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(54) **CLOSING SYSTEM FOR A CONTAINER**

(57) A closing system for a container (2), in particular for a perfume bottle (2), comprises a cap (3) suitable for closing a mouth portion (4) of the aforementioned perfume bottle (2).

The cap (3) is made completely of metal and comprises engaging elastic means (5) for snap coupling with the mouth portion (4) of the bottle (2).

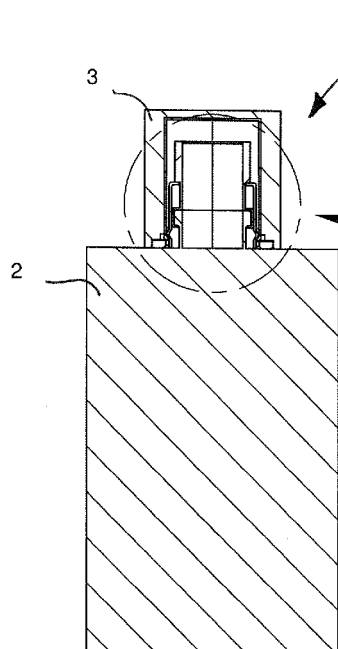


Fig. 3

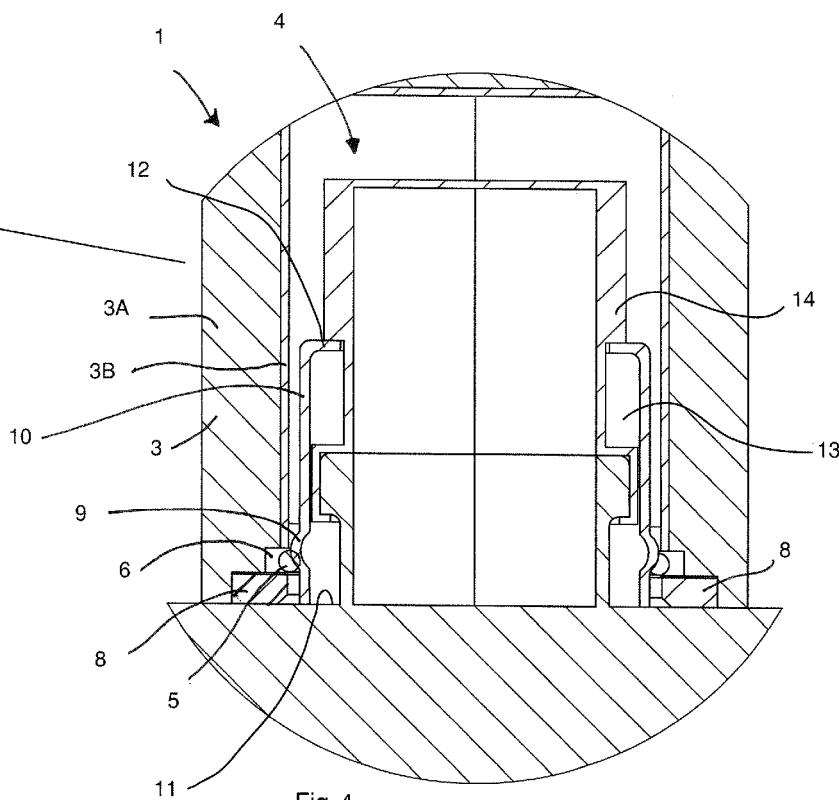


Fig. 4

Description

BACKGROUND OF THE INVENTION

[0001] The invention relates to a closing system for a container for a cosmetic product, in particular for a perfume bottle.

STATE OF THE ART

[0002] In the cosmetics industry field, and with specific reference to the field of fine scents, packaging solutions are proposed that are increasingly evolved from the aesthetic point of view, with the objective of striking and attracting customers. In particular, there is a continuous development of closing systems, i.e. caps or lids that are used to close and cover the mouth of the perfume bottle, to which a little spray pump is generally fitted for spraying the perfume.

[0003] A closing system for perfume bottle is known whose cap has a metal outer part: the choice of metal as a material for making the outer part of the cap arises from the need to provide users with a perception of an important and high quality luxury product, increasingly neglecting, at least relatively to the niche perfumes, the use of plastics that although painted or surface treated are not able to create in the user the same sensation as metal material.

