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(54) DISPENSING DEVICE FOR CONTAINERS FOR LIQUIDS

(57) The present invention relates to a dispensing device intended for being coupled to the mouth of a container for dispensing the contents thereof. It is particularly suitable for dispensing oil, for example, olive oil. The device comprises a first part (1) couplable to the container mouth and provided with one or more passage openings (1.2) to allow the contents to flow out of the container and a closure protrusion (1.4). A second part (2) provided with an opening (2.2) is mounted around the first part for axial movement between a closed and an

open position. The design of this dispenser is characterized by a configuration that prevents the existence of cavities through which dirt can easily enter, and it furthermore prevents this dirt from being accessible and visible for the user. To this end, the first part (1) comprises a cavity (1.5) configured to partially house the second part (2) such that the second part (2) is partially housed in the cavity (1.5) in any axial position between the first position and the second position.

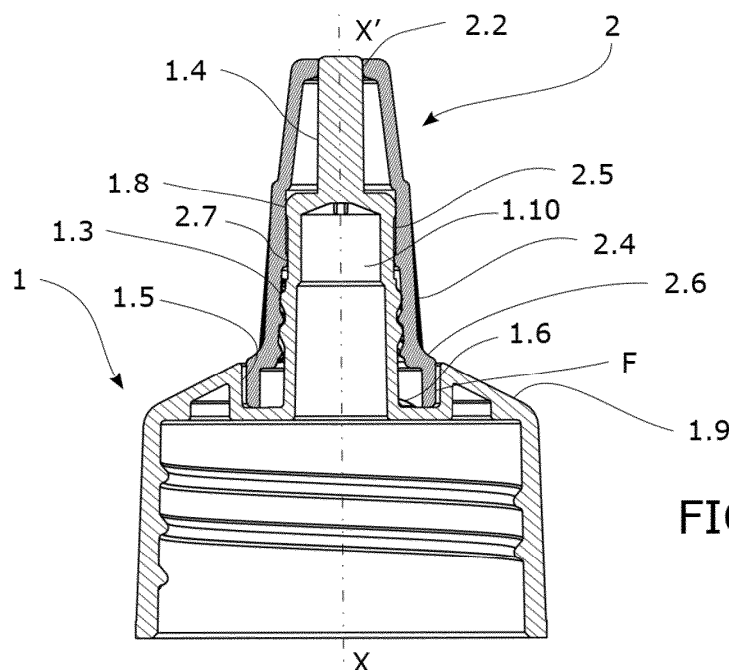
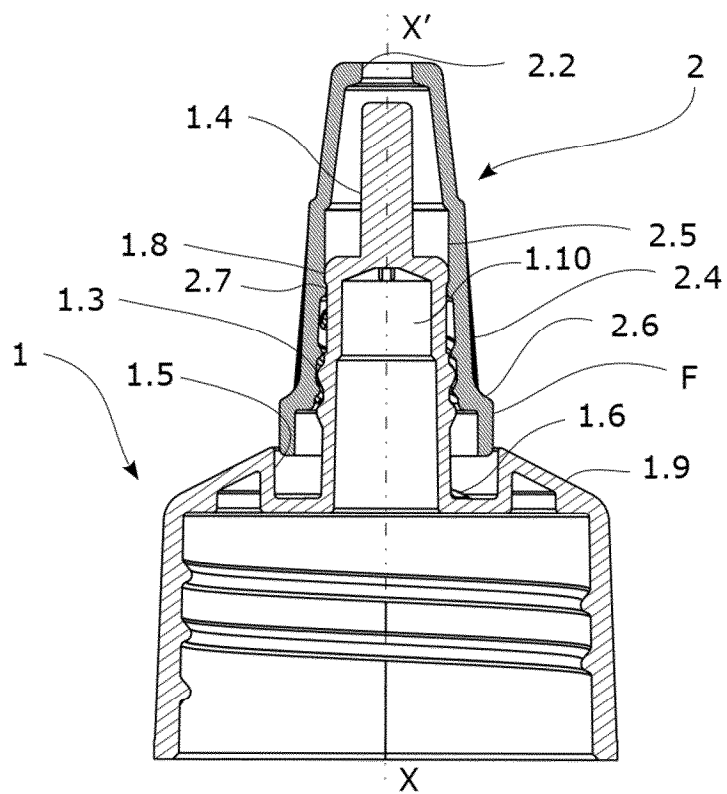
**FIG. 7****EP 4 818 070 A1**

FIG. 8



Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a dispensing device intended for being coupled to the mouth of a container for dispensing the contents thereof. It is particularly suitable for dispensing oil, for example, olive oil.

[0002] The design of this dispenser is characterized by a configuration that prevents the existence of cavities through which dirt can easily enter, and it furthermore prevents this dirt from being accessible and visible for the user.

BACKGROUND OF THE INVENTION

[0003] A well-known field of the art is that of closure systems intended for being coupled to containers for dispensing the contents thereof. These dispensers have a configuration which adapts to the type of contents to be dispensed, i.e., for liquids, others for liquids with a high viscosity, or even for pasty contents.

[0004] One of the aspects to be considered for these dispensing devices is the closure capacity. Closure elements are mechanical solutions providing movement to two or more parts, whether by rotation or by hinging, achieving that in one position of one or more parts the dispensing is allowed, and in another position, the tight closure is established

[0005] One problem of these dispensing devices is that the fluid which is poured out can splatter onto the dispenser itself, or even worse, the container. This situation gives rise to a lack of hygiene or can even end up splattering onto the user.

[0006] There are dispensers made up of two parts. The first part, which is coupled to the container, has a projection or protrusion, which is preferably cylindrical or conical, allowing the dispensing in an applicator. This applicator ensures that the dispensing position is far away from the container.

[0007] The projection or protrusion allowing the dispensing has threading means on which there is screwed a second part with an approximately complementary shape. For example, if the protrusion is conical then this second part is also conical and the threading allows this second part to be displaced axially.

[0008] The outlet for the outflow of the contents of the container through the end has an opening which is either left free or else is closed as a result of the axial displacement of the second part, wherein the separation or approximation caused by this axial displacement ensures the opening or the closure.

[0009] Although the second part is axially displaced to achieve that opening or closure at the end, it is also displaced in the lower portion, moving closer to or farther away from the base of the protrusion.

[0010] When the second part is opened, it is in a position spaced from the base of the protrusion, and the entry

of liquids, pastes, dirt, etc., into the space that is left free due to the spacing or separation of the parts, is allowed. Furthermore, this same spacing allows observing the constructive interior, so that the access of these unwanted substances is introduced to the interior without any control of hygiene.

[0011] It therefore remains to be resolved how to ensure hygiene in this lower area between the two parts without affecting the ability to open and close in the protrusion or projection.

