



(11)

EP 4 818 069 A1

(12)

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

(43) Date of publication:
07.10.2026 Bulletin 2026/41

(51) International Patent Classification (IPC):
B65D 47/10 ^(2006.01) **A47G 19/22** ^(2006.01)
B65D 47/06 ^(2006.01)

(21) Application number: **24896960.2**

(52) Cooperative Patent Classification (CPC):
A47G 19/22; B65D 47/06; B65D 47/10

(22) Date of filing: **24.06.2024**

(86) International application number:
PCT/JP2024/022809

(87) International publication number:
WO 2025/115268 (05.06.2025 Gazette 2025/23)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
GE KH MA MD TN

(72) Inventors:
• **TANAKA, Yuusuke**
Tokyo 141-0022 (JP)
• **WATANABE, Tsuneaki**
Tokyo 141-0022 (JP)
• **OTA, Tomoki**
Tokyo 141-0022 (JP)

(30) Priority: **27.11.2023 JP 2023200222**

(74) Representative: **Rings, Rolf**
Klingseisen, Rings & Partner
Patentanwälte
Postfach 10 15 61
80089 München (DE)

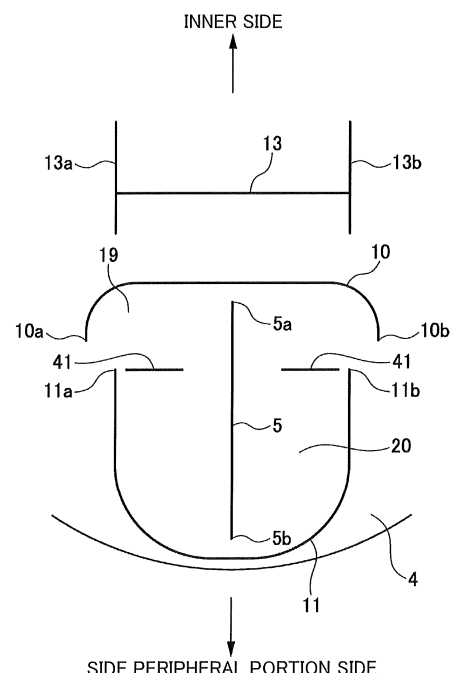
(71) Applicant: **Tokan Kogyo Co., Ltd.**
Tokyo 141-0022 (JP)

(54) LID FOR BEVERAGE CONTAINER AND BEVERAGE CONTAINER

(57) Provided is a beverage container lid capable of providing a spout by lifting a spout forming site upward even when a width of the spout itself is reduced as a force toward a center is applied to a covering plate while the lid is closed.

The beverage container lid includes a pushing site 19 that is provided in the covering plate 4, that is surrounded by a pushing line portion 10 including one of a low-strength portion having a strength lower than a strength of a general portion of the covering plate 4 and a cutting line portion, and that is to be pressed downward by a finger; and a spout forming site 20 that is provided in the covering plate 4 on a side peripheral portion side of the pushing site 19, and surrounded by a spout forming line portion 11 including one of the low-strength portion and the cutting line portion, the spout forming site 20 being lifted upward by a reaction force of pressing the pushing site 19 downward, wherein in the spout forming site 20, a reduced diameter generation line 5 including one of the low-strength portion and the cutting line portion extends from an inner side toward the side peripheral portion side.

FIG. 3



EP 4 818 069 A1

Description

Technical Field

[0001] The present invention relates to a beverage container lid that covers an opening of a beverage container, and a beverage container including the beverage container lid.

Background Art

[0002] Conventionally, many beverage shops such as fast food shops and convenience stores sell a beverage such as juice or coffee such that the beverage contained in a beverage container may not spill from an opening of the beverage container while carrying the beverage container, by covering the opening of the beverage container such as a plastic (synthetic resin) cup or a paper cup with a beverage container lid.

[0003] In particular, in recent years, there has been a demand for a beverage container lid capable of providing a spout through which a beverage can be easily taken without a straw and without removing the beverage container lid. For this reason, a lid of a push-down type has also been proposed in which a portion to be a spout provided on the beverage container lid is valley folded to form the spout.

[0004] However, this push-down type has a problem that since the push-down type forces the consumer to perform a two-step opening action to form the spout, it is difficult for a consumer to intuitively understand how to form the spout. For this reason, there has been a demand for a beverage container lid that enables a consumer to intuitively understand how to form a spout by simplifying an opening operation itself so that the opening operation can be realized in one step.

[0005] Therefore, Patent Literature 1 proposes a beverage container lid 1 having a seesaw type (push-up type) spout that is opened by forming a spout (spout 110) including a spout opening site 12A and a spout forming site 11A as pushing sites with a linear perforation (low-strength portion 14 for folding) as a boundary, and by pushing down the spout opening site 12A with a finger to lift up the spout forming site 11A with a reaction thereto (See claim 1 of the claims of Patent Literature 1, paragraphs[0024] to[0036] of the description, Figs. 2 to 4 of the drawings, and the like).

[0006] The seesaw type spout of the beverage container lid as described in Patent Literature 1 can be opened in one step only by pushing down the pushing site with a finger, and thus there is an advantage that the consumer can easily and intuitively understand how to form the spout and anyone can immediately open the spout even without an instruction.

Citation List

Patent Literature

[0007] Patent Literature 1: JP 2023-6268 A

5 Summary of Invention

Technical Problem

[0008] In such a technique disclosed in Patent Literature 1, as shown in Fig. 12(a), a side peripheral portion 71 is provided on a peripheral edge of a covering plate 70. While the lid is closed, the opening of the beverage container is covered with the covering plate 70, and the side peripheral portion 71 is engaged with an edge of the opening. At this time, a slight load is often applied to the side peripheral portion 71 as the side peripheral portion 71 is fitted to the edge of the beverage container. Therefore, while the lid is closed, a force toward the center is applied to the covering plate 70 as indicated by an arrow in Fig. 12(a) based on the load of the side peripheral portion 71.

[0009] In such a case, a spout 72, which can be said to be the weakest portion on the covering plate 70, is pushed from the peripheral edge by the force toward the center applied to the covering plate 70 and warps so as to shrink, and the width of the spout 72 itself is reduced. In such a case, as shown in Fig. 12(b), there is a problem that a spout forming site 75 enters under the spout 72 whose diameter has been reduced and is engaged with a back surface of the covering plate 70, and therefore it is difficult to lift the spout forming site 75 upward.

[0010] Thus, the present invention has been made in view of the above-described problems, and an object of the present invention is to provide a beverage container lid capable of providing a spout by lifting a spout forming site upward even when a width of the spout itself is reduced as a force toward a center is applied to a covering plate while the lid is closed, and a beverage container including the beverage container lid.

Solution to Problem

[0011] A beverage container lid according to a first aspect of the present invention is a beverage container lid provided with: a covering plate that covers an opening of a beverage container; and a side peripheral portion that is provided on an outer peripheral edge of the covering plate, the side peripheral portion being engageable with an edge of the opening of the beverage container when the covering plate covers the opening of the beverage container, the beverage container lid including: a pushing site that is provided in the covering plate, that is surrounded by a pushing line portion including one of a low-strength portion having a strength lower than a strength of a general portion of the covering plate and a cutting line portion, and that is to be pressed downward by a finger; and a spout forming site that is provided in the

covering plate on a side peripheral portion side of the pushing site, and surrounded by a spout forming line portion including one of the low-strength portion and the cutting line portion, the spout forming site being lifted upward by a reaction force of pressing the pushing site downward, wherein in the spout forming site, a reduced diameter generation line including one of the low-strength portion and the cutting line portion extends from an inner side toward the side peripheral portion side.

[0012] A beverage container lid according to a second aspect of the present invention is the beverage container lid according to the first aspect of the present invention, wherein a spout end and a pushing portion end are separated from each other, the spout end being an end portion of the spout forming line portion surrounding the spout forming site, the pushing portion end being an end portion of the pushing line portion surrounding the pushing site, a boundary between the spout forming site and the pushing site is defined by a partitioning line portion including one of the low-strength portion and the cutting line portion, and an engaging portion engageable with a peripheral edge of the spout forming site folded back via the partitioning line portion is provided on the inner side of the pushing site.

[0013] A beverage container lid according to a third aspect of the present invention is the beverage container lid according to the first aspect or the second aspect of the present invention, wherein the reduced diameter generation line linearly extends from the inner side toward the side peripheral portion side at a substantially center of the spout forming site.

[0014] A beverage container lid according to a fourth aspect of the present invention is the beverage container lid according to the second aspect of the present invention, wherein the reduced diameter generation line extends toward the side peripheral portion side with a starting point of the reduced diameter generation line being on the inner side of the partitioning line portion.

[0015] A beverage container lid according to a fifth aspect of the present invention is the beverage container lid according to the first or fourth aspect of the present invention, wherein the reduced diameter generation line includes: a base line that extends from the inner side toward the side peripheral portion side, and one or more branch lines branching from the base line in a lateral direction.

[0016] A beverage container lid according to a sixth aspect of the present invention is the beverage container lid according to the first or second aspect of the present invention, wherein a plurality of the reduced diameter generation lines are provided.

