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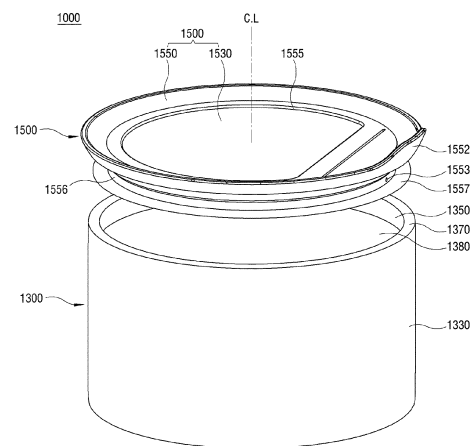
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(54) **AIRTIGHT CONTAINER**

(57) Disclosed is an airtight container comprising a container body with an opening opened upward, and a cover for opening and closing the opening, the container body comprising a bottom, a wall extended upward from an edge of the bottom, and a cover contact portion provided at a top portion of the wall to come into contact with the cover, the cover comprising a cover body with glass centrally positioned, and a cover seal of which an inward side is coupled around the cover body and an outward side is coupled to the wall and the cover contact portion to maintain sealing between the container body and the cover, and the cover seal comprising a sealing body coupled to surround the cover body, a container contact portion provided beneath the sealing body and shaped corresponding to the cover contact portion to come into contact with the cover contact portion, a sealing skirt extended downwards from an inward plate surface of the container contact portion, and a horizontal rib bent outwards from an end portion of the sealing skirt and elastically transformable for sealing between the container body and the cover by coming into contact with the wall while the opening is closed.

Thus, the airtight container is prevented from a pup-up phenomenon that the cover is separated from the container body by internal pressure, has a simple structure, is easy to use, and includes fewer parts.

[Fig. 1]



Description

BACKGROUND OF THE INVENTION

5 Field of the Invention

[0001] The disclosure relates to an airtight container, and more particularly to an airtight container having an improved structure to prevent a pop-up phenomenon that a cover pops up as internal pressure increases due to generation of gas, fermentation, etc. inside the container in a state that the container and the cover are coupled.

10 Description of the Related Art

[0002] In general, food is put in an airtight container so that the food can be maintained for a long time and stored hygienically, and an appropriate amount of food is taken out of the air container as necessary.

[0003] Such an airtight container has a structure for preventing air from flowing into or out of the airtight container. To this end, an elastic packing is typically provided in a coupling portion between a container body and a cover.

[0004] The airtight container is made of synthetic resin, glass, ceramic, or etc. according to the kinds, storage purpose/use, etc. of food to be stored therein. The container made of glass or ceramic may be manually manufactured by a user in person as well as mechanical methods.

[0005] The airtight container with the foregoing structure has been disclosed in various embodiment. As an airtight container cover for maintaining the airtightness of the airtight container, there has been disclosed Patent Document 1 titled "airtight container (Korean Patent No. 10-1726702/ laid open on May 8, 2017)" applied and registered by the present applicant.

[0006] The "airtight container" of Patent Document 1 discloses an airtight container cover 100 coupled to an upper portion of a rectangular parallelepiped container body 200 and sealing the inside of the container body 200 according to operations. The airtight container includes an upper plate 110 formed with a coupling hole 111 at the center thereof and a stepped portion 112 formed on an inner surface of the coupling hole 111; a rotary grip 120 inserted in the coupling hole 111, including a wing portion 121 formed in an upper outer surface and seated on the stepped portion 112, and formed with a screw thread 122 on a lower outer surface; a lower plate 130 coupled to the upper plate 110, centrally formed with a tap coupling groove 131 bolted to the rotary grip 120, and formed with an insertion groove 132 on an outer surface thereof; and an elastic packing 140 inserted in the insertion groove 132 and having an outer circumferential surface tapering outwards. When the rotary grip 120 is rotated in the state that the lower plate 130 is seated on a lower cover supporting member 115 of the container body 200, the upper plate 110 moves down so that the outer surface of the upper plate 110 can press the inner surface of the packing 140, thereby making the outer surface of the packing 140 come into contact with the inner surface of the container body 200. The packing 140 includes a close-contact surface 141 on the outer circumference thereof to be formed at the same angle as the inner surface of the container body 200 so as to be in close contact with the inner surface of the container body 200 when the packing 140 is opened outwards as the upper plate 110 moves down, and the upper plate 110 includes an inclined portion 113 on the outer circumference thereof to be formed at the same angle as the inner surface of the packing 140. With such features, the related art has advantages that the inside of the container body is easily closed by a simple operation because the upper cover moves down and pushes the packing provided in the lower cover circumference in an outward direction according to whether the rotary grip is rotated or not, and production and processing efficiencies are increased and production costs and selling prices are significantly decreased because a production process is reduced due to the minimum structure.

[0007] Such an airtight container maintains the airtightness between the container body and the cover so that food or the like accommodated in an airtight space can avoid contact with air if possible and be stored for a long time. However, there may occur a pop-up phenomenon that the cover pops up when the internal pressure of the airtight container is increased as the airtight container and contents put therein are heated in a microwave oven or the like heating container, or kimchi or the like is fermented, and so on,

[0008] Accordingly, it is necessary to prevent such a pop-up phenomenon, simplify the structure without a screw structure, improve economic efficiency with fewer parts, and increase aesthetic beauty.

Documents of Related Art

[0009]

Korean Patent No. 10-1726702 (laid open on May 8, 2017)

Korean Utility-Model Publication No. 20-2015-0003772 (published on October 15, 2015)

SUMMARY OF THE INVENTION

[0010] An aspect of the disclosure is to provide an airtight container which prevents a pop-up phenomenon that a cover is separated from a container body by internal pressure.

