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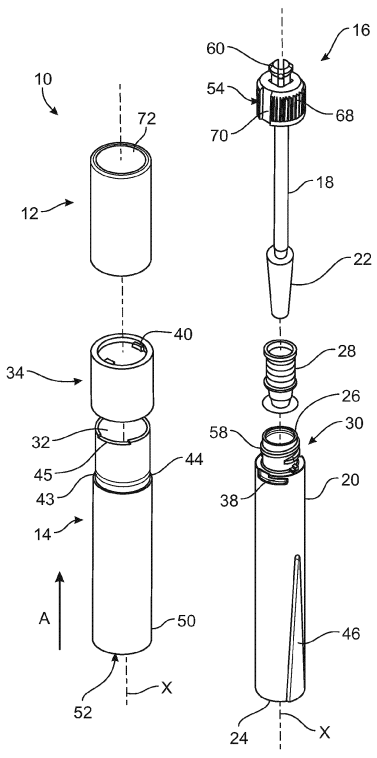
(54) REFILL FOR A DEVICE FOR PACKAGING A COSMETIC PRODUCT AND ASSOCIATED DEVICE

(57) The invention concerns a cosmetic product refill (16) intended to be removably mounted in a device (10) for packaging the cosmetic product, said refill (16) extending along a main longitudinal axis (X) and comprising a container (20) configured to contain the cosmetic product and comprising :
at least one attachment means configured to cooperate with a sealing means (54) of the refill,
at least one locking means (38) configured to cooperate with an attachment ring (34) of the device (10) for packaging free to rotate and axially secured to a sheath of the device (10) for packaging so that the refill (16) is attached and/or separated from the sheath (14) of the device (10) for packaging.

FIG. 1



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Description

Technical field of the invention

[0001] The invention relates to a refill intended to be removably mounted in a device for packaging a cosmetic product, and the associated device. The invention also relates to a system for removably assembling such cosmetic product refill to a sheath of such device.

Background

[0002] It is known, in the field of cosmetic packaging, to provide devices for packaging intended to carry cosmetic products, said devices for packaging comprising a container and an applicator assembly. Often, the applicator assembly and the container form a selfsufficient, nomadic device for packaging.

[0003] When the container is empty or its contents have become unusable, the whole of the device for packaging is usually discarded.

[0004] Such a design can pose both economic and environmental problems.

[0005] First of all, depending on the materials used and its degree of finish, the cost of the device for packaging can represent a significant proportion of the purchase price.

[0006] Moreover, the number of materials used, the techniques for assembling the various components together and the decoration techniques implemented do not allow all the materials used to manufacture the device for packaging to be recycled in the same recycling chain.

[0007] One solution to this problem is the use of an element referred to as "interchangeable".

[0008] Compared to a single-use device, such interchangeable element is characterized by being refillable, i.e. designed to allow the change of a part of the device for packaging, in particular but not exclusively after the cosmetic product has been fully used.

[0009] The interchangeability of the device allows to use a same receptacle, independently of a complete use, with several interchangeable elements each comprising, for example, a different cosmetic product such as mascara, gloss, lip-gloss, lips varnish, nails polish, concealer, etc. of a given shade.

[0010] Such a design allows to keep a cover and a sheath of the receptacle, which is particularly advantageous when these parts are made of precious materials and/or decorated, for example covered by a covering, which by comparison makes parts more expensive to manufacture.

[0011] In such a receptacle, the interchangeable element constitutes in particular a freely changeable refill with a simple gesture.

[0012] Not only do current refill examples consist of complex elements comprising many parts, but very often changing the refill is complicated and even messy.

[0013] There is therefore a need for a solution allowing to solve at least some of the disadvantages of the prior art while maintaining an assembly that is interchangeable and advantageously simple and economical to manufacture.

Summary of the invention

[0014] According to a first aspect, the invention relates to a cosmetic product refill intended to be removably mounted in a device for packaging the cosmetic product, said refill extending along a main longitudinal axis and comprising a container configured to contain the cosmetic product and comprising:

at least one attachment means configured to cooperate with a sealing means of the refill,
at least one locking means configured to cooperate with an attachment ring of the device for packaging free to rotate and axially secured to a sheath of the device for packaging so that the refill is attached and/or separated from the sheath of the device for packaging.

[0015] Thus, the refill according to the invention, comprising a container remains simple in design and can easily be inserted into a sheath of a device for packaging or removed therefrom in a reversible manner, while keeping the container closed thanks to the possibility of fixing a sealing means in contrast to conventional refills from which the sealing means, usually on which a rod equipped with an applicator end piece is hung, must be removed to be inserted separately into the sheath of the device for packaging.

[0016] According to various embodiments, which may be taken together or separately:

- the cosmetic product is mascara, gloss, lip-gloss, lips varnish, nails polish and/or concealer,
- the refill comprises a rod configured to be equipped at a first axial end with an applicator end piece configured to be received inside the container,
- the rod further comprises the sealing means of the refill situated at a second axial end of the rod opposed to the first axial end,
- the rod comprises a skirt configured to be the sealing means of the refill,
- the skirt comprises at least one complementary attachment means configured to cooperate with the at least one attachment means of the container so as to be attached to and/or separated from the container,
- the at least one complementary attachment means of the skirt is an internal thread configured to cooperate with an external thread of the container so as to be attached to and/or separated from the container by a rotational movement of the skirt relative to the container,
- the refill further comprises at least one anti-rotation

means configured to cooperate with the device for packaging so that the sheath of the device for packaging and the refill are integral in rotation,

- the sheath of the device for packaging and the refill are integral in rotation with respect to the attachment ring of the device for packaging,
- the container comprises an opening allowing the entry and/or the exit of the rod,
- the at least one locking means is located on an upper portion of the container close to said opening,
- the at least one locking means is located on an outer surface of the container,
- the container comprises a bottom opposite said opening,
- the at least one anti-rotation means is located on a lower part of the container close to said bottom,
- the at least one locking means is a slot or a rib extending annularly horizontally with respect to the main axis on the outer surface of the container,
- the at least one anti-rotation means is an excess thickness of material or a hollow cooperating with reciprocally a hollow or an excess thickness of material of the sheath of the device for packaging,
- the anti-rotation means extends along the main axis on an external surface of the container from a wide base located at the level of the bottom of the container to a narrow opposite end so as to facilitate the introduction of the refill through a lower opening of the sheath of the device for packaging,
- the excess thickness and the hollow are complementary in shape.

[0017] According to a second aspect, the invention relates to a device for packaging a cosmetic product, comprising:

- a refill as described above,
- a cover configured to be removably attached to the refill,
- a sheath configured to removably receive the refill, and
- an attachment ring, cooperating with the at least one means, called locking means, for locking the refill so as to attach and/or separate the refill from the sheath.

[0018] The attachment ring of the invention allows an easy reversible attaching and separation of the refill in the sheath of the device for packaging. The refill remains simple in design and can be easily inserted into the sheath of the device for packaging or reversibly removed from it by simply activating the attachment ring.

