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(54) **COSMETIC PACKAGING**

(57) Disclosed herein is a cosmetic packaging (1) defining a main axis (1a) and comprising a body (2) defining at least one opening (20) and centred with respect to the main axis (1a), a cosmetic (3) of the solid compact powder type and arranged inside the body (2), an advancement mechanism (4) suitable to make the cosmetic (3) emerge at least partially from the opening (20), and retaining means (5) suitable to retain the cosmetic (3) at least at the opening (20) and comprising at least one protuberance (50) arranged inside the body (2) and extending inside the latter parallel to the main axis (1a) and radially towards the main axis (1a) so as to converge on a plane perpendicular to the main axis (1a).

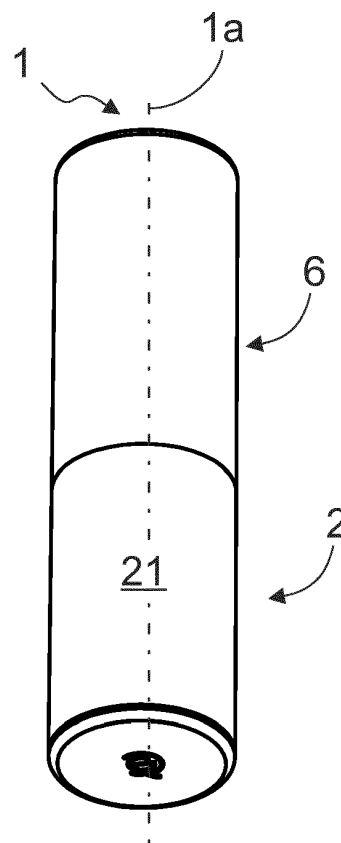


Fig. 1

Description

[0001] The present invention relates to a cosmetic packaging of the type as recited in the preamble of Claim 1.

[0002] In particular, the present invention relates to a cosmetic packaging suitable to apply a powder cosmetic such as face powder, foundation, rouge, bronzer, eye shadow, talc or spray powder, for example, to the surface of the skin.

[0003] Devices for cosmetics used, in particular, for the storage and application of powder cosmetics are known in the prior art.

[0004] Cosmetic powders can substantially be divided into loose, compact, baked and extruded.

[0005] Loose powders are generally placed and stored in simple receptacles suitable to be opened and re-closed by friction or screwing and designed to allow a brush or similar instrument to reach the powder. Once the brush has been impregnated with cosmetic powder it can be used to apply the product to the skin. Loose face powder is an example of this type.

[0006] Alternatively, loose powders may be placed in squeeze bottles similar to ordinary bottles, as in the case of talcum powder.

[0007] Compact powders are conceptually similar to loose powders, with the difference that they are compressed and, often, contain pigments.

[0008] The conventional face powders and eye shadows found in receptacles similar to those used for water-colour paints are an example of this type.

[0009] Baked powders are, instead, powders from which the water or any residual moisture has been removed, while extruded powders are substantially characterised by their "stick" structure, typical for example of large make-up pencils.

[0010] In this latter case, the powder cosmetic can be applied to the skin simply by rubbing the stick over the skin.

[0011] Such sticks are usually in an extracted position with respect to the containment case or must be taken out when they are loose inside said case.

[0012] The prior art described above has some notable drawbacks.

[0013] In particular, cosmetic devices that keep the sticks in an exposed position are often easily broken when subjected to bending, for example after the cosmetic has been applied to the skin or when a user places it in a handbag.

[0014] When, instead, such sticks are loose and have to be taken out of the containment case, they have the drawback that they are subject to being accidentally dropped which, also in this case, results in breakage and thus in the cosmetic product being discarded.

[0015] A further drawback, deriving from the previous one, is given by the fact that the implementation of conventional packaging for powder and compact cosmetic products in order to form a stick results in large amounts

of waste material.

[0016] In conclusion, a further drawback is given by the fact that the user often has to hold the actual stick, and so gets his or her hands dirty.

[0017] In this context, the technical purpose underlying the present invention is to devise a cosmetic packaging capable of substantially obviating at least some of the above-mentioned drawbacks.

[0018] Within the sphere of said technical purpose one important aim of the invention is to obtain a cosmetic packaging that reduces the bending stress on the cosmetic product during the use thereof.

[0019] Another important aim of the invention is to implement a cosmetic packaging in which the cosmetic is securely attached to the packaging in order to prevent it from falling and breaking.

[0020] Therefore, a secondary aim of the invention is to reduce the amount of waste material associated with the cosmetic product.

[0021] In conclusion, a further purpose of the invention is to implement a cosmetic packaging that prevents users from getting their hands dirty when using the cosmetic product.

