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

(11) EP 2 559 632 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
20.02.2013 Bulletin 2013/08

(21) Application number: **11382279.5**

(22) Date of filing: **16.08.2011**

(51) Int Cl.:
B65D 47/12 *(2006.01)* ***B65D 47/04*** *(2006.01)*
B65D 47/14 *(2006.01)* ***B65D 47/08*** *(2006.01)*

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

(71) Applicant: **DPI INTERNATIONAL S.A.S.**
69220 Belleville-sur-Saône (FR)

(72) Inventor: **Alberto Ochoa Laburu**
20001 San Sebastian (Guipúzcoa) (ES)

(74) Representative: **Carpintero Lopez, Francisco et al**
Herrero & Asociados, S.L.
Alcalá 35
28014 Madrid (ES)

(54) Cap for oil bottles and similar

(57) Sealing cap for oil bottles which comprises a pouring element (2) coupled to the neck (1a) of a bottle (1), comprising a second extension (2a) which extends beyond the neck (1 a) of the bottle (1); a capsule (4) which can be coupled to said pouring element (2) and/or neck (1 a) of the bottle (1), which comprises an obturator (5) and a skirt (6), wherein the obturator (5) comprises a peripheral projection which gives rise to a first upper cylindrical surface (5a) and to a second lower cylindrical surface (5b); a circumferential partition wall (8) disposed towards the neck (1a) of the bottle (1) and at the back of the obturator (5); and a housing (9) defined between the circumferential partition wall (8) and the inner wall of the first cylindrical surface (5a), for introduction and coupling of the second ring-shaped extension (2a) of the pouring element (2), preventing the oil from leaking out of the interior of the bottle (1) towards the exterior.

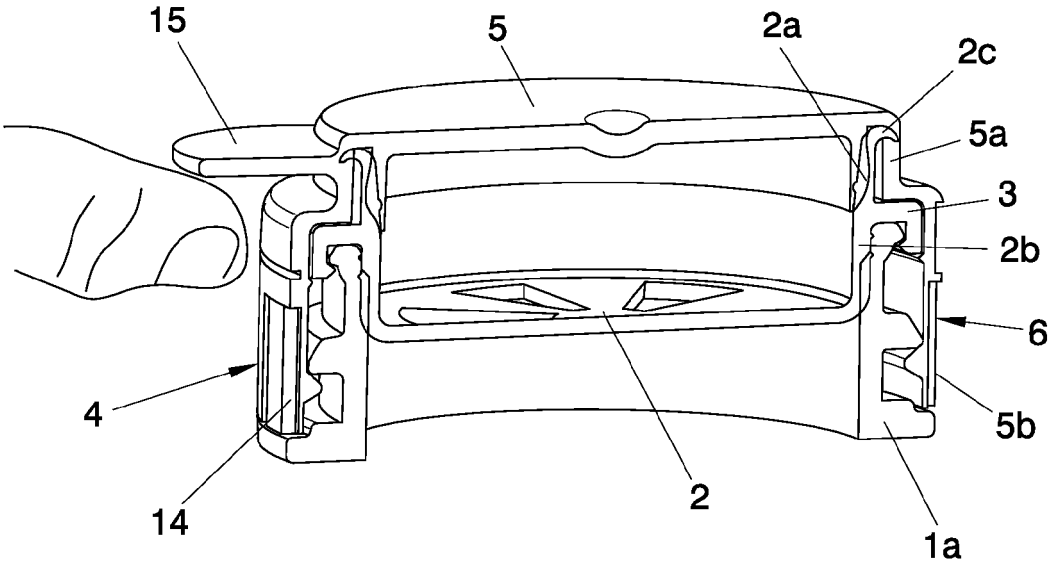

FIG. 1

EP 2 559 632 A1

Description

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention relates to a sealing cap of the type normally used to seal bottles or containers containing oil or similar fluids in their interior, wherein said cap is applicable to the food and food preservation industry.

[0002] This sealing cap for oil bottles serves a triple purpose: firstly, to improve the watertightness of the oil in the interior of the bottle through a simple and novel design; secondly, to simplify the shape of the cap, expediting production thereof with a lower rejection rate by simplifying the moulding process, generally injection moulding, and the cost of manufacturing the cap object of the invention; and finally to prevent, to the extent possible, the aperture of the cap from generating residual elements stemming from aperture thereof, such as the tear strip which is required in current caps to open the cap.

BACKGROUND OF THE INVENTION

[0003] The aforementioned problem for achieving watertightness in bottles and containers containing oil or similar products is currently known in the state of the art, in such a manner that, on being a viscous and dense product, it can leak through the cap area of the bottle or container in a relatively easy manner, leaving traces of oil and soiling both the cap and the bottle itself and resting areas thereof.

[0004] To this end, multiple alternatives have been developed with a view to guaranteeing the correct watertightness of the bottle. Thus, for example, French patent 0251123 discloses a cap composed of a pouring element which is fixed by means of plugging to the neck of the bottle and which projects outwards in a pouring spout finishing in a flexible lip, in such a manner that watertightness between the pouring spout and the sealing capsule is achieved by means of high-pressure coupling between the pouring spout and a circumferential ring disposed inside the obturator; however, in practice, watertightness is easily lost due to the loss of contact between the pouring spout and the circumferential ring.

[0005] This problem is solved in Spanish patent 2139076, which discloses a cap for oil having a pouring element with a vertical extension which is housed inside the cap; in order to achieve said watertightness, the cap has a pair of circumferential partition walls at the back which define a ring-shaped space wherein the vertical extension of the pouring element is housed. This prevents the oil from leaking out through the cap area due to the good watertightness achieved by introducing the pouring spout between the two circumferential partition walls of the cap, whereby the pouring spout and its flexible lip comes into contact with the three walls that delimit the housing formed between the two rings.

