(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 256 057 A2**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
01.12.2010 Bulletin 2010/48

(21) Application number: **09709254.8**

(22) Date of filing: **06.02.2009**

(51) Int Cl.:
B65D 41/62 *(2006.01)* ***B65D 51/18*** *(2006.01)*
B65D 49/04 *(2006.01)*

(86) International application number:
PCT/ES2009/070018

(87) International publication number:
WO 2009/098347 (13.08.2009 Gazette 2009/33)

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA RS

(30) Priority: **08.02.2008 ES 200800349**

(71) Applicant: **Compania de Tapones Irrellenables, S.A.**
11500 Puerto de Santa Maria (ES)

(72) Inventor: **TORRENT ORTEGA, David**
E-11500 Puerto De Santa Maria
Cadiz (ES)

(74) Representative: **ABG Patentes, S.L.**
Avenida de Burgos 16D
Edificio Euromor
28036 Madrid (ES)

(54) **CAPSULE FOR BOTTLE STOPPER**

(57) The present invention relates to a capsule for a bottle3closure that can be removed by tearing. The capsule configuration according to the invention allows providing a large area for including publicity. The capsule is configured in two parts, such that after removing the upper segment by tearing, the lower part remains stable in its position. This capsule is at the same time a seal guarantee that makes it evident whether or not the bottle cap has been opened. It characterises a configuration of the capsule based on two essentially weakened lines that define a lateral tearing band placed on the means that relate the capsule and the pouring member or bottle.

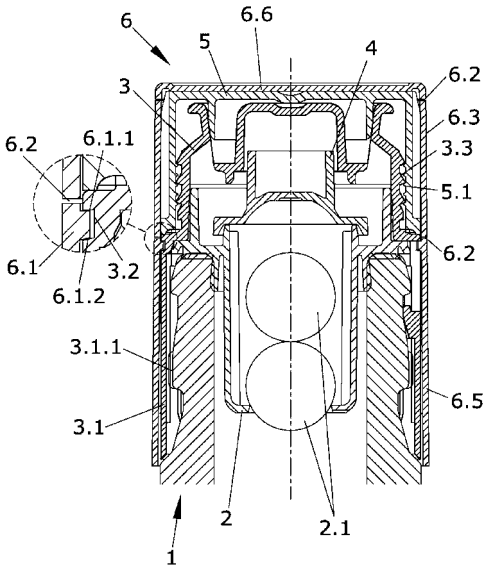

FIG.1

EP 2 256 057 A2

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a capsule for a bottle cap that can be removed by tearing.

[0002] The capsule configuration according to the invention allows providing a large area for including publicity. The capsule is configured in two parts such that, once the upper part is removed by tearing, the bottom part remains stable in its position.

[0003] This capsule is at the same time a seal guarantee that makes it evident whether the bottle cap has been opened.

BACKGROUND OF THE INVENTION

[0004] Closures including first sealing closure means often require second closures with various additional functions.

[0005] This is the case for some closures using caps in bottles with pouring members that have valves to prevent fraudulent refilling.

[0006] In these cases, the incorporation of an external capsule reveals the first opening and in addition favours the inclusion of publicity in a surface free of knurls or mechanical means intended for closure.

[0007] A patent is known with publication number W00007898 in which a capsule is added on a cap closure incorporated on a bottle neck with pouring member prepared to prevent fraudulent filling.

[0008] This capsule has a special configuration for its attachment and tearing means for removal. The capsule has a peripheral weakened line that gives rise to two portions: an upper portion and a lower portion.

[0009] The upper portion has two weakened lines in vertical position with the weakened incorporated in the internal part of the capsule surface, in which at least one of these intersects the first peripheral line.

[0010] Before breaking the capsule, the peripheral weakened line establishes a division such that both above and below it there are means to prevent the capsule from rising along the axial direction.

[0011] The capsule descent is prevented by the presence of the cap. However, once the upper part is removed this retention is no longer present and the descent is only prevented by the wedge of the bottom flange in the conical surface of the bottle neck, resulting in the possibility of clearances in the axial direction between them.

[0012] Similarly, the vertical tearing requires an upper tab from which the tearing begins, continuing along the side vertically to the weakened line that intersects the peripheral line. When the tearing has reached this point, continuing results in the advance of the lateral weakened line until the entire perimeter is covered.

[0013] The presence of the upper tab prevents the use of this surface for including publicity, making use of the entire upper area of the capsule.

[0014] Tearing this type of capsule also requires two changes of direction: from horizontal to vertical and from vertical to the final peripheral segment.

[0015] The present invention establishes a capsule configuration that provides a closure that overcomes these drawbacks.

DESCRIPTION OF THE INVENTION

[0016] The present invention consists of a capsule that can establish a closure in bottles that include a pouring member. This pouring member can include, for example, means to prevent fraudulent refilling of the bottle contents.

[0017] It is also possible that the pouring member is not an independent part, instead being integrated in the configuration of the bottle mouth. In this case the capsule can be applied directly on the bottle.

[0018] The capsule is of those in which at least one of the parts is detached by a tearing operation, leaving the bottle cap accessible. The configuration of the invention provides a tearing that takes place in the side of the capsule without interfering with the upper surface, allowing the use of the entire area for including publicity.

[0019] After tearing the capsule is divided into two segments, a bottom one that remains joined to the bottle neck and an upper one that is detached.

[0020] The object of the invention is the specific way in which these objectives are achieved by a configuration allowing the bottom part to maintain an axial retention with respect to the bottle and the upper segment not to be directly attached to the bottle at any time, only through the lower segment which has a temporary union until the tearing operation is performed.

