(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 570 699 A1**

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

(43) Date of publication:
18.06.2025 Bulletin 2025/25

(21) Application number: **23852613.1**

(22) Date of filing: **09.08.2023**

(51) International Patent Classification (IPC):
B65D 77/20 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B65D 77/20

(86) International application number:
PCT/JP2023/029182

(87) International publication number:
WO 2024/034651 (15.02.2024 Gazette 2024/07)

(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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **09.08.2022 US 202263396263 P**
24.04.2023 US 202363461439 P
27.04.2023 PCT/JP2023/016707

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(54) LID, LIDDED CONTAINER, AND COMBINATION OF LID AND CONTAINER

(57) [Problem] To provide a lid, a container with a lid, and a combination of a lid and a container that allow the addition of solids such as ice and beverages to the container, and can suppress accidental ingestion of solids when drinking the beverage after adding the beverage and solids.

[Solution] The lid is formed to be bondable to a container having an opening formed at the upper end and an edge forming the outer periphery of the opening, The lid is formed to be bondable to a container having an opening formed at the upper end and an edge forming the outer periphery of the opening, A base part having a bonding area corresponding portion corresponding to the area bonded to the container along the edge of the container and a small opening smaller than the opening of the container, A base part having a bonding area corresponding portion corresponding to the area bonded to the container along the edge of the container and a small opening smaller than the opening of the container, A small lid part for opening and closing the small opening, A small lid part for opening and closing the small opening, And a hinge part connecting the base part and the small lid part, And a hinge part connecting the base part and the small lid part, The small lid part is configured to be rotatable relative to the base part about the hinge part, The small lid part is configured to be rotatable relative to the base part about the hinge part, Having a margin portion defined as a part satisfying the following conditions 1 and 2. Having a margin portion defined as a part satisfying the following conditions 1 and 2.

Condition 1: In a plan view of the base part, the margin portion is a part formed inside from the inner edge of the bonding area corresponding portion of the base part and outside from the opening edge of the small opening.

Condition 2: In a plan view of the base part, when a line segment connecting the margin portion and the hinge part is assumed, the line segment passes through the opening edge of the small opening.

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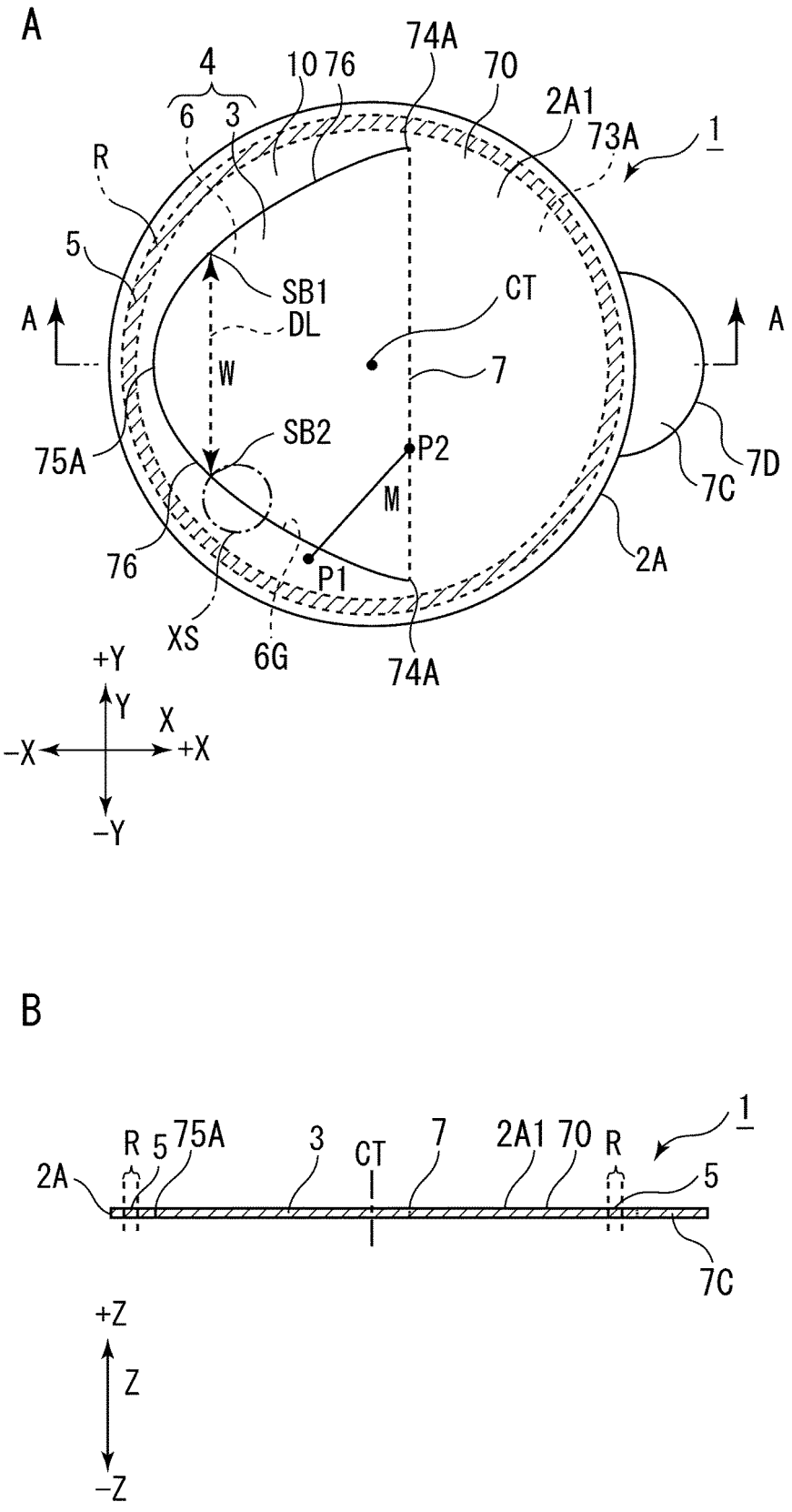
[Fig 1]


A
4
6
3
10
76
74A
70
2A1
73A
1
R
5
SB1
DL
W
CT
7
A
A
75A
SB2
P2
M
7C
7D
2A
76
P1
XS
6G
74A
+Y
Y
X
−X
+X
−Y
B
R
5
75A
3
CT
7
2A1
70
R
1
2A
5
7C
+Z
Z
−Z

Description

Technical field

[0001] The present invention relates to a lid, a container with a lid, and a combination of a lid and a container.

Background art

[0002] It is widely practiced to provide a container with an opening at the top, containing food and beverages (hereinafter referred to as 'contents'), in a closed state by attaching a lid.

[0003] In retail stores (such as convenience stores) and restaurants (for instance fast food outlets) to supply any goods to customers by counter selling, a process to do this has been adopted such that contents are put into a container to which a lid is attached then. For beverage, a consumer may personally pour own coffee or carbonated drinks, for instance, into the container and then attach the lid on the container, or a staff pours the beverage and attaches the lid at the request of the consumer.

[0004] There is a method known for attaching a lid to a container by bonding the lid with an edge that forms an outer periphery of an opening at the upper end of the container using a heat pressing, for instance. Where beverages are stored in the container, the lid has a small opening that serves as a spout, which is covered by the lid while not in use. In such a container with a lid, once the consumer finishes drinking the beverage via the spout, it is difficult to pour the beverage smoothly to add (refill) into the container via the spout. Especially for solids like ice mixed with the beverage, it is difficult to accurately place the ice into the container. Regarding this, as shown in Patent Document 1, a structure where the lid is peeled off (removed) from the edge of the container is conceivable.

[0005] Also, a container with a lid in which the lid is thermally bonded to the edge of an opening as shown in Patent Document 2 is known. Such containers are used for various purposes, such as containing beverages like coffee, bean-soup , and various prepared foods. In the lid as such a couple of containers with lids, film materials made of plastic are widely used.

Citation List

Patent Literature

Citation List

[0006]

Patent Literature 1: JP 2014-84128 A
Patent Literature 2: JP 2015-101357 A

[0007] In the configurations of Patent Literature s 1 and 2, there is a risk of accidentally ingesting solids like ice while a mouth being touched to the upper edge of the container to drink the beverage stored in the container in which solids like ice are included under the situation of the lid being removed from the container after refilling. It may lead to serious problem for small children and infants when they drink beverages with their mouth touch the container at the upper edge.

[0008] The present invention has been made in view of the problem, and to provide a lid, a container with a lid, and a combination of a lid and a container that enables refilling solids like ice and beverages to the container, and to avoid such accidental ingestion of solids when drinking beverages after refilling.

Solution to Problem

[0009] The present invention is summarized in the following inventions (1) to (20).

[0010]

(1) A lid formed so as to be bonded a container having an opening formed at an upper end and an edge formed on an outer periphery of the opening: comprising

a base part having a bonding region corresponding part that corresponds to a region bonded to the container along the peripheral edge of the container and a small opening that is smaller than the opening of the container,
a small lid part for opening and closing the small opening, and
a hinge part connecting the base part and the small lid part, wherein
the small lid part is configured to be rotatable with respect to the base part via the hinge part as an axis,
the base part shown in a plan view has a protecting part outside beyond an opening edge of the small opening.

(2) The lid according to (1), wherein
a protecting part is defined as a margin portion that fulfills the following conditions 1 and 2,

Condition 1: the margin portion is formed inside from an inner edge of the bonding region corresponding part and outside from the opening edge of the small opening in the base part when shown in a plan view thereof.
Condition 2: a line segment connecting the margin portion and the hinge part, if drawn, is passed through the opening edge of the small opening when shown in a plan view of the base part.

(3) The lid according to (2), wherein
the margin portion is smaller than the small opening when shown in a plan view of the base part.
(4) The lid according to (2), wherein

the margin portion is formed such that the inner edge and an outer edge of the margin portion are not to be concentric.

(5) The lid according to (2), wherein
the margin portion has an inclined portion that slopes downwardly from the outer edge to the inner edge of the margin portion.

(6) The lid according to (1), wherein
a knob part is provided on an upper surface of the small lid part.

(7) The lid according to (6), wherein
the knob part has a tab member that is bonded to the upper surface of the small lid part.

(8) The lid according to (7), wherein
a part of the tab member crosses the opening edge of the small opening, once the small lid part makes the small opening close when shown in a plan view of the base part.

(9) The lid according to (6), wherein

the lid has a holding structure forming portion that holds the small lid part such that the small lid part is rotated with respect to the base part with the hinge part serving as an axis to open the small opening,
a claw part is provided on the knob part,
the base part has a receiving part positioned in contact with the claw part,
the claw part and the receiving part form the holding structure forming portion.

(10) The lid according to (1), wherein
an extending portion is formed on the outer periphery of the base part.

(11) The lid according to (10), wherein
the lid has a holding structure forming portion that holds the small lid part such that the small lid part is rotated about the hinge part serving as an axis relative to the base part to open the small opening,

a knob part is provided on the upper surface of the small lid part,
a claw part is provided on the knob part, and
the extending portion and the claw part form the holding structure forming portion.

(12) The lid according to (10) or (11), wherein
the hinge part is formed between the extending portion and the tip of the small lid part.

(13) The lid according to (1), wherein
a recessed portion is formed in the inner part of the bonding region corresponding part.

(14) The lid according to (1), wherein

a protruding portion is formed on the outer periphery of the small lid part, and
a concave portion corresponding to the protruding portion is formed on the opening edge of the small opening.

(15) The lid according to (1), wherein

a recessed portion is formed on the outer periphery of the small lid part, and
a convex portion corresponding to the recessed portion is formed on the opening edge of the small opening.

(16) The lid according to (1), wherein

a connection structure for connecting the outer periphery of the small lid part and the opening edge of the small opening is formed,
the connection structure includes a fragile portion more fragile than the small lid part, and
the fragile portion is destroyed where the small lid part is rotated about the hinge part serving as an axis relative to the base part.

(17) The lid according to (16), wherein
the fragile portion has a combined structure of a connecting portion and a notch, and/or a half-cut structure.

(18) The lid according to (1), wherein
the lid is formed of paper-based material.

(19) A container with a lid: comprising

the lid according to (1), and
the container having an opening formed at an upper end thereof and an edge formed on the outer periphery of the opening, wherein

the lid is bonded to the container.

(20) A combination of a lid and a container: comprising
the lid according to (1), wherein
the container having an opening formed at the upper end thereof and an edge formed on the outer periphery of the opening.

Advantageous Effects of Invention

[0011] According to the present invention, it is possible to add solids like ice and beverages to the container, and suppress accidental ingestion of solids when drinking the beverage after adding the beverage and solids, and a lid, a container with a lid, and a combination of a lid and a container with excellent stability in the re-closed state are provided.

Brief Description of Drawings

[0012]

[Fig. 1] Fig. 1A is a plan view showing an example of a lid according to the first embodiment. Fig. 1B is a

cross-sectional view schematically showing the state of the A-A line longitudinal section of Fig. 1A.

[Fig. 2] Fig. 2 is a plan view showing an example of a lid according to the first embodiment.

[Fig. 3] Fig. 3A is a perspective view showing an example of a container with a lid. Fig. 3B is a cross-sectional view schematically showing the state of the B-B line longitudinal section of Fig. 3A.

[Fig. 4] Fig. 4 is a plan view showing an example of a lid according to the first modification of the first embodiment.

[Fig. 5] Fig. 5 is a plan view showing an example of a lid according to the second embodiment.

[Fig. 6] Fig. 6 is a plan view showing an example of a lid according to the second modification of the second embodiment.

[Fig. 7] Fig. 7 is a plan view showing an example of a lid according to the second modification of the second embodiment.

[Fig. 8] Fig. 8A is a cross-sectional view schematically showing the state of the C-C line longitudinal section of Fig. 7. Fig. 8B is a cross-sectional view schematically showing an example when a holding structure is formed on the lid.

[Fig. 9] Fig. 9A is a plan view showing an example of a lid according to the first embodiment. Fig. 9B is a plan view showing an example of a lid according to the sixth modification of the first embodiment.

[Fig. 10] Fig. 10 is a plan view showing an example of a lid according to the third modification of the first embodiment.

[Fig. 11] Fig. 11 is a plan view showing an example of a lid according to the first modification of the second embodiment.

[Fig. 12] Fig. 12 is a plan view showing an example of a lid according to the first modification of the second embodiment.

[Fig. 13] Fig. 13 is a plan view showing an example of a lid according to the second modification of the first embodiment.

[Fig. 14] Fig. 14A is a plan view schematically showing an example of a lid according to the third embodiment. Figure 14B is a diagram for explaining the margin portion.

[FIG. 15] Figure 15A is a plan view showing an example of a lid according to modification example 4 of the first embodiment. Figure 15B is a cross-sectional view schematically illustrating the state of the D-D line longitudinal section of Figure 15A.

[FIG. 16] Figures 16A and 16B are cross-sectional views showing an example of a lid according to modification example 5 of the first embodiment.

[FIG. 17] Figure 17 is a plan view schematically showing an enlarged state of the portion of area XS enclosed by a chain line in Figure 1.

[FIG. 18] Figure 18 is a cross-sectional view schematically showing an example of the boundary between the outer peripheral edge of the small lid part and the opening edge of the small opening in the lid according to the first embodiment.

[FIG. 19] Figures 19A and 19B are plan views showing an example of a lid according to modification example 7 of the first embodiment.

[FIG. 20] Figure 20(a) is a plan view for explaining an example of the fourth embodiment. Figure 20(b) is a cross-sectional view schematically showing the state of the A-A line longitudinal section of Figure 20(a).

[FIG. 21] Figure 21(a) is a plan view for explaining an example of the fourth embodiment. Figure 21(b) is a cross-sectional view schematically showing the state of the B-B line longitudinal section of Figure 21(a).

[FIG. 22] Figures 22(a) and 22(b) are plan views for explaining an example of a modification of the fourth embodiment.

[FIG. 23] Figures 23(a) and 23(b) are plan views for explaining an example of a modification of the fourth embodiment.

[FIG. 24] Figures 24(a) and 24(b) are plan views for explaining an example of a modification of the fourth embodiment.

[FIG. 25] Figure 25 is a plan view for explaining an example of a modification of the fourth embodiment.

[FIG. 26] Figures 26(a) and 26(b) are plan views for explaining a rotatable movement facilitation structure in an example of the fourth embodiment. Figure 26(c) is a cross-sectional view schematically showing the C-C line longitudinal section of Figure 26(b).

[FIG. 27] Figure 27 is a plan view for explaining an example of a modification of the fourth embodiment.

[FIG. 28] Figure 28 is an enlarged partial cross-sectional view for explaining an example of the fourth embodiment.

[FIG. 29] Figure 29 is a perspective view showing an example of a container with a lid attached to the container according to the fourth embodiment.

[FIG. 30] Figure 30 is a cross-sectional view schematically showing the state of the D-D line longitudinal section of Figure 29.

[FIG. 31] Figure 31 is a perspective view showing an example of a container with a lid attached to the container according to the fourth embodiment.

[FIG. 32] Figure 32 is a cross-sectional view showing an example of a container with a lid attached to the container according to the fourth embodiment.

[FIG. 33] Figure 33(a) is a plan view for explaining an example of the fifth embodiment. Figure 33(b) is a cross-sectional view schematically showing the state of the E-E line longitudinal section of Figure 33(a).

[FIG. 34] Figure 34(a) is a cross-sectional view schematically showing the state of the F-F line longitudinal section of Figure 33(a). Figure 34(b) is a cross-sectional view schematically showing the state of the G-G line longitudinal section of Figure

33(a). Figure 34(c) is a cross-sectional view schematically showing the state of the H-H line longitudinal section of Figure 33(a).

[FIG. 35] Figure 35 is a plan view for explaining an example of the fifth embodiment.

[FIG. 36] Figure 36 is a plan view for explaining an example of the fifth embodiment.

[FIG. 37] Figure 37 is a cross-sectional view for explaining an example of the fifth embodiment.

[FIG. 38] Figure 38 is a perspective view showing an example of a container with a lid attached to the container according to the fifth embodiment.

[FIG. 39] Figure 39 is a cross-sectional view showing an example of a container with a lid attached to the container according to the fifth embodiment.

[FIG. 40] Figure 40 is an enlarged partial cross-section for explaining an example of the fifth embodiment.

[FIG. 41] Figure 41(a) is a plan view for explaining an example of the sixth embodiment. Figure 41(b) is a cross-sectional view schematically showing the state of the I-I line longitudinal section of Figure 41(a).

[FIG. 42] Figure 42 is a cross-sectional view showing an example of a container with a lid attached to the container according to a modification of the sixth embodiment.

[FIG. 43] Figure 43A is a plan view for explaining an example of a lid according to the seventh embodiment. Figure 43B is a cross-sectional view schematically showing the state of the A-A line longitudinal section of Figure 43A.

[FIG. 44] Figure 44 is a cross-sectional view for explaining an example of a lid attached to a container in the seventh embodiment.

[FIG. 45] Figure 45 is a plan view for explaining an example of a lid attached to a container in the seventh embodiment.

[FIG. 46] Figure 46A is a plan view for explaining an example of a lid according to the eighth embodiment. Figure 46B is a cross-sectional view schematically showing the state of the B-B line longitudinal section of Figure 46A.

[FIG. 47] Figure 47 is a cross-sectional view for explaining an example of a lid attached to a container in the eighth embodiment.

[FIG. 48] Figure 48 is a plan view for explaining an example of a lid attached to a container in the eighth embodiment.

[FIG. 49] Figure 49A is a plan view for explaining an example of a lid according to modification example 1 of the seventh embodiment. Figure 49B is a diagram schematically showing the state of the C-C line longitudinal section of Figure 49A.

[FIG. 50] Figures 50A and 50B are plan views for explaining an example of a lid according to modification example 2 of the seventh embodiment.

[FIG. 51] Figure 51A is a plan view for explaining an example of a lid according to modification example 5 of the seventh embodiment. Figure 51B is a plan view for explaining an example of a lid according to modification example 4 of the seventh embodiment.

[FIG. 52] Figures 52A and 52B are plan views for explaining an example of a lid according to modification example 6 of the seventh embodiment.

[FIG. 53] Figure 53A is a plan view for explaining an example of a lid according to modification example 1 of the eighth embodiment. Figure 53B is a cross-sectional view schematically showing the state of the D-D line longitudinal section of Figure 53A.

[FIG. 54] Figure 54A is a plan view for explaining an example of a lid according to modification example 2 of the eighth embodiment. Figure 54B is a cross-sectional view schematically showing the state of the E-E line longitudinal section of Figure 54A.

[FIG. 55] Figure 55A is a plan view for explaining an example of a lid according to the ninth embodiment. Figure 55B is a cross-sectional view schematically showing the state of the F-F line longitudinal section of Figure 55A.

[FIG. 56] Figure 56A is a plan view showing an example of a container with a lid according to the tenth embodiment. Figure 56B is a diagram for explaining the connection structure.

[FIG. 57] Figure 57 shows the state of the A-A line longitudinal section of Figure 56 and is a cross-sectional view schematically showing the cross-section of a container with a lid.

[FIG. 58] Figure 58 is a cross-sectional view showing an example of the connecting portion.

[FIG. 59] Figure 59 is a plan view showing an example of a container with a lid according to the eleventh embodiment.

[FIG. 60] Figure 60 is a plan view showing an example of a container with a lid according to the twelfth embodiment.

[FIG. 61] Figure 61 is a plan view showing an example of a container with a lid according to the thirteenth embodiment.

[FIG. 62] Figure 62 is a plan view showing an example of a lid according to the fourteenth embodiment.

[FIG. 63] Figure 63 is a cross-sectional view for explaining the state of a lid attached to a container in the fourteenth embodiment.

[FIG. 64] Figure 64 is a schematic diagram showing an example of a lid according to the seventh to ninth embodiments.

[FIG. 65] Figure 65 is a schematic diagram showing an example of a lid according to the seventh to ninth embodiments.

[FIG. 66] Figure 66 is a schematic diagram showing an example of a lid according to the first embodiment.

[FIG. 67] Figure 67 is a schematic diagram showing an example of a lid according to the seventh to ninth embodiments.

[Mode for Carrying Out the Invention]

[0013] The lid according to the present invention will be described in detail with reference to the drawings. It should be noted that the lid according to the present invention is described using a lid for a container (cup) for various beverages such as coffee cups as an example, but it is not limited to lids for containers for beverages, and can also be applied as a lid for containers that store foods other than beverages, such as prepared foods. Furthermore, the lid according to the present invention can be applied to containers that can store various items other than food and drink, such as parts like bolts and nuts, and other items not mentioned above. Moreover, the lid according to the present invention is described below using examples where the shape is circular when viewed in plan, but the shape of the lid is not limited to circular when viewed in plan and can be applied to various shapes other than circular, such as elliptical, rectangular, triangular, polygonal, chamfered rectangular, chamfered polygonal, etc.

[0014] Embodiments and examples related to the present invention will be described sequentially with reference to the drawings. In this specification and drawings, configurations having substantially the same functional structure are denoted by the same reference numerals to omit redundant explanations. It should be noted that the embodiments, modifications, and application examples described below may be appropriately combined and applied.

[0015] The following description is a preferred specific example of the present invention, and the content of the present invention is not limited to these embodiments, etc. In the following description, for the sake of convenience, directions such as front and back, left and right, up and down, and the direction of the horizontal plane are indicated, but the content of the present invention is not limited to these directions. In the examples of Figures 1 to 67, the Z-axis direction is assumed to be the vertical direction (upper side is +Z direction, lower side is -Z direction), the X-axis direction is the front-back direction (rear side is +X direction, front side is -X direction), and the directions along the X-axis and Y-axis, which are orthogonal to each other on a plane defined with the Z-axis direction as the normal, are the X-axis direction and Y-axis direction, and the plane spanned by the X-axis and Y-axis, the XY plane, is assumed to be the horizontal plane, and the explanation is based on these. The relative size ratios and the like shown in each of Figures 1 to 67 are described for convenience, and unless specifically limited, they do not limit the actual size ratios.

[1 First embodiment]

[1-1 Configuration]

[0016] The lid 1 according to the first embodiment is formed to be bondable to a container having an opening 102 formed at the upper end and an edge 103 forming the outer periphery of the opening 102, as will be described later with reference to FIGS. 3A and 3B. FIGS. 3A and 3B are perspective and sectional views showing an example of a container 150 with a lid, in which the lid 1 shown in FIGS. 1A, 1B, and 2 is bonded to the container 101. The lid 1 can be used by being bonded along the edge 103. In the lid 1, the area bonded to the edge 103 in a plan view of the lid 1 is referred to as the bonding region R. FIG. 1A is a plan view showing an embodiment of the lid 1. FIG. 1B is a sectional view schematically showing the A-A line longitudinal section of FIG. 1A. FIG. 2 is a diagram showing an example of the region of the margin portion 10 and the region of the small opening 6, which will be described later. It should be noted that, as the container 101, one having flexibility at the edge 103 of the opening 102 is more preferably used. However, this does not prohibit the container 101 from being a container with little or no flexibility, such as a metal container.

[0017] In the examples of FIGS. 1A and 1B, the bonding region R corresponds to a region formed generally annularly along the opening 102 in a shape corresponding to the opening 102 of the container 101. If the bonding region R between the lid 1 and the container 101 is not continuously bonded, the portion sandwiched between adjacent bonding regions R and the portion facing the edge 103 are also included in the bonding region corresponding part 5.

(Material of the lid)

[0018] The material of the lid 1 is not particularly limited, but it is preferably a paper-based material. As for paper-based materials, they include so-called paper obtained by scooping a slurry of fibrous raw materials onto a net, drying or pressing and drying, and papermaking into sheets, and so-called air-laid sheets obtained by crushing raw material sheets made of pulp-based fibers, etc., with a crusher to obtain crushed pulp and other open-fiber raw materials, which are then fibered by air flow and fixed with a binder, as well as so-called paper products made by agglutinating plant fibers and other fibers, chemical fiber paper, synthetic paper, water-resistant paper, coated paper, alternative paper, parchment, wool paper, glass fiber paper, stone paper, ceramic paper, etc., and those laminated in multiple layers. In addition, as a paper-based material, it may include fibers other than pulp, such as non-pulp-based natural fibers, synthetic fibers, and recycled fibers, but it is preferably composed of 50% or more by mass of pulp, more preferably 70% or more by mass, and even more preferably 80% or more by mass, with those composed of 100% by mass of pulp being particularly preferred. Paper-based materials can also be used in combination with synthetic resin or natural resin films, non-woven fabrics, wood-based materials such as wood foil, and materials such as aluminum foil, but when used as a composite material, it is preferable that the composite material as a whole contains 50% or more by

mass of pulp, and particularly preferably 80% or more by mass of pulp. The higher the pulp content, the more easily the paper-based material is biodegraded, which is preferable.

[0019] It is preferable that the entire lid 1 is formed of the above-mentioned paper-based material. However, this does not prohibit part or all of it from being formed of a material different from the paper-based material. For example, the lid 1 may be formed of a laminate of a paper-based material and a resin film material, such as only the base part 2A1 described later. In this case, by appropriately using sealing methods such as pressing, heat sealing, or ultrasonic welding with the film material side of the lid 1 facing the container 101, it becomes easy to bond the lid 1 to the container 101. Considering these points, the lid 1 is preferably used as a laminate including a paper-based material. The small lid part 3 may also be used as a laminate including a paper-based material.

[0020] As shown in FIGS. 1A, 1B, etc., the lid 1 has a base part 2A1, a small lid part 3, and a hinge part 7.

(Base part)

[0021] The base part 2A1 is defined as a portion having a bonding region corresponding part 5 as well as forming a small opening 6. The base part 2A1 can be a portion that defines the reference for the rotatable movement of the small lid part 3, which will be described later. In the example of FIG. 1A, in a plan view of the lid 1, the base part 2A1 and the small lid part 3 form the exposed surface 70 of the lid 1.

(Bonding region corresponding part)

[0022] The bonding region corresponding part 5 is a portion of the lid 1 corresponding to the bonding region R (the region facing the edge 103 of the container 101 and the region bonded to the container 101). In the container 150 with a lid, the bonding region corresponding part 5 is the portion of the lid 1 that forms the bonding part 151 between the lid 1 and the container 101. Specifically, in a plan view of the lid 1 (in the example of FIG. 1A, when the Z-axis direction (vertical direction) is the line of sight direction), the portion of the base part 2A1 that forms the bonding region R is defined as the bonding region corresponding part 5. The bonding region corresponding part 5 is usually formed annularly, as shown in FIG. 1A. Particularly, as shown in FIGS. 3A and 3B, when the edge 103 of the container 101 is formed in an substantially annular shape, the bonding region R becomes annular, and the bonding region corresponding part 5 also becomes generally annular in a plan view of the lid 1. The outer edge of the bonding region corresponding part 5 is defined according to the position of the outer edge of the bonding region R. The outer edge of the bonding region corresponding part 5 may be located at the outer peripheral edge 2A of the base part 2A1, or it may be located inside the outer peripheral edge 2A of the base part 2A1, as shown in the example of FIG. 1A.

Small opening

[0023] The small opening 6 is formed to penetrate the opposing surface 73A of the lid 1 to the container 101 and the non-opposing surface of the lid 1 to the container 101 (the exposed surface 70 of the lid 1). The small opening 6 is formed to have an opening smaller than the opening 102 of the container 101 on the inside of the portion corresponding to the bonding region corresponding part 5 in a plan view of the lid 1. The small opening 6 is for forming an opening for the entrance and exit of the contents (such as beverages or food) in the space 105 of the container 101 when the lid 1 is bonded to the container 101. The small opening 6, in combination with the small lid part 3 described later, forms the opening forming part 4.

Opening forming part

[0024] As shown in FIG. 1A, the opening forming part 4 is defined as the portion having the small opening 6 and the small lid part 3. In the opening forming part 4, the small opening 6 opens and closes with the movement of the small lid part 3. The opening forming part 4 is formed such that, as shown in FIG. 1A, the small lid part 3 is in a state of closing the small opening 6, and the small lid part 3 is rotatably moved to open the small opening 6. When the small lid part 3 is rotated to lift the small lid part 3 based on the base part 2A1, the small opening 6 is exposed and becomes an outlet. That is, the opening forming part 4 is configured such that when the lid 1 is attached to the container 101 and the small lid part 3 is lifted, the small opening 6 and the small lid part 3 are combined so that the space 105 of the container 101 can be seen through the small opening 6.

[0025] In the state where the small opening 6 becomes an outlet, it can be used as a supply port for additional liquids such as beverages or solids such as ice, as will be described later. Also, when a liquid such as a beverage is present inside the container 101 (space 105), the small opening 6 may be used as a drinking or pouring spout for the beverage, etc.

Small lid part

[0026] The lid 1 is provided with a small lid part 3. The small lid part 3 is formed to be capable of covering and opening and closing the small opening 6. In the example of FIG. 1A, the small lid part 3 is formed to be rotatably movable to a lifted state with respect to the base part 2A1, as also shown in FIG. 3B, and when the small lid part 3 is lifted, the small opening 6 is formed (opened). In the example shown in FIG. 1A, the shape of the small lid part 3 can be defined such that the outer peripheral contour shape of the small lid part 3 follows the shape of the opening edge 6G of the small opening 6 when the

small opening 6 is closed by the small lid part 3. In this case, it becomes easy to bring the tip end surface of the outer peripheral edge 3A of the small lid part 3 into contact with the tip end surface of the opening edge 6G of the small opening 6 when the small opening 6 is closed by the small lid part 3.

[0027] In the lid 1 shown in the example of FIG. 1A, the small lid part 3 is provided inside (on the center CT side) of the bonding region corresponding part 5 in a plan view of the lid 1. The small lid part 3 is moved (rotated) so that the small lid part 3 is in a lifted state. The small lid part 3 is connected to the base part 2A1 by a hinge part 7. As the small lid part 3 is lifted with the hinge part 7 as a pivot, the small opening 6 is exposed.

[0028] The shape and structure of the small lid part 3 are not particularly limited as long as they are such that they form the margin portion 10, which will be described later. In the example of FIG. 1A, the shape of the front edge portion 75A of the outer peripheral edge 3A of the small lid part 3 is located inside the bonding region R, and the width W of the small lid part 3 is formed to widen from the front edge portion 75A toward the base end portion 74A. The width W of the small lid part is specified as follows. That is, as a fixed position SB1 of the outer peripheral edge of the small lid part, when a straight line DL passing through the position SB1 and extending in the direction of the hinge part 7 is assumed, the intersection position of the straight line DL and the outer peripheral edge of the small lid part (but different from the position SB1) (corresponding position SB2) is defined. Then, the distance between position SB1 and position SB2 is defined, and this distance is specified as the width W.

[0029] According to the first embodiment, it is not limited that the center CT of the lid 1 is located in the small lid part 3 as shown in FIG. 1, etc., and the small lid part 3 may be configured not to include the center CT of the lid 1 as shown in FIG. 9A.

[0030] When the small lid part 3 is lifted, the small opening 6 is exposed as described above and called the open lid phase. The state where the small opening 6 is covered by the small lid part 3 is called a closed lid phase.

[0031] Even after the lid 1 is opened (after the small lid part 3 is raised so as to let the small opening 6 be exposed outwards), the lid can be re-closed, and there the tip end surface (outer peripheral end surface) of the outer peripheral edge 3A of the small lid part 3 and the tip end surface of the opening edge 6G of the small opening 6 of the base part 2A1 can face oppositely.

(Hinge part)

[0032] As described above, the lid 1 has a hinge part 7. The hinge part 7 is generally configured as a part corresponding to the line segment connecting the two base ends 74A along the outer peripheral edge 3A of the small lid part 3, corresponding to the boundary part between the base part 2A1 and the small lid part 3. The hinge part 7 serves as the rotation axis when the small lid part 3 rotates. However, when the small lid part 3 rotates, it is not only when the small lid part 3 rises from the base part 2A1 at a certain angle at the position of the hinge part 7, but also includes cases where the small lid part 3 gradually curves and rises from the hinge part 7 toward the front edge 75A of the small lid part 3, as shown in Figure 3B.

[0033] The base part 2A1 is connected to the small lid part 3 at least at the hinge part 7. The hinge part 7 is not particularly limited in structure as long as it is defined as the boundary between the base part 2A1 and the small lid part 3. The hinge part 7, like the connection structure 17 described later, may be a perforated structure or a half-cut section.

(Connection Structure between Base part and Small lid part)

[0034] In the lid 1, a structure (connection structure 17) connected at the opening edge 6G of the small opening 6 of the base part 2A1 and the outer peripheral edge 3A of the small lid part 3 may be formed. It is preferable that the connection structure 17 is configured as a weakened part, which is a more fragile part than the small lid part 3. Since the connection structure 17 is a weakened part, it can be destroyed when the small lid part 3 rotates about the hinge part 7 relative to the base part 2A1. That is, the small lid part 3 is raised relative to the base part 2A1 while being generally separated along the connection structure 17.

[0035] In the example of Figure 1, the structure of the connection structure 17 is a combination of a continuous part 18A and a cut part 18B, as shown in Figure 17. Figure 17 is an enlarged plan view of the area XS enclosed by the one-dot chain line in Figure 1, schematically showing an embodiment of the connection structure 17. The combination structure is, for example, a structure (so-called perforated structure) in which the combination of the continuous part 18A and the cut part 18B alternates along the longitudinal direction where the tip end surface of the opening edge 6G of the small opening 6 and the tip end surface of the outer peripheral edge 3A of the small lid part 3 face each other. Moreover, the connection structure 17 is not limited to a perforated structure and may be a half-cut section 16, as shown in Figure 18. The half-cut section 16 is identified as a part cut halfway through in the thickness direction of the lid 1, as shown in Figure 18. The half-cut section 16 is not limited to a part cut to half the thickness of the lid 1 in the thickness direction. The half-cut section 16 includes a structure cut more than half the thickness of the lid 1 while avoiding penetration, or a structure cut less than half the thickness of the lid 1 in the thickness direction.

[0036] In cases where the connection structure 17 has a continuous part 18A and a cut part 18B, the continuous part 18A may have a structure corresponding to the half-cut section 16.

(Eaves Section)

[0037] The lid 1 has an eaves section. The eaves section is formed as part of the base part 2A1. The eaves section is configured as a part formed inside from the inner edge of the bonding area corresponding part 5 and outside from the opening edge 6G of the small opening 6 on the plan view of the base part 2A1. With the eaves section formed on the lid 1, when the small opening 6 is opened (open lid phase), solid objects can hit the eaves section when drinking beverages, etc., through the small opening 6, preventing accidental ingestion of solids. As the eaves section in the lid 1, a margin section 10 is formed in examples such as Figure 1. In the following explanation, the case where the eaves section is the margin section 10 will be used as an example.

(Margin Section)

[0038] The lid 1 has a margin section 10, as shown in Figures 1A, 1B, 2, etc. The margin section 10 is defined as a part that satisfies the following conditions 1 and 2.

[0039] Condition 1: On the plan view of the base part 2A1, the margin section 10 is a part formed inside from the inner edge of the bonding area corresponding part 5 of the base part 2A1.

[0040] Condition 2: On the plan view of the base part 2A1, when a line segment connecting the margin section 10 and the hinge part 7 is assumed, the line segment passes through the opening edge 6G of the small opening 6.

[0041] The plan view of the base part 2A1 refers to the view when looking at the base part 2A1 from the +Z side to the -Z side along the Z-axis direction in Figures 1A and 1B.

[0042] Regarding condition 1, since the margin section 10 is a part formed on the base part 2A1, it is a part separated from the small lid part 3. Regarding condition 2, for example, as shown in Figure 1A, when a line segment M connecting the position P1 of the margin section 10 and the position P2 of the hinge part 7 is assumed, the line segment M passes through the opening edge 6G of the small opening 6. The margin section 10, when viewed from the position of the hinge part 7, is the part outside the position of the opening edge 6G. Therefore, in the example of Figure 2, the margin section 10 is identified as a part different from the bonding area corresponding part 5 and the small lid part 3, as the hatched part S1 in Figure 2. The hatched part S2 corresponds to the small opening 6. In the example of Figure 1, the part S2 also corresponds to the small lid part 3. Figure 2 is a plan view showing the part that becomes the margin section 10 for the lid 1 in Figure 1.

(Area of Margin Section and Small Opening)

[0043] The size of the margin section 10 is not particularly limited, but it is preferable that the area of the margin section 10 is smaller than the area of the small opening 6 on the plan view of the base part 2A1. That is, in the example of Figure 2, the area of the part S1 corresponding to the margin section 10 is smaller than the area of the part S2 corresponding to the small opening 6. In this case, since the size of the small opening 6 is larger than the size of the margin section 10, it becomes easy to add liquids such as beverages or solids such as ice to the space 105 of the container 101 when the container 150 with the lid is in the state where the small opening 6 is opened (open lid phase). Regarding the criteria for specifying the area of the margin section 10 and the area of the small opening 6, the area of both the margin section 10 and the small opening 6 is indicated on the plan view of the lid 1 (when the direction from +Z to -Z in Figure 2 is taken as the viewing direction). The criteria for specifying the area shown here are the same for the area of the first portion described later.

(Area of Margin Section and First portion)

[0044] It is preferable that the area of the margin section 10 is larger than the area of the first portion 5E of the bonding region corresponding part 5. Here, the first portion 5E is a part specified as follows.

[0045] When assuming a state where the base part 2A1 is divided into two parts by an extension line ME extended outward along the hinge part 7, the part of the bonding region corresponding part 5 formed in the part including the small opening 6 is defined as the first portion 5E, and the part excluding the first portion 5E from the bonding region corresponding part 5 is defined as the second portion 5F.

[0046] When the area of the margin section 10 is larger than the area of the first portion 5E of the bonding region corresponding part 5, it becomes easy to slightly flex the margin section 10 in the vertical direction relative to the first portion 5E. When the small opening 6 is opened (open lid phase), if a solid object hits the margin section while drinking beverages, etc., through the small opening 6, the margin section becomes easier to flex, making it easier to buffer the force applied from the solid object to the margin section.

(Shape of Margin Section)

[0047] The shape of the margin section 10 is determined according to the shapes of the small opening 6 and the bonding region corresponding part 5, but it is preferable that the inner edge 10C and the outer edge 10D of the margin section 10 are formed not to be concentric. Here, non-concentric means that at least one of the contour shape of the inner edge 10C and the contour shape of the outer edge 10D of the margin section 10 deviates from the arc shape centered on the center CT of the lid 1. In the example of Figure 2, the contour shape of the inner edge 10C of the margin section 10 is formed to be non-arc-shaped, deviating from the arc shape cen-

tered on the center CT of the lid 1. However, this does not prohibit the contour shape of the inner edge 10C and the contour shape of the outer edge 10D of the margin section 10 from being arc-shaped centered on the center CT of the lid 1, as shown in the examples of Figures 9A and 9B. The examples of Figures 9A and 9B are plan views showing another embodiment of the lid 1 of the first embodiment.

(Extension Section)

[0048] In the lid 1 according to the first embodiment, an extension section 7C may be formed on the outer peripheral edge 2A of the base part 2A1. In the examples of Figures 1A and 1B, the position of the extension section 7C is defined on the outer peripheral edge 2A of the base part 2A1 so that the hinge part 7 is positioned between the front edge 75A forming the tip of the small lid part 3 and the extension section 7C in the closed state. The shape of the extension section 7C is not particularly limited, but in the example of Figure 1A, the shape of the extension section 7C is defined so that the outer peripheral edge 7D of the extension section 7C becomes a gently curved convex shape.

[0049] When the extension section 7C is formed, marks or characters indicating the container 101 corresponding to the lid 1 can be arranged on the extension section 7C. For example, characters such as S, M, L, etc., can be printed or otherwise arranged on the extension section 7C. When the size of the container 101 is small, a lid 1 with the letter S printed on it is used; when the size of the container 101 is medium, a lid 1 with the letter M printed on it is used; and when the size of the container 101 is large, a lid 1 with the letter L printed on it is used, thus associating the types of container 101 and lid 1. This prevents the risk of bonding the container 101 and lid 1 in incorrect size combinations when attaching the lid 1 to the container 101.

[0050] Additionally, if an extension 7C is formed on the lid 1, the extension 7C can be used as a handle. As shown in the example in Fig. 1, the extension 7C is defined on the outer peripheral edge 2A of the base part 2A1 so that the hinge part 7 is positioned between the front edge 75A forming the tip of the small lid part 3 and the extension 7C, allowing the position of the front edge 75A of the small lid part 3 and the position of the extension 7C to be as far apart as possible. By keeping the position of the front edge 75A of the small lid part 3 and the position of the extension 7C as far apart as possible, it is possible to prevent the person carrying the lid 1 by pinching the extension 7C from inadvertently touching the small lid part 3 of the lid 1, thereby reducing the risk of contamination of the small lid part 3 occurred from touching by hand.

[1-2 Operation and Effect]

[0051] In conventional containers with lids bonded to the edge of the container, when the lid is removed from the edge, there was a possibility of drinking the beverage from the edge of the container while solid objects like ice and the beverage were contained in the container. Therefore, when drinking the beverage, there was a risk that solid objects like ice could flow out together from the edge of the container, leading to accidental ingestion by the consumer.

[0052] In the lid 1 according to the first embodiment, a margin part 10 is provided. Therefore, when drinking a beverage by placing the mouth on the container 150 with a lid, even if solid objects like ice try to flow out together from the space part 105 of the container 101, the liquid flows out from the small opening, but the solid objects like ice are easily restricted by the margin part 10, reducing the risk of accidental ingestion by the consumer.

[0053] Additionally, in the lid 1 according to the first embodiment, the small opening 6 has a larger area than the margin part 10, allowing additional pouring of beverages, etc., through the small opening 6. Furthermore, after additional pouring of beverages, etc., it is possible to reclose the small opening 6 with the small lid part 3 by obtaining the same effect as the lids according to the seventh to ninth embodiments of the present invention described below. Moreover, even when reclosed in this manner, it is still possible to ensure sealing performance similar to the lid according to the embodiments described later.

[0054] Further explanation will be continued regarding the modified example of the first embodiment.

[1-3 Modified Example]

(Modified Example 1)

[0055] In the lid 1 according to the first embodiment, as shown in Fig. 4, a protruding part 3F may be formed on the outer peripheral edge 3A of the small lid part 3. In this case, a concave-shaped part corresponding to the protruding part 3F is formed on the opening edge 6G of the small opening 6. A lid 1 having such a configuration is referred to as Modified Example 1 of the first embodiment. Fig. 4 is a schematic plan view showing an example of the lid 1 according to Modified Example 1 of the first embodiment.

(Protruding Part)

[0056] In the example of Fig. 4, the protruding part 3F is a portion that extends convexly in the direction toward the outside of the small lid part 3 at the front edge 75A. The protruding part 3F can be identified as a portion having a contour shape that protrudes outward compared to the surrounding outer peripheral edge 3A in the plan view of the small lid part 3. Then, a concave-shaped part 3K corresponding to the protruding part 3F is formed on the opening edge 6G of the small opening 6. In the example of Fig. 4, the concave-shaped part 3K is formed to fit with the protruding part 3F. This makes it easier for the base

end of the protruding part 3F to be locked at the opening edge 6G of the small opening 6 when reclosing the small opening 6 with the small lid part 3, thereby stabilizing the reclosed state of the small opening 6 with the small lid part 3.

(Modified Example 2)

[0057] In the lid 1 according to the first embodiment, as shown in Fig. 13, a recessed part 3I may be formed on the outer peripheral edge 3A of the small lid part 3. In this case, a convex-shaped part 3J corresponding to the recessed part 3I is formed on the opening edge 6G of the small opening 6. A lid 1 having such a configuration is referred to as Modified Example 2 of the first embodiment. Fig. 13 is a schematic plan view showing an example of the lid 1 according to Modified Example 2 of the first embodiment.

(Recessed Part)

[0058] The recessed part 3I is a portion shaped by gouging the small lid part 3 inward at a fixed position from the front edge 75A toward the base end 74A of the small lid part 3. In the example of Fig. 13, the recessed part 3I is a portion shaped by gouging the small lid part 3 in a U-shape inward at a fixed position from the front edge 75A toward the base end 74A of the small lid part 3 at each of the two side edges 76.

(Convex Part)

[0059] A convex-shaped part 3J corresponding to the recessed part 3I is formed on the opening edge 6G of the small opening 6. The convex-shaped part 3J is formed to fit with the recessed part 3I, and in the example of Fig. 13, it is formed in a tongue-like shape. This makes it easier for the recessed part 3I to be locked at the convex-shaped part 3J or its vicinity on the opening edge 6G of the small opening 6 when reclosing the small opening 6 with the small lid part 3, thereby stabilizing the reclosed state of the small opening 6 with the small lid part 3.

(Modified Example 3)

[0060] In the lid 1 according to the first embodiment, as shown in Fig. 10, a notch 8 may be provided in the base part 2A1. A lid 1 having such a configuration is referred to as Modified Example 3 of the first embodiment. Fig. 10 is a schematic plan view showing an example of the lid 1 according to Modified Example 3 of the first embodiment.

(Notch)

[0061] In Modified Example 3 of the first embodiment, the notch 8 is formed in a cross shape. The notch 8 can be formed by penetrating the member constituting the base part of the lid in the vertical direction. In Modified Example 3 of the first embodiment, the notch 8 is formed so that it can be used as an insertion port for a straw or the like. Additionally, as described later, if a claw part 23B is provided to hold the small opening 6 open with the small lid part 3, the notch 8 can be used as a through-hole for inserting the claw part 23B. In this case, the notch 8 also serves as part of the holding structure forming part 30 described later, meaning that the claw part 23B and the notch 8 constitute the holding structure forming part 30. The shape of the notch 8 is not limited to a cross shape as long as it can be used as an insertion port for a straw or the like, and various shapes such as a C-shape or tongue-like shape may be used.

(Modified Example 4)

[0062] In the lid 1 according to the first embodiment, as shown in Figs. 15A and 15B, a recessed part 2B may be formed on the inner part of the bonding area corresponding part 5. A lid 1 having such a configuration is referred to as Modified Example 4 of the first embodiment. Fig. 15A is a schematic plan view showing an example of the lid 1 according to Modified Example 4 of the first embodiment. Fig. 15B is a schematic cross-sectional view showing the state of the D-D line longitudinal section of Fig. 15A.

(Recessed Part)

[0063] The recessed part 2B can be formed by embossing the member (sometimes referred to as a blank material) used to form the lid 1. The range in which the recessed part 2B is formed is not particularly limited as long as it is on the inner part of the bonding area corresponding part 5, but it is preferable that it includes the small lid part 3. By having the part including the small lid part 3 as the recessed part 2B, even if a liquid such as a beverage spills on the exposed surface 70 side of the lid 1, it becomes easy to guide the liquid to the recessed part 2B, thereby preventing the liquid from spilling outside the lid 1.

(Modified Example 5)

[0064] In the lid 1 according to the first embodiment, as shown in Fig. 16A, the margin part 10 may have an inclined part 19 that inclines diagonally downward or upward from the outer edge 10D of the margin part 10 toward the inner edge 10C of the margin part 10. A lid 1 having such a configuration is referred to as Modified Example 5 of the first embodiment. Fig. 16A is a schematic cross-sectional view showing an example of the lid 1 according to Modified Example 5 of the first embodiment. Fig. 16A corresponds to a figure showing a cross-section at the same position as the cross-section corresponding to Fig. 15B. This is also the case for Fig. 16B.

(Inclined Part)

[0065] The inclined part 19 may be formed on the entire margin part 10 or on a part of it. Regarding the inclination state of the inclined part 19, it is preferable that the inclination state of the inclined part 19 can vary at the contact part between the small lid part 3 and the inner edge 10C of the margin part 10 (opening edge 6G of the small opening 6) when forming the open state by lifting the small lid part 3 from the closed state of the lid 1. For example, as the small lid part 3 is lifted, the margin part 10 is also slightly lifted upward (+Z direction), and the inclined part 19 may be formed on the margin part 10 so that the inclination state of the inclined part 19 changes from a state inclined diagonally downward to a state inclined diagonally upward or a horizontal state. This can be realized by the small lid part 3 and the small opening 6 coming into contact so that there is a frictional force between the outer peripheral edge 3A of the small lid part 3 and the inner edge 10C of the margin part 10 (opening edge 6G of the small opening 6) in the closed state.

[0066] In Modified Example 5 of the first embodiment, the formation of the inclined part 19 makes it easier for the inner edge 10C of the margin part 10 to flex in the vertical direction (Z-axis direction) around the outer edge 10D of the margin part 10. Therefore, according to the fourth modification of the first embodiment, in the case where the container with a lid 150 is in a state where the space of the container is filled with beverages or solids and the small opening is opened (open lid phase), when a solid hits the margin part while drinking a beverage, etc., using the small opening as a drinking mouth, the margin part becomes more flexible in the vertical direction, making it easier to buffer the force applied from the solid to the margin part.

(Other examples of the inclined section)

[0067] The inclined section 19 may be formed not only on the margin part 10 but also on the entire inside of the bonding area corresponding part 5 as shown in Fig. 16B. Fig. 16B is a schematic cross-sectional view showing another embodiment of the lid 1 according to the fifth modification of the first embodiment. In this case, the inclined section 19 forms a sloped surface that inclines from the inner edge of the bonding region corresponding part 5 towards the inside of the lid 1.

(Modification 6)

[0068] In the first embodiment, as shown in Fig. 1, etc., the small lid part 3 is not limited to that the width W gradually increases from the front edge 75A towards the hinge part 7, but as shown in Fig. 9B, the width W of the small lid part 3 may gradually increase to a fixed position from the front edge 75A towards the hinge part 7, and then gradually decrease from that fixed position towards the hinge part 7. A lid 1 having such a configuration is referred to as the sixth modification of the first embodiment. Fig. 9B is a schematic plan view showing an embodiment of the lid 1 according to the sixth modification of the first embodiment. In Fig. 9B, the inner edge 10C and the outer edge 10D of the margin part 10 are formed to be concentric.

(Modification 7)

[0069] In the first embodiment, as shown in Figs. 19A and 19B, a stress adjustment part 27 may be formed at the base end 74A of the small lid part 3. A lid 1 having such a configuration is referred to as the seventh modification of the first embodiment. Figs. 19A and 19B are schematic plan views showing an embodiment of the lid 1 according to the seventh modification of the first embodiment. In the example of Fig. 19A, the stress adjustment part 27 is a U-shaped curved portion outward at the base end 74A of the small lid part 3. In Fig. 19B, the stress adjustment part 27 is a substantially circular through-hole portion formed at the base end 74A of the small lid part 3. By providing the stress adjustment part 27, it is possible to suppress the concentration of stress at a single point on the base end 74A of the small lid part 3 when rotating the small lid part 3 around the hinge part 7, thereby reducing the risk of the lid 1 tearing from the base end 74A towards the base part 2AI and the rotation of the small lid part 3 around the hinge part 7 becoming insufficient. If the stress adjustment part 27 is formed, it is assumed that the base end 74A of the small lid part 3 includes the stress adjustment part 27. Therefore, as shown in Figs. 19A and 19B, the hinge part 7 is formed at a position corresponding to a straight line connecting the ends of the stress adjustment part 27. Therefore, the small lid part 3 and the margin part 10 can be defined as the hatched portions in Figs. 19A and 19B, respectively.

[2 Second Embodiment]

[2-1 Configuration]

[0070] In the second embodiment, as shown in Fig. 5, etc., a lid 1 has a knob part 24 provided on the small lid part 3 in the first embodiment. The lid 1 having such a configuration is referred to as the second embodiment. Fig. 5 is a schematic plan view showing an embodiment of the lid 1 according to the second embodiment.

[0071] In the second embodiment, a lid 1 is similar to the first embodiment except for the configuration where the knob part 24 is provided on the small lid part 3, so the description of other configurations (base part 2A1, hinge part 7, margin part 10, etc.) excluding the configuration where the knob part 24 is provided on the small lid part 3 is omitted.

(Knob Part)

[0072] In the second embodiment shown in Fig. 5, the knob part 24 is provided on the upper surface, which is the exposed surface of the small lid part 3 (exposed surface 70 of the lid 1), while the small opening 6 is closed by the small lid part 3. The structure of the knob part 24 is not particularly limited as long as it can rotate the small lid part 3 around the hinge part 7, but in the example of Fig. 5, a tab member 31 is provided as the knob part 24.

(Tab Member)

[0073] In Fig. 5, as the small opening 6 is closed by the small lid part 3, the tab member 31 is bonded to the small lid part 3 at one end 31A of the tab member 31, and the other end 31B of the tab member 31 is a free end. The portion of the tab member 31 bonded to the small lid part 3 is called the tab bonding part 18. Excluding the tab bonding part 18, the free end side portion (the other end 31B side portion) of the tab member 31 is not particularly limited in shape or structure as long as it is formed in a size and shape that allows a person to grasp the tab member 31 by hand. The material of the tab member 31 may be the same as the material of the lid 1 described in the first embodiment and may be made of paper-based material.

[0074] In the lid 1, the attachment position and direction of the tab member 31 on the small lid part 3 are not particularly limited, but in the example of Fig. 5, the tab member 31 is bonded to the small lid part 3 at a position closer to the tip (i.e., near the front edge 75A).

[0075] Various methods such as ultrasonic bonding, heat sealing, and adhesive bonding can be exemplified as methods for bonding the tab member 31 to the small lid part 3 (i.e., forming the tab bonding part 18). As a method for forming the tab bonding part 18, ultrasonic bonding is preferred in view of easy bonding and bonding strength among the methods mentioned above. The position of the tab bonding part 18 formed on the small lid part 3 is preferably to be off from the center of the small lid part 3 in the light of facilitating to stand up the small lid part 3 (rotating the small lid part 3) by lifting the tab member 31.

(Orientation of the Tab Member (Attachment Direction))

[0076] In Fig. 5, the other end 31B side (free end side) of the tab member 31 is arranged to be proximal to the hinge part 7 side compared to one end 31A of the tab member 31. However, this is just one example, and the orientation of the tab member 31 may be in a direction other than the one shown in the example of Fig. 5. For example, the tab member 31 may be arranged such that the other end 31B side of the tab member 31 is positioned further from the hinge part 7 than one end 31A.

[2-2 Operation and effect]

[0077] The second embodiment enables the same effects as the first embodiment. The knob part 24 in second embodiment allows the small lid part 3 to be easily lifted.

[0078] Further explanation of the modifications of the second embodiment will continue.

[2-3 Modifications]

(Modification 1)

[0079] In the second embodiment, in which the tab member 31 is provided serving as the knob part 24, as shown in Fig. 11, in the phase of the small opening 6 closed by the small lid part 3, a part of the tab member 31 may intersect the opening edge 6G of the small opening 6 when shown from a plan view of the base part 2A1. A lid 1 having such a configuration is referred to as the first modification of the second embodiment. Fig. 11 is a schematic plan view showing the lid 1 according to the first modification of the second embodiment.