[0019] According to various embodiments, which may be taken together or separately:

- the cosmetic product is mascara, gloss, lip-gloss, lips varnish, nails polish and/or concealer,
- the container comprises at least one attachment means configured to cooperate with an sealing means of the refill,
- the sheath has a lower opening through which the refill is inserted, the at least one anti-rotation means further serving as a guiding means during the insertion of the refill into the sheath,
- the slot or the rib interacts with reciprocally a rib or a slot of the attachment ring,
- the slot comprises an inlet into which the rib is inserted and a locking portion into which the rib is housed when the container is attached in the sheath of the device for packaging,
- the device for packaging comprises means, called attachment means, for attaching the attachment ring to the sheath so as to axially lock the attachment ring relative to the sheath,
- the attachment means comprise a first attachment part which is carried by the attachment ring cooperating with a second attachment part which is carried by the sheath,
- the first attachment part is an annular groove or an annular bead housed on an internal surface of the attachment ring and the second attachment part is respectively an annular bead or an annular groove housed on an external surface of the sheath,
- the rod and the cover are configured so as to cooperate with each other to ensure a reversible attachment and/or separation of the rod to the cover,
- the second end of the rod comprises at least one leg configured to cooperate with the cover to ensure the reversible attachment and/or separation of the rod with the cover,
- the device for packaging comprises a pusher button slidably mounted with respect to the cover so as to obtain the separation and/or the attachment of the rod and of the cover when an axial movement is exerted on the pusher button,
- the rod comprises a skirt configured to be the sealing means of the refill,
- the skirt comprises at least one complementary attachment means configured to cooperate with the at least one attachment means of the container so as to be attached to and/or separated from the container,
- the at least one complementary attachment means of the skirt is an internal thread configured to cooperate with an external thread of the container so as to be attached to and/or separated from the container by a rotational movement of the skirt relative to the container,
- the skirt comprises external anti-rotation means cooperating with internal anti-rotation means of the cover so that a rotation of the cover causes the rod to rotate relative to the container so as to be attached and/or separated from the container,
- the sealing means of the refill comprises two opposing recesses allowing the passage of the ribs of the attachment ring when the refill is inserted into the sheath and/or removed from the sheath,

- the recesses are aligned with the locking means of the container.

[0020] According to a third aspect, the invention relates to a system for removably assembling a cosmetic product refill as described above to a sheath of a device for packaging the cosmetic product.

[0021] The system comprises at least one locking means located on a container of the refill configured to contain the cosmetic product and an attachment ring free to rotate and axially secured to the sheath. The at least one locking means is configured to cooperate with the attachment ring so that the refill is attached and/or separated from the sheath.

[0022] According to various embodiments, which may be taken together or separately:

- the refill is intended to be removably mounted in the device for packaging the cosmetic product,
- the refill extends along a main longitudinal axis,
- the cosmetic product is mascara, gloss, lip-gloss, lips varnish, nails polish and/or concealer,
- the system further comprises at least one attachment means located on the container and configured to cooperate with an sealing means of the refill,
- the refill comprises a rod configured to be equipped at a first axial end with an applicator end piece configured to be received inside the container,
- the rod further comprises the sealing means of the refill situated at a second axial end of the rod opposed to the first axial end,
- the system further comprises at least one anti-rotation means located on the refill configured to cooperate with the sheath so that the sheath and the refill are integral in rotation,
- the sheath and the refill are integral in rotation with respect to the attachment ring,
- the at least one locking means is located on an upper portion of the container close to an opening allowing the entry and/or the exit of the rod,
- the at least one locking means is located on an outer surface of the container,
- the at least one anti-rotation means is located on a lower part of the container close to a bottom opposite to the opening,
- the at least one locking means is a slot or a rib extending annularly horizontally with respect to the main axis on the outer surface of the container,
- the at least one anti-rotation means is an excess thickness of material or a hollow cooperating with reciprocally a hollow or an excess thickness of material of the sheath,
- the anti-rotation means extends along the main axis on an external surface of the container from a wide base located at the level of the bottom of the container to a narrow opposite end so as to facilitate the introduction of the refill through a lower opening of the sheath,
- the excess thickness and the hollow are complementary in shape.
- the sheath has a lower opening through which the refill is inserted, the at least one anti-rotation means further serving as a guiding means during the insertion of the refill into the sheath,
- the slot or the rib interacts with reciprocally a rib or a slot of the attachment ring,
- the slot comprises an inlet into which the rib is inserted and a locking portion into which the rib is housed when the container is attached in the sheath of the device for packaging,
- the device for packaging comprises means, called attachment means, for attaching the attachment ring to the sheath so as to axially lock the attachment ring relative to the sheath,
- the attachment means comprise a first attachment part which is carried by the attachment ring cooperating with a second attachment part which is carried by the sheath,
- the first attachment part is an annular groove or an annular bead housed on an internal surface of the attachment ring and the second attachment part is respectively an annular bead or an annular groove housed on an external surface of the sheath,
- the rod comprises a skirt configured to be the sealing means of the refill,
- the skirt comprises at least one complementary attachment means configured to cooperate with the at least one attachment means of the container so as to be attached to and/or separated from the container,
- the at least one complementary attachment means of the skirt is an internal thread configured to cooperate with an external thread of the container so as to be attached to and/or separated from the container by a rotational movement of the skirt relative to the container,
- the skirt comprises external anti-rotation means cooperating with internal anti-rotation means of the cover so that a rotation of the cover causes the rod to rotate relative to the container so as to be attached and/or separated from the container.

Brief description of figures

[0023] Further characteristics and advantages of the invention will become apparent from the following detailed description, for the understanding of which reference is made to the attached drawings in which:

[Fig. 1] Figure 1 is an exploded view showing the various components of a device for packaging according to the invention;

[Fig. 2] Figure 2 is an axial cross-sectional view of the device for packaging of Figure 1;

[Fig. 3] Figure 3 is a perspective view of a container of a refill according to the invention of the device for

packaging of Figure 1;
[Fig. 4] Figure 4 is a detail view of Figure 3;
[Fig. 5] Figure 5 is an axial cross-sectional view of a sheath of the device for packaging of Figure 1;
[Fig. 6] Figure 6 is a perspective view of an attachment ring of the device for packaging of Figure 1.

Detailed description of the invention

[0024] In the following description, elements with identical structure or similar functions will be referred to by the same reference.

[0025] In the following description, we will adopt in a non-limitative way:

- an axial orientation which is directed parallel to the main axis of the device for packaging from the bottom to the top in the direction indicated by the arrow "A" in the figure 1, and
- radial orientations which are orthogonal to the axial orientation and which are directed from the interior, in the vicinity of the main axis of the device for packaging, outwardly away from the main axis of the device for packaging.

[0026] In a non-limitative way, the terms "upper" are also used to designate elements located towards the top of the figures, and "lower" to designate elements located towards the bottom of the figures.

[0027] In the rest of the description, the term "reversible" will be used to mean that it is possible to detach two parts reversibly attached together without damaging said parts or the attachment means.

