



(11) **EP 4 260 728 A1**

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

(43) Date of publication:
18.10.2023 Bulletin 2023/42

(51) International Patent Classification (IPC):
A24F 40/40^(2020.01)

(21) Application number: **20965152.0**

(52) Cooperative Patent Classification (CPC):
A24F 40/40

(22) Date of filing: **11.12.2020**

(86) International application number:
PCT/JP2020/046279

(87) International publication number:
WO 2022/123770 (16.06.2022 Gazette 2022/24)

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

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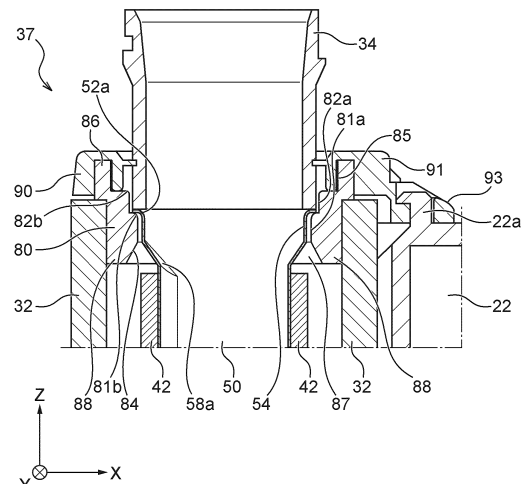
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(54) **FLAVOR INHALER AND METHOD FOR PRODUCING FLAVOR INHALER**

(57) There is provided a flavor inhaler including an accommodating portion in which an opening portion is formed on one end, the accommodating portion being for housing at least a part of a consumable through the opening portion; and a support portion that supports the accommodating portion, the support portion including a first abutting surface provided to surround an outer circumference of the opening portion of the accommodating portion, and an extending portion extending from the first abutting surface in a direction away from the opening portion, where the extending portion of the support portion and a part of an outer circumference of the accommodating portion that faces the extending portion are separated from each other such that a space is formed inbetween.

Fig. 8



Description

TECHNICAL FIELD

[0001] The present disclosure relates to a flavor inhaler.

BACKGROUND ART

[0002] These days, in the field of electronic cigarettes, there is known a mechanism for supporting a chamber inside a device housing, the chamber being for housing a consumable. For example, according to PTL 1, a side wall of an upper end portion of a heating chamber is supported by a washer made of resin.

CITATION LIST

PATENT LITERATURE

[0003] PTL 1: International Publication No. WO 2020/074612

SUMMARY OF INVENTION

TECHNICAL PROBLEM

[0004] The present disclosure provides a flavor inhaler with improved retainability and sealability inside the device.

SOLUTION TO PROBLEM

[0005] A first aspect of the present disclosure is a flavor inhaler including: an accommodating portion in which an opening portion is formed on one end, the accommodating portion being for housing at least a part of a consumable through the opening portion; and a support portion that supports the accommodating portion, the support portion including a first abutting surface provided to surround an outer circumference of the opening portion of the accommodating portion, and an extending portion extending from the first abutting surface in a direction away from the opening portion, where the extending portion of the support portion and a part of an outer circumference of the accommodating portion that faces the extending portion are separated from each other such that a space is formed in between.

[0006] In the first aspect described above, a space is formed in the flavor inhaler, between the extending portion extending from the first abutting surface of the support portion that supports, from outside, a periphery of an opening in the accommodating portion that houses the consumable, and the outer circumference of the accommodating portion. As a result, in the case of adhering the first abutting surface of the support portion and the outer circumference of the accommodating portion, the space may function as a pocket for collecting a member

that contributes to adhering and the like, allowing sufficient adhering. Therefore, according to the first aspect, retainability, adhesion and airtightness between the support portion and the accommodating portion may be improved, and the accommodating portion may be stably supported by the support portion.

[0007] A second aspect of the present disclosure is the flavor inhaler according to the first aspect, where the first abutting surface of the support portion is adhered to an adhesion surface on the outer circumference of the accommodating portion.

