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

(11) EP 0 788 976 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
05.12.2001 Bulletin 2001/49

(51) Int Cl.[7]: **B65D 51/22**, B65D 47/08, B65D 41/48

(21) Application number: **97101824.7**

(22) Date of filing: **05.02.1997**

(54) **Container and heat-resistant cap for use with same**

Behälter und hitzebeständiger Behälterverschluss

Récipient et capuchon résistant à la chaleur pour utilisation avec celui-çi

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB IT LI NL PT SE

(30) Priority: **08.02.1996 JP 2268696**
12.06.1996 JP 15110396

(43) Date of publication of application:
13.08.1997 Bulletin 1997/33

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EP 0 788 976 B1

Printed by Jouve, 75001 PARIS (FR)

Description

BACKGROUND OF THE INVENTION

1. Title of the Invention

[0001] The present invention relates to a container for containing juice, alcoholic drink, soup or the like that is heated when filled in the container, and a heat-resistant cap for use with the container.

2. Description of the Related Art

[0002] Heretofore, containers and heat-resistant caps for use with the containers, which are adapted for the purpose mentioned above, have been generally constructed as shown in Fig. 13. Referring to Fig. 13, denoted by reference numeral 51 is a container illustrated as, by way of example, a bottle. The container 51 has a mouth 52 provided with an annular recess 53 formed in an outer circumferential surface of its upper portion and an annular boss 54 formed below the annular recess 53. Denoted by 55 is an intermediate stopper made of synthetic resin, e.g., polyethylene, and comprising an inner tube 56, an intermediate tube 57 and an upper wall 58. A mouth wall 60 having an endless rippable groove 59 formed therein is provided at the center. The intermediate stopper 55 also comprises a ripping member 61, a lower support portion 62, a pouring tube 63 and a latching portion 64. Denoted by 65 is an annular ridge engaging the annular recess 53. Further, denoted by 66 is an outer lid made of highly heat-resistant synthetic resin, e.g., polypropylene, and comprising an outer tube 67 and a lid member 68 formed integrally with each other through a hinge 69.

[0003] The outer tube 67 has a lower end 70 positioned to rest on an upper end of the lower support portion 62, and also has an annular engagement portion 71 formed on an inner circumferential surface of its upper portion to project radially inward. The engagement portion 71 is engaged in vertical relation with the latching portion 64 annularly formed above the upper wall 58 of the intermediate stopper 55. Further, the lid member 68 is held in place such that a locked portion 72 formed in a part of an inner circumferential surface of the lid member is lightly locked in vertical relation by a locking portion 73 formed in an upper part of the engagement portion 71 when the lid member is closed. In addition, denoted by 74 is an annular intermediate leg coming into close contact with the pouring tube 63.

[0004] Because of the foregoing construction, the container and the heat-resistant cap for use with the container are suitably employed to contain liquid goods as mentioned above which are heated when filled in the container. More specifically, the outer tube 67 made of heat-resistant synthetic resin and held in pressure contact with the intermediate tube 57 serves to prevent the intermediate tube 57 from reducing elasticity, i.e., losing a proper elastic deformation, due to heat transmitted through the mouth 52 from a heated liquid (not shown) filled in the container 51, and hence to compensate for a reduction in degree of sealing. In other words, the container 51 is prevented from lowering a degree of sealing by the presence of the outer tube 67.

[0005] But the conventional container and the conventional heat-resistant cap for use with the container, which are constructed as described above, have a problem as follows.

[0006] When the liquid commodity in the container 51 is used up and the container 51 is recovered for recycling of resources, it is required to separate the container 51 and the heat-resistant cap from each other. Stated otherwise, the heat-resistant cap must be removed from the container mouth 52. However, the heat-resistant cap cannot be easily removed from the container mouth 52 because the ridge 65 of the intermediate tube 57 is tightly engaged in vertical relation with the recess 53 of the mouth 52. Also, even in an attempt to remove the heat-resistant cap by using an uncapping tool such as a cap opener, the use of an uncapping tool such as a cap opener will be in vain because an access to a lower end of the lower support portion 62 is blocked off by the boss 54 of the container mouth 52.

[0007] The present invention has been made with a view of solving the problem stated above, and its object is to provide a container and a heat-resistant cap for use with the container, which heat-resistant cap is of hit-capping type that can be easily fitted to the container by simple hitting when capped over a mouth of the container, and can also be very easily removed from the container mouth, and which container is suitable for recycling of resources.

SUMMARY OF THE INVENTION

[0008] This object is achieved by the features of claim 1.

[0009] In the container and the heat-resistant cap for use with the container, preferably, the lower end of the outer tube is located in a position corresponding to the upper edge of the ridge of the intermediate tube, and the embrittled line is formed in the inner circumferential surface of the intermediate tube in a position contiguous to the upper edge of the ridge.

[0010] In the container and the heat-resistant cap for use with the container, preferably, the lower end of the outer tube is located in a position corresponding to the upper edge of the ridge of the intermediate tube, and the embrittled line is formed in the inner circumferential surface of the intermediate tube in a position contiguous to the lower edge of the ridge.

[0011] In the container and the heat-resistant cap for use with the container, preferably, the lower end of the outer tube is located in a position corresponding to the ridge of the intermediate tube, and the embrittled line is formed in the inner circumferential surface of the inter-

mediate tube in a position contiguous to the lower edge of the ridge.

[0012] In the container and the heat-resistant cap for use with the container, preferably, the embrittled portion is formed in the form of a slit. Also, in the container and the heat-resistant cap for use with the container, preferably, the lower end of the outer tube is located in a position corresponding to substantially the lower edge of the ridge of the intermediate tube, and a part of the intermediate tube below an upper end of the lower support portion is formed to be dislocated radially outward of the remaining part thereof to form an embrittled line in the dislocated position.

[0013] In the container and the heat-resistant cap for use with the container, preferably, the ridge is held in pressure contact with the recess in the vertical direction by the lower end of the outer tube.

[0014] In the container and the heat-resistant cap for use with the container, preferably, the ridge is located in a position above a bottom portion of the recess.

[0015] In the container and the heat-resistant cap for use with the container, preferably, the outer tube and the lid member are joined to each other through a hinge.

[0016] In the container and the heat-resistant cap for use with the container, preferably, the lower support portion includes a tab provided contiguous to or in the vicinity of the embrittled portion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] Fig. 1 is cross-sectional view, partly omitted, of a container and a heat-resistant cap for use with the container, the view showing a first embodiment of the present invention and a state where the cap is fitted to the container.

[0018] Fig. 2 is cross-sectional view similar to Fig. 1, the view showing a second embodiment of the present invention.

[0019] Fig. 3 is cross-sectional view similar to Fig. 1, the view showing a third embodiment of the present invention.

[0020] Fig. 4 is a side view, partly sectioned, of the heat -resistant cap shown in Fig. 1.

[0021] Fig. 5 is a side view, partly sectioned, of a heat-resistant cap shown in Fig. 3.

[0022] Fig. 6 is a side view, partly sectioned, of a heat-resistant cap, the view showing a fourth embodiment of the present invention.