[0021] As regards the characteristics of the capsule for bottle closures, those considered essential are the ones related to its configuration, which must be such that the capsule is formed by two segments joined to one another and separable by a tearing operation the first time that the closure is opened, and therefore must comprise:

- A first lower segment in the form of an external flange meant to remain attached to the bottle after the tearing; and
- A second upper segment that can be removed by the tearing operation;

wherein the first lower segment of the capsule has means of attachment meant to be joined either to a pouring member of the bottle or directly to the bottle, providing an axial retention in both senses and with the possibility of remaining joined to the pouring member or bottle after the tearing operation; and the second upper segment of the capsule is provided with a tearing band on its lateral face defined by two weakened lines, these weakened lines being disposed along the axial sense above the attachment means that join the bottom segment of the capsule

and the pouring member.

[0022] In the examples of embodiment, the upper and lower segment of said capsule can be separated in the tearing operation using the lower weakened line that defines the band. Thus, the band is considered to be part of the upper segment.

[0023] The various embodiments of the invention according to dependent claims 2 to 13 are considered to be included in this description by reference.

[0024] Also considered as included in the invention is the closure constituted with this capsule. The closure comprises a capsule according to any of the embodiments of the capsule, as well as:

- A pouring member to place on the neck of the bottle (the pouring member can be integrated in the bottle); A cap that can be coupled on the pouring member to provide a tight closure.

[0025] In this closure the capsule is placed covering the assembly formed by the pouring member and the cap with a configuration such that:

- The bottom segment of the capsule establishes a permanent union to the pouring member or bottle, this is, one that remains after the tearing operation; and
- The upper segment of the capsule is free of any attachment to the pouring member before and after the tearing operation.

[0026] Similarly, closures derived from any combination of the dependent claims 15 to 21 are considered to be included in the description.

[0027] This capsule is at the same time a seal guarantee that shows in a very obvious manner whether or not the bottle cap has been opened: if it has been opened, the capsule will be missing the upper segment; otherwise, the capsule will be complete.

[0028] For this reason, as well as a capsule it is also considered to be a seal guarantee.

DESCRIPTION OF THE DRAWINGS

[0029] The present descriptive memory is completed with a set of drawings that illustrate a preferred example of the invention in a non-limiting sense.

Figure 1 shows an elevation view of a first embodiment of the invention in a cross-sectional view representing the neck of the bottle with the closure that prevents fraudulent refilling and the capsule.

Figure 2 shows an elevation view of the same example of embodiment from the outside, showing the presence of the tab that favours the elimination of part of the capsule.

Figure 3 shows an elevation view of the same example of embodiment where the upper segment of the capsule is detached.

Figure 4 shows the same view as in the previous figure, where now the assembly without the upper segment of the capsule is shown in cross-section.

Figure 5 is an elevation representation showing a cross section of the capsule without the presence of the internal assembly, revealing the lip that constitutes the retention means to the pouring member. This figure also includes an enlarged view of the lip in cross section.

Figure 6 is a cross-sectional elevation view of a second example of the embodiment of the invention in which the way in which the weakened lines that define the root of the removable band of the capsule begin in a different way.

Figure 7 is a cross-sectional elevation and cross-sectional plan view of a third example of embodiment of the invention, in which the weakened lines comprise three consecutive sectors.

Figures 8a, 8b and 8c show a cross-sectional elevation view, plan view and profile view rotated 90° of a fourth example of embodiment of the capsule. This example incorporates internal ribs that prevent the upper part from being separated and fully detached after tearing.

DETAILED DESCRIPTION OF THE EMBODIMENT

[0030] A first example of embodiment of the invention is shown in figures 1 to 5. Specifically, the cross-section of figure 1 shows the neck of a bottle (1) on which is placed an assembly to prevent fraudulent refilling.

[0031] This assembly mainly consists of a pouring member (3) having a flange (3.1) with an internal face provided with means (3.1.1) for retaining rotation with respect to the bottle (1).

[0032] Inside this pouring member (3), in this example of embodiment, is incorporated a chassis (2) that retains a valve (4) for preventing fraudulent refilling, as well as two balls (2.1) that increase the safety against fraudulent refilling provided by the valve (4).

[0033] The pouring member (3) is closed by a cap (5), to which it is connected by a thread (3.3, 5.1).

[0034] The internal closure assembly and the cap (5) are covered by a capsule (6) that can be separated into two portions or segments, an upper segment and a lower segment, the latter having the form of an external flange (6.5).

[0035] This flange is provided on its inner face with a peripheral lip (6.1) meant to be inserted in an external peripheral groove (3.2) of the pouring member (3).

[0036] This peripheral lip (6.1) does not have to be continuous; instead, as shown in figure 5, it may be discontinuous.

[0037] In this first example, as shown in the enlarged view of figure 5, the cross-section of the peripheral lip (6.1) has a small angle of inclination (α) in the lower face that facilitates the insertion of the capsule (6) on the pouring member (3).

[0038] However, this peripheral lip (6.1), working jointly with the peripheral groove (3.2) of the pouring member (3), is such that it provides retention in both axial senses (according to the position shown in the figures), both upward and downward.

[0039] As this lip (6.1) is inside the lower segment or external flange (6.5) of the capsule (6), after the upper segment of the capsule (6) is detached the external flange (6.5) is secured axially with respect to the bottle (1) by its attachment to the pouring member (3).

[0040] The upper part of the capsule (6) can be separated by two weakened lines (6.2) between which a band (6.3) is defined. The weakened lines (6.2) can for example be constituted by breakable bridges.

[0041] In this example of embodiment the two weakened lines (6.2) are parallel, defining a band (6.3) with a constant width that ends in a gripping tab (6.3.1) that makes it easier to start tearing the band (6.3).

[0042] Eliminating this band (6.3) involves only advancing in the peripheral sense until a full turn is completed.