[0080] In Fig. 11, the edge on one end (end 31A) of the tab member 31 intersects the opening edge 6G of the small opening 6, and the portion of the tab member 31 overlapping the upper surface of the base part 2A1 is referred to as the overlap part 35. Once the small opening 6 is opened and then closed again with the small lid part 3, the overlap part 35 is stuck in the opening edge 6G of the small opening 6 so as to be situated below the small opening 6 by pushing the overlap part 35 downward (-Z direction) into the small opening 6. This allows the small opening 6 to keep more steady re-closure by the small lid part 3.

[0081] In the light of getting more effect of the overlap part 35 configured to re-close the small opening 6 with the small lid part 3, it is preferable that the small lid part 3 is formed with an overhang part 3F as explained in the first modification of the first embodiment. As shown in Fig. 12, in which the small lid part 3 is formed with the overhang part 3F, it is preferable that a part of one end (one end 31A) of the tab member 31 extends outward from the overhang part 3F, and the extended portion becomes the overlap part 35. Fig. 12 is a schematic plan view showing the lid 1 according to the first modification of the second embodiment. As shown in Fig. 12, it is possible to form the overlap part 35 of the tab member 31 being steadily stuck in the bottom (on the opposite surface 73A) of the opening edge 6G of the small opening 6, and to securely keep the small opening 6 being re-closed by the small lid part 3.

(Modification 2)

[0082] In the second embodiment, as shown in Fig. 6, it may have a holding structure forming part 30, which is to hold the small lid part 3 such that the small opening 6 is opened by the small lid part 3 being rotated about the

hinge part 7relative to the base part 2A1. A lid 1 having such a configuration is referred to as the second modification of the second embodiment. Fig. 6 is a schematic plan view showing the lid 1 according to the second modification of the second embodiment.

(Holding Structure Forming Part)

[0083] The holding structure forming part 30 is not particularly limited. For example, in the lid 1 as shown in Fig. 6, the holding structure forming part 30 is formed by the claw part 23B and the receiving part 33.

(Claw Part)

[0084] As shown in Fig. 6, the claw part 23B may be any part as long as it can hook or insert into the receiving part 33 for locking as will be described later. The claw part 23B in Fig. 6 is provided on the tab member 31 as an example of the knob part 24. The claw part 23B is formed by a cut-out portion shaped in a substantially mountain-like contour at a fixed position of the tab member 31.

(Receiving Part)

[0085] The receiving part 33 is formed in a shape that allows the claw part 23B to be engaged or inserted. In Fig. 6, the receiving part 33 is a slit by cutting at a fixed position of the base section 2A1. The receiving part 33 is formed at a position so as to face the claw part 23B as the tab member 31 is rotatablly moved to rotate the small lid part 3.

(Formation of Retaining Structure)

[0086] The knob part is pulled up to let the small lid part 3 raise. By pulling up the tab member 31 as well as bending any place on the side of the free end (the other end 31B) of the tab member 31, the claw part 23B has a shape as protruding downward or upward. Next, the tab member 31 is moved to rotate the small lid part 3 until the claw part 23B of the small lid part 3 reaches or be close to the receiving part 33. Thus, the claw part 23B of the tab member 31 is hooked or inserted into the receiving part 33. This retaining structure holds the small lid part 3 to let unmove with keeping exposure of the small opening 6 .

[0087] In the above description, the case where the retaining structure forming section 30 has a slit section as the receiving part 33 was explained, but the structure corresponding to the receiving part 33 is not limited to the slit section.

(Other Examples of Retaining Structure Forming Section)

[0088] If the base section 2A1 of the lid 1 is provided with an extension section 7C, as shown in Fig. 7, the extension section 7C may also serve as the receiving part. Fig. 7 is a schematic plan view showing the lid 1 according to the second embodiment (another example of the retaining structure forming section).

[0089] The lid 1 shown in Fig. 7 has the claw part 23B formed on the knob part 24 (tab member 31 in Fig. 7) as in the example of Fig. 6, and the claw part 23B and the extension section 7C form the retaining structure forming section 30. In the example of Fig. 7, the extension section 7C is formed so that the outer peripheral edge 7D of the extension section 7C can face the claw part 23B when the tab member 31 is moved to rotate the small lid part 3.

(Formation of retaining structure)

[0090] In the lid 1 shown in the example of Fig. 7, as in the example of Fig. 6, when raising the small lid part 3, the tab member 31 is lifted in the direction of arrow F in Fig. 8A. Fig. 8A is a cross-sectional view schematically showing the state of the C-C line longitudinal section of Fig. 7. In the example of Fig. 7, as in the example of Fig. 6, by lifting the tab member 31 and bending a fixed portion of the free end side (the other end 31B side) of the tab member 31, the claw part takes on a shape protruding downward or upward. Then, the tab member 31 is moved to rotate the small lid part 3 until the claw part 23B of the small lid part 3 reaches a position facing or near the outer peripheral edge 7D of the extension section 7C. Then, as shown in Fig. 8B, the claw part 23B of the small lid part 3 is hooked or inserted into the extension section 7C. This forms a retaining structure that holds the small lid part 3 in a state where the small opening 6 serves as the outlet of the space section 105. Fig. 8B is a cross-sectional view for explaining an example of the retaining structure.

[0091] As shown in Fig. 66, instead of the tab member 31, a protruding piece may be formed from the small lid part 3 to form the knob part, and the small lid part 3 may be opened and closed by operating this knob part 24.

[3 Third Embodiment]

[0092] The lid 1 according to the third embodiment may be provided with multiple margin sections, as shown in Figs. 14A and 14B. A lid 1 having such a configuration is referred to as the third embodiment. Fig. 14A is a schematic plan view showing an example of the lid 1 according to the third embodiment. Fig. 14B is a diagram for explaining the margin section 10. In the lid 1 according to the third embodiment, the small lid part 3, the base section 2A1, and the hinge part 7 are also provided, similar to the first embodiment. The lid 1 according to the third embodiment is similar to the first embodiment except for the fact that multiple margin sections 10 are formed and the formation parts (positions) of the small lid part 3 and the small opening 6 are different, so the explanation of these other points is omitted.

(Formation parts of small lid part 3 and small opening)

[0093] In the third embodiment, the front edge 75A of the small lid part 3 is formed at a position overlapping the bonding region corresponding part 5. Also, since the opening edge 6G of the small opening 6 corresponds to the outer peripheral edge 3A of the small lid part 3, a part of the small opening 6 overlaps with the bonding region corresponding part 5, similar to the small lid part. Therefore, in the example of the third embodiment shown in Fig. 14A, in the open phase (where the small lid part 3 is rotated around the hinge part 7 to expose the small opening), an opening section (serving as the outlet) is formed that exposes the space section 105 of the container 101 with a part of the edge section 103 and the small opening.

(Margin section)

[0094] The margin section 10 is defined similarly to the first embodiment. Therefore, in the example of Fig. 14, the margin section 10 is formed as the first margin section 10A and the second margin section 10B.

(Area of First and Second Margin Sections and Area of Small Opening)

[0095] The sizes of the first margin section 10A and the second margin section 10B are not particularly limited, but it is preferable that the total area of the first margin section 10A and the second margin section 10B is smaller than the area of the small opening 6 (which also corresponds to the area of the small lid part 3 in the example of Fig. 14A) in a plan view of the base section 2A1. That is, in the example of Fig. 14B, it is preferable that the total area of the portion S11 corresponding to the first margin section 10A and the portion S12 corresponding to the second margin section 10B is smaller than the area of the portion S2 corresponding to the small opening 6 (the area of the small lid part 3). In this case, since the size of the small opening 6 (the area of portion S1) is larger than the size of the margin section 10 (the total area of portions S11 and S12), it becomes easy to add liquids such as beverages or solids such as ice to the space section 105 of the container 101 when the container with lid 150 is in a state where the small opening 6 is open (open state).

[4 Application example]

[0096] The lid 1 according to the first embodiment can be used for the container with lid 150 as shown in Figs. 3A and 3B. Fig. 3A is a perspective view the lid 1 according to the first embodiment is bonded to the edge section 103 forming the outer periphery of the opening 102 of the container 101 having the opening 102 formed at the upper end. Fig. 3B is a cross-sectional view schematically showing the state of the B-B line longitudinal section of Fig. 3A. The explanation of the container with lid 150 continues using Figs. 3A and 3B.

(Container with lid)

[0097] The container with lid 150 has a bonding part 151 where the container 101 and the lid 1 are bonded, and a region in the lid 1 to form the bonding part 151 becomes the bonding region R. The method of bonding the lid 1 and the container 101 is not particularly limited and can be appropriately used with bonding methods such as crimping or heat sealing. The lid 1 according to the first embodiment is used for the container with lid 150 is explained below as an example.

[0098] In Figs. 3A and 3B, the container 101 has a cylindrical side wall 104 and a bottom 106 that widen upward (taper downward) and a container body 110 forming a space section 105 inside, and an opening 102 opened at the upper end of the container body 110 (upper end of the side wall 104). Not shown, but the opening 102 of the container 101 is formed in a circular shape. However, the container 101 shown here is an example and does not limit the configuration of the container 101. For example, the container 101 may have the opening 102 formed in a rectangular shape. The container 101 may be any that can cover the opening 102 with the lid 1. Also, what is stored inside the container 101 (space section 105) is not particularly limited and can include, for example, liquids, solids, or combinations thereof.

[0099] In the container shown in Fig. 3, the edge section 103 of the opening 102 has a flange section. The flange section may be a curl section 109 where the member forming the container body 110 is wound outward, as shown in Fig. 3, or it may be formed as a part extending outward on a plane (flange section).

[0100] Also, the lid 1 according to the first embodiment may be combined with the container 101 having the opening 102.

[0101] The descriptions in [4 Application example] above are not limited to the lid 1 according to the first embodiment. The second and third embodiments can also be used for the container with lid 150 bonded to the container 101 in the same manner as the lid 1 according to the first embodiment (not shown).

[0102] Next, the fourth to sixth embodiments of the lid according to the present invention will be described.

[1 Fourth embodiment]

[1-1 Configuration]

(Lid)

[0103] According to the fourth embodiment, the lid 1 is bonded along the edge 103 of the opening 102 of the container 101 for use. The lid 1 is able to be formed in a shape that is fittable on the edge 103 (bonded to the edge 103) to cover the opening 102 while being bonded to the

opening 102 of the container 101. As shown in Fig. 20, the lid 1 has a bonding region R to be bonded to the edge 103 of the opening 102 of the container 101. Fig. 20 is a diagram showing an example of the lid 1. It is preferable that the container 101 has more flexibility at the edge 103. However, this do not except the container 101 due to a container with little or substantially no flexibility, such as a metal container.

[0104] The lid 1 includes a main body 2, as shown in Figs. 20(a), 20(b), etc. In the lid 1, the main body 2 includes the bonding region R. Figures 20(a) and 20(b) are a plan view and a cross-sectional view, respectively, showing another embodiment of the lid 1.

(Bonding region)

[0105] The bonding region R indicates the part that forms the area where the lid 1 is bonded to the edge 103 when the lid 1 is attached to the edge 103 over the opening 102 of the container 101. In the example of Figure 20, the bonding region R corresponds to an area that is generally annularly formed along the opening 102 in a shape corresponding to the opening 102 of the container 101 in a plan view of the lid 1. The width W of the bonding region R (width along the inner and outer directions) is usually the same as or narrower than the width of the edge 103 of the opening 102. However, this does not prohibit the width W of the bonding region R from being wider than the width of the edge 103 of the opening 102. Additionally, the bonding region R may be formed inside the outer peripheral edge 2A of the main body 2 or up to the outer peripheral edge 2A of the main body 2. The inside of the bonding region R indicates the part that forms the inside of the portion forming the bonding region R in a plan view of the lid 1. The inside of the bonding region R may be referred to as the inner region Rn. The top of the bonding region R indicates the upper surface (exposed surface 70 side) of the portion corresponding to the bonding region R of the lid 1 in a plan view.

(Main Body)

[0106] The main body 2 covers the opening 102 and the edge 103 when the lid 1 is attached over the opening 102 of the container 101. The main body 2 includes a movement facilitation structure 5B.

(Rotatally movement Facilitation Structure)

[0107] In the main body 2, the rotatally movement facilitation structure 5B is configured to allow a part of the main body 2 to rotatally move relative to another part of the main body 2 from the edge defined at the outer peripheral edge 2A of the main body 2 towards the inside of the main body 2. The aforementioned edge is referred to as the first edge (indicated by reference numeral 71A in Figure 20(a), etc.), and the outer peripheral edge 2A excluding the first edge 71A is referred to as the second edge 71B. A part of the main body 2 that can rotatally move relative to the second portion 3D (the aforementioned part of the main body 2) is defined as the first portion 3B, and the other part of the main body 2 (excluding the first portion) is defined as the second portion 3D. The rotatally movement facilitation structure 5B includes a guide part 6A.

(Guide Part)

[0108] The guide part 6A has a portion extending from the first end 71A1 and the second end 71A2, which are both ends of the edge (first edge 71A), towards the inside of the main body 2. The guide part 6A delineates at least part of the boundary K1 between the first portion 3B and the second portion 3D. In Figure 20(a), the guide 6A is formed as the first guide 6B and the second guide 6C. The first guide part 6B extends from the first end 71A1 towards the inside of the main body 2, forming the boundary K1 between the first portion 3B and the second portion 3D. The second guide 6C extends from the second end 71A2 towards the inside of the main body 2, forming the boundary K1 between the first portion 3B and the second portion 3D. If the first guide 6B and the second guide 6C are not distinguished, they are collectively referred to as the guide part 6A.

[0109] The guide 6A crosses the bonding region R. In the example of Figure 20(a), the guide part 6A is formed linearly. The guide part 6A is defined as the part where a separation structure between the first portion 3B and the second portion 3D is formed along the boundary K1 when displacing the first portion 3B relative to the second portion 3D. When displacing the first portion 3B from the unused state of the container 101 with the attached lid 1, separation from the container 101 and the lid 1 occurs, resulting in strong forces being applied at the boundary between the first portion 3B and the second portion 3D in the bonding region R and its vicinity, making internal breakage of the lid 1 likely. Internal breakage refers to delamination within the material (such as paper-based material) forming the lid 1 itself or unintended breakage (breakage other than at the boundary K1). By forming the rotatably movement facilitation structure 5B with such a guide part 6A in the lid 1, the risk of internal breakage at the boundary between the first portion 3B and the second portion 3D in the bonding region R and its vicinity can be suppressed, enabling smooth rotatably movement of the first portion 3B.

[0110] The structure of the guide part 6A is not particularly limited, but in the example of Figure 20(a), it is a notch structure as described above. However, this does not restrict the guide part 6A from having a structure other than a notch structure. For example, the guide part 6A may have a weakening structure.

[0111] In this specification, the notch structure indicates a slit-like through structure that penetrates entirely from the non-opposing surface (exposed surface 70) side to the opposing surface (back surface) when the lid 1 is

attached to the container 101. A weakening structure indicates a structural part that can reduce the force required for rotatably movement compared to parts not endowed with such a structure, such as a perforation structure or a half-cut structure. The perforation structure, as shown in Figure 26(a), indicates a structure where cutting parts 18B penetrating from the exposed surface 70 to the back surface and continuous parts 18A avoiding cuts are alternately formed. The half-cut structure, as shown in Figure 26(c), indicates a structure (partial notch structure) where partially notched parts 32 are formed while avoiding penetration in the thickness direction of the material forming the main body 2. The depth of the notch in the half-cut structure is not particularly limited concerning the material constituting the main body 2. Figure 26(a) is a plan view showing an example where the guide part 6A has a perforation structure, and Figure 26(b) is a plan view showing an example where the guide part 6A has a half-cut structure.

[0112] In the example of Figure 20(a), the first guide part 6B has a first outer guide part 8A formed from the first end 71A1 to the inner edge RA of the bonding region R, and a first inner guide part 9A excluding the first outer guide part 8A. Additionally, the second guide part 6C has a second outer guide part 8B formed from the second end 71A2 to the inner edge RA of the bonding region R, and a second inner guide part 9B excluding the second outer guide part 8B.

[0113] In the guide part 6A, the structure may differ between the first outer guide part 8A and the first inner guide part 9A. For example, a half-cut structure may be formed in the first outer guide part 8A, and a notch structure may be formed in the first inner guide part 9A. This is also the case for the second outer guide part 8B and the second inner guide part 9B.

[0114] In the rotatably movement facilitation structure 5B, the first guide part 6B and the second guide part 6C extend towards each other towards the inside of the main body 2. This is one example, and as shown in the first modification of the fourth embodiment described later, the first guide part 6B and the second guide part 6C may be formed along the inner edge RA of the bonding region R for at least one of them. However, from the viewpoint of making the shape of the first portion 3B taper from the first edge 71A towards the inside of the main body 2, as described later, it is preferable that the first guide part 6B and the second guide part 6C extend towards each other from the first end 71A1 and the second end 71A2, respectively, towards the inside of the main body 2.

[0115] Additionally, for the first guide part 6B and the second guide part 6C, the length of the part of the first guide part 6B overlapping the bonding region R (first overlapping part) and the length of the part of the second guide part 6C overlapping the bonding region R (second overlapping part) may differ.

[0116] In such cases, the length of the adhesive part in the first overlapping part and the length of the adhesive part in the second overlapping part can be made different. In this case, when displacing the first portion, the rotatably movement of the first portion is performed while eliminating the adhesion between the container 101 and the lid 1 (while peeling) in the first outer guide part 8A and the second outer guide part 8B, so the user rotatably moves the first portion using a relatively large force. In the first inner guide part 9A and the second inner guide part 9B, the force to eliminate the adhesion between the container 101 and the lid 1 is unnecessary, so the user can rotatably move the first portion using a relatively small force. Therefore, the force applied to the lid changes suddenly at the timing of transitioning from the first outer guide part 8A to the first inner guide part 9A and from the second outer guide part 8B to the second inner guide part 9B. At this time, if the user continues to apply force in the first inner guide part 9A or the second inner guide part 9B, an excessive load is applied to the lid. Therefore, by varying the length of the adhesive part in the first overlapping part and the length of the adhesive part in the second overlapping part, it becomes easier to shift the timing of transitioning from the first outer guide part 8A to the first inner guide part 9A and from the second outer guide part 8B to the second inner guide part 9B, making it less likely for an excessive load to be applied to the lid.

(Hinge Part)

[0117] As shown in the examples of Figures 20(a) and 20(b), it is preferable for the rotatably movement facilitation structure 5B to have a hinge part 7. The hinge part 7 is connected to the inner end of the guide part 6A. In the examples of Figures 20(a) and 20(b), the end of the hinge part 7 is connected to the inner end of each of the first guide part 6B and the second guide part 6C. That is, the guide part 6A is connected to the end of the hinge part 7 at the end opposite to the connecting end side with the outer guide part (first outer guide part 8A, second outer guide part 8B) among the ends of the inner guide part (first inner guide part 9A, second inner guide part 9B). The structure of the hinge part 7 is not particularly limited as long as it is not a notch structure; it may be a non-formed structure or a weakening structure.

[0118] The hinge part 7 can facilitate the smooth rotatably movement of the first portion 3B relative to the second portion 3D. For example, in the cases of FIG. 20(a) and FIG. 20(b), when the lid 1 is not in use, the first portion 3B is in a state of being bonded to the container 101 in the region corresponding to the first portion 3B of the bonding region R, and the rotatably movement of the first portion 3B is restricted. As shown in FIG. 21(a) and FIG. 21(b), when using the lid 1, the first portion 3B is raised against the second portion 3D from the outer peripheral edge of the first portion 3B (the outer end of the first edge 71A). At this time, the first portion 3B is peeled off from the edge 103 of the container 101. Then, the first portion 3B gradually rises against the second portion 3D while the first portion 3B and the second

portion 3D are separated along the guide portion 6A. The guide portion 6A defines the boundary between the first portion 3B and the second portion 3D.

[0119] When the separation of the first portion 3B and the second portion 3D progresses to the inner end of the guide portion 6A, since the hinge part 7 is formed, as shown in FIG. 21(b), the first portion 3B can rotate more smoothly in the direction of arrow F with respect to the second portion 3D using the hinge part 7 as an axis. Then, the first portion 3B can be smoothly folded back to a position facing the exposed surface 70 side of the second portion using the hinge part 7 as an axis. Thus, the hinge part 7 becomes a part that can make the rotatably movement of the first portion smoother. It is preferable that the hinge part 7 forms a weakened structure from the viewpoint of smoothly forming the separation portion of the first portion 3B and the second portion 3D. However, this is an example, and the hinge part 7 may be a non-formed part. A non-formed part indicates a part where the formation of a notch structure and a weakened structure is omitted.

(First Portion)

[0120] The first portion 3B is defined as a part that can be rotatably moved by the rotatably movement facilitation structure 5B when the lid 1 is attached to the container 101. Also, the first portion 3B is defined as a part that forms a fixed area spreading inside the bonding region R from a part of the outer peripheral edge 2A of the main body 2 (the first edge 71A) as a base end towards the inside of the main body 2 in a plan view of the lid 1.

(Shape of the First Portion)

[0121] The shape of the first portion 3B is determined according to the layout of the guide portion 6A of the rotatably movement facilitation structure 5B. In the example of FIG. 20, the first portion 3B has a first side edge 77A and a second side edge 77B as two side edges 77, and an inner edge 73 connected to the side edges 77 at the inner end of the side edges 77, and the first edge 71A corresponding to the first portion 3B of the outer peripheral edge 2A of the main body 2 also serves as the front edge of the first portion 3B. In the first portion 3B, the first side edge 77A and the second side edge 77B extend in a direction intersecting each other (approaching each other) from the front edge (the first edge 71A) towards the inner edge 73 towards the inside of the main body 2. The first side edge 77A is formed as the first portion 3B and the second portion 3D are separated at the first guide portion 6B. The second side edge 77B is formed as the first portion 3B and the second portion 3D are separated at the second guide portion 6C.

[0122] The shape of the first portion 3B is not particularly limited, but as shown in FIG. 20(a) and the like, it is preferable to have a tapered shape from the base end (the first edge 71A) of the first portion 3B of the outer peripheral edge of the main body 2 towards the inside of the main body 2.

[0123] Such a shape of the first portion 3B can be realized by adopting a layout of the first guide portion and the second guide portion, where the first guide portion 6B and the second guide portion 6C extend in a direction intersecting towards the inside of the main body, as described above.

[0124] When the first portion 3B is formed in such a shape, it becomes easier to cause the separation of the first portion 3B and the second portion 3D along the extending direction of the guide portion 6A when displacing the first portion 3B against the second portion 3D. Then, with the separation of the first portion 3B and the second portion 3D, the aforementioned first side edge 77A and second side edge 77B are formed. The hinge part 7 of the rotatably movement facilitation structure 5B forms a part corresponding to the inner edge 73.

(Second Portion)

[0125] The second portion 3D is defined as a part that forms the area excluding the area formed by the first portion 3B of the main body 2 in a plan view of the lid 1, that is, the part excluding the first portion 3B of the main body 2. In the example of FIG. 20, at least a part of the boundary K1 between the second portion 3D and the first portion 3B is a structure divided by the guide portion 6A. In this example, the hinge part 7, which will be described later, forms a continuous structural part at the boundary K1 between the second portion 3D and the first portion 3B. Also, as shown in FIG. 21(a), the part of the second portion 3D corresponding to the boundary K1 between the second portion 3D and the first portion 3B has a concave contour shape corresponding to a part of the contour of the first portion 3B.

(Small Opening)

[0126] As shown in FIG. 32, when the first portion 3B is rotatably moved (in the example of FIG. 21(a), when the first portion 3B is folded back using the hinge part 7 as an axis), a small opening 6 with a smaller opening area than the opening 102 is formed between the lid 1 and the container 101, as shown in FIG. 31. FIG. 31 and FIG. 32 are diagrams explaining the state where the first portion 3B is rotatably moved in the container with lid 150, where the lid 1 according to the fourth embodiment is attached to the container 101. This can be realized by defining a size for the first portion 3B that allows the formation of the small opening 6. Also, when the small opening 6 is formed, the opening 102 and the space 105 of the container 101 are exposed from the small opening 6. The small opening 6 is formed in the area surrounded by the edge 103 of the container 101, the forming part of the facing surface 3H of the second portion 3D, and the hinge part 7 in a plan view of the lid 1. According to such a lid 1, when the lid 1 is attached to the opening 102 of the

container 101 into which a beverage is injected into the space 105, the user can drink the beverage inside the container 101 using the small opening 6 of the lid 1 as a drinking spout.

(Protrusion)

[0127] In the lid 1 according to the fourth embodiment, it is preferable that the protrusion 11 is provided. The protrusion 11 is a part protruding outward from the part corresponding to the first portion 3B of the outer peripheral edge 2A of the main body 2. This protrusion 11 can function as a knob to lift the first portion 3B when displacing the first portion 3B against the second portion 3D. For example, by lifting while pinching the tip 11A of the protrusion 11 or its vicinity, the first portion 3B is lifted along with the protrusion 11. The tip 11A indicates a fixed part including the tip of the protrusion 11. The boundary K2 between the protrusion 11 and the first portion 3B is located on a part of the outer peripheral edge 2A of the main body 2, and a weakened structure may be formed along the boundary K2. This weakened structure may be similar to the weakened structure described in the rotatably movement facilitation structure 5B.

[0128] The size of the protrusion 11 is not particularly limited, but in the examples of FIG. 20(a) and FIG. 20(b), it is a part extending outward from the entire first edge 71A of the first portion 3B, and is formed in a crescent shape in a plan view of the lid 1.

[0129] In the lid 1 according to the fourth embodiment shown in the example of FIG. 20(a), the protrusion 11 has a claw part 23B inside the protrusion 11, and a receiving part 20 is formed in the second portion 3D. However, this is not limited to the case where the lid 1 has the claw part 23B and the receiving part 20. The lid 1 may omit at least one of the claw part 23B and the receiving part 20.

(Claw part)

[0130] In modification example 5, the claw part 23B is formed by allowing the claw forming portion 23C formed on the protrusion 11 to hang down from the protrusion 11. The claw forming portion 23C is formed with a notch structure. The claw forming portion 23C is formed in a convex shape from the tip 11A of the protrusion 11 towards the main body 2. By bending the claw forming portion 23C from the base end 24A so that the tip 24B of the claw forming portion 23C is directed downward while the user pinches the tip 11A or its vicinity of the protrusion 11, the claw forming portion 23C hangs down from the protrusion 11. At this time, the hanging part becomes the claw part 23B.

(Receiving part)

[0131] The receiving part 20 has a shape that allows the claw part 23B to be inserted. Specifically, in the example of FIG. 20(a), the receiving part 20 is a notch structure formed in a shape that allows the claw part 23B of the protrusion 11 to be inserted. In modification example 5, as shown in FIG. 21(b), as the first portion 3B is folded back to the upper surface of the second portion 3D using the hinge part 7 as an axis, the protrusion 11 is rotatably moved integrally with the first portion 3B. FIG. 21(a) is a plan view showing the state where the first portion 3B is folded back to the upper surface (on the exposed surface 70) of the second portion 3D, and FIG. 21(b) is a longitudinal sectional view along line B-B shown in FIG. 21(a).

[0132] At this time, the protrusion 11 is rotatably moved to a position where the claw part 23B can be inserted into the receiving part 20. That is, regarding the relative position of the claw part 23B and the receiving part 20, when the first portion 3B is folded back to the upper surface of the second portion 3D using the hinge part 7 as an axis, the claw part 23B and the receiving part 20 are positioned to face each other. Then, when the claw part 23B of the protrusion 11 is inserted into the receiving part 20, the state where the first portion 3B is folded back to the upper surface of the second portion 3D can be stably maintained.

[1-2 Operation and Effect]

[0133] According to the lid 1 of the fourth embodiment, the rotatably movement facilitation structure 5B is formed, and the first portion 3B can be smoothly rotatably moved against the second portion 3D by the rotatably movement facilitation structure 5B. At this time, internal breakage is less likely to occur at the boundary between the first portion 3B and the second portion 3D. Therefore, after the small opening 6 is formed by the rotatably movement of the first portion 3B relative to the second portion 3D, it becomes easy to close the small opening 6 again with the first portion 3B as tightly as possible. It should be noted that the state in which the small opening 6 is exposed while the first portion 3B is at least partially separated from the second portion 3D is referred to as the open state. The state in which the small opening 6 is covered by the first portion 3B is referred to as the closed state. Once the open state is formed and then returns to the closed state, it is referred to as the re-closed state.

[0134] Conventionally, when a liquid such as a beverage is contained inside a container with a lid, the user would peel off the film material forming the lid to expose the mouth of the container in order to drink the contents. In this case, even if one tried to cover the exposed mouth part again with the lid (sometimes referred to as the re-closed state), the state of the mouth being covered by the lid was easily undone. Furthermore, when the mouth was covered with the lid, a gap of significant size was likely to form between the lid and the mouth. In such cases, liquid is likely to leak out from the gap between the lid and the mouth.

[0135] In this regard, according to the lid 1 of the present invention, since the first portion 3B and the

second portion 3D are easily separated along the guide part 6A when forming the open state, as shown in Figure 28, the tip end surface 72C of the side edge 77 of the first portion 3B and the face of the second portion facing this tip end surface (facing surface 3H) are easily aligned, and in the re-closed state, the tip end surface 72C of the side edge 77 of the first portion 3B and the face of the second portion facing this tip end surface (facing surface 3H) are likely to be in contact.

[0136] Figure 28 is an enlarged view of the main part to explain the connection between the first portion 3B and the second portion 3D. When the lid 1 is formed of a paper-based material in the state shown in Figure 28, the fibers of the paper-based material are easily exposed at the tip end surface 72C and the facing surface 3H, and friction is likely to occur at the tip end surface 72C and the facing surface 3H. In this case, the risk that the first portion 3B and the second portion 3D will generate friction with each other and the first portion 3B will easily detach from the second portion 3D is suppressed, and the state in which the small opening 6 is re-closed by the first portion 3B can be maintained more stably. However, in the lid 1, since at least the guide part 6A becomes a part that separates the first portion 3B and the second portion 3D when in the open state, it is possible to ensure breathability even in the re-closed state, and it is possible to allow steam to pass through at least part of the boundary between the first portion 3B and the second portion 3D.

[1-3 Modification Examples]

[0137] Next, modification examples of the lid 1 according to the fourth embodiment will be described.

(Modification Example 1)

[0138] In the example of the lid 1 according to the fourth embodiment, the first inner guide part 9A and the second inner guide part 9B extend in a direction intersecting towards the inside of the main body 2, but the layout of the first inner guide part 9A and the second inner guide part 9B is not particularly limited to the shape shown in Figure 20. The lid 1 according to the fourth embodiment may be formed such that at least one of the first inner guide part 9A and the second inner guide part 9B extends along the inner edge RA of the bonding region R, as shown in Figure 23(a) and the like (Modification Example 1).

[0139] Figure 23(a) is a plan view showing an example of the lid 1 according to Modification Example 1 of the fourth embodiment. In the example of Figure 23(a), both the first inner guide part 9A and the second inner guide part 9B are formed in a shape along the inner edge RA of the bonding region R. In this case, the first portion 3B is formed in a shape having at least part of a contour shape that spreads along the inner edge RA of the bonding region R, in the inner part of the bonding region R. And the end of the hinge part 7 is connected to the end of each of the first inner guide part 9A and the second inner guide part 9B (the end different from the one connected to the first outer guide part 8A and the second outer guide part 8B).

(Modification Example 2)

[0140] In the example of the lid 1 according to Modification Example 1 of the fourth embodiment, the first inner guide part 9A and the second inner guide part 9B are formed along the inner edge RA of the bonding region R, and the hinge part 7 is formed, but as shown in Figure 23(b), the hinge part 7 may be omitted (Modification Example 2). Figure 23(b) is a plan view showing an example of the lid 1 according to Modification Example 2 of the fourth embodiment. In this example, the part of the first portion 3B formed inside the bonding region R is formed in a shape along the inner edge RA of the bonding region R.

[0141] In Figure 23(b), the end 9A1 of the first inner guide part 9A and the end 9B1 of the second inner guide part 9B are connected. In such a case, since the first inner guide part 9A and the second inner guide part 9B of the guide part 6A are formed along the inner edge RA of the bonding region R and the hinge part 7 is omitted, it becomes easy to completely separate the first portion 3B from the second portion 3D along the boundary K1. In this case, the small opening 6 is formed in the part surrounded by a part of the edge 103 of the container 101 (the part of the edge 103 formed in the part exposed by the rotatably movement of the first portion 3B) and the facing surface 3H (inner tip end surface) of the second portion 3D.

(Modification Example 3)

[0142] In the lid 1 according to the fourth embodiment, as shown in Figure 27, the rotatably movement facilitating structure 5B may form a protruding curved portion 14 that curves from the first portion 3B towards the second portion 3D in the guide part 6A (Modification Example 3). Figure 27 is a plan view showing an example of the lid of Modification Example 3 of the fourth embodiment. In the first portion 3B, the part corresponding to the protruding curved portion 14 forms a convex portion 15. In the example shown in Figure 27, the convex portion 15 is formed in the part of the first portion 3B formed inside the bonding region R. At this time, the second portion 3D forms a concave shape part 15C corresponding to the contour of the convex portion 15.

[0143] According to Modification Example 3, the length of the boundary K1 between the first portion 3B and the second portion 3D is increased, and the area of the tip end surface 72C of the first portion 3B and the facing face 3H of the second portion 3D can be increased. As a result, the re-closed state in which the small opening 6 is re-closed by the first portion 3B can be maintained more stably.

(Modification Example 4)

[0144] In the lid 1 according to the fourth embodiment, as shown in Figure 22(b), when the receiving part 20 is formed in the second portion 3D, the tip 11A of the protruding part 11 may be formed in a shape corresponding to the shape of the receiving part 20. (Modification Example 4). Figure 22(b) is a plan view showing an example of the lid according to Modification Example 4 of the fourth embodiment.

[0145] In Modification Example 4, the receiving part 20 is a notch formed in a shape that allows the tip 11A of the protruding part 11 to be inserted. In Modification Example 4, as the first portion 3B is folded over the upper surface (exposed surface 70 side) of the second portion 3D with the hinge part 7 as the axis, the protruding part 11 rotatably moves integrally with the first portion 3B. At this time, the protruding part 11 rotatably movement to a position where its tip 11A can be inserted into the receiving part 20. And when the tip 11A of the protruding part 11 is inserted into the receiving part 20, the state in which the first portion 3B is folded over the upper surface of the second portion 3D can be stably maintained.

(Modification Example 5)

[0146] In the lid 1 according to the fourth embodiment, as shown in Figure 22(a), the first portion 3B may have a claw part 23B on its inside and the second portion 3D may have a receiving part 20 formed (Modification Example 5). Figure 22(a) is a plan view showing an example of the lid according to Modification Example 5 of the fourth embodiment. The structure of the claw part 23B and the receiving part 20, and the relative position of the claw part 23B and the receiving part 20 may be the same as in Modification Example 5. In this case, the same effect as in Modification Example 5 can be obtained.

(Modification Example 6)

[0147] In the lid 1 according to the fourth embodiment, as shown in Figure 25, a protruding part 22 that protrudes outward from a part of the portion corresponding to the second portion 3D of the outer peripheral edge 2A of the main body 2 may be formed (Modification Example 6). Figure 25 is a diagram showing an example of the lid according to Modification Example 6 of the fourth embodiment. In this case, the protruding part 11 protruding from the part corresponding to the first portion 3B of the outer peripheral edge 2A of the main body 2 is referred to as the first protruding part 11B. And the protruding part 22 protruding from the part corresponding to the second portion of the outer peripheral edge 2A of the main body 2 is referred to as the second protruding part 22A. It is preferable that the first protruding part 11B and the second protruding part 22A are arranged such that the center CP of the main body 2 is present between the first protruding part 11B and the second protruding part 22A in a plan view of the lid 1. In this case, for example, an operator attaching the lid 1 to the container 101 can pinch the second protruding part 22A to attach the lid 1 to the container 101, and the user of the container 101 can pinch the first protruding part 11B to rotatably move the first portion 3B relative to the second portion 3D. That is, the possibility of the first protruding part 11B and its surroundings being contaminated by someone other than the user touching the first protruding part 11B is suppressed.

(Modification Example 7)

[0148] In the lid 1 according to Modification Example 7 of the fourth embodiment, a claw part 23B may be formed on the first protruding part 11B, and a receiving part 20 may be formed on the second protruding part 22A (not shown). The structure of the claw part 23B and the receiving part 20, and the relative position of the claw part 23B and the receiving part 20 may be the same as in Modification Example 5. In this case, the same effect as in Modification Example 5 can be obtained.

(Modification Example 8)

[0149] In the lid 1 according to the fourth embodiment, as shown in Figures 24(a) and 24(b), a tab member 31 may be provided on the outer peripheral edge 75B of the protruding part 11 or the outer peripheral edge 2A of the main body 2 (Modification Example 8). Figures 24(a) and 24(b) are plan views showing an example of the lid 1 according to Modification Example 8 of the fourth embodiment. In the lid 1 shown in Figure 24(a), multiple tab members 31 are provided on the outer peripheral edge 75B of the protruding part 11. In the lid 1 shown in FIG. 24(b), multiple tab members 31 are provided on the portion corresponding to the second portion 3D of the outer peripheral edge 2A of the main body 2 (second edge 71B). FIG. 24(a) and FIG. 24(b) are examples, and the number of tab members 31 and the like are not limited to those shown in these figures. It is preferable that each tab member 31 has a printed section with decorative images such as text or graphic pattern. When a printed section is formed, it is preferable that the printed section is formed on both the exposed surface side and the back side of the tab member 31 (not shown).

(Modification example 9)

[0150] The lid 1 according to Modification Example 9 of the fourth embodiment may be configured so that the claw part 23B is not locked to the receiving part 20, but is locked to a fixed place such as the edge 103 of the lid 1 or the container 101. By locking the claw part 23B in this way, it is possible to maintain the state where the small opening 6 is formed open and the state where the small opening 6 is closed again after being formed open. The configuration that can maintain the state where the small

opening 6 is formed open and the configuration that can maintain the state where the small opening 6 is closed again may be other than those described above.

[2 Fifth embodiment]

[2-1 Configuration]

(Lid)

[0151] The lid 1 according to the fifth embodiment, as shown in FIG. 33(a) and FIG. 33(b), has a groove 80 formed in the region corresponding to the inside of the bonding region R (inner region Rn of the bonding region R) on the non-formed surface (exposed surface 70) of the bonding region R of the main body 2 in a plan view of the lid 1. FIG. 33(a) and FIG. 33(b) are diagrams showing an example of the lid 1 according to Modification Example 1 of the fifth embodiment. The lid 1 according to the fifth embodiment is similar to the fourth embodiment regarding other configurations forming the groove 80 (such as the rotatably movement facilitation structure 5b), so their descriptions are omitted.

(Groove)

[0152] In the lid 1 according to the fifth embodiment, it is preferable that the groove 80 is formed to extend along the inner edge RA of the bonding region R in the inner region Rn of the bonding region R. The depth of the groove 80 is not particularly limited, but it is preferable that it is configured to gradually deepen as it approaches the first portion 3B from a position far from the first portion 3B along the direction in which the groove 80 extends, as shown in FIG. 34(a), FIG. 34(b), and FIG. 34(c). As also shown in FIG. 34(b) and FIG. 34(c), the depth D2 of the groove 80 at a position far from the first portion 3B is shallower than the depth D1 of the groove 80 at a position closer to the first portion 3B along the direction in which the groove 80 extends. Moreover, it is preferable that the groove 80 is also formed in the first portion 3B and the second portion 3D, as shown in the examples of FIG. 33(a) and FIG. 34(a). In this example, the groove 80 extends so as to cross the boundary K1 between the first portion 3B and the second portion 3D. This can be realized by forming the groove 80 so that it also crosses the guide portion 6A. In the example of FIG. 33(a), the groove 80 is formed to traverse the first portion 3B. In this example, the groove 80 is formed in a shape extending in a curve along the inner edge RA in the first portion 3B.

[0153] In this example, the groove 80 is formed in a C-shape along the inner edge RA of the bonding region R. However, this is just an example of the overall shape of the groove 80, and the shape of the groove 80 is not particularly limited. The groove 80 may be formed in an annular shape, for example, as shown in FIG. 35.

[0154] Even when the groove 80 is formed, the guide portion 6A may form a notch structure, or may form a fragile structure such as a half-cut structure. However, when the guide portion 6A forms a half-cut structure, even if the groove 80 is in a state where its depth is deepened and is formed across the guide portion 6A (across the boundary K1 between the first portion 3B and the second portion 3D), gaps are less likely to occur at the position where the guide portion 6A and the groove 80 intersect.

(Convex Strip)

[0155] In the lid 1, as shown in FIG. 33(b), it is preferable that a convex strip 82 is provided in a corresponding position to the groove 80 and on the opposite surface that the groove 80 is formed (exposed surface 70). As shown in FIG. 39, it is preferable that the convex strip 82 is formed so as to contact the inner surface of the edge 103 of the opening 102 in the container 101. Further, it is preferable that the convex strip 82 has a height enough not to occur a gap in the surface direction of the exposed surface 70 in the lid 1 relative to the edge 103 of the opening 102 in the container 101. This convex strip 82 can be realized by embossing the lid 1. As noted, the groove 80 is formed on the side of the exposed surface 70 in the lid 1, and a convex strip 82 having a vertical length corresponding to the groove 80 is formed at the position opposite to the groove 80 formed. The groove 80 is formed along the inside of the edge 103 of the opening 102 in the container 101, as shown in FIG. 39, so that the convex strip 82 can be formed along the inner end of the edge 103 of the opening 102 in the container 101 and in contact with the inner surface side of the edge 103 of the opening 102 in the container 101. Here FIG. 39 is a cross-sectional view showing the lid 1 placed on the container 101.

[0156] With such a convex strip 82 formed, it becomes easy to align the position of the lid 1 with respect to the container 101 when placing the lid 1 to cover the opening 102 of the container 101.

[2-2 Operation and Effect]

[0157] According to the lid 1 of the second embodiment, when the lid 1 is bonded to the opening 102 of the container 101 containing liquid, even if liquid leaks from inside the container 101 onto the exposed surface 70 of the lid 1, it is possible to make the liquid flow into the groove 80 before it spills outside the lid 1. Also, if the groove 80 is formed to deepen toward the first portion, the liquid that has flowed into the groove 80 can be made to flow down toward the position of the first portion. Then, by lifting the first portion to expose the small opening 6, the liquid can be made to drip from the small opening 6 into the container. As shown in FIG. 38, in the fifth embodiment as well, similar to the fourth embodiment, the small opening 6 is formed when the first portion 3B is rotatably moved, for example, in the portion surrounded by the hinge part 7, the portion corresponding to the facing

surface 3H of the second portion, and the edge 3G.

[0158] Also, when the groove 80 is formed in the first portion 3B, as shown in FIG. 40, when forming a re-closed state by pressing the first portion 3B against the edge 103 of the container 101, the first portion 3B slightly bends at the position of the groove 80, and the restoring force from that bend can strongly press the edge 103 of the container 101, which is considered to further strengthen the contact between the first portion 3B and the edge 103. As a result, the small opening 6 can be more securely sealed with the first portion 3B.

[2-3 Modification Examples]

[0159] Modification examples of the fifth embodiment will be described.

(Modification Example 1)

[0160] In the lid according to the fifth embodiment shown in FIG. 36, the number of grooves 80 formed may be multiple. Regarding the layout of the grooves 80, as shown in FIG. 36, multiple grooves 80 may be formed concentrically. FIG. 36 is a plan view according to Modification Example 1 of the fifth embodiment. As shown in Modification Example 1 of the fifth embodiment, when there are multiple grooves 80, one type of lid 1 can be used to cover the openings 102 of multiple types of containers 101 with different diameters of the opening 102.

(Modification example 2)

[0161] In the lid according to the fifth embodiment, when the groove 80 is formed in an annular shape, as shown in FIG. 37, the main body 2 may be formed so that the portion corresponding to the inner region (inner region part 90) is positioned higher than the portion corresponding to the outer region (outer region part 91) in a plan view of the lid 1. FIG. 37 is a cross-sectional view according to Modification example 2 of the fifth embodiment. According to the lid 1 of Modification Example 2 of the fifth embodiment, when the lid 1 is fitted on the container 101 containing liquid, even if liquid leaks onto the inner region part 90 of the exposed surface 70 of the lid 1, it becomes easier for the liquid to flow from the inner region part 90 into the groove 80 on the exposed surface 70 of the lid 1.

[3 Sixth embodiment]

[3-1 Configuration]

(Lid)

[0162] In the lid 1 according to the third embodiment, as shown in FIG. 41, a recessed portion 85 may be formed in the second portion 3D, in the inside (inner region Rn) of the bonding region R, in a fixed area of the non-formed surface (exposed surface 70) of the bonding region R. FIG. 41 is a diagram showing an example of the lid 1 according to the third embodiment. The lid 1 according to the sixth embodiment is similar to the fourth embodiment regarding other configurations forming the recessed portion 85 (such as the rotatably movement facilitation structure 5B), so their descriptions are omitted.

(Recessed portion)

[0163] The recessed portion 85 is formed in the region from the inner edge RA of the bonding region R to a fixed position toward the center of the main body 2 in the second portion 3D. In the example of FIG. 41, the bottom surface 87 of the recessed portion 85 has a sloped surface that descends from the reference position STP toward the first portion 3B, when the farthest position from the portion corresponding to the first portion 3B of the inner edge RA of the bonding region R is set as the reference position STP. However, this does not prohibit the bottom surface 87 of the recessed portion 85 from being flat.

(Raised Portion)

[0164] In the lid 1, it is preferable that the position on the opposite side of the formation surface (exposed surface 70) of the recessed portion 85 is a raised portion 86. In this case, it is preferable that the outer peripheral end of the raised portion 86 is formed to contact the inner surface side of the edge 103 of the opening 102 of the container 101. Moreover, it is preferable that the height of the raised portion 86 is secured to a degree that makes it difficult for misalignment to occur relative to the opening 102 of the container 101. Such a protrusion 86 can be realized by embossing the lid 1. Through embossing, a recess 85 is formed on the exposed surface 70 side of the lid 1, and a protrusion 86 with a height corresponding to the depth of the recess 85 is formed on the opposite side corresponding to the position of the recess 85. Then, by forming the recess 85 so that its contour shape follows the opening 102 of the container 101, the protrusion 86 can be formed to contact the inner surface side of the edge 103 of the opening 102 of the container 101.

[3-2 Operation and Effect]

[0165] According to the lid 1 of the third embodiment, when the lid 1 is bonded to the opening 102 of the container 101 containing liquid, even if liquid leaks from inside the container 101 onto the exposed surface 70 of the lid 1, it is possible to allow the liquid to flow into the recess 85 before spilling outside the lid 1.

[3-3 Modified Example]

[0166] A modified example of the sixth embodiment will

be described.

(Modified Example)

[0167] According to the lid 1 of the sixth embodiment, as shown in Fig. 42, the recess 85 may be formed over the entire body 2. Fig. 42 is a diagram showing an example of the lid 1 according to a modified example of the sixth embodiment. In the lid 1 according to the modified example of the sixth embodiment, the recess 85 is shaped to sink in a conical manner from the outer peripheral edge 2A of the body 2 towards the center of the body 2. According to the lid 1 of the modified example of the sixth embodiment, when the lid 1 is bonded to the opening 102 of the container 101 containing liquid, it is possible to allow the liquid to flow into the recess 85 before spilling outside the lid 1, regardless of the position on the exposed surface 70 of the lid 1 where the liquid leaks.

[4 Application Example]

[0168] The lid 1 according to the fourth embodiment can be used for a container 150 with a lid, as shown in Figs. 29, 30, etc. Figs. 29 and 30 are a perspective view and a cross-sectional view showing an example in which the lid 1 according to the fourth embodiment is bonded to the edge 103 of the opening 102 of the container 101 having the opening 102. The container 150 with a lid has a bonding part 151 where the container 101 and the lid 1 are bonded, and the area of the lid 1 forming the bonding part 151 becomes the bonding region R. The method of bonding the lid 1 and the container 101 is not particularly limited and can be appropriately used with bonding methods such as crimping or heat sealing. Below, the case where the lid 1 according to the fourth embodiment is used for the container 150 with a lid will be described as an example.

[0169] The container 101 has a cylindrical side wall 104 and a bottom 106 that widen upward, forming a space 105 inside, and an opening 102 at the upper end of the body (upper end of the side wall 104). Although not shown, the opening 102 of the container 101 is formed in a circular shape. However, the container 101 shown here is an example and does not limit the configuration of the container 101. For example, the container may have a rectangularly shaped mouth. The container may be any that can have its mouth covered by a lid. Also, what is stored inside the container is not particularly limited and can include, for example, liquid, solid, or combinations thereof.

[0170] In the container shown in Figs. 29 and 30, a curl portion 109, where the member forming the body of the container is wound outward, is formed on the edge 103 of the opening 102, but the container 101 is not limited to this. The end surface of the side wall 104 may be exposed at the edge 103 of the opening 102, or a flange extending outward from the opening 102 of the container 101 may be formed at the edge 103 of the opening 102.

[0171] Also, the lid according to the fourth embodiment may be combined with a container having a mouth.

[0172] The matters shown in [4 Application Example] above are not limited to the use of the lid 1 according to the fourth embodiment and are also applicable to the fifth to sixth embodiments.

[0173] The seventh to ninth embodiments of the lid according to the present invention will be described in detail with reference to the drawings.

[1 Seventh Embodiment]

[1-1 Configuration]

(Lid)

[0174] The lid 1 according to the seventh embodiment is used by being bonded along the edge 103, which is specified as the portion extending outward from the edge of the opening 102 of the container 101, as will be described later with reference to Fig. 44, etc. Therefore, the lid 1 is formed so as to be capable of forming a bonding region R that is bonded to the edge 103 of the container 101 having the opening 102. Also, the lid 1 is formed in a shape that allows it to cover the opening 102 when bonded to the opening 102 of the container 101, forming a state where it is attached to the edge 103 (bonded to the edge 103).

[0175] As shown in Fig. 43, the lid 1 has a bonding region R that is bonded to the edge 103 formed on the upper end side of the opening 102 of the container 101. Fig. 43 is a diagram showing an example of the lid 1. As for the container 101, those having flexibility at the edge of the opening 102 are more preferably used. However, these do not prohibit the container 101 from being a container with little or no flexibility, such as a metal container.

[0176] The lid 1 includes a body 2, as shown in Figs. 43A, 43B, etc. In the lid 1, the body 2 includes the bonding region R. Figs. 43A and 43B are a plan view and a cross-sectional view showing one of other examples of the lid 1, respectively.

(Bonding Region)

[0177] The bonding region R indicates the area of the lid 1 that is bonded to the edge 103 when the lid 1 is attached to the edge 103, which is specified as the portion extending outward from the edge 102A formed at the upper end of the opening 102 of the container 101. Also, in the lid 1, the portion of the body 2 forming the bonding region R is called the bonding region corresponding part 5. In the examples of Figs. 43A and 43B, the bonding region R corresponds to the area formed generally annularly along the opening 102 in a shape corresponding to the opening 102 of the container 101. In this case, the bonding region corresponding part 5 is defined as the annular portion including the bonding region R. If the

bonding region R between the lid 1 and the container 101 is not continuously bonded, the portion sandwiched between adjacent bonding regions R is also included in the bonding region corresponding part 5.

[0178] The width of the bonding region R (width along the inner and outer directions) (i.e., the width of the bonding region corresponding part 5) is usually the same as or narrower than the width of the edge 103 of the opening 102. However, this does not prohibit the width of the bonding region R from being wider than the width of the edge 103 of the opening 102. Also, the bonding region R may be formed inside the outer peripheral edge 2A of the body 2, or it may be formed up to the outer peripheral edge 2A of the body 2.

[0179] In the plan view of the lid 1 (i.e., in the plan view of the body 2), the inner edge end of the bonding region R (i.e., the inner edge end 5C of the bonding region corresponding part 5) is located slightly outside the edge of the opening 102 in the example of Fig. 43, but this is an example, and it may be located significantly outside from directly above the edge 102A of the opening 102, directly above the edge 102A of the opening 102, or inside from directly above the edge 102A of the opening 102. Note that the plan view of the lid 1 refers to the case where the lid 1 is viewed in the direction from the +Z side to the -Z side along the Z-axis direction in Figs. 43A and 43B. The plan view of the body 2 is also defined as the case where the body 2 is viewed in the direction from the +Z side to the -Z side, similar to the plan view of the lid 1.

[0180] Note that in the plan view of the lid 1, the area inside the bonding region R of the body 2 may be referred to as the inner region Rn. Also, the term "above the bonding region R" refers to the upper surface (exposed surface 70 side) of the portion corresponding to the bonding region R of the lid 1 in the plan view of the lid 1.

(Body)

[0181] As shown in Fig. 43A, the body 2 covers the opening 102 and the edge 103 when the lid 1 is attached over the opening 102 of the container 101. The body 2 has a portion corresponding to the bonding region R (bonding region corresponding part 5), and includes an outer part 72 containing the bonding region R and an inner part 72D composed of the portion inside from the inner edge 72A of the outer part 72. Note that the direction from the center CT of the body 2 outward is referred to as the outer direction, and the direction from the outer peripheral edge 2A of the body 2 towards the center CT is referred to as the inner direction.

(Outer Part)

[0182] In the plan view of the lid 1, the portion of the body 2 outside the inner edge of the bonding region R (i.e., the inner edge end 5C of the bonding region corresponding part 5) is referred to as the outer part 72.

(Inner Part)

[0183] In the plan view of the lid 1, the inside of the bonding region R (i.e., the inside of the bonding region corresponding part 5) refers to the portion forming the inside of the part forming the bonding region R of the lid 1. This portion is referred to as the inner part 72D.

(First portion and Second portion)

[0184] The body 2 includes a first portion 3C and a second portion 3E. In the example of Fig. 43, the boundary part 5A formed by the boundary between the first portion 3C and the second portion 3E includes a guide part 6A and a hinge part 7. The combination of the guide part 6A and the hinge part 7 can form a rotatably movement structure that facilitates the rotation of the first portion 3C.

(First portion)

[0185] The first portion 3C indicates the portion of the body 2 that is defined as the part that is rotated upward to expose the opening 102 when the body 2 is bonded to the edge 103 of the container 101. Here, the rotation of the first portion 3C indicates that the first portion 3C is rotatably moved to rotate about the hinge part 7, which will be described later. When the first portion 3C rotates, deformation of the shape of the first portion 3C may accompany it. Rotating the first portion 3C upward can be achieved, for example, by lifting the first portion 3C. The shape of the first portion 3C is not particularly limited, but in examples such as Fig. 43A, it is generally formed in a semi-circular shape in a plan view of the lid 1. In this example, the first portion 3C is formed on the inner side 72D (i.e., inside the bonding region corresponding part 5).

(Second portion)

[0186] The second portion 3E indicates the portion of the main body 2 excluding the first portion 3C.

(Boundary Section)

[0187] In the main body 2, the boundary section 5A indicates the part defined as the boundary between the first portion 3C and the second portion 3E in a non-rotating state. The non-rotating state refers to the state of the main body 2 where the rotation of the first portion 3C relative to the second portion 3E is restricted. For example, the non-rotating state is when the first portion 3C is not rotated when the lid 1 is not in use.

(Guide part and Hinge part)

[0188] The boundary section 5A includes a guide part 6A and a hinge part 7.

[0189] The hinge part 7 is defined as the part that becomes the rotation axis of the first portion 3C when forming a condition of upwardly rotatably movement. The condition of upwardly rotatably movement is specified as the state of the main body 2 when the first portion 3C is rotated upward (in the direction causing the rotatably movement on the +Z side, +F direction in the example of Fig. 43B) relative to the second portion 3E.

[0190] Rotating the first portion 3C upward means rotating it in a direction along a plane perpendicular to the horizontal plane (corresponding to the upper surface of the main body 2 (exposed surface 70) in the example of Fig. 43A, corresponding to the XY plane spanned by the X and Y axes), as well as rotating it in a direction along a plane that intersects the horizontal plane obliquely.

[0191] The guide part 6A defines the position intended to cause separation between the first portion 3C and the second portion 3E when forming a condition of upwardly rotatably movement. The guide part 6A is defined as the part that specifies the intended position for causing separation between the first portion 3C and the second portion 3E when forming a condition of upwardly rotatably movement.

(Guide part)

[0192] In the examples of Fig. 43A and Fig. 43B, the guide part 6A is specified as the part extending in the direction away from the hinge part 7, with the ends of the hinge part 7 (one end 7A, the other end 7B) as the base end. In this example, one end 6D of the guide part 6A is connected to one end 7A of the hinge part 7, and the other end 6E of the guide part 6A is connected to the other end 7B of the hinge part 7.