[0004] However, this cap of known type is not completely devoid of parts made of plastics. In fact, this cap is provided, inside, with a cladding element made of plastics, the presence of which is necessary for permitting snap locking of the cap on the neck of the perfume bottle.

[0005] In particular, on the mouth portion of the bottle, an annular protrusion is generally obtained with which a corresponding annular ridge inside the cap has to engage. This annular ridge is obtained on the inner cladding made of plastics as it has to be provided with a certain degree of elasticity necessary to enable the annular ridge to overcome the annular protrusion during the snap coupling operation, by getting positioned therebelow.

[0006] One drawback of this configuration is that the protrusion made of plastics can easily suffer damage, thus compromising the correct closing function.

[0007] There is currently a strong desire to arrange caps that make the smallest possible use of plastics, both for aesthetic and market needs and for aspects related to ecological sustainability and recycling and recovery of materials.

[0008] In the light of the above, there is thus ample room for improvement of closing systems for cosmetic products, in particular for perfume bottles.

OBJECTS OF THE INVENTION

[0009] One object of the present invention is to provide a closing system that is able to solve the limits inherent in prior art systems.

[0010] In particular, one object of the present invention is to provide an improved closing system for perfume bottles, the cap of which is provided with a new mechanism for hooking with the bottle, such as to ensure an effective and reliable mechanical coupling and, and at the same time, such as to make possible the use of only metal material to make the cap itself.

[0011] Such objects of the invention are achieved with a closing system according to one or more of the appended claims.

SHORT DESCRIPTION OF THE INVENTION

[0012] According to the invention, a closing system is provided for a container, in particular for a perfume bottle, said closing system comprising a cap suitable for closing a mouth portion of said perfume bottle. The cap is made completely of metal and comprises engaging elastic means for snap coupling with said mouth portion.

[0013] Owing to the closing system according to the invention, the set objectives are achieved successfully.

SHORT DESCRIPTION OF THE DRAWINGS

[0014] Further features and advantages of the invention will be clearer from the following description with the help of the appended drawings that show a non-limiting illustrative embodiment of the invention, in which:

Figure 1 is a perspective diagram of a perfume bottle provided with the closing system according to the invention;

Figure 2 is a side view of the perfume bottle provided with the closing system according to the invention;

Figure 3 is a longitudinal section taken along the plane III-III in Figure 2;

Figure 4 is an enlarged detail of Figure 3;

Figures 5 and 6 are two different views of an outer metal casing body of the cap according to the invention;

Figures 7 and 8 are two different views of an inner metal cladding body of the cap according to the invention;

Figures 9 and 10 are two different views of an elastic metal ring included in the cap according to the invention;

Figures 10 and 11 are two different views of a metal annular element included in the cap according to the invention;

Figure 13 shows a metal ferrule element suitable for being fixed to the perfume bottle.

DETAILED DESCRIPTION OF THE INVENTION

[0015] With reference to the enclosed figures, a closing system 1 for closing a container 2 is shown, in particular for a perfume bottle 2.

[0016] The closing system 1 comprises a cap 3, made

completely of metal, suitable for closing a mouth portion 4 of the bottle 2. To thus mouth portion 4, a pressure device can be fitted for dispensing a spray, i.e. a little pump that is drivable by the user to spray on herself or himself the perfume. As disclosed in detail below, the cap 3 is provided with engaging elastic means 5, which are also made of metal, which are suitable for snap engaging with an annular protrusion 9 provided on the bottle 2.

[0017] In particular, the annular protrusion 9 can be obtained directly on the neck of the glass bottle 2, or, as in the example shown in the appended figures, can be part of a ferrule element 10, and constrained on the bottle 2, defining at least in part the mouth portion 4 thereof.

[0018] In figure 4 an example of configuration of the ferrule element 10 is shown better. In this example, the ferrule element 10 abuts below on an upper bounding surface 11 bounding the bottle 2, and has above a curved edge portion 12 inside an annular recess 13 with which it engages and remains firmly constrained. The annular recess 13 is obtained on a static component 14, fixed to the bottle 2, which is part of the little pump device that is not shown.

