



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
31.10.2012 Bulletin 2012/44

(51) Int Cl.:
B65D 43/00 (2006.01) B65D 17/50 (2006.01)

(21) Application number: **10839303.4**

(86) International application number:
PCT/JP2010/072747

(22) Date of filing: **17.12.2010**

(87) International publication number:
WO 2011/078073 (30.06.2011 Gazette 2011/26)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **21.12.2009 JP 2009289483**
21.12.2009 JP 2009289484

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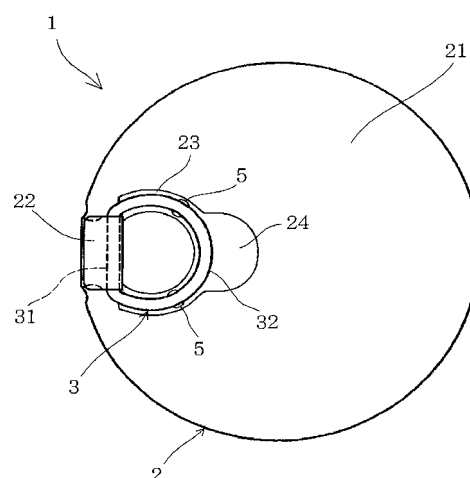
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(54) **SEAL LID PROVIDED WITH RING-SHAPED TAB**

(57) A sealing lid comprising a lid body made of thin-film like sheet material, and a ring tab formed separately from the lid body. The lid body comprises a panel portion covering an opening portion of a container to seal the container, and a protruding portion protruding from a circumference of the panel portion. The ring tab comprises a base portion held by the protruding portion, and a ring portion to which a finger is inserted. In the sealing lid thus structured, the ring portion of the ring tab is partially bonded to the panel portion of the lid body in a detachable manner.

Fig. 1



Description

TECHNICAL FIELD

[0001] This invention relates to a thin-film like sealing lid for covering an opening of a container, and especially to a sealing lid having a ring tab.

BACKGROUND ART

[0002] A food container for containing a solid food, a powder food etc. by closing an opening thereof using a thin film-like sealing lid has been developed in the prior art. In order to improve convenience to open the sealing lid, various kinds of ring-shaped finger tabs have been proposed to be arranged on the sealing lid.

[0003] For example, Japanese Patent Laid-Open No. 2003-81318 discloses a can body in which an opening hole of a top cover is closed by a seal cover having a ring tab integrated therewith. According to the teachings of Japanese Patent Laid-Open No. 2003-81318, the top cover is seamed with an opening end of the can trunk, and the opening hole is formed on the top cover. In order to close the opening hole formed on the top cover, the seal cover is mounted on the top cover and thermally bonded to an entire circumferential edge of the top cover. The ring-shaped finger tab is formed integrally with a portion of the circumferential edge of the seal cover.

[0004] Meanwhile, Japanese Utility Model Laid-Open No. 6-44724 discloses a container with an edge cover in which an opening of a lid plate is closed by a sealing lid to which a pull ring is attached. According to the teachings of Japanese Utility Model Laid-Open No. 6-44724, the sealing lid is thermally bonded to the lid plate to close the opening of the lid plate. In addition, a foldable tongue-shaped tab is formed on a portion of a circumferential edge of the sealing lid, and the separated pull ring is attached to the tab by a rivet or the like.

DISCLOSURE OF THE INVENTION

[0005] Basically, the above-explained sealing lids are punched out of a thin-film like sheet material. That is, even the seal cover having the integrated ring tab as taught by Japanese Patent Laid-Open No. 2003-81318 is also punched out of the sheet material. In this case, specifically, a substantially circular lid portion is punched out of the sheet material together with the ring-shaped finger tab. In case of punching out a material of the seal cover thus having an irregular configuration in which the tab is protruded outwardly from the lid portion, large amount of sheet scrap is generated and a material yield is thereby degraded.

[0006] On the other hand, according to the container taught by Japanese Utility Model Laid-Open No. 6-44724, the tab to which the pull ring is attached is protruded slightly from the circular panel of the sealing lid. Thus, a configuration of the sealing lid taught by Japa-

nese Utility Model Laid-Open No. 6-44724 is comparatively simpler so that such configuration to be punched out may be arranged tightly on the sheet material. Therefore, the material yield of the sealing lid taught by Japanese Utility Model Laid-Open No. 6-44724 is higher than that of the seal cover taught by Japanese Patent Laid-Open No. 2003-81318. However, according to the teachings of Japanese Utility Model Laid-Open No. 6-44724, the tab to which the pull ring is attached is made of same material as the main panel portion and a thickness thereof is thinned as the panel portion. In addition, the tab thus structured is protruded from the panel portion, therefore, a bending strength of the tab is extremely low. The separated pull ring is attached to the tab thus integrated with the sealing lid, and container is closed by the sealing lid thus structured. If the container thus structured is reversed vertically during transportation, the tab may be bent or weighted down with the pull ring and this hinders the transportation.

[0007] The present invention has been conceived noting the technical problems thus far described, and its object is to provide a sealing lid which can improve the material yield of the sheet material, and which can be transported easily even if a separated ring tab is attached thereto.

[0008] In order to achieve the above-mentioned object, according to the present invention, there is provided a sealing lid comprising a lid body, which is made of thin-film like sheet material, and a ring tab, which is formed separately from the lid body. Specifically, the lid body comprises a panel portion, which is configured to cover an opening portion of a container thereby sealing the container, and a protruding portion, which protrudes from a circumference of the panel portion. Meanwhile, the ring tab comprises a base portion which is held by the protruding portion of the lid body, and a ring portion to which a finger is inserted. According to the present invention, the sealing lid thus structured is characterized by a fixed portion at which the ring portion of the ring tab held by the protruding portion is fixed to the panel portion, in a manner to allow the ring portion to be detached from the panel portion by applying a pulling force to the ring portion in a direction to lift the ring portion away from the panel portion.

[0009] According to the present invention, the fixed portion includes a bonded portion at which the ring portion is bonded partially to the panel portion of the lid body in a detachable manner.

[0010] Specifically, adhesive agent which adheres stronger to the panel portion rather than adhering to the ring portion is used at the bonded portion.

[0011] According to the present invention, the panel portion comprises a grooved portion configured to hold the ring portion therein, and the ring portion held in the grooved portion is fixed at the bonded portion.

[0012] Alternatively, the ring portion may be fixed to the panel portion of the lid body in a detachable manner by hooking the ring portion at least partially at a stopper

portion formed on the panel portion.

