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(54) RE-CLOSABLE CONTAINER FOR FLUID PRODUCTS

WIEDERVERSCHLIESSBARER BEHÄLTER FÜR FLUIDPRODUKTE

CONTENANT POUVANT ÊTRE REFERMÉ POUR PRODUITS FLUIDES

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(56) References cited:
**IT-U- 199 776 US-A- 4 512 475
US-A- 5 897 009**

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Description

Technical Field

[0001] This invention refers to a re-closeable container for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like.

Background art

[0002] There are known re-closeable containers made of plastic material, for medical products, pharmaceuticals, cosmetics, or the like, which are produced by blowing and/or moulding in two parts, one of which is constituted by the container body, while the other part is constituted by closing means, to keep the container closed after manufacture and to re-close it after use.

[0003] In these containers the closing means are inserted in or coupled to the container neck after manufacture and remain in that position until they are first opened for use.

[0004] The aforementioned containers however present some drawbacks, among which the fact that they are particularly costly to manufacture, as they require separate moulds for the two parts of the container and they must be assembled after moulding.

[0005] There are also known re-closeable containers made of plastic material, for medical products, pharmaceuticals, cosmetics, or the like, which are manufactured by injection moulding in a single piece, in which the container body is made in a single body piece with the closing means suitable for keeping the container closed after manufacture and/or to re-close it after use.

[0006] A section-view detail of containers of this type, according to the preamble of claim 1, is illustrated in figure 1.

[0007] This type of single-dose or multi-dose container for fluid products consists in a hollow body A that contains the fluid product and a closing cap B which is obtained by injection moulding integrally with the hollow body A along a breakable type pre-formed fracture line C.

[0008] At the time of use, the closing cap B is torn from the hollow body A and, at the pre-formed fracture line C, an outlet opening is formed from which the fluid product can be dispensed by the user.

[0009] In detail, the closing cap B has a coupling element D which is solid in shape, on which the following are obtained: the pre-formed fracture line C, a shutter element E, which is associated to the coupling element D on the opposite side to the pre-formed fracture line C, and a side wall F, which is associated to the coupling element D and arranged around the shutter element E.

[0010] Having poured out the liquid, therefore, the closing cap B is once again associated to the hollow body A by fitting the side wall F around the neck of the hollow body A and inserting the shutter element E to measure into the outlet opening.

[0011] These containers are undoubtedly cheaper to

manufacture than the former type, but they have the disadvantage that the particular shape of the coupling element D sometimes determines an incorrect shaping of the piece.

[0012] During the injection moulding phase of an element made in this way, in fact, cases in which small air bubbles remain trapped inside the closing cap B near the pre-formed fracture line C are frequent, and this risks weakening the resistance and the sealing of the cap itself, causing leakage and/or compromising the sterility and asepticity of the fluid product contained in the container. Similar containers are known from IT 199776U.

[0013] This circumstance is highly dangerous, particularly in the event of containers destined to contain pharmaceutical substances for which maximum sterility must be guaranteed.

Object of the Invention

[0014] The background art is susceptible to numerous improvements concerning the possibility to eliminate the above-described drawbacks.

[0015] The above in fact leads to the need to resolve the technical problem of designing a re-closeable container for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like, which can be manufactured in a practical, easy and economic manner, which assures the preservation of the product contained therein in a sterile and aseptic manner and which, after opening, can be re-sealed reducing the risk of pollution or leakage of the substance it contains to a minimum.

[0016] Another object of this invention is to design a re-closeable container for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like, that permits overcoming the mentioned drawbacks of the background art as part of a simple, rational and low cost, as well as easy and efficient-to-use solution.

[0017] The above-described objects are achieved by a re-closeable container for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like, comprising the features of claim 1.

Brief Description of the Drawings

[0018] Further characteristics and advantages of this invention will appear more evident from the description of a preferred, but not only, embodiment of a re-closeable container for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like, illustrated indicatively by way of non limiting example, in the attached drawings wherein:

figure 1 is a longitudinal section view of a detail of traditional type containers described above;

figure 2 is a front, partially in section, view of a strip of containers according to the invention;

figure 3 is a view on an enlarged scale of a detail of the section along the track plane III - III of figure 2.