[0028] A device 10 for packaging a cosmetic product is shown in Figures 1 and 2.

[0029] The device 10 for packaging extends along a main axis X.

[0030] The device 10 for packaging comprises a cover 12 and a sheath 14 into which a refill 16 is intended to be axially inserted and attached in a dismountable manner.

[0031] Such an arrangement allow very advantageously to keep the sheath 14 of the device 10 for packaging when it is desired to change the refill 16, for example when the latter is empty, when the cosmetic product has become unusable, or when the user wishes to change the cosmetic product. Such a design is economic and ecological. In particular, it is possible to provide a sheath 14 made of a solid material and/or with a high quality finish, while the refill 16 is made of a lighter, recyclable or less expensive material.

[0032] In the embodiment shown in Figures 1 and 2, the refill 16 has an elongated shape along the main axis X and comprises a rod 18 and a container 20 configured to hold the cosmetic product and receive the rod 18.

[0033] The axial rod 18 extends, along the main axis X in the closed position of the device 10 for packaging, downwardly from an upper end, referred to as the second end, housed within the cover 12 to a free lower end, referred to as the first end.

[0034] In the closed position, the rod 18 is immersed in the container 20. The lower end of the rod 18, referred to as the first end, is equipped with an applicator end piece 22 intended for application of the cosmetic product, depending on its nature, to the skin, the lashes or the nails of a user. This cosmetic product may be in a viscous form such as a mascara, concealer, in a liquid state (gloss or lip-gloss) or in a semi-liquid state (lips varnish or nails polish).

[0035] The applicator end piece 22 is adapted to the intended use and to the cosmetic product carried in the container 20. This applicator end piece 22 is, for example, a brush, an end piece usually used for the lips of a user or a paintbrush. In the embodiment illustrated herein, the device is a device 10 for packaging mascara.

[0036] The container 20 of the refill 16 is configured to contain the cosmetic product. The container 20 comprises a closed bottom 24 which is arranged at an axial end, shown at the bottom of Figure 1, and an opening orifice 26 arranged at an opposite axial end, shown at the top in Figure 1.

[0037] The cross-section of the container 20 is circular. Alternatively, the cross-section of the container 20 may have another shape, such as a polygonal shape.

[0038] In a known manner, the container 20 may comprise a wiper 28.

[0039] The wiper 28 is attached inside the container 20, in particular in a neck 30 or the opening orifice 26 of the container 20.

[0040] The wiper 28 may be made of a rigid or semi-rigid material, the material preferably being selected from the elastomers or the thermoplastic materials.

[0041] The wiper 28 allows to remove the excess of cosmetic product from the applicator end piece 22 and/or the rod 18 and to distribute the cosmetic product over the entire surface and the entire length of the applicator end piece 22.

[0042] In another embodiment not shown, the container 20 is devoid of wiper.

[0043] The sheath 14 has a tubular shape that extends along the main axis X. The sheath has a shape complementary to the shape of the refill 16 so that the refill 16 can be inserted axially into the sheath 14 through an orifice located at the upper or lower end.

[0044] To allow access to the cosmetic product contained in the refill 16, the sheath 14 opens at least upwardly through a mouth 32 located at its upper end.

[0045] The device 10 for packaging further comprises an attachment ring 34 which will cooperate with the container 20 of the refill 16 so as to lock the latter in the sheath 14 in a reversible manner. Thus, an activation of the attachment ring 34 allows the container 20 to be locked and/or unlocked in the sheath 14.

[0046] The refill 16 further comprises at least one locking means 38 configured to cooperate with the attachment ring 34 of the device 10 for packaging so that the

refill 16 is attached and/or separated from the sheath 14 of the device 10 for packaging.

[0047] In other words, the device 10 for packaging comprises a system for removably assembling the cosmetic product refill 16 to the sheath 14 of the 10 for packaging.

[0048] The system comprises the at least one locking means 38 located on the container 20 of the refill 16 and the attachment ring 34 free to rotate and axially secured to the sheath 14. The at least one locking means 38 is configured to cooperate with the attachment ring 34 so that the refill 16 is attached and/or separated from the sheath 14.

[0049] The attachment ring 34 comprises an opening at each of its axial ends: an upper opening 36a and a lower opening 36b.

[0050] In the illustrated embodiment, the refill 16 comprises two locking means 38 located on an outer surface of the container 20 at the level of an upper portion of the container 20 proximate to said opening 26.

[0051] The locking means 38 are located in particular on a longitudinal wall of the container 20 at the level of the neck 30 of the container 20.

[0052] These are two slots 38 arranged opposite each other on the periphery of the longitudinal wall.

[0053] Each slot 38 extends annularly horizontally with respect to the main axis X on the outer surface of the container 20.

[0054] As illustrated, each slot 38 is shaped like an L and comprises an inlet 38a, a vertical guiding portion 38b and a horizontal locking portion 38c.

[0055] Each slot 38 is configured to cooperate with a rib 40 of the attachment ring 34, like a bayonet-type system.

[0056] Each rib 40 is arranged opposite to an internal surface of the attachment ring 34 at the level of the upper opening 36a of the attachment ring 34. Each rib 40 extends annularly horizontally with respect to the main axis X on the internal surface of the attachment ring 34.

[0057] In another embodiment not shown, the at least one means, called locking means, for locking the refill 16 is a rib cooperating with a slot in the attachment ring 34. The rib of the refill 16 is then similar to the rib of the attachment ring 34 of the illustrated embodiment. Similarly, the slot in the attachment ring 34 is then similar to the slot in the refill 16 of the illustrated embodiment.

[0058] Thus, in this embodiment, when the refill 16 is inserted into the sheath 14, each of the ribs 40 of the attachment ring 34 (or container 20) house into the inlet 38a of the slot 38 of the container 20 (or the attachment ring 34). Each of the ribs 40 is then guided in the guiding portion 38b during a downward vertical translation movement of the attachment ring 34. Then each of the ribs 40 is axially locked in the locking portion 38c of the slot 38 by a rotational movement of the attachment ring 34.

[0059] A reverse movement (rotation and then vertical translation upwards) of the attachment ring 34 allows the release of each of the ribs 40 and the unlocking of the refill 16 from the sheath 14. The refill 16 can then be removed from the sheath 14.

[0060] In other words, the slot/rib assembly is similar to a cam track and cam system, with the cam track being the slot and the cam being the rib.

[0061] Advantageously, the device 10 for packaging further comprises means, called attachment means, for attaching the attachment ring 34 to the sheath 14 so as to axially lock the attachment ring 34 relative to the sheath 14.

[0062] Preferably, the attachment means comprise a first attachment part which is carried by the attachment ring 34 cooperating with a second attachment part which is carried by the sheath 14.

[0063] In the embodiment shown here, the first attachment part is an annular groove 42 housed on an internal surface of the attachment ring 34 and the second attachment part is an annular bead 44 housed on an external surface of the sheath 14.

[0064] The annular groove 42 and the bead 44 cooperate with each other so as to axially lock the attachment ring 34 on the sheath 14 while remaining free in rotation, in particular with respect to the sheath 14 and/or the refill 16.

