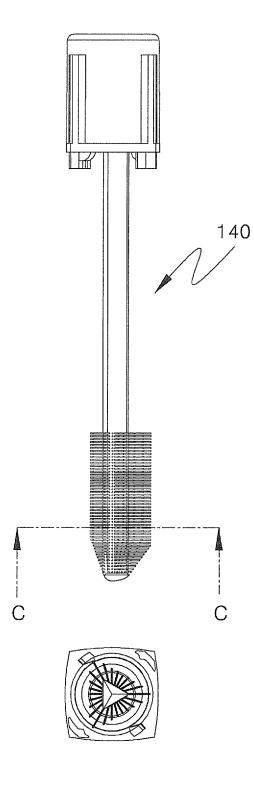
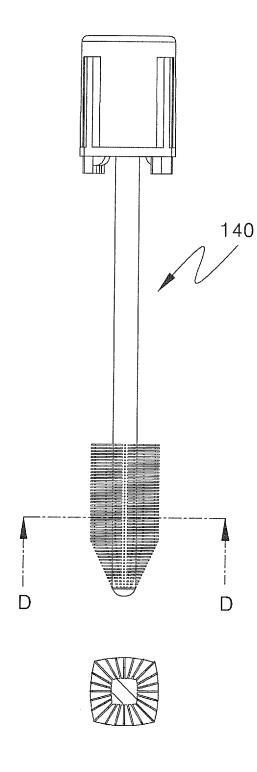
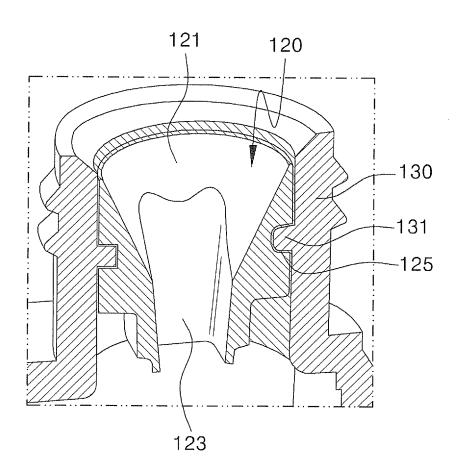


FIG. 8d









### **EUROPEAN SEARCH REPORT**

Application Number

EP 13 16 3169

	DOCUMENTS CONSIDERE				
Category	Citation of document with indicati of relevant passages	on, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)	
Х	US 5 137 387 A (BYRD R 11 August 1992 (1992-0 * columns 3-6; figures	8-11)	1,4-8	INV. A45D40/26	
Х	WO 96/32033 A1 (LVMH R FRANCOIS NOEL BENOIT [ 17 October 1996 (1996- * page 2, lines 31-36; * page 4 - page 6 *	FR]) 10-17)	6-8		
Α	EP 2 022 366 A1 (OREAL 11 February 2009 (2009 * the whole document *	-02-11)	2		
Α	FR 2 968 906 A1 (OREAL 22 June 2012 (2012-06- * the whole document *	 [FR]) 22) 	7		
				TECHNICAL FIELDS	
				SEARCHED (IPC) A45D	
				7430	
	The present search report has been of	drawn up for all claims			
	Place of search	Date of completion of the search		Examiner	
	The Hague	18 November 2013	Dir	nescu, Daniela	
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	-written disclosure mediate document	& : member of the sai document	me patent family	, corresponding	

#### ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 13 16 3169

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-11-2013

	atent document d in search report		Publication date		Patent family member(s)		Publication date
US	5137387	Α	11-08-1992	NONE			
WO	9632033	A1	17-10-1996	EP FR JP US WO	0820242 2732869 H11503345 5937869 9632033	A1 A A	28-01-199 18-10-199 26-03-199 17-08-199 17-10-199
EP	2022366	A1	11-02-2009	EP FR US	2022366 2919586 2009052969	A1	11-02-200 06-02-200 26-02-200
FR	2968906	A1	22-06-2012	NONE			

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82