



(11)

EP 4 180 351 A1

(12)

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

(43) Date of publication:

17.05.2023 Bulletin 2023/20

(21) Application number: **21837002.1**

(22) Date of filing: **09.07.2021**

(51) International Patent Classification (IPC):

B65D 43/16 (2006.01) **B65D 47/10** (2006.01)
B65D 41/62 (2006.01) **B65D 41/04** (2006.01)

(52) Cooperative Patent Classification (CPC):

B65D 41/04; B65D 41/62; B65D 43/16; B65D 47/10

(86) International application number:

PCT/KR2021/008829

(87) International publication number:

WO 2022/010321 (13.01.2022 Gazette 2022/02)

(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:

KH MA MD TN

(30) Priority: **09.07.2020 KR 20200086087**

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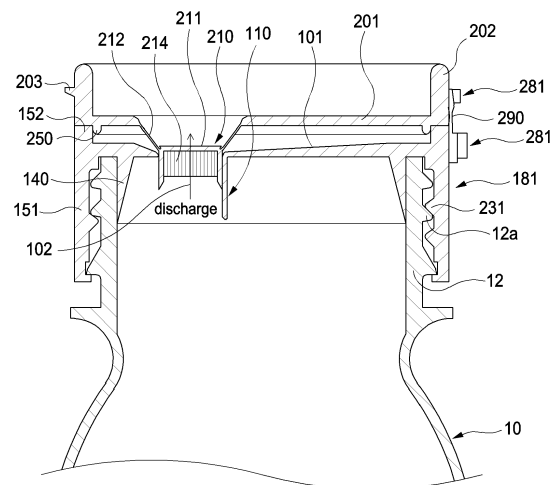
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(54) **CONTAINER CAP AND CONTAINER TO WHICH SAME IS COUPLED**

(57) The present invention relates to a container cap and, more specifically, to a container cap coupled to a container inlet, and a container to which same is coupled. Disclosed is the container cap comprising: a cap body (100) coupled to a container inlet (12) of the container (10) in which contents are contained; and an upper lid (200) coupled to the cap body (100) to cover the upper side of the cap body (100), wherein the cap body (100) includes an outlet plate (110) which is fractured from an upper plate part (101) to form a discharge hole (102) through which the contents contained in the container (10) are discharged, and the upper lid (200) includes a pushing part (210) which is formed in correspondence to the outlet plate (110) and which fractures the outlet plate (110) by means of the vertical movement thereof.



<Fig. 2>

Description

TECHNICAL FIELD

[0001] The present invention disclosed herein relates to a container cap, and more particularly, to a container cap coupled to a container inlet and a container to which same is coupled.

BACKGROUND ART

[0002] A container in which contents such as liquid or powder is contained is sealed when a container cap is coupled to a container inlet. Here, various kinds of container caps are coupled according to the kind of contents contained in the container, a discharge method, or an opening method.

[0003] The container cap coupled to the container may have various structures according to a coupling method and a function thereof.

[0004] Among typical container caps, patent documents 1, 2, and 3 disclose a container cap having a structure in which grain-type supplementary contents are stored therein so as to drink the supplementary contents together when drinking the contents.

[0005] However, the container cap for storing the grain-type supplementary contents disclosed in the patent documents 1 to 3 has a limitation in that since the container cap has a structure in which a plurality of members are coupled, manufacturing is complicated, and recycling is inconvenient or impossible due to internal contamination.

[0006] That is, since the typical container cap has a structure in which since two or more members are coupled to implement a particular function, manufacturing is complicated, coupling with the container is inconvenient, and recycling is inconvenient or impossible due to internal contamination.

Patent document 1: KR10-2017-0126366A
Patent document 2: KR10-2016-0024539A
Patent document 3: JP2013-133123A

DISCLOSURE OF THE INVENTION

TECHNICAL PROBLEM

[0007] The present invention provides a container cap having a simplified overall structure to be easily manufactured and minimizing internal contamination to be easily recycled and a container to which same is coupled.

TECHNICAL SOLUTION

[0008] In accordance with an embodiment of the present invention, a container cap includes: a cap body 100 coupled to a container inlet 12 of a container 10 in which contents are contained; and an upper lid 200 coupled to the cap body 100 to cover an upper side of the

cap body 100. Here, the cap body 100 includes an outlet plate 110 which is fractured from an upper plate part 101 to form a discharge hole 102 through which the contents contained in the container 10 are discharged, and the upper lid 200 includes a pushing part 210 which is formed in correspondence to the outlet plate 110 and which fractures the outlet plate 110 by a vertical movement thereof.

[0009] The pushing part 210 may include: a pushing plate 211 pushed by a user; an elastic deformation part 212 configured to couple the pushing part 210 with the upper lid 200 so as to be movable vertically with respect to the upper lid 200; and a pressing part 213 protruding from a bottom surface of the pushing plate 211 to press the outlet plate 110 downward when the pushing plate 211 moves downward.

[0010] The pressing part 213 may be formed in correspondence to a cut line 131 fractured with respect to the upper plate part 101.

[0011] The pushing part 210 may comprise a reinforcing part (214) formed inside the pressing part 213 to reinforce structural strength.

[0012] The outlet plate 110 may be partitioned by the cut line 131 formed on the upper plate part 101.

[0013] The cut line 131 may form an open curve so that the outlet plate 110 is fractured from the upper plate part 101 in a state of being partially coupled with the upper plate part 101.

[0014] A hook part 132 may be formed on a bottom surface of the upper plate part 101 to maintain a folded state after the outlet plate 110 is pressed and folded by the pushing part 210.

[0015] The outlet plate 110 may be eccentric from a center of the upper plate part 101.

[0016] The upper plate part 101 may be inclined downward toward the outlet plate 110.

[0017] The upper lid 200 may be hinge-coupled to the cap body 100.

ADVANTAGEOUS EFFECTS

[0018] The container cap and the container to which same is coupled in accordance with the present invention has an advantage in that the user easily and conveniently drinks the contents because the container cap includes the cap body for sealing the container inlet and the upper lid covering the top surface of the cap body, and the outlet plate fractured by the pushing part formed on the upper lid to form the opening is formed in the container cap.

[0019] Particularly, the container cap and the container to which same is coupled in accordance with the present invention has an advantage in that the user easily and conveniently drinks the contents in the state in which the container cap is not separated from the container inlet by forming the discharge hole such that the outlet plate is fractured and separated from the cap body by pushing the pushing part.

[0020] Also, the container cap and the container to which same is coupled in accordance with the present

invention has an advantage in that the recycling is convenient after use because the container cap includes the cap body for sealing the container inlet and the upper lid covering the top surface of the cap body, the outlet plate fractured by the pushing part formed on the upper lid to form the opening is formed in the container cap, and the upper lid and the cap body are hinge-coupled to have the integrated structure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021]

FIG 1 is a cross-sectional view illustrating a container cap in accordance with the present invention.

FIG 2 is a cross-sectional view illustrating a state in which a pushing part is operated as the container cap of FIG 1.

FIG 3 is a side view illustrating the container cap of FIG 1.

FIGS. 4a and 4b are cross-sectional views illustrating an operation process of an upper lid in the container cap of FIG 1.

FIGS. 5a and 5b are a plan view and a bottom view, respectively, illustrating a top surface and a bottom surface of the upper lid of the container cap of FIG 1.

FIGS. 6a and 6b are a plan view and a bottom view, respectively, illustrating a top surface and a bottom surface of a cap body of the container cap of FIG 1.

FIGS. 7a and 7b are enlarged views in which a portion of FIG 1 is enlarged and which illustrating an operation process of the pushing part.

FIG 8 is an enlarged view in which a portion of FIG 1 is enlarged and which illustrating a state after the pushing part is moved upward or the upper lid is separated from the cap body.

FIG 9 is a side view illustrating a hinge coupling part as a side surface of the container cap of FIG 1.

FIGS. 10a and 10b are side views illustrating a state before and after the upper lid is separated from the cap body as a side view of the container cap of FIG 1.

FIG 11 illustrates bottom views showing examples of upper lid in the container cap of FIG 1, respectively.

FIG 12 illustrates bottom views showing examples of cap body in the container cap of FIG 1, respectively.

MODE FOR CARRYING OUT THE INVENTION

[0022] Hereinafter, a container and a container cap in accordance with the present invention will be described with reference to the accompanying drawings.

