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EP 2 704 962 B1

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Description

TECHNICAL FIELD AND BACKGROUND ART

[0001] The present invention relates to a package for maintaining a first and a second product separate before use.

[0002] Single-dose packages are known, of a type described in European patent EP0963325 in the name of the present applicant.

[0003] These packages comprise:

- a container provided with an upper mouth and containing a liquid product;
- a reservoir, at least partly inserted internally of the mouth of the container, superiorly open, separated from inside the container, provided with a rupturable bottom, containing a first powder product; breaking the rupturable bottom sets the reservoir in communication with the inside of the container;
- a cutting element inserted into the reservoir and provided with a lower end destined in use to break the rupturable bottom, enabling mixing the powder product with the liquid product;
- a hood, arranged on the container such as to cover the reservoir and the cutting element.

[0004] The hood is provided with a thread with which a screw-coupling is realised by means of which the hood is capable of an axial movement downwards with respect to the container. By effect of said axial movement the hood interacts with the cutting element such as to rupture the reservoir.

[0005] These packages enable maintaining two products separate, mixing them immediately prior to use.

[0006] A drawback of these products is connected to the fact that the powder product is especially sensitive to moisture, both due to its physical nature (the powder product might form lumps) and due to its chemical nature (the powder product might have its properties changed). This effect might further be due to the fact that usually the rupturable bottom exhibits a pre-incision that reduces the thickness of the rupturable bottom, facilitating the rupturing thereof.

[0007] In this context, the technical task underpinning the present invention is to provide a package that obviates the above-cited drawbacks of the prior art.

[0008] US2010/0000960 discloses a dosing cap comprising a desiccant, in accordance with the preamble of appended claim 1.

DISCLOSURE OF THE INVENTION.

[0009] In particular, an aim of the present invention is to provide a package which enables preventing deterioration of a product contained internally of the package.

[0010] The specified technical task and the set aims are substantially attained by a closure for a package,

according to claim 1.

BRIEF DESCRIPTION OF THE DRAWINGS.

[0011] Further characteristics and advantages of the present invention will more clearly emerge from the following description, which is indicative and therefore non-limiting, of a preferred but not exclusive embodiment of a package illustrated in the accompanying drawings, in which:

- figure 1 shows a view of a package according to the present invention;
- figure 2 shows a sectional view according to plane II-II of figure 1;
- figure 3 shows the package of figures 1 and 2 in a second configuration;
- figure 4 shows the package of figures 1, 2, 3 in a further configuration;
- figure 5 shows an alternative constructive solution to the one illustrated in figures 1-4.

BEST MODE FOR CARRYING OUT THE INVENTIONS.

[0012] In the accompanying figures, reference number 10 denotes a capsule (also known as a closure). The capsule 10 is part of a package 1, typically a packaging for pharmaceutical products (including food supplements, diet products, probiotics, etc.). The package 1 is typically a single-dose product. The capsule 10 comprises a reservoir 4, in turn comprising a rupturable bottom 40. Typically, the rupturable bottom 40 comprises a pre-incision, which facilitates the breaking of the rupturable bottom 40. The reservoir 4 is applicable directly or indirectly to a mouth 60 of a container 6 suitable for containing a first product.

[0013] The capsule 10 further comprises a cutter 5 positionable in front of the rupturable bottom 40 in order to open (typically to break) said rupturable bottom 40. The cutter 5 is therefore a pusher which pushes said rupturable bottom 40 and breaks it. The reservoir 4 is a cap intended to occlude the mouth 60 of the container 6. This reservoir 6 defines a cavity internally of which said cutter 5 is at least partially locatable.

[0014] The capsule 10 assumes at least a first and a second configuration. In the first configuration (see for example figure 2) the rupturable bottom 40 is intact and at least the reservoir 4 and the cutter 5 in combination define a first chamber 2 suitable for containing a second product. In the second configuration (see for example figure 3) the rupturable bottom 40 is open to enable mixing of the first and second product. In the second configuration the breakable bottom is typically broken (by the action of the cutter 5). The cutter 5 advantageously comprises a hollow body 50 (i.e. such as to identify an internal housing). The hollow body 50 in turn comprising a cutter edge 51. The cutter edge 51 in the first configuration faces said rupturable bottom 40. The cutter 5, at the cutter

edge 51, is pointed. In particular, the cutter 5 at the cutter edge 51 is flute-beak shaped. The cutter edge 51 is the part of the cutter 5 which enables the rupturable bottom 40 to be broken. In use, in a downwards displacement thereof the cutter 5 breaks the rupturable bottom 40 as it passes from the first to the second configuration of the capsule 10.