[0017] A beverage container according to a seventh aspect of the present invention includes: a container body; and the beverage container lid according to any one of the aspects 1 to 6.

Advantageous Effects of Invention

[0018] According to the present invention having the above-described configuration, it is possible to reduce a bending width by valley folding the spout forming site centering the reduced diameter generation line, and as a result, it is possible to easily lift the spout forming site with a finger without being engaged with a back surface of the covering plate. Therefore, according to the present invention, it is possible to easily provide the spout in the covering plate of the beverage container lid.

Brief Description of Drawings

[0019]

Fig. 1 is an exploded perspective view of a beverage container lid according to an embodiment of the present invention, and a beverage container to which the lid is fitted.

Fig. 2 is a plan view of a covering plate.

Fig. 3 is an enlarged plan view illustrating a detailed shape of a portion surrounded by a broken line in Fig. 2.

Fig. 4 is a diagram for explaining various variations of a shape of a reduced diameter generation line.

Fig. 5 is a view illustrating an example in which a start point of the reduced diameter generation line is located closer to a side peripheral portion than a partitioning line portion.

Fig. 6 is a view illustrating an example in which a plurality of reduced diameter generation lines are provided.

Fig. 7 is a view illustrating a mode in which the reduced diameter generation line includes a base line extending from an inside toward a side peripheral portion side and one or more branch lines branching from the base line in a lateral direction.

Fig. 8 is a first explanatory view showing, in stages, a method for forming a spout of the beverage container lid according to the embodiment of the present invention.

Fig. 9 is a view for describing a function and an effect of the beverage container lid according to the embodiment of the present invention.

Fig. 10 is a second explanatory view showing the method for forming the spout of the beverage container lid according to the embodiment of the present invention in stages.

Fig. 11 is a third explanatory view showing, in stages, the method for forming the spout of the beverage container lid according to the embodiment of the present invention.

Fig. 12 is a view for describing a problem of the conventional technique.

Description of Embodiment

[0020] Hereinafter, an exemplary embodiment to which the present invention is applied will be described with reference to the drawings.

[0021] First, a beverage container lid 1 according to an embodiment of the present invention will be described with reference to Fig. 1. Fig. 1 is an exploded perspective view of a beverage container lid 1 according to an embodiment of the present invention and a beverage container 2 to which the lid 1 is fitted.

[0022] As shown in Fig. 1, the beverage container 2 is a bottomed cylindrical paper cup which is made of paper, which includes an opening 3 having an edge 3a at an upper portion thereof, and which is often used to contain a beverage 6 such as juice or coffee to sell the beverage.

[0023] The beverage container 2 is not limited to paper, and may be made of other materials such as plastic. In a case where the beverage container 2 is made of plastic, environmentally friendly biodegradable plastic or the like may be used.

[0024] The beverage container 2 is used for the purpose of selling the beverage 6 by closing the opening 3 with the beverage container lid 1.

[0025] The beverage container lid 1 is made of paper, and includes a disk-shaped covering plate 4 that covers the opening 3 of the beverage container 2, and a side peripheral portion 50 that is provided on an outer peripheral edge of the covering plate 4 and that is engageable with an edge 3a of the opening 3 of the beverage container 2 when the opening 3 of the beverage container 2 is covered by the covering plate 4.

[0026] Here, the beverage container lid 1 is also not limited to paper, and may be made of other materials such as plastic. In a case where the beverage container lid 1 is made of plastic, environmentally friendly biodegradable plastic or the like may be used.

[0027] Fig. 2 is a plan view of the covering plate 4, and Fig. 3 is an enlarged plan view illustrating a detailed shape of a portion surrounded by a broken line in Fig. 2. The covering plate 4 is provided with a pushing line portion 10 including one of a low-strength portion having a strength lower than that of a general portion of the covering plate 4 and a cutting line portion. On the side peripheral portion side of the pushing line portion 10, a spout forming line portion 11 including the cutting line portion having a shape of a peripheral edge of the spout for forming a spout or the low-strength portion having a lower strength than the general portion of the covering plate is provided.

[0028] In a case where the pushing line portion 10 is configured by a low-strength portion, the low-strength portion having a strength lower than that of the general portion of the covering plate 4 is provided by providing a perforation, reducing the thickness by half cutting, or the like. The pushing line portion 10 includes any shape as long as it swells inward in a convex shape from one end 10a and the other end 10b. A region surrounded by the

pushing line portion 10 is the pushing site 19.

[0029] In a case where the spout forming line portion 11 is configured by a low-strength portion, the low-strength portion having a strength lower than that of the general portion of the covering plate 4 is provided by providing a perforation, reducing the thickness by half cutting, or the like. The spout forming line portion 11 includes any shape as long as it swells toward the side peripheral portion side in a convex shape from one end 11a and the other end 11b. A region surrounded by the spout forming line portion 11 is a spout forming site 20.

[0030] As illustrated in Fig. 3, it is assumed that the one end 11a and the other end 11b of the spout forming line portion 11 are positioned to be spaced apart from the one end 10a and the other end 10b of the pushing line portion 10 on the side peripheral portion side. That is, the pushing site 19 surrounded by the pushing line portion 10 is configured to be larger in diameter in the width direction than that of the spout forming site 20 surrounded by the spout forming line portion 11. However, the diameters of the pushing site 19 and the spout forming site 20 in a widthwise direction are not limited thereto, and may be configured to have the same widthwise diameter, or the spout forming site 20 is configured to have a larger diameter in the widthwise direction than that of the pushing site 19.

[0031] Note that the partitioning line portion 41 may be separately provided on an extension line of the one end 11a and the other end 11b of the spout forming line portion 11. The partitioning line portion 41 includes one of a low-strength portion having a lower strength than the general portion of the covering plate 4 and a cutting line portion. In the case of includes such a low-strength portion, processing such as providing a perforation, reducing the thickness by half cutting, or the like is performed. The partitioning line portion 41 may be continuous from the one end 11a to the other end 11b, or may be provided intermittently at a plurality of portions from the one end 11a to the other end 11b. By providing the partitioning line portion 41, the spout forming site 20 can be configured to be rotatable about the partitioning line portion 41 as a fulcrum. However, the partitioning line portion 41 is not limited to the case of being provided on the extension line of the one end 11a and the other end 11b of the spout forming line portion 11, and may be formed at any position as long as it is between the spout forming site 20 and the pushing site 19. That is, the partitioning line portion 41 constitutes a boundary between the spout forming site 20 and the pushing site 19. Note that the configuration of the partitioning line portion 41 is not essential and may be omitted.

[0032] On the covering plate 4, an engaging portion 13 may be provided inside the pushing site 19. The engaging portion 13 can engage with a peripheral edge of the spout forming site 20 folded back via the partitioning line portion 41. The engaging portion 13 is a cutting line portion into which the peripheral edge of the spout forming site 20 can be inserted. At both ends of the engaging portion 13,

cutting line portions 13a and 13b including incisions orthogonal to an extending direction of the engaging portion 13 may be provided. By providing such cutting line portions 13a and 13b, the engaging portion 13 can be easily pushed and spread with a finger.

[0033] In the spout forming site 20, a reduced diameter generation line 5 including one of a low-strength portion or a cutting line portion extends from inside toward the side peripheral portion side. A start point 5a of the reduced diameter generation line 5 is located on more inward, and an end point 5b of the reduced diameter generation line 5 is located closer to the side peripheral portion side. The reduced diameter generation line 5 is assumed to be provided linearly from the start point 5a to the end point 5b, but is not limited thereto, and the reduced diameter generation line 5 may be provided in a curved shape as illustrated in Fig. 4(a) or may be provided in an irregular linear shape as illustrated in Fig. 4(b). In addition, the reduced diameter generation line 5 is provided substantially at the center of the spout forming site 20, but is not limited thereto, and may be provided at least in any part of the spout forming site 20. In the example of Fig. 2, the reduced diameter generation line 5 constitutes a straight line on the extension line connecting just a center O of the covering plate 4, but the reduced diameter generation line 5 is not limited to this, and the reduced diameter generation line 5 may deviate from the extension line connecting the center O of the covering plate 4, or may extend obliquely from the inside toward the side peripheral portion side as illustrated in Fig. 4(c).

[0034] The case where the reduced diameter generation line 5 extends toward the side peripheral portion side with the inner side of the partitioning line portion 41 as the start point 5a has been described as an example. In such a case, the start point 5a of the reduced diameter generation line 5 may be close to the vicinity of the pushing line portion 10, or may be provided on the pushing line portion 10 to intersect therewith.

[0035] Fig. 5 illustrates an example in which the start point 5a of the reduced diameter generation line 5 is located closer to the side peripheral portion than the partitioning line portion 41. According to this mode, the entire portion of the reduced diameter generation line 5 from the start point 5a to the end point 5b is included in the spout forming site 20. Even in such a case, the reduced diameter generation line 5 may be provided in a curved shape, may be provided in an irregular linear shape, or may extend in an oblique direction from the inside toward the side peripheral portion side.

