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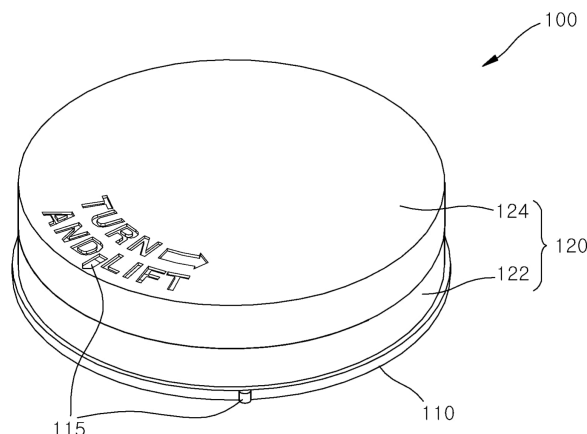
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(54) **ONE-TOUCH CAP WITH SEALING FUNCTION**

(57) The present invention relates to a one-touch cap having a sealing function, and the one-touch cap includes a main body, a cover provided on the main body and configured to open or close an opening of the main body

through a hinge, and an opening/closing operation portion configured to bring the cover into close contact with the main body such that the cover and the main body are sealed and control opening/closing of the cover.

FIG. 1



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Description

[Technical Field]

[0001] The present invention relates to a one-touch cap having a sealing function and relates to an environmentally friendly one-touch cap having a sealing function, in which the sealing function is improvable while maintaining the convenience of the one-touch cap and which is made of a single material so that separate disposal is not required.

[Background Art]

[0002] In general, cosmetic containers are used to store and use cosmetics for various purposes, and most cosmetic containers are provided with airtightness components for preventing deterioration or damage during distribution or carrying and storage of cosmetics, and the degree of airtightness varies according to the purpose or nature of the cosmetics.

[0003] Accordingly, in the case of containers used to store and use cosmetics of relatively low viscosity types, such as cream-type cosmetics, or cosmetics of similar types, a relatively high level of airtightness is not required. In consideration of these points, conventional cream-type cosmetics containers have a structure including a container body, an inner stopper, and a lid, a separate packing is attached to the inside of the lid to provide airtightness for cosmetics contained in the container body, and the inner stopper is simply used as a cover to prevent the cosmetics contained in the container body from coming into contact with an inner surface of the lid.

[0004] According to recent trends, the development of cosmetic containers is also actively encouraging the development of products designed in consideration of resource recycling and environments, and there is a need for environmentally friendly products that minimize inconvenience to consumers due to the use or disposal of the products by enabling easy separate disposal.

[0005] In consideration of these points, in conventional structures in which a separate packing is attached to an inner surface of a lid to provide airtightness for cosmetics, there are various problems in that it is very difficult to separately dispose cosmetic containers due to a difference in material between the cosmetic containers and other components, and also additional labor or costs for separate collection are required.

[0006] Therefore, there is a need to solve such problems.

[0007] The background technology of the present invention is disclosed in Korean Registered Utility Model Publication No. 20-0270346 (Registered on March 19, 2002: Title of the Utility Model: Cosmetic case having one body type cap.

[Detailed Description of Invention]

[Technical Problem]

[0008] The present invention has been devised to solve the above problems and is directed to providing an environmentally friendly one-touch cap having a sealing function, in which the sealing function is improvable while maintaining the convenience of the one-touch cap and which is made of a single material so that separate disposal is not required.

[Technical Solution]

[0009] A one-touch cap having a sealing function according to one embodiment of the present invention includes a main body, a cover provided on the main body and configured to open or close an opening of the main body through a hinge, and an opening/closing operation portion configured to bring the cover into close contact with the main body such that the cover and the main body are sealed and control opening/closing of the cover.

[0010] In addition, the cover may include a ring portion rotatably provided on a circumference of the main body, and a rotating cover hinge-connected to the ring portion and configured to open or close the opening of the main body.

[0011] In addition, step portions corresponding to each other may be formed on facing surfaces of the ring portion and the rotating cover.

[0012] In addition, the opening/closing operation portion may include a sealing rib formed to protrude from an inner surface of the rotating cover, a sealing operation portion configured to move the cover downward such that the sealing rib is in close contact with the opening of the main body, and an opening/closing control portion configured to control opening/closing of the rotating cover in conjunction with downward movement of the cover by the sealing operation portion.

[0013] In addition, the sealing operation portion may include a plurality of sealing guide grooves, each of which is formed to be inclined downward from a circumferential surface of the main body by a predetermined length, and a sealing guide protrusion formed on the ring portion so as to be inserted into a corresponding sealing guide groove

[0014] In addition, the sealing guide grooves may be provided as three or more sealing guide grooves disposed on the circumferential surface of the main body and spaced a predetermined interval from each other.

[0015] In addition, a position fixing projection configured to fix a position of the sealing guide protrusion may be formed at each end portion of the sealing guide groove.

[0016] In addition, the opening/closing control portion may include a plurality of control guide grooves, each of which has an inlet and is formed to be inclined downward from a circumferential surface of the main body by a predetermined length, and a plurality of control guide protrusions formed on the rotating cover to be inserted

into the control guide grooves.

[0017] In addition, the control guide grooves may be provided as three or more control guide grooves disposed on the circumferential surface of the main body and spaced a predetermined interval from each other.

[0018] In addition, the sealing operation portion may include a plurality of sealing guide grooves, each of which is formed to be inclined downward from a circumferential surface of the main body by a predetermined length, and a plurality of sealing guide protrusions formed on the ring portion to be inserted into the sealing guide grooves, and the opening/closing control portion may include a plurality of control guide grooves, each of which has an inlet groove and is formed to be inclined downward from the circumferential surface of the main body by a predetermined length, and a plurality of control guide protrusions formed on the rotating cover to be inserted into the control guide grooves.

[0019] In addition, the sealing guide groove and the control guide groove may be connected to each other through connection grooves, and the sealing guide protrusion inserted into the sealing guide groove may be attachable or detachable through the inlet groove.

[0020] In addition, an undercut may be formed in the connection groove to prevent the sealing guide protrusion from being unintentionally detached from the sealing guide groove to the connection groove.

[0021] In addition, a position fixing projection configured to fix a position of the sealing guide protrusion may be formed at each end portion of the sealing guide groove, and when the sealing guide protrusion is located on the position fixing projection formed at an upper end portion of the sealing guide groove among the position fixing projections, the control guide protrusion may be located to be colinear with the inlet.

[0022] In addition, the main body and the cover may be made of a single material.

[0023] In addition, the main body may have an accommodation space in which contents are accommodated.

[Advantageous Effects]

[0024] As described above, in a one-touch cap having a sealing function according to the present invention, while the convenience of opening or closing by a hinge is maintained, a cover is vertically lowered through the rotation thereof, thereby enhancing a sealing function.

[0025] In addition, according to the present invention, the opening/closing, sealing, and locking operations of a cover can be performed at one time, thereby providing convenience in use. A structure in which a sealing operation portion and an opening/closing control portion are disposed in two rows enables stable opening/closing movement, and a sealing position and an opening position are recognizable through a position fixing portion, thereby providing convenience in use.

[0026] In addition, according to the present invention, a main body and a cover are made of a single material of

polypropylene (PP), thereby providing products designed in consideration of resource recycling and environments, and separate disposal is not also required, thereby providing environmentally friendly products that minimize inconvenience to consumers due to the use or disposal of the products.

[Description of Drawings]

10 [0027]

FIG. 1 is a perspective view illustrating a closed state of a one-touch cap having a sealing function according to one embodiment of the present invention.

15 FIG. 2 is a perspective view illustrating an open state of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 3 is an exploded perspective view of the one-touch cap having a sealing function according to one embodiment of the present invention.

FIG. 4 is an exploded perspective view of a bottom surface of a one-touch cap having a sealing function according to one embodiment of the present invention.

25 FIG. 5 is a cross-sectional view of a sealed state of the one-touch cap having a sealing function according to one embodiment of the present invention.

FIG. 6 is a cross-sectional view of an unsealed state of the one-touch cap having a sealing function according to one embodiment of the present invention.

30 FIG. 7 is a cross-sectional view of an open state of the one-touch cap having a sealing function according to one embodiment of the present invention.

35 FIG. 8 shows operational views for describing an opening operation of the one-touch cap having a sealing function according to one embodiment of the present invention.

FIG. 9 is a view illustrating a use state of the one-touch cap having a sealing function according to one embodiment of the present invention.

40 FIG. 10 is a view showing a modified example of the one-touch cap having a sealing function according to one embodiment of the present invention.

45 FIG. 11 is a perspective view illustrating a modified example of a hinge portion of the one-touch cap having a sealing function according to one embodiment of the present invention.

50 FIG. 12 is an exploded perspective view illustrating a modified example of the hinge portion of the one-touch cap having a sealing function according to one embodiment of the present invention.

55 FIG. 13 is an operational state view illustrating a modified example of the hinge portion of the one-touch cap having a sealing function according to one embodiment of the present invention.

