



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

(43) Date of publication:
04.10.2017 Bulletin 2017/40

(51) Int Cl.:
A45D 40/00 (2006.01) B65D 47/00 (2006.01)
B65D 83/00 (2006.01)

(21) Application number: **15875735.1**

(86) International application number:
PCT/KR2015/014516

(22) Date of filing: **30.12.2015**

(87) International publication number:
WO 2016/108641 (07.07.2016 Gazette 2016/27)

(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
Designated Extension States:
BA ME
Designated Validation States:
MA MD

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(30) Priority: **31.12.2014 KR 20140009718 U**

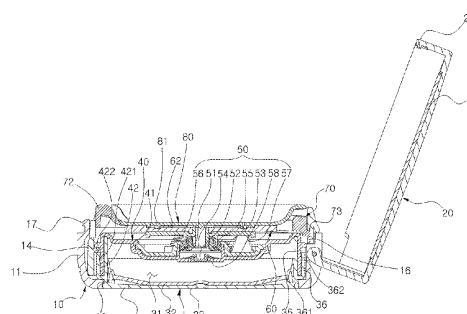
(54) **COMPACT CONTAINER COMPRISING RING BUTTON MEMBER**

(57) The present invention relates to a compact container having a ring button member, and more particularly, to a compact container having a ring button member which is capable of allowing a distribution plate to vertically press a pump by allowing pressing grooves formed in a diagonal direction of the ring button member to press an upper part of pressing protrusions of the distribution plate even though the ring button member is pressed in a state that the ring button member is inclined when the ring button member is pressed to exhaust contents, wherein the ring button member having a ring shape is formed on a lower part of a discharge plate, the pressing grooves are formed at two places facing each other in a diagonal direction of a lower end of the ring button member, the pressing protrusions are formed at two places facing each other facing each other in a diagonal direction of an outside of the distribution plate to correspond to the positions of the pressing grooves of the ring button member, and the distribution plate formed on the lower portion of the ring button member is coupled to the discharge plate so that a content discharge path is formed.

According to the present invention, there is provided a compact container having a ring button member, which includes a container body (10) provided with a button (11) formed at one side thereof, and a container lid (20) hinge-coupled to one side of the container body (10) to be taken on/off, wherein the compact container includes: an inner container (30) provided with a content receiving space (31); a pump support plate (40) coupled to an up-

per part of the inner container (30) to seal the inner container (30); a pump (50) installed to a central upper part of the pump support plate (40) to pump contents; a distribution plate (60) coupled to an upper part of the pump (50) and having pressing protrusions (61) formed at two places facing each other in a diagonal direction on an outside thereof; and a ring button member (70) coupled to an upper part of the distribution plate 60 and having pressing grooves (71) formed at two places facing each other in a diagonal direction on a lower end thereof, wherein the pressing protrusions (61) of the distribution plate (60) are inserted into the pressing grooves (71) of the ring button member (70), and diameters of the pressing protrusions (61) are less than inner diameters of the pressing grooves (71).

[Fig. 5]



Description

[Technical Field]

5 **[0001]** The present invention relates to a compact container having a ring button member, and more particularly, to a compact container having a ring button member which is capable of allowing a distribution plate to vertically press a pump by allowing pressing grooves formed in a diagonal direction of the ring button member to press an upper part of pressing protrusions of the distribution plate even though the ring button member is pressed in a state that the ring button member is inclined when the ring button member is pressed to exhaust contents, wherein the ring button member having a ring shape is formed on a lower part of a discharge plate, the pressing grooves are formed at two places facing each other in a diagonal direction of a lower end of the ring button member, the pressing protrusions are formed at two places facing each other in a diagonal direction of an outside of the distribution plate to correspond to the positions of the pressing grooves of the ring button member, and the distribution plate formed on the lower portion of the ring button member is coupled to the discharge plate so that a content discharge path is formed.

[Background Art]

20 **[0002]** Color cosmetics, which are used to beautifully adorn the skin of a user by making the appearance beautiful, are classified into a base makeup used for making a skin color uniform and covering a defect and a point makeup used for partially enhancing a three-dimensional effect of a lip, eyes, or nails. The base makeup includes a makeup base, a foundation and a powder, and the point makeup includes a lipstick, an eye liner, and mascara.

25 **[0003]** The foundation is classified into solid-type foundation, liquid-type foundation and gel-type foundation according to a type of cosmetic contents. In case of the solid-type foundation, although the solid-type foundation has a good cover effect, the makeup is united when the makeup is refreshed. In case of the liquid-type foundation, although the liquid-type foundation gives a good close contact feel, the persistency is weak. Thus, in recent years, the number of customers favoring the gel-type foundation having a considerable persistency and a good close contact feel has been increased.

30 **[0004]** Therefore, there is need to develop a container for gel-type foundation. Generally, the gel-type foundation, which is filled into a glass container or a tub-type container, is used in such a manner that a user takes some foundation on his hands for use or squeezes foundation from the container and then, coats the foundation on his skin by using a puff or his hands.

[0005] However, according to the related art, since a user gets cosmetics on his hands every time that it is used, it is inconvenient to wash hands every time after use. In addition, as the hands coated with cosmetics are washed, the cosmetics are wasted.

35 **[0006]** To solve the above problems, as shown in FIG. 1, a compact container having an airless pump is disclosed in Korean Registered Utility Model No. 20-0470757 issued to the applicant of the present application. According to the related art, as a mixing member is pressed, a distribution plate and a pump are pressed, so that the cosmetics filled in a container body are discharged onto the distribution plate. Then, a user uses the cosmetics impregnated to the mixing member by getting a puff the cosmetics for makeup, so that the cosmetic can be used without coating user's hands with the cosmetics.

40 **[0007]** However, in the pump according to the related art, although an up-down moving member and a bushing are tightly formed to induce the up-down moving member to vertically move only when the central axis of a piston and the central axis of a cylinder are on the same axis, if a user does not exactly push the center of the mixing member when the user operates the pump, as shown in FIG. 2, the up-down moving member is inclined so that the up-down moving member is trapped by the bushing, so the pump is not operated. Thus, when a user uses cosmetics, the user must press the central portion of the mixing member with a puff to pump the cosmetics. Therefore, the pressing position of the mixing member is limited so that the pump is inconvenient for use.