[0023] As illustrated in FIGS. 1 to 12, the container cap in accordance with the present invention includes: a cap body 100 coupled to a container inlet 12 of a container 10 in which contents are contained; and an upper lid 200 coupled to the cap body 100 to cover an upper side of

the cap body 100.

[0024] The container 10 that is a component in which a liquid material such as a beverage or a material in the form of powder is contained may include all sorts of components as long as the container inlet 12 for container discharge is formed therein.

[0025] The contents contained in the container 10 may be various materials such as a liquid material in which supplementary contents 42 that will be described later is drunk together with a solid pill depending on a combination with the supplementary contents. Typically, the contents may be made of a liquid material.

[0026] Also, the container 10 may have various shapes such as a cylindrical shape or a rectangular cylinder shape except for the container inlet 12,

[0027] Also, the container 10 may be made of a plastic material or glass. Here, the container cap may be made of a plastic material in consideration of manufacturing and fracture separation.

[0028] The container inlet 12 that is a discharge hole through which the contents are discharged to the outside and a portion opened and closed by opening and closing of the container cap 100 may have various structures according to a coupling structure of the container inlet 12.

[0029] The cap body 100 that is a component coupled to the container inlet 12 of the container 10 in which the contents are contained may have various configurations.

[0030] For example, the cap body 100 may include: an upper plate part 110 covering an opening of the container inlet 12; and a container coupling part 151 extending downward from the upper plate part 101 and coupled to the container inlet 12.

[0031] The upper plate part 101 that is a component for covering the opening of the container inlet 12 may have a circular plate shape.

[0032] Also, the upper plate part 101 is fractured to form an outlet plate 110 that forms a discharge hole 102 through which the contents contained in the container are discharged.

[0033] The outlet plate 110 that is a component fractured from the upper plate part 101 to form the discharge hole 102 through which the contents contained in the container are discharged may include all sorts of components as long as the components are fractured from the upper plate part 101 to form the discharge hole 102.

[0034] In particular, the outlet plate 110 may be partitioned by a cut line 131 formed on the upper plate part 101 so as to be easily broken from the upper plate part 101.

[0035] The cut line 131 may be formed as a recessed cut groove so that the outlet plate 110 is fractured from the upper plate part 101.

[0036] As illustrated in FIGS. 2 and 6a, the cut line 131 may form an open curve so that the outlet plate 110 is fractured from the upper plate part 101 in a state of being partially coupled with the upper plate part 101.

[0037] Here, the outlet plate 110 may be completely separated from the upper plate part 101.

[0038] As illustrated in FIGS. 1, 2, 6b, 7a and 8, a hook part 132 may be formed on a bottom surface of the upper plate part 101 to maintain a folded state after the outlet plate 110 is pressed and folded by a pushing part 210.

[0039] The hook part 132 that is a component formed on the bottom surface of the upper plate part 101 to maintain the folded state after the outlet plate 110 is pressed and folded by a pushing part 210 may have various configurations.

[0040] For example, as illustrated in FIGS. 1, 2, 6b, 7a and 8, each of a pair of hook parts 132 may have a width less than a width W (diameter) of the outlet plate 110 to maintain the folded state after the outlet plate 110 is pressed and folded by a pushing part 210.

[0041] As illustrated in FIGS. 11 and 12, the outlet plate 110 and the hook part 132 may be configured in various embodiments in connection with a configuration of the pushing part 210 that will be described later.

[0042] For example, as illustrated in FIG 12a, the outlet plate 110 may be completely separated when fractured from the upper plate part 101 and integrally connected by a connection part 111 formed on the bottom surface of the upper plate part 101.

[0043] Here, the pushing part 210 may have a structure by which the outlet plate 110 is completely separated from the upper plate part 101.

[0044] For another example, as illustrated in FIG 12b, the outlet plate 110 may be fractured and separated from the upper plate part 101 in a state of being connected to a plurality of portions of the upper plate part 101.

[0045] That is, as illustrated in FIG 12b, the outlet plate 110 is separated into two members, and at this time, the outlet plate 110 may be connected to the upper plate part 101 at two points to maintain a connected state while being folded from the upper plate part 101.

[0046] In addition, the hook part 132 of the upper plate part 101 is provided in accordance with the number and position of the outlet plate 110 to be fractured and separated.

[0047] On the other hand, the outlet plate 110 may be formed of a circular plate having a size appropriate to form a concentric circle on the upper plate part 101 and be foldable in the container inlet 12.

[0048] Also, the outlet plate 110 may be eccentric from a center of the upper plate part 101.

[0049] Here, the outlet plate 110 may be disposed as close as possible to an edge of the upper plate part 101 in consideration that the contents are discharged to the outside through the discharge hole 102 fractured and separated from the upper plate part 101.

[0050] As illustrated in FIGS. 1 and 2, the upper plate part 101 may be inclined downward toward the outlet plate 110 so that the contents are easily discharged.

[0051] Also, supplementary contents such as grains and powder, which are mixed with the contents contained in the container 10, may be filled in a space between the upper plate part 101 and the upper lid 200 that will be described later.

[0052] The supplementary contents may be filled in the space between the upper plate part 101 and the upper lid 200 that will be described later, injected into the container 10 through the discharge hole 102 formed as the outlet plate 110 is fractured and separated, and then mixed with the contents.

[0053] The container coupling part 151 that is a component extending downward from the upper plate part 101 and coupled to the container inlet 12 may have various configurations according to the coupling structure of the container inlet 12.

[0054] For example, the container coupling part 151 may be screw-coupled to the container inlet 12, and a female screw part 153 that is screw-coupled with a male screw part 12a may be formed on an outer circumferential surface of the container inlet 12 may be formed on an inner circumferential surface of the container coupling part 151.

[0055] Also, the container coupling part 151 may be coupled with the container inlet 12 through a snap-type structure.

[0056] On the other hand, an upper partition part 152 protruding upward to be sealingly coupled when the upper lid 200 that will be described later is coupled may be additionally formed on the cap body 100.

[0057] Also, the cap body 100 may include a sealing unit for sealing the inside of the container 10 when coupled to the container inlet 12.

[0058] The sealing unit may be a gasket, a sealing member, etc., and as illustrated in FIGS. 1 and 2, a ring-shaped gasket 142 closely contacting the inner circumferential surface of the container inlet 12 to seal the container 10 may extend downward from the bottom surface of the upper plate part 101.

[0059] The upper lid 200 that is a component coupled to the cap body 100 in order to cover the upper side of the cap body 100 may have various configurations.

[0060] For example, the upper lid 200 may be coupled to the cap body 100 in a hinge-rotation method by a hinge coupling part 290 at one side based on a central line passing through a center thereof and integrally coupled, i.e., formed, with the cap body 100.

[0061] The hinge coupling part 290 that is a component connecting the upper lid 200 to the cap body 100 in the hinge-rotation method at one side based on the central line passing through the center may have various shapes such as a thin film or band.

[0062] Here, the upper lid 200 and the cap body 100 may be completely separably coupled to each other.

[0063] Also, a protruding bump 203 protruding to an outer circumference side may be formed on an opposite side of the hinge coupling part 290 to separate the upper lid 200 from the cap body 100.

[0064] The protruding bump 203 that is a component formed on an outer circumferential surface of the upper lid 200 so that a user pushes the upper lid 200 by hands to separate the upper lid 200 from the cap body 100 may have various structures and shapes.

[0065] A coupling unit coupled by a fitting method may be disposed on the outer circumferential surface of each of the upper lid 200 and the cap body 100 to maintain a folded state when the upper lid 200 is separated from the cap body 100 and hinge-rotated.

[0066] For example, a first fitting part 181 may be formed below the hinge coupling part 290 on the outer circumferential surface of the cap body 100, and a second fitting part 281 fitted to the first fitting part 181 when the upper lid 200 is separated from the cap body 100 and hinge-rotated may be formed on the outer circumferential surface of the upper lid 200.

[0067] The first fitting part 181 and the second fitting part 281 are fitted to each other. Here, one is a projection, and the other is a groove part that forms a groove to which the projection is fitted.

[0068] The upper lid 200 may have a structure coupled with the upper plate part 101 of the cap body 100 in a state sealed from the outside.

[0069] Thus, the upper lid 20 may include a cover part 201 having a size and a shape (e.g., a circular plate shape) corresponding to the upper plate part 101 of the cap body 100, and a partition part 202 extending upward while forming an edge of the cover part 201.