[0008] In the second aspect described above, the first abutting surface that is provided surrounding the outer circumference of the opening portion of the accommodating portion is adhered to the adhesion surface on the outer circumference of the accommodating portion. At the time of adhering, the space that is formed between the extending portion of the support portion and the outer circumference of the accommodating portion functions as the pocket for collecting a member that contributes to adhering. Therefore, according to the second aspect, retainability, adhesion and airtightness between the support portion and the accommodating portion may be improved by the adhering, and the accommodating portion may be stably supported by the support portion.

[0009] A third aspect of the present disclosure is the flavor inhaler according to the second aspect, where the first abutting surface of the support portion is adhered to the adhesion surface by an adhesive.

[0010] In the third aspect described above, the first abutting surface that is provided surrounding the outer circumference of the opening portion of the accommodating portion is adhered to the adhesion surface on the outer circumference of the accommodating portion by an adhesive. At the time of adhering, the space that is formed between the extending portion of the support portion and the outer circumference of the accommodating portion functions as a pocket for collecting the adhesive, and allowing a sufficient amount of adhesive to be used in adhering. Particularly, in the case where the adhesive is a liquid adhesive, the function of the pocket becomes more significant. Therefore, according to the third aspect, retainability, adhesion and airtightness between the support portion and the accommodating portion may be even more improved, and the accommodating portion may be stably supported by the support portion.

[0011] A fourth aspect of the present disclosure is the flavor inhaler according to the third aspect, where an adhesive reservoir for retaining the adhesive is formed in the space between the extending portion and the part of the outer circumference of the accommodating portion that faces the extending portion.

[0012] In the fourth aspect described above, the outer circumference of the accommodating portion and the support portion are adhered by an adhesive near the opening in the accommodating portion, and the space between the outer circumference of the accommodating portion and the extending portion of the support portion

may function as the adhesive reservoir for retaining the adhesive. Particularly, in the case where the adhesive is a liquid adhesive, the function of the adhesive reservoir may become more significant. Therefore, according to the fourth aspect, a sufficient amount of adhesive may be applied between the outer circumference of the accommodating portion and the support portion, and airtightness inside the flavor inhaler may be improved, and the accommodating portion may be stably supported by the support portion.

[0013] A fifth aspect of the present disclosure is the flavor inhaler according to the first to fourth aspects, where the extending portion of the support portion includes a first tapered surface that faces the outer circumference of the accommodating portion and that slopes away from the outer circumference of the accommodating portion.

[0014] In the fifth aspect described above, the first tapered surface is provided on the extending portion of the support portion, the first tapered surface sloping away from a facing part of the outer circumference of the accommodating portion. Therefore, according to the fifth aspect, a sufficient separation space may be secured between the outer circumference of the accommodating portion and the extending portion of the support portion.

[0015] A sixth aspect of the present disclosure is the flavor inhaler according to the first to fifth aspects, where a second tapered surface is provided on the outer circumference of the accommodating portion, the second tapered surface facing the extending portion of the support portion and sloping away from the extending portion.

[0016] In the sixth aspect described above, the second tapered surface is provided on the outer circumference of the accommodating portion, at a part facing the extending portion of the support portion, the second tapered surface sloping away from the extending portion. Therefore, according to the sixth aspect, an even larger separation space may be secured between the outer circumference of the accommodating portion and the extending portion of the support portion by the second tapered surface. As a result, in the case of adhering the first abutting surface and the adhesion surface on the outer circumference of the accommodating portion, a space that functions as the pocket for collecting a member that contributes to adhering may be sufficiently formed.

[0017] A seventh aspect of the present disclosure is the flavor inhaler according to the second to sixth aspects, where a heat generating unit is provided on the outer circumference of the accommodating portion, the heat generating unit being separated from the adhesion surface across a part facing the extending portion of the support portion.

[0018] In the seventh aspect described above, the adhesion surface to be adhered to the first abutting surface of the support portion, the part that faces the extending portion of the support portion, and the heat generating unit are arranged on the outer circumference of the accommodating portion, in the stated order from an end

portion of the opening through which the consumable is inserted. That is, the heat generating unit is separated in an insertion direction of the consumable, from a set of the first abutting surface and the adhesion surface by a set of the extending portion of the support portion and the corresponding part of the accommodating portion. Therefore, according to the seventh aspect, heat from the heat generating unit provided on the outer circumference of the accommodating portion may be prevented from interfering with adhesion between the support portion and the accommodating portion near the opening in the accommodating portion, or in other words, from exerting negative influence by reducing adhesive force.

