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(54) Reclosable container

(57) A reclosable container has a mouth (3) and a closure (4) having an internally threaded tubular wall (41) connected to the mouth by a facilitated fracture zone (5) and protected by a lid (6) having a hinge (7) arranged on the tubular wall on the side opposite the facilitated fracture zone.

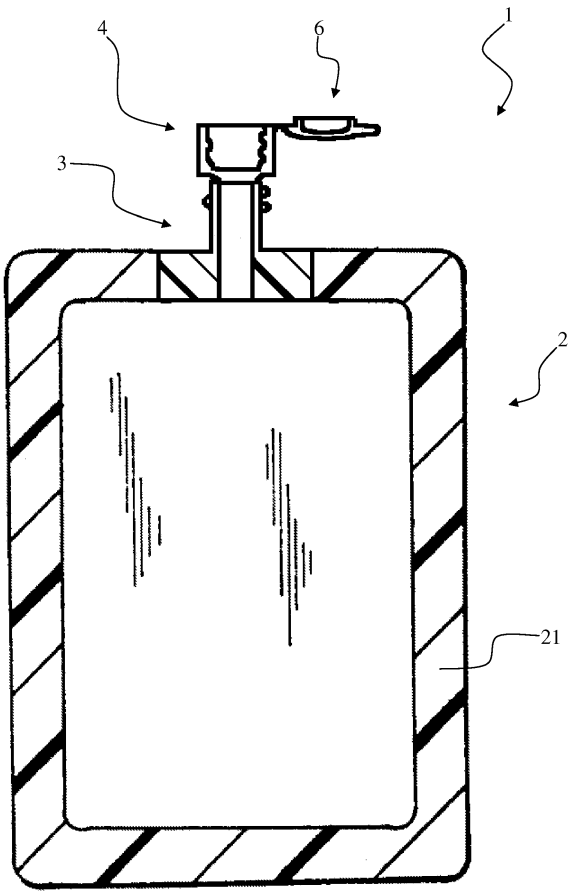

Fig. 1

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Description

Background of the invention

[0001] The invention relates to a reclosable container, in particular for containing fluid products (liquid, pasty, creamy, oily, powder, granular, etc).

[0002] Specifically, but not exclusively, the container can be used in the food, pharmaceutical or cosmetic field to form packages having one part made of a flexible material that forms a container body, and one part made of stiff material that forms an integrated structure comprising a mouth and a closure that is detachable by fracture from the mouth at the moment of the first opening of the container and which, if overturned, is couplable with the mouth to close, also several times, the container body.

[0003] In particular, reference is made to a container of the type disclosed in the preamble of the first claim.

[0004] A container of the aforesaid type is known, for example, from the patent publications US 5,290,105, US 4,512,475, WO 2009/037534 and US 5,897,009.

[0005] One of the drawbacks of prior-art reclosable containers is that of ensuring the hygiene of a package, especially in the case of reclosing.

[0006] Hygiene can be jeopardised by the fact that before the cap is detached and thus before the package is opened for the first time, the external surface of the cap is exposed to the atmosphere with a consequent risk of contamination. When the cap is used, in an overturned configuration, to reclose the package, at least part of the external surface could pollute the product in the package.

Summary of the invention

[0007] An object of the invention is to overcome the aforesaid drawback of the prior art.

[0008] An advantage of the invention is to make a reclosable container that is constructionally simple and cheap and easy and immediate to use.

[0009] Another advantage is to provide a container that is able to ensure the hygiene of the contained product also against possible fraudulent tampering.

[0010] These objects and advantages and also others are all achieved by a container made according to one or more of the claims set out below.

Brief description of the drawings

[0011] The invention can be better understood and implemented with reference to the attached drawings that show some embodiments thereof by way of non-limiting example.

