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CONTAINER WITH SUCH A CLOSURE**(71) Applicant: **Aptar Freyung GmbH**(72) Inventor: **Bruno Koenigseder, Roehrnbach (DE)**(73) Assignee: **Aptar Freyung GmbH, Freyung (DE)**(21) Appl. No.: **16/482,805**(22) PCT Filed: **Apr. 5, 2018**(86) PCT No.: **PCT/EP2018/058777**

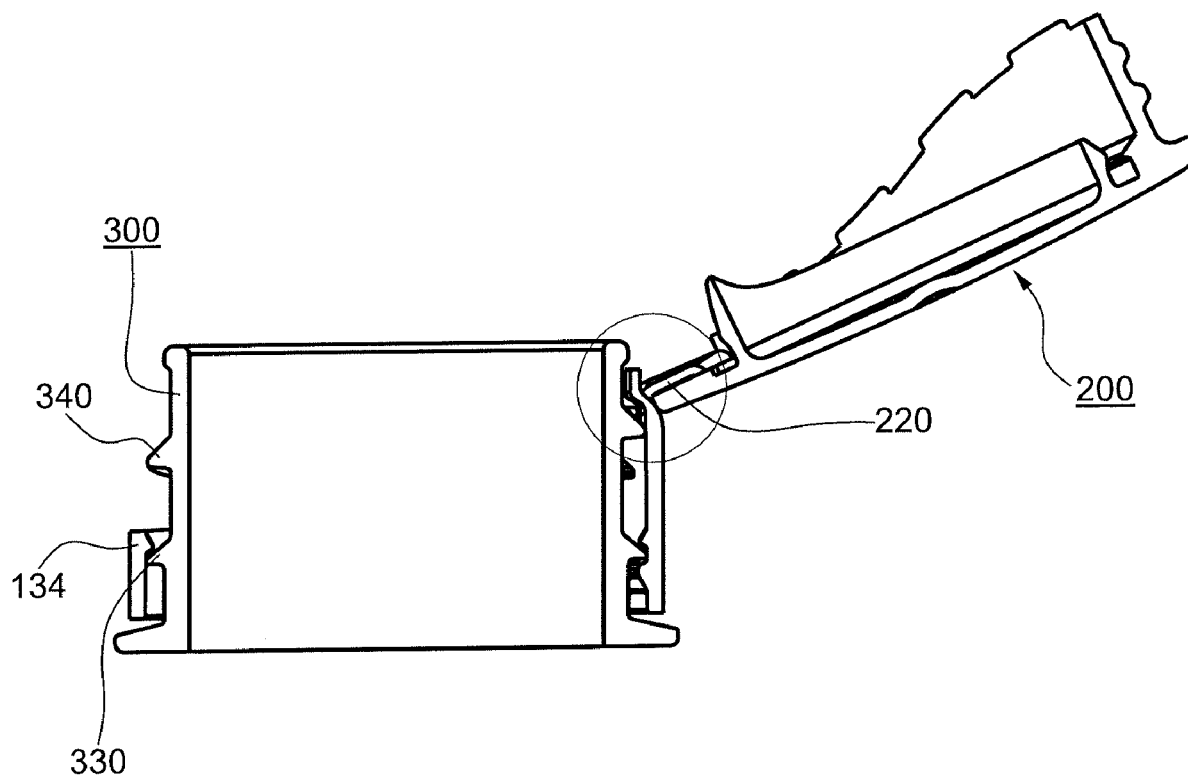
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(57)

**ABSTRACT**

The present invention relates to a closure for a container with a base element and a flip-top lid attached to said base element by a hinge, such that the flip-top lid can be moved between a fully open and a fully closed position. The flip-top lid has a protrusion extending outwardly from said flip-top lid and said skirt having a tongue member extending from an upper region of the skirt of said base member. The invention also relates to a container with such a closure.



