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(71) Applicant: **Shiseido Company, Ltd.**
Chuo-ku
Tokyo 104-0061 (JP)

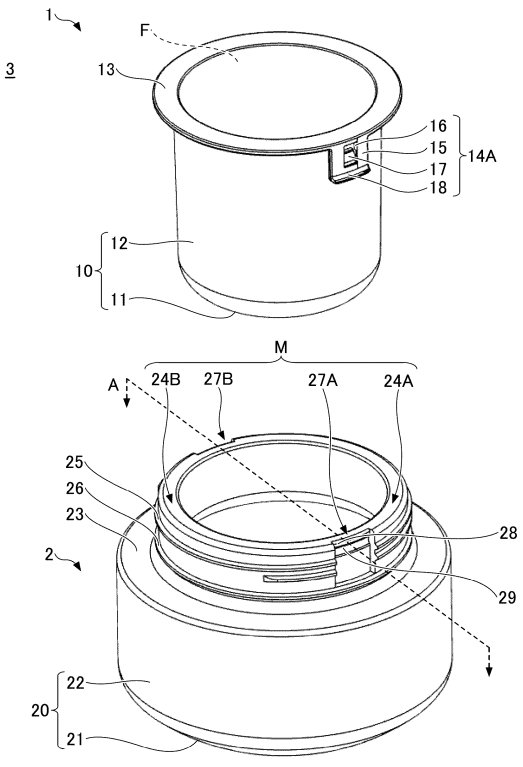
(72) Inventor: **KOBASHI, Yoshihiko**
Tokyo 104-0061 (JP)

(74) Representative: **Ter Meer Steinmeister & Partner Patentanwälte mbB**
Nymphenburger Straße 4
80335 München (DE)

(54) TWO-PART CONTAINER, AND CAP-EQUIPPED TWO-PART CONTAINER

(57) The present invention discloses a two-part container 3, including: an outer container 2; and an inner container 1. The outer container 2 includes a projection 28 formed on an outer surface of a mouth M thereof and extends in a circumferential direction. The inner container 1 includes an accommodating portion 10 configured to accommodate contents, an upper-end flange 13 that extends outward from an upper end of the accommodating portion 10, and a hanging portion 14 that hangs downward from an outer edge end of the upper-end flange 13. An opening 16 is formed in the hanging portion 14 and the hanging portion 14 includes an engagement piece 17 that elastically deforms within an opening region of the opening 16 in a view from an outer surface of the hanging portion 14. A part of the engagement piece 17 contacts a lower surface of the projection 28 upon attachment of the inner container 1 to the outer container 2, thereby preventing release of engagement between the outer container 2 and the inner container 1.

FIG.4



EP 4 549 334 A1

Description

TECHNICAL FIELD

[0001] The present invention relates to a two-part container and a cap-equipped two-part container.

BACKGROUND ART

[0002] In recent years, from the viewpoint of reducing resin, two-part containers composed of an outer container that can be used repeatedly and a replaceable refill (inner container) have been increasing.

[0003] As a technique for using an inner side of a jar container as a refill container, the jar container being provided with a wide mouth for storing viscous substances such as cosmetics and pharmaceuticals, a configuration in which an outer container is held from an outer side by a holding piece (hanging piece) that extends outward from an upper end of an inner container and hangs downward around the mouth is known. As an example, as illustrated in FIG. 1, Patent Document 1 discloses a configuration in which a tongue-shaped notch 94 is formed at an upper end of an outer container 92, a hanging piece 93 with a spring property hanging down from an outside of an upper end of an inner container 91 covers the notch 94, and an engaging portion 931 at a lower end of the hanging piece 93 engages an engaging portion 941 located in a bottom portion of the notch 94.

RELATED ART DOCUMENTS

PATENT DOCUMENTS

[0004] Patent Document 1: Japanese Patent No. 6448471

SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0005] However, in the configuration of Patent Document 1, since the notch 94 is formed in the outer container 92, the outer container 92 cannot be formed with glass, and the material that can be used is limited.

[0006] Further, in the configuration of Patent Document 1, when a user grips the hanging piece 93 from the outside, an engagement state of the engaging portions 931 and 941 is released when lifted, and there is a possibility that the inner container 91 may become disengaged from the outer container 92.

[0007] In view of the above, the present invention provides a two-part container without limiting the material of the outer container, and wherein an engagement between the inner container and the outer container is unlikely to be released when the engagement is not intended to be released.

MEANS FOR SOLVING THE PROBLEMS

[0008] To solve the above problem, according to one aspect of the present invention, provided is a two-part container including:

an outer container; and
an inner container, wherein
the outer container includes a projection formed on an outer surface of a mouth thereof and extends in a circumferential direction,
the inner container includes an accommodating portion configured to accommodate contents, an upper-end flange that extends outward from an upper end of the accommodating portion, and a hanging portion that hangs downward from an outer edge end of the upper-end flange,
an opening is formed in the hanging portion, and the hanging portion includes an engagement piece that elastically deforms within an opening region of the opening in a view from an outer surface of the hanging portion, and
a part of the engagement piece contacts a lower surface of the projection, thereby preventing engagement between the outer container and the inner container from being released, upon attachment of the inner container to the outer container.

ADVANTAGEOUS EFFECTS OF THE INVENTION

[0009] According to one aspect, in the two-part container, the material of the outer container is not limited, and the engagement between the inner container and the outer container can be made difficult to be released when the engagement is not intended to be released.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

[FIG. 1] FIG. 1 is an exploded perspective view of a two-part container of a related-art example.
[FIG. 2] FIG. 2 is a cross-sectional view of a two-part container of a first embodiment.
[FIG. 3] FIG. 3 is a perspective view of the two-part container of the first embodiment.
[FIG. 4] FIG. 4 is an exploded perspective view of the two-part container of the first embodiment.
[FIG. 5] FIG. 5 is an enlarged cross-sectional perspective view illustrating a state of engagement between a hanging portion of an inner container and a mouth thin-walled portion of the outer-container of the first embodiment.
[FIG. 6] FIG. 6 is a cross-sectional perspective view near the hanging portion of the inner container and a cross-sectional perspective view near the mouth thin-walled portion of the outer-container according to the first embodiment.
[FIG. 7] FIG. 7 is a cross-sectional view of the two-part container of the first embodiment engaged with a cap.
[FIG. 8] FIG. 8 is an explanatory view of deformation of the engagement piece during assembly and disassembly of the two-part container of the first embodiment.
[FIG. 9] FIG. 9 is a view for comparing the size of the finger with the opening of the hanging portion.
[FIG. 10] FIG. 10 is an enlarged cross-sectional view illustrating the state of the engagement between the hanging portion of the inner container and the mouth thin-walled portion of the outer container, when gripping of the hanging portion of the first embodiment is performed with fingers.
[FIG. 11] FIG. 11 is a view illustrating a gripping force applied to the two-part container according to a comparative example.
[FIG. 12] FIG. 12 is an enlarged cross-sectional view illustrating a state of engagement between the hanging portion of the inner container and the mouth thin-walled portion of the outer container, of modified example 1 of the first embodiment.
[FIG. 13] FIG. 13 is an enlarged cross-sectional view illustrating the state of engagement between the hanging portion of the inner container and the mouth thin-walled portion of the outer container, of modified example 2 of the first embodiment.
[FIG. 14] FIG. 14 is an exploded front view of the two-part container of modified example 3 of the first embodiment.
[FIG. 15] FIG. 15 is an enlarged sectional view illustrating the state of engagement between the hanging portion of the inner container and the mouth thin-walled portion of the outer container of FIG. 14 engaged with the cap.
[FIG. 16] FIG. 16 is a sectional perspective view of a vicinity of a hanging portion of an inner container and a sectional perspective view of a vicinity of a mouth thin-walled portion of an outer container according to a second embodiment of the present invention.
[FIG. 17] FIG. 17 is an enlarged sectional view illustrating the state of engagement between the hanging portion of the inner container and the mouth thin-walled portion of the outer container according to the second embodiment.

DETAILED DESCRIPTION OF THE INVENTION

[0011] Hereinafter, an embodiment for carrying out the present invention will be described with reference to the drawings. In the following drawings, the same components are denoted by the same reference numerals, and redundant descriptions may be omitted.

[0012] The present invention relates to a two-part container, particularly to a two-part container for casing a viscous substance or a solid substance. The inner container of the two-part container is made of resin or paper and may be self-standing or non-self-standing. The outer container of the two-part container is a self-standing container made of glass, wood, resin, silicone, metal, or the like.

[0013] The contents to be contained in the inner container held by the outer container of the two-part container of the present invention are preferably viscous or solid substances such as cosmetics, perfumes, detergents, seasonings, and the like, which are not used up at once but are used in multiple times.

[0014] In the present specification, the viscous substances are viscous cosmetics, viscous medicines, viscous soaps, and the like, such as creams, hair waxes, and ointments. The solid substances are solid cosmetics such as hair styling sticks, hair waxes, solid beauty serums (e.g., similar in hardness to a stick serum) and the like, which are particularly hard, or semi-solid cosmetics, solid soaps, cheese, butter, and the like.

[0015] In the present invention, the viscous substances or the solid substances are originally filled into the accommodating portion, and replenished by replacing the inner container itself with a refill (refill container).

<Overall Configuration of First Embodiment>

[0016] First, the overall configuration of a two-part container according to a first embodiment of the present invention will be described with reference to FIGS. 2 to 4. FIG. 2 is a cross-sectional view of a two-part container 3 according to the first embodiment of the present invention. FIG. 3 is a perspective view of the two-part container 3 according to the first embodiment of the present invention. FIG. 2 corresponds to a cross-sectional view on a plane A of FIG. 3. FIG. 4 is an exploded perspective view of the two-part container 3 according to the first embodiment of the present invention.

[0017] The two-part container 3 according to the present invention includes an inner container 1 and an outer container 2. The two-part container 3 as illustrated in FIG. 2 is in a shape of a jar having a wide mouth and a low height, but the two-part container 3 may be in the shape of a vertically long bottle.

[0018] In the present embodiment, the inner container 1 includes a bottomed cylindrical accommodating portion 10 including a bottom 11 and a side wall 12, an upper-end flange 13 projecting outward from the upper end of the accommodating portion 10, and two hanging portions 14A and 14B hanging from the outer edge of the upper-end flange 13.

[0019] The hanging portions 14A and 14B are tongue-shaped holding pieces for holding the outer container 2 from the outside and engaging with a part of the outer container 2. The hanging portions 14A and 14B have openings 16 formed in a hanging surface 15 which is a hanging piece hanging from the outer edge of the upper-end flange 13. In addition, the hanging portions 14 and 14B are provided with engagement pieces 17 which are claw members that elastically deform within the opening region of the opening 16 when viewed from the outside.

[0020] At the lower end of the hanging surface 15 of a hanging portion 14, a lower-end projection 18 projecting upward is provided. The lower-end projection 18 serves as a finger-hook portion on an inner container 1 side when pulling out the inner container 1 from the outer container 2. Alternatively, when it is too tight to be pulled out due to, for example, a change in an internal pressure, the lower-end projection 18 may be used as an aid for lifting when pulling out, by inserting a coin or the like into a gap on a lower side of the lower-end projection 18 and pushing it up.

[0021] The inner container 1 is made of, for example, resin or paper. The resin forming the inner container 1 is made of, for example, a polyester-based resin such as polypropylene (PP), polyethylene (PE), acrylonitrile butadiene styrene (ABS), polybutylene terephthalate (PBS), polyacetal (POM), polyethylene terephthalate (PET), and resin such as a biodegradable resin. Alternatively, the paper forming the inner container 1 is, for example, a laminate made of paper as a base material.

[0022] The outer container 2 is a container-accommodating portion for replaceably casing the inner container 1. The outer container 2 includes a case portion 20 including a bottom 21 and a side wall 22. In the outer container 2, a shoulder portion 23 extending inward is provided at the upper end of the case portion 20, and a cylindrical mouth M (see FIG. 4) extending upward is provided from an inner edge of the shoulder portion 23. As illustrated in FIG. 2, the cylindrical mouth M has a diameter smaller than that of the case portion 20 and is located inward of the side wall 22.

[0023] The cylindrical mouth M includes mouth thick-walled portions 24A, 24B, and 24 and mouth thin-walled portions 27A and 27B. Referring to FIG. 4, the cylindrical mouth M is alternately provided with a plurality of mouth thick-walled portions 24A and 24B and mouth thin-walled portions 27A and 27B, the inner surface of which is a continuous circumferential surface and the outer surface of which varies in thickness from the circumferential surface in a stepwise manner. More specifically, the mouth thin-walled portions 27A and 27B are vertically elongated rectangular regions in the cylindrical mouth M. Outer surfaces of the mouth thin-walled portions 27A and 27B are partially recessed, extend from the upper end of the cylindrical mouth M, and do not reach the lower end. Therefore, in the cylindrical mouth M, a lower side of an annular projection 26 of the mouth thin-walled portions 27A and 27B is a mouth thick-walled portion 24 having the same thickness as the mouth thick-walled portions 24A and 24B.

[0024] In the cylindrical mouth M, the mouth thick-walled portions 24A and 24B are longer in a circumferential direction than the mouth thin-walled portions 27A and 27B. The annular projection 26 extending in the circumferential direction is provided on the entire outer periphery of the cylindrical mouth M. A screw projection 25 is provided on the outer peripheral surface of the mouth thick-walled portions 24A and 24B. In the present embodiment, the screw projection 25 is interrupted in the circumferential direction at sections of the mouth thin-walled portions 27A and 27B. However, a lower portion of the annular projection 26 is provided under the mouth thin-walled portions 27A and 27B without being interrupted in the circumferential direction. The screw projection 25 may be interrupted in the circumferential direction near the mouth thin-walled portions 27A and 27B (see FIG. 14).

[0025] The screw projection 25 is threadedly engaged with a screw projection 43 of a cap 4 (see FIG. 7). The annular projection 26 is positioned below the screw projection 25, and the cap 4 is engaged so as to cover the annular projection 26. The annular projection 26 may also serve as a finger-hook portion on the outer container 2 side for pulling downward when the inner container 1 is pulled out from the outer container **2.**

[0026] The mouth thin-walled portions 27A and 27B are each formed with a projection 28 extending in the circumferential direction and a groove 29 positioned below the projection 28. The projection 28 provided in the mouth thin-walled portions 27A and 27B may project outwardly on the outer peripheral surface in a stepwise manner at least from the groove 29 immediately below the projection 28. Therefore, the projection 28 need not project from the upper end of the mouth thin-walled portions 27A and 27B above it or from the outer surface of the mouth thin-walled portions 27A and 27B positioned below the groove 29. The projection 28 and the groove 29 are used to engage the engagement piece 17 of the hanging portion 14.