Figure 1 is a schematic section of a reclosable container that has not yet been opened for the first time.
Figure 2 is a partially sectioned enlarged detail of figure 1.
Figure 3 is a view from the right of figure 2 with the closure 6 in the closure configuration.
Figure 4 is a top view of figure 2 with the closure 6 removed for greater clarity.
Figure 5 is section V-V of figure 2.

Detailed description

[0012] With reference to figure 1, with 1 there has been indicated overall a reclosable container comprising a container body 2 for a fluid product. The fluid product may comprise a product in a liquid, pasty, creamy, oily, powder, granular, etc state. The fluid product may comprise a food, pharmaceutical, cosmetic, etc product.

[0013] The container body 2 has a mouth 3 for the passage of the fluid product, and a closure 4 for closing the mouth 3, which are shown enlarged in figure 2.

[0014] The closure 4 comprises a tubular wall 41 that has a first end (lower end with reference to figure 2) from which a closure wall 42 extends.

[0015] The closure 4 also has first coupling means arranged inside the tubular wall 41 for coupling with second coupling means of the container body. The first coupling means comprises in this case an internally threaded surface 43 of the tubular wall 41 and the second coupling means comprises an externally threaded surface 31 of the mouth 3 that can form a screw coupling with the aforesaid internally threaded surface 43.

[0016] The closure 4 is configured in such a way as to be able to assume a first closure configuration (figure 2) in which the closure wall 42 closes the mouth 3 and in which the closure 4 is connected to the mouth 3 along a facilitated fracture zone 5 the breakage of which causes the detachment of the closure and the opening of the mouth 3.

[0017] The facilitated fracture zone 5 may, as in the illustrated case, be of annular shape and surround an end of a tubular neck portion 32 of the mouth 3. Upon breakage of the facilitated fracture zone 5 an opening is opened at the aforesaid end of the tubular neck portion 32 for the exit of the fluid product.

[0018] The facilitated fracture zone 5 comprises an annular portion of material that extends continuously to connect an edge of the wall 42 and an edge of the wall 32 and has a relatively thin thickness. The facilitated fracture zone 5 can, as in the specific case, form a barrier that is impermeable to the fluids to protect the product inside the container body 2.

[0019] The tubular wall 41 can have, as in the illustrated case, an external surface provided with ridges (for example knurls as in the specific case) to facilitate the manual grip of a user.

[0020] The tubular neck portion 32 has the externally threaded surface 31.

[0021] The closure 4 is configured in such a way as to be able to assume a second closure configuration (which is not illustrated and is overturned with respect to the one in figure 2) in which the facilitated fracture zone 5 has been broken and the closure has in fact been overturned

by 180° with respect to the first closure configuration. In this second closure configuration the closure wall 42 (overturned by 180°) still closes the mouth and the (screw) coupling means 31 and 43 are coupled together to (removably) connect together the closure 4 and the mouth 3.

[0022] The closure 4 comprises a lid 6 that, in the first closure configuration, can at least partially close a second end (upper end with reference to figure 2) of the tubular wall 41 opposite the aforesaid first end that has the closure wall 42 and the facilitated fracture zone 5. The lid 6, when it closes the second end (dashed line in figure 2) protects a space defined inside the tubular wall. This space inside the tubular wall, at least partially protected by the lid, comprises the closure wall 42 and/or the first coupling means (internally threaded surface 43 of the tubular wall 41).

[0023] The lid 6 can be connected, as in the illustrated example, to the tubular wall 41 by a hinge 7, which can be arranged, as in the illustrated example, outside the tubular wall 41 in such a manner that the lid 6 can assume an opening configuration (continuous line in figure 2) in which (in the second closure configuration that is overturned with respect to that of figure 2) the tubular neck portion 32 of the mouth can be inserted inside the tubular wall 41 of the closure 4. The lid 6 can thus assume an opening configuration in which it does not interfere in the coupling between the closure 4 and the mouth 3. The lid 6, at least in the closure position of the tubular wall 41, is arranged on the opposite side of the wall 41 with respect to the side where the facilitated fracture zone 5 is located.