[0011] Further, another aspect of the disclosure is to provide an airtight container which has a simple structure, is easy to use, and includes fewer parts.

[0012] In addition, still another aspect of the disclosure is to provide an airtight container in which a cover is easily guided to be in position with respect to a container body (the central lines of the cover and the container body are easily guided to be aligned) while the cover is coupled to the container body.

[0013] Further, still another aspect of the disclosure is to provide an airtight container in which pressure generated by sealing between a container body and a cover is easily removed while the cover is separated from the container body.

[0014] In addition, still another aspect of the disclosure is to provide an airtight container which is economically and aesthetically improved because fewer parts are used to maintain airtightness.

[0015] According to an embodiment of the disclosure, an airtight container includes a container body with an opening opened upward, and a cover for opening and closing the opening, the container body including a bottom, a wall extended upward from an edge of the bottom, and a cover contact portion provided at a top portion of the wall to come into contact with the cover, the cover including a cover body with glass centrally positioned, and a cover seal of which an inward side is coupled around the cover body and an outward side is coupled to the wall and the cover contact portion to maintain sealing between the container body and the cover, and the cover seal including a sealing body coupled to surround the cover body, a container contact portion provided beneath the sealing body and shaped corresponding to the cover contact portion to come into contact with the cover contact portion, a sealing skirt extended downwards from an inward plate surface of the container contact portion, and a horizontal rib bent outwards from an end portion of the sealing skirt and elastically transformable for sealing between the container body and the cover by coming into contact with the wall while the opening is closed.

[0016] Further, the airtight container may further include a rib stepped portion that is formed at an outward side of the horizontal rib, is thicker than an inward side of the horizontal rib, and generates frictional force based on contact with the wall.

[0017] Further, the wall may be internally formed with an inclined portion, the inclined portion gradually inclining towards an inward central line of the container body from the set height to a top portion of the wall.

[0018] Further, the rib stepped portion may have a larger inner diameter than the wall.

[0019] Further, the inclined portion may have an inward inclination of 6 ± 1.5 degrees with respect to an inner side of the wall.

[0020] Further, an inner side of the cover contact portion may be spaced apart from an inner side of the sealing skirt.

[0021] Further, the airtight container may further include a through hole formed penetrating the sealing skirt.

[0022] According to an embodiment of the disclosure, an airtight container includes a container body with an opening opened upward, and a cover for opening and closing the opening, the container body including: a bottom; and a wall extended upward from an edge of the bottom, wherein the wall is internally formed with an inclined portion, the inclined portion gradually inclining towards an inward central line of the container body from a set height to a top portion of the wall.

[0023] Further, the cover may include a cover body with glass centrally positioned, and a cover seal of which an inward side is coupled around the cover body and an outward side is coupled to the wall and the cover contact portion to maintain sealing between the container body and the cover; the cover seal including a sealing body coupled to surround the cover body, a container contact portion provided beneath the sealing body and shaped corresponding to the cover contact portion to come into contact with the cover contact portion, a sealing skirt extended downwards from an inward plate surface of the container contact portion, and a horizontal rib bent outwards from an end portion of the sealing skirt and elastically transformable for sealing between the container body and the cover by coming into contact with the wall while the opening is closed; and an inner side of the cover contact portion is spaced apart from an inner side of the sealing skirt, and the horizontal rib is in contact with the inclined portion to keep the opening closed while the opening is closed with the cover.

[0024] Thus, there is provided an airtight container which prevents a pop-up phenomenon that a cover is separated from a container body by internal pressure.

[0025] Further, there is provided an airtight container which has a simple structure, is easy to use, and includes fewer parts.

[0026] In addition, there is provided an airtight container in which a cover is easily guided to be in position with respect to a container body (the central lines of the cover and the container body are easily guided to be aligned) while the cover is coupled to the container body.

[0027] Further, there is provided an airtight container in which pressure generated by sealing between a container body and a cover is easily removed while the cover is separated from the container body.

[0028] In addition, there is provided an airtight container which is economically and aesthetically improved because

fewer parts are used to maintain airtightness.

BRIEF DESCRIPTION OF THE DRAWINGS

[0029]

FIG. 1 is an exploded perspective view of an airtight container according to an embodiment of the disclosure, FIG. 2 is a cross-sectional view of the airtight container shown in FIG. 1, FIGS. 3A to 3C are cross-sectional views and/or partially enlarged views for describing operations of an airtight container according to an embodiment of the disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0030] Below, an airtight container 1000 according to an embodiment of the disclosure will be described with reference to FIGS. 1 to 3C.

[0031] FIG. 1 is an exploded perspective view of an airtight container according to an embodiment of the disclosure, FIG. 2 is a cross-sectional view of the airtight container shown in FIG. 1, and FIGS. 3A to 3C are cross-sectional views and/or partially enlarged views for describing operations of an airtight container according to an embodiment of the disclosure.

