



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 679 268 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
12.07.2006 Bulletin 2006/28

(51) Int Cl.:
B65D 55/08 (2006.01)

(21) Application number: **05380267.4**

(22) Date of filing: **16.12.2005**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK YU

(72) Inventor: **Martin Lopez, Eduardo**
08570 Torelló (Barcelona) (ES)

(74) Representative: **Durán Moya, Luis-Alfonso**
DURAN-CORRETJER
Còrsega, 329
(Paseo de Gracia/Diagonal)
08037 Barcelona (ES)

(30) Priority: **24.12.2004 ES 200403078**

(71) Applicant: **Plastivit, S.A.**
08029 Barcelona (ES)

(54) **Non refillable stopper with double security device**

(57) Non refillable stopper with double security device.

The non refillable stopper is characterised in that a special tubular closing element forming a tubular body which is connected to and surrounds the upper portion of the bottle neck has an upper projecting flange and a lower projecting flange respectively which are pressed inwards by the action of the external laminar covering, which may be displaced vertically during the stopper opening operation, so that said flanges, in view of their compressed disposition, thus protrude resiliently outwards when they are released by the laminar covering, and prevent said external laminar covering from descending again, said flanges being permanently visible and demonstrating the prior opening of the bottle stopper.

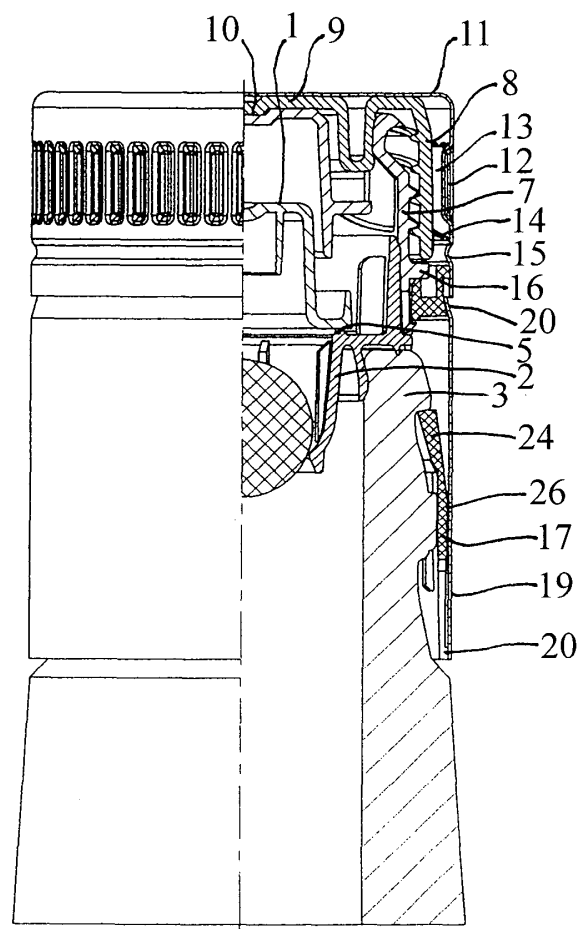


FIG. 1

Description

[0001] The present invention relates to a non refillable stopper, in particular of the type used for expensive alcoholic beverages, having security features which are far superior to those of currently known non refillable stoppers.

[0002] As known, one of the features of non refillable stoppers for alcoholic beverages is precisely that they cannot easily be manipulated in order to refill the container with beverages of inferior quality. This illegal action is traditionally fairly widespread, particularly in specific countries, and causes significant harm to bottlers of the original beverages.

[0003] At present there are numerous devices which, to a greater or lesser extent, claim to achieve an effect of security with the objective, once the stopper has been opened for the first time, of visibly revealing elements which reveal the manipulation of the bottle, for example breakage of seals, to be identified and therefore make fraudulent sale thereof difficult once the bottle has been refilled with a beverage of inferior quality.

[0004] It is obvious that these means of identification of the initial opening of the stopper must be very simple and economical as they must not entail awkward operations by the initial user or significantly increase the production costs of the non refillable stoppers which, as known, are intended for mass production for the closure of large quantities of bottles which are frequently distributed throughout the world.

[0005] The inventors of the present non refillable stopper have set the objective of very significantly increasing the security features of the stopper so as to provide a non refillable stopper having very simple features but which, after the opening thereof, simultaneously and clearly exhibits two highly visible signs which demonstrate the initial opening thereof. The inventors have demonstrated that, although the effect of a visual indicator may sometimes be unnoticed after manipulation, the production of a double security device with two highly visible indicators on the exterior of the stopper make it virtually impossible to miss said manipulation.

[0006] After numerous tests and experiments, the inventors have achieved a non refillable stopper with which, owing to a simple, original construction, by means of the mere normal opening of the stopper by unscrewing the upper portion thereof, it is possible to achieve the effect of revealing two external indicators of a special tubular closing element which cannot be re-covered after said opening operation. Since said indicators, which can have the form of annular or other elements, can have different colours, including bright colours, the appearance of the bottle equipped with the non refillable stopper of the invention, once opened, demonstrates clearly by the existence of the two very visible indicators that the stopper has already been opened, so it does not allow subsequent manipulation.