[0024] The lid 6 can have an annular protrusion 61 configured for engaging, by elastic-joint coupling, with a corresponding annular recess arranged on an upper edge of the tubular wall 41 (as illustrated with a dashed line in figure 2).

[0025] The closure wall 42 may comprise, as in the illustrated example, an external surface 44 with a flared shape, for example a frustoconical shape, having a first end of minimum diameter and a second end of maximum diameter, in which the first end is situated in the facilitated fracture zone 5. The container body 2 may comprise, as in the illustrated case, a pair of flexible sheet elements that are firmly joined together along respective perimeter flaps 21. It is possible, for example, to provide for the use of sheets of weldable material to form a container body like that disclosed in patent EP 493723 (of the same applicant) that is included here for reference.

[0026] The mouth 3 may comprise the tubular neck portion 32 for the passage of the fluid product and may comprise a joint portion 33 that is, for example, integral with the tubular neck portion 32.

[0027] The joint portion 33 can be like the one disclosed in patent EP 493723 that is included here for reference. The joint portion 33, which surrounds at least a part of the tubular neck portion 32, is inserted between the perimeter flaps of the two sheet elements and is firmly joined thereto.

[0028] The tubular neck portion 32 internally defines a conduit 34 for the passage of the fluid product.

[0029] The tubular wall 32, the closure wall 42 and the first coupling means (threaded surface 43) are integrated into a single structure made by moulding plastics (for example by injection-moulding). This structure may comprise, as in the illustrated example, the entire tubular wall 41 and/or the joint portion 33. This structure may comprise, as in the illustrated example, the lid 6 and the hinge 7 which may be formed together by moulding inside a mould made of plastics in the open configuration (continuous line in figure 2).

[0030] It is possible to provide for the first coupling means comprising, instead of a screw coupling, a pin element like that disclosed in patent EP 493723 (where the pin element is numbered in the figures by 4) that is included here for reference.

[0031] The first coupling means could also comprise an elastic-joint coupling system (for example of the snap type) or other systems that are known and not illustrated here, of removable type, to enable the mouth 3 to be opened and closed several times.

[0032] In an example that is not illustrated it is possible to arrange a lid that covers the tubular wall 41, as does the lid 6 disclosed above, and which is connected to the wall 41 (with or without the presence of the hinge 7) by means of fracturable connecting means that has to be broken to enable the lid 6 to be opened and thus the inside of the tubular wall to be accessed freely, in particular to enable the mouth 3 to be reclosed by inserting the tubular neck portion 32 in the tubular wall 41.

[0033] Such fracturable connecting means would form a tamper device that could indicate the first opening of the lid. The fracturable connecting means may comprise a single fracturable element (for example a flap that is integral with the lid 6 and fix by a hook tooth in a hollow seat that is integral with the closure 4, or a single connecting bridge between the lid 6 and the closure 4, or a continuous annular portion of material with a thin thickness interposed completely between the lid 6 and the closure 4), or a series of fracturable elements (for example a plurality of connecting bridges arranged between the lid 6 and the closure 4). The aforesaid fracturable connecting means can be made directly in a moulding step of plastic material (for example injection-moulding) and/or by means of one or more material removal operations (for example by cutting) and/or by applying an additional connecting material (for example an adhesive substance) between the lid 6 and the closure 4. The fracturable connecting means can be combined with further connecting means of another type, or can form the only connecting means between the lid and the closure.

[0034] In another example that is not illustrated it is possible to use a lid that covers the tubular wall 41, as the lid 6 disclosed above, and which comprises a film (peelable film) that is applied to the edge of the wall 41 and is easily removable (for example by pulling the film

by hand using a possible gripping flap).

