EUROPEAN PATENT SPECIFICATION

(54) METHOD FOR PROVIDING A HINGED GUARANTEE CLOSURE, A HINGED GUARANTEE CLOSURE AND CONTAINER WITH A HINGED GUARANTEE CLOSURE

"VERFAHREN ZUR BEREITSTELLUNG EINES GELENK-GARANTIEVERSCHLUSSES, GELENK-GARANTIEVERSCHLUSS UND BEHÄLTER MIT EINEM GELENK-GARANTIEVERSCHLUSS"

PROCEDE DE PRODUCTION D’UNE FERMETURE DE SECURITE A CHARNIERES, FERMETURE DE SECURITE A CHARNIERES ET RECEPTACLE POURVU D’UNE FERMETURE DE SECURITE A CHARNIERES

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(56) References cited:
WO-A1-00/44638
DE-A1- 4 338 090
US-B1- 6 253 937

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Description

[0001] The invention relates to a method for providing a hinged guarantee closure for a container, said closure comprising a cap having an integral closing member for closing cooperation with an opening in said container, and a ring member for connection to said container around said opening.

[0002] The invention also relates to a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with the opening, and a ring member for connection to the container around said opening.

[0003] Furthermore, the invention also relates to a container having a hinged guarantee closure for an opening in said container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member for connection to the container around said opening, said guarantee closure being injection moulded in the closed state with a guarantee connection.

[0004] A number of so-called guarantee closures are known, i.e., closures of the type where the user can see whether the closure is intact and that no third person has had access to the contents of the container on which the closure is used. A very common type of closure is one comprising a base member with an opening and designed for mounting on the container in question, which has a separate opening, a cap hinge-connected to the base member and an integral closing member in the cap which, in the closed position, cooperates with a corresponding opening in the base member. Such closures are as a rule injection moulded with the cap swung out, i.e., open, to the side of the base member. After removal from the mould, the base member of the closure is placed on the container. With the cap swung in, i.e., in the closed position, a connection is provided between the cap and the base member, diametrically opposite the hinge, for example, by welding. This connection provides an assurance or guarantee that the closure has not been opened before the purchaser or user opens the closure for the first time.

[0005] This prior art has a number of drawbacks. A substantial drawback is that the closure is moulded in the said swung-out state. This means that the moulding surface or pressure surface will be about twice the size of the closure surface when mounted and closed, and that the mould tool and the process machine in which the tool is arranged must be scaled up correspondingly. Moreover, before or after its mounting on the container, the closure must be brought into the closed state, which requires an extra work process. The provision of the assurance or guarantee connection also requires a separate work process.

[0006] The known embodiment having an inverted cup-shaped base member also entails extra consumption of material.

[0007] EP 0309396 describes an integral closure that is manufactured in the closed position, where the closure comprises an upper part and a lower part that are radially spaced by means of a gap extending in the joint surface which is traversed by a film hinge and an element that produces the snapping effect. The gap can also be traversed by a guarantee connection.

[0008] However, full size caps with an integral hinge and assurance/guarantee connection that are moulded in the closed position are not found in the prior art. Full size caps are highly advantageous since the tube can stand in a relatively stable manner on the cap, which means that the tube takes up little space. Tubes that do not have full size caps are stored in a horizontal position and they therefore require more space. There is therefore a need for an improved closure of the guarantee type.

[0009] A reclosable guarantee closure is disclosed in DE -A- 43 38 090. This closure, however, is intended to be removed from the container during use, leaving no remaining hinge.

[0010] Another guarantee closure is disclosed in US -A- 4 911 324. This closure has no axially spaced and does not have an integral hinge and guarantee connection in the periphery of the upper and lower part thereof, and cannot therefore be made as a full size cap.

[0011] A closure disclosed in WO -A- 00/44638. Nor this closure discloses a Full size cap that is injection moulded in a closed position and provided with an integral hinge and assurance/guarantee connection.

[0012] The object of the invention is to be able to produce a hinged guarantee closure using a smaller moulding tool (moulding machine) in a materials-saving manner, which closure should be capable of being attached to a container in a single work process.

[0013] According to the invention there is therefore proposed a method for providing a hinged guarantee closure for a container, said closure comprising a cap having an integral closing member for closing cooperation with an opening in said container, and a ring member for connection to said container around said opening, the guarantee closure is injection moulded and formed in the closed state with a guarantee connection, characterised in that the closure is injection moulded as a full size cap with an integral hinge and guarantee connection, the hinge and guarantee connection spanning the gap between the cap and ring member and are arranged generally flush with the cap and ring member exterior surfaces.

