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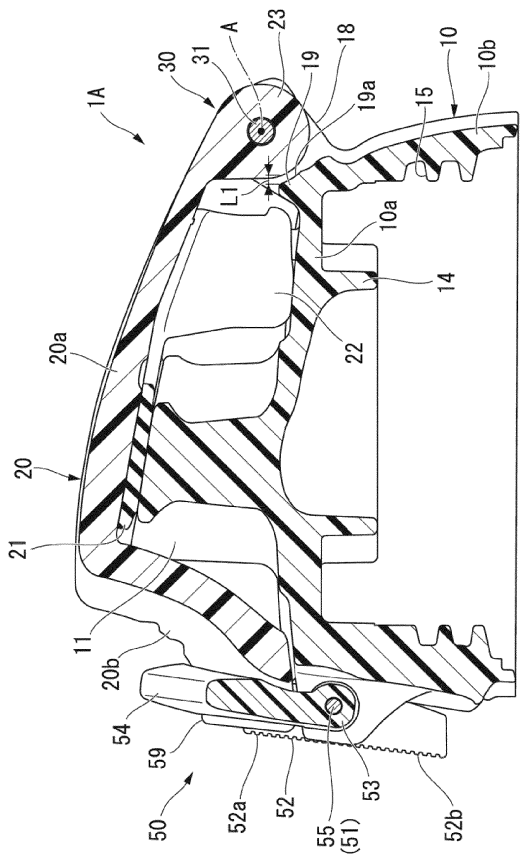
(54) CAP UNIT AND BEVERAGE CONTAINER

(57) A cap unit comprising; a cap main body 10 which includes a liquid inlet by which communication between the interior and exterior of the container main body is established; a lid body 20 which is disposed on the upper side of the cap main body 10 and which covers the liquid inlet; a hinge 30 which rotatably couples the lid body 20 to the cap main body 10; and a lid locking mechanism 50 which fixes the lid body 20 to the cap main body 10 at the closed position, the lid locking mechanism 50 including an engaged portion provided in one of either the cap main body 10 or lid body 20 and an engaging portion which is provided in the other of either the cap main body 10 or the lid body 20 and which engages with the engaged portion from the front side, the cap main body 10 including an abutted portion 19, and the lid body 20 including an abutting portion which, when the lid body 20 is displaced to the front side, abuts the abutted portion 19 from the rear side.

[FIG. 5]



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Description

[Technical Field]

[0001] The present invention relates to a cap unit and a beverage container.

[Background Art]

[0002] Patent Document 1 describes an example of a known conventional cap unit. The cap unit comprises: a cap main body which closes an upper opening portion of a container main body, and which includes a liquid inlet by which communication between the interior and exterior of the container main body is established; a lid body which is rotatably coupled with the cap main body by way of a hinge, and which opens and closes the liquid inlet; and a locking means which fixes (locks) the lid body to the cap main body at the closed position. The hinge couples a rear end portion of the cap main body to the rear end portion of the lid body, and the locking means fixes the front end portion of the cap main body to the front end portion of the lid body. In addition, in Patent Document 1, the lid body is urged by an elastic member in the opening direction around the hinge to close an air hole.

[Prior Art Document]

[Patent Document]

[0003] [Patent Document 1] Japanese Patent No. 3937428

[Summary of the Invention]

[Problems to be Solved by the Invention]

[0004] If a beverage container comprising this kind of cap unit is subject to impact from the hinge side (rear side) as a result of a drop or similar, the lid body may be displaced to the front side. As a result of this displacement, the locked state of the lid body afforded by the locking means may be unintentionally released and, in turn, the lid body may open and beverage may leak from the container.

[0005] It is an object of the present invention to provide a cap unit and beverage container in which the locked state of the lid body is able to be satisfactorily maintained, even if subject to impact as a result of a drop or similar.

[Means to Solve the Problems]

[0006] In one mode of the present invention, a cap unit affixed to a container main body with an upper opening comprises: a cap main body which closes an upper opening portion of the aforementioned container main body, and which includes a liquid inlet by which communication between the interior and exterior of the container main body is established; a lid body which is disposed on the upper side of the aforementioned cap main body and which covers the aforementioned liquid inlet; a hinge which rotatably couples the aforementioned lid body to the aforementioned cap main body; and a lid locking mechanism which fixes the aforementioned lid body to the aforementioned cap main body, wherein the aforementioned hinge is disposed in the rear portion of the cap unit, the aforementioned lid locking mechanism is disposed in the front portion of the cap unit, the aforementioned lid locking mechanism includes an engaged portion which is provided in one of either the aforementioned cap main body or the aforementioned lid body, and an engaging portion which is provided in the other of either the aforementioned cap main body or the aforementioned lid body and which engages with the aforementioned engaged portion from the front side, the aforementioned cap main body includes an abutted portion, and the aforementioned lid body includes an abutting portion which, when the aforementioned lid body is displaced to the front side, abuts the aforementioned abutted portion from the rear side.

[0007] In the above-mentioned cap unit, the aforementioned engaged portion is provided in the aforementioned lid body, the aforementioned engaging portion is provided in the aforementioned cap main body, the aforementioned lid locking mechanism includes a lock member in which the aforementioned engaging portion is disposed and, in the locked state in which the aforementioned lid body is fixed at the aforementioned closed position by the aforementioned lid locking mechanism, the dimension in the front-rear direction between the aforementioned abutted portion and the aforementioned abutting portion is preferably less than the clearance dimension in the front-rear direction between the aforementioned lock member and the aforementioned lid body.

[0008] In the above-mentioned cap unit, the aforementioned engaging portion is provided in the aforementioned lid body, the aforementioned engaged portion is provided in the aforementioned cap main body, and the aforementioned lid locking mechanism includes a lock member in which the aforementioned engaged portion is disposed, wherein in the locked state in which the aforementioned lid body is fixed at the aforementioned closed position by the aforementioned lid locking mechanism, the dimension in the front-rear direction between the aforementioned abutted portion and the aforementioned abutting portion is preferably less than the engagement dimension in the front-rear direction between the aforementioned engaged portion and the aforementioned engaging portion.

[0009] In the above-mentioned cap unit, the aforementioned cap main body includes a first bearing portion which extends along the hinge central axis of the aforementioned hinge, the aforementioned lid body includes a second bearing portion which is disposed coaxially with the aforementioned first bearing portion, the aforementioned hinge includes a hinge axle which pivotally sup-

ports the aforementioned first bearing portion and the aforementioned second bearing portion to be able to rotate about the aforementioned hinge central axis, the aforementioned cap main body includes an opposing wall portion which opposes the aforementioned second bearing portion from the front side, wherein the aforementioned abutted portion preferably serves as the aforementioned opposing wall portion and the aforementioned abutting portion preferably serves as the aforementioned second bearing portion.

[0010] In the above-mentioned cap unit, sets of the aforementioned abutted portion and the aforementioned abutting portion are preferably provided in both sides in the left-right direction of the cap unit about the central axis thereof.

[0011] In addition, this mode of the beverage container of the present invention comprises the cap unit described above, along with the aforementioned container main body to which the aforementioned cap unit is affixed.

[0012] In the above-described beverage container, the aforementioned container main body preferably possesses a vacuum insulated structure.

[Effects of the Invention]

[0013] According to this mode of the cap unit and beverage container of the present invention, the locked state of the lid body is able to be satisfactorily maintained even when subject to impact as a result of a drop or similar.

[Brief Description of the Drawings]

[0014]

[FIG. 1] FIG. 1 is a perspective view of a first embodiment of the beverage container of the present invention;

[FIG. 2] FIG. 2 is a cross-sectional view of the beverage container;

[FIG. 3] FIG. 3 is a partial cross-sectional view of the beverage container showing the lid body in the closed state (closed position);

[FIG. 4] FIG. 4 is a partial perspective view of the beverage container showing the lid body in the opened state (opened position);

[FIG. 5] FIG. 5 is a cross-sectional view of the cap unit in which, more specifically, the cross section position differs from that of FIG. 3 in the left-right direction and, in addition, from which the liquid seal packing has been omitted from the drawing; [FIG. 6] FIG. 6 is a partial perspective view of a second embodiment of the beverage container of the present invention showing the lid body in the opened state;

[FIG. 7] FIG. 7 is a partial cross-sectional perspective view of the beverage container showing the lid body in the closed state;

[FIG. 8] FIG. 8 is a partial perspective view of a third embodiment of the beverage container of the present invention showing the lid body in the opened state;

[FIG. 9] FIG. 9 is a partial side view of the beverage container showing the lid body in the closed state; and

[FIG. 10] FIG. 10 is a cross-sectional perspective view of a modified example of the lid locking mechanism.

[Best Mode for Carrying Out the Invention]

<First Embodiment>

[0015] The cap unit 1A and beverage container 100 comprising the same of the first embodiment of the present invention will be hereinafter described with reference to FIGS. 1 to 5. Notably, in the description given hereinbelow, the cap unit 1A may be referred to simply as the cap, and the beverage container 100 may be referred to simply as the container.

[0016] As shown in FIG. 1 and FIG. 2, the beverage container 100 of this embodiment comprises a cap unit 1A; and a bottomed cylindrical container main body 2 to which the cap unit 1A is detachably affixed. The cap unit 1A comprises: a topped cylindrical cap main body 10 which, in other words, has a top wall (ceiling wall); a topped cylindrical lid body 20; a first hinge (hinge) 30 which rotatably couples the lid body 20 to the cap main body 10; an urging portion 60; a liquid seal packing 40 which establishes a seal between the container main body 2 and the cap main body 10; and a lid locking mechanism 50. The cap unit 1A and container main body 2 are disposed mutually coaxially about a central axis C.

[0017] In this embodiment: the direction in which the central axis C extends is referred to as the top-bottom direction and, in the top-bottom direction, the direction from the base surface portion 2a of the container main body 2 to the ceiling wall portion 20a of the lid body 20 is referred to as upward and the direction from the ceiling wall portion 20a to the base surface portion 2a is referred to as downward. The direction orthogonal to the central axis C is referred to as the radial direction and, in the radial direction, the direction approaching the central axis C is referred to as the radially inward direction or simply as inward, and the direction away from the central axis C is referred to as radially outward direction or simply as outward. The direction of circumvolution about the central axis C is referred to as the circumferential direction.

[0018] In addition, in the radial direction, the direction passing through the first hinge 30 and central axis C is referred to as the front-rear direction and, in the front-rear direction, the direction from the first hinge 30 toward the central axis C is referred to as frontward, and the direction from the central axis C toward the first hinge 30 is referred to as rearward. In addition, in the radial direction, the direction orthogonal to the front-rear direction is referred to as the left-right direction and, as shown in FIG. 2, when the beverage container 100 is seen from the front in an upright posture with the ceiling wall portion

20a of the lid body 20 facing vertically upward, in the left-right direction, the direction facing toward the left is referred to as the left side, and the direction facing toward the right is referred to as the right side. In addition, notably, although not shown in the drawings, the position (state) of the beverage container 100 when the ceiling wall portion 20a of the lid body 20 is facing vertically downward is referred to as the inverted position.

[0019] Notably, the central axis C is differentiated as, for example, a later-described nozzle central axis and the hinge central axis A, and may be also referred to as the cap central axis C or container central axis C.

[0020] In addition, as shown in FIG. 3 and FIG. 4, the hinge central axis A of the first hinge 30 extends in the left-right direction. The hinge central axis A is disposed more to the rear than the central axis C. The central axis C and hinge central axis A exist in mutually skewed positions. The direction orthogonal to hinge central axis A is referred to as the hinge radial direction and, in the hinge radial direction, the direction approaching the hinge central axis A is referred to as the hinge radially inward direction, and the direction away from the hinge central axis A is referred to as the hinge radially outward direction. The direction of circumvolution about the hinge central axis A is referred to as the hinge circumferential direction.

[0021] As shown in FIG. 2, the beverage container 100, by virtue of the container main body 2 with a vacuum insulated structure, is able to keep a beverage (liquid contents, fluid) housed in the container main body 2 cool or warm. The container main body 2 is a bottomed cylindrical with an upper opening. Notably, other contents besides beverages may be housed in the container main body 2.

[0022] More specifically, the container main body 2 is configured as a double structure container which includes a bottomed cylindrical outer container 4 and inner container 5 constituted from, for example, stainless steel, in which mouth portions of each are joined in a state in which the inner container 5 is housed within the outer container 4.