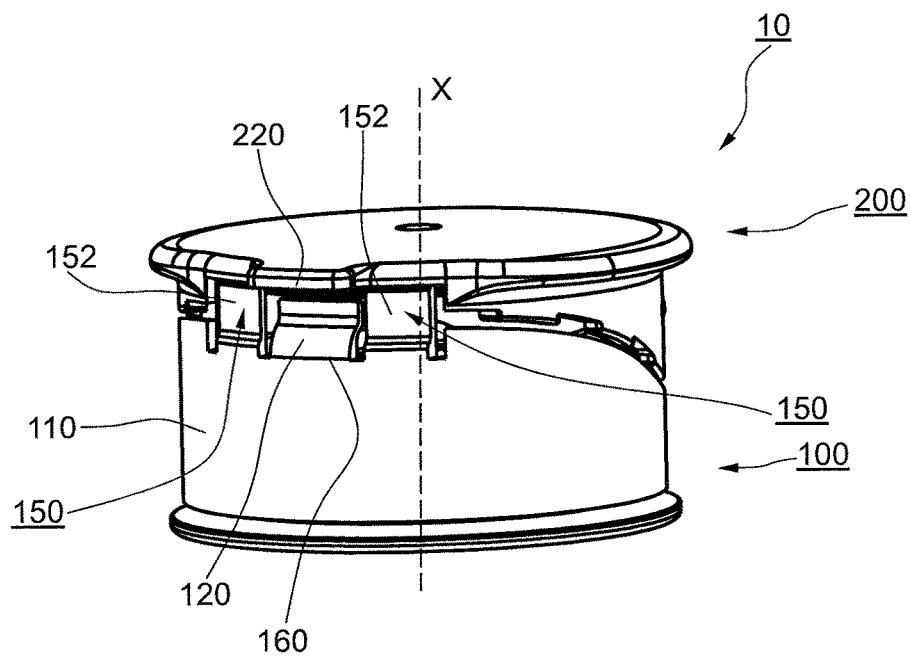


Fig. 1

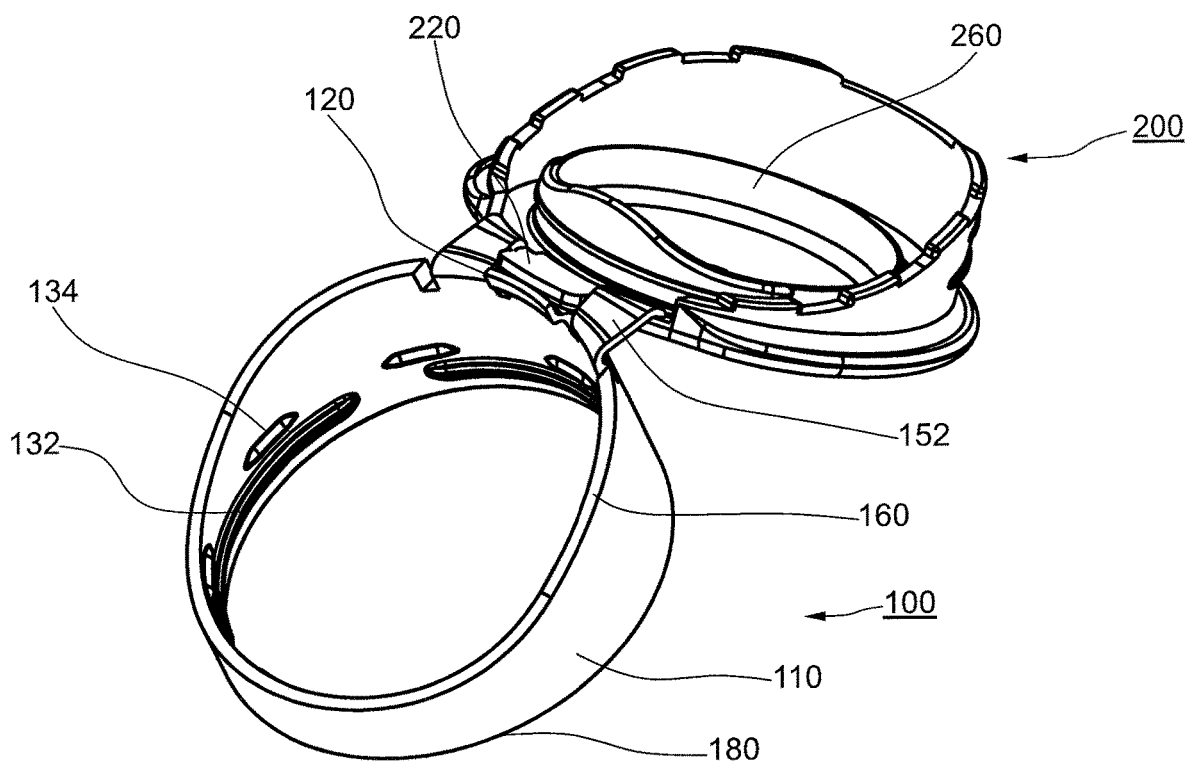


Fig. 2

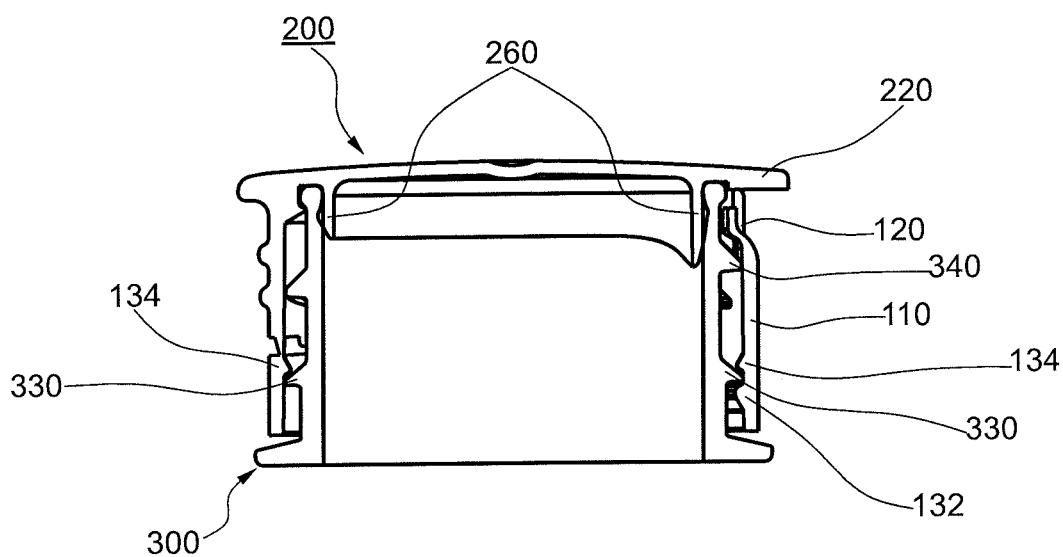


Fig. 3

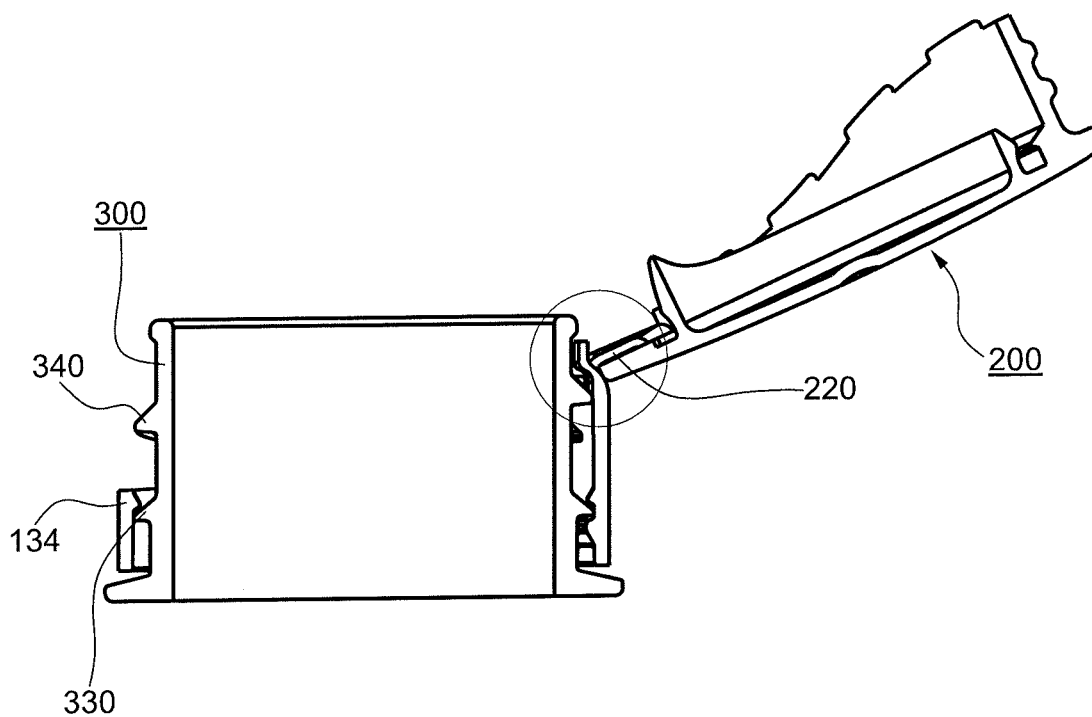


Fig. 4

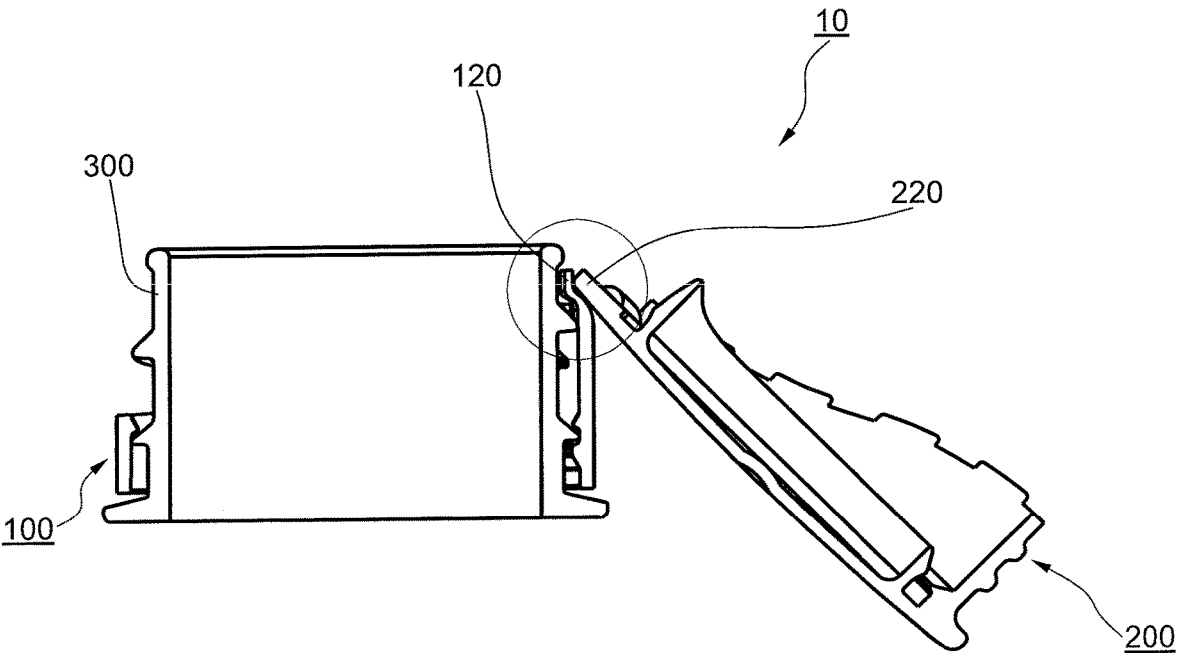