[0015] The reservoir 4 comprises a surface 42 for guiding the cutter 5. The guide surface 42 directs the movement of the cutter 5 during the displacement thereof that determines the transition from the first to the second configuration. The cutter 5 is coupled with said guide surface 42 with slight interference such as to create a fluid-dynamic seal. In the preferred embodiment the cutter 5 can be made of polypropylene and/or the reservoir 4 can be made of polyethylene.

[0016] The capsule 10 comprises moisture absorbing means 7. The moisture absorbing means 7 enables the moisture that penetrates from the outside of the first chamber 2 into the first chamber 2 to be absorbed. The moisture originates from the first product which is preferably liquid; the moisture might, however, infiltrate from the environment and therefore come from outside the package 1.

[0017] In the first configuration of the capsule 10 the moisture absorbing means 7 are in contact with the inside of the first chamber 2.

[0018] The absorbing means 7 are located internally of said body 50. The hollow body 50 at least partly surrounds the absorbing means 7.

[0019] The moisture absorbing means 7 at least partly delimit an internal cavity 8 of the hollow body 50. In the first configuration the cavity 8 is part of said first chamber 2. The absorbing means 7 at least partly clad an internal surface 53 of said hollow body 50. The inner surface 53 of said hollow body 50 is preferably surrounded by an external surface 54 of the cutter 5. Said external surface 54 is, at least in the first and/or in the second configuration, in contact with the guide surface 42 forming part of the reservoir 4. The positioning of the absorbing means 7 internally of the cutter 5 is important. In this way the cutter 5 itself partly protects the absorbing means 7 from the moisture that penetrates into the first chamber 2, avoiding a premature saturation of the absorbing means 7. They adhere to the internal surface 53 of the hollow body 50 they clad.

[0020] In a constructive solution the absorbing means 7 are shaped as a hollow sleeve. They are advantageously shaped like the side surface of a cylinder. In a further constructive solution they could be shaped as a hollow beaker cladding the surfaces of the hollow body 50 (in which case they clad the internal bottom and the internal wall of said hollow body 50). The beaker would in this case be open in proximity of the cutter edge 51. The thickness of the absorbing means 7 is preferably constant. The thickness is preferably between 0.5 and 4 millimetres. The absorbing means 7 advantageously do not clad the cutter edge 51 so as not to impede the breaking

action of the rupturable bottom 6. The internal cavity 8 is in fluid communication at said cutter edge 51 (through an opening in the cutter 5) with a portion of the first chamber 2 external of the hollow body 50. In the first configuration of the capsule 10, said second product is advantageously present in the cavity 8. The second product is advantageously arranged partly also in the portion of the first chamber external of the hollow body 50. The moisture absorbing means 7 advantageously develop over at least two thirds of the length of said hollow body 50 (typically in the solution in which the absorbing means 7 are shaped as a sleeve or beaker). The hollow body 50 comprises a stem and said cutter edge 51 is fashioned at an end of the stem. The cavity 8 develops internally of the stem. The absorbing means 7 advantageously develop over at least two-thirds of the length of the cavity 8, said length being measured along the main development direction of the stem. Advantageously, the moisture absorbing means 7 are unremovably connected to said hollow body 50. In particular, the absorbing means 7 are moulded with said hollow body 50. In an alternative solution the absorbing means 7 are inserted with interference (usually slight interference) into said hollow body 50. By way of non-limiting example, the absorbing means 7 are made of a material known under the trade name activ-dri or activ-pak or active polymer, produced by the company CSP Technologies Inc.. In particular, the absorbing means 7 are made of a material described in patent document EP0892673.

[0021] An object of the present invention is also a package 1 comprising:

- a capsule 10 having one or more of the technical characteristics described above;
- a container 6 comprising a mouth 60 to which said capsule 10 is directly or indirectly applicable, in accordance with claim 6. The mouth 60 comprises a neck of the container 6 which terminates in an opening (the opening, if the capsule 10 permits, enables placing the second chamber 3 in communication with the outside of the container 6). The container 6 identifies a second chamber 3 suitable for containing the first product.

[0022] The package 1 takes on at least an initial configuration and an operating configuration. In the initial configuration said capsule 10 is in the first configuration and the first and the second chambers 2, 3 are separated from one another by the rupturable bottom 40 (see for example figure 2); in the operating configuration the capsule 10 is in the second configuration and the first and the second chambers 2, 3 are in reciprocal fluid communication to enable mixing of the first and second product (see for example figure 3).

[0023] The mouth 60 is typically located in an upper portion of the container 6. The mouth 60 is therefore opposite the bottom of the container 6. At least in the initial configuration of the package, the reservoir 4 defines a

cap that closes the mouth 60 of the container 6.