[0043] After tearing, the presence of a connection segment between the band (6.3) and the end segment (6.6) of the upper segment allows that, after detaching the upper segment of the capsule (6), the band (6.3) remains connected to the end portion (6.6) of the upper segment, which in this case is essentially disc-shaped in view of the short length of the lateral segments left when eliminating the band (6.3).

[0044] In practice, this segment (6.4) is not essential to the above-described tearing mode as, during this tearing, after somewhat more than half of the points that joint the band (6.3) to the end portion (6.6) of the upper segment are removed, the two elements (6.3, 6.6) are connected by the segment of points that have not been broken yet.

[0045] In turn, the entire upper segment, understood as including the band (6.3), is separated from the flange (6.5).

[0046] Of the two weakened lines (6.2), the lower one is always above the attachment lip (6.1) so that the attachment of the flange (6.5) is always ensured, even after removing the upper segment of the capsule (6).

[0047] The end portion (6.6) of the upper segment, preferably disc-shaped, can be used for advertising purposes by printing or embossing, for example.

[0048] In a second example of embodiment, as shown in figure 6, the band (6.3) is not necessarily defined between two weakened lines (6.2) disposed in parallel, but instead an inclination is provided (6.2) in its initial segment that directs the final tearing of the band (6.3) towards the upper disc by an oblique segment (6.3.2), without the band (6.3) being detached from the upper portion of the capsule (6).

[0049] Although it is a cross sectional view the configuration of the band (6.3) can be seen equally from the inside.

[0050] In this second example the peripheral lip (6.1) inside the capsule (6) is continuous and remains according to the invention under the lower weakened line (6.2) that gives rise to the tearing band (6.3).

[0051] Figure 7 shows a third example of embodiment in which the weakened lines (6.2) are parallel to one another, but not continuous in the entire perimeter of the capsule (6), instead comprising at least two consecutive sectors; in the example shown in the figure there are three sectors.

[0052] This division of the band (6.3) into sectors has the advantage that if an adhesive tape is placed on the capsule (6), indicating for example the corresponding capsules, one of the ends of the adhesive tape could fall on the gripping tab (6.3.1), hindering the opening of the capsule (6). By including more than one gripping tab (6.3.1) in the band (6.3) the user is allowed access to another (6.3.1) that is not covered by said adhesive tape. Another advantage resulting from this third example of embodiment is that as the band (6.3) comprises several sectors, it is more obvious if the bottle has been opened, as it is more difficult to subsequently attempt to replace each sector in its initial position to conceal that the bottle was opened.

[0053] In this way, in the example of embodiment shown in figure 7 three sectors (6.3.3, 6.3.4, 6.3.5) are defined in the band (6.3) with a constant width, each sector (6.3.3, 6.3.4, 6.3.5) ending in a gripping tab (6.3.1) that makes it easier to start tearing each sector (6.3.3, 6.3.4, 6.3.5) of the band (6.3).

[0054] In addition, the end portion (6.6) of the capsule (6) is provided on the top with an orifice (6.6.1) which, in the embodiment shown, has a circular shape and is coaxial with the upper part of the cap (5), thereby revealing it so that the cap (5) can be seen.

[0055] Between at least one of the sectors (6.3.3, 6.3.4, 6.3.5) of the band (6.3) and the end portion (6.6) of the upper segment there may be a connecting segment (6.4) that allows relating the band (6.3) and the aforementioned end portion (6.6). It may also be the case that there is no relation between the two elements (6.3, 6.6), so that the end portion (6.6) of the upper segment is removed after tearing the band (6.3).

[0056] In the fourth example of embodiment shown in figures 8a, 8b and 8c a specific form of attachment has been established between the band (6.3) and the end portion (6.6) of the upper segment. This attachment is established by one or more ribs (6.79 (two in the example) with a very small thickness. The purpose of these ribs is to obtain a thickness greater than that of the wall on which they are placed. As the normal way to generate the weak-

ened line is by an external cut, if the blade penetrates only the thickness of the wall the ribs (6.7) are not cut and maintain the relationship between the band (6.3) and the end portion (6.6) of the upper segment even after tearing.

[0057] In this other example of embodiment, although the bottle (1) is not shown a design is considered that is adequate for application directly on the bottle (1). This bottle (1) incorporates a groove in which enters the attachment lip (6.1) internal to the flange (6.5). The pouring member in this case is integrated in the shape of the pouring mouth of the bottle.

Claims

1. Capsule for a bottle closure formed by two segments joined to each other that can be separated by a tearing operation the first time that the closure is opened:

   • a first lower segment in the form of an external flange (6.5) meant to remain attached to the bottle (1) after the tearing; and
   • a second upper segment that can be removed by the
   tearing operation,
   characterised in that the first lower segment of the capsule (6) has attachment means (6.1) meant to be joined either to a pouring member (3) of the bottle (1) or directly to the bottle (1), giving rise to an axial retention in both senses for with the possibility of remaining attached to the pouring member (3) or to the bottle (1) after the tearing operation; and the second upper segment of the capsule (6) has a tearing band (6.3) on the lateral face of the same (6) defined by two weakened lines (6.2), these weakened lines (6.2) being located above, along the axial direction, the attachment means (6.1) that join the lower segment of the capsule (6) and the pouring member (3).

2. Capsule according to claim 1 **characterised in that** the upper segment and the lower segment of said capsule can be separated in the tearing operation by the lower weakened line (6.2).

3. Capsule according to claim 1 **characterised in that** the attachment means between the first lower segment of the capsule (6) and the pouring member (3) are constituted by a peripheral lip (6.1) disposed on the inner face of the capsule (6), configured to enter an external peripheral groove (3.2) of the pouring member (3) or the bottle.

4. Capsule according to claim 3 **characterised in that** the axial retention in an upward direction according to the position of the bottle (1) is obtained by the presence of an upper plane (6.1.1) in the peripheral lip (6.1).

