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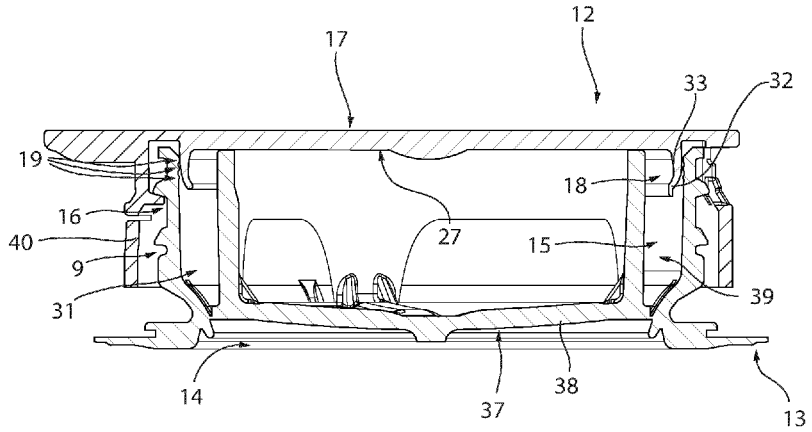


FIG. 4

(57) Abstract: There is described an opening device (3) for a package (1) having a main body (2) being filled with a pourable product. The opening device (3) comprises a collar (9) having an inner surface (15) delimiting a flow channel (10) for the pourable product and having a pouring outlet (11), a closure group (12) coupled to the collar (9) and configured to selectively open and close the pouring outlet (11) and one or more annular protrusion elements (19) extending from the inner surface (15) and into the flow channel (10). The closure group (12) comprises a closure (17) configured to selectively open and close the pouring outlet (11) when being respectively in an opening position and a closing position and a sealing lip (18) extending from the closure (17). The sealing lip (18) extends into the flow channel (10) with the closure (17) being in the closing position. The sealing lip (18) interacts with at least one of the one or more annular protrusion elements (19) for sealing the pouring outlet (11) in cooperation with the annular protrusion elements (19) with the closure (17) being in the closing position.

WO 2023/083598 A1

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OPENING DEVICE FOR A PACKAGE AND PACKAGE HAVING AN OPENING DEVICE

TECHNICAL FIELD

The present invention relates to an opening device for a package, in particular a package having a main body, filled with a pourable product, even more particular filled with a pourable food product.

Furthermore, the present invention also relates to a package having a main body, filled with a pourable product, even more particular filled with a pourable food product, and an opening device coupled to the main body.

BACKGROUND ART

As is known, many liquid or pourable food products, such as fruit juice, milk, milk-based drinks, drinking yoghurt, wine, tomato sauce, salt, sugar etc., are sold in packages, in particular sealed packages, made of a sterilized packaging material.

A typical example is the parallelepiped-shaped package for pourable food products known as Tetra Brik Aseptic (registered trademark), which is made by sealing and folding a laminated strip packaging material. The packaging material has a multilayer structure comprising a carton and/or paper base layer, covered on both sides with layers of heat-seal plastic material, e.g. layers of polyethylene. In the case of aseptic packages for long-storage products, the packaging material also comprises a layer of oxygen-barrier material, e.g. an aluminum foil, which is superimposed on a layer of heat-seal plastic material, and is in turn covered with another layer of heat-seal plastic material forming the inner face of the package eventually contacting the food product.

Thus, such a type of package comprises a main body formed from a multilayer packaging material and has a

designated pour opening, which allows the outpouring of the pourable product from the package. Additionally, the package can comprise an opening device coupled to the main body and arranged about the designated pour opening. The opening device is designed to seal the package prior to a first opening of the opening device and to allow for a controlled outpouring.

A typical opening device comprises a collar having an inner surface delimiting a flow channel and having a pouring outlet and a closure group configured to selectively open and close the pouring outlet.

Some closure groups also comprise a closure and a sealing lip, which extends from the closure and into the flow channel when the closure covers the pouring outlet. Additionally, the sealing lip contacts the inner surface so as to seal the flow channel such that the pourable product cannot leak out of the flow channel.

Even though the known opening devices work satisfyingly well, a desire is felt in the sector to improve the known opening devices, in particular so as to improve the sealing effect obtained by means of the coupling between the collar and the sealing lip.

DISCLOSURE OF INVENTION

It is therefore an object of the present invention to provide in a straightforward and low-cost manner an improved opening device for a package, in particular a package having a main body formed from a multilayer packaging material, filled with a pourable product, even more particular filled with a pourable food product.

In particular, it is an object of the present invention to provide in a straightforward and low-cost manner an improved opening device for a package, in particular a

package having a main body formed from a multilayer packaging material, filled with a pourable product, even more particular filled with a pourable food product, which comes along with improved sealing properties.

It is a further object of the present invention to provide in a straightforward and low-cost manner a package, in particular a package having a main body formed from a multilayer packaging material, filled with a pourable product, in particular filled with a pourable food product, having an opening device, in particular an opening device which comes along with improved sealing properties.