[0007] To achieve its objective, the non refillable stop-

per according to the present invention basically comprises what is known as a special tubular closing element which is connected externally to the bottle neck and has a special structure both at its upper edge and at its lower edge, and is also combined with an external laminar covering provided with a skirt, preferably made of a metal, which covers what is known as the cap of the stopper and is rotationally engaged therewith, having special design features which will be described in detail hereinafter such that respective mutual displacements of the ends of the special tubular closing element and of the external metal covering of the cap and its skirt are produced when the stopper is unscrewed and the cap therefore separated from the body to allow the subsequent egress of the liquid.

[0008] In greater detail:

The special tubular closing element has, in its lower region, a small flange which is deflected slightly radially inwards, in other words exerts a radial pressure outwards on the metal covering integral with the covering skirt, and the upper end of said tubular closing element has a flange which is similarly deflected slightly inwards, and also exerts a specific radial pressure outwards on the corresponding portion of the upper laminar covering, which further comprises numerous protrusions for radial engagement with the cap of the stopper and further comprises an internal annular projection which may be substituted by a fin, numerous separate projections or the like, for the abutment of the corresponding body flange. By means of this disposition, the unscrewing of the stopper leads to the entrainment of the external covering and, when the external covering moves upward beyond the flange of the tubular closing element, in view of the smooth outward deflection thereof, it protrudes outwards so that it occupies a greater diameter and is radially separated from the cap covering so that the cap covering cannot be reintroduced as said flange remains visible, constituting one of the obvious manifestations that the stopper has been opened. At the same time, during the initial upward unscrewing travel of the stopper, before the breakage of the weakened seal zone, the skirt of the lateral covering will have been displaced upwards and revealed the lower flange of the tubular closing element which, as it is also deflected outwards under pressure will protrude slightly and prevent reintroduction of the covering. In other words, as the stopper is opened, the lower flange of the tubular closing element covering will remain visible and, owing to its shape and/or different colouring, will indicate the manipulation of the stopper and, immediately afterwards, when the cap covering is separated from the lower skirt connected thereto, the upper flange of said tubular closing element will remain insuperably visible so that, after the egress of the bottle contents, the upper and lower flanges of the tubular closing

element will remain visible with no possibility of concealment and, owing to their special features of shape, colour, etc. will clearly demonstrate that the stopper has been opened and will prevent manipulation.

The present invention is similarly intended to achieve an additional effect of security which clearly reveals manipulation in cases where the entire stopper is to be extracted using a tool which, by resting on the lower edge thereof, enables significant traction to be effected in order to separate the entire stopper from the bottle. Owing to the arrangement according to the present invention, the T-shaped expanses of the special tubular closing element, in the aforementioned case, act as deformation elements for the external covering which will be destroyed and prevent the reuse thereof and clearly demonstrate manipulation.

To assist understanding there are attached, by way of explanatory nonlimiting examples, drawings of a preferred embodiment of the present invention, in which:

Fig. 1 shows the initial closed position of the non refillable stopper according to the invention;
 Fig. 2 is an external elevation of the stopper;
 Fig. 3 shows the open position of the stopper in which the upper cap covering portion has been separated from the lower skirt covering the tubular closing element, the two external indicators remaining visible as evidence of the opening of the stopper;
 Fig. 4 is a view similar to Fig. 2 showing an external view after separation of the cap from the skirt, in other words in the phase of opening for egress of the liquid from the bottle;
 Fig. 5 is a perspective view of the special tubular closing element which forms part of the invention;
 Fig. 6 is an elevation of the stopper with the cap removed;
 Fig. 7 is a section through a detail, showing the radial engagement of the external metal cap covering and the closure of the non refillable stopper;
 Fig. 8 is a section of a detail of the special tubular closing element;
 Fig. 9, 10 and 11 are respective sections showing the security effect of the T-shaped expanses when the external stopper covering is actuated in the event of complete extraction of the stopper using a pulling device.

[0009] As shown in the figures, the non refillable stopper according to the present invention conventionally comprises an internal closure valve 1 which is combined with what is known as the washer 2 which is the part resting on the upper edge of the bottle neck 3 and is fitted

by means of an internal wing 4 in the interior portion of the actual bottle for the purposes of sealing and retention. Said washer 2, which receives the lower plate of the valve 1 in its upper region by means of a small flange 5 further comprises a cylindrical projection 6 intended to receive the upper body 7, equipped with an external thread, on which the cap 8 is engaged, the upper portion 9 of which abuts against the upper face 10 of the internal portion of said body 7.

[0010] An external laminar covering 11 is fitted externally to the entire cap 8 and special tubular closing element 17, and has numerous recesses 12 which mate with grooves 13 in the external cylindrical portion of the closure, causing it to be rotationally engaged. In the region of its lower edge, the closure 8 comprises downwardly directed projecting radial fins 14 which combine with a recessed zone 15 of the external laminar covering 11 and cause the axial connection between said external covering 11 and the closure 8.