[0023] As shown in FIG. 3, an upper end cylinder portion of the inner container 5 is fitted within an upper end cylinder portion of the outer container 4 and, in this fitted state, the upper end cylinder portions thereof are welded. As a result, the upper opening portion 2d of the container main body 2 defines a tapering shape which is referred to as a so-called "fillet weld structure".

[0024] In addition, a vacuum insulated layer 6 is provided between the outer container 4 and the inner container 5. As a result of the closure of a de-aeration hole provided in the centre of the base surface portion of the outer container 4, the vacuum insulated layer 6 is able to be formed in a chamber which, for example, has been decompressed (evacuated) to a high vacuum.

[0025] As shown in FIG. 1 and FIG. 2, the container main body 2 includes a substantially disc-shaped base surface portion 2a; a trunk portion 2b of a substantially cylindrical shape of which a lower end portion connects with an outer circumferential portion of the base surface portion 2a; a neck portion 2c of a substantially cylindrical shape which is disposed on the upper side of the trunk portion 2b and which narrows in diameter from the trunk portion 2b; and a shoulder portion 2e of a substantially tapered shape that narrows in diameter as it extends toward the upper side, and which connects the upper end portion of the trunk portion 2b to the lower end portion of the neck portion 2c.

[0026] As shown in FIG. 3, inner circumferential portion of the neck portion 2c narrows in diameter from the inner circumferential surface of the trunk portion 2b. In addition, a male thread portion 7 is provided in the outer circumferential portion of the neck portion 2c. In addition, the upper end portion of the neck portion 2c defines a circular opening that serves as an upper opening portion 2d of the container main body 2.

[0027] Notably, while the overall external appearance of the beverage container 100 of this embodiment defines a substantially cylindrical shape as shown in FIG. 1, there are no particular limitations to the external appearance of the beverage container 100, and various modifications, as appropriate, may be made to the size and design and so on thereof. In addition, the outer surfaces (top surfaces) of the container main body 2, cap main body 10 and lid body 20 may be coated or printed, or similar.

[0028] As shown in FIG. 3, the cap unit 1A is configured as a stopper which is affixed to the neck portion 2c of the container main body 2, and which closes the upper opening portion 2d of the container main body 2.

[0029] The cap main body 10 constitutes a member which is constituted from a heat-resistant resin such as polypropylene (PP) or similar, and which closes the upper opening portion 2d of the container main body 2. As shown in FIG. 3 to FIG. 5, the cap main body 10 includes a top wall portion 10a; a circumferential wall portion 10b; a cylinder portion 14; a first bearing portion 18; and an opposing wall portion (abutted portion) 19. Notably, FIG. 3 and FIG. 5 show cross-sections (vertical cross section) that are parallel to the central axis C of the cap unit 1A and, more specifically, FIG. 3 is a vertical cross-sectional view which is perpendicular to the left-right direction and which incorporates the central axis C, while FIG. 5 is a vertical cross-sectional view (vertical cross-sectional view at a position offset rightward from the central axis C) which is perpendicular to the left-right direction and of which the position in the left-right direction differs from that of FIG. 3.

[0030] The top wall portion 10a covers the upper opening portion 2d of the container main body 2 from the upper side. The top wall portion 10a describes a substantially annular plate shape. The wall portion 10a includes a nozzle portion 11 which protrudes upward from the top wall portion 10a. The nozzle portion 11 defines a cylindrical shape which extends in the top-bottom direction, and the nozzle central axis not shown in the diagram is positioned frontward from the central axis C of the container.

[0031] The nozzle portion 11 includes an interior liquid inlet 12. In other words, the cap main body 10 includes the liquid inlet 12. The liquid inlet 12 penetrates the top wall portion 10a in the top-bottom direction so as to establish communication between the interior and exterior of the container main body 2. That is to say, the liquid inlet 12 extends within the nozzle portion 11 in the top-bottom direction, and openings are provided in each of the upper end portion and lower end portion of the nozzle portion 11.

[0032] In addition, the top wall portion 10a includes a vent hole 13 which penetrates the top wall portion 10a in the top-bottom direction so as to establish communication between the interior and exterior of the container main body 2. In other words, the cap main body 10 includes the vent hole 13. The vent hole 13 is disposed in the front-rear direction between the nozzle portion 11 (liquid inlet 12) and the first hinge 30. In this embodiment, the vent hole 13 defines a circular shape, and is located rearward from the central axis C of the container.

[0033] In the closed state of the lid body 20 shown in FIG. 3, the liquid inlet 12 and the vent hole 13 are covered by the lid body 20. In addition, in the opened state of the lid body 20 shown in FIG. 4, the liquid inlet 12 and the vent hole 13 open upward.

[0034] As shown in FIG. 3, the circumferential wall portion 10b defines a cylindrical shape which extends downward from the outer circumferential portion of the top wall portion 10a. The circumferential wall portion 10b encloses neck portion 2c from the radially outward direction around the entire circumference in the circumferential direction. The lower end of the circumferential wall portion 10b either opposes the shoulder portion 2e from the upper side with a gap therebetween, or is contiguous therewith. The circumferential wall portion 10b defines a substantially cylindrical shape which extends in the top-bottom direction is such a way as to be continuous with the trunk portion 2b of the container main body 2.

[0035] The circumferential wall portion 10b includes a female thread portion 15 provided in the inner circumferential surface of the circumferential wall portion 10b. The female thread portion 15 is screwed together with a male thread portion 7 of the neck portion 2c. That is to say, the cap main body 10, in a state that covers the upper opening portion 2d of the container main body 2, is detachably affixed by screwing to the exterior of the neck portion 2c.

[0036] The cylinder portion 14, which defines a cylindrical shape about the central axis C, extends downward from the top wall portion 10a. As seen from the lower side, the cylinder portion 14 defines an annular shape that surrounds the liquid inlet 12. More specifically, as seen from the lower side, the cylinder portion 14 encloses the liquid inlet 12 from the radially outward direction around the entire circumference in the circumferential direction. The cylinder portion 14 is inserted in the neck portion 2c.

[0037] As shown in FIG. 3 and FIG. 4, the first bearing portion 18 is disposed in the upper end portion and rear end portion of the cap main body 10. More specifically, the first bearing portion 18 is disposed in the centre portion and the rear portion in the left-right direction of the top wall portion 10a. The first bearing portion 18 protrudes upward and rearward from the top wall portion 10a. The first bearing portion 18 defines a substantially cylindrical shape which extends along the hinge central axis A of the first hinge 30.

[0038] The first bearing portion 18 includes a bushing portion 18a and a connecting wall portion 18b. The bushing portion 18a, which defines a cylindrical shape about the hinge central axis A, extends in the left-right direction. Because the bushing portion 18a constitutes the main body section of the first bearing portion 18, it may also be referred to as the main body portion 18a. The connecting wall portion 18b connects the bushing portion 18a with the top wall portion 10a. More specifically, the connecting wall portion 18b connects the bottom portion of the outer circumferential surface of the bushing portion 18a with the rear end portion of the upper surface of the top wall portion 10a. Notably, because the connecting wall portion 18b constitutes the joint section of the first bearing portion 18, it may also be referred to as the joint portion 18b.

[0039] As shown in FIG. 4 and FIG. 5, the opposing wall portion 19 is disposed in the upper end portion and rear end portion of the cap main body 10. More specifically, the opposing wall portion 19 defines a rib shape which is disposed in the rear end portion of the top wall portion 10a, which protrudes upward from the top wall portion 10a, and which extends in the left-right direction. The opposing wall portion 19 is disposed, in the front-rear direction, between the vent hole 13 and the first hinge 30. The opposing wall portion 19, in the left-right direction, is disposed alongside the connecting wall portion 18b of the first bearing portion 18.

[0040] The opposing wall portion 19 includes a rear surface 19a that faces rearward. In this embodiment, the rear surface 19a defines an inclined surface shape extending rearward toward the lower side. More specifically, the rear surface 19a defines a concave surface shape about the hinge central axis A. That is to say, in the vertical cross-sectional view of FIG. 5, the rear surface 19a defines a concave arc shape about the hinge central axis A.

[0041] As shown in FIG. 4, in this embodiment, a pair of opposing wall portions 19 are provided with a gap therebetween in the left-right direction. The left (first) opposing wall portion 19 of the pair of opposing wall portions 19 is disposed adjacent to the left connecting wall portion 18b of the first bearing portion 18. The right opposing wall portion 19 (second) of the pair of opposing wall portions 19 is disposed adjacent to the right connecting wall portion 18b of the first bearing portion 18.

[0042] In this embodiment, the opposing wall portions 19 are mutually connected with the connecting wall portions 18b of the first bearing portion 18. More specifically,

the right end portion of the left opposing wall portion 19 of the pair of opposing wall portions 19 is connected with the left lower end portion of the connecting wall portion 18b of the first bearing portion 18. In addition, the left end portion of the right opposing wall portion 19 of the pair of opposing wall portions 19 is connected with the right lower end portion of the connecting wall portion 18b of the first bearing portion 18.

[0043] As shown in FIG. 3, the lid body 20 is disposed in the upper side of the cap main body 10. The lid body 20 constitutes a member which covers the upper portion of the cap main body 10, and which openably and closeably covers the liquid inlet 12 and vent hole 13. The lid body 20 includes a heat-resistant section manufactured from, for example, polypropylene (PP) (for example, a section other than the later described liquid sealing portion 21, vent sealing portion 22 and cover member 24.

As shown in FIG. 3 to FIG. 5, the lid body 20 includes a: ceiling wall portion 20a; a lid circumferential wall portion 20b; a liquid sealing portion 21; a vent sealing portion 22; a second bearing portion (abutting portion) 23; and a cover member 24.

[0044] The ceiling wall portion 20a is disposed in the upper side of the top wall portion 10a of the cap main body 10. In this embodiment, the ceiling wall portion 20a defines a panel shape which extends in the front-rear direction, and which inclines from the first hinge 30 upward toward the front side.

[0045] As shown in FIG. 3, the ceiling wall portion 20a includes: a hole portion 20c that penetrates the ceiling wall portion 20a in the top-bottom direction; and a support cylinder 20d which is disposed in the front-rear direction between the hole portion 20c and the first hinge 30 and which protrudes downward from the ceiling wall portion 20a.

[0046] The lid circumferential wall portion 20b defines a cylindrical shape which extends downward from the outer circumferential portion of the ceiling wall portion 20a. The lid circumferential wall portion 20b is disposed in such a way as to enclose the periphery of the top wall portion 10a of the cap main body 10.

[0047] The liquid sealing portion 21 is constituted from a heat-resistant rubber or an elastomer such as, for example, silicone rubber. That is to say, the liquid sealing portion 21 is elastically deformable. The liquid sealing portion 21 is detachably affixed to the ceiling wall portion 20a of the lid body 20. When the lid body 20 is in the closed state, the liquid sealing portion 21 is in liquid-tight contact with the opening portion on the upper side of the nozzle portion 11. As a result, the liquid sealing portion 21 openably closes the liquid inlet 12 from the upper side. The liquid sealing portion 21 constitutes a stopper-like sealing member which closes the liquid inlet 12 of the nozzle portion 11.

[0048] The liquid sealing portion 21 includes a shaft portion 21a that fits into a hole portion 20c, and a stopper portion 21b which defines a substantially dome shape that defines a convex shape toward the lower side, and which is connected to the lower end portion of the shaft portion 21a. The liquid sealing portion 21 is detachable from the hole portion 20c. Accordingly, the lid body 20 and the liquid sealing portion 21 are able to be washed separately, and cleanliness of the section between the lid body 20 and the liquid sealing portion 21 is able to be maintained.

[0049] When the lid body 20 of the cap unit 1A is at the closed position as shown in FIG. 3, the stopper portion 21b of the liquid sealing portion 21 abuts the upper end opening edge of the nozzle portion 11, in other words, abuts the periphery of the opening portion of the liquid inlet 12 whereupon, as the stopper portion 21b elastically deforms, a state of close attachment to the periphery of the opening portion of the liquid inlet 12 is established. As a result, the liquid inlet 12 of the nozzle portion 11 is able to be closed by the liquid sealing portion 21.

[0050] The vent sealing portion 22 is constituted from a heat-resistant rubber or elastomer or similar elastic member such as, for example, silicone rubber. That is to say, the vent sealing portion 22 is elastically deformable. The vent sealing portion 22 is detachably affixed to the ceiling wall portion 20a of the lid body 20. When the lid body 20 is in the closed state, the vent sealing portion 22 is in liquid-tight contact with the upper side opening portion of the vent hole 13. As a result, the vent sealing portion 22 openably closes the vent hole 13 from the upper side. The vent sealing portion 22 constitutes a bottomed cylindrical sealing member which closes the vent hole 13.