[0032] As shown in FIGS. 1 to 3C, the airtight container 1000 according to an embodiment of the disclosure includes a container body 1300 with an opening 1380 opened upward, and a cover 1500 for opening and closing the opening 1380. The container body 1300 includes a bottom 1310, a wall 1330 extended upward from the edge of the bottom 1310, and a cover contact portion 1370 provided at a top portion of the wall 1330 to come into contact with the cover 1500. The cover 1500 includes a cover body 1530 with glass centrally positioned, and a cover seal 1550 of which an inward side is coupled around the cover body 1530 and an outward side can be coupled to the wall 1330 and the cover contact portion 1370 to maintain sealing between the container body 1300 and the cover 1500. The cover seal 1550 may include a sealing body 1551 coupled to surround the cover body 1530, a container contact portion 1554 provided beneath the sealing body 1551 and shaped corresponding to the cover contact portion 1370 to come into contact with the cover contact portion 1370, a sealing skirt 1556 extended downwards from an inward plate surface of the container contact portion 1554, and a horizontal rib 1557 bent outwards from an end portion of the sealing skirt 1556 and elastically transformable for sealing between the container body 1300 and the cover 1500 by coming into contact with the wall 1330 while the opening 1380 is closed.

[0033] Hereinafter, a position where the cover 1500 is coupled to the opening 1380 of the container body 1300 and airtightness between the container body 1300 and the cover 1500 will be referred to as a coupled position (see FIGS. 2 and 3B), and a position where the cover 1500 is separated from the opening 1380 of the container body 1300 will be referred to as a separated position (see FIGS. 1 and 3A).

[0034] To form a space for accommodating food or the like contents therein, the container body 1300 includes the bottom 1310, the wall 1330 extended upward from an end portion of the bottom 1310, and the opening 1380 opened along the inner circumference of the wall 1330.

[0035] The container body 1300 may be made of various materials. According to an embodiment of the disclosure, the container body 1300 may be made of ceramic, and the cover body 1530 (to be described later) may be made of glass enabling its contents to be seen.

[0036] In the container body 1300, the outer surface of the bottom 1310 and the outer surface of the wall 1330 are provided to form the external aesthetic characteristics of the bottom and lateral sides of the airtight container 1000. In particular, when the container body 1300 is made of ceramic, the airtight container 1000 may have unique aesthetic beauty of ceramics.

[0037] According to an embodiment of the disclosure, the container body 1300 is shaped like a cylinder by way of example. Alternatively, the container body may be shaped like a rectangular parallelepiped or the like without departing from the scope of the disclosure.

[0038] The wall 1330 is formed with an inclined portion 1350 to gradually decrease the inner diameter of the container body 1300 toward the top portion of the wall 1330 and make force of friction with a rib stepped portion 1557a of the horizontal rib 1557 elastically transformed (to be described later) be greater than force of the cover 1500 moving upwards and separating from the container body 1300, thereby preventing the cover 1500 from popping up from the container body 1300.

[0039] Here, the inclination (see 'A' in FIG. 3A) of the inclined portion 1350 may be varied depending on the smoothness of the inclined portion 1350, the thickness of the rib stepped portion 1557a, the material of the cover seal 1550, etc. According to an embodiment, the inclined portion 1350 may have an inclination of 6 ± 1.5 degrees.

[0040] The top portion of the wall 1330 is used as the cover contact portion 1370 to come into contact with the cover 1500.

[0041] The cover 1500 (except a grip 1552) is shaped corresponding to the opening 1380 of the container body 1300, and may, as described above, include the cover body 1530 made of glass, and the cover seal 1550 coupled to the cover body 1530 while surrounding the cover body 1530 and elastically transformable to maintain the airtightness of the airtight container 1000 at the coupled position where the cover seal 1550 is detachably coupled to the container body 1300 to close the opening 1380.

[0042] The cover seal 1550 may include the sealing body 1551, the grip 1552, a through hole 1553, the container contact portion 1554, a body coupling groove 1555, the sealing skirt 1556, and the horizontal rib 1557 having the rib stepped portion 1557a. The cover seal 1550 may be made of various materials. According to an embodiment of the disclosure, the cover seal 1550 may be made of silicon.

[0043] The sealing body 1551 includes the body coupling groove 1555 recessed at an inner side thereof to couple with the cover body 1530, the grip 1552 formed at one side thereof and gripped by a user, in particular, when the cover 1500 is separated from the container body 1300, thereby exhibiting the aesthetic beauty of the upper portion of the airtight container 1000 together with the cover body 1530 and supporting the other elements.

[0044] The sealing skirt 1556 is vertically extended downwards from the inner side of the sealing body 1551 while forming an approximately annular shape, and functions to support the horizontal rib 1557 provided at a lower end.

[0045] The sealing skirt 1556 is coupled to the sealing body 1115 while having an outer circumferential surface not to be in contact with the wall 1330 or the inclined portion 1350 of the container body 1300 at the coupled position (see 'GAP' in FIGS. 2 and 3C).

[0046] With this structure, the technical idea of the disclosure is implemented such that the container body 1300 and the cover 1500 are maintained as coupled at the coupled position based on frictional force and elastic transformation between the inclined portion 1350 of the container body 1300 and the rib stepped portion 1557a of the horizontal rib 1557.

[0047] At least one through hole 1553 is formed penetrating the sealing skirt 1556 to maintain a balance between pressure generated inside the container body 1300 and external pressure at the coupled position.

[0048] By the through holes 1553, the internal pressure of the container body 1300 can be equal to the external pressure.

[0049] For example, when the internal pressure is generated inside the container body 1300 (e.g., when gas or the like is generated as the container body is heated, contents inside the container body are fermented, etc.), the gas may be discharged through the through holes 1553 so that the internal pressure can be equal to the atmospheric pressure.

[0050] Further, when the inside of the container body 1300 becomes a vacuum (e.g., when relatively hot contents cool, etc.), a user holds the grip 1552 of the cover 1500 and separates the container contact portion 1554 from the cover contact portion 1370 to release the vacuum through the through holes 1553 as the internal pressure of the container body 1300 becomes equal to the atmospheric pressure. As the vacuum is released, a user can more easily separate the cover 1500 from the container body 1300.