[Best Mode]

[0028] Hereinafter, exemplary embodiments of a one-touch cap having a sealing function according to embodiments of the present invention will be described with reference to the accompanying drawings. The accompanying drawings are not necessarily to scale, and in some instances, proportions may have been exaggerated in order to clearly illustrate features of the embodiments.

[0029] Further, terms to be described below are terms defined in consideration of functions in the present invention and thus may vary according to intentions or customs of users and operators. Accordingly, the definitions of such terms should be made based on the content throughout the specification.

[0030] FIG. 1 is a perspective view illustrating a closed state of a one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 2 is a perspective view illustrating an open state of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 3 is an exploded perspective view of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 4 is an exploded perspective view of a bottom surface of a one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 5 is a cross-sectional view of a sealed state of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 6 is a cross-sectional view of an unsealed state of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 7 is a cross-sectional view of an open state of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 8 shows operational views for describing an opening operation of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 9 is a view illustrating a use state of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 10 is a view illustrating a modified example of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 11 is a perspective view illustrating a modified example of a hinge portion of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 12 is an exploded perspective view illustrating a modified example of the hinge portion of the one-touch cap having a sealing function according to one embodiment of the present invention. FIG. 13 is an operational state view illustrating a modified example of the hinge portion of the one-touch cap having a sealing function according to one embodiment of the present invention.

[0031] Referring to FIGS. 1 to 9, a one-touch cap 100 having a sealing function according to one embodiment of the present invention includes a main body 110, a cover 120, and an opening/closing operation portion 130.

[0032] The main body 110 may be formed in a ring shape and coupled to an inlet of an upper end portion of a container C in which contents are accommodated as shown in FIG. 9. That is, the main body 110 may be formed integrally with the inlet of the container C or may be fixed to the inlet through a separate coupling portion. The container C may be a container with any shape that accommodates contents therein and has an inlet through which contents may be taken out.

[0033] Referring to FIGS. 2 and 7, the cover 120 is provided on the main body 110 to open or close an opening of the main body 110 through a hinge and includes a ring portion 122 that is rotatably provided on a circumference of the main body 110 and a rotating cover 124 that is hinge-connected to the ring portion 122 to open or close the opening of the main body 110.

[0034] That is, the ring portion 122 is formed in a ring shape with a predetermined width, and the rotating cover 124 is hinge-connected to the ring portion 122 through a hinge portion 123.

[0035] Step portions 125 corresponding to each other are formed on facing surfaces of the ring portion 122 and the rotating cover 124. The step portions 125 may be formed to correspond to each other and have a wide contact area, thereby improving a sealing force and may also prevent corresponding surfaces of the ring portion 122 and the rotating cover 124 from being misaligned in a state in which the rotating cover 124 is closed.

[0036] A tapered portion 112 is formed on an upper end surface of the main body 110. The tapered portion 112 can prevent an inner surface of the rotating cover 124 from being caught on an upper end portion of the main body 110 when the rotating cover 124 is opened or closed.

[0037] Referring to FIGS. 3 to 5, the opening/closing operation portion 130 may bring the cover 120 into close contact with the main body 110 so that the cover 120 and the main body 110 are sealed and may control the opening/closing of the cover 120.

[0038] In this case, indicators 115 may be formed in the main body 110 and the cover 120 and may be aligned with each other in a state in which the cover 120 is open, thereby allowing an open state to be visually checked (See FIG. 1).

[0039] The opening/closing operation portion 130 includes a sealing rib 132, a sealing operation portion 140, and an opening/closing control portion 150.

[0040] The sealing rib 132 is formed to protrude from the inner surface of the rotating cover 124. More specifically, as shown in FIGS. 4 and 5, the sealing rib 132 may be formed to protrude downward from a bottom surface of the rotating cover 124 and may come into contact with an inner surface of the opening of the main body 110 to seal the opening of the main body 110 when the cover 120 is lowered by the sealing operation portion 140 to be described below.

[0041] A tapered portion 133 is formed at an end portion of the sealing rib 132 to facilitate insertion into the

opening of the main body 110 when the rotating cover 124 is closed.

[0042] The sealing operation portion 140 moves the cover 120 downward such that the sealing rib 132 comes into close contact with the opening of the main body 110 and may include sealing guide grooves 142, each of which is formed to be inclined downward from a circumferential surface of the main body 110 by a predetermined length, and sealing guide protrusions 144 formed on the ring portion 122 to be inserted correspondingly into the sealing guide grooves 142.

[0043] That is, the sealing rib 132 may be vertically lowered by the rotation of the cover 120 and thus may be perpendicularly inserted into the opening of the main body 110.

[0044] One end and the other end of the sealing guide groove 142 may have a level difference such that the sealing rib 132 may be inserted into the opening of the main body 110. Accordingly, as shown in FIGS. 5 and 8A, when the sealing guide protrusion 144 is located at a lower end portion of the sealing guide groove 142 by the rotation of the cover 120, the sealing rib 132 is inserted into the opening of the main body 110 so that the opening is sealed, and as shown in FIGS. 6 and 8B, when the sealing guide protrusion 144 is located at an upper end portion of the sealing guide groove 142 by the rotation of the cover 120, the opening is unsealed.

[0045] It is preferable that three or more sealing guide grooves 142 be formed on the circumferential surface of the main body 110 and spaced a predetermined interval from each other. When only two sealing guide grooves 142 are formed on the circumferential surface of the main body 110, since the cover 120 may shake to both sides with respect to the sealing guide protrusion 144, three sealing guide grooves 142 may be disposed at 120° intervals to prevent the shaking of the cover 120.

[0046] Referring to FIG. 3, a position fixing projection 143 is formed at each end portion of the sealing guide groove 142 to fix a position of the sealing guide protrusion 144. A current position of the sealing guide protrusion 144 that has passed over the position fixing projection 143 may be fixed to prevent the unintended movement of the cover 120.

[0047] In addition, a user can feel the shaking of the sealing guide protrusion 144 passing over the position fixing projection 143, thereby recognizing a sealed state of the cover 120 or an openable state of the rotating cover 124.

[0048] Referring to FIGS. 2 and 7, the opening/closing control portion 150 may control the opening/closing of the rotating cover 124 in conjunction with the downward movement of the cover 120 by the sealing operation portion 140.

[0049] The opening/closing control portion 150 includes a plurality of control guide grooves 152, each of which has an inlet groove 153 and is formed to be inclined downward from the circumferential surface of the main body 110 by a predetermined length, and a plurality of

control guide protrusions 154 formed on the rotating cover 124 to be inserted into the control guide grooves 152.

[0050] Three or more control guide grooves 152 are formed in the circumferential surface of the main body 110 and spaced a predetermined interval from each other. That is, like the sealing guide grooves 142, three control guide grooves 152 may be disposed at 120° intervals to prevent the shaking of the rotating cover 124.

[0051] The control guide groove 152 is formed parallel to the sealing guide groove 142, and the control guide protrusion 154 is formed to be colinear with and above the sealing guide protrusion 144.

[0052] Accordingly, the opening/closing control portion 150 may control the opening/closing of the rotating cover 124 and may serve to guide the rotation of the cover 120 as well as seal the cover 120 together with the sealing operation portion 140.

[0053] The inlet groove 153 is formed in an upper end portion of the control guide groove 152 such that the control guide protrusion 154 is detached when the rotating cover 124 is opened. The inlet groove 153 is formed to be colinear with the corresponding position fixing projection 143 formed at the upper end portion of the sealing guide groove 142 among the position fixing projections 143.

[0054] That is, when the sealing guide protrusion 144 is located on the position fixing projection 143 formed at the upper end portion, the control guide protrusion 154 may be located to be colinear with the inlet groove 153 so that the rotating cover 124 may be opened.

[0055] In addition, it is preferable that a level of a lower end portion of the control guide groove 152, that is, a portion opposite to a portion at which the inlet groove 153 is located, be formed to be slightly lower than that of the control guide protrusion 154. Thus, the control guide protrusion 154 is forcibly fitted into the lower end portion of the control guide groove 152 to bring the main body 110 and the rotating cover 124 into closer contact with each other, thereby improving a sealing force. In the present embodiment, the level of the lower end portion of the control guide groove 152 is illustrated as being lower than that of the control guide protrusion 154, but the present invention is not limited thereto. Various design changes are possible such that the control guide protrusion 154 is forcibly fitted into the lower end portion of the control guide groove 152. As an example, various design changes are possible, such as forming the control guide protrusion 154 to have a slightly larger diameter or forming the lower end of the control guide groove 152 in a shape that is inclined downward rather than horizontal.

[0056] The sealing guide groove 142 and the control guide groove 152 may be connected to each other through a connection groove 160, and the sealing guide protrusion 144 inserted into the sealing guide groove 142 may be attached or detached through the inlet groove 153.

[0057] The connection groove 160 may be a compo-

nent for assembling or separating the cover 120, and the cover 120 may be assembled and separated through the inlet groove 153 of the control guide groove 152 and the connection groove 160 that connects the control guide groove 152 and the sealing guide groove 142.

[0058] That is, the sealing guide protrusion 144 may be inserted through the inlet groove 153 and enter the sealing guide groove 142 through the connection groove 160, thereby enabling assembly and disassembly.