[0014] It is especially advantageous if the ring member is injection moulded with a coupling part designed for cooperation with a coupling part on the container.

[0015] In an especially preferred embodiment, the ring member can be injection moulded with an internal circumferential snap edge as coupling part.

[0016] It is especially advantageous if the spaced ring member is made having an internal circumferential snap edge, the container then being provided with a circumferential groove around the opening, adapted to the snap edge, and that the moulded closure is pressed by means
In a particularly preferred embodiment, the closure may be injection moulded so that the hinge is in the periphery of the cap, thus ensuring that no parts of the hinge project beyond the outer diameter of the cap. When the cap is to be placed on the container, it is highly advantageous that no elements of the product project beyond the outer diameter of the cap. In addition, this gives the cap a neat appearance.

A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

It is especially advantageous if said coupling part is in the form of an internal circumferential snap edge on the ring member.

In a particularly advantageous embodiment, the closure can be injection moulded so that the hinge is in the periphery of the cap, thus ensuring that no parts of the hinge project beyond the outer diameter of the cap. When the cap is to be put on the container, it is highly advantageous that no elements of the product project beyond the outer diameter of the cap. In addition, this gives the cap a neat appearance.

A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

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A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

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A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

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A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

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A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

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A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

It is especially advantageous if said coupling part is in the form of an internal circumferential snap edge on the ring member.

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A particular advantage with these embodiments of the hinge is that projecting hinge portions are avoided and at the same time the favourable snap-over effect is obtained when the cap is opened and swung about the hinge.

According to the invention, there is also proposed a hinged guarantee closure for an opening in a container, said closure comprising a cap having an integral closing member for cooperation with said opening, and a ring member spaced from the cap by a gap for connection to the container around said opening, characterised by said cap being a full sized cap, and said cap and ring member being connected by an integral hinge element and at least one integral guarantee connection; the hinge element and the at least one guarantee connection being formed generally flush with the cap and ring member exterior surfaces, said ring member otherwise being axially spaced relative to said cap. It is especially advantageous if such a hinged guarantee closure is able to have incorporated in the ring member a coupling part designed for cooperation with a coupling member on the container.

It is especially advantageous if said coupling part is in the form of an internal circumferential snap edge on the ring member.
bodiment of a closure having an inverted cup-shaped base member;

Fig. 2 shows a closure according to the invention when shut or closed;

Fig. 3 shows the same closure from the opposite side;

Fig. 4 shows the closure when open, with the cap swung out;

Fig. 5 is an enlarged sectional view of the closure in Figs. 2-4 fitted on a container;

Fig. 6 shows a third closure according to the invention; and

Fig. 7 shows the closure in Fig. 10 with broken guarantee connection.

[0034] Fig. 1 shows a prior art closure for a container. The closure 2 comprises an inverted cup-shaped base member 3 in the bottom of which is a circular-cylindrical collar 4 for cooperation with the neck 5 of the container. In the bottom of the inverted cup-shaped base member 3 is an opening 6 which, in the fitted state shown, will be flush with the opening 7 in the container 1. The base member 3 is hinge-connected 8 to the cap 9. It is a particular object of the invention to reduce the use of material in the base member 3 by reducing the base member to a ring member, thus also avoiding the "bottom" of the base member and the collar or support 4.

[0035] The closure according to the invention shown in Figs. 2 to 5 comprises a cap 11, an integral closing member 12 in the cap, and a ring member 13 with an internal snap edge 14. The cap 11 is connected to the ring member 13 by an integral hinge 15, with no portions projecting beyond the periphery of the closure, and with an integral guarantee connection 16, arranged diametrically opposite the hinge 15. The guarantee connection 16 is shown broken in Fig. 4.

[0036] Fig. 2 shows a highly advantageous embodiment where the integral hinge 15 is arranged in the periphery of the cap so that when the cap is closed the no parts of the hinge 15 project beyond the outer diameter of the cap. This is highly advantageous during the subsequent process in which the cap is fitted on a container. In addition, it gives this cap an attractive and neat design.