DESCRIPTION OF THE INVENTION

[0012] A first aspect of the invention relates to a dispensing device for containers comprising a *first part* and a *second part*, wherein:

- *the first part is configured to establish an attachment with the container and comprises:*

one or more passage openings to allow the contents to flow out of the container, first retention means for retaining the second part, and a closure protrusion;

- *the second part comprises:*

second retention means intended for establishing the retention with the first retention means of the first part, and wherein both retention means allow relative axial movement between the first part and the second part according to a longitudinal direction, limited axial movement between two end positions, a first position allowing the dispensing of the contents of the container, and a second position establishing the closure, preventing the contents from flowing out of the container, and an opening to allow the dispensing of the contents of the container in fluid communication with the one or more passage openings of the first part and configured to be closed by means of the closure protrusion of the first part in the second position; and

wherein the first part comprises a cavity configured to partially house the second part such that the second part is partially housed in the cavity in any axial position between the first position and the second position.

[0013] The first part is the part used as a base for the second part, and it is this first part that is coupled to the container. According to one embodiment, this first part can be screwed onto the container. This part has one or more openings which are what allow, for example upon tipping the container, the outflow of the contents. These openings are closed by means of the second part.

[0014] The openings are in a protrusion of the first part

such that the dispensing of the contents of the container takes place at a point spaced from the main body of the first part, facilitating the application.

[0015] The first part has retention means for retaining the second part, according to one embodiment preferably in the form of a thread and located in the protrusion, such that the second part is mechanically linked to the first part.

[0016] The second part has complementary retention means. By way of example, when the means in the first part are an outer thread, in the second part the means are an inner thread. These complementary means establish the retention between the first part and the second part and allow at least one longitudinal relative movement. The longitudinal direction is considered the direction in which the protrusion that contains the openings extends, the openings preferably being in a proximal area of the free end of the protrusion. According to preferred embodiments, the openings have different configurations and are located proximal to the free end but slightly spaced apart due to the presence of a closure protrusion.

[0017] The axial movement has at least two end positions: a first position allowing the dispensing, and a second position establishing the closure and therefore preventing the contents from flowing out of the container. According to a preferred example, the axial movement is limited by these two ends, that is, the second part moves between the position in which the closure is achieved and the end position in which the outflow is allowed, and not beyond that.

[0018] Also according to a preferred example, the closure position is a position in which the second part moves closer to the first part, and the opening position is a position in which the second part moves farther away from the first part. In the closure position, the second part closes the openings of the first part, albeit indirectly, by means of a closure protrusion establishing the leak-tightness of its own opening, and in the opening position the openings of the first part are left free.

[0019] In preferred examples, intermediate positions in which the openings are partially opened, for example to meter out smaller amounts of the contents from the container, are allowed.

[0020] As indicated, the second part has an opening which makes the passage through the openings of the first part in the open position accessible, letting the contents that flow out through the opening or openings of the first part to also be able to flow out through this opening of the second part. According to one embodiment, this opening of the second part in the closure position lets a portion of the protrusion of the first part to emerge such that this opening of the second part becomes obstructed, establishing a tight closure.

[0021] In the axial movement between the first part and the second part, the second part moves away from the first part. However, according to the invention, the first part comprises a cavity configured to partially house the second part such that the second part is partially housed in the cavity in any axial position between the first end

position and the second end position. That is, although the second part moves away from the first part when it transitions from the closed configuration to the opened configuration, this separation is not enough to entirely come out of the cavity.

[0022] The effect that this condition has is that in no position of the second part with respect to the first part is a gap established between the two that allows dirt to enter and furthermore allows the dirt to be seen.

[0023] The second part, which is partially housed in the cavity, preferably being housed tightly, leaving a clearance to allow movement but without leaving a gap for dirt to easily enter during the service life of the closure. This service life is usually up until the container is empty when said container is disposable.

[0024] According to one embodiment applicable to any of the described examples, *the first part, the second part, or both parts have a configuration essentially of revolution around the longitudinal direction.*

[0025] According to this embodiment, each of the parts having a configuration essentially of revolution around the longitudinal direction favors the use of threads or the application thereof in containers which also show a configuration corresponding to a shape with symmetry of revolution around the longitudinal direction. Though strictly speaking the thread is not an element that shows symmetry of revolution, it is understood that this condition is verified for the body on which the thread is incorporated. The same occurs with grooving that favors the gripping or the structural radii that form the openings. Although occasionally these small elements do not strictly give rise to a figure of revolution, the configuration of the main bodies on which they are located does.

[0026] According to one embodiment applicable to any of the described examples, *the attachment of the first part with the container is a threaded attachment.*

[0027] The threaded attachment allows operations for refilling the container and reusing the dispenser.

[0028] According to one embodiment applicable to any of the described examples, *the first retention means and the second retention means are threads establishing axial displacement by rotation.*

[0029] According to this embodiment, the axial displacement is the result of the displacement imposed by the rotation of the thread. This axial displacement is what establishes the closing or the opening and achieves high closure stresses with reduced user effort.

[0030] Additionally, the rotation of the second part with respect to the first part requires that the cavity of the first part and the portion of the second part that is at least partially concealed in the cavity to have a shape with symmetry of revolution around the longitudinal axis, the axis of rotation also of one thread with respect to the other.

[0031] According to one embodiment applicable to any of the described examples, *the device further comprises a spring adapted to exert a separation force between the first part and the second part to maintain a tendency to*

maintain the first position.

[0032] According to this embodiment, between the first part and the second part there is interposed a spring adapted to maintain a tendency to hold the first position in which dispensing is allowed, that is, in which the openings are open. The presence of this spring, for example a helical spring extending in the longitudinal direction, allows configurations which dispense with the thread in which case there must be retention means such that the end positions are kept temporarily blocked; that is, the first position and the second position are maintained in a stable manner until the user exerts a force for the release of the retention means to transition from one end position to the other end position.

[0033] According to one embodiment applicable to the example described above, *the cavity comprises one or more ramps to support one or more internal flanges of the second part such that they establish the support in a segment of the helical displacement of the second part with respect to the first part.*

[0034] The attachment threads between the first part and the second part impose a relative movement between both helical parts. The presence of the support ramps in the cavity of the first part according to this embodiment, and the internal flange or flanges of the second part positioned to rest on these ramps, allow any axial effort exerted by the user on the second part against the first part to be supported not only by the thread but also by this reinforcing support, preventing damage to the threads. This action may occur, for example, if the user mistakenly believes that instead of a thread, the closing movement is simply exerted by pressing.

[0035] According to a preferred example, each of the flanges of the second part has a ramp, wherein the configuration of the ramp is helical.