Fig. 5

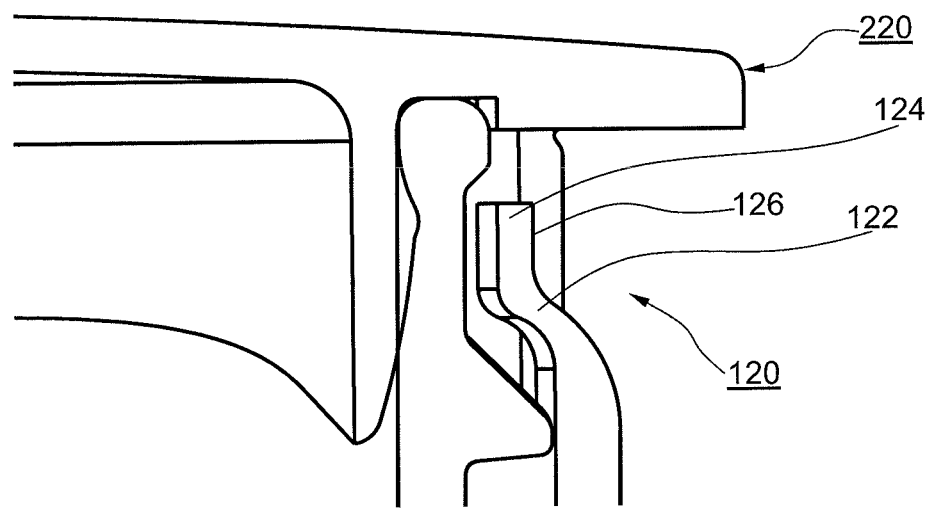


Fig. 6

## CLOSURE FOR A CONTAINER AND CONTAINER WITH SUCH A CLOSURE

[0001] The present invention relates to a closure or closure device for a container and to a container provided with such a closure.