Embodiments of the Invention

[0019] With special reference to figures 2 and 3, a strip of re-closeable containers 2 for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like, has been globally designated by reference number 1.

[0020] Each container 2 comprises a hollow containment body 3 for containing a fluid product, which substantially extends lengthways along a corresponding longitudinal axis L.

[0021] At one end of the hollow body 3 an introduction mouth 4 is defined for filling with the fluid product; the closure of the introduction mouth 4 (for example, by sealing the mouth lips together) is done once the product has been introduced. At the opposite end to the introduction mouth 4, the hollow body 3 extends into a neck 5.

[0022] Each container 2 also comprises a closing cap 6 which, in an initial configuration, is integrally associated to the corresponding hollow body 3 along a pre-formed fracture line 7 obtained on the neck 5.

[0023] In this application, the term "pre-formed fracture line" refers to an area of the containers 2 which presents a weakened section and which is therefore more easily breakable.

[0024] The pre-formed fracture lines 7, in particular, are suitable for allowing the separation of the closing caps 6 from the hollow bodies 3 in such a way as to define a configuration of separation in which on the hollow bodies 3, at the pre-formed fracture lines 7, an equal number of outlet openings of the fluid products are obtained.

[0025] In practice, the containers 2 are made integrally in a single body piece in the aforementioned initial configuration through, e.g., an injection moulding production process.

[0026] After filling the hollow bodies 3 with the fluid product and sealing the introduction mouths 4, the containers 2 are meant to be opened by the user only just before use, by breaking the pre-formed fracture lines 7 and separating the closing caps 6 from the hollow bodies 3.

[0027] In detail, each closing cap 6 comprises a coupling element 8 on which, on one side, the pre-formed fracture line 7 is obtained and, on the opposite side, it extends into a shutter element 9 which can be placed inside the outlet opening in the configuration of separation.

[0028] This shutter element 9 is composed, e.g., of a pin which extends from the coupling element 8 coaxially to the longitudinal axis L.

[0029] Advantageously, the closing cap 6 also has a side wall 10 that is associated to the coupling element 8 on the opposite side to the pre-formed fracture line 7.

[0030] This side wall 10 has a substantially cylindrical shape and is arranged coaxially around the pin 9.

[0031] The transversal sizes of the pin 9 and of the side wall 10 are such that, in the configuration of separation, the side wall 10 fits snugly around the neck 5 with

the pin 9 fitting into and sealing the corresponding outlet opening.

[0032] According to the invention, each closing cap 6 has a lightening groove 11 obtained in the surface of the coupling element 8 on the opposite side to the pre-formed fracture line 7. The lightening groove 11 extends in a circular form around the shutter element 9 and coaxially to the longitudinal axis L.

[0033] The section of the lightening groove 11 along a longitudinal plane is given in the detailed view of figure 3 and has a substantially pointed shape with the apex facing the pre-formed fracture line 7.

[0034] In detail, the lightening groove 11 is defined by a first surface 12 with a truncated-cone conformation, and a second surface 13, also with a truncated-cone shape, which present a symmetrical axis coaxial to the longitudinal axis L and which are sloped with respect to the longitudinal axis L with angles that are substantially opposite to one another.

[0035] In this application the expression "angles that are substantially opposite to one another" is used to mean that if the first truncated-cone surface 12 is arranged convergently towards the introduction mouth 4, then the second truncated-cone surface 13 is convergent towards the opposite side.

[0036] Advantageously, each container 2 comprises a pair of first gripping fins 14, which protrude from the external side surface of the hollow body 3 from parts that are diametrically opposite to the longitudinal axis L, and a pair of second gripping fins 15, which protrude from the external side surface of the closing cap 6 and are coplanar to the first gripping fins 14.

[0037] The containers 2 of the strip 1 are joined together by the first gripping fins 14 and the second gripping fins 15.

[0038] The first gripping fins 14 of a container 2 are in fact associated along a first weakened area 16 to the first gripping fins 14 of the two containers 2 positioned adjacently.