[0024] The rupturable bottom 40 is advantageously at least partially aligned with said mouth 60. This involves the rupturable bottom 40 being located inside the mouth 60 or on an extension of the mouth 60 (or, in other words, inside the neck or on an extension of the neck of the container 6). As represented in the figures, at least in the initial configuration the rupturable bottom 40 is located inside the container 60.

[0025] The container 6 has an axial development direction of the mouth 60. The rupturable bottom 40 develops transversally to said axial development direction of the mouth 60.

[0026] At least in the first configuration, the rupturable bottom 40 separates the first chamber 2 from the second chamber 3. The reservoir 4 is at least partly inserted in the mouth 60. As shown in the accompanying figures, the reservoir 4 extends at least partly externally of the mouth 60. In particular, the reservoir 4 is inserted with slight interference in the mouth 60. An external wall of the reservoir 4 comes into contact with an internal wall of the mouth 60 and this slight interference defines a fluid-dynamic seal that prevents any undesired leakage of the liquid in the container 6 in the second configuration. The second product is a solid product; typically it is a powder or granular product. The first product is typically a liquid. In the mixture obtained from the first and second product the second product can therefore be considered a solute while the first product can be considered a solvent.

[0027] As illustrated in the accompanying figures the package 1 comprises a hood 9 which in the first configuration is connected to the container 6. The hood 9 comprises a tamper-proof strip 90 that must be removed to enable removal of the hood 9. In the initial configuration of the package the hood 9 covers the reservoir 4 and the cutter 5. In a particular constructive solution, not illustrated, the hood 9 and the cutter 5 may also be unremovably connected.

[0028] The hood 9, in particular the tamper-proof strip 90, comprises an annular relief 95 coupled in undercut with the container 6 so as to prevent or limit axial distancing movement of the hood 9 from container 6.

[0029] In the constructive solution exemplified in figure 1, the tamper-proof strip 90 is connected to the remaining parts of the hood 9 by means of an easy-break perimeter line 96. This easy-break perimeter line 96 breaks during the unscrewing operation of the hood 9 from the container 1.

[0030] The reservoir 4 has an upper part 41 situated above the upper margin of the mouth 60 of the container 6. In the initial configuration of the package 1 (see for example figure 2), the upper part 41 of the reservoir 4 is susceptible to being elastically deformed toward the inside. The cutter 5 exhibits a section 52 which is destined to abut the inner surface of the upper part 41 of the reservoir 4, so as to prevent the upper part from being deformed toward the inside (in particular the section 52 is

at least partially complementarily shaped with respect to the internal surface of the upper part 41 of the reservoir 4). An annular projection 91, which protrudes internally from the hood 9, exhibits an internal diameter that is less than the internal diameter of the thread 92 of the hood 9. During the axial downward movement of the hood 9, the annular projection 91 is destined to engage in undercut with an annular recess 94 predisposed on the upper part 41 of the reservoir 4, such as to render the hood 9 and the reservoir 3 solidly constrained to one another with respect to an axial upwards extraction movement of the hood 9 from the container.

[0031] Upon use, the tamper-proof strip 90 detaches from the remaining parts of the hood 9 by effect of the screwing of the hood 9. During the screwing the hood 9 interacts in contact with the cutter 5 so that the cutter 5 is pushed downwards, thus breaking the rupturable bottom 40 of the reservoir 4. This enables the second product present in the capsule 10 to fall by gravity into the container 6. During this step the annular upper part 41 of the reservoir 4 is deformed towards the inside, enabling the internal projection 91 of the hood 9 to engage elastically jointly with the recess 94 on the upper part 41 of the reservoir. This is made possible by the fact that between the annular upper and elastically deformable part 41 of the reservoir 4 and the external surface 54 of the cutter 5 there is a clearance. On conclusion of the screwing of the hood 9, the clearance no longer exists as the above-mentioned section 52 of cutter 5 is inserted in the annular upper part 41 of the reservoir 4 and radially abuts it. In the next step of unscrewing of the hood 9, the reservoir 4, united with the hood 9 by virtue of the undercut between the above-mentioned projection 91 and recess 94, is lifted together with the cutter 5. During this step of unscrewing the upper section 41 of reservoir 4 can no longer deform inwardly - as in the screwing step - since it is contactingly constrained between the section 52 of the cutter and the hood 9. The section 52 of the cutter 5 with a larger diameter then has the task of maintaining solidarity between the reservoir 4 and the hood 9 during the extraction step from the container 6.