According to the present invention, there is provided an opening device according to the independent claim.

Further advantageous embodiments of the opening device are specified in the claims directly or indirectly depending on claim 1.

According to the present invention, there is also provided a package according to claim 13, claim 14 or claim 15.

BRIEF DESCRIPTION OF THE DRAWINGS

A non-limiting embodiment of the present invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a schematic perspective view of a portion of a package having an opening device according to the present invention, with parts removed for clarity;

Figure 2 is a perspective view of the package of Figure 1 and focusing on a detail of the opening device of Figure 1, with parts removed for clarity;

Figure 3 is a perspective view of a detail of the opening device of Figure 1, with parts removed for clarity;

Figure 4 is a section view of the opening device of

Figure 1, with parts removed for clarity;

Figure 5a is an enlarged section view of details of the opening device of Figure 1, with parts removed for clarity; and

Figure 5b is an enlarged sectioned perspective view of details of the opening device of Figure 1, with parts removed for clarity.

BEST MODES FOR CARRYING OUT THE INVENTION

Number 1 indicates as a whole a package (only partially shown to the extent necessary for the comprehension of the present invention) comprising:

- a main body 2, in particular a main body 2 formed from a multilayer packaging material, being filled and/or being fillable with a pourable product, in particular a pourable food product, and in particular having a designated pour opening (not shown and known as such) configured to allow for an outflow of the pourable product from main body 2; and

- an opening device 3, in particular formed from a polymer material, coupled to main body 2 about the designated pour opening and configured to seal the designated pour opening and to be controllable so as to open the designated pour opening and to allow for the outpouring of the pourable product.

The pourable product may be milk, tomato sauce, milk-based drinks, drinking yoghurt, water, sugar, salt, juices, emulsions, and the like.

According to some preferred non-limiting embodiments, the packaging material may comprise at least a layer of fibrous material, such as e.g. a paper or cardboard layer, and at least two layers of heat-seal plastic material, e.g. polyethylene layers, interposing the layer of fibrous

material in between one another. One of these two layers of heat-seal plastic material may define the inner face of main body 2 contacting the pourable product.

Preferably, the packaging material may also comprise a layer of gas- and light-barrier material, e.g. aluminum foil or ethylene vinyl alcohol (EVOH) film, in particular being arranged between one of the layers of heat-seal plastic material and the layer of fibrous material. Preferentially but not necessarily, the packaging material may also comprise a further layer of heat-seal plastic material being interposed between the layer of gas- and light-barrier material and the layer of fibrous material.

Preferentially, each package 1, in particular the respective main body 2, may be obtained from a respective blank of the multilayer packaging material. In particular, the blank may define a precursor of the respective package 1, in particular the respective main body 2.

In more detail, the respective blank may comprise the respective designated pour opening, which in particular may be covered by a separation membrane. The separation membrane may be formed from a gas-barrier material, in particular the separation membrane may be defined by a portion of the layer of the gas- and light-barrier material and/or the layers of heat-seal plastic material.

According to some preferred non-limiting embodiments, the multilayer packaging material may be provided in the form of a web, thereby the blanks may be successively arranged with respect to one another. During the formation of packages 1, the web is formed into a tube, longitudinally sealed, filled with the pourable product and transversally sealed and cut in correspondence with the extensions of the blanks.

According to a preferred non-limiting embodiment, each opening device 3 may be applied, in particular molded or bonded, to the respective main body 2 or onto the respective packaging blank. Preferentially, each opening device 3 may be molded onto the respective packaging blank and about the designated pour opening. In particular and as will be explained further below, a first portion of opening device 3 may be molded onto the respective packaging blank and a second portion of opening device 3 may be applied onto the first portion after molding of the first portion.

In particular, opening device 3 may be molded by means of a respective mold.

With particular reference to Figures 1 and 2, main body 2 may extend along a longitudinal axis A, a first transversal axis B perpendicular to longitudinal axis A and a second transversal axis C perpendicular to first transversal axis B and longitudinal axis A. In particular, the extension of package 2 along longitudinal axis A may be larger than the extension of package 2 along first transversal axis B and second transversal axis C.

Preferentially, main body 2 may be parallelepiped-shaped.

According to some preferred non-limiting embodiments, main body 2 may comprise a first wall (not shown and known as such), in particular being transversal, even more particular perpendicular, to longitudinal axis A, from which main body 2 may extend along longitudinal axis A. Preferably, the first wall may define a support surface of package 1, in particular main body 2, which may be designed to be put in contact with a support, such as e.g. a shelf, when, in use, being e.g. exposed within a sales point or when being stored. In particular, when being arranged on the support the first

wall may define a bottom wall.

Preferably, main body 2 may also comprise a side wall 4 being (fixedly) connected to the first wall and extending, in particular substantially parallel, along longitudinal axis A, from the first wall.

Preferentially, main body 2 may also comprise a second wall 5 opposed to the first wall and being (fixedly) connected to side wall 4. In particular, side wall 4 may be interposed between the first wall and second wall 5.

In particular, when package 1 is arranged on the support, second wall 5 may define a top wall.