[0039] In the same way, the second gripping fins 15 of a container 2 are associated along a second weakened area 17 to the second gripping fins 17 of the two adjacent containers 2.

[0040] It has in practice been demonstrated how the described invention achieves the proposed objects.

[0041] In this sense, the fact is underlined that the particular feature of contemplating a lightening groove on the coupling element of the closing cap allows for the facilitation of the moulding of the containers, avoiding the formation of air bubbles inside the closing caps and guaranteeing maximum sterility and sealing capacity of the containers.

[0042] It is also shown that the lightening groove ensures an increase in the flexibility and manageability of the closing cap, which offers a guarantee of greater cap sealing once it has been fitted on the neck of the hollow body.

[0043] The invention thus conceived is susceptible to

numerous modifications and variations.

[0044] Furthermore all the details can be replaced with others that are technically equivalent.

[0045] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to requirements without moving outside the protection scope of the following claims.

Claims

1. Re-closeable container (2) for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like, comprising at least one hollow containment body (3) for containing a fluid product and at least one closing cap (6) which, in an initial configuration, is associated integrally to said hollow body (3) along a pre-formed fracture line (7) suitable for allowing the separation of said closing cap (6) from said hollow body (3) in a configuration of separation in which on said hollow body (3) an outlet opening is obtained for said fluid product; wherein said hollow body (3) substantially extends lengthways along a longitudinal axis (L) and comprises a neck (5) on which said pre-formed fracture line (7) is obtained; and wherein said closing cap (6) comprises:

- at least one coupling element (8) on which said pre-formed fracture line (7) is obtained and which has a lateral outer surface substantially sloped with respect to said longitudinal axis (L);
- at least one shutter element (9) which is associated to said coupling element (8) on the opposite side to said pre-formed fracture line (7) and which can be placed inside said outlet opening in said configuration of separation, said shutter element (9) comprising a pin which extends from said coupling element (8); and
- a side wall (10) that is associated to said coupling element (8) on the opposite side to said pre-formed fracture line (7), has a substantially cylindrical shape and is arranged around said pin (9), the transversal sizes of said pin (9) and of said side wall (10) are such that, in the configuration of separation, the side wall (10) fits snugly around said neck (5) with said pin (9) fitting into and sealing said outlet opening;

characterized by the fact that said closing cap (6) comprises at least one lightening groove (11) obtained in the surface of said coupling element (8) opposite to said pre-formed fracture line (7) around said shutter element (9), said lightening groove (11) comprising at least one first substantially truncated-cone surface (12) which is sloped with respect to said longitudinal axis (L) and is parallel to said lateral outer surface of said coupling element (8).

2. Container (2) according to claim 1, **characterized by** the fact that said hollow body (3) and said closing cap (6) are made integrally in a single body in said initial configuration.
3. Container (2) according to one or more of the preceding claims, **characterized by** the fact that said pin (9) is substantially coaxial to said longitudinal axis (L).
4. Container (2) according to one or more of the preceding claims, **characterized by** the fact that said side wall (10) is substantially coaxial to said pin (9).
5. Container (2) according to one or more of the preceding claims, **characterized by** the fact that said side wall (10) is substantially coaxial to said longitudinal axis (L).
6. Container (2) according to one or more of the preceding claims, **characterized by** the fact that said lightening groove (11) is substantially coaxial to said pin (9).
7. Container (2) according to one or more of the preceding claims, **characterized by** the fact that said lightening groove (11) is substantially coaxial to said longitudinal axis (L).
8. Container (2) according to one or more of the preceding claims, **characterized by** the fact that the section of said lightening groove (11) along a substantially longitudinal, plane has a substantially pointed shape with the apex substantially facing said pre-formed fracture line (7).
9. Container (2) according to one or more of the preceding claims, **characterized by** the fact that said lightening groove (11) comprises at least a second substantially truncated-cone surface (13), said first substantially truncated cone surface (12) and second substantially truncated-cone surface (13) being sloped with respect to said longitudinal axis (L) with angles that are substantially opposite to one another.
10. Container (2) according to one or more of the preceding claims, **characterized by** the fact that at least one between said first and second truncated-cone surface (12, 13) is substantially coaxial to said longitudinal axis (L).
11. Container (2) according to one or more of the preceding claims, **characterized by** the fact that it comprises at least one first gripping fin (14) which protrudes from the external side surface of said hollow body (3).
12. Contained (2) according to one or more of the pre-

ceding claims, **characterized by** the fact that said first gripping fin (14) is associated along a first weakened area (16) to the first gripping fin (14) of another container (2) positioned adjacently to form a strip (1) of containers (2).