[0032] Upon packaging, the liquid is inserted into the container 6, the powder is inserted into the reservoir 4 or the hollow body 50. The whole assembly is then inserted into the mouth 60 of the container 6. Subsequently the hood 9 is inserted; this insertion is performed in such a way that the annular relief 95 engages in the annular cavity in the undercut fashioned on the perimeter of the container 6 (see figure 2). In this first configuration, the hood 9 is firmly anchored to the container 6 and is partially screwed onto the container 6; in this first configuration, the hood 9 has a first function that is to prevent fraudulent access to the package 1, and therefore any tampering with the contents of the reservoir 4 or the container 6. As mentioned herein above, the strip 90 is broken upon use, constraining the hood 9 to the container 6 only by means of the threaded coupling.

[0033] At the end of the run of the cutter 5 towards the

container 6, the hood 9 is firmly anchored, thanks to the projection 91 and the recess 94, to the reservoir 4. It is now possible, and extremely easy, to open the package 1; in fact it is sufficient to unscrew the hood 9 which, as it moves in the axial direction away from the container 1, will draw the reservoir 4 and the cutter 5, which are constrained thereto (see figure 4). At this point the mixture of the first and second product can be administrated.

[0034] In the constructive solution illustrated in figure 5, the opening operation of the package 1 provides the following operations:

- removal of the tamper-proof strip;
- removal of the hood 9;
- nearing the cutter 5 to the container 1; this step involves the breaking of the rupturable bottom 40; the nearing of the cutter to the container includes a translation (and not a screwing) of the cutter 5;
- removal of the cutter 5 and the reservoir 4 from the container 6.

[0035] The invention as it is conceived leads to obtaining several advantages.

[0036] In particular, the physical-chemical properties of at least two products that are kept separate until just before use are conserved. Another advantage is related to the particular positioning of the moisture absorbing means. This positioning obtains the best performance from the absorbing means. At the same time that placement is perfectly compatible with an efficient system that enables mixing of the active ingredients shortly before use thereof. Furthermore, the moisture absorbing means are positioned in an area in which any tampering is obvious.

[0037] The invention as it is conceived is susceptible to numerous modifications and variations, all falling within the scope of the inventive concept that characterizes it. Moreover all details can be substituted by other technically equivalent elements. In practice, all materials used, as well as the dimensions thereof, may be of any type according to requirements.

Claims

1. A closure comprising:

- a reservoir (4) in turn comprising a rupturable bottom (40), said reservoir (4) being applicable to a mouth (60) of a container (6) destined to contain a first product;
- a cutter (5), at least partially locatable internally of the reservoir (4) and positionable in front of the rupturable bottom (40) for opening said rupturable bottom (40);
- said closure (10) taking on at least a first and a second configuration; in the first configuration, the rupturable bottom (40) being intact and at

least the reservoir (4) and the cutter (5) identifying, in combination, a first chamber (2) suitable for containing a second product; in the second configuration said rupturable bottom (40) being open such as to enable a mixing of the first and the second product;

- moisture absorbing means (7) which in the first configuration of the closure (1) are in contact with an inside of the first chamber (2); the cutter (5) comprising a hollow body (50) in turn comprising a cutter edge (51) and a stem; said cutter edge (51) being fashioned at an end of the stem and in the first configuration being in front of said rupturable bottom (40); said closure being **characterised in that** the moisture absorbing means (7) at least partly delimit an internal cavity (8) inside the hollow body (50) and the stem and at least partly clad an internal surface (53) of said hollow body, the cavity (8) in the first configuration being a part of the first chamber (2); said absorbing means (7) are shaped:

as a hollow sleeve; or

as a hollow beaker open in proximity of the cutter edge (51) and cladding an internal bottom and an internal wall of the hollow body (50).

2. A closure according to claim 1, **characterised in that** the reservoir (4) comprises a guide surface of the cutter (5) during the displacement thereof which determines the passage from the first to the second configuration; said internal surface (53) is surrounded by an external surface (54) of the cutter (5), said external surface (54) being in contact with said guide surface (42) at least in the first and/or in the second configuration.

3. The closure according to claim 1 or 2, **characterised in that** said moisture absorbing means (7) develop over at least two thirds of a length of said hollow body (50).

4. The closure according to any one of the preceding claims, **characterised in that** said moisture absorbing means (7) are co-moulded with said hollow body (50).

5. The closure according to any one of the preceding claims, **characterised in that** in the first configuration, in proximity of said cutter edge (51), the internal cavity (8) is in fluid communication with a portion of the first chamber (2) external of the hollow body (50).

6. A package comprising:

- a closure (1) according to any one of claims

from 1 to 5;

- a container (6) comprising a mouth (60) to which said closure (10) is applied, said container (6) identifying a second chamber (3) suitable for containing the first product;

said package (1) assuming at least an initial configuration and an operative configuration; in the initial configuration said closure (10) being in the first configuration and the first and the second chamber (2, 3) being fluid-dynamically separate; in the operative configuration the closure (10) being in the second configuration and the first and the second chamber (2, 3) being in reciprocal fluid communication such as to enable a mixing of the first and the second product.