[0013] Specifically, the stopper portion is configured to engage the ring portion with the panel portion. For this purpose, the grooved portion configured to hold the ring portion therein is formed on the panel portion, and the ring portion held therein is engaged with an inner face of the grooved portion.

[0014] In case of thus forming the grooved portion on the panel portion, a recessed portion may be formed on the panel portion integrally with the grooved portion in a manner to allow a finger to be inserted into the ring portion from underneath the ring portion.

[0015] Thus, according to the present invention, the ring tab is formed separately and attached to the lid body. That is, only the protruding portion is slightly protruded from the circular panel portion so that the configuration of the sealing lid can be simplified. Therefore, the configuration to be punched out may be arranged tightly on the sheet material so that the sheet scrap can be reduced. For this reason, according to the present invention, the material yield of the sheet material to form the sealing lid can be improved. As also described, according to the present invention, the ring portion of the tab held by the protruding portion of the sealing lid is fixed to the panel portion at the fixed portion in a manner not to be detached from the panel portion unless lifting the ring portion. Therefore, in addition to the above-explained advantage, a weight down of the tab can be prevented even if the container is reversed vertically during transportation. Thus, the separated ring tab will not hinder the transportation of the container.

[0016] In case of lifting the sealing lid from the opening portion to unseal the container, the ring tab can be detached from the panel portion easily by lifting the tab by a finger inserted into the ring portion of the tab. Then, the panel portion of the sealing lid can be lifted easily from the opening portion of the container by further lifting the ring held by the protruding portion integrated with the panel portion, by the finger inserted into the ring portion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017]

Fig. 1 is a plane view showing one example of the sealing lid according to the present invention.

Fig. 2 is a plane view showing the sealing lid punched out of the sheet material and the separated ring tab.

Figs. 3(A), 3(B) and 3(C) are process drawings showing a procedure to attach the ring tab to the sealing lid.

Fig. 4 is a plane view showing the sealing lid closing the opening portion of the lid frame.

Fig. 5 is a sectional view showing a cross-section along V-V line shown in Fig. 4.

Fig. 6 is a plane view showing an example to close the opening portion of the lid frame using the sealing lid according to another example of the present in-

vention.

Fig. 7 is a sectional view showing a cross-section along VII-VII line shown in Fig. 6.

BEST MODE FOR CARRYING OUT THE INVENTION

[0018] For example, the sealing lid according to the present invention is used to close an opening of a can container containing a food therein. A lid body 2 of the sealing lid 1 shown in Fig. 1 is made of thin-film like sheet material, and a separated ring tab 3 is attached to the lid body 2. As shown in Fig. 2, the lid body 2 comprises a circular panel portion 21 and a protruding portion 22 protruding integrally from an outer circumference of the panel portion 21. Meanwhile, the ring tab 3 comprises a straight base portion 31 which is attached to the protruding portion, and a ring portion 32 to which a finger is inserted to open the container.

[0019] The thin-film like sheet material of the lid body 2 should not be limited to specific material. In this example, specifically, an aluminum foil or a gas barrier synthetic resin film is used in this example as a base material of the sheet material. In order to bond the sheet material to the circumference of the opening of the container, an adhesive resin layer is formed on an inner surface of the base material (i.e., on a surface to be an inner surface of the container). In addition, an outer surface of the base material (i.e., a surface to be an outer surface of the container) is coated with a resin film or a resin layer. A thickness of the sheet material is preferably within a range of 20 to 150 μ m (more preferably, 40 to 100 μ m).

[0020] The ring tab 3 is thicker than the lid body 2 so that stiffness thereof is higher than that of the lid body 2. Also, material of the ring tab 3 should not be limited to specific material. In this example, specifically, the ring tab 3 is made of polyester resin such as polyethylene terephthalate, or thermoplastic resin such as olefin resin, e.g., polyethylene, polypropylene and so on. Specifically, the ring tab 3 is formed by an injection molding or a press forming using the above-explained material. A thickness of the ring tab 3 is preferably within a range of 0.5 to 3mm (more preferably, 1 to 2mm).

[0021] A method to attach the ring tab 3 to the lid body 2 should not be limited to a specific method. In this example, specifically, the ring tab 3 is attached to the lid body 2 by a procedure shown in Fig. 3. The lid body 2 is punched out of the sheet material, and as shown in Fig. 3(A), the protruding portion 22 is protruded from the outer circumference of the circular panel portion 21. In Fig. 3, reference numeral "23" represents an after mentioned arcuate grooved portion, and reference numeral "24" represents an after mentioned recessed portion to which a finger is inserted. As shown in Fig. 3(B), the protruding portion 22 of the lid body 2 is folded outwardly from a base portion thereof. Then, as shown in Fig. 3(C), the base portion 31 of the ring tab 3 is laid roughly on a center portion of the protruding portion 21 thus folded. Thereafter, a leading end 22a of the protruding portion 22 is folded

inversely to wrap around the base portion 31 of the ring tab 3, and inner faces of the protruding portion 22 (on which the adhesive resin layer is formed) thus overlapped while holding the base portion 31 of the ring tab 3 therebetween are bonded by a known heat sealing method or by a known ultrasonic sealing method.

[0022] As shown in Fig. 4, the sealing lid 1 thus structured is used to close a circular opening portion 41 situated in the center of the metal lid frame 4. For this purpose, the sealing lid 1 is laid on the opening portion 41 of the lid frame 4, and an outer circumference of the panel portion 21 of the lid body 2 is bonded to the outer circumference of the opening portion 41 of the lid frame 4 by a known heat sealing method or by a known ultrasonic sealing method. The lid frame 4 whose opening portion 41 is thus closed by the sealing lid 1 is sealed to an upper end of a metal can trunk.

[0023] In the sealing lid 1 according to this example, an arcuate grooved portion 23 is formed in the vicinity of the protruding portion 22 of the lid body 2 by depressing a flat upper face of the panel portion 21. In addition, a recessed portion 24 to which a finger is inserted is formed continuously from the grooved portion 23. Specifically, the grooved portion 23 is formed into arcuate to hold the ring portion 23 of the tab 3 therein. A depth of the grooved portion 23 is deepened gradually from both ends thereof toward an intermediate portion thereof, and the recessed portion 24 to which a finger is inserted is formed continuously in the vicinity of the intermediate portion of the arcuate groove at which the depth thereof is deepest.