[0193] Additionally, the guide part 6A is formed in a convex shape in the direction away from the hinge part 7, has a front end 6F, and extends in a linear (curved) manner. However, this is just one example, and the shape of the guide part 6A is not limited to being convex, and the guide part 6A may be formed in a state different from the linear (curved) shape shown in Fig. 43A.

(Positional Relationship between Guide part and Bonding Region)

[0194] In the example of Fig. 43A, the guide part 6A is formed inside the bonding region R, that is, it is formed on the inner side 72D. The guide part 6A can be the part where the separation structure between the first portion 3C and the second portion 3E is formed when the first portion 3C is rotated relative to the second portion 3E.

(Positional Relationship between Guide part and Opening)

[0195] In the example of Fig. 43A, the guide part 6A is formed in a position slightly inside along the edge 102A of the opening 102 of the container 101, directly above (+Z direction side) when the lid 1 is bonded to the container 101. However, this is just one example, and at least part of the guide part 6A may be positioned directly above the edge 102A of the opening 102, or it may not be along the edge 102A, and the guide part 6A may be positioned significantly inside the edge 102A of the opening 102 in a plan view of the lid 1, but from the perspective of making it easier for the first portion 3C to contact the inner peripheral surface 104A of the container 101 when the first portion 3C is rotated downward to form a condition of downwardly rotatably movement, it is preferable for it to be positioned directly above or outside the edge 102A of the opening 102.

[0196] The structure of the guide part 6A is not particularly limited, but as mentioned above, it is a weakened structure. However, this does not restrict the guide part 6A from being a structure other than a cut structure.
For example, the guide part 6A may have a cut structure.

[0197] In this specification, a cut structure refers to a slit-like through structure that penetrates entirely from the non-facing side (exposed surface 70) to the facing side (back surface) relative to the opening 102 when the lid 1 is attached to the container 101. A weakened structure refers to a structural part that can reduce the force required for a rotatably movement compared to parts not endowed with such a structure, such as a perforated structure or a half-cut structure.

[0198] A perforated structure indicates a structure where cut parts penetrating from the exposed surface 70 to the back surface and continuous parts avoiding cuts are alternately formed. A half-cut structure indicates a structure (partial cut structure) where partially cut parts are formed while avoiding penetration in the thickness direction of the material forming the main body 2. The depth of the cut in a half-cut structure is not particularly limited concerning the material constituting the main body 2.

[0199] In the guide part 6A, the structure may partially differ. For example, a half-cut structure may be formed near the front end 6F of the guide part 6A, while a cut structure may be formed in other parts. If the front end 6F of the guide part 6A is located in the bonding region corresponding part 5, even if the entire guide part 6A is a cut structure, the unintended opening of the first portion 3C is suppressed by the bonding structure (bonding section 151) between the container 101 and the lid 1.

(Hinge part)

[0200] As shown in the examples of Fig. 43A and Fig. 43B, the boundary section 5A includes a hinge part 7. In this example, the ends 7A, 7B of the hinge part 7 are connected to the respective ends 6D, 6E of the guide part 6A. The structure of the hinge part 7 is not particularly limited as long as it is not a cut structure; it may be a non-formed structure or a weakened structure. A non-formed structure indicates a part where the formation of cut structures and weakened structures is omitted. That is,

the non-formed structure here indicates that the main body 2 is configured so that the hinge part 7 becomes apparent when the first portion 3C is rotated upward or downward.

[0201] When using the lid 1, the first portion 3C is raised relative to the second portion 3E. At this time, the first portion 3C gradually rises while rotating relative to the second portion 3E around the hinge part 7, with the first portion 3C and the second portion 3E separating generally along the guide part 6A. From the perspective of smoothly forming the separation part between the first portion 3C and the second portion 3E, it is preferable for the hinge part 7 to form a weakened structure. However, this is just one example, and as mentioned above, the hinge part 7 may be a non-formed structure.

(Positional Relationship between Hinge part and Bonding Region)

[0202] In the example of Fig. 43A, the hinge part 7 is formed inside the bonding region R, that is, it is formed on the inner side 72D. However, this is just one example, and the hinge part 7 may be formed directly above the bonding region R in a plan view of the lid 1, or it may be formed outside the bonding region R.

(Positional Relationship between Hinge part and Opening)

[0203] In the example of Fig. 43A, the ends 7A, 7B of the hinge part 7 are formed in a position slightly inside directly above the edge 102A of the opening 102 of the container 101 when the lid 1 is bonded to the container 101. However, this is just one example, and at least one end (7A, 7B) of the hinge part 7 may be formed directly above the edge 102A of the opening 102, or it may be formed in a position outside directly above the edge 102A. From the perspective of making it easier for the first portion 3C to contact the inner peripheral surface 104A of the container 101 when the first portion 3C is rotated downward to form a a condition of downwardly rotatably movement, it is preferable for the ends 7A, 7B of the hinge part 7 to be positioned directly above or outside the edge 102A of the opening 102 in a plan view of the lid 1.

(Exposed Opening)

[0204] As shown in Fig. 44, when the first portion 3C is in a condition of rotatably movement (upwardly rotatably movement), an exposed opening 6H is formed to expose the space 105 from the opening 102. According to the lid 1, when the lid 1 is attached to the opening 102 of the container 101 into which liquids such as beverages or miso soup have been poured into the space 105, the user can drink the liquids inside the container 101 using the exposed opening 6H of the lid 1 as a drinking spout.

(Condition of downwardly rotatably movement)

[0205] The main body 2 is configured to form a condition of downwardly rotatably movement as shown in Fig. 43B and Fig. 44. Here, the condition of downwardly rotatably movement is defined as the state of the main body 2 where the first portion 3C is pushed down (rotated downward) in the direction below the second portion 3E (in the direction causing a rotatably movement on the -Z side, -F direction in the example of Fig. 43B) with the hinge part 7 as the rotation axis. Rotating the first portion 3C downward means rotating it in a direction along a plane perpendicular to the horizontal plane (corresponding to the upper surface of the main body 2 (exposed surface 70) in the example of Fig. 43A, corresponding to the XY plane), as well as rotating it in a direction along a plane that intersects the horizontal plane obliquely. In the examples of Fig. 43B and Fig. 44, when the first portion 3C is rotated downward, the first portion 3C rotates in the -F direction with the hinge part 7 as the rotation axis.

[0206] When the first portion 3C of the main body 2 is rotated to an upwardly rotatably movement and then pushed downward to cover the outlet 6H again, the first portion 3C is returned to a position corresponding to a non-rotating state. Furthermore, when the first portion 3C is pushed downward, it is defined as being pushed further downward than the second portion 3E, using the hinge part 7 as the rotation axis. Particularly, when the entire lid 1 has a structure with paper-based material, since the main body 2 also has paper-based material, it is possible to form a state where the first portion 3C is bent, and in a state where the first portion 3C has downward bending, it can be pushed further downward than the second portion 3E.

[0207] In cases where the tab member 31, which will be described later, is provided on the first portion 3C, the part of the first portion 3C where the tab member 31 is bonded (the tab bonding part 18 described later) is stiffer than other parts of the first portion 3C (parts other than the tab bonding part 18). Thus, when the tab member 31 is provided on the first portion 3C, it is possible to impart a difference in stiffness to the first portion 3C, allowing for the efficient formation of a state where the first portion 3C has downward bending, particularly in the vicinity of the tab bonding part 18 where the tab member 31 is bonded. Therefore, when a condition of downwardly rotatably movement is formed with the lid 1 bonded to the container 101, the resilience from the bending of the first portion 3C allows the first portion 3C to contact the inner peripheral surface 104A of the container 101 more strongly.

(Tab Member)

[0208] As shown in examples such as Fig. 43A and Fig. 43B, it is preferable that the lid 1 has a tab member 31 attached to the first portion 3C. The attachment position and direction of the tab member 31 on the first portion 3C are not particularly limited, but in the examples of Fig. 43A

and Fig. 43B, the tab member 31 is bonded to the first portion 3C at a position closer to the tip (front end) (i.e., near the front end 6F of the guide part 6A). At this time, the bonding part between the tab member 31 and the first portion 3C is referred to as the tab bonding part 18. In this example, the tab bonding part 18 is formed at one end 21A of the tab member 31. Also, in this example, the tab bonding part 18 is formed at a position closer to the tip of the first portion 3C. Methods for bonding the tab member 31 to the first portion 3C (i.e., methods for forming the tab bonding part 18) can include various methods such as ultrasonic bonding, heat sealing, and adhesive bonding. Among the methods mentioned above, ultrasonic bonding is preferred for forming the tab bonding part 18 from the perspective of ease of bonding and bonding strength. The formation position of the tab bonding part 18 on the first portion 3C is preferably off from the center of the first portion 3C to facilitate lifting the first portion 3C by lifting the tab member 31. From this perspective, it is preferable that it is attached to a position on the first portion 3C that is away from the hinge part 7 and also away from the center of the main body 2. That is, it is preferable that the tab member 31 is attached to a position closer to the tip of the first portion 3C.

[0209] In the first portion 3C, if the tab member 31 is bonded at a position closer to the tip than the hinge part 7, the distance to the point of force application relative to the hinge part 7 (fulcrum) can be increased.

(Grip Part)

[0210] In the example of Fig. 43A, the tab member 31 is bonded at one end 21A to the first portion 3C, and a grip part is formed at the other end 21B of the tab member 31. The grip part 24 is not particularly limited in shape or structure as long as it is formed in a size and shape that allows the tab member 31 to be pinched.

(Orientation of the Tab Member (Attachment Direction))

[0211] In the lid 1, in the example of Fig. 43A, the other end side of the tab member is positioned closer to the center of the main body than one end 21A of the tab member 31. However, this is just one example, and the orientation of the tab member may be in a direction other than that shown in the example of Fig. 43A. For example, the other end side of the tab member may be positioned to be directed outward from the main body, rather than one end of the tab member.

[1-2 Operation and Effect]

[0212] The lid 1 according to the seventh embodiment can be used by being bonded to the edge 103 of the container 101, as shown in Fig. 44. Therefore, the lid 1 is formed to be capable of forming a bonding region R that is bonded to the edge 103 of the container 101 having an opening 102. The container 101 can preferably be used when it is formed such that the opening diameter decreases downward from the opening 102, i.e., it is formed in a tapered shape downward. Also, from the perspective of further strengthening the bonding force between the container 101 and the lid 1, it is preferable that the container has a flange part at the upper edge. It should be noted that these do not limit the shape of the container 101 to which the lid 1 can be attached. However, considering the stackability of the container, it is preferable that the container is also formed in a tapered shape toward the bottom with respect to its outer peripheral surface. Also, in Fig. 43, the flange part has a planar structure extending outward, but the structure of the flange part is not limited to this. The shape of the flange part may have a structure with an outward curl.

[0213] According to the lid 1 of the seventh embodiment, the first portion 3C is formed to enable the formation of a condition of downwardly rotatably movement, and with the lid 1 bonded to the container 101, the guide part 6A is formed near the edge 102A of the opening 102 in a plan view of the lid 1. When the inner peripheral surface 104A of the container 101 is tapered toward the bottom 106, as shown in Fig. 45, at least a part of the assumed region can be positioned outside the inner peripheral surface 104A of the container 101, or the assumed region can be made to contact the inner peripheral surface 104A of the container 101. However, the assumed region refers to the area through which the guide part 6A is expected to pass when the first portion 3C is pushed downward without causing bending in the first portion 3C. Fig. 45 is a plan view showing an example of a state where the main body 2 of the lid 1 forms a condition of downwardly rotatably movement when the lid 1 is attached to the container 101.

[0214] Also, when a part of the assumed region is positioned outside the inner peripheral surface 104A of the container 101, and the first portion 3C is formed of a material with flexibility, such as a paper-based material, it is possible to form a state where the first portion 3C is downwardly rotatably moved relative to the second portion 3E, causing bending in the first portion 3C while contacting the outer peripheral edge (the part corresponding to the guide part 6A) of the first portion 3C with the inner peripheral surface 104A of the container 101. Also, when the assumed region contacts the inner peripheral surface 104A of the container 101, it is possible to form a state where the outer peripheral edge (the part corresponding to the guide part 6A) of the first portion is in contact with the inner peripheral surface 104A of the container 101 when the first portion 3C is downwardly rotatably moved relative to the second portion 3E. In such cases, as shown in Fig. 44 and Fig. 45, a part of the space 105 of the container 101, enclosed by the lower surface of the lid 1 (the side opposite to the exposed surface 70) and the inner peripheral surface 104A of the container 101, can be closed, forming a state where at least a part of the space 105 (partial space) of the container 101 is re-closed. It should be noted that a state where the first

portion 3C is rotated upward relative to the second portion 3E (condition of upwardly rotatably movement) and the outlet 6H is formed may be referred to as an open lid phase. Also, a state where the first portion 3C is rotated downward (condition of downwardly rotatably movement) and the partial space of the space 105 is generally closed (closed) (i.e., a state where a part of the space 105 is covered by the lid 1) is referred to as a closed lid phase. A state where the open lid phase is once formed and then becomes the closed lid phase again (the partial space of the space 105 is re-closed) is referred to as a re-closed lid phase. In Fig. 44, as an example of the condition of upwardly rotatably movement, the state where the first portion 3C is rotated in the +F direction is shown with a dashed line generally above the position indicated by the solid line for the first portion 3C. Also, in Fig. 44, as an example of the condition of downwardly rotatably movement where the first portion 3C is rotated in the -F direction is shown with a dashed line generally below the position indicated by the solid line for the first portion 3C. This is also the case for Fig. 47.

[0215] In conventional lids and containers with lids, when a liquid such as a beverage is contained inside, the user would peel off the film material forming the lid to expose the mouth of the container in order to drink the contents of the container with the lid. In this case, even if one tries to cover the exposed mouth part again with the lid (sometimes referred to as a re-closed lid phase), the state where the mouth is covered by the lid is easily undone. Furthermore, even if the mouth is closed with the lid, a large gap tends to form between the lid and the mouth, and in such cases, liquid tends to leak out from the gap between the lid and the mouth. Therefore, improvements have been sought for the lid in terms of enhancing the stability of the re-closed lid phase when used with a container with a lid. In this regard, according to the lid of the present invention, it is possible to solve the conventional problems mentioned above, allowing for easy reclosing and ensuring sealing performance during reclosing.

[0216] Next, a modified example of the lid 1 according to the seventh embodiment will be described. The modified examples include those where additional structures are added to or removed from the embodiment of the lid 1 shown above.

[1-3 Modified Examples]

(Modified Example 1)

[0217] In the lid 1 according to the seventh embodiment, when the tab member 31 is provided, a locking portion may also be provided on the tab member 31. This form is referred to as Modification Example 1 of the seventh embodiment.

(Locking Portion)

[0218] The locking portion is a part that forms a locking structure that allows the position of the first portion 3C to be maintained when the first portion 3C is lifted in the lid 1. In the lid 1 according to Modification Example 1 of the seventh embodiment, the configuration of the locking portion is not particularly limited.

[0219] For example, the locking portion can be exemplified by the holding section 23 as shown in Figures 49A and 49B. The holding section 23 can be exemplified by a structure formed to protrude downward relative to the surface direction of the tab member 31. Here, the explanation will continue using the case where the locking portion is the holding section 23 as an example. It should be noted that this does not limit the lid 1 to having the locking portion as the holding section 23. The locking portion may have a structure that can regulate the rotatably movement of the tab member 31 by being locked to a fixed position of the lid 1 or the container 101.

(Holding section)

[0220] The holding section 23 is preferably formed at a position between one end 21A and the other end 21B of the tab member 31. It can be exemplified by a structure configured to form a claw-like protruding portion when the tab member 31 is bent by making a cut line 23A in the tab member 31. The shape of the holding section 23 can be exemplified as triangular, but is not limited to this. For example, the shape of the holding section 23 can be arbitrarily adopted and used as a polygonal shape such as a semicircular or rectangular shape, or an elliptical shape.

(Locking Receiving part)

[0221] In Modification Example 1 of the seventh embodiment, a locking receiving part may be provided in the second portion 3E. The locking receiving part is formed in a shape that can receive the locking portion in the second portion. The position of the locking receiving part may be determined according to the position of the locking portion. Regarding the formation position of the locking receiving part, it is preferable that the locking receiving part is formed at a position facing the locking portion when the tab member 31 is lifted to raise the first portion 3C, further folded over to the upper surface of the second portion 3E, and then overlaid with the tab member 31 on the upper surface of the second portion 3E (when a condition of upwardly rotatably movement is formed).

[0222] The locking receiving part is not particularly limited, but in the examples of Figures 49A and 49B, it is formed by a linear cut (insertion portion 26) formed at a fixed position of the second portion. The insertion portion 26 is a cut portion that penetrates the main body 2 along the thickness direction of the main body 2. By inserting the holding section 23 into the insertion portion 26, the

position of the tab member 31 is more easily maintained, and the condition of upwardly rotatably movement is more easily maintained. It should be noted that the insertion portion 26 is an example of the locking receiving part, and the configuration of the locking receiving part is not limited to the insertion portion 26. For example, the holding section 23 may be hooked onto the edge portion located on the opposite side of where the locking portion is formed in the lid 1, or other configurations may be used.

(Modification Example 2)

[0223] In the lid 1 according to the seventh embodiment, at least a part of the hinge part 7 is formed inside the outer peripheral edge of the bonding region R (i.e., the outer edge 5D of the bonding region corresponding part 5) in a plan view of the lid 1, and in the example of Figure 43A, the hinge part 7 is formed inside the outer peripheral edge of the bonding region R.

[0224] In the lid 1 according to the seventh embodiment, it is not limited to the example of Figure 43A, and as shown in Figures 50A and 50B, at least one end of the hinge part 7 (at least one of end 7A and end 7B) may be arranged to overlap the bonding region R in a plan view of the lid 1. At this time, the other portions excluding the end of the hinge part 7 overlapping the bonding region R (at least one of end 7A and end 7B) may be formed in the inner portion 72D. This form is referred to as Modification Example 2 of the seventh embodiment. In Modification Example 2, the hinge part 7 is formed inside the outer peripheral edge of the bonding region R (the outer edge 5D of the bonding region corresponding part 5). In this case, for the guide portion 6A, as shown in Figure 50A, a part of the guide portion 6A may be positioned inside the bonding region R (inner portion 72D), or as shown in Figure 50B, the guide portion 6A may be positioned in the bonding region R.

[0225] According to Modification Example 2 of the seventh embodiment, for example, when the end 7A of the hinge part 7 is located in the bonding region R, and the end 7A of the hinge part 7 is connected to the end 6D of the guide portion 6A, the end 6D of the guide portion 6A can be positioned in the bonding region R. This allows the lid 1 to be in a condition of downwardly rotatably movement when the lid 1 is attached to the container 101, thereby more reliably closing the partial space of the space portion 105 of the container 101 with the end 6D of the guide portion 6A when reclosing the container 101 with the lid 1. This is also the case when the end 7B of the hinge part 7 is located in the bonding region R, and the end 7B of the hinge part 7 is connected to the end 6D of the guide portion 6A.

(Modification Example 3)

[0226] In the lid 1 according to the seventh embodiment, when the main body 2 is bonded to the edge 103 of the container 101, at least one end of the hinge part 7 (at least one of end 7A and end 7B) may be positioned outside the edge 102A of the opening 102 in a plan view of the main body 2 (in a plan view of the lid 1).

(Modification Example 4)

[0227] In the example of Figure 43A, an example is shown where the guide portion 6A is formed inside the outer peripheral edge of the bonding region R. The lid 1 according to the seventh embodiment is not limited to this, and a part of the guide portion 6A may be formed in the outer portion 72. This form is referred to as Modification Example 4 of the seventh embodiment. In Modification Example 4 of the seventh embodiment, a part of the guide portion 6A is formed in the inner portion 72D. In Modification Example 4 of the seventh embodiment, for example, as shown in Figure 51B, a fixed portion including the front end 6F of the guide portion 6A is formed in the outer portion 72, and the other portions of the guide portion 6A may be formed in the inner portion 72D. In this case, since a part of the guide portion 6A is formed in the outer portion 72, in a plan view of the lid 1, a part of the guide portion 6A can be positioned to overlap the bonding region R, allowing a part of the first portion 3C to be positioned in the bonding region R. This prevents the first portion 3C from rotating unintentionally even if the guide portion 6A has a cut structure.

(Modification Example 5)

[0228] In the lid 1 according to the seventh embodiment, when the main body 2 is bonded to the edge 103 of the container 101, as shown in Figure 51A, the separation distance between the bonding region corresponding part 5 and the guide portion 6A may be formed to gradually change from a position close to the hinge part 7 (ends 6D, 6E) toward the front end 6F of the guide portion 6A. This form is referred to as Modification Example 5 of the seventh embodiment. In the lid 1 according to Modification Example 5 of the seventh embodiment, in a non-rotating state, in a plan view of the main body 2, the guide portion 6A is formed to be more separated from the portion corresponding to the bonding region R as it is positioned further from the position where the hinge part 7 and the guide portion 6A are connected (ends 6D, 6E) along the extending direction of the guide portion 6A.

[0229] According to the lid 1 of the seventh embodiment, when the main body 2 is bonded to the edge 103 of the container 101, it becomes easier to form a state where the first portion 3C is more closely adhered to the inner peripheral surface 104A of the container 101 at the portion closer to the hinge part 7 when the lid 1 is in a condition of downwardly rotatably movement .

(Modification Example 6)

[0230] In the lid 1 according to the seventh embodiment, in the example of Figure 43A, the position of the

hinge part 7 at the boundary portion 5A between the first portion 3C and the second portion 3E is arranged near the center of the main body 2, but the position of the hinge part 7 may be different from near the center of the main body 2. However, when the lid 1 is bonded to the edge 103 of the container 101, the position of the hinge part 7 is determined so that the outer peripheral edge of the first portion 3C contacts the inner peripheral surface 104A of the container 101 when a condition of rotatably lower movement is formed. The first portion 3C may be arranged at a position closer to the front end 6F of the guide portion 6A as shown in Figure 52A. The first portion 3C may be arranged at a position further from the front end 6F of the guide portion 6A as shown in Figure 52B.

[0231] Next, the eighth embodiment will be described.

[2 Eighth Embodiment]

[2-1 Configuration]

(Lid)

[0232] The lid 1 according to the eighth embodiment, as shown in Figures 46A and 46B, has a main body 2 similar to the seventh embodiment, and a bonding region R is formed in the main body 2. Also, the lid 1 according to the eighth embodiment has an inner portion 72D and an outer portion 72 similar to the seventh embodiment. However, in the lid 1 according to the eighth embodiment, the tab member 31 described in the seventh embodiment may be omitted. In the description of the eighth embodiment, the configuration similar to the seventh embodiment will be omitted.

[0233] The lid 1 according to the eighth embodiment has a protruding portion 11 formed, and a part of the first portion 3C crosses the bonding region R, and the part of the first portion 3C that crosses the bonding region R is connected to the protruding portion 11.

(Protruding Portion)

[0234] The protruding portion 11 is a part that protrudes outward from a fixed portion of the outer peripheral edge 2A of the main body 2. This protruding portion 11 is formed in a size and shape that can function as a knob to lift the first portion 3C when rotating the first portion 3C relative to the second portion 3E. For example, by pinching and lifting the tip 11A of the protruding portion 11 or its vicinity, the first portion 3C connected to the protruding portion 11 is lifted along with the rotatably movement of the protruding portion 11, as will be described later.

(First portion and Second portion)

[0235] In the eighth embodiment, the main body 2 has a first portion 3C and a second portion 3E, with the first portion 3C being formed to connect to the protrusion 11 as described above. The boundary 5a between the first portion 3C and the second portion 3E has a guide part 6A and a hinge part 7, similar to the seventh embodiment. However, unlike the seventh embodiment, the guide part 6A is formed to avoid crossing the area (intermediate region RV) between the protrusion 11 and the hinge part 7 in the main body 2. In the example of FIG. 46A, the guide part 6A includes a first guide part 60 with one end 6D as the base end, and a second guide part 61 with the other end 6E as the base end. The first guide part 60 extends in an arc from its base end (end 6D) away from the hinge part 7 towards the intermediate region RV, bends towards the protrusion 11 at a slightly outer position of the intermediate region RV, and extends to the outer peripheral edge of the main body 2 (outer peripheral edge 2A of the lid 1). The second guide part 61, similar to the first guide part 60, extends in an arc from its base end (end 6D) away from the hinge part 7 towards the intermediate region RV, bends towards the protrusion 11 at a slightly outer position of the intermediate region RV, and extends to the outer peripheral edge of the main body 2 (outer peripheral edge 2A of the lid 1). However, this is just an example, and the configuration of the first guide part 60 and the second guide part 61 is not limited to this example. In FIG. 46A, the intermediate region RV is shown as the area enclosed by a two-dot chain line. This is also the case for FIGS. 53A and 54A.

[0236] For example, the first guide part 60 may extend in an arc from the end 6D away from the hinge part 7 towards the intermediate region RV, forming an end at a slightly outer position of the intermediate region RV. Similarly, the second guide part 61 may extend in an arc from the end 6D away from the hinge part 7 towards the intermediate region RV, forming an end at a slightly inner position of the intermediate region RV. In this case, when not in use, the second portion 3E and the first portion 3C are in a state of partial boundary loss, and the first portion 3C is formed in accordance with the formation of the condition of upwardly or downwardly rotatably movement (when the protrusion 11 is lifted to raise a part of the main body 2 along the guide part 6A, exposing the outlet 6H).

[0237] In the lid 1 according to the eighth embodiment, as in the seventh embodiment, the first portion 3C is formed to enable the formation of a condition of downwardly rotatably movement, as shown in FIGS. 47 and 48. FIG. 47 is a cross-sectional view showing an example when the lid 1 is attached to the container 101. FIG. 48 is a plan view showing an example of the state where the main body 2 of the lid 1 forms a condition of downwardly rotatably movement, when attached to the container 101.

[2-2 Operation and Effect]

[0238] The lid 1 according to the eighth embodiment can be used by being bonded to the edge 103 of the container 101, similar to the seventh embodiment.

[0239] According to the lid 1 of the eighth embodiment, when in use (when bonded to the edge 103 of the contain-

er 101), the first portion 3C is raised relative to the second portion 3E by lifting the protrusion 11. At this time, the first portion 3C gradually rises relative to the second portion 3E while rotating around the hinge part 7 as an axis, separating along the guide part 6A. At this time, in the lid 1 according to the eighth embodiment, a condition of n upwardly rotatably movement is formed.

[0240] According to the lid 1 of the eighth embodiment, as in the seventh embodiment, the first portion 3C is formed to enable the formation of a condition of downwardly rotatably movement. Also, when the lid 1 is bonded to the container 101, the guide part 6A is formed near the edge 102A of the opening 102 in a plan view of the lid 1. Therefore, for example, when the first portion 3C is downwardly rotatably moved downward relative to the second portion 3E, as shown in FIG. 48, it is possible to form a state where the outer peripheral edge of the first portion 3C (the part corresponding to the guide part 6A) is in contact with the inner peripheral surface 104A of the container 101. Note that the protrusion 11 is connected to the first portion 3C and can form a state in contact with the inner peripheral surface 104A of the container 101 while being given a bend or deformation to follow the first portion 3C.

[0241] Therefore, according to the lid 1 of the eighth embodiment, it is possible to get a re-closed lid condition even after forming into opening the lid by creating an upwardly rotatably movement.

[0242] Next, a modified example of the lid 1 according to the eighth embodiment will be described.

[2-3 Modified Example]

(Modification 1)

[0243] In the lid 1 according to the eighth embodiment, as shown in FIGS. 53A and 53B, a bending auxiliary part may be formed. Such a form is referred to as Modification 1 of the eighth embodiment.

(Bending auxiliary part)

[0244] The bending auxiliary part 12 serves as a guide for the position where the extension part rises relative to the first portion 3C when forming a condition of downwardly rotatably movement. in the lid 1, while the lid 1 is bonded to the edge 103 of the container 101.

[0245] The bending auxiliary part 12 is formed at a position directed from the protrusion 11 towards the hinge part 7 (a position inside the intermediate region RV) and at a position inside the edge 102A of the opening 102 (a position closer to the center of the main body 2) when the main body 2 is connected to the edge 103 of the container 101 in a plan view. In the example of FIG. 53, the bending auxiliary part 12 has a notch structure, but it is not limited to this and may have a weakening structure.

[0246] The auxiliary part 12 is formed on the first portion 3C of the main body 2, in a position directed from the protrusion 11 toward the hinge part 7 (a position inside the intermediate region RV), and also in a position inside the edge 102A of the opening 102 (a position closer to the center of the main body 2), when the main body 2 is bonded to the edge 103 of the container 101 in a plan view. The bending auxiliary part 12, in the example of Figure 53, has a notch structure, but is not limited to this and may have a weakening structure.

(Modification 2) In the lid 1 according to the eighth embodiment, a locking part may be provided on the protrusion 11. The locking part may be configured similarly to the locking part described in Modification 1 of the seventh embodiment. For example, as shown in FIGS. 54A and 54B, the locking part may be a holding part 23. The holding part 23 may be formed similarly to the holding part 23 described in Modification 1 of the seventh embodiment. However, it is preferable that the direction in which the holding part 23 protrudes is opposite to that of the protrusion 11.

(Modification Example 2)

[0247] In the lid 1 according to the eighth embodiment, a locking portion may be provided on the protrusion 11. The locking portion may be configured similarly to the locking portion described in Modification Example 1 of the seventh embodiment. For example, the locking portion may be the holding portion 23, as shown in Figures 54A and 54B. The holding section 23 may be formed similarly to the holding section 23 described in Modification Example 1 of the seventh embodiment. However, it is preferable that the direction in which the holding section 23 protrudes is opposite to that of the protruding section 11.

[0248] (Locking Receiving Part) In Modification 2 of the eighth embodiment, a locking receiving part may be provided in the second portion. The locking receiving part may be configured similarly to the locking receiving part described in Modification 1 of the seventh embodiment. For example, as shown in FIGS. 54A and 54B, the locking receiving part may be an insertion part 26. The insertion part 26 may be formed similarly to the insertion part 26 described in Modification 1 of the seventh embodiment. However, it is preferable that the position where the insertion part 26 is formed is a position where it can be aligned with the holding part 23 when the first portion 3C is folded back to face the second portion 3E with the hinge part 7 as an axis. This includes cases where the insertion part 26 and the holding part 23 can be aligned with each other when the first portion 3C is bent.

Locking receiving part

[0249] In the second variation of the eighth embodiment, a locking receiving part may be provided in the second portion. The locking receiving part may be configured similarly to the locking receiving part described in Modification Example 1 of the seventh embodiment. For

example, the locking receiving part may be the insertion part 26 as shown in Figures 54A and 54B. The insertion part 26 may be formed similarly to the insertion part 26 described in the first modification of the seventh embodiment. However, it is preferable that the position where the insertion portion 26 is formed is such that when the first portion 3C is folded back around the hinge part 7 to face the second portion 3E, it can be aligned with the holding portion 23. In cases where it is possible to align with the holding part 23, it may also include situations where the insertion part 26 and the holding part 23 can be aligned while the first portion 3C is bent.

[0250] [3 Ninth Embodiment] [3-1 Configuration] (Lid) The lid 1 according to the ninth embodiment, as shown in FIGS. 55A and 55B, has a low adhesion region RPE formed in the bonding region R of the main body 2, and the guide part 6A is formed to avoid crossing the area (intermediate region RV) between the low adhesion region RPE and the hinge part 7, and is formed similarly to the lid 1 according to the eighth embodiment except for the omission of the protrusion 11. In the example of FIG. 55A, the low adhesion region RPE is shown as the area enclosed by a one-dot chain line.

[3 Ninth Embodiment]

3-1 Configuration

Lid

[0251] The lid 1 according to the ninth embodiment, as shown in Figures 55A and 55B, has a low adhesion region RPE formed in the bonding region R on the main body 2, and a guide part 6A is formed to avoid crossing the region (intermediate region RV) between the low adhesion region RPE and the hinge part 7, and is formed similarly to the lid 1 according to the eighth embodiment, except that the protrusion 11 is omitted. In the example of Figure 55A, the low adhesion region RPE is indicated by the area enclosed by a dashed line.

[0252] (Bonding region) The lid 1 according to the ninth embodiment has a low adhesion region RPE formed in the bonding region R of the main body 2. The low adhesion region RPE is identified as a part with lower adhesion (easily peelable part) when comparing the adhesion of the outside of the low adhesion region RPE and the adhesion of the low adhesion region RPE in the bonding region R.

Junction area

[0253] In the ninth embodiment, the lid 1 has a low-adhesion region RPE formed in the bonding region R of the main body 2. The low adhesion region RPE is identified as the part with lower adhesion (easily peelable part) when comparing the adhesion outside the low adhesion region RPE with the adhesion of the low adhesion region RPE in the bonding region R.

[0254] (Guide Part) The guide part 6A is formed to avoid crossing the area (intermediate region RV) between the low adhesion region RPE and the hinge part 7. This can be realized by forming the first guide part 60 and the second guide part 61 as described in the eighth embodiment. In the examples of FIGS. 55A and 55B, both the first guide part 60 and the second guide part 61 bend slightly inside the intermediate region RV and extend towards the outer edge 71C of the main body 2, crossing the low adhesion region RPE. However, this is just an example, and the configuration of the guide part 6A is not limited to FIGS. 55A and 55B. In the example of FIG. 55A, the intermediate region RV is shown as the area enclosed by a two-dot chain line.

Internal draft

[0255] The guide part 6A is formed to avoid crossing the region (intermediate region RV) between the low adhesion region RPE and the hinge part 7. This can be realized, for example, by forming the first guide part 60 and the second guide part 61 as the guide part 6A, as described in the eighth embodiment. In the examples of FIGS. 55A and 55B, both the first guide part 60 and the second guide part 61 bend slightly inward of the intermediate region RV and extend towards the outer edge 71C of the main body 2, crossing the low adhesion region RPE. However, this is merely an example, and the configuration of guide part 6A is not limited to those shown in Figures 55A and 55B. In the example of Figure 55A, the interstitial region RV is indicated by the area enclosed by a two-dot chain line.

[0256] [3-2 Operation and Effect] The lid 1 according to the ninth embodiment can be used by being bonded to the edge 103 of the container 101, similar to the eighth embodiment. In the lid 1 according to the ninth embodiment, by using the outer region of the low adhesion region RPE as a pinching part instead of the protrusion 11 described in the eighth embodiment, the conditions of upwardly and downwardly movements can be formed as described in the eighth embodiment. Then, according to the lid 1 of the ninth embodiment, a re-closed lid phase can be formed similarly to the eighth embodiment.

[3-2 Function and Effect]

[0257] The lid 1 according to the ninth embodiment can be used by being bonded to the edge 103 of the container 101, similar to the eighth embodiment. In the lid 1 according to the ninth embodiment, instead of the protrusion 11 described in the eighth embodiment, the area outside the low adhesion region RPE of the outer portion 72 is used as a gripping part, thereby forming the conditions of upwardly and downwardly rotatably movements as described in the eighth embodiment. And according to the lid 1 pertaining to the ninth embodiment, it is possible to form a re-closure state similar to the eighth embodiment.

[0258] [4 Application Example] The lid 1 according to

the seventh to eighth embodiments can be used in a container 150 with a lid, as shown in FIGS. 44 and 47. FIGS. 44 and 47 are cross-sectional views showing examples where the lid 1 according to the seventh and eighth embodiments is bonded to the edge 103, which is the outer part from the edge 102A of the opening 102 of the container 101 with an opening 102.

4 Application Examples

[0259] The lid 1 according to the seventh to eighth embodiments can be used for the container with a lid 150, as shown in figures 44 and 47, etc. Figs. 44 and 47 are cross-sectional views showing examples in which the lid 1 according to the seventh embodiment and the eighth embodiment is bonded to the edge 103, which is the outer part from the edge 102A of the opening 102 of the container 101 having the opening 102. The container 150 with a lid has a bonding part 151 where the container 101 and the lid 1 are bonded, and the area of the lid 1 forming the bonding part 151 becomes the bonding region R. The method of bonding the lid 1 and the container 101 is not particularly limited and can be appropriately used with bonding methods such as crimping or heat sealing. Below, the use of the lid 1 according to the seventh embodiment in the container 150 with a lid will be explained as an example.

[0260] In the example shown in Fig. 44, the container 101 has a cylindrical side wall 104 that widens upward (tapers downward) and a bottom 106, forming a space 105 inside, and a container body 110 with an opening 102 at the upper end (upper end of the side wall 104). Although not shown, the opening 102 of the container 101 is formed in a circular shape. However, the container 101 shown here is just an example and does not limit the configuration of the container 101. For example, the container 101 may have the opening 102 formed in a rectangular shape. The container 101 may be any that can cover the opening 102 with the lid 1. Also, what is stored inside the container 101 (space 105) is not particularly limited and can include, for example, liquids, solids, or combinations thereof.

[0261] In the container shown in Fig. 44, the edge 103 formed from the outer part of the edge 102A of the opening 102 has a flange part 108. The flange part 108 may be a curled part where the member forming the container body 110 is wound outward, as shown in Figs. 44 and 47, or it may be formed as a part extending outward on a plane (flange part).

[0262] Also, the lid 1 according to the seventh embodiment may be combined with the container 101 having the opening 102.

[0263] Moreover, as shown in Figs. 64 and 65, it is preferable to configure it so that when the first portion 3C is opened, water droplets adhering to the back side of the first portion 3C can flow into the container. Such a configuration may involve inserting the holding part 23 formed on the tab member 31 into the hole-shaped holding receiving part 26 formed on the knob part from below, as shown in Fig. 64, to maintain the first portion 3C in an open state, with the open part of the first portion 3C being horizontal, or with the end side where the tab member is attached to the first portion 3C in the lid 1 as the upper end, it is preferable to configure it to slope downward from the upper end toward the center of the lid. By arranging the first portion 3C in this way, it is possible to let water droplets adhering to the back surface of the lid flow into the container when opening, and when operating the lid, for example, when the user tries to close the first portion 3C that was once opened, it is possible to greatly reduce the chance of wetting or soiling the hands with water droplets adhering to the back surface of the lid. Also, at this time, it is more preferable to form a guide part 500 on the lid to guide the water droplets to flow more smoothly into the container. The shape of the guide part 500 can be variously considered, for example, by forming a streak-like guide part 500 in advance by embossing or the like during the molding of the lid 1, or by performing fixed processing to make the lid easier to bend when the user tries to open it. Also, when resealing the first portion 3C after opening it once, it is preferable to adopt a shape such as the wave shape 501 shown in Fig. 67 along at least part of the contour of the first portion 3C to make it easier to maintain the resealed state. By adopting such a shape, it becomes easier for the first portion 3C to catch, making it easier to maintain the state after resealing.

[0264] The matters shown in the above [4 Application Example] are not limited to the case of using the lid 1 according to the seventh embodiment and can also be applied to the case of using the lid 1 according to the eighth embodiment as shown in Fig. 47. Also, the matters shown in [4 Application Example] may be similarly applied to the ninth embodiment.

[0265] Next, the tenth to thirteenth embodiments of the lid according to the present invention will be described in detail with reference to the drawings.

[1 Tenth Embodiment]

[1-1 Configuration]

(Container with Lid)

[0266] The container 150 with a lid according to the tenth embodiment includes a container 101 and a lid 1 attached to the container 101. The container 150 with a lid also has a bonding part 50 for bonding the container 101 and the lid 1. In the tenth embodiment, the case where a separate tab member 31 is provided on the small lid part 3 of the lid 1 is explained as an example, but this is just one example and does not exclude cases where no tab member is provided on the small lid part. Also, the tab member is not limited to being provided separately from the small lid part, and the part corresponding to the tab member may be integrally formed with the small lid part. In the explanation of the tenth embodiment, the case

where the shape of the container 101 is circular in the cross-section of the container 101 in a plan view of the container 150 with a lid is used as an example, but the shape of the container 101 is not limited to this and may be rectangular, polygonal, or a combination of curves and straight lines in the cross-section of the container 101.

(Lid)

[0267] The lid 1 is used by being bonded to the container 101 along the edge 103, which will be described later. In the example of Fig. 56A, the shape of the outer peripheral contour of the lid 1 is generally circular in plan view, but it is not limited to this and may be rectangular or elliptical, for example. The lid 1 is formed in a shape that can cover at least part of the opening 102, which will be described later, of the container 101. In the example of Fig. 56A, the lid 1 is formed to cover the entire area of the opening 102 when the small lid part 3 closes the small opening 6 (the area of the small opening 6 is generally covered by the small lid part 3). When covering the entire area of the opening 102, it may include cases where the opening 102 is completely covered or where fine hole structures such as small holes, slits, or notches with specific functions to release air from the container to the outside are formed in the main body or small lid part of the lid 1.

[0268] The lid 1 includes a main body 2 having a small opening 6 and a small lid part 3 covering the small opening 6. Also, as shown in the example of Fig. 56A, the lid 1 may be provided with a tab member 31 connected to the small lid part 3. In the lid 1, the opening forming part 4 is formed by the small lid part 3 and the small opening 6.

(Main Body)

[0269] The main body 2 has a part forming the bonding part 50, which will be described later, and is connected to the small lid part 3 via a hinge part 7. In the example of Fig. 56A, it is preferable that the main body 2 is connected to the small lid part 3 by a connection structure 17 that connects the edge of the small opening 6 of the main body 2 and the edge of the small lid part 3, in addition to the hinge part 7, before lifting the small lid part 3 to form the small opening 6. The structure of the connection structure 17 is such that the edge of the small opening 6 of the main body 2 and the edge of the small lid part 3 are locally connected at a fixed position along the longitudinal direction of the part where they face each other. The connection structure 17 may be a perforated structure as shown in Fig. 56B (in Fig. 56B, an alternating arrangement structure of the cut part 18B and the connection structure 17) or a half-cut part 16 as shown in Fig. 58. In this case, the half-cut part 16 may be formed along the edge of the small opening 6 of the main body 2 over the entire area of the edge of the small opening 6 (the part forming the outer peripheral edge 3A) or may be formed locally.

(Opening Forming Part)

[0270] As shown in Fig. 56A, the opening forming part 4 is defined as the part where the small opening 6 opens and closes with the rotatably movement of the small lid part 3. The opening forming part 4 is defined as the part having the small opening 6 and the small lid part 3. The opening forming part 4 is formed so that, as shown in Fig. 56, it is in a state where the small lid part 3 closes the small opening 6 and in a state where the small lid part 3 is rotatably moved and the small opening 6 is open. The opening forming part 4 is formed at a position offset from the center CT to a fixed position in the direction outward (outward direction) from the center CT of the lid 1.

[0271] The opening forming part 4 is configured so that when the small lid part 3 is opened with the lid 1 attached to the container 101, the space 105 of the container 101 can be viewed through the small opening 6.

(Small Opening)

[0272] The small opening 6 is formed to penetrate the opposing surface 73A of the lid 1 to the container 101 and the non-opposing surface (exposed surface 70 of the lid 1) to the container 101. The small opening 6 is formed to have a smaller opening area than the opening 102 on the inside of the part corresponding to the bonding part 50 in a plan view of the lid 1. The small opening 6 is for forming an opening for the entry and exit of contents (such as beverages or food) in the space 105 of the container 101 in the container 150 with a lid. When the small lid part 3 is lifted relative to the main body 2, the small opening 6 is exposed.

(Small Lid Part)

[0273] The lid 1 is provided with a small lid part 3. The small lid part 3 covers the small opening 6 in a manner that allows it to open and close. In the example of Fig. 56, the small lid part 3 is formed to be rotatably movable to a lifted state relative to the main body 2, and the small opening 6 is formed when the small lid part 3 is lifted.

[0274] In the lid 1 shown in the example of Fig. 56, the small lid part 3 is provided on the inside (center CT side) relative to the part corresponding to the bonding part 50 in a plan view of the lid 1. In the example shown in Fig. 56, the small lid part 3 is moved (rotated) so that it is in a lifted state in conjunction with the movement of the tab member 31 bonded to the small lid part 3 at the tab bonding part 18. The main body 2 and the small lid part 3 are connected by a hinge part 7. As the small lid part 3 is lifted with the hinge part 7 as the pivot, the small opening 6 is exposed. In the example of Figure 56, in the plan view of the lid 1, the portion forming the exposed surface 70 of the lid 1, excluding the small lid part 3, becomes the main body 2.

[0275] The shape and structure of the small lid part 3 are not particularly limited. Additionally, it is preferable that the shape of the small lid part 3, as shown in Figure

56, has a contour shape where at least part of the outer peripheral edge 3A of the small lid part 3 extends along the portion corresponding to the bonding part 50 (the portion forming the bonding part 50). In the example of Figure 56, the shape of the front edge portion 75A of the outer peripheral edge 3A of the small lid part 3 is shaped along the inner end of the bonding region R. Also, at this time, the shape of the front edge portion 75A tends to be shaped along the inner end of the edge portion 103. Such a shape of the small lid part 3 may be applied to the small lid part 3 of the lid 1 according to the tenth embodiment. Hereinafter, in the description of the lid 1, unless otherwise specified, the explanation will continue using the case where the small lid part 3 as shown in Figure 56 is used as an example. In the example of the small lid part 3 shown in Figure 56, the outer peripheral edge 3A is composed of the front edge portion 75A and the side edge portion 76 connecting the front edge portion 75A and the hinge part 7.

[0276] The outer peripheral edge 3A of the small lid part 3 may be connected to the main body 2 by the connection structure 17 as described above.

[0277] In the lid 1 according to the tenth embodiment, even after the small lid part 3 is raised and the small opening 6 is exposed, the small opening 6 can be covered by the small lid part 3. When the small lid part 3 is raised, the small opening 6 is exposed. This is called an open lid phase. The state where the small opening 6 is covered by the small lid part 3 is called a closed lid phase.

[0278] In the lid 1, it is possible to be in the closed lid phase even after being in an open lid phase, and when in the closed lid phase, the tip end surface (outer peripheral end surface) of the outer peripheral edge 3A of the small lid part 3 can face the tip end surface formed at the position of the small opening 6 of the main body 2.

(Hinge part)

[0279] As described above, the lid 1 is formed with a hinge part 7, and the hinge part 7 connects the small lid part 3 to the main body 2 in a rotatable manner. The hinge part 7 may be a perforated structure or a half-cut portion similar to the connection structure 17.

(Tab member)

[0280] The tab member 31 has a knob part 24 formed in the portion including the other end 16B, as shown in the example of Figure 56.

[0281] In the example of Figure 56, the tab member 31 is bonded to the small lid part 3 at one end 16A of the tab member 31, and this bonding part forms the tab bonding part 18. The position of the portion corresponding to the tab bonding part 18 in the small lid part 3 is not limited, but in the example of Figure 56, the tab bonding part 18 is bonded to the portion closer to the tip of the small lid part 3 (near the one end 14A).

(Bonding part)

[0282] In the container 150 with a lid, the bonding part 50 is formed as the portion where the lid 1 and the container 101 are bonded. The bonding part 50 has at least a wide breadth part 51 and a narrower part 52, which are parts with different widths. The width of the bonding part 50, in the plan view of the lid 1, indicates the size of the bonding part 50 in the direction perpendicular to the longitudinal direction (arrow F direction) and along the surface direction of the main body 2 (H1, H2 in Figures 56, 58 to 61).

[0283] The portion defined as the relatively wider part of the bonding part is specified as the wide breadth part 51 (width H1), and the portion excluding the wide breadth part 51 (the part with a width equal to or less than the width of the wide breadth part 51 (width H2)) is defined as the narrower part 52. The boundary position between the wide breadth part 51 and the narrower part 52 is defined as being included in the wide breadth part 51. Therefore, if the bonding part 50 gradually narrows from the wide breadth part 51 to the narrower part 52, the gradually narrowing portion is considered to be included in the wide breadth part 51. The bonding part 50 is in a state where the narrower part 52 is connected to the two ends along the longitudinal direction (arrow F direction) of the wide breadth part 51. This allows the force loaded near the boundary between the wide breadth part 51 and the narrower part 52 to be released towards the narrower part.

(Arrangement of the wide breadth part and the small lid part)

[0284] In the container 150 with a lid, the arrangement of the wide breadth part 51 and the small lid part 3 satisfies the following condition 1.

[0285] Condition 1: In the state where the small opening is covered by the small lid part, in the plan view of the lid, assuming a half-line intersecting the wide breadth part from the center of the lid, at least one half-line intersects the small lid part.

[0286] In the example of Figure 56, at least the half-line M1 intersecting the wide breadth part 51 from the center of the lid passes through the presence area of the small lid part 3, that is, it intersects the small lid part 3. The half-line M1 is a half-line intersecting at a slightly offset position along the longitudinal direction F of the wide breadth part 51 from the center CL of the wide breadth part 51.

(Container)

[0287] The container 101 has a cylindrical side wall portion 107 and a bottom 106 that increase in diameter upward, forming a space portion 105 inside, and an opening 102 opened at the upper end of the main body (upper end of the side wall portion 107). Not shown, but the opening 102 of the container 101 is surrounded by an

edge portion 103, and the edge portion 103 is formed in a circular shape. However, the container 101 shown here is an example and does not limit the configuration of the container 101. For example, the container 101 may have the edge portion 103 formed in a rectangular shape. The container 101 may be any that can cover the opening 102 with the lid 1. Also, what is stored inside the container 101 is not particularly limited, and examples include liquid, solid, or combinations thereof.

[0288] In the container 101 shown in Figure 57, a curl portion 109 is formed on the edge portion 103 by winding a member forming the main body portion 101A of the container 101 outward, but the container 101 is not limited to this. The tip end surface of the side wall portion 107 may be exposed on the edge portion 103, or a flange extending outward from the opening 102 of the container 101 may be formed on the edge portion 103.

[1-2 Manufacturing Method]

[0289] The container 150 with a lid can be manufactured by placing the lid 1 over the opening 102 of the container 101 and bonding the lid 1 and the container 101 to form the bonding part 50. The method of bonding the lid 1 and the container 101 is not particularly limited and can be appropriately used with bonding methods such as crimping or heat sealing.

[1-3 Operation and Effect]

[0290] According to the container 150 with a lid according to the tenth embodiment, the bonding part 50 has parts with different widths, and at least one half-line connecting the wide breadth part 51 and the center of the lid 1 intersects the small lid part in the plan view of the lid. This makes it easier to form a state where the wide breadth part is located near at least part of the small lid part and the small opening, strengthening the vicinity of the small lid part and the small opening, while the strength of the parts distant from the small lid part and the small opening becomes relatively less strong. Therefore, when the small lid part is pinched and lifted, even if force is applied to the small lid part, the shape of the small opening can be easily stabilized by the wide breadth part. Additionally, it becomes easier to release the force applied to the small lid part to the narrower part.

[2 Eleventh Embodiment]

[0291] In the description of the tenth embodiment, the container with a lid was provided with a tab member 31. The tab member 31 is not limited to what was described in the tenth embodiment. As shown in Figure 59, in the container with a lid according to the tenth embodiment, a fixing structure forming portion 23 that detachably fixes the tab member 31 when the small lid part 3 is lifted by the tab member 31 may be provided. Hereinafter, this embodiment will be referred to as the eleventh embodiment. Figure 59 is a schematic plan view showing an example of a lid used in the container with a lid according to the eleventh embodiment.

(Fixing Structure Forming Portion)

[0292] The fixing structure forming portion 23 is not particularly limited as long as it is a structure that can detachably fix the position of the tab member 31 when the tab member 31 is lifted. For example, in the example of Figure 59, the fixing structure forming portion 23 is formed by the claw part 23B and the receiving part 20. The claw part 23B is a part that protrudes downward by bending the knob part. Additionally, the receiving part 20 is formed in a slit shape in the main body 2. The receiving part 20 is formed at a position facing the claw part 23B when the small lid part 3 is lifted and the tab member 31 is positioned on the main body 2.

(Operation and Effect)

[0293] According to the container 150 with a lid according to the eleventh embodiment, the provision of the fixing structure forming portion 23 allows the state where the small lid part 3 is lifted to form the small opening 6 to be maintained.

[3 Twelfth Embodiment]

[0294] In the container with a lid according to the tenth embodiment, in addition to condition 1 shown in the tenth embodiment, as shown in Figure 60, the arrangement of the wide breadth part 51 and the small lid part 3 may satisfy condition 2 described later. Hereinafter, this embodiment will be referred to as the twelfth embodiment. Figure 59 is a schematic plan view showing an example of a lid used in the container with a lid according to the twelfth embodiment.

[0295] Regarding the arrangement of the wide breadth part 51 and the small lid part 3, condition 2 is as follows.

[0296] Condition 2: In the state where the small opening is covered by the small lid part, in the plan view of the lid, the center of the hinge part is formed at a position deviated from the line passing through the center of the wide breadth part along the longitudinal direction of the wide breadth part from the center of the lid among the half-lines.

[0297] In the example shown in Figure 60, in the plan view of the lid 1, the center HP of the hinge part is formed at a position deviated from the line (half-line MCL) passing through the center CL of the wide breadth part 51 along the longitudinal direction of the wide breadth part 51 from the center CT of the lid among the half-lines. Note that the center HP of the hinge part 7 indicates the intermediate position of the two ends 7A, 7B of the hinge part 7.

(Operation and Effect)

[0298] According to the container 150 with a lid according to the 12th embodiment, the center CT of the hinge part 7 can be off from the half-line MCL, there can be a difference in the distance to the center CL of the wide breadth part 51 between the one end 7A of the hinge part 7 and the other end 7B. It can be arranged, for example, such that end 7B is closer to the center CL of the wide breadth part 51, and end 7A is farther away. Here, when lifting the small lid part 3, the shape of end 7A becomes more variable than end 7B, allowing the formation of parts of the small lid part 3 that are easier to lift and parts that are relatively harder to lift, making it easier to lift the small lid part 3 gradually and partially rather than all at once.

[4 13th Embodiment]

[0299] In the container with a lid of the 10th embodiment, as shown in Figure 61, the bonding part 50 may be formed with multiple wide breadth part 51 and narrow parts 52. This embodiment is referred to as the 13th embodiment. Figure 61 is a schematic plan view showing an example of a lid used in the container with a lid according to the 13th embodiment.

[0300] Next, the 14th embodiment of the lid according to the present invention will be described.

(Lid)

[0301] The lid 1 is used by being bonded along the edge 103 of the opening 102 of the container 101. The lid 1 is formed in a shape that covers the opening 102 when bonded to the opening 102 of the container 101. As shown in Figure 62, the lid 1 has a bonding region R that is bonded to the edge 103 of the opening 102 of the container 101. Figure 62 shows an example of the lid 1.

(Bonding region)

[0302] The bonding region R is an area formed annularly along the opening 102 in a shape corresponding to the opening 102 of the container 101. The width W of the bonding region R (width along the inner and outer direction) is usually the same as or narrower than the width of the edge 103 of the opening 102. However, this does not prohibit the width W of the bonding region R from being wider than the width of the edge 103 of the opening 102. Additionally, the bonding region R may be formed inside the outer peripheral edge 71D of the lid 1, or it may be formed up to the outer peripheral edge 71D of the lid 1 as shown in Figure 62. Figure 62 is a plan view showing an example of the lid 1.

[0303] The lid 1 includes a main body 2 having a small opening 6, a small lid piece 13 covering the small opening 6, and a tab member 31. In the lid 1, the small lid piece 13 and the small opening 6 form the opening forming part 4.

(Opening Forming Part)

[0304] As shown in Figure 62, the opening forming part 4 includes the small opening 6 and the small lid piece 13 as described above. The opening forming part 4 is formed such that the small lid piece 13 and the small opening 6 are in a state where the small lid piece 13 closes the small opening 6, and in a state where the small lid piece 13 is open and the small opening 6 is open, as shown in Figure 62. The opening forming part 4 is provided at a position offset to a fixed position in the direction from the central part of the lid 1 to the outside.

[0305] When the small lid piece 13 is opened with the lid 1 attached to the container 101, the opening forming part 4 allows the space part 105 of the container 101 to be visible through the small opening 6.

(Opening)

[0306] The small opening 6 constituting the opening forming part 4 is formed to penetrate the opposing surface of the lid 1 to the container 101 and the non-opposing surface of the lid 1 to the container 101 (exposed surface 70 of the lid 1). The small opening 6 is intended to form an opening for the entrance and exit of contents (such as beverages or food) in the space part 105 of the container 101 when the lid 1 is attached to the container 101. In the lid 1, the small opening 6 is formed to be exposed when the small lid piece is lifted.

(Small Lid Piece)

[0307] The lid 1 is provided with a small lid piece 13. The small lid piece 13 is formed to be rotatably movable to a lifted state relative to the main body, and in the lid 1, the small opening 6 is formed when the small lid piece 13 is lifted.