[0019] The cap 3 comprises an outer casing body 3A made of metal and an inner cladding body 3B which is also made of metal and is fixed inside said casing body 3A.

[0020] The outer casing body 3A, in particular, is made of a metal alloy with a high level of zinc of significant purity, combined with small percentages of aluminium, magnesium and copper. A metal alloy of this kind is commonly known by the commercial name "Zama".

[0021] Alternatively, the outer casing body 3A can be made of brass or aluminium, or other metals or suitable metal alloys.

[0022] The use of the metal material to make the outer casing body 3A gives the closing system 1, in particular the cap 3, a valued and pleasing aesthetic appearance, very appreciated by a user who perceives the product as being provided with high quality.

[0023] The inner cladding body 3B, of almost cylindrical shape, extends longitudinally inside the cavity of the casing body 3A for a large part of the longitudinal dimension of the cavity itself.

[0024] The inner cladding body 3B is made of aluminium or aluminium alloy, or another suitable metal material.

[0025] The inner cladding body 3B can be coupled with the outer casing body 3A by joint, or by mechanical interference or by gluing.

[0026] The assembly defined by the outer casing body 3A and by the inner cladding body 3B is thus completely made of metal.

[0027] Making not only the casing body 3A but also the inner cladding body 3B of metal significantly increases the sensation of quality perceived by the user.

[0028] The casing body 3A and the inner cladding body 3B define together a housing seat 6 for the aforesaid

engaging elastic means 5.

[0029] According to a different possible embodiment, the cap 3 can consist of only the casing body 3A. In other words, the cap 3 can be devoid of the cladding body 3B, and the inside of the casing body 3A can be for example painted.

[0030] In this version, the housing seat 6, obtained for example by removing in the thickness of the casing body 3A, will be shaped with a suitable geometry that is suitable for housing the engaging elastic means 5.

[0031] The engaging elastic means, in particular, comprises a metal elastic ring 5, configured to expand elastically radially when it interacts in contact with the aforesaid annular retaining protrusion 9 provided on the mouth portion 4 of the bottle 2.

[0032] In particular, the metal elastic ring 5, made of iron or another suitable metallic material, has a zone of discontinuity 7 that enables the metal elastic ring 5 to expand elastically in a radial direction.

[0033] The engaging elastic ring 5, in the rest condition, has a lesser inner diameter than the outer diameter of the annular protrusion 9. During the coupling step, the zone of discontinuity 7 enables the engaging elastic ring 5 to expand temporarily to advance beyond the annular protrusion 9 and be positioned below the latter. The annular protrusion 9 thus secures the engaging elastic ring 5 in the engagement position, and thus the cap 3 is firmly coupled with the bottle 2. Exerting appropriate tensile force on the cap 3 to remove it from the bottle 2 means that the engaging elastic ring 5 expands again to pass beyond the annular protrusion 9. At this point, the cap 3 is easily separable from the mouth portion 4.

[0034] The housing seat 6 is shaped as an annular groove obtained in the casing body 3A and is bounded above partially by the inner cladding body 3B. In other words, the inner cladding body 3B, of cylindrical shape, extends, in the casing body 3A for a lesser length than the longitudinal extent of the cavity of the casing body 3A itself. In particular, the lower end of the inner cladding body 3B ends at the annular groove obtained in the casing body 3A and concurs therewith to define the housing seat 6 for the elastic ring 5. The outer diameter of the annular housing seat 6 is sized to enable the metal elastic ring 5 to expand radially during snap coupling of the cap 3 with the bottle 2.

[0035] The cap 3 comprises an annular, also metal, retaining element 8, fixed to a base portion of the casing body 3A and which is shaped to retain in the housing seat 6 the engaging elastic ring 5.

[0036] In particular, the annular element 8 has a lesser inner diameter than the outer diameter of the elastic ring 5, and this ensures the correct operation of retaining the latter in the seat 6 thereof.

[0037] The annular element 8 is housed in a respective seat 15 of circumferential shape, or another shape, which extends below the seat 6 of the elastic ring 5.