5. Capsule according to claim 3 **characterised in that** the axial retention in a downward direction according to the position of the bottle (1) is obtained by the presence of a lower plane (6.1.2) in the peripheral lip (6.1).

6. Capsule according to claim 5 **characterised in that** the lower plane (6.1.2) is oblique in order to simplify the insertion of the capsule (6) on the pouring member (3).

7. Capsule according to claim 3 **characterised in that** the peripheral lip (6.1) of the capsule (6) can be constituted by segments along the internal perimeter.

8. Capsule according to claim 1 **characterised in that** the weakened lines (6.2) that define the tearing band (6.3) are essentially parallel and run peripherally along the upper segment of the capsule (6).

9. Capsule according to claim 8 **characterised in that** the root of the tearing band (6.3) is provided with an oblique segment (6.3.2) towards the end portion (6.6) of the upper segment of the capsule (6).

10. Capsule according to claim 8 **characterised in that** the weakened lines (6.2) comprise at least two consecutive sectors such that at least two sectors (6.3.3, 6.3.4) are defined in the tearing band (6.3).

11. Capsule according to claims 1 or 10 **characterised in that** the band (6.3) or the sectors (6.3.3, 6.3.4) of the tearing band (6.3) have on their end a gripping tab (6.3.1).

12. Capsule according to claim 8 or 10 **characterised in that** the root of the tearing band (6.3) or at least one of the sectors (6.3.3, 6.3.4) of the tearing band (6.3) is provided with a connection segment (6.4) which, after the tearing operation, connects the band (6.3) to the rest of the upper segment of the capsule (6).

13. Capsule according to claim 1, **characterised in that** the end portion (6.6) of the upper segment of the capsule includes on its top an orifice (6.6.1) that provides visual access to the upper part of the cap (5).

14. Capsule according to claim 1, **characterised in that** the inner wall is provided with one or more ribs (6.7) on the weakened line, such that after tearing the maintain the connection between the tearing band (6.3) and the end portion (6.6) of the upper segment of the capsule.

15. Bottle closure comprising a capsule (6) according to any of the above claims, as well as:

• a pouring member (3) to be placed on the neck of the bottle (1),
• a cap (5) that can be coupled on the pouring member (3) to provide a tight closure,
characterised in that the capsule (6) is placed covering the assembly formed by the pouring member (3) and the cap (5) with a configuration such that:
• the lower segment of the capsule (6) establishes a permanent union to the pouring member (3), this is, the union is maintained after the tearing operation; and
• the upper segment of the capsule (6) is free of connections to the pouring member (3) before and after the tearing operation.

16. Closure according to claim 15 **characterised in that** the pouring member (3) is integrated in the mouth of the bottle (1).

17. Closure according to claim 15 **characterised in that** the upper segment of the capsule (6), which can be removed by the tearing operation, has a configuration with respect to the rest of the closure assembly such that after the tearing operation it leaves the cap (5) free.

18. Closure according to claim 15 **characterised in that** the pouring member (3) is provided with a flange (3.1) that covers externally the neck of the bottle (1).

19. Closure according to claim 18 or 16 **characterised in that** the external flange (6.5) of the capsule (6) covers the flange (3.1) of the pouring member (3).

20. Closure according to claim 15 or 16 **characterised in that** the cap (5) is coupled on the pouring member (3) by a thread (3.3, 5.1).

21. Closure according to claim 15 **characterised in that** the inside of the pouring member (3) contains a valve (4) for preventing the fraudulent refilling of the bottle (1).

22. Closure according to claim 15 **characterised in that** the pouring member (3) has an external peripheral groove (3.2) for attaching the capsule (6) with its peripheral lip (6.1).

23. Closure according to claim 22 o 16 **characterised in that** the peripheral groove (3.2) of the pouring member (3) has a configuration antagonistic of the lip (6.1) of the capsule (6).