[0036] According to one embodiment applicable to any of the described examples except to the examples in which the attachment between the first part and the second part is by means of threads, in this example *the first retention means and the second retention means are axial guides with temporary fixing elements at the end positions, that is, in the first position and in the second position.*

[0037] According to this embodiment, the axial movement is guided and does not require the rotation imposed by a thread. In this embodiment, the opening and closing are faster, and in the event of an effort to move the second part farther away or closer with respect to the first part, it has been found that the most common result is a movement extending between the two ends, open and closed respectively.

[0038] According to one embodiment applicable to any of the described examples, *the first part has an annular flange and the second part also has an annular flange, with both flanges being configured to establish a limit for travel in the first fully open position.*

[0039] The second part moves with respect to the first part between two end positions, the first open position

and the second closed position. In the closed position, the contact between both parts establishes the limitation of travel. According to this embodiment, the open position is also limited by means of an annular flange in both parts acting as a stop, limiting at least the axial displacement.

[0040] According to one embodiment applicable to any of the described examples, *the cavity of the first part comprises on the inside thereof a projection at the end of which the closure protrusion is located, and the second part has a skirt surrounding the projection, with the skirt being the portion of the second part that is partially housed in the cavity.*

[0041] According to this configuration, the point from where the contents flow out of the container is located far away from the container and also from the cavity. While the combination of a cavity and of a portion of the second part that is partially concealed with the cavity prevents the accumulation of dirt, by spacing the point from where the contents flow out away from the container, the possibility of splattering onto the relative spacing area between the first part and the second part is also reduced.

[0042] According to this configuration, the cavity shows a projection which emerges and is intended for being concealed inside the second part. It is concealed by means of the skirt surrounding the projection. Located at the end thereof is a portion intended for closing the opening of the second part when the second part moves closer to the first part.

[0043] According to preferred examples, the skirt is fitted on the inner surface of the cavity so that the axial movement thereof, without being prevented, maintains the fitting that prevents dirt from entering the skirt and therefore the cavity.

[0044] According to one embodiment applicable to the examples described above, *the projection extends from the inside of the cavity by means of a hollow structure with a configuration essentially of revolution around the longitudinal direction, this hollow structure configuring on the inside thereof a conduit, comprising the one or more openings at the distal end thereof with respect to the cavity, and wherein the closure protrusion is arranged extended along a segment according to the longitudinal direction at the distal end of the hollow structure.*

[0045] According to this embodiment, the projection is the means that transport the contents of the container out of the container. The contents of the container, in operation, flow through the hollow interior of the projection, referred to as a conduit, until reaching one or more openings located in the distal area, but without being located right in the closure element sealing the opening of the second part but before it. Therefore, when the device is opened, the contents flow through the inside of the projection, through the conduit, and flow out through the opening or openings to therefore be inside the second part, and then flow out through the opening of the second part.

[0046] In the closed position, after the fluid flows out through the openings of the projection, the end of this

same projection in the form of a closure protrusion is housed in the opening of the second part, preventing the outflow although the opening or openings of the projection are not obstructed.

[0047] According to one embodiment applicable to the examples described above, *the closure protrusion and the end of the conduit are connected by two or more oblique radii wherein the openings are located between the radii.*

[0048] That is, according to a first embodiment which will be described below with the support of the figures, at the end of the conduit the openings are formed between a plurality of radii distributed in the radial direction, that is, perpendicular to the longitudinal direction, wherein the radii connect the end of the conduit and the closure protrusion.

[0049] According to a second embodiment, which will be described now and also below with the support of the figures, the structural connection between the closure protrusion and the end of the conduit is by means of a plurality of radii extending in an oblique manner. This oblique configuration of the radii gives rise to larger openings and to less free space between the first part and the second part, after which free space the fluid flows out through the opening of the second part.

[0050] According to one embodiment applicable to the examples described above, *there are sealing means between the projection of the first part and the inside of the second part to prevent fluid communication between the opening or openings of the projection and the cavity.*

[0051] When the contents of the container flow out through the opening or openings of the first protrusion, they must be guided towards the opening of the second part. The other possible path is towards the cavity through the space which is established between the projection and the inside of the second part. These sealing means are established between the projection and the inside of the second part to avoid this possible second path by forcing the contents of the container in the form of a fluid to all flow out through the opening of the second part towards the outside and not to go into the cavity.

[0052] According to a preferred example, *the sealing is established with an annular flange in one of the parts, that is, the first part or the second part, and a cylindrical surface in the other part.*

[0053] This configuration allows the annular protrusion to slide over the cylindrical surface, ensuring the closure in any axial position, and without preventing rotation should there be any.

[0054] According to a preferred embodiment, both the first part and the second part have an annular flange configured to rest on a cylindrical surface of the other part. Two barriers against the passage of the contents of the container are thereby established. According to one embodiment, one or two of these flanges may also be used as stop elements to establish a limit for axial travel in the first fully open position.

[0055] According to one embodiment applicable to the examples described above, *the retention means are distributed around at least one segment of the hollow structure.*

[0056] In a preferred embodiment in which the attachment between the first part and the second part is through the existence of retention means configured in the form of two complementary threads, the threads are located on the outer surface of the projection and on the inner surface of the second part.

[0057] According to one embodiment applicable to the examples described above, *the first part comprises a plurality of first grooves distributed around an outer surface of the first part to facilitate the gripping of the first part.*

[0058] Either grooves or a textured surface, for example with knurling as it increases the user's grip, are considered to be equivalent. Specifically, when the grooves are oriented in the longitudinal direction, they allow optimization of the grip against a turning torque to achieve the opening or closure when the first part and the second part have retention means formed by threads.

[0059] According to one embodiment applicable to the examples described above, *the second part comprises a plurality of second grooves distributed around an outer surface of the second part to facilitate the gripping of the second part.*

[0060] According to this embodiment, the grooves or the textured surface also considered to be equivalent to the presence of the grooves, are located in the second part wherein this second part establishes a rotation with respect to the first part when the link between the two are retention means formed by threads.

[0061] Another object of this invention relates to a container comprising a bottle neck closed by means of a device according to any of the described examples.

DESCRIPTION OF THE DRAWINGS

[0062] These and other features and advantages of the invention will become more apparent from the following detailed description of a preferred embodiment given only by way of illustrative and non-limiting example in reference to the attached figures.

Figures 1 and 2 These figures show a perspective view of an embodiment of the dispensing device in the closed position and open position, respectively.

Figures 3 and 4 These figures show an elevational view of the same embodiment of the dispensing device in the closed position and open position, respectively.

Figures 5a and 6 These figures show a perspective

view, according to two different positions and with the parts separated from one another, of the same embodiment to allow visual access to details that are concealed when the second part is installed in the first part.