[0019] An eighth aspect of the present disclosure is the flavor inhaler according to the first to seventh aspects, the flavor inhaler further including a heat insulating portion that abuts an outer circumference of the support portion.

[0020] In the eighth aspect described above, the heat insulating portion is disposed surrounding, from outside, the support portion supporting the accommodating portion. Therefore, according to the eighth aspect, transfer of heat generated by the accommodating portion to outside may be prevented.

[0021] A ninth aspect of the present disclosure is the flavor inhaler according to the eighth aspect, where the heat insulating portion abuts an outer circumference of the extending portion of the support portion.

[0022] In the ninth aspect described above, the heat insulating portion is disposed surrounding the extending portion of the support portion from outside. The extending portion of the support portion and the facing part on the outer circumference of the accommodating portion are separated from each other and a space is formed therebetween. Furthermore, the heat generating unit is provided on the outer circumference of the accommodating portion. Moreover, a heat bridge that is an escape route for heat from the heat generating unit may be formed between the outer circumference of the support portion and the heat insulating portion. In the ninth aspect described above, because the support portion includes the extending portion, the route of the heat bridge that may be formed between the outer circumference of the support portion and the heat insulating portion is longer than in a case where the support portion does not include the extending portion. Accordingly, because the route that is necessary for the heat from the heat generating unit to escape is long, the heat bridge is formed and the heat is less likely to reach outside. Therefore, according to the ninth aspect, the heat bridge is formed, and heat from the heat generating unit may be prevented from reaching outside the support portion.

[0023] A tenth aspect of the present disclosure is the flavor inhaler according to the first to ninth aspects, the flavor inhaler further including a guide portion that is cylindrical, one end portion of the guide portion abutting an opening surface of the opening portion of the accommodating portion, where the support portion further includes

a second abutting surface that abuts an outer circumference of the one end portion of the guide portion.

[0024] In the tenth aspect described above, the guide portion that is cylindrical is provided above the opening portion of the accommodating portion, and the support portion abuts the outer circumference of the accommodating portion at the first abutting surface, and abuts the outer circumference of the guide portion at the second abutting portion. That is, with the flavor inhaler, a set of the accommodating portion for housing the consumable and the guide portion is supported by the support portion. Therefore, according to the tenth aspect, the guide portion for sustaining the accommodating portion may be supported by the support portion, and an increase in the number of components may be prevented.

[0025] An eleventh aspect of the present disclosure is a flavor inhaler manufacturing method including: forming, on an inner circumference of a support portion, a first abutting surface, and a first tapered surface that is connected to the first abutting surface and that slopes outward in a radial direction of the support portion; forming an adhesion surface on an outer circumference of an accommodating portion that includes an opening portion on one end and that houses at least a part of a consumable through the opening portion, inserting the accommodating portion on the inner circumference of the support portion such that the first abutting surface and the adhesion surface abut each other and such that a space is formed between the first tapered surface and a part of the outer circumference of the accommodating portion that faces the first tapered surface; and adhering the inner circumference of the support portion and the outer circumference of the accommodating portion by supplying an adhesive between the first abutting surface and the adhesion surface through the space between the first tapered surface and the outer circumference of the accommodating portion.

[0026] In the eleventh aspect described above, at the time of inserting the accommodating portion on the inner circumference of the support portion, the space is formed between the first tapered surface that slopes outward in the radial direction of the support portion and the part of the outer circumference of the accommodating portion that faces the first tapered surface. The adhesive is supplied between the first abutting surface on the inner circumference of the support portion and the adhesion surface on the outer circumference of the accommodating portion through the space. Therefore, according to the eleventh aspect, the adhesive for adhering the inner circumference of the support portion and the outer circumference of the accommodating portion may be appropriately supplied, and a flavor inhaler with improved retainability, adhesion and airtightness may be manufactured.