45 **[0008]** In addition, according to the related art, since the mixing member is exposed, when the cosmetics is used, the cosmetics impregnated to the mixing member is polluted and oil and moisture are evaporated to dry the cosmetics, so that the function of cosmetics is not fully exhibited.

[Disclosure]

[Technical Problem]

55 **[0009]** The present invention has been made in an effort to solve the above-described problems, and it is an object of the present invention to provide a compact container having a ring button member, which is capable of allowing a distribution plate to vertically press a pump by allowing pressing grooves formed in a diagonal direction of the ring button member to press an upper part of pressing protrusions of the distribution plate even though the ring button member is

pressed in a state that the ring button member is inclined when the ring button member is pressed to discharge contents, wherein the ring button member having a ring shape is formed on a lower part of a discharge plate, the pressing grooves are formed at two places facing each other in a diagonal direction of a lower end of the ring button member, the pressing protrusions are formed at two places facing each other facing each other in a diagonal direction of an outside of the distribution plate to correspond to the positions of the pressing grooves of the ring button member, and the distribution plate formed on the lower portion of the ring button member is coupled to the discharge plate, so that a content discharge path is formed.

[0010] In addition, a compact container having a ring button member according to the present invention is not limited to a scheme of pressing a ring button member in order to pump cosmetics. It is another object of the present invention to provide a compact container having a ring button member which includes a bushing coupled to an upper part of a cylinder of a pump to easily discharge a cosmetic material even when a discharge plate is pressed according to the related art, wherein the bushing, into which an up-down moving member is inserted, has a round-shaped end; and a gap of 0.3 mm to 1.2 mm formed between the bushing and the up-down moving member to allow the up-down moving member to fluidly move, so that the cosmetics is easily discharged even though any portions of an upper part of the discharge plate is pressed by making a piston-stroking distance short, but a scheme of pumping cosmetics is not limited to a vertical pressing against a central portion of the discharge plate.

[0011] In addition, it is still another object of the present invention to provide a compact container having a ring button member, which is capable of preventing the cosmetics kept in a container body from making contact with air by forming a discharge plate, so that the cosmetics may be used cleanly and hygienically for a long time.

[Technical Solution]

[0012] According to the present invention, there is provided a compact container having a ring button member, which includes a container body (10) provided with a button (11) formed at one side thereof, and a container lid (20) hinge-coupled to one side of the container body (10) to be taken on/off, wherein the compact container includes:

an inner container (30) provided with a content receiving space (31);
 a pump support plate (40) coupled to an upper part of the inner container (30) to seal the inner container (30);
 a pump (50) installed to a central upper part of the pump support plate (40) to pump contents;
 a distribution plate (60) coupled to an upper part of the pump (50) and having pressing protrusions (61) formed at two places facing each other in a diagonal direction on an outside thereof; and
 a ring button member (70) coupled to an upper part of the distribution plate (60) and having pressing grooves (71) formed at two places facing each other in a diagonal direction on a lower end thereof,
 wherein the pressing protrusions (61) of the distribution plate (60) are inserted into the pressing grooves (71) of the ring button member (70), and diameters of the pressing protrusions (61) are less than inner diameters of the pressing grooves (71).

[0013] In addition, the distribution plate (60) is provided on the top surface thereof with a content discharge path (62) through which contents are discharged.

[0014] In addition, wherein the ring button member (70) is formed in a ring shape and provided at one side thereof with a pressing unit (72) and a hook (73) is formed at an outside of the ring button member (70) in opposition to the pressing unit (72).

[0015] In addition, the pressing protrusions (61) of the distribution plate have a semicircular or circular shape, and the pressing groove (71) of the ring button member (70) has a semicircular shape.

[0016] In addition, the compact container further includes a discharge plate (80) mounted on an upper part of the ring button member (70) while adhering to the top surface of the distribution plate (60) and provided therein with a plurality of discharge holes.

[0017] In addition, preferably, the discharge plate (80) adheres to the upper surface of the distribution plate (60) with a dual adhering tape.

[0018] In addition, the pump (50) includes: a cylinder (51) formed on a central upper side of the pump support plate (40) and having a content suction hole (58) formed on a bottom surface thereof; a suction valve plate (52) mounted on the bottom surface of the cylinder (51) to selectively open or close the content suction hole (58); a bushing (53) coupled to an outside of the cylinder (51) to be placed on a top end of the cylinder (51); a piston (54) formed inside the cylinder (51); a piston ring (55) fitted around an outside of the piston (54) to make close contact with an inner side surface of the cylinder (51); an up-down moving member (56) coupled to an inner circumferential surface to move up or down; and an elastic member (57) elastically supporting the up-down moving member (56).

[0019] In addition, an inner extension wheel (561) coupled to the piston (54) extends toward a central lower side of the vertically moving member (56), and an outer extension wheel (562), which is spaced part from the piston ring (55)

by a predetermined interval and fitted onto the outside of the piston ring (55), extends toward an outside of the inner extension wheel (561).

[0020] In addition, a through-hole (53), through which the outer extension wheel (562) of the vertically moving member (56) passes, is formed at the center of the bushing (53). An inner horizontal extension piece extends to an inside of the through-hole (531) and a plurality of elastic member receiving parts (533) are formed at an outside of the through-hole (531). An outer horizontal extension piece (534) fitted into the pump support plate (40) is formed at an outside of the elastic member receiving part (533).

[0021] In addition, an inner side end of the inner horizontal extension piece (532) of the bushing (53) is formed in a round shape.

[0022] In addition, a gap (59) of 0.3 mm to 1.2 mm is formed between the inner side horizontal extension piece (532) of the bushing (53) and the outer extension wheel (562) such that the vertically moving member (56) may move fluidly in the bushing (53).