[0065] In another embodiment not shown, the first attachment part is an annular bead housed on an internal surface of the attachment ring 34 and the second attachment part is an annular groove housed on an external surface of the sheath 14.

[0066] Advantageously, the sheath 14 comprises a shoulder 43 so that the outer surface of the attachment ring 34 is substantially aligned with the outer surface of the sheath 14. In other words, the attachment ring 34 comprises an upper portion of smaller diameter than the diameter of the rest of the sheath 14. Thus, the mouth 32 has a reduced diameter compared to the diameter of the rest of the sheath 14.

[0067] Advantageously, the sheath 14 comprises at least one notch 45 located at the level of the mouth 32 allowing the access of the attachment ring 34 to at least one means for locking the container 20.

[0068] Thus, in the illustrated embodiment, the sheath 14 comprises two opposing notches 45 allowing the access of the two ribs 40 of the attachment ring 34 to the two slots 38 of the container 20, in particular allowing the access of the two ribs 40 of the attachment ring 34 to the two inlets 38a of the slots 38 of the container 20. Advantageously, the refill 16 further comprises at least one anti-rotation means configured to cooperate with the 10 for packaging so that the sheath and the refill 16 are integral in rotation.

[0069] In particular, the at least one anti-rotation means is configured so that the sheath 14 of the device 10 for packaging and the refill 16 are rotationally integral with respect to the attachment ring 34 of the device for packaging.

[0070] Preferably, the at least one anti-rotation means is located on a lower part of the container 20 near the

bottom 24 of the container 20.

[0071] In the illustrated embodiment, the refill 16 comprises two anti-rotation means which are two excess thicknesses of material 46, each cooperating with a hollow 48 of the sheath 14 of the device 10 for packaging.

[0072] Each anti-rotation means of the refill 16 extends along the main axis X on the outer surface of the longitudinal wall of the container 20 from a wide base 46a located at the level of the bottom 24 of the container 20 to a narrow opposite end 46b. In other words, the anti-rotation means are triangular in shape.

[0073] Advantageously, the anti-rotation means also serve as a codingtype keying device to ensure that the correct refill is inserted into the correct sheath.

[0074] Each of the hollows 48 of the sheath 14 is complementary in shape and extends along the main axis X on an inner surface of a longitudinal wall of the sheath 14 from a wide base 48a located at the level of a bottom 50 of the sheath 14 to a narrow opposite end 48b. In other words, the hollows 48 are triangular in shape.

[0075] In another embodiment not shown, the at least one anti-rotation means is a hollow cooperating with an excess thickness of material of the sheath 14 of the device 10 for packaging. The hollow of the refill 16 is then similar to the hollow 48 of the sheath 14 of the illustrated embodiment. Similarly, the excess thickness of the sheath 14 is then similar to the excess thickness 46 of the refill 16 of the illustrated embodiment.

[0076] In other words, when the refill 16 is inserted into the sheath 14, the excess thickness 46 of material of the refill 16 (or of the sheath 14) is embedded in the hollow 48 of the sheath 14 (or of the refill 16) so that the sheath 14 and the refill 16 are integral in rotation. Advantageously, the refill 16 may be inserted into the sheath 14 through a lower opening 52 at the level of the lower bottom 50 thereof as shown in the illustrated embodiment.

[0077] The introduction of the refill 16 inside the sheath 14 of the device 10 for packaging may advantageously be facilitated by at least one guiding means.

[0078] Preferably, the at least one anti-rotation means serves as guiding means.

[0079] Thus, in the illustrated embodiment, the particular shape of the excess thicknesses 46 and the hollows 48 allows the refill 16 to be guided when it is introduced into the interior of the sheath 14 of the device 10 for packaging and to facilitate its insertion.

[0080] According to an aspect of the invention, the container 20 comprises at least one attachment means configured to cooperate with an sealing means 54 of the refill 16.

[0081] In the illustrated embodiment, the rod 18 further comprises the sealing means 54 of the refill 16 situated at a second axial end of the rod opposed to the first axial end.

[0082] More precisely, in the illustrated embodiment, the rod 18 comprises a skirt 54 configured to be the sealing means 54 of the refill 16. The skirt 54 surrounds the upper end of the rod 18 intended to cooperate with the neck of the container 20 so as to seal the container 20.

[0083] In the embodiment shown, the skirt 54 comprises an internal thread 56, as complementary attachment means, and configured to cooperate with an external thread 58 of the neck 30, as attachment means of the container 20, so that the rod 18 is attached and/or separated from the container 20 by a rotational movement of the skirt 54 relative to the container 20.

[0084] According to another aspect of the invention, the rod 18 and the cover 12 are configured to cooperate together to ensure a reversible attachment and/or separation of the rod 18 to the cover 12. In particular, the rod 18 is elastically snap-fitted in an axial direction to the cover 12.

[0085] Advantageously, the rod 18 may comprise at least one leg 60 configured to cooperate with the cover 12 to ensure the reversible attachment and/or separation of the rod 18 to the cover 12. Preferably, the legs 60 are elastically flexible.

[0086] In the illustrated embodiment, the cover 12 comprises a lower internal skirt 62 projecting axially downwardly and comprising a peripheral bead 64 on its internal surface at the level of the free end of the lower internal skirt 62 of the cover 12.

[0087] The rod 18 comprises four legs 60 each provided with a bead 66 which cooperates with the bead 64 of the lower internal skirt 62 so that the rod 18 and the cover 12 can be attached and held together axially.

[0088] The legs 60 of the rod 18 form a flexible circular skirt, a radially inward movement of which allows the cover 12 to be placed on the rod 18 to ensure the attachment of the rod 18 and the cover 12 and/or the remove of the cover 12 attached to the rod 18 to ensure the separation of the rod 18 and the cover 12.

[0089] Advantageously, the skirt 54 of the rod 18 comprises external anti-rotation means cooperating with internal anti-rotation means of the cover 12 so that a rotation of the cover 12 causes the rotational movement of the skirt with respect to the container 20 so as to be attached and/or separated from the container 20, in other words so that the cover 12 and the rod 18 are integral in rotation.

[0090] Thus, when a rotational movement is exerted on the cover 12, it causes the skirt 54 of the rod 18 to rotate and become separated and/or attached to the container 20. Once the skirt 54 of the rod 18 is separated from the container 20, an upward axial movement of the cover 12 draws the rod 18 out of the container 20.

[0091] Preferably, the external anti-rotation means of the skirt 54 of the rod 18 and the internal anti-rotation means of the cover 12 are axially extending striations 68, parallel to each other, which form a complementary detent of the skirt 54 of the rod 18 and the cover 12.

[0092] The striations 68 of the skirt 54 of the rod 18 are located on an external surface of the skirt 54 of the rod18 as seen in Figure 1. The striations (not visible) of the cover 12 are located on an internal surface of an external wall 69 of the cover 12.

[0093] The external wall 69 has a generally tubular shape enveloping the lower internal skirt 62 of the cover 12. It extends axially parallel to the lower internal skirt 62 of the cover 12.