13. Container (2) according to one or more of the preceding claims, **characterized by** the fact that it comprises at least one second gripping fin (15) which protrudes from the external side surface of said closing cap (6).
14. Container (2) according to one or more of the preceding claims, **characterized by** the fact that said second gripping fin (15) is associated along a second weakened area (17) to the second gripping (15) fin of another container (2) positioned adjacently to form a strip (1) of containers (2).
15. Strip (1) of re-closeable containers (2) for fluid products, particularly for medical products, pharmaceuticals, cosmetics or the like, **characterized by** the fact that it comprises a plurality of containers (2) according to one or more of the claims from 1 to 14 associated to one another.

Patentansprüche

1. Wiederverschließbarer Behälter (2) für Fluidprodukte, insbesondere für medizinische Produkte, pharmazeutische Produkte, Kosmetika oder dergleichen, mit mindestens einem hohlen Umschließungsgehäuse (3) zur Aufnahme eines Fluidproduktes und mindestens einer Verschlusskappe (6), die in einer ersten Konfiguration in einem Stück mit dem Hohlkörper (3) verbunden ist, und zwar entlang einer vorgeformten Bruchlinie (7), die geeignet ist, die Trennung der Verschlusskappe (6) von dem Hohlkörper (3) in einer Konfiguration der Abtrennung zu ermöglichen, in der man an dem Hohlkörper (3) eine Austrittsöffnung für das Fluidprodukt erhält; wobei sich der Hohlkörper (3) im Wesentlichen der Länge nach entlang einer Längsachse (L) erstreckt und einen Hals (5) aufweist, an dem die vorgeformte Bruchlinie (7) hergestellt ist; und wobei die Verschlusskappe (6) folgendes aufweist:

mindestens ein Kopplungselement (8), an dem sich die vorgeformte Bruchlinie (7) befindet, und dessen äußere Seitenfläche in Bezug auf die Längsachse (L) im Wesentlichen abgeschrägt ist;
mindestens ein Klappenelement (9), das mit dem Kopplungselement (8) an der gegenüberliegenden Seite der vorgeformten Bruchlinie (7) verbunden ist, und das in der Konfiguration der Abtrennung in der Austrittsöffnung platziert werden

kann, wobei das Klappenelement (9) einen Stift aufweist, der sich von dem Kopplungselement (8) aus erstreckt; und
eine Seitenwand (10), die mit dem Kopplungselement (8) auf der gegenüberliegenden Seite der vorgeformten Bruchlinie (7) verbunden ist, besitzt eine im wesentlichen zylindrische Form und ist um den Stift (9) herum angeordnet, wobei die transversalen Abmessungen des Stiftes (9) derart ausgeführt sind, dass die Seitenwand (10) in der Konfiguration der Abtrennung fest um den Hals (5) sitzt, wobei der Stift (9) in die Austrittsöffnung passt und sie verschließt;
dadurch gekennzeichnet, dass die Verschlusskappe (6) mindestens eine Erleichterungsrille (11) in der Oberfläche des Kopplungselementes (8) gegenüber der vorgeformten Bruchlinie (7) um das Klappenelement (9) herum besitzt, wobei die Erleichterungsrille (11) mindestens eine erste, im wesentlichen kegelförmige Oberfläche (12) aufweist, die in Bezug auf die Längsachse (L) abgeschrägt ist und parallel zu der äußeren Seitenfläche des Kopplungselementes (8) verläuft.