[0051] Beneath the sealing body 1551 and on the outer surface of the sealing skirt 1556, the container contact portion 1554 is formed and shaped corresponding to the cover contact portion 1370 of the container body 1300.

[0052] The horizontal rib 1557 is bent outwards from the end portion of the sealing skirt 1556 and elastically transformable to come into contact with the wall 1330 and seal and maintain the airtightness between the container body 1300 and the cover 1500 while the opening 1380 is closed with the cover 1500.

[0053] Further, the rib stepped portion 1557a may be formed at the outward side of the horizontal rib 1557. The rib stepped portion 1557a is thicker than the inward side of the horizontal rib 1557 and generates the frictional force while being in contact with the wall 1330 and/or the inclined portion 1350.

[0054] In other words, as shown in FIG. 3A, the cross-sectional thickness (see 't1' in FIG. 3A) of the horizontal rib 1557 coupled to the sealing skirt 1556 and shaped like a plate is thinner than the cross-sectional thickness (see 't2' in FIG. 3A) of the rib stepped portion 1557a shaped like a plate.

[0055] Further, the inner diameter (see 'Ida' in FIG. 3A) of the rib stepped portion 1557a may be greater than the inner diameter (see 'IDb' in FIG. 3A) of the wall 1330. With this structure, the airtightness between the container body 1300 and the cover 1500 is more appropriately maintained, and the coupled position where the container body 1300 and the cover 1500 are coupled is stably maintained.

[0056] In the airtight container 1000 according to an embodiment of the disclosure, the wall 1330 of the container body 1300 forms a circle, the thin plate of the horizontal rib 1557 has a cross-sectional thickness of 1.1 mm, and the thick plate of the rib stepped portion 1557a has a cross-sectional thickness of 1.6 mm. Further, the rib stepped portion 1557a has an inner diameter of 121.78mm and an outer diameter of 125.68 mm, the wall 1330 has an inner diameter of 123 mm, and the inclined portion 1350 has a height of about 9mm. In addition, a distance from a start point of the inclined portion 1350 to the top portion of the container body 1300 is 10 mm, and a distance from the cover contact portion 1370 to the rib stepped portion 1557a is 10.50mm.

[0057] The operations of the airtight container 1000 with this structure will be described below with reference to FIG. 3A to 3C.

[0058] FIG. 3A shows the separated position where the container body 1300 is separated from the cover 1500.

[0059] In this state, the cover 1500 is gradually moved toward the coupled position and moved to the opening 1380

like the dotted lines, thereby coupling with the container body 1300.

[0060] In the state shown in the dotted line of FIG. 3A, a user presses the upper side and the edge areas of the cover 1500 so as to maintain the coupled position between the container body 1300 and the cover 1500.

[0061] While moving from the separated position to the coupled position, the thick portion of the rib stepped portion 1557a provided at the outward side of the horizontal rib 1557 may move downwards along the inclined portion 1350 inside the wall 1330 and functions to guide the central lines (see 'CL' in FIGS. 1 to 3C) of the cover 1500 and the container body 1300 to be aligned with each other. In other words, the thick rib stepped portion 1557a of the horizontal rib 1557 is bent to guide the central line of the cover 1500 to be aligned with the central line of the container body 1300, so that the central line of the cover 1500 and the central line of the container body 1300 can be maintained as aligned at the coupled position.

[0062] Further, in the coupled position as shown in FIG. 3B, the container contact portion 1554 is in contact with the cover contact portion 1370 on the top portion of the wall 1330, and the rib stepped portion 1557a is in contact with the inclined portion 1350 inside the wall 1330 as shown in FIG. 3C. In this state, as shown in FIG. 3C, the frictional force and elastic restoring force (see 'Fpush' in FIG. 3C) based on the contact between the inclined portion 1350 and the rib stepped portion 1557a are greater than the internal pressure (see 'P' in FIG. 3C) generated in the container body 1300, thereby preventing the cover 1500 from popping up and separating from the container body 1300 by the internal pressure generated inside the container body 1300.

[0063] On the other hand, although the internal pressure generated inside the container body 1300 is gradually increased, the internal pressure of the container body 1300 is lowered as gas in the container body 1300 is discharged to the outside through the through hole 1553 between the cover contact portion 1370 and the container contact portion 1554.

[0064] Thus, according to the disclosure, there is provided an airtight container which prevents a pop-up phenomenon that a cover is separated from a container body by internal pressure.

[0065] Further, there is provided an airtight container which has a simple structure, is easy to use, and includes fewer parts.

[0066] In addition, there is provided an airtight container in which a cover is easily guided to be in position with respect to a container body (the central lines of the cover and the container body are easily guided to be aligned) while the cover is coupled to the container body.

[0067] Further, there is provided an airtight container in which pressure generated by sealing between a container body and a cover is easily removed while the cover is separated from the container body.

[0068] In addition, there is provided an airtight container which is economically and aesthetically improved because fewer parts are used to maintain airtightness.

[0069] Although several embodiments of the disclosure have been illustrated and described, it will be obvious to a person having ordinary knowledge in the art that various changes can be made in the embodiments without departing from the principles and spirit of the disclosure. Accordingly, the scope of the disclosure is defined by the appended claims and their equivalents.