[0051] The vent sealing portion 22 is externally fitted to the support cylinder 20d. The vent sealing portion 22 is detachable from the support cylinder 20d. Accordingly, the lid body 20 and the vent sealing portion 22 are able to be washed separately, and cleanliness between the lid body 20 and vent sealing portion 22 is able to be maintained.

[0052] When the lid body 20 of this cap unit 1A is at the closed position, the base portion of the vent sealing portion 22 abuts the periphery of the opening portion of the vent hole 13 and, as the base portion elastically deforms, a state of close attachment to the periphery of the opening portion of the vent hole 13 is established. As a result, the vent hole 13 is able to be closed by the vent sealing portion 22.

[0053] Notably, in this embodiment, the liquid sealing portion 21 and the vent sealing portion 22 are integrally fabricated as a single member. Accordingly, the number of components is able to be reduced and, in turn, the likelihood of the loss of component members during washing or the like is able to be suppressed.

[0054] As shown in FIG. 5, the second bearing portion 23 is disposed in the rear end portion of the lid body 20. More specifically, the second bearing portion 23, which protrudes from the ceiling wall portion 20a to the lower side and protrudes in the radially inward direction from the lid circumferential wall portion 20b, is disposed in the rear end portion of the ceiling wall portion 20a and the

rear end portion of the lid circumferential wall portion 20b,.

[0055] As shown in FIG. 4, the second bearing portion 23, which defines a substantially cylindrical shape that extends along the hinge central axis A of the first hinge 30, is disposed coaxially with the bushing portion 18a of the first bearing portion 18. The second bearing portion 23, in the left-right direction, is disposed alongside the bushing portion 18a of the first bearing portion 18.

[0056] In this embodiment, the pair of second bearing portions 23 are provided with an interval therebetween in the left-right direction. The left (first) second bearing portion 23 of the pair of second bearing portions 23 is disposed adjacent to the left side of the bushing portion 18a of the first bearing portion 18. The right (second) second bearing portion 23 of the pair of second bearing portions 23 is disposed adjacent to the right side of the bushing portion 18a of the first bearing portion 18.

[0057] As shown in FIG. 5, the second bearing portion 23 opposes the opposing wall portion 19 from the rear side. To put this another way, the opposing wall portion 19 opposes the second bearing portion 23 from the front side. In this embodiment, in the front-rear direction, a gap of a dimension L1 is provided between the opposing wall portion 19 and the second bearing portion 23. More particularly, in the hinge radial direction, a gap of dimension L1 which is constant along the hinge circumferential direction is provided between the rear surface 19a of the opposing wall portion 19 and the outer circumferential surface of the second bearing portion 23. When the lid body 20 is displaced frontward due to impact as a result of a drop or similar, the second bearing portion 23 abuts the opposing wall portion 19 from the rear side.

[0058] As shown in FIG. 4, the left (first) opposing wall portion 19 of the pair of opposing wall portions 19 abuts the left (first) second bearing portion 23 of the pair of second bearing portions 23 from the front side. In addition, the right (second) opposing wall portion 19 of the pair of opposing wall portions 19 abuts the right (second) second bearing portion 23 of the pair of second bearing portions 23 from the front side. That is to say, in this embodiment, sets of mutually opposing wall portions (abutted portions) 19 and second bearing portions (abutting portions) 23 are provided in both sides in the left-right direction about the central axis C of the cap unit 1A.

[0059] The cover member 24 defines a substantially cylindrical-shaped member or a substantially annular plate-like member about the hinge central axis A (see FIG. 7). The cover member 24 is disposed adjacent in the left-right direction to one of the second bearing portion 23 of the pair of second bearing portions 23. A material that differs from the second bearing portion 23, for example, a material of superior abrasion resistance than the second bearing portion 23 such as polyacetal (POM) or acrylonitrile butadiene styrene (ABS) is suitable for employment as the cover member 24.

[0060] As shown in FIG. 4, in this embodiment, the cover member 24 is provided between the right (second) second bearing portion 23 of the pair of second bearing portions 23 and the bushing portion 18a of the first bearing portion 18. The cover member 24 and the second of the second bearing portions 23 mutually engage in a state in which relative movement in the hinge circumferential direction is restricted. In addition, the cover member 24 and bushing portion 18a are rotatable in the hinge circumferential direction and, more specifically, are in slidable contact.

[0061] As shown in FIG. 3, the first hinge 30 is disposed in the rear portion of the cap unit 1A. The first hinge 30 couples the upper side rear end portion of the cap main body 10 to the rear end portion of the lid body 20 so as to be relatively rotatable in the hinge circumferential direction. The lid body 20, as a result of being connected to the cap main body 10 by way of the first hinge 30, is rotatable between a position for closing the liquid inlet 12 and vent hole 13 shown in FIG. 3 (closed position) and the position for opening the liquid inlet 12 and vent hole 13 shown in FIG. 4 (open position).

[0062] The first hinge 30 includes a hinge axle 31 which pivotally supports the first bearing portion 18 and second bearing portion 23 to be able to rotate about the hinge central axis A. The hinge axle 31 defines a shaft shape which extends in the left-right direction, and which is inserted in the bushing portion 18a of the first bearing portion 18, the pair of second bearing portions 23, the cover member 24, and the urging portion 60 (see FIG. 7). The hinge axle 31 is constituted as a shaft or a pipe made from, for example, stainless steel.

[0063] The urging portion 60 urges the lid body 20 around the first hinge 30 (in other words, the hinge circumferential direction) in the opening direction with respect to the cap main body 10 (see FIG. 7). In this embodiment, the urging portion 60 is provided within the first hinge 30. The urging portion 60 constitutes a torsion coil spring that extends in a spiral shape about the hinge central axis A. The urging portion 60 of this embodiment, which is disposed along the interior of the bushing portion 18a of the first bearing portion 18 and the interior of the cover member 24, urges the lid body 20 in the opening direction with respect to the first bearing portion 18 by urging the second of the second bearing portions 23, by way of the cover member 24, in the hinge circumferential direction. When the locked state afforded by the lid locking mechanism 50 is released as a result of this urging force, the lid body 20 rotates from the closed position toward the open position around the first hinge 30.

[0064] As shown in FIG. 3, the liquid seal packing 40 is detachably affixed to the inner side of the cap main body 10. The liquid seal packing 40, which constitutes an annular sealing member for establishing a seal (liquid seal) between the container main body 2 and the cap main body 10, is constituted from a heat-resistant rubber or elastomer or similar elastic member such as, for example, silicone rubber. That is to say, the liquid seal packing 40 is elastically deformable. More specifically, the liquid seal packing 40 of this embodiment provides a liq-

uid-tight seal between the upper opening portion 2d of the container main body 2 and the top wall portion 10a of the cap main body 10. Notably, in FIG. 3, the elastically deformable part of the liquid seal packing 40 is shown by the double-dot dashed line (virtual line).

[0065] The liquid seal packing 40 is affixed to the cap main body 10 in a state in which it is externally fitted to the cylinder portion 14. In addition, the liquid seal packing 40 is able to be removed from the cylinder portion 14. As a result, the cap main body 10 and the liquid seal packing 40 are able to be separately washed, and cleanliness between the cap main body 10 and the liquid seal packing 40 is able to be maintained.

[0066] The liquid seal packing 40 includes a cylindrical packing circumferential wall 41 which is externally fitted to the cylinder portion 14, an annular sealing flange 42 which expands in the radially outward direction from the packing circumferential wall 41 and which establishes a seal between the upper opening portion 2d of the container main body 2 and the top wall portion 10a of the cap main body 10, and an extending flange portion 43 extends in the radially inward direction from the lower end portion of the packing circumferential wall 41.

[0067] The packing circumferential wall 41 extends in the top-bottom direction about the central axis C, and mates with the cylinder portion 14 on the outer side thereof. The inner circumferential surface of the packing circumferential wall 41 is contiguous with the outer circumferential surface of the cylinder portion 14. The lower end portion of the packing circumferential wall 41 protrudes downward from the lower end portion of the cylinder portion 14.

[0068] The sealing flange 42 defines a substantially annular plate shape about the central axis C. The sealing flange 42 protrudes in the radially outward direction from the upper end portion of the packing circumferential wall 41, extending in the circumferential direction. As shown by the double-dot dashed line of FIG. 3, in this embodiment the sealing flange 42 includes a groove portion 42a which indents in the radially inward direction from the outer circumferential surface of the sealing flange 42 extending in the circumferential direction, and a pair of flange portions 42b disposed in the upper side and lower side of the groove portion 42a. Accordingly, the cross-sectional shape (vertical cross-sectional shape) of the sealing flange 42 parallel to the central axis C defines a substantially C-shape or substantially U-shape which opens in the radially outward direction.

[0069] Of the pair of flange portions 42b, the upper surface of the upper side flange portion is contiguous with the lower surface of the top wall portion 10a. In other words, the upper surface of the sealing flange 42 is contiguous with the lower surface of the top wall portion 10a. The thickness (plate thickness) of the one of the pair of flange portions 42b is less than the thickness of the packing circumferential wall 41. The pair of flange portions 42b, even within the liquid seal packing 40, are particularly easily elastically deformable and able to be firmly attached to each of the upper opening portion 2d and the top wall portion 10a whereupon, as a result, a stable seal is able to be established therebetween.

[0070] The extending flange portion 43 defines an annular plate shape about the central axis C. The extending flange portion 43 protrudes in the radially inward direction from the lower end portion of the packing circumferential wall 41, extending in the circumferential direction. The extending flange portion 43 is disposed directly below the circumferential wall of the cylinder portion 14. A gap is provided in the top-bottom direction between the upper surface of the extending flange portion 43 and the lower end surface of the cylinder portion 14. Accordingly, during the assembly of the liquid seal packing 40, for example, contact of the extending flange portion 43 with the lower end surface of the cylinder portion 14 as a result of a component manufacturing error or the like is able to be suppressed, and in turn, instability of the firm attached state between the sealing flange 42 and the top wall portion 10a is able to be suppressed.

[0071] As shown in FIG. 1, FIG. 3 and FIG. 4, the lid locking mechanism 50 is disposed in the front portion of the cap unit 1A. The lid locking mechanism 50, resisting the rotational urging force in the opening direction around the first hinge 30 (hinge central axis A), fixes the lid body 20 to the cap main body 10 at the closed position (closed state) described above. The lid locking mechanism 50 fixes the front end portion of the cap main body 10 to the front end portion of the lid body 20. Notably, FIG. 1 and FIG. 3 show a state in which the lid body 20 is fixed at the closed position by the lid locking mechanism 50 (locked state), and FIG. 4 shows a state in which the fixing state of the lid body 20 afforded by the lid locking mechanism 50 is released (lock release state).

[0072] The lid locking mechanism 50 includes a second hinge 55 of which the hinge central axis thereof (not shown in the drawing) extends in the left-right direction; a lock member 52 able to rotate round the hinge central axis of the second hinge 55; and a ring stopper (engaging portion) 54 provided to be able to rotate around the hinge central axis of the second hinge 55. In addition, the second hinge 55 includes an inner hinge portion 51, and an outer hinge portion 53 located in the outer side at both sides of the inner hinge portion 51 in the left-right direction. The inner hinge portion 51 and outer hinge portion 53 are disposed coaxially with the hinge central axis of the second hinge 55 serving as a common shaft.

[0073] The lock member 52 is rotatably (swingably) affixed to the cap main body 10 by way of the inner hinge portion 51. The ring stopper 54 is rotatably affixed to the cap main body 10 by way of the outer hinge portion 53. That is to say, each of the lock member 52 and the ring stopper 54 are provided in the cap main body 10.

[0074] The inner hinge portion 51 is provided in the front surface of the circumferential wall portion 10b of the cap main body 10. The inner hinge portion 51 is disposed in the left-right direction on the inner side of the outer hinge portion 53 (in other words, the central axis C side).