[0006] Thus, the first solution does not achieve a secure watertight seal between the cap and the obturator, while the second solution achieves a good watertight seal but complicates the mould and requires excess material to form the second partition wall. The cap described in Spanish patent 2.127.076 is complemented with a skirt which allows joining of the capsule to the bottle by means of inner protuberances of the skirt which interlock along a peripheral edge of the bottle neck.

[0007] Complementarily, currently used oil bottle caps include a tear off seal or closure for aperture thereof which, in addition to the cost in terms of raw material, produces disposable material and the ensuing environmental and ecological problems.

[0008] Due to this, in light of the aforementioned patents and the expounded drawbacks relative to improving the watertightness of the cap, simplifying the design, simplifying the mould for forming thereof and avoiding the existence of disposable materials which incur a cost in terms of material and recovery and elimination of the tear off seal, a new cap for sealing oil bottles is required which avoids the previously mentioned drawbacks, in addition to giving the cap an aesthetic appearance which differentiates it from the currently known state of the art, in such a manner that the user is familiar with and distinguishes the sealing device object of the invention from other sealing devices, as well as appreciating the environmental efficiency, among others, achieved in forming thereof.

DESCRIPTION OF THE INVENTION

[0009] The present invention relates to a sealing cap for oil bottles or similar, which allows simplification of the design of the cap itself, a reduction in the amount of material to be used, in turn reducing moulding time, and simplification of the mould for forming the cap object of the invention, as well as giving the unit a personalisable and distinctive design, all by means of a simple sealing cap which can be adapted to any bottle or container currently available on the market.

[0010] The sealing cap for oil bottles proposed by the invention comprises:

- A pouring element which comprises:
    - o a first ring-shaped extension which can be coupled by plugging or high-pressure coupling to the neck of a bottle;
    - o a second extension or pouring spout which projects outwards towards the bottle neck; and
    - o an open, outer circumferential ring which is introduced into the neck of the bottle, in such a manner that the pouring element is joined to the bottle by plugging the first ring-shaped extension into the neck of said bottle and by interlocking or clipping of the outer peripheral edge of the bottle neck onto the housing of the outer circumferential ring; additionally, the pouring ele-

ment has a transverse partition wall having grooves or orifices which allow the passage of the oil or liquid in question from the interior of bottle towards the pouring spout.

- A capsule, which can be coupled to said pouring element and/or to the bottle neck, which comprises a fold back obturator and a skirt, said obturator and skirt being joined together by means of a juncture or hinge which allows tilting of the obturator in relation to the skirt to achieve aperture and/or closure of the cap; wherein the obturator comprises:

  o A peripheral projection that separates a first cylindrical surface located on the upper part of said obturator from a second, lower cylindrical surface, in such a manner that the outer and inner diameters of the first cylindrical surface of the obturator are smaller than the outer and inner diameters of the second cylindrical obturator surface,

  o A circumferential partition wall disposed at the back or inner base of the obturator, perpendicular to said base, extending towards the bottle neck; wherein said partition wall is preferably bevelled, in such a manner that its height is greatest at the beginning of the seal of the obturator against the pouring element, the height of said partition wall decreasing towards the opposite side.

  o A chamber or housing for the watertight seal, defined between the inner wall of the first cylindrical obturator surface and the circumferential partition wall perpendicular to the base of the aforementioned obturator, in the housing of which the second ring-shaped extension of the obturator penetrates in the closed position, producing a watertight seal by deformation of said second ring-shaped extension against the walls of the aforementioned housing.

[0011] These technical characteristics differentiate the sealing device object of the invention from the sealing devices currently known in the state of the art and specifically from French patent 251123 and Spanish patent ES 2137076, as the peripheral projection located on the upper part of said cap achieves a triple objective:

1. Eliminate the second circumferential partition wall of the cap (as disclosed in ES2137076), thereby significantly simplifying the cap shaping mould and moulding process while saving on material, all of which improves the production cycle and costs.
2. Improve cap watertightness, as the chamber or housing defined between the inner wall of the first cylindrical partition wall of the obturator and the circumferential partition wall which emerges perpendicularly from the back of the aforementioned obturator is more robust and allows correct high-pressure coupling of the pouring spout therewithin.
3. Achieve a unique and differentiating outer cap design in relation to other currently known caps, as caps currently have an a completely projection-free cylindrical outer geometry, as described in the caps mentioned in the background of the invention.

[0012] With regard to the best way of guaranteeing watertightness of the sealing cap object of the invention, the possibility of the second ring-shaped extension of the pouring element comprising a flexible lip which is coupled to the back of the obturator and inside the ring-shaped space comprised between the inner wall of the first cylindrical surface of the obturator and the wall of the circumferential partition wall of the obturator is envisaged; said lip has flexible mechanical properties, in such a manner that the second ring-shaped extension of the pouring element is not only coupled to the ring-shaped wall of the obturator but is also coupled to the back of the obturator, giving rise to a larger watertight surface area between the pouring element and the cap.

[0013] The possibility of the skirt comprising a plurality of inner projections which can come into contact with the peripheral edge of the bottle neck to achieve fixation of the capsule to the bottle through the aforementioned skirt is envisaged.

[0014] Additionally and relative to the aperture of the obturator in relation to the skirt as of rotation of the hinge, the possibility of the range of angular values occupied by the hinge being comprised between 60° and 90° is envisaged.

[0015] In order to guarantee the inviolability of the sealing device object of the invention and to avoid possible adulteration of the product (oil, vinegar or similar) contained in the bottle, the possibility of the cap comprising at least one weakened groove made in the aperture area of the obturator has been envisaged, where said, at least one, groove can break at the time of aperture of said obturator by way of a weakened cap area; i.e. the thickness or contact area between the groove and the cap is small, sufficient for the groove to crack and allow the user to visually verify that the cap has not been opened beforehand; i.e. it acts as warning mechanism, alerting of aperture prior to purchase of the bottle by the user.