[Advantageous Effects]

[0023] According to the present invention, the compact container having a ring button member includes the ring button member having a ring shape and formed on a lower part of a discharge plate, the pressing grooves formed at two places facing each other in a diagonal direction of a lower end of the ring button member, the pressing protrusions formed at two places facing each other in a diagonal direction of an outside of the distribution plate to correspond to the positions of the pressing grooves of the ring button member, and the distribution plate formed on the lower portion of the ring button member and coupled to the discharge plate to form a content discharge path, so that the distribution plate may vertically press the pump by allowing the pressing grooves formed in a diagonal direction of the ring button member to press an upper part of the pressing protrusions of the distribution plate even though the ring button member is pressed in a state that the ring button member is inclined when the ring button member is pressed to discharge contents,

[0024] In addition, a compact container having a ring button member according to the present invention is not limited to a scheme of pressing a ring button member in order to pump cosmetics. In addition, the compact container having a ring button member according to the present invention includes a bushing coupled to an upper part of a cylinder of a pump to easily discharge a cosmetic material even when a discharge plate is pressed according to the related art, wherein the bushing, into which an up-down moving member is inserted, has a round-shaped end; and a gap of 0.3 mm to 1.2 mm formed between the bushing and the up-down moving member to allow the up-down moving member to fluidly move, so that the cosmetics may be easily discharged even though any portions of an upper part of the discharge plate is pressed by making a piston-stroking distance short. However, the scheme of pumping cosmetics is not limited to a vertical pressing against a central portion of the discharge plate.

[0025] In addition, the compact container having a ring button member according to the present invention may prevent the cosmetics kept in a container body from making contact with air by forming a discharge plate, so that the cosmetics may be used cleanly and hygienically for a long time.

[Description of Drawings]

[0026]

FIG. 1 is a sectional view showing a compact container having an airless pump according to the related art.

FIG. 2 is a sectional view showing a state of pressing a compact container having an airless pump according to the related art.

FIG. 3 is a perspective view show a compact container having a ring button member according to the present invention.

FIG. 4 is an exploded perspective view illustrating a compact container having a ring button member according to the present invention.

FIG. 5 is a sectional view taken along line A-A of FIG. 3.

FIG. 6 is a sectional view taken along line B-B of FIG. 3.

FIG. 7 is a sectional view taken along line A-A of FIG. 3 in a state that a pressing button of a compact container having a ring button according to the present invention is pressed.

FIG. 8 is a sectional view taken along line B-B of FIG. 3 in a state that a pressing button of a compact container having a ring button according to the present invention is pressed.

FIG. 9 is a sectional view taken along line A-A of FIG. 3 in a state that a pressing of a compact container having a ring button according to the present invention is released.

[Best Mode]

[Mode for Invention]

5 **[0027]** Hereinafter, a preferable embodiment of the present invention will be described in more detail with reference to accompanying drawings. First, when reference numerals are assigned to the components in the drawings, it should be noted that the same reference numerals are assigned to reference numerals as same as possible even if they are shown in different drawings. In addition, in the following description, the detailed description of related well-known configurations and functions will be omitted when it is determined as making the scope of the present invention unclear. A compact container having a ring button member according to an embodiment of the present invention will be described with reference to accompanying drawings as follows.

10 **[0028]** FIG. 3 is a perspective view show a compact container having a ring button member according to the present invention. FIG. 4 is an exploded perspective view illustrating a compact container having a ring button member according to the present invention. FIG. 5 is a sectional view taken along line A-A of FIG. 3. FIG. 6 is a sectional view taken along line B-B of FIG. 3. FIG. 7 is a sectional view taken along line A-A of FIG. 3 in a state that a pressing button of a compact container having a ring button according to the present invention is pressed. FIG. 8 is a sectional view taken along line B-B of FIG. 3 in a state that a pressing button of a compact container having a ring button according to the present invention is pressed. FIG. 9 is a sectional view taken along line A-A of FIG. 3 in a state that a pressing of a compact container having a ring button according to the present invention is released.

20 **[0029]** As shown in FIG. 5, a compact container having a ring button member according to an embodiment of the present invention includes a container body (10) provided with a button (11) formed at one side thereof, and a container lid (20) hinge-coupled to one side of the container body (10) to be taken on/off. In addition, the compact container having a ring button member includes an inner container (30) provided with a content receiving space (31); a pump support plate (40) coupled to an upper part of the inner container (30) to seal the inner container (30); a pump (50) installed to a central upper part of the pump support plate (40) to pump contents; a distribution plate (60) coupled to an upper part of the pump (50) and having pressing protrusions (61) formed at two places facing each other in a diagonal direction on an outside thereof; and a ring button member (70) coupled to an upper part of the distribution plate (60) and having pressing grooves (71) formed at two places facing each other in a diagonal direction on a lower end thereof, where the pressing protrusions (61) of the distribution plate (60) are inserted into the pressing grooves (71) of the ring button member (70) and diameters of the pressing protrusions (61) are less than inner diameters of the pressing grooves (71).

30 **[0030]** The container body (10) has an inner container receiving space (12) formed therein to receive the inner container (30) and is provided with first to third mounting steps (13) to (15) formed on an inner side surface thereof, where the second and third mounting steps (14) and (15) are spaced apart upwardly from the first mounting step (13) by a predetermined interval. In addition, a hook coupling groove (16) is formed on an inner side surface of the container body (10) in a diagonal direction to the button (11).

35 **[0031]** The button (11) is integrally formed on one side of the container body (10), and a locking protrusion (17) protrudes from an upper surface of the button (11).

40 **[0032]** The container lid (20) opens or closes the container body (10). A hook (21) is formed at a place of one side of the container lid (20) corresponding to the locking protrusion (17) of the container body (10) to be coupled to the locking protrusion (17) of the container body (10).

[0033] In addition, a mirror is provided inside the container lid (20) to allow a user to easily put makeup.

[0034] A pushing plate (32) is formed inside the inner container (30) to push up the contents and makes close contact with an inner side surface of the inner container (30).

45 **[0035]** The inner container (30) includes an inner container bottom surface (33), an inner wall (35) extending from the inner container bottom surface (33) and an outer wall (36) spaced part from the inner wall (35) by a predetermined interval.

[0036] A mounting groove (361) is formed on an outer periphery of a lower side of the inner container (30) to be coupled to the first mounting protrusion (13) of the container body (10) and a coupling groove (362) is formed on an inner periphery of the outer wall (36).

50 **[0037]** In addition, an air circulation hole (34), through which external air is input, is formed on the inner container bottom surface (33) of the inner container (30).

[0038] The pump support late (40) is formed in a flat shape and is coupled to an upper part of the inner container (30) to seal the inner container (30).