[0023] Fig. 7 is a side view, partly sectioned, of a heat-resistant cap, the view showing a fifth embodiment of the present invention.

[0024] Fig. 8 is a view showing a state where the heat-resistant cap shown in Fig. 1 is being removed from the container.

[0025] Fig. 9 is a view showing a state where a heat-resistant cap shown in Fig. 2 is being removed from a container.

[0026] Fig. 10 is cross-sectional view, partly omitted, of a container and a heat-resistant cap for use with the container, the view showing a sixth embodiment of the present invention and a state where the cap is fitted to the container.

[0027] Fig. 11 is a bottom view of the heat-resistant cap shown in Fig. 10.

[0028] Fig. 12 is a view showing a state where the heat-resistant cap shown in Fig. 10 is being removed from the container.

[0029] Fig. 13 is cross-sectional view, partly omitted, of a conventional container and a conventional heat-resistant cap for use with the container.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0030] Referring to Figs. 1 to 3, denoted by reference numeral 1 is a container illustrated as, by way of example, a glass bottle. The container 1 has a mouth 2 provided in its outer circumferential surface with an annular recess 3 and an annular boss 4 formed in the order named from above with a spacing therebetween. Denoted by 5 is a stopper fitted over the mouth 2 and made of synthetic resin, e.g., polyethylene. The stopper 5 has a gripping portion 9 comprising an inner tube 6, an intermediate tube 7 and an upper wall 8. The gripping portion 9 grips the mouth 2 in such a manner that the inner tube 6, the intermediate tube 7 and the upper wall 8 are held in pressure contact with inner, outer and top surfaces of the mouth 2, respectively, thereby keeping the stopper 5 fitted over the mouth 2.

[0031] Denoted by 10 is a pouring tube extending upward from the upper wall 8, and a mouth wall 14 having an endless rippable groove 12 formed therein is provided integrally with the upper wall 8 and within the pouring tube 10. The mouth wall 14 includes a ripping member 13 in the form of a pull ring provided inside the rippable groove 12. The intermediate tube 7 has an annular ridge 15 formed on its inner circumferential surface. When the heat-resistant cap is capped over the mouth 2 of the container by hitting, the annular ridge 15 is engaged with the annular recess 3 formed in the outer circumferential surface of the mouth 2 in its upper end portion.

[0032] Denoted by 11 is a latching portion formed above the upper wall 8 to extend radially outward and engaged with an engagement portion 19 of an outer lid 18, described later, for latching the same.

[0033] Further, denoted by 18 is an outer lid made of synthetic resin, e.g., polypropylene, having a softening temperature against heat that is higher than not only the softening temperature of the synthetic resin as material of the stopper 5, but also the boiling point of water, and having hardness higher than the material of the stopper 5. The outer lid 18 comprises an outer tube 16 held in pressure contact with an outer circumferential surface of the intermediate tube 7 and a lid member 17. The outer tube 16 and the lid member 17 are integrally formed with each other through a hinge 26. The outer tube 16

has an annular engagement portion 19 formed on an inner circumferential surface of its upper part and, as seen from the drawing, the engagement portion 19 is engaged in vertical relation with the latching portion 11 annularly formed above the upper wall 8 of the intermediate stopper 5. The outer tube 16 has a lower end 20 located around the intermediate tube 7 in a position corresponding to any one of upper and lower edges and a middle point of the ridge 15 on the inner circumferential surface of the intermediate tube 7. More specifically, the lower end 20 of the outer tube 16 is positioned corresponding to the upper edge of the ridge 15 in the first and second embodiments shown in Figs. 1 and 2, while it is positioned corresponding to substantially the middle point of the ridge 15 in the third embodiment shown in Fig. 3. The lower end 20 of the outer tube 16 located in any of the above positions can serve to urge the ridge 15 toward the mouth 2 for pressure contact therewith. Denoted by 28 is a locked portion and 29 is a locking portion, the former 28 being lightly locked in vertical relation by the latter 29 when the lid member 17 is closed.

[0034] Further, the intermediate tube 7 has an embrittled line 22 formed therein contiguous to any one of the upper and lower edges of the ridge 15. The embrittled line 22 is formed as a thin-walled portion, for example, and may be formed entirely or partly over the circumference of the intermediate tube 7. In the first embodiment shown in Fig. 1, the embrittled line 22 is formed contiguous to the upper edge of the ridge 15, while in the second and third embodiments shown in Figs. 2 and 3, it is formed contiguous to the lower edge of the ridge 15. Note that the embrittled line 22 may be in the form of perforations, successive holes or notches, or combinations thereof other than the thin-walled portion. Additionally, denoted by 30 is an annular intermediate leg formed on an inner surface of the lid member 17 and coming into close contact with the pouring tube 10 when the outer lid 18 is closed.

[0035] Next, referring to Figs. 4 to 7, denoted by 24 is an embrittled portion formed as a thin-walled portion, for example, to extend from a lower end 23 of the intermediate tube 7 to the embrittled line 22. The embrittled portion 24 may be in the form of perforations, successive holes or notches, or combinations thereof other than the thin-walled portion. As an alternative, the embrittled portion 24 may be in the form of a slit as shown in Fig. 6. The intermediate tube 7 also includes a tab 27 provided on its outer circumferential surface near the embrittled portion 22. When the tab 27 is pulled, a part of the intermediate tube is ripped off along the embrittled portion 24 and the embrittled line 22. Incidentally, denoted by 31 is a connecting piece formed to be easily rippable, and 32 is a secured portion ofthe connecting piece 31. In the heat-resistant cap of the foregoing construction, as mentioned before, when the cap isfitted to the container 1 filled with a heated liquid commodity, heat of the liquid commodity is transmitted to the intermediate tube 7 of the stopper 5 through the mouth 2, whereupon the intermediate tube 7 held in pressure contact with the mouth 2 under its elastic deformation is heated to tend to reduce the strength of the pressure contact. However, because the outer tube 16 of the outer lid 18, which is made of synthetic resin having a softening temperature against heat that is higher than not only the softening temperature of the material of the intermediate tube 7, but also the boiling point of water, and having hardness higher than the material of the intermediatetube 7, is held in pressure contact with the outer circumferential surface of the intermediate tube 7, such a reduction in strength of the pressure contact of the intermediate tube 7 is compensated by the pressure contact of the outer tube 16. As a result, a reduction in degree of sealing can be kept within a practically allowable range.

[0036] It is to be noted that a cap of another embodiment such as shown in Fig. 10 also operates in the same manner as described above. Denoted by 21 is a lower support portion.