[0011] The special tubular closing element 17 is shown in greater detail in Fig. 5, which illustrates large lateral windows such as 21, 21', 22, 22', each of which has a T-shaped expanse such as 23 and 24 for adaptable retention on the bottle neck, joined, to its openings by central arms, for example 25 and 26. Lower openings such as 29 and 30 impart greater flexibility to the special tubular closing element 17.

[0012] The external laminar covering 11, as indicated, is also fitted to the external portion of the special tubular closing element 17 in such a way that the lower edge of the lateral wall of said metal covering 11 externally surrounds an upper projecting flange 16 of the special tubular closing element 17, which has a similar flange 18 in the lower portion, with the feature that the upper flange 16 remains slightly compressed, in other words deflected inwards and making contact with the internal portion of lateral wall of the covering laminar part 11 and the flange 18 also remains slightly compressed or deflected, and also makes contact with the corresponding internal portion of the skirt 19 connected to the metal covering 11 by means of fracturable bridges (not shown) and which, beneath the flange 16, has a zone 20 which is smoothly recessed from the bottle neck and joined to the upper portion 11 by known easy-break bridges.

[0013] Owing to the disposition of the above-described elements, the security edges 16 and 18 of said special tubular closing element 17 are concealed when the bottle is closed, as shown in Fig. 1, but, as the bottle stopper is opened, the first phase of which is shown in Fig. 3, after the short vertical displacement until the zone 20 abuts against the lower edge of the projection 16, the lower flange 18 will be revealed and, owing to the earlier deflection which it has received, will tend to move outwards and occupy a greater diameter than the skirt 19, so that said skirt cannot subsequently be reintroduced to cover said security flange 18 again. At the same time, as the displacement of the upper portion of the stopper continues, the flange 16, in view of its compressed state

and after having passed beyond the lateral wall of the covering 11 in its ascending movement, will issue outwards and occupy the position shown in Fig. 3, so that the external diameter effectively occupied by said flange 16 will be slightly greater than the lower edge of the lateral wall of the covering 11 so that, in the subsequent closed position of the bottle, the position occupied by the various elements is that shown in Fig. 3, which shows clearly that the external security flanges 16 and 18 will remain visible and cannot be concealed again by the skirt or the upper metal covering since the diameters which they now occupy, which are somewhat greater than said covering, do not allow the subsequent concealment thereof.

[0014] In order to render the security elements 16 and 18, in the form of flanges, ribs, points, crenellations or of any other type visible, the colouring thereof may be very visible and different from the remainder of the stopper so as to make the opening more clearly identifiable.

[0015] As indicated hereinbefore, the present invention enables an additional effect of security against external manipulation to be achieved, as shown in Fig. 9, 10 and 11. The existence of the T-shaped expanses such as those indicated by reference numerals 23 and 24 in Fig. 5 enables a penetration effect to be achieved with the step of the neck 3, producing an outward fold which permanently deforms the skirt 19 of the lower portion of the covering. For the sake of clarity, only the lower portion 19 of the external laminar element is shown in said figures, and it will be appreciated that, if an axial force is exerted for extraction of the stopper, the case illustrated in said figures will occur, beginning with the driving of said fins 23 in the step of the neck so as to produce an externally visible outwardly directed step in the form of projections 27, 27', 27'', etc. in a number equal to the number of previously produced T-shaped expanses and, when the extraction force is continued, the step will acquire an even more pronounced form, as shown in Fig. 10, in such a way that, when the stopper could be completely extracted, as illustrated in Fig. 11, the external covering of the lower portion 19 would have very pronounced steps 27, 27', 27'' which would indicate the destruction of said covering and would therefore make it impossible to position it again.

[0016] Said Fig. 9 to 11 also show the connection by means of corresponding ribs and recesses between the bottle neck and the tubular closing element 17, the projections 29, 29', etc. of the bottle neck which are combined with ribs 30, 30', etc. of the tubular closing element 17 being illustrated.

[0017] It is obvious that the present invention will allow the various security devices described to be used together, in other words the security elements involving the external ribs 16 and 18 can be used together with the system of T-shaped fins or any of them independently.

[0018] The disposition of the T-shaped fins such as 23 and 24 shown in Fig. 5 is illustrated in greater detail in said figure showing the possible disposition of easy-break connecting bridges at the edges, such as those

indicated by reference numerals 31 and 32, which will improve the driving thereof into bottles of inferior quality, in other words lesser precision of the flange and possibly smaller width of the drive-in step.

[0019] It will be appreciated that the arrangement of the non refillable stopper according to the present invention provides, in a very simple and practical manner, a double device for security against manipulation of the stopper which will not be salvageable for possible manipulators of the bottle attempting to refill the bottle at a later stage.

[0020] It will also be appreciated that, although the invention has been described in detail with respect to an embodiment thereof, said embodiment does not limit the present invention, of which the essence lies in the scope of the following claims.