[0027] Since the outer container 2 of the present invention does not have an intermittent portion such as a cutout in the related-art example, it can be molded of various materials without limitation of materials. For example, the outer container 2 can be made of resin, glass, wood, silicone, metal, paper, or the like. In the case of resin, for example, like the inner container 1 described above, the outer container 2 is made of resin such as PP, PE, ABS, PBS, POM, PET, polyester resin, or biodegradable resin. In the case of wood, for example, coniferous wood such as cedar, cypress, and pine, broadleaf wood such as oak, walnut, black cherry, elder, and rubberwood, and bamboo are included. In the case of paper, for example, the outer container 2 is self-standing cardboard.

[0028] Here, as illustrated in the exploded view of FIG. 4, the inner container 1 is a refill that can be replaced (removable and changeable with another) together with its contents, the viscous substance or solid substance. Additionally, the outer container 2 is reused after the refill is replaced.

[0029] Therefore, the inner container 1 that is empty can be replaced with a new refill of the same shape, and the outer container 2 can be used repeatedly.

[0030] The inner container 1 for replacement, that is replaceable as a refill, can cover an upper surface of the upper-end flange 13 with a film F (see FIG. 4) or a cover surrounding the upper-end flange 13. Thus, the inner container 1 serving as a refill can be distributed independently.

[0031] In the examples illustrated in FIGS. 2 to 4, the inner container 1 is provided with the two hanging portions 14A and 14B, but the inner container may include one or more than two hanging portions. When the number of hanging portions of the inner container is three or more, the number of mouth thin-walled portions provided in the cylindrical mouth M of the outer container is the same as the number of hanging portions.

<Engagement between Hanging Portion and Mouth Thin-Walled Portion in First Embodiment>

[0032] Next, the configuration and engagement of the hanging portion and the mouth thin-walled portion in the first embodiment will be described with reference to FIGS. 5 and 6. FIG. 5 is an enlarged sectional perspective view illustrating an engagement between the hanging portion 14A of the inner container 1 and the mouth thin-walled portion 27A of the outer container 2 in the first embodiment. In FIG. 6, (a) is a sectional perspective view of the hanging portion 14A and its surrounding of the inner container 1 according to the first embodiment, and (b) is a sectional perspective view of the mouth thin-walled portion 27A and its surrounding of the outer container 2.

[0033] As illustrated in FIGS. 5 and 6, in the configuration of the first embodiment, the engagement piece 17 formed in the hanging portion 14A of the inner container 1 is connected to the lower end of the opening 16, extends upward in a cantilever shape, and is bent such that the upper end is positioned inside (on the inner-diameter side) the lower end.

[0034] Therefore, as illustrated in FIG. 5, when the inner container 1 is mounted on the outer container 2, the hanging portion 14A which hangs outside the side wall 12 of the inner container 1 faces the mouth thin-walled portion 27A of the outer container 2, and a vicinity of the upper end which is a part of the engagement piece 17 engages with the groove 29 of the mouth thin-walled portion 27A.

[0035] Further, since the projection 28 is arranged above the groove 29 which engages with the upper end of the engagement piece 17, the engagement between the outer container 2 and the inner container 1 can be prevented from being released, when a force other than an external force for removal is applied by a user.

[0036] Also, as illustrated in FIG. 5, in an engaged state, the outer surface (outer-diameter side surface) of the hanging surface 15 of the hanging portion 14 is positioned inside (on the inner-diameter side) the outer surfaces of the mouth thick-walled portions 24A and 24B of the outer container 2. Therefore, when the cap 4 (see FIG. 7) and the outer container 2 are relatively rotated so as to be engaged with each other by screwing, the hanging portion 14 does not interfere.

[0037] Although FIG. 5 is a figure illustrating an example in which the engagement piece 17 formed in the hanging portion 14A of the inner container 1 is connected to the lower end of the opening 16 and extends upward in the cantilever shape, for example, an extending direction of the engagement piece 17 may be upside-down or oblique. The upside-down configuration will be described later as a second embodiment together with FIGS. 16 and 17.

[0038] Further, in the configuration of the present embodiment, since the upper end of the engagement piece 17, which is the free end thereof, is bent inward, a free-end side (upper end side) of the cantilever-shaped engagement piece 17 is positioned on the inner-diameter side of the lower end, which is a base (connected end) thereof, and is projected inward. According to this configuration, the upper end of the free-end side of the engagement piece 17 is caught on the projection 28 of the mouth thin-walled portion 27A from the lower side and engaged therewith. Therefore, even when it is not intended

to release the engagement, for example, when the two-part container 3 is lifted while the vicinity of the engagement piece 17 is pushed from the outer-diameter side, or when opening the cap, which will be described later, it is unlikely that the engagement between the inner container 1 and the outer container 2 will become released, and thus the inner container 1 can be prevented from being detached from the outer container 2.

<Cap Engagement>

[0039] The two-part container 3 of the present invention can be engaged with a cap. FIG. 7 is a cross-sectional view of an example of the two-part container 3 engaged with the cap 4.

[0040] The cap 4 includes a top surface 41 and a peripheral wall 42, and a screw projection 43 is provided inside the peripheral wall 42.

[0041] The cap 4 is a lid portion covering the upper-end flange 13 of the inner container 1 and the cylindrical mouth M of the outer container 2, and is made of resin such as PP, PE, ABS, PBS, POM, PET, a polyester resin, or a biodegradable resin.

[0042] A packing 5 as a sealing material for preventing leakage is provided on an inner side (lower side) of the top surface 41 of the cap 4. The packing 5 may be adhered to the cap 4, or may be provided separately from the cap 4. The packing 5 is made of an elastic rubber or resin (e.g., PP, PE), for example.

[0043] When the cap 4 is engaged with the two-part container 3, the screw projection 25 of the cylindrical mouth M of the outer container 2 and the screw projection 43 of the cap 4 are threadedly engaged with each other. At this time, the packing 5 is engaged between the lower surface of the top surface 41 of the cap 4 and the upper-end flange 13 of the inner container 1.

[0044] When the cap 4 and the two-part container 3 are engaged with the elastic packing 5 in between, the contents do not leak out even when the two-part container 3 is tilted or turned upside down.

[0045] However, when the two-part container is left for a long time with the cap 4 engaged, the contents of the inner container 1 absorb the air inside the container, and the pressure inside of the inner container 1 becomes a negative pressure. Alternatively, when the two-part container 3 is flown on an airplane with the cap 4 engaged, the pressure inside the inner container 1 becomes the negative pressure after landing due to changes in air pressure.

[0046] Due to the above circumstances, when the pressure inside the inner container 1 becomes the negative pressure, the packing 5 is strongly adsorbed to the upper-end flange 13 side. In this state, when the engagement between the two-part container 3 and the cap 4 is released, a force is applied in the direction in which the inner container 1 is detached from the outer container 2 due to the adsorption of the packing 5.

[0047] However, according to the configuration of the present invention, since the projection 28 is provided above the groove 29 in a mouth thin-walled portion 27 facing the hanging portion 14, the upper end of the engagement piece 17 receives resistance from the projection 28 even when a force is applied to pull the hanging portion 14 upward by suction of the packing 5, and the engagement piece 17 is prevented from climbing over the projection 28, thereby preventing the inner container 1 having the hanging portion 14 from being detached from the outer container 2.

[0048] Furthermore, the engagement piece 17 receives a resistance greater than a predetermined value in both vertical directions by a hand of a user, the engagement piece 17 can be moved by climbing over the projection 28.

(Movement of Engagement Piece)

[0049] Now, the behavior of the engagement piece 17 during attachment (assembly) and detachment (disassembly) of the inner container from the outer container according to the first embodiment will be described with reference to FIGS. 5, 6, and 8. FIG. 8 is an explanatory view of the state of the engagement piece 17 when the two-part container 3 is assembled and disassembled.

[0050] In FIG. 8, (a) is a view illustrating a state where the engagement piece 17 is not in contact with the outer container 2, (b) is a view illustrating a state where the end of the engagement piece 17 is in contact with the projection 28 of the outer container 2, (c) is a view illustrating a state where the end of the engagement piece 17 slides on an inclined surface of the groove 29, and (d) is a view illustrating a state where the engagement piece 17 is engaged with an innermost portion of the groove 29.

[0051] As illustrated in FIG. 8, the groove 29 formed in the mouth thin-walled portion 27A of the outer container 2 is a V-groove or a U-groove whose cross section is inclined in the vertical direction toward the innermost portion. As illustrated in FIG. 8 (c), since a tip of the engagement piece 17 slides on an upper inclined surface or curved surface of the groove, it is preferable that the groove is a V-shaped or a U-shaped groove and not a rectangular shape whose cross section includes right angles.

[0052] A lateral width (circumferential length) of the groove 29 in the mouth thin-walled portion 27A of the outer container 2 is, for example, about 5 mm to 30 mm, and a length l in the vertical direction of the upper inclined surface or the upper curved surface constituting the groove 29 is about 0.25 mm to 2.5 mm. Therefore, the longitudinal length of the groove 29 is

0.5 mm to 5.0 mm because it is twice the length l of either the inclined or curved surface, and the longitudinal length of the innermost portion of the groove 29 is about 0.5 mm to 3 mm. A vertical width W of the projection 28 at the upper end of the mouth thin-walled portion 27A is, for example, about 1 mm to 10 mm.

[0053] In the hanging portion 14A, the engagement piece 17 provided in the opening region of the opening 16 is elastically deformable when the inner container 1 and the outer container 2 are assembled or disassembled.

[0054] During assembly, a state of the engagement piece 17 changes in the order of (a) → (b) → (c) → (d) in FIG. 8. As illustrated in FIG. 8 (a), when the engagement piece 17 is in a non-contact state and no force is applied, the inner-diameter side surface of the end of the free end positioned at the upper end of the engagement piece 17 is positioned radially inward of the inner-diameter side surface of the lower end by a distance d. The distance d is, for example, about 5 mm to 15 mm.

[0055] Then, when the position of the inner container 1 is lowered by pushing it downward with respect to the outer container 2 as illustrated in FIG. 8 (a) → FIG. 8 (b), the engagement piece 17 moves radially outward in an opening space formed by the opening 16 while the tip thereof is deformed by contacting the projection 28. At this time, since the upper end of the engagement piece 17 passes over an upper-end corner of the mouth thin-walled portion 27A indicated by "o" in FIG. 8 (b), a resistive force is generated in the movement of FIG. 8 (a) → FIG. 8 (b), and thus a user must push the inner container 1 downward with a force of a predetermined strength or stronger.

[0056] Further, when the inner container 1 is pushed downward with respect to the outer container 2, as illustrated in FIG. 8 (b) → FIG. 8 (c), the engagement piece 17 moves downward while moving toward an inner side (inner-diameter side) of the groove 29, in a state the tip thereof is deformed by contacting an upper inclined side of the groove 29 and moved outward (outer-diameter side) in the opening space formed by the opening 16.

[0057] Then, when the inner container 1 is pushed to the lowest end with respect to the outer container 2, as illustrated in FIG. 8 (c) → FIG. 8 (d), the upper-end flange 13 is brought close to an upper end U of the cylindrical mouth M of the outer container 2, and the tip of the engagement piece 17 fits into the innermost portion of the groove 29. As a result, the engagement piece 17, which is a part of the hanging portion 14A, is engaged with the groove 29.

[0058] Furthermore, at the time of removal, steps change in the order of (d) → (c) → (b) → (a) in FIG. 8. As illustrated in FIG. 8 (d), in the engaged state, the tip of the engagement piece 17, which is a part of the hanging portion 14A, is fitted into the innermost part of the groove 29 and engaged with it.

[0059] As illustrated in FIG. 8 (d) → FIG. 8 (c), when the position of the inner container 1 is raised by pushing it upward with respect to the outer container 2, the engagement piece 17 moves outward in the opening space formed by the opening 16 while the tip (upper end) is deformed by contacting the upper inclined side of the groove 29.

[0060] Furthermore, when the inner container 1 is pushed upward with respect to the outer container 2, as illustrated in FIG. 8 (c) → FIG. 8 (b), the engagement piece 17 moves in contact with the outer surface of the projection 28 while crossing a boundary between the upper inclined side of the groove 29 and the projection 28, in a state where the tip is pushed and moved outward in the open space formed by the opening 16.

[0061] Here, when the upper end of the engagement piece 17 moves from the state as illustrated in FIG. 8 (d) → FIG. 8 (c), the engagement piece 17 deforms elastically and a resistive force is required to climb up the upper inclined side of the groove 29 while receiving a force. Further, in a transition from the state as illustrated in FIG. 8 (c) → FIG. 8 (b), the resistive force is required such that the engagement piece 17 is elastically deformed in the direction it further deforms and passes over the boundary with the projection 28 after climbing up the upper inclined side of the groove 29 while receiving a force.

[0062] Therefore, even when a force is applied to pull the hanging portion 14 upward due to the adsorption of the packing 5 due to the passage of time or a change in air pressure caused by an airplane, the upper end of the engagement piece 17 receives the resistance from the projection 28 during the disengagement of the cap 4, and the engagement piece 17 is prevented from coming off upward from the projection 28. Alternatively, since the upper end of the engagement piece 17 receives the resistance from the projection 28, even when the user unintentionally holds the portion of the hanging portions 14A and 14B and lifts the two-part container 3, the outer container 2 can be prevented from coming off from the inner container 1.

[0063] On the other hand, when the user pulls the inner container 1 upward and the outer container 2 downward for the purpose of disassembling the two-part container 3 and applies a force equal to or greater than a predetermined force, the engagement piece 17 can move over the upper inclined side of the groove 29 and the projection 28.

[0064] Furthermore, when the inner container 1 is pushed upward with respect to the outer container 2, as illustrated in FIG. 8 (b) → FIG. 8 (a), the engagement piece 17 moves while contacting the outer surface of the projection 28, and then becomes to be in a non-contact state. Accordingly, the contact between the hanging portion 14A and the mouth thin-walled portion 27A is released, and thus the engagement is released.