The lock member 52 is pivotally supported by the inner hinge portion 51 to be able to rotate in the front-rear direction. The lock member 52 includes an upper side arm portion 52a that extends upward from the hinge central axis of the second hinge 55, and a lower side arm portion 52b that extends downward from the hinge central axis of the second hinge 55. A hook portion (engaging portion) 56 is provided to protrude to the rear side in the distal end portion (upper end portion of the lock member 52) of the upper side arm portion 52a. That is to say, the hook portion 56 is disposed in the lock member 52, and the hook portion 56 is provided in the cap main body 10 by way of the lock member 52 and the inner hinge portion 51. A compression coil spring 57 is provided in a compressed state in the front-rear direction between the lower side arm portion 52b and the circumferential wall portion 10b.

[0075] The outer hinge portion 53 is provided in the front surface of the circumferential wall portion 10b of the cap main body 10. The ring stopper 54 is constituted as a curved, substantially C-shaped member, and both end portions thereof are pivotally supported by the outer hinge portion 53 to be able to rotate in the top-bottom direction.

[0076] In addition, the lid locking mechanism 50 includes a lock receiving portion (engaged portion) 58 with which the hook portion 56 of the lock member 52 engages, and a stopper receiving portion (engaged portion) 59 by which the ring stopper 54 is held. The lock receiving portion 58 defines a clasp shape that protrudes forward from the lower end portion of the front side of the lid body 20. The stopper receiving portion 59, which defines a substantially semi-circular shape that matches the shape of the inner circumferential portion of the ring stopper 54, protrudes frontward from a position on the front surface of the lid body 20 which surrounds the periphery of the lock receiving portion 58. That is to say, each of the lock receiving portion 58 and the stopper receiving portion 59 are provided in the lid body 20.

[0077] More particularly, the lid locking mechanism 50 includes a lock receiving portion (engaged portion) 58 provided in one of either the cap main body 10 or the lid body 20 (the lid body 20 in this embodiment), and a hook portion (engaging portion) 56 which is provided in either of the cap main body 10 or the lid body 20 (the cap main body 10 in this embodiment) and which engages with the lock receiving portion 58 from the front side. In addition, the lower surface of the hook portion 56 engages with the upper surface of the lock receiving portion 58 to be able to move in the front-rear direction.

[0078] In addition, the lid locking mechanism 50 includes a stopper receiving portion (engaged portion) 59 provided in one of either the cap main body 10 or the lid body 20 (the lid body 20 in this embodiment), and the ring stopper (engaging portion) 54 which is provided in either of the cap main body 10 or the lid body 20 (the cap main body 10 in this embodiment) which engages with the stopper receiving portion 59 from the front side. In addition, the inner circumferential portion of the ring stopper 54 engages with the outer circumferential portion of the stopper receiving portion 59 to be able to move in the front-rear direction.

[0079] In addition, as shown in FIG. 3 and FIG. 5, in the locked state in which the lid body 20 is fixed by the lid locking mechanism 50 at the closed position, the dimension L1 in the front-rear direction between the opposing wall portion (abutted portion) 19 and the second bearing portion (abutting portion) 23 is less than the clearance dimension L2 in the front-rear direction between the lock member 52 and the lid body 20. More specifically, in this embodiment, the above-noted clearance dimension L2 refers to a gap dimension (a so-called "play dimension") L2 in the front-rear direction established between the front end of the lock receiving portion 58 and the section of the rear surface of the upper side arm portion 52a of the lock member 52 other than the hook portion 56.

[0080] In this lid locking mechanism 50, with the lid body 20 at the closed position, the state in which the lid body 20, resisting the rotational urging force first hinge 30 in the opening direction, is fixed to the cap main body 10 is established as a result of the hook portion 56 of the lock member 52 being engaged with the lock receiving portion 58.

[0081] The engaged state of the hook portion 56 with the lock receiving portion 58 is released when, from this state, the lower side arm portion 52b of the lock member 52 is pressed rearward as a user compresses the compression coil spring 57. As a result, the lid body 20 urged in the opening direction is able to be rotated to the open position.

[0082] In addition, in this lid locking mechanism 50, with the lid body 20 at the closed position, rotation of the lid body 20 in the opening direction is stopped as a result of the ring stopper 54 being held (engaged) by the stopper receiving portion 59. As a result, in this lid locking mechanism 50, opening of the lid body 20 as a result of an unnecessary (unintended) operation or the like of the lock member 52 can be prevented.

[0083] When the cap unit 1A and beverage container 100 of the embodiment described above is subject to impact from the first hinge 30 side (rear side) as a result of, for example, a drop or similar, the lid body 20 may be displaced to the front side whereupon, in turn, the second bearing portion (abutting portion) 23 of the lid body 20 will abut the opposing wall portion (abutted portion) 19 of the cap main body 10. When the abutting portion 23 abuts abutted portion 19, the impact is absorbed, and further displacement of the lid body 20 to the front side is suppressed. Because the displacement amount of the lid body 20 to the front side is able to be suppressed to a minimum, unintended release of the locked state of the lid body 20 afforded by the lid locking mechanism 50 is able to be suppressed.

[0084] More particularly, because the displacement amount of the lid body 20 to the front side is able to be

suppressed, the engaged state between the lock receiving portion 58 and the hook portion 56 is able to be satisfactorily maintained. In addition, the engaged state between the stopper receiving portion 59 and the ring stopper 54 is able to be satisfactorily maintained. According to the embodiment described above, even when subject to impact as a result of a drop or similar, the locked state of the lid body 20 is able to be satisfactorily maintained, and leakage of the beverage to the container exterior is able to be prevented.

[0085] In addition, in this embodiment, when the lid body 20 is in the locked state, the dimension L1 in the front-rear direction established between the abutted portion 19 and the abutting portion 23 is comparatively less than the clearance dimension L2, in other words the so-called "play dimension" L2 established in the front-rear direction between the lock member 52 and the lid body 20. Accordingly, when the lid body 20 is displaced to the front side due to impact as a result of a drop or similar, the abutted portion 19 abuts initially with the abutting portion 23, and further displacement to the front side in excess of above-noted play dimension L2 of the lid body 20 with respect to the lock member 52 is suppressed thereby. Because the engaged state of the hook portion 56 of the lock member 52 with the lock receiving portion 58 of the lid body 20 is able to be satisfactorily maintained, unintended release of the locked state of the lid body 20 is able to be more stably suppressed.

[0086] In addition, although not shown in the drawings, in the locked state of the lid body 20, when a clearance dimension (play dimension) in the front-rear direction is established between the ring stopper 54 and the lid circumferential wall portion 20b, because the dimension in the front-rear direction L1 between the opposing wall portion (abutted portion) 19 and the second bearing portion (abutting portion) 23 is less than this clearance dimension, the engaged state between the stopper receiving portion 59 and the ring stopper 54 is able to be satisfactorily maintained in the same way as described above.

[0087] In addition, in this embodiment, because the opposing wall portion 19 opposes the second bearing portion 23 from the front side, even when subject to impact from the first hinge 30 side (rear side) in an opened state in which the lid body 20 is at the open position, the impact is able to be absorbed by the opposing wall portion 19 abutting the second bearing portion 23. Accordingly, strength in the vicinity of the first hinge 30 of the cap unit 1A is enhanced, and breakage of the first hinge 30 and so on as a result of a drop or similar is able to be suppressed.

[0088] In addition, in this embodiment, the opposing wall portion 19 and the connecting wall portion 18b of the first bearing portion 18 are mutually connected. In this case, as a result of the enhanced strength of the first bearing portion 18 afforded by the opposing wall portion 19, breakage of the first hinge 30 and so on is able to be suppressed. In addition, as a result of a suppression of the displacement amount to the front side of the lid body 20 to a minimum produced by the improved rigidity of the first bearing portion 18, the actions and effects afforded by the embodiment described above are more stably and successfully produced.

[0089] In addition, in this embodiment, in the vertical cross-sectional view shown in FIG. 5, the rear surface 19a of the opposing wall portion 19 defines a concave arc shape about the hinge central axis A, in other words, a concave surface shape in which the rear surface 19a expands in the hinge circumferential direction.
In this case, the effects of the second bearing portion 23 being held by the opposing wall portion 19 are more stably produced.

[0090] In addition, in this embodiment, sets of the opposing wall portion (abutted portion) 19 and second bearing portion (abutting portion) 23 are provided in each side in the left-right direction about the central axis C of the cap unit 1A.
In this case, not only is the displacement amount of the lid body 20 to the front side able to be suppressed to a minimum, because impact is able to be suppressed by either of the left-right sets of the opposing wall portion (abutted portion) 19 abutting the second bearing portion (abutting portion) 23, the displacement amount of the lid body 20 in respect of rotation from the upper surface view (skew in the left-right direction) with respect to the first hinge 30 is also able to be suppressed to a minimum as a result thereof. Accordingly, the action and effects afforded by the embodiment described above are even more pronounced, and breakage of the first hinge 30 and the like due to the skew displacement (deformation) of the lid body 20 is able to be suppressed.

<Second Embodiment>

[0091] Next, the cap unit 1B and beverage container 100 comprising the same of a second embodiment of the present invention will be hereinafter described with reference to FIG. 6 and FIG. 7. Notably, in this embodiment, a description of component parts the same as those of the previously described embodiment and to which the same name or symbol has been assigned has been omitted.

[0092] FIG. 6 shows an opened state in which the lid body 20 is at the open position, and FIG. 7 shows a closed state in which the lid body 20 is in a closed position. Notably, FIG. 7 is cross sectional perspective view which incorporates a horizontal cross-section perpendicular to the central axis C (not shown in the drawing).

[0093] As shown in FIG. 6 and FIG. 7, the cap main body 10 of this embodiment includes a first wall portion (abutted portion) 70 which faces rearward. The first wall portion 70 constitutes a wall portion which is provided on the top wall portion 10a, and which extends in the left-right direction protruding upward. In this embodiment, the first wall portion 70 is disposed in the front-rear direction between the nozzle portion 11 (liquid inlet 12) and the vent hole 13.

[0094] In addition, the lid body 20 includes a second wall portion (abutting portion) 71 which, when the lid body 20 is displaced to the front side due to impact as a result of a drop or similar, abuts the first wall portion 70 from the rear side. The second wall portion 71 defines a rib shape which extends in the top-bottom direction protruding inward from the inner circumferential surface of the lid circumferential wall portion 20b. In the illustrated example, the protruding amount that the second wall portion 71 protrudes inward from the inner circumferential surface of the lid circumferential wall portion 20b reduces toward the lower side (cap main body 10 side). Notably, with the lid body 20 at the closed position (closed state), the second wall portion 71 may oppose the first wall portion 70 with a gap therebetween or, provided the dimension is able to be precisely controlled, it may be contiguous therewith.

[0095] More specifically, as shown in FIG. 7, in the locked state in which the lid body 20 is fixed at the closed position by the lid locking mechanism 50, the dimension L1 in the front-rear direction between the first wall portion (abutted portion) 70 and second wall portion (abutting portion) 71 is less than the clearance dimension L2 (see FIG. 3) described above.

[0096] In addition, sets of the mutually opposing first wall portion 70 and second wall portion 71 are provided in each side in the left-right direction about the central axis C of the cap unit 1B.

[0097] Action and effects the same as those of the previously described embodiment are afforded by the cap unit 1B and beverage container 100 of this embodiment, In addition, in this embodiment, the abutting position of the first wall portion (abutted portion) 70 with the second wall portion (abutting portion) 71 is able to be arranged more forward than the abutting position between the opposing wall portion (abutted portion) 19 and second bearing portion (abutting portion) 23 of the first embodiment. That is to say, because the above-noted abutting position is established nearer to the lid locking mechanism 50, unintended release of the locked state of the lid body 20 afforded by the lid locking mechanism 50 is more stably able to be suppressed.

<Third Embodiment>

[0098] The cap unit 1C and beverage container 100 comprising the same of the third embodiment of the present invention will be described hereinbelow with reference to FIG. 8 and FIG. 9. Notably, in this embodiment, a description of component parts the same as those of the previously described embodiment and to which the same name or symbol has been assigned has been omitted.

[0099] FIG. 8 shows the opened state with the lid body 20 at the open position, and FIG. 9 shows the closed state with the lid body 20 at the closed position.

[0100] As shown in FIG. 8 and FIG. 9, in this embodiment, the cap main body 10 includes a rib portion (abutted portion) 72 that extends in the left-right direction and which protrudes upward from the top wall portion 10a. In the illustrated example, the rib portion 72 is disposed alongside the nozzle portion 11 (liquid inlet 12) in the left-right direction.