7. The package according to claim 6, **characterised in that** it comprises a hood (9) which in the initial configuration of the package (1) is connected to the container (6) and protects the reservoir (4) from tampering, said hood (9) comprising a tamper-proof band (90) which must be removed in order for the hood (9) to be removed.

Patentansprüche

1. Verschluss, umfassend:

- ein Speichergefäß (4), das wiederum einen ausbrechbaren Boden (40) umfasst, wobei das Speichergefäß (4) an einer Öffnung (60) eines Behälters (6) angebracht werden kann, der dazu bestimmt ist, ein erstes Produkt zu enthalten;

- eine Schneideeinrichtung (5), die mindestens teilweise innenseitig im Speichergefäß (4) untergebracht und gegenüber dem ausbrechbaren Boden (40) positioniert werden kann, um den ausbrechbaren Boden (40) zu öffnen, wobei der Verschluss (10) mindestens eine erste und eine zweite Konfiguration einnimmt und der ausbrechbare Boden (40) in der ersten Konfiguration intakt ist und zumindest das Speichergefäß (4) und die Schneideeinrichtung (5) in Kombination eine erste Kammer (2) identifizieren, die geeignet ist, um ein zweites Produkt zu enthalten, wobei der ausbrechbare Boden (40) in der zweiten Konfiguration offen ist, sodass ein Mischen des ersten und des zweiten Produkts ermöglicht wird;

- Feuchtigkeitsabsorptionsmittel (7), die in der ersten Konfiguration des Verschlusses (1) mit einer Innenseite der ersten Kammer (2) in Kontakt sind, wobei die Schneideeinrichtung (5) einen Hohlkörper (50) umfasst, der wiederum eine Schneidkante (51) und einen Schaft umfasst, wobei die Schneidkante (51) an einem Ende des

Schafts ausgebildet ist und in der ersten Konfiguration gegenüber dem ausbrechbaren Boden (40) angeordnet ist, wobei der Verschluss **dadurch gekennzeichnet ist, dass** die Feuchtigkeitsabsorptionsmittel (7) mindestens teilweise einen innenseitigen Hohlraum (8) im Hohlkörper (50) und dem Schaft abgrenzen und mindestens teilweise eine innenseitige Oberfläche (53) des Hohlkörpers ummanteln, wobei der Hohlraum (8) in der ersten Konfiguration ein Teil der ersten Kammer (2) ist, wobei die Absorptionsmittel (7) ausgestaltet sind: als hohle Hülse oder als hohler Becher, offen in der Nähe der Schneidkante (51) und ummantelnd einen innenseitigen Boden und eine innenseitige Wand des Hohlkörpers (50).

2. Verschluss nach Anspruch 1, **dadurch gekennzeichnet, dass** das Speichergefäß (4) eine Führungsoberfläche der Schneideeinrichtung (5) während deren Verschiebung umfasst, die den Übergang von der ersten zur zweiten Konfiguration bestimmt, wobei die innenseitige Oberfläche (53) von einer außenseitigen Oberfläche (54) der Schneideeinrichtung (5) umgeben ist, wobei die außenseitige Oberfläche (54) mit der Führungsoberfläche (42) zumindest in der ersten und/oder in der zweiten Konfiguration in Kontakt ist.

3. Verschluss nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** sich die Feuchtigkeitsabsorptionsmittel (7) mindestens über zwei Drittel einer Länge des Hohlkörpers (50) entwickeln.

4. Verschluss nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Feuchtigkeitsabsorptionsmittel (7) im Co-Formungsverfahren mit dem Hohlkörper (50) hergestellt sind.

5. Verschluss nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der innenseitige Hohlraum (8) in der ersten Konfiguration in der Nähe der Schneidkante (51) mit einem Abschnitt der ersten Kammer (2), die außerhalb des Hohlkörpers (50) angeordnet ist, in Fluidkommunikation steht.

6. Paket, umfassend:

- einen Verschluss (1) nach einem der Ansprüche 1 bis 5;

- einen Behälter (6), umfassend eine Öffnung (60), an der der Verschluss (10) angebracht wird, wobei der Behälter (6) eine zweite Kammer (3) identifiziert, die geeignet ist, um das erste Produkt zu enthalten, wobei das Paket (1) mindestens eine anfängliche Konfiguration und eine

Betriebskonfiguration einnimmt, wobei sich der Verschluss (10) in der anfänglichen Konfiguration in der ersten Konfiguration befindet und die erste und die zweite Kammer (2, 3) fluiddynamisch getrennt sind, wobei sich der Verschluss (10) in der Betriebskonfiguration in der zweiten Konfiguration befindet und die erste und die zweite Kammer (2, 3) gegenseitiger Fluidkommunikation stehen, um ein Vermischen des ersten und des zweiten Produkts zu ermöglichen.