[0094] In the illustrated embodiment, when the cover 12 and the rod 18 are attached together the external wall 69 of the cover 12 envelops the skirt 54 of the rod 18 so that the latter is not visible. Advantageously, in the embodiment shown, the skirt 54 of the rod 18 comprises two opposing recesses 70 free of striation 68. The recesses 70 allow the passage of the ribs 40 of the attachment ring 34 when the refill 16 is inserted into the sheath 14 and vice versa when the refill 16 is removed from the sheath 14. Advantageously, the recesses 70 are aligned with the locking means 38.

[0095] Advantageously, the device 10 for packaging comprises a pusher button 72 slidably mounted with respect to the cover 12 so as to obtain the separation of the rod 18 and the cover 12 when an axial movement is exerted on the pusher button 72.

[0096] The pusher button 72 may thus be in a position of separating the rod 18 from the cover 12 and/or in a position of attaching the rod 18 with the cover 12.

[0097] The pusher button 72 comprises legs 74 projecting downwardly from an internal skirt of the pusher button 72 and forming a flexible skirt having an inner diameter of substantially the same size as an outer diameter of the lower internal skirt 62 of the cover 12 allowing to hold the pusher button 72 to the cover 12.

[0098] In the attaching position, the legs 74 of the pusher button 72 exert a radial pressure on the lower internal skirt 62 of the cover 12 allowing a tightening of the flexible legs 60 of the rod 18 improving the cooperation between the beads 64, 66 of the rod 18 and the cover 12 and ensuring the holding of the cover 12 on the rod 18. In the separation position, a lateral movement of the lower internal skirt 62 of the cover 12 allows the release of the beads 66 of the legs 60 of the rod 18 and a separation of the cover 12 and of the rod 18.

[0099] Advantageously, the device 10 for packaging comprises a return means so that the pusher button 72 automatically returns to position after the translational movement along the axis X of the pusher button 72 relative to the cover 12.

[0100] In the illustrated embodiment, the return means is a spring 76 placed between the pusher button 72 and the external wall 69 of the cover 12.

[0101] In the illustrated embodiment, when the user wishes to change the refill 16 that is inserted in the device 10 for packaging the cosmetic product, the user first separate the cover 12 and the rod 18 by pressing the pusher button 72 causing an axial downward movement thereof and the release of the legs 60 of the rod 18, which results in the separation of the cover 12 and the rod 18. Then, the user exerts on the attachment ring 34 a rotational movement followed by a vertical translation movement upwards so as to release each of the ribs 40 and to cause an unlocking of the refill 16 of the sheath 14. The refill 16 can then be removed from the sheath 14 through the lower opening 52 thereof.

[0102] A new refill 16 can then be inserted. The user then takes a new refill 16, comprising a container 20 and a rod 18, and inserts it through the lower opening 52 of the sheath 14 by its neck 30 until the skirt 54 of the rod 18 emerges through the upper openings 52, 36a of the sheath 14 and of the attachment ring 34, the attachment ring 34 being integral with the sheath 14.

[0103] The insertion is facilitated by the anti-rotation means (here the excess thicknesses 46 of the container 20 cooperating with the hollows 48 of the sheath 14) which serve as a guiding means so that the recesses 70 of the skirt 54 of the rod 18 are aligned with the ribs 40 of the sheath 14, thus allowing the exit of the skirt 54 of the rod 18 through the mouth 32 of the sheath 14 and of the attachment ring 34.

[0104] Once the refill 16 is inserted in the sheath 14, the user exerts on the attachment ring 34 a downward vertical translation movement followed by a rotation movement so as to insert and then lock each of the ribs 40 in their respective slot 38, resulting in a locking of the refill 16 inside the sheath 14.

[0105] Then the cover 12 is snapped onto the new refill 16. The attachment to the rod 18 is ensured by exerting a pressure on the cover 12 so as to engage the legs 60 of the rod 18 with the skirt 62 of the cover 12.

[0106] The rod 18 can then be removed from the container 20 so that make-up can be applied by rotating the cover 12, causing the rotation of the rod 18 and the separation thereof with respect to the container 20. An upward axial movement of the cover 12 causes the rod 18 to exit the container 20.

[0107] The refill 16 removed from the sheath 14, can then, if necessary, be disposed of for recycling in the appropriate sector.

[0108] The refill 16 is made of a plastic material, preferably a recyclable plastic material. Examples are polyethylene terephthalate (PET), recycled polyethylene terephthalate (R-PET), in particular from plastic water bottles (identifiable source of supply), polypropylene (PP), recycled polypropylene (PP-R).

[0109] The sheath 14 and the cover 12 should be aesthetically pleasing and also durable so that they can be reused with multiple refills 16. The sheath 14 and/or the cover 12 are advantageously made of a metallic material. This material is, for example, aluminum, anodized aluminum or an aluminum alloy, which allows to provide an aesthetically pleasing, strong and lightweight device 10 for packaging.

[0110] Aluminum and aluminum alloys also include recycled aluminum or glass. Thus, the same material can be used several times to produce new devices 10 for packaging, allowing to save natural aluminum resources.

[0111] Alternatively, the cover 12 and/or the sheath 14 are formed from plastic material, such as polyethylene terephthalate (PET), polypropylene (PP). These materials have the advantage of being recyclable.

[0112] Alternatively, the sheath 14 and/or the cover 12 are made of wood, for example of a precious wood worked to present a luxurious appearance.

[0113] It is also conceivable that the sheath 14 and/or the cover 12 are made of concrete, glass or a hybrid material, such as a metal molded with wood, for example.

[0114] Alternatively, the sheath 14 and/or the cover 12 are made of resin by a 3D printing method. Such a printing method allows, in particular, the free creation of a sheath 14 and/or a cover 12 with patterns and shapes that contribute to the aesthetic appearance of the device 10 for packaging.

[0115] According to an alternative embodiment of the invention, the sheath 14 and the cover 12 are also designed to be recyclable together. Because of the ease of separating the refill 16 from the sheath 14, the sheath 14 and the cover 12 can be recycled in different sector as the refill 16.

[0116] Thus, the sheath 14 and the cover 12 are made of a same material or of compatible materials so that they can be recycled together in the same sector.

[0117] In yet another alternative embodiment, the sheath 14 and the cover 12 are made of different materials. For example, the sheath 14 is made of wood or resin by 3D printing, while the cover 12 is made of metallic material such as aluminum or an aluminum alloy.

Claims

1. Cosmetic product refill (16) intended to be removably mounted in a device (10) for packaging the cosmetic product, said refill (16) extending along a main longitudinal axis (X) and comprising a container (20) configured to contain the cosmetic product and comprising :

   at least one attachment means configured to cooperate with a sealing means (54) of the refill,
   at least one locking means (38) configured to cooperate with an attachment ring (34) of the device (10) for packaging free to rotate and axially secured to a sheath of the device (10) for packaging so that the refill (16) is attached and/or separated from the sheath (14) of the device (10) for packaging.