[0022] The technical purpose and specified aims are achieved with a cosmetic packaging as claimed in the appended claim 1.

[0023] Exemplary preferred embodiments are described in the dependent claims. Preferred embodiments are set forth in the dependent claims.

[0024] The characteristics and advantages of the invention will be apparent from the following detailed description of preferred embodiments thereof, with reference to the accompanying drawings, in which:

Fig. 1 shows a perspective view of the cosmetic packaging according to the invention when closed;

Fig. 2 shows a perspective view of the cosmetic packaging according to the invention when open;

Fig. 3 is an exploded view of a cosmetic packaging according to the invention;

Fig. 4a illustrates a longitudinal section of a cosmetic packaging according to the invention;

Fig. 4b shows a second longitudinal section of a cosmetic packaging according to the invention rotated with respect to Fig. 4a;

Fig. 5 illustrates the detail of the one-way friction mechanism of a cosmetic packaging according to the invention;

Fig. 6 illustrates the detail of the retaining means of a cosmetic packaging according to the invention; and

Fig. 7 is a perspective view of the second portion of a device according to the invention showing a number of protuberances of the retaining means.

[0025] In this document, measurements, values, forms and geometric references (such as perpendicularity and parallelism), when used with words like "about" or other similar terms such as "more or less" or "substantially",

are to be understood as smaller than measurement errors or inaccuracies due to production and/or manufacturing defects and, especially, as less than a slight divergence from the value, measurement, form or geometric reference with which they are associated. For example, such terms, if associated with a value, preferably indicate a divergence of not more than 10% from said value.

[0026] Moreover, terms such as "first", "second", "upper", "lower", "main" and "secondary" do not necessarily indicate an order, priority or respective position, but may simply be used in order to make a clear distinction between the different components. Unless otherwise indicated, the measurements and data provided in this document are to be considered using International Standard Atmosphere ICAO (ISO 2533:1975).

[0027] With reference to the Figures, reference numeral 1 globally denotes the cosmetic packaging according to the invention.

[0028] The cosmetic packaging 1 preferably defines a main axis 1a.

[0029] The main axis 1a is preferably the prevalent axis or line of extension of the packaging 1. It may be, and is preferably, rectilinear. Nonetheless, the main axis could be curved instead of rectilinear. This possibility is to be considered when the packaging 1 describes specific and complex aesthetic forms, in which, for example, the containment case of the cosmetic and the cap are not centred.

[0030] The packaging 1 further comprises at least a body 2, a cosmetic product 3 and an advancement mechanism 4.

[0031] The body 2 is preferably centred with respect to the main axis 1a. Furthermore, it is preferably a containment body inside which at least one cosmetic can be housed. Substantially, therefore, it is preferably an open container.

[0032] In particular, the body 2 preferably defines at least one opening 20.

[0033] The opening 20 is preferably centred with respect to the main axis 1a.

[0034] Moreover, it may have a regular shape, for example it may be circular, or it may have a more complex shape.

[0035] The opening 20 preferably allows access to the contents of the case 2. Preferably, the cosmetic product 3 is arranged inside the body 2. It is preferably of the solid, compact powder type.

[0036] In detail, the cosmetic product 3 is a cosmetic product that has been compacted in order to form a "stick" from which the user can take material to apply the cosmetic to the skin.

[0037] In particular, the cosmetic 3 is a hard and fragile cosmetic that allows powder cosmetic 3 to be applied by rubbing it over the skin.

[0038] Said cosmetic 3 itself may thus define a cylindrical shape the bases of which are, for example, compatible with the opening 20.

[0039] The case 2 may further comprise a first portion

21 and a second portion 22.

[0040] The first portion 21 and the second portion 22 may be formed as a single piece and together define the outside surface of the cosmetic packaging 1, or at least a part thereof if the packaging 1 also comprises a further body defining a cap for closing the packaging 1.

[0041] Alternatively, preferably, the first portion 21 and the second portion 22 are transiently connected to one another and both centred with respect to the main axis 1a. Moreover, the first portion 21 and the second portion are preferably arranged adjacent to one another along the main axis 1a and the second portion 22 is arranged close to the opening 20 and comprises said opening 20.

[0042] The advancement mechanism 4 is preferably suitable to make the cosmetic 3 emerge at least partially from the opening 20.

[0043] The advancement mechanism 4 may be arranged at least partially on the outside of the case 2, or it may be arranged inside the case 2 and cooperate with the first portion and the second portion.

[0044] For example, the advancement mechanism 4 may be an advancement mechanism 4 similar to that present inside the cases used for ordinary lipsticks.

[0045] Preferably, the advancement mechanism 4 is connected to the portions 21, 22 so as to push the cosmetic product 3 towards the opening 20 when the portions 21, 22 are reciprocally moved along the main axis 1a.