[0035] The lid 6 can be connected to the closure 4 in such a way as to remain attached to the closure also during the opening step (as in the illustrated example in which the hinge 7 maintains the open lid 6 still attached to the closure 4), or in such a manner as to be removed from the closure 4 and be possibly rejoinable, for example by means of a screw connection between a threaded surface (for example an internal surface) of the lid 6 and a threaded surface (for example an external surface) of the closure 4.

[0036] It is also possible to provide for the lid 6 being connected to the closure 4 by an elastic snap joint connection located outside the tubular wall 41 (instead of inside as in the illustrated example), of open or closed annular shape, and of non-annular shape (for example with a single joint element), with or without hinge 7.

Claims

1. Container (1) comprising:

- a container body (2) for a fluid product, said container body having a mouth (3); and
- a closure (4) for closing said mouth (3), said closure (4) comprising a tubular wall (41) having a first end from which a closure wall (42) extends, said closure having first coupling means (43) arranged inside said tubular wall (41) for coupling with second coupling means (31) of said mouth (3);

said closure (4) assuming a first closure configuration in which said closure wall (42) closes said mouth (3) and is connected to said mouth (3) along a facilitated fracture zone (5) the breakage of which determines the detachment of said closure (4) and the opening of said mouth (3);

said closure (4) assuming a second closure configuration in which said facilitated fracture zone (5) has been broken and said closure (4) has been overturned with respect to said first closure configuration, and in which said closure wall (42) closes said mouth (3) and said first coupling means (43) of said closure is coupled with said second coupling means (31) of said mouth;

characterised by comprising a lid (6) that closes at least partially a second end of said tubular wall (41) in said first closure configuration, said second end being opposite said first end so as to protect a space defined inside said tubular wall (41), said space comprising said closure wall (42) and/or said first coupling means (43).

2. Container according to claim 1, wherein said lid (6) is connected to said tubular wall (41) by a hinge (7) arranged outside said tubular wall (41) such that the lid (6) can assume an open non-interference configuration wherein it enables said mouth (3) to be inserted inside said tubular wall (41).

3. Container according to any preceding claim, wherein said first coupling means (43) comprises an internally threaded surface of said tubular wall (41) and said second coupling means (31) comprises an externally threaded surface of said mouth (3).

4. Container according to any preceding claim, wherein said lid (6) is provided with elastic-joint connecting means (61) for the removable connection to said tubular wall (41).

5. Container according to any preceding claim, wherein said closure and said lid are connected together by a tamperproof device of frangible type.

6. Container according to any preceding claim, wherein said lid comprises a peelable film applied to an edge of said second end.

7. Container according to any preceding claim, wherein said closure wall (42) comprises an external surface (44) of flared shape having a first end of minimum diameter situated in said facilitated fracture zone (5).

8. Container according to any preceding claim, wherein said container body (2) comprises a pair of flexible sheet elements that are firmly joined together along respective perimeter flaps (21), and wherein said mouth (3) comprises a tubular neck portion (32) for the passage of the fluid product and a joint portion (33) that is integral with and arranged outside said tubular neck portion (32), said joint portion (33) being inserted between and firmly joined to said perimeter flaps.

9. Container according to any preceding claim, wherein said tubular wall (41), said closure wall (42) and said first coupling means (43) are integrated into a single structure made by moulding plastic material.

10. Container according to any preceding claim, wherein said facilitated fracture zone (5) has an annular shape and surrounds an end of a neck portion (32) of said mouth (3).