According to the shown non-limiting embodiment, the first wall and second wall 5 may be parallel to one another.

According to non-limiting alternative embodiments not shown, the first wall and second wall 5 may be inclined with respect to one another. In particular, second wall 5 may define a slanted top or may define a portion of a gable-top.

According to some non-limiting embodiments, second wall 5 may carry and/or comprise the designated pour opening.

According to some preferred non-limiting embodiments, package 1, in particular main body 2, may comprise an inner space configured to contain and/or containing the pourable product. In particular, the first wall, side wall 4 and second wall 5 may delimit the inner space.

With particular reference to Figures 1 to 5b, opening device 3 may comprise:

- a collar 9 delimiting a flow channel 10 for the pourable product and having a pouring outlet 11; and
- a closure group 12 coupled to collar 9 and configured to selectively open and close pouring outlet 11.

Moreover, opening device 3 may also comprise a base frame 13 configured to couple and/or coupling opening device

3 onto main body 2, in particular to second wall 5, and about the designated pour opening.

In particular, collar 9 may extend from base frame 13.

Preferentially, collar 9 and base frame 13 may be integrally connected to one another. Even more preferentially, collar 9 and base frame 13 may be made in a single piece.

Additionally, closure group 12 may be made as a separate piece. In particular, closure group 12 may be coupled to collar 9 after formation of collar 9.

More specifically, collar 9 may also comprise an inlet opening 14 configured to allow for the introduction of the pourable product into flow channel 10. In particular, inlet opening 14 may be arranged opposite to pouring outlet 11.

In further detail, collar 9 may extend along a central axis E. In particular, pouring outlet 11 and inlet opening 14 may be arranged at respective axial ends of collar 9.

Moreover, collar 9 comprises an inner surface 15 delimiting flow channel 10.

Additionally, collar 9 may also comprise an external surface 16 opposed to inner surface 15.

With particular reference to Figure 1, 3, 4 and 5a, closure group 12 comprises a closure 17 configured to selectively open and close pouring outlet 11.

Closure 17 may be movable between:

- a closing position, in which closure 17 closes and/or covers pouring outlet 11, in particular for impeding an outflow of the pourable product out of pouring outlet 11; and

- an opening position in which closure 17 may be detached from pouring outlet 11, in particular for allowing an outflow of the pourable product through pouring outlet

11.

In other words, closure 17 may be configured to selectively open and close pouring outlet 11 when being respectively in the opening position and the closing position.

Preferentially, closure 17 may be reversibly movable between the closing position and the opening position.

Closure group 12 also comprises a sealing lip 18, in particular an annular sealing lip 18, extending from closure 17. In particular, sealing lip 18 may be integrally connected to closure 17.

In more detail, sealing lip 18 may extend into flow channel 10 with closure 17 being in the closing position.

Advantageously and with particular reference to Figures 4, 5a and 5b, opening device 3 also comprises one or more annular protrusion elements 19, in the specific case shown three, extending from inner surface 15 and into flow channel 10. Preferentially, each one of the one or more annular protrusion elements 19 may be integral to inner surface 15.

Sealing lip 18 interacts with, in particular contacts, at least one of the one or more annular protrusion elements 19 for sealing pouring outlet 11 in cooperation with annular protrusion elements 19 with closure 17 being in the closing position. In particular, the interaction between sealing lip 18 and annular protrusion elements 19 determines the tightness of opening device 3 when closure 17 is in the closing position.

More specifically, by sealing pouring outlet 11 while closure 17 is arranged in the closing position, one guarantees that the pourable product does not leak out from flow channel 10 while closure 17 is in the closing position.

More precisely, the overall sealing of pouring outlet

11 results both from the interaction of sealing lip 18 with at least one of the one or more annular protrusion elements 19 and the presence of closure 17.

With particular reference to Figures 1, 3 and 5a, closure 17 comprises a main wall 25 and a lateral annular wall 26 integrally connected to main wall 25 and transversally protruding from main wall 25. In particular, with closure 17 being arranged in the closing position, main wall 25 covers pouring outlet 11 (in other words, main wall 25 is superimposed on pouring outlet 11) and lateral annular wall 26 at least partially surrounds collar 9, in particular facing external surface 16.

Preferentially, sealing lip 18 is integrally connected to and extends from main wall 25, in particular an inner face 27 of main wall 25.

In particular, inner face 27 may face flow channel 10 with closure 17 being in the closing position.

According to some preferred non-limiting embodiments, opening device 3 may comprise at least two, preferentially at least three, annular protrusion elements 19. In dependence of the actual position of sealing lip 18 within flow channel 10 when closure 17 is in the closing position, it may occur that sealing lip 18 contacts only one of annular protrusion elements 19 (which still is sufficient to improve the tightness of opening device 3 with closure 17 being in the closing position). Such an example situation is e.g. also depicted in Figures 4 and 5a.

It should be noted that the actual position of sealing lip 18 may vary between successive placements of closure 17 in the closing position. Thus, there may be positions of sealing lip 18 in which sealing lip 18 contacts only one of annular protrusion elements 19, but there may also be

positions of sealing lip 18 in which sealing lip 18 contacts two or more annular protrusion elements 19.