[0037] Fig. 5 shows the closure placed on a container 17. The container 17 has a top wall 18 having an opening 19. The guarantee closure is pressed in place on the container 17, the snap edge 14 being brought into cooperation with a corresponding groove 20 in the container 17. The closing member 12 that is integral with the cap 11 passes into the opening 19 in the container 17 and closes this opening 19. It will be understood that when the cap 11 is swung into the open position, as in Fig. 4, the closing member 12 will move out of the opening 19 and unstop it. The section in Fig. 5 is outside the hinge 15 and the connection 16 respectively, to show the axial gap 21 between the cap 11 and the ring member 13.

[0038] The closure according to the invention shown in Figs. 2 to 5 is injection moulded using a tool that comprises a housing and a core member that is insertable into the housing. The core defines a mould chamber together with the housing. This mould chamber is divided by a collapsible core into two chambers, i.e., a chamber in which the cap is formed and a chamber in which the ring member is formed. A collapsible core is introduced into the mould chamber and this partly closes the chambers around the core off from one another, so that a mould section is created in which the hinge or guarantee connection will be formed. The collapsible core will form the axial gap between the cap and the ring member. This involves the application of injection moulding technique that is known per se.

[0039] The snap edge 14 is produced in that the core is provided with a circumferential recess. The elasticity of the moulding materials allows the core to be withdrawn without any difficulty. Optionally, a more or less collapsible core may also be used, as will be known to the person skilled in the art of injection moulding.

[0040] After the injection moulding, there is a guarantee closure which can be broken by the first-time user, by breaking the connection 16. This is done in a common manner in that the cap 11 is swung about the hinge 15.

[0041] The closing member 12 is shown in this case as a pin which passes into the opening 19 in the container. Of course, the closing member may be of another suitable design, and may, for instance be in the form of an annular projection which on closing comes to rest around an elevation around the opening.

[0042] Of course, instead of the snap edge 14 (see Figs. 4 and 5) other suitable coupling means may be used. For instance, the use of cooperating screw threads which can be injection moulded without any difficulty by using a collapsible core would be possible, or, for example, a bayonet fastening. However, the illustrated snap edge connection, which could optionally be reversed, is advantageous because the closure can then simply be pressed axially onto the container and snapped into place.

[0043] Figs. 6 and 7 show another advantageous embodiment of a hinged guarantee closure comprising a cap 38, and a ring member 39 axially separated relative to the cap, where there is another design of the guarantee connection 40 from which it can be seen whether the guarantee connection 40 has been broken or not. In Fig. 6 the closure is shown with an unbroken guarantee connection 40, i.e., that the cap has not previously been opened. Fig. 7 shows the same closure as in Fig. 6, but now with a broken guarantee connection 40. This design of the guarantee connection 40 makes its clear to a user whether the cap has already been opened or not.

[0044] A major advantage obtained with the invention
is the simplified and materials-saving closure embodiment compared, for example, with the known embodiment shown in Fig. 1, as it can be seen that by using a ring member, the bottom of the known inverted cup member is avoided and this results in materials saving. The projected surface or pressure surface in the injection moulding tool is also greatly reduced compared with the prior art, to about half, with the associated advantages as regards the sizing of tools and moulding machine.

[0045] Another major advantage obtained with the invention is that the integral cap can be made as a full size cap where none of the elements of the cap project beyond the outer periphery of the cap.

Claims

1. A method for providing a hinged guarantee closure for a container, said closure comprising a cap (11; 22; 38) having an integral closing member (12; 23) for closing cooperation with an opening in said container, and a ring member (13; 24; 39) spaced from the cap by a gap for connection to said container around said opening, the guarantee closure is injection moulded and formed in the closed state with a guarantee connection, characterised in that the closure is injection moulded as a full size cap with an integral hinge (15; 26) and guarantee connection (16; 27; 40), the hinge and guarantee connection spanning the gap (21) between the cap (11; 22; 38) and ring member (13; 24; 39) and are arranged generally flush with the cap and ring member exterior surfaces.

2. The method of claim 1, characterised in that the ring member (13; 24; 39) is injection moulded with a coupling part (14; 25) intended for cooperation with a coupling part on the container.

3. The method of claim 2, characterised in that the ring member (13; 24; 39) is injection moulded having an internal circumferential snap edge (14; 25).

4. The method of either one of the preceding claims, characterised in that the guarantee connection (40) is made so that it is clear whether the guarantee connection (40) has been broken or not.

5. The method according to any of claims 1-4, characterised in that the closure is made having a coupling part (14; 25), and the container (17; 28) is provided with a coupling part (20; 31) that cooperates therewith.