[0037] When the liquid commodity in the container 1 is used up and the container 1 is recovered for recycling of resources, the embrittled portion 24 of the intermediate tube 7 and then the embrittled line 22 connecting to the former are ripped up. At this time, since the embrittled line 22 is formed contiguous to selected one of the upper and lower edges of the ridge 15, the intermediate tube 7 is ripped up circumferentially at the upper or lower edge of th e ridge 15. Further, unlike the conventional cap described above, the lower end 20 of the outer tube 16 is not extended to reach the lower end 23 of the intermediate tube 7, but it is terminated in a position adjacent to the ridge 15. Thus, the outer tube 16 can serve to press the ridge 15 inward on one hand, and allows the intermediate tube 16 to be ripped up along the embrittled line 22 in spite of the presence of itself on the other hand. The intermediate tube 16 may be ripped up completely when the embrittled line 22 is formed all over the circumference thereof, or partly when it is formed over a part of the circumference thereof. In the case where the embrittled line 22 is formed contiguous to the upper edge of the ridge 15, forces urging the ridge 15 into the pressure contact state are weakened by partly ripping up the intermediate tube 7 along the embrittled line, or are completely eliminated by ripping up same all over the circumference thereof. Accordingly, the heat-resistant cap can be easily removed from the mouth by placing a finger 33 against the ripped-up edge of the intermediate tube 7 and pushing it upward, as shown in Fig. 8.

[0038] In the case where the embrittled line 22 is formed contiguous to the lower edge of the ridge 15, the heat-resistant cap can be easily removed from the mouth by placing an uncapping tool 34 such as a cap opener against the ripped-up edge of the intermediate tube 7 and pushing it upward, as shown in Fig. 9.

[0039] Furthermore, in the cap wherein the embrittled line 22 and the lower end 20 of the outer tube 16 are substantially aligned with each other in the radial direc-

tion, ripping forces are just directly transmitted to the embrittled line 22, enabling starting of the ripping up in a snap, because the intermediate tube 7 is less deformed due to the rigidity of the outer tube 16 having hardness higher than the intermediate tube 7.

[0040] In the cap wherein the lower end 20 of the outer tube 16 is positioned corresponding to the upper edge of the ridge 15 and the embrittled line 22 is formed along the lower edge of the ridge 15, ripping forces are also directly transmitted to the embrittled line 22, enabling starting of the ripping up in a snap, because the lower end 20 of the outer tube 16 is present near the embrittled line 22 and the intermediate tube 7 is less deformed for essentially the intermediate tube 7 is less deformed for essentially the same reason as in the above cap.

[0041] In the cap, wherein the lower end 20 of the outer tube 16 is positioned corresponding to substantially the middle point of the ridge 15 and the embrittled line 22 is formed contiguous to the lower edge of the ridge 15, as shown in Fig. 3, it is also possible to start the ripping up in a snap for essentially the same reason as in the above cap.

[0042] The ripping-up can be more easily started by the presence of the tab 27 provided contiguous to or in the vicinity of the embrittled portion 24 as shown in Figs. 4 to 7. In other words, by gripping the tab 27 and pulling it outward, ripping forces can be easily applied to the embrittled portion 24.

[0043] In addition, when removing the heat-resistant cap from the container, the cap can be removed by placing the finger 33 or the uncapping tool such as a cap opener in contact with the outer lid 18 having higher hardness, i.e., rigidity, than the stopper 5, because the latching portion 11 of the stopper 5 is so tightly engaged with the engagement portion 19 of the outer tube 16 in its upper portion that the stopper 5 and the outer tube 16 are integrally fitted to each other over a wide circumferential region. Therefore, in comparison with the case of applying forces to a part of the relatively soft stopper 5 through direct dispersion of the forces due to a partial elastic deformation of the stopper 5 is less, thus enabling confortable and easy removal of the cap.

[0044] Next, a container and a heat-resistant cap for use with the container, shown in Fig. 10, according to a sixth embodiment of the present invention will be described below. Referring to Fig. 10, a part of the intermediate tube 7 below an upper end of its lower support portion 21 is formed to be dislocated radially outward of the remaining part thereof,and the lower end 20 of the outer tube 16 is positioned substantially at the same level as the ridge 15. The outer circumferential surface of the mouth 2 includes a slope 35 extended from the recess 3 to the boss 4. The ridge 15 of the intermediate tube 7 is located midway the recess 3 in the vertical direction and is held in pressure contact with the recess 3 in a position above a bottom portion 25 of the recess 3.

[0045] The container and the heat-resistant cap for use with the container, which are constructed as described above, operate essentially in the same manner as with the other embodiments shown in Figs. 1 to 9. A liquid commodity filled in the container 1 can be used by opening the lid member 17, pulling the ripping member 13 and ripping off the mouth wall 14 along the rippable groove 12. When the liquid commodity in the container 1 is used up and the container 1 is recovered for recycling of resources, the tab 27 is pulled so as to rip up the intermediate tube 7 along the embrittled portion 24 and then the embrittled line 22. The ripping-up causes the lower ends of the intermediate tube 7 and the outer tube 16 to appear substantially at the same level, as shown in Fig. 12. Therefore, the heat-resistant cap can be easily removed from the container 1 by placing the uncapping tool 34 such as a cap opener against the lower ends of the intermediate tube 7 and the outer tube 16. Note that, instead of using the uncapping tool 34 such as a cap opener, the cap can also be easily removed from the container 1 by applying forces directly with the finger 33.

[0046] In the heat-resistant cap of this embodiment, since the part of the intermediate tube 7 below the upper end of the lower support portion 21 is formed to be dislocated radially outward of the remaining part thereof, ripping forces are concentrated on the outwardly dislocated portion when applied to rip up the intermediate tube 7 along the embrittled line 22, so that the intermediate tube 7 can be easily ripped up along the embrittled line 22. Also, since the ridge 15 of the intermediate tube 7 is located midway the recess 3 in the vertical direction, the heat-resistant cap can be more easily removed from the container 1 when uncapped.

[0047] Advantages of the present invention are as follows.

[0048] According to the present invention constructed as described above, when the heat-resistant cap is fitted to the mouth 2 of the container 1 filled with a heated liquid commodity, a reduction in degree of sealing due to heat of the liquid commodity transmitted through the mouth 2 can be kept within a practically allowable range. Also, when the container 1 is recovered for recycling of resources, the heat-resistant cap can be very easily removed from the mouth 2 of the container 1 by such a simple operation as ripping up the intermediate tube 7 along the embrittled portion 24 and then the embrittled line 22 connecting to the former.

[0049] According to the feature defined in Claim 2, the heat-resistant cap can be very easily removed by the finger 33 without using the uncapping tool 34 such as a cap opener.

[0050] According to the feature defined in Claim 3, the heat-resistant cap can be very easily removed by using the uncapping tool 34 such as a cap opener.

[0051] According to the feature defined in Claim 4, the outer tube 16 can satisfactorily bring the ridge 15 of the intermediate tube 7 into pressure contact with the mouth 2, and the heat-resistant cap can be very easily removed by using the uncapping tool 34 such as a cap opener.

[0052] According to the feature defined in Claim 5, since the embrittled portion 24 is in the form of a slit, it is very easy to start ripping up the intermediate tube 7 along the embrittled line 22.

[0053] According to the feature defined in Claim 6, since the part of the intermediate tube 7 below the upper end of the lower support portion 21 is formed to be dislocated radially outward of the remaining part thereof, ripping forces tend to concentrate on the outwardly dislocated portion so that the intermediate tube 7 can be more easily ripped up along the embrittled line 22.