[0038] The circumferential seat 15 has a maximum diameter that is greater than the seat 6.

[0039] To sum up, the cap 3 consists of the following parts:

- casing body 3A,
- inner cladding body 3B,
- engaging elastic ring 5,
- annular retaining element 8,

all made of metal.

[0040] The operation of the closing system 1 is disclosed briefly below.

[0041] In order to close the bottle 2, the cap 3 is put on the mouth portion 4, and pressed thereupon. The engaging elastic ring 5, which in the rest condition has a lesser inner diameter than the outer diameter of the annular protrusion 9, is forced to expand to overcome, by sliding thereupon, the annular protrusion 9 itself. The passage from the position above the annular protrusion 9 to the position below it is rapid and of snap type and this hooking operation provides the user with pleasing tactile feedback, which assures the user that the bottle 2 has been closed correctly.

[0042] In order to open the bottle 2, the user has to exert appropriate tensile force on the cap 3 that is sufficient to force the engaging elastic ring 5 to expand again to pass above the annular protrusion 9. At this point, the cap 3 is easily removable from the mouth portion 4.

[0043] From what has been disclosed, claimed and shown in the appended figures, it is clear that the closing system 1, in particular the cap 3 according to the invention, achieves successfully all the set objects, by overcoming all the limits inherent in the prior art systems.

[0044] In particular, an improved closing system 1 is provided, the cap 3 of which is provided with a new spring mechanism for hooking with the bottle 2. The hooking mechanism with metal elastic element 5 ensures an effective mechanical coupling that is more reliable and precise over time. At the same time, this solution makes it possible to use only metal material to make the entire cap 3, thus fully meeting current market needs.

[0045] It is possible to configure and size the closing system 1 in a desired manner in function of specific needs, with possible variations on and/or additions to what has been disclosed above and illustrated in the appended drawings.

[0046] The ferrule element 10 can be made of aluminium by drawing or can be made of Zama and be constrained by interference or other coupling systems to the bottle 2. The ferrule element 10 can also be made of plastics by injection.

[0047] What has been said and shown in the appended drawings has been shown by way of illustration of the innovative features of the closing system 1, so other modifications can be made to the frame, or to parts thereof, without thereby falling outside the claims.

[0048] In practice, the materials, insofar as they are compatible with the specific use and with the respective single elements for which they are intended, can be cho-

sen opportunely in function of the required requirements and in function of the available prior art.

5 Claims

1. Closing system for a container (2), in particular for a perfume bottle (2), said closing system (1) comprising a cap (3) suitable for closing a mouth portion (4) of said perfume bottle (2), wherein said cap (3) is made completely of metal and comprises engaging elastic means (5) for snap coupling with said mouth portion (4), and wherein said cap (3) comprises an outer casing body (3A) made of metal and an inner cladding body (3B) made of metal, fixed inside said casing body (3A), wherein said casing body (3A) and said inner cladding body (3B) define together a housing seat (6) for said engaging elastic means (5).
2. Closing system according to claim 1, wherein said engaging elastic means comprises a metal elastic ring (5), configured to expand elastically radially upon interaction with an annular retaining protrusion (9) of said mouth portion (4) and again contract to the rest position, said metal elastic ring (5) being shaped for engaging in a zone below said annular retaining protrusion (8).
3. Closing system according to claim 1 or 2, wherein said housing seat (6) is obtained by removing material in the thickness of said cap (3).
4. Closing system according to claim 2 or according to claim 3 as appended to claim 2, wherein said housing seat (6) is shaped as an annular groove obtained in said casing body (3A) and is bounded above partially by said inner cladding body (3B), said housing seat (6) being dimensioned to enable said metal elastic ring (5) to expand radially during snap coupling of said cap (3) with said mouth portion (4) of said bottle (2).
5. Closing system according to claim 2 or according to claim 3 or 4 as appended to claim 2, wherein said metal elastic ring (5) is made of iron and has a zone of discontinuity (7) for radial elastic expansion/contraction.
6. Closing system according to any one of the preceding claims, wherein said cap (3) comprises a metal annular element (8), fixed to a base portion of said casing body (3A) and shaped for retaining in said housing seat (6) said engaging elastic means (5).
7. Closing system according to any one of the preceding claims, wherein said outer casing body (3A) is made of a metal alloy with a high level of zinc of significant purity, combined with small percentages

of aluminium, magnesium and copper.