Figure 5b

This figure shows another embodiment in which the configurations of the openings allowing the passage from the inside of the first part to the inside of the second part are different.

Figures 7 and 8

These figures show a cross-section of the elevational view of the same embodiment of the dispensing device to observe the interaction of the internal elements.

DETAILED DESCRIPTION OF THE INVENTION

[0063] A specific example of a dispensing device as shown in Figures 1 to 8 is described.

[0064] The dispensing is of contents stored in a container that is closed by the dispensing device. The contents are a fluid having a preferably liquid or pasty consistency, capable of flowing due to gravity or by being forced, for example by the pressure that can be exerted by the container when pressed by the user, causing it to deform due to a compression action.

[0065] Figures 1 and 3 show the dispensing device in the closed position in a perspective view and an elevational view, respectively. Figures 2 and 4 show the same dispensing device in the open position also in a perspective view and an elevational view, respectively.

[0066] The dispensing device shows a first part in the lower portion which is intended for being attached to a container, particularly to the inlet mouth of the container. In this embodiment, the first part (1) has attachment means (1.1) configured as a thread adapted to screw onto the outer thread of the mouth of the container which is not shown in the figures.

[0067] The first part (1) according to the embodiment shows first grooves (1.7) which favor the gripping in the tightening torque with the container.

[0068] On the main body of the first part (1), with an essentially cylindrical main configuration, there is a frustoconical surface (1.9) above which the second part (2) rises.

[0069] The second part (2) also shows grooves, i.e., second grooves (2.4), used to allow the user to apply a turning torque that causes a helical movement of the second part (2) with respect to the first part (1).

[0070] The helical movement is a combination of a rotation and an axial displacement according to a longitudinal direction X-X', where Figures 2 and 4 show how

the second part (2), in its opening position, rises with respect to the first part (1) as a result of the displacement in the longitudinal direction X-X'.

[0071] In the first closed position, the second part (2) shows continuity with the first part (1), especially in its lower portion, where a curvature below the first grooving (1.7) establishes a transition surface (2.6) with the frustoconical surface (1.9) of the first part (1). In contrast, after the opening, the area with a larger curvature that was used as a transition surface (2.6) rises, allowing a skirt (F) that was previously concealed inside a cavity (1.5) of the first part (1) to be seen.

[0072] This skirt (F) maintains continuity on the upper surface of the device, preventing any dirt from entering the inside thereof, particularly the space between the first part (1) and the second part (2), and if said dirt were inside same, it would not be accessible from the outside, favoring hygiene.

[0073] The dispensing occurs in the upper portion, with positional terms such as up, down, to the right, or to the left being interpreted at all times taking into account the position shown in Figures 1 to 4. In this upper position, in the open operating position, it can be seen that the second part (2) has an opening (2.2) to allow the dispensing of the contents of the container. When the second part (2) is in a lowered or closed position, this opening (2.2) is obstructed.

[0074] Figures 7 and 8 show the cross-sections of Figures 3 and 4, respectively. In these figures, it is possible to see the space under the first part (1) and that the space is what is filled upon tipping the container together with the device coupled thereto.

[0075] In this space, it is possible to see a thread as the attachment means (1.1) for the attachment with the container. Both in these figures and in detail Figures 5a and 6, intended for showing the first part (1) and the second part (2) separated from each other and in a perspective view, it can be seen that the lower space of the first part is in fluid communication with the inside of a projection (P), which has a hollow configuration, emerging from the base of the cavity (1.5).

[0076] The inner space of the projection (P) has an outlet through openings (1.2) located in the upper portion of the hollow portion of the projection (P) and allow the contents to flow out of the container. This same hollow projection (P) generates a main conduit (1.10) allowing the contents of the container to be driven towards the openings (1.2) for the fluid contents to flow out of the part (1).

[0077] On the outer surface of this projection (P) there is a thread (1.3) that is complementary to an inner thread (2.1) of the second part (2), which both allow the helical movement between the two parts (1, 2) in the event of a turning torque applied on the second part (2), and wherein both threads form the first and second retention means (1.3, 2.1), respectively.

[0078] The projection is prolonged over these openings (1.2) by means of a closure protrusion (1.4) which, in

this example, has a cylindrical configuration and is responsible for tightly entering the opening (2.2) of the second part to establish the closure of the dispensing device.

[0079] Once the contents of the container have flown out of the first part (1) through the openings (1.2) thereof, they move on to an intermediate chamber formed inside the second part (2) right before flowing out through the opening (2.2) of this second part (2).

[0080] Figure 5b shows another embodiment in which the upper end of the projection (P) has a configuration somewhat different from the configuration of the example shown in Figure 5a.

[0081] In Figure 5a, the main conduit (1.10) opens up into a set of radii (r) which are what connect the end of the main conduit (1.10) and the cylindrical closure protrusion (1.4) to one another. The separations between radii (r) define the outlet openings (1.2) for the fluid.

[0082] In contrast, in Figure 5b the closure protrusion (1.4) is shorter and is connected with oblique radii (r), like a tripod, which ensures greater structural rigidity in the connection between the closure protrusion (1.4) and the segment of the projection (P) corresponding to the main conduit (1.10). Furthermore, this configuration provides larger openings (1.2), reducing the free space between the first part (1) and the second part (2). This is positive given that the contents should not be stored in cavities, but rather should either be in the container or should have been dispensed for the user.

[0083] Likewise, this space could be in communication with the space established between the first part (1) and the second part (2) in the region where the main conduit (1.10) is located, which would allow the contents to move into the cavity (1.5), filling it and flowing out.

[0084] To prevent this, the inner surface of the second part (2) shows a cylindrical inner surface (2.5) over which an annular flange (1.8) of the projection (P) tightly slides in the portion proximal to the openings (1.2), the annular flange (1.8) and the cylindrical inner surface (2.5) forming sealing means to prevent fluid communication with the cavity (1.5) such that the contents of the container can only flow out through the opening of the second part (2) when it is open.

[0085] It can be seen in Figures 7 and 8 how the closure protrusion (1.4) with a cylindrical shape fits into the opening (2.1) of the second part (2), also with a cylindrical configuration, such that the partial passage of the closure protrusion (1.4) establishes a tight closure with less axial effort than if the closure were established between surfaces having a non-zero projection in the longitudinal direction (X-X').