[0046] Therefore, the portions 21, 22 can substantially also be considered to be part of the advancement mechanism 4.

[0047] In detail, the second portion 22 is preferably arranged adjacent to the opening 20, as already mentioned. Furthermore, it comprises the cosmetic 3 and is suitable to at least partially enter the first portion 21 when the portions 21, 22 are mutually moved along the main axis 1a.

[0048] Preferably, the advancement mechanism 4 further comprises a piston 40 and an intermediate body 41.

[0049] The piston 40 is preferably centred with respect to the main axis 1a and is also connected to the first portion 21 and is suitable to push the cosmetic 3 towards the opening 20.

[0050] The piston 40 may be active or passive. Active means that the movement of the piston implements the mechanism described above, whereas passive means that the piston is fixed and opposes the movement of the cosmetic 3.

[0051] Preferably, the piston 40 is of the passive type. In particular, it is transiently connected to the first portion 21. In particular, the piston 40 is integral with the first portion 21 axially with respect to the main axis 1a, although it may be rotated about the main axis 1a with respect to the first portion 21.

[0052] A coupling of this type can be achieved according to standard configurations in which, for example, the piston 40 is a hollow body inside which there is a circular guide that is circumferential with respect to the main axis 1a cooperating with part of the portion 21. A coupling of

this type is shown clearly in Figs. 4a,4b. Alternatively, the piston 40 could also be connected to the first portion 21 by interlocking and be entirely integral with the first portion 21.

[0053] The intermediate body 41 is also preferably centred with respect to the main axis 1a. Furthermore, the intermediate body 41 is connected to and integral with the first portion 21 and transiently connected to the second portion 22.

[0054] The second portion 22 is preferably rotatable about the main axis 1a and able to translate along the main axis 1a when rotated with respect to the intermediate body 41. Therefore, the intermediate body 41 substantially allows the transient connection between the first portion 21 and the second portion 22 to be achieved. Furthermore, the piston 40 is preferably only able to rotate about the main axis 1a with respect to the intermediate body 41 and is connected to the second portion 22 so as to rotate integrally therewith.

[0055] However, the piston 40 and the second portion 22 are able to reciprocally translate along the main axis 1a.

[0056] The shape of the portions 21, 22, of the piston 40 and of the intermediate body 41 that constitute the advancement mechanism 4 can be of various types.

[0057] Preferably, the intermediate body 41 and the second portion 22 are two hollow concentric cylinders each comprising a thread that is counter-shaped with respect to the other so as to allow the second portion 22 to translate along the main axis 1a with respect to the first portion 21 integral with the intermediate body 41. Said translation occurs in particular when the intermediate body 41 and the second portion 22 are reciprocally rotated about the main axis 1a.

[0058] The advancement mechanism 4 may also comprise a one-way friction mechanism 42.

[0059] The one-way friction mechanism 42, illustrated in detail in Fig. 5, is of the type known in the prior art. Preferably, the one-way friction mechanism 42 is suitable to permit the reciprocal rotation of the portions 21, 22 in a single direction. In particular, the one-way friction mechanism 42 allows and preferably guarantees that the first portion 21 and the second portion 22 always translate towards one another.

[0060] Advantageously, the packaging 1 comprises retaining means 5.

[0061] The retaining means 5 are preferably suitable to retain the cosmetic product 3 at least at the opening 20. Furthermore, they comprise at least one protuberance 50. The protuberance 50 is preferably arranged inside the body 2. In particular, the protuberance 50 preferably extends inside the body 2 parallel to the main axis 1a and radially with respect to the main axis 1a so as to converge on a plane perpendicular to the main axis 1a.

[0062] In detail, the protuberance 50 is preferably arranged on the inside surface of the second portion 22. Furthermore, the protuberance 50 is integral with the second portion 22.

[0063] Furthermore, the protuberance 50 converges along the main axis 1a so as to form a tip suitable to locally scratch the cosmetic 3.

[0064] In particular, the purpose of the protuberance 50 is to penetrate the cosmetic product 3, mainly by friction, so as to establish an interlocking connection with the latter.

[0065] The protuberance 50 is preferably arranged close to the opening 20.

[0066] However, it could extend along the second portion 22 with respect to the main axis 1a.

[0067] The protuberance 50 preferably extends convergent with respect to the main axis also along the main axis 1a towards the opening 20, as illustrated in Fig. 7. Therefore, the protuberance 50 forms a kind of rib inside the body 2, in particular inside the second portion 22, substantially parallel to the main axis 1a and suitable to retain the cosmetic 3 along the main axis 1a.

[0068] Furthermore, the protuberance, by converging towards the axis at the opening 20, allows the most distant portion of said cosmetic to be left free without producing any significant bending stress.