7. Paket nach Anspruch 6, **dadurch gekennzeichnet, dass** es eine Haube (9) umfasst, die in der anfänglichen Konfiguration des Pakets (1) mit dem Behälter (6) verbunden ist und das Speichergefäß (4) vor Manipulationen schützt, wobei die Haube (9) ein sabotagesicheres Band (90) umfasst, das entfernt werden muss, damit die Haube (9) entfernt werden kann.

Revendications

1. Fermeture comprenant:

- un réservoir (4) comprenant à son tour un fond (40) pouvant se rompre, ledit réservoir (4) pouvant s'appliquer à un goulot (60) d'un récipient (6) destiné à contenir un premier produit ;
- un dispositif de coupe (5), pouvant être au moins partiellement situé à l'intérieur du réservoir (4) et positionné en face du fond (40) pouvant se rompre pour l'ouverture dudit fond (40) pouvant se rompre ; ladite fermeture (10) prenant au moins une première et une seconde configuration ; dans la première configuration, le fond (40) pouvant se rompre étant intact et au moins le réservoir (4) et le dispositif de coupe (5) identifiant, en combinaison, une première chambre (2) adaptée pour contenir un second produit ; dans la seconde configuration ledit fond (40) pouvant se rompre étant ouvert de sorte à permettre un mélange du premier et du second produit ;
- des moyens d'absorption de l'humidité (7) qui, dans la première configuration de la fermeture (1), sont en contact avec l'intérieur de la première chambre (2) ; le dispositif de coupe (5) comprenant un corps creux (50) comprenant à son tour un bord tranchant (51) et une tige ; ledit bord tranchant (51) étant façonné à une extrémité de la tige et, dans la première configuration, étant en face dudit fond (40) pouvant se rompre ; ladite fermeture étant **caractérisée en ce que** les moyens d'absorption de l'humidité (7) délimitent au moins partiellement une cavité interne (8) à l'intérieur du corps creux (50) et de la tige et revêtent au moins partiellement une surface interne (53) dudit corps creux, la cavité (8), dans

la première configuration, constituant une partie de la première chambre (2) ; lesdits moyens d'absorption (7) ont la forme : d'un manchon creux ; ou d'un verre creux ouvert à proximité du bord tranchant (51) et revêtant un fond interne et une paroi interne du corps creux (50).

2. Fermeture selon la revendication 1, **caractérisée en ce que** le réservoir (4) comprend une surface de guidage du dispositif de coupe (5) lors de son déplacement qui détermine le passage de la première à la seconde configuration ; ladite surface interne (53) est entourée par une surface externe (54) du dispositif de découpe (5), ladite surface externe (54) étant en contact avec ladite surface de guidage (42) au moins dans la première et/ou dans la seconde configuration.
3. Fermeture selon la revendication 1 ou 2, **caractérisée en ce que** les moyens d'absorption d'humidité (7) se développent sur au moins deux-tiers de la longueur dudit corps creux (50).
4. Fermeture selon l'une quelconque des revendications précédentes, **caractérisée en ce que** lesdits moyens d'absorption d'humidité (7) sont co-moulés au dit corps creux (50).
5. Fermeture selon l'une quelconque des revendications précédentes, **caractérisée en ce que** dans la première configuration, à proximité dudit bord tranchant (51), la cavité interne (8) se trouve en communication fluïdique avec une partie de la première chambre (2) externe au corps creux (50).
6. Emballage comprenant :
- une fermeture (1) selon l'une quelconque des revendications de 1 à 5 ;
 - un récipient (6) comprenant un goulot (60) auquel ladite fermeture (10) est appliquée, ledit récipient (6) identifiant une seconde chambre (3) adaptée pour contenir le premier produit ; ledit emballage (1) adoptant au moins une configuration initiale et une configuration fonctionnelle ; dans la configuration initiale, ladite fermeture (10) se trouvant dans la première configuration et la première et la seconde chambre (2, 3) étant hydro-dynamiquement séparées ; dans la configuration fonctionnelle, la fermeture (10) se trouvant dans la seconde configuration et la première et la seconde chambre (2, 3) étant en communication fluïdique réciproque de manière à permettre un mélange du premier et du second produit.
7. Emballage selon la revendication 6, **caractérisé en ce qu'il** comporte un capuchon (9) qui, dans la con-

figuration initiale de l'emballage (1), est relié au récipient (6) et protège le réservoir (4) des falsifications, ledit capuchon (9) comprenant une bande inviolable (90) qui doit être retirée afin de pouvoir retirer le capuchon (9).