[0101] In addition, the lid body 20 includes a groove portion (abutting portion) 73 with which, with the lid body 20 at the closed position (closed state), the rib portion 72 engages. The groove portion 73 indents from the lower end surface of the lid circumferential wall portion 20b to the upper side, extending in the left-right direction. The groove portion 73 penetrates the lid circumferential wall portion 20b in the left-right direction, and opens at the outer circumferential surface and the inner circumferential surface of the lid circumferential wall portion 20b.

[0102] When the lid body 20 is displaced to the front side due to impact as a result of a drop or similar, the groove portion 73 abuts the rib portion 72 from the rear side. Notably, with the lid body 20 at the closed position (closed state), the groove portion 73 may oppose the rib portion 72 with a gap therebetween or, provided the dimension is able to be precisely controlled, it may be contiguous therewith (mated therewith).

[0103] More specifically, as shown in FIG. 9, in the locked state in which the lid body 20 is fixed at the closed position by the lid locking mechanism 50, the dimension L1 in the front-rear direction between the rib portion (abutted portion) 72 and the groove portion (abutting portion) 73 is less than the clearance dimension L2 described above (see FIG. 3).

[0104] In addition, sets of the mutually opposing rib portion 72 and groove portion 73 are provided in both sides in the left-right direction about the central axis C of the cap unit 1C (not shown in the drawing).

[0105] The cap unit 1C and beverage container 100 of the embodiment described above afford action and effects the same as those of the previously described embodiment. In addition, in this embodiment, the abutting position between the rib portion (abutted portion) 72 and the groove portion (abutting portion) 73 can be established more forward than the abutting position between the opposing wall portion (abutted portion) 19 and second bearing portion (abutting portion) 23 of the first embodiment. That is to say, because the above-noted abutting position is able to be established nearer to the lid locking mechanism 50, unintended release of the locked state of the lid body 20 afforded by the lid locking mechanism 50 is more stably able to be suppressed. Notably, while not shown in the drawings, as a modified example of this embodiment, a configuration in which the cap main body 10 includes a groove portion (abutted portion), the lid body 20 includes a rib portion (abutting portion), and the rib portion abuts the groove portion from the rear side when the lid body 20 is displaced to the front side may be adopted.

[0106] The present invention is not limited to the previously described embodiments and, for example, as described hereinbelow, various modifications that do not

depart from the scope of the present invention may be made thereto.

[0107] While the previously described embodiments cite examples in which the urging portion 60 for urging the lid body 20 in the opening direction around the first hinge 30 is a torsion coil spring disposed within the first hinge 30, this is not limited thereto. The urging portion may be configured from, for example, a vent sealing portion 22. In this case, when the lid body 20 is in the closed state, the upper end portion of the vent sealing portion 22 elastically deforms as a result of being pressed against the top wall portion 10a, and the lid body 20 is urged in the opening direction around the first hinge 30 by the deformation restoring force. In addition, while not shown in the drawings, the urging portion may be configured as an annular elastic member which is latched to the first hinge 30 and the ceiling wall portion 20a, and which urges the lid body 20 in the opening direction around the first hinge 30.

[0108] Although the previously described embodiment describes the lock member 52 of the lid locking mechanism 50 as being able to rotate about the second hinge 55, this is not limited thereto. FIG. 10 shows a modified example of the lid locking mechanism 50. In this modified example, the lid locking mechanism 50 includes a lock member 81 which is slidably moveable in the front-rear direction, and an elastic deformable elastic member 82 which urges the lock member 81 to the front side. The lock member 81 and elastic member 82 are provided in the cap main body 10. The elastic member 82 is elastically deformable in the front-rear direction and, for example, is configured from rubber or elastomer, or as a compression coil spring or the like.

[0109] In addition, a first latch portion (engaged portion) 83 is provided in the upper end portion of the lock member 81 to protrude forward.

In addition, a second latch portion (engaging portion) 84 which protrudes rearward is provided in the front lower end portion of the lid circumferential wall portion 20b of the lid body 20. The second latch portion (engaging portion) 84 engages with the first latch portion (engaged portion) 83 from the front side.

[0110] More particularly, the lid locking mechanism 50 includes a first latch portion (engaged portion) 83 of the lock member 81 provided in one of either the cap main body 10 or the lid body 20 (the cap main body 10 in the modified example), and a second latch portion (engaging portion) 84 which is provided in the other of either the cap main body 10 or the lid body 20 (the lid body 20 in this modified example) and which engages with the first latch portion 83 from the front side. The adoption of the lid locking mechanism 50 of the modified example shown in FIG. 10 affords action and effects the same as those of the previously described embodiments.

[0111] In addition, in this modified example, in the locked state in which the lid body 20 if fixed at the closed position by the lid locking mechanism 50 as shown in FIG. 10, the dimension L1 in the front-rear direction between the abutted portion (for example, opposing wall portion 19 of the first embodiment) and abutting portion (for example, second bearing portion 23 of the first embodiment) is preferably less than the engagement dimension in the front-rear direction between the first latch portion (engaged portion) 83 and the second latch portion (engaging portion) 84. Notably, the engagement dimension noted above corresponds to a dimension in the front-rear direction of the engaging section where the lower surface of the first latch portion 83 and the upper surface second latch portion 84 are contiguous, and it may also be referred to as an overlap allowance. In this case, when the lid body 20 is displaced to the front side due to impact as a result of a drop or similar, because the abutted portion 19 initially abuts with the abutting portion 23, displacement of the lid body 20 forward in an amount in excess of the engagement dimension noted above is suppressed. As a result, because the engaged state of the first latch portion 83 of the lock member 81 with the second latch portion 84 of the lid body 20 is maintained, unintended release of the locked state of the lid body 20 is able to be stably suppressed.

[0112] Although the previously described embodiments cite examples of the adoption of the present invention in a beverage container 100 to which a function for retaining heat and cold is imparted as a result of the use of a container main body 2 with a vacuum insulated structure, this is not limited thereto. That is to say, the present invention is able to have broad application in capped containers in which cap unit closes the upper opening portion of a container main body.

[0113] The present invention may be constituted as a combination of the various configurations described in the embodiments and modified examples above, and various additions, deletions, substitutions and other modifications may be made thereto provided such configurations do not depart from the scope of the present invention. In addition, the present invention is not limited to the embodiments described above, and is limited only by the claims thereof.

[Explanation of Symbols]

[0114] 1A, 1B, 1C...Cap unit, 2...Container main body, 2d...Upper opening portion, 10... Cap main body, 12...Liquid inlet, 18...First bearing portion, 19...Opposing wall portion (abutted portion), 20...Lid body, 23...Second bearing portion (abutting portion), 30...First hinge (hinge), 31... Hinge axle, 50...Lid locking mechanism, 52, 81...Lock member, 54...Ring stopper (engaging portion), 56...Hook portion (engaging portion), 58...Lock receiving portion (engaged portion), 59... Stopper receiving portion (engaged portion), 60...Urging portion, 70...First wall portion (abutted portion), 71...Second wall portion (abutting portion), 72...Rib portion (abutted portion), 73...Groove portion (abutting portion), 83...First latch portion (engaged portion), 84... Second latch portion (engaging portion), 100...Beverage container, A... Hinge central axis,

C... Central axis, L1... Dimension, L2... Clearance dimension

Claims

1. Ac ap unit affixed to a container main body with an upper opening portion, which cap unit is **characterized by** comprising:

   a cap main body which closes the upper opening portion of said container main body, and which includes a liquid inlet by which communication between the interior and exterior of said container main body is established;
   a lid body which is disposed on the upper side of said cap main body, and which covers said liquid inlet;
   a hinge which rotatably couples said lid body to said cap main body; and a lid locking mechanism which fixes said lid body to said cap main body at a closed position; wherein
   said hinge is disposed in the rear portion of the cap unit,
   said lid locking mechanism is disposed in the front portion of the cap unit,
   said lid locking mechanism includes

      an engaged portion provided in one of either said cap main body or said lid body, and
      an engaging portion which is provided in one of either said cap main body and said lid body and which engages with said engaged portion from the front side;

   said cap main body includes an abutted portion, and
   said lid body includes an abutting portion which, when said lid body is displaced to the front side, abuts said abutted portion from the rear side.

2. A cap unit according to Claim 1, **characterized in that**:

   said engaged portion is provided in said lid body, said engaging portion is provided in said cap main body, and
   said lid locking mechanism includes a lock member in which said engaging portion is disposed, wherein
   in a locked state in which said lid body is fixed at said closed position by said lid locking mechanism, a dimension in the front-rear direction between said abutted portion and said abutting portion is less than a clearance dimension in the front-rear direction between said lock member and said lid body.

3. A cap unit according to Claim 1, **characterized in that**:

   said engaged portion is provided in said lid body, said engaging portion is provided in said cap main body, and
   said lid locking mechanism includes a lock member in which said engaging portion is disposed, wherein
   in a locked state in which said lid body is fixed at said closed position by said lid locking mechanism, a dimension in the front-rear direction between said abutted portion and said abutting portion is less than an engagement dimension in the front-rear direction between said engaged portion and said engaging portion.

4. A cap unit according to any of Claims 1 to 3, **characterized in that**:

   said cap main body includes a first bearing portion which extends along a hinge central axis of said hinge,
   said lid body includes a second bearing portion which is disposed coaxially with said first bearing portion,
   said hinge includes a hinge axle which pivotally supports said first bearing portion and said second bearing portion to be able to rotate about said hinge central axis,
   said cap main body includes an opposing wall portion which opposes said second bearing portion from the front side,
   said abutted portion serves as said opposing wall portion, and
   said abutting portion serves as said second bearing portion.

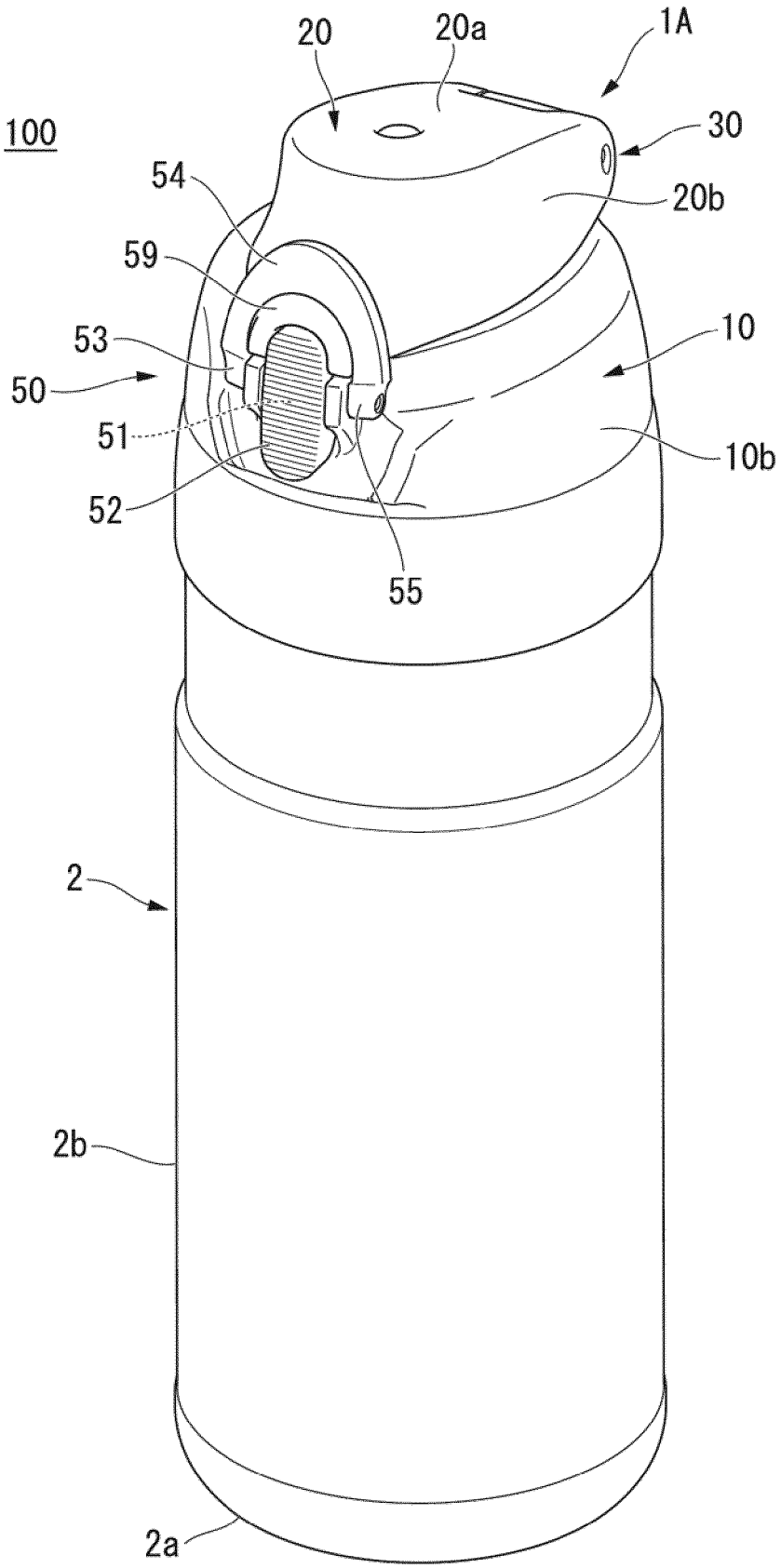
5. A cap unit according to any of Claims 1 to 4, **characterized in that**:
   sets of said abutted portion and said abutting portion are provided in both sides in the left-right direction about the central axis of the cap unit.