[0002] Such a closure or dispensing device is especially used for dispensing products contained in a container to which said closure or dispensing device is attached.

[0003] The products to be dispensed are typically fluid products, like e.g. liquids or powdered or granular products, e.g. in the food or beverage area, but also in other applications, e.g. for cleaning substances, detergents or other products.

[0004] The present invention especially relates to a closure having a flip-top lid being attached to a base element by a hinge, while such a flip-top lid can be moved between a fully opened and a fully closed position, while it is typically essentially rotated around a hinge between its opened and closed position.

[0005] Such a product is e.g. known from U.S. Pat. No. 7,051,888 B2.

[0006] It is an object of the present invention to provide an enhanced closure or dispensing device with a base element and a flip-top lid attached to said base element.

[0007] This object is solved by a closure for a container according to claim 1 and a container with such a closure according to claim 14. Claims 2 to 13 refer to specifically advantageous realizations of the closure according to claim 1, claim 15 is a specifically advantageous realization of a container with such a closure according to claim 14.

[0008] According to the present invention the closure for a container comprises a base element and a flip-top lid being, directly or indirectly, attached to said base element by means of a hinge. The connection of the flip-top lid to the base element is realized such that the flip-top lid can be moved between a fully opened and a fully closed position, typically the flip-top lid is rotated between these two positions.

[0009] According to the invention the base element has a skirt with attachment means for attaching the closure to the container, wherein said skirt has an upper region and a lower region, with the upper region being closer to the flip-top lid than said lower region when said flip-top lid is in its fully closed position.

[0010] The attachment means are suitable for attaching the closure element to a container, preferably to a neck of a container, e.g. a bottle, so that a product, typically a fluid product, e.g. a liquid or a powder or a granular product, can be dispensed from said container through said neck and through the closure, provided of course that said flip-top lid is in its opened position.

[0011] The closure has an orientation, with the lower part or side being attached to a container, especially a neck of a container, the upper part being defined by the opposite part of the closure, where the flip-top lid is arranged when it is in its closed position. One can therefore define a vertical x-axis, which extends, in a vertical direction, from top to down, through the closure.

[0012] Typically, such closures have an essentially circular form, as also the typical necks of containers are essentially circular, so that also the skirt of such a closure has an essentially cylindrical form, with the cylinder having an essentially circular cross-section and with the vertical x-axis being the longitudinal axis of such a cylinder or of such an essentially cylindrical form.

[0013] A direction normal or perpendicular to the vertical direction or x-axis is therefore defined as an inward or outward direction, also referred to as a radial direction, even if the form of the closure would not be strictly circular. An outward direction would therefore be a direction normal to the vertical x-axis direction, from an inside of the closure to an outside of the closure, e.g. starting from the x-axis and normal or perpendicular thereto.

[0014] According to the present invention the skirt of the base element has a tongue member which extends from the upper region or an upper edge of said skirt into an upward direction or vertically upward direction, i.e. in a direction essentially parallel to said vertical x-axis.

[0015] In this respect it has to be noted that an extension of said tongue member into an upward or vertically upward direction is given when said extension of said tongue member has at least one component which extends into an upward or vertically upward direction. It is therefore also possible that the tongue member, in addition to the extension in a vertically upward direction, also extends in an inward or outward or radial direction.

[0016] The flip-top lid in a disclosure of the present invention has a protrusion extending outwardly or radially outwardly from said flip-top lid in a direction being normal or essentially normal to said upward or vertically upward direction or x-axis direction, into which said tongue member extends. Also in this respect it has to be noted that the extension of the protrusion provides at least one component being directed outwardly or radially outwardly, while it would be possible that the extension of that protrusion also partly has other components, e.g. in a vertical direction, so that the protrusion does not necessarily has to extend solely in a radially outward or outward direction, but can also partly extend in an upward or downward direction, so that the extension comprises components both in an outward direction and in a vertical or x-axis direction.

[0017] According to the present invention said tongue member and said protrusion being positioned and arranged such that during a movement of said flip-top lid between its fully closed and its fully opened position said protrusion and said tongue member are, over a first predetermined angular range of the position of the flip-top lid relative to the base element during its movement between its fully closed and its fully opened position, in contact with each other such that the protrusion exerts a force onto said tongue member in an inward or radially inward direction, whereas said tongue member exerts a counter-force to said protrusion.

[0018] The amount of the force and counter-force exerted can be set by the specific geometric structure and dimensions of especially the tongue member, e.g. the thickness of the tongue member, and it can be also influenced and determined by the selection of the material utilized for the closure and especially the tongue member and its mechanical properties, e.g. its rigidity and elasticity.

[0019] Said tongue member and said protrusion are positioned and arranged such that, when said flip-top lid is within a second predetermined angular range relative to said base element, said counter-force supports a movement of said flip-top lid in a direction towards its fully opened position.

[0020] In a preferred embodiment, set first predetermined angular range, in which said protrusion and said tongue member are in contact with each other, extends over a range of about 70° to 190°, preferably of about 80° to 140°.