2. Refill (16) according to the preceding claim, comprising a rod (18) configured to be equipped at a first axial end with an applicator end piece (22) configured to be received inside the container (20), the rod (18) further comprising the sealing means (54) of the refill situated at a second axial end of the rod opposed to the first axial end.

3. Refill (16) according to any one of the preceding claims, wherein the refill (16) further comprises at least one anti-rotation means configured to cooperate with the device (10) for packaging so that the sheath (14) of the device (10) for packaging and the refill (16) are integral in rotation.

4. Refill (16) according to the preceding claim taken in combination with claim 2, wherein the container (20) comprises an opening allowing the entry and/or the exit of the rod (18), the at least one locking means being located on an upper portion of the container (20) close to said opening.

5. Refill (16) according to any one of the preceding claims, wherein the at least one locking means is located on an outer surface of the container (20).

6. Refill (16) according to any one of the preceding claims, wherein the container (20) comprises a bottom opposite said opening, the at least one anti-rotation means being located on a lower part of the container (20) close to said bottom.

7. Refill (16) according to any one of the preceding claims, wherein the at least one locking means is a slot (38) or a rib extending annularly horizontally with respect to the main axis (X) on the outer surface of the container (20).

8. Refill (16) according to any one of claims 3 to 7, wherein the at least one anti-rotation means is an excess thickness (46) of material or a hollow cooperating with reciprocally a hollow (48) or an excess thickness of material of the sheath (14) of the device (10) for packaging.

9. Refill (16) according to any one of claims 3 to 8, wherein the anti-rotation means extends along the main axis (X) on an external surface of the container (20) from a wide base located at the level of the bottom of the container (20) to a narrow opposite end so as to facilitate the introduction of the refill (16) through a lower opening of the sheath (14) of the device (10) for packaging.

10. Device (10) for packaging a cosmetic product, comprising:

    - a refill (16) according to any of the preceding claims,
    - a cover (12) configured to be removably attached to the refill (16),
    - a sheath (14) configured to removably receive the refill (16), and
    - an attachment ring (34) capable to rotate and axially secured to the sheath (14) , the attachment ring (34) cooperating with the at least one means, called locking means (38), for locking the refill (16) so as to attach and/or separate the refill (16) from the sheath (14).

11. Device (10) for packaging according to the preceding claim taken in combination with claim 4, wherein the sheath (14) has a lower opening through which the refill (16) is inserted, the at least one anti-rotation means further serving as a guiding means during the insertion of the refill (16) into the sheath (14).

12. Device (10) for packaging according to the preceding claim taken in combination with claim 7, wherein the slot (38) or the rib interacts with reciprocally a rib (40) or a slot of the attachment ring (34).

13. Device (10) for packaging according to the preceding claim, wherein the attachment means comprise a first attachment part which is carried by the attachment ring (34) cooperating with a second attachment part which is carried by the sheath (14).

14. Device (10) for packaging according to the preceding claim, wherein the sealing means (54) of the refill (16) comprises two opposing recesses (70) allowing the passage of the ribs (40) of the attachment ring (34) when the refill (16) is inserted into the sheath (14) and/or removed from the sheath (14)

15. Device (10) for packaging according to the preceding claim, wherein the recesses (70) are aligned with the locking means of the container (20).

FIG. 1

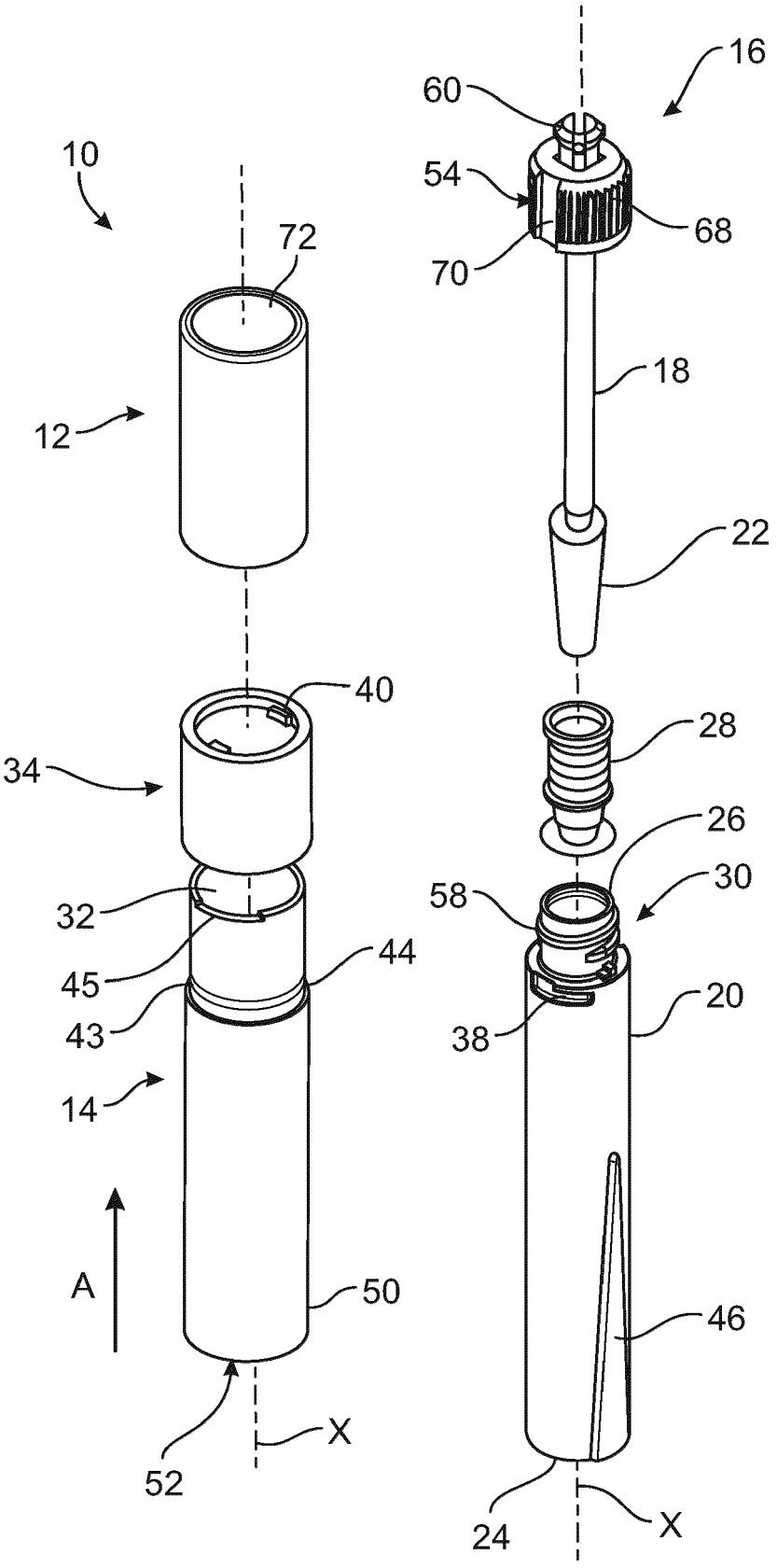
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FIG. 2