[0070] The cover part 201 that is a component having a size and a shape (e.g., a circular plate shape) corresponding to the upper plate part 101 of the cap body 100 may have a shape corresponding to the upper plate part 101 of the cap body 100 except for the pushing plate that will be described later.

[0071] The partition part 202 that is a component extending upward while forming the edge of the cover part 201 and a component extending upward so that the pushing part 210 is not arbitrarily pushed may have a height equal to or greater than that of the pushing part 210.

[0072] Also, the partition part 202 may form a cylindrical shape together with the above-described container coupling part 151.

[0073] The partition part 202 may be coupled with the container coupling part 151 so that a space formed by the upper lid 200 and the cap body 100 is sealed from the outside.

[0074] That is, the upper lid 200 may be sealingly coupled with the upper cover 200.

[0075] To this end, a sealing coupling ring 250 closely contacting an inner circumferential surface or an outer circumferential surface of the container coupling part 151 and coupled with the container coupling part 151 may be formed at a lower end of the partition part 202.

[0076] The sealing coupling ring 250 that is a component formed at the lower end of the partition part 202 so as to closely contact the inner circumferential surface or the outer circumferential surface of the container coupling part 151 and be coupled with the container coupling part 151 may have various configurations such as a feature of closely contacting with the container coupling part 151.

[0077] As illustrated in FIGS. 1 to 12, the upper lid 200

includes the pushing part 210 formed in correspondence to the outlet plate 110 to fracture the outlet plate 110 by a vertical movement thereof.

[0078] The pushing part 210 that is a component formed in correspondence to the outlet plate 110 to fracture the outlet plate 110 by the vertical movement thereof may have various configurations.

[0079] For example, the pushing part 210 may include: a pushing plate 211 pushed by the user; an elastic deformation part 212 coupling the pushing part 210 with the upper lid 200 so as to be movable vertically with respect to the upper lid 200; and a pressing part 213 protruding from a bottom surface of the pushing plate 211 to press the outlet plate 110 downward when the pushing plate 211 moves downward.

[0080] The pushing plate 211 that is a portion pushed by the user may have a solid structure in consideration of a feature of being pressed by the user.

[0081] Here, the pushing plate 211 is formed at a position corresponding to the outlet plate 110 so that the outlet plate 110 is fractured and separated downward when the pushing plate 211 is pushed by the user.

[0082] The elastic deformation part 212 that is a component coupling the pushing part 210 with the upper lid 200 so as to be movable vertically with respect to the upper lid 200 may have various configurations.

[0083] For example, the elastic deformation part 212 may be a relatively thin film as a concentric structure with the pushing plate 211 or a component in which each of a portion connected to the pushing plate 211 and a portion connected to the cover part 201 is thinner than the rest portion.

[0084] The pressing part 213 that is a component protruding from the bottom surface of the pushing plate 211 to press the outlet plate 110 downward when the pushing plate 211 moves downward may have all sorts of configurations as long as the outlet plate 110 is fractured and separated from the upper plate part 101.

[0085] For example, as illustrated in FIGS. 1 to 12, the pressing part 213 may be formed in correspondence to a portion in which the outlet plate 110 is fractured and separated from the upper plate part 101, e.g., the cut line 131.

[0086] That is, the pressing part 213 may have a cross-sectional shape corresponding to a shape of the cut line 131.

[0087] For example, as illustrated in FIGS. 1, 2, 5b, and 12, the pressing part 213 may have a ring shape except for a portion in which the outlet plate 110 is connected to the upper plate part 101.

[0088] Also, a lower end of the pressing part 213 may have a sharp shape to promote breakage at the cut line 131.

[0089] Also, the pressing part 213 may have a height sufficient to fracture and separate the outlet plate 110 from the upper plate part 101 by the vertical movement and be disposed in correspondence to an edge of the outlet plate 110 in a state in which the upper lid 200 is

coupled to the cap body 100.

[0090] That is, the pressing part 213 may be formed in correspondence to the cut line 131 that is fractured with respect to the upper plate part 101.

[0091] The pushing part 210 may include a reinforcing part 214 formed inside the pressing part 213 to reinforce structural strength.

[0092] The reinforcing part 214 that is a component formed inside the pressing part 213 to reinforce structural strength may have various configurations.

[0093] For example, the reinforcing part 214 may have various configurations such as a rib or partition elongated vertically on an inner circumferential surface of the pressing part 213.

[0094] The above-disclosed subject matter is to be considered illustrative, and not restrictive, and the appended claims are intended to cover all such modifications, enhancements, and other embodiments, which fall within the true spirit and scope of the present invention. Thus, to the maximum extent allowed by law, the scope of the present invention is to be determined by the broadest permissible interpretation of the following claims and their equivalents, and shall not be restricted or limited by the foregoing detailed description.

Claims

1. A container cap comprising:

a cap body (100) coupled to a container inlet (12) of a container (10) in which contents are contained; and

an upper lid (200) coupled to the cap body (100) to cover an upper side of the cap body (100), wherein the cap body (100) comprises an outlet plate (110) which is fractured from an upper plate part (101) to form a discharge hole (102) through which the contents contained in the container (10) are discharged, and the upper lid (200) comprises a pushing part (210) which is formed in correspondence to the outlet plate (110) and which fractures the outlet plate (110) by a vertical movement thereof.

2. The container cap of claim 1, wherein the pushing part (210) comprises:

a pushing plate (211) pushed by a user;
an elastic deformation part (212) configured to couple the pushing part (210) with the upper lid (200) so as to be movable vertically with respect to the upper lid (200); and
a pressing part (213) protruding from a bottom surface of the pushing plate (211) to press the outlet plate (110) downward when the pushing plate (211) moves downward.

3. The container cap of claim 2, wherein the pressing part (213) is formed in correspondence to a cut line (131) fractured with respect to the upper plate part (101).

4. The container cap of claim 2, wherein the pushing part (210) comprises a reinforcing part (214) formed inside the pressing part (213) to reinforce structural strength.

5. The container cap of any one of claims 1 to 4, wherein the outlet plate (110) is partitioned by the cut line (131) formed on the upper plate part (101).

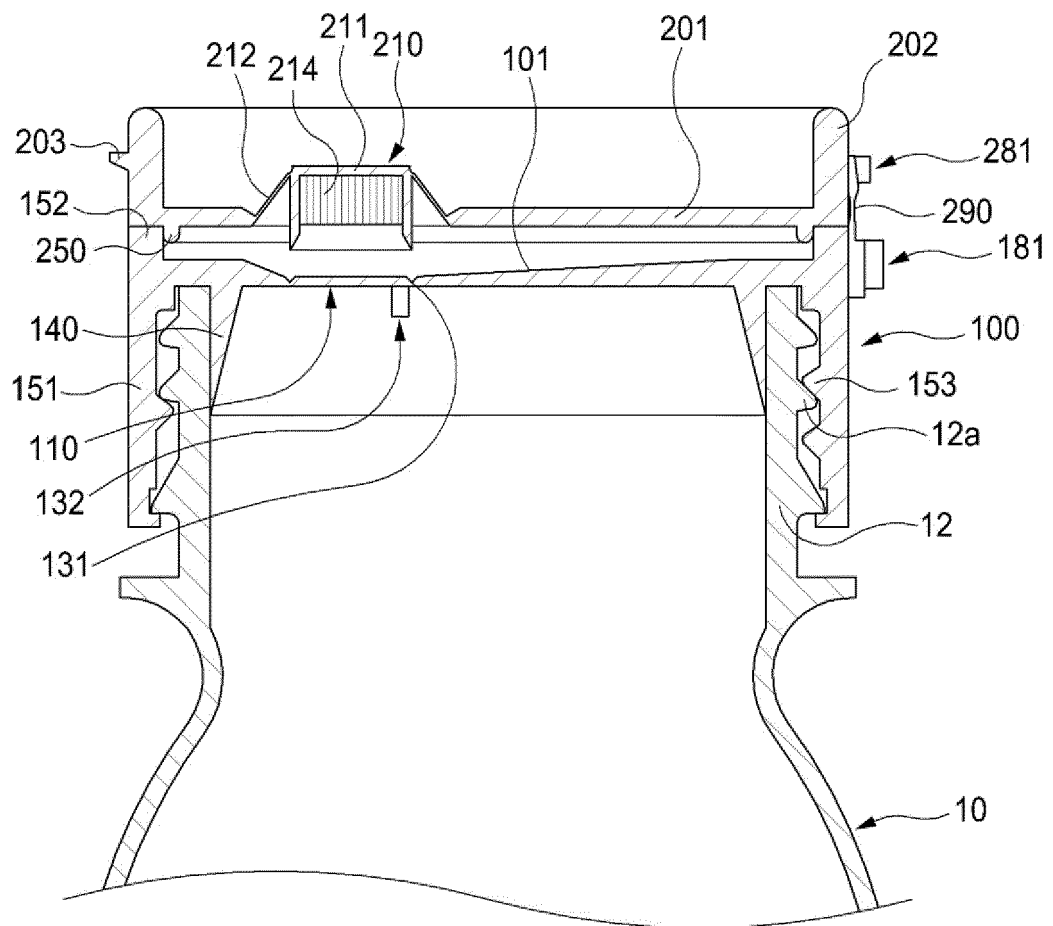
6. The container cap of claim 5, wherein the cut line (131) forms an open curve so that the outlet plate (110) is fractured from the upper plate part (101) in a state of being partially coupled with the upper plate part (101).