[0086] As shown in Figure 5a and Figure 5b, the first part (1) shows two ramps (1.6) with a helical configuration at the base of the cavity (1.5). These ramps (1.6) have an inclination or slope equal to the slope of the threads (1.3, 2.1) between the first part (1) and the second part (2). These ramps (1.6) are configured to be used as a support in respective internal flanges (2.3) of the second part (2),

as shown in Figure 6. That is, throughout the entire rotational travel of the second part (2) with respect to the first part (1), such that in the event of a force by the user in the longitudinal direction (X-X') or axial direction, it is not the thread that supports the entire effort but rather the internal flanges (2.3) of the second part (2) transmit the axial force to the ramps (1.6) without overcoming the capacity of the threads (1.3, 2.1).

[0087] The described configuration results in a dispensing device in which, in any position of the second part (2) with respect to the first part (1), the space generated when separating the second part (2) remains concealed at all times, particularly by the skirt (F), preventing external dirt that may enter this space from being accessible to the user, improving the hygiene and the appearance of the device.

Claims

1. Dispensing device for containers comprising a first part (1) and a second part (2), wherein:

- the first part (1) is configured to establish an attachment (1.1) with the container and comprises:

- one or more passage openings (1.2) to allow the contents to flow out of the container,
- first retention means (1.3) for retaining the second part (2), and
- a closure protrusion (1.4);

- the second part (2) comprises:

- second retention means (2.1) intended for establishing the retention with the first retention means (1.3) of the first part (1), and wherein both retention means (1.3, 2.1) allow relative axial movement between the first part (1) and the second part (2) according to a longitudinal direction (X-X'), limited axial movement between two end positions, a first position allowing the dispensing of the contents of the container, and a second position establishing the closure, preventing the contents from flowing out the container, and
- an opening (2.2) to allow the dispensing of the contents of the container in fluid communication with the one or more passage openings (1.2) of the first part (1) and configured to be closed by means of the closure protrusion (1.4) of the first part (1) in the second position; and

wherein the first part (1) comprises a cavity (1.5)

configured to partially house the second part (2) such that the second part (2) is partially housed in the cavity (1.5) in any axial position between the first position and the second position.

2. Device according to claim 1, wherein the first part (1), the second part (2), or both parts (1, 2) have a configuration essentially of revolution around the longitudinal direction (X-X').

3. Device according to claim 1 or 2, wherein the attachment (1.1) of the first part (1) with the container is a threaded attachment.

4. Device according to any of the preceding claims, wherein the first retention means (1.3) and the second retention means (2.1) are threads establishing axial displacement by rotation.

5. Device according to any of the preceding claims, wherein it further comprises a spring adapted to exert a separation force between the first part (1) and the second part (2) to maintain a tendency to maintain the first position.

6. Device according to claim 4 or 5, wherein the cavity (1.5) comprises one or more ramps (1.6) to support one or more internal flanges (2.3) of the second part (2) such that they establish the support in a segment of the helical displacement of the second part (2) with respect to the first part (1).

7. Device according to any of claims 1 to 3 or according to claims 5 or 6, wherein the first retention means (1.3) and the second retention means (2.1) are axial guides with temporary fixing elements at the end positions, that is, in the first position and in the second position.

8. Device according to the preceding claims, wherein the first part (1) has an annular flange (1.8) and the second part (2) also has an annular flange (2.7), with both flanges being configured to establish a limit for travel in the first fully open position.

8. Device according to any of the preceding claims, wherein the cavity (1.5) of the first part (1) comprises on the inside thereof a projection (P) at the end of which the closure protrusion (1.4) is located, and the second part (2) has a skirt (F) surrounding the projection (P), with the skirt (F) being the portion of the second part (2) that is partially housed in the cavity (1.5).

9. Device according to the preceding claim, wherein the projection (P) extends from the inside of the cavity (1.5) by means of a hollow structure with a configuration essentially of revolution around the

longitudinal direction (X-X'), this hollow structure configuring on the inside thereof a conduit (1.10), comprising the one or more openings (1.2) at the distal end thereof with respect to the cavity (1.5), and wherein the closure protrusion (1.4) is arranged extended along a segment according to the longitudinal direction (X-X') at the distal end of the hollow structure.

10. Device according to the preceding claim, wherein the closure protrusion (1.4) and the end of the conduit (1.10) are connected by two or more oblique radii (r), wherein the openings (1.2) are located between the radii (r).

11. Device according to claim 9 or 10, wherein there are sealing means (1.8, 2.5) between the projection of the first part and the inside of the second part to prevent fluid communication between the opening or openings of the projection and the cavity.

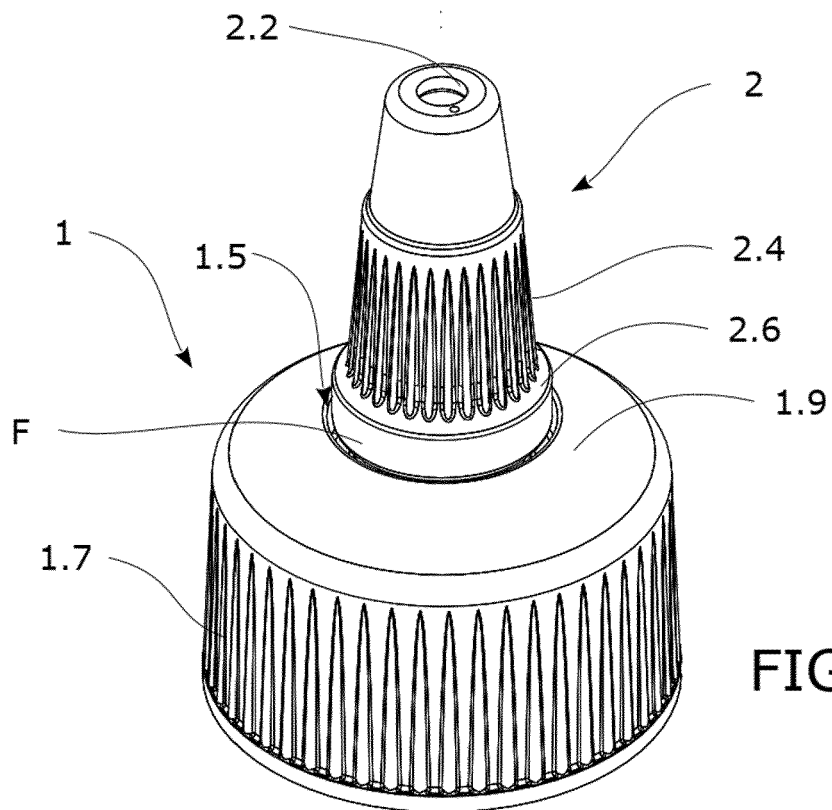
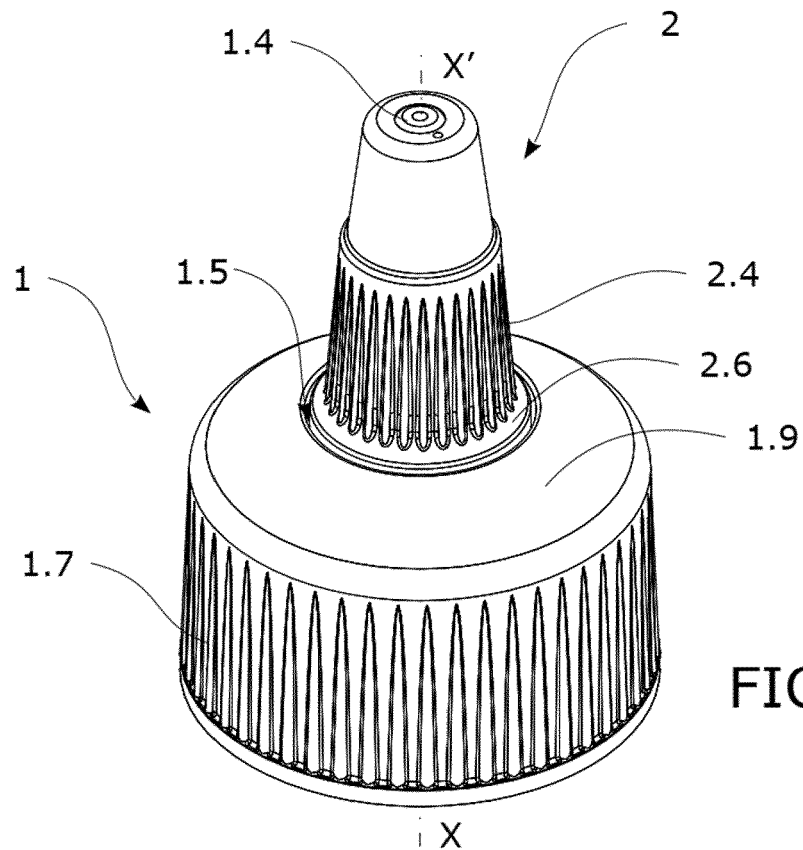
12. Device according to the preceding claim, wherein the sealing is established with an annular flange (1.8, 2.7) in one of the parts (1, 2), that is, the first part (1) or the second part (2), and a cylindrical surface (2.5) in the other part (2, 1).