8. Closing system according to any one of claims 1 to 6, wherein said outer casing body (3A) is made of brass or aluminium. 5
9. Closing system according to any one of the preceding claims, in which said inner cladding body (3B) is made of aluminium or an aluminium alloy. 10
10. Closing system according to claim 2, or according to one of claims 3 to 9, as appended to claim 2, comprising a substantially cylindrical ferrule element (10) shaped for being fixed to said bottle (2) to define said mouth portion (4), on said ferrule element (10) said annular protrusion (9) being obtained that is suitable for engaging with and retaining, said metal elastic ring (5). 15
11. Closing system according to claim 10, in which said ferrule element (10) is made of metal. 20
12. Perfume bottle comprising a closing system (1) according to any one of the preceding claims. 25

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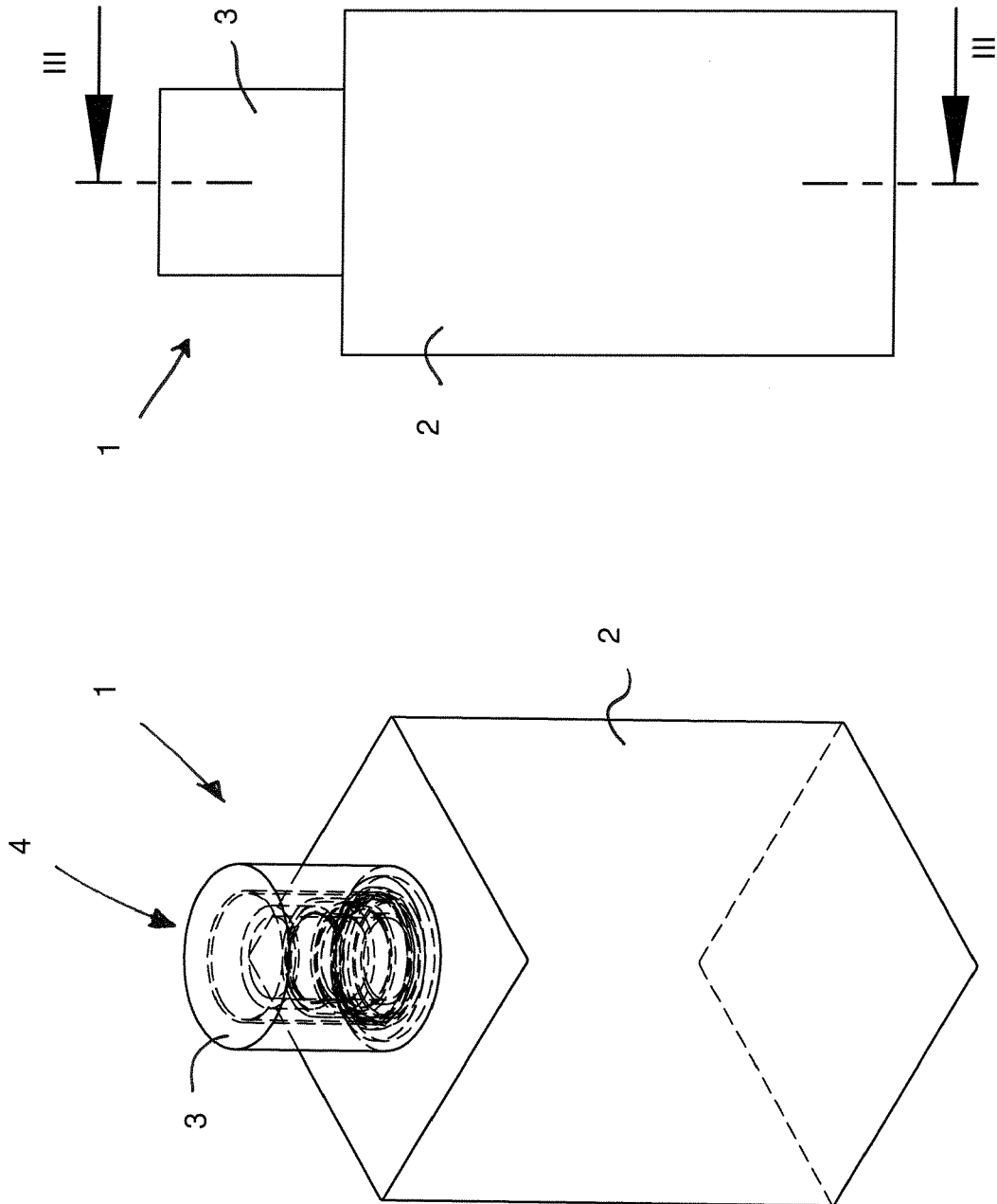
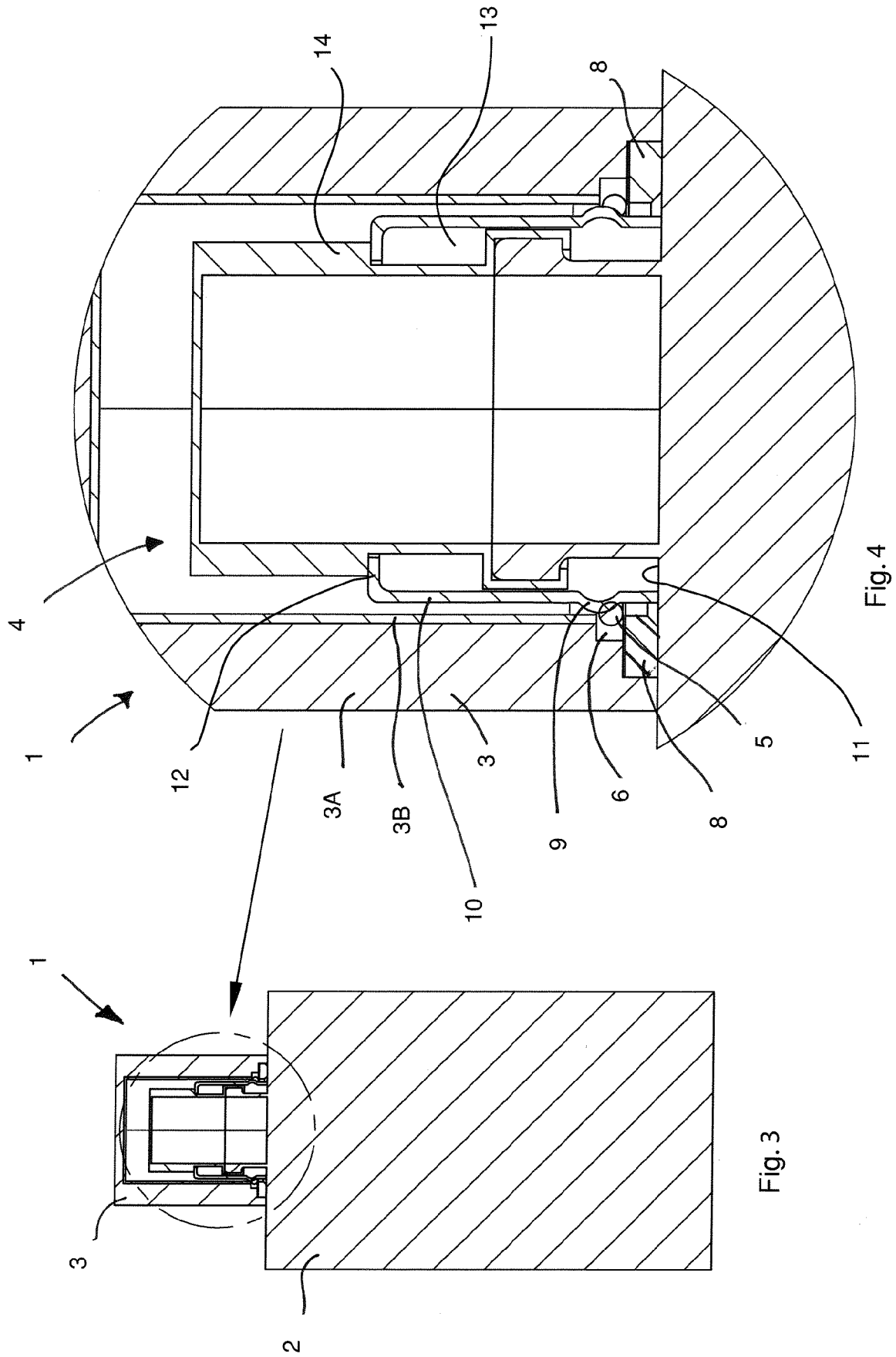
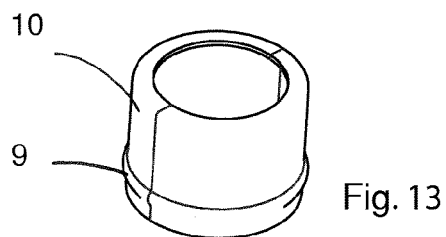
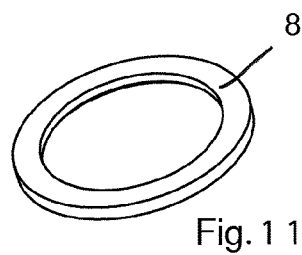
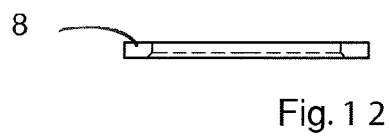