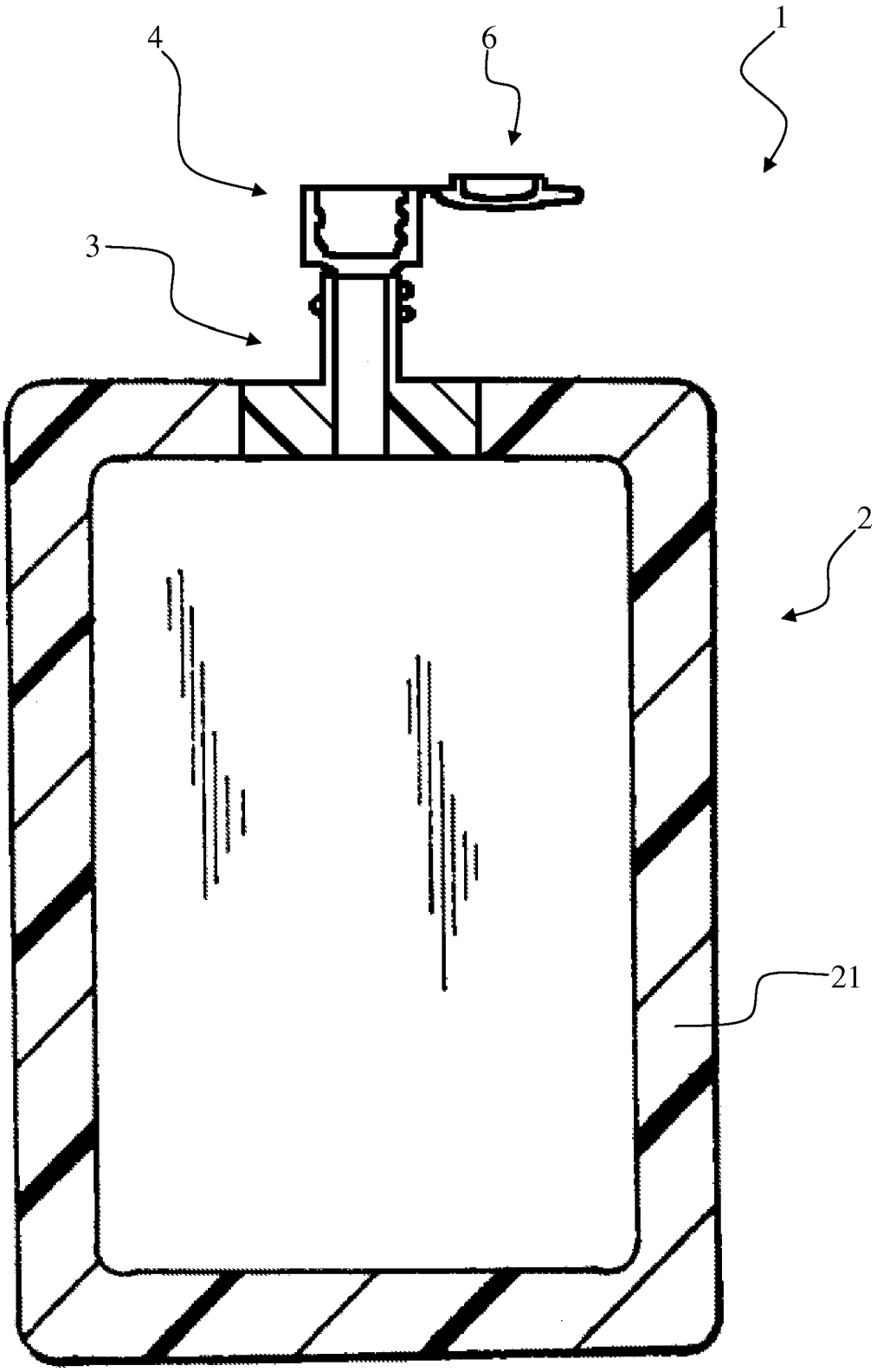

Fig. 1

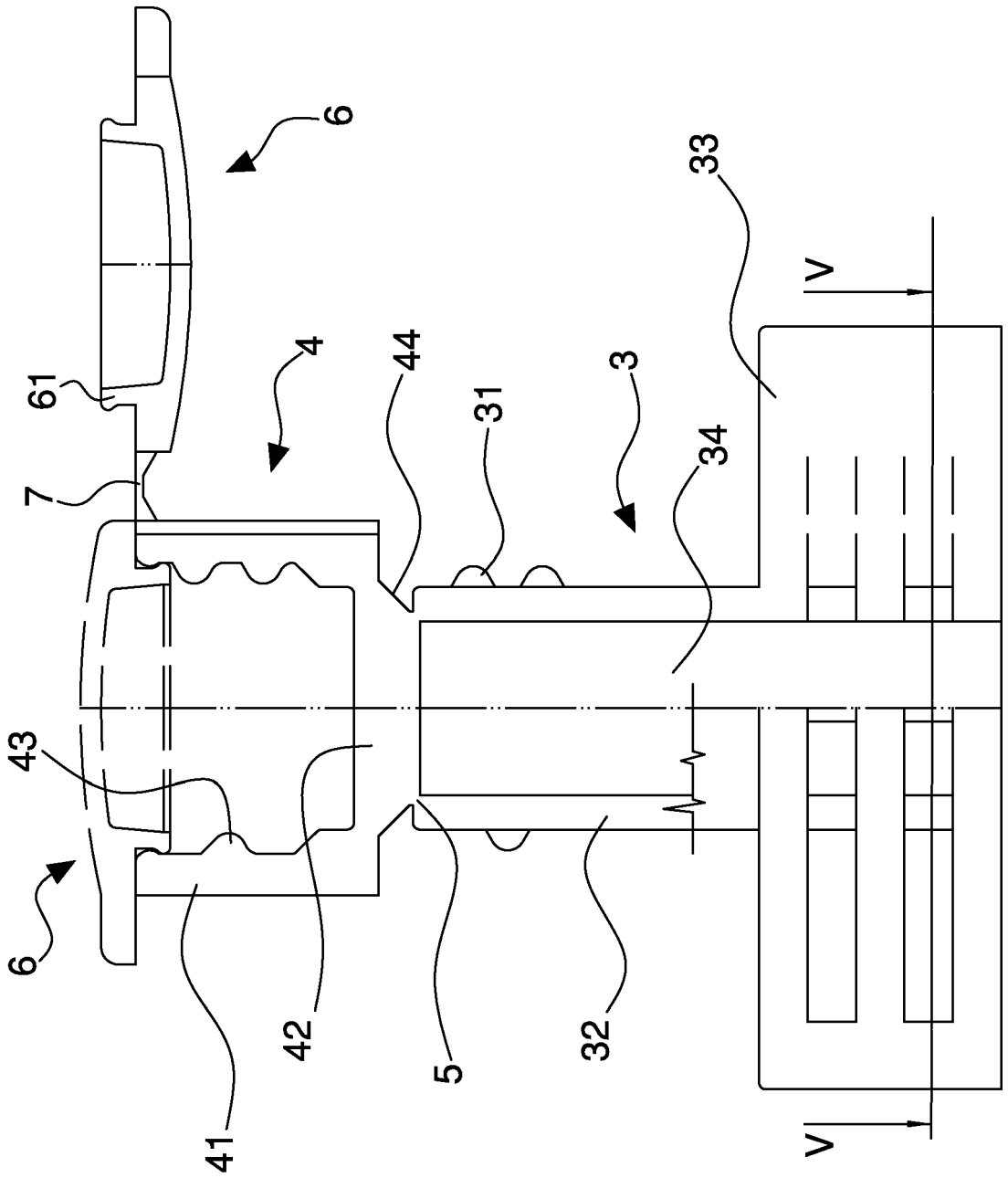

Fig. 2

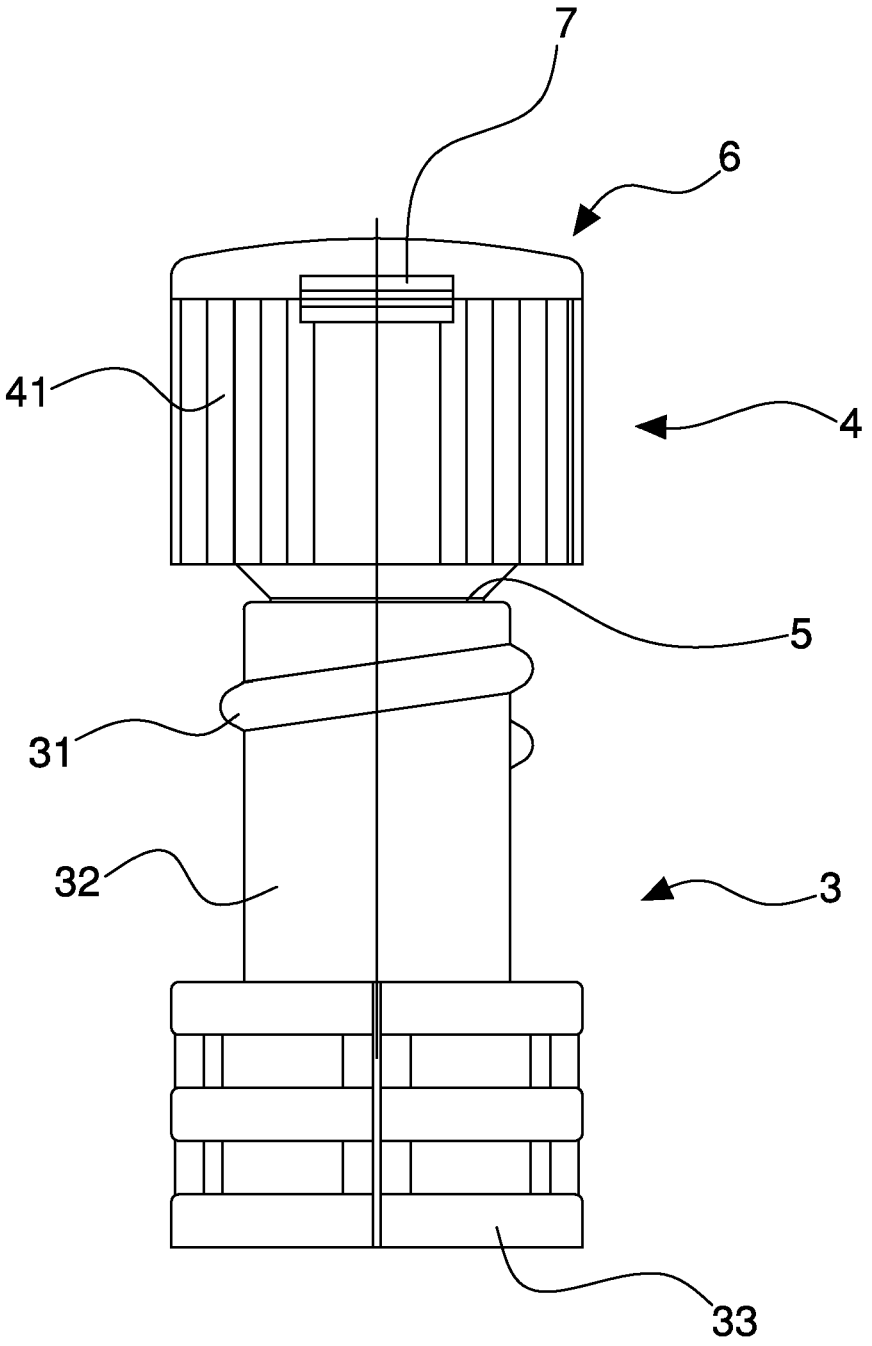