[0054] According to the feature defined in Claim 7, since the ridge 15 is held in pressure contact with midway the recess 3 in the vertical direction, the heat-resistant cap can be easily removed from the mouth 2.

[0055] According to the feature defined in Claim 8, since the ridge 15 is located in a position above the bottom portion 25 of the recess 3, the heat-resistant cap can be more easily removed from the mouth 2.

[0056] According to the feature defined in Claim 9, since the outer tube 16 and the lid member 17 are joined to each other through the hinge 26, the rigidity of the outer lid 18 can be maintained by such a structure when a heated liquid commodity is filled in the container and the cap is fitted to the container. As a result, a reduction in degree of sealing of the stopper 5 is compensated by the pressure contact of the outer lid 18 with the intermediate stopper 5.

[0057] According to the feature defined in Claim 10, since the tab 27 is provided contiguous to or in the vicinity of the embrittled portion 24, the part of the intermediate tube 7 below the upper end of the lower support portion 21 can be easily ripped away along the embrittled line 22 by gripping the tab 27, although the intermediate tube 7 has a less grippable portion and is more hard to grip by the presence of the outer tube 16 held in pressure contact with the intermediate tube 7.

Claims

1. A container and a heat-resistant cap for use with said container, comprising a recess (3) and a boss (4) formed in and on an outer circumferential surface of a mouth (2) of a container (1) to extend circumferentially with a vertical spacing therebetween; a stopper (5) made of synthetic resin and fitted over said mouth (2); a gripping portion (9) provided in said stopper (5) and comprising an inner tube (6), an intermediated tube (7) and an upper wall (8) which are held in pressure contact with inner, outer and top surfaces of said mouth (2), respectively; a pouring tube (10) extending upward from said upper wall (8) and a latching portion (11) formed to extend radially outward from said pouring portion (10); a mouth wall (14) provided integrally with said upper wall (8) within said pouring tube (10) for closing said mouth (2) and including a ripping member (13) in the form of a pull ring located above an upper surface of said mouth wall (14) inside an annular groove (12) thereof for separating said mouth wall (14) from said upper wall (8) along said annular groove (12); a ridge (15) provided on an inner circumferential surface of said intermediate tube (7) and held in pressure contact with said recess (3); an outer lid (18) comprising an outer tube (16) held in pressure contact with a part of an outer circumferential surface of said intermediate tube (7) and a lid member (17), said outer lid (18) being made of synthetic resin having a softening temperature higher than both the softening temperature of the synthetic resin of said stopper (5) and the boiling point of water, and having a higher hardness than the synthetic resin of said stopper (5); an engagement portion (19) provided on said outer lid (18) and engaged in vertical relation with said latching portion (11); a lower end (20) of said outer tube (16) located around said intermediate tube (7) in a position corresponding to any one of upper and lower edges and a middle region of said ridge (15); a lower support portion (21) formed in said intermediate tube (7) for supporting the lower end (20) of said outer tube (16); an embrittled line (22) formed to extend circumferentially in the inner circumferential surface of said intermediate tube (7) in a position contiguous to selected one of the upper and lower edges of said ridge (15); and an embrittled portion (24) formed to extend from a lower end (23) of said intermediate tube (7) to said embrittled line (22).

2. A container and a heat-resistant cap for use with said container according to claim 1, wherein the lower end (20) of said outer tube (16) is located in a position corresponding to the upper edge of said ridge (15) of said intermediate tube (7), and said embrittled line (22) is formed in the inner circumferential surface of said intermediate tube (7) in a position contiguous to the upper edge of said ridge (15).

3. A container and a heat-resistant cap for use with said container according to claim 1, wherein the lower end (20) of said outer tube (16) is located in a position corresponding to the upper edge of said ridge (15) of said intermediate tube (7), and said embrittled line (22) is formed in the inner circumferential surface of said intermediate tube (7) in a position contiguous to the lower edge of said ridge (15).

4. A container and a heat-resistant cap for use with said container according to claim 1, wherein the lower end (20) of said outer tube (16) is located in a position corresponding to said ridge (15) of said intermediate tube (7), and said embrittled line (22) is formed in the inner circumferential surface of said

intermediate tube (7) in a position contiguous to the lower edge of said ridge (15).

5. A container and a heat-resistant cap for use with said container according to any one of claims 1 to 4, wherein said embrittled portion (24) is formed in the form of a slit.

6. A container and a heat-resistant cap for use with said container according to claim 1, wherein the lower end (20) of said outer tube (16) is located in a position corresponding to substantially the lower edge of said ridge (15) of said intermediate tube (7), and said intermediate tube (7) below an upper end of said lower support portion (21) is formed to be dislocated radially outward of the remaining part thereof to form an embrittled line (22) in the dislocated position.

7. A container and a heat-resistant cap for use with said container according to claim 6, wherein said ridge (15) is held in pressure contact with said recess (3) in the vertical direction by the lower end (20) of said outer tube (16).

8. A container and a heat-resistant cap for use with said container according to claim 7, wherein said ridge (15) is located in a position above a bottom portion (25) of said recess (3).

9. A container and a heat-resistant cap for use with said container according to claim 1 to 8, wherein said outer tube (16) and said lid member (17) are joined to each other through a hinge (26).

10. A container and a heat-resistant cap for use with said container according to any one of claims 1 to 9, wherein said lower support portion (21) includes a tab (27) provided contiguous to or in the vicinity of said embrittled portion (24).

Patentansprüche

1. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter, aufweisend eine Eintiefung (3) und einen Vorsprung (4), die in und auf einer Außenumfangsfläche eines Mundstücks (2) eines Behälters (1) so gebildet sind, dass sie sich über den Umfang unter vertikalem Abstand untereinander erstrecken; einen Anschlag (5), der aus Kunstharz hergestellt ist und über dem Mundstück (2) angebracht ist; einen Griffabschnitt (9), der in dem Anschlag (5) vorgesehen ist, und ein Innenrohr (6), ein Zwischenrohr (7) und eine obere Wand (8) umfasst, die im Presskontakt mit Innen-, Außen- und Oberseiten des Mundstücks (2) gehalten sind; ein Gießrohr (10), das sich, ausgehend von der oberen Wand (8) und einem Verriegelungsabschnitt (11), erstreckt, der so gebildet ist, dass er sich radial auswärts von dem Gießabschnitt (10) erstreckt; eine Mundstückwand (14), die integral mit der oberen Wand (8) in dem Gießrohr (10) zum Verschließen des Mundstücks (2) vorgesehen ist, und ein Reißelement (13) in Form eines Zugrings umfasst, der über eine Oberseite der Mundstückwand (14) in einer Ringnut (12) von dieser gebildet ist, um die Mundstückwand (14) von der oberen Wand (8) entlang der Ringnut (12) zu trennen; eine Rippe (15), die auf der Außenumfangsfläche des Zwischenrohrs (7) vorgesehen ist und im Druckkontakt mit der Eintiefung (3) gehalten ist; einen Außendeckel (18) mit einem Außenrohr (16), der im Presskontakt mit einem Teil einer Außenumfangsfläche des Zwischenrohrs (7) gehalten ist, und mit einem Deckelelement (17), wobei der Außendeckel (18) aus Kunstharz hergestellt ist, der eine Erweichungstemperatur aufweist, die höher ist als sowohl die Erweichungstemperatur des Kunstharzes des Anschlags (5) als auch der Siedepunkt von Wasser, und mit einer höheren Härte als das Kunstharz des Anschlags (5); einen Eingriffabschnitt (19), der auf dem Außendeckel (18) vorgesehen ist und sich in vertikaler Beziehung zu dem Verriegelungsabschnitt (11) im Eingriff befindet; ein unteres Ende (20) des äußeren Rohrs (16), das um das Zwischenrohr (7) in einer Position entsprechend von einem der oberen und unteren Ränder und einem mittleren Bereich der Rippe (15) angeordnet ist; einen unteren Stützabschnitt (21), der in dem Zwischenrohr (7) zum Abstützen des unteren Endes (20) des Außenrohrs (16) vorgesehen ist; eine Versprödungslinie (22), die sich über den Umfang einer Innenumfangsfläche des Zwischenrohrs (7) in einer Position erstreckend gebildet ist, die sich an einen ausgewählten der oberen und unteren Ränder der Rippe (15) anschließt; und einen Versprödungsabschnitt (24), der so gebildet ist, dass er sich, ausgehend von einem unteren Ende (23) des Zwischenrohrs (7), zu der Versprödungslinie (22) erstreckt.

2. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach Anspruch 1, wobei das untere Ende (20) des Außenrohrs (16) in einer Position entsprechend dem oberen Rand der Rippe (15) des Zwischenrohrs (7) zu liegen kommt, und wobei die Versprödungslinie (22) in der Innenumfangsfläche des Zwischenrohrs (7) in einer Position gebildet ist, die sich an den oberen Rand der Rippe (15) anschließt.

3. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach Anspruch 1, wobei das untere Ende (20) des äußeren Rohrs (16) in einer Position entsprechend dem oberen Rand der Rippe

(15) des Zwischenrohrs (7) zu liegen kommt, und wobei die Versprödungslinie (22) in der Innenumfangsfläche des Zwischenrohrs (7) in einer Position gebildet ist, die sich an den unteren Rand der Rippe (15) anschließt.

4. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach Anspruch 1, wobei das untere Ende (20) des Außenrohrs (16) in einer Position entsprechend der Rippe (15) des Zwischenrohrs (7) zu liegen kommt, und wobei die Versprödungslinie (22) in der Innenumfangsfläche des Zwischenrohrs (7) in einer Position zu liegen kommt, die sich an den unteren Rand der Rippe (15) anschließt.

5. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach einem der Ansprüche 1 bis 3, wobei der Versprödungsabschnitt (24) in Form eines Schlitzes gebildet ist.

6. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach Anspruch 1, wobei das untere Ende (20) des Außenrohrs (16) in einer Position entsprechend im Wesentlichen dem unteren Rand der Rippe (15) des Zwischenrohrs (7) zu liegen kommt, und wobei das Zwischenrohr (7) unterhalb eines oberen Endes des unteren Stützabschnitts (21) so gebildet ist, dass es radial auswärts von dem restlichen Teil von ihm zu liegen kommt, um eine Versprödungslinie (22) in der versetzten Position zu bilden.

7. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach Anspruch 6, wobei die Rippe (15) im Presskontakt mit der Eintiefung (3) in der vertikalen Richtung durch das untere Ende (20) des Außenrohrs (16) gehalten ist.

8. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach Anspruch 7, wobei die Rippe (15) in einer Position über einem Bodenabschnitt (25) der Eintiefung (3) zu liegen kommt.

9. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach einem der Ansprüche 1 bis 8, wobei das Außenrohr (16) und das Deckelelement (17) miteinander über ein Gelenk (26) verbunden sind.

10. Behälter und wärmebeständige Kappe zur Verwendung mit dem Behälter nach einem der Ansprüche 1 bis 9, wobei der untere Stützabschnitt (21) eine Zunge (27) umfasst, die anschließend an den Versprödungsabschnitt (24) oder in dessen Bereich vorgesehen ist.

Revendications

1. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur, comprenant un évidement (3) et un embossement (4) formés dans et sur la surface circonférentielle externe d'une embouchure (2) d'un conteneur (1) pour se prolonger circonférentiellement avec un espacement vertical entre eux ; une butée d'arrêt (5) constituée de résine synthétique et ajustée sur ladite embouchure (2) ; une partie d'agrippement (9) disposée dans ladite butée d'arrêt (5) et comprenant un tube interne (6), un tube intermédiaire (7) et une paroi supérieure (8) qui sont maintenus en contact de pression avec des surfaces interne, externe et supérieure de ladite embouchure (2), respectivement ; un tube verseur (10) s'étendant vers l'extérieur à partir de ladite paroi supérieure (8) et une partie de verrouillage (11) formée pour se prolonger dans le sens radial vers l'extérieur depuis ladite partie verseuse (10) ; une paroi d'embouchure (14) formée solidairement avec ladite paroi supérieure (8) à l'intérieur dudit tube verseur (10) pour fermer ladite embouchure (2) et incluant un élément de déchirure (13) sous la forme d'un anneau de traction situé au-dessus d'une surface supérieure de ladite paroi d'embouchure (14) à l'intérieur d'une rainure annulaire (12) de celui-ci pour séparer ladite paroi d'embouchure (14) de ladite paroi supérieure (8) le long de ladite rainure annulaire (12) ; une nervure (15) formée sur une surface circonférencielle interne dudit tube intermédiaire (7) et maintenue en contact de pression avec ledit évidement (3) ; un couvercle externe (18) comprenant un tube externe (16) maintenu en contact de pression avec une partie d'une surface circonférencielle externe dudit tube intermédiaire (7) et un élément de couvercle (17), ledit couvercle externe (18) étant constitué d'une résine synthétique ayant une température de ramollissement au-dessus à la fois de la température de ramollissement de la résine synthétique de ladite butée d'arrêt (5) et du point d'ébullition de l'eau et ayant une dureté plus élevée que la résine synthétique de ladite butée d'arrêt (5) ; une partie d'engagement (19) formée sur ledit couvercle externe (18) et venant en prise en relation verticale avec ladite partie de verrouillage (11) ; une extrémité inférieure (20) dudit tube externe (16) situé autour dudit tube intermédiaire (7) dans un emplacement correspondant à l'un quelconque des bords supérieur et inférieur et d'une région médiane de ladite nervure (15) ; une partie de support inférieure (21) formée dans ledit tube intermédiaire (7) pour supporter l'extrémité inférieure (20) dudit tube externe (16) ; une ligne affaiblie (22) formée pour se prolonger circonférentiellement dans la surface circonférentielle interne dudit tube intermédiaire (7) dans un emplacement contigu à l'un sélectionné des bords supérieur et in-

férieur de ladite nervure (15) ; et une partie affaiblie (24) formée pour se prolonger d'une extrémité inférieure (23) dudit tube intermédiaire (7) à ladite ligne affaiblie (22).

2. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon la revendication 1, dans lequel l'extrémité inférieure (20) dudit tube externe (16) est située dans un emplacement correspondant au bord supérieur de ladite nervure (15) dudit tube intermédiaire (7) et ladite ligne affaiblie (22) est formée dans la surface circonférencielle interne dudit tube intermédiaire (7) dans un emplacement contigu au bord supérieur de ladite nervure (15).

3. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon la revendication 1, dans lequel l'extrémité inférieure (20) dudit tube externe (16) est située dans un emplacement correspondant au bord supérieur de ladite nervure (15) dudit tube intermédiaire (7) et ladite ligne affaiblie (22) est formée dans la surface circonférentielle interne dudit tube intermédiaire (7) dans un emplacement contigu au bord inférieur de ladite nervure (15).

4. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon la revendication 1, dans lequel l'extrémité inférieure (20) dudit tube externe (16) est située dans un emplacement correspondant à ladite nervure (15) dudit tube intermédiaire (7) et ladite ligne affaiblie (22) est formée dans ladite surface circonférentielle interne dudit tube intermédiaire (7) dans un emplacement contigu au bord inférieur de ladite nervure (15).

5. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon l'une quelconque des revendications 1 à 3, dans lequel ladite partie affaiblie (24) est formée sous la forme d'une fente.

6. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon la revendication 1, dans lequel l'extrémité inférieure (20) dudit tube externe (16) est située dans un emplacement correspondant à sensiblement le bord inférieur de ladite nervure (15) dudit tube intermédiaire (7) et ledit tube intermédiaire (7) en dessous d'une extrémité supérieure de ladite partie de support inférieur (21) est formé pour être disloqué dans le sens radial vers l'extérieur de sa partie restante pour former une ligne affaiblie (22) dans la position disloquée.

7. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon la revendication 6, dans lequel ladite nervure (15) est maintenue en contact de pression avec ledit évidement (3) dans la direction verticale par l'extrémité inférieure (20) dudit tube externe (16).

8. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon la revendication 7, dans lequel ladite nervure (15) est située dans un emplacement au-dessus d'une partie de fond (25) dudit évidement (3)

9. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon la revendication 1 à 8, dans lequel ledit tube externe (16) et ledit élément de couvercle (17) sont réunis entre eux à travers une charnière (26).

10. Conteneur et bouchon thermorésistant pour utilisation avec ledit conteneur selon l'une quelconque des revendications 1 à 9, dans lequel ladite partie de support inférieure (21) comprend une languette (27) disposée contiguë ou au voisinage de ladite partie affaiblie (24).

FIG.1

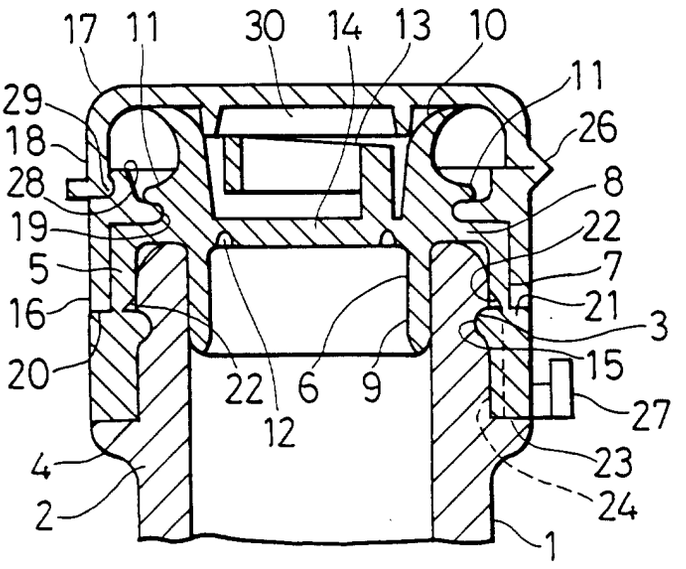
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FIG.2

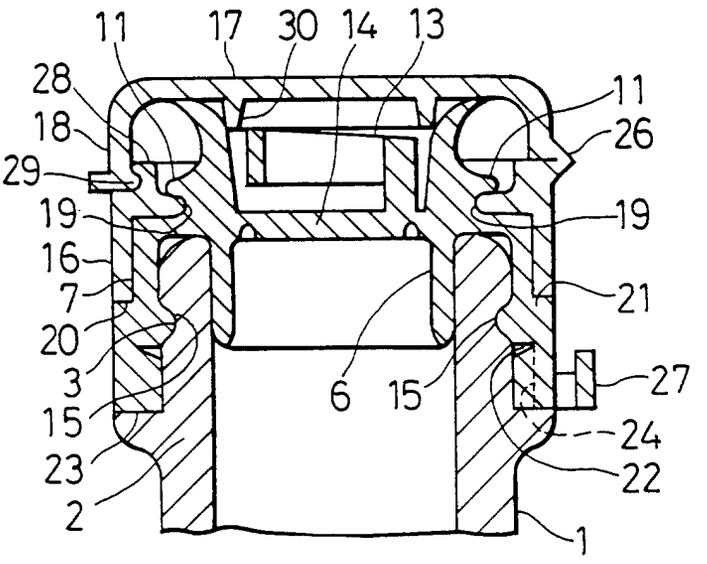
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FIG.3

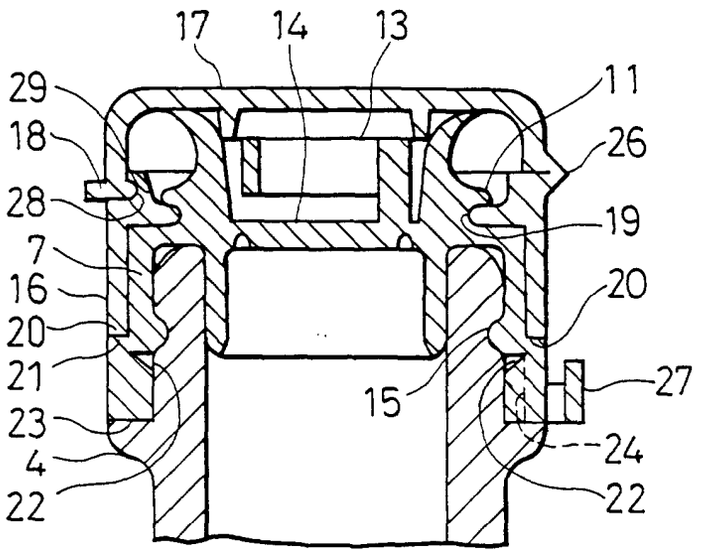
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FIG.4