55 **[0039]** A cylinder (51) is integrally formed at the center of the pump support plate (40). A bushing coupling groove (41) coupled to a bushing (53) of the pump (50) is formed outside the cylinder (51), and a lower extension wheel (42) is formed outside the pump support plate (40) while extending downwardly.

[0040] A coupling protrusion (421) is formed on an outer periphery of the lower extension wheel (42) of the pump support plate (40), such that the coupling protrusion (421) is coupled to the coupling groove (362) of the inner container (30). A mounting wheel (422) protrudes from an upper side of the coupling protrusion (421), such that the mounting

protrusion (422) is inserted between the second and third mounting protrusions (14) and (15) of the container body (10).

[0041] The pump (50) pumps the contents and like a pump according to the related art, includes the cylinder (51); a suction valve plate (52), a piston (54) and a piston ring (55). However, differently from the pump according to the related art, in order to maximize an area of a content receiving space (31) in the inner container (30), the pump (50) is installed to an upper part of the pump support plate (40) and has a piston-stroke distance in the range of 1.5 mm to 2.5 mm. In addition, the ratio between the piston-stroke distance and an inner diameter of the cylinder (51) is in the range of 1:5 to 1:13, and the pump (50) has a very short piston-stroke distance and the cylinder (51) of a large inner diameter as compared with the pump according to the related art.

[0042] The ratio between a piston-stroke distance and an inner diameter of a cylinder of a pump according to the related art are shown in the following Table 1.

[Table 1]

Piston-stroke distance of pump (mm)	Inner diameter of cylinder (mm)	Ratio	Discharge (cc)
6.3	7.2	1:1.143	0.256
5.8	8.4	1:1.448	0.321
5.2	7.6	1:1.462	0.236
4	7.66	1:1.915	0.184
3.0	9.0	1:3	0.191
3.2	9.7	1:3.031	0.236

[0043] As denoted in Table 1, the pump according to the related art has a piston-stroke distance in the range of 3.0 mm to 6.3 mm and the ratio between the piston-stroke distance of the pump and the inner diameter of the cylinder is in the range of 1:1 to 1:3. When the pump according to the related art is employed to a compact container having a short longitudinal length and a long transverse length, the pump is accommodated in the content receiving space while occupying too large area in the content receiving space.

[0044] According to the compact container having a pump having a short piston-stroke distance proposed to solve the above-described problem according to the present invention, the piston-stroke distance of the pump (50) is reduced to be in the range of 1.5 mm to 2.5 mm, the ratio between the piston-stroke distance and the cylinder (51) is changed to be in the range of 1:5 to 1:13 in order to enlarge the inner diameter of the cylinder (51), and the pump (50) is mounted on an upper part of the pump support plate (40), so that the content receiving space (31) may be utilized at the maximum.

[0045] The pump (50) includes a cylinder (51) formed at a central upper side of the pump support plate (40) and having a content suction hole (58) formed on a bottom surface thereof; a suction valve plate (52) mounted on the bottom surface of the cylinder (51) to selectively open or close the content suction hole (58); a bushing (53) coupled to an outside of the cylinder (51) to be placed on a top end of the cylinder (51); a piston (54) formed inside the cylinder (51); a piston ring (55) fitted with the piston (54) to make close contact with an inner side surface of the cylinder (51); an up-down moving member (56) coupled to an inner periphery surface to move up or down; and an elastic member (57) to elastically support the up-down moving member (56).

[0046] An inner extension wheel (561) coupled to the piston (54) extends toward a central lower side of the up-down moving member (56), and an outer extension wheel (562), which is spaced part from the piston ring (55) by a predetermined interval and fitted onto the outside of the piston ring (55), extends toward an outside of the inner extension wheel (561).

[0047] In addition, an upper extension wheel (563) coupled to the distribution plate (60) extends toward a central upper side of the up-down moving member (56).

[0048] A plurality of slits (564), through which the contents pumped pass, are formed along an outer periphery of the inner extension wheel (561) of the up-down moving member (56).

[0049] An upper part of the piston ring (55) is opened outwardly and a close contact wheel (551) protrudes from an upper outer periphery of the piston ring (55). In addition, a piston blade (552), which makes close contact with an inner side wall of the cylinder (51), is formed at a low side of the close contact wheel (551).

[0050] A through-hole (53), through which the outer extension wheel (562) of the up-down moving member (56) passes, is formed at the center of the bushing (53). An inner horizontal extension piece extends to an inside of the through-hole (531) and a plurality of elastic member receiving parts (533) are formed at an outside of the through-hole (531). An outer horizontal extension piece (534) fitted into the pump support plate (40) is formed at an outside of the elastic member receiving part (533).

[0051] Preferably, an inner side end of the inner horizontal extension piece (532) of the bushing (53) is formed in a

round shape.

[0052] A gap 59 of 0.3 mm to 1.2 mm is formed between the inner side horizontal extension piece (532) of the bushing (53) and the outer extension wheel (562) such that the up-down moving member (56) may move fluidly in the bushing (53).

[0053] That is, the upper part of the piston ring (55) is in an outwardly opened state and the close contact wheel (551) is formed, so that the piston ring (55) is inserted closely into the inside of the outer extension wheel (562) of the up-down moving member (56). In addition, the piston blade (552) is formed at a low side of the close contact wheel (551) to make close contact with the inner side wall of the cylinder (51). For this reason, even though the up-down moving member (56) is pressed in a state that the up-down moving member (56) is inclined to one side, since the inner space of the cylinder (51) is sealed by the piston ring (55), the pump (50) is normally operated.

[0054] Thus, even when a user presses not the central portion of the discharge plate (80) vertically but an eccentric portion being out of the central portion so that the up-down moving member, the piston (55) is normally operated in the cylinder (51) so that the contents are easily pumped.

[0055] A pair of pressing protrusions (61) are formed on an outer edge of the distribution plate (60) and a content discharge path (62), through which contents moves, is formed on an upper surface of the distribution plate (60). In addition, a coupling hole (63), into which the upper extension wheel (563) of the up-down moving member (56) is inserted, is formed at the center of the distribution plate (60).