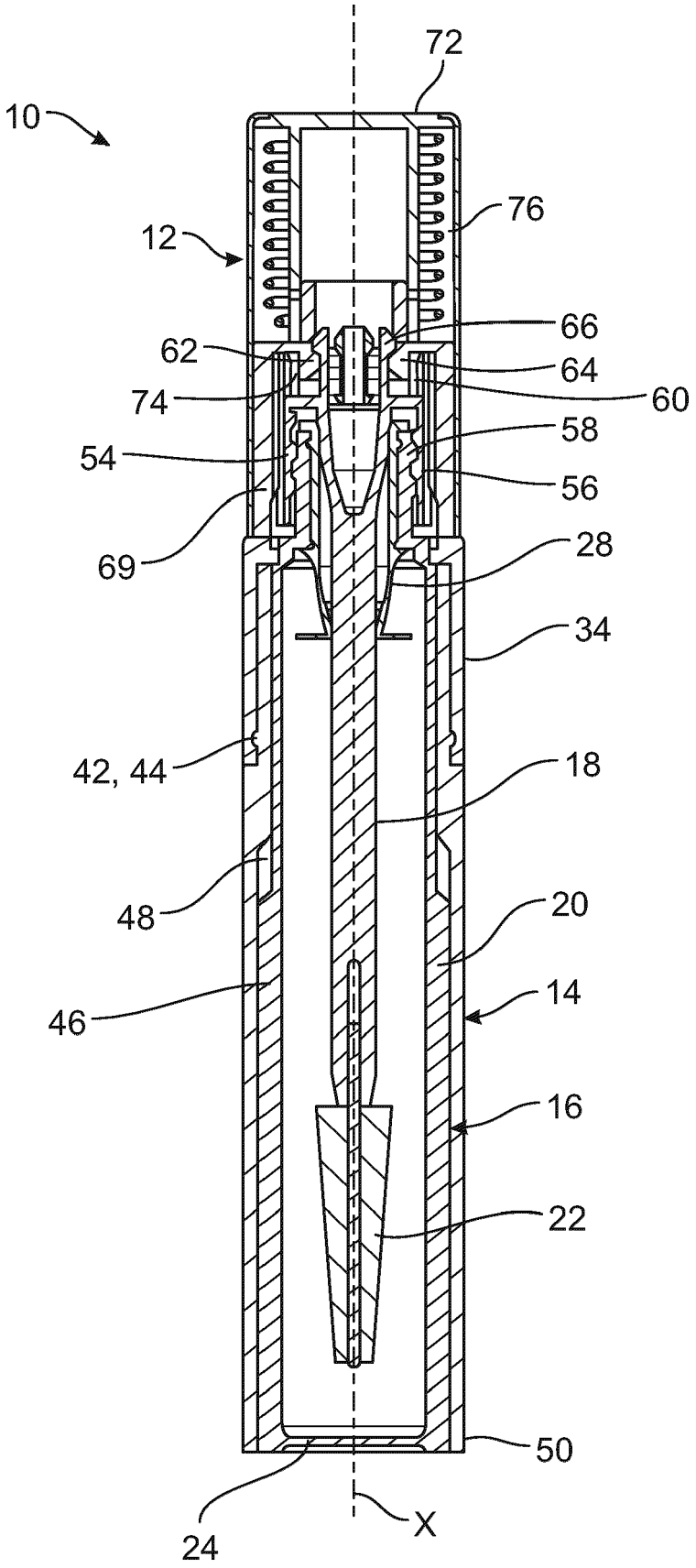
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FIG. 3