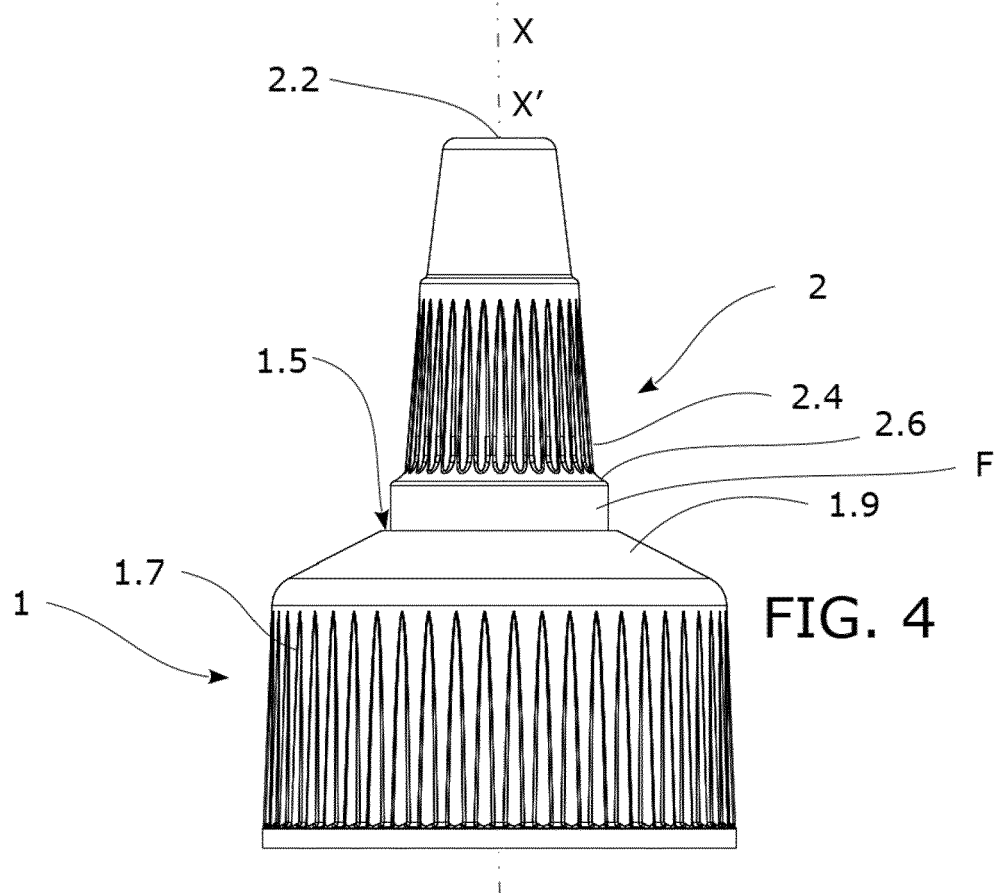
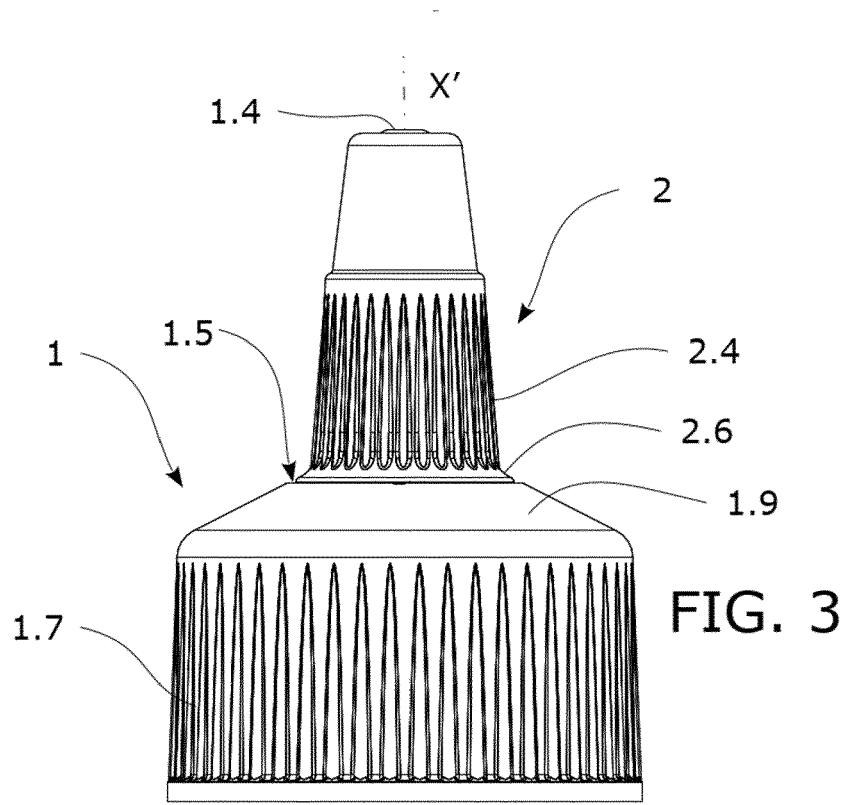
13. Device according to any of claims 9 to 12, wherein the retention means (1.3) are distributed around at least one segment of the hollow structure (1.10).