[0059] An undercut portion 162 is formed in the connection groove 160 to prevent the sealing guide protrusion 144 from being unintentionally detached from the sealing guide groove 142 to the connection groove 160.

[0060] As shown in FIG. 3, the connection groove 160 is formed to be inclined upward in a direction opposite to the sealing guide groove 142, and the undercut portion 162 protruding inward is formed at each lower edge of the connection groove 160, thereby preventing the sealing guide protrusion 144 from entering the connection groove 160 while moving along the sealing guide groove 142.

[0061] According to the present embodiment, the main body 110 and the cover 120 may be made of a single material. As an example, the main body 110 and the cover 120 are made of a single material of polypropylene (PP). All of the above components are made of a single material, thereby providing products designed in consideration of resource recycling and environments.

[0062] Meanwhile, as a modified example of the main body 110, as shown in FIG. 10, an accommodation space 170 in which contents are accommodated may be formed in the main body 110. The main body 110 may be formed to have a predetermined height, and a bottom surface may be formed to have the accommodation space 170 capable of accommodating a predetermined amount. Thus, the cover 120 may be coupled so that the main body 110 itself may be used as a container.

[0063] In addition, referring to FIGS. 11 to 13, as a modified example of a hinge portion 223, the ring portion 122 and the rotating cover 124 are connected through the hinge portion 223, and the hinge portion 223 includes a hinge shaft 224 formed on the ring portion 122 and a hinge bracket 225 formed on the rotating cover 124 to be coupled to the hinge shaft 224.

[0064] The hinge bracket 225 is formed in a structure that is attachable to or detachable from the hinge shaft 224. That is, the hinge bracket 225 is formed to have a "C" cross-sectional shape and is attachable to or detachable from the hinge shaft 224.

[0065] Hereinafter, the operation and effects of the one-touch cap having a sealing function according to one embodiment of the present invention will be described as follows.

[0066] First, referring to FIGS. 3 and 4, describing the assembly of the main body 110 and the cover 120, the sealing guide groove 142 and the control guide groove 152 are formed at upper and lower portions of the circumferential surface of the main body 110 and engraved

in the same shape in parallel, and each sealing guide protrusion 144 and each control guide protrusion 154 inserted therein are formed to be collinear with the ring portion 122 and the rotating cover 124, respectively.

[0067] After the sealing guide protrusion 144 formed on the ring portion 122 is aligned with the inlet groove 153 formed in the control guide groove 152 and inserted, the sealing guide protrusion 144 enters the sealing guide groove 142 through the connection groove 160. Afterwards, the control guide protrusion 154 also enters the control guide groove 152 through the inlet groove 153. Each sealing guide protrusion 144 and each control guide protrusion 154 are inserted into a corresponding sealing guide groove 142 and a corresponding control guide groove 152, thereby completing the assembly.

[0068] Hereinafter, the closing and opening operations of the cover 120 will be described with reference to FIGS. 5 to 8.

[0069] Referring to FIGS. 5 and 8A, when the sealing guide protrusion 144 and the control guide protrusion 154 are located at the lower end portion of each sealing guide groove 142 and the lower end portion of each control guide groove 152, since the cover 120 is lowered from the main body 110, the sealing rib 132 formed to protrude from the inner surface of the rotating cover 124 may be in close contact with the inner surface of the opening of the main body 110 to seal the opening of the main body 110.

[0070] The position fixing projection 143 may be formed at the lower end portion of the sealing guide groove 142 to fix the position of the sealing guide protrusion 144, thereby preventing the unintended movement of the cover 120.

[0071] In addition, the lower end portion of the control guide groove 152 may be formed to be slightly smaller than the control guide protrusion 154 so that the control guide protrusion 154 may be forcibly fitted into the lower end portion of the control guide groove 152, thereby bringing the main body 110 and the rotating cover 124 into closer contact with each other to improve a sealing force. In addition, through the position fixing projection 143 as well as the interference fit of the control guide protrusion 154 into the control guide groove 152, a closing and sealing state of the main body 110 and the cover 120 may be firmly maintained.

[0072] In a case in which a user wants to open the cover 120, as shown in FIGS. 6 and 8B, when the user rotates the cover 120 to one side, each sealing guide protrusion 144 and each control guide protrusion 154 move along a corresponding sealing guide groove 142 and a corresponding control guide groove 152, and the cover 120 is lifted from the main body 110.

[0073] The sealing guide protrusion 144 is fixed by passing over the position fixing projection 143 formed at the upper end portion of the sealing guide groove 142, and the control guide protrusion 154 is aligned with the inlet groove 153 formed in the upper end portion of the control guide groove 152.

[0074] As the cover 120 is lifted, the contact between

the sealing rib 132 formed in the rotating cover 124 and the inner surface of the opening may be released so that the opening may be unsealed, and the rotating cover 124 may secure a space in which opening or closing through a hinge is possible.

[0075] Thereafter, referring to FIGS. 7 and 8C, by rotating the rotating cover 124, the user may cause the control guide protrusion 154 to be detached through the inlet groove 153, thereby opening the rotating cover 124 to use contents inside the container C.

[0076] When the use of the contents is completed, the rotating cover 124 is closed, and the cover 120 is rotated in a direction opposite to an opening direction, each sealing guide protrusion 144 and each control guide protrusion 154 move along a corresponding sealing guide groove 142 and a corresponding control guide groove 152 to lower the cover 120, thereby sealing the container C again and maintaining the locked state of the cover 120.

[0077] In addition, the tapered portion 112 may be formed at the upper end portion of the main body 110 to prevent interference between the inner surface of the rotating cover 124 and the upper end portion of the main body 110 when the rotating cover 124 is opened or closed, thereby enabling a smooth opening/closing operation.

[0078] Meanwhile, as shown in FIG. 10, the main body 110 may be formed to have a predetermined height, and the bottom surface may be formed to have the accommodation space 170 capable of accommodating contents so that the main body 110 itself may be used as a container.

[0079] In addition, referring to FIGS. 11 to 13, the hinge portion 223 may include the hinge shaft 224 and the hinge bracket 225 which are separable from each other and thus may be applied to various containers such as large-volume containers. The rotating cover 124 may be separated and used according to use states, thereby improving availability.

[0080] As described above, the one-touch cap of the present invention has a structure in which the cover 120 is rotated once relative to the main body 110 to perform sealing and locking or unsealing and unlocking, thereby providing convenience in use. In addition, the cover 120 can be vertically lowered through the rotation thereof so that sealing is possible without the use of a separate packing. Therefore, due to such structural features, there is an effect of enabling the production of a product with a sealing function using a single material.

[0081] In addition, a structure in which the sealing operation portion 140 and the opening/closing control portion 150 are disposed in two rows enables stable movement, and a sealing position and an opening position is recognizable through the position fixing portion, thereby providing convenience in use.

[0082] In addition, the main body 110 and the cover 120 are made of a single material of PP, thereby providing products designed in consideration of resource recycling

and environments. Separate disposal is not also required, thereby providing environmentally friendly products that minimize inconvenience to consumers due to the use or disposal of the products.

[0083] The present invention has been described with reference to embodiments shown in the drawings, but this is merely illustrative, and those skilled in the art will understand that various modifications and other equivalent embodiments are possible therefrom.

[0084] Therefore, the true technical protection scope of the present invention should be defined by the appended claims.

15 Claims

1. A one-touch cap having a sealing function, comprising:

a main body;
a cover provided on the main body and configured to open or close an opening of the main body through a hinge; and
an opening/closing operation portion configured to bring the cover into close contact with the main body such that the cover and the main body are sealed and control opening/closing of the cover.

2. The one-touch cap of claim 1, wherein the cover includes:

a ring portion rotatably provided on a circumference of the main body; and
a rotating cover hinge-connected to the ring portion and configured to open or close the opening of the main body.

3. The one-touch cap of claim 2, wherein step portions corresponding to each other are formed on facing surfaces of the ring portion and the rotating cover.

4. The one-touch cap of claim 2, wherein the opening/closing operation portion includes:

a sealing rib formed to protrude from an inner surface of the rotating cover;
a sealing operation portion configured to move the cover downward such that the sealing rib is in close contact with the opening of the main body; and
an opening/closing control portion configured to control opening/closing of the rotating cover in conjunction with downward movement of the cover by the sealing operation portion.