7. The container cap of claim 5, wherein a hook part (132) is formed on a bottom surface of the upper plate part (101) to maintain a folded state after the outlet plate (110) is pressed and folded by the pushing part (210).

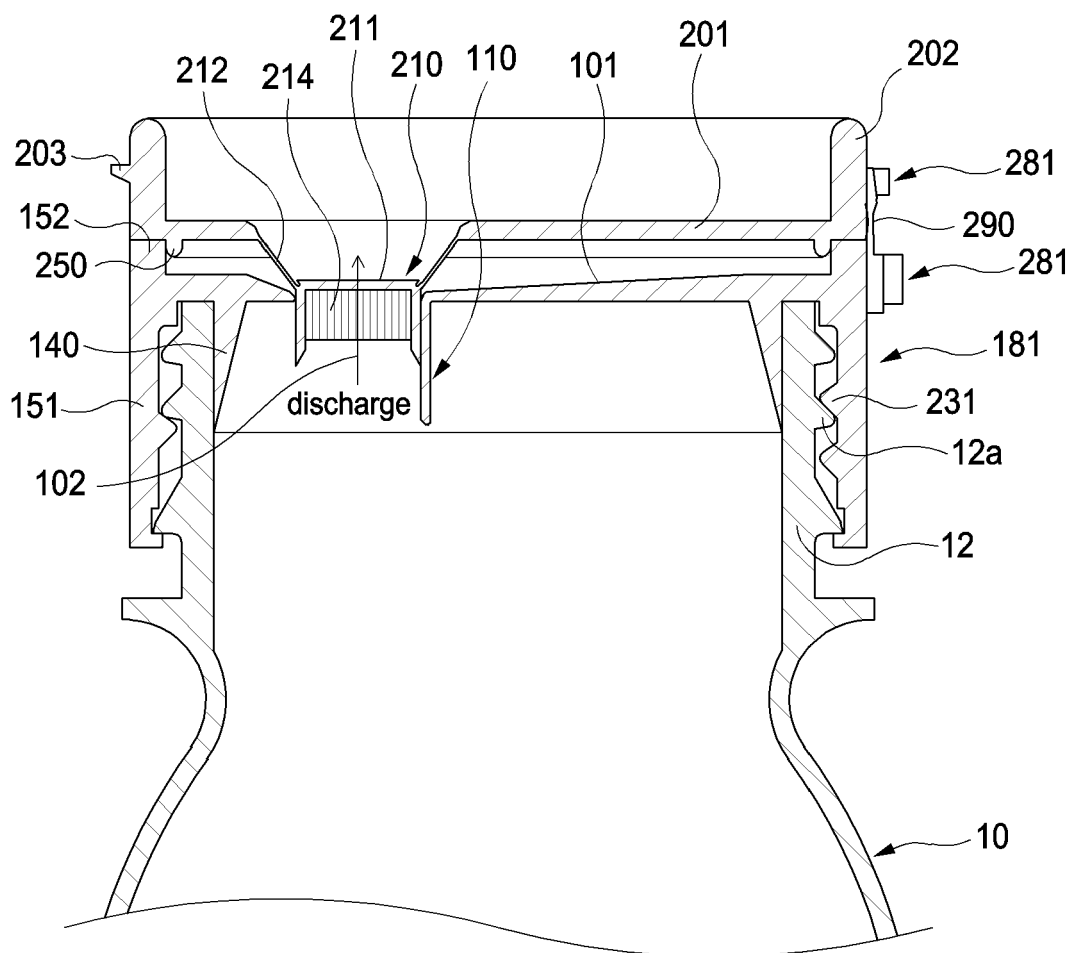
8. The container cap of claim 5, wherein the outlet plate (110) is eccentric from a center of the upper plate part (101).

9. The container cap of claim 5, wherein the upper plate part (101) is inclined downward toward the outlet plate (110).

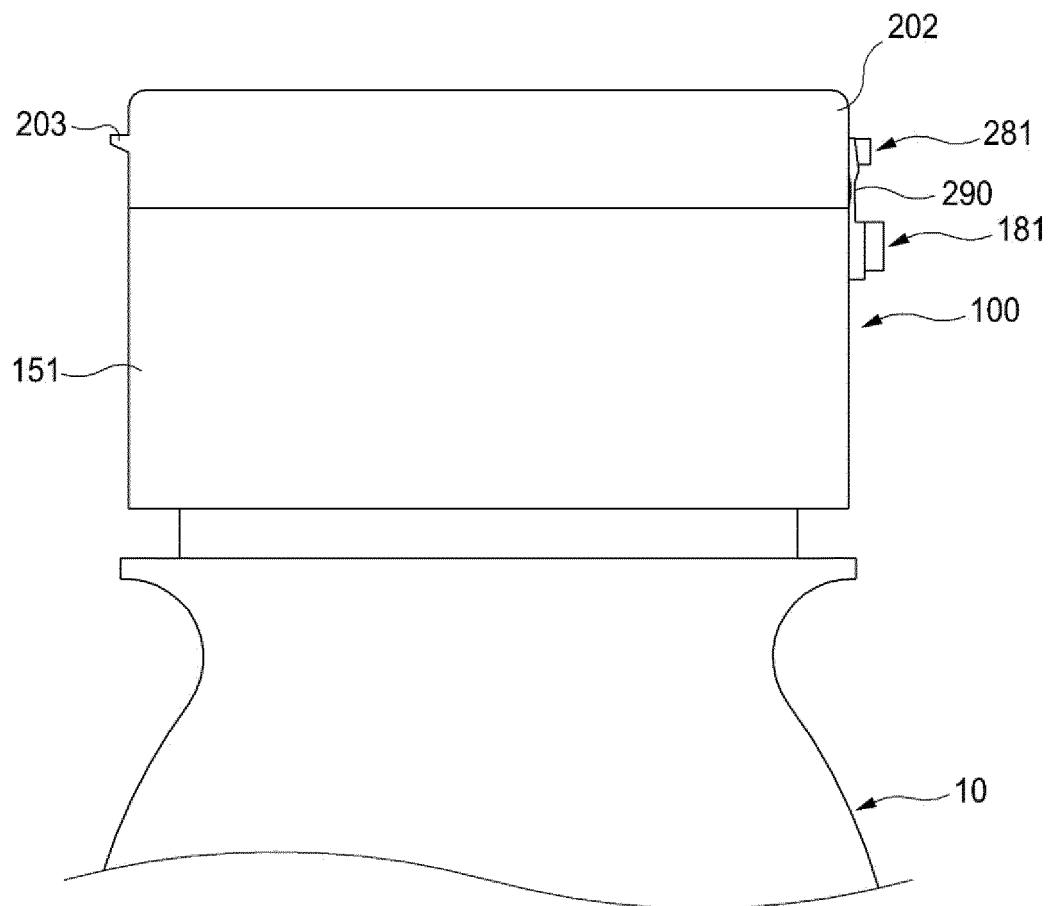
10. The container cap of any one of claims 1 to 4, wherein the upper lid (200) is hinge-coupled to the cap body (100).