[0021] The second predetermined angular range preferably extends over about 30° to 90°, preferably over about 40° to 60°.

[0022] In this respect, it also has to be noted that in a case when said flip-top lid is within a third predetermined angular range relative to said base element, which is essentially directly adjacent to the second predetermined angular range, while both the second and the third predetermined angular range are within the first predetermined angular range, said counter-force can support a movement of said flip-top lid in a direction towards its fully closed position.

[0023] In a preferred embodiment, there is a “neutral position” between said second and said third predetermined angular range, while, when the flip-top lid is moved a little bit into either the second predetermined angular range or the third predetermined angular range the movement of said flip-top lid in either the range of its fully opened position or in its fully closed position is supported.

[0024] According to the present invention said tongue element or at least an outer surface thereof extends, in an upper part thereof, at least partly into an inward or radially inward direction.

[0025] A closure for a container according to the present invention has the advantage that the flip-top lid is, when being in its opened or fully opened position, efficiently maintained in this position, such that the flip-top lid does not inadvertently move into its closed position or an intermediate position during use or during dispensing of a product contained in a corresponding container.

[0026] Furthermore the device is especially user-friendly, as due to the force and counter-force created by said tongue member and said protrusion, there is a direct feedback to the user, who automatically feels the force or counter-force when operating the flip-top lid, so that the user gets an automatic feedback as to when the flip-top lid is in its fully opened position.

[0027] An important advantage is realized by the specific form and geometric arrangement of said tongue element or at least an outer surface thereof, which extends, preferably in an upper part thereof, at least partly into an inward or radially inward direction, as this provides an even development of the force and the counter-force created between said tongue member and said protrusion such that these forces are not changing abruptly or with a too high gradient, thereby ensuring that a smooth movement of the flip-top lid from its closed position into its fully opened position and vice-versa is realized, which especially avoids a splashing or a spilling of product contained in a corresponding container, especially in those cases, where the product is a liquid product and especially for a first opening of the closure, when the corresponding container is still fully filled with a product, especially a liquid, to be dispensed.

[0028] Such a controlled development of a force and a counter-force between tongue member and protrusion cannot be realized with a tongue member which essentially extends only in a vertical direction.

[0029] The exact development of force and counter-force between said tongue member and said protrusion can be fine-tuned, also depending on the materials used for the manufacture of the closure, but it always requires that the tongue member or at least an outer surface thereof at least partly extends into an inward or radially inward direction

relative to the starting position of said tongue member at the upper part or at the upper edge of said skirt, or relative to the outer surface of the skirt.

[0030] The extension into an inward or radially inward direction may start already early with respect to a vertical extension of said tongue, for example already at about 10% or 20% of the total vertical extension of the tongue element calculated from the upper part or upper edge of said skirt.

[0031] In one embodiment it is also possible that the tongue, extending from an upper portion or upper part or upper edge of said skirt, directly starts to flex or bend partly inwardly until said tongue element or an outer surface thereof has reached its maximum inward directed position, relative to the radial or inward/outward position of said skirt or the outer surface of said skirt.

[0032] The outer surface of said tongue element has, in a preferred embodiment, a continuously developing form or a continuously differentiable form, i.e. a form without any edges, and it may comprise convex and concave forms, in a specific embodiment the outer surface shows essentially an S-form or a partial S-form. However, it also has to be noted that in another embodiment it is also possible that the outer surface of the tongue element comprises one or more edges.

[0033] In a preferred embodiment the closure is arranged such that an angle of opening of said flip-top lid between its completely closed and its completely opened position is at least equal to 180°, preferably it is greater than 180°. This large angle of opening especially ensures that the flip-top lid does not at all interfere with the dispensing of any product when being dispensed, even if the user should not handle the device during dispensing in a perfect way, e.g. by tilting the container to which a closure according to the present invention is attached.

[0034] In a preferred embodiment the hinge comprises two or at least two separate parts, being arranged, in a circumferential direction of said closure, in a certain distance. These two parts of the hinge could e.g. be realized by two elastic sheets connecting the flip-top lid and the base element. Such a hinge is easy to manufacture, especially by injection molding, and provides a reliable operation, closing and/or opening, of the flip-top lid. Preferably the closure is arranged such that it is possible to mold the closure also with the lid in a closed position.

[0035] In a preferred embodiment the tongue member and said protrusion are positioned between such two parts of the hinge, e.g. between the two elastic sheets. Especially as due to the fact that the tongue member and the protrusion exert a force and a counter-force onto each other, the specific realization leads to a stable and reliable functioning of the closure, especially a stable and reliable movement of the flip-top lid between its opened and its closed position.

[0036] According to a further preferred embodiment the tongue member has a lower part, which extends both into an upward direction and an inward direction of the closure, preferably in a radially inward direction of the closure, as the closure is preferably a closure having an essentially circular form with an essentially cylindrical or partly cylindrical skirt.

[0037] Preferably the outer surface of said tongue element is curved, preferably convexly curved, which enables a smooth development of the force and the counter-force during the opening and closing of said flip-top lid.

**[0038]** In a preferred embodiment the upper part of the tongue member extends only in a vertical or upward direction.

**[0039]** In a preferred embodiment, the tongue element and the protrusion are arranged such that during movement of the flip-top lid from its fully closed into its fully opened position, the protrusion first abuts, at a predetermined angular position, against an outer surface of said tongue element, preferably in an area which has a most outward or radially outward position, so that, when further moving, especially rotating, the flip-top lid into its fully opened position, the tongue member stays in contact with the outer surface of said tongue member and moves along the tongue member such that it then comes into contact with a part of said tongue element or an outer surface thereof which at least partly extends into a more inward direction.