<DESCRIPTION OF REFERENCE NUMERALS>

1000:	airtight container	1300:	container body
1310:	bottom	1330:	wall
1350:	inclined portion	1370:	cover contact portion
1380:	opening	1500:	cover
1530:	cover body	1550:	cover seal
1551:	sealing body	1552:	grip
1553:	through hole		
1554:	container contact portion	1555:	body coupling groove
1556:	sealing skirt	1557:	horizontal rib
1557a:	rib stepped portion		

Claims

1. An airtight container comprising a container body with an opening opened upward, and a cover for opening and closing the opening,

the container body comprising a bottom, a wall extended upward from an edge of the bottom, and a cover

contact portion provided at a top portion of the wall to come into contact with the cover,
the cover comprising a cover body with glass centrally positioned, and a cover seal of which an inward side is
coupled around the cover body and an outward side is coupled to the wall and the cover contact portion to
maintain sealing between the container body and the cover, and

the cover seal comprising a sealing body coupled to surround the cover body, a container contact portion
provided beneath the sealing body and shaped corresponding to the cover contact portion to come into contact
with the cover contact portion, a sealing skirt extended downwards from an inward plate surface of the container
contact portion, and a horizontal rib bent outwards from an end portion of the sealing skirt and elastically
transformable for sealing between the container body and the cover by coming into contact with the wall while
the opening is closed.

2. The airtight container of claim 1, further comprising a rib stepped portion that is formed at an outward side of the
horizontal rib, is thicker than an inward side of the horizontal rib, and generates frictional force based on contact
with the wall.

3. The airtight container of claim 1 or 2, wherein the wall is internally formed with an inclined portion, the inclined portion
gradually inclining towards an inward central line of the container body from the set height to a top portion of the wall.

4. The airtight container of claim 3, wherein the rib stepped portion has a larger inner diameter than the wall.

5. The airtight container of claim 3, wherein the inclined portion has an inward inclination of 6 ± 1.5 degrees with
respect to an inner side of the wall.

6. The airtight container of claim 1, wherein an inner side of the cover contact portion is spaced apart from an inner
side of the sealing skirt.

7. The airtight container of claim 1, further comprising a through hole formed penetrating the sealing skirt.

8. An airtight container comprising a container body with an opening opened upward, and a cover for opening and
closing the opening,
the container body comprising:

a bottom; and

a wall extended upward from an edge of the bottom,

wherein the wall is internally formed with an inclined portion, the inclined portion gradually inclining towards an
inward central line of the container body from a set height to a top portion of the wall.

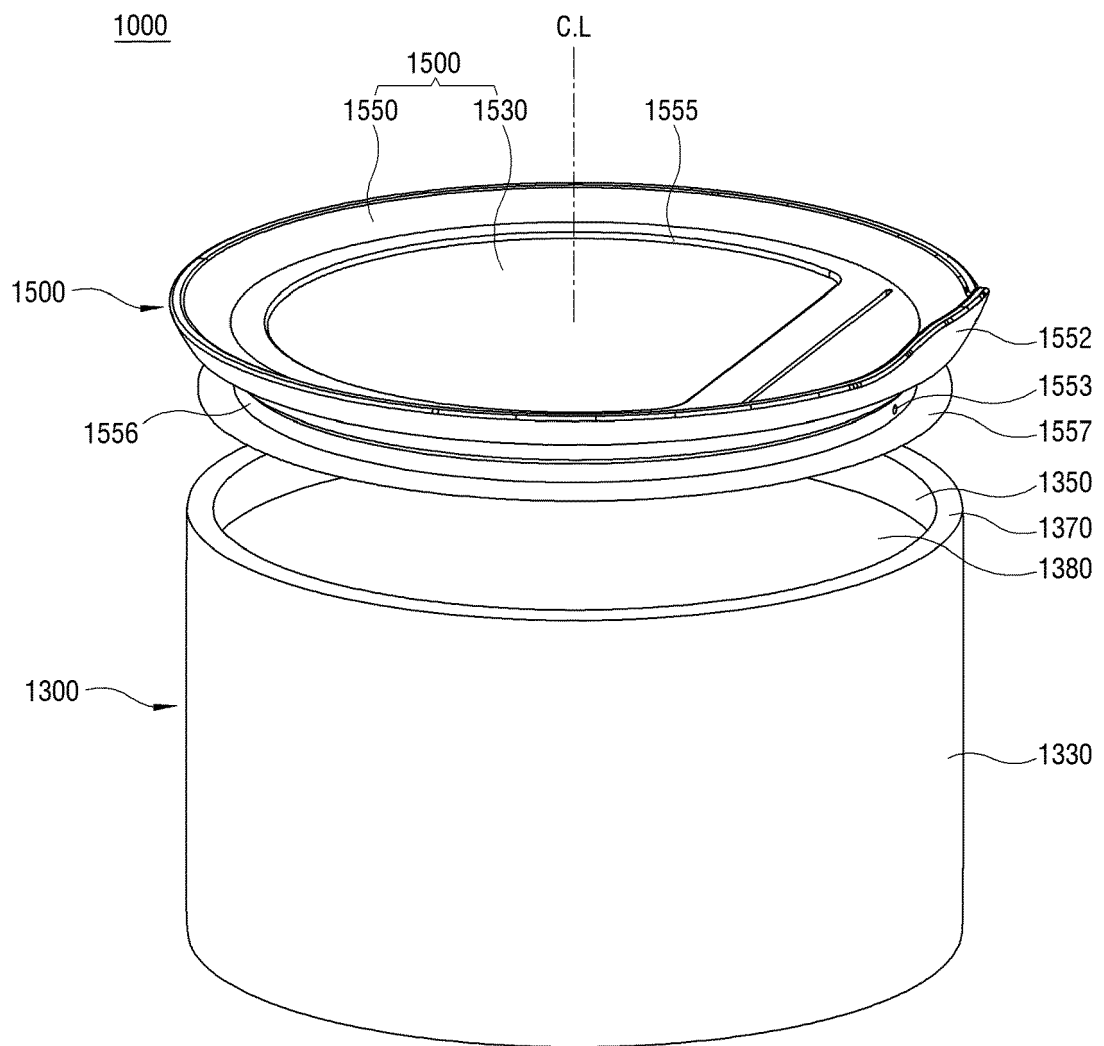
9. The airtight container of claim 8, wherein

the cover comprises a cover body with glass centrally positioned, and a cover seal of which an inward side is
coupled around the cover body and an outward side is coupled to the wall and the cover contact portion to
maintain sealing between the container body and the cover,