In particular, by having more than one annular protrusion element 19 it is guaranteed that sealing lip 18 interacts with at least one of annular protrusion elements 19 so as to obtain the sealing effect, independently of the actual position.

Preferentially, annular protrusion elements 19 may be axially displaced from one another (with respect to central axis E).

Preferentially, each annular protrusion element 19 may comprise a tip portion 28.

According to some possible embodiments, each annular protrusion element 19 may have a respective radial extension.

Possibly, the respective radial extensions of annular protrusion elements 19 may differ from one another or at least two may have the same radial extensions or at least one annular protrusion element 19 may have a radial extension different from the radial extension of the other annular protrusion elements 19.

It may also be possible that the radial extension of each annular protrusion element 19 into flow channel 10 may be such that each tip portion 28 may lie on and/or be in contact with an imaginary cylinder surface (of an imaginary cylinder placed within flow channel 10).In other words, when considering a cross-section of annular protrusion elements 19 with respect to a cross-section plane having central axis E, the respective points originating from tip portions 28 lie on a linear line.

Preferentially, at least one annular protrusion element 19 may be arranged adjacent to pouring outlet 11.

More precisely, the at least one annular protrusion

element 19 may be adjacent to and axially displaced with respect to central axis E from a rim 29 of collar 9, rim 29 delimiting pouring outlet 11.

According to some preferred non-limiting embodiments, the one or more annular protrusion elements 19 may protrude into a first zone 30 of flow channel 10. In particular, first zone 30 may extend from pouring outlet 11 and towards inlet opening 14.

Moreover, flow channel 10 may comprise a second zone 31 distinct from first zone 30 and extending towards inlet opening 14. In particular, second zone 31 may extend from first zone 30 to inlet opening 14.

Preferentially, an extension of first zone 30 may correspond to at most one third of an extension of flow channel 10 from pouring outlet 11 to inlet opening 14. In other words, an extension of second zone 31 may correspond to at least two thirds of the extension of flow channel 10 from pouring outlet 11 to inlet opening 14. Accordingly, it is possible to maintain an extension of sealing lip 18 within certain limits.

In further detail, the one or more annular protrusion elements 19 may be coaxially arranged with respect to central axis E. In particular, each tip portion 28 may lie within a respective plane being perpendicular to central axis E.

Preferentially, sealing lip 18 may have an outer diameter, which equals or substantially equals an inner diameter of collar 9. Alternatively, the outer diameter may equal or substantially equal an inner diameter defined by the one or more annular protrusion elements 19. In this way, one guarantees that sealing lip 18 can enter flow channel 10 and can interact with at least one of annular protrusion elements 19, in particular independently of the actual

position of sealing lip 18 within flow channel 10.

With particular reference to Figures 3, 4 and 5a, sealing lip 18 may comprise at least one curved portion, in particular at least one curved end portion 32.

Additionally, sealing lip 18 may also comprise a connecting portion 33 connected, in particular integrally connected, to closure 17, in particular main wall 25, even more particular inner face 27.

Preferentially, the at least one curved portion, in particular curved end portion 32, may be connected to connecting portion 33.

Reverting again to Figures 2, 3 and 4, opening device 3 may also comprise a closing element 37 arranged and/or being arrangeable within flow channel 10 and configured to close flow channel 10 when being arranged within flow channel 10, i.e. closing element 37 can be arranged within flow channel 10 so as to interrupt a fluidic connection between inlet opening 14 and pouring outlet 11.

In particular, closing element 37 may be arranged within flow channel 10.

Preferentially, closing element 37 may be coaxially positioned with respect to collar 9.

Preferentially, base frame 13, collar 9 and closing element 37 may be made in a single piece.

In particular, closing element 37 may be rupturably fixed to collar 9, in particular inner surface 15. Even more particular, during a first movement of closing element 37 away from collar 9 and/or out of flow channel 10, closing element 37 irreversibly ruptures, i.e. closing element 37 may contact again collar 9, in particular inner surface 15 when being newly placed within flow channel 10, but is not fixed again to collar 9, in particular inner surface 15.

In more detail, closing element 37 may comprise:

- a membrane wall 38 rupturably fixed to collar 9, in particular inner surface 15; and

- a coupling structure 39 extending from membrane wall 38 and operatively coupling closing element 37 to closure group 12, in particular closure 17.

In particular, coupling structure 39 may be integral to and may extend from membrane wall 38.

More specifically, membrane wall 38 may be configured to rupturably detach from collar 9, in particular inner surface 15 so as to allow a fluid connection between inlet opening 14 and pouring outlet 11 for allowing the outpouring of the pourable product.

In more detail, membrane wall 38 may be controllable between an active position in which membrane wall 38 is arranged within flow channel 10 for interrupting the fluid connection between pouring outlet 11 and inlet opening 14 and an inactive position in which membrane wall 38 is positioned out of flow channel 10 for allowing the fluid connection between pouring outlet 11 and inlet opening 14

In particular, as coupling structure 39 couples closing element 37, in particular main wall 25, to closure 17, membrane wall 38 is in the active position and the inactive position, when closure 17 is in respectively the closing position and the opening position.