[0036] That is, regardless of whether or not the start point 5a is positioned closer to the side peripheral portion side from the partitioning line portion 41, the end point 5b of the reduced diameter generation line 5 may be positioned at least closer to the side peripheral portion side from the partitioning line portion 41.

[0037] As illustrated in Figs. 6(a) and 6(b), a plurality of the reduced diameter generation lines 5 may be pro-

vided.

[0038] Figs. 7(a) and 7(b) illustrate a mode in which the reduced diameter generation line 5 includes a base line 51 extending from the inside toward the side peripheral portion side and one or more branch lines 52 branching from the base line 51 in the lateral direction. For example, the branch line 52 does not extend in a direction orthogonal to the base line 51, but a branch line 52a closer to the inner side is inclined inward, and a branch line 52b closer to the side peripheral portion side is inclined toward the side peripheral portion side. However, the angle of the branch line 52 with respect to the base line 51 may be formed by directions orthogonal to each other, or may be configured at any other angle.

[0039] A position at which the branch line 52 branches in the base line 51 may be on the side peripheral portion side of the start point 5a and on the inner side of the end point 5b as illustrated in Fig. 7(a), but not limited thereto, and the position at which the branch line 52 branches may be the start point 5a and the end point 5b as illustrated in Fig. 7(b).

[0040] Next, a method for forming the spout of the beverage container lid according to the embodiment of the present invention will be described with reference to Figs. 8 to 10. Figs. 8 to 10 are explanatory views showing, in stages, the method for forming the spout of the beverage container lid according to the embodiment of the present invention.

[0041] First, as illustrated in Figs. 8(a) and 8(b), upon pushing the pushing site 19 from above with a finger F such as an index finger, a stress is transmitted, and the spout forming site 20 is lifted. At this time, as shown in Fig. 9(a), in a case where the pushing site 19 is pushed with the finger F, the reduced diameter generation line 5 is opened, and the spout forming site 20 is valley folded centering the reduced diameter generation line 5 as viewed from a front surface. As a result, as illustrated in Figs. 8 and 9, when the pushing site 19 sinks and the spout forming site 20 is lifted accordingly, a bending width H of the spout forming site 20 can be further reduced.

[0042] Fig. 9(b) illustrates a cross-sectional shape immediately before the spout forming site 20 is lifted from the covering plate 4. As a result of the valley fold of the spout forming site 20 as viewed from the front surface centering the reduced diameter generation line 5, the bending width H decreases, and as illustrated in the enlarged view in Fig. 9(b), a gap is provided between the spout forming line portion 11 at the peripheral edge of the spout forming site 20 and the covering plate 4. As a result, even if the spout forming site 20 is pushed downward below the covering plate 4, it is possible to prevent the spout forming site 20 from being engaged with a back surface of the covering plate 4.

[0043] In particular, while the lid is closed, the side peripheral portion 50 is engaged with the edge 3a of the opening 3 of the beverage container 2, and as a result, a force toward the center is exerted on the covering plate 4 based on the load of the side peripheral portion

50. Even in such a case, according to the present invention, it is possible to reduce the bending width H by valley folding the spout forming site 20 centering the reduced diameter generation line 5, and as a result, it is possible to easily lift the spout forming site 20 with the finger F without being engaged with the back surface of the covering plate 4.

[0044] Subsequently, as illustrated in Figs. 10(a) and 10(b), the spout forming site 20 that has been lifted is folded inward of the covering plate 4 with the finger F such as a thumb. Since it is possible to prevent the spout forming site 20 from being engaged with the back surface of the covering plate 4, it is possible to easily realize such an operation of lifting the spout forming site 20 upward and folding the spout forming site 20.

[0045] Then, as illustrated in Figs. 11(a) and 11(b), the peripheral edge of the spout forming site 20 is inserted into the engaging portion 13 and is engaged with the engaging portion 13 with the finger F such as a thumb to provide a spout 110.

[0046] At this time, as shown in Fig. 6, even in a case where a plurality of the reduced diameter generation lines 5 are provided, the spout forming site 20 can be valley folded in a similar manner, and the spout forming site 20 can be prevented from being engaged with the back surface of the covering plate 4.

[0047] In addition, as illustrated in Fig. 7, by introducing one or more branch lines 52 branching from the base line 51 in the lateral direction, the diameter of the spout forming site 20 can be further reduced from the inner side to the side peripheral portion side at the time of pushing the pushing site 19, and the spout forming site 20 can be prevented from being engaged with the back surface of the covering plate 4.

Reference Signs List

[0048]

1	Beverage container lid
2	Beverage container
3	Opening
3a	Edge
4	Covering plate
5	Reduced diameter generation line
5a	Start point
5b	End point
6	Beverage
F	Finger
O	Center
10	Pushing line portion
11	Spout forming line portion
13	Engaging portion
13a, 13b	Cutting line portion
19	pushing site
20	Spout forming site
41	Partitioning line portion
50	Side peripheral portion

110 Spout

Claims

- 5 1. A beverage container lid provided with:
a covering plate that covers an opening of a beverage container; and a side peripheral portion that is provided on an outer peripheral edge of the covering plate, the side peripheral portion being engageable with an edge of the opening of the beverage container when the covering plate covers the opening of the beverage container, the beverage container lid comprising:
10
15 a pushing site that is provided in the covering plate, that is surrounded by a pushing line portion including one of a low-strength portion having a strength lower than a strength of a general portion of the covering plate and a cutting line portion, and that is to be pressed downward by a finger; and
20 a spout forming site that is provided in the covering plate on a side peripheral portion side of the pushing site, and surrounded by a spout forming line portion including one of the low-strength portion and the cutting line portion, the spout forming site being lifted upward by a reaction force of pressing the pushing site downward, wherein
25 in the spout forming site, a reduced diameter generation line including one of the low-strength portion and the cutting line portion extends from an inner side toward the side peripheral portion side.
30
35
2. The beverage container lid according to claim 1, wherein
40 a spout end and a pushing portion end are separated from each other, the spout end being an end portion of the spout forming line portion surrounding the spout forming site, the pushing portion end being an end portion of the pushing line portion surrounding the pushing site,
45 a boundary between the spout forming site and the pushing site is defined by a partitioning line portion including one of the low-strength portion and the cutting line portion, and
50 an engaging portion engageable with a peripheral edge of the spout forming site folded back via the partitioning line portion is provided on the inner side of the pushing site.
3. The beverage container lid according to claim 1 or 2, wherein
55 the reduced diameter generation line linearly extends from the inner side toward the side peripheral portion side at a substantially center of the spout

forming site.

4. The beverage container lid according to claim 2,
wherein
the reduced diameter generation line extends to- 5
ward the side peripheral portion side with a starting
point of the reduced diameter generation line being
on the inner side of the partitioning line portion.
5. The beverage container lid according to claim 1 or 4, 10
wherein
the reduced diameter generation line includes: a
base line that extends from the inner side toward
the side peripheral portion side, and one or more
branch lines branching from the base line in a lateral 15
direction.
6. The beverage container lid according to claim 1 or 2,
wherein
a plurality of the reduced diameter generation lines 20
are provided.
7. A beverage container comprising:
a container body; and the beverage container lid
according to any one of claims 1 to 6. 25