[0024] Fig. 5 is a sectional view showing the lid body 2 to which the ring tab 3 is attached. As shown in Fig. 5, the base portion 31 of the ring tab 3 is wrapped by the protruding portion 22 integrated with the panel portion 21, and fixed to the flat upper face of the panel portion 21 in the vicinity of the arcuate ends of the grooved portion 23. Meanwhile, the ring portion 32 of the ring tab 3 is held in the grooved portion 23 formed on the upper face of the panel portion 21. As described, the depth of the grooved portion 23 is deepened gradually toward the center of the panel portion 21. Therefore, the ring portion 32 situated along the groove bottom is inclined downwardly from the base portion 31. Thus, a leading end of the ring portion 32 (i.e., the portion furthest away from the base portion 31) is opposed to the recessed portion 24 to which a finger is inserted.

[0025] In order to restrict a lateral movement or displacement of the ring portion 32 of the ring tab 3, a width of the grooved portion 23 is slightly wider than that of the ring portion 32 of the ring tab 3. Meanwhile, the depth of the grooved portion 23 is set to 30 to 100% of the thickness of the ring tab 3, at the deepest portion where the leading end of the ring portion 32 (i.e., the portion furthest away from the base portion 31) is situated. Accordingly, a depth of the recessed portion 24 to which a finger is inserted is preferably set also to 30 to 100% of the thickness of the ring tab 3.

[0026] An adhesive agent 5 is applied to the grooved

portion 23 at two portions away from each other from the leading end of the ring portion 32 (i.e., the portion furthest away from the base portion 31) in a circumferential direction of the grooved portion 23, underneath the ring portion 32 of the ring tab 3 held in the grooved portion 23. However, an adhesion force of the adhesive agent 5 is comparatively weak. Therefore, the ring portion 32 of the ring tab 3 can be fixed to the panel portion 21 of the lid body 2 (in the grooved portion 23) by the adhesive agent 5 in a detachable manner. Thus, the portion at which the adhesive agent 5 is applied corresponds to the fixed portion of the present invention.

[0027] Preferably, the ring portion 32 of the ring tab 3 is fixed to the panel portion 21 of the lid body 2 at a point outside the region where a finger is inserted easily into the ring portion 32 to apply a pulling force to the ring portion 32 to lift the sealing lid 1. In other words, the ring portion 32 of the ring tab 3 is preferably fixed to the panel portion 21 of the lid body 2 at a point outside the region opposed to an intermediate portion of the base portion 31 (lengthwise) in the direction perpendicular to the intermediate portion.

[0028] In order to thus bond the ring portion 32 of the ring tab 3 to the panel portion 21 of the lid body 2 (in the grooved portion 23), the adhesive agent 5 to be used may be selected arbitrarily depending on the materials of the ring tab 3 and the outer surface of the lid body 2 (i.e., material of the outer resin layer). For this purpose, hot melt agent, for example, thermoplastic resin such as olefin resin, e.g., polyethylene, polypropylene, and urethane resin, polyamide resin and so on is especially suitable.

[0029] In case the resin material of the ring tab 3 and the resin material of the outer surface of the lid body 2 (i.e., material of the outer resin layer) are different, it is preferable to use the adhesive agent 5 which adheres stronger to the outer surface of the lid body 2 rather than adhering to the ring tab 3. For example, the adhesive agent 5 can be adhered to the lid body 2 stronger than adhering to the ring tab 3, by using the resin material of the adhesive agent 5 same as the material of the outer surface of the lid body 2 (i.e., material of the outer resin layer), while using different resin material to form the ring tab 3.

[0030] For example, in case of forming a resin layer of polypropylene on the outer surface of the base material of the lid body 2 such as the aluminum foil while forming the ring tab 3 using polyethylene terephthalate resin, the ring portion 32 of the ring tab 3 is fixed to the lid body 2 using the hot melt agent of polypropylene series.

[0031] According to the example, specifically, the ring portion 32 of the ring tab 3 is bonded to the grooved portion 23 of the lid body 2 by applying thermally melted adhesive agent to the grooved portion 23 after carrying out the step shown in Fig. 3(B). Then, at the step shown in Fig. 3(C), the ring tab 3 is laid on the melted adhesive agent and pressed from above.

[0032] Thus, according to the present invention, the

base portion 31 of the ring tab 3 is attached to the lid body 2 made of the thin-film sheet material by the protruding portion 22. In addition, the ring portion 32 of the ring tab 3 is also fixed to the panel portion 21 of the lid body 2 (in the grooved portion 23) in a detachable manner. Therefore, even if the sealing lid 1 attached to the metal lid frame 4 is reversed vertically during transportation, the ring tab 3 will not be weighted down to hinder the transportation.

[0033] The metal lid frame 4 to which the sealing lid 1 thus structured is attached is sealed to the can trunk to form a can container. In order to open the can container thus structured, a finger can be inserted into the ring portion 32 of the ring tab 3 from between the adhesive agents 5 through the recessed portion 24 formed on the panel portion 21 of the lid body 2. Then, the ring tab 3 is lifted by pulling the leading end of the ring portion 32 (i.e., the portion furthest away from the base portion 31) which is not bonded to the panel portion 21 of the lid body 2 by the finger thus inserted therein. After thus detaching the ring tab 3 from the panel portion 21 of the lid body 2, the ring tab 3 is further lifted by the finger inserted into the ring portion 32. As a result, the panel portion 21 of the lid body 2 is detached from the lid frame 4 from the protruding portion 22 to which the base portion 31 of the ring tab 3 is attached, and the opening portion 41 formed in the center of the lid frame 4 is opened.

[0034] However, if the adhesive agent 5 is adhered to the ring tab 3 after thus detaching the ring tab 3 from the panel portion 21 of the lid body 2, an appearance of the can container may be spoiled. In addition, the adhesive agent 5 remains on the ring tab 3 may disturb the insertion of the finger. In order to avoid those disadvantages, according to this example, the adhesive agent which adheres to the lid body 2 stronger rather than adhering to the ring tab 3 is used to bond the ring portion 32 of the ring tab 3 to the grooved portion 23. Therefore, the adhesive agent 5 will not remain on the ring tab 3 even after detaching the ring tab 3 from the panel portion 21.

[0035] In addition, according to this example, the adhesive agent 5 is applied to the bottom of the arcuate grooved portion 23 formed by depressing the panel portion 21 of the lid body 2, and the ring portion 32 of the ring tab 3 is bonded to the panel portion 21 inside of the grooved portion 23. Therefore, the adhesive agent 5 thus fixing the ring portion 32 of the ring tab 3 to the panel portion 21 of the lid body 2 will not be noticed so that the appearance of the can container will not be spoiled by the adhesive agent 5.