Fig. 3

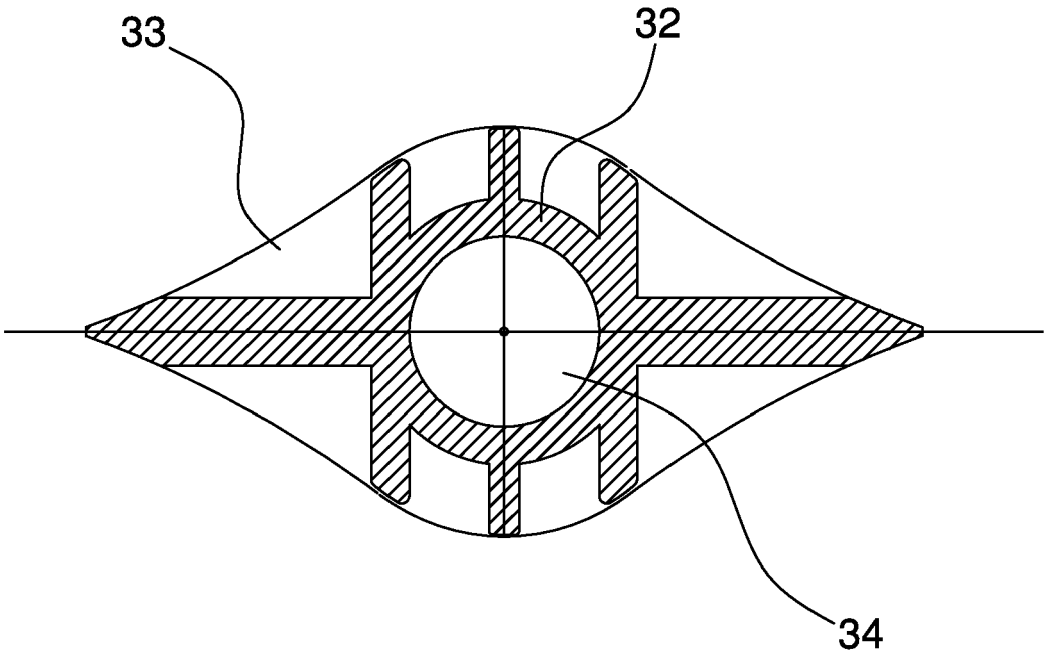

Fig. 5

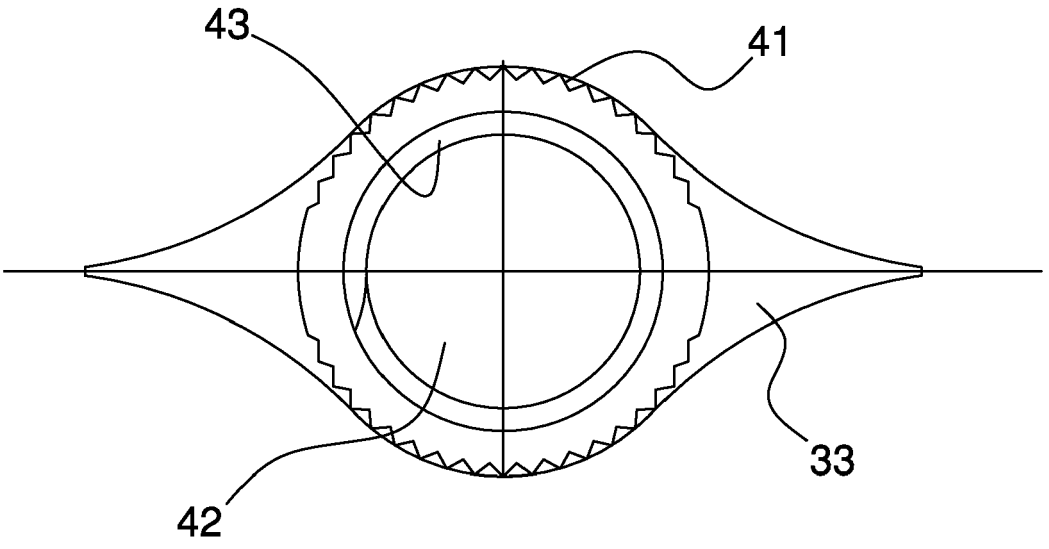

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 11 15 9470

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	14 June 2011	Serrano Galarraga, J

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X : particularly relevant if taken alone
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