[0065] Such characteristics of the engagement piece 17 make it possible to: make it difficult for the engagement between the inner container 1 and the outer container 2 to be released by the contact between the tip of the engagement piece 17 and the projection 28; and make it difficult for the outer container 2 to be released from the inner container 1, for example, when an unintended force is applied, such as when the packing 5 is attracted or the hanging portion 14A is held and lifted upward. Additionally, according to the characteristics of the engagement piece 17, the engagement can be released by applying a force for separation from both the upper and lower sides while holding both the inner container 1 and

the outer container **2.**

(Opening of Hanging Portion and Finger Size of User)

[0066] Hereinafter, the sizes of the user's finger and the opening 16 of the hanging portion 14 will be described with reference to FIGS. 9 and 10. FIG. 9 is a view for comparing the size of the finger with the size of the opening 16 of the hanging portion 14A. FIG. 10 is an enlarged cross-sectional view illustrating a state of engagement between the hanging portion 14A of the inner container 1 and the mouth thin-walled portion 27A of the outer container 2 with the hanging portion 14A held with the finger. In FIG. 10 and subsequent FIGS. 12, 13, 16, and 17, one hanging portion 14A and one mouth thin-walled portion 27A are illustrated, but the hanging portion 14B and the mouth thin-walled portion 27B have the same configuration.

[0067] As described above, in the hanging portion 14A, the opening 16 surrounding the engagement piece 17 has an elongated rectangular shape, and a lateral width OW is 1 cm or less, more preferably 0.7 cm or less, and a longitudinal length OH is 1 to 2 cm.

[0068] In contrast to this, as an example, the width of an average index finger of a Japanese adult near the first joint is about 1.4 cm, and the thumb is thicker than the index finger.

[0069] Thus, even when a user grips the portion of the hanging portion 14 with his or her finger, the width of the index finger is thicker than the width OW of the opening 16, and the finger is prevented from directly touching the engagement piece 17 located inside the opening 16.

[0070] Therefore, as illustrated in FIG. 10, in a state where the finger does not enter the inside of the opening 16, touching of the hanging portion 14 without user's intention to release the engagement, for example, when opening or closing the cap, and unintentionally moving the the engagement piece 17 in the opening space defined by the opening 16 do not occur. Therefore, a constant resistance can be continuously provided by the contact between the tip of the engagement piece 17 in the hanging portion 14 and the projection 28 of the mouth thin-walled portion 27A, and the engagement between the inner container 1 and the outer container 2 can be made difficult to be released.

[0071] In addition to the above, when the user intends to release the engagement in order to disassemble the two-part container 3, the movement of the engagement piece 17 with the spring property is not restricted even when the user grips the portion of the hanging portion 14 firmly. Therefore, when a force is applied from both the upper and lower sides by holding both the inner container 1 and the outer container 2 and pull them apart, the engagement piece 17 can slide as illustrated in FIG. 8 and the engagement can be released.

(Comparative Example)

[0072] FIG. 11 is for describing a gripping force applied to the two-part container according to a comparative example. In FIG. 11, a configuration in which an entire surface of a hanging portion 82 of an inner container 81 is elastically deformed and engaged with a projection 85 of an outer container 84 is illustrated.

[0073] In the configuration of this comparative example, since the entire surface of the hanging portion 82 provided with the engaging projection 83 at an inner lower end is elastically deformed like a spring, when the hanging portion 82 is pushed in from the outside, an engagement becomes stronger, and the outer container 84 cannot be pulled out from the inner container 81 when a two-part container X is disassembled.

[0074] Therefore, in the comparative example of FIG. 11, at the time of disassembling the two-part container X, a user applies a force to open a lower end of the hanging portion 82 in an outward direction so as to separate the engagement, while applying a force in a vertical direction to separate the engagement. Therefore, a process of opening the lower end in the outward direction is added during assembly and disassembly.

[0075] In contrast, in the configuration of the present invention, the engagement piece 17 that is movable is provided in the opening 16 provided in the hanging portion 14. Thus, since the movement of the engagement piece 17 with the spring property is not restricted due to the space defined in the opening 16, no matter how much "gripping force" is applied from the outside against the hanging portion 14, the pulling force can be kept unaffected. That is, even when the hanging portion is held with a finger as illustrated in FIG. 10, by applying a force in the vertical direction, that is the direction separating the inner container from the outer container, the engagement piece can be deformed inside the opening and on the inner peripheral side of the finger and the inner container can be pulled out.

[0076] Therefore, at the time of assembly or removal, there is no need to additionally perform a process of opening the hanging portion as in the comparative example, and the engagement can be released by applying a force for separation from both the upper and lower sides while holding both the inner container 1 and the outer container 2.

[0077] Further, as illustrated in FIG. 8 (d) and FIG. 10, at the time of engagement, a predetermined resistance is applied to the movement of the tip of the engagement piece 17 by the groove 29 and the projection 28 in the mouth thin-walled portion 27A, so that the engagement state between the inner container 1 and the outer container 2 is not released and the two-part container state is maintained without disassembling by simply gripping and lifting the hanging portions 14A and

14B.

[0078] Thus, according to the present invention, a predetermined resistance value is provided for the engagement between the tip of the engagement piece 17 and the groove and the projection, and when a force equal to or less than the resistance value is applied without intending to release the engagement, the engagement between the inner container 1 and the outer container 2 is not released, but when a force larger than the resistance value, which is the force for disassembling, is applied, the engagement between the inner container 1 and the outer container 2 can be released without any special additional operation.

[0079] In the configuration of the above embodiment, the upper end, which is the free end of the engagement piece 17, is bent inward, so that the free-end side of the cantilever-shaped engagement piece 17 is positioned closer to the inner-diameter side than the lower end, which is the base (connected end). However, other configurations may be used as long as the free-end side of the engagement piece of the inner container of the present invention, is positioned inward as compared to the connected end.

<Modified Example 1 of Engagement Piece>

[0080] FIG. 12 is an enlarged cross-sectional view illustrating an engagement state between a hanging portion 14Aα of an inner container 1α and a mouth thin-walled portion 27A of an outer container 2α of a modified example 1 of the first embodiment. In the present modified example, an engagement piece 17α in the hanging portion 14Aα of the inner container 1α is formed by a vertically-extended portion 171 and an upper-end projection 172.

[0081] More specifically, in the engagement piece 17α in the present modified example, the vertically-extended portion 171 extends upward from a vicinity of a lower end of the opening 16 of the hanging portion 14Aα in the vertical direction. The vertically-extended portion 171 is configured such that its outer-diameter side is thinner than the hanging surface 15. The upper-end projection 172 projects inward from an upper end of the vertically-extended portion 171.

[0082] In the configuration of the present modified example, since the upper-end projection 172 projecting inward is provided on the upper end, which is the free end of the engagement piece 17α, the inner surface of the free end of the cantilever-shaped engagement piece 17α is positioned on the inner-diameter side of the lower end, which is the base (connected end), in other words, projected inward. According to this configuration, since the upper-end projection 172 positioned on the free-end side of the engagement piece 17α is engaged with the groove 29 so as to be caught on the projection 28 of the mouth thin-walled portion 27A from the lower side, the engagement between the inner container 1α and the outer container 2α can be made difficult to be released when the release of the engagement is not intended, and the inner container 1α can be prevented from being detached from the outer container 2α.

[0083] Since the thickness of the engagement piece 17α is different between the upper end and the lower end in the configuration of the present modified example, in order to secure a movable space of the engagement piece 17α even in a state where the engagement piece is held with a finger, it is preferable that the difference in thickness between the mouth thin-walled portions 27A and 27B and the mouth thick-walled portions 24α, 24Aα (not illustrated), and 24Bα (not illustrated) in the cylindrical mouth of the outer container 2α is larger than that in the configuration of FIG. 10. Although FIG. 12 is a figure illustrating an example in which a mouth thick-walled portion 24α side is formed thicker than the configuration of FIG. 10, the thickness on the mouth thin-walled portion 27A side may be formed thinner.

<Modified Example 2 of Engagement Piece>

[0084] FIG. 13 is an enlarged cross-sectional view illustrating an engagement between a hanging portion 14Aβ of an inner container 1β and the mouth thin-walled portion 27A of the outer container 2α in a modified example 2 of the first embodiment. In the present modified example, an engagement piece 17β in the hanging portion 14Aβ of the inner container 1β is formed of the vertically-extended portion 171, a variable-thickness portion 173, and an upper-end projection 172β.

[0085] More specifically, the vertically-extended portion 171 of the engagement piece 17β in the present modified example has the same configuration as that in FIG. 12, but the thickness of the variable-thickness portion 173 gradually increases from the bottom to the top of the engagement piece 17β and the variable-thickness portion 173 is connected to the upper-end projection 172β.

[0086] Further, in the configuration of the present modified example, since the upper-end projection 172β projecting inwardly is provided at the upper end, which is the free end of the engagement piece 17β, the inner surface of the free end of the cantilever-shaped engagement piece 17β is located on the inner-diameter side of the lower end, which is the base (connected end), and is projected inward. With this configuration, in a state where the upper-end projection 172β is engaged with the groove 29, the upper end of the free-end side of the engagement piece 17β is caught (contacts) by the projection 28 of the mouth thin-walled portion 27A, whereby a constant resistance can be continuously provided. Accordingly, when the engagement is not intended to be released, it is unlikely that the engagement between the engagement piece 17β of the inner container 1β and the mouth thin-walled portion 27A of the outer container 2α will

become released, and thus separation between the inner container 1β and the outer container 2α can be prevented.

[0087] Incidentally, in the configuration of the present modified example, the thickness of the hanging portion 17Aβ varies at the upper and lower ends of the engagement piece 17β, and the thicknesses are different at the upper and lower ends. Therefore, in order to secure the movable space of the engagement piece 17β even in the state of being held with a finger as in the modified example 1, it is preferable that the difference in thickness between the mouth thin-walled portions 27A, 27B and the mouth thick-walled portions 24α, 24Aα, 24Bα in the cylindrical mouth of the outer container 2α is larger than that of the configuration as illustrated in FIG. 10. Although FIG. 13 is a figure illustrating an example in which the thickness on the mouth thick-walled portion 24α side is thicker than that of the configuration as illustrated in FIG. 10, the thickness on the mouth thin-walled portion 27A side may be thinner.

<Modified Example 3 of First Embodiment>

[0088] FIG. 14 is an exploded front view of the two-part container according to a modified example 3 of the first embodiment. FIG. 15 is an enlarged sectional view illustrating a state of engagement between the hanging portion of the inner container of FIG. 14 engaged with the cap and the mouth thin-walled portion of the outer container.

[0089] Although there are two hanging portions in the foregoing, there may be one hanging portion. In the present modified example, there is one hanging portion 14. Therefore, in the circumferential direction, one mouth thin-walled portion 27δ and one mouth thick-walled portion 24δ are provided on a cylindrical mouth Mδ of an outer container 2δ which is an engagement target.

[0090] When there is one hanging portion 14δ, widths in the circumferential direction of the single hanging portion 14δ and the mouth thin-walled portion 27δ opposed thereto can be made wider than when there are a plurality of hanging portions. However, even when the hanging portion 14δ is made wider, in order to prevent interference between the user's finger and the engagement piece 17 in the hanging portion 14δ, as illustrated in FIG. 9, the opening 16 surrounding the engagement piece 17 has an elongated rectangular shape, and the lateral width OW is 1 cm or less, more preferably 0.7 cm or less, and the longitudinal length OH is 1 to 2 cm.

[0091] Furthermore, as illustrated in FIG. 14, in the outer container 2δ, a screw projection 25δ provided on an outer circumferential surface of the mouth thick-walled portion 24δ may be interrupted in the vicinity of the mouth thin-walled portion 27δ without reaching the mouth thin-walled portion. Although not illustrated, since the screw projection 43, which is a female screw of the cap 4 to be engaged with the screw projection 25δ, is provided without discontinuity in the circumferential direction, the cap 4 and the cylindrical mouth Mδ of the outer container 2δ can be screwed into and threadedly engaged with each other without any problem even when the screw projection 25 is broken in the outer container 2δ.

[0092] Additionally, a vertical rib 121 is provided on the outside of a side wall 12δ of an accommodating portion 10δ of an inner container 1δ. By providing the vertical rib 121, when assembled as a two-part container 3δ, a space G is provided between an outside surface of the side wall 12δ of the accommodating portion 10δ of the inner container 1δ and the inside surface of the cylindrical mouth Mδ of the outer container 2δ. In this way, an area of adhesion between the inner container 1δ and the outer container 2δ on a side surface can be reduced, thereby preventing excessive adhesion.

[0093] Furthermore, an annular rib 131 is provided on an upper surface of an upper-end flange 13δ of the inner container 1δ. Thus, when a packing 5δ is provided on an inner (lower) side of the top surface 41 of the cap 4, the packing 5δ is arranged on the annular rib 131, and when the packing 5δ comes into close contact with the upper-end flange 13δ, the annular rib 131 fits into the packing 5δ.

<Second Embodiment>

[0094] Next, a configuration of a two-part container according to a second embodiment of the present invention will be described with reference to FIGS. 16 and 17. In FIG. 16, (a) is a sectional perspective view in the vicinity of a hanging portion 140A of an inner container 1γ according to the second embodiment, and (b) is a sectional perspective view in the vicinity of a mouth thin-walled portion 270A of an outer container 2γ according to the second embodiment. FIG. 17 is an enlarged sectional view illustrating a state of engagement between the hanging portion 140A of the inner container 1γ according to the second embodiment and the mouth thin-walled portion 270A of the outer container γ. Only differences from the first embodiment will be described.

[0095] In the configuration of the present embodiment, an engagement piece 170 of the inner container 1γ extends downward in a cantilever shape so that the upper end thereof is connected to the vicinity of the upper end of an opening 160 in a hanging surface 150 of the hanging portion 140A and a lower end thereof is a free end thereof, and a lower end thereof is bent so as to be positioned on an inner-diameter side of an upper end thereof. With this configuration, the engagement piece 170 according to the present embodiment is vertically opposite to the extending direction of the engagement piece 17 according to the first embodiment.

[0096] Additionally, in the mouth thin-walled portion 270A of the outer container 2γ according to the present embodiment,

a projection 280 to which the inner surface of the lower end, that is the free end, of the engagement piece 170 contacts, and a groove 290 into which the free end is fitted into at the time of engagement, are positioned on lower than the positions in the first embodiment. With this configuration, it is possible to secure a movable space for the engagement piece 170 that extends in a direction vertically opposite to that of the first embodiment, and includes the free end at the lower end thereof.

[0097] In the present embodiment, the engagement piece 170 extends downward in a cantilever shape, and since the lower end is bent so as to be positioned on the inner-diameter side of the upper end, the inner surface of the lower end, which is the free end, is positioned on the inner side of the upper end, which is the base (connected end), and is projected inward.

[0098] Also, in the present embodiment, although not illustrated in an overall view, a width and a vertical width of the opening 160 in the hanging portion 140A are both less than 1 cm. Therefore, in a state where the finger does not enter the inside of the opening 160, the engagement piece 170 will not be unintentionally moved in an opening space defined by the opening 160 when the engagement is not intended to be released. In addition, according to this configuration, since the lower end of the free-end side of the engagement piece 170 is caught (contacts) on the lower side of the projection 280 of the mouth thin-walled portion 270A, the engagement between the inner container 1γ and the outer container 2γ is unlikely to be released when the engagement is not intended to be released, and the inner container 1γ can be prevented from being detached from the outer container 2γ.