[0016] Likewise, the possibility of the cap comprising a plurality of vertical grooves disposed in the lower part of the skirt next to the bottle's access mouth is envisaged, wherein said vertical grooves can break upon forced unscrewing of the cap, once again by way of a weakened area of said cap.

[0017] In relation to the initial aperture of the lid of the cap object of the invention, two possibilities are envisaged:

1) The first of these envisages that the cap will comprise a tear off seal between the obturator and the skirt, disposed peripherally in relation to the cap with

the exception of the area where the hinge is defined, wherein said tear off seal allows folding back and aperture of the obturator in relation to the skirt; this seal is commonly used in the caps of current bottles, which is perfectly combinable with the previously described technical characteristics but gives rise to a non-recommendable waste of material, although with the possibility of use with the previously described peripheral projection.

When opening the obturator upon removing the tear off seal, said obturator may be open thanks to a small projection or cavity formed in said lid, as the force of aperture and folding back of said lid is very limited on having previously removed said tear off seal.

2) The second possibility envisages separation of the obturator and skirt of the capsule by means of a cut, keeping the obturator and skirt joined together by a plurality of connections of the moulded material itself, said connections being breakable at the time of aperture of the cap by pushing or pulling a flange disposed on the obturator.

[0018] This solution avoids the use of a tear off and subsequently disposable seal due to the fact that, as of said cut disposed along the perimeter of the capsule of the cap and, logically, without being disposed in the hinge area, it allows the only joining area between the lid and the body to be the plurality of connections, in such a manner that, in order to proceed with the aperture of the lid, the user must break said connections.

[0019] Said connections are disposed in the interior of the cap, not being visible from the exterior by the user, and are located between the area limited by the obturator and the skirt, being formed in the cap mould itself, for subsequently performing said peripheral cut, which does not break said connections.

[0020] The possibility of extending the cut to the entire circumference of the obturator and skirt, with the exception of the hinge area, is envisaged, said area being recessed to avoid severing thereof on performing said cut.

[0021] It can be observed that, in order for the user to open or unseal the obturator, aperture force increases in relation to the earlier tear off seal possibility, due to which the possibility of the obturator comprising a visor adequate for facilitating the aperture operation of said obturator is envisaged, in such a manner that the user rests one of his/her fingers underneath said visor and pushes the obturator, tearing it along the previously described cut.

[0022] As mentioned earlier in relation to the execution of said cut, the possibility of the hinge being disposed at a distance from the centre of the cap smaller than the distance from the perimeter of the upper or lower cylinder (depending on the height of the cap lid) is envisaged; in such a manner that the blade in charge of performing said cut does so along a previously defined cutting radius which does not come into contact with the hinge, due to which it is the only area where the cut is not performed and prevents the hinge, upon cutting the obturator, from breaking also, improving subsequent sealing of the bottle obturator.

[0023] Finally, the possibility of the housing defined between the circumferential partition wall and the inner wall of the first cylindrical surface comprising a plurality of stiffening elements for guaranteeing that the circumferential partition wall of the cap does not break during coupling of the second ring-shaped extension of the pouring element inside said space is envisaged.

[0024] Therefore, according to the described invention, the cap for oil bottles proposed by the invention constitutes an advance in the sealing caps used to date and solves the previously expounded problems in a fully satisfactory manner in that it improves cap watertightness, simplifying the design and shape thereof, as well as giving it a unique and differentiating outer design in relation to the other caps of the state of the art.

DESCRIPTION OF THE DRAWINGS

[0025] In order to complement the description being made and with the object of helping to better understand the characteristics of the invention, according to a preferred example of practical embodiment thereof, a set of drawings has been included as an integral part of said description, wherein the following has been represented in an illustrative and non-limiting manner:

Fig. 1 shows a schematic perspective view of a cross-section of the cap object of the invention;

Fig. 2 shows a schematic elevational view of a cross-section of the cap object of the invention;

Fig. 3 shows a schematic perspective view of the cap object of the invention, where the cut made thereto for subsequent tearing off thereof, as well as the plurality of connections in the interior of the cap, can be observed;

Fig. 4 shows a schematic view of the sealing cap with the respective vertical grooves by way of aperture warning mechanisms;

Fig. 5 shows a schematic perspective view of a cross-section of the cap object of the invention, wherein the cutting line and one of the connections can be observed;

Fig. 6 shows a section of the cap, wherein the peripheral cut, plurality of connection points, vertical grooves by way of warning mechanisms and bevelling of the circumferential partition wall of the cap can be observed;

Fig. 7 shows a section of the pouring element, with its corresponding ring-shaped extensions;

Fig. 8 shows a sequence of views related to the aperture of the cap object of the invention; and

Fig. 9 shows a schematic view of the different elements to be coupled to the bottle which comprises the cap object of the invention.