More specifically, coupling structure 39 may be welded and/or bonded and/or fused, to closure group 12, in particular closure 17, even more particular inner face 27.

According to some preferred non-limiting embodiments, closure group 12 may comprise a coupling ring 40 arranged about collar 9.

In particular, closure 17 may be coupled to, in

particular tethered to, even more particular hinged to, coupling ring 40.

Preferentially, closure 17 may be hinged to coupling ring 40 and may be angularly movable about a hinge axis and between the closing position and the opening position.

Preferentially, closure group 12 may also comprise one or more rupturable coupling bridges rupturably connected to coupling ring 40 and closure 17, in particular lateral wall 26, and configured to irreversibly rupture during the first movement of closure 17 from the closing position to the opening position.

According to some non-limiting embodiments, base frame 13, collar 9, annular protrusion elements 19 and closing element 37 may be integrally formed, in particular in a single piece. In particular, base frame 13, collar 9 and closing element 37 may be formed during a molding process, in particular during a molding of opening device 3 onto the respective packaging blank.

Furthermore, closure group 12 may be coupled to collar 9 after formation of base frame 13, collar 9 and closing element 37.

In other words, base frame 13, collar 9, annular protrusion elements 19 and closing element 37 may define the first portion of opening device 3 and closure group 12 may define the second portion of opening device 3. Thus, closure group 12 is applied to collar 9 after molding of base frame 13, collar 9, annular protrusion elements 19 and closing element 37, in particular about the designated pour opening.

In particular, the molding of the first portion onto main body 2 or the blank defining the precursor of main body 2 relies on the use of a respective mold.

In use, a user receives package 1 with closure 17 being

in the closing position. Additionally, membrane wall 38 is in the active position and is still rupturably connected to collar 9.

The user, in order to access the pourable product, needs to control closure 17 from the closing position to the opening position, in particular also leading to a movement of membrane wall 38 from the active position to the inactive position and a rupturing of membrane wall 38 from collar 9. This then allows the pourable product to flow from the inner space through flow channel 10 and out of pouring outlet 11.

Afterwards, it is repeatably possible to move closure 17 between the opening position and the closing position. Each time closure 17 is moved in the closing position, sealing lip 18 seals flow channel 10 by interacting, in particular contacting, at least one of annular protrusion elements 19.

In particular, sealing lip 18 contacts at least one annular protrusion elements 19 at any angular position.

The advantages of opening device 3 and/or of package 1 according to the present invention will be clear from the foregoing description.

In particular, by having one or more annular protrusion elements 19 it is possible to improve the tightness of opening device 3 in comparison to the state-of-the-art opening devices.

A further advantage resides, in that the tightness is guaranteed independently of the actual position of sealing lip 18, which may slightly differ each time closure 17 is placed in the closing position.

Another advantage can be seen in that the tightness is guaranteed for any shape of sealing lip 18.

Clearly, changes may be made to opening device 3 and/or

package 1 as described herein without, however, departing from the scope of protection as defined in the accompanying claims.

CLAIMS

1.- Opening device (3) for a package (1) having a main body (2) being filled with a pourable product;

the opening device (3) comprises:

- a collar (9) having an inner surface (15) delimiting a flow channel (10) for the pourable product and having a pouring outlet (11);

- a closure group (12) coupled to the collar (9) and configured to selectively open and close the pouring outlet (11); and

- one or more annular protrusion elements (19) extending from the inner surface (15) and into the flow channel (10);

wherein the closure group (12) comprises a closure (17) configured to selectively open and close the pouring outlet (11) when being respectively in an opening position and a closing position and a sealing lip (18) extending from the closure (17);

wherein the sealing lip (18) extends into the flow channel (10) with the closure (17) being in the closing position;

wherein the sealing lip (18) interacts with at least one of the one or more annular protrusion elements (19) for sealing the pouring outlet (11) in cooperation with the annular protrusion elements (19) with the closure (17) being in the closing position.

2.- Opening device according to claim 1, and comprising at least two annular protrusion elements (19);

wherein the annular protrusion elements (19) are axially displaced from one another along a central axis (E) of the collar.

3.- Opening device according to claim 2, wherein each annular protrusion element (19) comprises a tip portion (28);

wherein an imaginary cylinder surface contacts the respective tip portions (28) of each annular protrusion element (19).

4.- Opening device according to claim 2 or 3, wherein each annular protrusion element (19) has a respective radial extension;

wherein the respective radial extensions of at least one annular protrusion element (19) differs from the respective radial extension of the other annular protrusion elements (19).

5.- Opening device according to any one of the preceding claims, wherein at least one annular protrusion element (19) is arranged adjacent to the pouring outlet (11).