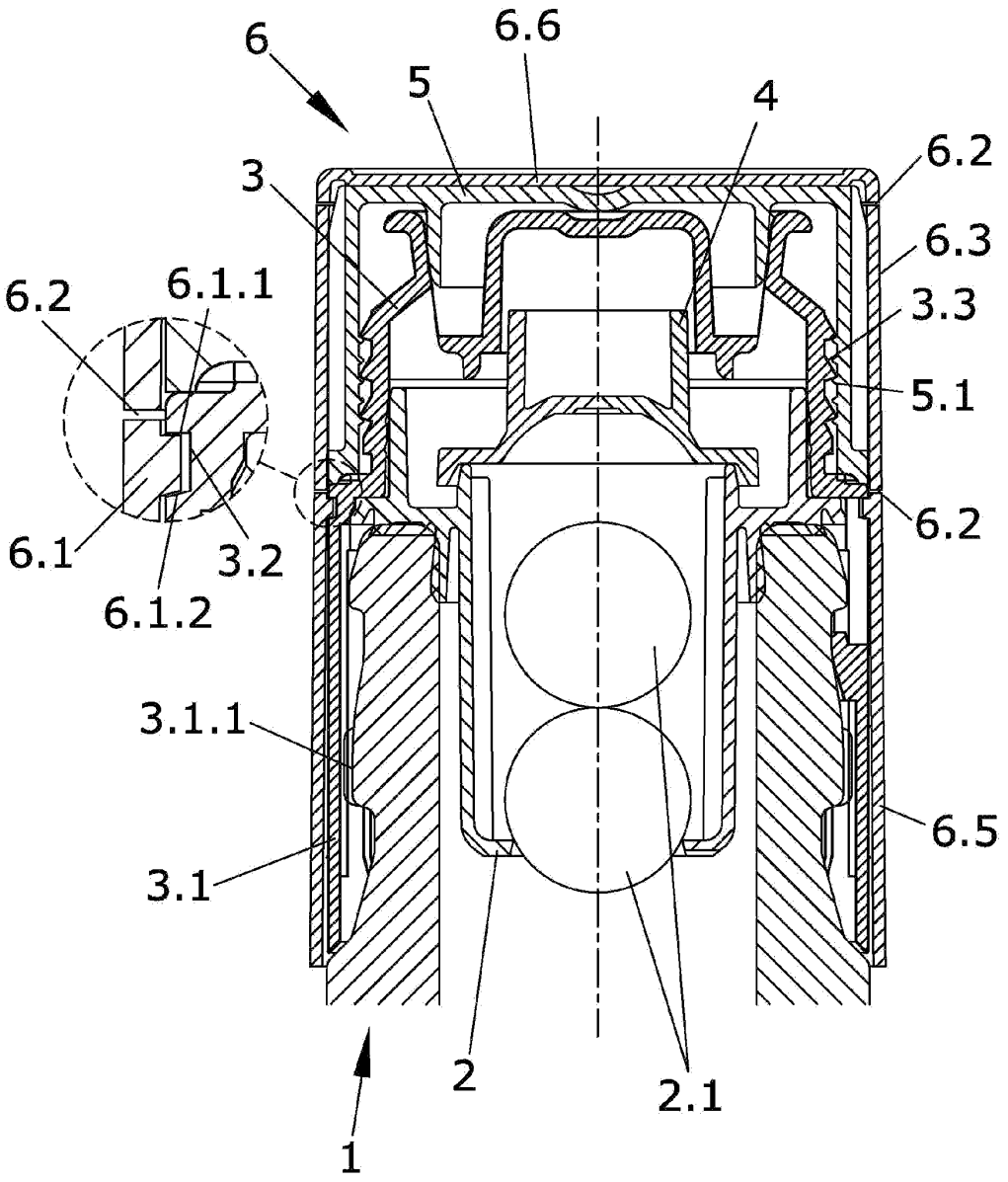

FIG.1

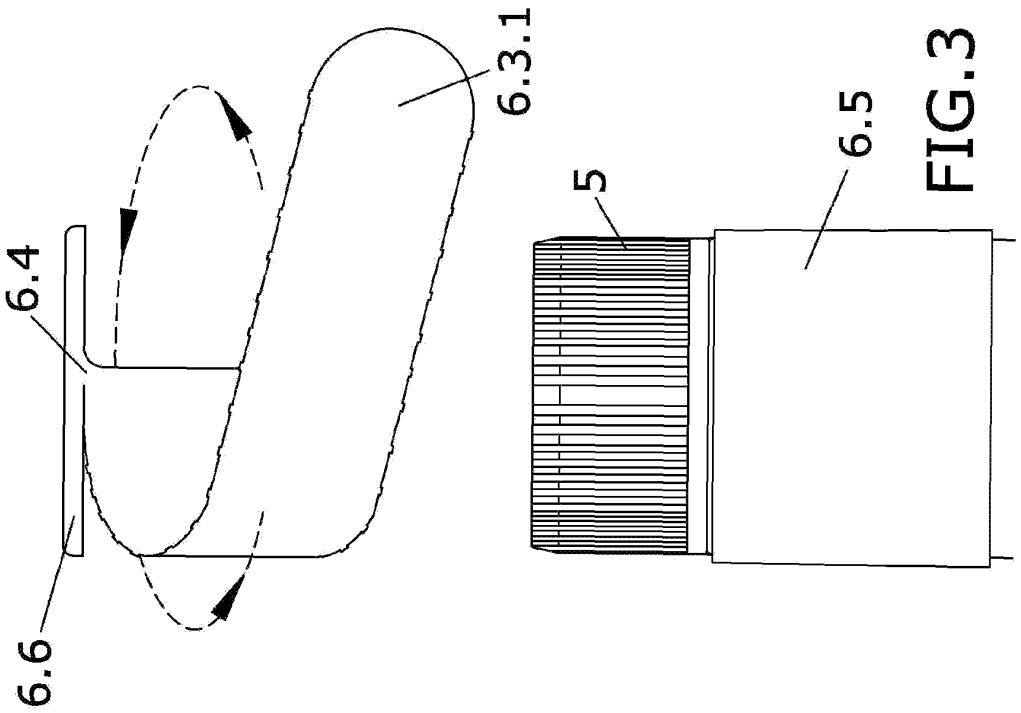

FIG.3

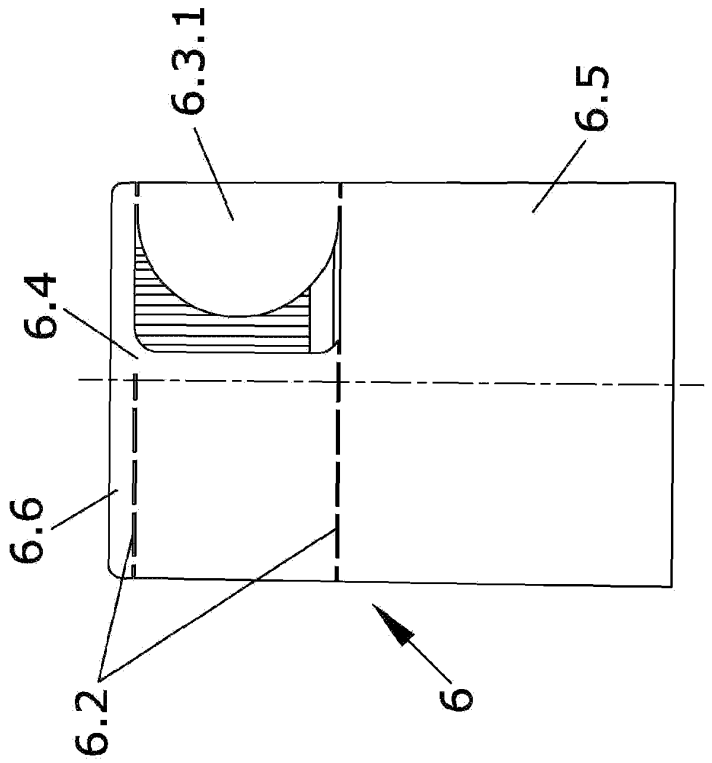