[0036] As described, the ring portion 32 of the ring tab 3 is bonded to the panel portion 21 in a detachable manner using the adhesive agent 5 the adhesive force thereof is comparatively weak. However, the ring portion 32 of the ring tab 3 is held inside of the arcuate grooved portion 23 formed on the panel portion 21 of the lid body 2. Therefore, a lateral movement of the ring tab 3 can be restricted by the arcuate grooved portion 23 even if the base portion 31 of the ring tab 3 and vicinity thereof is subjected to a

load from the side, during transportation of the sealing lid 1 thus bonded to the metal lid frame 4. For this reason, the ring portion 32 of the ring tab 3 will not be detached from the panel portion 21 of the lid body 2 accidentally.

[0037] Next, here will be explained another example of the present invention for fixing the ring tab 3 to the panel portion 21 temporarily. Fig. 6 is a plane view showing another example of the present invention, and Fig. 7 is a sectional view showing a cross-section along VII-VII line in Fig. 6. According to the sealing lid 1 shown in Figs. 6 and 7, the protruding portion 22 is also formed integrally with the outer circumference of the panel portion 21 at a predetermined portion, and the base portion 31 of the ring tab 3 is also wrapped by the protruding portion 22 to be attached to the panel portion 21. However, according to the example shown in Fig. 6, a grooved portion 23A is configured to engage the ring portion 32 of the ring tab 3 partially therewith in a detachable manner.

[0038] Specifically, a width of the grooved portion 23A is substantially identical to that of the ring portion 32, and the ring portion 32 of the ring tab 3 is engaged detachably with the grooved portion 23A in regions of both sides of the grooved portion 23A diverging from the recessed portion 24 in the circumferential direction. That is, the ring portion 32 is stopped partially by the grooved portion 23A. Therefore, the ring portion 32 of the ring tab 3 is retained in the grooved portion 23A unless the ring portion 32 is pulled to be detached from the panel portion 21. Preferably, the ring portion 32 is engaged with the grooved portion 23A at a portion outside the region where a finger is inserted to pull the ring portion 32 thereby lifting the sealing lid 11. In other words, the ring portion 32 is preferably engaged with the grooved portion 23A at a point outside the region opposed to an intermediate portion of the base portion 31 (lengthwise) in the direction perpendicular to the intermediate portion. Accordingly, the portion of the grooved portion 23A at which the ring portion 32 is thus engaged therewith also corresponds to the fixed portion of the present invention.

[0039] More specifically, in order to engage the ring portion 32 of the ring tab 3 with the grooved portion 23A, the width of the grooved portion 23A is basically identical to or slightly narrower than that of the ring portion 32. Therefore, according to another example of the present invention, the ring portion 32 of the tab 3 is engaged with the grooved portion 23A by pushing the ring portion 32 onto the grooved portion 23A from above. Meanwhile, a depth of the grooved portion 23 is preferably set to 50 to 150% of the thickness of the ring tab 3 at the deepest portion. In case of thus forming the grooved portion 23A, the ring tab 3 can be engaged with the grooved portion 23A certainly. In this case, moreover, the sealing lid 1 can be formed easily and stacked neatly. In addition, the depth of the recessed portion 24 is preferably set to 50 to 200% of the thickness of the ring tab 3. In case of thus forming the recessed portion 24, the finger can be inserted into the ring portion 32 smoothly. In this case, the sealing lid 1 can be formed further easily and stacked

further neatly.

[0040] Therefore, the sealing lid 1 shown in Figs. 6 and 7 can also be transported easily and opened by the same procedure to open the sealing lid 1 of the aforementioned example in which the ring tab 3 is bonded to the panel portion 21. Specifically, according to the sealing lid 1 of another example of the present invention, the lid body 2 is also made of the thin-film like sheet material, and the base portion 31 of the ring tab 3 is attached to the lid body 2 by the protruding portion 22. In addition, according to another example of the present invention, the ring portion 32 is thus engaged with the panel portion 21 of the lid body 2 (in the grooved portion 23A) in a detachable manner. Therefore, even if the sealing lid 1 according to another example attached to the metal lid frame 4 is reversed vertically during transportation, the ring tab 3 also will not be weighted down to hinder the transportation.

[0041] The metal lid frame 4 to which the sealing lid 1 of another example thus structured is attached is also sealed to the can trunk to form a can container. In this case, in order to open the can container thus structured, a finger can be inserted into the ring portion 32 of the ring tab 3 from the portion which is not engaged with the grooved portion 23A through the recessed portion 24 formed on the panel portion 21 of the lid body 2. Then, the ring tab 3 is lifted by pulling the leading end of the ring portion 32 (i.e., the portion furthest away from the base portion 31) by the finger thus inserted therein. After thus detaching the ring tab 3 from the panel portion 21 of the lid body 2, the ring tab 3 is further lifted by the finger inserted into the ring portion 32. As a result, the panel portion 21 of the lid body 2 is detached from the lid frame 4 from the protruding portion 22 to which the base portion 31 of the ring tab 3 is attached, and the opening portion 41 formed in the center of the lid frame 4 is opened.

[0042] In addition, according to another example of the present invention, the ring portion 32 of the ring tab 3 is also held inside of the arcuate grooved portion 23A formed on the panel portion 21 of the lid body 2. Therefore, a lateral movement of the ring tab 3 can also be restricted by the arcuate grooved portion 23 even if the base portion 31 of the ring tab 3 and vicinity thereof is subjected to a load from the side during transportation of the sealing lid 1 thus bonded to the metal lid frame 4. For this reason, the ring portion 32 of the ring tab 3 will not be detached from the panel portion 21 of the lid body 2 accidentally.

[0043] The sealing lid according to the present invention should not be limited to the examples thus far explained. For example, according to the examples, the sealing lid is attached to the metal lid frame to be sealed to the can trunk. However, the sealing lid according to the present invention may also be bonded directly to a flange of the container.

[0044] In addition, in the above-explained examples, the adhesive resin layer is formed entirely on the inner surface of the lid body. However, according to the present invention, the adhesive resin layer may also be formed

only on a portion of the inner surface of the lid body to be bonded to the circumference of the opening of the container. Likewise, a method to attach the ring tab to the lid body also should not be limited to the method explained in the examples. Therefore, the ring tab may also be attached to the lid body by any conventional method.