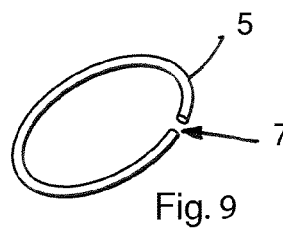
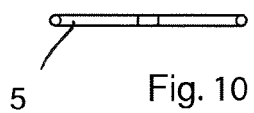
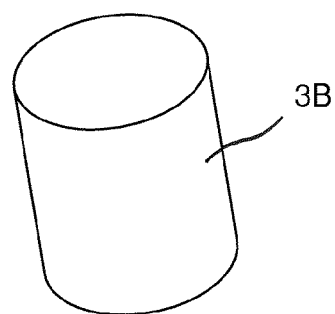
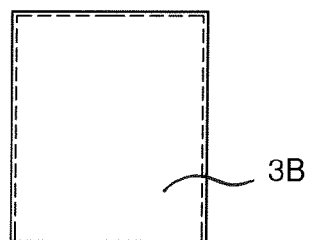
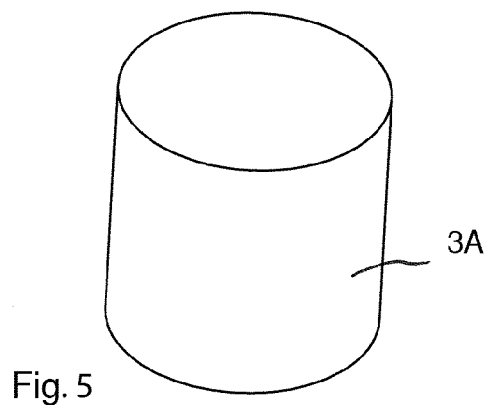
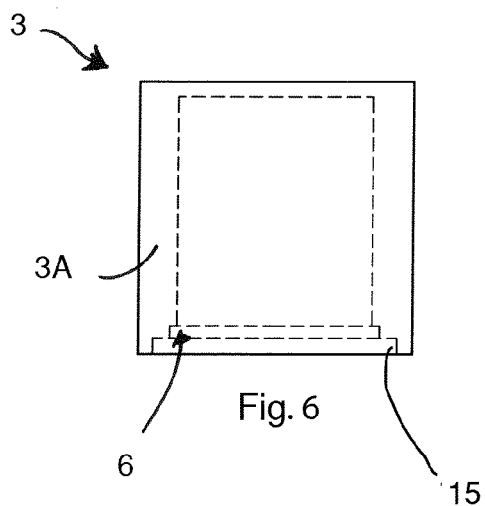


Fig. 2

Fig. 1







EUROPEAN SEARCH REPORT

Application Number
EP 20 17 3676

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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 21 September 2020	Examiner Blazquez Lainez, R
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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