FIG.2

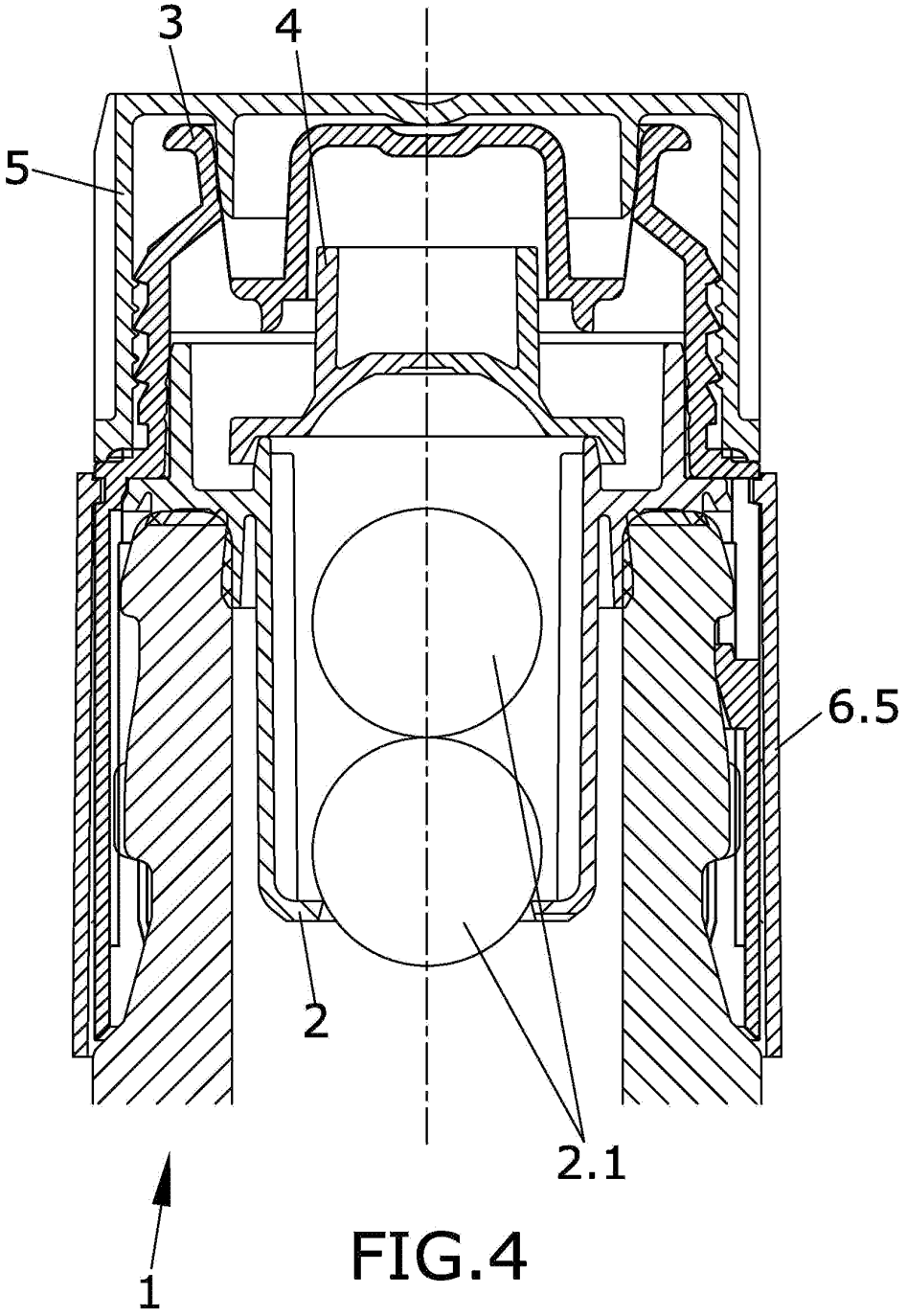

FIG.4

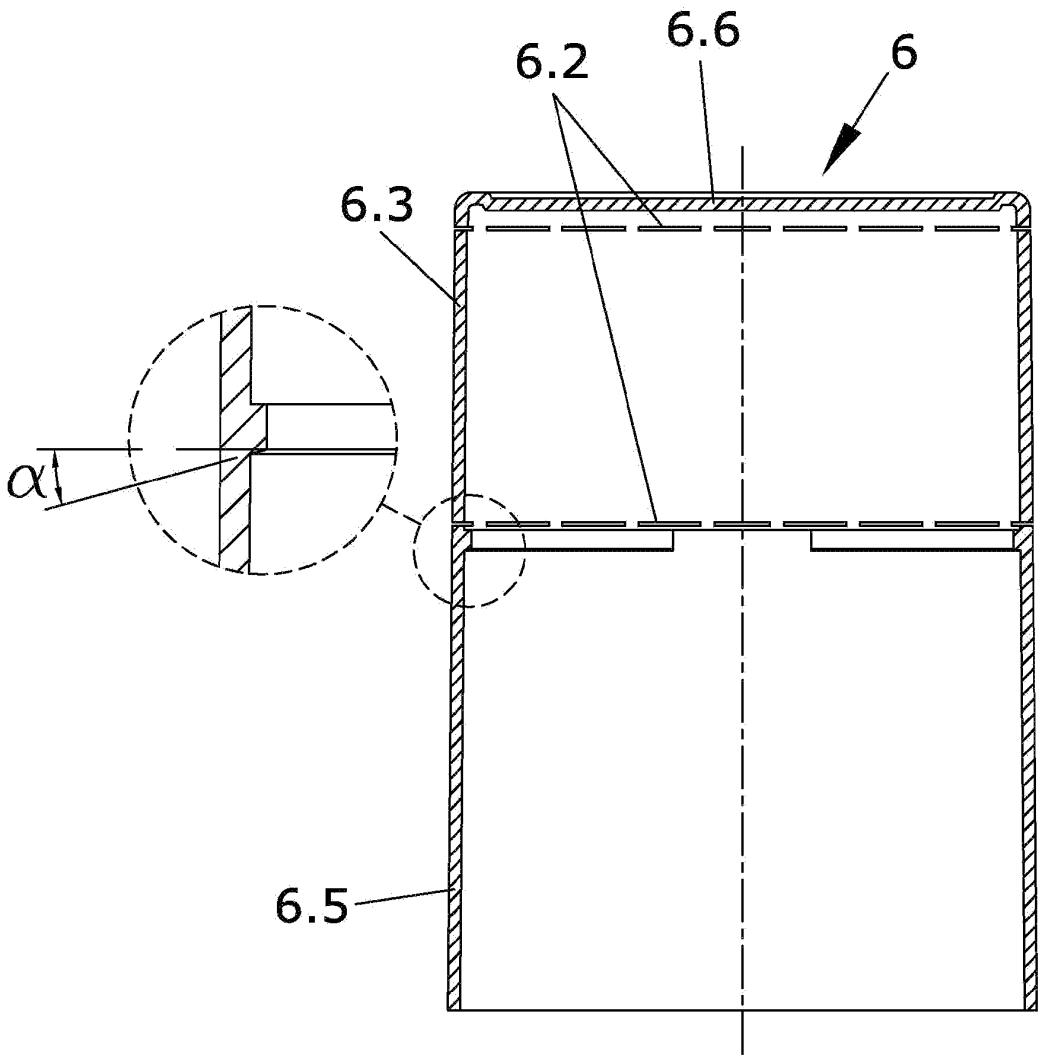

FIG.5