PREFERRED EMBODIMENT OF THE INVENTION

[0026] In light of the aforementioned figures, it can be observed that one of the possible embodiments of the cap for oil bottles (1) or similar proposed by the invention comprises:

- A pouring element (2) coupled to the neck (1a) of the bottle (1), wherein said pouring element (2) comprises:
  - ■ a first extension (2b) which is introduced into the neck (1a) of a bottle (1) at high pressure;
  - ■ a second extension or pouring spout (2a) which extends beyond the neck (1a) of the bottle (1);
  - ■ an outer circumferential ring (3), open in its lower part, whereinto the neck (1a) of the bottle (1) is inserted to keep the pouring element (2) joined to the outer peripheral edge of the neck (1 a) of said bottle (1);
  - ■ a peripheral projection which gives rise to a first upper cylindrical surface (5a) and a second lower cylindrical surface (5b), the outer and inner diameters of the first cylindrical surface (5a) being smaller than the outer and inner diameters of the second cylindrical surface (5b);
  - ■ a circumferential partition wall (8) disposed towards the neck (1a) of the bottle (1) and at the back of the obturator (5); and
  - ■ a housing (9) defined between the circumferential partition wall (8) and the inner wall of the first cylindrical surface (5a), for introduction and coupling of the second ring-shaped extension (2a) of the pouring element (2).
- A capsule (4) which can be coupled to said pouring element (2) and to the neck (1a) of the bottle (1), which comprises an obturator (5) and a skirt (6), joined by a juncture or hinge (11) which allows tilting of the obturator (5) over the skirt (6).

[0027] It can be observed in the details of figures 1, 2 and 7 how the second ring-shaped extension (2a) of the pouring element (2) comprises a flexible lip (2c) which is coupled to the back of the obturator (5) and inside the housing (9) comprised between the inner wall of the first cylindrical surface (5a) of the obturator (5) and the circumferential partition wall (8) of the obturator (5), increasing the contact surface area between the second ring-shaped extension (2a) of the pouring element (2) and the capsule (4), thereby improving the watertightness of the capsule (4) in said area.

[0028] It can also be observed that, when performing coupling between the neck (1a) of the bottle (1), the pouring element (2) and the capsule (4), the pouring element (2) includes a first extension (2b) in a radial direction towards said pouring element (2); wherein said first extension (2b) is coupled to the neck (1 a) of the bottle (1) and wherein the first ring-shaped extension (2b) has a plurality of hook-shaped projections which are coupled to another set of projections disposed at the end of the neck (1 a) of the bottle (1); likewise, it can be observed that the skirt (6) of the capsule (4) comprises a plurality of inner projections (7) which can come into contact with respective projections belonging to the neck (1a) of the bottle (1) and which prevent extraction thereof.

[0029] With regard to the aperture of the obturator (5) in relation to the skirt (6), it can be observed that in one preferred embodiment, the obturator (5) and the skirt (6) of the capsule (4) are separated by a cut (10), the obturator (5) and the skirt (6) being joined by a plurality of connections (13) of the moulded material itself, said connections (13) being breakable at the time of aperture of the cap by pushing or pulling a flange (15) disposed on the obturator (5). Said cut (10) extends throughout the circumference of the obturator (5) and the skirt (6), with the exception of the hinge (11) area, said area being recessed to avoid severing thereof when performing the cut (10).

[0030] Finally, in light of figures 4 and 6, it can be observed that:

- The obturator (5) has an outer pair of weakened grooves (12) next to the aperture flange (15), which break and alert the user that the obturator (5) has been opened or fraudulently manipulated.
- The skirt (6) has a plurality of weakened vertical grooves (14) which break and alert the user of the fraudulent manipulation of the cap in the coupling area of the skirt (6) and the neck (1 a) of the bottle (1).

[0031] In light of this description and set of figures, a person skilled in the art will understand that the described embodiments of the invention can be combined in multiple ways within the object of the invention. The invention has been described according to some preferred embodiments thereof, but for a person skilled in the art it will be evident that multiple variations can be introduced in said preferred embodiments without detracting from the object of the claimed invention.

Claims

1. Sealing cap for oil bottles which comprises a pouring element (2) coupled to the neck (1a) of a bottle (1), wherein said pouring element (2) comprises a first extension (2b) which is introduced at high pressure into the neck (1 a) of a bottle (1); it additionally comprises a second extension or pouring spout (2a) which extends outside of the neck (1 a) of the bottle (1) and comprises an outer circumferential ring (3), open in the lower part thereof, whereinto the neck (1 a) of the bottle (1) is inserted to keep the pouring element (2) joined to the outer peripheral

edge of the neck (1a) of said bottle (1);
a capsule (4) which can be coupled to said pouring element (2) and/or to the neck (1 a) of the bottle (1), comprising an obturator (5) and a skirt (6) joined by a juncture or hinge (11) which allows tilting of the obturator (5) over the skirt (6), said obturator (5) being **characterised in that** it comprises
a peripheral projection which gives rise to a first upper cylindrical surface (5a) and a second lower cylindrical surface (5b), the outer and inner diameters of the first cylindrical surface (5a) being smaller than the outer and inner diameters of the second cylindrical surface (5b);
a circumferential partition wall (8) disposed towards the neck (1a) of the bottle (1) and on the back of the obturator (5); and
a housing (9) defined between the circumferential partition wall (8) and the inner wall of the first cylindrical surface (5a) for introduction and coupling of the second ring-shaped extension (2a) of the pouring element (2).

2. Sealing cap for oil bottles, according to claim 1, **characterised in that** the obturator (5) and the skirt (6) of the capsule (4) are separated by a cut (10), the obturator (5) and skirt (6) being joined by a plurality of connections (13) of the moulded material itself, said connections (13) being breakable at the time of aperture of the cap by pushing or pulling a flange (15) disposed on the obturator (5).

3. Sealing cap for oil bottles, according to claim 2, **characterised in that** the cut (10) extends throughout the circumference of the obturator (5) and the skirt (6), with the exception of the hinge (11) area, said area being recessed in order to avoid severing thereof when performing the cut (10).

4. Sealing cap for oil bottles, according to claim 1, **characterised in that** the obturator (5) and the skirt (6) of the capsule (4) are separated by a tear off seal disposed peripherally in relation to the capsule (4), with the exception of the area where the hinge (11) is defined; wherein said tear off seal allows folding back and aperture of the obturator (5) in relation to the skirt (6).