Claims

1. Non refillable stopper for beverage bottles, of the type comprising an internal washer coupled to the bottle neck and carrying a movable closure valve, the washer also having a projecting cylindrical portion for receiving the stopper body equipped with the external thread for the cap and possessing a lower tubular portion which is coupled to the external portion of the bottle neck, with a laminar covering which externally covers the cap and the tubular body assembly joined to the exterior of the neck, **characterised in that** a special tubular closing element forming a tubular body which is connected to and surrounds the upper portion of the bottle neck has an upper projecting flange and a lower projecting flange respectively which are pressed inwards by the action of the external laminar covering, which may be displaced vertically during the stopper opening operation, so that said flanges, in view of their compressed disposition, thus protrude resiliently outwards when they are released by the laminar covering, and prevent said external laminar covering from descending again, said flanges being permanently visible and demonstrating the prior opening of the bottle stopper.
2. Non refillable stopper for beverage bottles according to claim 1, **characterised in that** the laminar covering of the stopper cap has means for radial connection to said cap so that, when the upper portion of the stopper is rotated, said laminar covering and the cap screwed to the body rotate simultaneously.
3. Non refillable stopper for beverage bottles according to claim 2, **characterised in that** the radial connection means consist of a series of matching recesses and projections which mate with one another and are produced in said external laminar covering and in the upper threaded cap of the stopper.

4. Non refillable stopper for beverage bottles according to the preceding claims, **characterised in that** the upper threaded cap of the stopper has lower internal fins which combine with recessed zones of the external laminar covering so as to axially connect said threaded cap to said external laminar part. 5
5. Non refillable stopper for beverage bottles according to claim 1, **characterised in that** the upper edge of the lower laminar body covering the bottle neck has a zone which is smoothly recessed with respect to the bottle neck and joined to the upper portion of said laminar cap covering by fracturable bridges. 10
6. Non refillable stopper for beverage bottles according to claim 1, **characterised in that**, between the upper edge of the recessed zone of the lower laminar body covering the neck and the upper flange of said special tubular closing element, there is disposed a separation which is greater than the height of the lower flange of the actual special tubular closing element so that the lower flange is completely exposed before said recessed zone abuts the lower portion of the upper flange of the special tubular closing element. 15
20
25
7. Non refillable stopper for beverage bottles according to claim 1, **characterised in that** the external diameters of the upper and lower flanges of the special tubular closing element in the released position, in other words when relaxed, are slightly greater than the opposing portions of the external laminar covering so that, when relaxed and after the ascending vertical displacement of said external laminar covering, said flanges cannot be concealed by a new descent of said external laminar part. 30
35
8. Non refillable stopper for beverage bottles according to claim 1, **characterised in that** the special tubular closing element has large lateral openings, each of which is provided with a T-shaped retaining expanse capable of being driven by its upper edge in the lower flange of the bottle neck in the event of an attempt to extract the stopper assembly axially, causing said retaining expanses to be folded outwards while marking and/or destroying the external laminar covering and thus demonstrating manipulation. 40
45
9. Non refillable stopper for beverage bottles according to claim 8, **characterised in that** each of the T-shaped retaining expanses is joined to the body of the tubular closing element by its lateral edges by means of easy-break bridges, thus improving the driving thereof into bottles of inferior quality. 50
55