6. A beverage container, **characterized by** comprising:

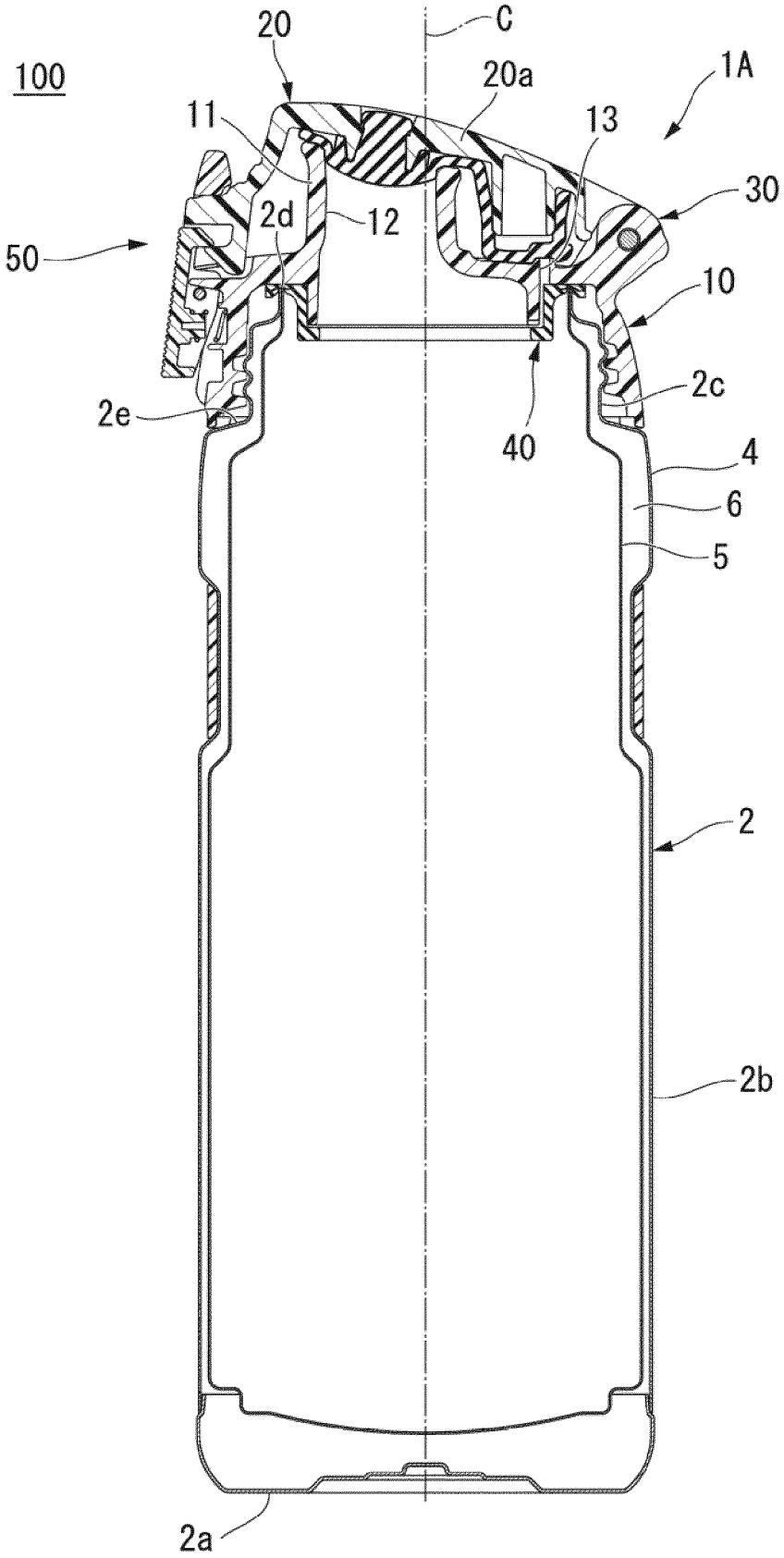
   the cap unit according to any of Claims 1 to 5; and
   said container main body to which said cap unit is affixed.

7. A beverage container according to Claim 6, **characterized in that** said container main body possesses a vacuum insulated structure.

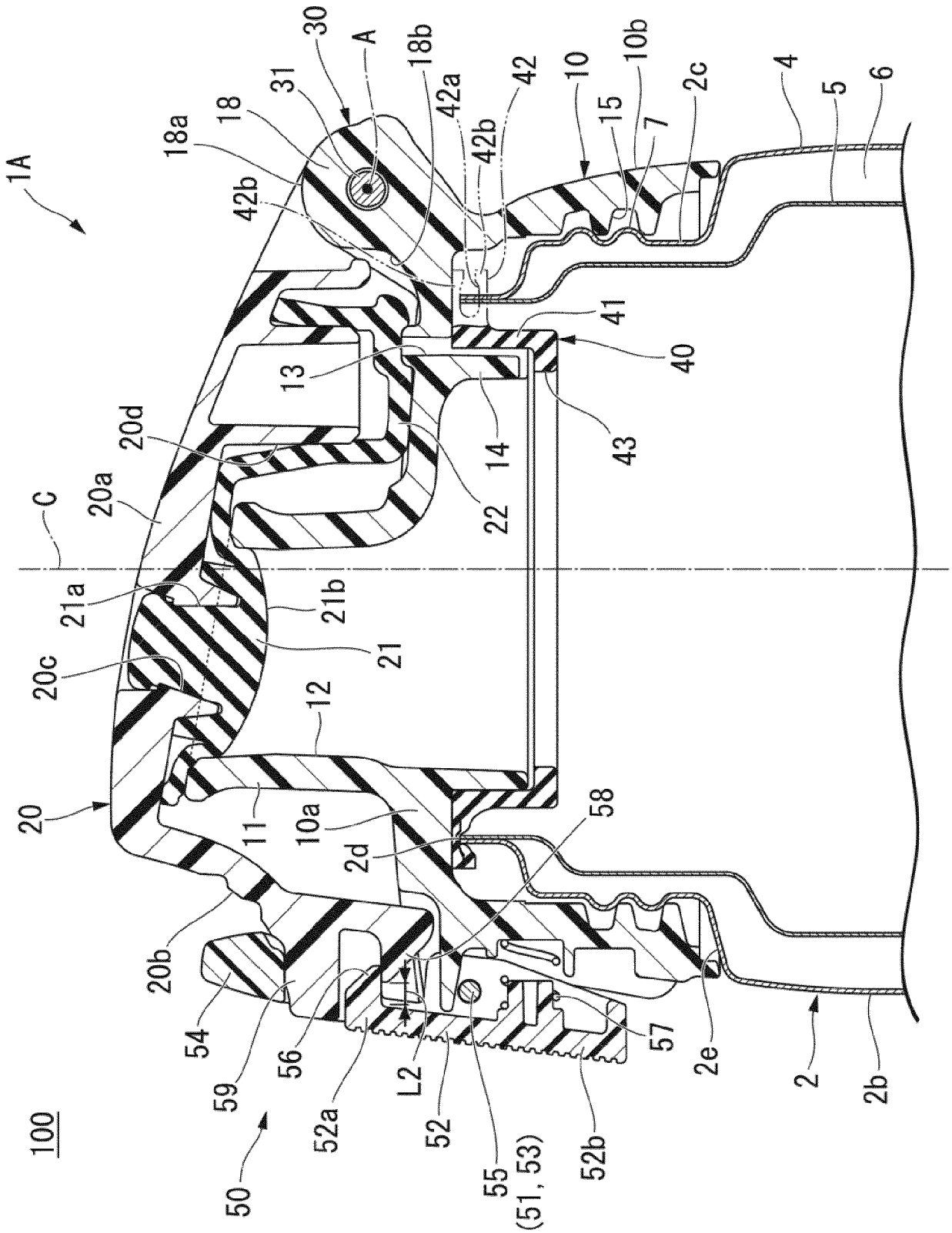
[FIG. 1]



[FIG. 2]



[FIG. 3]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18b
31
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18a
42a
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4
5
6
42b
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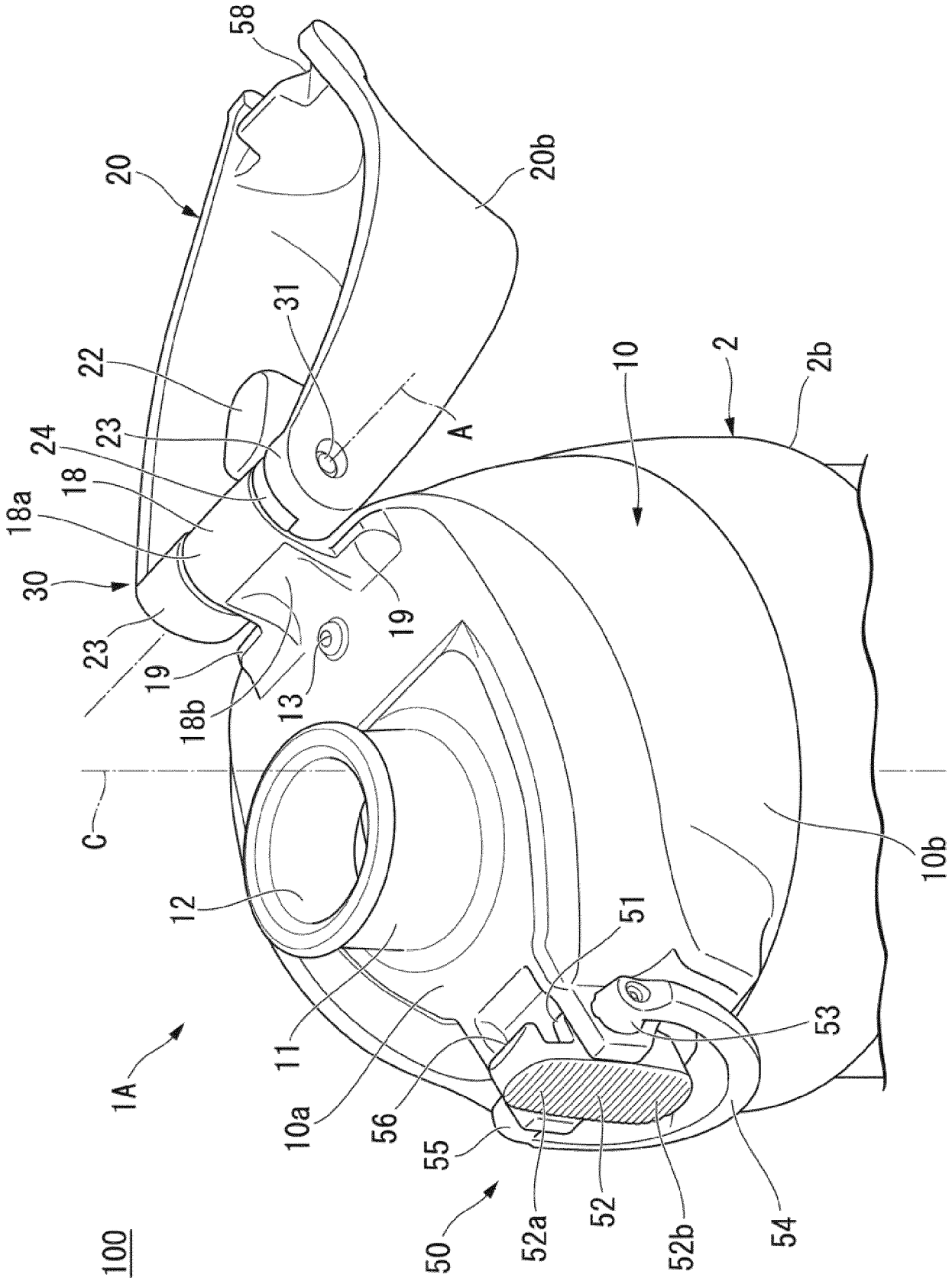
7
41
40
13
14
43
20d
20a
22
C
21a
21b
21
20c
12
20
11
10a
2d
58
20b
54
59
56
52a
L2
52
55
(51, 53)
52b
57
2e
2
2b
50