2. Behälter (2) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Hohlkörper (3) und die Verschlusskappe (6) in der ersten Konfiguration aus einem Stück in einem einzigen Gehäuse hergestellt sind.
3. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Stift (9) im Wesentlichen coaxial zu der Längsachse (L) verläuft.
4. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Seitenwand (10) im Wesentlichen coaxial zu dem Stift (9) verläuft.
5. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Seitenwand (10) im Wesentlichen coaxial zu der Längsachse (L) verläuft.
6. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Erleichterungsrille (11) im Wesentlichen coaxial zu dem Stift (9) verläuft.
7. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Erleichterungsrille (11) im Wesentlichen coaxial zu der Längsachse (L) verläuft.
8. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet,**

dass der Abschnitt der Erleichterungsrille (11) entlang einer im Wesentlichen längs verlaufenden Ebene eine im wesentlichen spitze Form aufweist, wobei die Spitze im Wesentlichen der vorgeformten Bruchlinie (7) zugewandt ist.

9. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Erleichterungsrille (11) mindestens eine zweite, im wesentlichen kegelmuffförmige Oberfläche (13) aufweist, wobei die erste, kegelmuffförmige Oberfläche (12) und die zweite, im wesentlichen kegelmuffförmige Oberfläche (13) in Bezug auf die Längsachse (L) abgeschrägt sind, wobei die Winkel im Wesentlichen einander gegenüberliegen. 10
10. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** mindestens eine zwischen der ersten und zweiten kegelmuffförmigen Oberfläche (12, 13) im Wesentlichen coaxial zu der Längsachse (L) verläuft. 20
11. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** er mindestens einen ersten Greifflügel (14) besitzt, der von der äußeren Seitenfläche des Hohlkörpers (3) vorsteht. 25
12. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der erste Greifflügel (14) entlang einem ersten Sollbruchbereich (16) mit dem ersten Greifflügel (14) eines weiteren Behälters (2) verbunden ist, der daran angrenzend positioniert ist, um eine Reihe (1) von Behältern (2) zu bilden. 30 35
13. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** er mindestens einen zweiten Greifflügel (15) besitzt, der von der äußeren Seitenfläche der Verschlusskappe (6) vorsteht. 40
14. Behälter (2) nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der zweite Greifflügel (15) entlang einem zweiten Sollbruchbereich (17) mit dem zweiten Greifflügel (15) eines weiteren Behälters (2) verbunden ist, der daran angrenzend positioniert ist, um eine Reihe (1) von Behältern (2) zu bilden. 45 50
15. Reihe (1) mit wiederverschließbaren Behältern (2) für Fluidprodukte, insbesondere für medizinische Produkte, pharmazeutische Produkte, Kosmetika oder dergleichen, **dadurch gekennzeichnet, dass** sie eine Vielzahl von Behältern (2) nach einem oder mehreren der Ansprüche 1 bis 14 aufweist, die miteinander verbunden sind. 55

Revendications

1. Contenant refermable (2) pour des produits fluides, en particulier pour des produits médicinaux, pharmaceutiques, cosmétiques ou similaires, comprenant au moins un corps creux (3) formant contenant, destiné à contenir un produit fluide, et au moins un capuchon de fermeture (6) qui, dans une configuration initiale, est associé de manière solidaire audit corps creux (3) le long d'une ligne de rupture préformée (7) apte à permettre la séparation dudit capuchon de fermeture (6) d'avec ledit corps creux (3) dans une configuration de séparation dans laquelle, sur ledit corps creux (3), il est obtenu une ouverture de sortie pour ledit produit fluide ; dans lequel ledit corps creux (3) s'étend essentiellement en longueur le long d'un axe longitudinal (L) et comprend un goulot (5) sur lequel est ménagée ladite ligne de rupture préformée (7) ; et dans lequel ledit capuchon de fermeture (6) comprend :

- au moins un élément de couplage (8) sur lequel est ménagée ladite ligne de rupture préformée (7), et qui possède une surface latérale extérieure légèrement inclinée par rapport audit axe longitudinal (L) ;

- au moins un élément obturateur (9) qui est associé audit élément de couplage (8) sur le côté opposé à ladite ligne de rupture préformée (7) et qui peut être placé à l'intérieur de ladite ouverture de sortie dans ladite configuration de séparation, ledit élément obturateur (9) comprenant une broche qui part dudit élément de couplage (8) ; et