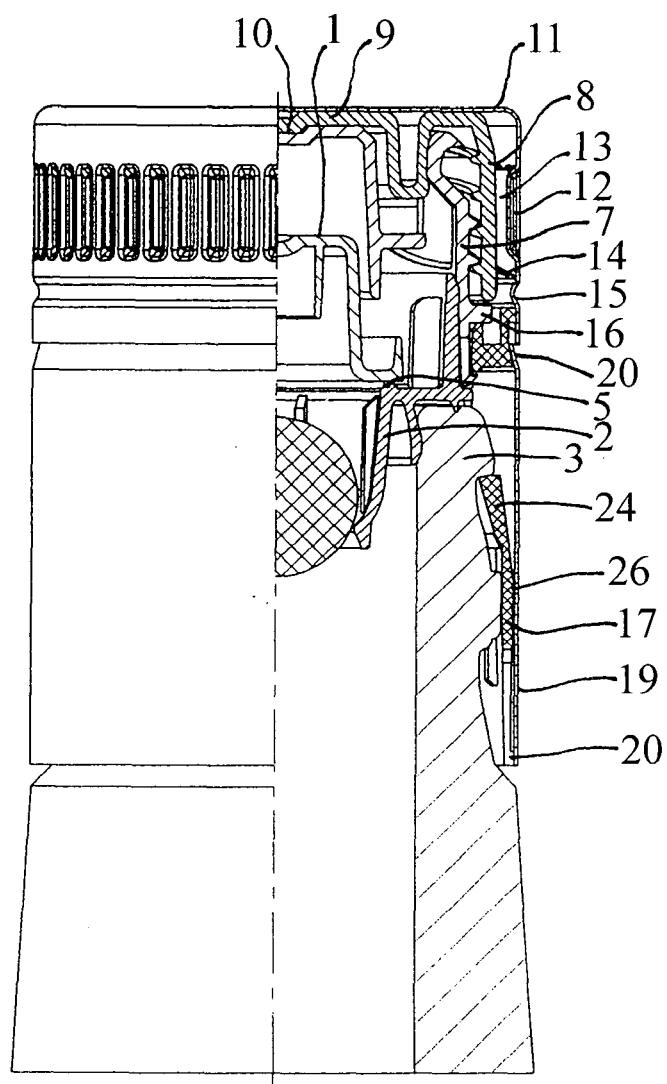


FIG. 1

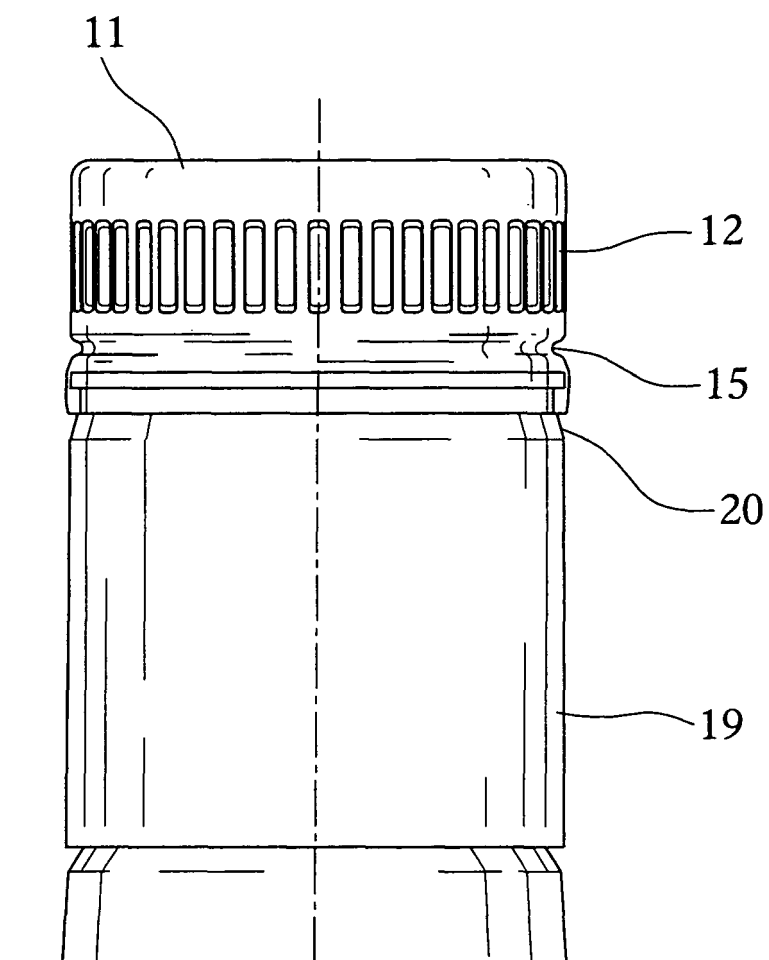


FIG. 2

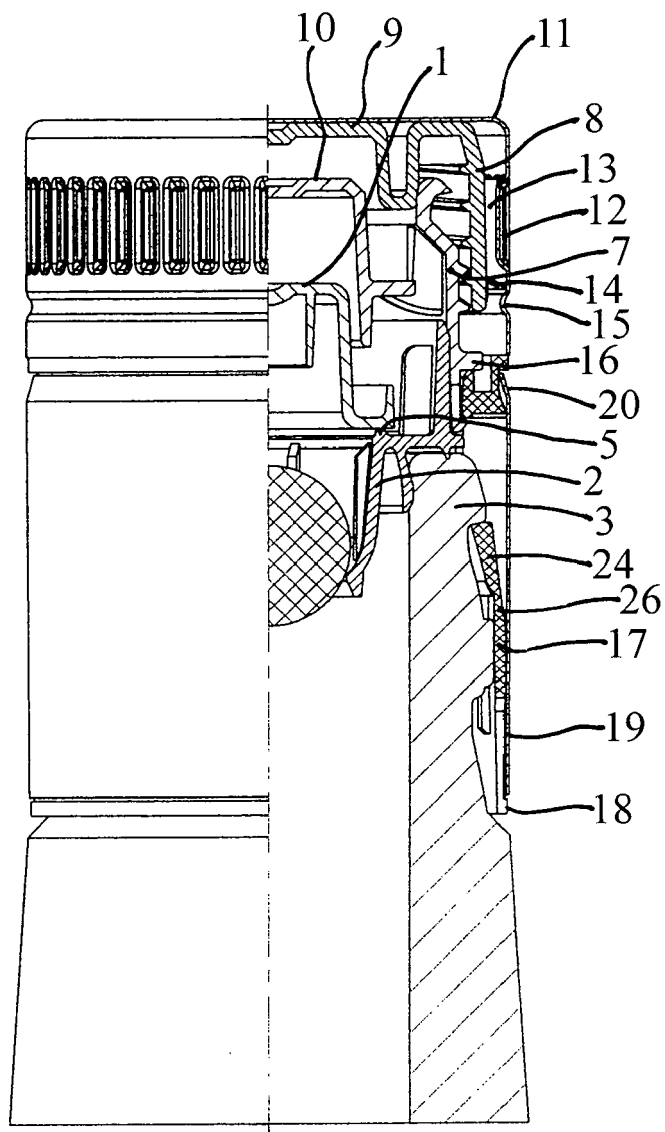


FIG. 3

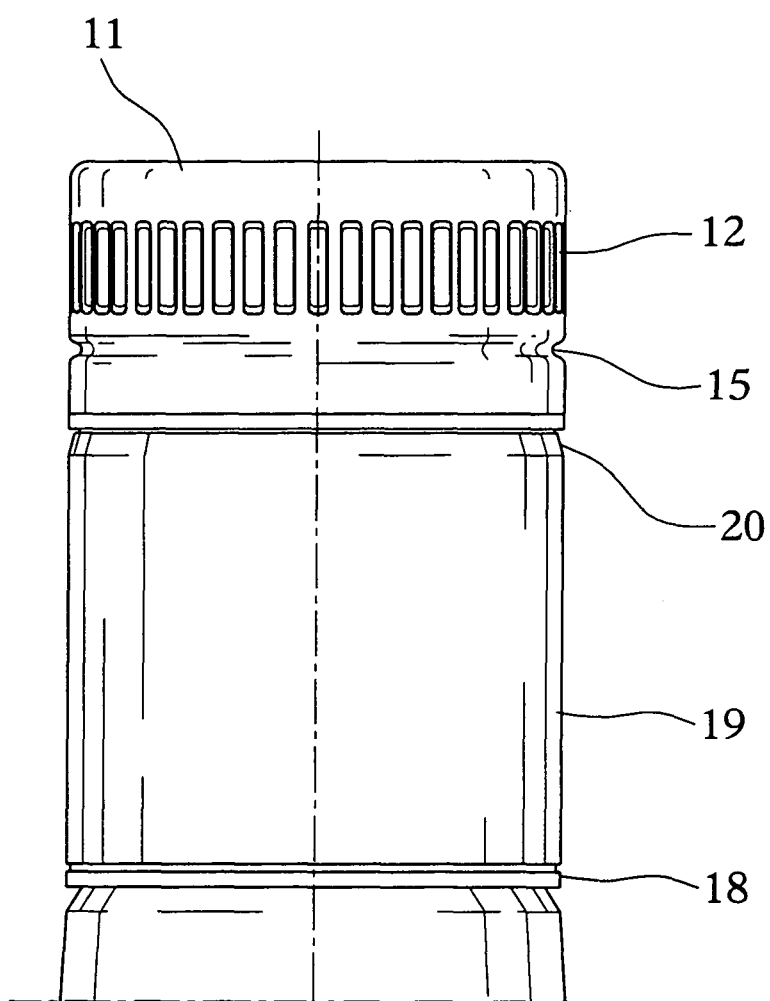


FIG. 4

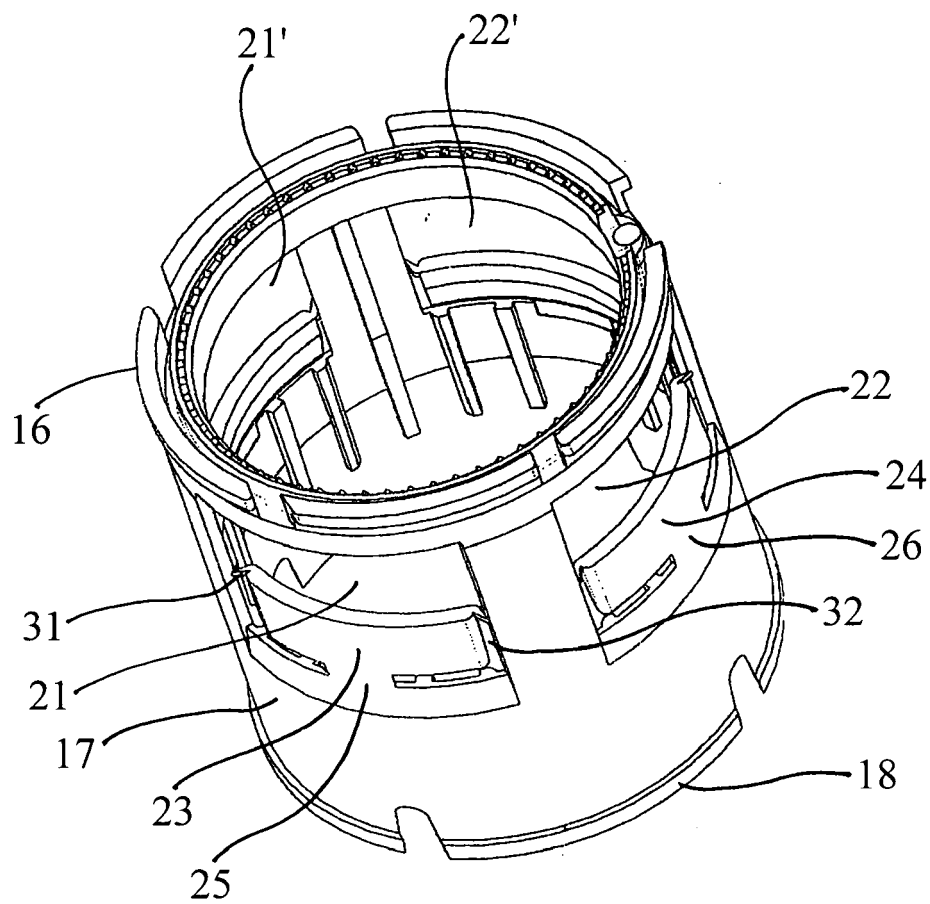


FIG. 5

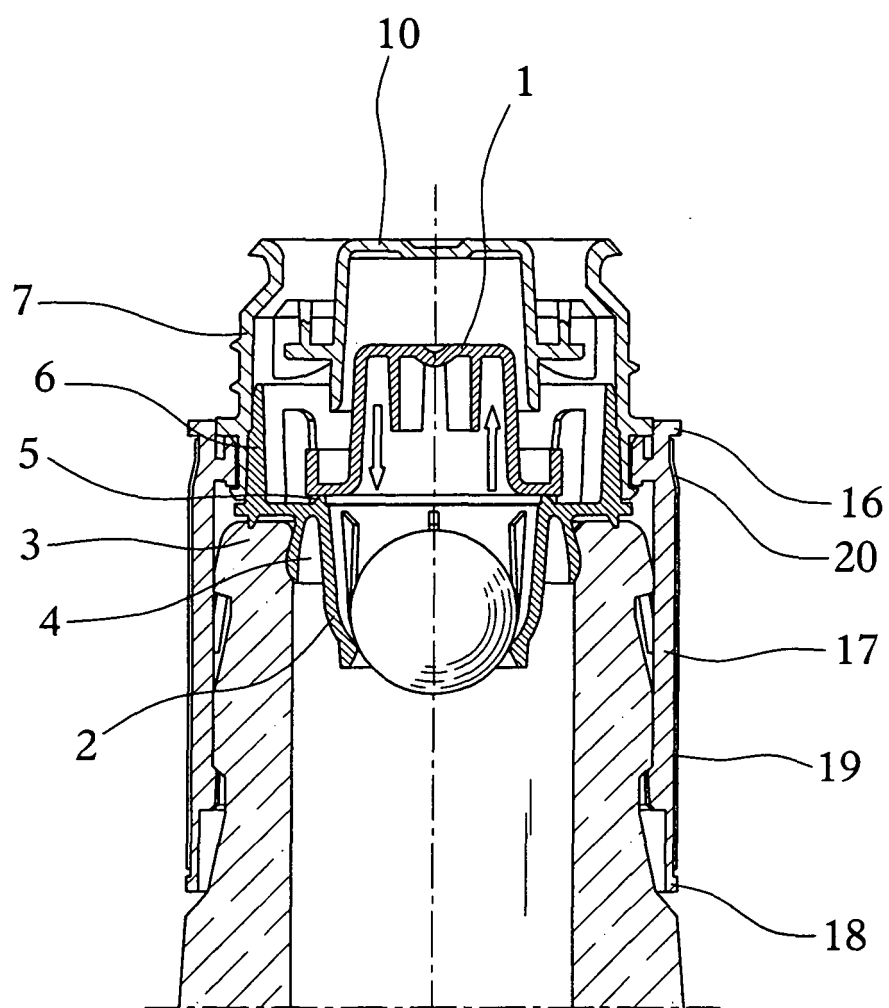


FIG. 6

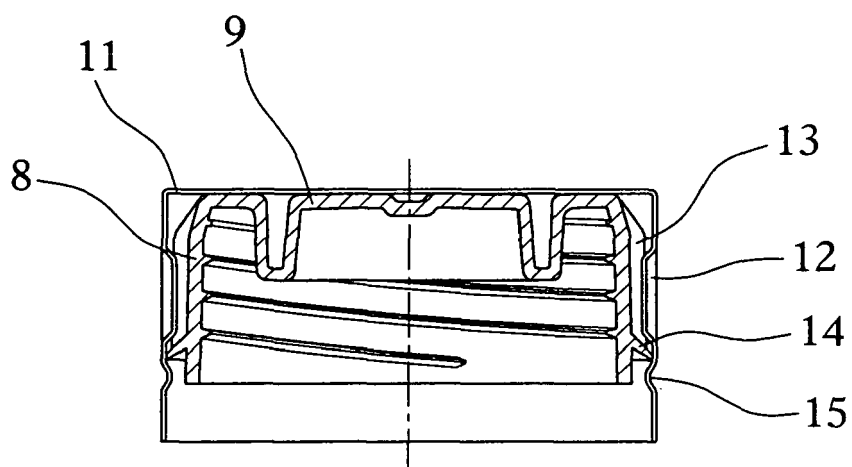


FIG. 7

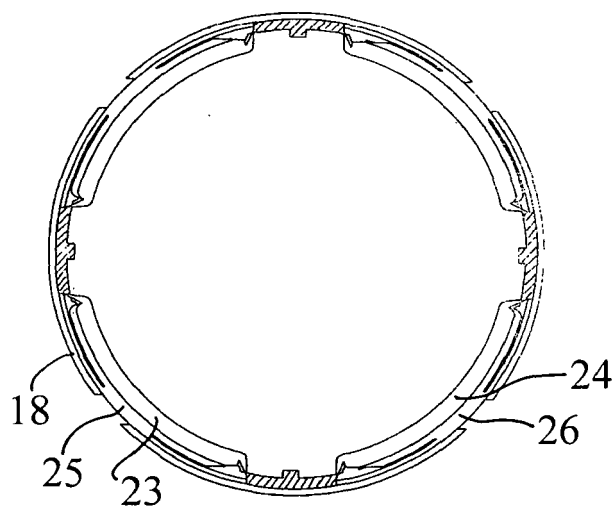