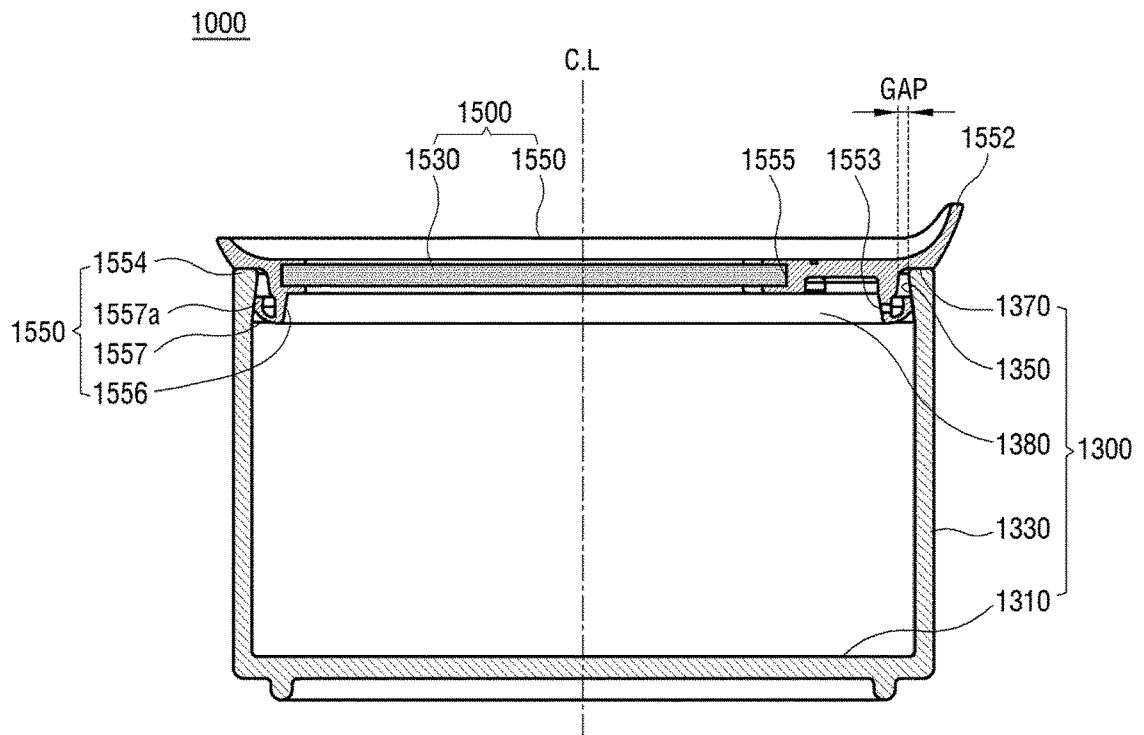
the cover seal comprises a sealing body coupled to surround the cover body, a container contact portion provided
beneath the sealing body and shaped corresponding to the cover contact portion to come into contact with the
cover contact portion, a sealing skirt extended downwards from an inward plate surface of the container contact
portion, and a horizontal rib bent outwards from an end portion of the sealing skirt and elastically transformable
for sealing between the container body and the cover by coming into contact with the wall while the opening is
closed, and

an inner side of the cover contact portion is spaced apart from an inner side of the sealing skirt, and the horizontal
rib is in contact with the inclined portion to keep the opening closed while the opening is closed with the cover.