[0069] The retaining means 5 may, in addition, comprise more than one protuberance 50. The retaining means 5 preferably comprise a plurality of protuberances 50. In detail, they comprise four protuberances 50. Said protuberances are preferably arranged radially about the main axis 1a and equally spaced at intervals equal to 90°. Furthermore, the protuberance 50 preferably has a second purpose.

[0070] When the protuberance 50 is arranged along the entire main axis 1a, it is in fact suitable to radially engage the piston 40.

[0071] The piston 40 is, in fact, preferably connected to the second portion 22 by means of at least one abutment element counter-shaped with respect to the protuberance 50 so as to rotate integrally with the second portion 22.

[0072] The piston 40 could, therefore, be connected to and integral with the second rotating portion 22 by means of other abutment elements or mechanisms. Indeed, the protuberance 50 need not necessarily extend along the entire length of the second portion 22 with respect to the main axis 1a.

[0073] The functioning of the cosmetic packaging 1 described above in a structural sense, is as follows.

[0074] A user can hold the first portion 21 and the second portion 22 and reciprocally rotate them about the main axis 1a.

[0075] When the portions rotate, the cosmetic product 3 emerges.

[0076] When the cosmetic 3 emerges from the opening 20 it is also retained by the second portion 22 at the opening 20, so that the user can apply the cosmetic 3 to the skin without fully extracting the cosmetic 3 from the body 2.

[0077] For example, only 1 mm of the cosmetic 3 need be extracted along the main axis 1a and with respect to

the opening 20. This possibility thus reduces the bending stress to which a cosmetic 3 of the type described herein is usually subjected. The invention comprises a new method for producing a cosmetic packaging 1 as described above in a structural sense.

[0078] In particular, the method comprises at least a filling step and an assembly step.

[0079] In the filling step, the cosmetic 3 is placed inside the second portion 22 through a hole opposite the opening 20.

[0080] In this step, the first portion 21 and the second portion 22 are preferably not assembled and, therefore, they are not transiently connected but separate.

[0081] In the assembly step, the body 2 is assembled by transiently connecting the portions 21, 22. Said assembly can be greatly simplified since, for example, all that is required is to couple the threads of the intermediate body 41 and of the second portion 22 and then to reciprocally rotate the intermediate body 41 and the second portion 2 with respect to the main axis 1a in order to transiently connect them.

[0082] The rotation is appropriately defined by the one-way friction mechanism 42.

[0083] In addition to the steps described above, the method preferably comprises a further step.

[0084] This consists in a retaining step in which the portions 21, 22 are reciprocally moved so as to push the cosmetic product 3 towards the opening 20. Said step allows the cosmetic product 3 to be scratched by the retaining means 5 at least when it passes through the opening 20. However, it could also be scratched in other areas of the second portion 22 along the main axis 1a.

[0085] The cosmetic packaging 1 according to the invention achieves some important advantages.

[0086] As mentioned previously, with this packaging it is possible to reduce the bending stress to which the "stick"-type cosmetic product 3 is usually subjected. The latter is, in fact, a hard and fragile material with little resistance to stress of this type. This aspect thus prevents breakage of the cosmetic product 3 and prevents having to discard the packaging 1 owing to breakage of the cosmetic product 3. Moreover, the actual method of production is such that the cosmetic 3 is not subjected to excessive bending or compression stress even during the production of the packaging.

[0087] The cosmetic product 3 is, in fact, pushed gradually along the second portion 22 so as to be scratched by the retaining means 5.

[0088] As already mentioned, the preferred position of the retaining means 5 thus prevents the cosmetic product 3 from being extracted too far from the body 2. In addition to protecting the outside surface of the cosmetic product 3, which is less exposed, this aspect also affects the ease of handling of the packaging 1 and the strength thereof. Owing to said restraint, the cosmetic product 3 cannot come away from the body and fall off, which is the case instead with ordinary cosmetic products, and the user is able to apply the cosmetic product 3 to the skin with ex-

trême ease.

[0089] As a consequence of the above, a further advantage of the invention is that it prevents packaging waste due to breakage of the cosmetic product 3, but also prevents breakage of the cosmetic product 3 during production.

[0090] This aspect also has an important impact on production costs and the sale price of the cosmetic.

[0091] In conclusion, an important advantage of the cosmetic product 3 is that the user does not have to touch the cosmetic product 3.

[0092] The invention is subject to variations without departing from the scope of the inventive concept as defined in the claims.

[0093] For example, as already mentioned, the packaging may also comprise a cap 6. Said cap 6 may be removably connected to the body 2.

[0094] In particular, the cap 6 may be removably connected to the first portion 21 and suitable to surround and protect the second portion 22.