[0027] A twelfth aspect of the present disclosure is the flavor inhaler manufacturing method according to the eleventh aspect, further including forming a second tapered surface at the part of the outer circumference of the accommodating portion that faces the first tapered

surface, the second tapered surface sloping away from the first tapered surface.

[0028] In the twelfth aspect of the present disclosure, a tapered surface that slopes away from the first tapered surface of the support portion is provided on the outer circumference of the accommodating portion in a manner facing the first tapered surface. Therefore, according to the twelfth aspect, a flavor inhaler including a sufficient separation space between the outer circumference of the accommodating portion and the first tapered surface of the support portion may be manufactured.

[0029] A thirteenth aspect of the present disclosure is the flavor inhaler manufacturing method according to the eleventh or twelfth aspect, including supplying an adhesive between the first abutting surface and the adhesion surface through the space between the first tapered surface and the outer circumference of the accommodating portion in a state where the accommodating portion that is inserted on the inner circumference of the support portion is disposed in such a way that the one end of the accommodating portion is on a vertically lower side and an other end is on a vertically upper side.

[0030] In the thirteenth aspect described above, the adhesive is supplied between the outer circumference of the accommodating portion and the inner circumference of the support portion through the space between the first tapered surface and the outer circumference of the accommodating portion in a state where one end of the accommodating portion at which the opening portion is formed is disposed on the vertically lower side and the other end of the accommodating portion is disposed on the other side in the vertically direction. In this case, the space between the first tapered surface and the outer circumference of the accommodating portion functions as a pocket for collecting an adhesive material, and allowing a sufficient amount of adhesive to be used in adhering. Therefore, according to the thirteenth aspect, a flavor inhaler with even more improved retainability, adhesion and airtightness may be manufactured.

BRIEF DESCRIPTION OF DRAWINGS

[0031]

[Fig. 1A] Fig. 1A is a schematic front view of a flavor inhaler according to the present disclosure.

[Fig. 1B] Fig. 1B is a schematic top view of the flavor inhaler according to the present disclosure.

[Fig. 1C] Fig. 1C is a schematic bottom view of the flavor inhaler according to the present disclosure.

[Fig. 2] Fig. 2 is a schematic cross-sectional side view of a consumable.

[Fig. 3] Fig. 3 is a cross-sectional view of the flavor inhaler taken along arrows 3-3 shown in Fig. 1B.

[Fig. 4A] Fig. 4A is a perspective view of a chamber.

[Fig. 4B] Fig. 4B is a cross-sectional view of the chamber taken along arrows 4B-4B shown in Fig. 4A.

[Fig. 5A] Fig. 5A is a cross-sectional view of the

chamber taken along arrows 5A-5A shown in Fig. 4B. [Fig. 5B] Fig. 5B is a cross-sectional view of the chamber taken along arrows 5B-5B shown in Fig. 4B. [Fig. 6] Fig. 6 is a perspective view of the chamber and a heating unit. [Fig. 7] Fig. 7 is a cross-sectional view shown in Fig. 5B, where the consumable is disposed at a desired position inside the chamber. [Fig. 8] Fig. 8 is an enlarged cross-sectional view of a first holding portion. [Fig. 9] Fig. 9 is a perspective view of a gasket and an O-ring. [Fig. 10] Fig. 10 is an enlarged cross-sectional view of the gasket and a periphery thereof, Fig. 10 showing generation of a heat bridge.

DESCRIPTION OF EMBODIMENTS

[0032] Hereinafter, an embodiment of the present disclosure will be described with reference to the drawings. In the drawings described below, same or corresponding structural elements will be denoted by a same reference sign, and redundant description thereof will be omitted.