[0056] The pressing protrusions (61) of the distribution plate (60) are formed at places corresponding to the places of the pressing grooves (71) of the ring button member (70), so that the pressing protrusions (61) are inserted into the pressing grooves (71) of the ring button member (70).

[0057] The pressing protrusion (61) of the distribution plate (60) has a semicircular or circular shape so that the pressing protrusion (61) may be easily rotated in the pressing groove (71) of the ring button member (70).

[0058] The ring button member (70) is formed in a ring shape and a pressing unit (72) protrudes upwardly from one side of the ring button member (70). A hook (73) is formed at an outer side of the ring button member (70) in opposition to the pressing unit (72), so that the hook (73) is inserted into the hook coupling groove (16) of the container body (10). In addition, the pair of pressing grooves (71) are formed at the places perpendicular to the direction of connecting the pressing unit (72) to the hook (73), respectively.

[0059] The pressing grooves (71) of the ring button member (70) are formed in a semicircular or circular shape.

[0060] A diameter of the pressing protrusion (61) of the distribution plate (60) is less than an inner diameter of the pressing groove (71) of the ring button member (70).

[0061] That is, the pressing protrusion (61) of the distribution plate (60) is formed in a semicircular or circular shape, the pressing groove (71) of the ring button member (70) is formed in a semicircular shape, and the diameter of the pressing protrusion (61) is less than the inner diameter of the pressing groove (71), so that the pressing protrusion (61) may be inserted into the pressing groove (71). For this reason, when a user presses the pressing unit (72) of the ring button member (70) or the discharge plate (80) in order to discharge contents, even though the ring button member (70) or the discharge plate (80) is pressed at an inclined state, the pressing groove (71) of the ring button member (70) changes the pressing center thereof while spinning with no traction, so that the distribution plate (60) can vertically presses the up-down moving member (56) of the pump (50).

[0062] The discharge plate (80) is formed on the distribution plate (60). The discharge plate (80) is placed on an upper part of the ring button member (70) while adhering to an upper surface of the distribution plate (60), and is formed with a plurality of discharge holes (81).

[0063] Discharge wheels (82) safely placed on the content discharge path (62) of the distribution plate (60) are formed below each of the discharge holes (81), and each of the discharge wheels (81) has an outer periphery, one side of which is opened, such that contents may pass therethrough.

[0064] Preferably, the discharge plate (80) adheres to the upper surface of the distribution plate (60) with a dual adhering tape.

[0065] A scheme of assembling the compact container having a ring button member described above will be described as follows.

[0066] In order to assemble the compact container having a ring button member according to the present invention, as shown in FIGS. 4 and 5, the inner container (30) is installed in the container body (10), one side of which is hinge-coupled to the container lid (20).

[0067] Then, after the bottom plate (32) is placed in the inner container (30) and contents is input into the inner container (30), the pump support plate (40) is coupled to the upper part of the inner container (30). The mounting wheel (422) of the lower extension wheel (42) is interposed between the second and third mounting steps (14) and (15) of the container body (10) while the lower extension wheel (42) of the pump support plate (40) is interposed between the inner and outer walls (35) and (36) of the inner container (30).

[0068] Next, the pump (50) is mounted on the pump support plate (40) and the distribution plate (60) is coupled to the upper part of the up-down moving member (56) of the pump (50). The ring button member (70) is mounted on the distribution plate (60) while the pressing protrusion (61) of the distribution plate (60) is aligned with the pressing groove

(71) of the ring button member (70), and the hook (73) of the ring button member (70) is inserted into the hook coupling groove (16) of the container body (10).

[0069] Last, the discharge plate (80) is attached onto the upper surface of the distribution plate (60) while the discharge plate (80) is safely placed at the upper side of the ring button member (70), so that the assembly of the compact container having a ring button member according to the present invention is completed.

[0070] The usage of the compact container having a ring button member according to the present invention assembled in such a scheme as described above is as follows.

[0071] In order to use the compact container having a ring button member according to the present invention, as shown in FIGS. 7 and 8, a top surface of the pressing unit (72) of the ring button member (70) or the discharge plate (80) is pressed.

[0072] When the pressing unit (72) is pressed, the ring button member (70) moves downwardly while being inclined together with the distribution plate (60) installed below the ring button member (70).

[0073] In this case, the pressing protrusion (61) of the distribution plate (60) is formed in a semicircular or circular shape, the pressing groove (71) of the ring button member (70) is formed in a semicircular shape, and the diameter of the pressing protrusion (61) is less than the inner diameter of the pressing groove (71), so that the pressing protrusion (61) may be inserted into the pressing groove (71). For this reason, even though the ring button member (70) is pressed at an inclined state, the pressing groove (71) of the ring button member (70) vertically presses the pressing protrusion (61) of the distribution plate (60), so that the distribution plate (60) can vertically press the up-down moving member (56) of the pump (50).

[0074] In addition, when the discharge plate (80) is directly pressed, the distribution plate (60) coupled to the discharge plate (80) is pressed, so that they move downwardly together and the up-down moving member (56) of the pump (50) coupled to the distribution plate (60) moves downwardly.

[0075] As the up-down moving member (56) moves downwardly, the piston (54) coupled to the lower part of the up-down moving member (56) moves downwardly together. At this time, since the piston ring (55) is in close contact with the inner side surface of the cylinder (51), a gap is generated between the piston (54) and the piston ring (55) as the piston moves downwardly, so that the content discharge path is formed.

[0076] Thereafter, if the up-down moving member (56) is continuously pushed, the piston ring (55) reaches the up-down moving member (56), so that the piston ring (55) moves downwardly together with the piston (54), thereby reducing a volume of the inner space of the cylinder (51). Thus, the contents contained in the cylinder (51) are discharged from the space between the piston (54) and the piston ring (55) to an outside through the discharge hole (81) of the discharge plate 80 after sequentially passing through the slits (564) of the up-down moving member (56) and the content discharge path (62) of the distribution plate (60).

[0077] At the same time, the suction valve plate (52) shuts the content suction hole (58) formed on the bottom surface of the cylinder by the discharging pressure in the cylinder (51).