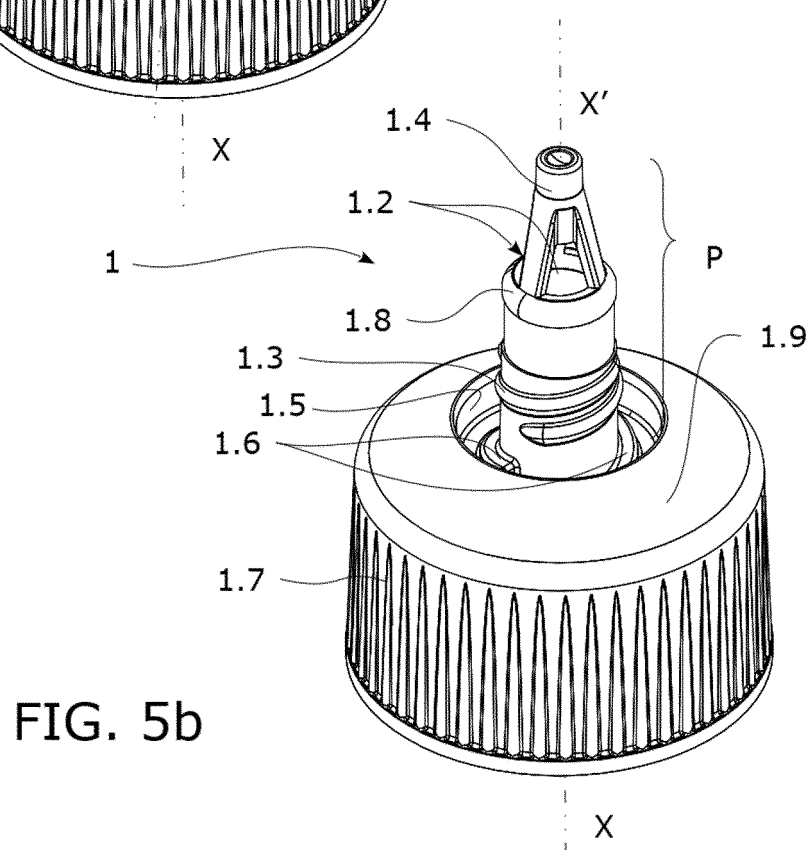
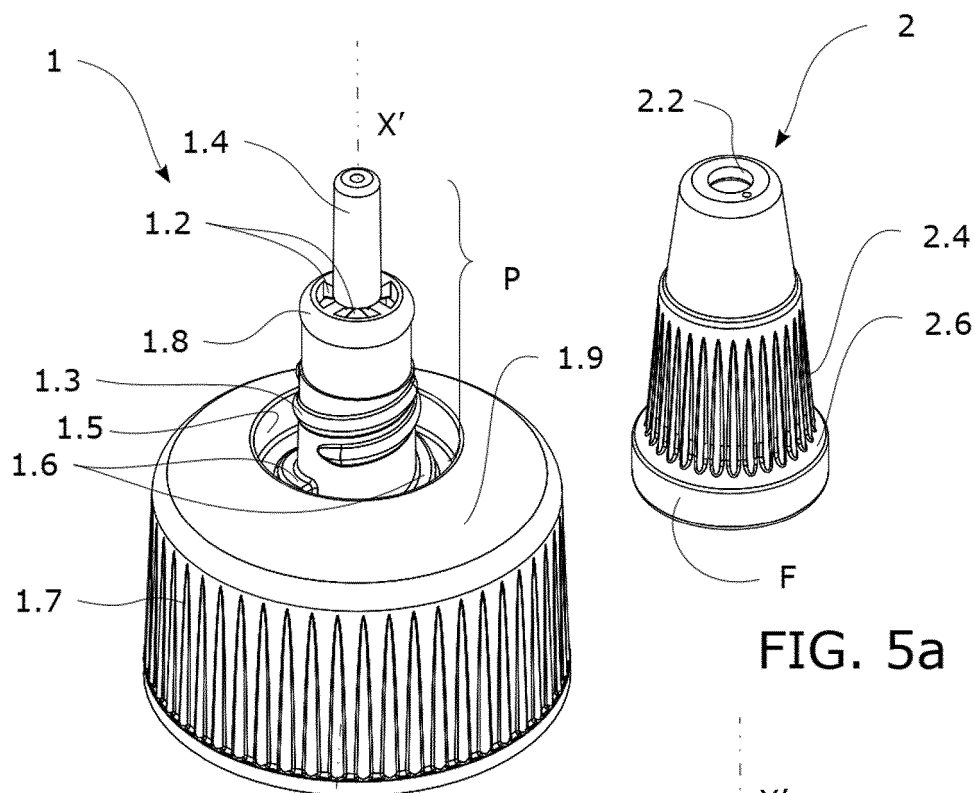
14. Device according to any of the preceding claims, wherein the first part (1) comprises a plurality of first grooves (1.7) distributed around an outer surface of the first part (1) to facilitate the gripping of the first part (1).

15. Device according to any of the preceding claims, wherein the second part (2) comprises a plurality of second grooves (2.4) distributed around an outer surface of the second part (2) to facilitate the gripping of the second part.