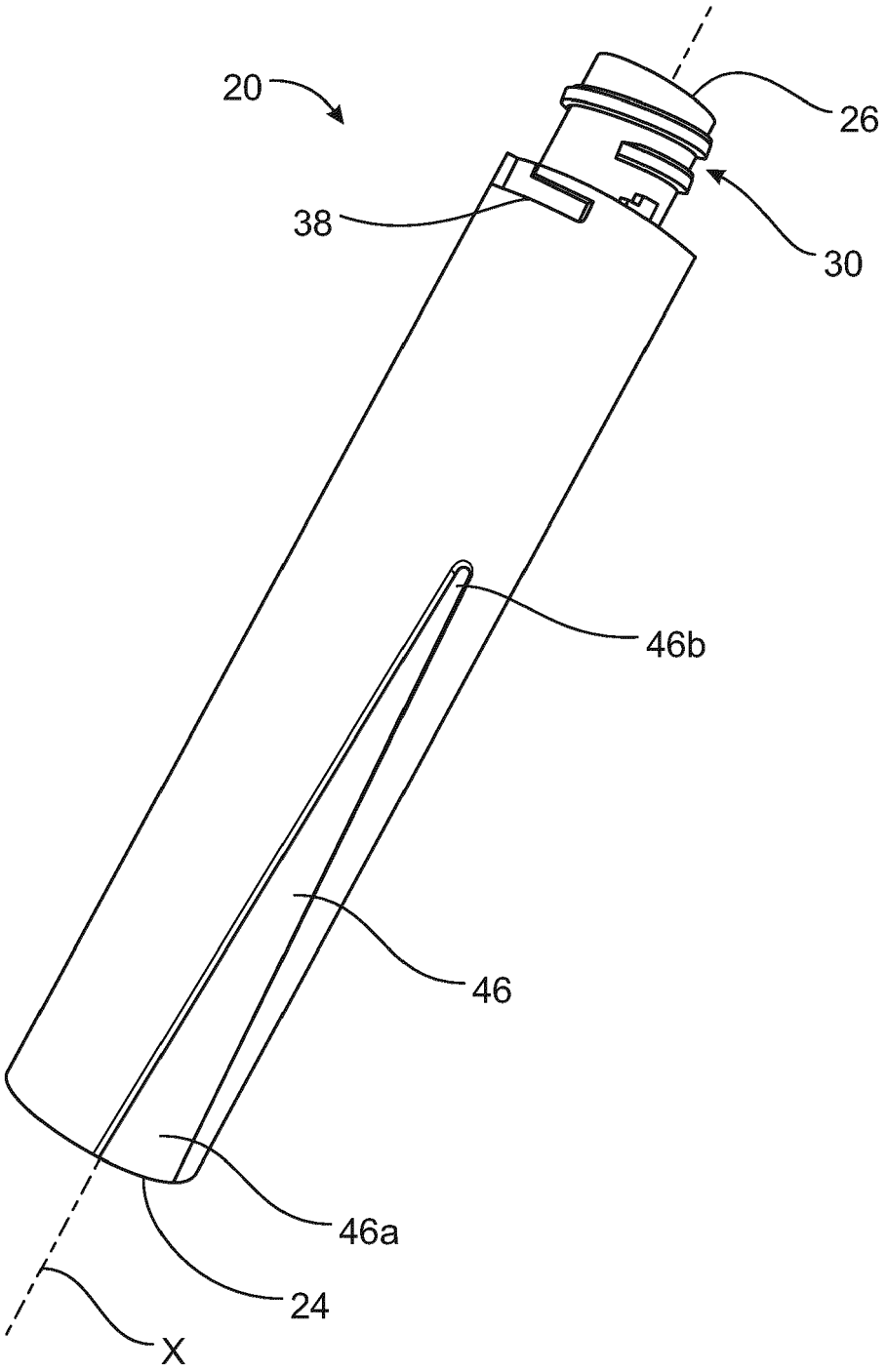


FIG. 4

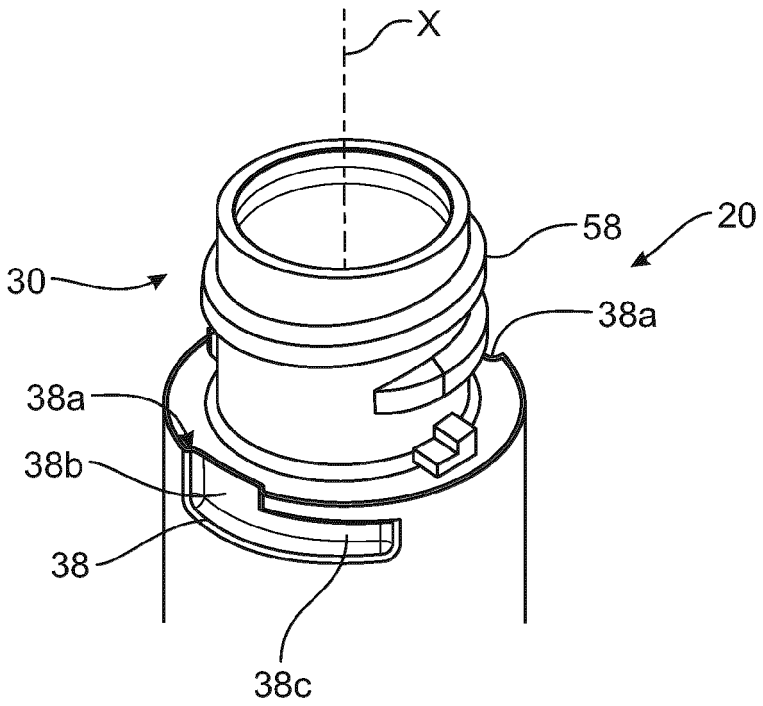


FIG. 5

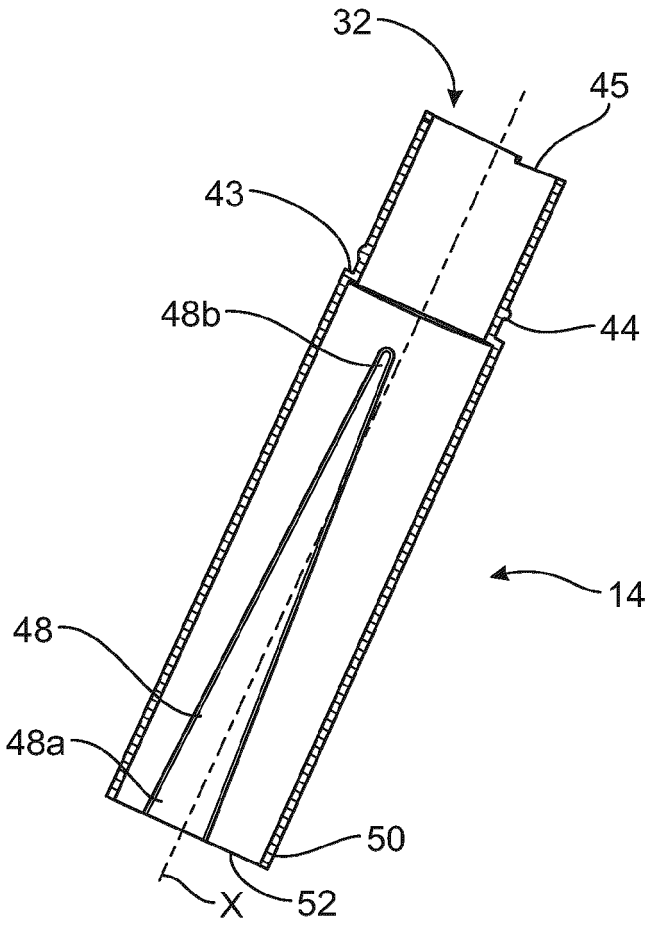
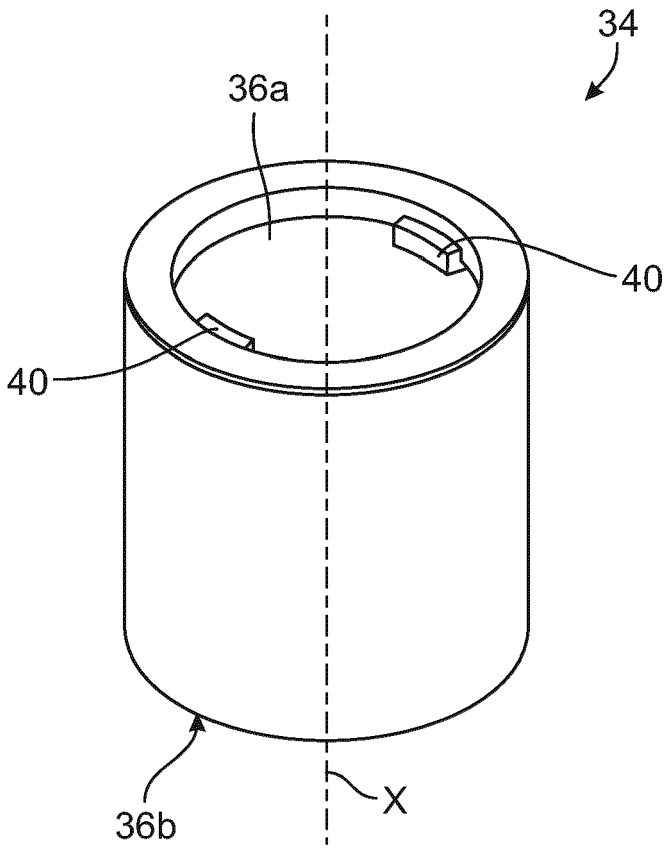


FIG. 6



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EUROPEAN SEARCH REPORT

Application Number
EP 21 30 6779

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y A	KR 101 804 506 B1 (SAMWHA PLASTIC IND CO [KR]) 4 December 2017 (2017-12-04) * paragraph [0034] - paragraph [0057]; figures * -----	1-5,7, 10,12,13 6 8,9,11, 14,15	INV. A45D40/26 A45D34/04
X A	US 2009/214285 A1 (CHO YONG HOON [US]) 27 August 2009 (2009-08-27) * paragraph [0037]; figures * -----	1,2,4,5, 7,10,12, 13 8,9,11, 14,15	
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TECHNICAL FIELDS SEARCHED (IPC)

A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	30 May 2022	van de Beek-Duijker

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30-05-2022

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