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Fig. 1

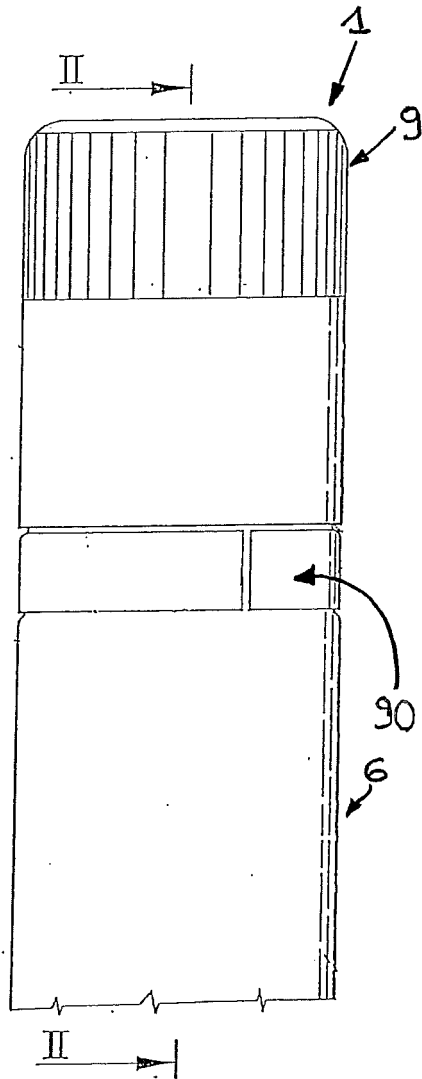
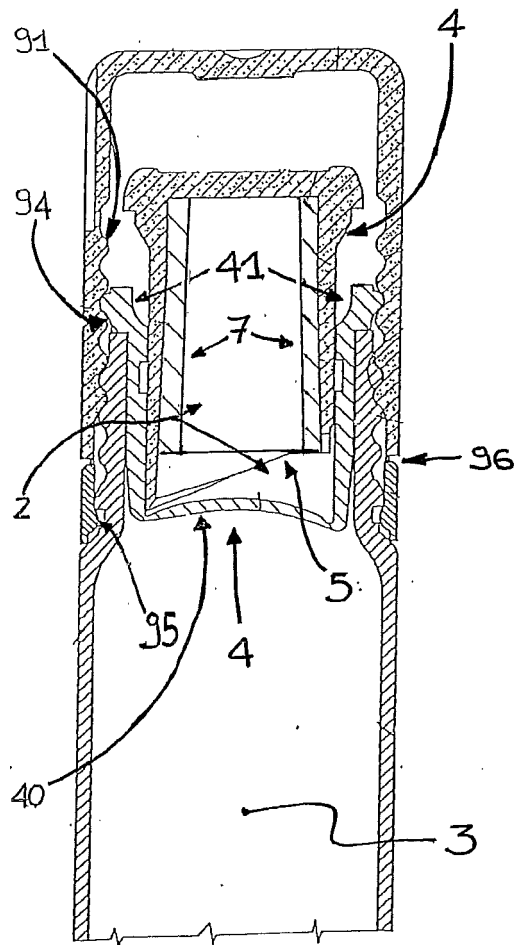
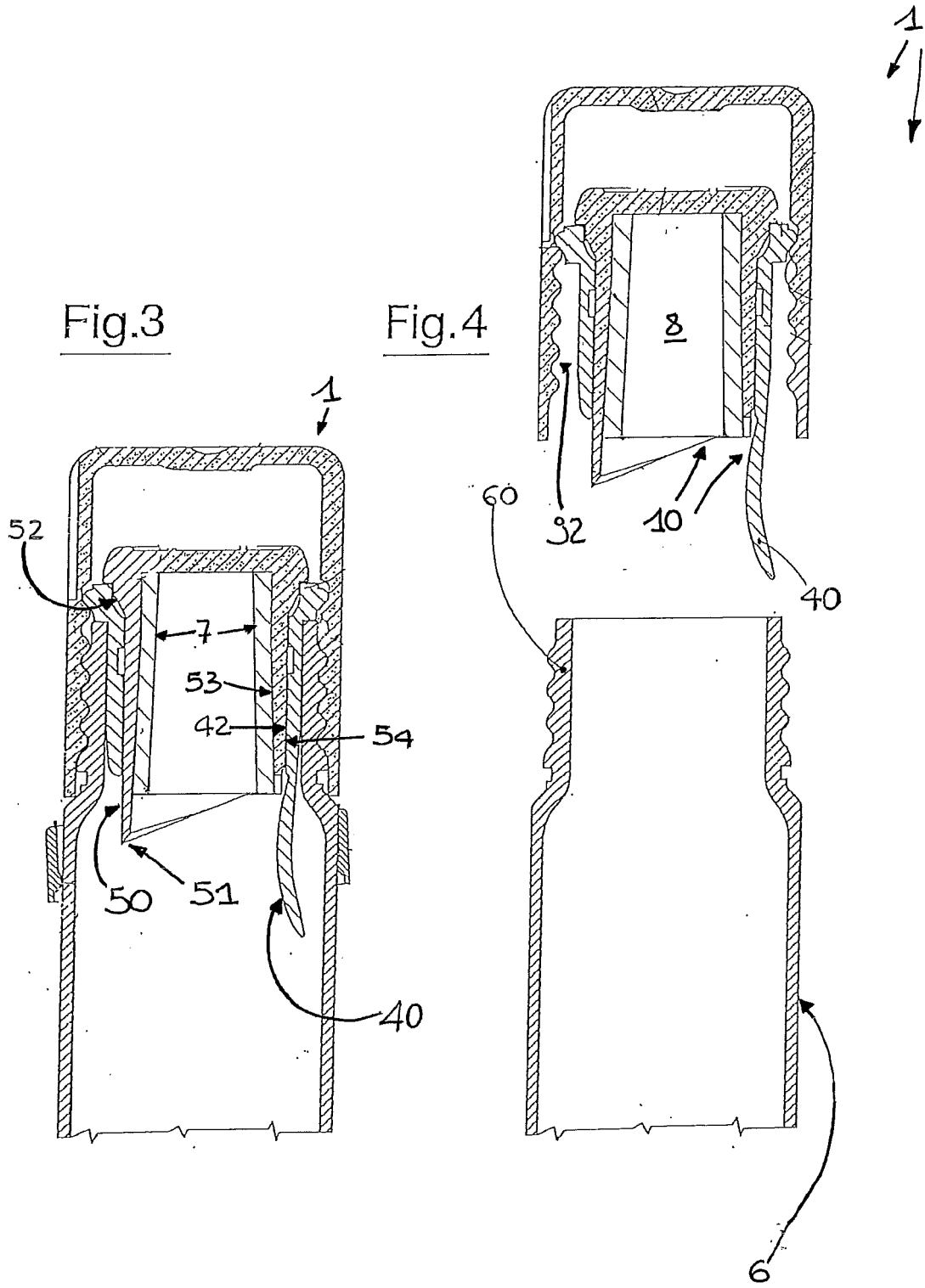