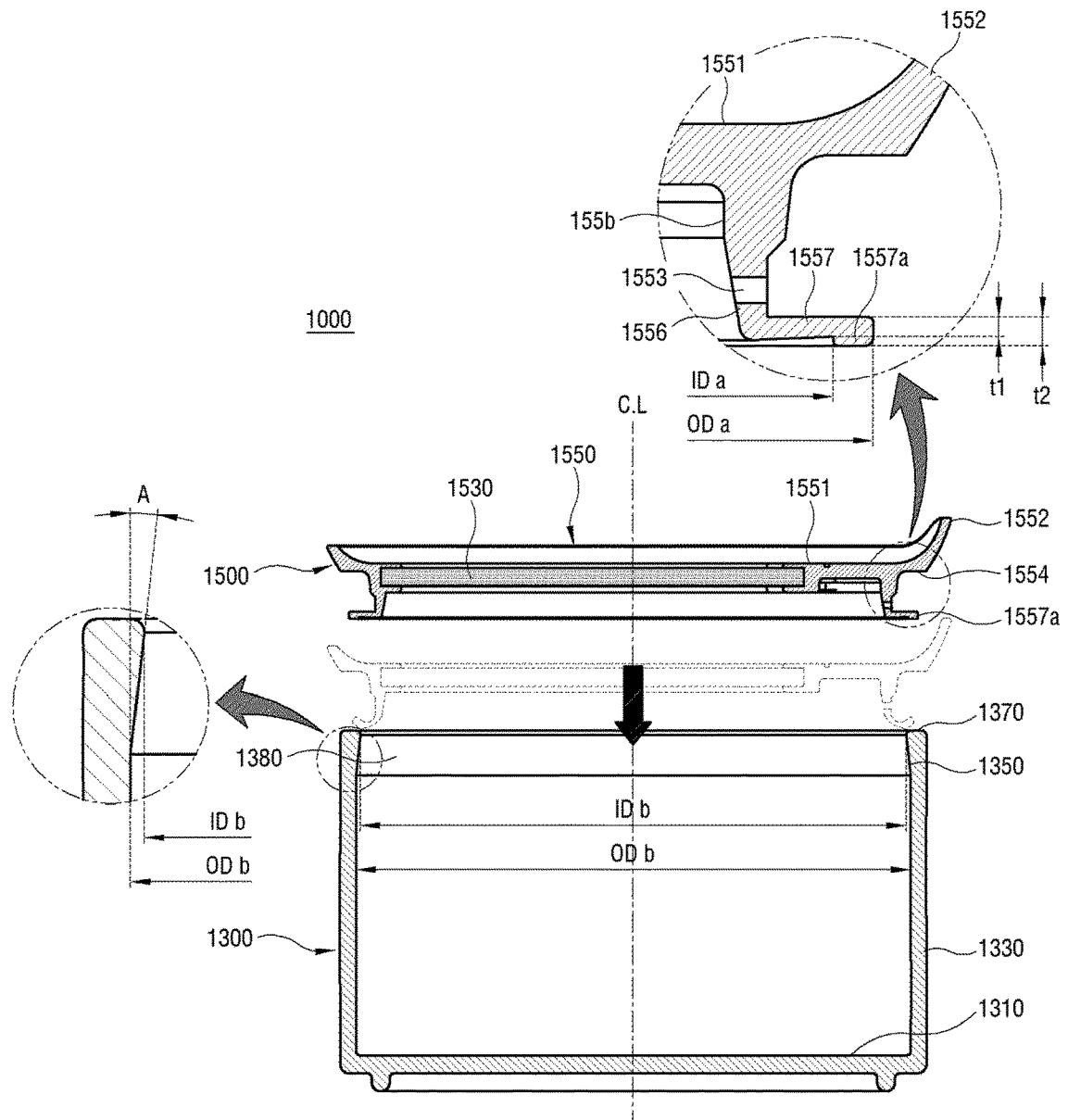
[Fig. 1]



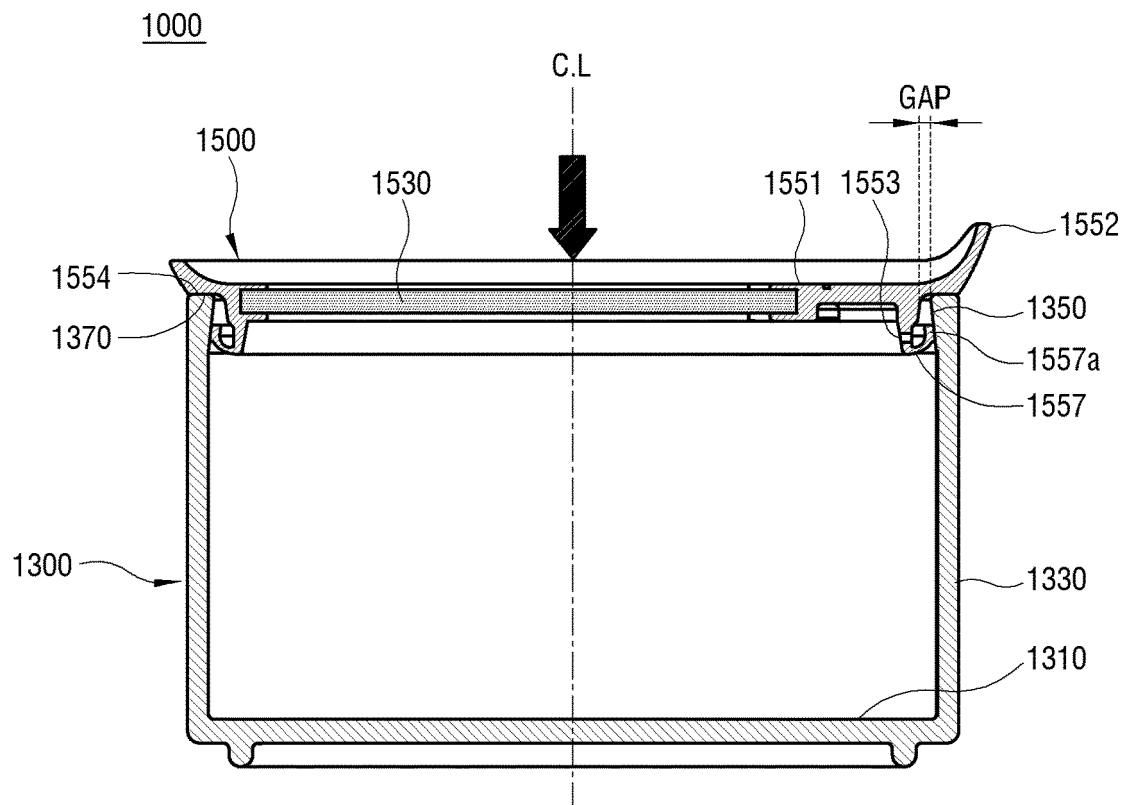
[Fig. 2]