[0078] Thereafter, when the pressing on the pressing unit (72) of the ring button member (70) or the discharge plate (80) is released, as shown in FIG. 9, the up-down moving member (56) moves up by the elasticity of the elastic member (57) elastically supporting the up-down moving member (56) and the piston (54) coupled to the lower part of the up-down moving member (56) moves up. In this case, as the extension wheel (541) formed at an outside of the lower end of the piston (54) pulls up the piston ring (55), the piston (54) and the piston ring (55) move up together while the gap between the piston (54) and the piston ring (55) is closed, so that the volume of the inner space of the cylinder is increased, thereby generating a vacuum pressure.

[0079] While the suction valve blade (521) of the suction valve plate (52) is lifted up by the vacuum pressure generated from the inside of the cylinder (51), the content suction hole (58) formed on the bottom surface of the cylinder (51) is opened. For this reason, while the contents contained in the inner container (30) are introduced into the inside of the cylinder (51) through the content suction hole (58), the push plate (32) installed in the inner container (30) moves up.

[0080] The compact container having a ring button member described in this disclosure is an illustrative purpose only, and the present invention is not limited thereto. Thus, it should be understood that numerous other modifications and embodiments can be devised by those skilled in the art within the spirit and scope of the present invention and they will fall within the scope of the present invention.

[DESCRIPTION OF REFERENCE NUMERALS]

[0081]

- 10: Container body
- 11: Button
- 12: Inner container receiving space
- 13: First mounting step

14: Second mounting step
 15: Third mounting step
 16: Hook coupling groove
 17: Locking protrusion
 5 20: Container lid
 21: Hook
 22: Mirror
 30: Inner container
 31: Content receiving space
 10 32: Pushing plate
 33: Inner container bottom surface
 34: Air circulation hole
 35: Inner wall
 36: Outer wall
 15 361: Mounting groove
 362: Coupling groove
 40: Pump support plate
 41: Bushing coupling groove
 42: Lower extension wheel
 20 421: Coupling protrusion
 422: Mounting wheel
 50: Pump
 51: Cylinder
 52: Suction valve plate
 25 53: Bushing
 54: Piston
 55: Piston ring
 56: Vertically moving member
 57: Elastic member
 30 58: Content suction hole
 59: Gap
 531: Through-hole
 532: Inner horizontal extension piece
 533: Elastic member receiving part
 35 534: Outer horizontal extension piece
 551: Close contact wheel
 552: Piston blade
 561: Inner extension wheel
 562: Outer extension wheel
 40 563: Upper extension wheel
 564: Slit
 60: Distribution plate
 61: Pressing protrusion
 62: Content discharge path
 45 63: Coupling hole
 70: Ring button member
 71: Pressing groove
 72: Pressing unit
 73: Hook
 50 80: Discharge plate
 81: Discharge hole
 82: Discharge wheel

55 **Claims**

1. A compact container comprising:

an inner container (30) provided with a content receiving space (31);
a pump support plate (40) coupled to an upper part of the inner container (30) to seal the inner container (30);
a pump (50) installed to a central upper part of the pump support plate (40) to pump contents;
a distribution plate (60) coupled to an upper part of the pump (50) and having pressing protrusions (61) formed
at two places facing each other in a diagonal direction on an outside thereof; and
a ring button member (70) coupled to an upper part of the distribution plate (60) and having pressing grooves
(71) formed at two places facing each other in a diagonal direction on a lower end thereof,
wherein the pressing protrusions (61) of the distribution plate 60 are inserted into the pressing grooves (71) of
the ring button member (70) to perform a pumping operation even when the ring button member (70) or a top
surface of the distribution plate (60) is pressed, and diameters of the pressing protrusions (61) are less than
inner diameters of the pressing grooves (71).

2. The compact container of claim 1, wherein the distribution plate (60) is provided on the top surface thereof with a
content discharge path (62) through which contents are discharged.

3. The compact container of claim 1, wherein the ring button member (70) is formed in a ring shape and provided at
one side thereof with a pressing unit (72) and a hook (73) is formed at an outside of the ring button member (70) in
opposition to the pressing unit (72).

4. The compact container of claim 1, wherein the pressing protrusions (61) of the distribution plate have a semicircular
or circular shape, and the pressing groove (71) of the ring button member (70) has a semicircular or polygonal shape.

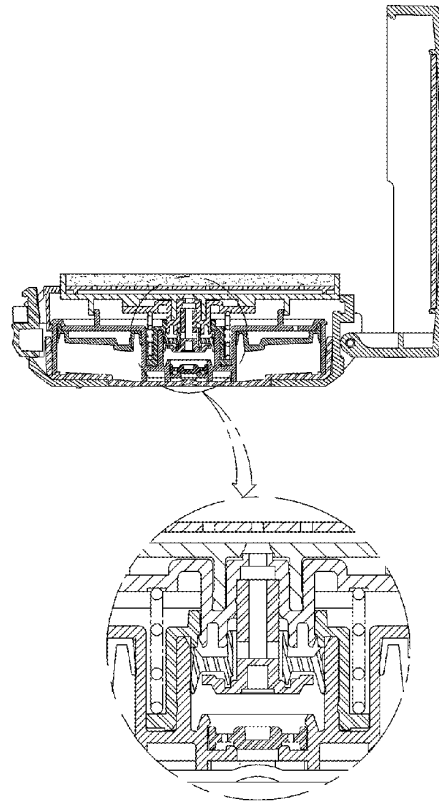
5. The compact container of claim 1, further comprising a discharge plate (80) mounted on an upper part of the ring
button member (70) while adhering to the top surface of the distribution plate (60) and provided therein with a plurality
of discharge holes.