[0095] Moreover, as already mentioned, the body 2 may define different shapes and dimensions and, compatibly, the cap 6, if present, may also define different shapes and dimensions.

[0096] The advancement mechanisms 4 could also differ from those described herein provided they allow the cosmetic product 3 to be extracted or, in any case, allow the cosmetic product 3 to be propelled in relation to the body 2 at least along the main axis 1a.

[0097] In this context, all details are replaceable by equivalent elements, and the materials, shapes and dimensions may be any materials, shapes and dimensions.

Claims

1. A cosmetic packaging (1) defining a main axis (1a) and comprising:

- a body (2) defining at least one opening (20) and centred with respect to said main axis (1a),
- a cosmetic (3) of the solid compact powder type and arranged inside said body (2),
- an advancement mechanism (4) suitable to make said cosmetic (3) emerge at least partially from said opening (20),
- and **characterised in that** it comprises
- retaining means (5) suitable to retain said cosmetic (3) at least at said opening (20) and comprising at least one protuberance (50) arranged inside said body (2),
- said protuberance (50) extending inside said body (2) parallel to said main axis (1a) and radially towards said main axis (1a) so as to converge on a plane perpendicular to said main axis (1a).

2. The packaging (1) as claimed in claim 1, wherein

said protuberance (50) converges along said main axis (1a) so as to form a tip suitable to locally scratch said cosmetic (3).

3. The packaging (1) as claimed in one or more of the preceding claims, wherein said protuberance (50) extends convergent with respect to said main axis (1a) also along said main axis (1a) towards said opening (20). 5
4. The packaging (1) as claimed in one or more of the preceding claims, wherein said retaining means (5) comprise a plurality of said protuberances (50). 10
5. The packaging (1) as claimed in one or more of the preceding claims, wherein said body (2) comprises a first portion (21) and a second portion (22) transiently connected to one another and centred with respect to said main axis (1a) and said advancement mechanism (4) is connected to said portions (21, 22) in such a way as to push said cosmetic (3) towards said opening (20) when said portions (21, 22) are reciprocally moved along said main axis (1a). 15
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6. The packaging (1) as claimed in one or more of the preceding claims, wherein said second portion (22) is arranged adjacent to said opening (20), comprises said cosmetic (3) and is suitable to at least partially enter said first portion (21) when said portions (21, 22) are reciprocally moved along said main axis (1a) and said advancement mechanism (4) comprises at least a piston (40) centred with respect to said main axis (1a), connected to said first portion (21) and suitable to push said cosmetic (3) towards said opening (20). 25
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7. The packaging (1) as claimed in one or more of the preceding claims, wherein said advancement mechanism (4) comprises an intermediate body (41) centred with respect to said main axis (1a), connected to and integral with said first portion (21) and transiently connected to said second portion (22), said second portion (22) being rotatable about said main axis (1a) and translatable along said main axis (1a) when rotated with respect to said intermediate body (41) and said piston (40) only being able to rotate with respect to said intermediate body (41) and connected to said second portion (22) by means of at least one abutment element counter-shaped with respect to said protuberance (50) so as to rotate integrally with said second portion (22). 40
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8. The packaging (1) as claimed in one or more of the preceding claims, wherein said advancement mechanism (4) comprises a one-way friction mechanism (42) suitable to permit the reciprocal rotation of said portions (21, 22) only in a single direction. 55

9. The packaging (1) as claimed in one or more of the preceding claims, wherein said intermediate body (41) and said second portion (22) are two concentric hollow cylinders each comprising a thread that is counter-shaped with respect to the other said thread so as to allow said second portion (22) to translate along said main axis (1a), when said intermediate body (41) and said second portion (22) are reciprocally rotated about said main axis (1a), with respect to said first portion (21) integral with said intermediate body (41).

10. A method (1) for producing a cosmetic packaging as claimed in at least one of the preceding claims, comprising the steps of:

- placing said cosmetic (3) inside said second portion (22) through a hole opposite said opening (20),
- assembling said body (2) by transiently connecting said second portion (22) and said first portion (21),
- and **characterised in that** it comprises:
- a further retaining step in which said portions (21, 22) are reciprocally moved so as to push said cosmetic (3) towards said opening (20) and said cosmetic (3) is scratched by said retaining means (5) at least when it passes through said opening (20).