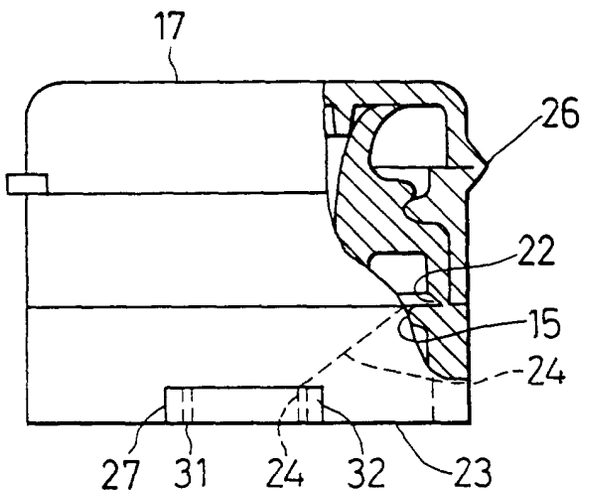
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FIG.5

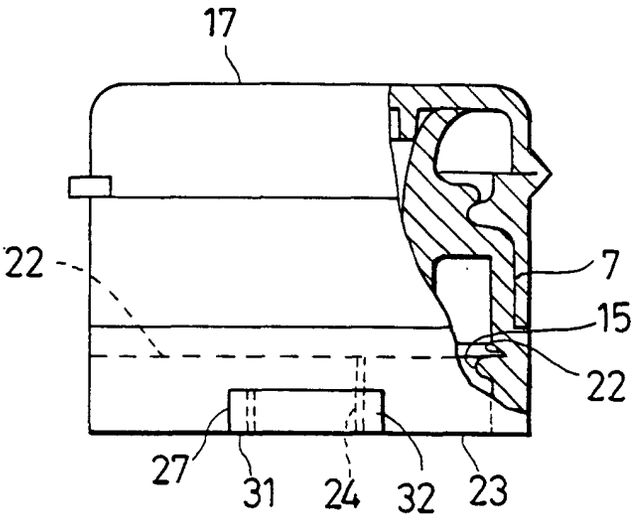

FIG.6

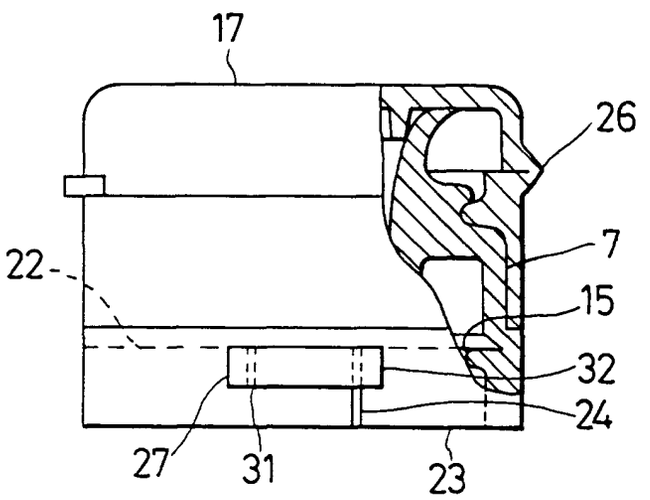

FIG.7

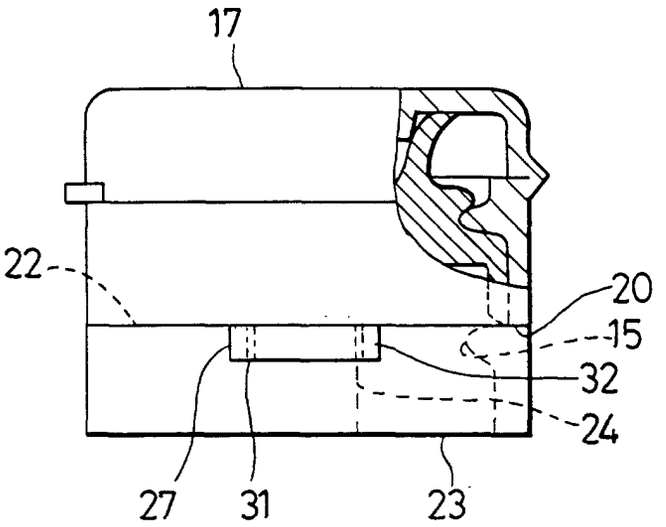

FIG.8

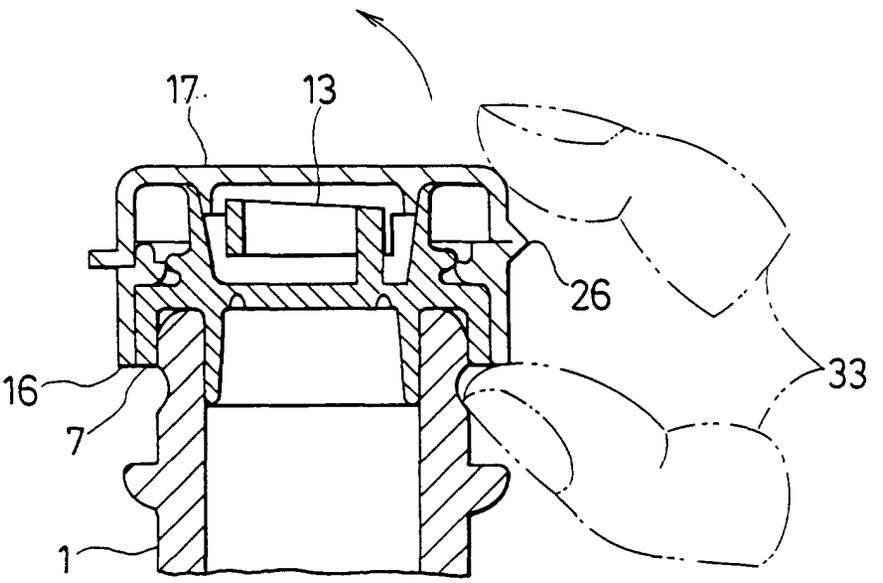

FIG.9

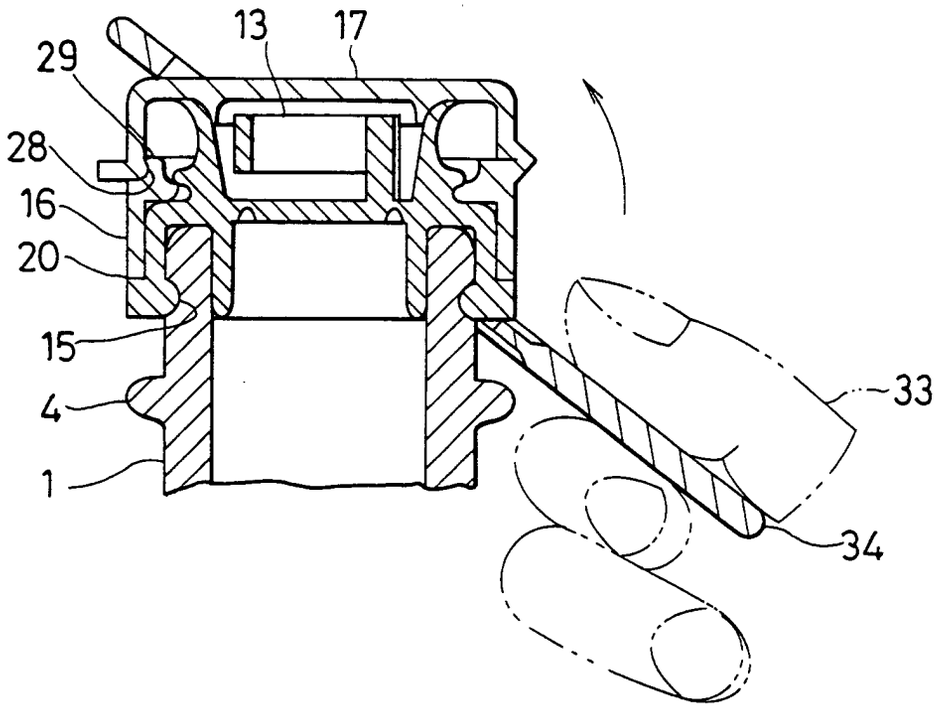
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FIG.10