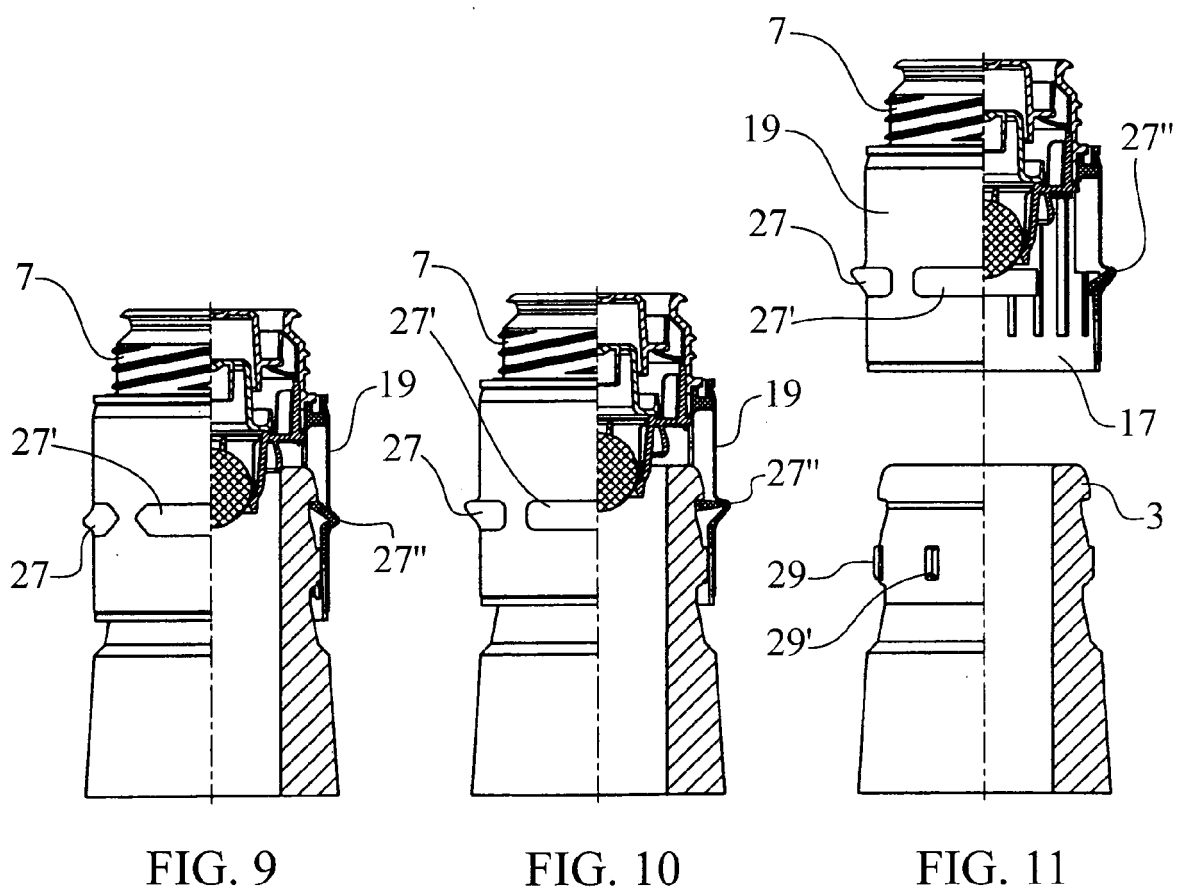


FIG. 8





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 38 0267

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	GB 2 390 086 A (* DANIEL MONTGOMERY & SON LIMITED) 31 December 2003 (2003-12-31) * page 16, line 5 - page 30, line 3; figures 1-5 *	1	INV. B65D55/08
A	WO 02/083518 A (GUALA CLOSURES S.P.A; BATTEGAZZORE, PIERO) 24 October 2002 (2002-10-24) * abstract; figure 1 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 1 June 2006	Examiner Augustin, W
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

2
EPO FORM 1503 03/82 (P04/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 38 0267

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-06-2006

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
GB 2390086	A	31-12-2003	AU	2003236886 A1		22-12-2003
			CN	1659084 A		24-08-2005
			EP	1511677 A1		09-03-2005
			WO	03104100 A1		18-12-2003
			MX	PA04012131 A		24-05-2005

WO 02083518	A	24-10-2002	BR	0116959 A		03-08-2004
			EP	1373087 A1		02-01-2004
			GB	2375532 A		20-11-2002
			IT	MI20020616 A1		25-09-2003
			MX	PA03009098 A		12-02-2004
			PL	363755 A1		29-11-2004