5. The one-touch cap of claim 4, wherein the sealing operation portion includes:

- a plurality of sealing guide grooves, each of which is formed to be inclined downward from a circumferential surface of the main body by a predetermined length; and
a sealing guide protrusion formed on the ring portion so as to be inserted into a corresponding sealing guide groove.
6. The one-touch cap of claim 5, wherein the sealing guide grooves are provided as three or more sealing guide grooves disposed on the circumferential surface of the main body and spaced a predetermined interval from each other.
7. The one-touch cap of claim 5, wherein a position fixing projection configured to fix a position of the sealing guide protrusion is formed at each end portion of the sealing guide groove.
8. The one-touch cap of claim 4, wherein the opening/closing control portion includes:

a plurality of control guide grooves, each of which has an inlet and is formed to be inclined downward from a circumferential surface of the main body by a predetermined length; and
a plurality of control guide protrusions formed on the rotating cover to be inserted into the control guide grooves.
9. The one-touch cap of claim 8, wherein the control guide grooves are provided as three or more control guide grooves disposed on the circumferential surface of the main body and spaced a predetermined interval from each other.
10. The one-touch cap of claim 3, wherein the sealing operation portion includes a plurality of sealing guide grooves, each of which is formed to be inclined downward from a circumferential surface of the main body by a predetermined length, and a plurality of sealing guide protrusions formed on the ring portion to be inserted into the sealing guide grooves, and the opening/closing control portion includes a plurality of control guide grooves, each of which has an inlet groove and is formed to be inclined downward from the circumferential surface of the main body by a predetermined length, and a plurality of control guide protrusions formed on the rotating cover to be inserted into the control guide grooves.
11. The one-touch cap of claim 10, wherein the sealing guide groove and the control guide groove are connected to each other through connection grooves, and
the sealing guide protrusion inserted into the sealing guide groove is attachable or detachable through the inlet groove.
12. The one-touch cap of claim 11, wherein an undercut is formed in the connection groove to prevent the sealing guide protrusion from being unintentionally detached from the sealing guide groove to the connection groove.
13. The one-touch cap of claim 10, wherein a position fixing projection configured to fix a position of the sealing guide protrusion is formed at each end portion of the sealing guide groove, and
when the sealing guide protrusion is located on the position fixing projection formed at an upper end portion of the sealing guide groove among the position fixing projections, the control guide protrusion is located to be colinear with the inlet.
14. The one-touch cap of claim 1, wherein the main body and the cover are made of a single material.
15. The one-touch cap of claim 1, wherein the main body has an accommodation space in which contents are accommodated.