30

35

40

45

50

55

FIG. 1

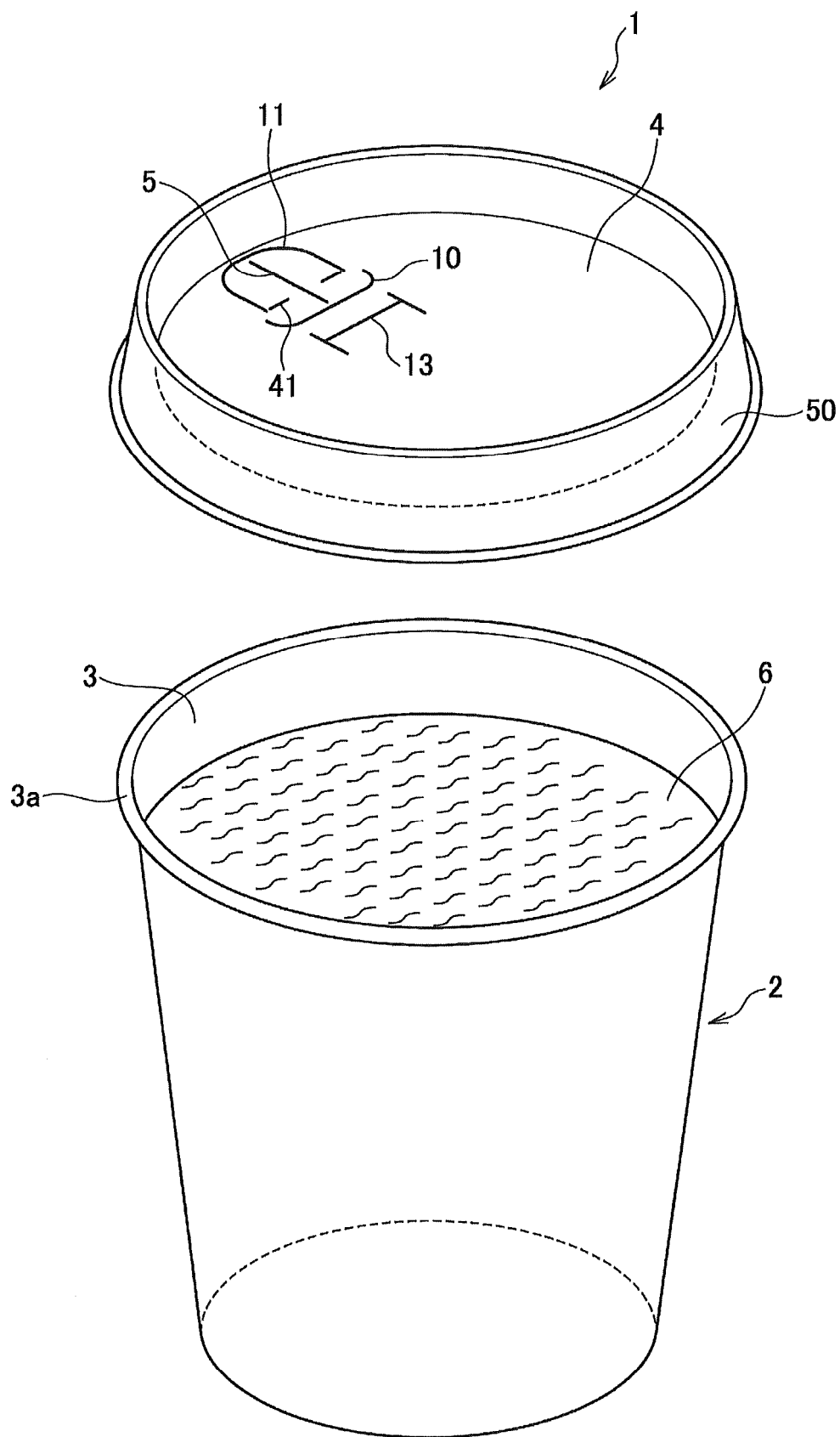


FIG. 2

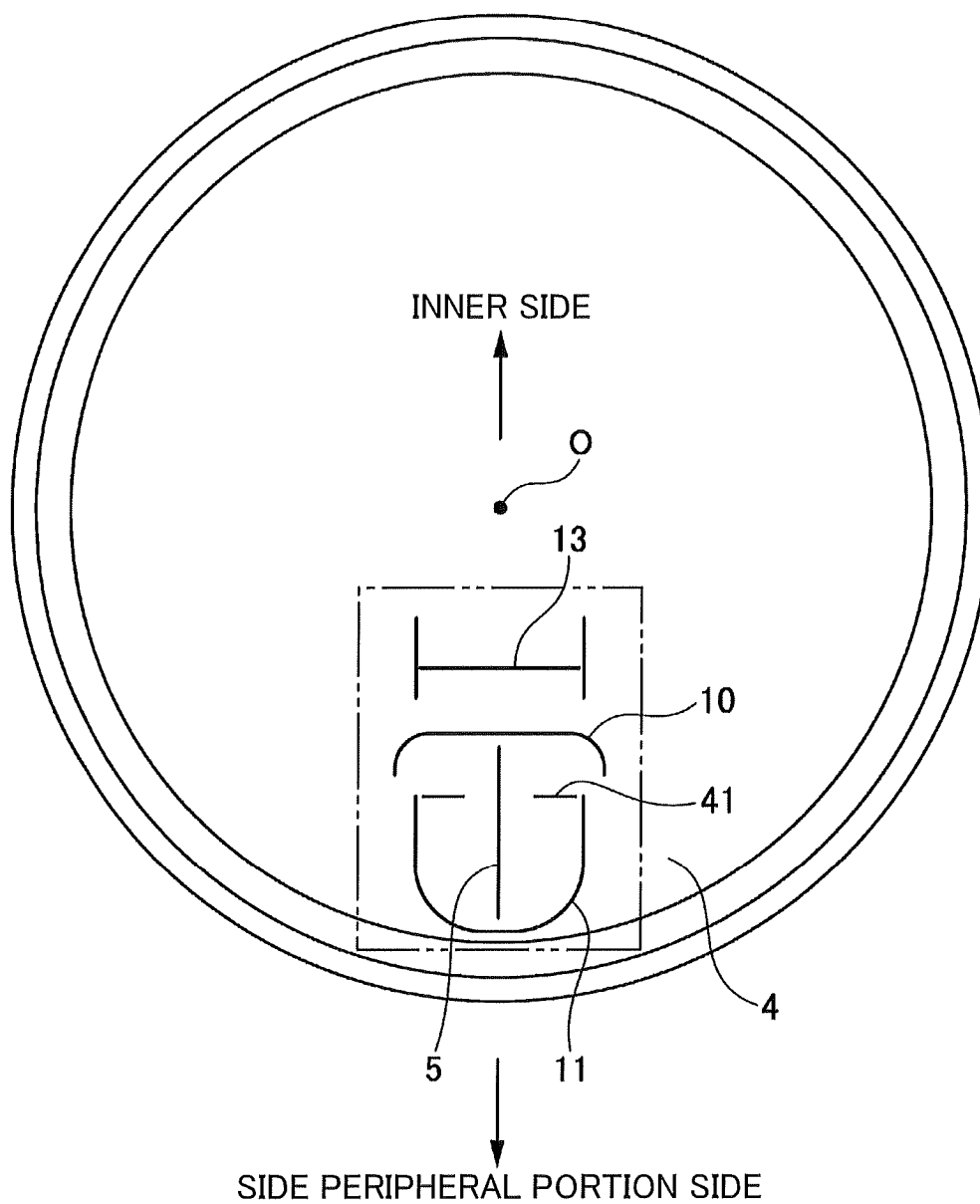


FIG. 3

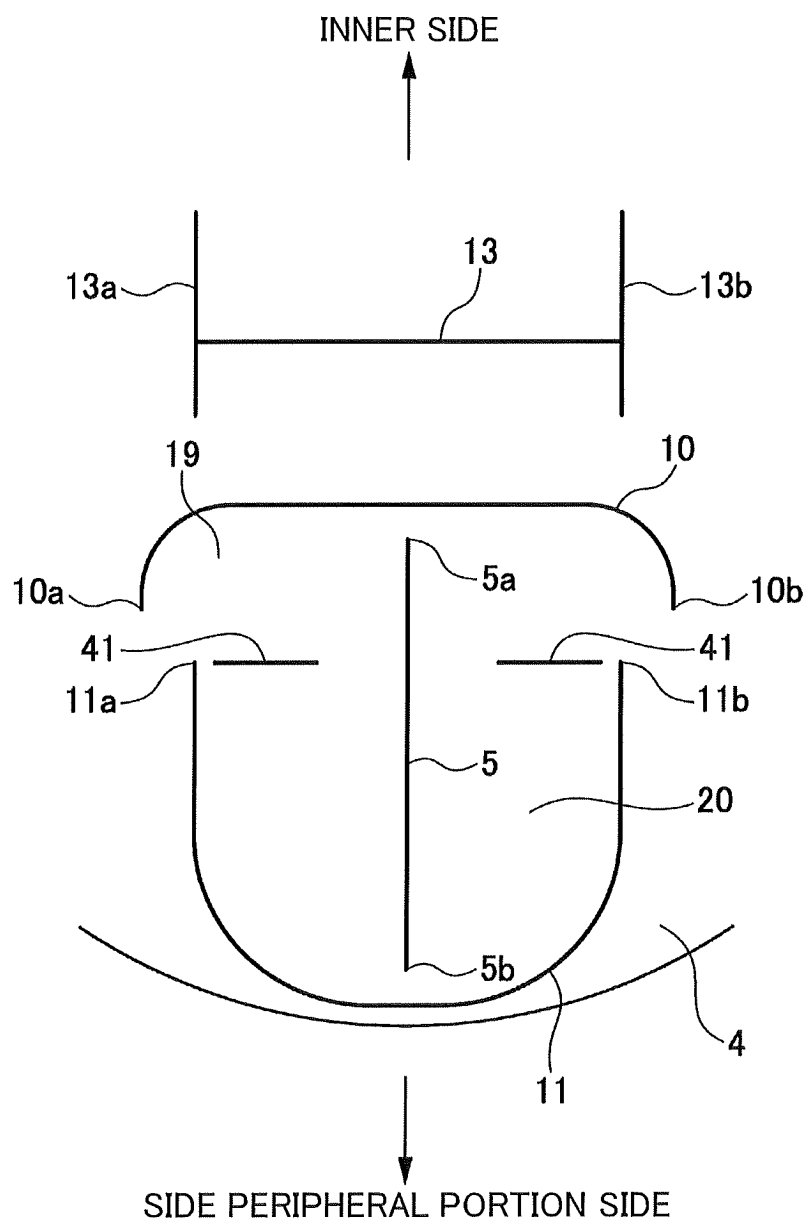