**[0040]** In a preferred embodiment, an outer surface of said tongue member, has, in a lower portion thereof, an at least partly convexly formed cross-section, which preferably turns, in a more upward direction, into a concavely formed cross-section, while further preferably in the most upper part of the tongue member the cross-section of the outer surface of said tongue member is essentially linearly formed. This specific arrangement realizes a specifically smooth and preferred development of the force and the counter-force between the tongue element and the protrusion during the operating of the flip-top lid and movement of the flip-top lid between its opened and its closed position.

**[0041]** Preferably the protrusion of the flip-top lid is positioned at an upper part of the flip-top lid and extends outwardly, preferably radially outwardly, while the term “radially outwardly” is also used in cases where the flip-top lid has a form at least partly deviating from a circular or cylindrical form, e.g. when the closure has an oval or another form.

**[0042]** According to a preferred embodiment the angular extension of said protrusion and/or said tongue member, in a circumferential direction of the closure, is in the area of about 10° to 40°, further preferably 15° to 30°, e.g. about 25°, which on the one hand enables a secure functioning of the device and a secure and reliable interaction between protrusion and tongue member, while on the other hand keeping the elements sufficiently small in order to use as few material as necessary and to thereby also reduce the total weight of the closure, which is an important cost factor for the manufacturing of the closures.

**[0043]** In one preferred embodiment the angular extensions of said protrusion and said tongue member in a circumferential direction are essentially identical and are overlapping, in another preferred embodiment, however, the angular extension of said protrusion is smaller than the angular extension of said tongue member in a circumferential direction of the closure.

**[0044]** According to a further preferred embodiment the height of the skirt of said base element is different over its circumferential extension, preferably the height of the skirt is largest in a circumferential area where said tongue member and/or said protrusion are positioned. This has the advantage that the protrusion and the tongue member are positioned in direct vicinity to each other, which makes it possible to have the size of the protrusion and/or the tongue member minimized, while still keeping a high stability and therefore a reliable interaction between these two elements during the operation of the closure. Preferably the skirt has,

on an opposite side thereof, the lowest height, which increases the total size of the opening provided by the closure when said flip-top lid is in its fully opened position.

**[0045]** Preferably the upper edge of the skirt extends continuously, i.e. without any edges, which both increases stability, while keeping the above-mentioned advantages, additionally providing a very exceptional optical appearance of the closure, in addition to the functional advantages as described above.

**[0046]** The present invention also relates to a container with a closure as described above, while the closure is preferably attached to said container, e.g. by screwing onto a neck of a container or by pushing the closure onto a neck of a container. Both the closure and the container, especially the neck of a container, therefore provide fastening means which interact with each other, while these fastening means could be threads, e.g. an inner thread at a skirt of the base element of the closure and corresponding outer threads at a neck of a container, but also corresponding protrusions for realizing a so-called snap-on closure are possible. It is also possible that closure and container or closure and neck of a container form an integral unit, as being at least partly manufactured together or alternatively by being connected to each other by other means, e.g. by gluing or welding.

**[0047]** According to a specifically preferred embodiment, the container or especially the neck of the container provides at least one protrusion, which at least partly extends around the circumference of e.g. the neck of a container, at a predetermined height of the neck, while such a protrusion is arranged such that when said closure is attached to the container, the tongue member extends in an inward or radially inward direction at a position (vertically) above said protrusion of said neck of said container. This specific realization has the advantage that also the protrusion of the neck supports and controls the development of the force and counter-force developed between tongue and protrusion, especially the counter-force of the tongue member.

**[0048]** These and other features and advantages of a closure or a container with a closure will be also described in connection with the following description of an embodiment of a closure device according to the present invention:

**[0049]** FIG. 1 shows a perspective view of an embodiment of a closure of the present invention in its fully closed position;

**[0050]** FIG. 2 shows a perspective view of the embodiment of FIG. 1, wherein the flip-top lid is in its fully opened position;

**[0051]** FIG. 3 shows a cross-section of the embodiment according to the present invention with the flip-top lid being in its fully closed position;

**[0052]** FIG. 4 shows a cross-section through the embodiment shown in FIG. 3 with the flip-top lid in a partly opened position;

**[0053]** FIG. 5 shows the embodiment shown in FIG. 3 with the flip-top lid being in its fully opened position;

**[0054]** FIG. 6 is an enlarged view of the embodiment shown in FIG. 3 with the flip-top lid being in its fully closed position.

**[0055]** FIG. 1 shows a perspective view of an embodiment of a closure 10 for a container according to the present invention. The closure 10 comprises a base element 100 and a flip-top lid 200, whereas the flip-top lid 200 is, in FIG. 1, shown in its fully closed position.



[0056] The base element 100 comprises an essentially cylindrical skirt 110, which has, on its inner surface, attachment means for attaching the closure to a neck of the container, see especially FIG. 3 as described hereinafter.

[0057] The closure 10 also comprises a flip-top lid 200, being shown in its fully closed position, while the flip-top lid 200 is attached to said base element 100 by means of a hinge 150.

[0058] The hinge 150 in this embodiment comprises two elastic sheets 152, being arranged with a distance from each other along the circumferential direction of the closure 10.

[0059] The base element 100 further comprises a tongue member 120, extending from an upper edge 160 of said skirt no in an upward direction, i.e. in a direction parallel to a central or longitudinal, vertical axis, the x-axis as shown in FIG. 1.

[0060] Furthermore, the tongue member 120 and its outer surface extends, in one part thereof, into an inward direction, which is in more detail shown and explained with respect to FIG. 3 hereinafter.