[0099] On the other hand, also in the present embodiment, the engagement piece 170 is movably provided in the opening 160 provided in the hanging portion 140A. Thus, since the movement of the engagement piece 170 with the spring property is not restricted due to the space defined by the opening 160, no matter how much "gripping force" is applied from the outside against the hanging portion 140A, the pulling force can be kept unaffected. That is, even when the hanging portion is held with a finger, by applying a force in the vertical direction, that is the direction separating the inner container 1γ from the outer container 2γ, the engagement piece 170 is deformed inside the opening 160 on the inner peripheral side of the finger and the inner container 1γ can be pulled out.

[0100] The engagement piece 170 as illustrated in FIG. 17 has a configuration in which the upper end, which is a free end, is bent inward, so that the free-end side of the cantilever-shaped engagement piece 170 is positioned inward from the lower end, which is a base (connected end). However, in the present embodiment, the engagement piece 170 may also have a configuration in which the free-end side projects inward from the coupling end due to another shape. For example, in the engagement piece cantilevered and extended downward from the top as in the second embodiment, the engagement piece may be configured to include a linearly-hanging hanging piece and a projection projecting inward to the lower side, which is the free end of the hanging piece, as in a configuration obtained by reversing the configuration of the engagement piece 17α in the modified example 1 as illustrated in FIG. 12. Alternatively, the engagement piece may be configured to include a hanging piece whose thickness varies in a stepwise manner, as in a configuration obtained by reversing the engagement piece 17β in the modified example 2 as illustrated in FIG. 13.

[0101] Furthermore, in the first embodiment, the engagement piece in the hanging portion is cantilevered and extends upward from the bottom, and in the second embodiment, the engagement piece extends downward from the top, but the extending direction of the engagement piece 17 may be oblique.

<Third Embodiment>

[0102] Although FIG. 7 is a figure illustrating an example in which the cap 4 is threadedly engaged with the outer container 2, the cap 4 need not be threadedly engaged and thus may be a push-in type. In the case of the push-in type, the outer container 2 may be provided with the projection 28 extending in the circumferential direction and the groove 29 positioned below the projection in the entire area on the outer surface without providing a screw projection. In this case, the inner container 1 need not be partially provided with a plurality of hanging portions, and a cylindrical hanging cylinder may be provided around the entire outer edge of the upper-end flange 13**.** In this case, the hanging cylinder is provided with one or more openings, and the engagement pieces, of the number equal to that of the openings, located on the inner side of the openings.

[0103] Although the preferred embodiments of the present invention have been described above, the present invention is not limited to the specific embodiments, and various modifications and changes are possible within the scope of the gist of the embodiments of the present invention described in the claims.

[0104] The present international application is based on and claims priority to Japanese Patent Application No. 2022-107334 filed on July 1, 2022, the entire contents of this Japanese patent application are hereby incorporated by reference.

REFERENCE SIGNS LIST

[0105]

1, 1α, 1β, 1γ	Inner container
2, 2α, 2β, 2γ	Outer container
3	Two-part container
4	Cap
5	Packing
10	Accommodating portion
11	Bottom
12	Side wall
13, 13δ	Upper-end flange
131	Annular rib
14A, 14B, 14Aα, 14Aβ, 140A, 14δ	Hanging portion
15, 150	Hanging surface
16, 160	Opening
17, 17α, 17β, 170	Engagement piece
18	Lower-end projection
20	Case portion
21	Bottom
22	Side wall
23	Shoulder portion
24, 24A, 24B, 24α	Mouth thick-walled portion
25	Screw projection
26	Annular projection
27A, 27B, 270A	Mouth thin-walled portion
28, 280	Projection
29, 290	Groove
3, 3δ	Two-part container
4	Cap
5, 5δ	Packing (sealing material)
M	Cylindrical mouth (mouth)

Claims

1. A two-part container, comprising:

an outer container; and
an inner container, wherein
the outer container includes a projection formed on an outer surface of a mouth thereof and extends in a circumferential direction,
the inner container includes an accommodating portion configured to accommodate contents, an upper-end flange that extends outward from an upper end of the accommodating portion, and a hanging portion that hangs downward from an outer edge end of the upper-end flange,
an opening is formed in the hanging portion, and the hanging portion includes an engagement piece that elastically deforms within an opening region of the opening in a view from an outer surface of the hanging portion, and
a part of the engagement piece contacts a lower surface of the projection, thereby preventing engagement between the outer container and the inner container from being released, upon attachment of the inner container to the outer container.

2. The two-part container according to claim 1, wherein
the opening has an elongated rectangular shape and has a lateral width of 1 cm or less.

3. The two-part container according to claim 1, wherein
the outer container includes a groove that extends in the circumferential direction formed on the outer surface of the mouth and on a lower side of the projection.

4. The two-part container according to claim 3, wherein
the engagement piece is connected to one end of the opening and extends in a cantilever shape, and a free end of the engagement piece projects to an inner-diameter side of a connected end.

5. The two-part container according to claim 4, wherein

in the mouth of the outer container, an inner surface is a continuous circumferential surface, and a thick-walled portion having a thick thickness in a radial direction from the inner surface, and a thin-walled portion of the outer container recessed from an end of the thick-walled portion in a stepwise manner in the radial direction and shorter in the circumferential direction than the thick-walled portion are provided,
the groove is formed on an outer surface of the thin-walled portion of the mouth, and
the hanging portion faces the thin-walled portion, and a part of the engagement piece is engaged with the groove, upon engagement of the outer container and the inner container.

6. The two-part container according to claim 5, wherein

a plurality of hanging portions, each being the hanging portion, are provided, and
the mouth includes a plurality of a plurality of thick-walled portions, each being the thick-walled portion, and a plurality of thin-walled portions, each being the thin-walled portion, and the thick-walled portions and the thin-walled portions are alternately provided.

7. The two-part container according to claim 5, wherein
in the outer container, a screw projection is formed on an outer surface of the thick-walled portion.

8. The two-part container according to claim 1, wherein

the outer container includes a case portion including a bottom and a side wall, and
the mouth is a cylindrical mouth positioned on an inner side of the side wall of the case portion.

9. The two-part container according to claim 7, wherein
the two-part container is threadedly engageable with a cap including a female screw.

10. A cap-equipped two-part container, comprising:

the two-part container of any one of claims 1 to 9; and
a cap engageable with the mouth of the outer container.

11. The cap-equipped two-part container according to claim 10, wherein
a seal member is provided on an underside of a top surface of the cap.

FIG.1

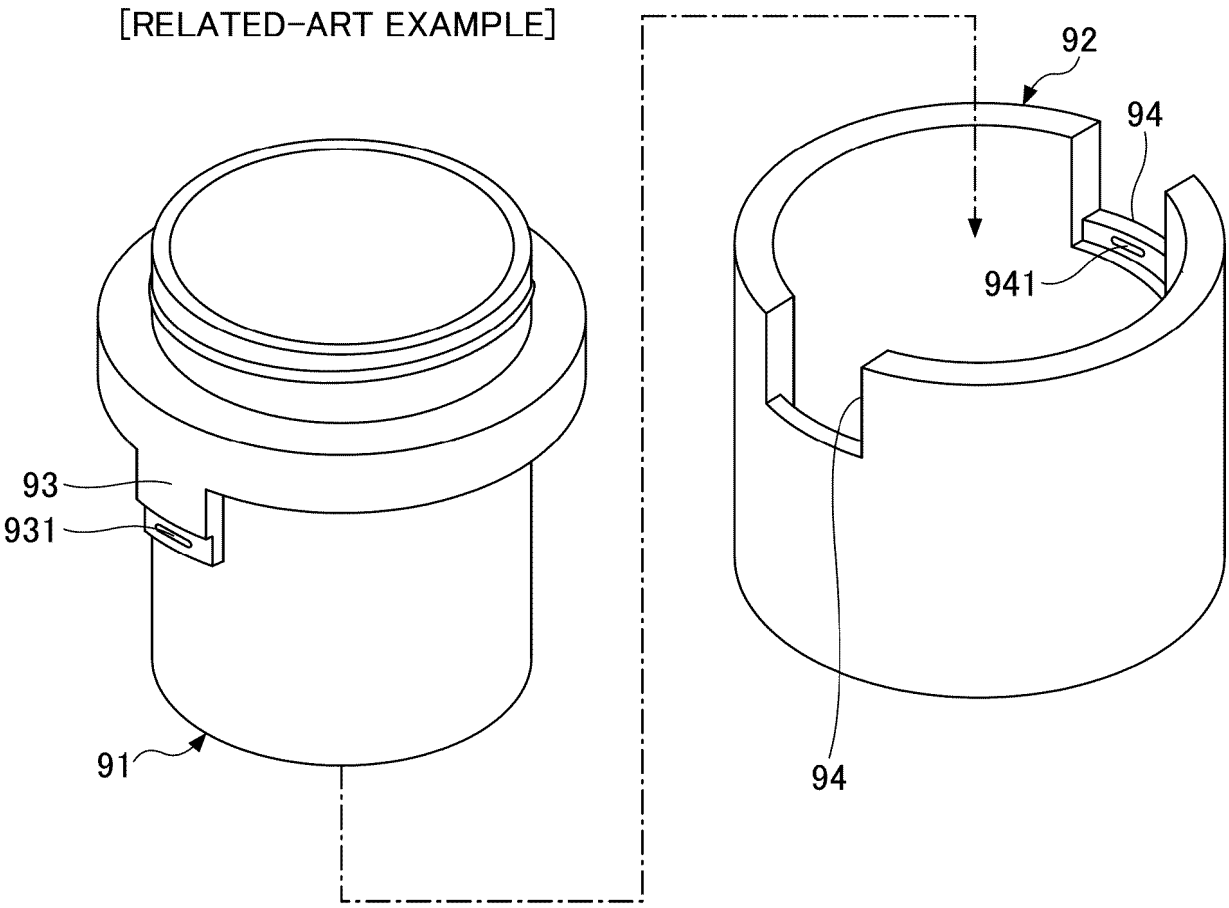


FIG.2

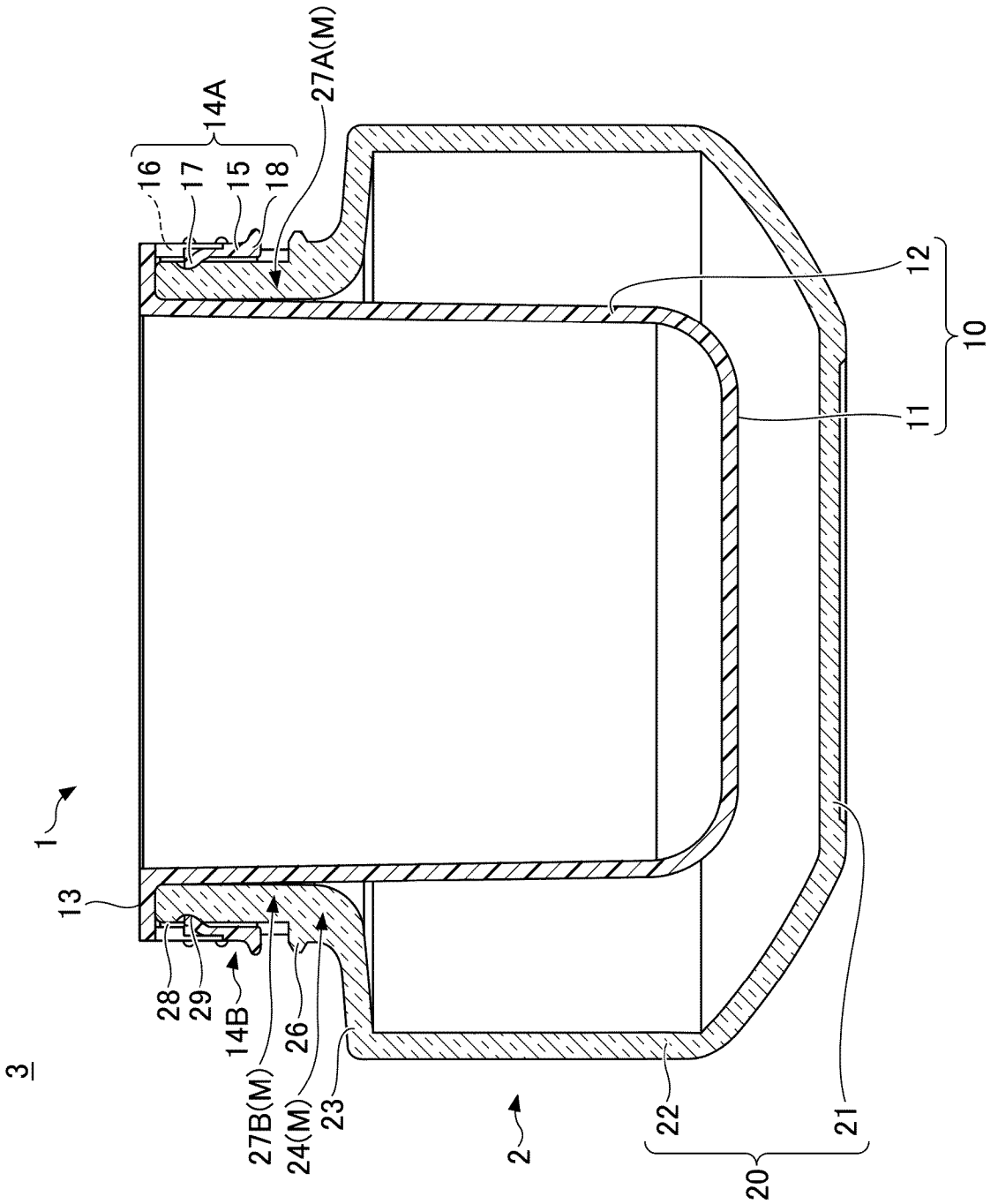

3
1
13
28
29
14B
27B(M)
24(M)
26
23
2
22
20
21
10
11
12
14A
16
17
15
18
27A(M)