- une paroi latérale (10) qui est associée audit élément de couplage (8) sur le côté opposé à ladite ligne de rupture préformée (7), possède une forme sensiblement cylindrique et est placée autour de ladite broche (9), les dimensions transversales de ladite broche (9) et de ladite paroi latérale (10) étant telles que, dans la configuration de séparation, la paroi latérale (10) s'ajuste étroitement autour dudit goulot (5), avec ladite broche (9) qui s'insère dans ladite ouverture de sortie et l'obture hermétiquement ;

caractérisé par le fait que ledit capuchon de fermeture (6) comprend au moins une rainure d'allègement (11) ménagée dans la surface dudit élément de couplage (8) opposée à ladite ligne de rupture préformée (7) autour dudit élément obturateur (9), ladite rainure d'allègement (11) comprenant au moins une première surface sensiblement tronconique (12) qui est inclinée par rapport audit axe longitudinal (L) et qui est parallèle à ladite surface latérale extérieure dudit élément de couplage (8).

2. Contenant (2) selon la revendication 1, **caractérisé par le fait que** ledit corps creux (3) et ledit capuchon de fermeture (6) sont fabriqués solidairement sous forme d'un corps unique dans ladite configuration initiale. 5
3. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite broche (9) est sensiblement coaxiale avec ledit axe longitudinal (L). 10
4. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite paroi latérale (10) est sensiblement coaxiale avec ladite broche (9). 15
5. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite paroi latérale (10) est sensiblement coaxiale avec ledit axe longitudinal (L). 20
6. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite rainure d'allègement (11) est sensiblement coaxiale avec ladite broche (9). 25
7. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite rainure d'allègement (11) est sensiblement coaxiale avec ledit axe longitudinal (L). 30
8. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** la section de ladite rainure d'allègement (11) le long d'un plan sensiblement longitudinal présente une forme sensiblement pointue avec la pointe sensiblement en vis-à-vis de ladite ligne de rupture préformée (7). 35
9. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite rainure d'allègement (11) comprend au moins une deuxième surface sensiblement tronconique (13), ladite première surface sensiblement tronconique (12) et ladite deuxième surface sensiblement tronconique (13) étant inclinées par rapport audit axe longitudinal (L) avec des angles sensiblement opposés l'un à l'autre. 40
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10. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait qu'au** moins l'une d'entre ladite première et ladite deuxième surfaces tronconiques (12, 13) est sensiblement coaxiale avec ledit axe longitudinal (L). 50
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11. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait qu'il** comprend au moins une première ailette de préhension (14) qui saille de la surface latérale extérieure dudit corps creux (3).
12. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite première ailette de préhension (14) est associée, le long d'une première zone affaiblie (16), à la première ailette de préhension (14) d'un autre contenant (2) positionné de manière adjacente pour former une bande (1) de contenants (2).
13. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait qu'il** comprend au moins une deuxième ailette de préhension (15) qui fait saillie de la surface latérale extérieure dudit capuchon de fermeture (6).
14. Contenant (2) selon l'une ou plusieurs des revendications précédentes, **caractérisé par le fait que** ladite deuxième ailette de préhension (15) est associée, le long d'une deuxième zone affaiblie (17), à la deuxième ailette de préhension (15) d'un autre contenant (2) positionné de manière adjacente pour former une bande (1) de contenants (2).
15. Bande (1) de contenants refermables (2) pour des produits fluides, en particulier pour des produits médicaux, pharmaceutiques, cosmétiques ou similaires, **caractérisée par le fait qu'elle** comprend une pluralité de contenants (2) selon l'une ou plusieurs des revendications 1 à 14, associés les uns aux autres.