6.- Opening device according to any one of the preceding claims, wherein the flow channel (10) comprises a first zone (30) extending from the pouring outlet (11) and a second zone (31) distinct from the first zone (30) and extending from the first zone (30) to an inlet opening (14) of the collar (9);

wherein an extension of the first zone (30) corresponds to at most one third of an extension of the flow channel (10) from the pouring outlet (11) to the inlet opening (14);

wherein the one or more annular protrusion elements (19) extend into the first zone (30) of the flow channel (10).

7.- Opening device according to any one of the preceding claims, wherein each one of the one or more annular protrusion elements (19) is integral to the inner surface (15).

8.- Opening device according to any one of the preceding claims, wherein the sealing lip (19) comprises at least one curved portion (32).

9.- Opening device according to any one of the preceding claims, and further comprising a closing element (37) arranged and/or being arrangeable within the flow channel (10) and being configured to close the flow channel (10).

10.- Opening device according to claim 9, wherein the closing element (37) comprises a membrane wall (38) rupturably fixed to the inner surface (15) of the collar (9) and a coupling structure (39) extending from the membrane wall (38) and operatively coupling the membrane wall (38) to the closure (17).

11.- Opening device according to any one of the preceding claims, and further comprising a base frame (13) configured to couple the opening device (3) about a designated pour opening of the main body (2);

wherein the collar (9) extends from the base frame (13).

12.- Opening device according to any one of the preceding claims, wherein the closure group (12) comprises at least a coupling ring (40) arranged about the collar (9);

wherein the closure (17) is coupled to the coupling ring (40).

13.- Package (1) filled and/or fillable with a pourable product and comprising at least one opening device (3) according to any one of claims 1 to 12.

14.- Package according to claim 13, wherein the package (1) comprises a main body (2) having a designated pour opening and being formed from a multilayer packaging material, wherein the opening device (3) is coupled onto the main body (2) and about the designated pour opening.

15.- Package according to claim 13 or 14, wherein the opening device (3) is molded to a main body (2) of the package (1).