[0045] Moreover, in the above-explained examples, the hot melt agent is used to bond the ring portion of the ring tab to the panel portion of the lid body. However, the ring portion of the ring tab may also be fixed to the panel portion without using the adhesive agent. For example, the ring portion of the ring tab may also be fixed directly to the lid body by forming a resin film adhesive to the resin material of the ring tab on the outer surface of the lid body, and heating the resin film together with the ring tab to bond the ring tab thermally to the resin film. In this case, in order to bond the ring portion of the ring tab partially to the panel portion (that is, not to bond partially), a masking layer may be formed partially on the outer resin layer of the panel portion underneath the ring portion using resin material which is not adhesive to the resin material of the ring tab. Alternatively, it is also possible to create a clearance partially between the ring tab and the panel portion by depressing the panel portion partially underneath the ring portion.

[0046] Further, in the above-explained examples, the arcuate grooved portion is formed on the panel portion of the lid body to hold the ring portion of the ring tab therein, and the ring portion is bonded to the panel portion in the grooved portion. However, the ring portion of the ring tab may also be bonded to the upper surface of the panel portion without forming the grooved portion on the panel portion. In this case, it is preferable to form a protrusion or the like on the panel portion in a manner to restrict the lateral movement of the ring tab. Thus, according to the present invention, a structure of the panel portion may be altered arbitrarily.

[0047] Furthermore, in the above-explained examples, the ring portion of the ring tab is engaged with the arcuate grooved portion. However, instead of forming the grooved portion, it is also possible to form a pair of protrusions on the panel portion for holding the ring portion at a portion away from the leading end of the ring portion. In this case, the ring tab is engaged with those protrusions by pushing the ring portion from above. Thus according to the present invention, a structure of the fixed portion may be altered arbitrarily.

Claims

1. A sealing lid, comprising:

a lid body made of thin-film like sheet material, which has a panel portion configured to cover an opening portion of a container thereby sealing the container, and a protruding portion pro-

truding from a circumference of the panel portion; and
 a ring tab formed separately from the lid body, which has a base portion held by the protruding portion of the lid body, and a ring portion to which a finger is inserted;
characterized by:

a fixed portion, at which the ring portion of the ring tab held by the protruding portion is fixed to the panel portion, in a manner to allow the ring portion to be detached from the panel portion by applying a pulling force to the ring portion in a direction to lift the ring portion away from the panel portion.

a recessed portion, which is formed on the panel portion integrally with the grooved portion in a manner to allow a finger to be inserted into the ring portion from underneath the ring portion.

2. The sealing lid as claimed in claim 1, wherein the fixed portion includes a bonded portion at which the ring portion is bonded partially to the panel portion of the lid body in a detachable manner.
3. The sealing lid as claimed in claim 2, wherein adhesive agent which adheres stronger to the panel portion rather than adhering to the ring portion is used at the bonded portion.
4. The sealing lid as claimed in claim 2 or 3, further comprising:

a grooved portion, which is formed on the panel portion to hold the ring portion therein; and wherein the ring portion held in the grooved portion is fixed at the bonded portion.
5. The sealing lid as claimed in claim 1, wherein:

the fixed portion includes a stopper portion, which is formed on the panel portion to fix the ring portion to the panel portion of the lid body in a detachable manner by hooking at least a portion of the ring portion.
6. The sealing lid as claimed in claim 5, wherein the stopper portion is configured to engage the ring portion with the panel portion.
7. The sealing lid as claimed in any of claims 1, 5 and 6, further comprising:

a grooved portion, which is formed on the panel portion and configured to hold the ring portion therein; and wherein the ring portion held in the grooved portion is engaged with an inner face of the grooved portion.
8. The sealing lid as claimed in claim 4 or 7, further comprising:

Fig. 1

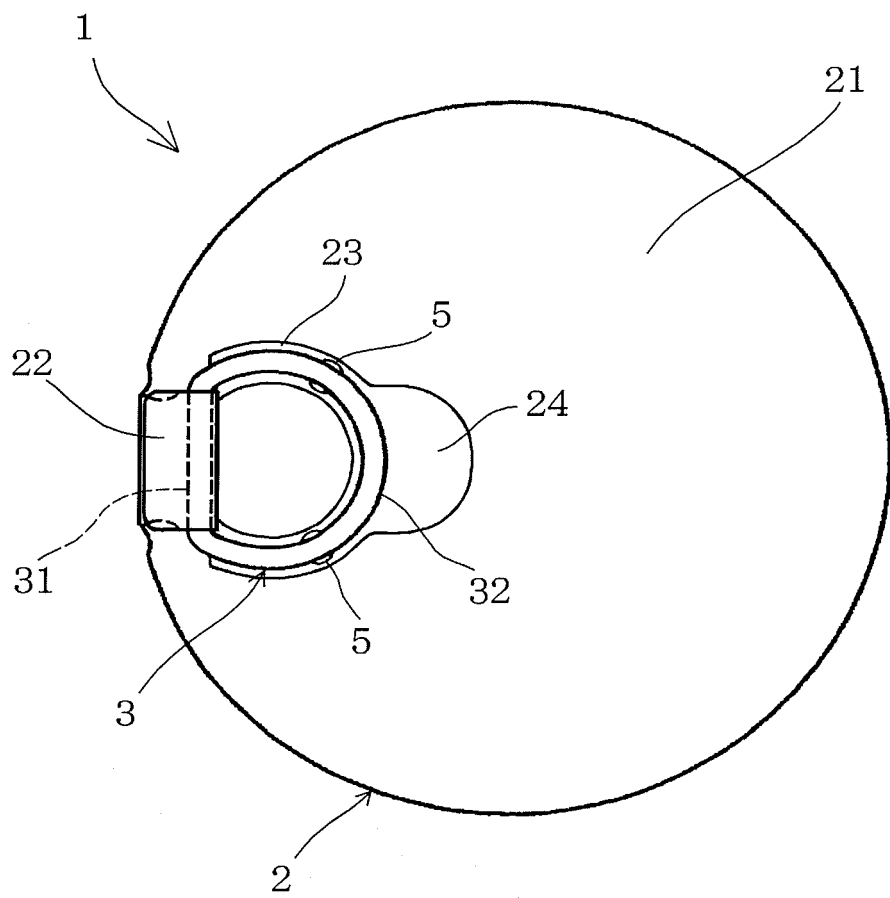


Fig. 2

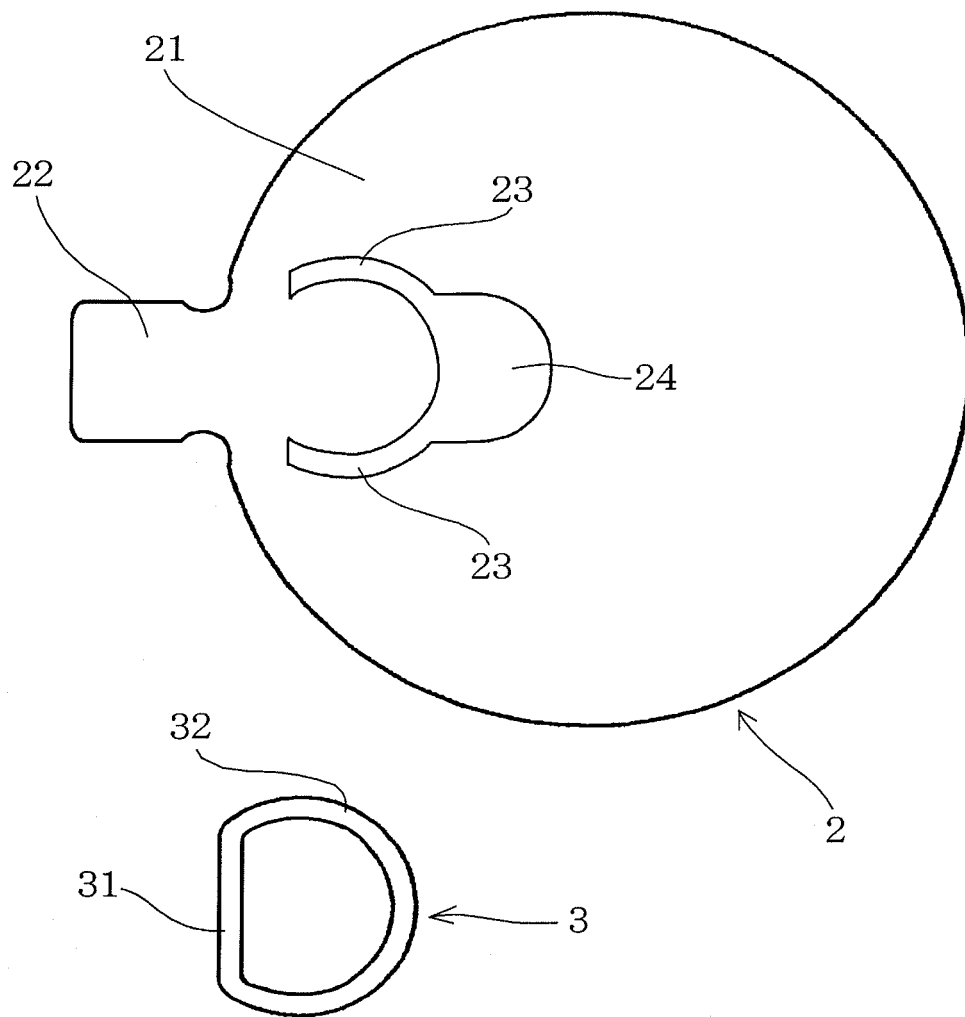


Fig. 3

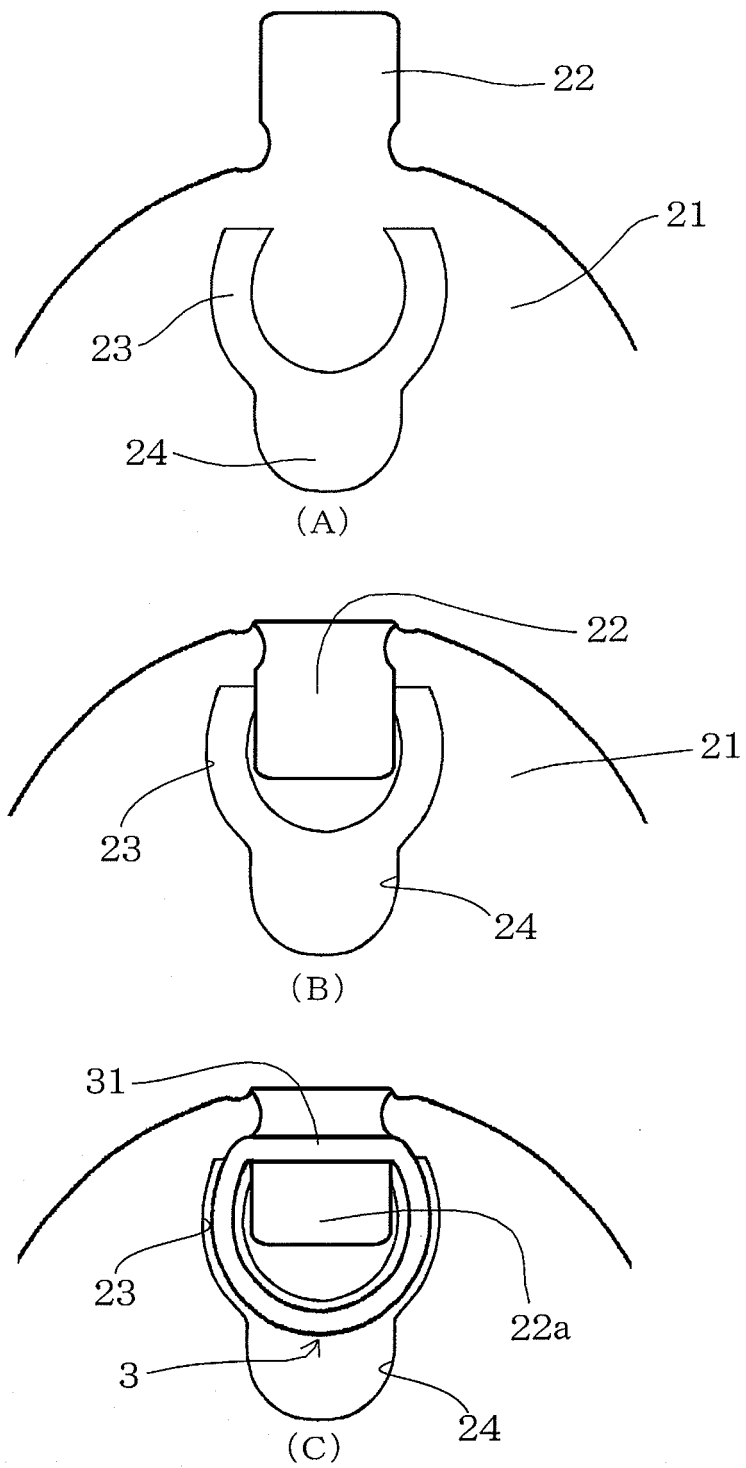


Fig. 4

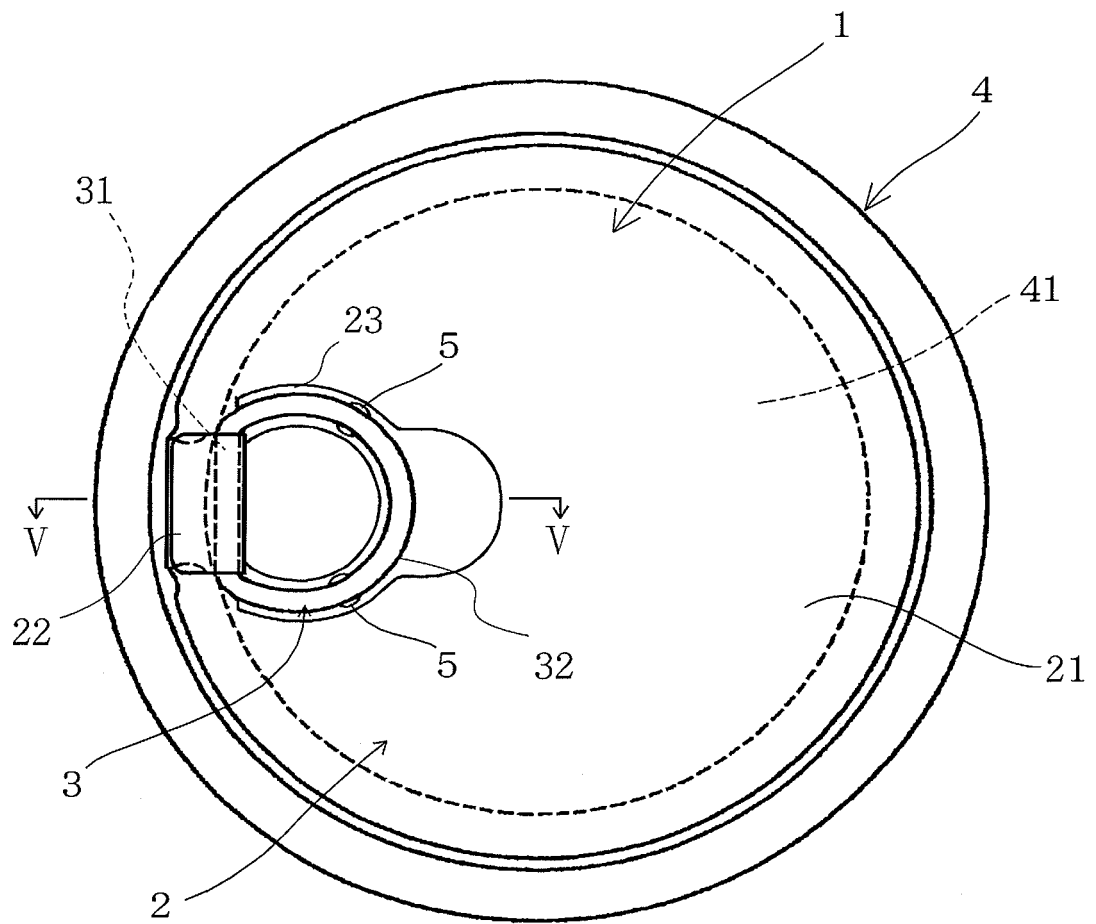


Fig. 5

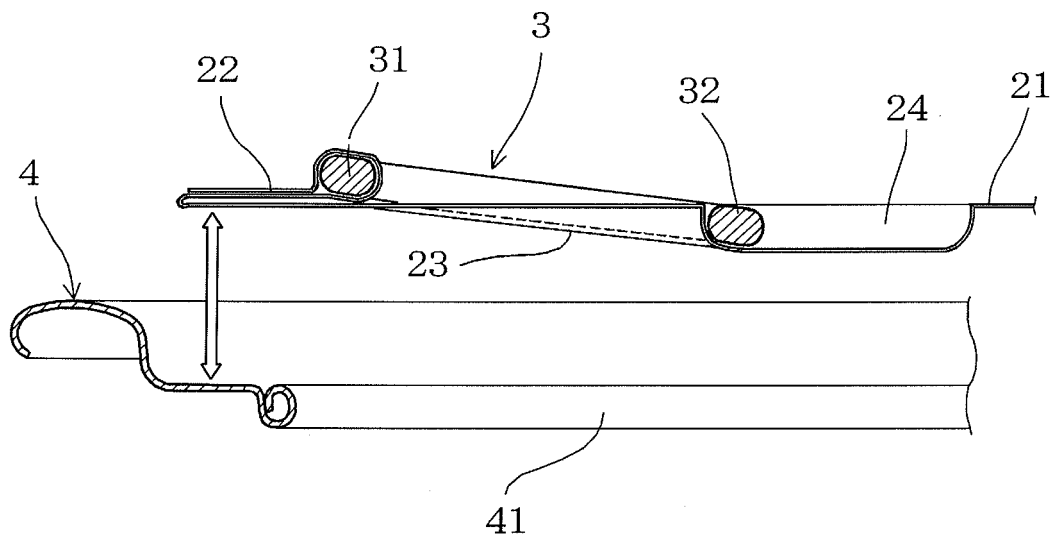


Fig. 6

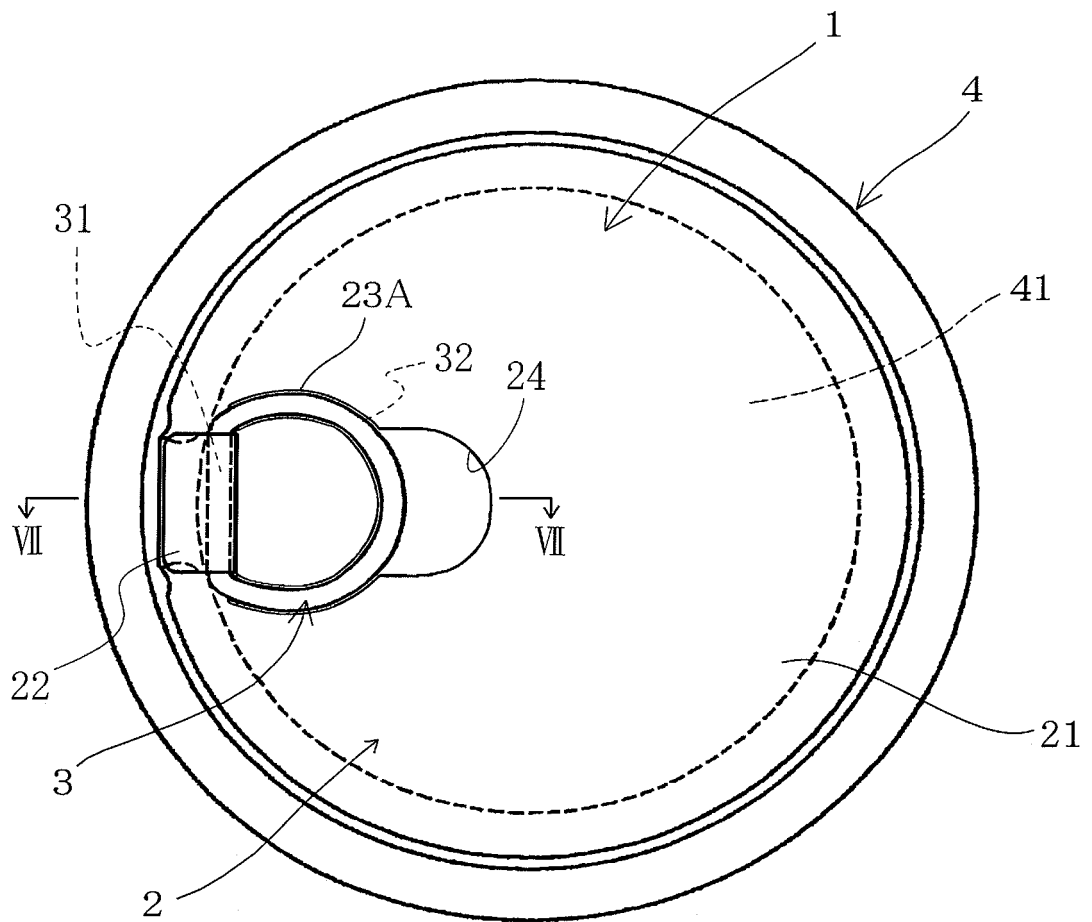
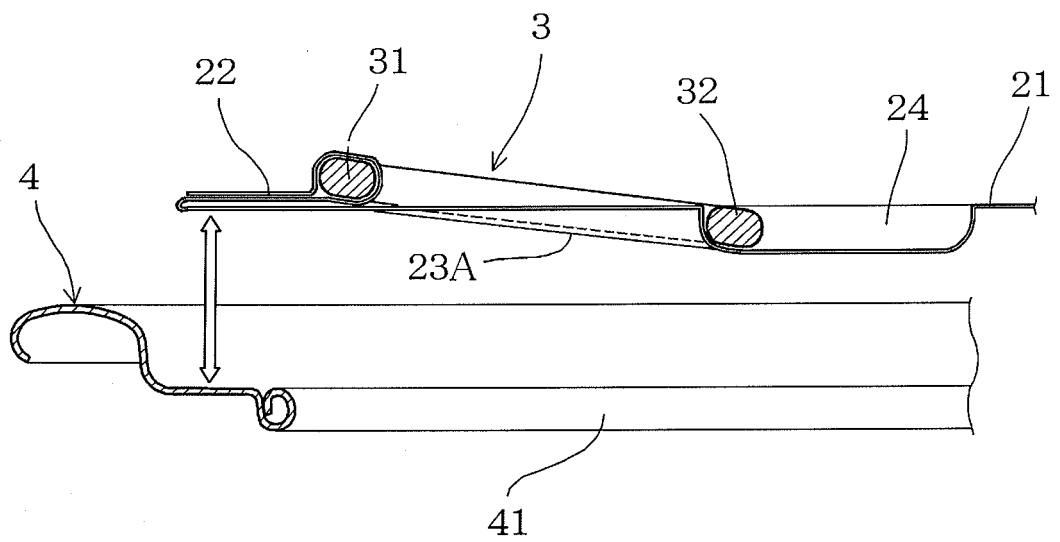


Fig. 7



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2010/072747

A. CLASSIFICATION OF SUBJECT MATTER <i>B65D43/00 (2006.01) i, B65D17/50 (2006.01) i</i>		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) B65D17/50, 35/44-35/54, 39/00-55/16, 77/20		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2011 Kokai Jitsuyo Shinan Koho 1971-2011 Toroku Jitsuyo Shinan Koho 1994-2011		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	CD-ROM of the specification and drawings annexed to the request of Japanese Utility