FIG. 1

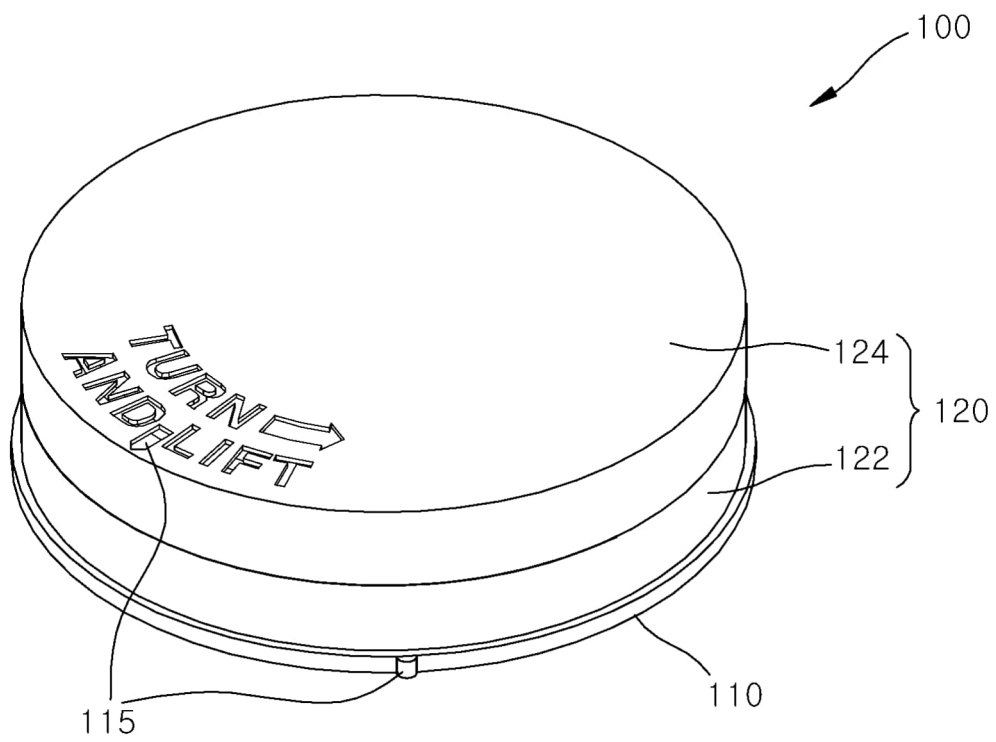


FIG. 2

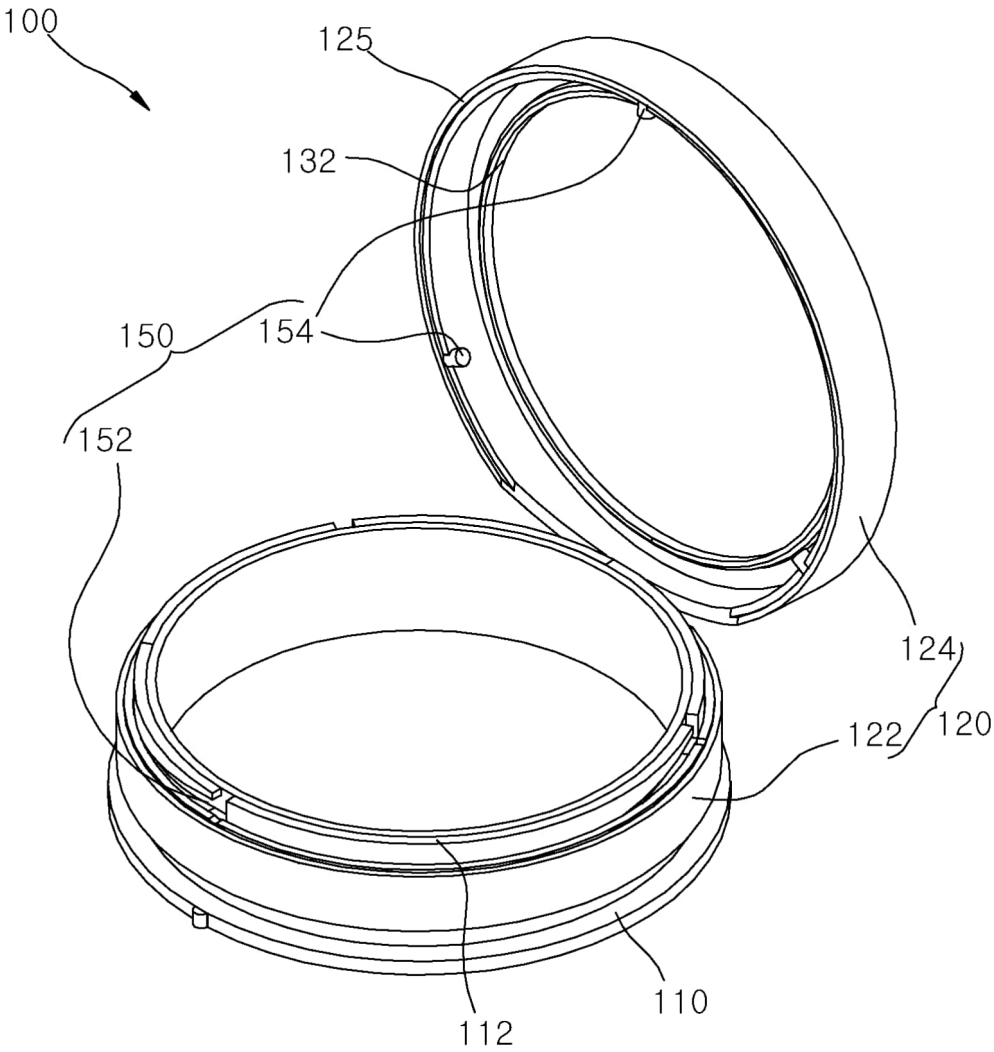


FIG. 3

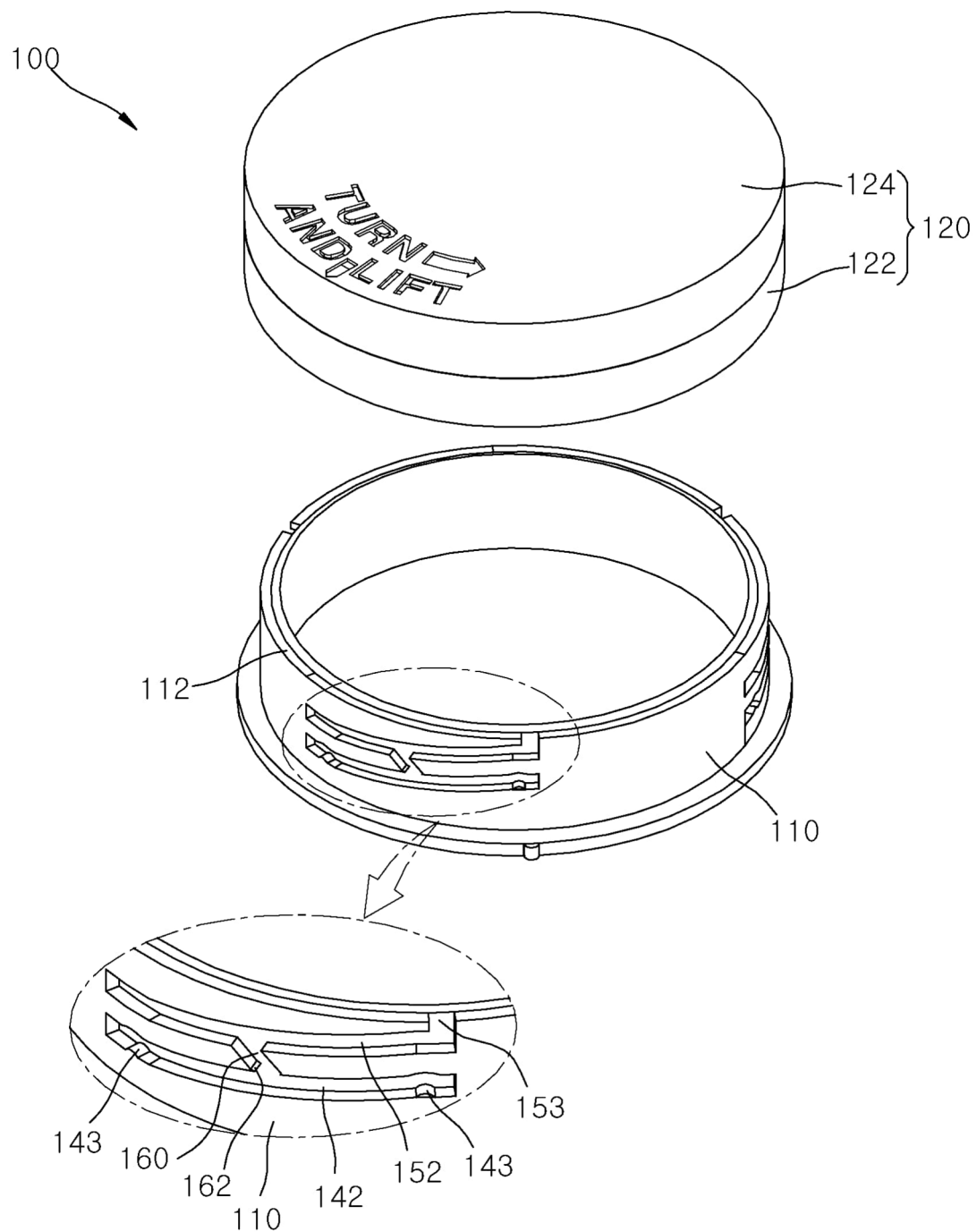


FIG. 4

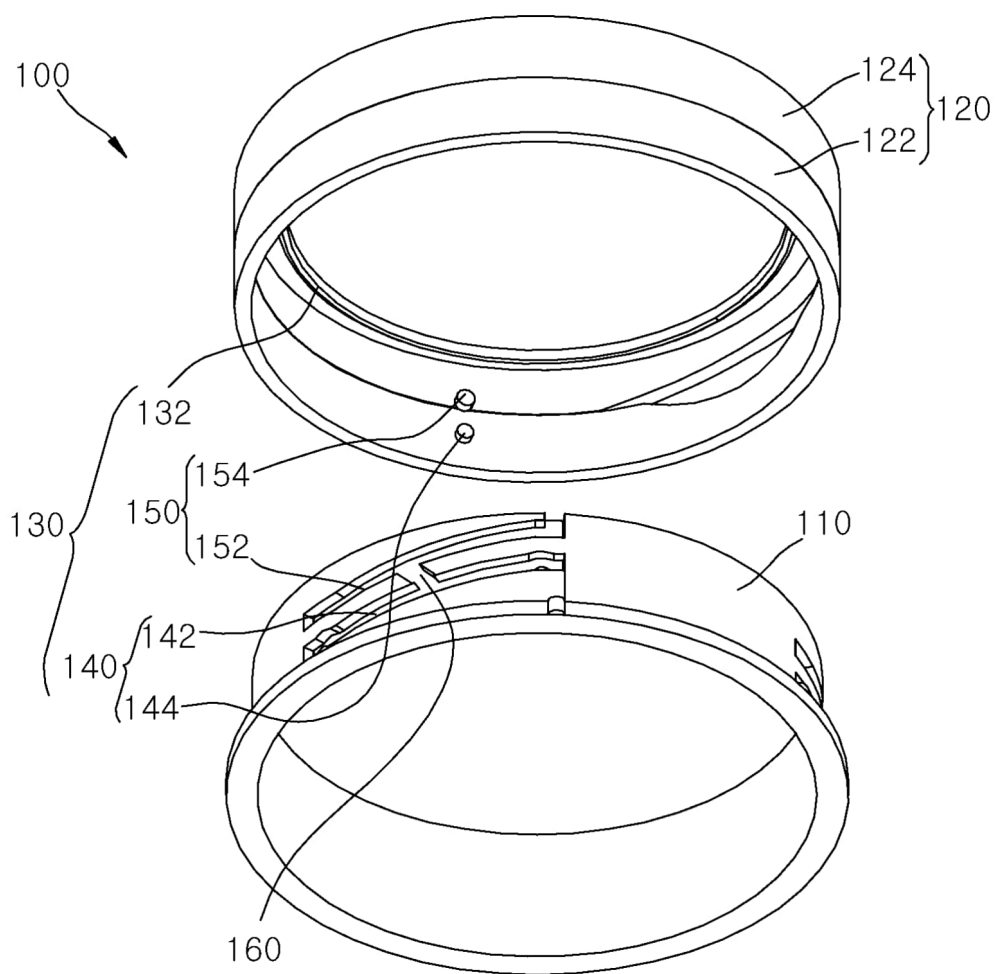


FIG. 5

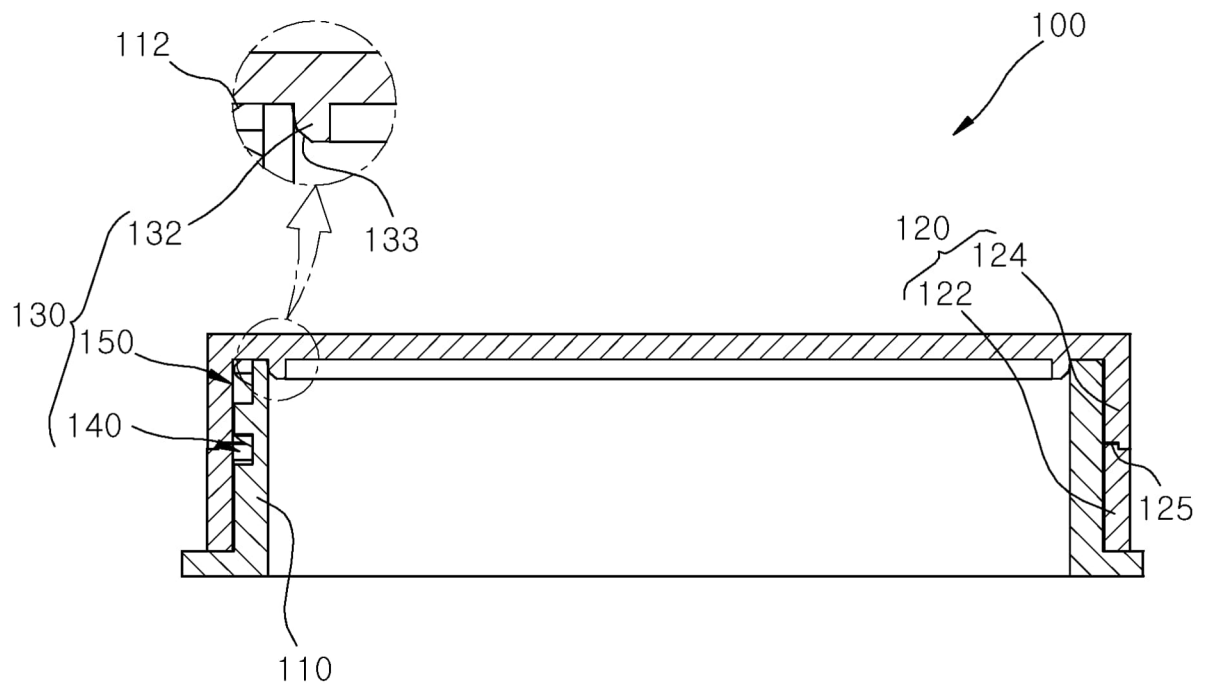


FIG. 6

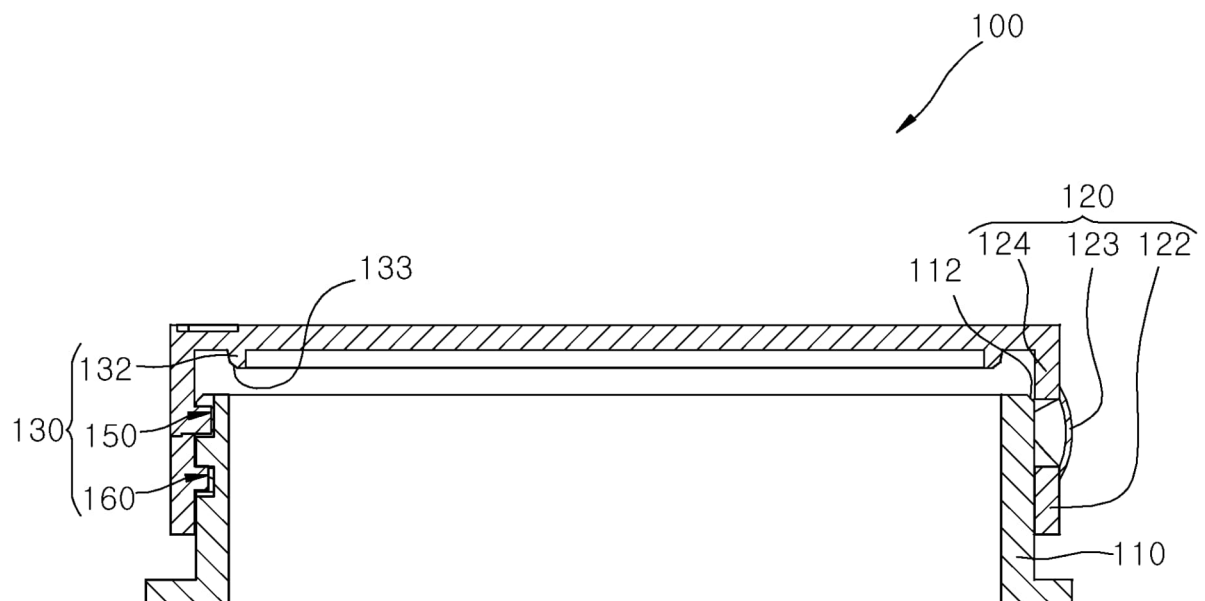


FIG. 7

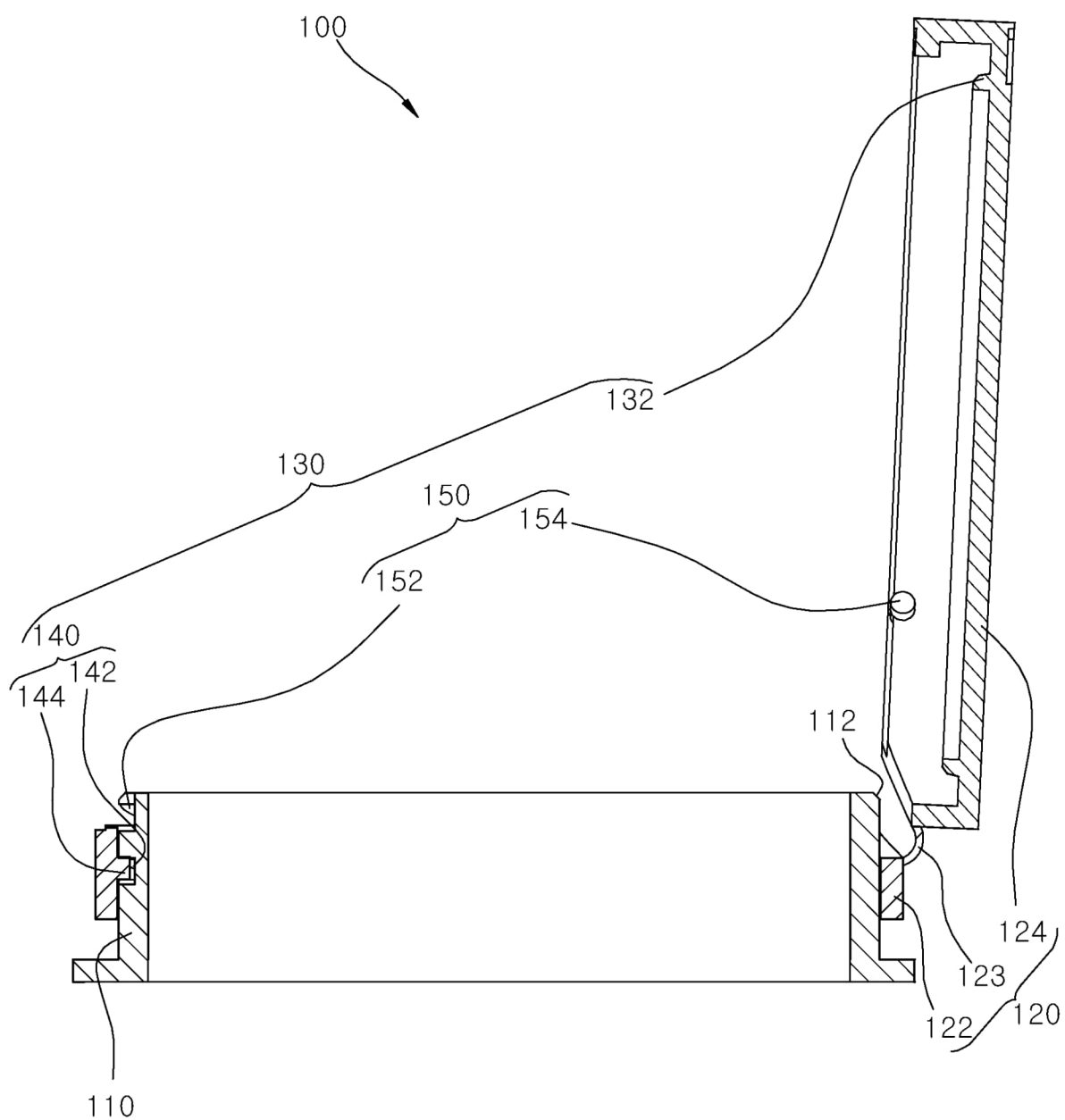


FIG. 8A

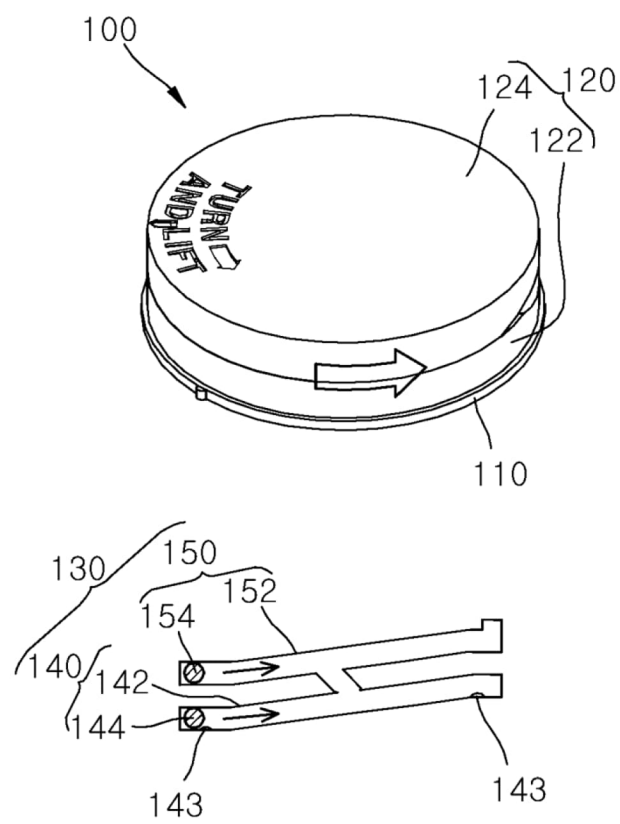


FIG. 8B

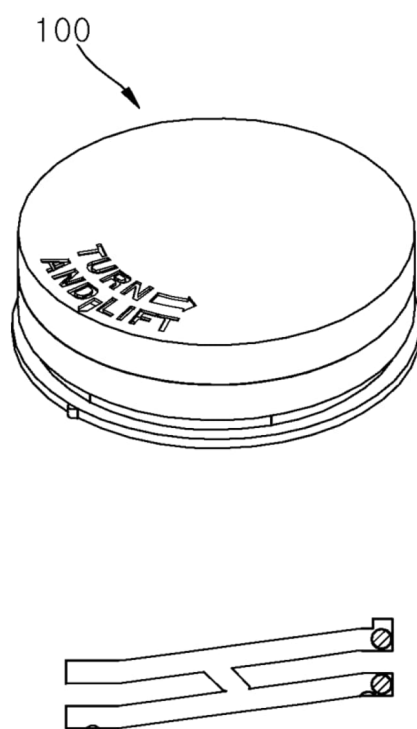


FIG. 8C

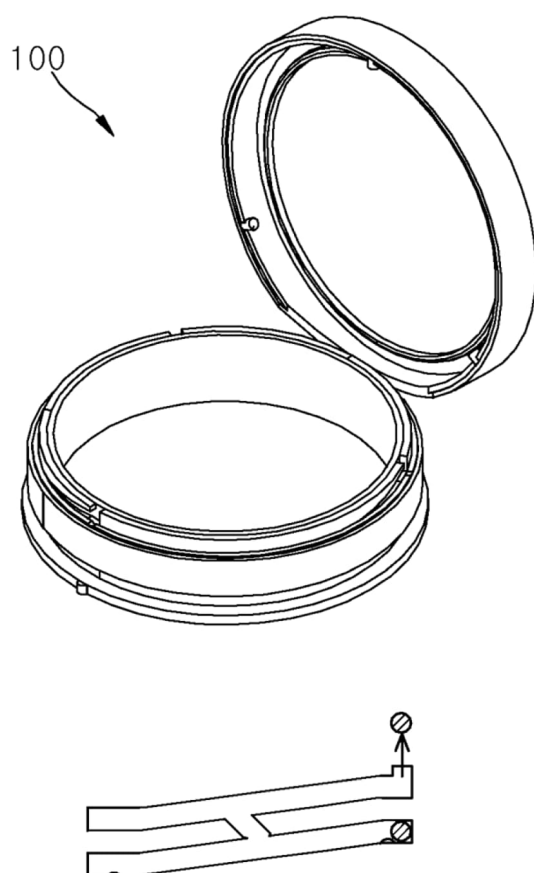


FIG. 9

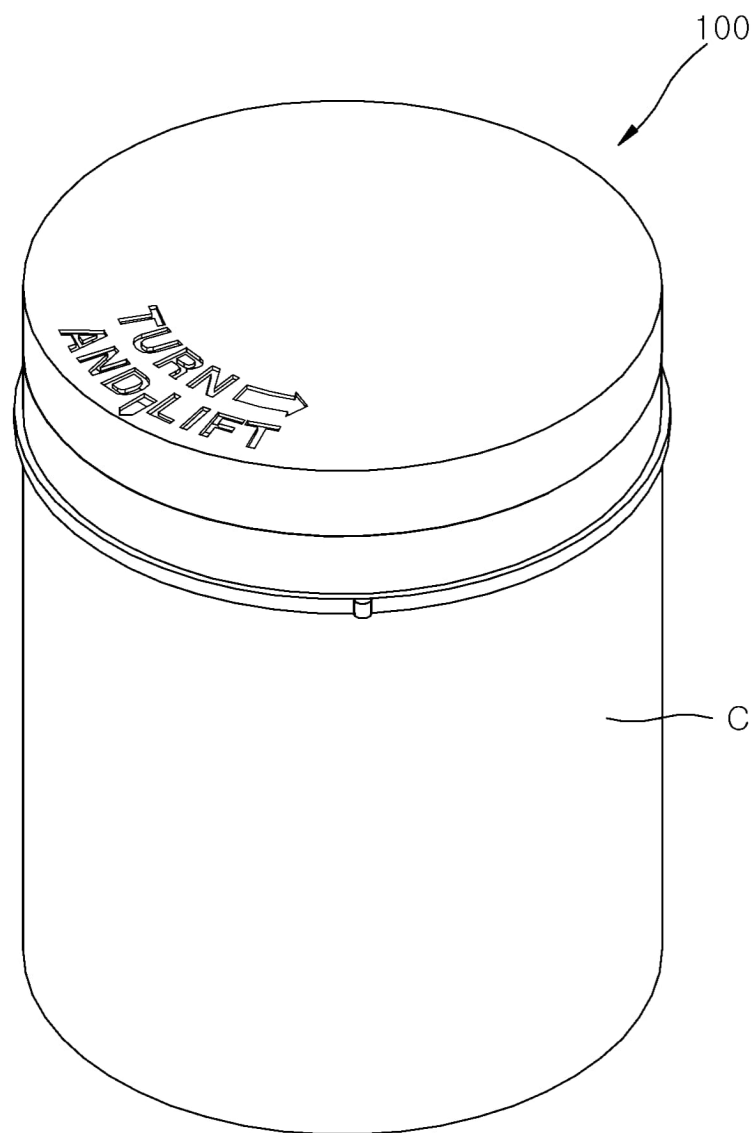


FIG. 10

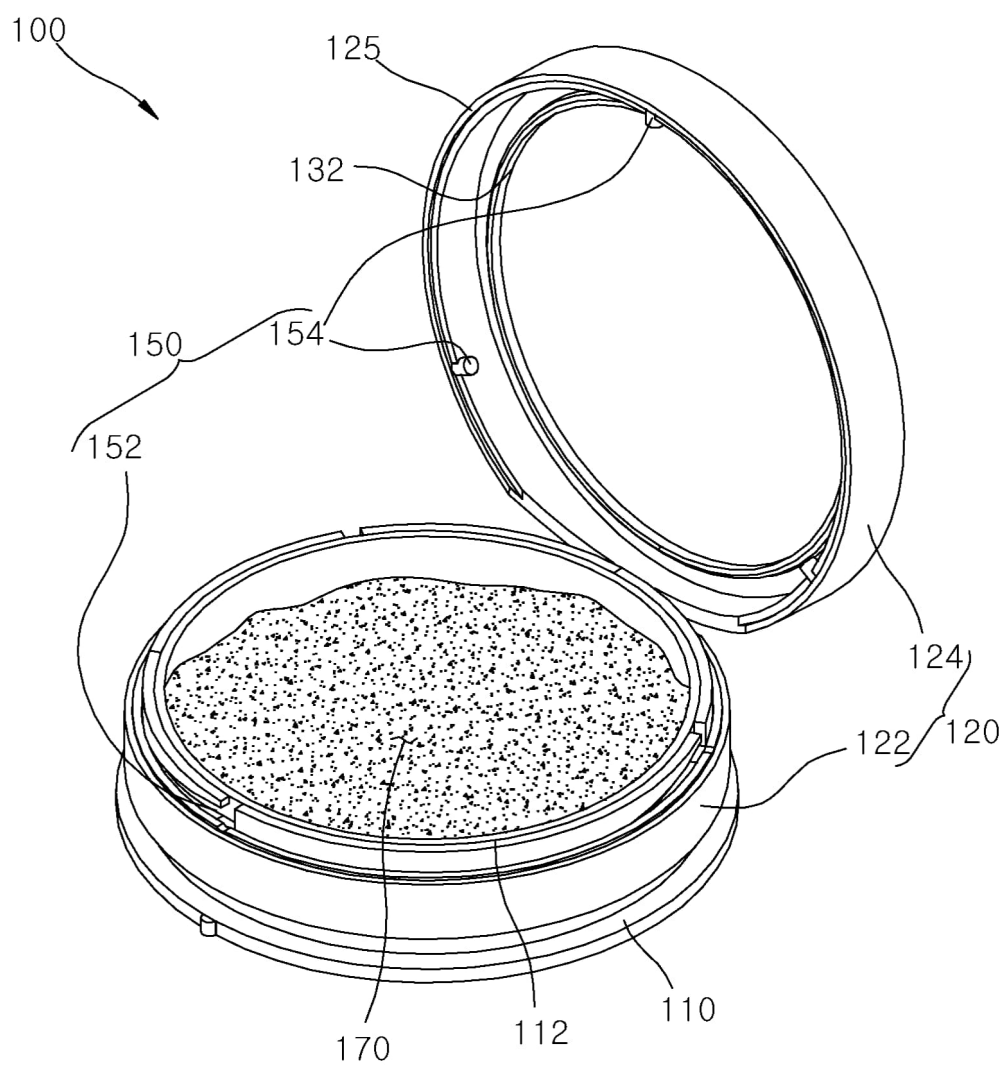


FIG. 11

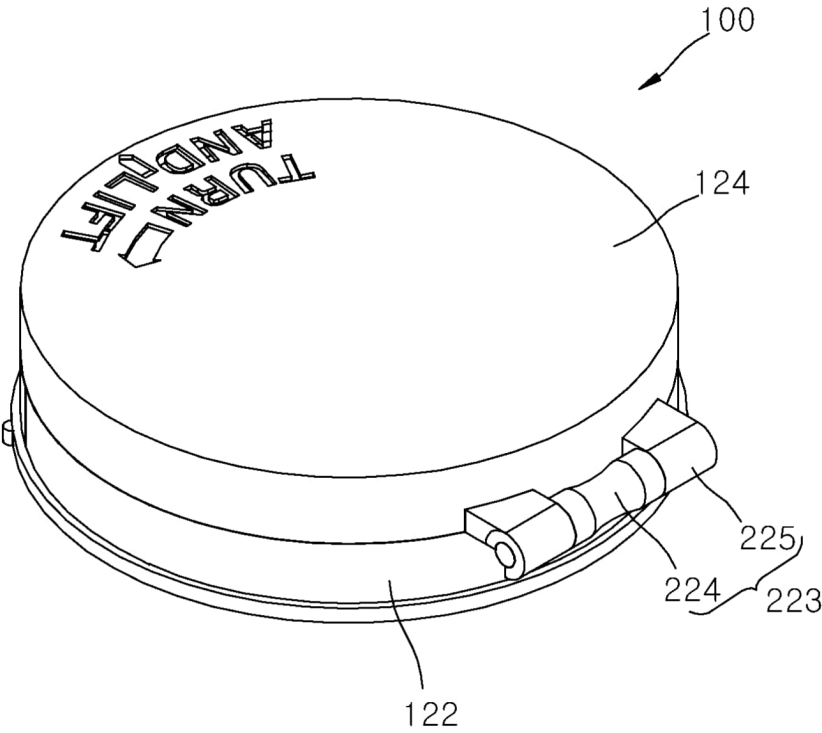


FIG. 12

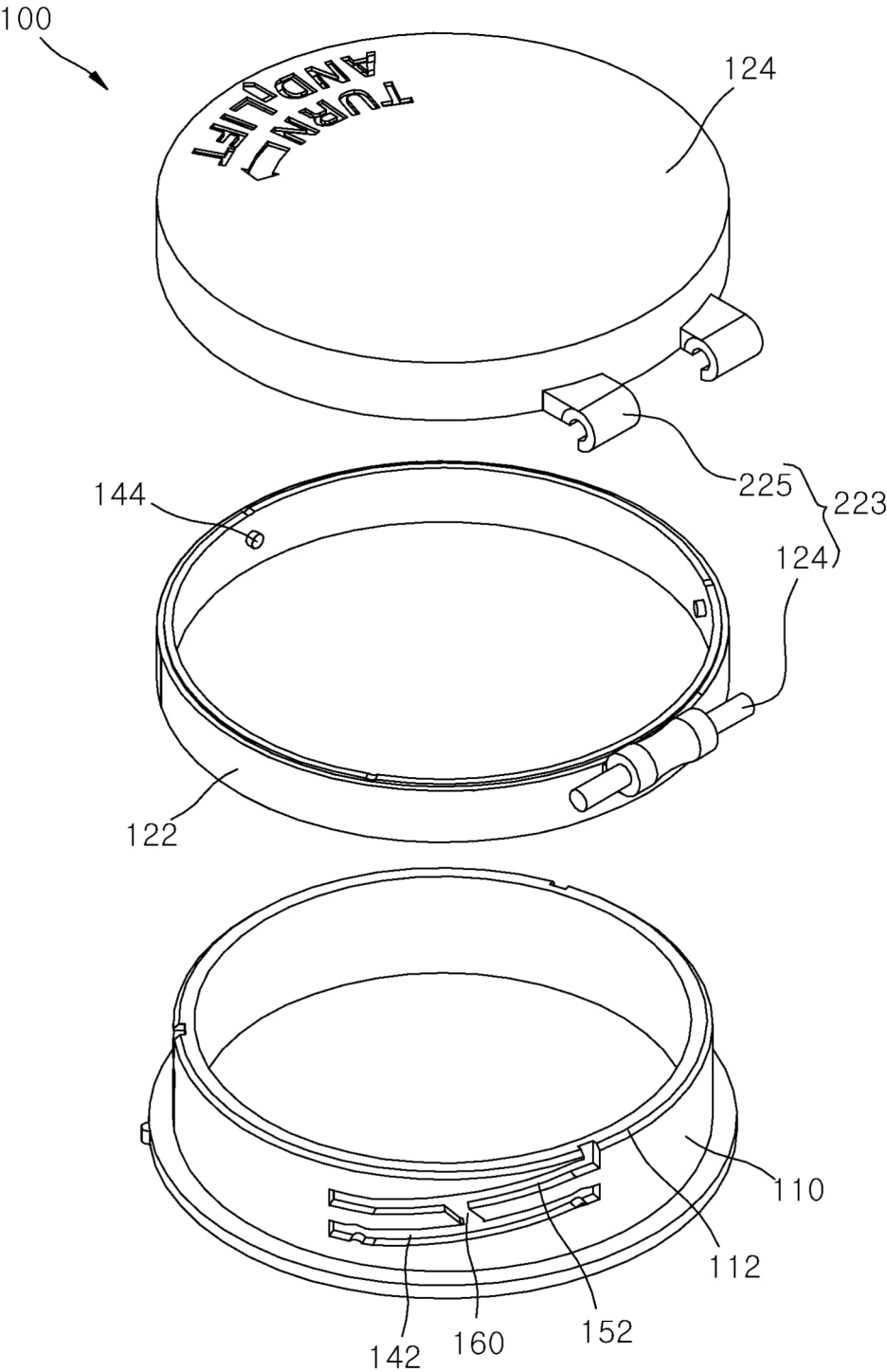
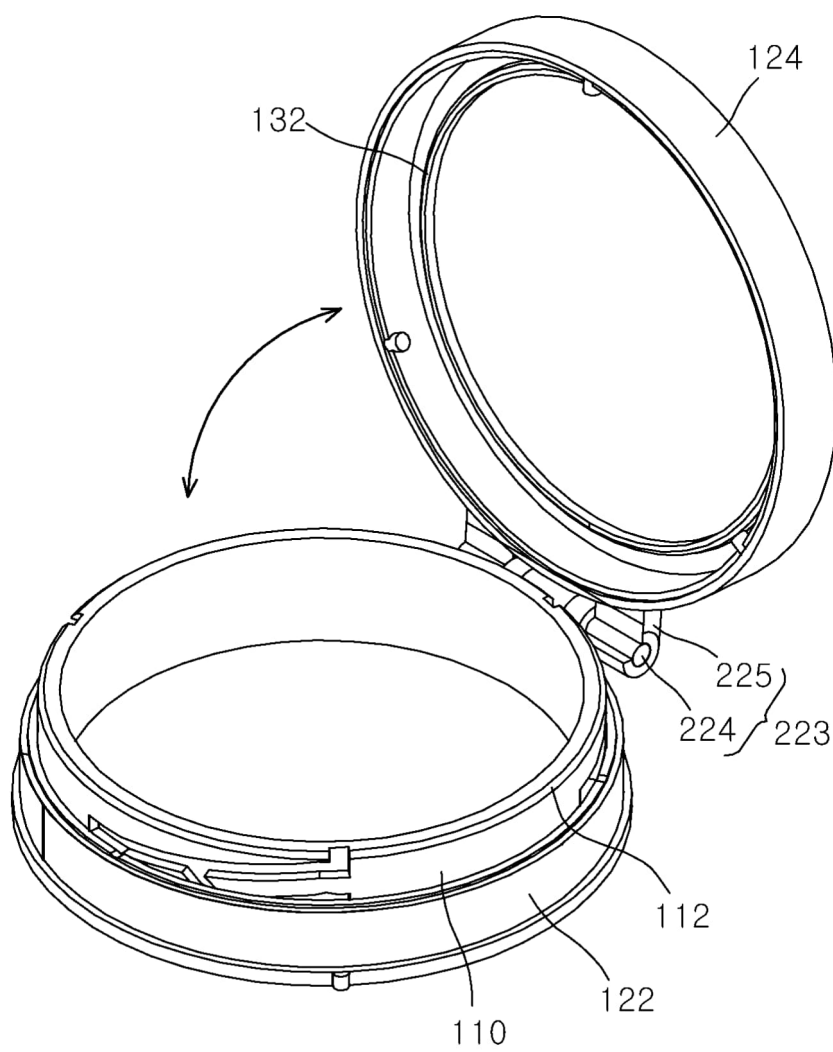


FIG. 13



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2024/012532