Fig. 1

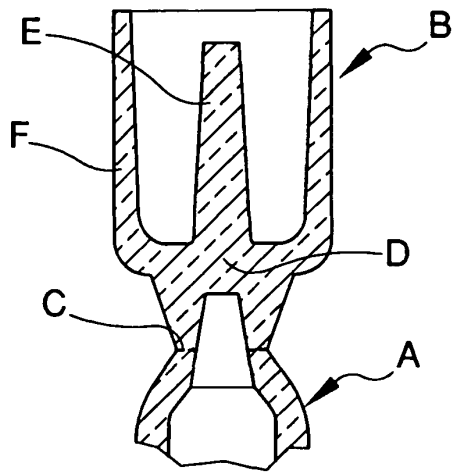


Fig. 3

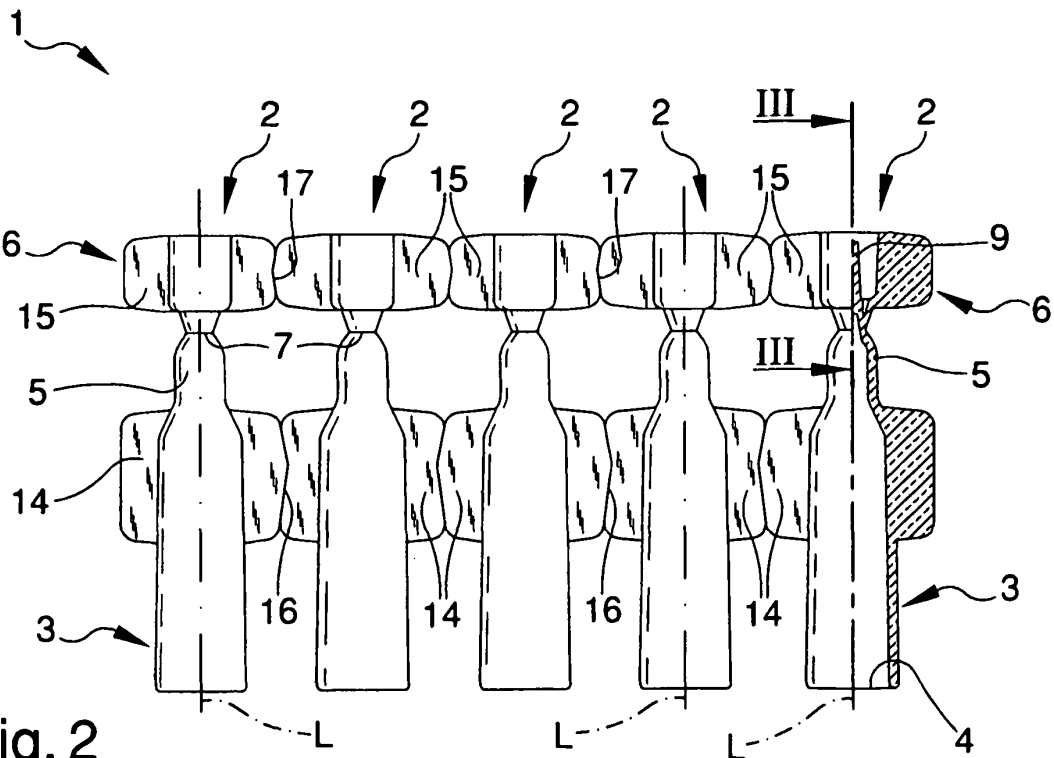
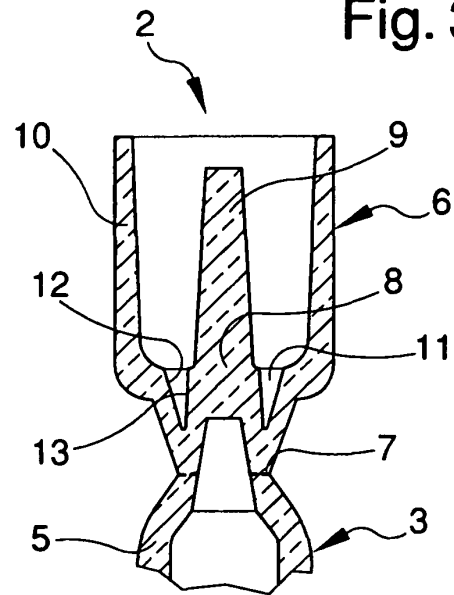


Fig. 2

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- IT 199776 U [0012]