[FIG. 4]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11
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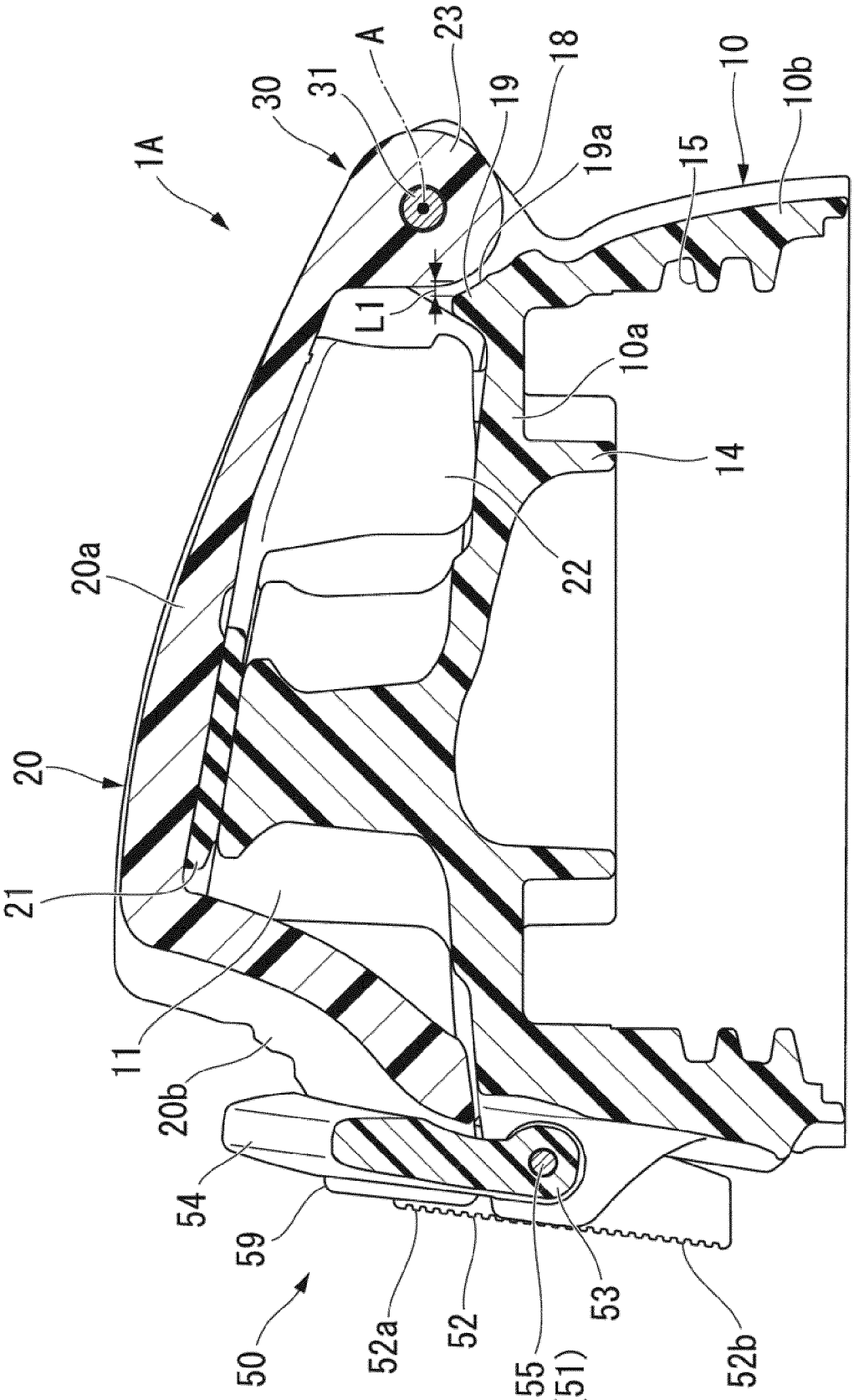
52a
52
52b
54
100

[FIG. 5]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10b
L1
10a
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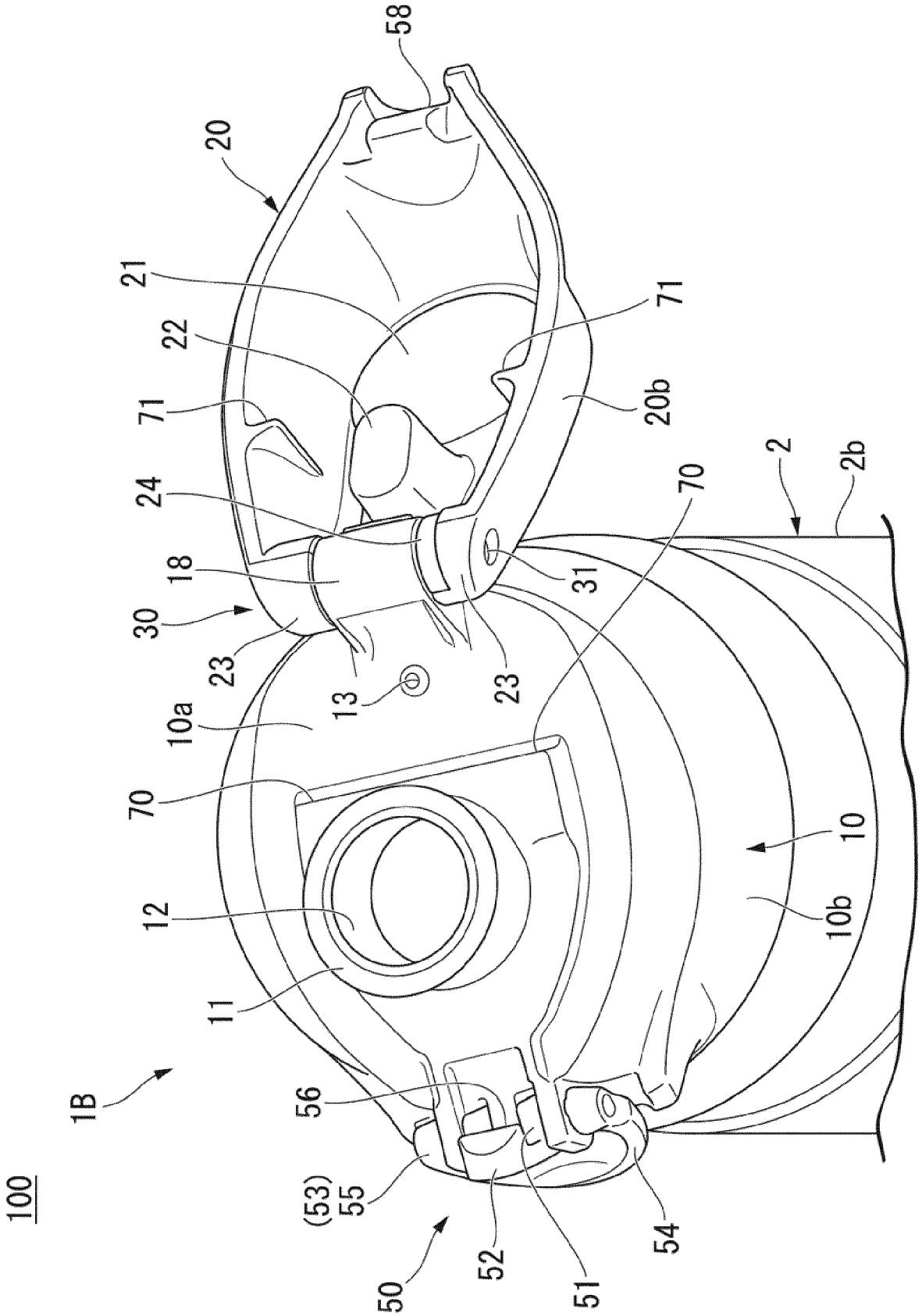
21
11
20b
54
59
50
52a
52
55
(51)
53
52b

[FIG. 6]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12
11
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23
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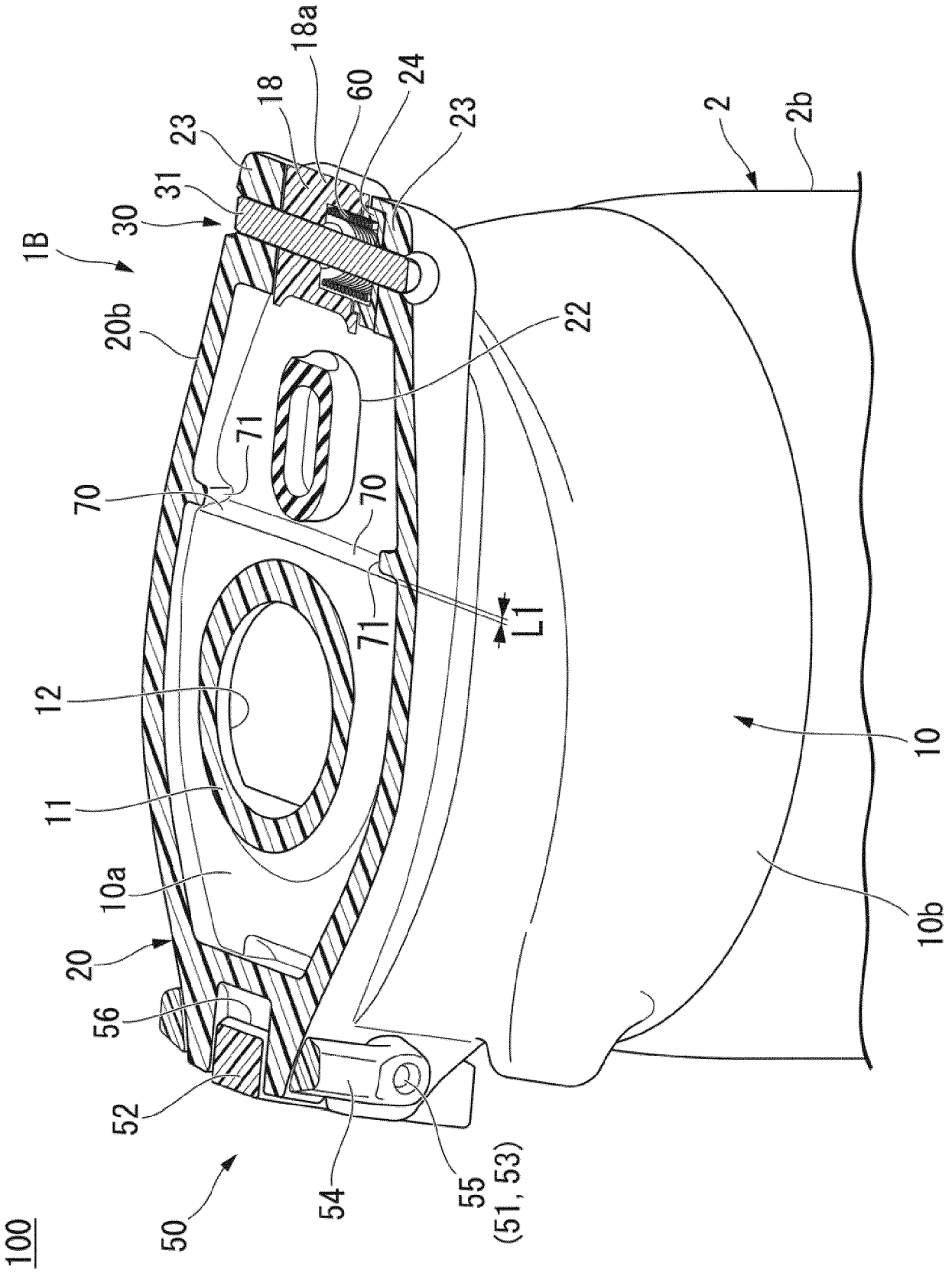
70
71
20b
2
2b
10
10b