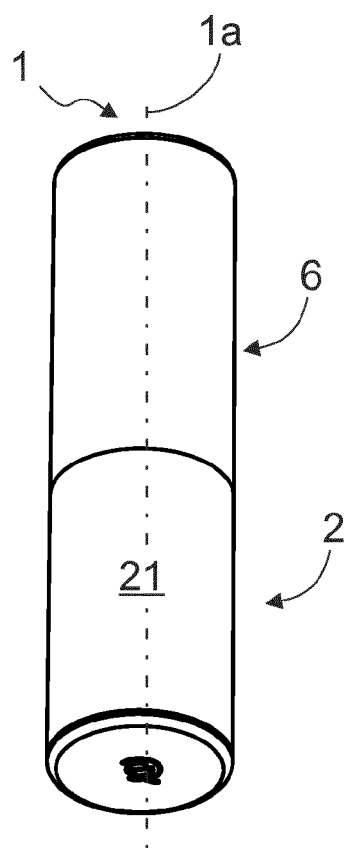


Fig. 1

Fig. 2

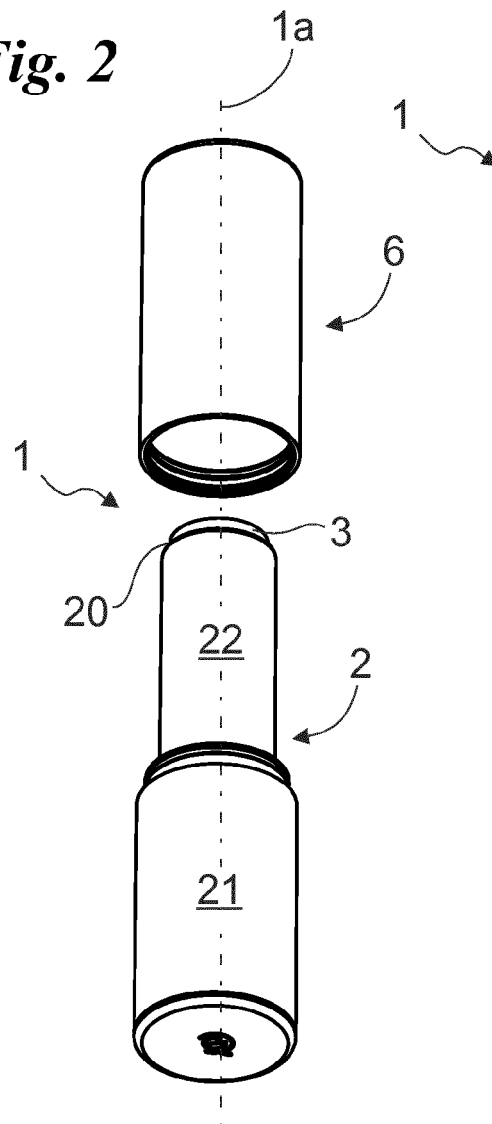
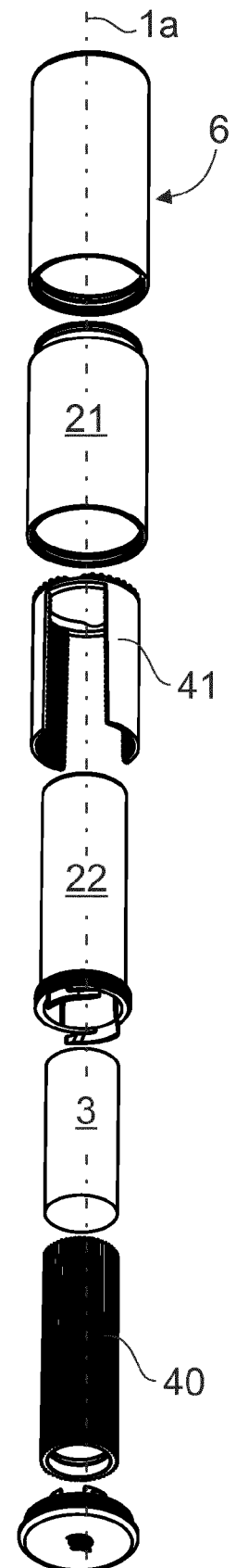