[0308] In the lid 1 shown in the example of Figure 62, the small lid piece 13 is provided in a region corresponding to the inside of the bonding region R on the exposed surface 70 of the lid 1 in a plan view (with the vertical direction as the line of sight), hereinafter simply referred to as the inside region of the bonding region R or the inner region Rn. The small lid piece 13 is connected to the main body 2 including the bonding region R. As shown in Figure 62, in the lid 1, the small lid piece 13 is rotatably moved so that it is in a lifted state in conjunction with the movement of the tab member 31 bonded to the small lid piece 13 at the first bonding part 210A. The small lid piece 13 uses the connecting part between the main body 2 and the small lid piece 13 as a hinge part, and as the small lid piece 13 is lifted with the connecting part as the support axis, the small opening 6 is exposed. The small lid piece 13 is provided inside the bonding region R in a plan view of the lid 1. Hereinafter, the connecting part (hinge part) that serves as the support axis when the small lid piece 13 is lifted is referred to as the hinge connecting part 74 among the outer peripheral edge 3A of the small lid piece

13. The main body 2 is composed of the part excluding the small lid piece 13 among the parts forming the exposed surface 70 of the lid 1 in a plan view.

[0309] The shape and structure of the small lid piece 13 are not particularly limited. Additionally, it is preferable that the shape of the small lid piece 13 has a contour shape such that at least a part of the outer peripheral edge 3A of the small lid piece 13 extends along the inner edge of the bonding region R, as shown in Figure 62. In the example of Figure 62, the shape of the front edge part 75A of the outer peripheral edge 3A of the small lid piece 13 is along the inner edge of the bonding region R. At this time, the shape of the front edge part 75A tends to be along the inner edge of the edge 103 of the opening 102. Such a shape of the small lid piece 13 may be applied to the small lid piece 13 of the lid 1 according to the first embodiment. Hereinafter, in the description of the lid 1, unless otherwise specified, the explanation will continue using the case where the small lid piece 13 as shown in Figure 62 is used as an example. In the example of the small lid piece 13 shown in Figure 62, the outer peripheral edge 3A is composed of the front edge part 75A, the hinge connecting part 74, and the side edge part 76 connecting the front edge part 75A and the hinge connecting part 74.

[0310] The outer peripheral edge 3A of the small lid piece 13, excluding the hinge connecting part 74, may form a cut part in a state of being cut relative to the main body 2, or it may form a fragile part in a partially bonded state. The cut part can be formed by providing a score line along the boundary between the small lid piece 13 and the main body 2. The fragile part can be formed by providing a structure (perforation structure) in which short score lines and point-like bonding parts are alternately arranged at the boundary between the small lid piece 13 and the main body 2, or by forming a half-cut structure as shown in the example of Figure 62. The half-cut structure can indicate a structure cut to a fixed depth in the thickness direction of the lid 1. At this time, it is preferable that the depth of the cut in the half-cut structure is more than half of the thickness of the lid 1 and less than the thickness of the lid 1. The hinge connecting part 74 may also be a fragile part.

[0311] In the lid 1 according to this embodiment, even after the small opening 6 is exposed by lifting the small lid piece 13, it can be in a state where the small opening 6 is covered by the small lid piece 13. When the small lid piece 13 is lifted, the small opening 6 is exposed. This state is called the open lid phase. The state where the small opening 6 is covered by the small lid piece 13 is called the closed lid phase.

[0312] In the lid 1, as shown in Figure 62, it is possible to be in a closed lid phase even after being in an open lid phase, and when in a closed lid phase, the tip end surface 73a (outer peripheral end surface) of the outer peripheral edge 3A of the small lid piece 13 and the tip end surface formed at the position of the small opening 6 of the main body 2 can face oppositely. Here, the tip end surface of the main body 2 that faces the tip end surface 73a of the outer peripheral edge 3A of the small lid piece 13 becomes a facing surface. According to the 14th embodiment, it is preferable that the tip end surface 73a of the outer peripheral edge 3A and the facing surface contact each other to form a contact part, thereby the small opening 6 is securely covered at the contact part in the closed lid phase. In this regard, since a part where the small lid piece 13 and the main body 2 are separated is created in the open lid phase, breathability can be ensured, and it allows steam to pass between the small lid piece 13 and the main body 2.

(Tab Member)

[0313] The tab member 31 has a first portion 210 that bonds to the small lid piece 13 and a second portion 211 that can be bonded to the main body when the small lid piece 13 is lifted.

[0314] In the example of Figure 62, the first portion 210 is one end 21a of the tab member 31. The part of the small lid piece 13 to which the first portion 210 is bonded is not limited, but in the example of Figure 62, the first portion 210 is bonded to the part closer to the tip of the small lid piece 13 (position near one end 13a).

[0315] The second portion 211 is a part closer to the other end 21b side than the first bonding part 210A in the tab member. It is preferable that the tab member forms a knob part 24 in the part including the other end 21b as shown in the example of Figure 62. In this case, it is preferable that the second portion 211 is formed on the one end part 21A side rather than the knob part 24. The second portion 211 is formed to be bondable to the main body 2, and the position of the second portion 211 is such that it can be bonded to the main body when the small lid piece 13 is lifted. The second portion 211 may be at a position away from the first portion 210, or it may be in contact with the boundary.

[0316] Additionally, from the viewpoint of accommodating the tab member 31 within the exposed surface 70 of the lid 1 in a plan view, as shown in the example of Figure 62, it is preferable that the tab member 31 is arranged such that the second portion 211 is positioned more toward the center side of the lid 1 than the first portion 210. However, it is permissible for the distance from the center of the lid 1 to the first portion 210 to be the same as the distance from the center of the lid 1 to the knob part 24, and it does not prohibit the tab member 31 from being arranged such that the first portion 210 is positioned closer to the center of the lid 1 than the second portion 211.

(First Bonding part and Second Bonding part)

[0317] In the lid 1, the first bonding part 210A is formed at the portion where the first portion 210 is bonded with the small lid piece 13. Additionally, the second bonding part 211A is formed at the portion where the second portion 211 is bonded to the main body 2.

[0318] In the lid 1, the strength of the bonding part (bonding strength) between the second portion 211 and the main body 2 at the second bonding part 211A is smaller than the strength of the bonding part (bonding strength) between the first portion 210 and the small lid piece 13 at the first bonding part 210A. This can be achieved by fixing the first portion 210 and the small lid piece 13 using ultrasonic bonding, heat sealing, adhesive bonding, etc., and adhering the second portion 211 and the main body 2 with a re-peelable adhesive. The re-peelable adhesive may be fixed to the tab member 31 or to the main body 2. Additionally, adhesives with different adhesive strengths may be provided for the first portion 210 and the second portion 211. The bonding strength between the first portion 210 and the small lid piece 13 refers to the magnitude of the force required to separate the first portion 210 and the small lid piece 13 without tearing them apart. The bonding strength between the second portion 211 and the main body 2 refers to the magnitude of the force required to separate the second portion 211 and the main body 2 without tearing them apart. If tearing occurs when separating the first portion 210 and the small lid piece 13, it corresponds to the case where the bonding strength is the greatest.

[0319] According to the lid 1, it is possible to obtain a lid that can easily and hygienically open the opening corresponding to the drinking spout.

(Application Example)

[0320] The lid 1 can be used with a container 150 with a lid, as shown in Figure 63. Figure 63 is a cross-sectional view showing an embodiment in which the lid 1 according to this embodiment is bonded to the edge 103 of the opening 102 of the container 101 having an opening 102. The method of bonding the lid 1 and the container 101 is not particularly limited and can be appropriately used with bonding methods such as crimping or heat sealing.

[0321] The container 101 has a cylindrical side wall 104 and a bottom 106 that become thicker in the upward direction, forming a space 105 inside, and an opening 102 at the upper end of the main body (upper end of the side wall 104). Although not shown, the opening 102 of the container 101 is formed in a circular shape. However, the container 101 shown here is an example and does not limit the configuration of the container 101. For example, the container may have a mouth formed in a rectangular shape. The container may be any that can be covered with a lid at the mouth. Furthermore, the contents stored inside the container are not particularly limited and can include, for example, liquids, solids, or combinations thereof.

[0322] In the container shown in Figure 63, a curl portion 109, where the member forming the main body of the container 101 is wound outwardly, is formed at the edge 103 of the opening 102, but the container 101 is not limited to this. The end surface of the side wall 104 may be exposed at the edge 103 of the opening 102, or a flange extending outwardly from the opening 102 of the container 101 may be formed at the edge 103 of the opening 102.

[0323] Additionally, the lid may be combined with a container having a mouth.

[0324] As explained so far, the lid 1 according to the present invention can be applied to many such embodiments of the lid 1. It is also possible to apply it to embodiments of the lid 1 other than those mentioned above. The lid according to the present invention has been described in detail above, but the above is merely an illustration of the lid according to the present invention and is not limited to these. Therefore, appropriate modifications may be made without departing from the spirit of the present invention. Furthermore, the configuration of the lid described above may be used independently for each example of the lid, or the configurations of the lids in each example may be appropriately combined and applied.

[0325] Based on the above description of this specification, the present invention may adopt the following configuration.

[E1]
A lid formed so as to be bonded to a container having an opening formed at an upper end and an edge formed on an outer periphery of the opening: comprising

a base part having a bonding region corresponding part that corresponds to a region bonded to the container along the peripheral edge of the container and a small opening that is smaller than the opening of the container,
a small lid part for opening and closing the small opening, and
a hinge part connecting the base part and the small lid part, wherein
the small lid part is configured to be rotatable with respect to the base part via the hinge part as an axis,
the base part shown in a plan view has a protecting part outside beyond an opening edge of the small opening.

[E2]
The lid according to [E1], wherein

a protecting part is defined as a margin portion that fulfills the following conditions 1 and 2,

Condition 1: the margin portion is formed inside from an inner edge of the bonding region corresponding part and outside from the opening edge of the small opening in the base part when shown in a plan view thereof.
Condition 2: a line segment connecting the margin portion and the hinge part, if drawn, is passed through the opening edge of the small opening when shown in a plan view of the base part.

[E3]
The lid according to [E2], wherein
the margin portion is smaller than the small opening when shown in a plan view of the base part..
[E4]
The lid according to [E2] or [E3], wherein
the margin portion is formed such that the inner edge and an outer edge of the margin portion are not to be concentric.
[E5]
The lid according to any one of [E2] to [E4], wherein
the margin portion has an inclined portion that slopes downwardly from the outer edge to the inner edge of the margin portion..
[E6]
The lid according to any one of [E1] to [E5], wherein
a knob part is provided on an upper surface of the small lid part.
[E7]
The lid according to [E6], wherein
the knob part has a tab member that is bonded to the upper surface of the small lid part.
[E8]
The lid according to [E7], wherein
a part of the tab member crosses the opening edge of the small opening, once the small lid part makes the small opening close when shown in a plan view of the base part.
[E9]
The lid according to any one of [E6] to [E8], wherein

the lid has a holding structure forming portion that holds the small lid part such that the small lid part is rotated with respect to the base part with the hinge part serving as an axis to open the small opening,
a claw part is provided on the knob part,
the base part has a receiving part positioned in contact with the claw part,
the claw part and the receiving part form the holding structure forming portion.

[E10] The lid according to any one of [E1] to [E9], wherein
an extending portion is formed on the outer periphery of the base part.
[E11] The lid according to [E10], wherein
the lid has a holding structure forming portion that holds the small lid part such that the small lid part is rotated about the hinge part serving as an axis relative to the base part to open the small opening,

a knob part is provided on the upper surface of the small lid part,
a claw part is provided on the knob part, and
the extending portion and the claw part form the holding structure forming portion.

[E12]
The lid according to [E10] or [E11], wherein
the hinge part is formed between the extending portion and the tip of the small lid part.
[E13]
The lid according to any one of [E1] to [E12], wherein
a recessed portion is formed in the inner part of the bonding region corresponding part.
[E14]
The lid according to any one of [E1] to [E13], wherein

a protruding portion is formed on the outer periphery of the small lid part, and
a concave portion corresponding to the protruding portion is formed on the opening edge of the small opening.

[E15]
The lid according to any one of [E1] to [E14], wherein

a recessed portion is formed on the outer periphery of the small lid part, and
a convex portion corresponding to the recessed portion is formed on the opening edge of the small opening.

[E16]
The lid according to any one of [E1] to [E15], wherein

a connection structure for connecting the outer periphery of the small lid part and the opening edge of the small opening is formed,
the connection structure includes a fragile portion more fragile than the small lid part, and
the fragile portion is destroyed where the small lid part is rotated about the hinge part serving as an axis relative to the base part.

[E17]
The lid according to [E16], wherein
the fragile portion has a combined structure of a connecting portion and a notch, and/or a half-cut structure.
[E18]
The lid according to any one of [E1] to [E17], wherein
the lid is formed of paper-based material.
[E19]
The lid according to any one of [E1] to [E18], wherein
the lid has a holding structure forming portion that holds the small lid part such that the small lid part is rotated with respect to the base part with the hinge part serving as an axis to open the small opening.
[E20]
A container with a lid according to any one of [E1] to [E19], wherein

the lid according to (1), and
the container having an opening formed at an

upper end thereof and an edge formed on the outer periphery of the opening, wherein the lid is bonded to the container.

[E21]
A combination of a lid and a container: comprising the lid according to any one of [E1] to [E19], and the container having an opening formed at the upper end thereof and an edge formed on the outer periphery of the opening.

[0326] The present invention also includes the following technical ideas.

(F1) The lid where a bonding area is formed attached to the edge to cover the opening portion of a container having an opening and an edge surrounding the opening,

having a main body including the bonding area, The main body is equipped with a rotatably movement facilitation structure configured to allow a part of the main body to be rotatably moved towards the inside of the main body from an edge portion defined on the outer peripheral edge of the main body relative to another part of the main body.

When the said part of the main body is referred to as the first portion and the other part of the main body is referred to as the second portion,
The rotatably movement facilitation structure has guide parts extending along the boundary between the first portion and the second portion from each of the first and second ends of the edge portion,
The guide part traverses the bonding region,
Lid.

(F2) The rotatably movement facilitation structure further includes a hinge part formed inside the bonding region, continuous with the guide part,

When displacing the first portion relative to the second portion, the first portion rises against the second portion with the hinge part as the axis,
The lid described in (F1).

(F3) The first portion has a tapered shape towards the inside of the main body from the edge portion,
The lid described in (F1) or (F2).
(F4) The main body is provided with a protrusion extending outward from the edge portion, The lid described in any one of (F1) to (F3).
(F5) The rotatably movement facilitation structure has a hinge part formed inside the bonding region, continuous with the guide part,

The protrusion has a claw part on its inside,
The second portion has a receiving part,
When the first portion is folded over the upper surface of the second portion with the hinge part as the axis,

The claw part and the receiving part face each other,
The lid described in (F4).
(F6) The rotatably movement facilitation structure has a hinge part formed inside the bonding region, continuous with the guide part,

The second portion has a receiving part,
When displacing the first portion relative to the second portion, it rotatably moves integrally with the first portion, and when the first portion is folded over the upper surface of the second portion with the hinge part as the axis,

The protrusion is rotatably moved to a position where it can be inserted into the receiving part, The lid described in (F4).
(F7) When the guide parts extending along the boundary between the first portion and the second portion from each of the first and second ends of the edge portion are referred to as the first guide part and the second guide part respectively,
The length of the portion of the first guide part overlapping the bonding region and the length of the portion of the second guide part overlapping the bonding region are different,
The lid described in any one of (F1) to (F6).
(F8) When the guide parts extending along the boundary between the first portion and the second portion from each of the first and second ends of the edge portion are referred to as the first guide part and the second guide part respectively,

The first guide part has a first outer guide part formed from the first end to the inner edge of the bonding region, and a first inner guide part excluding the first outer guide part,
The second guide part has a second outer guide part formed from the second end to the inner edge of the bonding region, and a second inner guide part excluding the second outer guide part,
At least one of the first inner guide part and the second inner guide part is formed along the inner edge of the bonding region
The lid described in any one of (F1) to (F6).

(F9) The guide part has a notch structure or a weakening structure
The lid described in any one of (F1) to (F8).
(F10) The rotatably movement facilitation structure is formed to allow the entire first portion to be separable from the second portion,

The lid described in any one of (F1) to (F9).
(F11) The rotatably movement facilitation structure forms a protruding curved part in the guide part, curving from the first portion towards the second portion,
The lid described in any one of (F1) to (F10).
(F12) At least in the second portion, a recessed part is formed inside the bonding region, making the non-formed surface of the bonding region concave,

When the farthest position from the edge portion of the inner edge of the bonding region is taken as the reference position, the recessed part has an inclined surface sloping downwards from the reference position towards the first portion,
The lid described in any one of (F1) to (F11).

(F13) Inside the bonding region, a groove is formed making the non-formed surface of the bonding region concave,
The lid described in any one of (F1) to (F11).
(F14) The groove extends in a curved shape crossing the first portion,
The lid described in (F13).
(F15) The groove is formed in an annular shape,
The lid described in (F13) or (F14).
(F16) The main body is positioned such that the inner region inside the groove is higher than the outer region outside the groove,
The lid described in any one of (F13) to (F15).
(F17) The groove is formed in multiple concentric shapes,
The lid described in any one of (F13) to (F16).
(F18) The groove is formed such that its depth gradually increases as it gets closer to the first portion along the extending direction from a position distant from the first portion,
The lid described in any one of (F13) to (F17).
(F19) A container with an opening and,

A lid described in any one of (F1) to (F18),
A bonding part is formed to bond the edge of the container's opening and the bonding region of the lid,
Container with a lid.

(F20) The bonding part is formed by crimping or heat sealing,
The container with a lid described in (F19).
(F21) A container with an opening and a lid described in any one of (F1) to (F18),
Combination of lid and container.

[0327] Furthermore, the present invention also encompasses the technical ideas shown below.

(G1) It is formed to enable the formation of a bonding region that is bonded to an upper edge portion composed of the outer part from the edge of the opening for a container with an opening,

Equipped with a main body having a part corresponding to the bonding region,
The main body has a first portion defined as a part that is rotated upwards to expose the opening when the main body is bonded to the edge of the opening of the container, and a second portion excluding the first portion,
The boundary between the first portion and the second portion in a non-rotating state where the rotation of the first portion relative to the second portion is restricted forms a hinge part that becomes the rotation axis of the first portion when forming an upwardly rotatably movement defined as the state where the first portion is rotated upwards relative to the second portion, and a guide part that determines the position where separation between the first portion and the second portion is intended to occur when forming the condition of upwardly rotatably movement,
And, the main body is configured to form a condition of downwardly rotatably movement defined as the state where the first portion is pushed downwards relative to the second portion with the hinge part as the rotation axis,
Lid.

(G2) At least one end of the hinge part is formed at a position overlapping the bonding region in a plan view of the main body,
The lid described in (G1).
(G3) The main body has an annular outer part having a portion corresponding to the area outside the inner edge of the bonding region and an inner part formed inside the outer part,
At least a part of the guide part is formed in the inner part,
The lid described in (G1) or (G2).
(G4) When the main body is bonded to the upper edge portion of the container, in a plan view of the main body, the outer part is positioned outside the edge of the opening,
The lid described in (G3).
(G5) When the main body is bonded to the upper edge portion of the container, in a plan view of the main body, at least one end of the hinge part is positioned outside the edge of the opening, The lid described in any one of (G1) to (G4).
(G6) When the main body is bonded to the upper edge portion of the container, in the non-rotating state, in a plan view of the main body, the guide part is formed to be spaced apart from the part corresponding to the bonding region as it moves away from the boundary between the hinge part and the guide part along the extending direction of the guide

part,
The lid described in any one of (G1) to (G5).
(G7) A tab member is bonded to the first portion,
The lid described in any one of (G1) to (G6).
(G8) In a plan view of the main body, the tab bonding part defined as the bonding part between

the tab member and the first portion is formed at a position closer to the front end of the guide part than the hinge part,
The lid described in (G7).

(G9) The tab member is bonded at one end to the first portion,
The tab member forms a knob part at the other end,
The lid described in (G7) or (G8).
(G10) The other end side of the tab member is positioned closer to the center side of the main body than the one end of the tab member,
The lid described in (G9).
(G11) The tab member has a locking part,
The lid described in any one of (G7) to (G10).
(G12) The second portion has a locking receiving part formed in a shape capable of receiving the locking part,
The lid described in (G11).
(G13) The main body is provided with an extending part extending outward from a part of the outer peripheral edge of the main body,
A part of the first portion traverses the bonding region and is continuous with the extending part,
The lid described in any one of (G1) to (G6).
(G14) When the main body is bonded to the upper edge portion of the container, in a plan view of the main body, a bending auxiliary part is formed in the first portion at a position directed from the extending part towards the hinge part and inside the edge of the opening,
The lid described in (G13).
(G15) The main body is formed of a paper-based material,
The lid described in any one of (G1) to (G14).
(G16) The container is formed such that the opening diameter decreases in the downward direction from the opening,
The lid according to any one of (G1) to (G15).
(G17) The container has a flange at the upper edge,
The lid according to any one of (G1) to (G16).
(G18) In the condition of downwardly rotatably movement, the guide portion of the first portion contacts the inner peripheral surface of the container,
The lid according to any one of (G1) to (G17).
(G19) A container having an opening and an upper edge portion formed from the edge of the opening to the outside,

and a lid according to any one of (G1) to (G18),
A bonding part is formed to bond the upper edge portion of the container and the bonding region of the lid,
A container with a lid.

(G20) The bonding part is formed by crimping or heat sealing,
The container with a lid according to (G19).
(G21) The container is formed such that the opening diameter decreases in the downward direction from the opening, as described in the container with a lid according to (G19) or (G20).
(G22) The container has a flange at the upper edge,
The container with a lid according to any one of (G19) to (G21).
(G23) In the condition of dowwardly rotatably movement, the guide portion of the first portion contacts the inner peripheral surface of the container,
The container with a lid according to any one of (G19) to (G22).
(G24) A container having an opening and an upper edge portion formed from the edge of the opening to the outside, and a lid according to any one of (G1) to (G18),
A combination of a lid and a container.

[0328] Furthermore, the present invention encompasses the technical ideas shown below.

(H1) A container having an opening formed at the upper end and a lid attached to the container and covering the opening,

The container has an edge surrounding the opening,
and has a bonding part for bonding the container and the lid along the edge,
The lid has a main body portion that forms a small opening with a smaller opening area than the opening on the inside of the portion corresponding to the bonding part in a plan view of the lid, a small lid part that can open and close the small opening, and a hinge part that connects the small lid part to the main body portion rotatably,
The bonding part has at least a wide breadth part and a narrow portion with a smaller width than the wide breadth part as parts with different widths,
In a state where the small opening is covered by the small lid part, in a plan view of the lid, when assuming a half-line intersecting the wide breadth part from the center of the lid, at least one of the half-lines intersects the small lid part,
A container with a lid.

(H2) The bonding part has at least the wide breadth part and the narrow portion with a smaller width than the wide breadth part, connected to the two ends of

the wide breadth part as parts with different widths,
The container with a lid according to (H1).
(H3) The main body portion of the lid is formed of a paper-based material,
The container with a lid according to (H1) or (H2).
(H4) In a state where the small opening is covered by the small lid part, in a plan view of the lid, the center of the hinge part is formed at a position deviated from the line passing through the center of the wide breadth part along the longitudinal direction of the wide breadth part from the center of the lid,
The container with a lid according to any one of (H1) to (H3).
(H5) A tab member is provided on the small lid part of the lid,
The container with a lid according to any one of (H1) to (H4).

[0329] Furthermore, the present invention also encompasses the technical ideas shown below.

(I1) A lid having a bonding region bonded to the periphery of the opening of the container,

having a shape that covers the opening when bonded to the container,
a main body with an opening,
a small lid piece covering the opening,
and a tab member,
The small lid piece is connected to the main body at least partially along its outer periphery and is formed to be rotatably moveable to a raised state relative to the main body,
and is formed such that the opening is exposed when the small lid piece is raised,
The tab member has a first portion bonded to the small lid piece and a second portion that can be bonded to the main body when the small lid piece is raised,
When the portion where the first portion and the small lid piece are bonded is defined as the first bonding part, and the portion where the second portion and the main body are bonded is defined as the second bonding part,
the strength of the bonding part between the second portion and the main body at the second bonding part is smaller than the strength of the bonding part between the first portion and the small lid piece at the first bonding part,
Lid.

(I2) A container with an opening and the lid according to (I1),
A combination of a container and a lid.
(I3) A container with a opening and the lid according to (I1),

The opening of the container is covered by the lid,
A container with a lid.

Reference Signs List

[0330]

1: Lid
2: Main body
2A: Outer periphery
3: Small lid part
3A: Outer periphery
4: Opening forming part
5: Bonding region corresponding part
6: Small opening
6G: Opening edge
7: Hinge part
7A: End
8: Notch portion
10: Margin portion
10A: First margin portion
10B: Second margin portion
11A: Tip portion
11B: First protruding portion
12: Bending auxiliary part
13: Protruding portion
14: Protruding curved portion
15A: First portion
15B: Second portion
16: Half-cut portion
17: Connection structure
18A: Continuous portion
18B: Cutting portion
19: Inclined portion
20: Receiving part
21: Fixing structure forming portion
23: Holding portion
24: Knob part
26: Insertion portion
30: Holding structure forming portion
31: Tab member
31A: One end
31B: Other end
32: Claw part
33: Receiving part
34: Tab bonding part
35: Overlapping portion
72: Outer portion
73: Inner edge portion
74: Hinge connecting portion
75: Front edge portion
76: Side edge portion
101: Container
102: Opening
103: Edge
104: Side wall
105: Space portion
107: Side wall portion

108: Flange
110: Container body
150: Container with lid
151: Bonding part
CT: Center
F: Arrow
M: Line segment
ME: Extension line
R: Bonding region
S1: Portion
S11: Portion
S12: Portion
S2: Portion
SB1: Fixed position
SB2: Corresponding position
XS: Area

Claims

1. A lid formed so as to be bonded to a container having an opening formed at an upper end and an edge formed on an outer periphery of the opening: comprising

a base part having a bonding region corresponding part that corresponds to a region bonded to the container along the peripheral edge of the container and a small opening that is smaller than the opening of the container,
a small lid part for opening and closing the small opening, and
a hinge part connecting the base part and the small lid part, wherein
the small lid part is configured to be rotatable with respect to the base part via the hinge part as an axis,
the base part shown in a plan view has a protecting part outside beyond an opening edge of the small opening.

2. The lid according to claim 1, wherein
a protecting part is defined as a margin portion that fulfills the following conditions 1 and 2,

Condition 1: the margin portion is formed inside from an inner edge of the bonding region corresponding part and outside from the opening edge of the small opening in the base part when shown in a plan view thereof.
Condition 2: a line segment connecting the margin portion and the hinge part, if drawn, is passed through the opening edge of the small opening when shown in a plan view of the base part.

3. The lid according to claim 2, wherein
the margin portion is smaller than the small opening when shown in a plan view of the base part.

4. The lid according to claim 2, wherein
the margin portion is formed such that the inner edge and an outer edge of the margin portion are not to be concentric.

5. The lid according to claim 2, wherein
the margin portion has an inclined portion that slopes downwardly from the outer edge to the inner edge of the margin portion.

6. The lid according to claim 1, wherein
a knob part is provided on an upper surface of the small lid part.

7. The lid according to claim 6, wherein
the knob part has a tab member that is bonded to the upper surface of the small lid part.

8. The lid according to claim 7, wherein
a part of the tab member crosses the opening edge of the small opening, once the small lid part makes the small opening close when shown in a plan view of the base part.

9. The lid according to claim 6, wherein

the lid has a holding structure forming portion that holds the small lid part such that the small lid part is rotated with respect to the base part with the hinge part serving as an axis to open the small opening,
a claw part is provided on the knob part,
the base part has a receiving part positioned in contact with the claw part,
the claw part and the receiving part form the holding structure forming portion.

10. The lid according to claim 1, wherein
an extending portion is formed on the outer periphery of the base part.

11. The lid according to claim 10, wherein
the lid has a holding structure forming portion that holds the small lid part such that the small lid part is rotated about the hinge part serving as an axis relative to the base part to open the small opening,

a knob part is provided on the upper surface of the small lid part,
a claw part is provided on the knob part, and
the extending portion and the claw part form the holding structure forming portion.

12. The lid according to claims 10 or 11, wherein
the hinge part is formed between the extending portion and the tip of the small lid part.

13. The lid according to claim 1, wherein

a recessed portion is formed in the inner part of the bonding region corresponding part.

14. The lid according to claim 1, wherein

a protruding portion is formed on the outer periphery of the small lid part, and
a concave portion corresponding to the protruding portion is formed on the opening edge of the small opening.

15. The lid according to claim 1, wherein

a recessed portion is formed on the outer periphery of the small lid part, and
a convex portion corresponding to the recessed portion is formed on the opening edge of the small opening.

16. The lid according to claim 1, wherein

a connection structure for connecting the outer periphery of the small lid part and the opening edge of the small opening is formed,
the connection structure includes a fragile portion more fragile than the small lid part, and
the fragile portion is destroyed where the small lid part is rotated about the hinge part serving as an axis relative to the base part.

17. The lid according to claim 16, wherein
the fragile portion has a combined structure of a connecting portion and a notch, and/or a half-cut structure.

18. The lid according to claim 1, wherein
the lid is formed of paper-based material.

19. A container with a lid: comprising

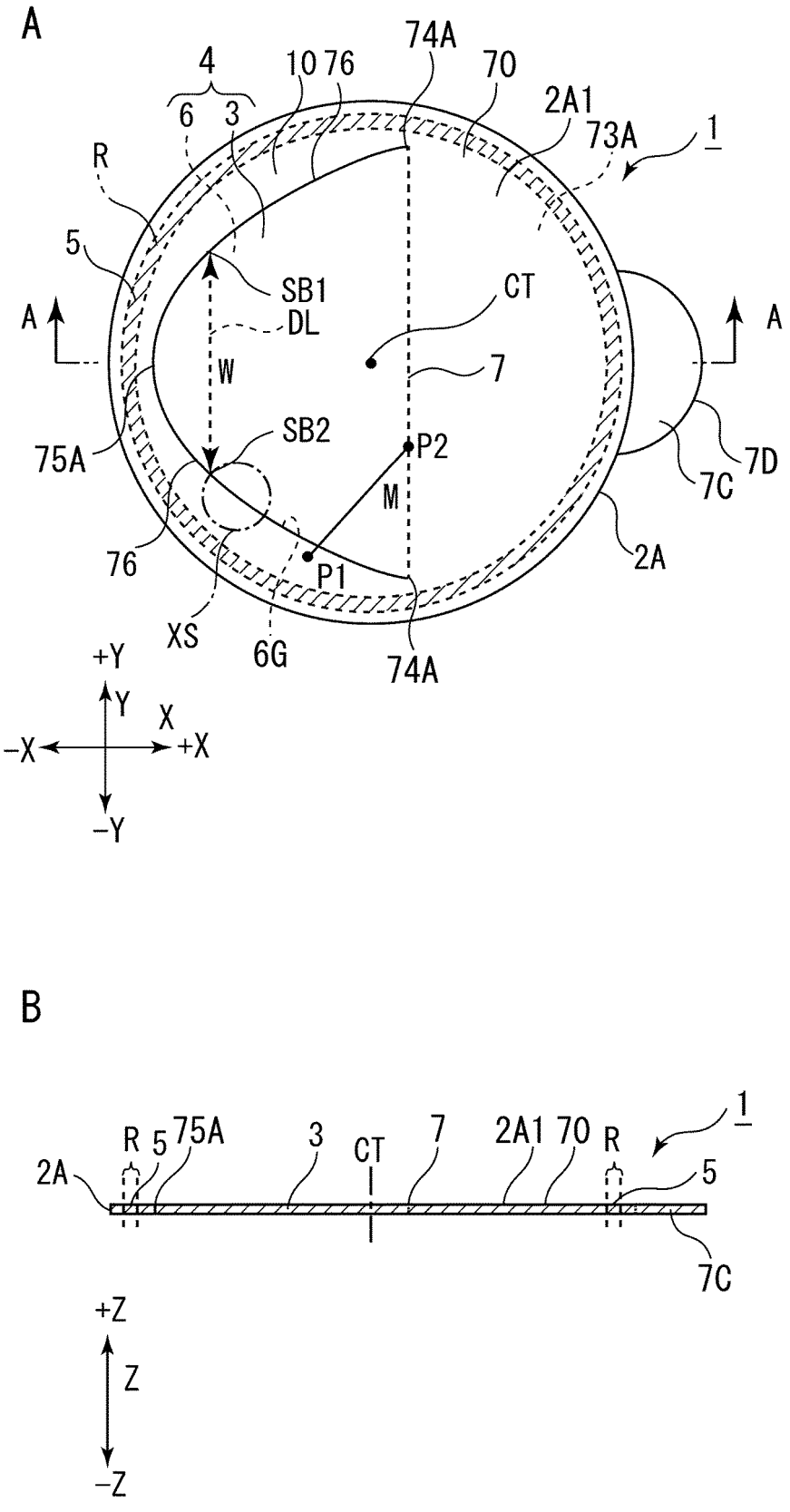
the lid according to claim 1, and
the container having an opening formed at an upper end thereof and an edge formed on the outer periphery of the opening, wherein

the lid is bonded to the container.

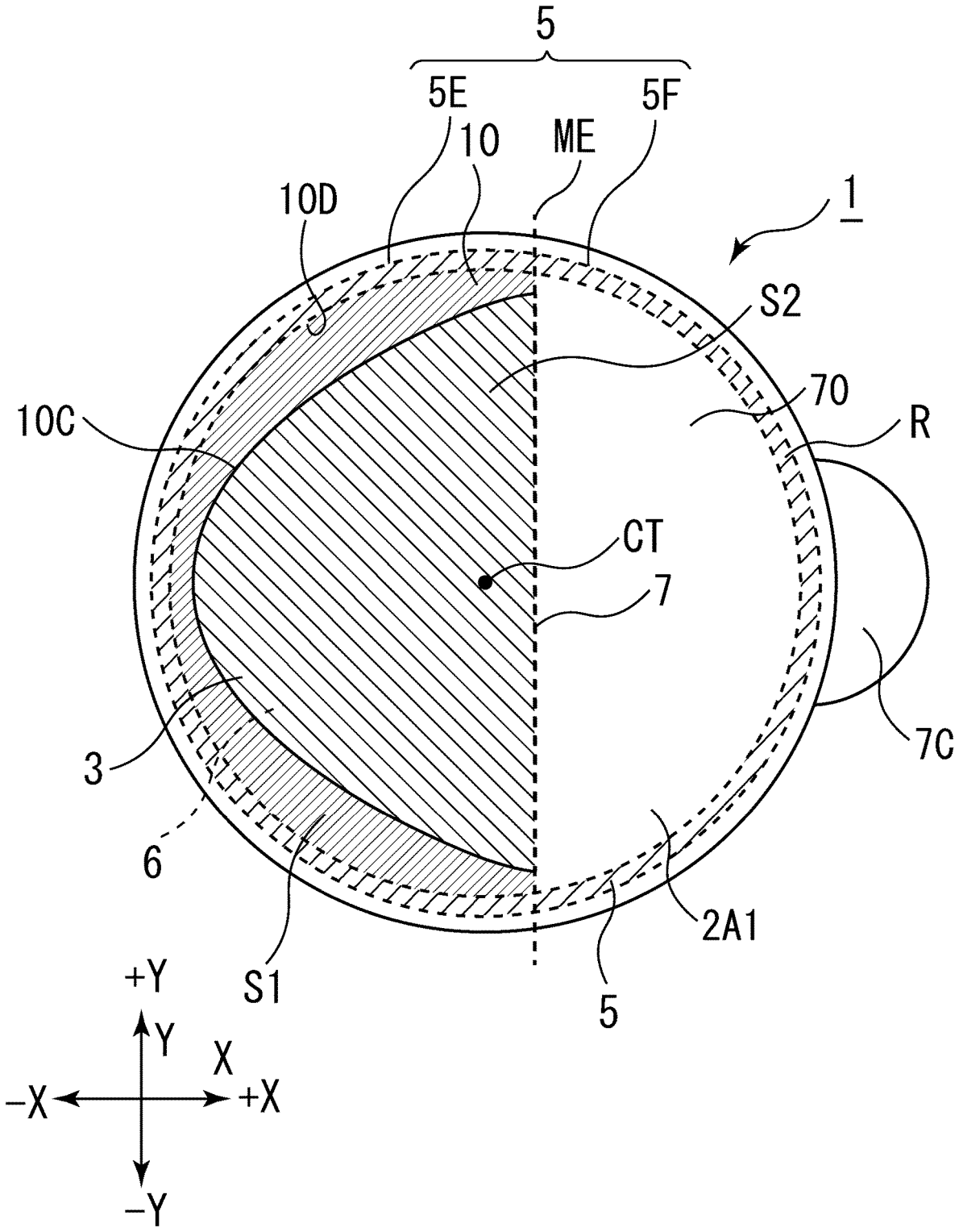
20. A combination of a lid and a container: comprising

the lid according to claim 1, wherein
the container having an opening formed at the upper end thereof and an edge formed on the outer periphery of the opening.

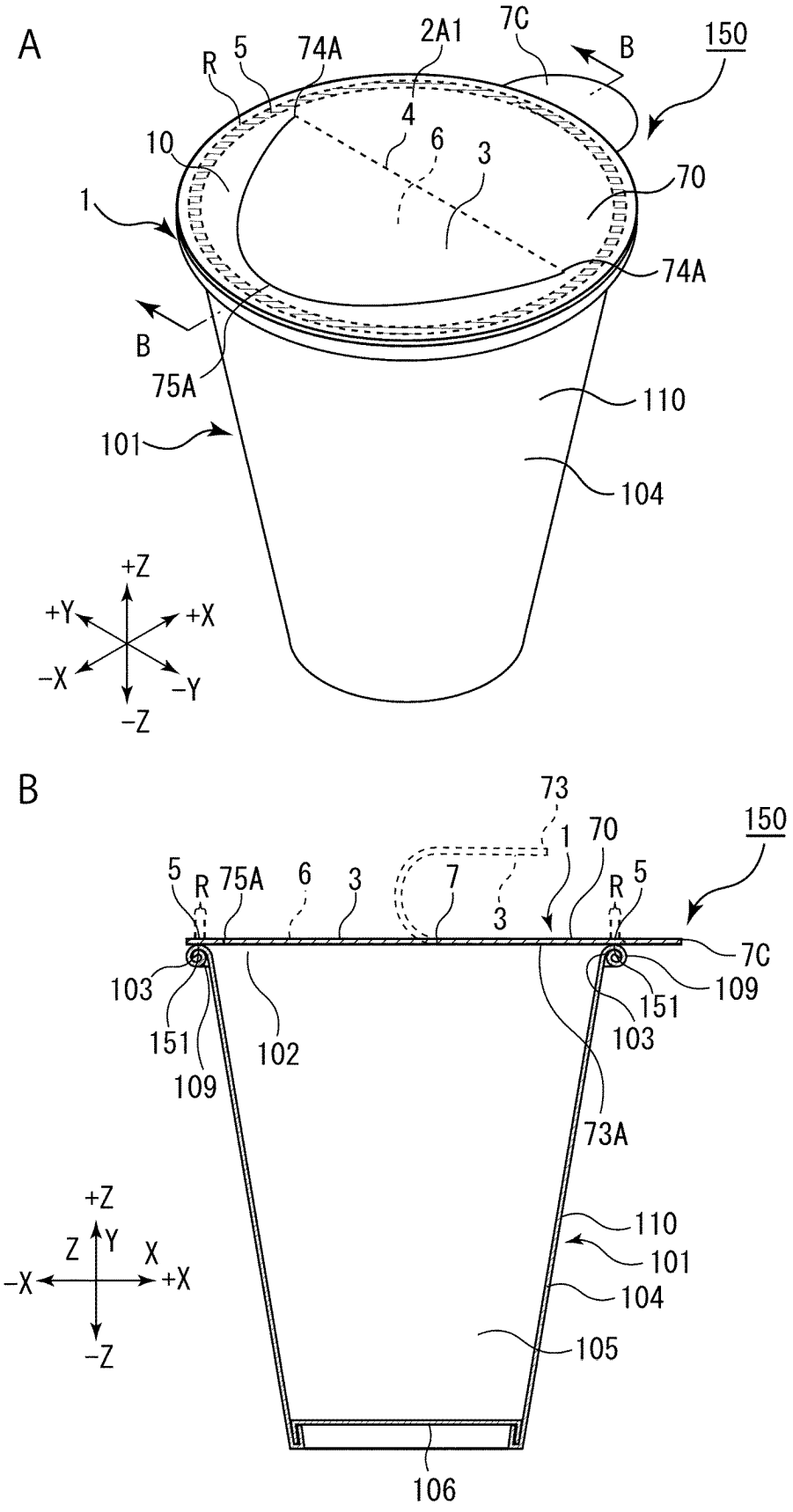
[Fig 1]


A
4
10
76
74A
70
2A1
73A
1
6
3
R
5
SB1
DL
CT
A
A
W
7
SB2
P2
75A
7D
7C
M
76
2A
P1
XS
6G
74A
+Y
Y
X
-X
+X
-Y
B
1
R
5
75A
3
CT
7
2A1
70
R
2A
5
7C
+Z
Z
-Z

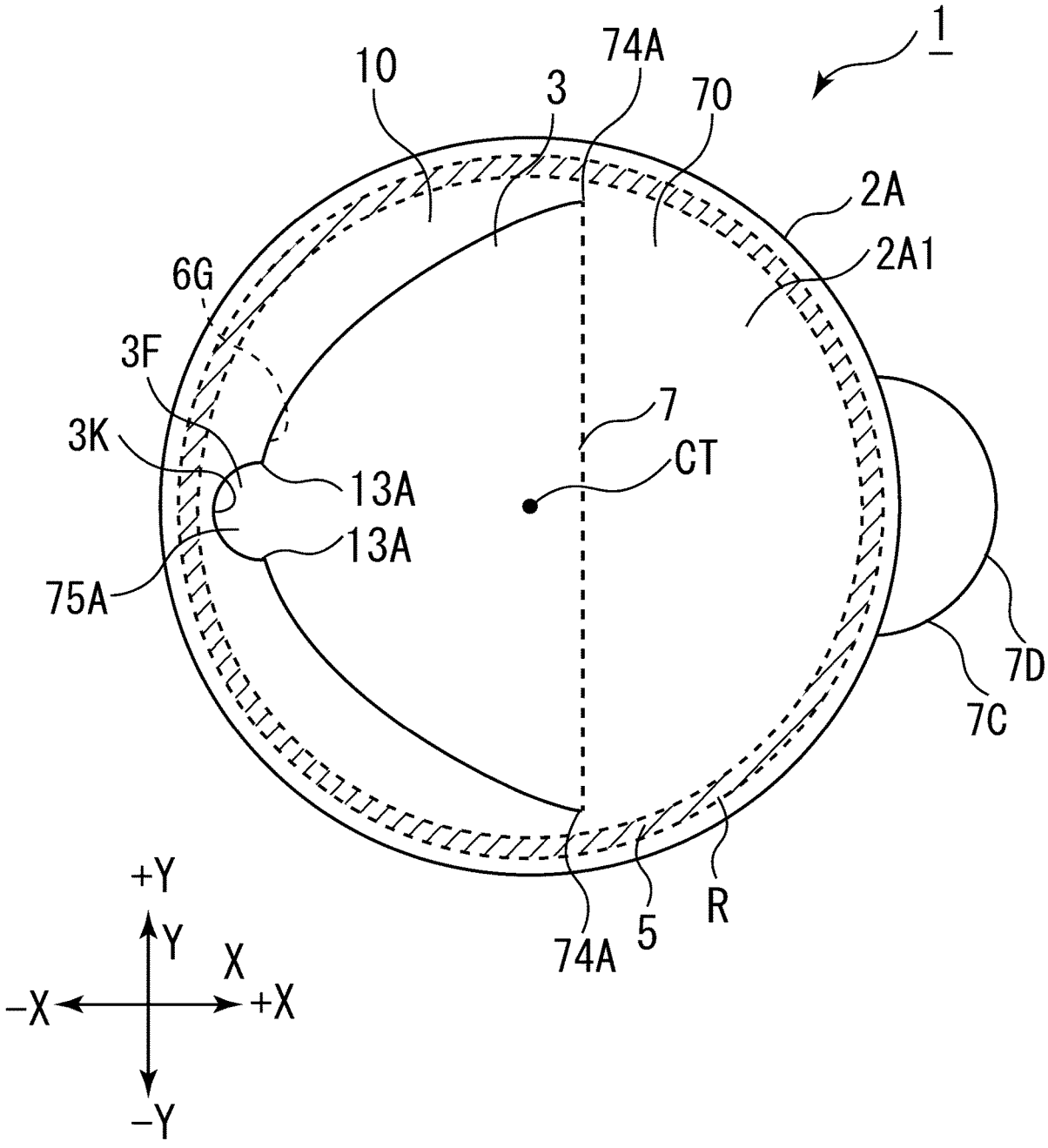
[Fig 2]



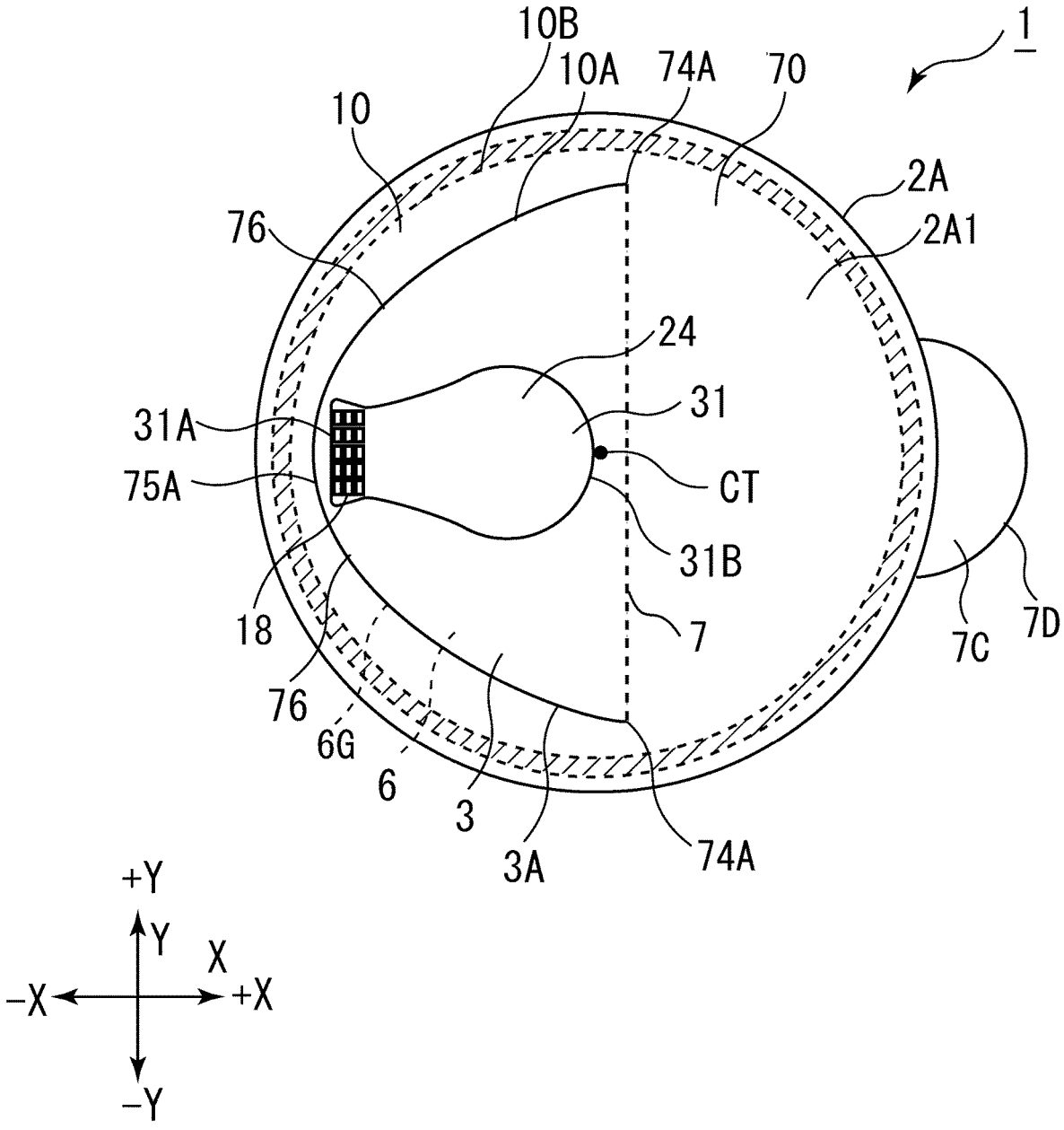
[Fig 3]


A
R
5
74A
2A1
7C
B
150
4
6
3
10
70
1
74A
B
75A
110
101
104
+Z
+Y
+X
-X
-Y
-Z
B
73
1
70
150
5
R
75A
6
3
7
3
R
5
7C
103
109
151
102
151
103
109
73A
110
101
104
105
106
+Z
Z
Y
X
-X
+X
-Z

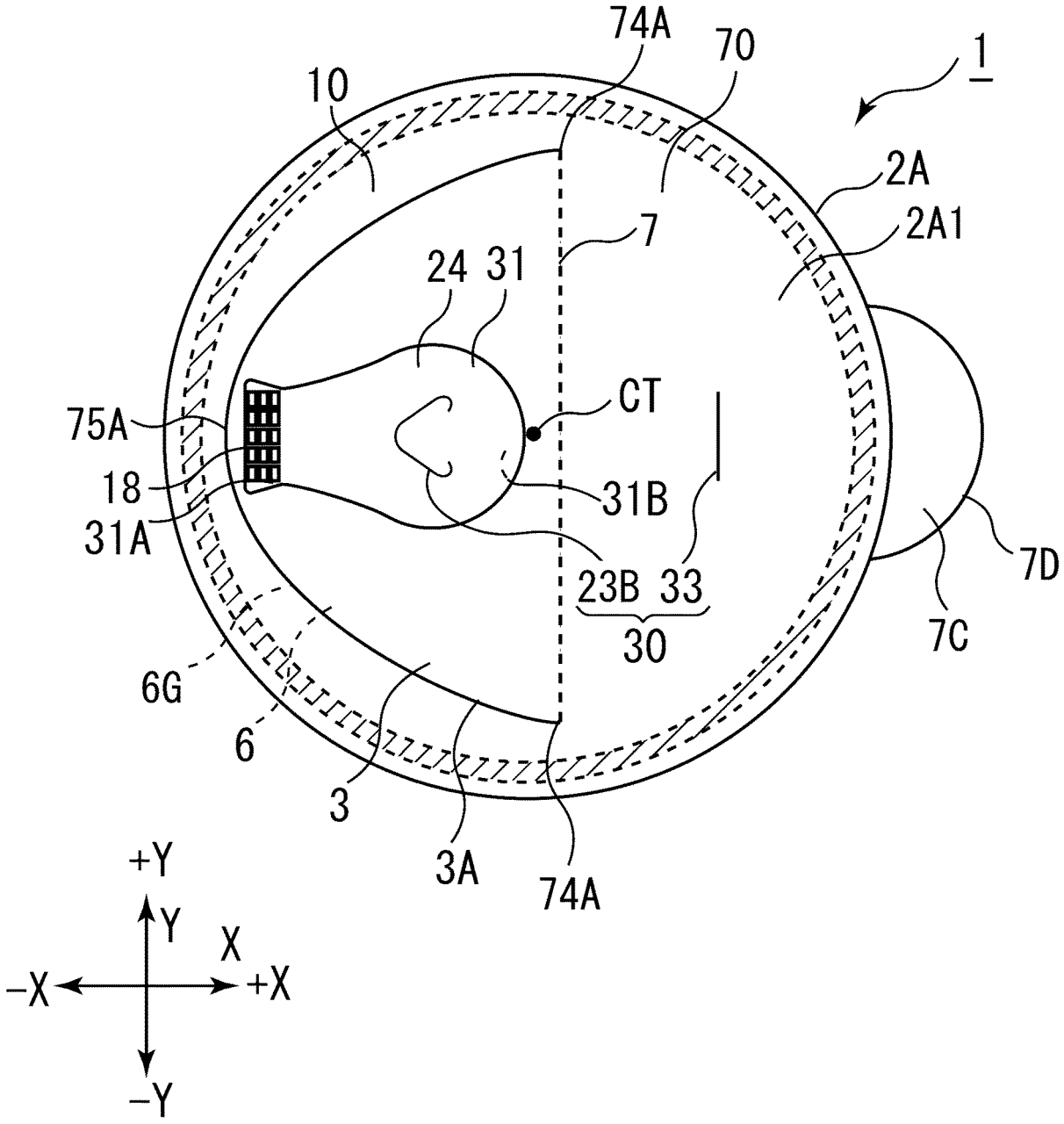
[Fig 4]



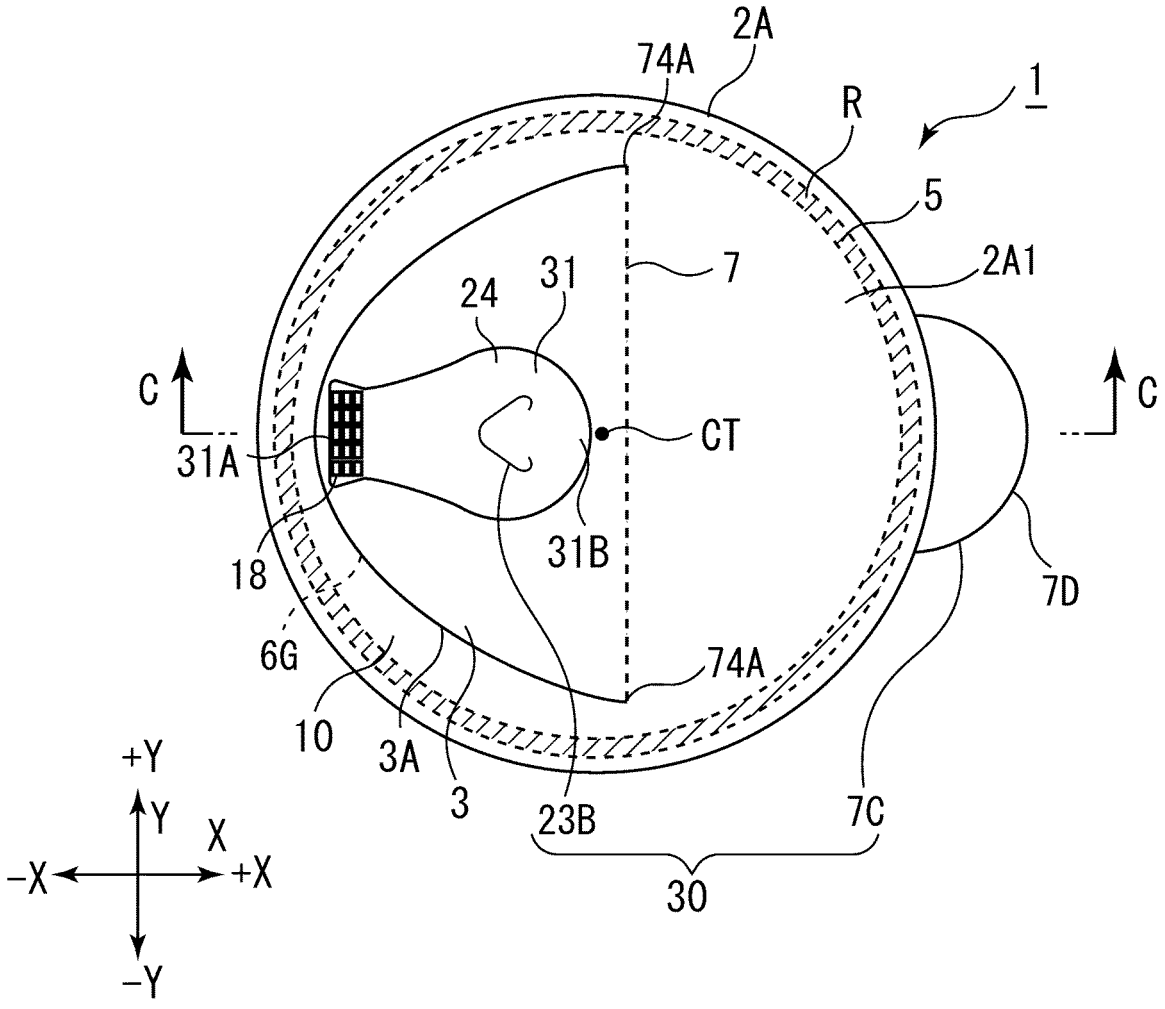
[Fig 5]