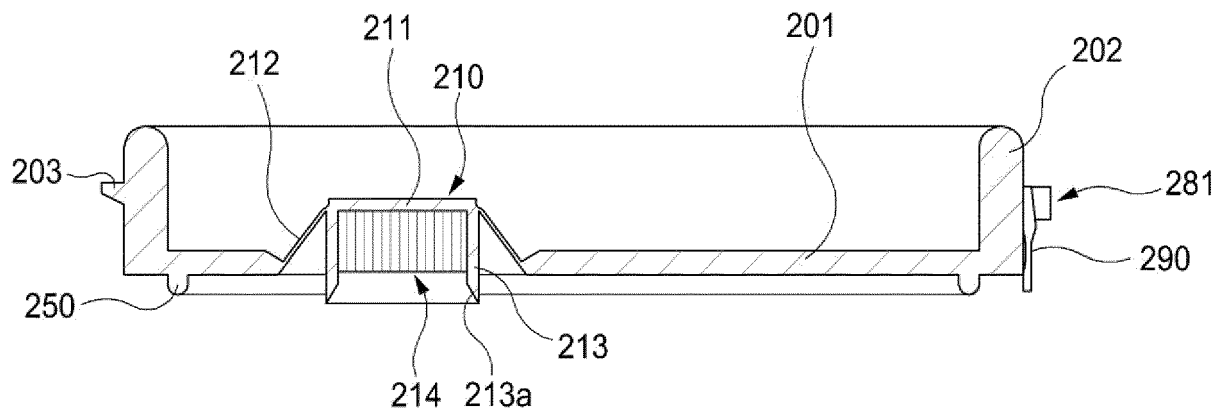
<Fig. 1>



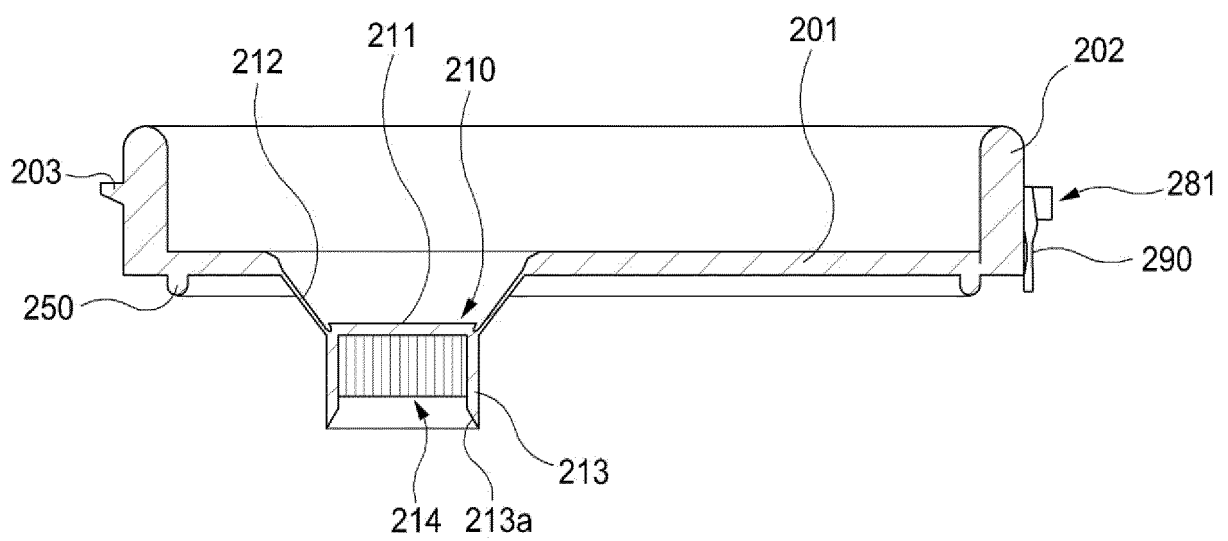
<Fig. 2>



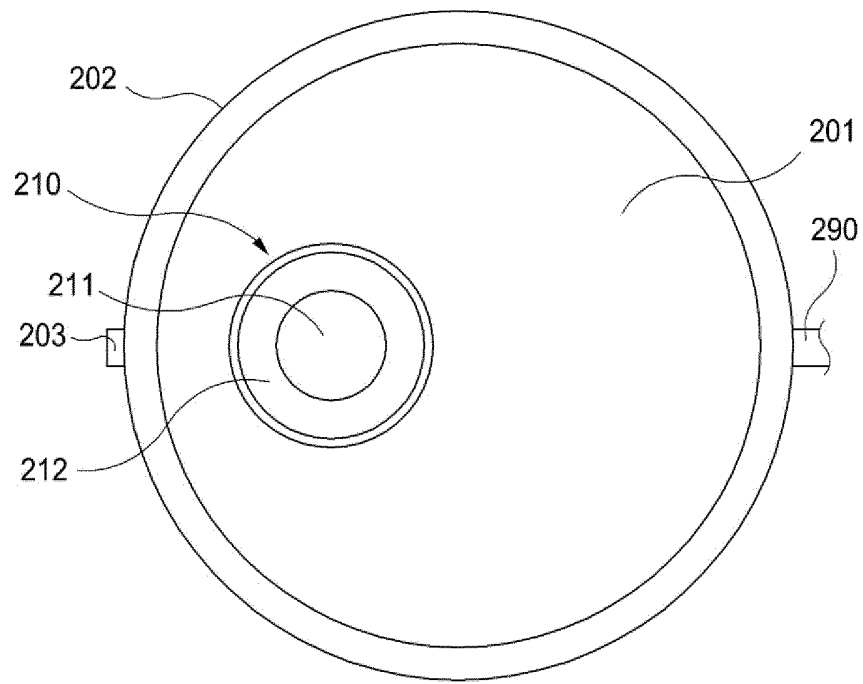
<Fig. 3>



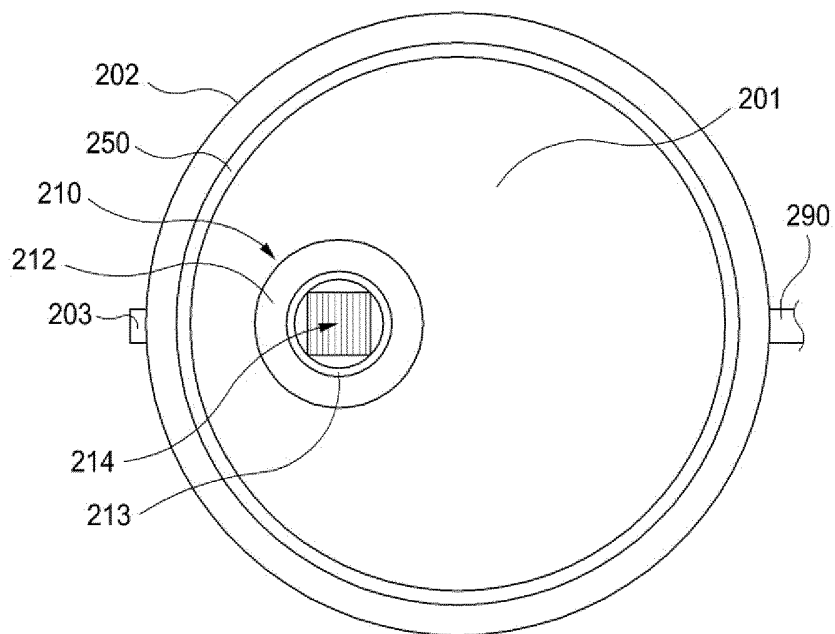
<Fig. 4a>



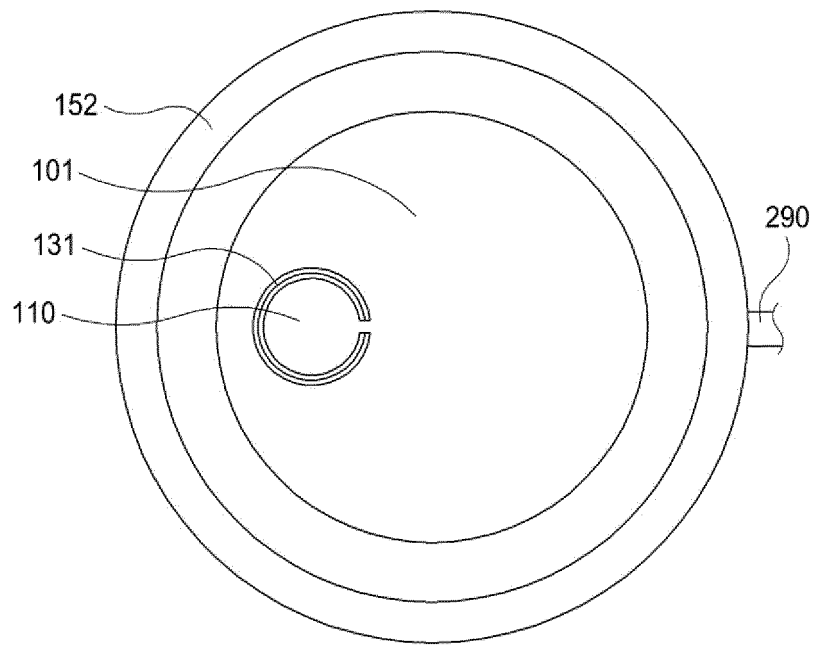
<Fig. 4b>



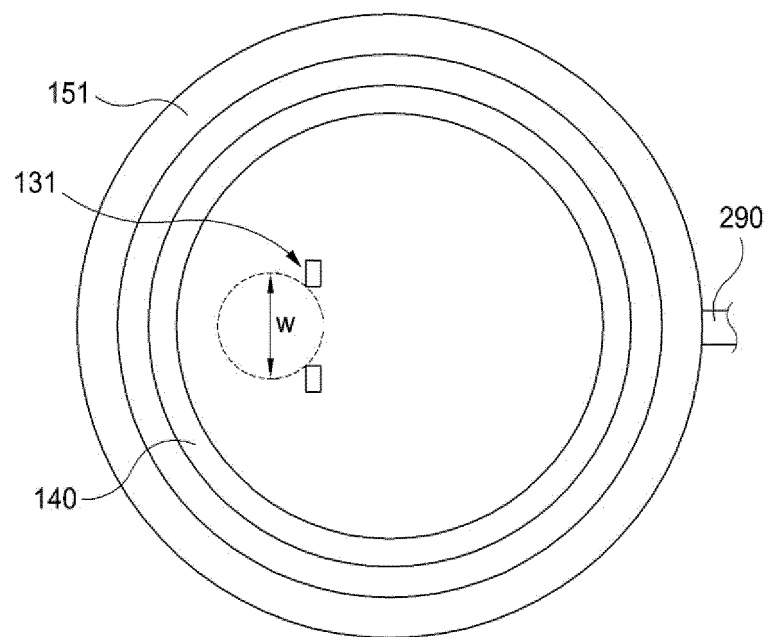
<Fig. 5a>



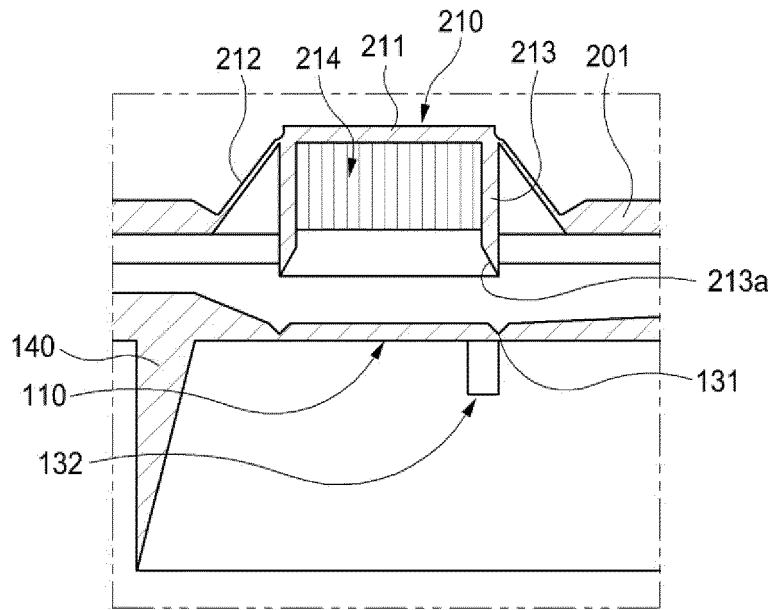
<Fig. 5b>



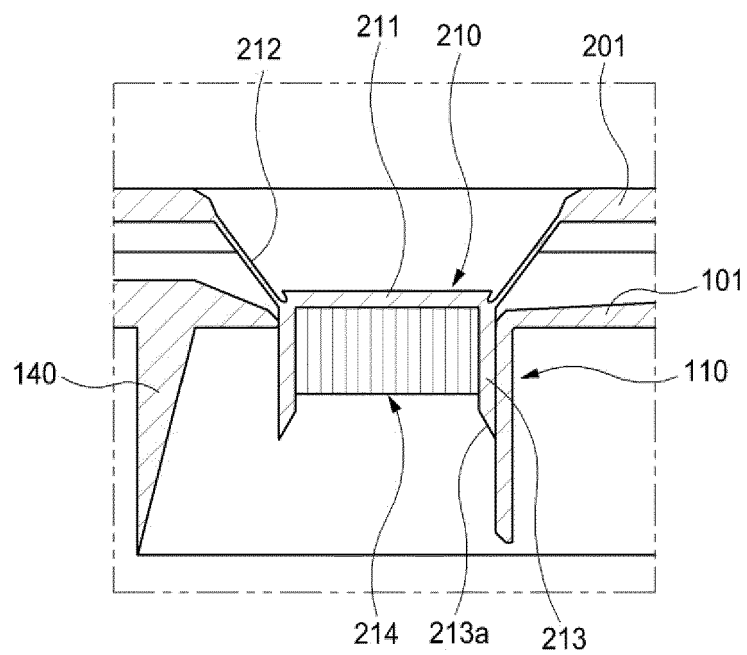
<Fig. 6a>



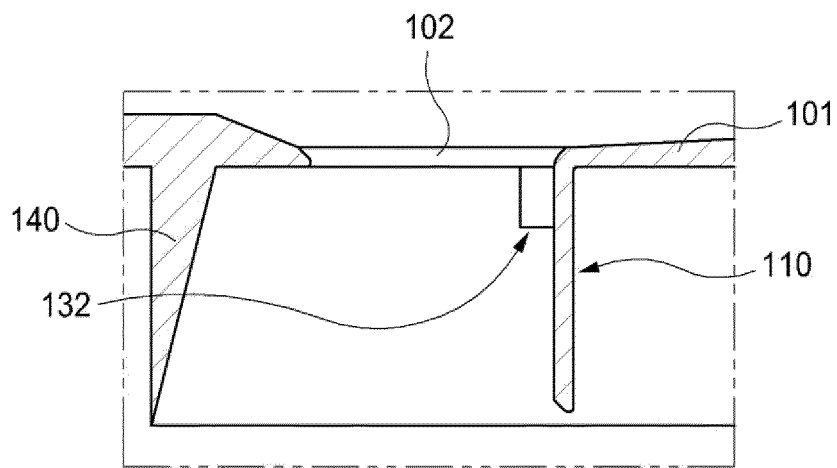
<Fig. 6b>



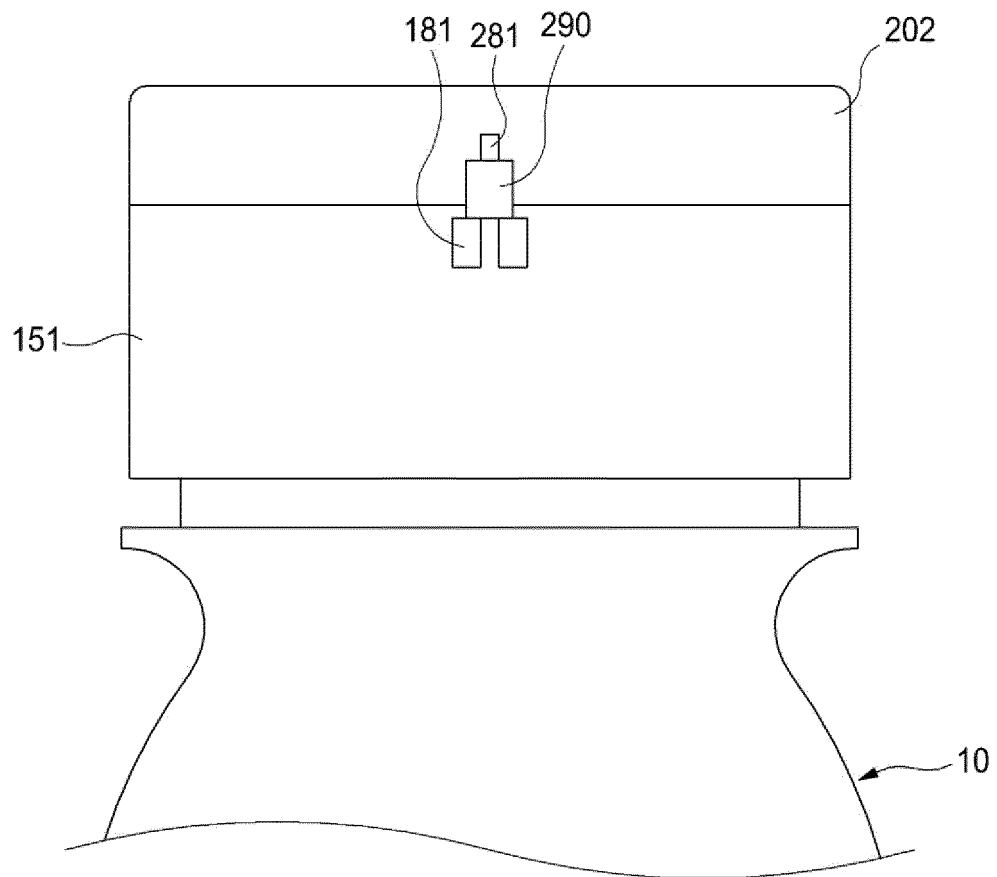
<Fig. 7a>



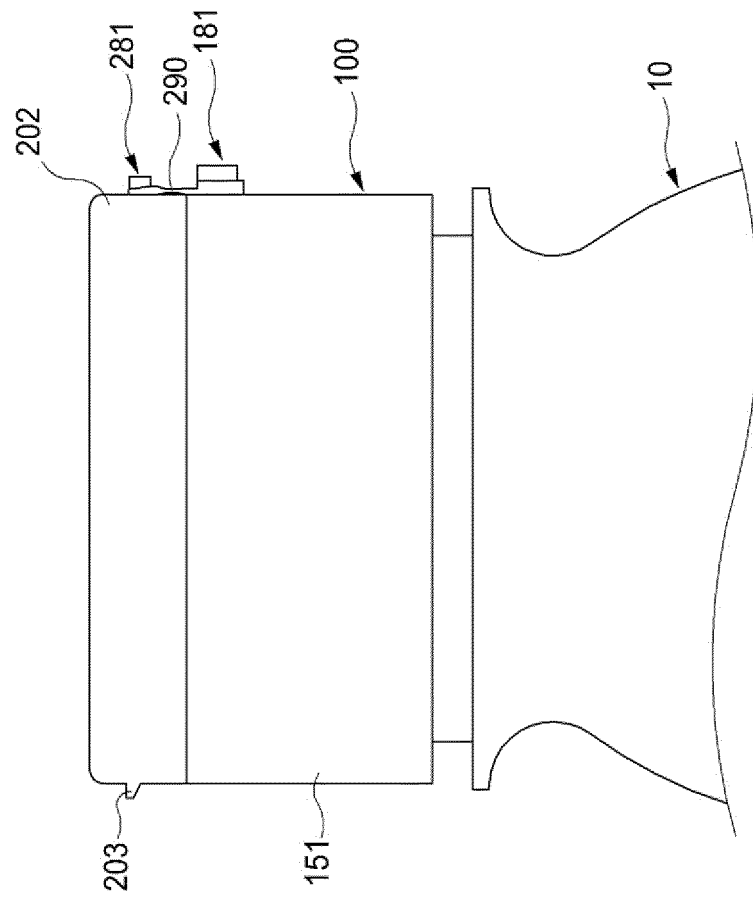
<Fig. 7b>



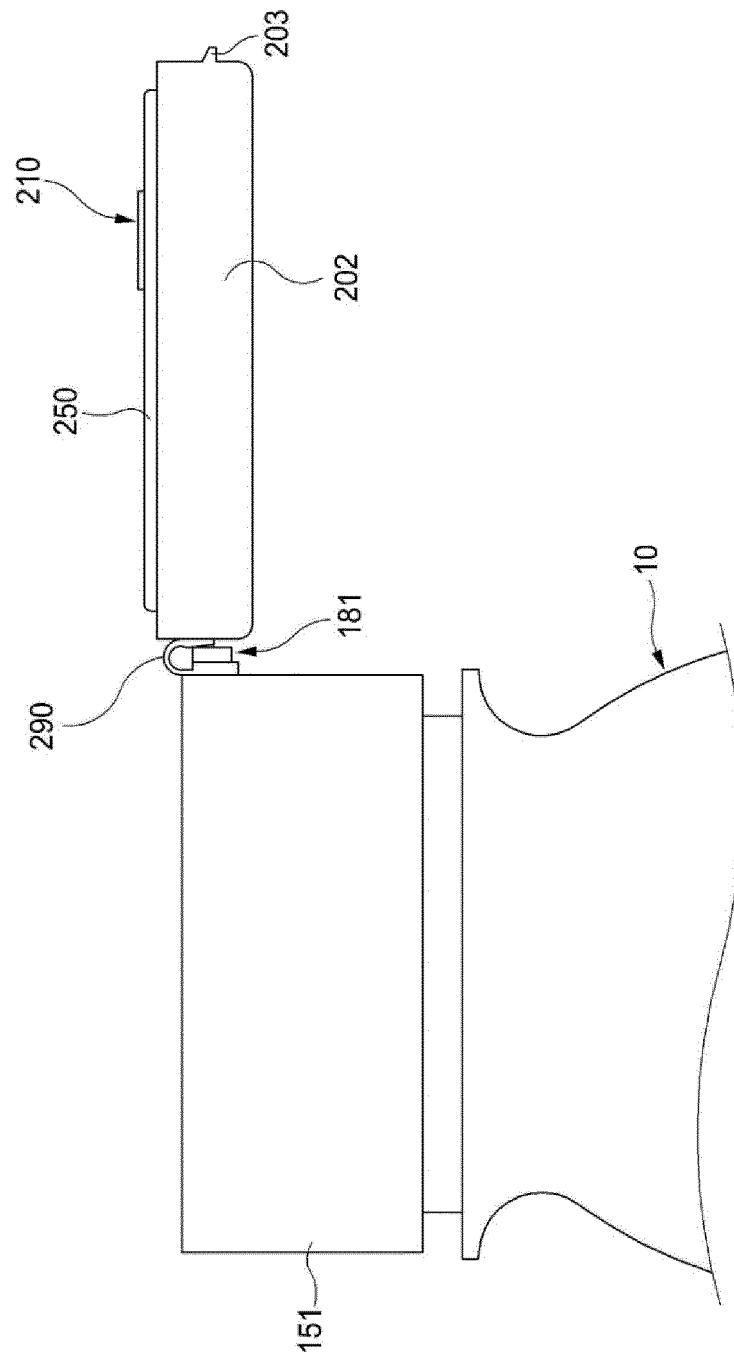
<Fig. 8>



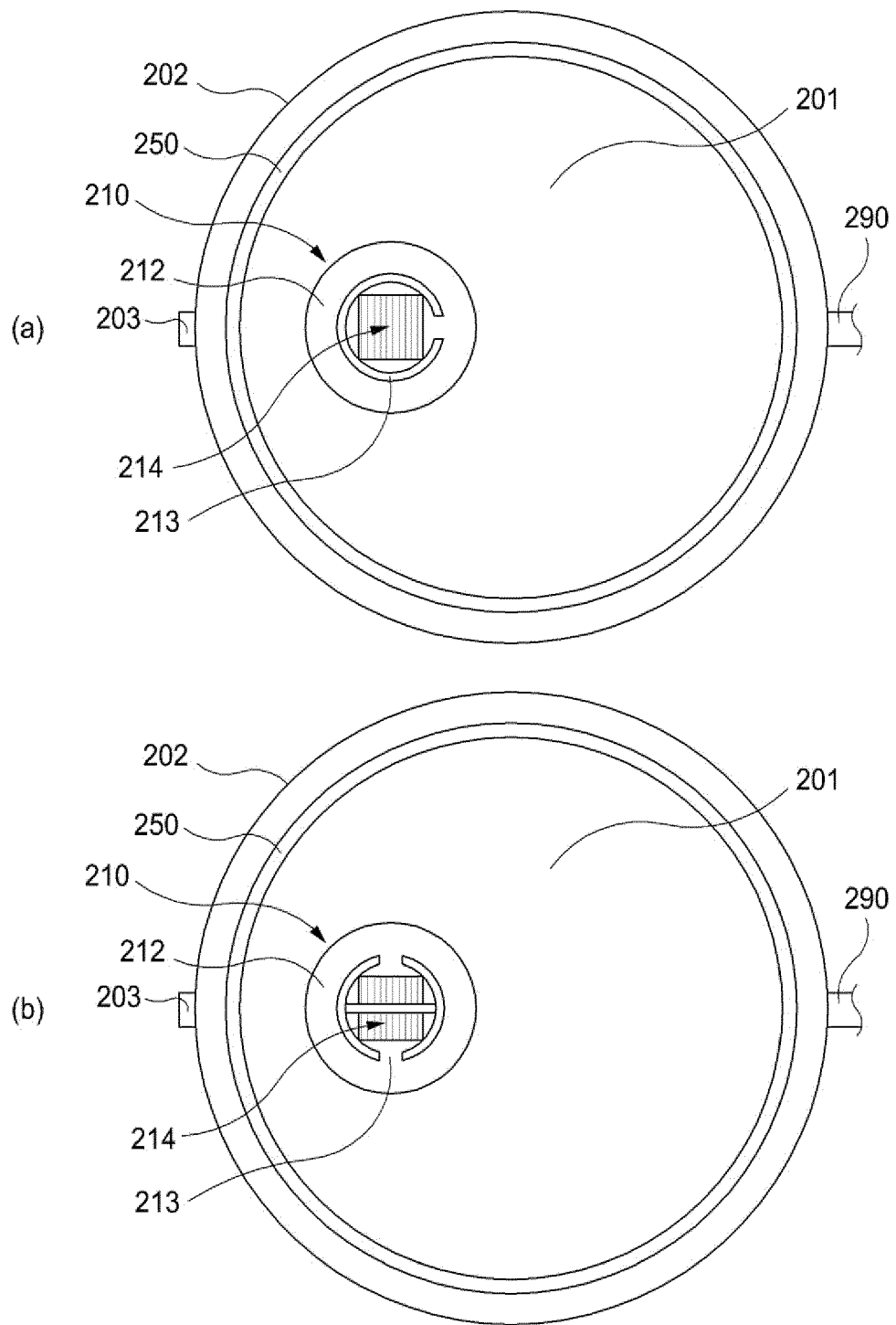
<Fig. 9>



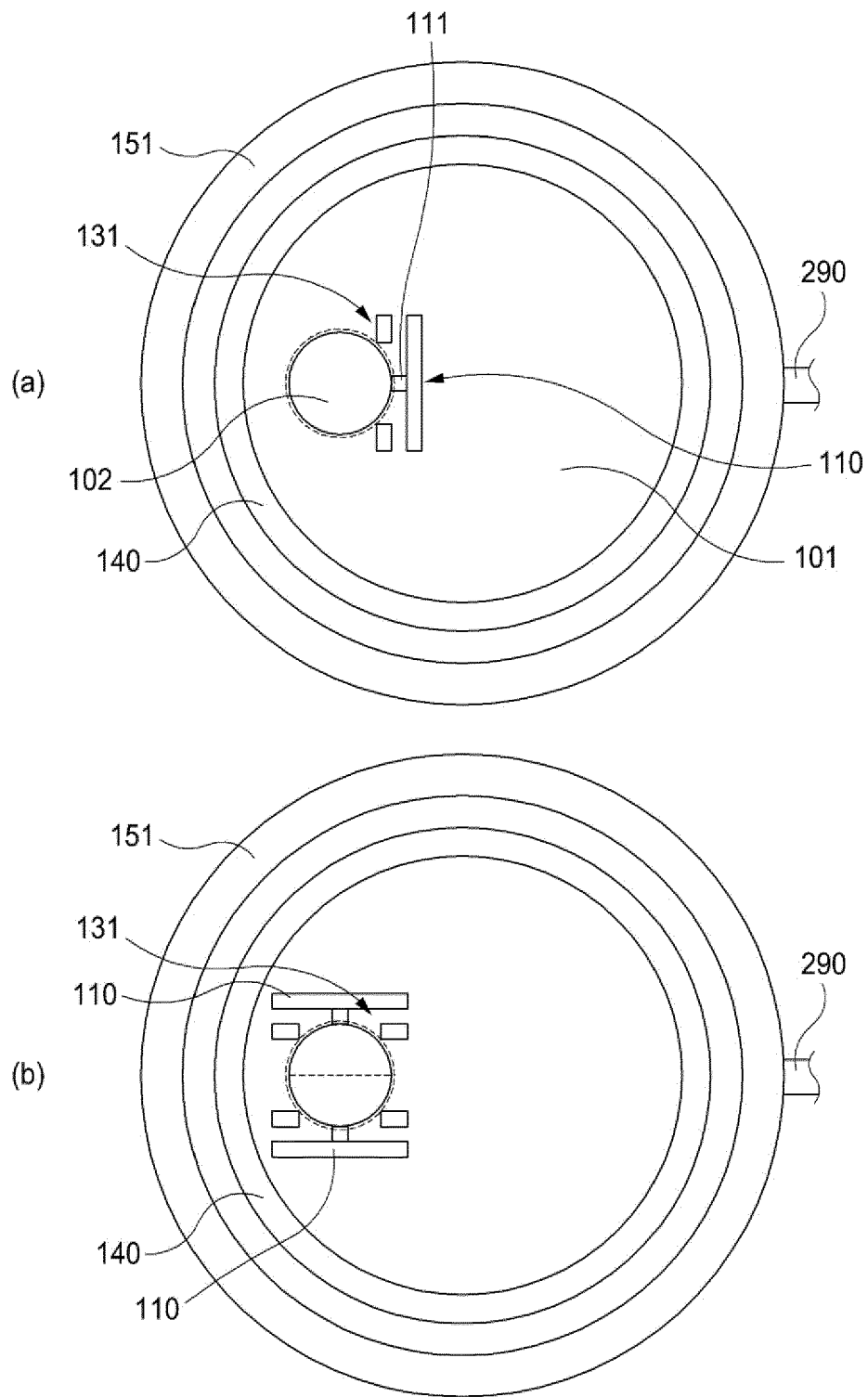
<Fig. 10a>



<Fig. 10b>



<Fig. 11>



<Fig. 12>