6. The method of claim 5, characterised in that the ring member (13; 24; 39) is made having an internal circumferential snap edge (14; 25), that the container (17; 28) is provided with a circumferential groove (20; 31) around the opening, adapted to the said snap edge, and that the moulded closure is pressed with its ring member (13; 24) onto the container (17; 28) so that the snap edge (14; 25) is pressed to snap into the circumferential groove (20; 31).

7. The method of claim 5 or 6, characterised in that the guarantee connection (40) is made so that it is clear whether the guarantee connection (40) has been broken or not.

8. A hinged guarantee closure for an opening in a container, said closure comprising a cap (11; 22; 38) having an integral closing member (12; 23) for cooperation with said opening, and a ring member (13; 24; 39) for connection to the container around said opening, characterised by:

9. The hinged guarantee closure of claim 8, characterised by said guarantee connection being positioned substantially diametrical of said respective hinge element.

10. The hinged guarantee closure of claim 8, characterised in that said hinge element has a snap effect, whereby the cap is biased in either one of an open position or closed position relative to said ring member.

11. The hinged guarantee closure of claim 11, characterised by a coupling part (14; 25) on the ring member (13; 24; 39).

12. The hinged guarantee closure of claim 11, characterised in that the coupling part on the ring member is an internal circumferential snap edge (14; 25).

13. The hinged guarantee closure of claim 12, characterised in that the hinge (26) is curved inwardly concavely.

14. The hinged guarantee closure of claims 8 to 13, characterised in that the guarantee connection (40) is formed so that it is clear whether it has been broken or not.

15. A container having a hinged guarantee closure for
The container of any of claims 15, 16 or 17, characterised by:

- said cap being a full sized cap, and
- said cap and ring member being connected by an integral hinge element (15; 26) and at least one integral guarantee connection (16; 27; 40); the hinge element (15; 26) and the at least one guarantee connection (16; 27; 40) being formed generally having similar external diameters.

16. The container of claim 15, characterised in that the coupling part on the ring member is an internal circumferential snap edge (14; 25), and that the container has a groove (20; 31) running around the opening (19; 30) into which the snap edge (14; 25) is snapped.

17. The container of claim 15 or 16, characterised in that the guarantee connection (40) is formed so that it is clear whether it has been broken or not.

18. The container of any of claims 15, 16 or 17, characterised by said cap, ring member, and container generally having similar external diameters.

Patentansprüche

1. Verfahren zur Herstellung eines Gelenk-Garantieverschlusses für einen Behälter, welcher Verschluss eine Kappe (11; 22; 38) mit einem integrierten Verschlussorgan (12; 23) aufweist, um einer Öffnung im Behälter zusammenzuwirken und diese zu verschließen, und einen durch einen Spalt von der Kappe getrennten Ring (13; 24; 39) aufweist, wobei der Garantieverchluss spritzgegossen ist und im geschlossenen Zustand mit einer Garantieverbindung geformt wird, durchgekennzeichnet, dass der Verschluss als Kappe voller Größe mit angeformtem Gelenk (15; 26) und Garantieverbindung (16; 27; 40) spritzgegossen wird, wobei das Gelenk und die Garantieverbindung den Spalt (21) zwischen der Kappe (11; 22; 38) und dem Ring (13; 24; 39) überbrücken und im Allgemeinen eben mit den Aussenflächen der Kappe und des Rings angeordnet sind.

2. Verfahren nach Anspruch 1, durchgekennzeichnet, dass am Ring (13; 24; 39) ein Kupplungs teil (14; 25) angespritzt wird, das zur Zusammenwirkung mit einem Kupplungs teil am Behälter vorgesehen ist.

3. Verfahren nach Anspruch 2, durchgekennzeichnet, dass an den Ring (13; 24; 39) eine innen umlaufende Schnappkante (14; 25) angespritzt wird.

4. Verfahren nach einem der vorstehenden Ansprüche, durchgekennzeichnet, dass die Garantieverbindung (40) so ausgebildet wird, dass es eindeutig ist, ob die Garantieverbindung (40) aufgebrochen wurde oder nicht.

5. Verfahren nach einem der Ansprüche 1-4, durchgekennzeichnet, dass am Verschluss ein Kupp lungsteil (14; 25) ausgebildet wird und der Behälter (17; 28) mit einem Kupp lungsteil (20; 31) versehen wird, der mit diesem zusammenwirkt.