10B
10A
74A
70
1
10
2A
2A1
76
24
31
31A
75A
CT
31B
18
7
7C
7D
76
6G
6
3
3A
74A
+Y
Y
X
−X
+X
−Y

[Fig 6]

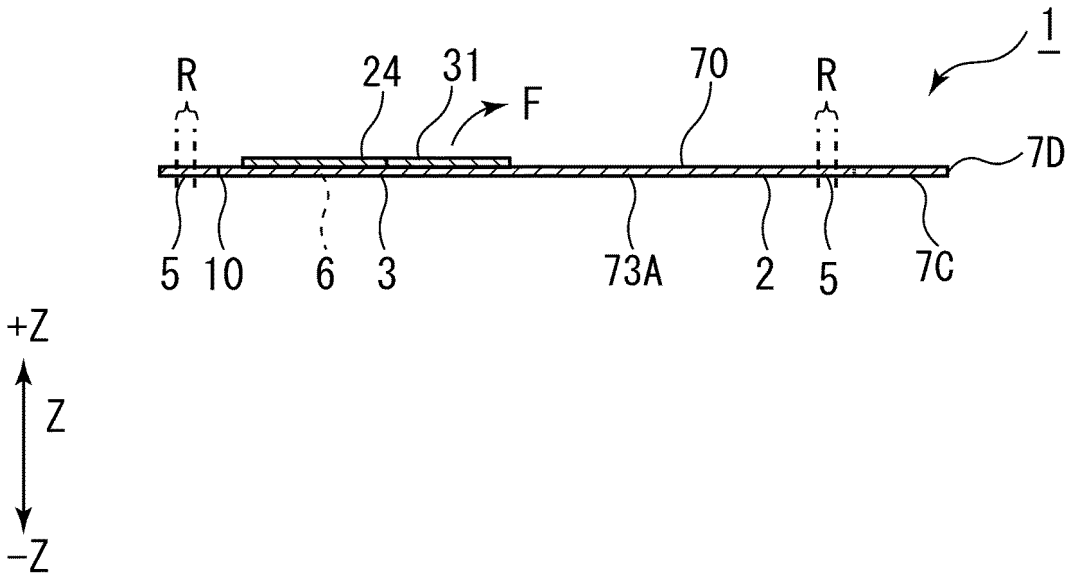

74A
70
1
10
2A
2A1
7
24 31
CT
75A
18
31A
31B
23B 33
30
7D
7C
6G
6
3
3A
74A
+Y
Y
X
-X
+X
-Y

[Fig 7]

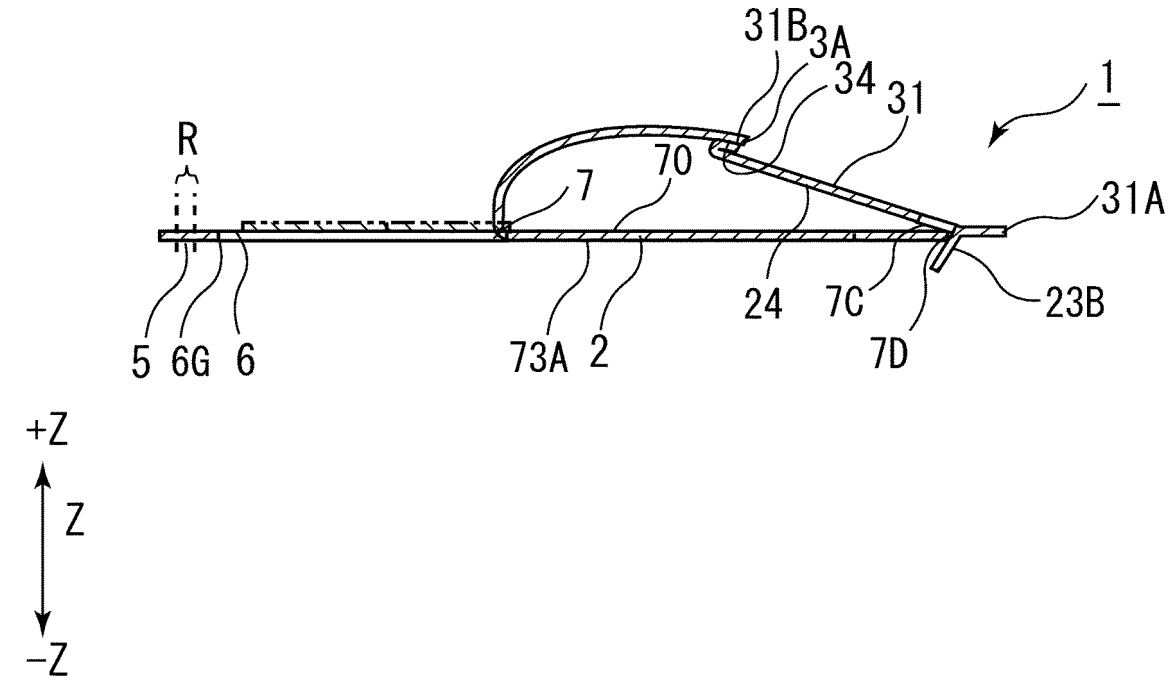

2A
74A
R
1
5
2A1
7
31
24
C
31A
CT
C
31B
18
7D
6G
74A
10
3A
3
23B
7C
30
+Y
Y
X
-X
+X
-Y

[Fig 8]

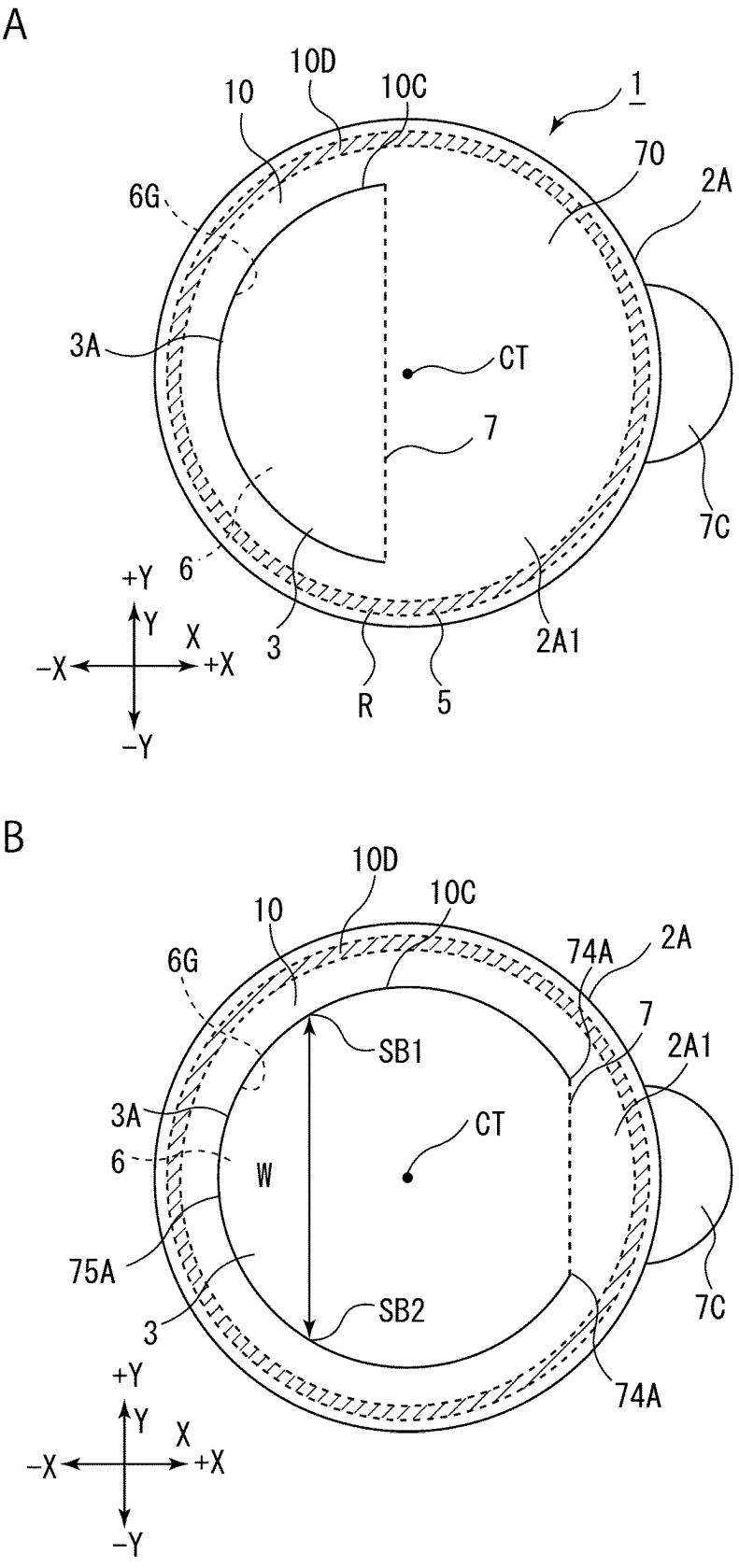
A


R
24
31
F
70
R
1
7D
5
10
6
3
73A
2
5
7C
+Z
Z
−Z

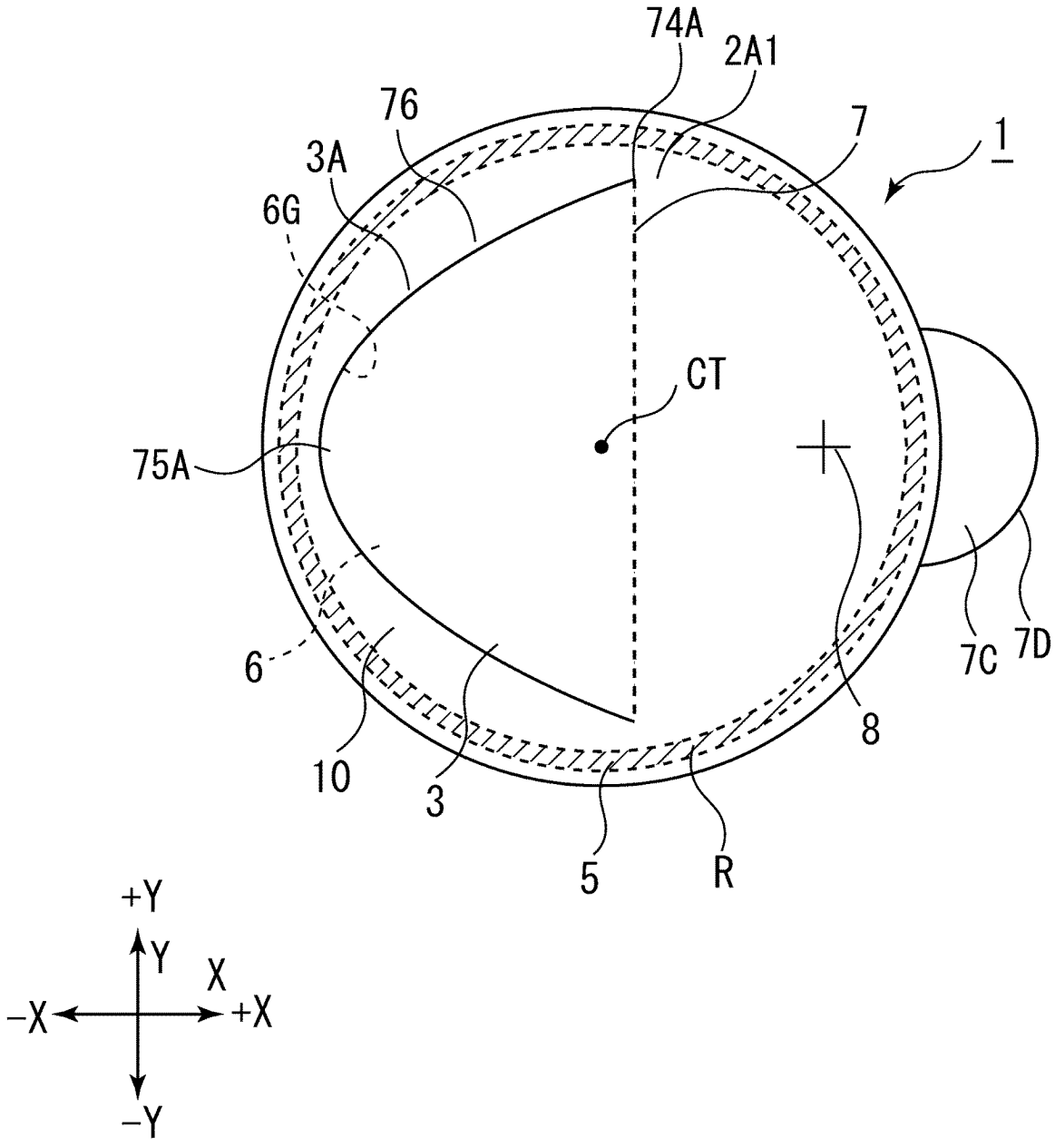
B


31B
3A
34
31
1
R
70
7
31A
24
7C
23B
5
6G
6
73A
2
7D
+Z
Z
−Z

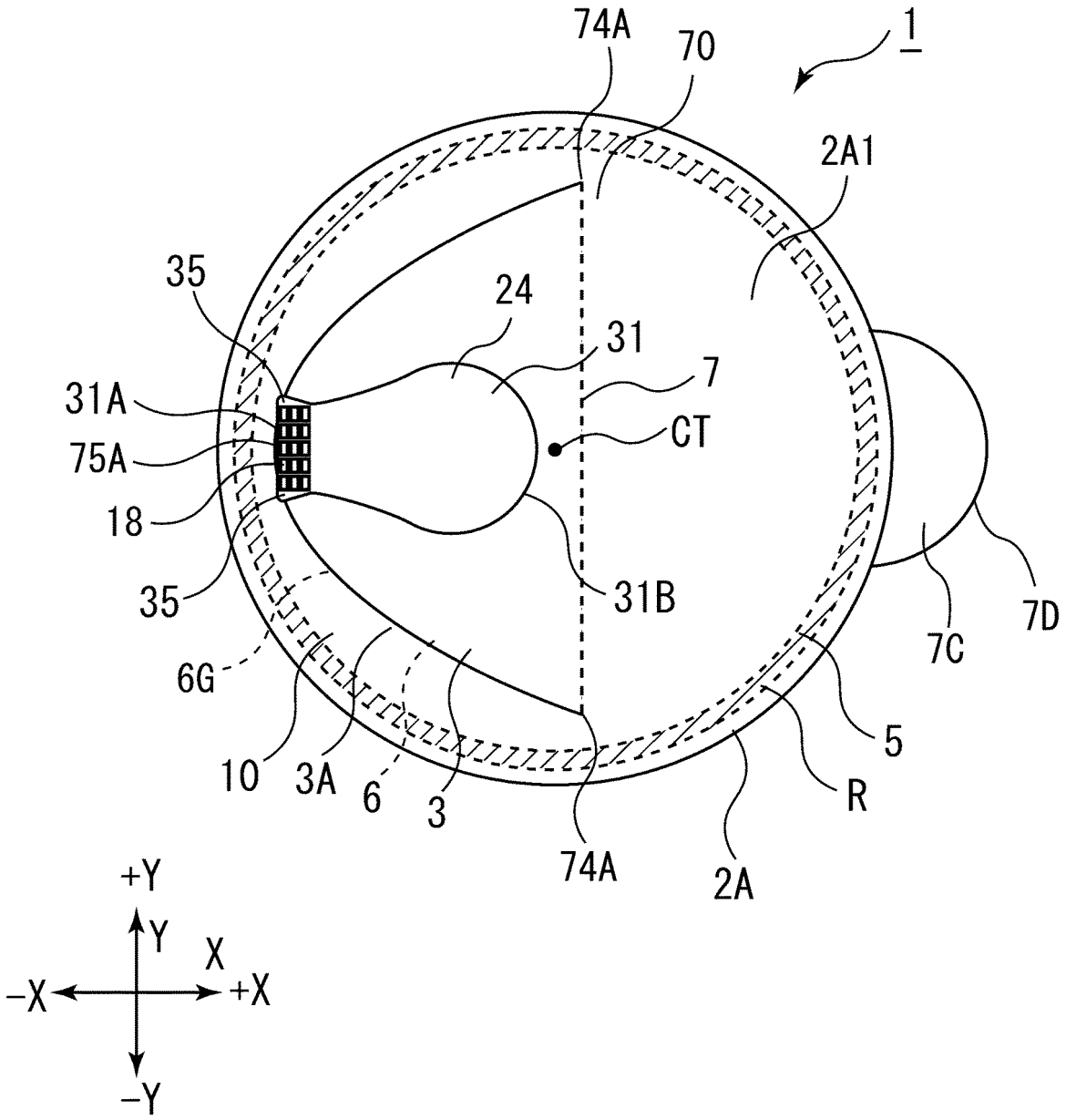
[Fig 9]


A
10D
10C
10
1
70
2A
6G
3A
CT
7
7C
6
+Y
Y
X
-X
+X
-Y
3
R
5
2A1
B
10D
10C
10
74A
2A
6G
7
SB1
2A1
3A
CT
6
W
75A
SB2
7C
3
74A
+Y
Y
X
-X
+X
-Y

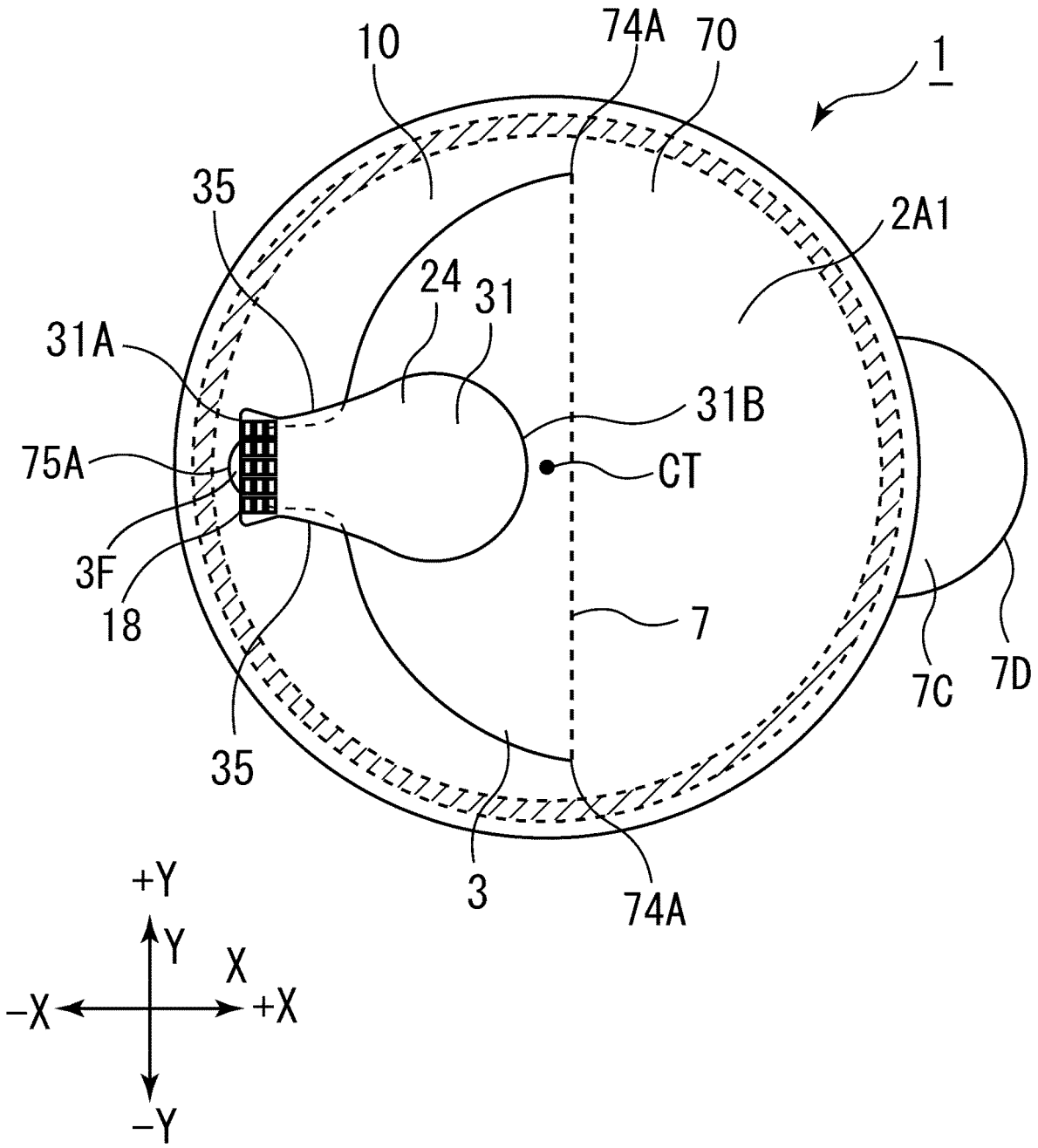
[Fig 10]



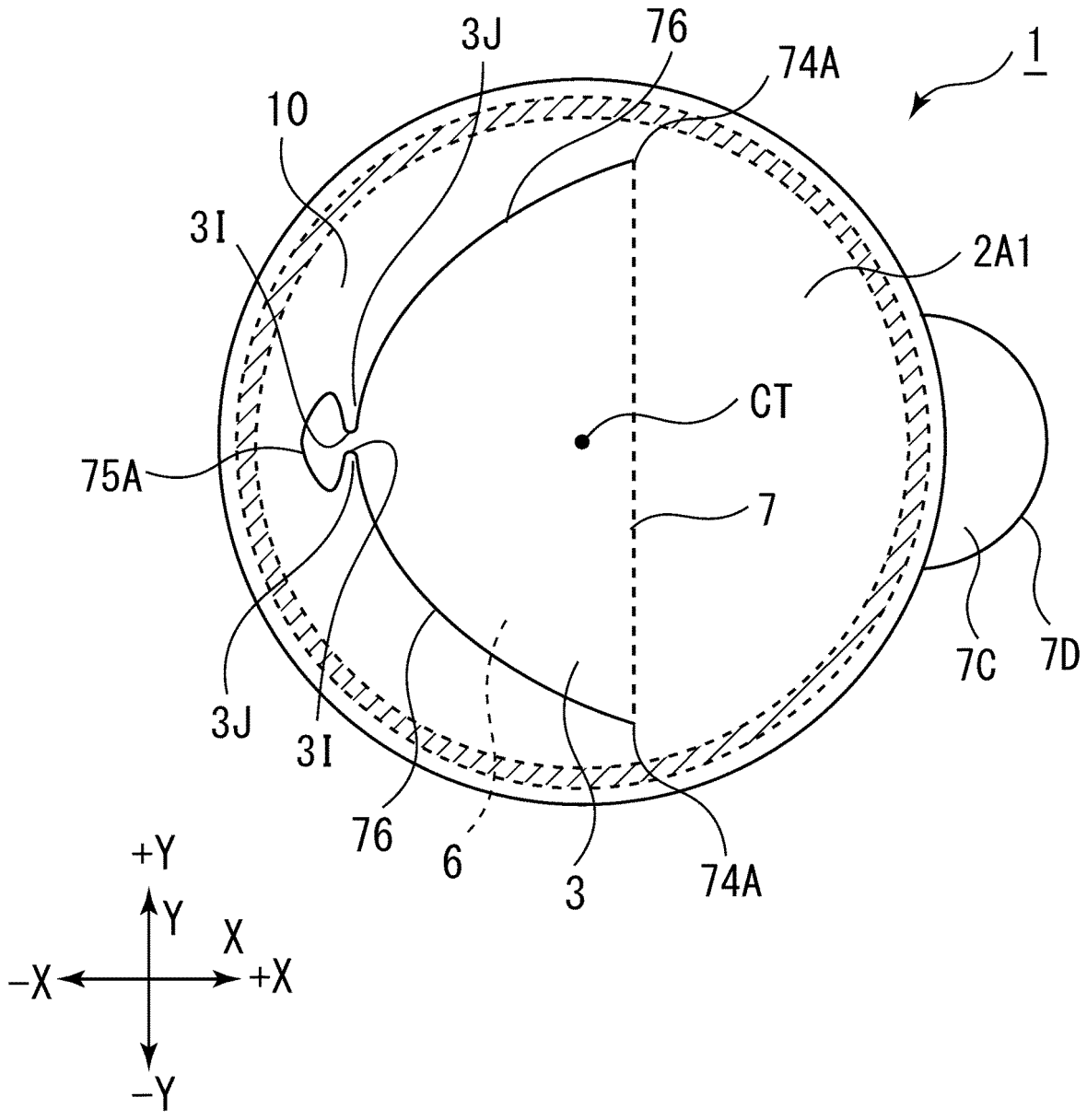
[Fig 11]


74A
70
1
2A1
35
24
31
7
31A
CT
75A
18
35
31B
7C
7D
6G
5
10
3A
6
3
R
74A
2A
+Y
Y
X
−X
+X
−Y

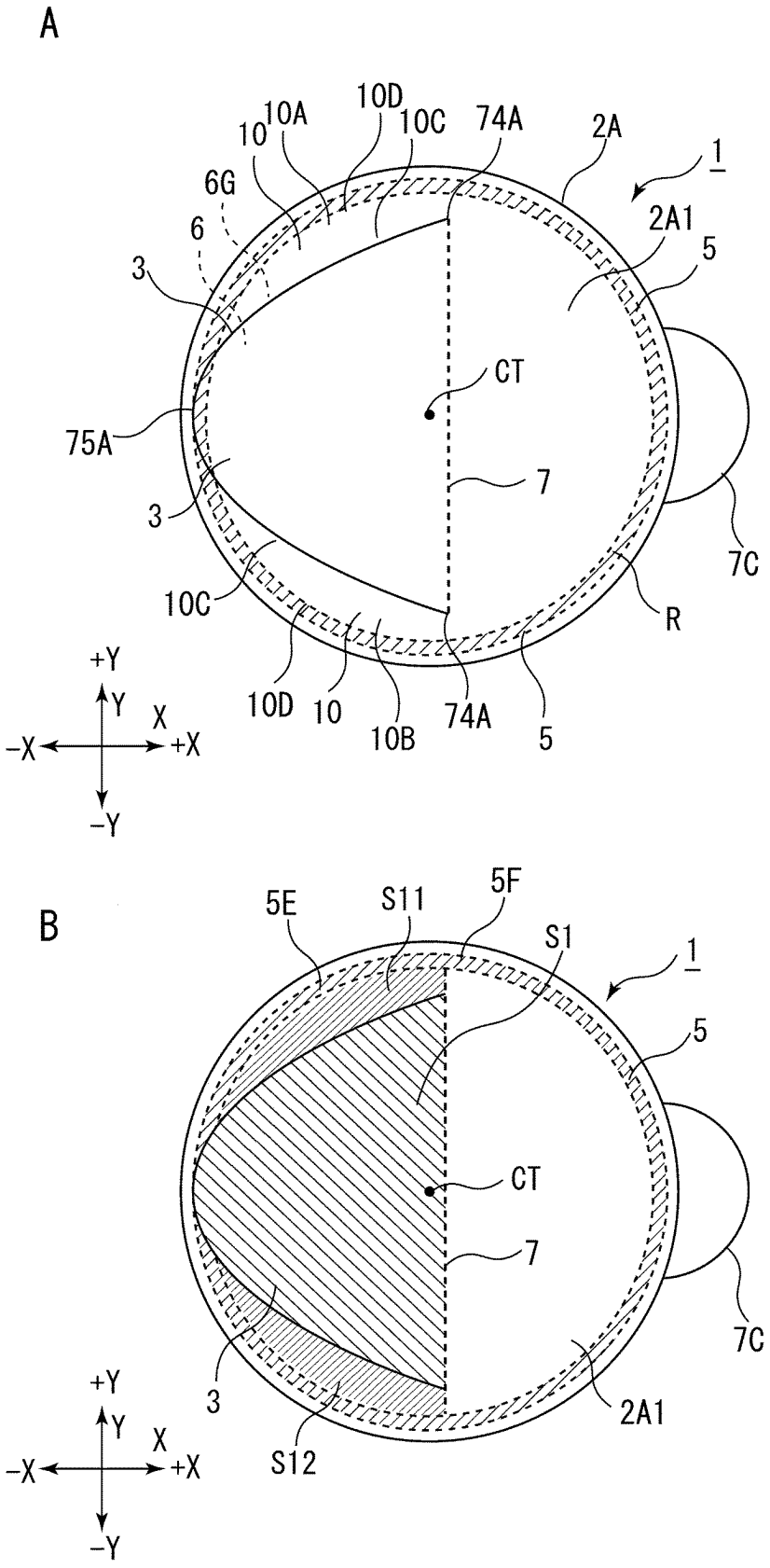
[Fig 12]



[Fig 13]

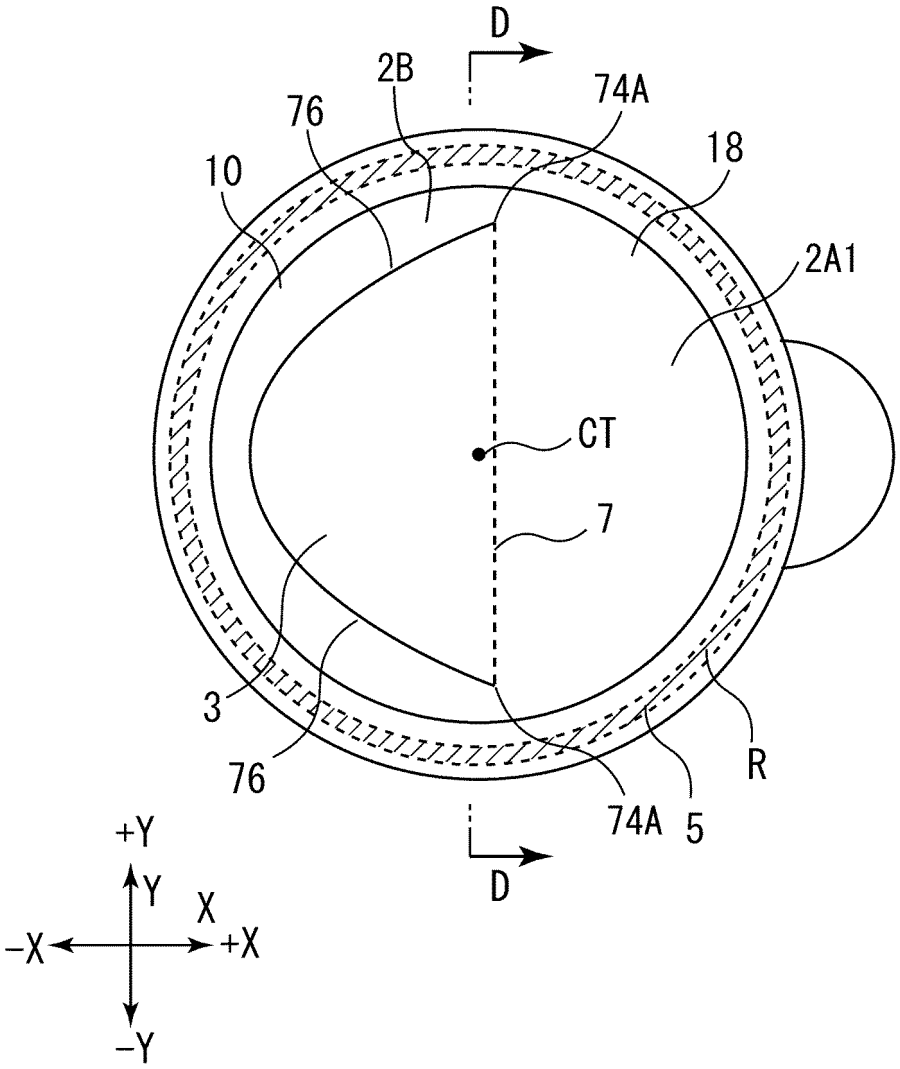


[Fig 14]

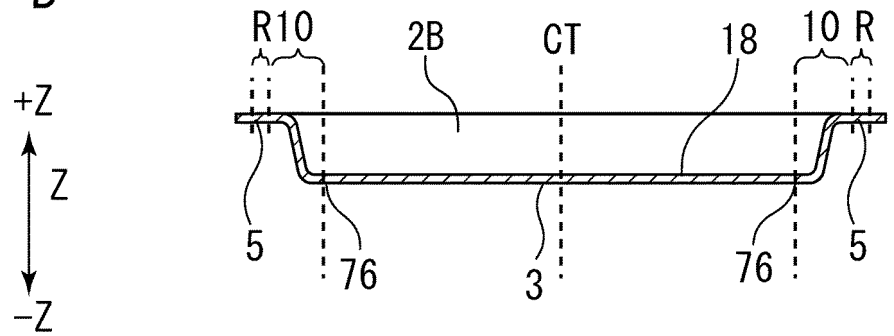

A
10D
10A
10
10C
74A
2A
1
6G
6
2A1
5
3
CT
75A
7
3
7C
10C
R
+Y
Y
X
-X
+X
-Y
10D
10
10B
74A
5
B
5E
S11
5F
S1
1
5
CT
7
7C
3
2A1
S12

[Fig 15]

A

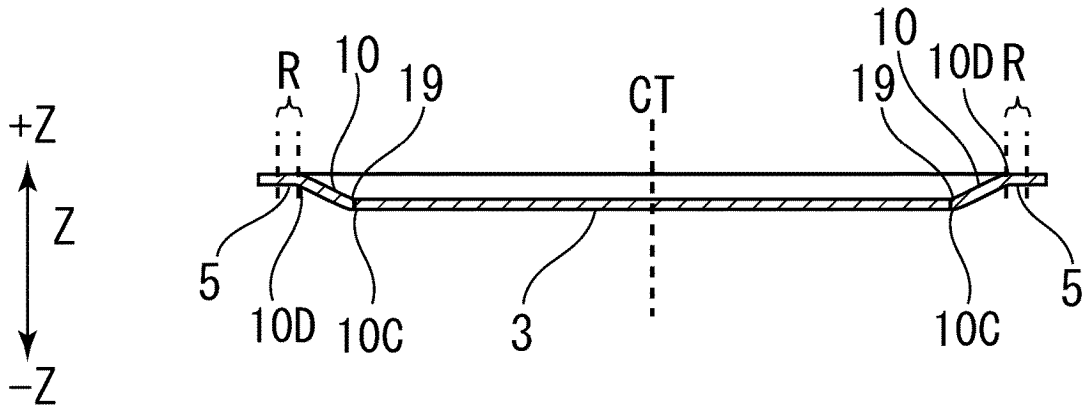

D
2B
74A
76
18
10
2A1
CT
7
3
76
74A
5
R
D
+Y
Y
X
−X
+X
−Y

B

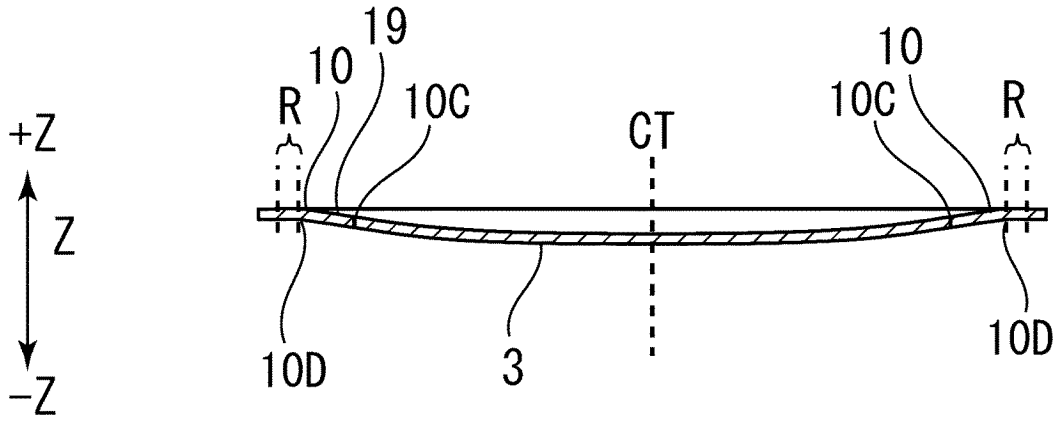

R10
2B
CT
18
10
R
+Z
Z
−Z
5
76
3
76
5

[Fig 16]

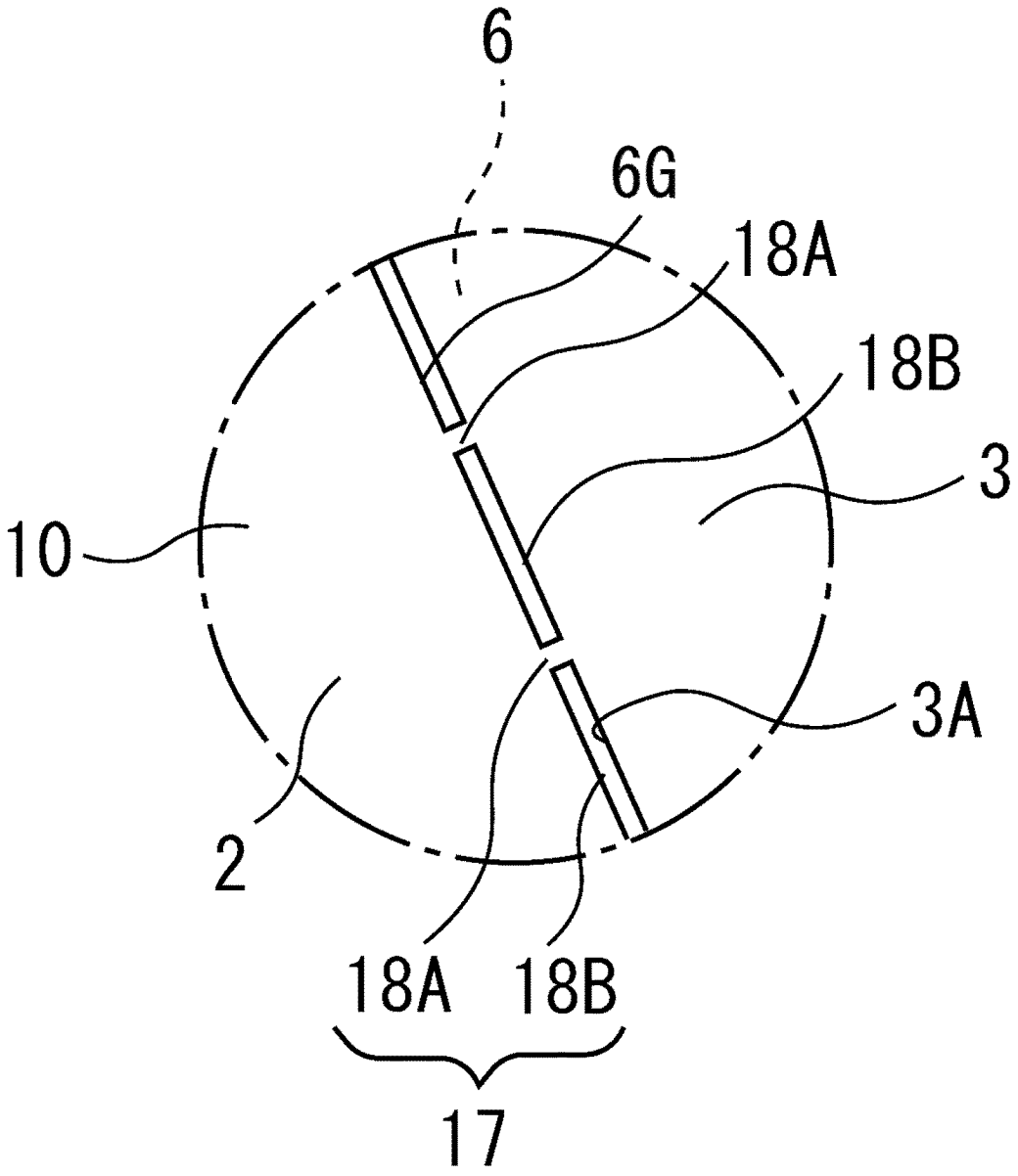
A


+Z
Z
−Z
R
10
19
CT
10
19
10D
R
5
10D
10C
3
10C
5

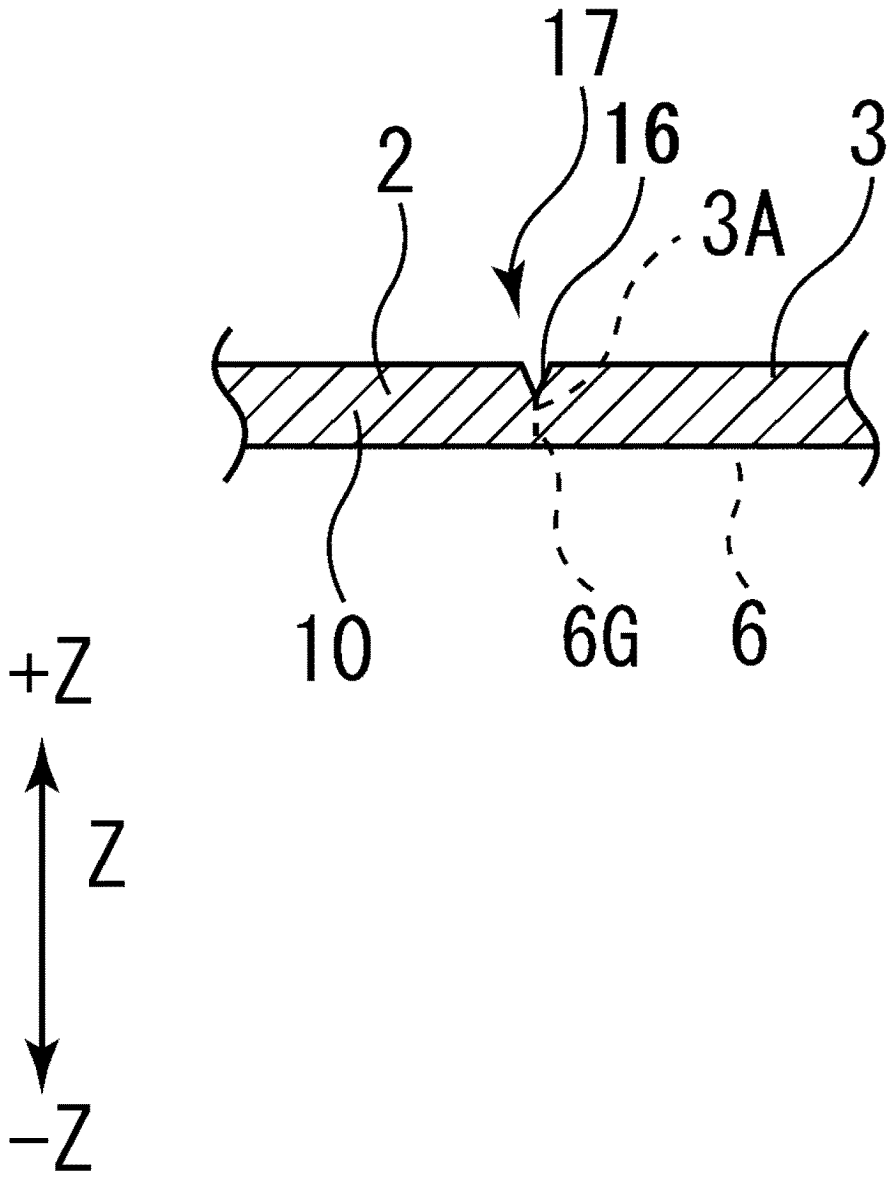
B


+Z
Z
−Z
19
10
R
10C
CT
10
10C
R
10D
3
10D

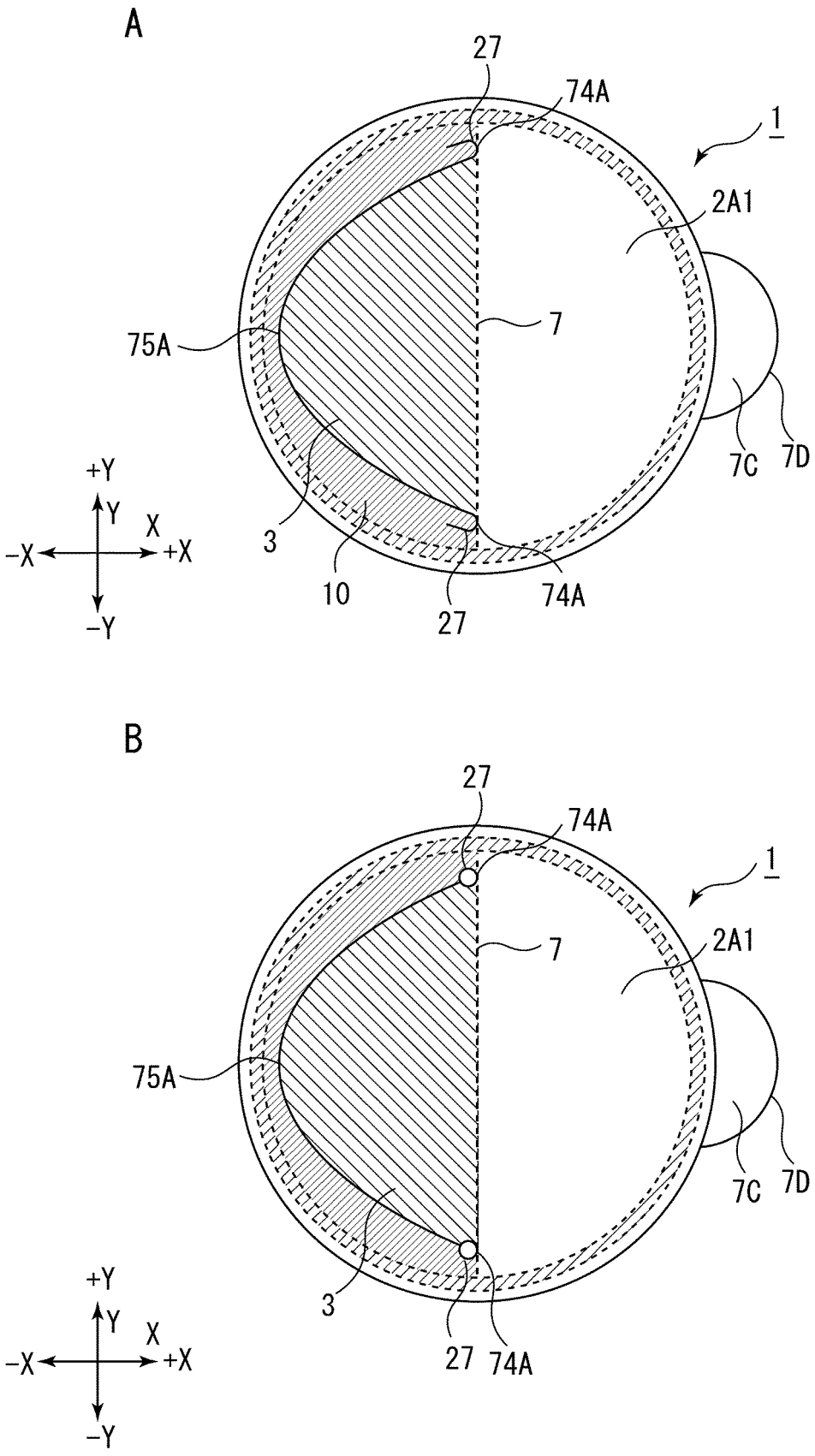
[Fig 17]



[Fig 18]

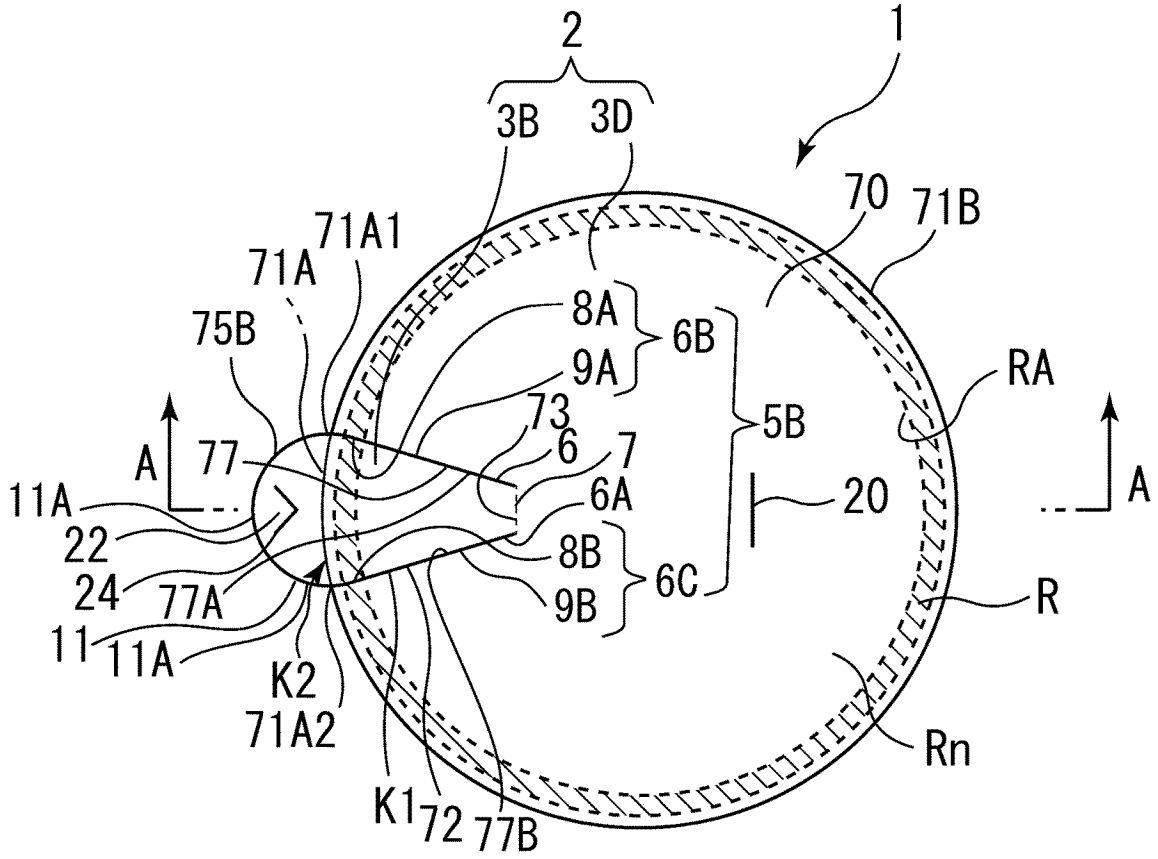


[Fig 19]

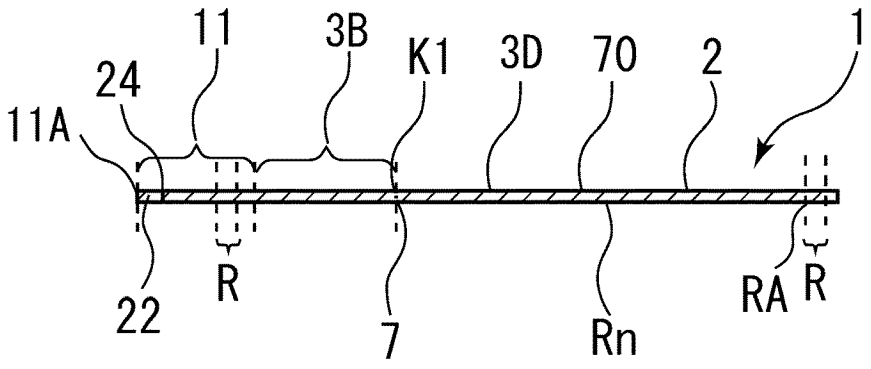

A
27
74A
1
2A1
7
75A
7C
7D
3
10
27
74A
+Y
Y
X
-X
+X
-Y
B
27
74A
1
7
2A1
75A
7C
7D
3
27
74A
+Y
Y
X
-X
+X
-Y

[Fig 20]

(a)

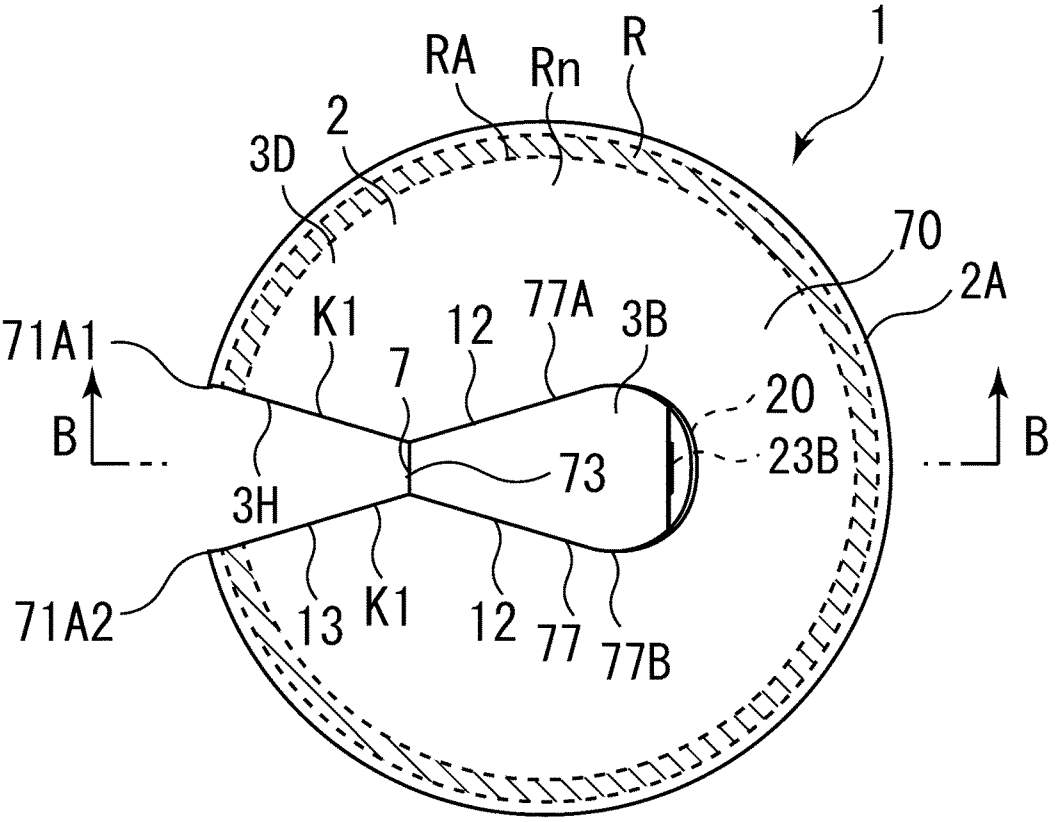

2
1
3B
3D
70
71B
71A1
71A
75B
8A
6B
9A
RA
73
A
77
6
7
5B
A
11A
6A
20
22
8B
24
77A
6C
R
9B
11
11A
K2
71A2
Rn
K1
72
77B

(b)

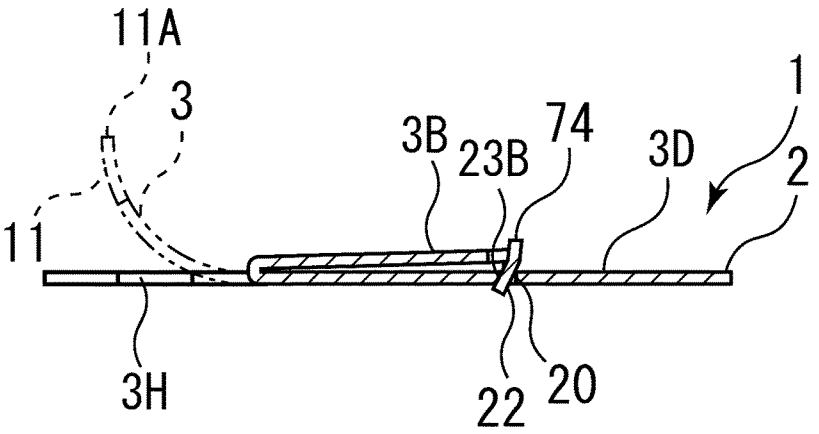

11
3B
K1
3D
70
2
1
24
11A
22
R
7
Rn
RA
R

[Fig 21]

(a)