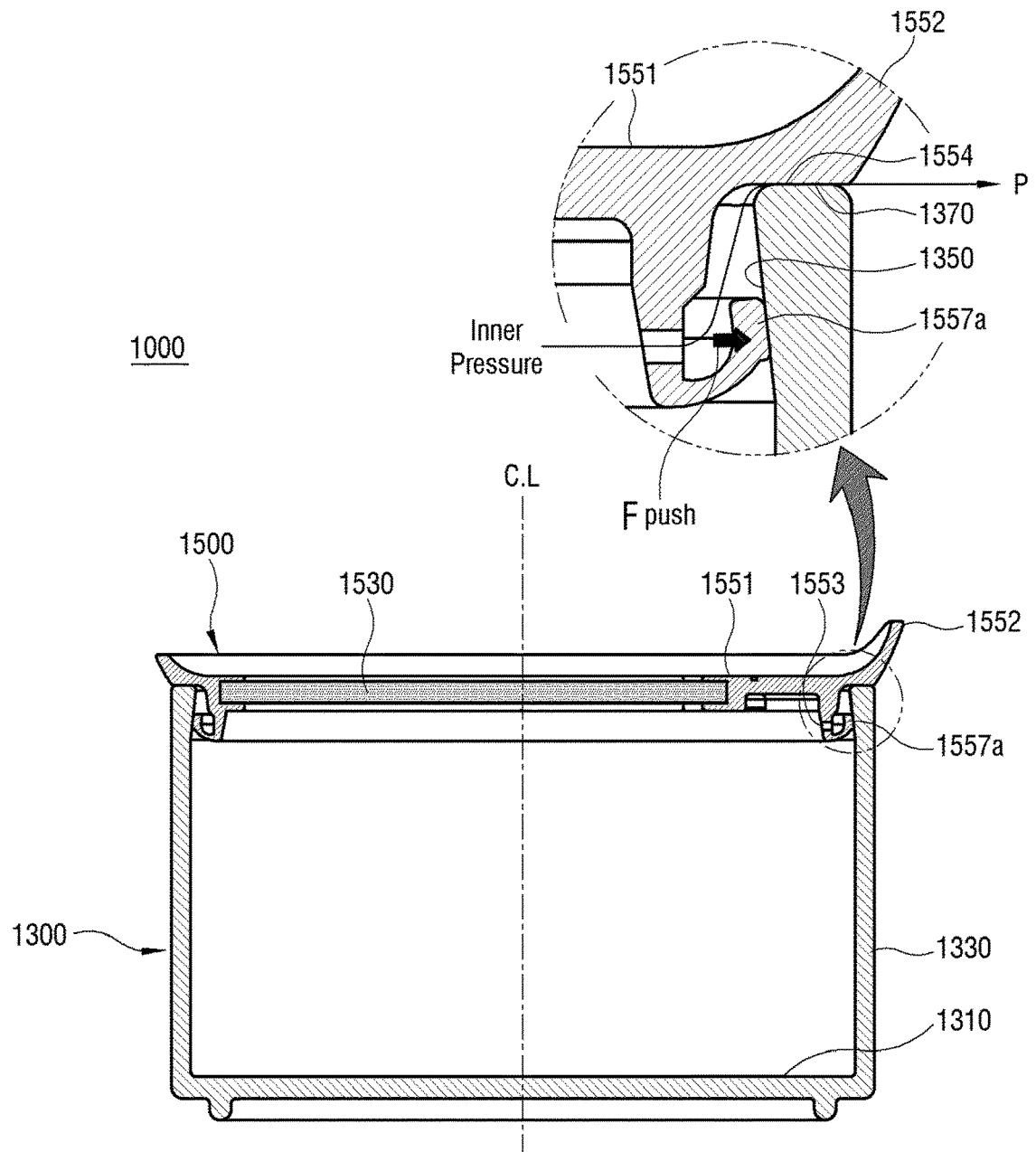
[Fig. 3A]



[Fig. 3B]



[Fig. 3C]





EUROPEAN SEARCH REPORT

Application Number

EP 22 17 1050

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2019/315538 A1 (CHENG STANLEY KIN SUI [US]) 17 October 2019 (2019-10-17) * abstract; figures 1A, 1B * * paragraphs [0047], [0080] * -----	1, 2, 6, 7	INV. B65D1/10 B65D1/40 B65D43/02 B65D53/02
X	KR 101 616 877 B1 (JEONG JIN OK [KR]) 29 April 2016 (2016-04-29) * abstract; figures 3-5 * -----	1, 6	
A	EP 2 698 323 A2 (HIPPO & CO [CH]) 19 February 2014 (2014-02-19) * abstract; figure 14 * -----	1-7	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 11 October 2022	Examiner Tempels, Marco
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	



Application Number

EP 22 17 1050

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-7

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 22 17 1050

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-7

Directed to an airtight container comprising a cover and cover seal.

2. claims: 8, 9

Directed to an airtight container comprising a wall internally formed with an inclined portion.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 22 17 1050

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 2019315538	A1	17-10-2019	CN	110384407 A		29-10-2019
			CN	210784011 U		19-06-2020
			TW	201945253 A		01-12-2019
			US	2019315538 A1		17-10-2019
			WO	2019204287 A1		24-10-2019

KR 101616877	B1	29-04-2016	NONE			

EP 2698323	A2	19-02-2014	DE 102012019220	A1		20-02-2014
			EP	2698323 A2		19-02-2014
			ES	2616251 T3		12-06-2017
			HR	P20170293 T1		21-04-2017
			HU	E033197 T2		28-11-2017
			PL	2698323 T3		30-06-2017