A. CLASSIFICATION OF SUBJECT MATTER**B65D 41/17**(2006.01)i; **B65D 43/16**(2006.01)i; **B65D 50/06**(2006.01)i; **A45D 40/22**(2006.01)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)

B65D 41/17(2006.01); A45D 33/00(2006.01); A45D 33/24(2006.01); A45D 34/00(2006.01); A45D 34/04(2006.01);
A45D 40/22(2006.01); B65D 1/02(2006.01); B65D 41/06(2006.01); B65D 43/16(2006.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models: IPC as above

Japanese utility models and applications for utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & keywords: 덮개부(cover member), 원터치 캡(one-touch cap), 회동(rotation), 밀폐(seal), 링부
(ring member)**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 10-2012-0016493 A (BYEON, Jae Sam) 24 February 2012 (2012-02-24) See paragraphs [0038]-[0051] and [0070]-[0072] and figures 1-7 and 15.	1-2,14-15
Y		3-10,13
A		11-12
Y	KR 10-1271359 B1 (JUNG, Kyu Youl) 07 June 2013 (2013-06-07) See paragraphs [0024]-[0025] and figures 4-5.	3
Y	JP 2003-312699 A (MFV K.K.) 06 November 2003 (2003-11-06) See paragraph [0033] and figure 8.	4-10,13
Y	KR 10-2020-0025419 A (LIM, Jong Su) 10 March 2020 (2020-03-10) See paragraphs [0035]-[0051] and figures 2-3.	7,13

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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“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

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“&” document member of the same patent family

Date of the actual completion of the international search

19 November 2024

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2024/012532

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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-2017-0019184 A (YONWOO CO., LTD.) 21 February 2017 (2017-02-21) See figure 1.	1-15
PX	KR 10-2656433 B1 (KIM, Jong Kwan et al.) 11 April 2024 (2024-04-11) See claims 1, 3, 6-7, 9 and 12-15. (* This document is a published earlier application that serves as a basis for claiming priority of the present international application.)	1-15

EP 4 772 453 A1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2024/012532

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
KR	10-2012-0016493	A	24 February 2012	EP	2487676	A1	15 August 2012
				KR	10-1173162	B1	16 August 2012
KR	10-1271359	B1	07 June 2013	None			
JP	2003-312699	A	06 November 2003	JP	3834256	B2	18 October 2006
				US	2003-0192892	A1	16 October 2003
				US	6923335	B2	02 August 2005
KR	10-2020-0025419	A	10 March 2020	None			
KR	10-2017-0019184	A	21 February 2017	CN	107847033	A	27 March 2018
				EP	3335587	A1	20 June 2018
				JP	2018-522670	A	16 August 2018
				KR	10-1711200	B1	02 March 2017
				US	2019-0000210	A1	03 January 2019
				WO	2017-026657	A1	16 February 2017
KR	10-2656433	B1	11 April 2024	None			

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- KR 200270346 [0007]