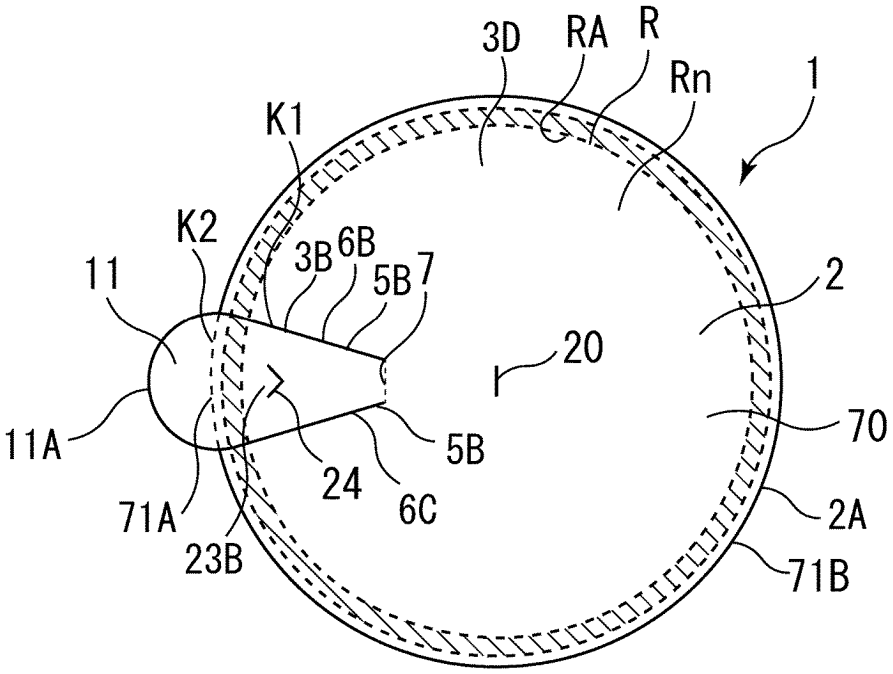

1
RA
Rn
R
2
3D
70
2A
71A1
K1
12
77A
3B
7
20
B
B
23B
73
3H
71A2
13
K1
12
77
77B

(b)

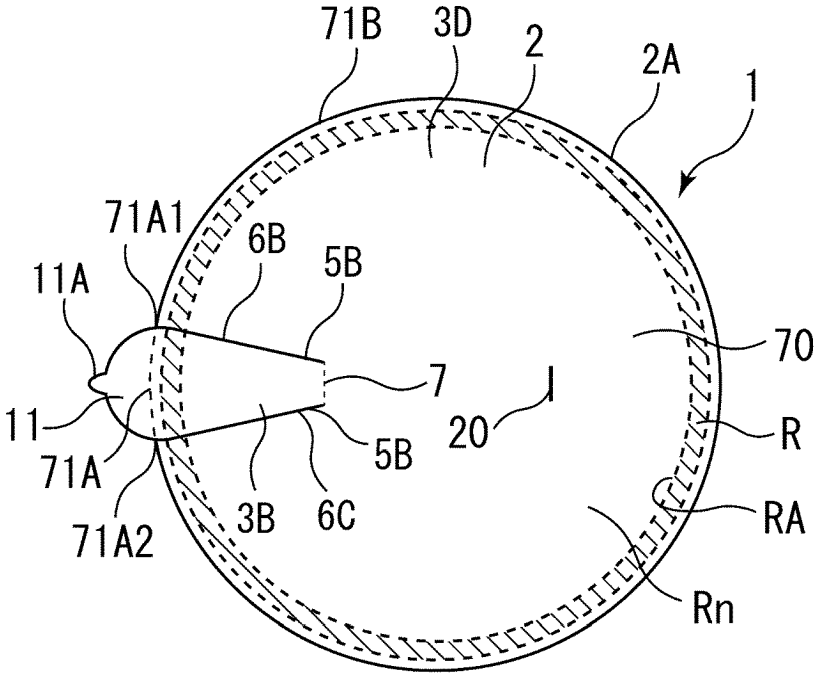

11A
3
1
3B
23B
74
3D
2
11
3H
22
20

[Fig 22]

(a)

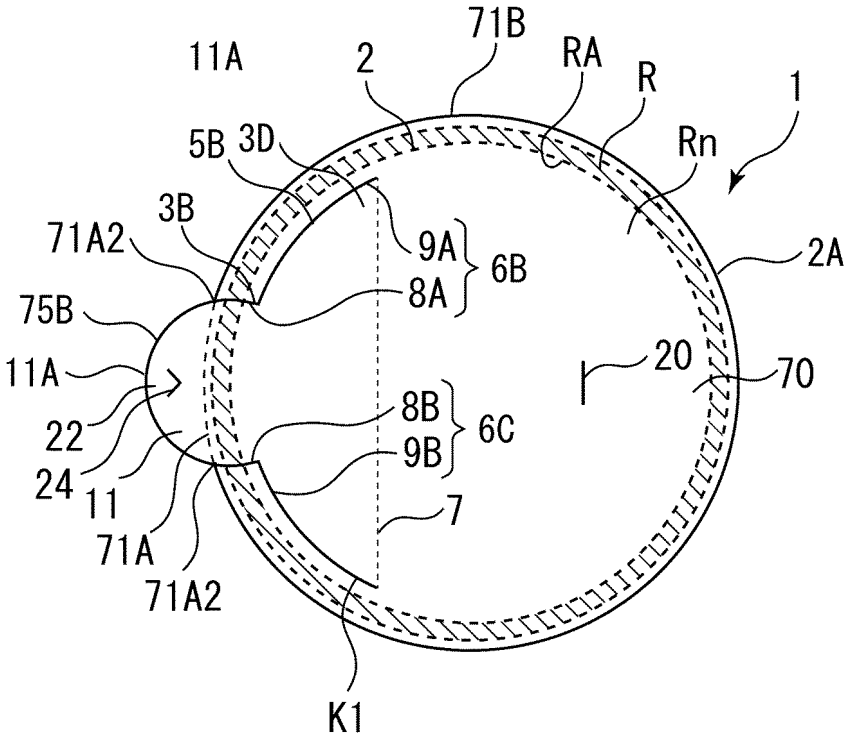

3D
RA
R
Rn
1
K1
K2
3B
6B
5B
7
11
2
20
11A
70
5B
24
6C
71A
2A
23B
71B

(b)

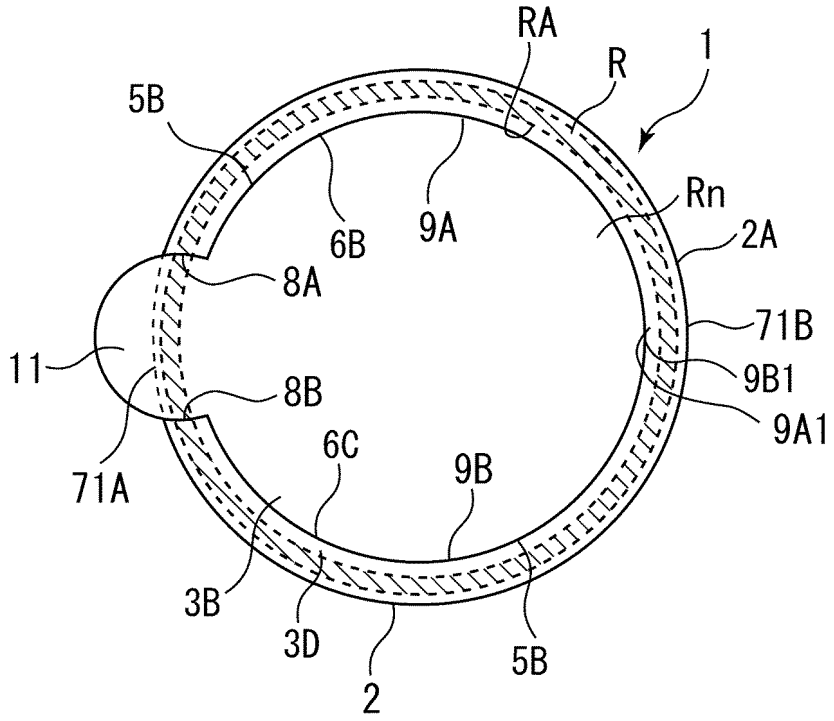

71B
3D
2
2A
1
71A1
6B
5B
11A
70
7
11
20
R
5B
71A
3B
6C
RA
71A2
Rn

[Fig 23]

(a)

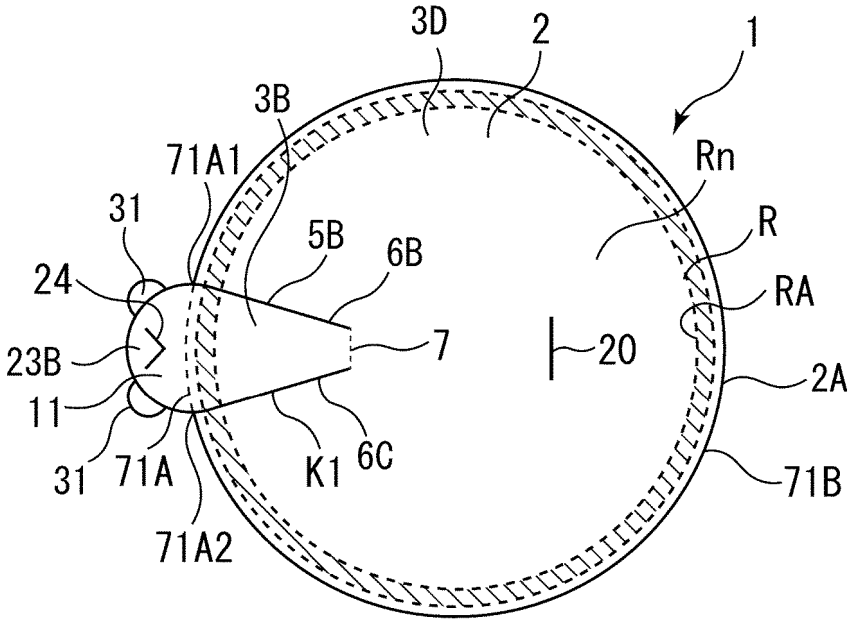

11A
2
71B
RA
R
1
5B
3D
Rn
3B
71A2
9A
6B
8A
2A
75B
20
70
11A
22
8B
6C
24
9B
11
7
71A
71A2
K1

(b)

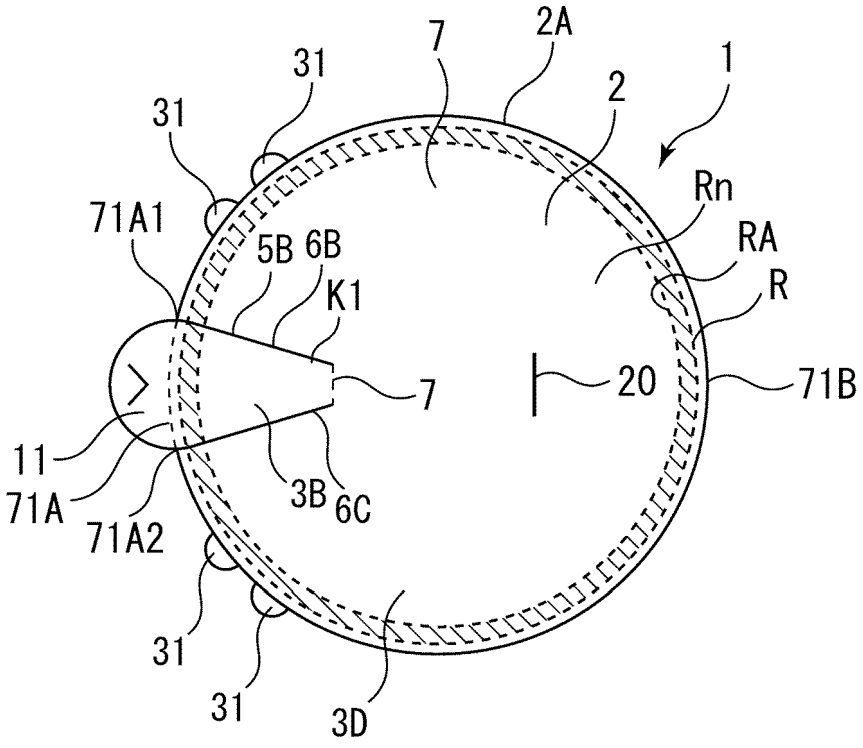

RA
R
1
5B
6B
9A
Rn
2A
8A
71B
11
9B1
8B
9A1
6C
9B
71A
3B
3D
2
5B

[Fig 24]

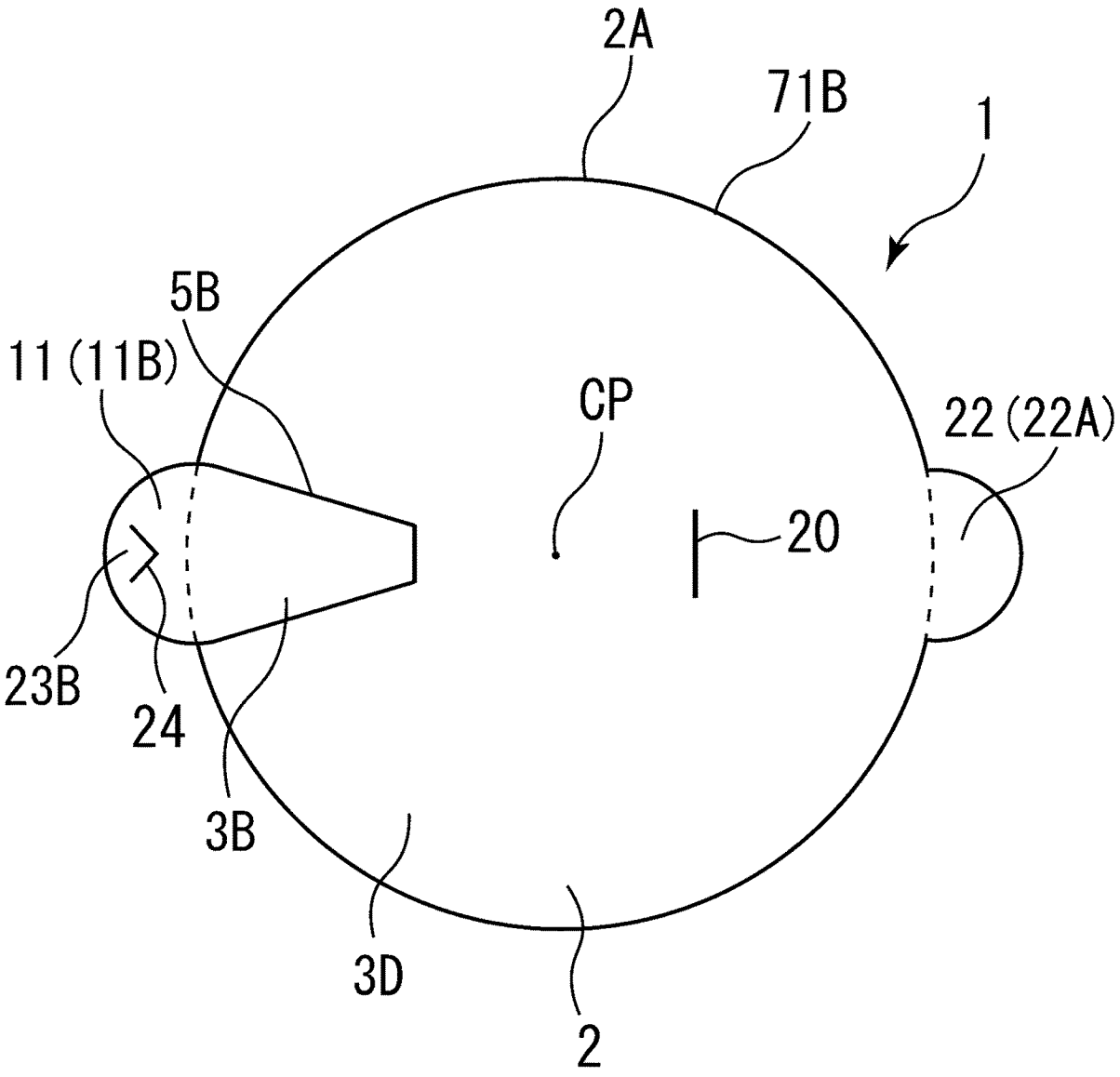
(a)


3D
2
1
3B
71A1
Rn
31
5B
6B
R
24
RA
7
20
23B
2A
11
6C
31
71A
K1
71B
71A2

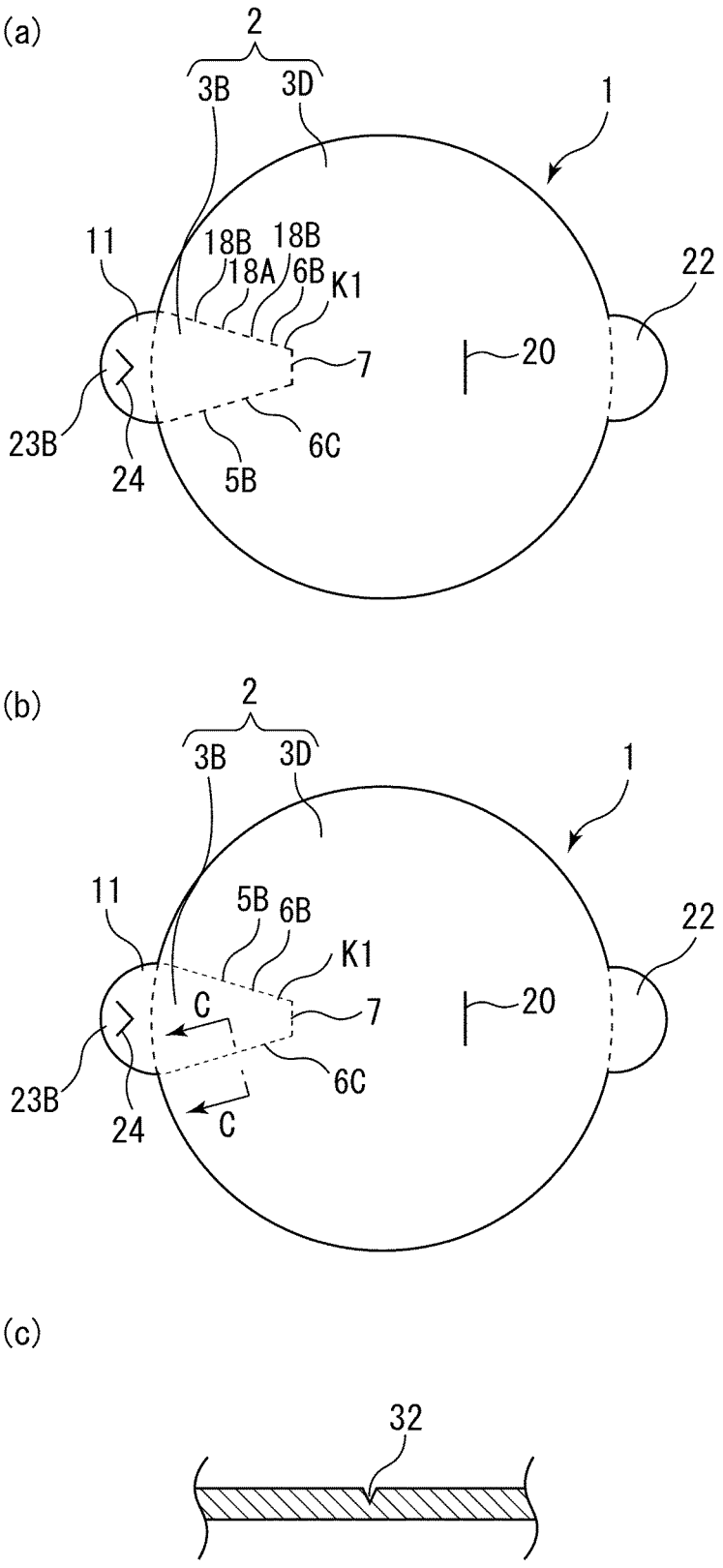
(b)


2A
7
31
1
31
2
Rn
71A1
5B
6B
RA
K1
R
7
20
71B
11
3B
6C
71A
71A2
31
31
3D

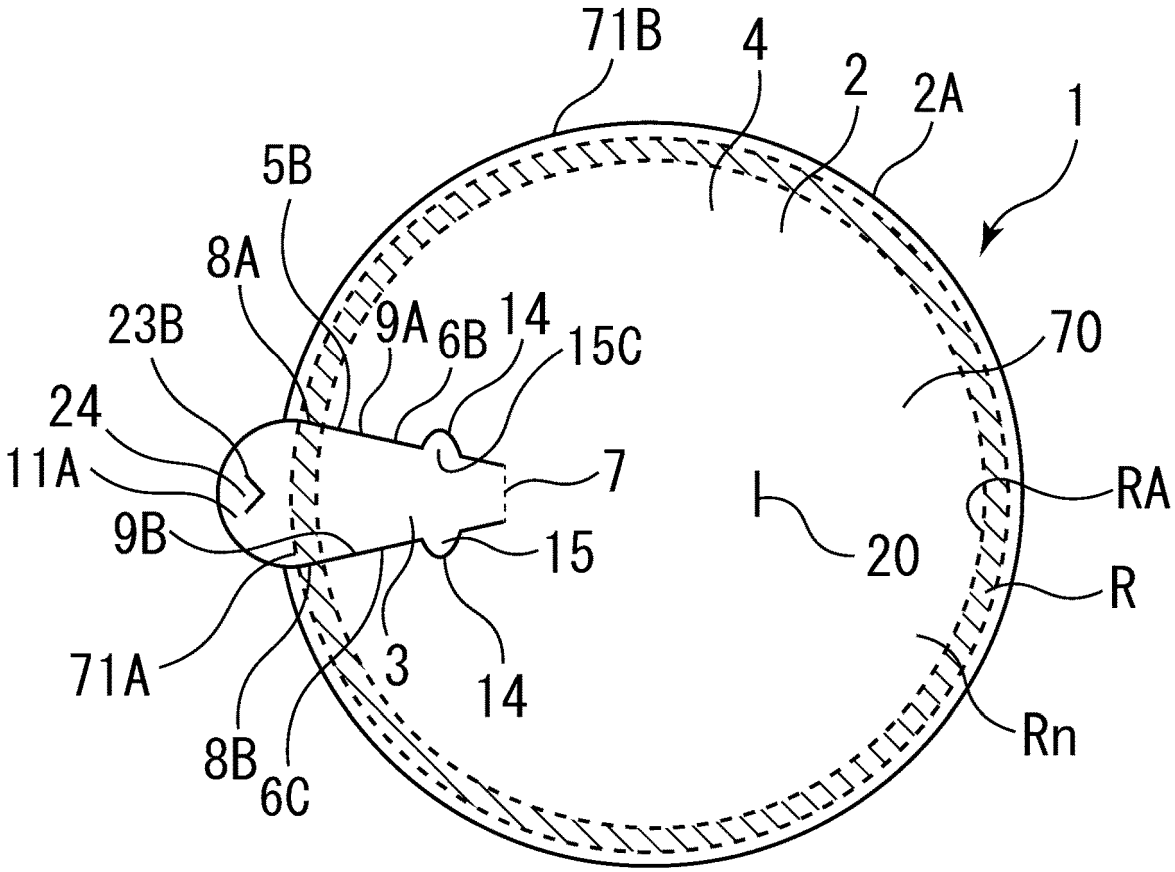
[Fig 25]



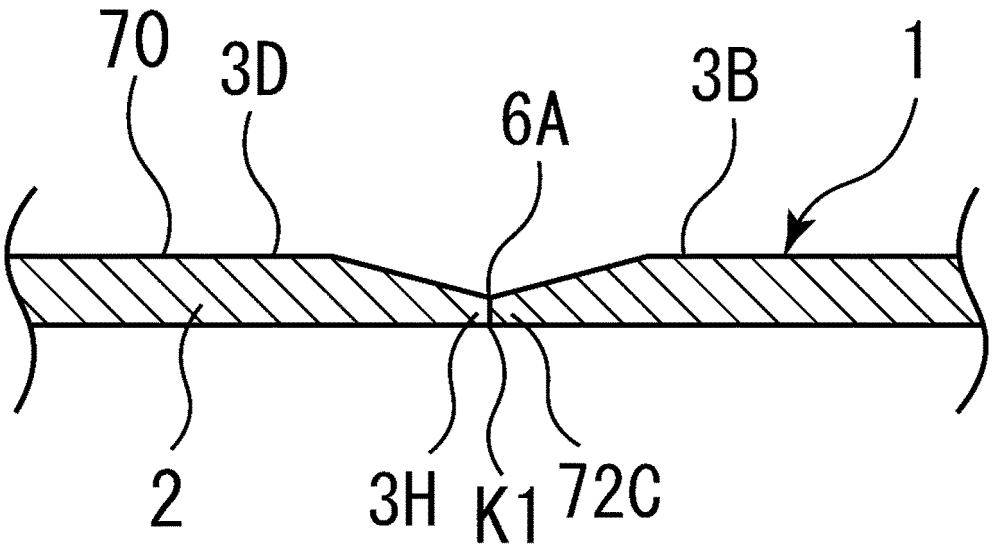
[Fig 26]


(a)
2
3B
3D
1
11
18B
18B
18A
6B
K1
22
7
20
23B
24
5B
6C
(b)
2
3B
3D
1
11
5B
6B
K1
22
C
7
20
23B
24
C
6C
(c)
32

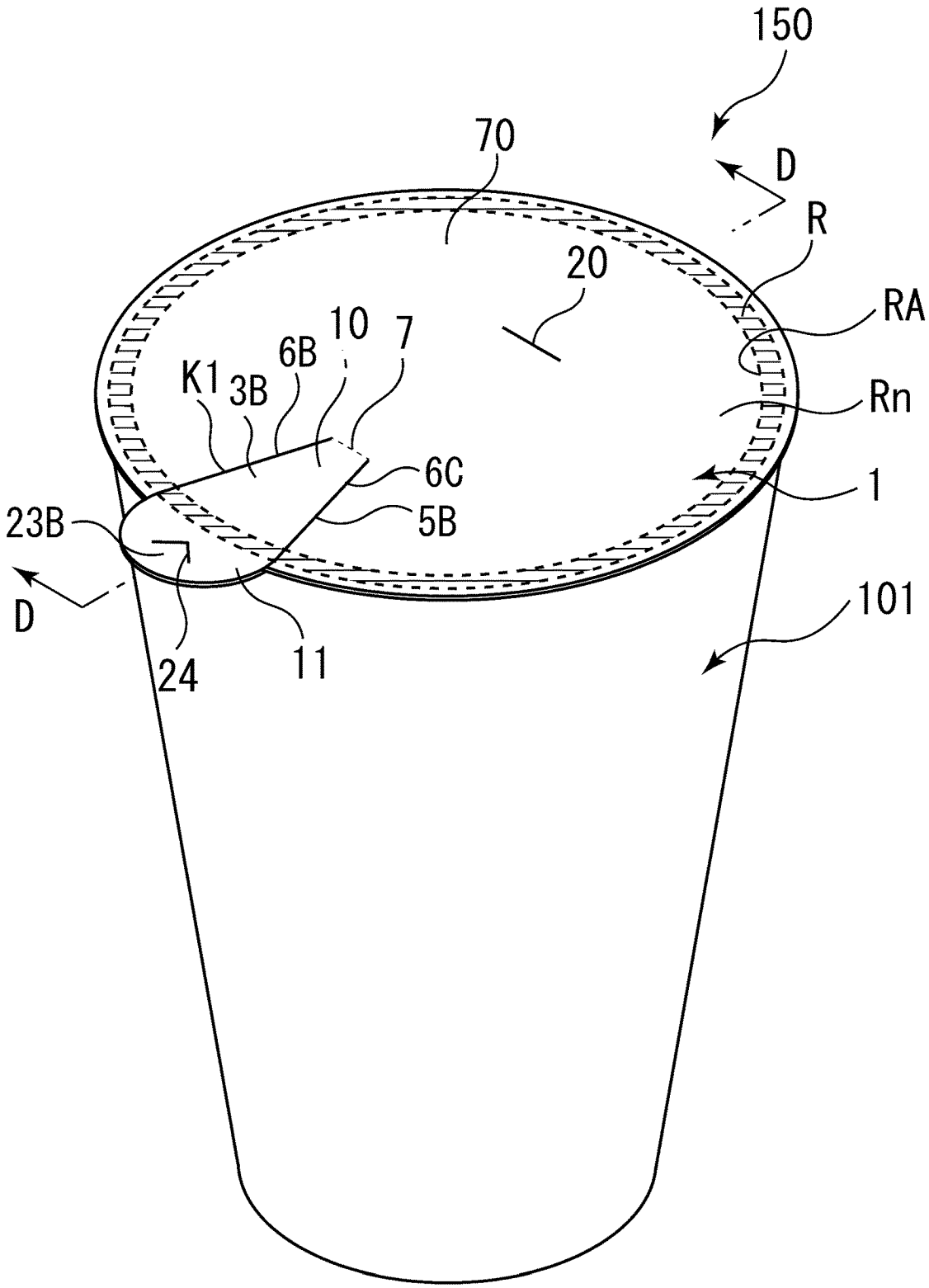
[Fig 27]


71B
4
2
2A
1
5B
8A
23B
9A
6B
14
15C
70
24
11A
7
RA
9B
15
20
R
71A
3
14
Rn
8B
6C

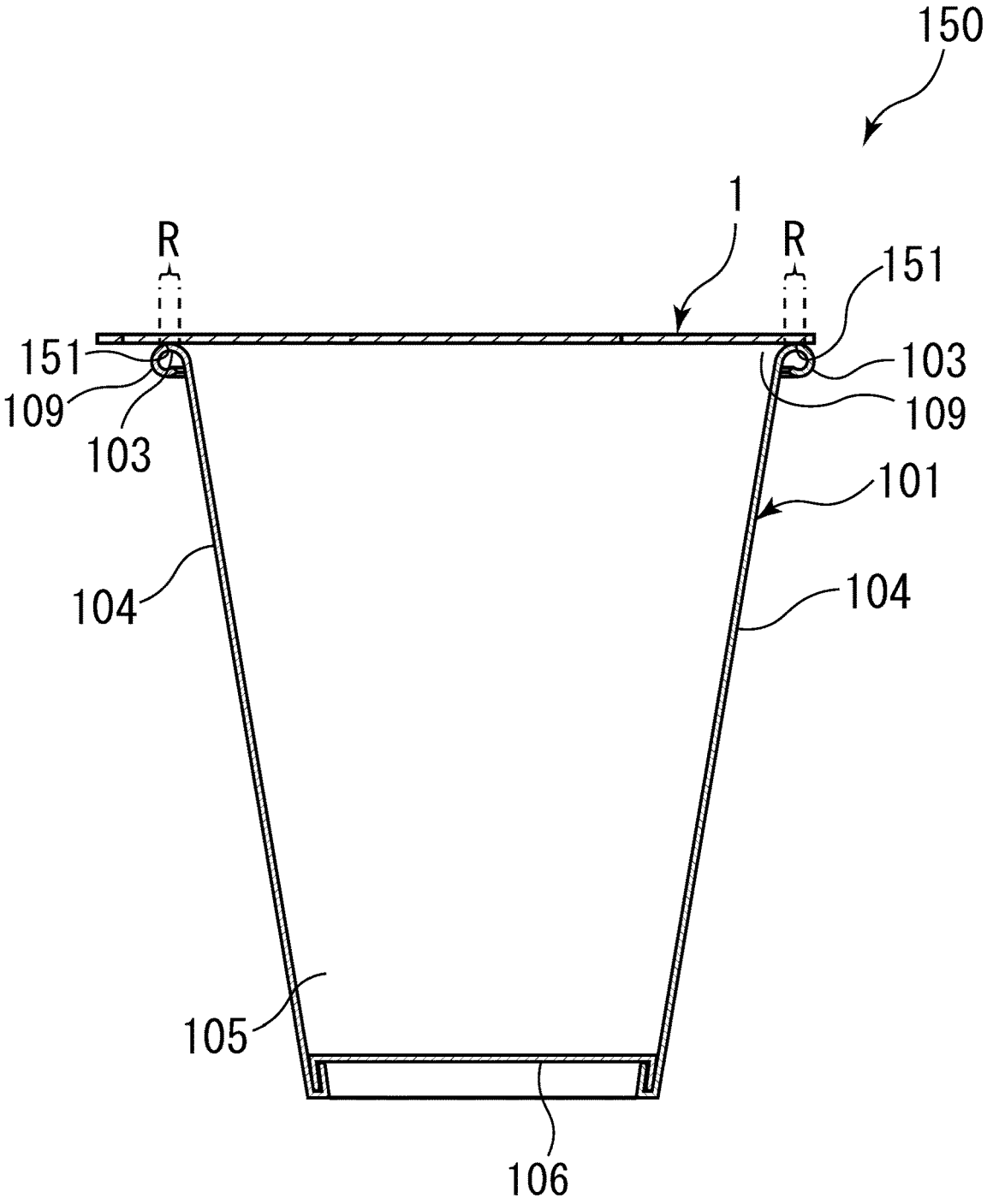
[Fig 28]


70
3D
6A
3B
1
2
3H
K1
72C

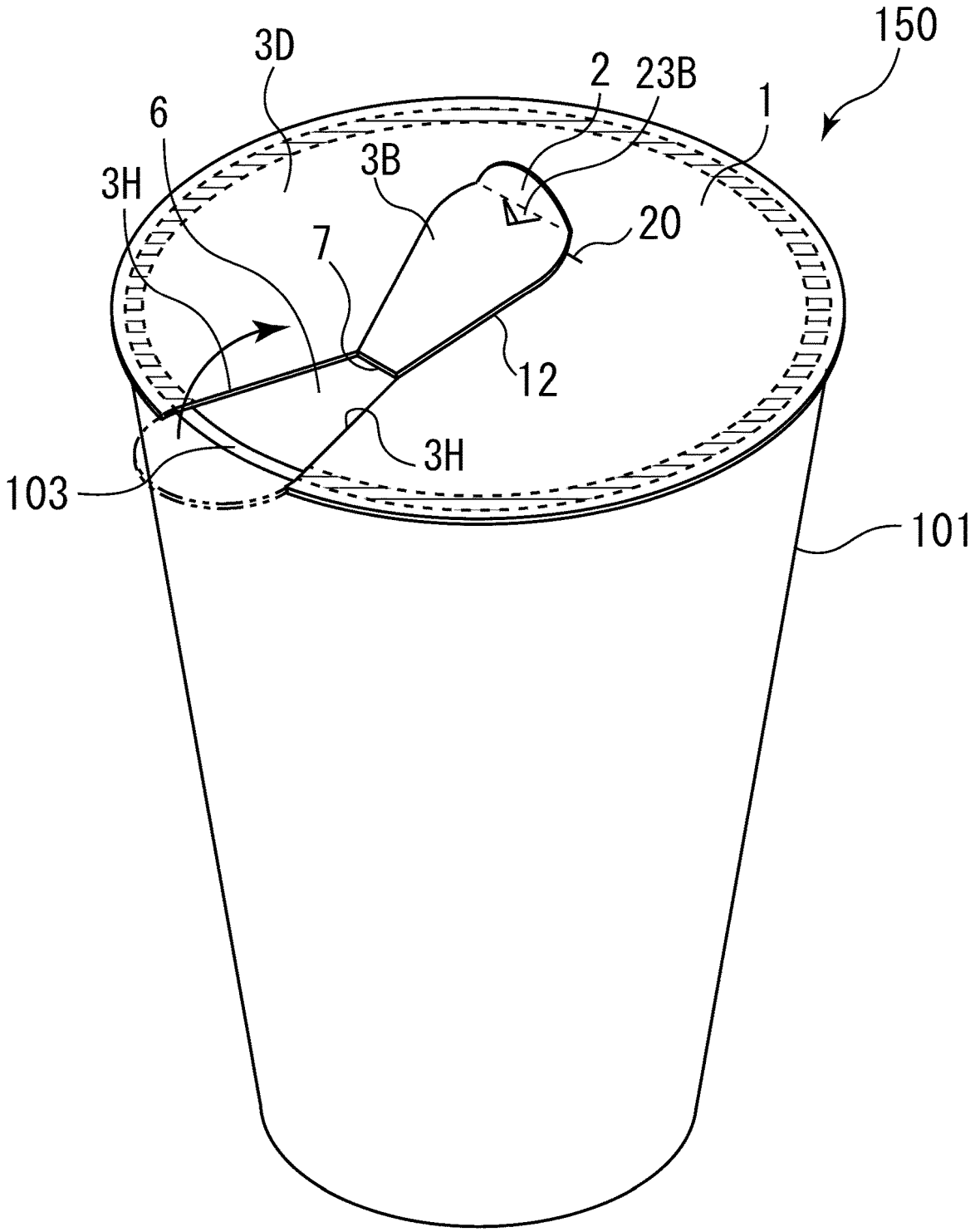
[Fig 29]



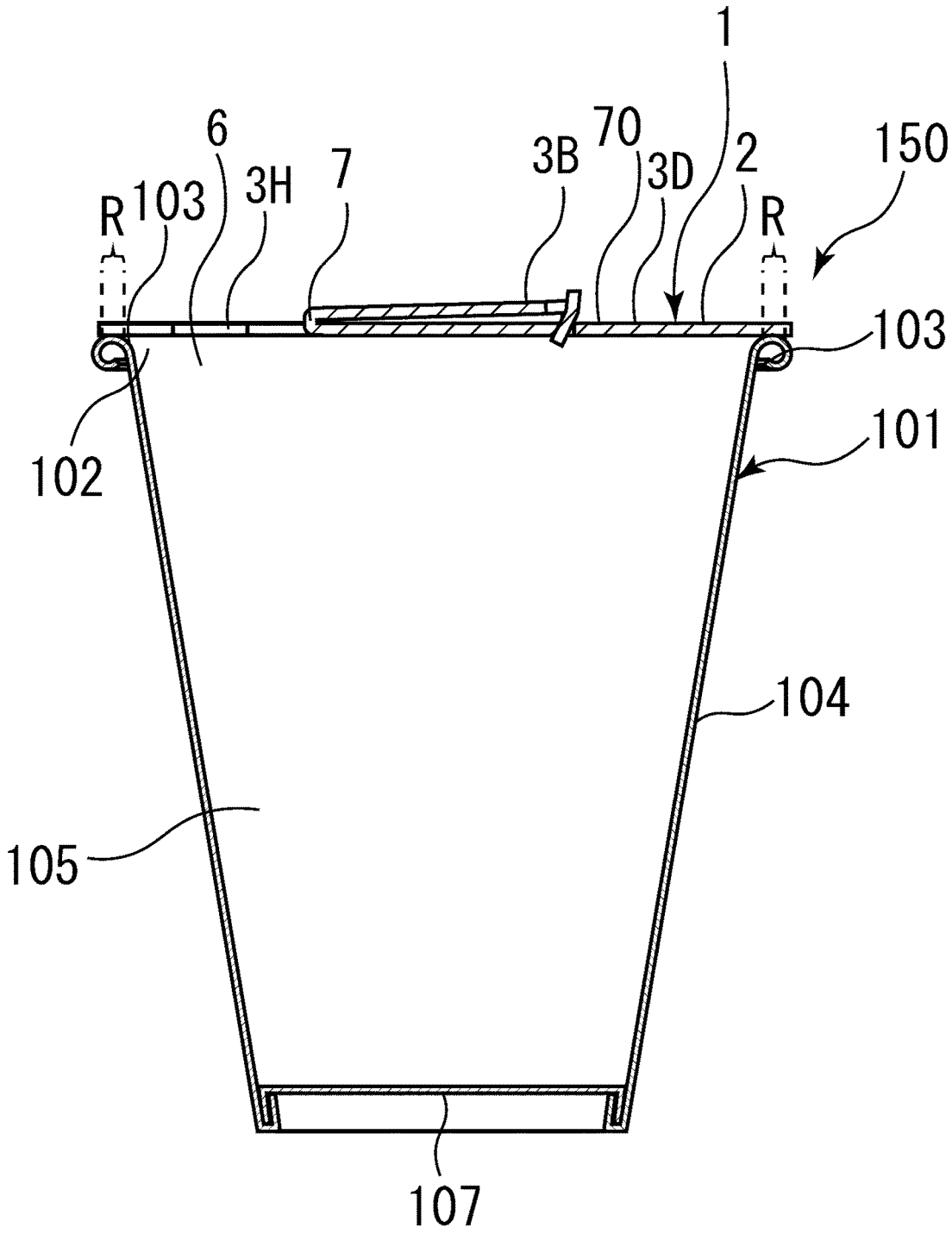
[Fig 30]



[Fig 31]

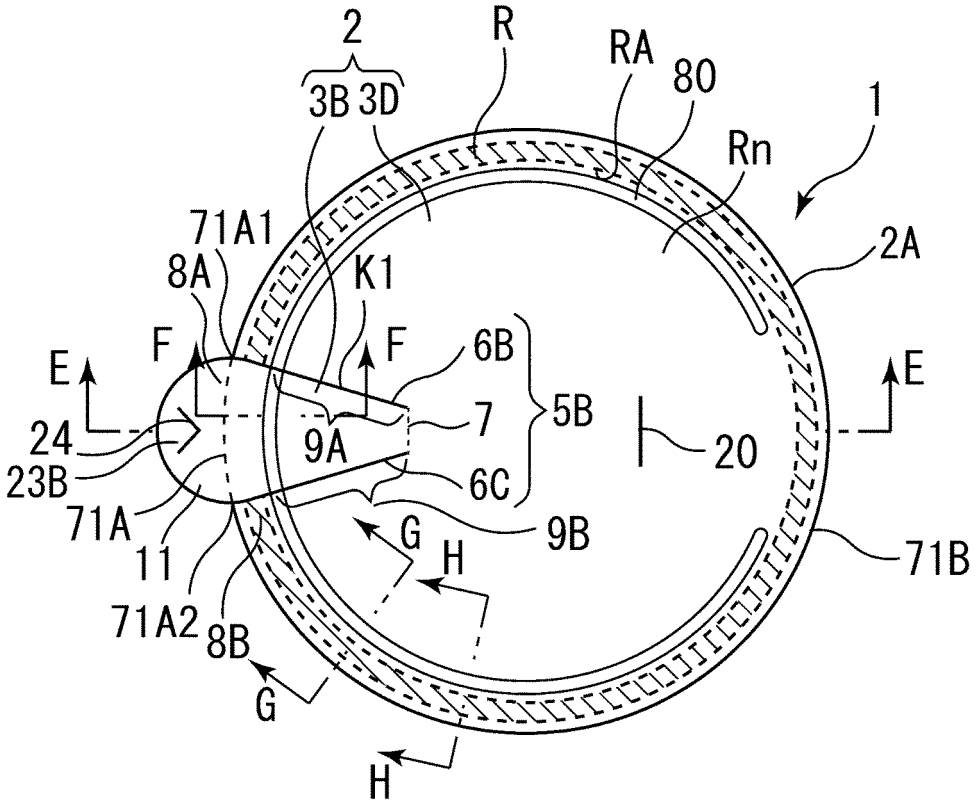


[Fig 32]

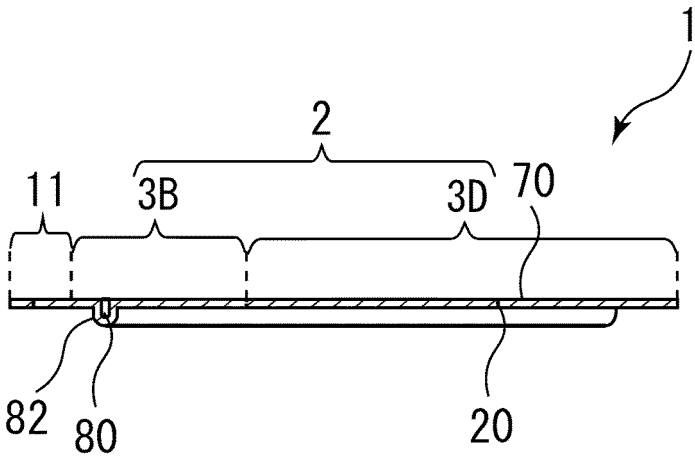


[Fig 33]

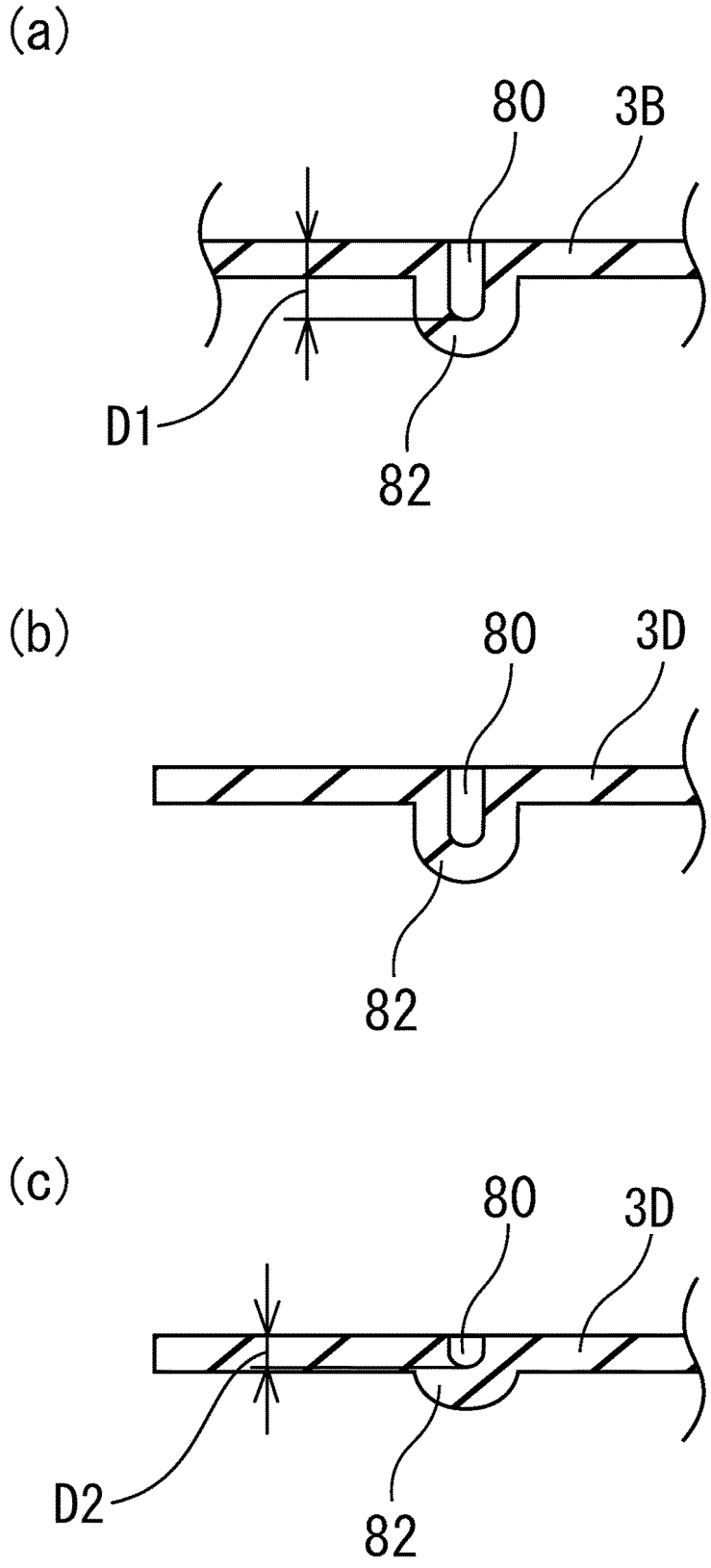
(a)


2
3B 3D
R
RA
80
1
Rn
2A
71A1
8A
K1
F
F
6B
E
E
7
5B
24
9A
20
23B
6C
71A
9B
G
H
11
71B
71A2
8B
G
H

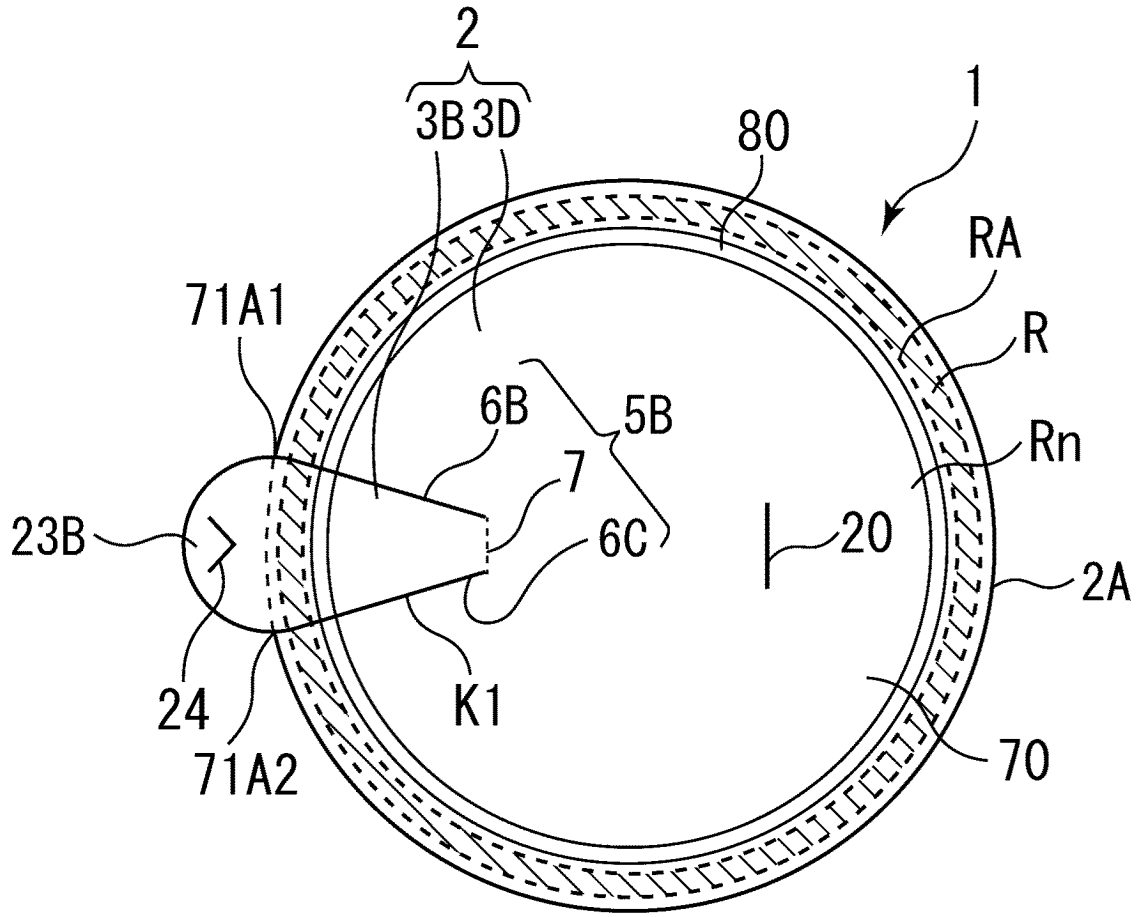
(b)


1
2
11
3B
3D
70
82
80
20

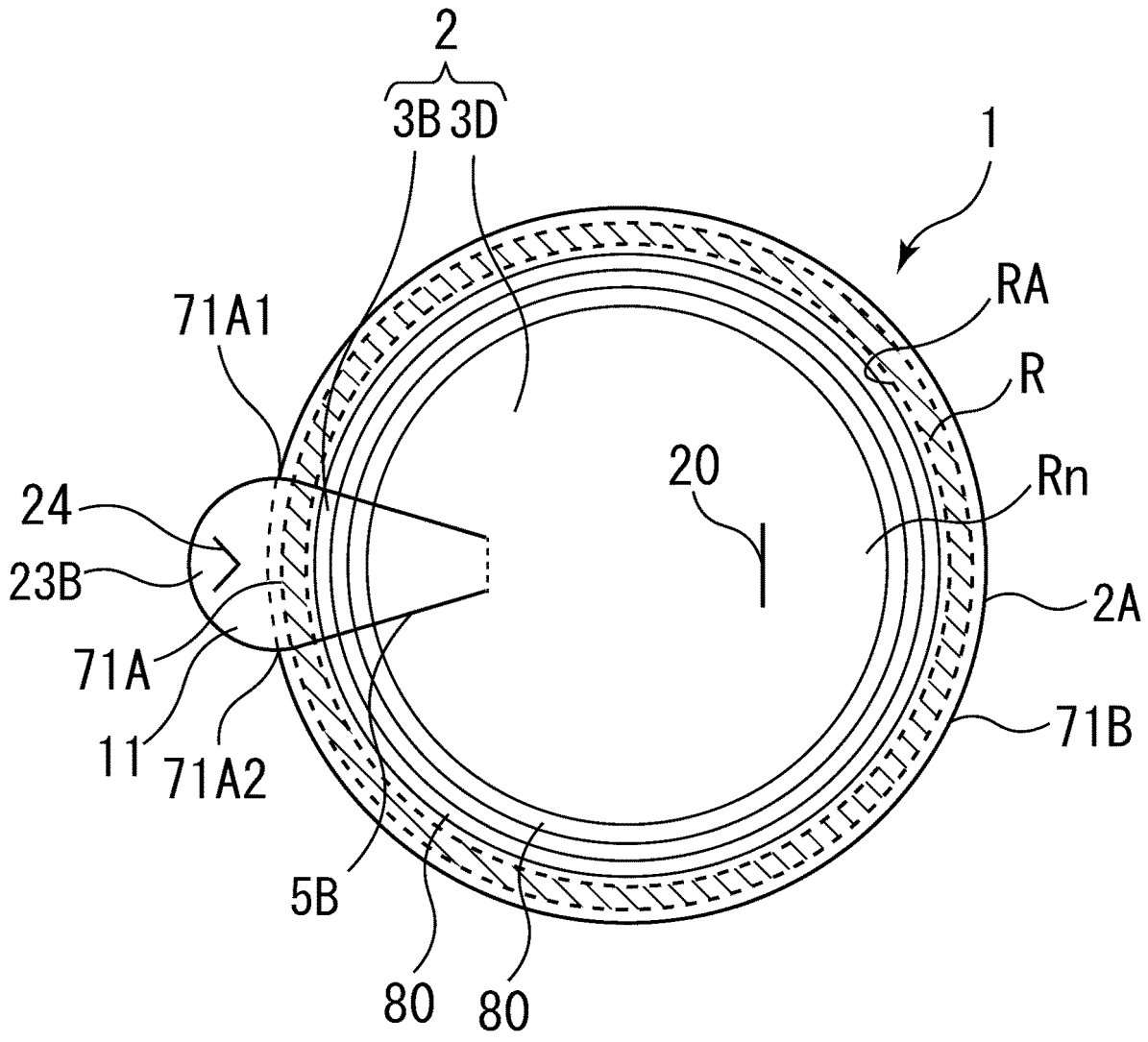
[Fig 34]



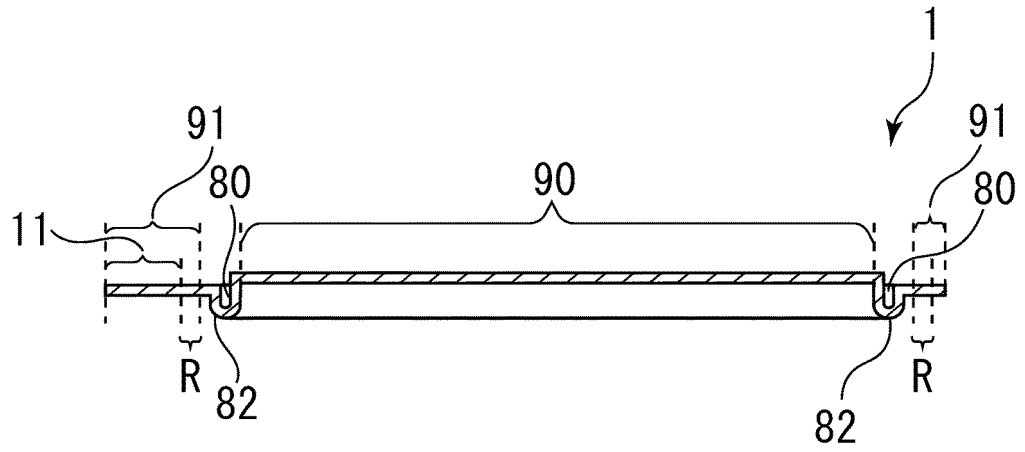
[Fig 35]