FIG. 4

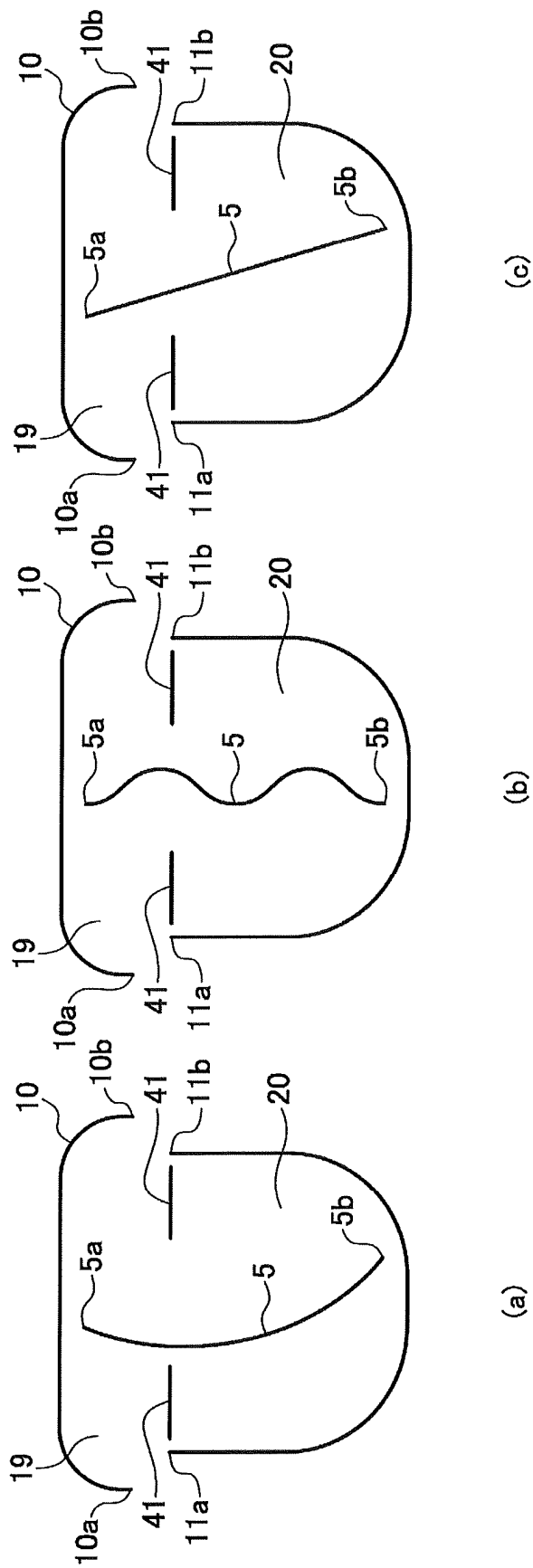


FIG. 5

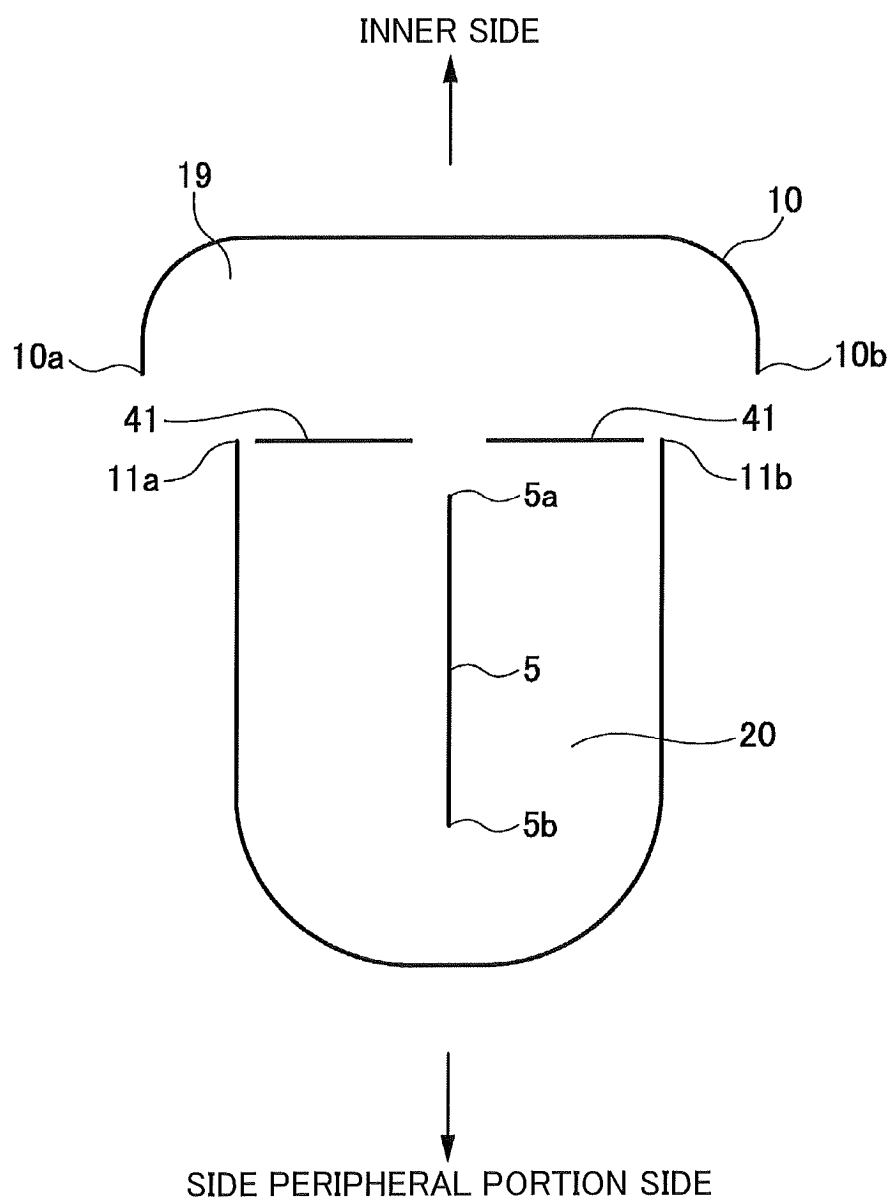


FIG. 6

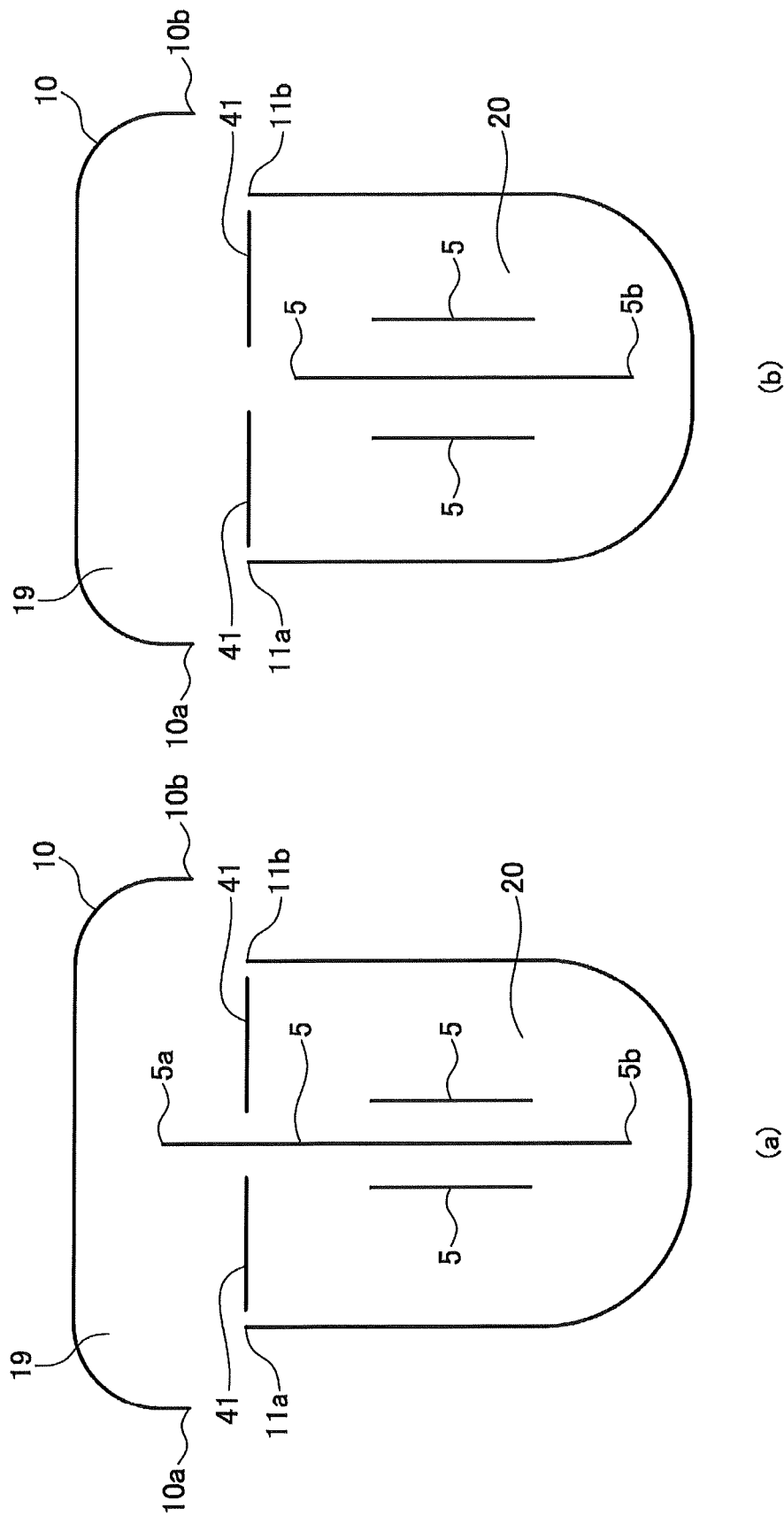


FIG. 7