6. The compact container of claim 1, wherein the pump (50) includes:

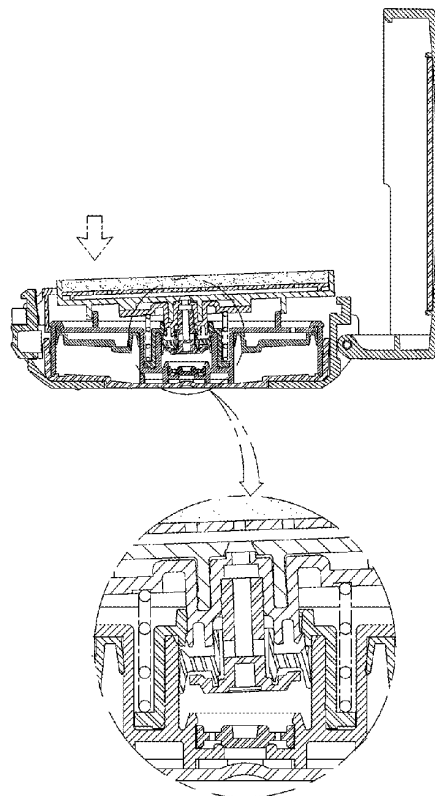
a cylinder (51) formed on a central upper side of the pump support plate (40) and having a content suction hole
(58) formed on a bottom surface thereof;
a suction valve plate (52) mounted on the bottom surface of the cylinder (51) to selectively open or close the
content suction hole (58);
a bushing (53) coupled to an outside of the cylinder (51) to be placed on a top end of the cylinder (51);
a piston (54) formed inside the cylinder (51);
a piston ring (55) fitted around an outside of the piston (54) to make close contact with an inner side surface of
the cylinder (51);
an up-down moving member (56) coupled to an inner circumferential surface to move up or down; and
an elastic member (57) elastically supporting the up-down moving member (56).

7. The compact container of claim 1 or 6, wherein the pump (50) has a piston-stroke distance in a range of 1.5 mm to
2.5 mm, and a ratio between the piston-stroke distance and an inner diameter of the cylinder (51) is in a range of
1:5 to 1:13.

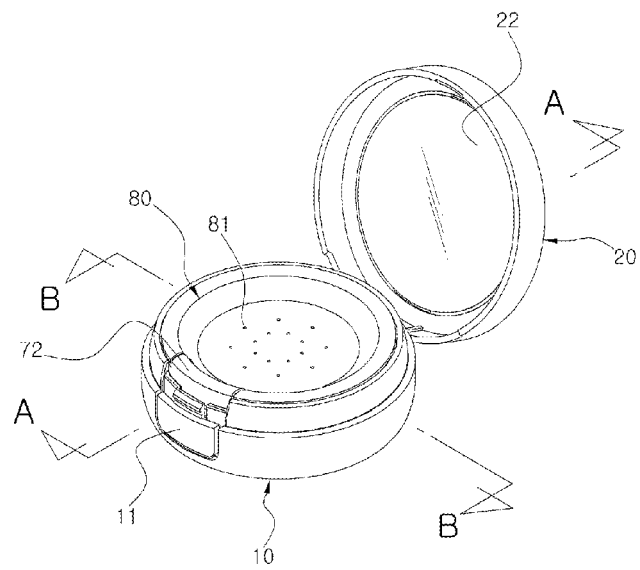
[Fig. 1]



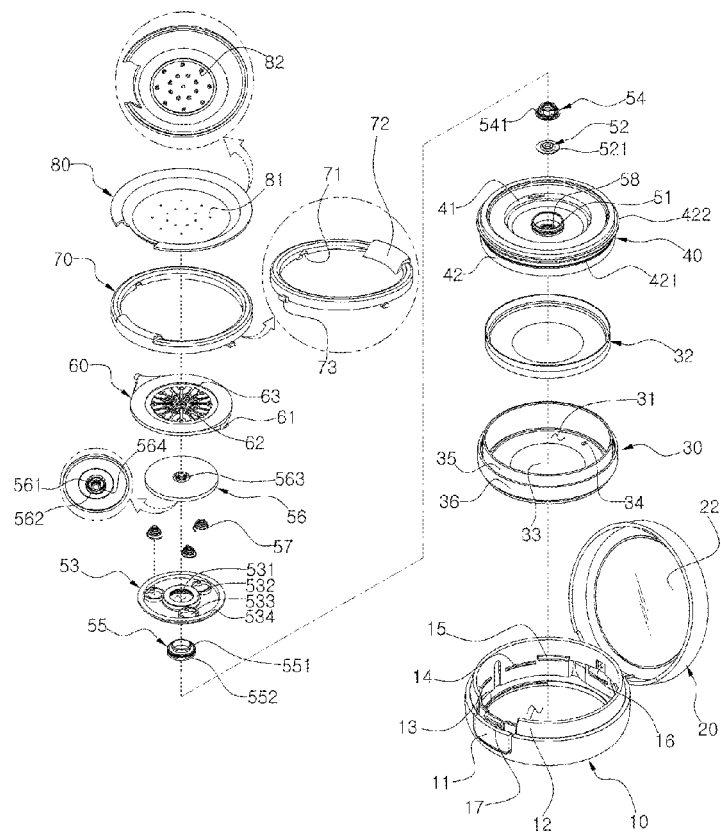
[Fig. 2]



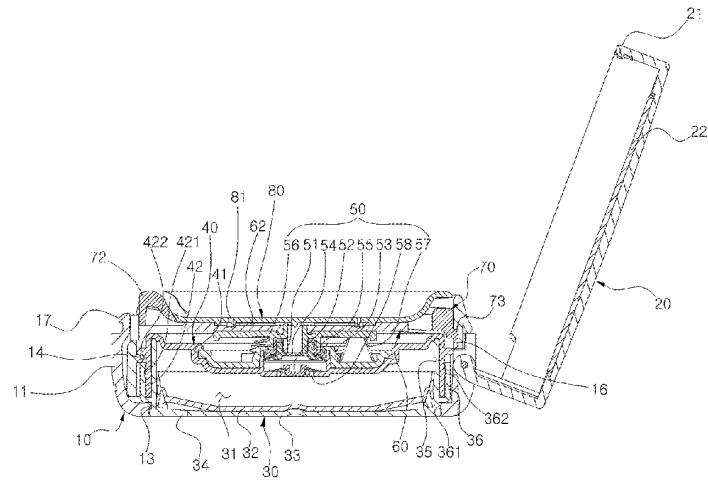
[Fig. 3]