[0061] The flip-top lid 200 comprises a protrusion 220, extending outwardly from said flip-top lid 200 in a direction being normal to said upward or vertical direction or x-axis direction, into which said tongue member 120 extends.

[0062] FIG. 2 shows another perspective view of the embodiment of the closure according to the invention as shown in FIG. 1, with the flip-top lid being in its fully opened position.

[0063] As can be well seen in FIG. 2, the angle of opening of said flip-top lid, e.g. the angle around which the flip-top lid 200 is rotated from its fully closed into its full opened position, is remarkably larger than 180°, in the present invention, the angle of opening is about 250°, see e.g. also FIG. 5 hereinafter.

[0064] The flip-top lid 200 also comprises an inner ring 260, which is suitable to seal the closure against the neck of a container, see especially FIG. 3 hereinafter.

[0065] As can be also well seen in FIG. 2, the protrusion 220 of the flip-top lid 100 and the tongue member 120 of the base element 100 interact with each other such that the flip-top lid 200 is held and maintained in its fully open position. If the user wants to move or rotate the flip-top lid 200 out of its fully opened position, as shown in FIG. 2, into the direction of the closed position, the protrusion 220 pushes against the outer surface of the tongue member 120, so that a force onto the tongue member 120 is exerted, creating a counter-force thereby, so that the user has to exert a higher force in order to move the flip-top lid 200 out of its fully opened position as it would be the case if no tongue member or protrusion would be present.

[0066] As mentioned earlier, the exact force can be set and fine-tuned e.g. by selecting a specific thickness of the elements, especially the tongue member, and by selecting the material of the tongue member with respect to its mechanical properties.

[0067] As can also be well seen in FIG. 2, the skirt 110 of the base element 100 comprises, on an inner surface of the skirt 110, attachment means 132 and 134, being suitable for attaching the closure to a neck of a container, as will be described hereinafter in connection with FIG. 3.

[0068] FIG. 3 shows a cross-section of the embodiment shown in FIGS. 1 and 2, with the flip-top lid 200 being in its fully closed position and with the closure 10 being attached to a neck 300 of a container.

[0069] As can be well seen in FIG. 3 the neck 300 of a container comprises an annular protrusion 330, extending in an outward direction at the outer surface of the neck 300.

[0070] The skirt 110 of the base member 100 of the closure 200 comprises, at its inner surface, inwardly protruding fastening means 132 and 134, while the fastening means 132, comprising various protrusions, are positioned below the protrusion 330 of the neck 300, when the closure 10 is mounted onto the neck 300 of the container, while the protrusion 134 of the skirt 100 are positioned above, or vertically above, the protrusion 330 of the neck 300 of the container.

[0071] In order to bring the closure 10 into its mounted position on the neck, the closure 10 is pushed onto the neck 300 of the container, so that the embodiment shown here is a so-called snap-on closure.

[0072] In this respect, however, it also has to be noted that it would be also possible to provide different fastening means. The closure could be e.g. also realized as a closure having internal threads which correspond to external threads of a neck of a container, so that the closure can be screwed onto the neck of the container.

[0073] As can be also well seen in FIG. 3, the inner ring 260 extending from a lower inside wall of the flip-top lid 200 fits into an opening defined by the neck 300 of the container, so that the flip-top lid 200 seals the opening of the neck 300 of the container when it is in its fully closed position.

[0074] FIG. 4 shows the embodiment shown in FIG. 3, also in cross section, however, with the flip-top lid 200 being in a partly opened position.

[0075] As can be well seen in FIG. 4, the protrusion 220 abuts against an outer surface of the tongue member 120, such that a force is exerted by said protrusion 220 onto said tongue member 120, which thereby generates a counter-force.

[0076] The user will therefore have to exert a higher force in order to further move or rotate the flip-top lid 200 into the direction of its fully open position.

[0077] However, due to the fact that, as can be also well seen in FIG. 4, the end of a protrusion 220 moves, with a further rotation of the flip-top lid into its fully open position, into an area of the tongue member 120, which is flexed or bent partly into an inward direction, the force and counter-force created between these two elements is gradually reduced starting from a certain, predetermined angle of rotation.

[0078] This has the advantage that the flip-top lid 200 will on the one hand be further pushed into its fully opened position, starting from a certain, predetermined angle of rotation, however, the force is reduced such that there is no strong “snapping” of the flip-top lid into its fully opened position, and this avoids splashing or spilling of any liquid from the container.

[0079] FIG. 5 shows the embodiment according to the present invention as shown in FIG. 4, however, with the flip-top lid being in its fully opened position.

[0080] As can be well seen in FIG. 5, the protrusion 220 now essentially fully fits into the area of the tongue element 110, which is shifted radially inwardly.

[0081] The specific form of the tongue member 120 or of the outer surface thereof therefore succeeds in providing a suitable development of the force and counter force created between the tongue element 120 and the protrusion 220, depending on the angle of rotation, so that, on the one hand,

the movement of the flip-top lid **200** into its fully opened position, after having reached a certain angular position, is supported and especially the flip-top lid is maintained and retained in its fully opened position, while on the other hand avoiding a too strong force being developed between these two elements, which would otherwise lead to an undesirably strong snapping of the flip-top lid into its fully opened position, as this frequently causes a splashing of spilling of content from the container, especially in case the container comprises a liquid and in case the container is relatively full.

[0082] In this respect it also has to be noted that the closure in this embodiment is also, essentially automatically, realized such that the movement of the flip-top lid **200** back into its closed position is supported when the user moves the flip-top lid **200**, from its fully opened position, back over a certain angular position.