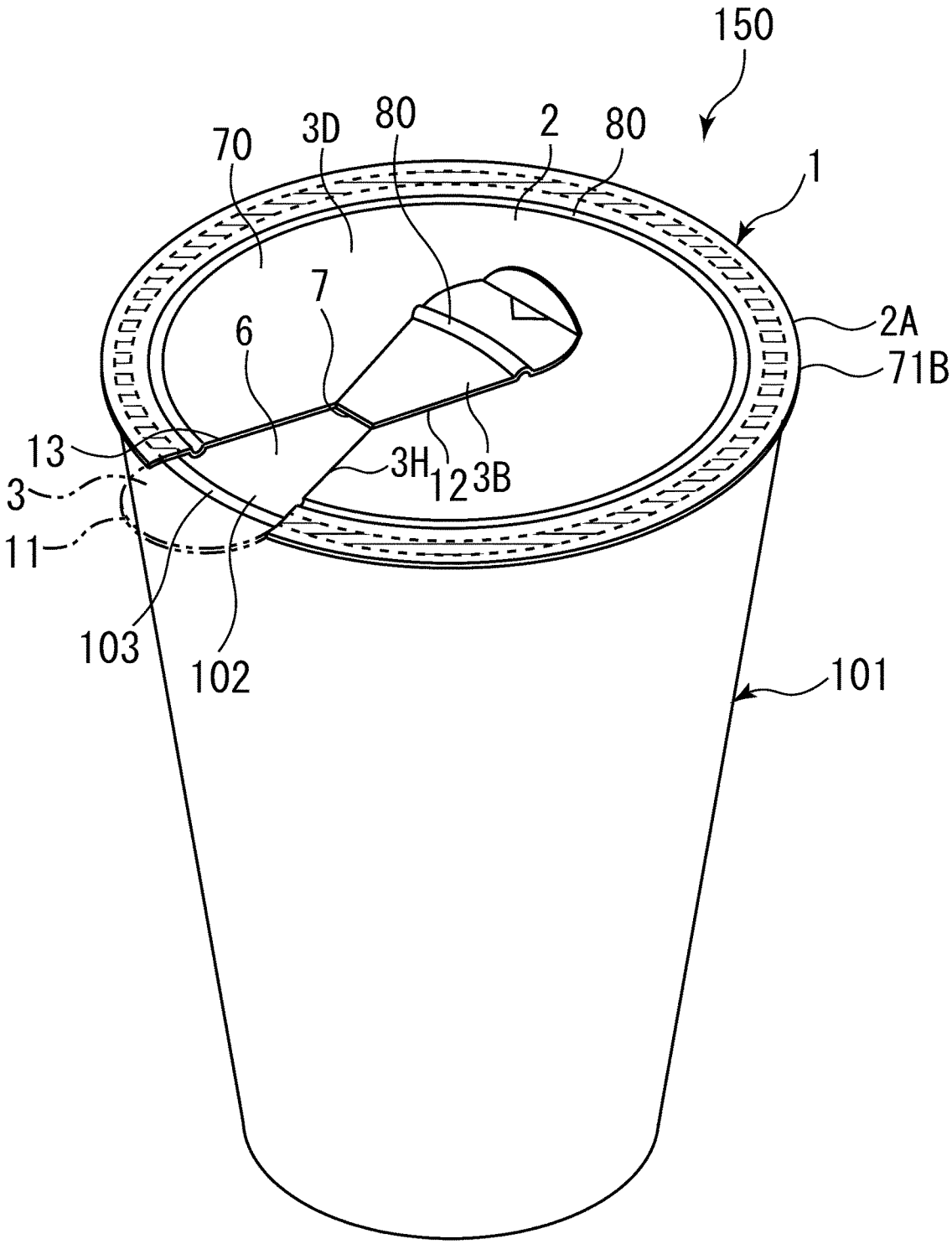
[Fig 36]


2
3B
3D
1
RA
71A1
R
20
Rn
24
23B
2A
71A
11
71A2
71B
5B
80
80

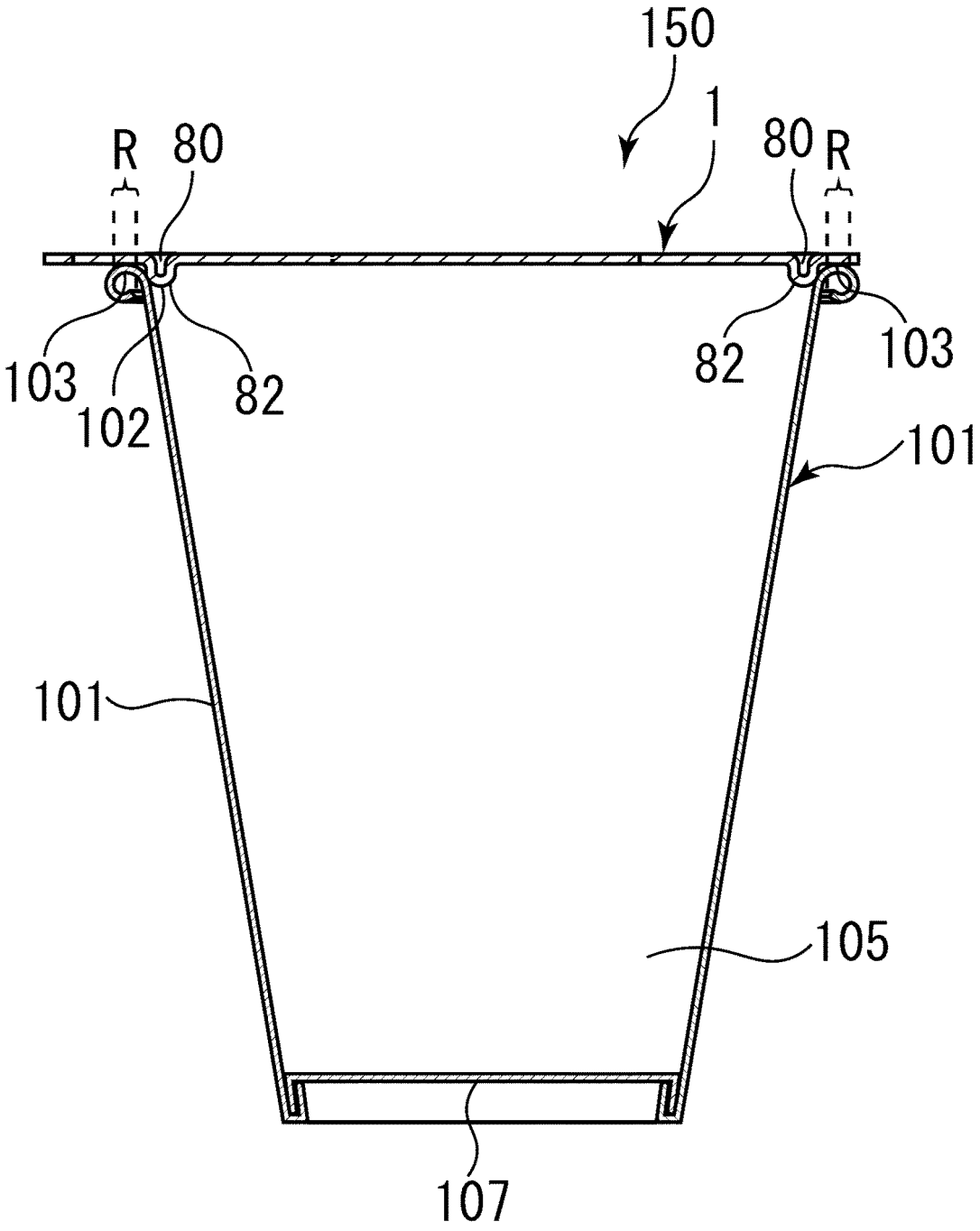
[Fig 37]


1
91
91
80
90
80
11
R
82
82
R

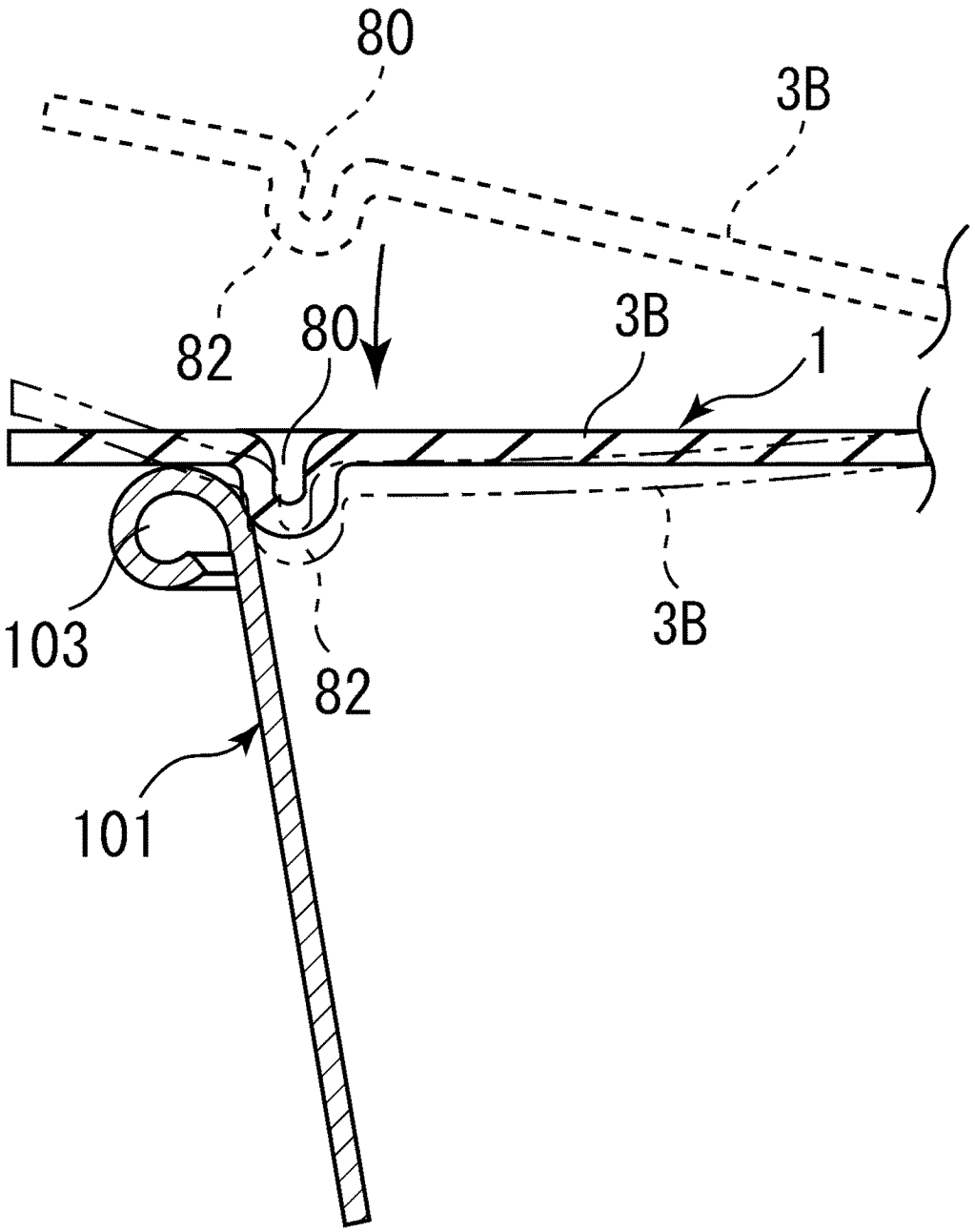
[Fig 38]



[Fig 39]

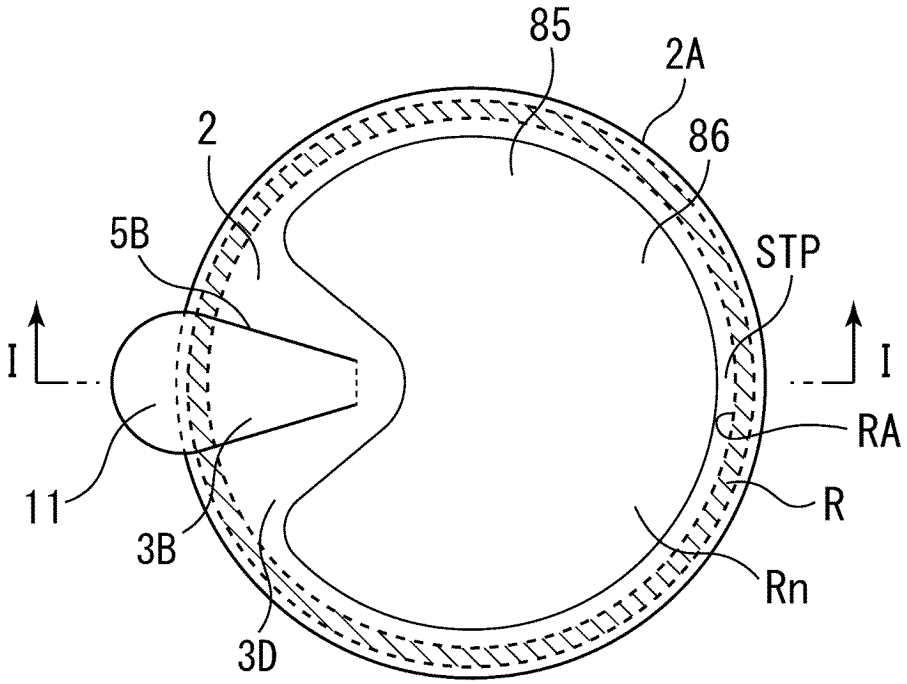


[Fig 40]

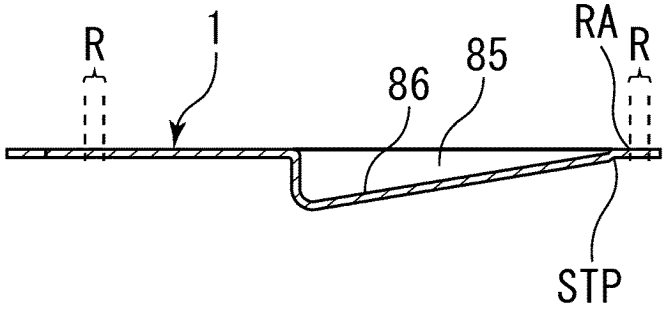


[Fig 41]

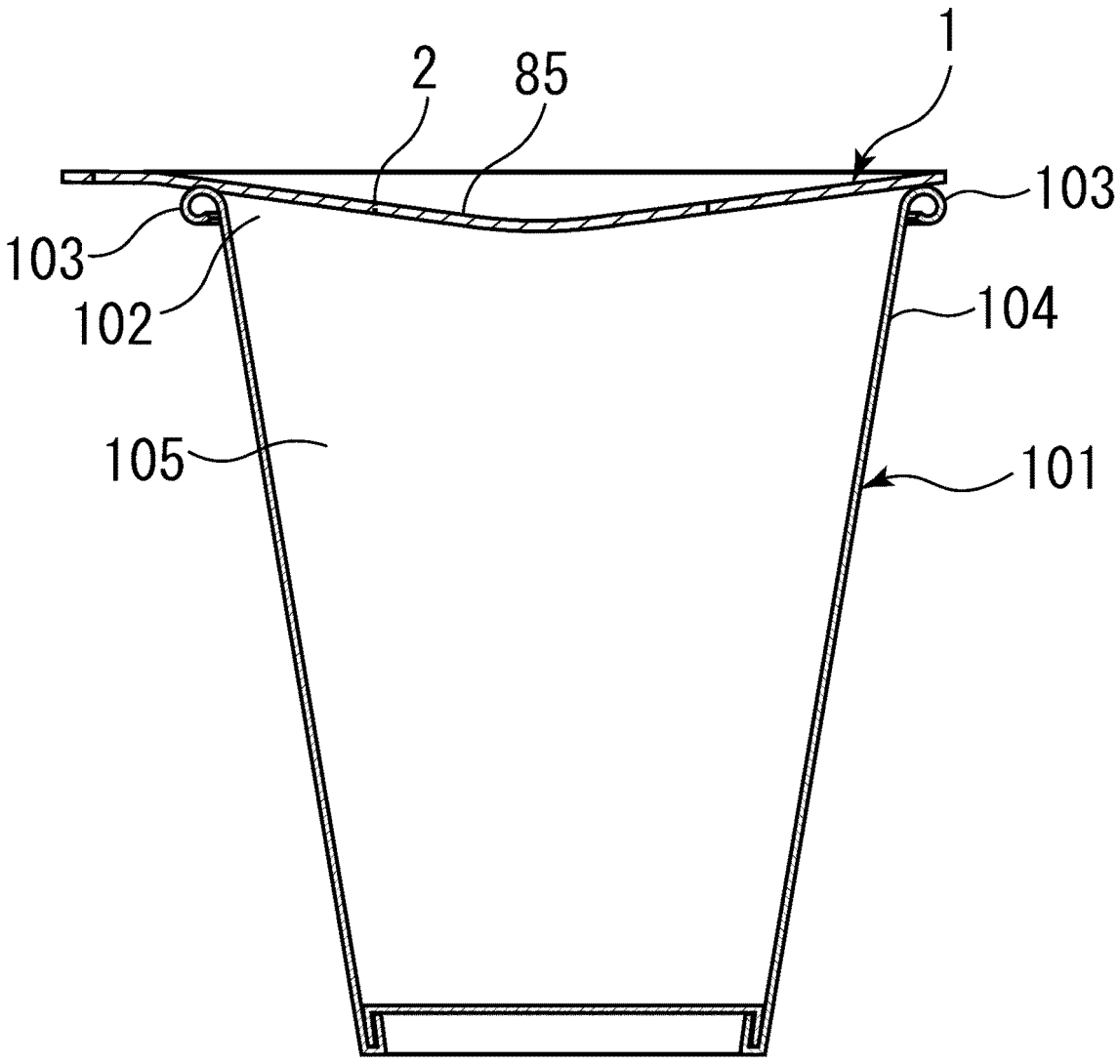
(a)



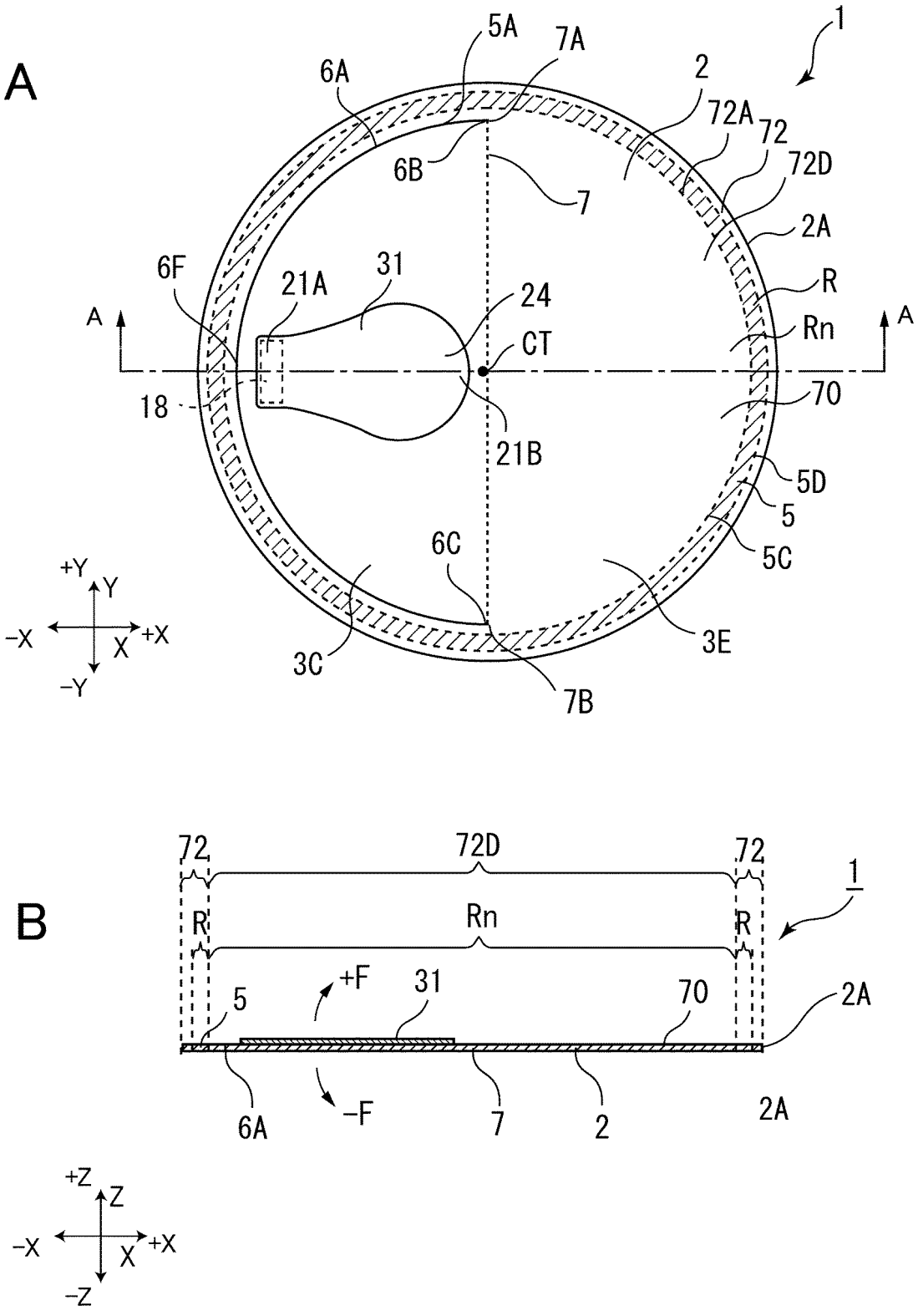
(b)



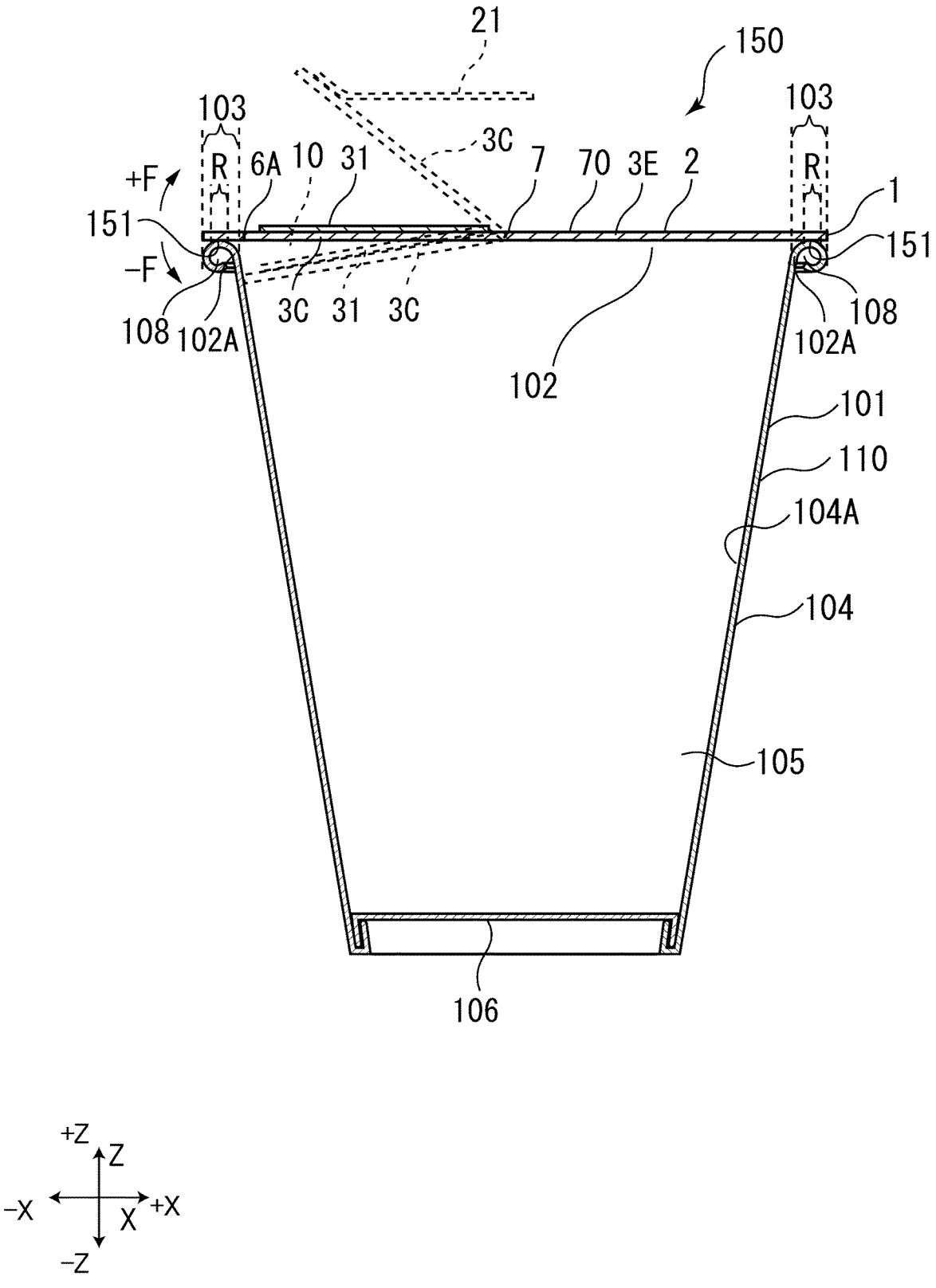
[Fig 42]



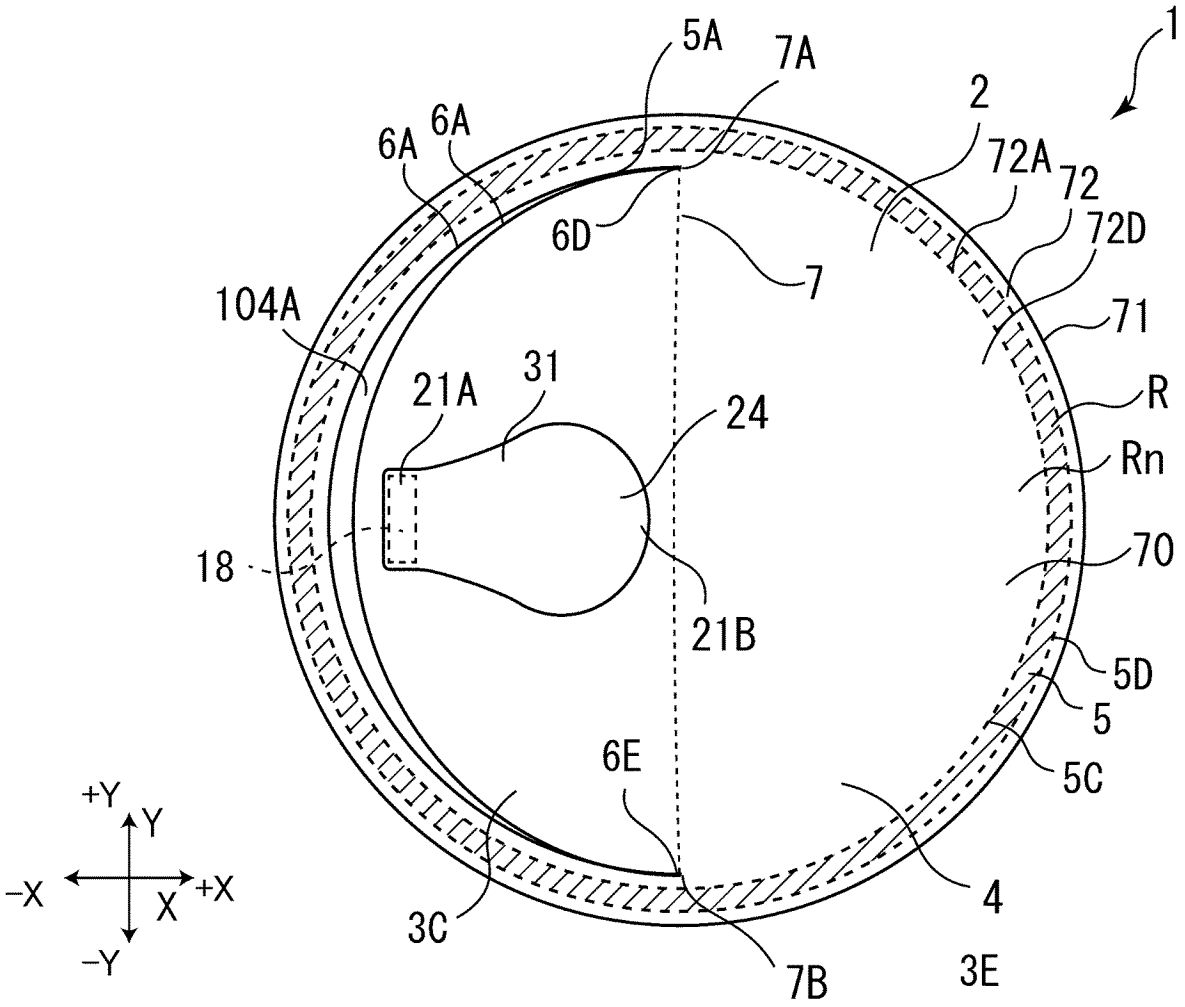
[Fig 43]


A
1
5A
7A
6A
2
72A
72
72D
6B
7
2A
6F
21A
31
24
R
A
CT
Rn
A
18
70
21B
5D
5
6C
5C
3C
3E
7B
+Y
Y
-X
+X
X
-Y
B
72
72D
72
1
R
Rn
R
+F
31
5
70
2A
6A
-F
7
2
2A
+Z
Z
-X
+X
X
-Z

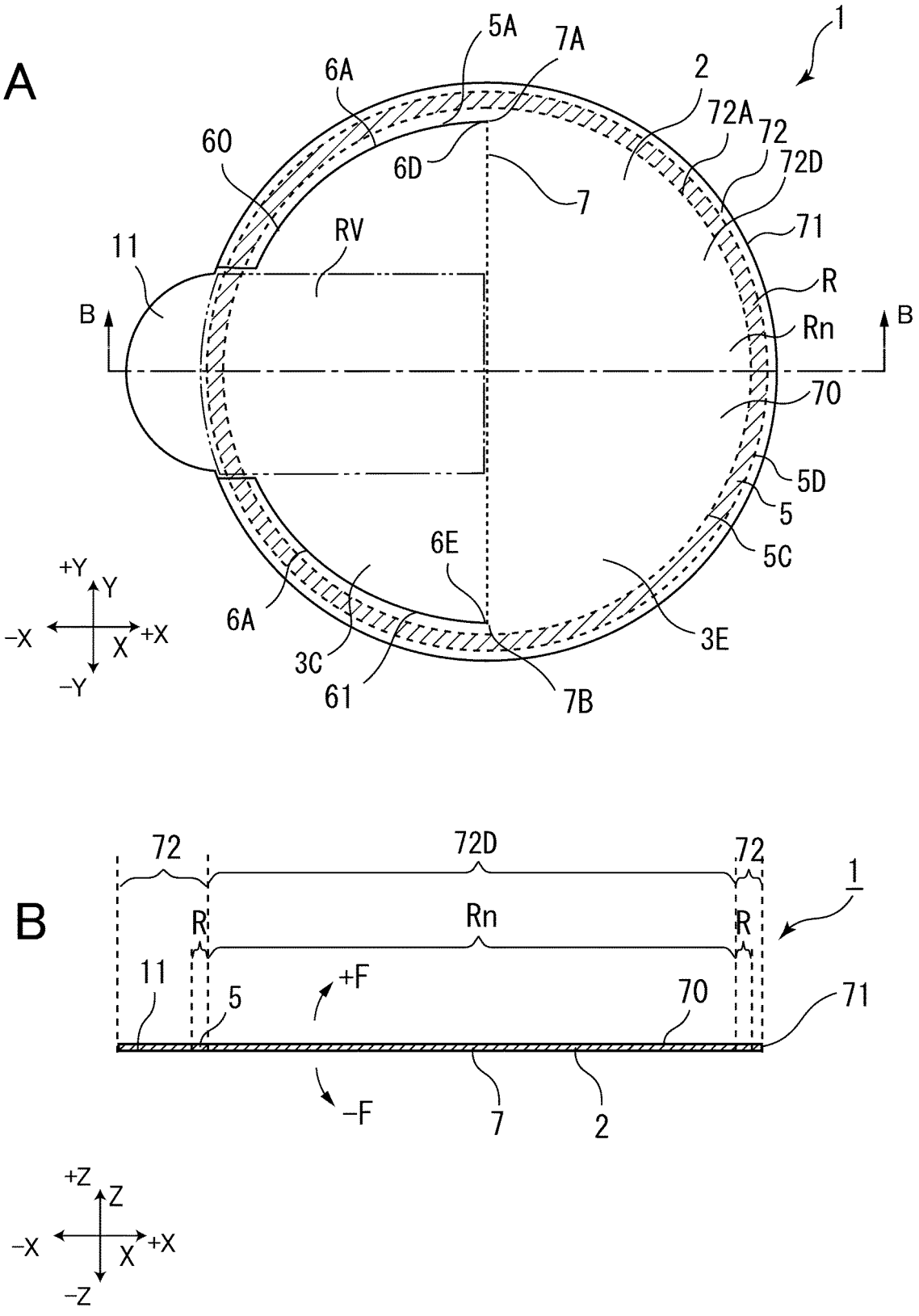
[Fig 44]


21
150
103
103
R
R
6A
10
31
3C
7
70
3E
2
1
+F
151
−F
151
108
102A
3C
31
3C
102
102A
108
101
110
104A
104
105
106
+Z
Z
−X
+X
X
−Z

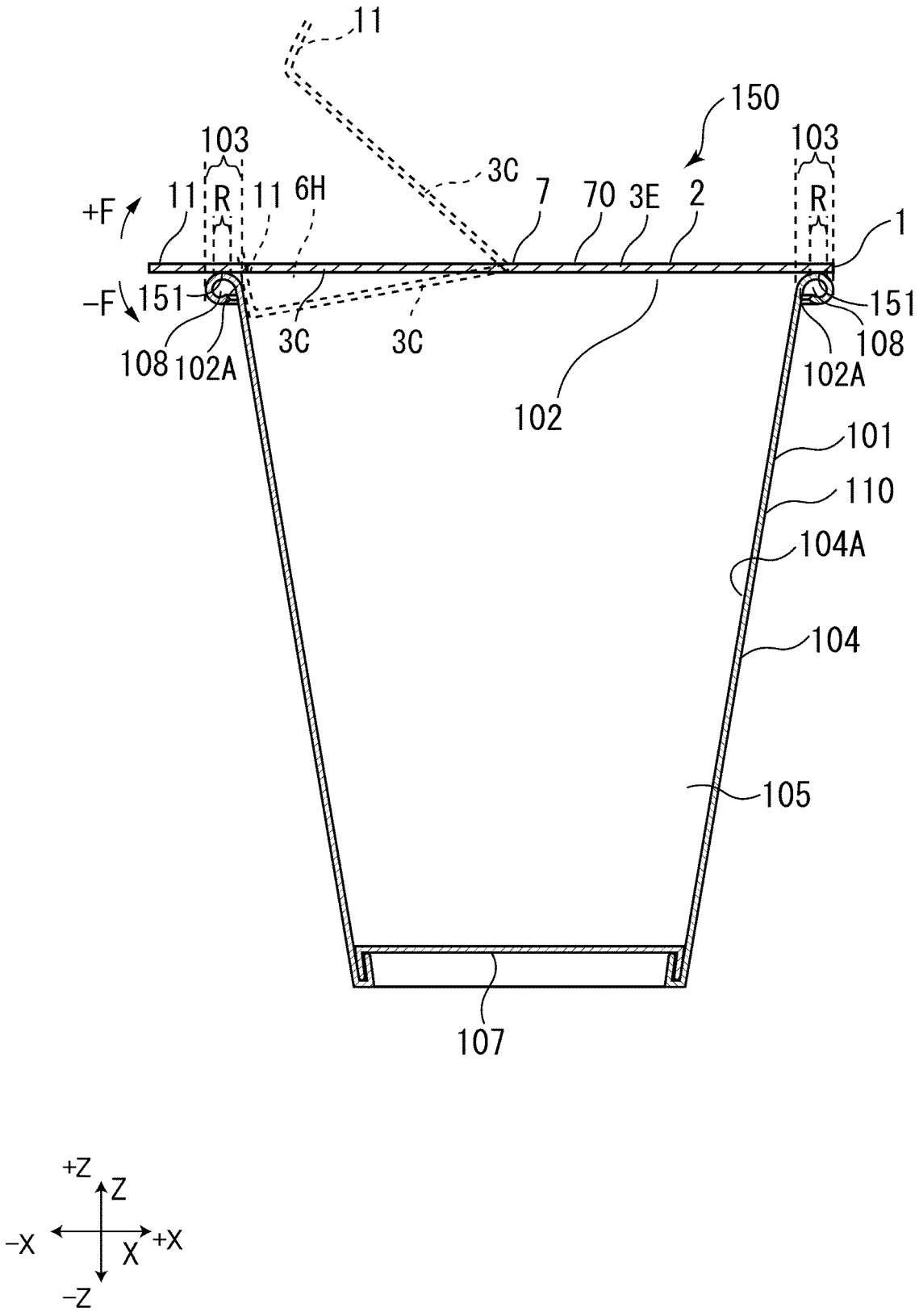
[Fig 45]


1
5A
7A
2
6A
6A
72A
72
72D
6D
7
104A
71
21A
31
24
R
Rn
18
70
21B
5D
5
6E
5C
4
3C
7B
3E
+Y
Y
−X
+X
X
−Y

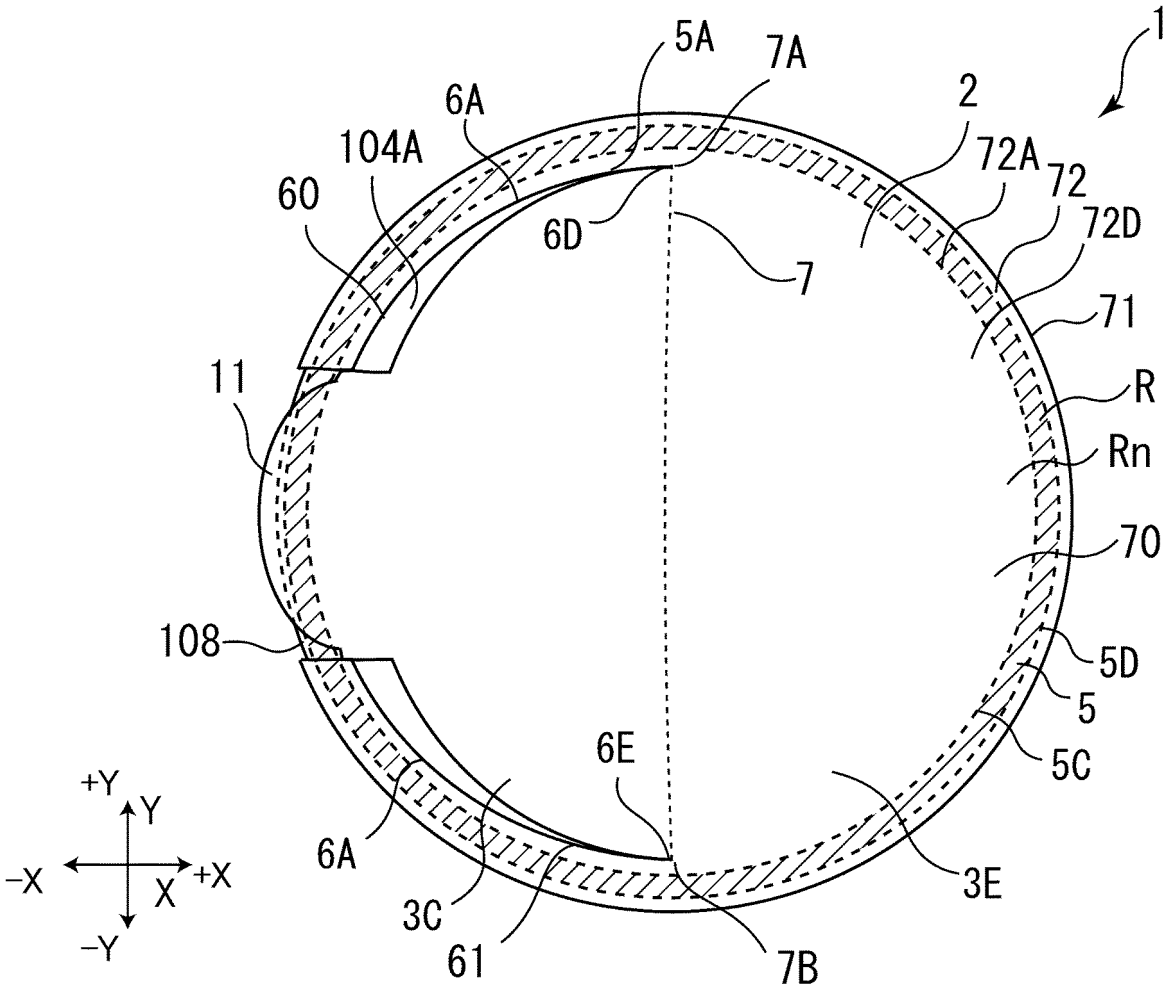
[Fig 46]


A
1
5A
7A
6A
2
72A
72
72D
60
6D
7
71
RV
11
R
B
B
Rn
70
5D
5
5C
6E
+Y
Y
-X
+X
X
-Y
6A
3C
61
7B
3E
B
72
72D
72
1
R
Rn
R
11
+F
5
70
71
-F
7
2
+Z
Z
-X
+X
X
-Z

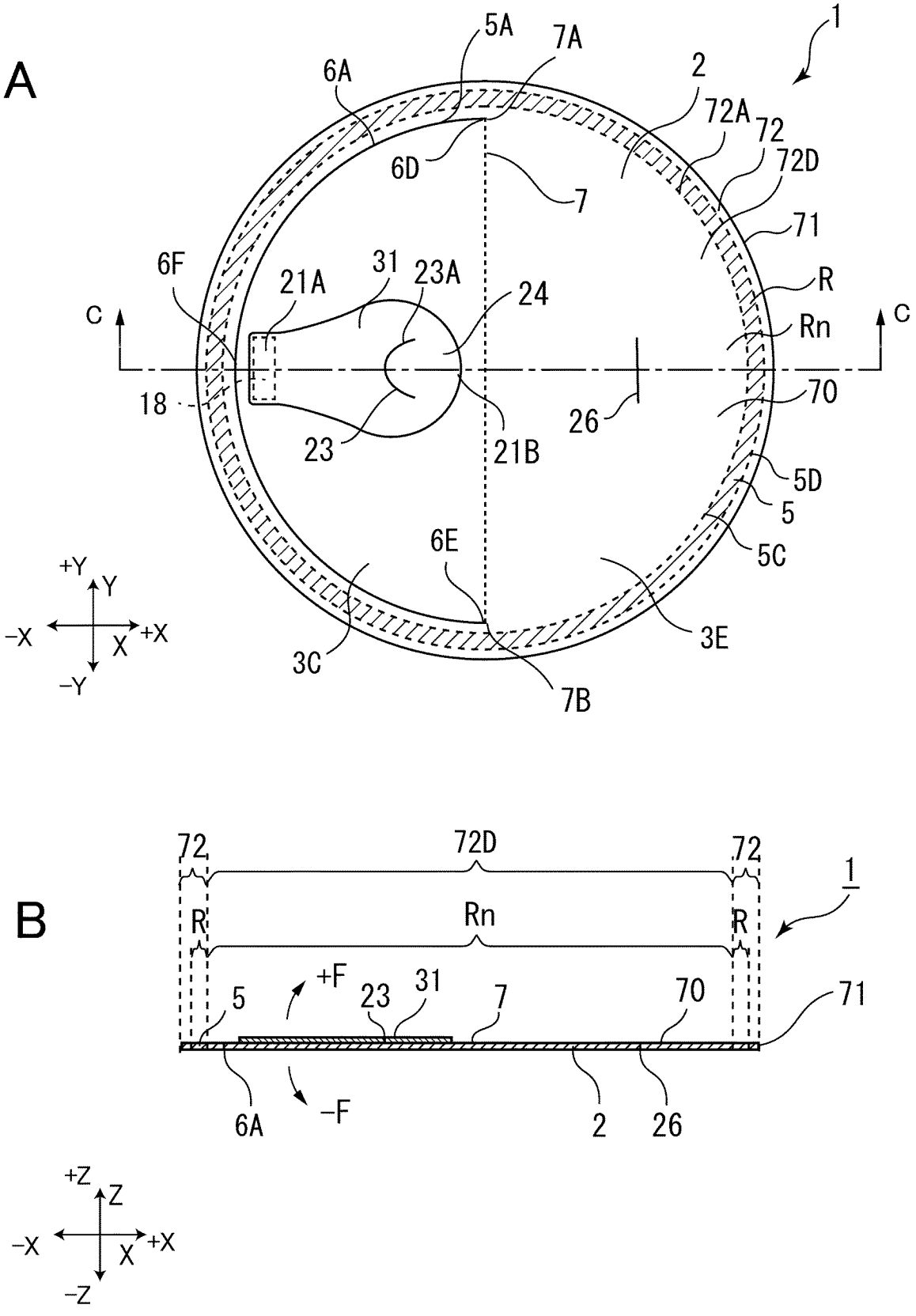
[Fig 47]


11
150
103
103
3C
+F
11
R
11
6H
7
70
3E
2
R
1
−F
151
151
108
102A
3C
3C
102A
108
102
101
110
104A
104
105
107
+Z
Z
−X
+X
X
−Z

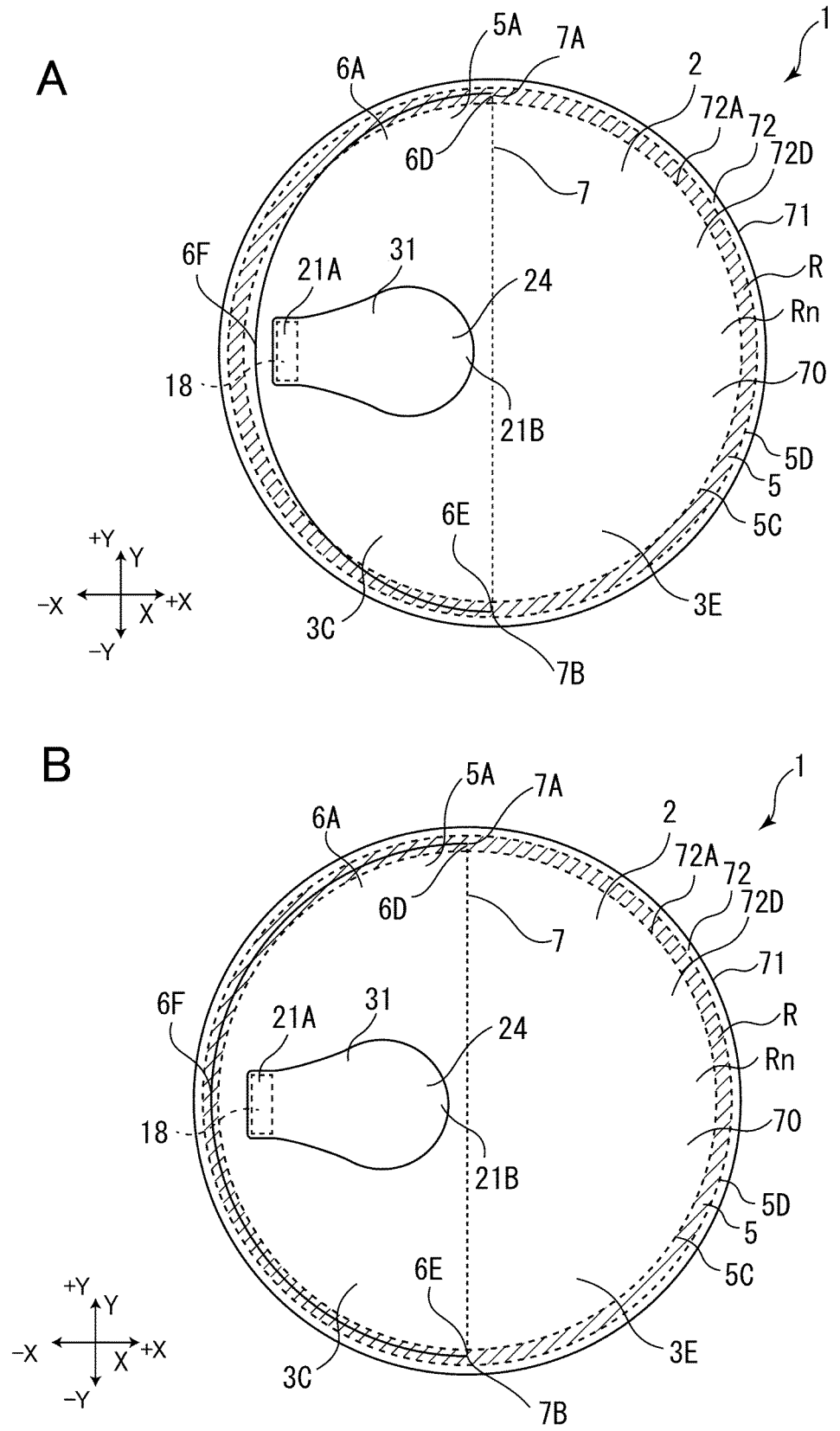
[Fig 48]


1
5A
7A
2
6A
104A
72A
72
60
6D
72D
7
71
11
R
Rn
70
108
5D
5
6E
5C
+Y
Y
6A
3E
−X
+X
X
3C
61
7B
−Y

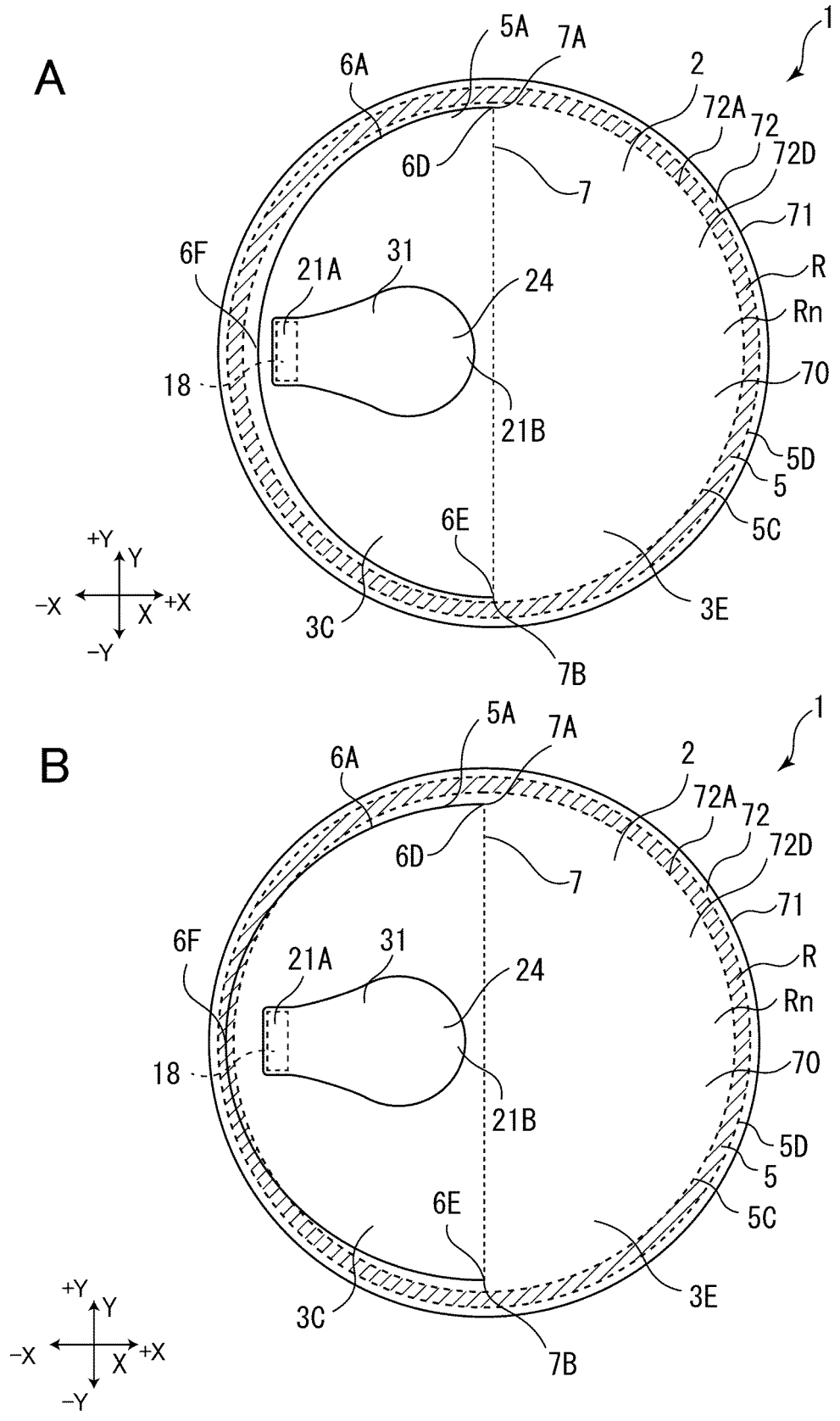
[Fig 49]


A
1
5A
7A
6A
2
72A
72
72D
6D
7
71
6F
21A
31
23A
24
R
Rn
C
C
18
26
70
23
21B
5D
5
6E
5C
+Y
Y
−X
+X
X
−Y
3C
3E
7B
B
72
72D
72
1
R
Rn
R
+F
5
23
31
7
70
71
6A
−F
2
26
+Z
Z
−X
+X
X
−Z

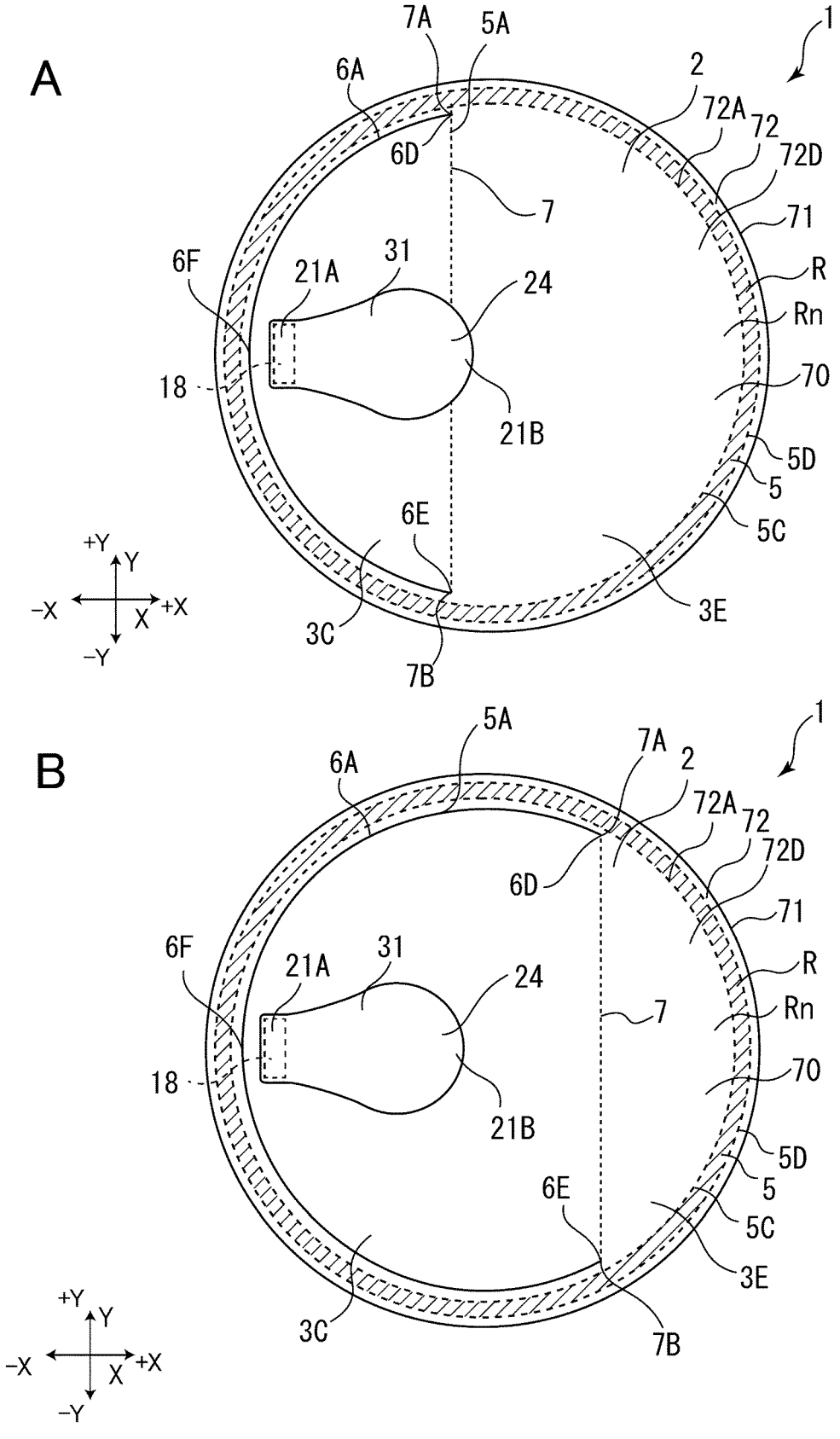
[Fig 50]


A
1
5A
7A
6A
2
72A
72
72D
6D
7
71
6F
21A
31
24
R
Rn
18
70
21B
5D
5
6E
5C
+Y
Y
−X
+X
X
−Y
3E
3C
7B
B
1
5A
7A
6A
2
72A
72
72D
6D
7
71
6F
21A
31
24
R
Rn
18
70
21B
5D
5
6E
5C
+Y
Y
−X
+X
X
−Y
3E
3C
7B