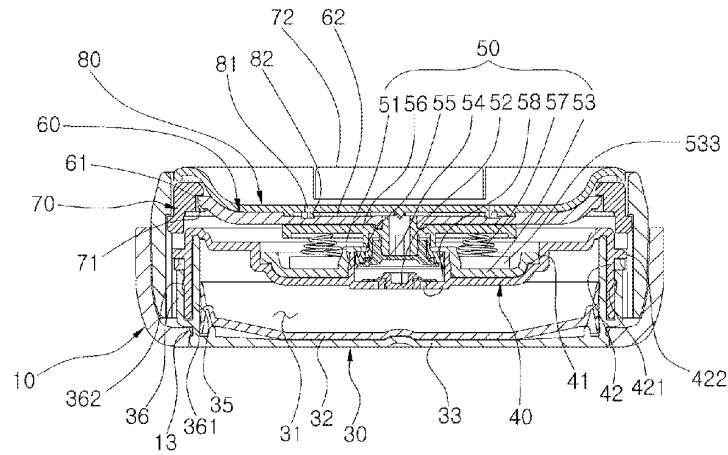
[Fig. 4]



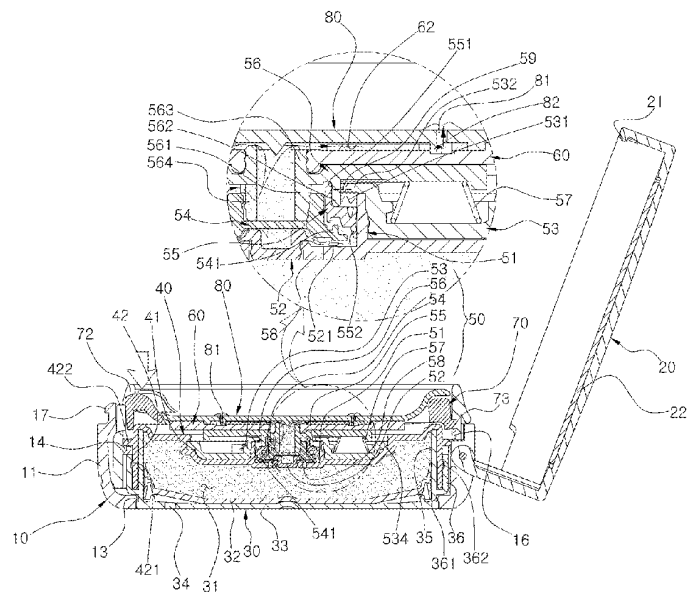
[Fig. 5]



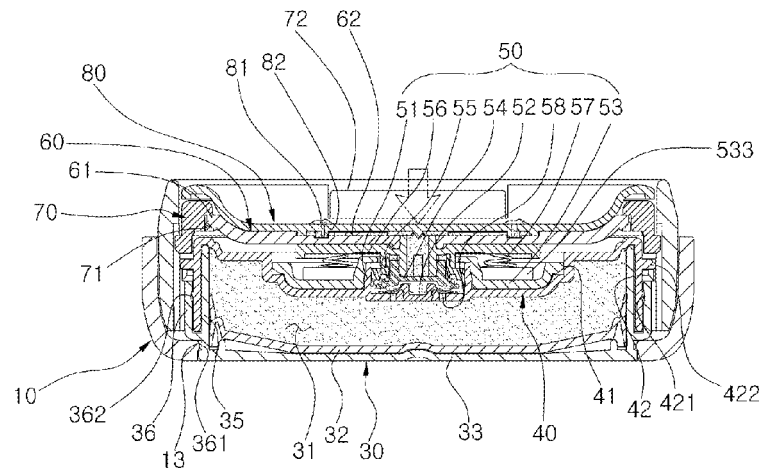
[Fig. 6]



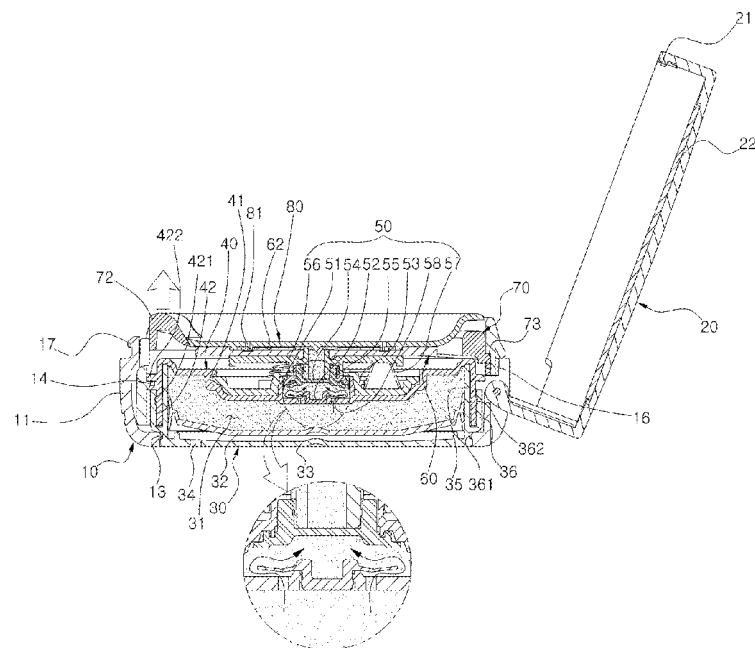
[Fig. 7]



[Fig. 8]



[Fig. 9]



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2015/014516

A. CLASSIFICATION OF SUBJECT MATTER

A45D 40/00(2006.01)i, B65D 47/00(2006.01)i, B65D 83/00(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)

A45D 40/00; A45D 34/04; A45D 34/00; B65D 47/34; G01F 11/02; B65D 47/00; B65D 83/00

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: compact, button, airless, pump, piston, push, distribution, projection

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	KR 20-0470757 Y1 (AMOREPACIFIC CORPORATION et al.) 09 January 2014 See paragraphs [0017]-[0023], [0028]-[0062]; claims 1-8; figures 2-5.	1-7
A	KR 10-2013-0107388 A (YONWOO CO., LTD.) 02 October 2013 See paragraphs [0026]-[0046]; claims 1-7; figures 1-7.	1-7
A	KR 20-0461424 Y1 (F.S.KOREA INDUSTRIES INC.) 11 July 2012 See the entire document.	1-7
A	US 8631975 B2 (LIM, J.) 21 January 2014 See the entire document.	1-7

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

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Date of the actual completion of the international search

03 MAY 2016 (03.05.2016)

Date of mailing of the international search report

04 MAY 2016 (04.05.2016)

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2015/014516

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