Model Application No. 88141/1992 (Laid-open No. 44724/1994) (Toyo Seikan Kaisha, Ltd.), 14 June 1994 (14.06.1994), paragraphs [0007] to [0009]; fig. 1 to 4 (Family: none)	1-2, 4-6, 8 3, 7
Y A	US 3380622 A (THE PROCTER & GAMBLE CO.), 30 April 1968 (30.04.1968), column 2, line 69 to column 3, line 2; fig. 1, 2 (Family: none)	1-2, 4, 8 3
☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 17 February, 2011 (17.02.11)		Date of mailing of the international search report 08 March, 2011 (08.03.11)
Name and mailing address of the ISA/ Japanese Patent Office		Authorized officer
Facsimile No.		Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2010/072747

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 63-500586 A (PLM AB.), 03 March 1988 (03.03.1988), page 4, upper right column, line 17 to page 5, upper left column, line 15; fig. 5 to 7, 10 & AU 6332486 A & AU 6332986 A & CA 1295576 C & CH 666240 A5 & DK 156709 B & DK 165054 B & DK 217789 A & EP 233270 A1 & EP 233286 A1 & FI 871674 A & FI 871675 A & GB 2186860 A & JP 63-500587 A & NZ 217179 A & SE 453822 B & US 4738374 A & US 4795055 A & ZA 8606049 A & WO 1987/01095 A1 & WO 1987/01098 A1	4, 8 7
Y	US 3494500 A (J. L. CLARK MANUFACTURING CO.), 10 February 1970 (10.02.1970), column 3, lines 33 to 49; fig. 1 to 2, 4 (Family: none)	1, 5-6
A	CH 171307 A (Gebr. HOFFMANN), 31 August 1934 (31.08.1934), entire text; all drawings (Family: none)	1
A	US 4834259 A (CONTINENTAL CAN CO., INC.), 30 May 1989 (30.05.1989), column 2, lines 19 to 29; fig. 4 to 5 (Family: none)	1

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REFERENCES CITED IN THE DESCRIPTION

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- JP 2003081318 A [0003] [0005] [0006]
- JP 6044724 A [0004] [0006]
- WO 644724 A [0006]