Fig. 2





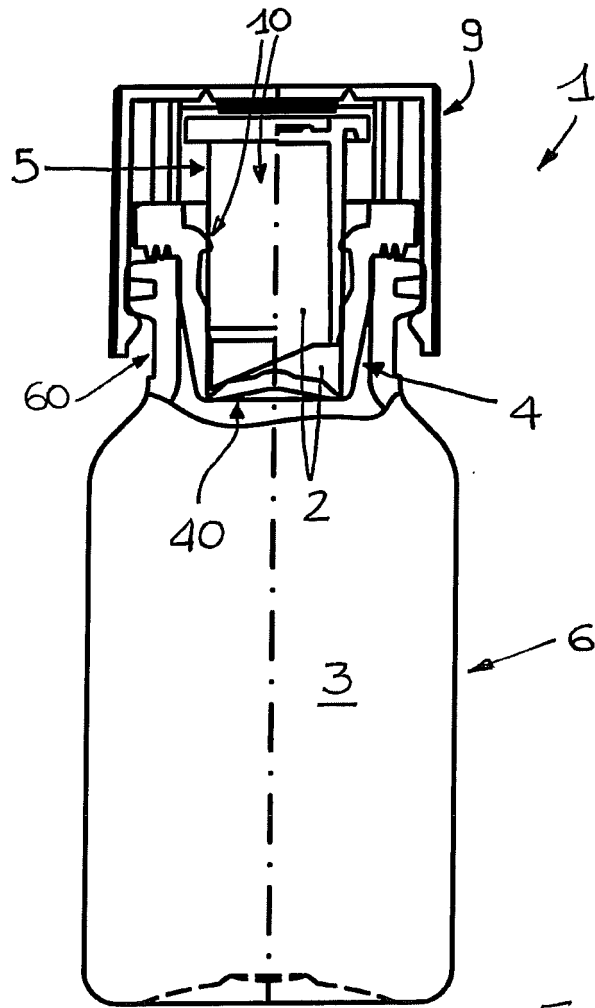


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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