5. Sealing cap for oil bottles, according to any of the preceding claims, **characterised in that** the second ring-shaped extension (2a) of the pouring element (2) comprises a flexible lip (2c) which is coupled to the back of the obturator (5) and inside the housing (9), comprised between the inner wall of the first cylindrical surface (5a) of the obturator (5) and the wall of the circumferential partition (8) of the obturator (5).

6. Sealing cap for oil bottles, according to any of claims 2 to 5, **characterised in that** the obturator (5) externally comprises at least one weakened groove (12) next to the aperture flange (15) which breaks, alerting that the obturator (5) has been opened or fraudulently manipulated.

7. Sealing cap for oil bottles, according to any of the preceding claims, **characterised in that** the skirt (6) has a plurality of weakened vertical grooves (14) which break and alert the user of the fraudulent manipulation of the cap in the coupling area of the skirt (6) and the neck (1 a) of the bottle (1).

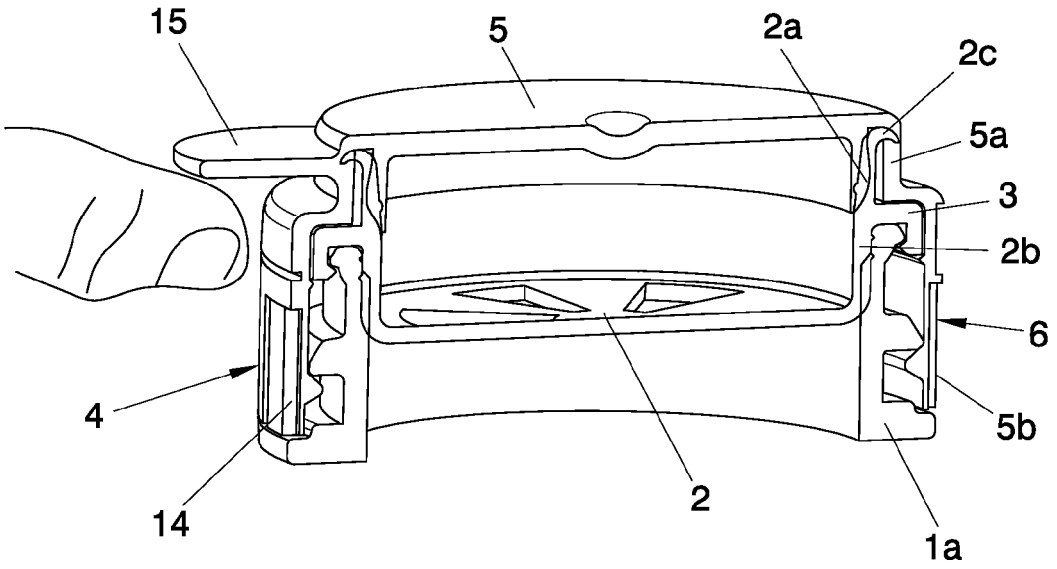

FIG. 1

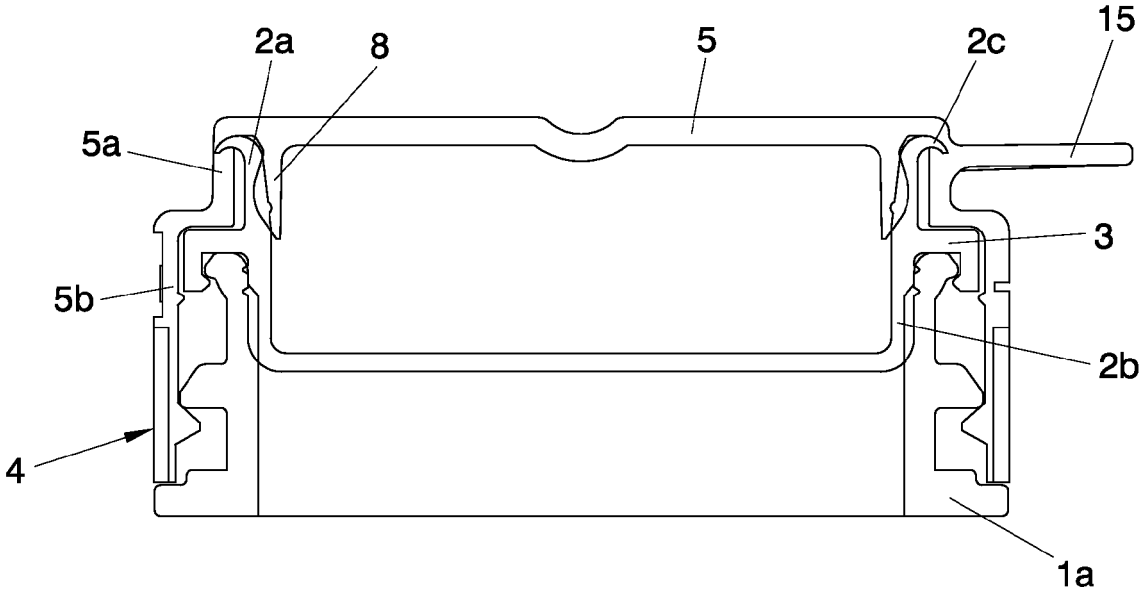

FIG. 2

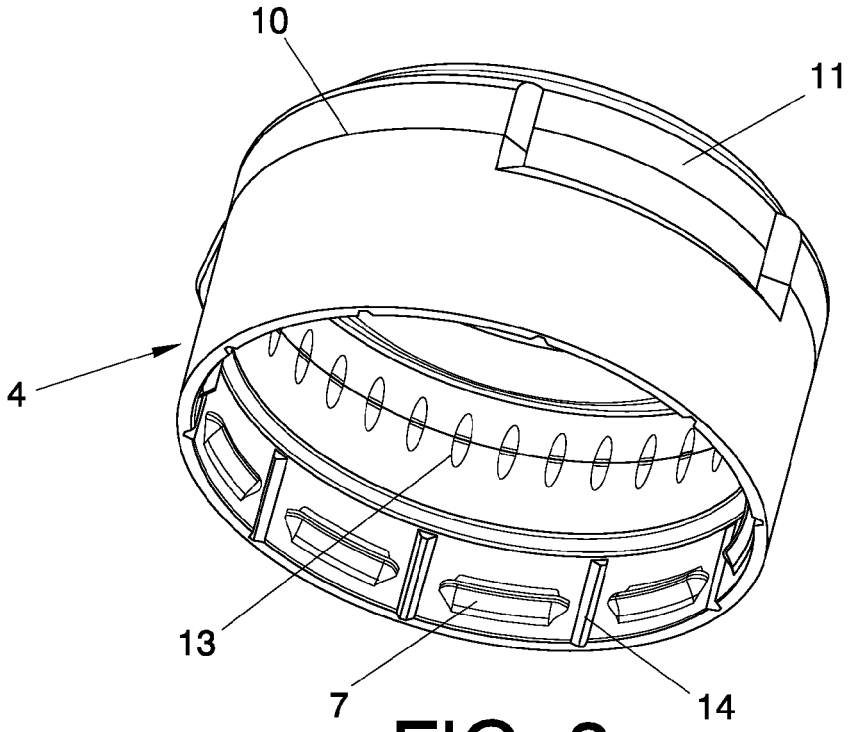

FIG. 3

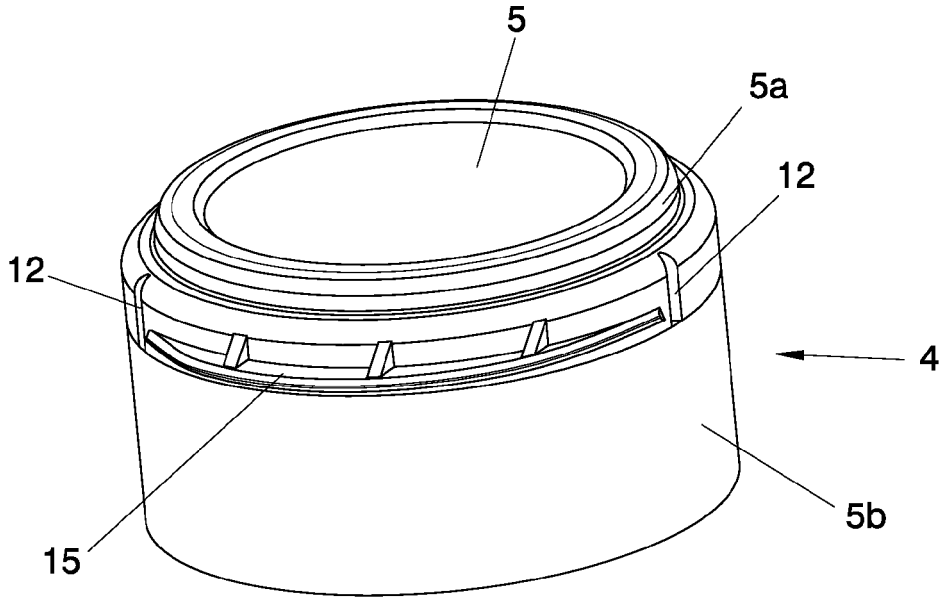

FIG. 4

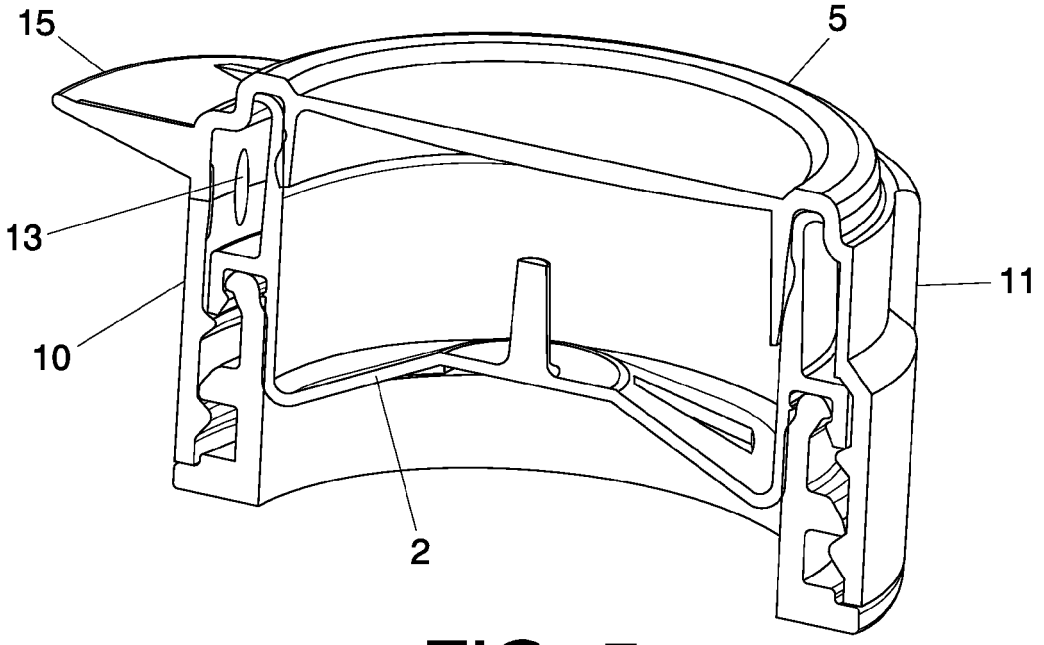

FIG. 5

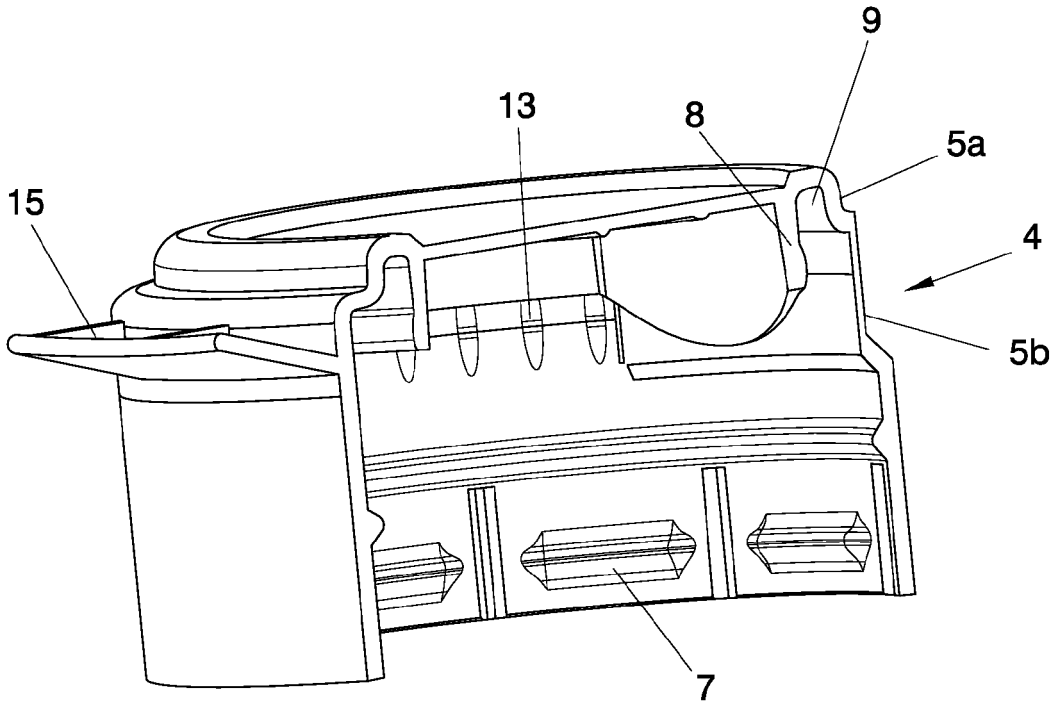

FIG. 6

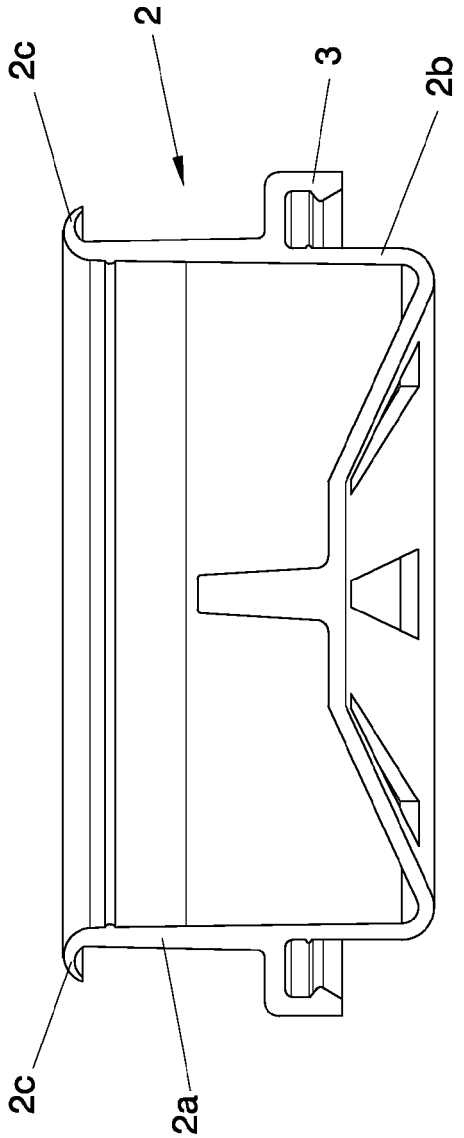

FIG. 7

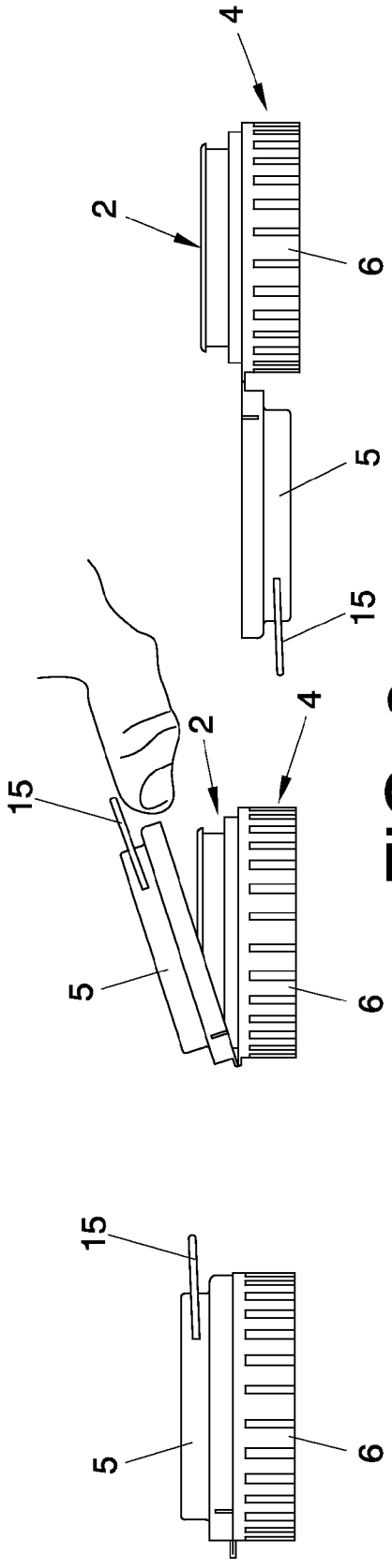

FIG. 8

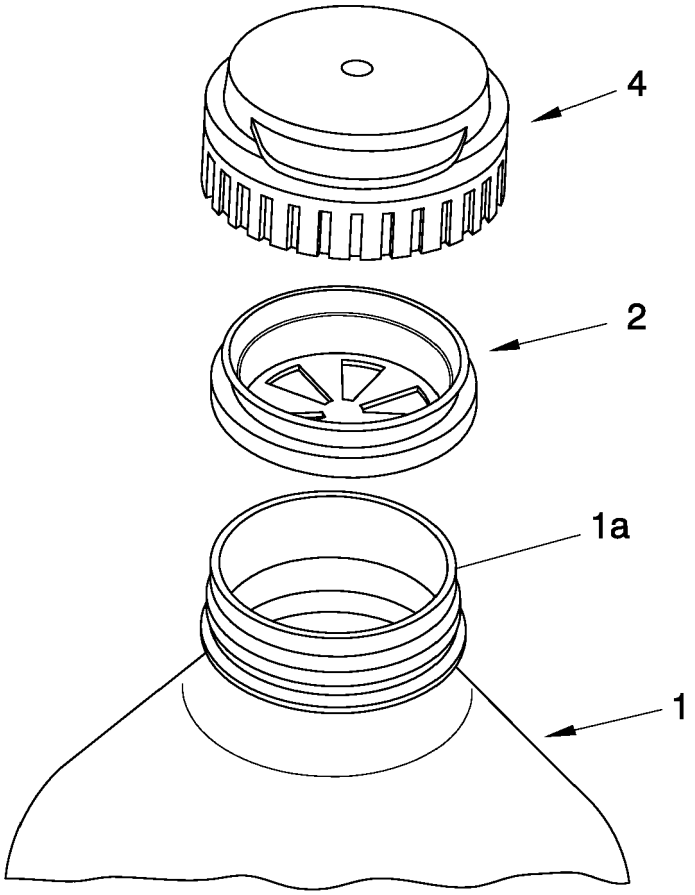

FIG. 9

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 11 38 2279

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	WO 02/42174 A1 (ALPLA WERKE [AT]; KLOPFER MANFRED [AT]) 30 May 2002 (2002-05-30) * abstract; figures 5,9,10 * -----	1-7	INV. B65D47/12 B65D47/04 B65D47/14
Y	EP 0 011 584 A1 (ASTRA PLASTIQUE [FR]) 28 May 1980 (1980-05-28) * page 2, line 9 - line 29; figures * -----	1-7	B65D47/08
Y	US 5 762 218 A (SACHAU WERNER [DE]) 9 June 1998 (1998-06-09) * abstract; figure 19 * -----	2,3,7	