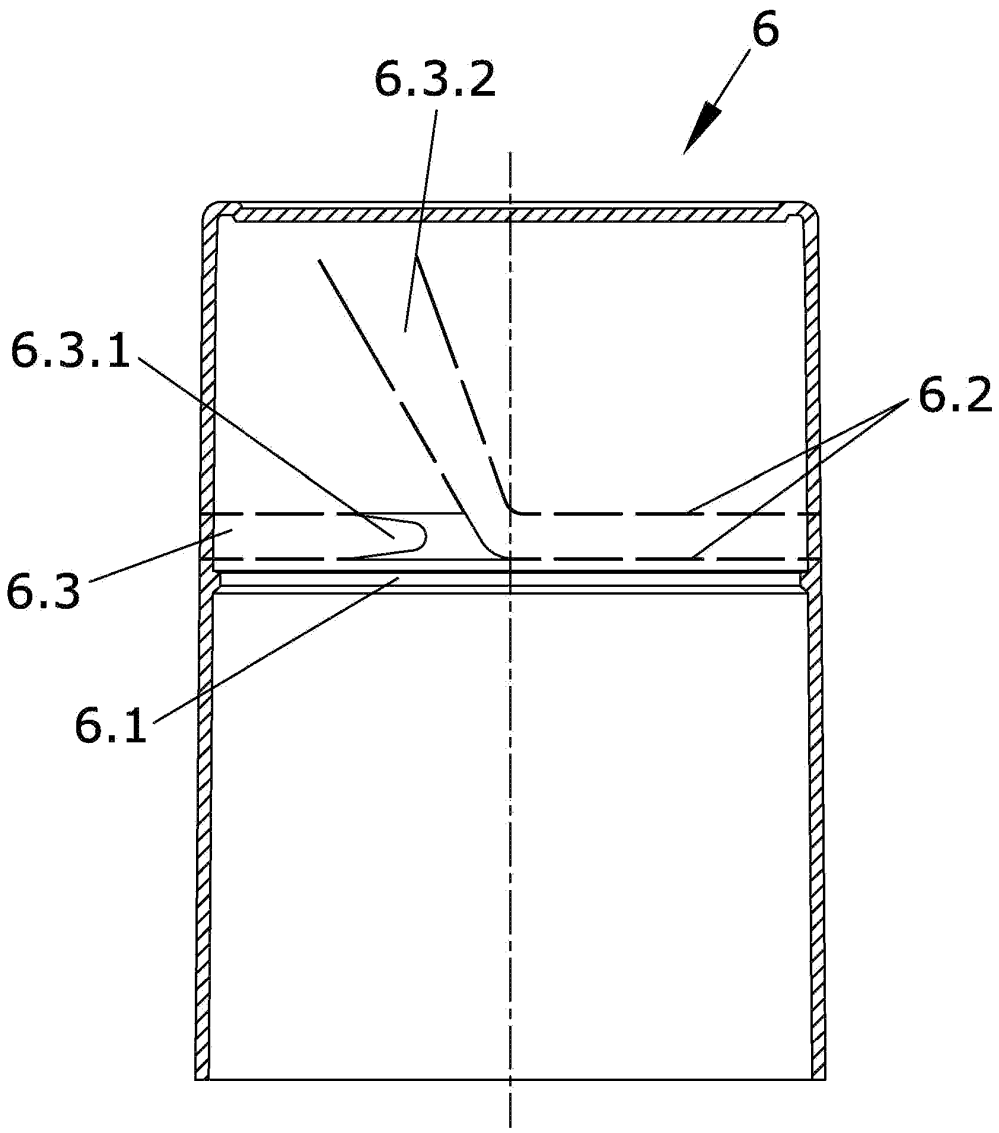

FIG.6

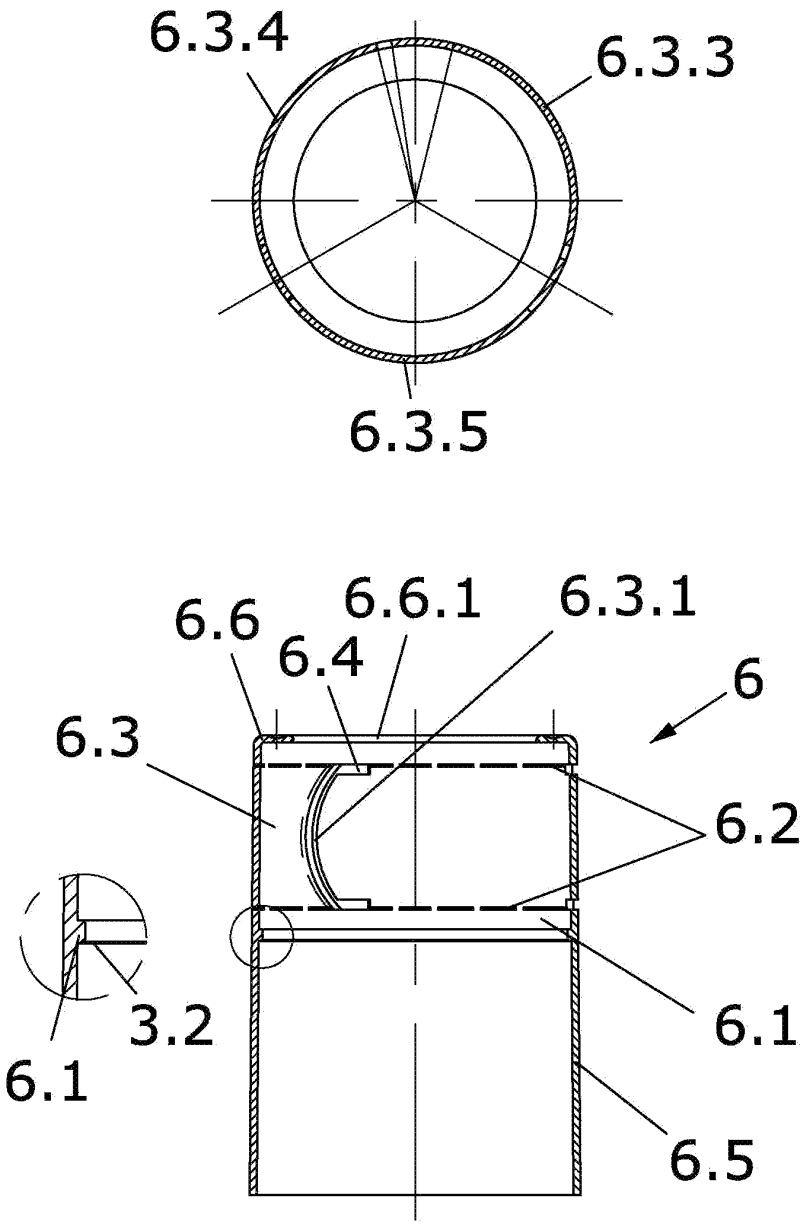

FIG.7

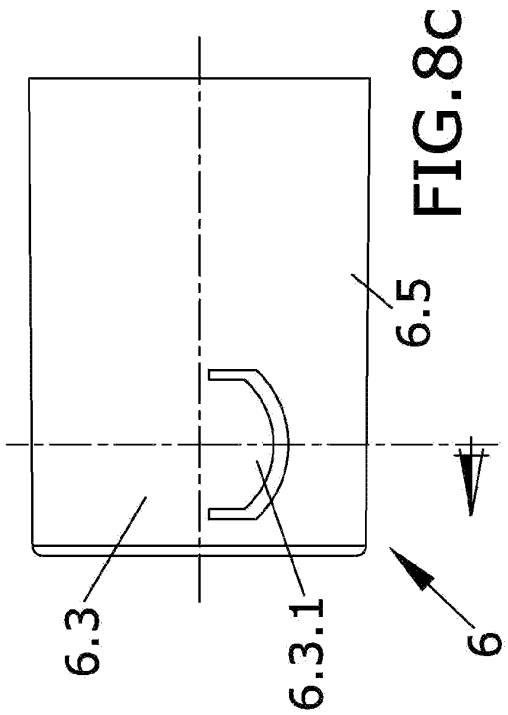

FIG.8c