FIG.3

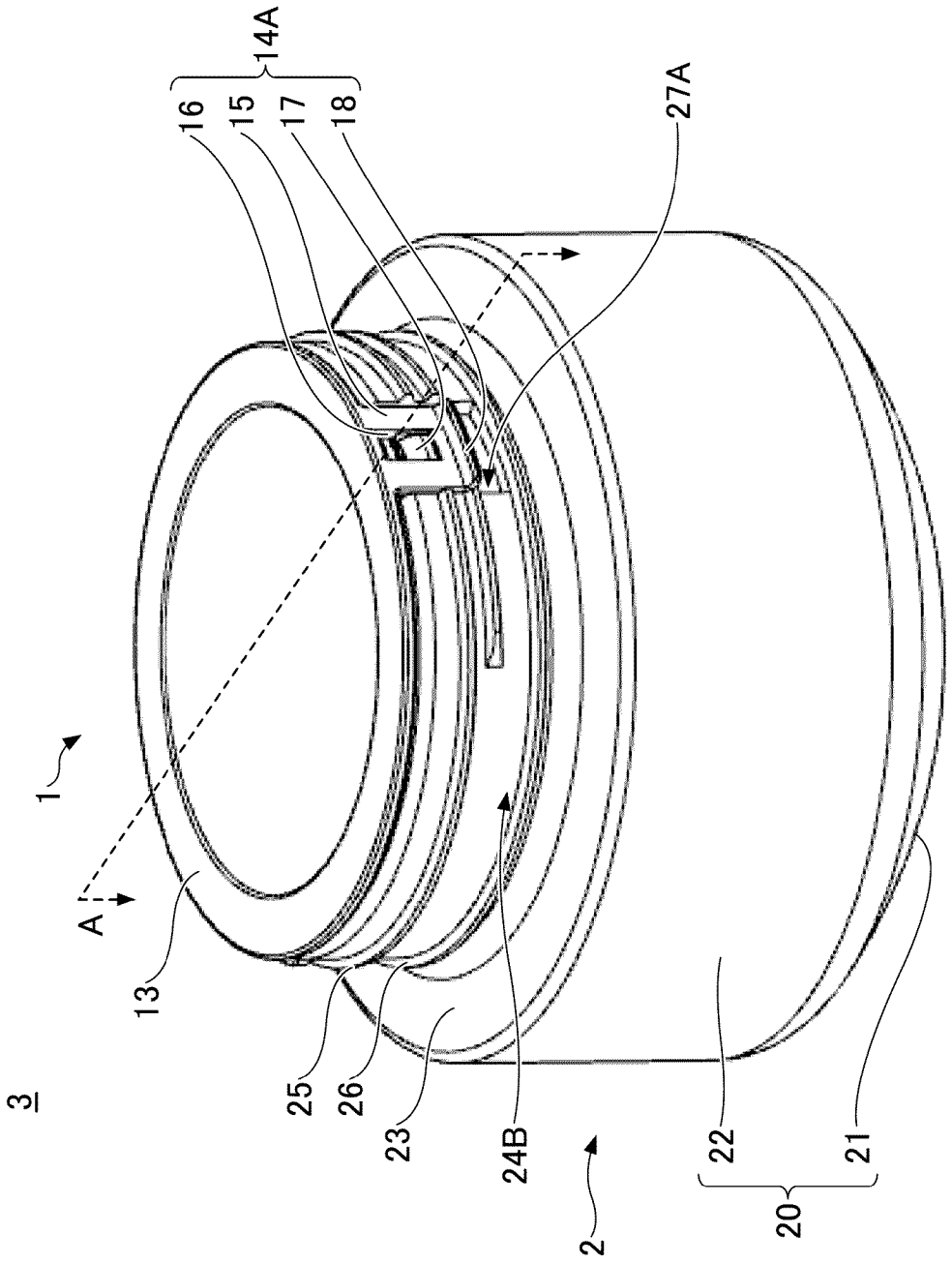


FIG.4

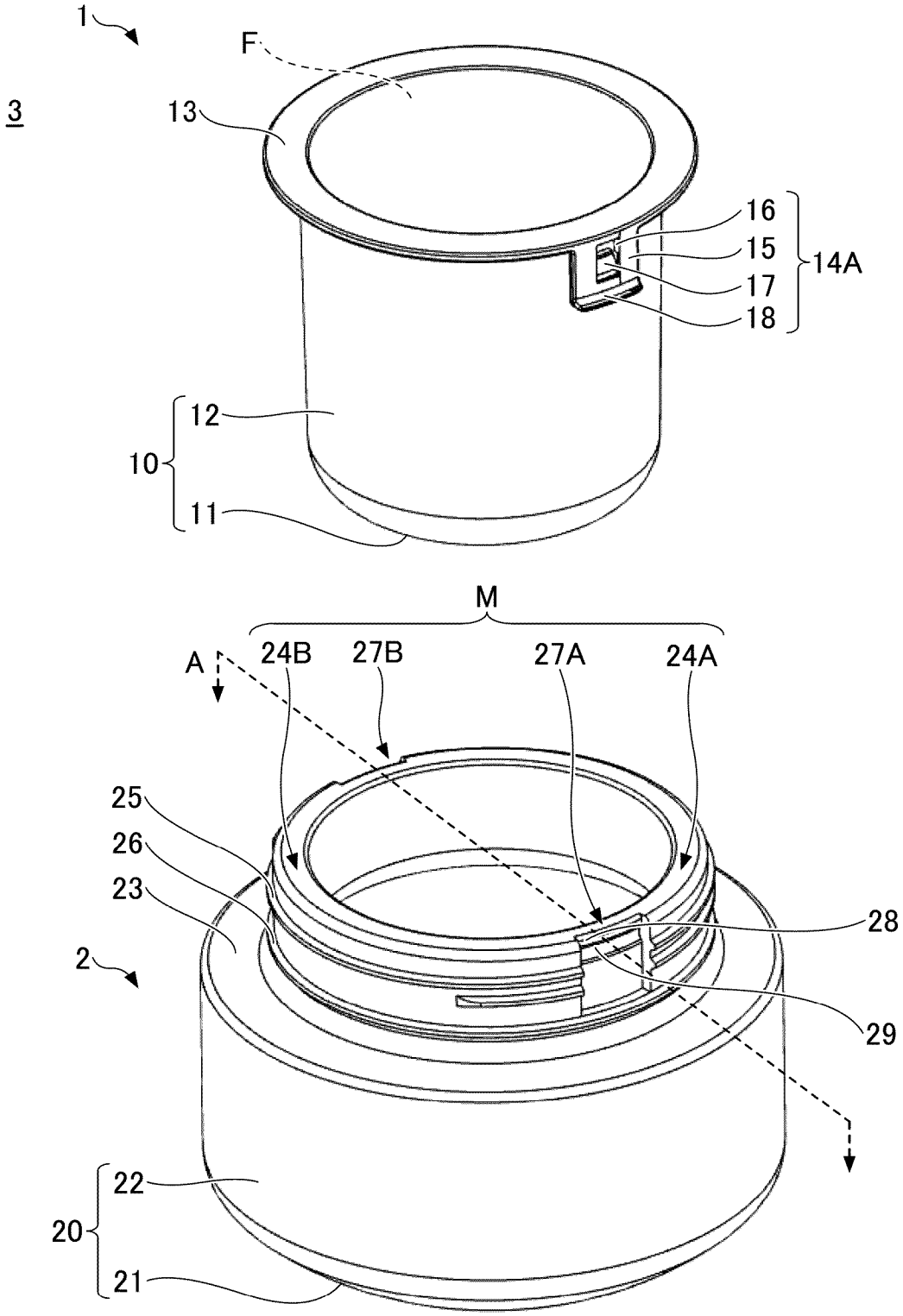

1
F
3
13
16
15
14A
17
18
12
10
11
M
A
24B
27B
27A
24A
25
26
23
28
2
29
22
20
21

FIG.5

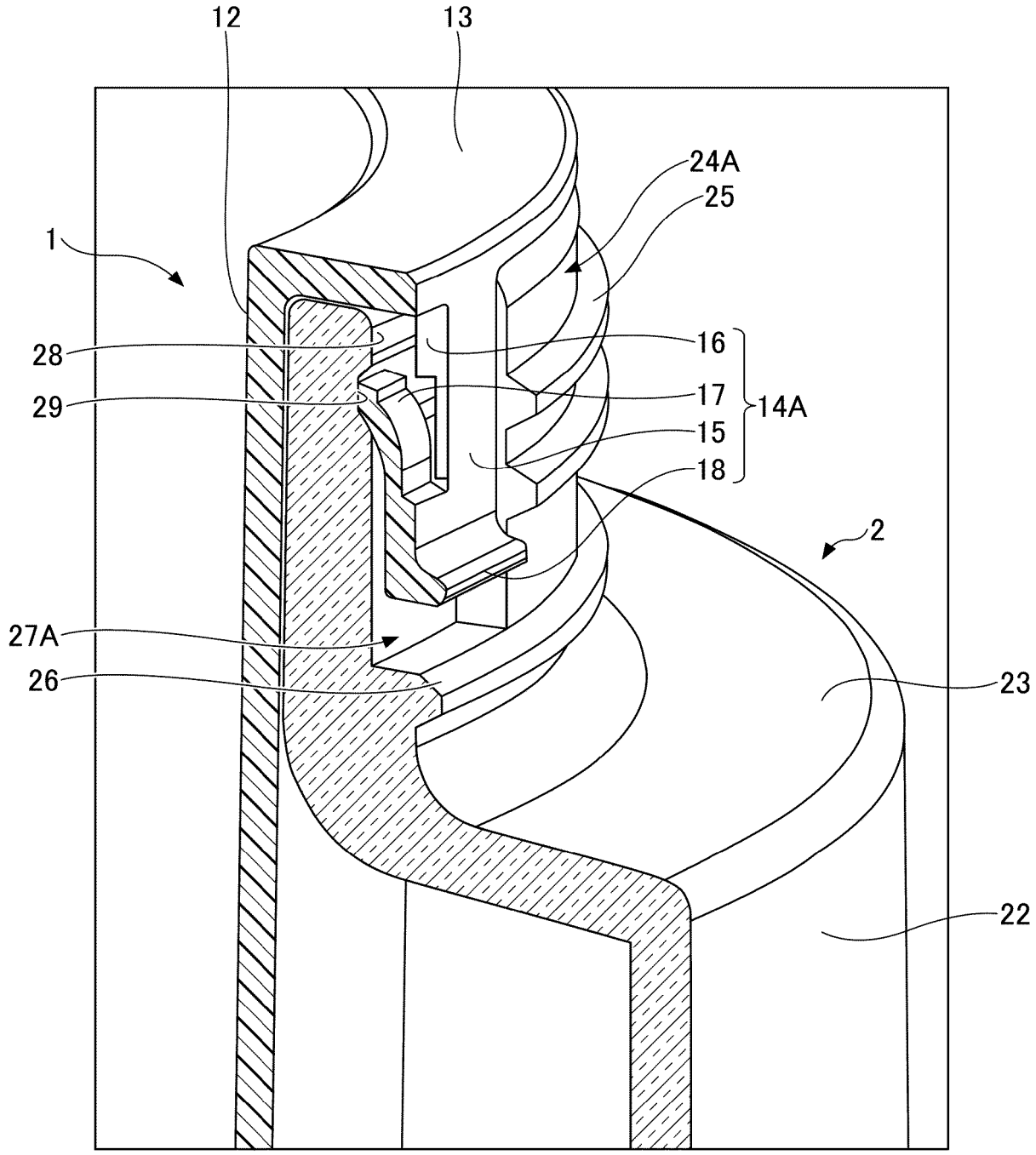


FIG.6

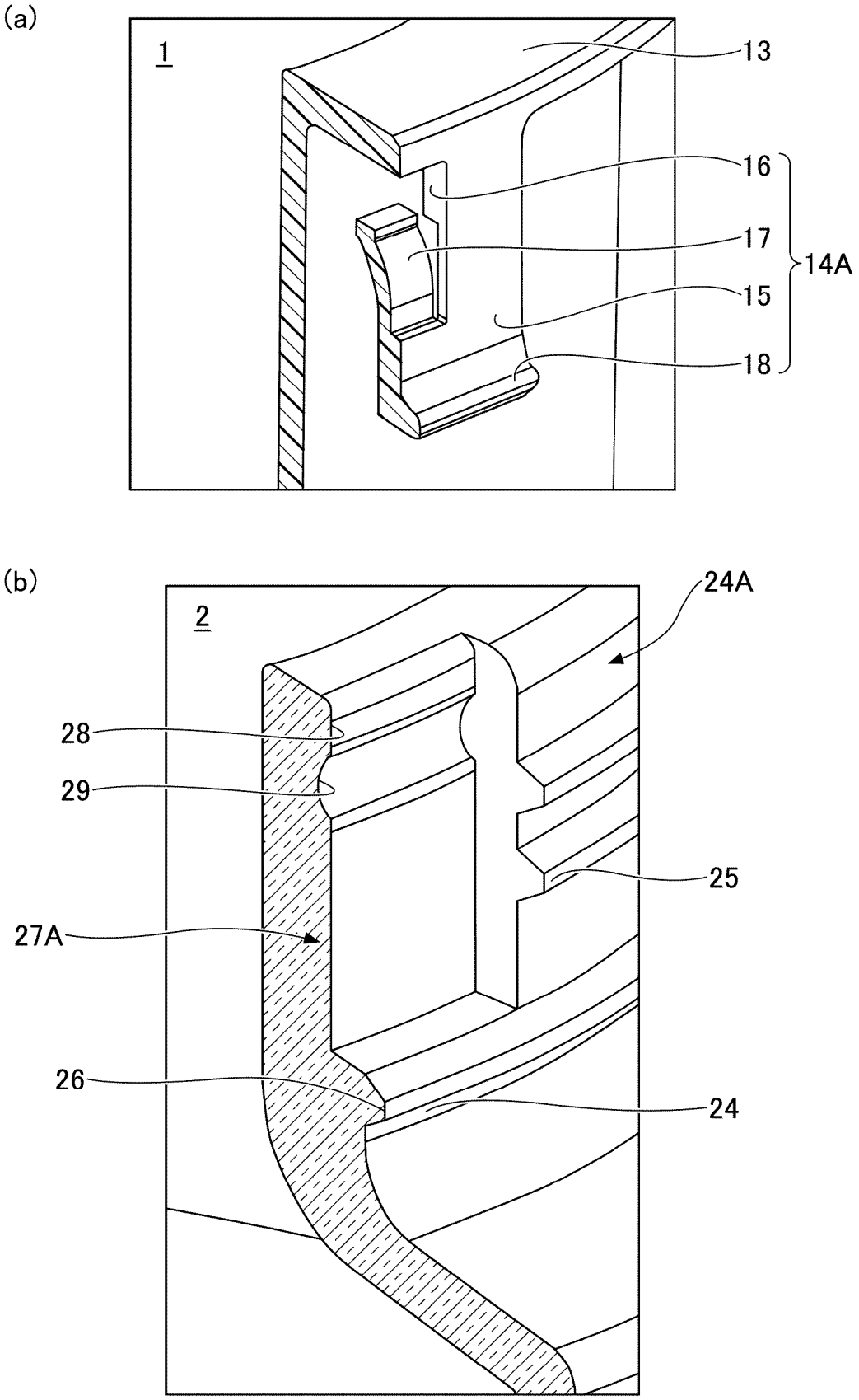


FIG.7

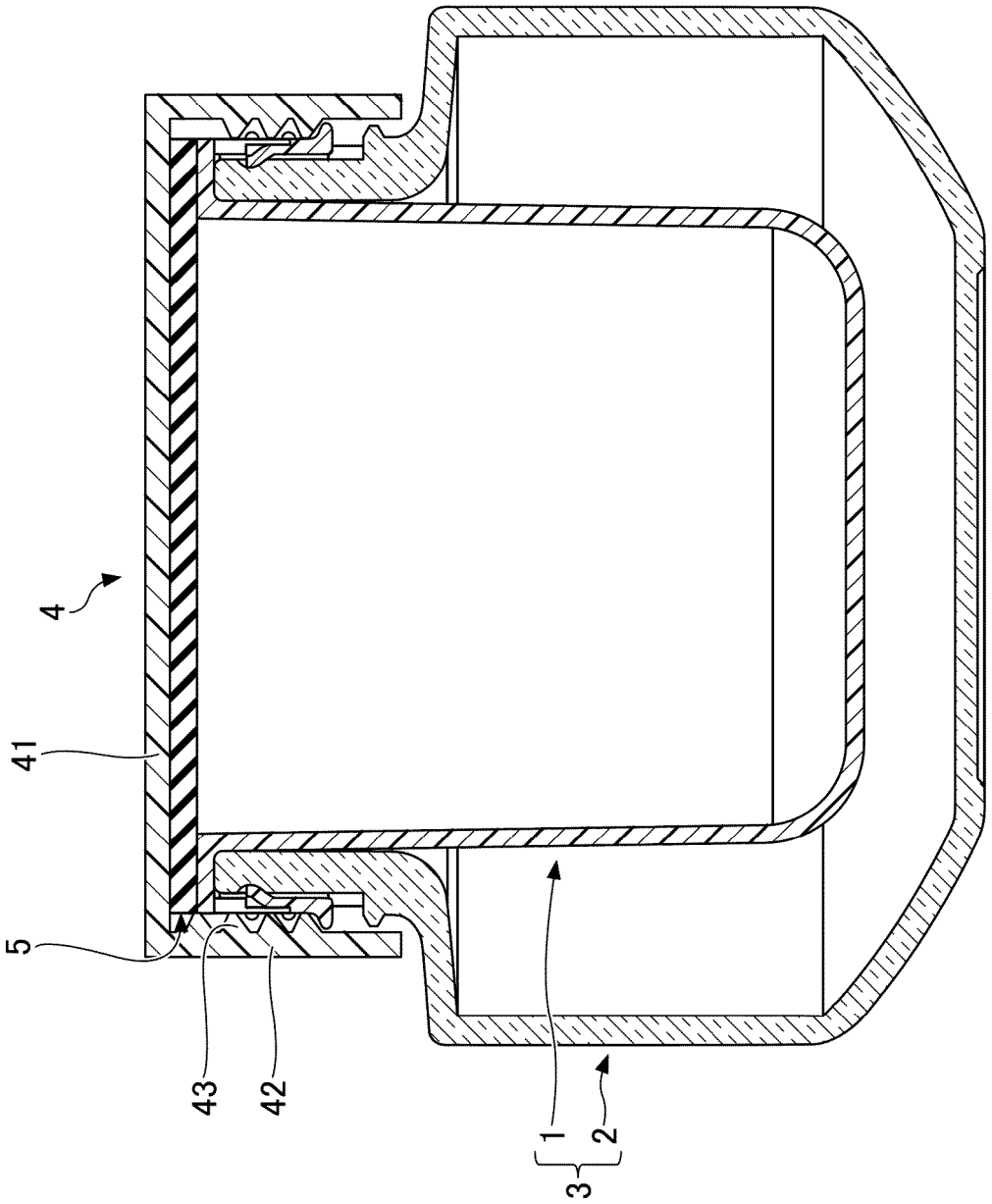


FIG.8

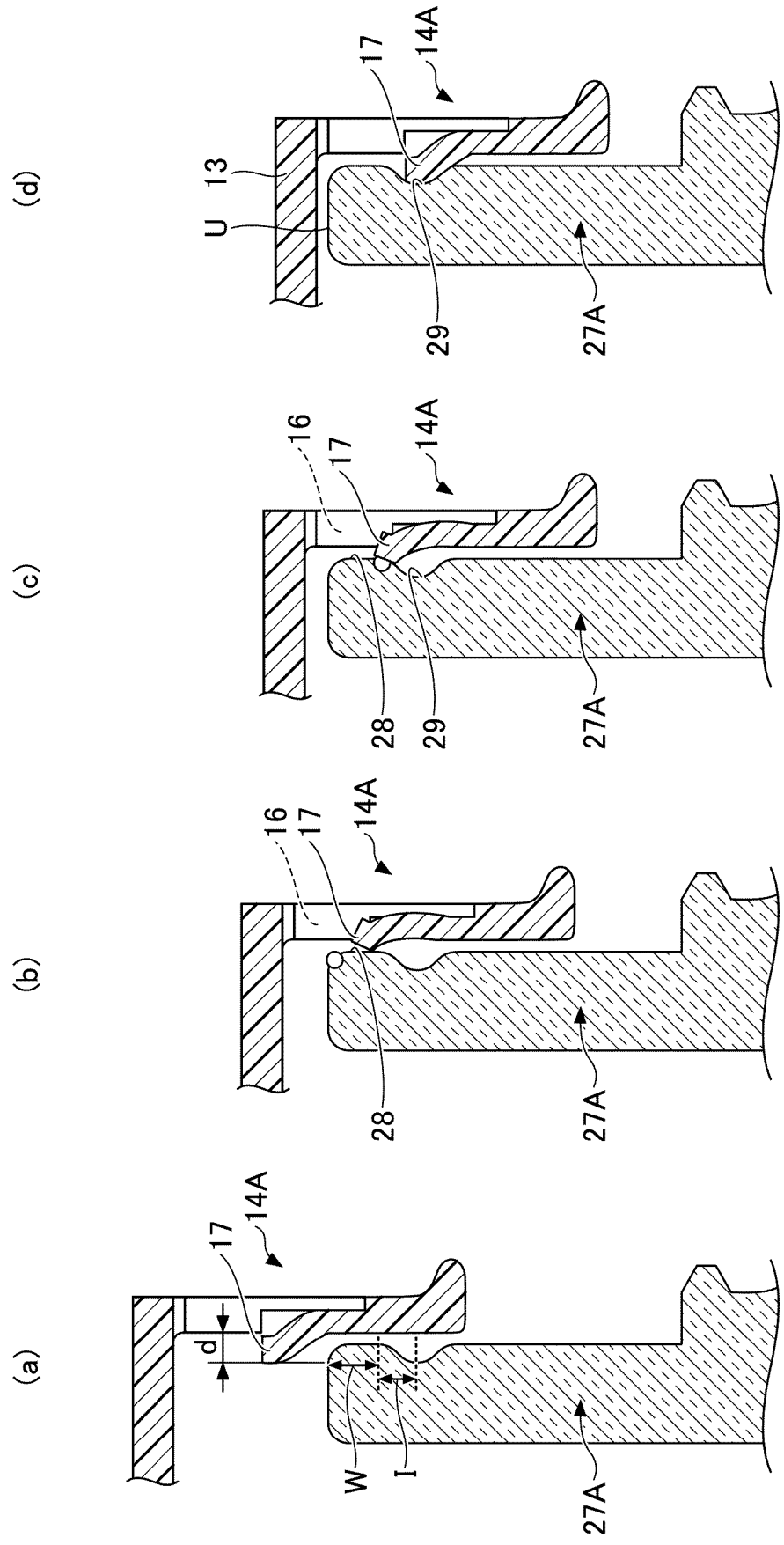


FIG.9

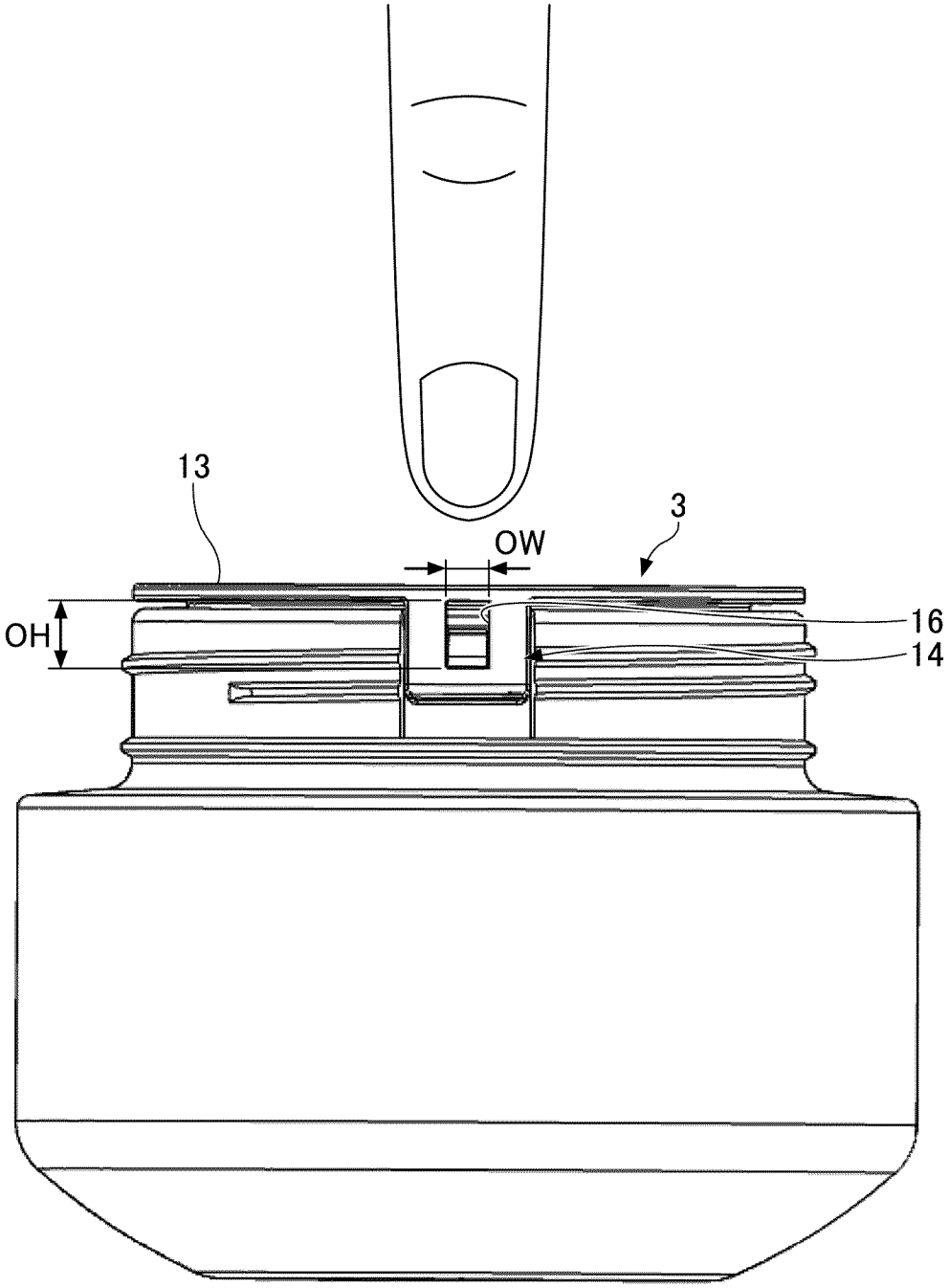


FIG.10

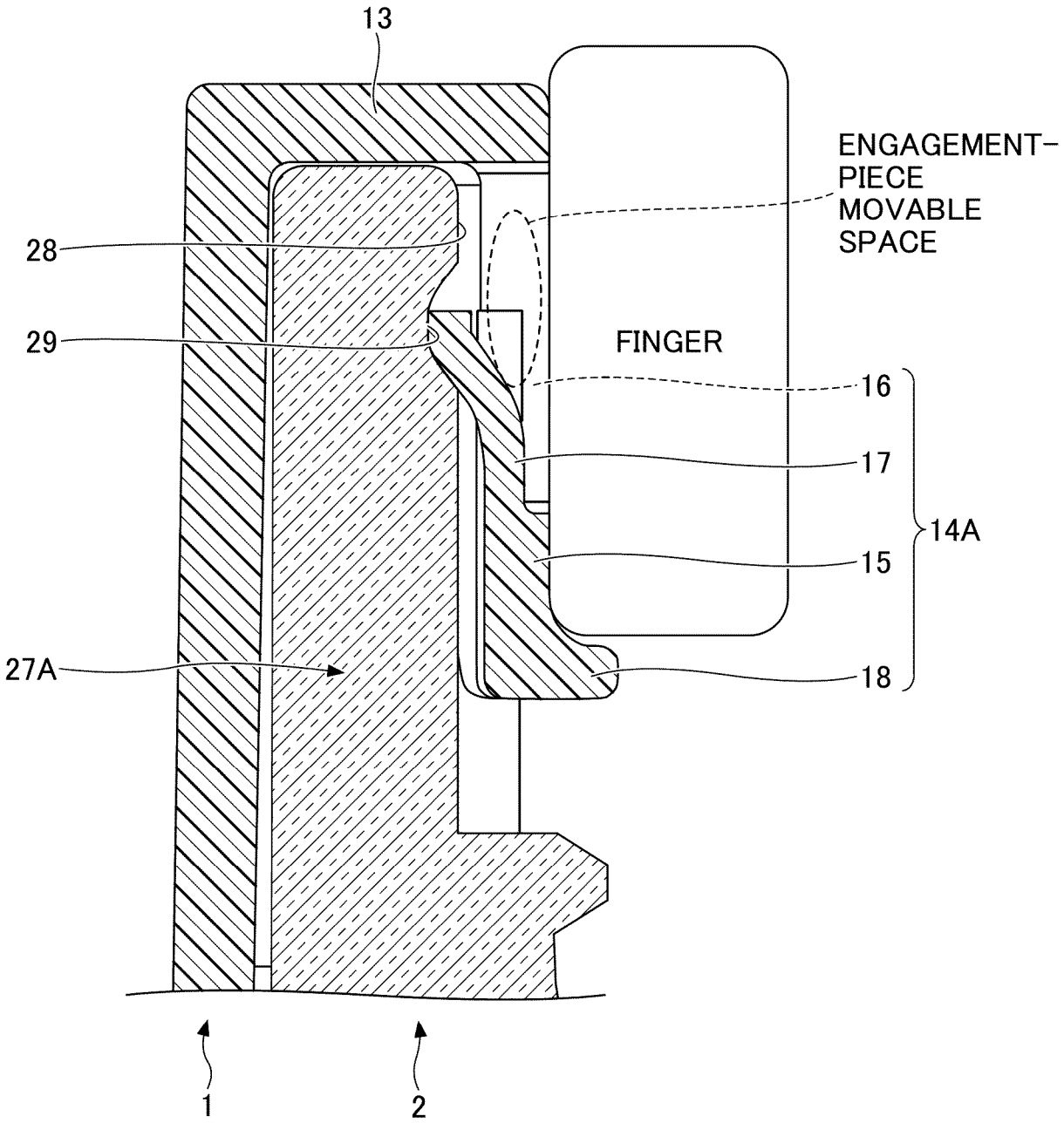

13
ENGAGEMENT-PIECE MOVABLE SPACE
28
29
FINGER
16
17
14A
15
27A
18
1
2

FIG.11

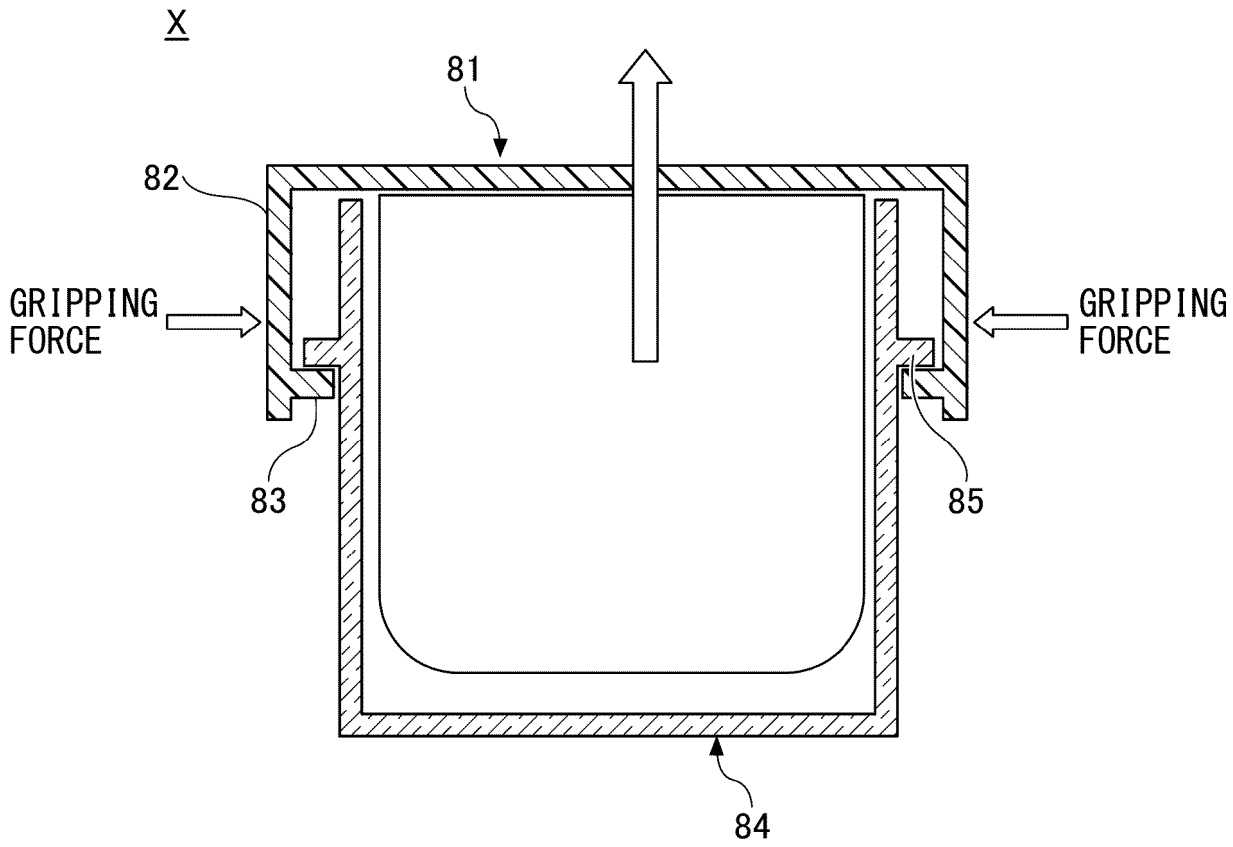


FIG.12

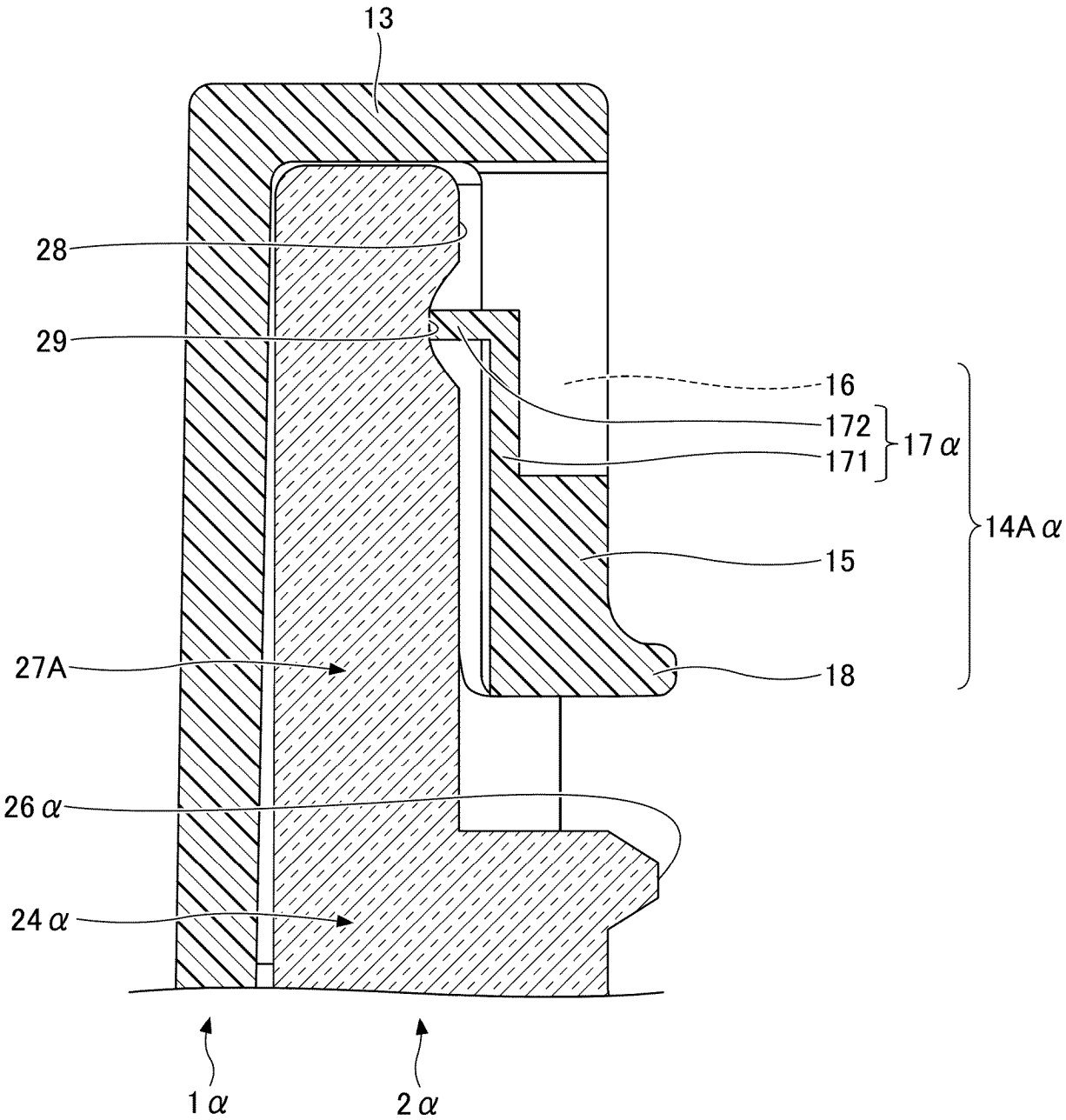


FIG.13

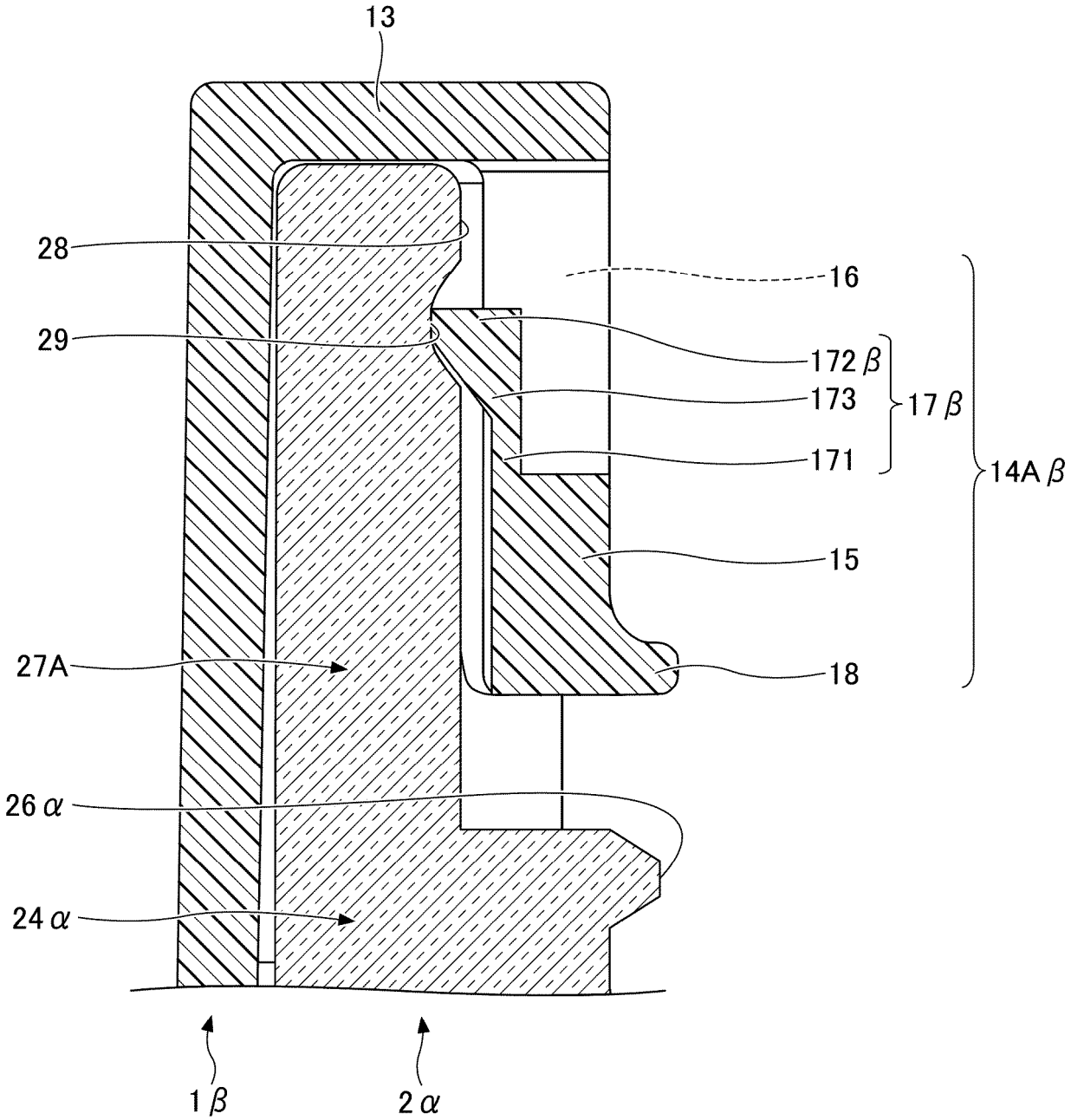


FIG.14

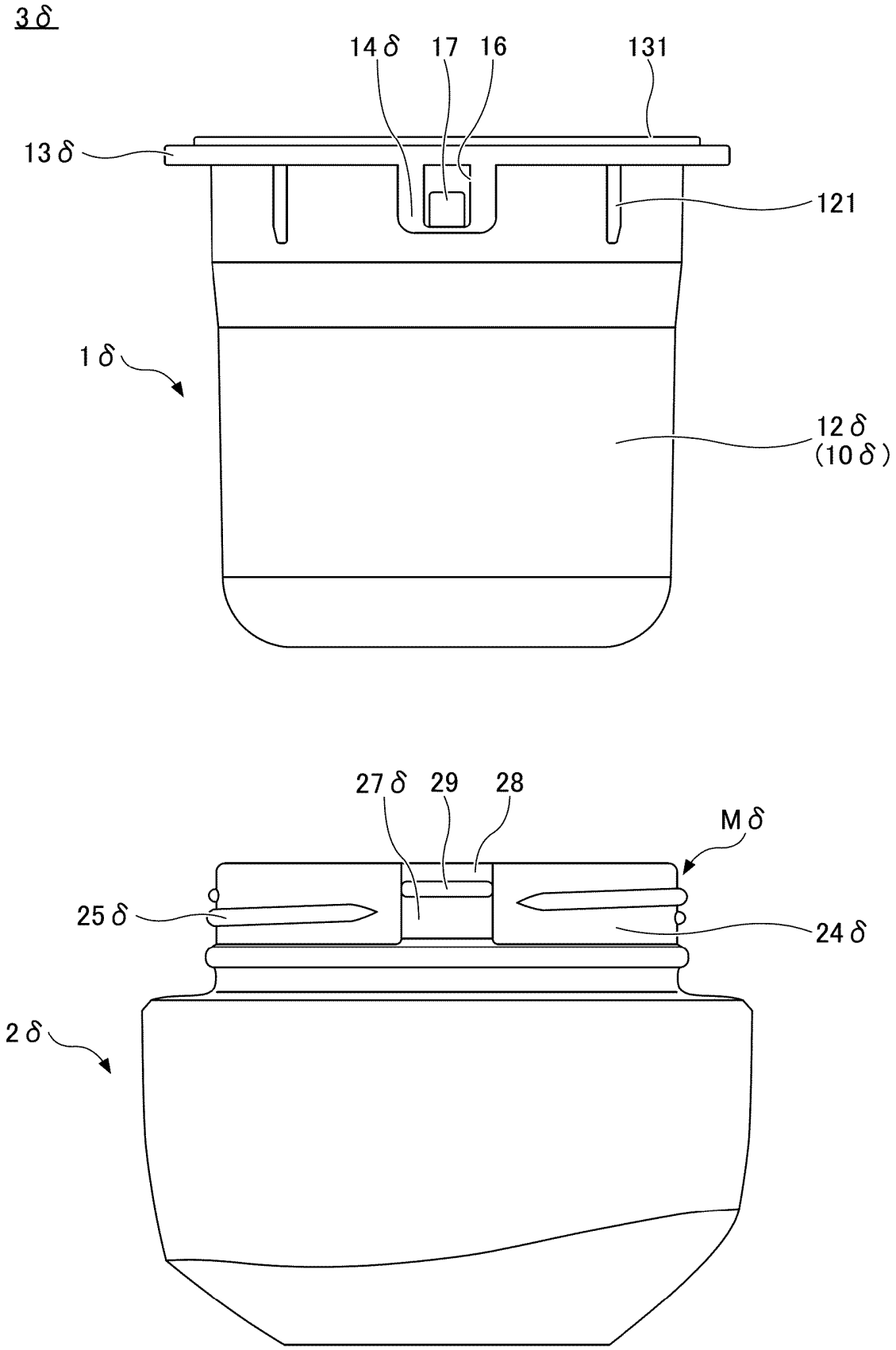


FIG.15

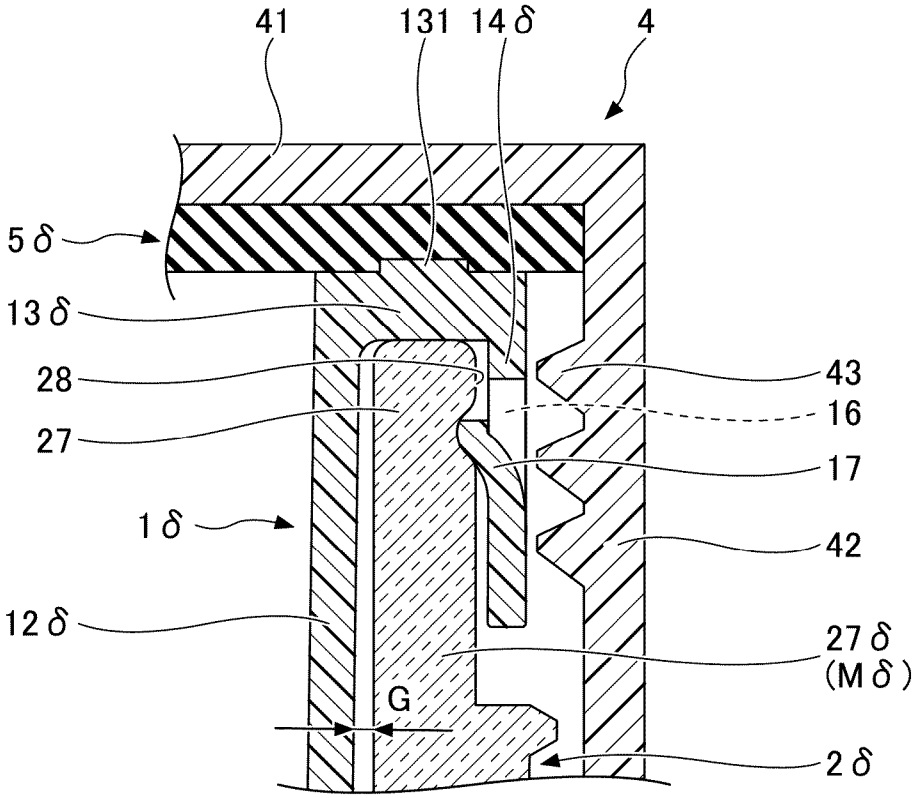


FIG.16

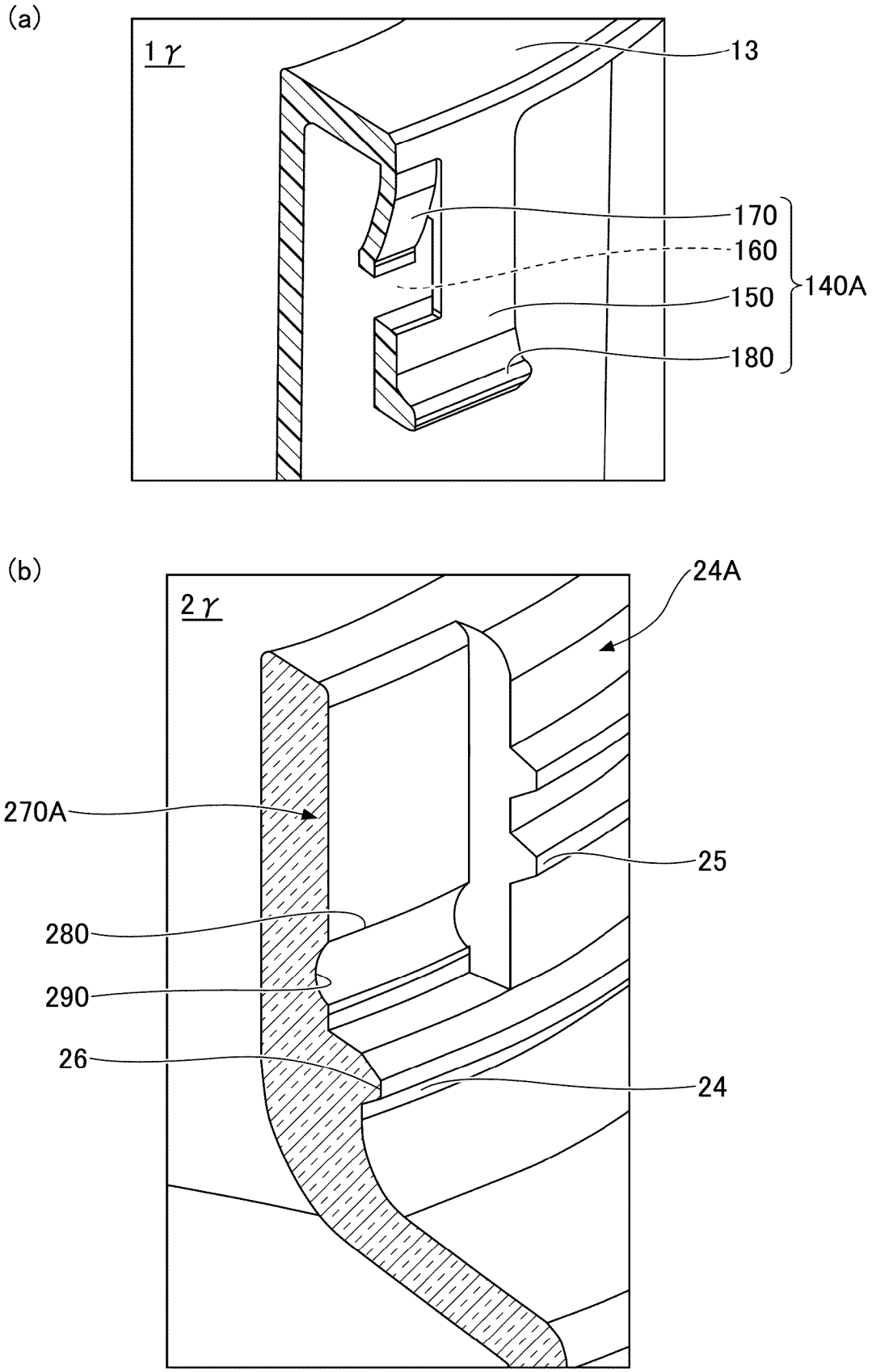