Y	EP 1 460 000 A1 (KREMSMUENSTER KUNSTSTOFF [AT]) 22 September 2004 (2004-09-22) * claim 1; figure 4 * -----	6	
A	US 4 555 048 A (HAMMAN MARTIN E [US] ET AL) 26 November 1985 (1985-11-26) * abstract; figure 2 * -----	1	

TECHNICAL FIELDS SEARCHED (IPC)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	4 January 2012	Zanghi, Amedeo

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

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 38 2279

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.

04-01-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0242174 A1	30-05-2002	AT 301587 T	15-08-2005
		AU 1602702 A	03-06-2002
		BR 0101765 A	09-07-2002
		CA 2428681 A1	30-05-2002
		CN 1476404 A	18-02-2004
		DE 50107072 D1	15-09-2005
		EP 1337444 A1	27-08-2003
		HU 0303572 A2	29-03-2004
		MX PA03004654 A	04-09-2003
		PL 365988 A1	24-01-2005
		US 2004026465 A1	12-02-2004
		WO 0242174 A1	30-05-2002
EP 0011584 A1	28-05-1980	CA 1109422 A1	22-09-1981
		DE 2961274 D1	14-01-1982
		EP 0011584 A1	28-05-1980
		ES 246595 U	16-02-1980
		FR 2442196 A1	20-06-1980
		MX 149326 A	18-10-1983
		US 4264022 A	28-04-1981
US 5762218 A	09-06-1998	AT 166309 T	15-06-1998
		AU 3745695 A	02-05-1996
		BR 9509243 A	21-10-1997
		CA 2201876 A1	18-04-1996
		DE 9416093 U1	01-02-1996
		EP 0792240 A1	03-09-1997
		ES 2119489 T3	01-10-1998
		JP H10507149 A	14-07-1998
		PL 319582 A1	18-08-1997
		RU 2133700 C1	27-07-1999
		US 5762218 A	09-06-1998
		WO 9611149 A1	18-04-1996
		ZA 9508468 A	14-05-1996
EP 1460000 A1	22-09-2004	AT 327180 T	15-06-2006
		DE 20304496 U1	18-06-2003
		EP 1460000 A1	22-09-2004
US 4555048 A	26-11-1985	JP 60251043 A	11-12-1985
		US 4555048 A	26-11-1985
		ZA 8500228 A	28-08-1985

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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

Patent documents cited in the description

- FR 0251123 **[0004]**
- ES 2139076 **[0005]**
- ES 2127076 **[0006]**
- FR 251123 **[0011]**
- ES 2137076 **[0011]**