[0033] Fig. 1A is a schematic front view of a flavor inhaler 100 according to the present disclosure. Fig. 1B is a schematic top view of the flavor inhaler 100 according to the present disclosure. Fig. 1C is a schematic bottom view of the flavor inhaler 100 according to the present disclosure. In the drawings described in the present specification, an X-Y-Z orthogonal coordinate system may be added for the sake of description. In the coordinate system, a Z-axis faces vertically upward, an X-Y plane cuts the flavor inhaler 100 in a horizontal direction, and a Y-axis extends from a front surface to a back surface of the flavor inhaler 100. The Z-axis may also be said to be an insertion direction of a consumable that is to be housed in a chamber 50 of an atomizing unit 30 described later, or an axial direction of the chamber 50 that has a cylindrical shape. In the present specification, a Z-axis direction may sometimes be simply referred to as an axial direction. Furthermore, an X-axis may be said to be a first direction that is orthogonal to the axial direction, and the Y-axis may be said to be a second direction that is orthogonal to the axial direction and the first direction. Moreover, an X-axis direction may be said to be a longitudinal direction of the flavor inhaler 100 on a plane that is orthogonal to the insertion direction of the consumable, and a Y-axis direction may be said to be a transverse direction of the flavor inhaler 100 on the plane that is orthogonal to the insertion direction of the consumable.

[0034] For example, the flavor inhaler 100 according to the present disclosure generates an aerosol including a flavor by heating a stick-shaped consumable including a flavor source including an aerosol source.

[0035] As shown in Figs. 1A to 1C, the flavor inhaler 100 includes an outer housing 101, a slide cover 102, and a switch unit 103. The outer housing 101 forms an outermost housing of the flavor inhaler 100, and has a

size that can be fitted in a hand of a user. At the time of using the flavor inhaler 100, a user may hold the flavor inhaler 100 in the hand, and may inhale the aerosol. The outer housing 101 may be formed by assembling a plurality of members. For example, the outer housing 101 may be formed of polycarbonate (PC), acrylonitrile-butadiene-styrene (ABS) resin, polyether ether ketone (PEEK), a polymer alloy containing a plurality of types of polymers, or metal such as aluminum.

[0036] The outer housing 101 includes an opening, not shown, for receiving a consumable, and the slide cover 102 is slidably attached to the outer housing 101 to close the opening. More specifically, the slide cover 102 is movable along an outer surface of the outer housing 101, between a close position of closing the opening in the outer housing 101 (a position shown in Figs. 1A and 1B) and an open position of opening the opening. For example, the slide cover 102 may be moved between the close position and the open position by the user manually operating the slide cover 102. The slide cover 102 may thus allow or restrict access of the consumable into the flavor inhaler 100.

[0037] The switch unit 103 is used to switch between on and off of operation of the flavor inhaler 100. For example, as described later, when a user operates the switch unit 103 in a state where the consumable is inserted in the flavor inhaler 100, power may be supplied from a power source 21 to a heating unit 40, and the consumable may be heated without being burnt. Additionally, the switch unit 103 may be a switch that is provided outside the outer housing 101, or may be a switch positioned inside the outer housing 101. In the case where the switch is positioned inside the outer housing 101, the switch is indirectly pressed when the switch unit 103 on a surface of the outer housing 101 is pressed. In the present disclosure, an example is described where the switch of the switch unit 103 is positioned inside the outer housing 101.

[0038] The flavor inhaler 100 may further include a terminal, not shown. The terminal may be an interface for connecting the flavor inhaler 100 to an external power source, for example. In the case where the power source of the flavor inhaler 100 is a rechargeable battery, current may be supplied from the external power source to the power source and the power source may be charged when the external power source is connected to the terminal. Furthermore, the flavor inhaler 100 may be formed such that, by connecting a data transmission cable to the terminal, data about operation of the flavor inhaler 100 may be transmitted to an external device.

[0039] Next, a consumable that is used with the flavor inhaler 100 according to the present disclosure will be described. Fig. 2 is a schematic cross-sectional side view of a consumable 110. In the present disclosure, a smoking system may be formed by the flavor inhaler 100 and the consumable 110. In the example shown in Fig. 2, the consumable 110 includes a smokable substance 111, a cylindrical member 114, a hollow filter portion 116, and

a filter portion 115. The smokable substance 111 is wrapped with a first rolling paper 112. The cylindrical member 114, the hollow filter portion 116, and the filter portion 115 are wrapped with a second rolling paper 113 different from the first rolling paper 112. The second rolling paper 113 is also wrapped around a part of the first rolling paper 112 that is wrapped around the smokable substance 111. The cylindrical member 114, the hollow filter portion 116, and the filter portion 115 are thus adhered to the smokable substance 111. Additionally, the second rolling paper 113 may be omitted, and the cylindrical member 114, the hollow filter portion 116, and the filter portion 115 may instead be adhered to the smokable substance 111 using the first rolling paper 112. A lip release agent 117 is applied on an outer surface of the second rolling paper 113, around an end portion on the filter portion 115 side, to prevent lips of the user from sticking to the second rolling paper 113. The part of the consumable 110 where the lip release agent 117 is applied functions as a mouthpiece of the consumable 110.