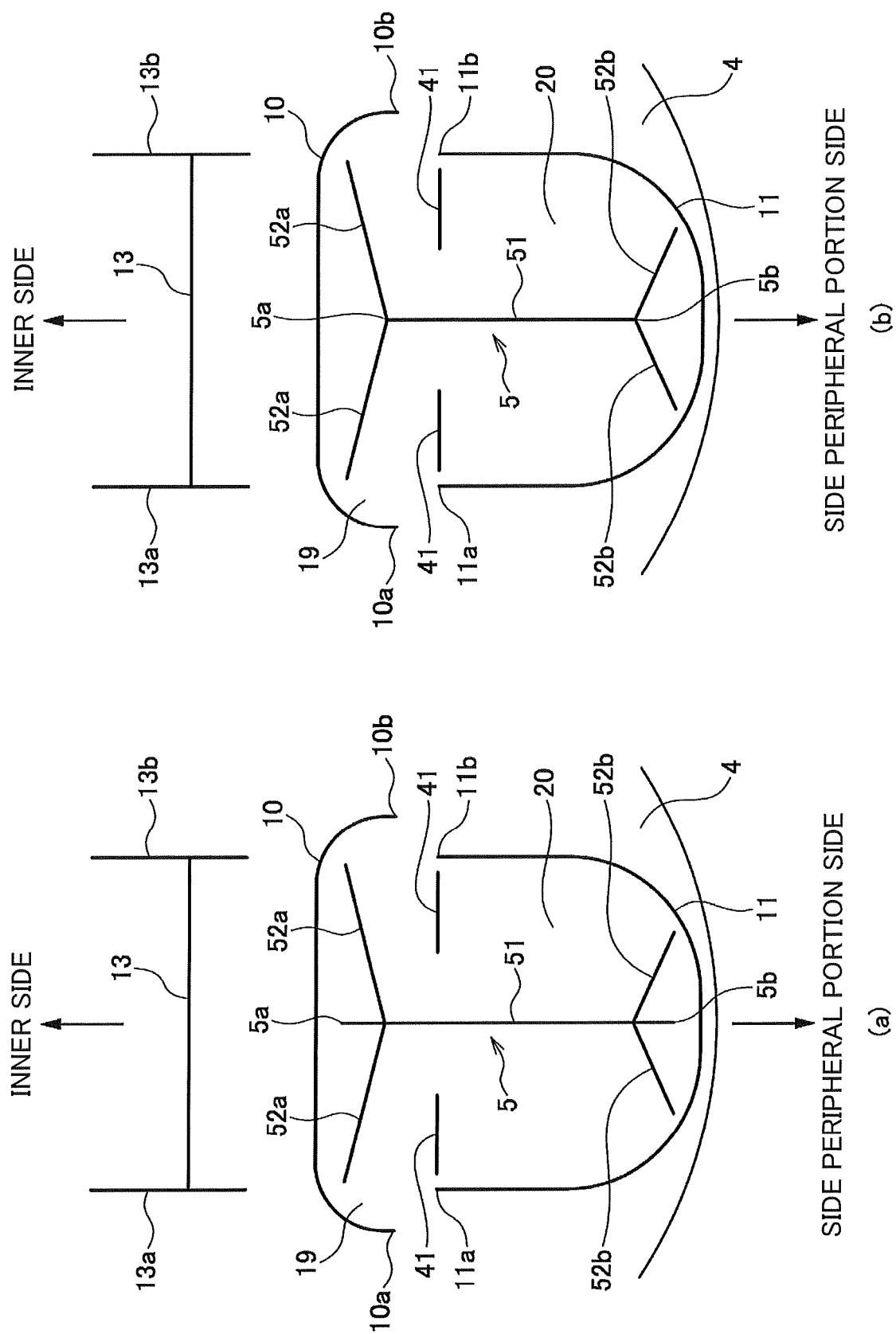


FIG. 8

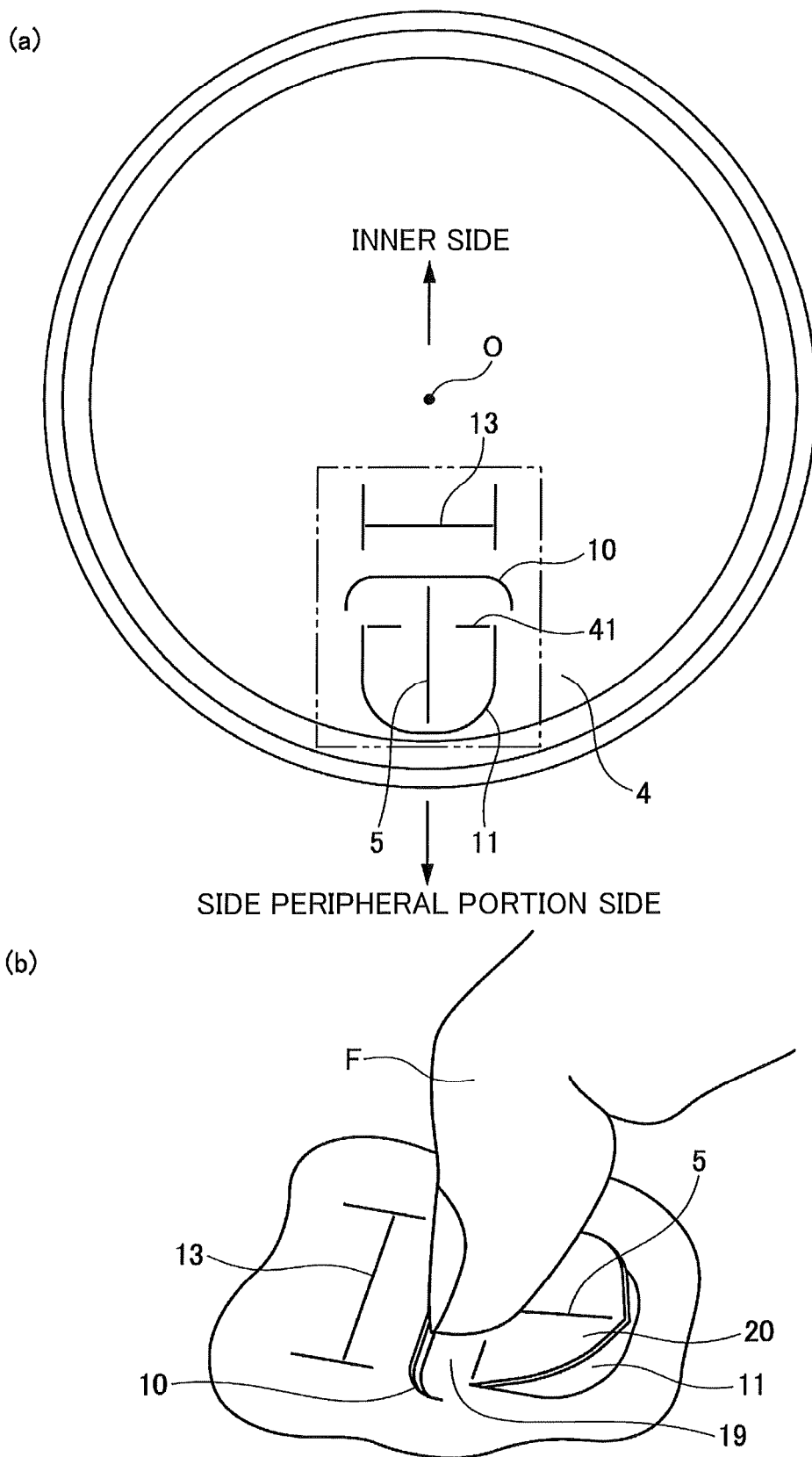
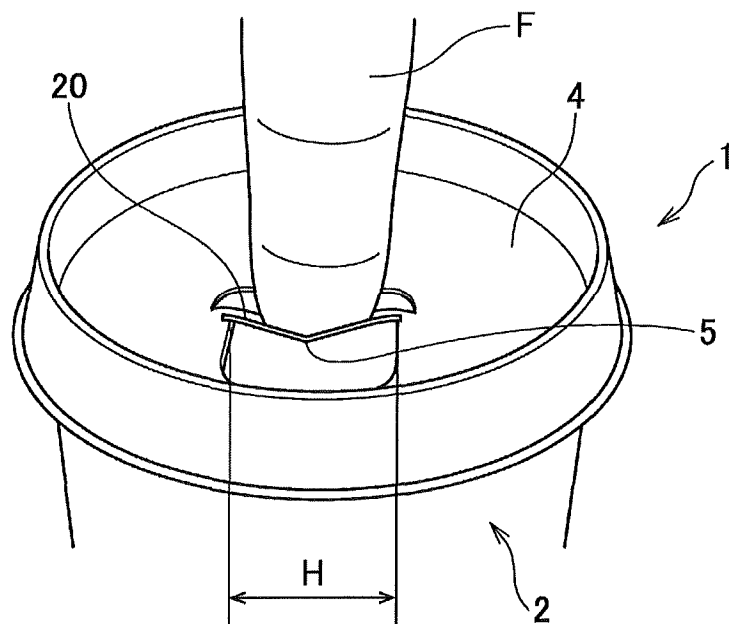
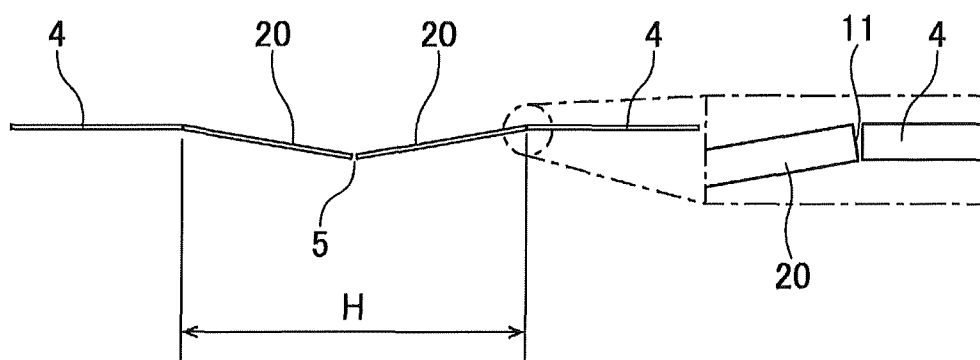