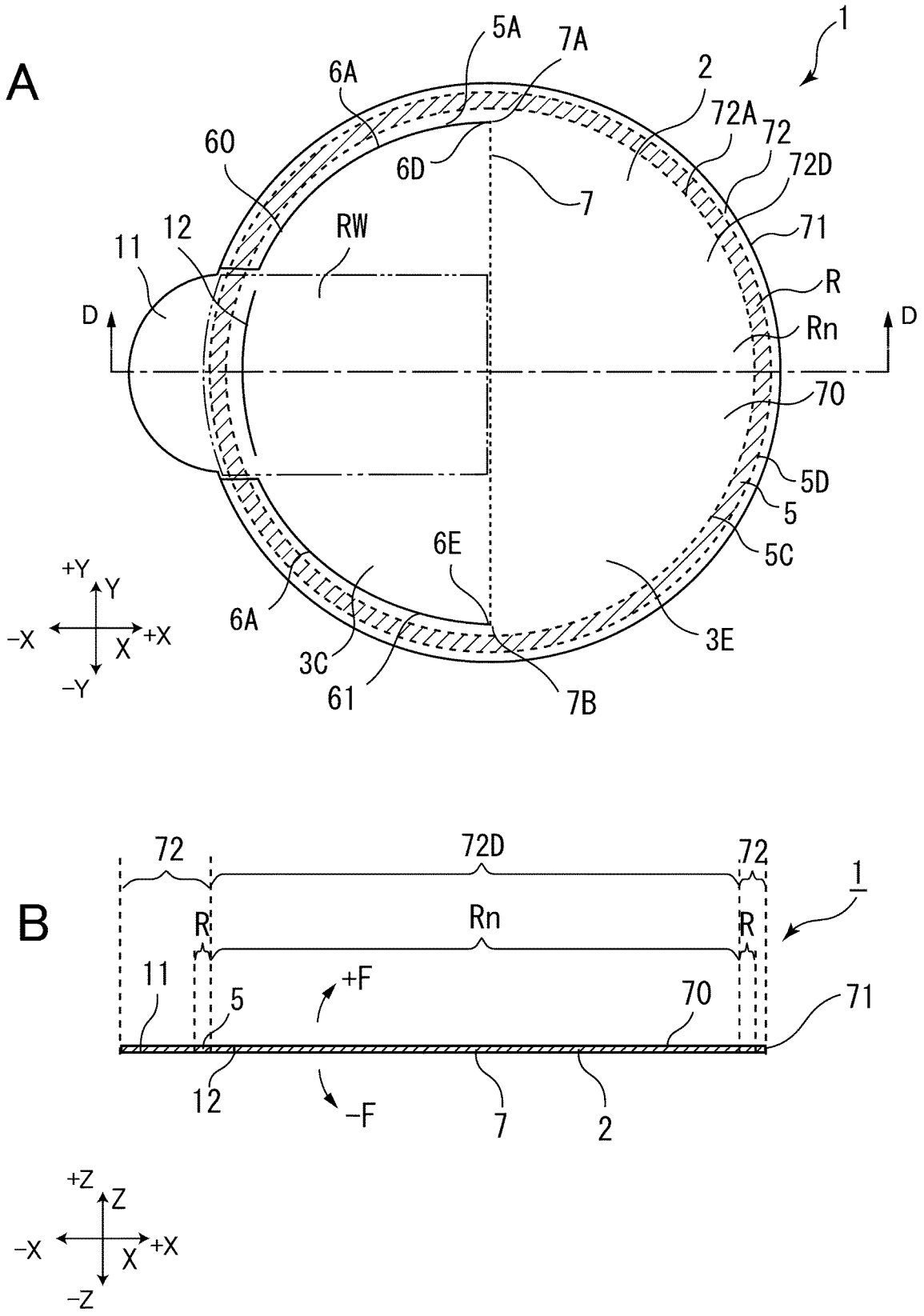
[Fig 51]


A
1
5A
7A
6A
2
72A
72
72D
6D
7
71
6F
21A
31
24
R
Rn
18
70
21B
5D
5
6E
5C
+Y
Y
-X
+X
X
-Y
3C
3E
7B
B
1
5A
7A
6A
2
72A
72
72D
6D
7
71
6F
21A
31
24
R
Rn
18
70
21B
5D
5
6E
5C
+Y
Y
-X
+X
X
-Y
3C
3E
7B

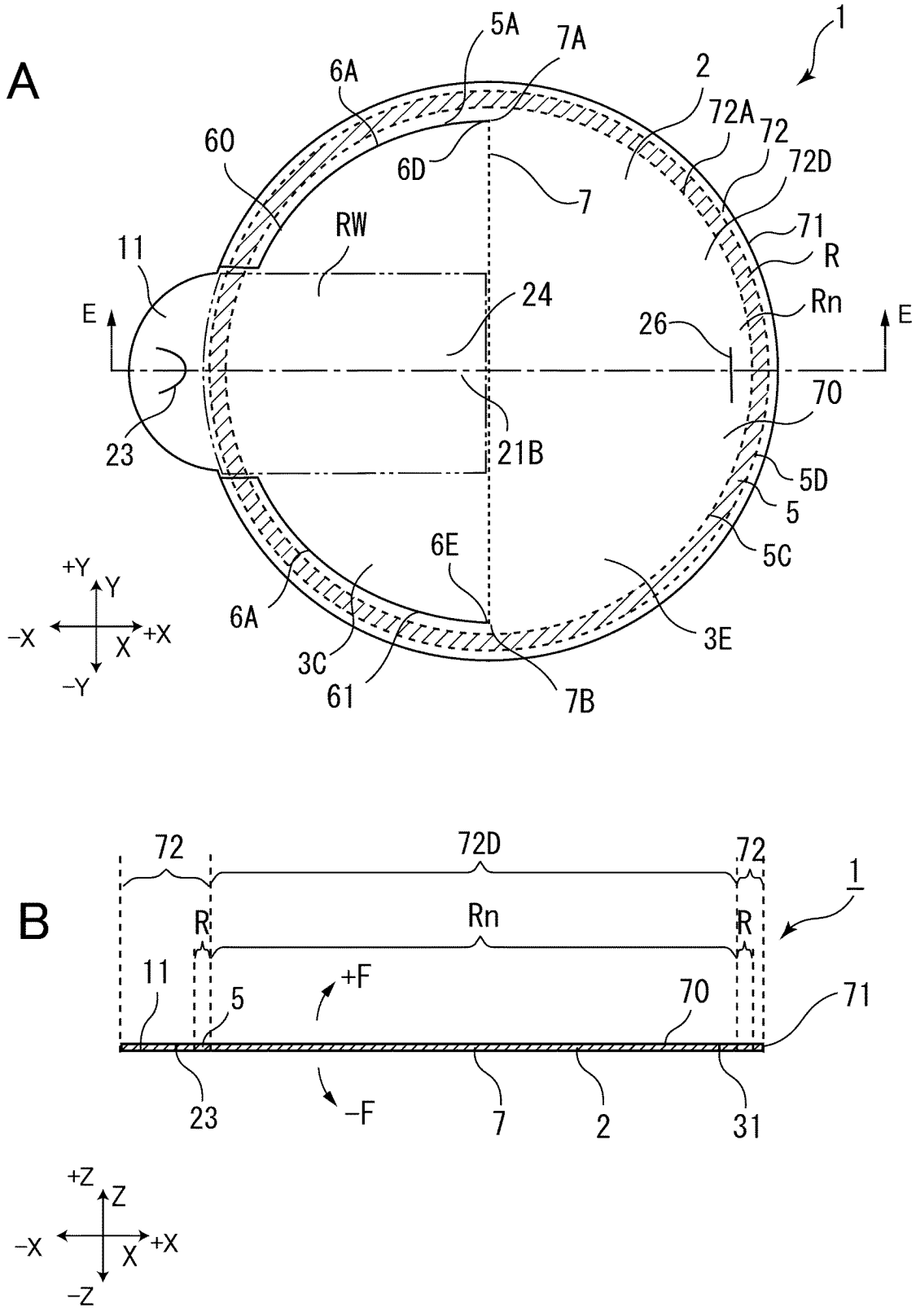
[Fig 52]


A
7A
5A
1
6A
2
72A
72
72D
6D
7
71
6F
21A
31
24
R
Rn
18
70
21B
5D
5
6E
5C
+Y
Y
-X
+X
X
3E
3C
-Y
7B
B
5A
1
7A
6A
2
72A
72
72D
6D
71
6F
21A
31
24
R
7
Rn
18
70
21B
5D
6E
5
5C
3E
3C
7B

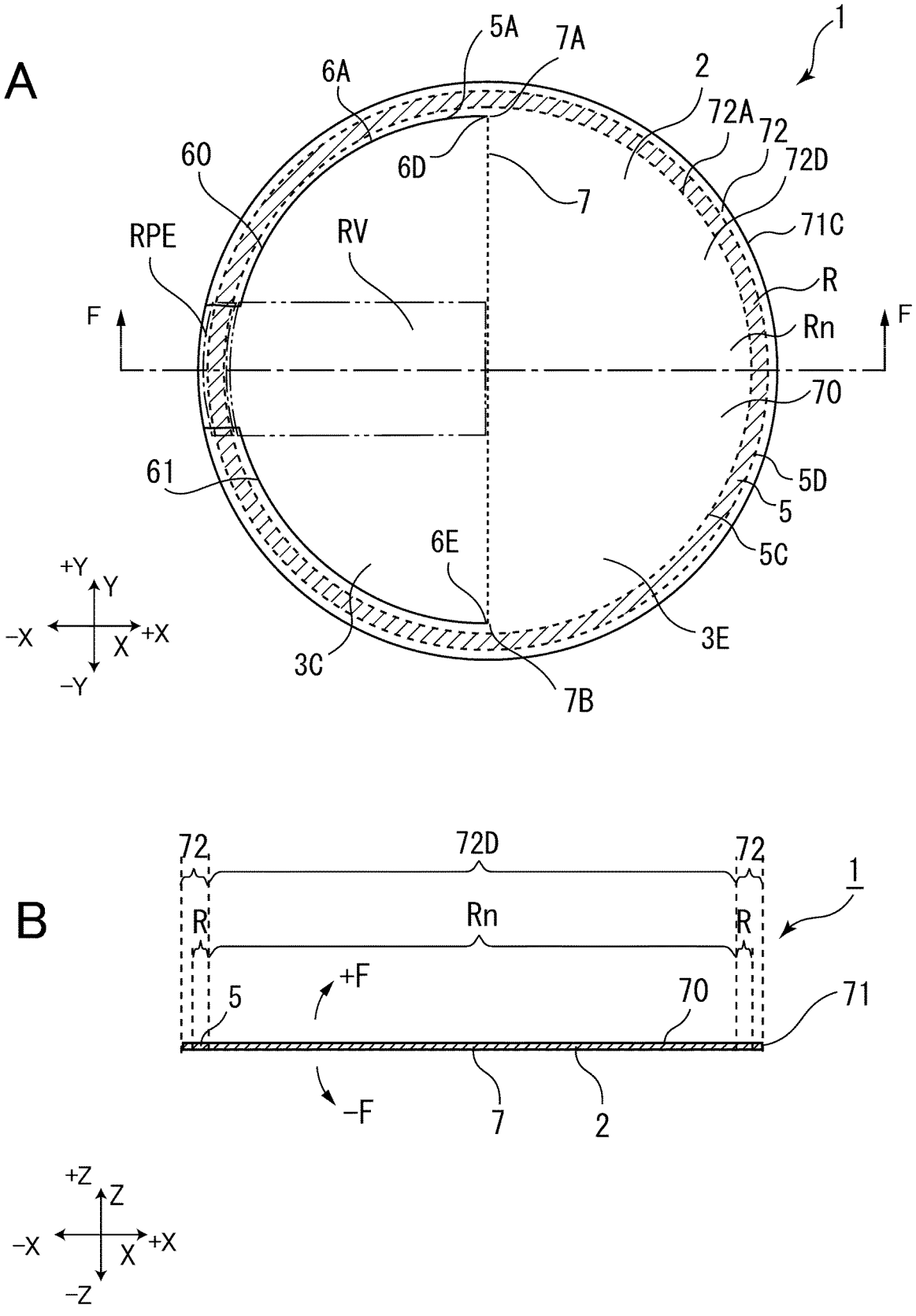
[Fig 53]


A
1
5A
7A
6A
2
72A
72
72D
60
6D
7
12
RW
71
11
R
D
Rn
D
70
5D
5
6E
5C
+Y
Y
−X
+X
X
−Y
6A
3E
3C
61
7B
B
72
72D
72
1
R
Rn
R
11
+F
5
70
71
12
−F
7
2
+Z
Z
−X
+X
X
−Z

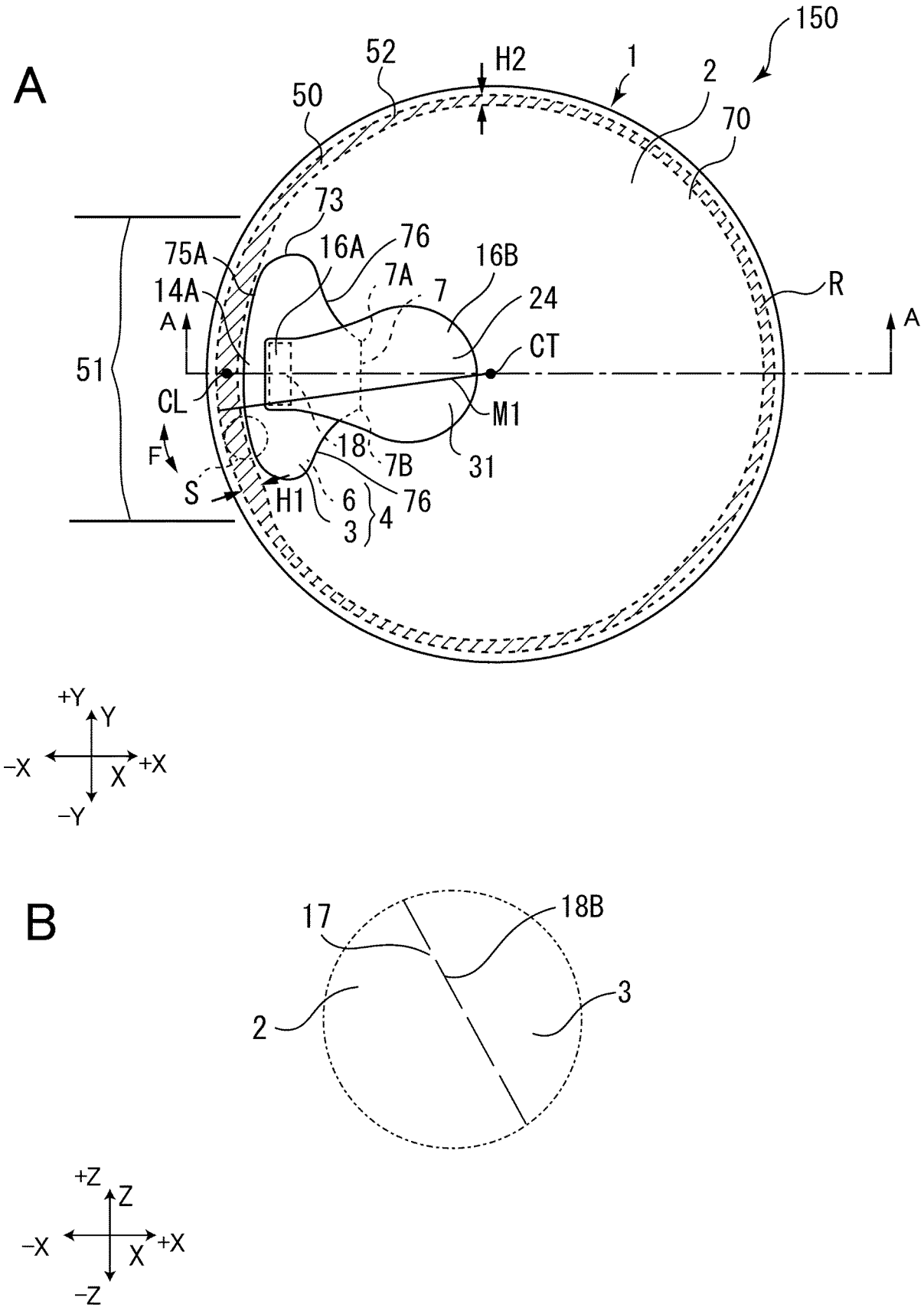
[Fig 54]


A
1
5A
7A
6A
2
72A
72
72D
60
6D
7
RW
71
11
R
24
Rn
E
E
26
70
23
21B
5D
5
6E
5C
+Y
Y
6A
3E
−X
+X
X
3C
61
7B
−Y
B
72
72D
72
1
R
Rn
R
11
+F
5
70
71
23
−F
7
2
31
+Z
Z
−X
+X
X
−Z

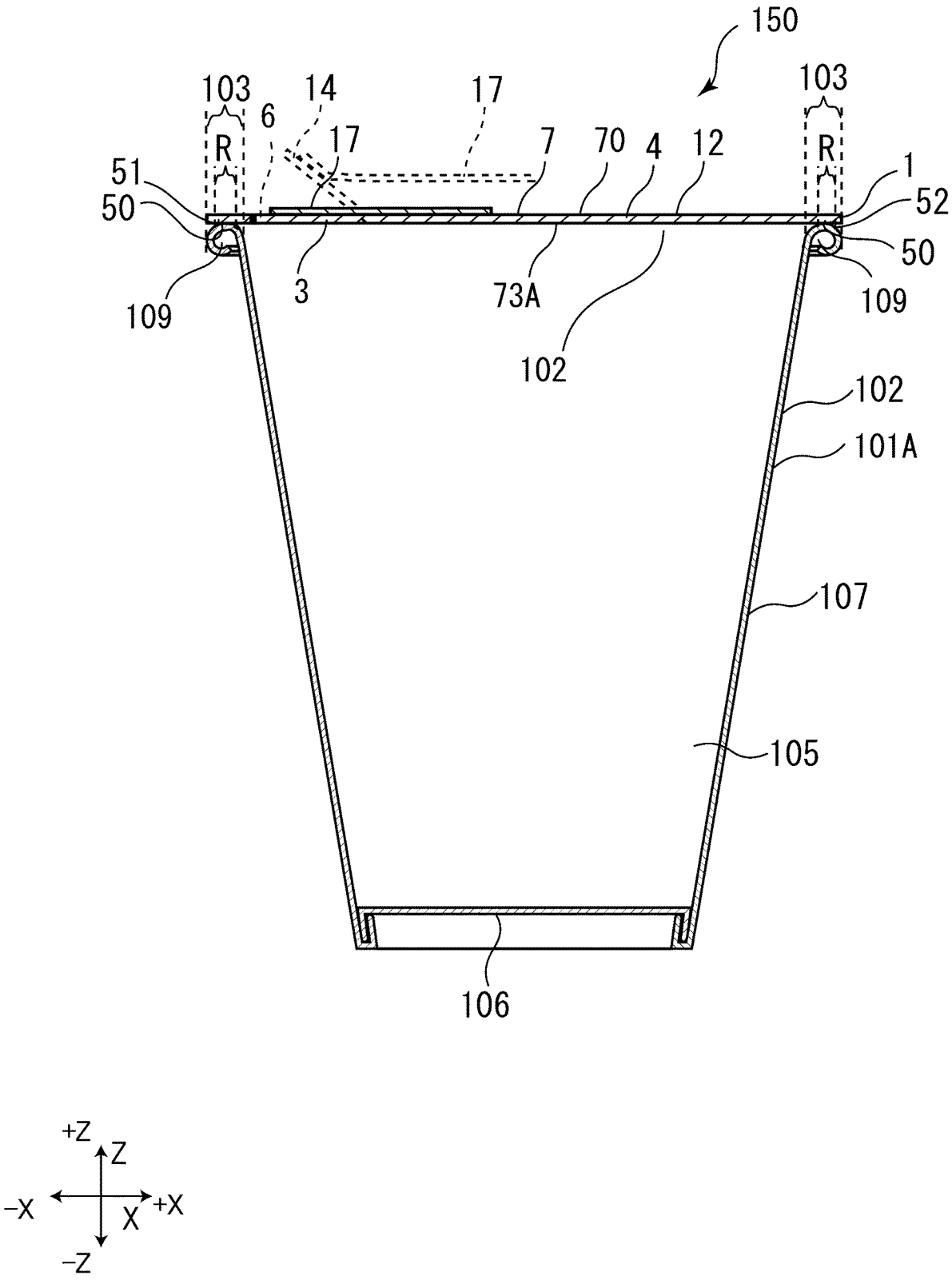
[Fig 55]


A
1
5A
7A
6A
2
72A
72
72D
60
6D
7
71C
RPE
RV
R
F
F
Rn
70
61
5D
5
6E
5C
3E
3C
7B
+Y
Y
−X
+X
X
−Y
B
72
72D
72
1
R
Rn
R
+F
5
70
71
−F
7
2
+Z
Z
−X
+X
X
−Z

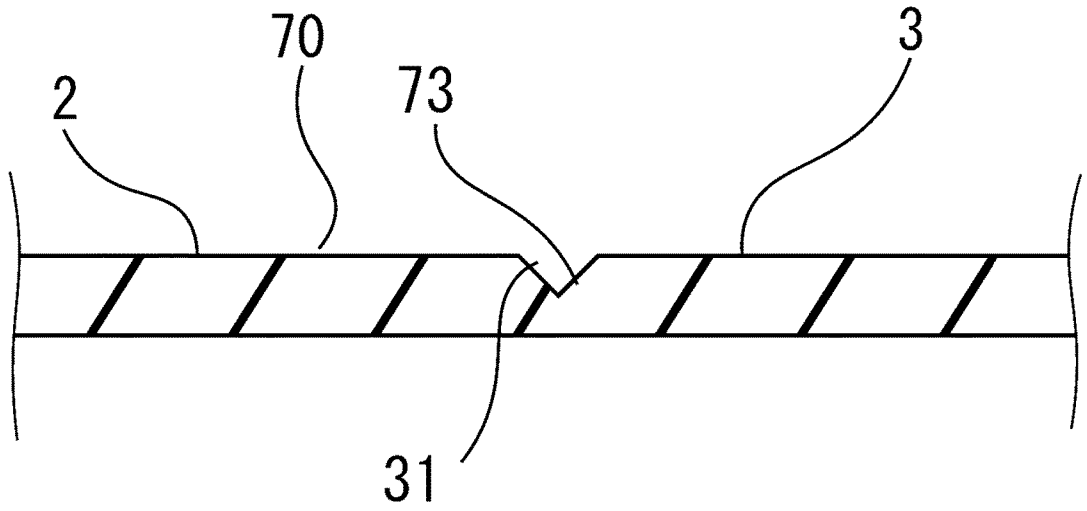
[Fig 56]


A
150
52
H2
1
2
50
70
73
75A
16A
76
16B
7A
7
24
14A
R
A
A
51
CT
CL
M1
F
18
7B
31
S
H1
6
3
4
76
+Y
Y
−X
+X
X
−Y
B
17
18B
2
3
+Z
Z
−X
+X
X
−Z

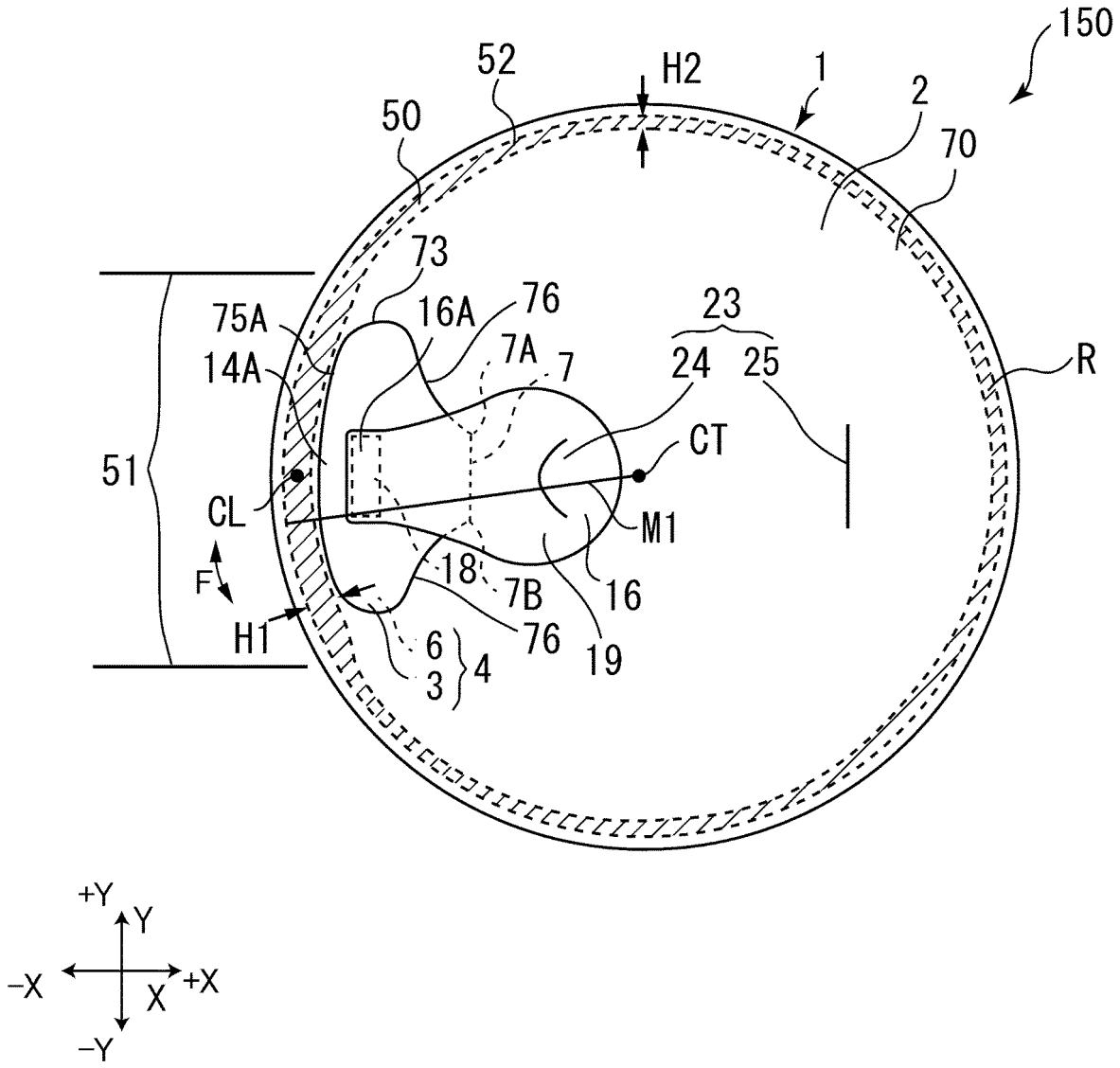
[Fig 57]


150
103
R
14
6
17
17
7
70
4
12
103
R
51
50
1
52
50
109
3
73A
102
109
102
101A
107
105
106
+Z
Z
−X
+X
X
−Z

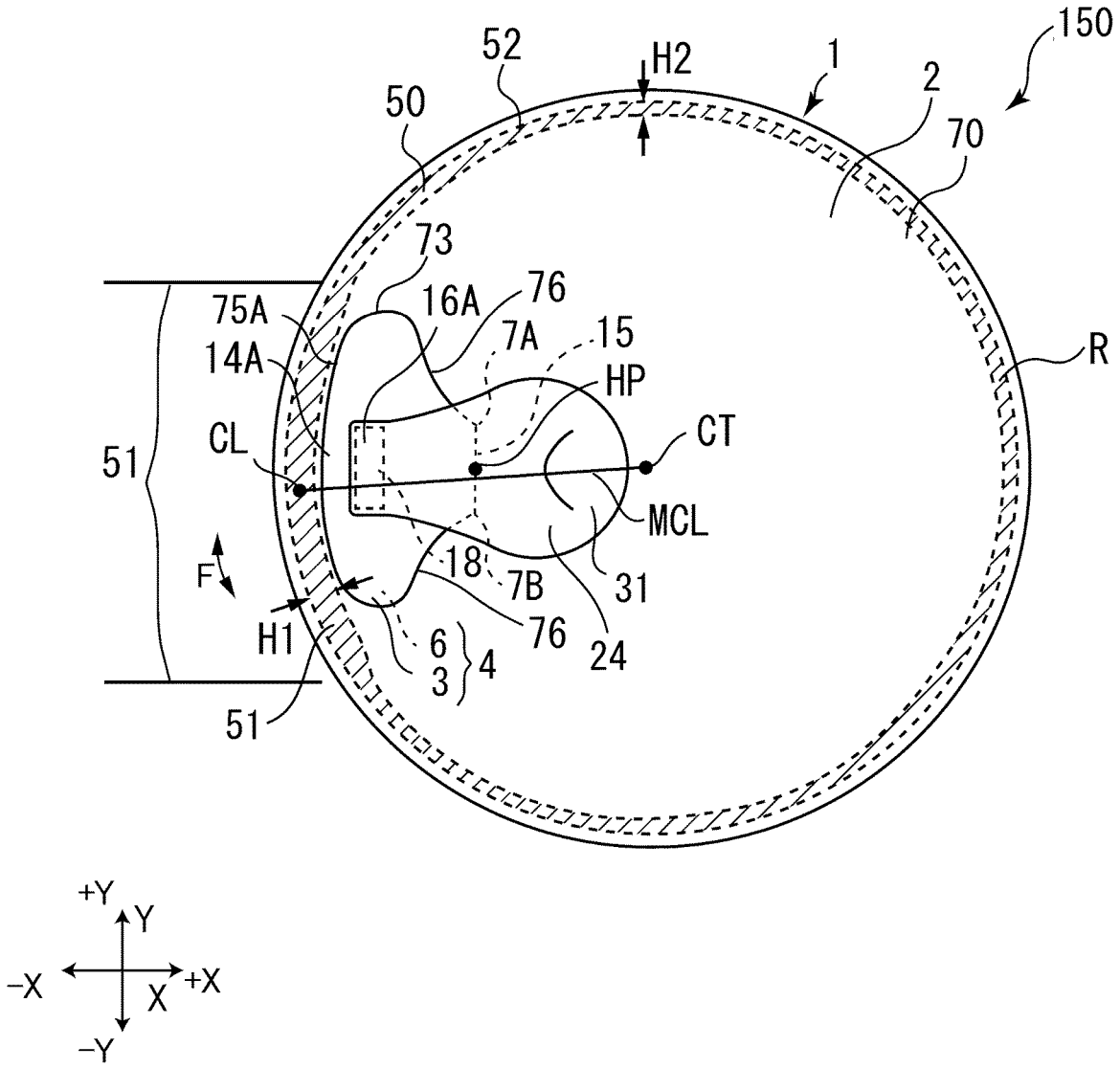
[Fig 58]



[Fig 59]


150
52
H2
1
2
50
70
73
75A
16A
76
23
14A
7A
7
24
25
R
51
CT
CL
M1
F
18
7B
16
H1
76
6
3
4
19
+Y
Y
−X
+X
X
−Y

[Fig 60]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MCL
F
18
7B
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H1
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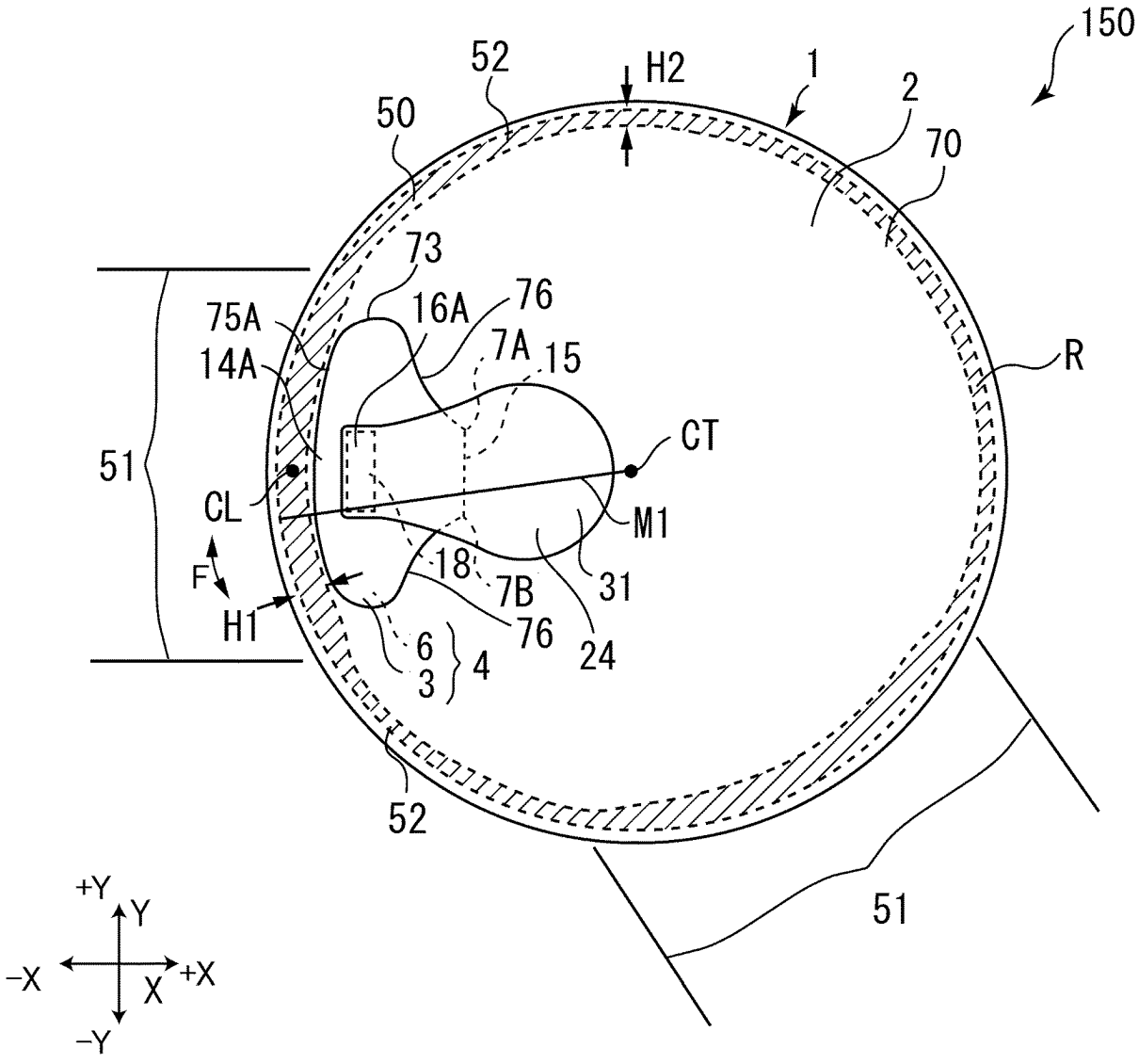
24
6
3
4
51
+Y
Y
−X
+X
X
−Y

[Fig 61]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F
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52
51
+Y
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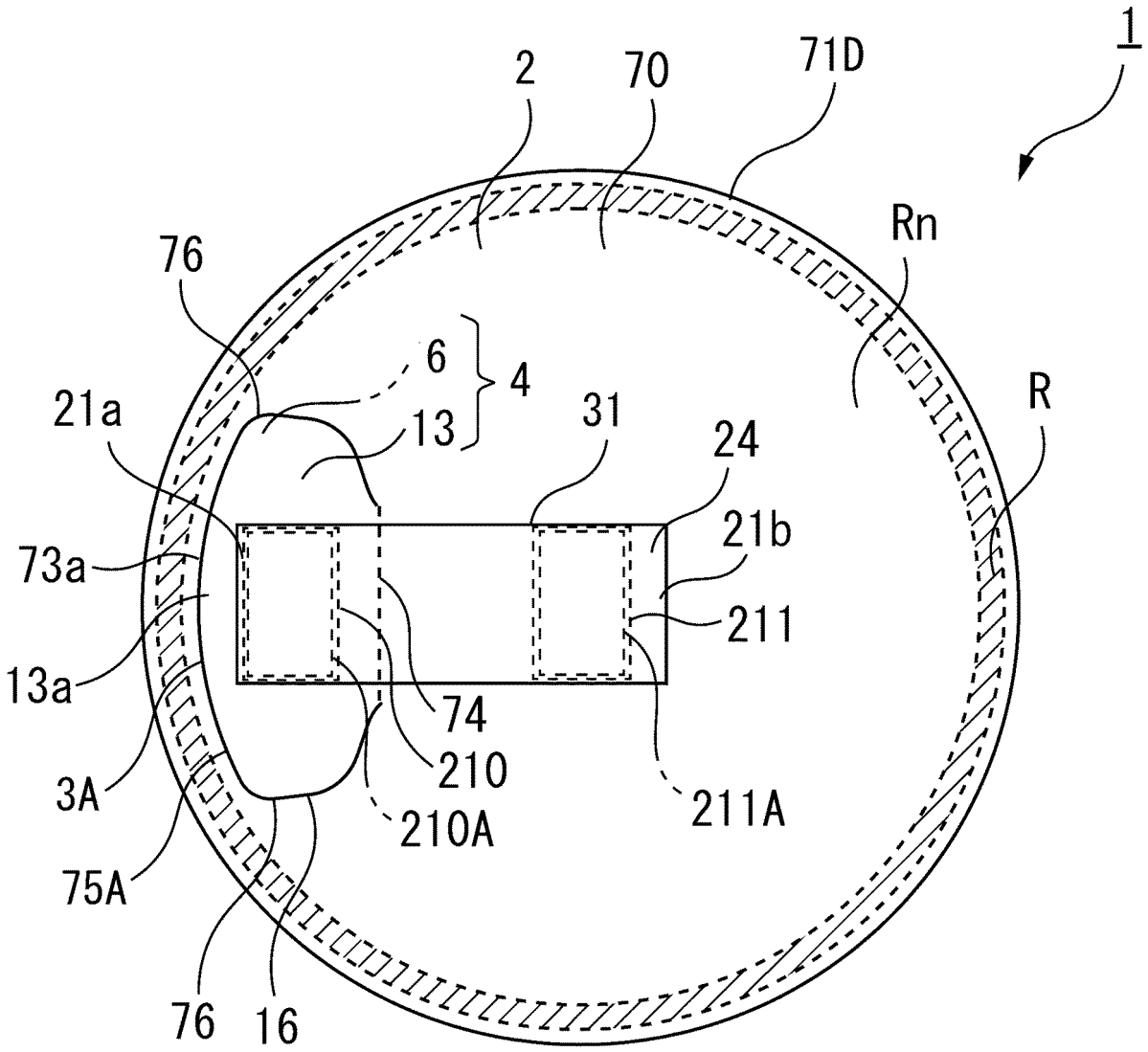
−X
+X
X
−Y

[Fig 62]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13a
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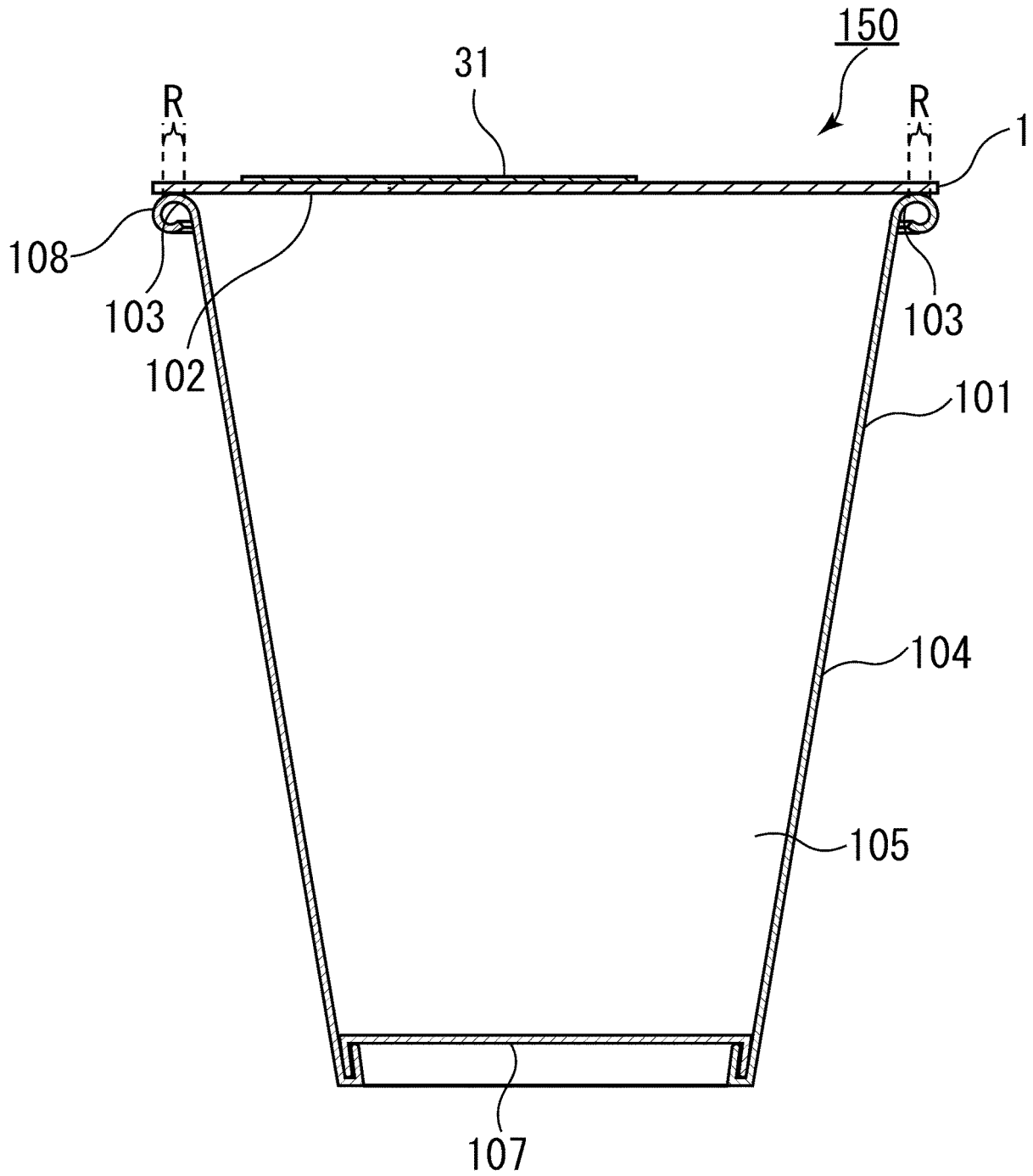
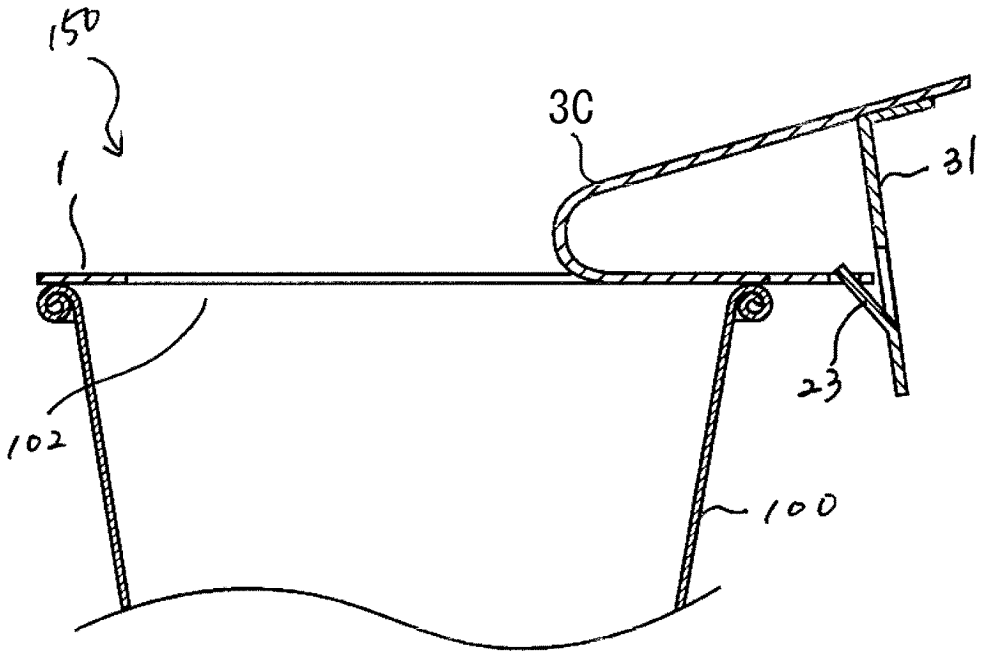
3A
210A
211A
75A
76
16

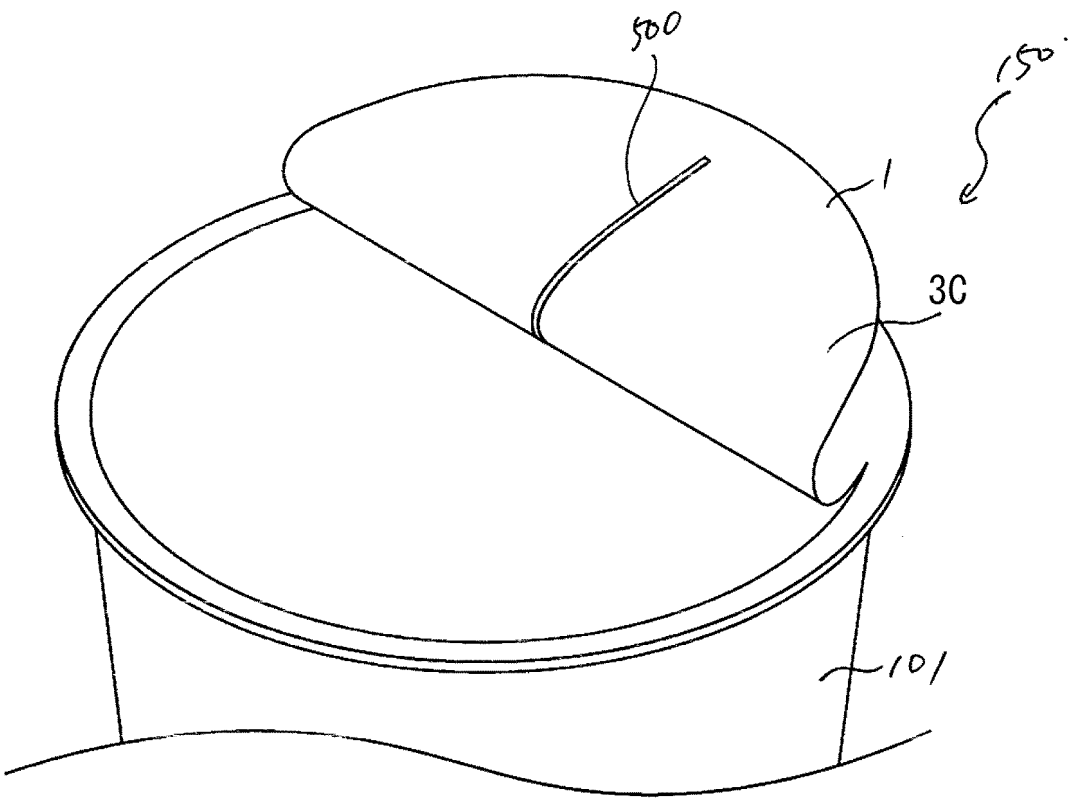
[Fig 63]



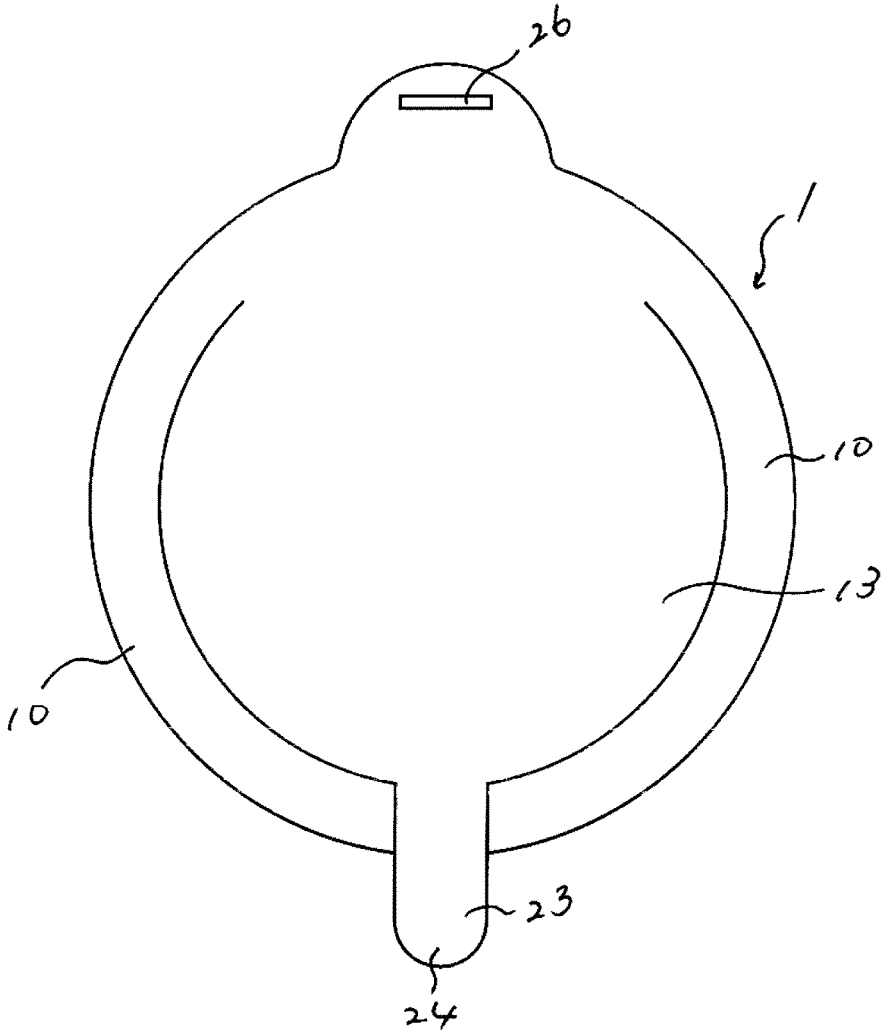
[Fig 64]



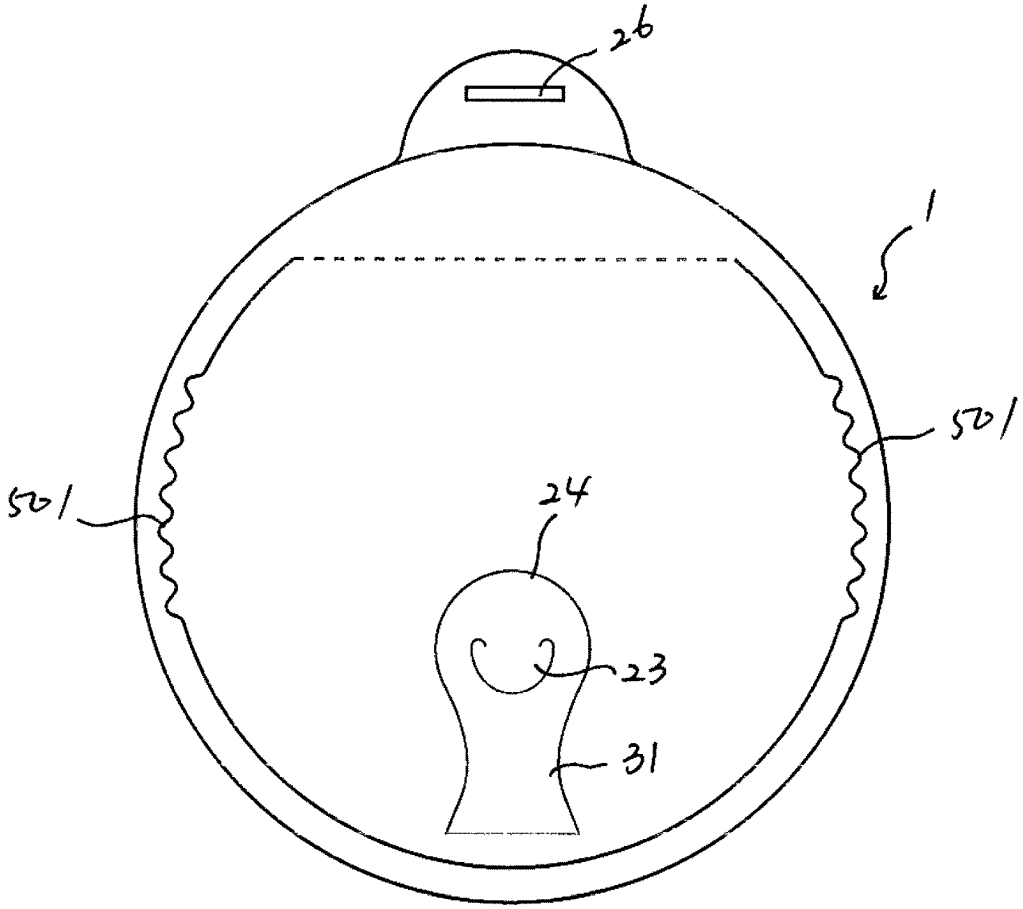
[Fig 65]



[Fig 66]



[Fig 67]



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2023/029182

A. CLASSIFICATION OF SUBJECT MATTER

B65D 77/20(2006.01)i
FI: B65D77/20 E; B65D77/20 J

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)

B65D77/20

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

Published examined utility model applications of Japan 1922-1996
Published unexamined utility model applications of Japan 1971-2023
Registered utility model specifications of Japan 1996-2023
Published registered utility model applications of Japan 1994-2023

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 102044/1977 (Laid-open No. 28640/1979) (SHIKOKU KAKOKI COMPANY, LIMITED) 24 February 1979 (1979-02-24), specification, page 2, lines 3-5, page 3, line 2 to page 5, line 3, fig. 1-3	1-2, 4, 6-8, 19
Y		1-20
X	JP 2004-224401 A (KAGAWA, Atsuko) 12 August 2004 (2004-08-12) paragraphs [0024], [0025], [0029], [0043], [0045], [0091], [0100], [0101], fig. 1-3, 6, 18, 36	1-4, 10, 12, 16-20
Y		1-20
Y	JP 2003-341698 A (TOPPAN PRINTING COMPANY, LIMITED) 03 December 2003 (2003-12-03) paragraphs [0010], [0011], [0022], [0023], fig. 1, 3	1-3, 5-7, 13, 16-17, 19-20

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

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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
03 October 2023	**17 October 2023**
Name and mailing address of the ISA/JP **Japan Patent Office (ISA/JP)** **3-4-3 Kasumigaseki, Chiyoda-ku, Tokyo 100-8915** **Japan**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2023/029182

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2009-73562 A (DAINIPPON PRINTING COMPANY, LIMITED) 09 April 2009 (2009-04-09) paragraphs [0015]-[0017], [0022], [0024], fig. 1, 4	1-4, 10, 12, 14, 16-20
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Y	JP 2008-1414 A (TOPPAN PRINTING COMPANY, LIMITED) 10 January 2008 (2008-01-10) paragraphs [0031]-[0039], fig. 1, 4	15
A	JP 2012-6613 A (TOPPAN PRINTING COMPANY, LIMITED) 12 January 2012 (2012-01-12) entire text, all drawings	1-20
A	JP 2002-104515 A (DAINIPPON PRINTING COMPANY, LIMITED) 10 April 2002 (2002-04-10) entire text, all drawings	1-20
A	JP 2008-155959 A (KYODO PRINTING COMPANY, LIMITED) 10 July 2008 (2008-07-10) entire text, all drawings	1-20
A	JP 2017-7733 A (TOPPAN PRINTING COMPANY, LIMITED) 12 January 2017 (2017-01-12) entire text, all drawings	1-20
A	US 2017/0057728 A1 (PARKSIDE FLEXIBLES (EUROPE) LIMITED) 02 March 2017 (2017-03-02) entire text, all drawings	1-20

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/JP2023/029182

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
JP 54-28640 U1	24 February 1979	(Family: none)	
JP 2004-224401 A	12 August 2004	(Family: none)	
JP 2003-341698 A	03 December 2003	(Family: none)	
JP 2009-73562 A	09 April 2009	(Family: none)	
JP 2008-1414 A	10 January 2008	(Family: none)	
JP 2012-6613 A	12 January 2012	(Family: none)	
JP 2002-104515 A	10 April 2002	(Family: none)	
JP 2008-155959 A	10 July 2008	(Family: none)	
JP 2017-7733 A	12 January 2017	(Family: none)	
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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2014084128 A **[0006]**
- JP 2015101357 A **[0006]**