[FIG. 7]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10b
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18a
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20b
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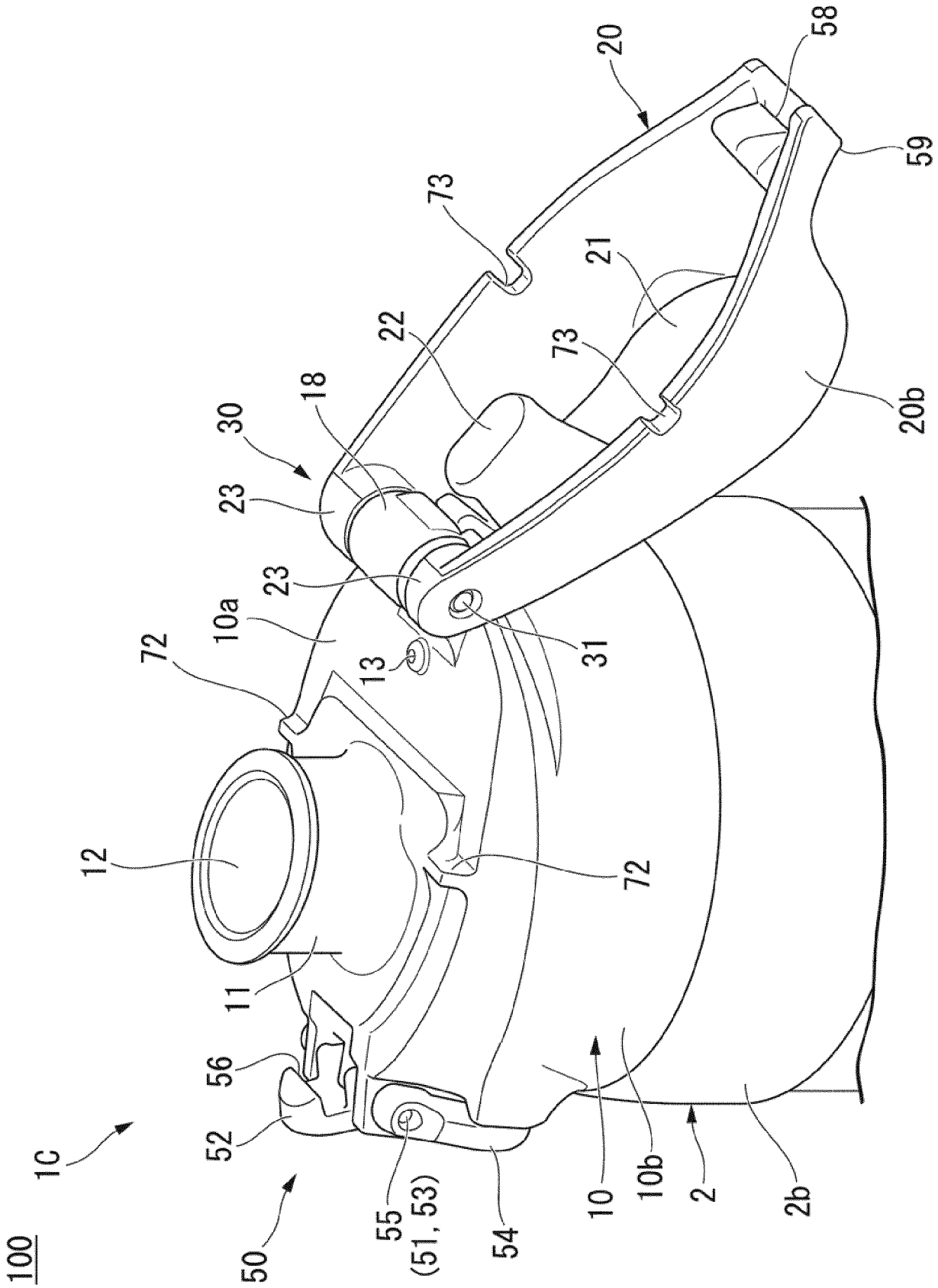
52
54
55
(51, 53)
56
60
70
70
71
71
L1

[FIG. 8]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(51, 53)
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2b
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10a
23
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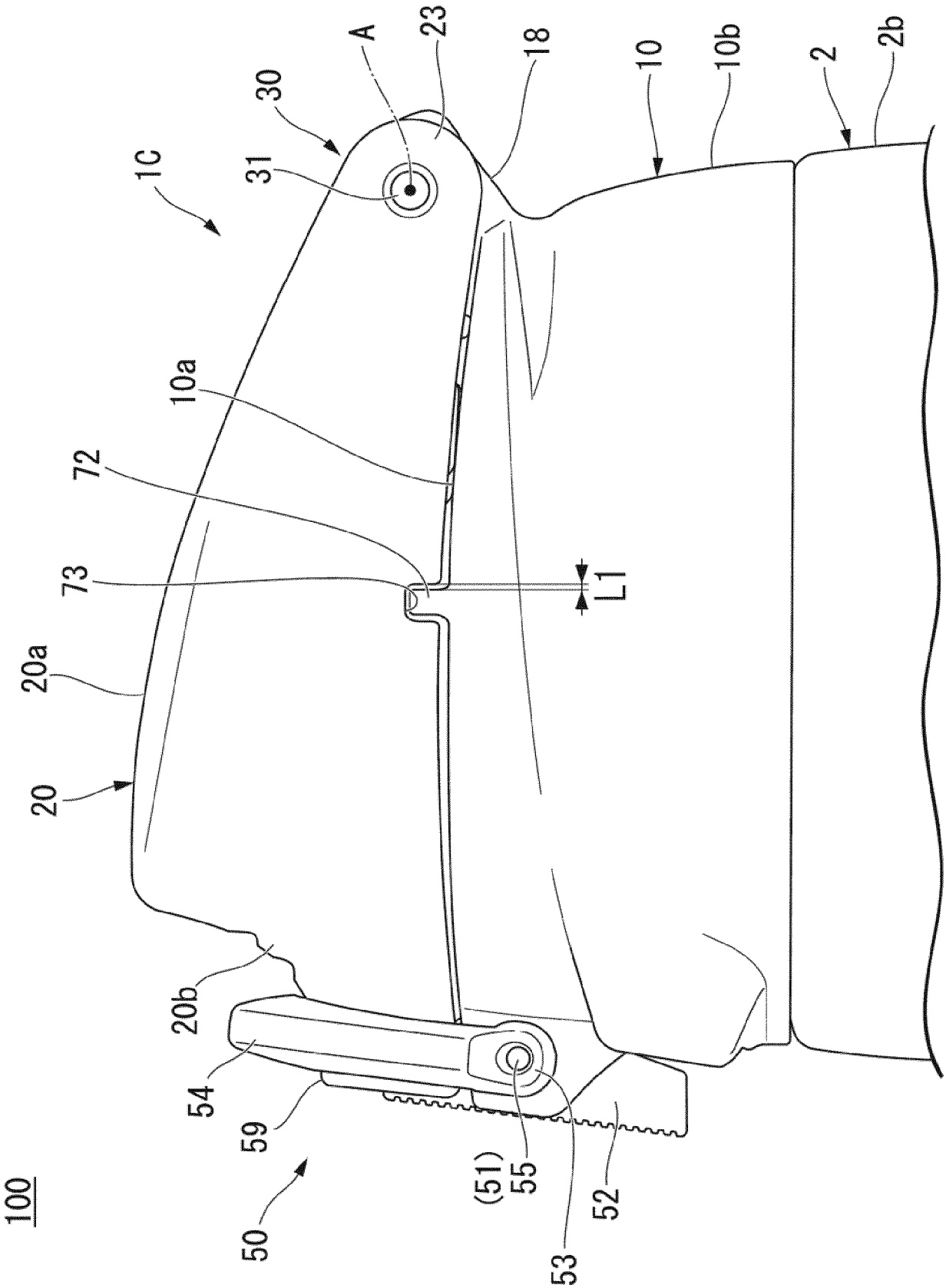
22
73
21
20
58
59
20b
31

[FIG. 9]


A
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18
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10b
2
2b
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72
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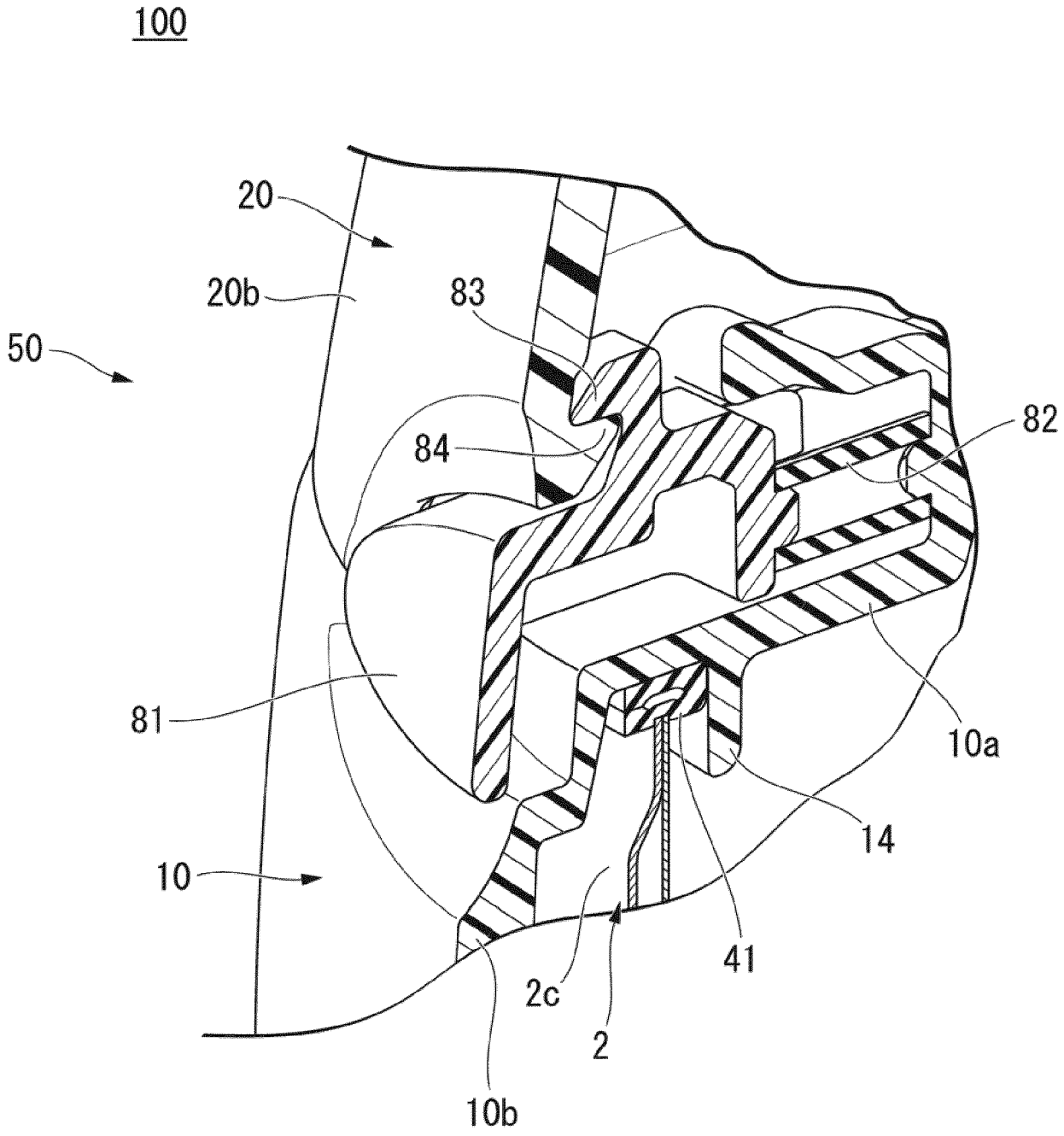
L1
20a
20
20b
54
59
50
100
(51)
55
53
52

[FIG. 10]



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EUROPEAN SEARCH REPORT

Application Number
EP 22 18 8594

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X	US 2006/016776 A1 (BARRE BERTRAND [FR] ET AL) 26 January 2006 (2006-01-26) * paragraph [0001] - paragraph [0128]; figures 1-18 *	1-7	INV. B65D47/08 A45F3/18 A47G19/22 B65D81/38
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B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	30 November 2022	Le Bihan, Nicolas

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