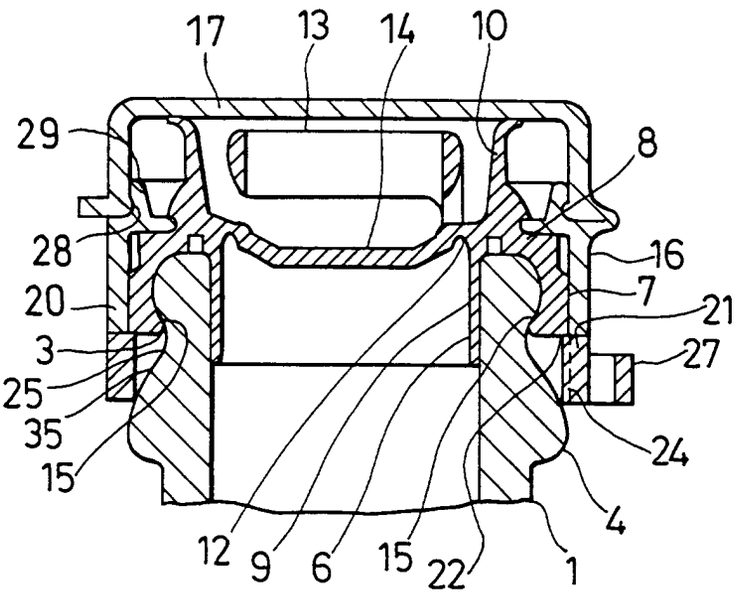
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FIG.11

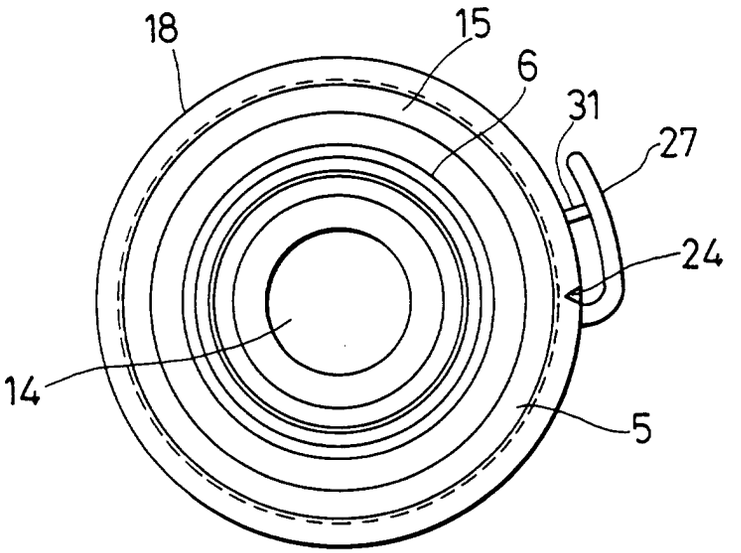


FIG.12

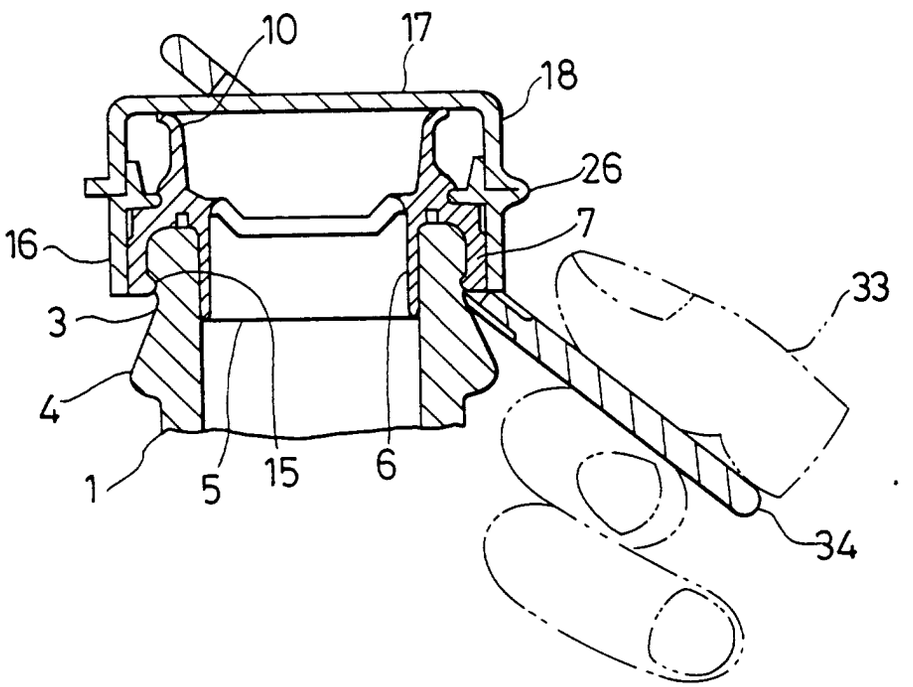
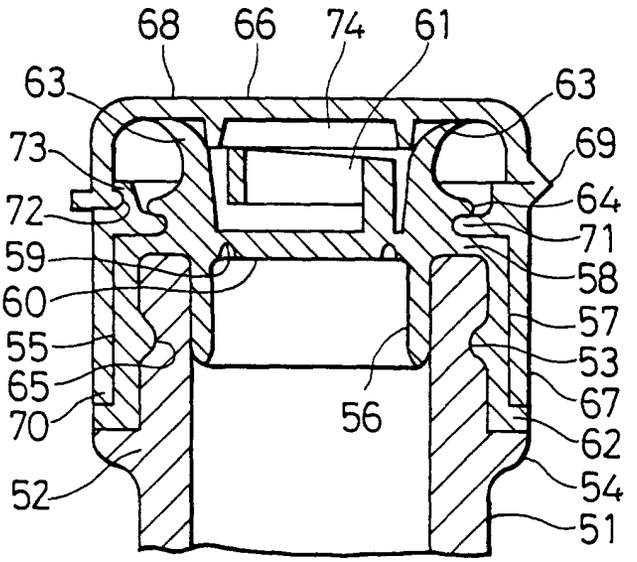


FIG.13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