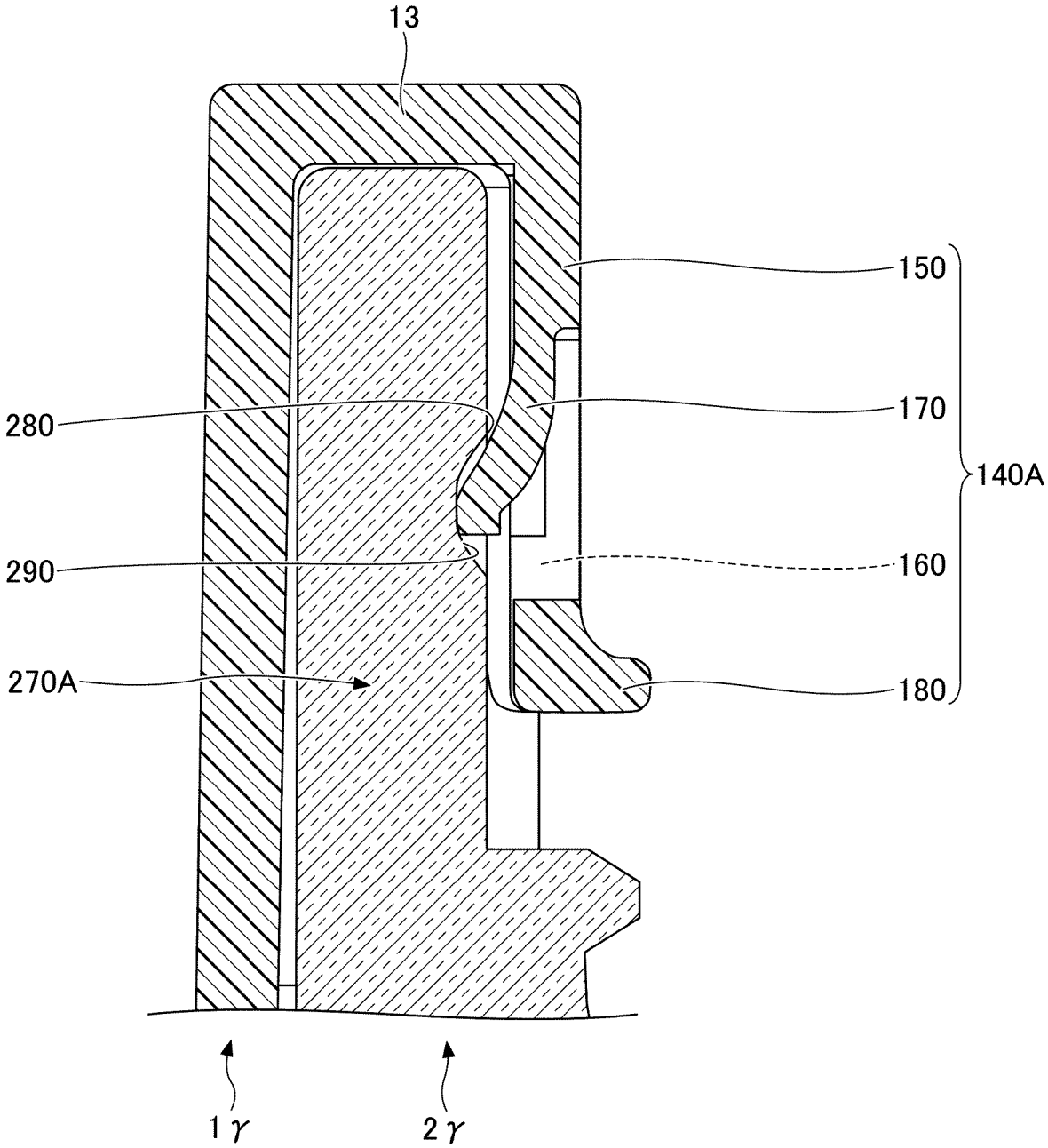


FIG.17



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2023/014936

A. CLASSIFICATION OF SUBJECT MATTER

B65D 8/06(2006.01)i; ***B65D 77/04***(2006.01)i
FI: B65D8/06 A; B65D77/04 A

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)

B65D8/06; B65D77/04

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.
Y	JP 2018-140788 A (YOSHINO KOGYOSHO CO LTD) 13 September 2018 (2018-09-13) paragraphs [0006]-[0030], fig. 1-6	1-4, 8-11
A	paragraphs [0006]-[0030], fig. 1-6	5-7
Y	CD-ROM of the specification and drawings annexed to the request of Japanese Utility Model Application No. 66318/1991 (Laid-open No. 13306/1993) (KANEBO, LIMITED) 23 February 1993 (1993-02-23), paragraphs [0008]-[0012], fig. 1-4	1-4, 8-11
A	paragraphs [0008]-[0012], fig. 1-4	5-7
Y	JP 2001-54423 A (YOSHIDA INDUSTRY CO LTD) 27 February 2001 (2001-02-27) paragraphs [0002]-[0032], fig. 1-8	1-4, 8-11