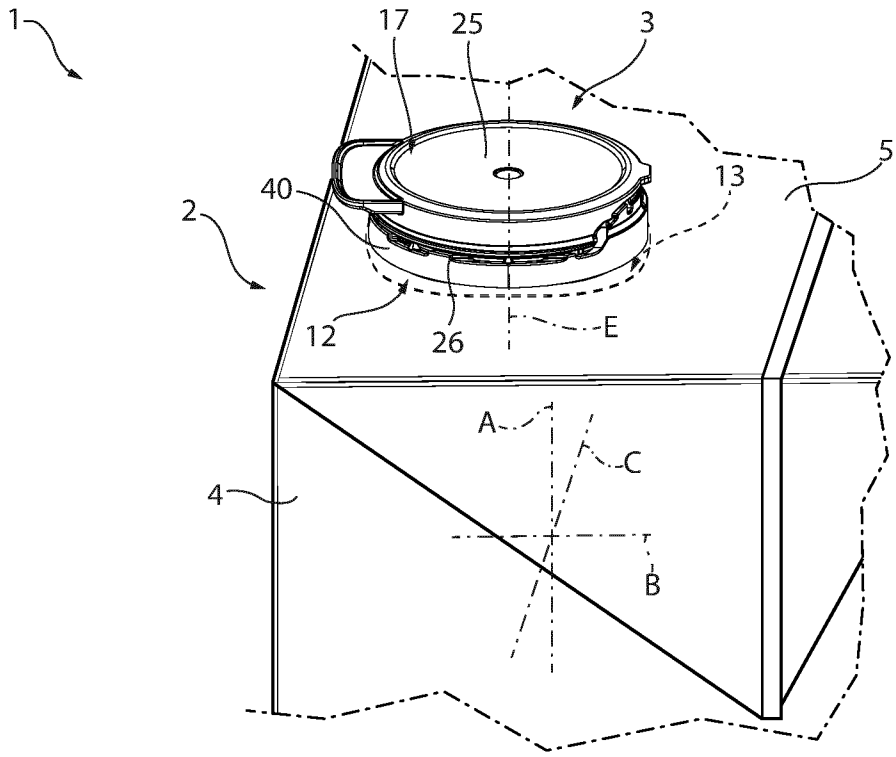


FIG. 1

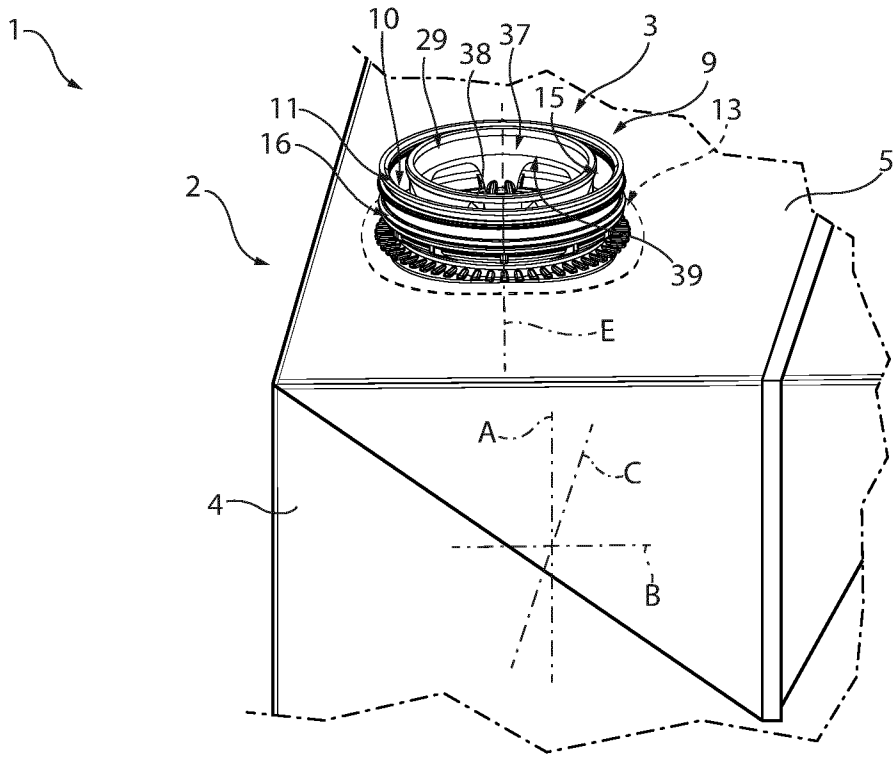


FIG. 2

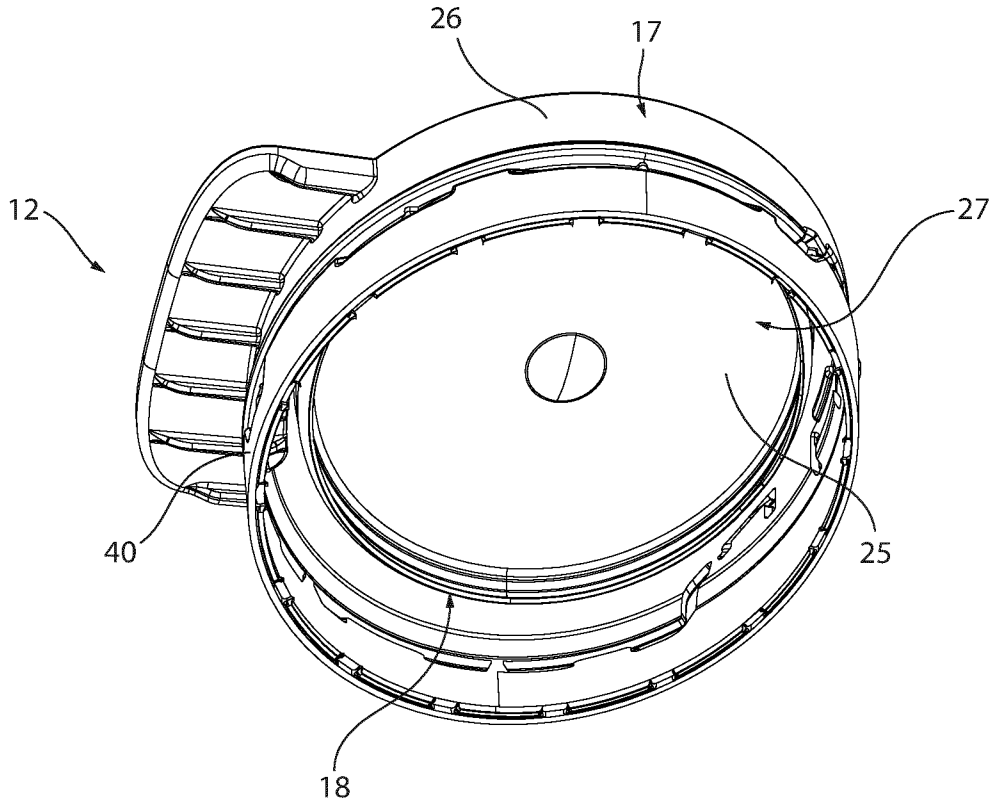


FIG. 3