FIG. 9



(a)



(b)

FIG. 10

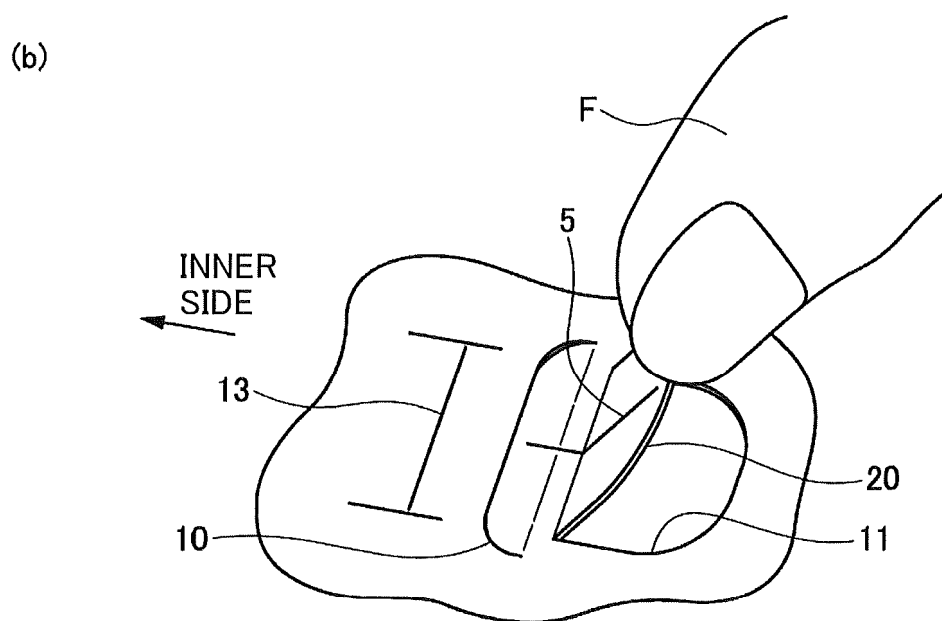
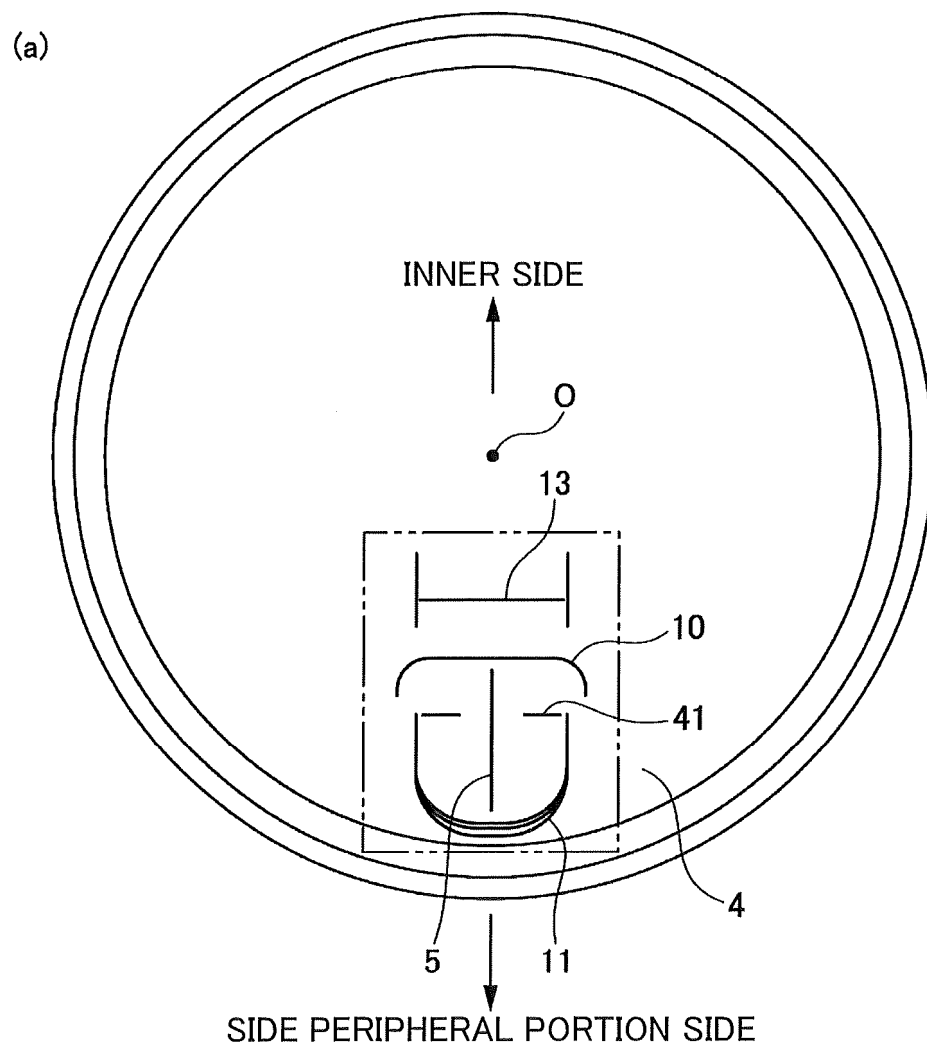