16. Container comprising a bottle neck closed by means of a device according to any of the preceding claims.







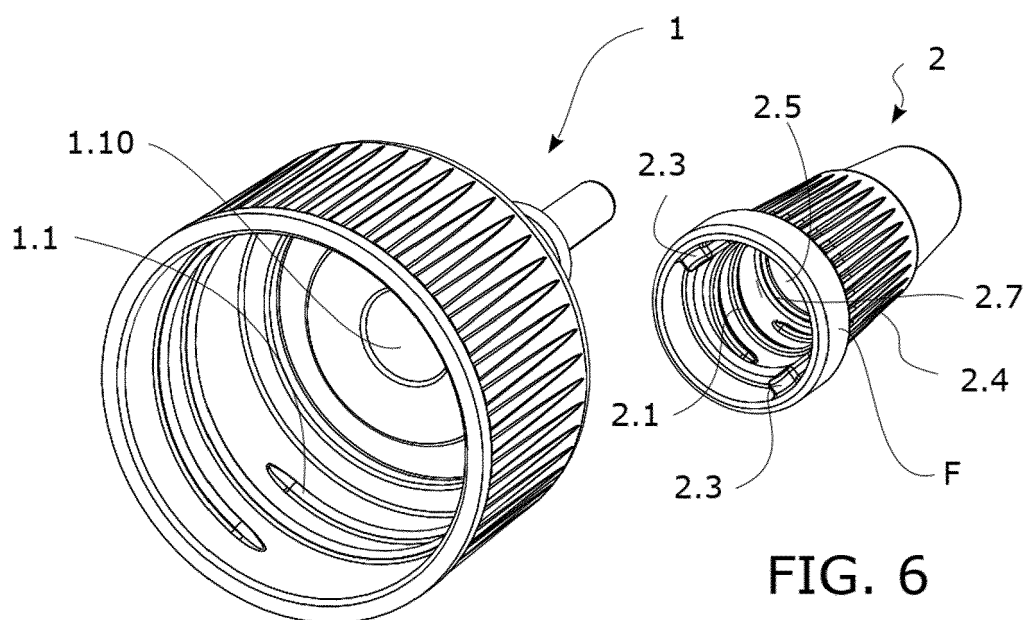
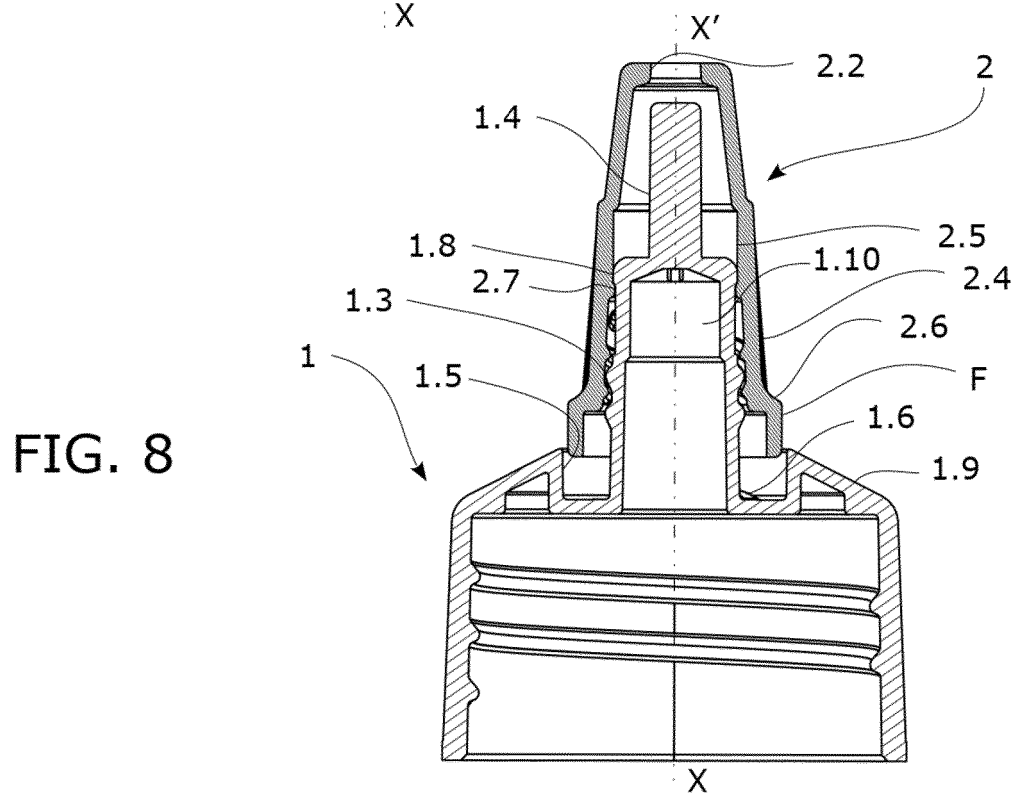
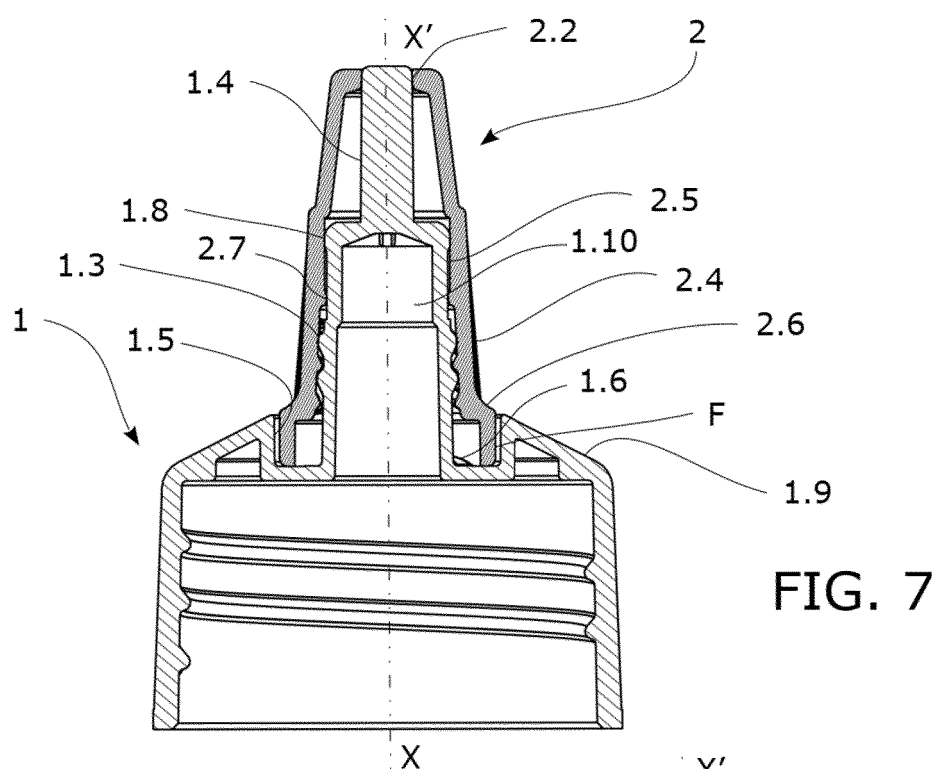


FIG. 6





EUROPEAN SEARCH REPORT

Application Number

EP 25 38 2311

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			B65D
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Place of search		Date of completion of the search	Examiner
The Hague		21 August 2025	Bridault, Alain
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