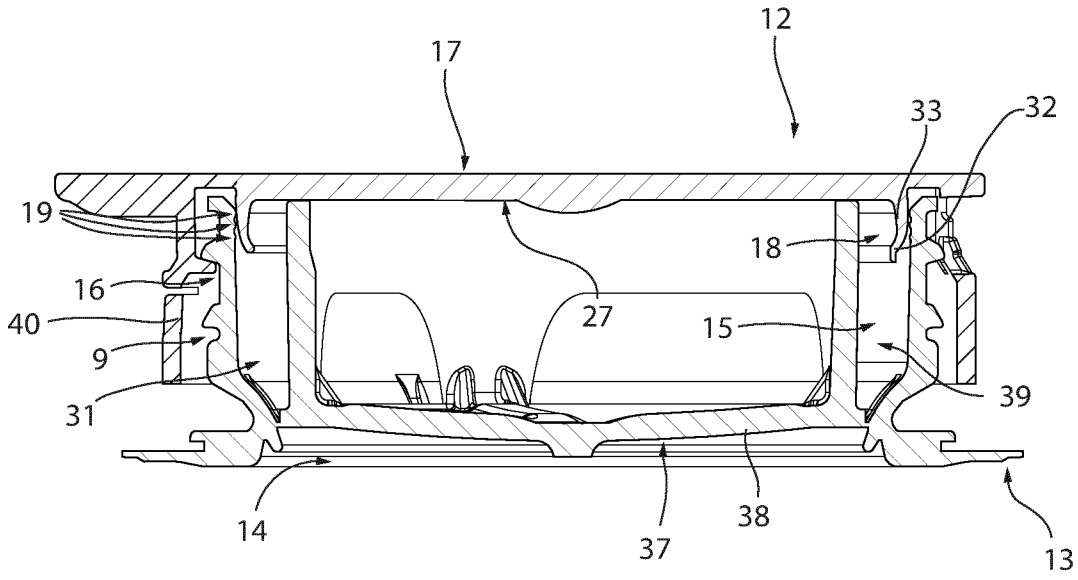


FIG. 4

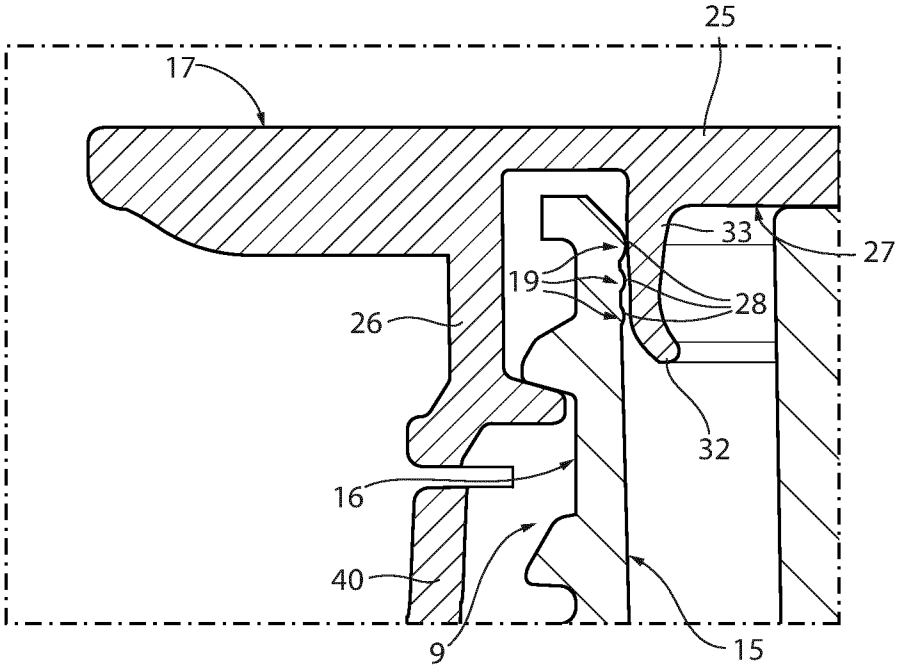


FIG. 5a

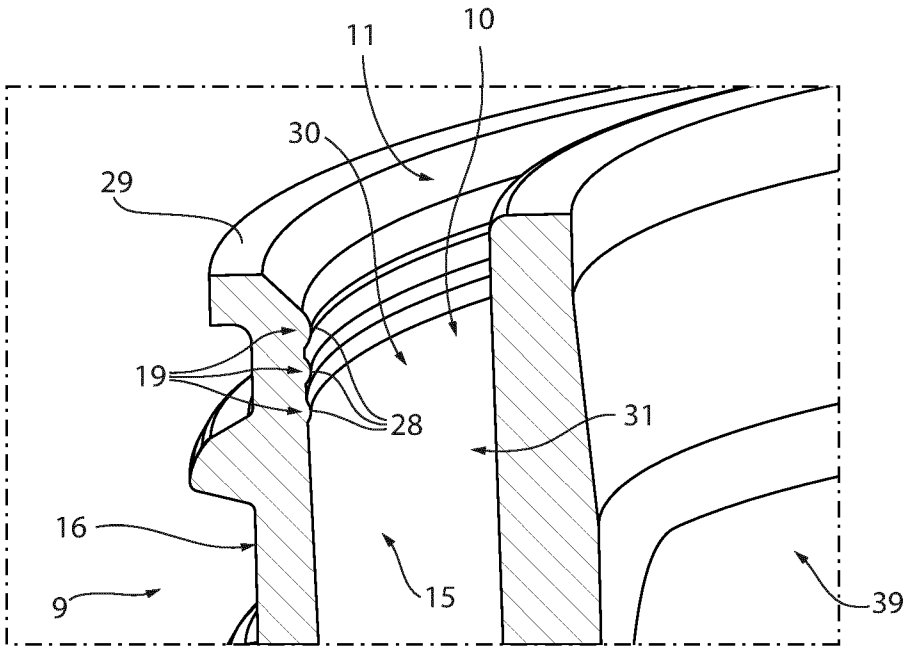


FIG. 5b