6. Verfahren nach Anspruch 5, durchgekennzeichnet, dass am inneren Umfang des Rings (13; 24; 39) ein Schnapprand (14; 25) angespritzt wird, dass der Behälter (17; 28) am Umfang mit einer um die Öffnung umlaufenden und an die Schnappkante angepassten Nut (20; 31) versehen wird, und dass der gegossene Verschluss mit seinem Ring (13; 24) an den Behälter (17; 28) gepresst wird, so dass die Schnappkante (14; 25) in der Umschlagnut (20; 31) einschnappt.

7. Verfahren nach Anspruch 5 oder 6, durchgekennzeichnet, dass die Garantieverbindung (40) so ausgebildet wird, dass es eindeutig ist, ob die Garantieverbindung (40) aufgebrochen wurde oder nicht.

8. Gelenk-Garantieverschluss für eine Öffnung in einem Behälter, welcher Verschluss eine Kappe (11; 22; 38) mit einem angeformten Verschlussorgan (12; 23) aufweist, um mit der Öffnung zusammenzuwirken, sowie einen Ring (13; 24; 39) zur Befestigung am Behälter um die Öffnung, durchgekennzeichnet, dass:

die Kappe eine Kappe voller Größe ist und die Kappe und der Ring miteinander verbunden sind über ein angeformtes Gelenkelement (15; 26) und mindestens eine angeformte Garantieverbindung (16; 27; 40); wobei das Gelenkelement (15; 26) und die mindestens eine Garantieverbindung (16; 27; 40) im Allgemeinen bündig eben mit den Aussenflächen der Kappe und

15. Gelenk-Garantieverschluss nach Anspruch 8, dadurch gekennzeichnet, dass das Gelenkelement eine Schnappwirkung aufweist, wodurch die Kappe entweder in eine offene oder in eine geschlossene Stellung gegenüber dem Ring gedrückt wird.

16. Behälter nach Anspruch 15, dadurch gekennzeichnet, dass das Kupplungsteil am Ring eine innen umlaufende Schnappkante (14; 25) ist, und dass der Behälter eine um die Öffnung (19; 30) umlaufende Nut (20; 31) aufweist, in welche die Schnappkante (14; 25) eingeschnappt wird.

17. Behälter nach Anspruch 15 oder 16, dadurch gekennzeichnet, dass die Garantieverbindung (40) so ausgebildet ist, dass es eindeutig ist, ob sie aufgebrochen wurde oder nicht.

18. Behälter nach einem der Ansprüche 15, 16 oder 17, dadurch gekennzeichnet, dass die Kappe, der Ring und der Behälter im Allgemeinen ähnliche Ausendurchmesser aufweisen.

Revendications

1. Procédé de production d'une fermeture de garantie à charnière pour un récipient, ladite fermeture comprenant un capuchon (11; 22; 38) ayant un organe de fermeture (12; 23) intégral, destiné à coopérer avec et fermer une ouverture dans ledit récipient, et un élément annulaire (13; 24; 39) espacé du capuchon par un interstice et destiné à être fixé audit récipient autour de ladite ouverture, la fermeture de garantie étant moulée par injection et façonnée à l’état fermé avec une liaison de garantie, caractérisé en ce que la fermeture est moulée par injection sous la forme d’un capuchon pleine grandeur avec une charnière (15; 26) et liaison de garantie (16; 27; 40) intérieures, la charnière et la liaison de garantie franchissant l’interstice (21) entre le capuchon (11; 22; 38) et l’élément annulaire (13; 24; 39) et étant agencées généralement à fleur des surfaces extérieures du capuchon et de l’élément annulaire.

2. Procédé selon la revendication 1, caractérisé en ce que l’élément annulaire (13; 24; 39) est moulé par injection avec une partie d’accouplement (14; 25) destinée à coopérer avec une partie d’accouplement sur le récipient.

3. Procédé selon la revendication 2, caractérisé en ce que l’élément annulaire (13; 24; 39) est moulé par injection avec une arête intérieure circonférentielle (14; 25) encliquetable.

4. Procédé selon l’une des revendications précédentes, caractérisé en ce que la liaison de garantie (40) est réalisée de telle manière qu’il est clair si la liaison de garantie (40) a été rompue ou non.