FIG. 11

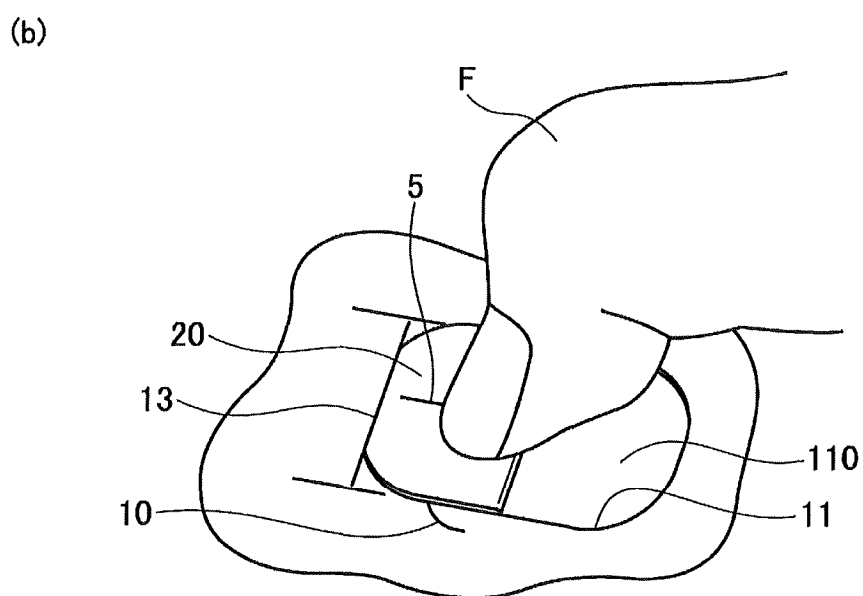
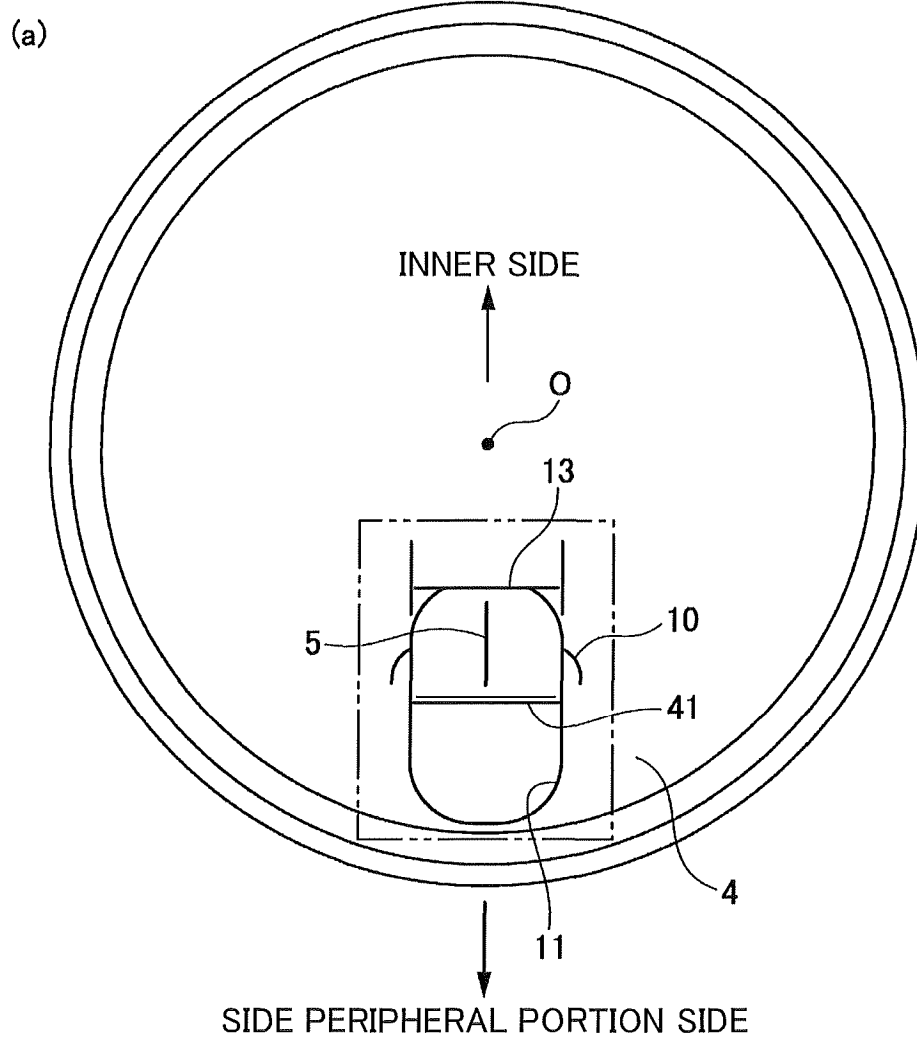
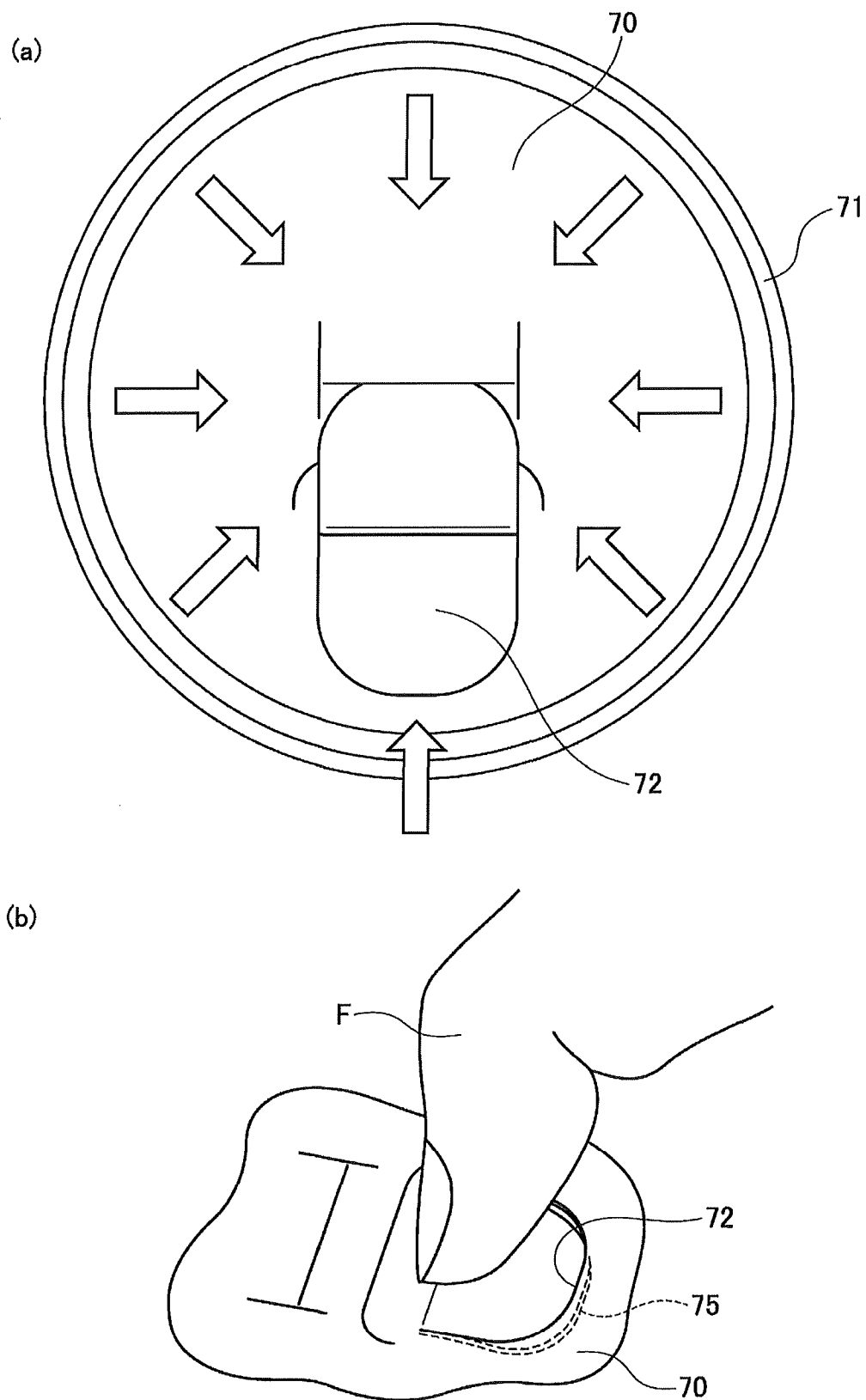


FIG. 12



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2024/022809

A. CLASSIFICATION OF SUBJECT MATTER

B65D 47/10(2006.01)i; **A47G 19/22**(2006.01)i; **B65D 47/06**(2006.01)i
 FI: B65D47/10; A47G19/22 M; A47G19/22 Q; B65D47/06 110

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)

B65D47/10; A47G19/22; B65D47/06

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 1971-2024
 Registered utility model specifications of Japan 1996-2024
 Published registered utility model applications of Japan 1994-2024

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2023-148868 A (TOKAN KOGYO CO., LTD.) 13 October 2023 (2023-10-13) paragraphs [0023]-[0087], fig. 1-17	1, 3, 7
Y	paragraphs [0023]-[0087], fig. 1-17	2, 4-6
X	JP 2023-148869 A (TOKAN KOGYO CO., LTD.) 13 October 2023 (2023-10-13) paragraphs [0023]-[0051], fig. 1-6	1, 3, 7
Y	paragraphs [0023]-[0051], fig. 1-6	2, 4-6
Y	JP 2023-6268 A (TOKAN KOGYO CO., LTD.) 18 January 2023 (2023-01-18) paragraphs [0023]-[0065], fig. 1-8	2, 4-6
A	JP 2021-91487 A (YAMADA, Kikuo) 17 June 2021 (2021-06-17)	1-7

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“D” document cited by the applicant in the international application

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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

“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

29 August 2024

Date of mailing of the international search report

10 September 2024

Name and mailing address of the ISA/JP

**Japan Patent Office (ISA/JP)
 3-4-3 Kasumigaseki, Chiyoda-ku, Tokyo 100-8915
 Japan**

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/JP2024/022809

5

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
JP	2023-148868	A	13 October 2023	(Family: none)			
JP	2023-148869	A	13 October 2023	(Family: none)			
JP	2023-6268	A	18 January 2023	(Family: none)			
JP	2021-91487	A	17 June 2021	US	2022/0227546	A1	
				US	2021/0316912	A1	
				WO	2020/100316	A1	
				EP	3895999	A1	
				CN	209987436	U	
				CN	209987437	U	
				CN	111196055	A	
				CN	111196056	A	
				CN	111267399	A	
				CN	211542543	U	
				KR	10-2021-0055093	A	
				CN	113165768	A	
				CA	3119093	A1	
				KR	10-2022-0123485	A	

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- JP 2023006268 A [0007]