[0083] In other words, there is an angular position  $\alpha_1$ , a “neutral position”, while a slight movement to an angular position being closer to the fully closed position leads to a support of the movement of the flip-top lid **200** in the direction of its closed position, while otherwise, as described above, a movement beyond this angular position  $\alpha_1$  into the direction of its fully opened position, leads to the effect that the movement of the flip-top lid **200** into its fully opened position is supported.

[0084] FIG. 6 shows a partial enlargement of the embodiment shown in FIG. 3, with the flip-top lid **200** in its fully closed position.

[0085] In FIG. 6 one can especially well see the realization of the tongue member **120**, which not only extends in an upward direction, but also has a section **122**, in which said tongue member **120** also extends in an inward direction, in this case a radially inward direction, with a final or upper section **124**, which again only extends in an upward direction.

[0086] The outer surface **126** of the tongue member **120** is therefore curved and has first a partly convexly formed surface, which, when moving more upwardly, transitions into a partly concavely formed cross section, before, in an upper area **124**, extending essentially linearly or vertically. The outer surface **126** of the tongue member **120** therefore describes essentially an S-form or part of an S-form.

[0087] In this embodiment, the thickness of the tongue member **120** is essentially constant, however, it would be of course also possible to have a tongue member with different thicknesses over its extension.

[0088] It is clear to the expert that various amendments can be made to the embodiment, without departing from the scope of the present invention as defined by the attached claims, and any features disclosed in connection with the embodiments or the general description can be important for realizing the invention, either alone or any combination thereof.

1. Closure for a container with  
a base element (**100**),

- a flip-top lid (**200**) attached to said base element (**100**) by a hinge (**150**) such that the flip-top lid (**200**) can be moved between a fully opened and a fully closed position,

said base element (**100**) having a skirt (**110**) with attachment means (**132**, **134**) for attaching the closure to the container, said skirt (**110**) having an upper region and a lower region,

the upper region being closer to the flip-top lid (**200**) than said lower region when said flip-top lid is in its fully closed position,

said skirt (**110**) having a tongue member (**120**) extending from said upper region of said skirt (**110**) into an upward direction,

said flip-top lid (**200**) having a protrusion (**220**) extending outwardly from said flip-top lid (**200**) in a direction being normal to said upward direction into which said tongue member (**120**) extends,

said tongue member (**120**) and said protrusion (**220**) being positioned and arranged such that, during a movement of said flip-top lid (**200**) between its fully closed and its fully opened position, said protrusion (**220**) and said tongue member (**120**) are, over a first predetermined angular range of the position of the flip-top lid (**200**) relative to the base element (**100**) during its movement between its fully closed and its fully opened position, in contact with each other, such that the protrusion (**220**) exerts a force onto said tongue member (**120**) in an inward direction and said tongue member (**120**) exerts a counter-force to said protrusion (**220**),

such that, when said flip-top lid (**200**) is within a second predetermined angular range relative to said base element (**100**), said counter-force supports a movement of said flip-top lid (**200**) in a direction towards its fully opened position,

wherein said tongue element (**120**) or an outer surface (**122**) thereof extends, in an upper part thereof, at least partly into an inward direction.

2. Closure according to claim 1, wherein an angle of opening ( $\alpha$ ) of said flip-top lid (**200**) between its completely closed and its completely opened position is equal to  $180^\circ$  and preferably greater than  $180^\circ$ .

3. Closure according to claim 1, wherein the hinge (**150**) comprises two parts, especially two elastic sheets (**152**), connecting the flip-top lid (**200**) and the base element (**100**).

4. Closure according to claim 3, wherein said tongue member and said protrusion are positioned, in a circumferential direction of said closure, between said two parts of said hinge.

5. Closure according to claim 1, wherein said tongue member (**120**) has a portion (**122**) which extends both into an upward direction and an inward direction of the closure (**10**), preferably a radially inward direction of the closure (**10**).

6. Closure according to claim 1, wherein an upper part (**124**) of the tongue member (**120**) extends only in an upward direction.

7. Closure according to claim 1, wherein an outer surface (**126**) of said tongue member is, in one portion (**122**) of the tongue member (**120**), curved, preferably in a convex form.

8. Closure according to claim 1, wherein an outer surface (**126**) of said tongue member (**110**) has, in one portion (**122**) thereof, an at least partly convexly formed cross section, which preferably turns, in a more upward direction, into a concavely formed cross section, while further preferably in the most upper portion (**124**) of the tongue member (**120**) the cross section of the outer surface (**126**) of said tongue member (**120**) is essentially linearly formed.

9. Closure according to claim 1, wherein the protrusion of the flip-top lid (**200**) is positioned at an upper portion of the flip-top lid (**200**) and extends outwardly, preferably radially outwardly.

10. Closure according to claim 1, wherein the angular extension of said protrusion (220) and/or said tongue member (120), in a circumferential direction of the closure (10), is in the area of about 10° to 40°, preferably 15° to 30°.

11. Closure according to claim 1, wherein the angular extensions of said protrusion (220) and said tongue member (120) in a circumferential direction of the closure are exactly identical and overlapping.

12. Closure according to claim 1, wherein the angular extension of said protrusion (220) is smaller than the angular extension of said tongue member (120) in a circumferential direction of the closure.

13. Closure according to claim 1, wherein a height of the skirt (110) of said base element (100) is different over its circumferential extension, while the height of the skirt (110) is largest in a circumferential area where said tongue member (120) and/or said protrusion (220) are positioned.

14. Container with a closure according to claim 1.

15. Container according to claim 14, wherein said closure (10) is attached to a neck (300) of said container and wherein the neck (300) comprises, at its outer surface, a protrusion (340), wherein said tongue member (120) is arranged such that it extends in an inward direction at a position above said protrusion (340) of said neck (300) of said container.

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