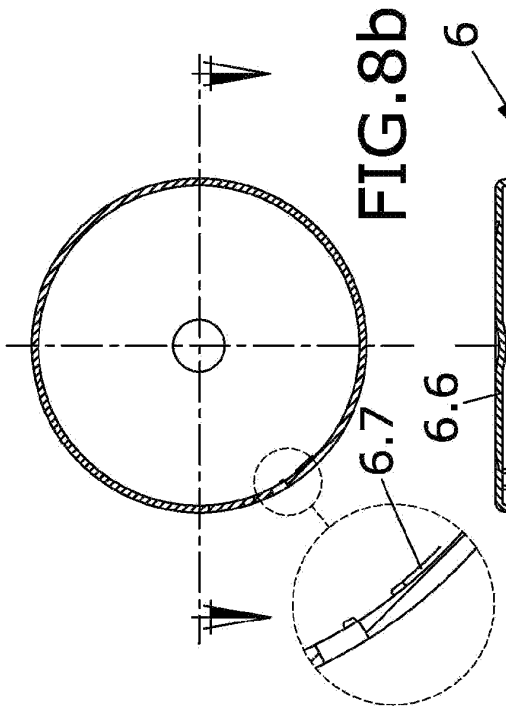

FIG.8b

FIG.8a

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 0007898 A **[0007]**