Fig. 3



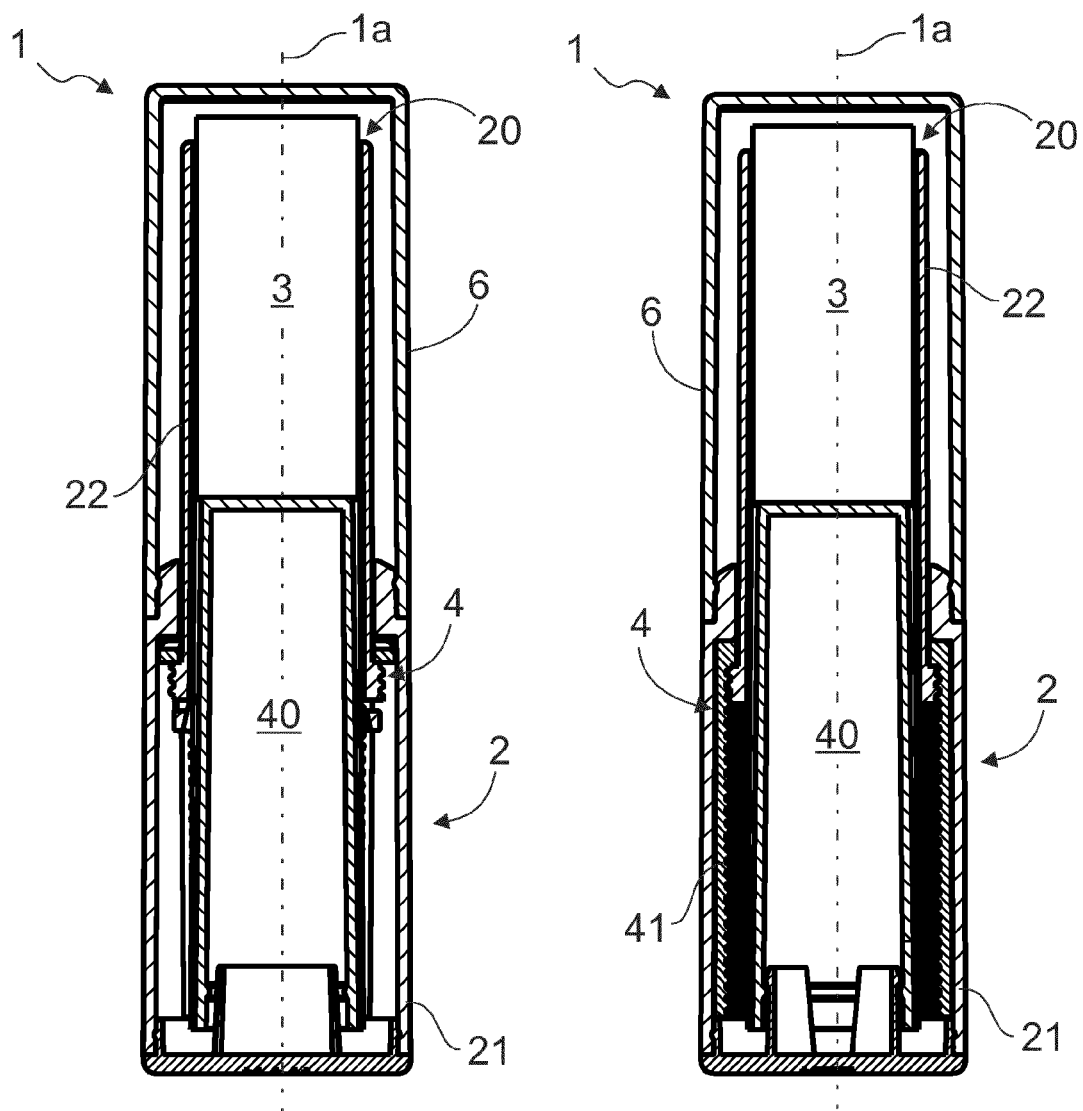


Fig. 4a

Fig. 4b

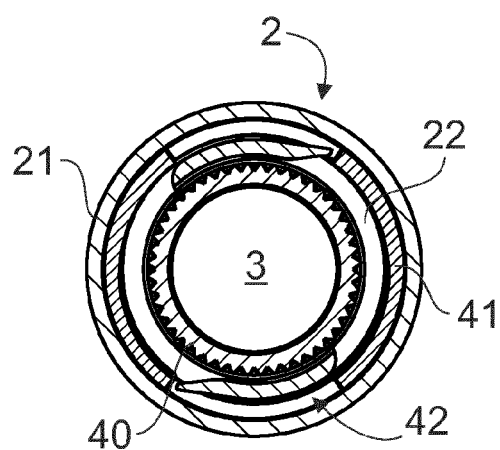
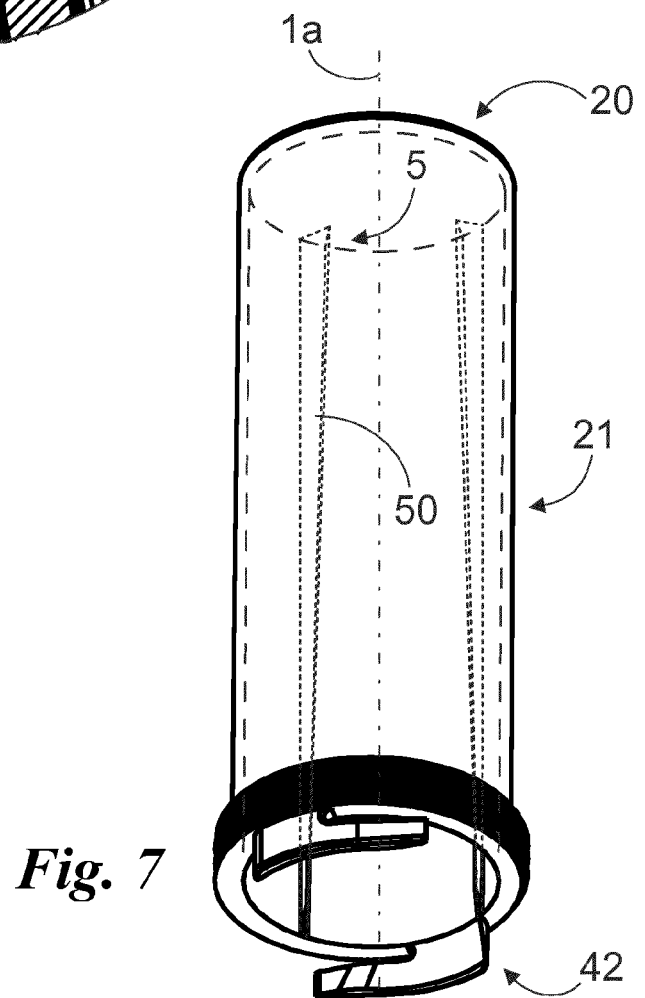
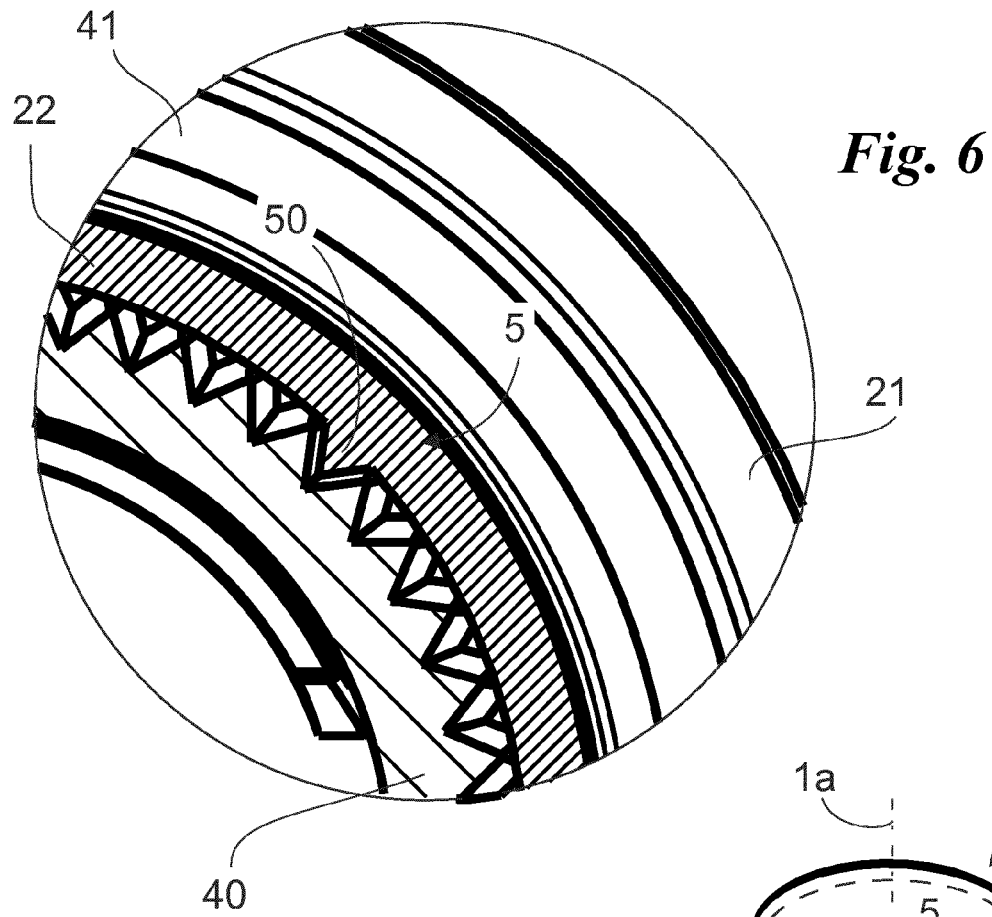


Fig. 5





EUROPEAN SEARCH REPORT

Application Number
EP 19 16 2498

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	* paragraphs [0045], [0046], [0056], [0059] - paragraphs [0062], [0071], [0076], [0077]; figures *	6,7,9	ADD. A45D40/20
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 30 April 2019	Examiner van de Beek-Duijker
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EPO FORM 1503 03.82 (P04C01)

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

EP 19 16 2498

5 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
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