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2021/008829

A. CLASSIFICATION OF SUBJECT MATTER

B65D 43/16(2006.01)i; B65D 47/10(2006.01)i; B65D 41/62(2006.01)i; B65D 41/04(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 43/16(2006.01); B65D 41/00(2006.01); B65D 41/62(2006.01); B65D 47/06(2006.01); B65D 47/08(2006.01);
B65D 47/36(2006.01); B65D 51/04(2006.01); B65D 51/22(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: 용기(container), 마개본체(cap body), 상부덮개(top cover), 유출구판(outlet plate),
누름부(presser), 배출구(outlet)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 20-0445206 Y1 (PARK, In Kyung) 07 July 2009 (2009-07-07) See paragraphs [0031] and [0056]; claim 1; and figures 2-3 and 5.	1,5-10
Y		2-4
Y	JP 2011-079566 A (NIHON TETRA PAK K.K. et al.) 21 April 2011 (2011-04-21) See paragraph [0013]; and figures 4-7.	2-4
Y	JP 02-004655 A (JAPAN CROWN CORK CO., LTD.) 09 January 1990 (1990-01-09) See figures 1 and 3.	2-4
A	US 2009-0194501 A1 (YAMANAKA et al.) 06 August 2009 (2009-08-06) See paragraphs [0039]-[0055]; and figures 1-4.	1-10
A	JP 2009-179347 A (YOSHINO KOGYOSHO CO., LTD.) 13 August 2009 (2009-08-13) See paragraphs [0013]-[0024]; and figures 1-6.	1-10

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

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“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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“&” document member of the same patent family

Date of the actual completion of the international search

25 October 2021

Date of mailing of the international search report

26 October 2021

Name and mailing address of the ISA/KR

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Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2021/008829

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
KR 20-0445206 Y1	07 July 2009	None	
JP 2011-079566 A	21 April 2011	JP 5650389 B2	07 January 2015
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US 2009-0194501 A1	06 August 2009	DE 102009000359 A1	01 October 2009
		DE 102009000359 B4	05 January 2011
		JP 2009-184682 A	20 August 2009
		JP 4276283 B1	10 June 2009
		US 7611024 B2	03 November 2009
JP 2009-179347 A	13 August 2009	JP 5059641 B2	24 October 2012

Form PCT/ISA/210 (patent family annex) (July 2019)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- KR 1020170126366 A [0006]
- KR 1020160024539 A [0006]
- JP 2013133123 A [0006]