5. Procédé selon l’une quelconque des revendications 1-4, caractérisé en ce que la fermeture est réalisée avec une partie d’accouplement (14; 25), et que le
6. Procédé selon la revendication 5, caractérisé en ce que l'élément annulaire (13; 24; 39) est muni d’une arête intérieure circonférentielle (14; 25) encliquetable, que le récipient (17; 28) est muni d’une rainure circonférentielle (20; 31) autour de l’ouverture, adaptée à ladite arête encliquetable, et que la fermeture moulée est pressée avec son élément annulaire (13; 24) sur le récipient (17; 28), de sorte que l’arête encliquetable (14; 25) est pressée pour s’encliquer dans la rainure circonférentielle (20; 31).

7. Procédé selon la revendication 5 ou 6, caractérisé en ce que la liaison de garantie (40) est réalisée de telle manière qu’il est clair si la liaison de garantie (40) a été rompue ou non.

8. Fermeture de garantie à charnière pour une ouverture dans un récipient, ladite fermeture comprenant un capuchon (11; 22; 38) ayant un organe de fermeture (12; 23) intégral, destiné à coopérer avec ladite ouverture, et un élément annulaire (13; 24; 39) destiné à être fixé audit récipient autour de ladite ouverture, caractérisée en ce que:

   ledit capuchon est un capuchon pleine grandeur, et que
   ledit capuchon et ledit élément annulaire sont reliés par un élément à charnière (15; 26) et au moins une liaison de garantie (16; 27; 40) intégrale; l’élément à charnière (15; 26) et ladite au moins une liaison de garantie (16; 27; 40) étant formées généralement à fleur des surfaces extérieures du capuchon et de l’élément annulaire, hormis cela, ledit élément annulaire est axialement espacé (21; 32) dudit capuchon.

9. Fermeture de garantie à charnière selon la revendication 8, caractérisée en ce que ladite liaison de garantie est substantiellement diamétralement audit élément à charnière respectif.

10. Fermeture de garantie à charnière selon la revendication 8, caractérisée en ce que ledit élément à charnière a un effet d’encliquetage par lequel le capuchon est poussé dans une position ouverte ou une position fermée par rapport audit élément annulaire.

11. Fermeture de garantie à charnière selon la revendication 8, caractérisée par une partie d’accouplement (14; 25) sur l’élément annulaire (13; 24; 39).

12. Fermeture de garantie à charnière selon la revendication 11, caractérisée en ce que la partie d’accouplement sur l’élément annulaire est une arête intérieure circonférentielle (14; 25) encliquetable.

13. Fermeture de garantie à charnière selon la revendication 12, caractérisée en ce que la charnière (26) est voûtée vers l’intérieur concavement.

14. Fermeture de garantie à charnière selon les revendications 8 à 13, caractérisée en ce que la liaison de garantie (40) est conformée de telle manière qu’il est clair si elle a été rompue ou non.

15. Récipient ayant une fermeture de garantie à charnière pour une ouverture dans ledit récipient, ladite fermeture comprenant un capuchon (11; 22; 38) ayant un organe de fermeture (12; 23) intégral, destiné à coopérer avec ladite ouverture, et un élément annulaire (13; 24; 39) destiné à être fixé audit récipient autour de ladite ouverture, ladite fermeture de garantie étant moulée par injection et façonnée à l’état fermé avec une liaison de garantie; caractérisé en ce que:

   ledit capuchon est un capuchon pleine grandeur, et que
   ledit capuchon et organe annulaire sont reliés par un élément à charnière (15; 26) et au moins une liaison de garantie (16; 27; 40) intégrale; l’élément à charnière (15; 26) et ladite au moins une liaison de garantie (16; 27; 40) étant formées généralement à fleur des surfaces extérieures du capuchon et de l’organe annulaire, hormis cela, ledit élément annulaire est axialement espacé (21; 32) dudit capuchon, la fermeture de garantie comporte une partie d’accouplement (14; 25), et le récipient est muni d’une partie d’accouplement (20; 31) destinée à coopérer avec ladite partie d’accouplement de l’élément annulaire (14; 25).

16. Récipient selon la revendication 15, caractérisé en ce que la partie d’accouplement sur l’élément annulaire est une arête intérieure circonférentielle (14; 25) encliquetable, et que le récipient a une rainure (20; 31) entourant l’ouverture (19; 30) dans laquelle le bord encliquetable (14; 25) est encliqueté.

17. Récipient selon la revendication 15 ou 16, caractérisé en ce que la liaison de garantie (40) est généralement conformée de telle manière qu’il est clair si elle a été rompue ou non.

18. Récipient selon l’une quelconque des revendications 15, 16 ou 17, caractérisé en ce que ledit capuchon, élément annulaire et récipient ont généralement des diamètres extérieurs similaires.