A	paragraphs [0002]-[0032], fig. 1-8	5-7
Y	JP 2009-220874 A (KEY TRANDING CO LTD) 01 October 2009 (2009-10-01) paragraphs [0014]-[0015], fig. 3	1-4, 8-11
A	paragraphs [0014]-[0015], fig. 3	5-7
Y	KR 10-2221054 B1 (TOLY KOREA INC.) 26 February 2021 (2021-02-26) paragraphs [0031]-[0087], fig. 1-6	8

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

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 June 2023	**04 July 2023**

Name and mailing address of the ISA/JP	Authorized officer
Japan Patent Office (ISA/JP) **3-4-3 Kasumigaseki, Chiyoda-ku, Tokyo 100-8915** **Japan**	Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2023/014936

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CD-ROM of the specification and drawings annexed to the request of Japanese Utility Model Application No. 27853/1993 (Laid-open No. 80630/1994) (KAMAYA KAGAKU KOGYO. CO., LTD.) 15 November 1994 (1994-11-15), paragraph [0007], fig. 1-3	9-11
A	JP 9-47319 A (SHISEIDO CO LTD) 18 February 1997 (1997-02-18) paragraphs [0008]-[0019], fig. 1-6	1-11

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/JP2023/014936

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
JP 2018-140788 A	13 September 2018	(Family: none)	
JP 5-13306 U1	23 February 1993	(Family: none)	
JP 2001-54423 A	27 February 2001	(Family: none)	
JP 2009-220874 A	01 October 2009	(Family: none)	
KR 10-2221054 B1	26 February 2021	(Family: none)	
JP 6-80630 U1	15 November 1994	(Family: none)	
JP 9-47319 A	18 February 1997	(Family: none)	

Form PCT/ISA/210 (patent family annex) (January 2015)

REFERENCES CITED IN THE DESCRIPTION

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- JP 2022107334 A **[0104]**