[0040] The smokable substance 111 may include a flavor source, such as tobacco, and an aerosol source, for example. Furthermore, the first rolling paper 112 wrapped around the smokable substance 111 may be a breathable sheet member. The cylindrical member 114 may be a paper tube or a hollow filter. In the example shown in Fig. 2, the consumable 110 includes the smokable substance 111, the cylindrical member 114, the hollow filter portion 116, and the filter portion 115, but the structure of the consumable 110 is not limited thereto. For example, the hollow filter portion 116 may be omitted, and the cylindrical member 114 and the filter portion 115 may be disposed next to each other.

[0041] Next, an internal structure of the flavor inhaler 100 will be described. Fig. 3 is a cross-sectional view of the flavor inhaler 100 taken along arrows 3-3 shown in Fig. 1B. As shown in Fig. 3, an inner housing 10 is provided inside the outer housing 101 of the flavor inhaler 100. For example, the inner housing 10 may be formed of polycarbonate, ABS resin, PEEK, a polymer alloy containing a plurality of types of polymers, or metal such as aluminum, but the material of the inner housing 10 is not particularly specified. A power source unit 20 and the atomizing unit 30 are provided in an internal space of the inner housing 10.

[0042] The power source unit 20 includes the power source 21. For example, the power source 21 may be a rechargeable battery or a non-rechargeable battery. The power source 21 is electrically connected to the atomizing unit 30. The power source 21 may thus supply power to the atomizing unit 30 so that the consumable 110 is appropriately heated.

[0043] As shown in Fig. 3, the atomizing unit 30 includes the chamber 50 extending in the insertion direction of the consumable 110 (the Z-axis direction), the heating unit 40 surrounding a part of the chamber 50, a heat insulating portion 32, and an insertion guide member 34 having a substantially cylindrical shape. The chamber

50 houses the consumable 110. The heating unit 40 is in contact with an outer circumferential surface of the chamber 50, and the heating unit 40 heats the consumable 110 that is housed in the chamber 50. Details of the chamber 50 will be given later. The chamber 50 is an example of an accommodating portion of the present disclosure. The insertion guide member 34 is an example of a guide portion of the present disclosure.

[0044] The heat insulating portion 32 is substantially cylindrical as a whole, and is disposed to surround the chamber 50. The heat insulating portion 32 may include an aerogel sheet, for example. The insertion guide member 34 is formed of a resin material such as polycarbonate, PEEK, or ABS, and is provided between the slide cover 102 in the close position and the chamber 50. When the slide cover 102 is in the open position, the insertion guide member 34 communicates with outside of the flavor inhaler 100, and guides insertion of the consumable 110 into the chamber 50 when the consumable 110 is inserted in the insertion guide member 34.

[0045] The flavor inhaler 100 further includes a first holding portion 37 and a second holding portion 38 for supporting both ends of the chamber 50 and the heat insulating portion 32. The first holding portion 37 is disposed to support end portions of the chamber 50 and the heat insulating portion 32 on the slide cover 102 side (a Z-axis positive direction side). Furthermore, the second holding portion 38 is disposed to directly or indirectly support end portions of the chamber 50 and the heat insulating portion 32 on a Z-axis negative direction side. Moreover, as shown in Fig. 3, a bottom member 36 may be provided on a bottom part of the chamber 50. The bottom member 36 may function as a stopper for positioning the consumable 110 that is inserted in the chamber 50. The bottom member 36 is uneven at a surface where the consumable 110 abuts against, and may demarcate a space where air can be supplied, in the surface where the consumable 110 abuts against. Details of the first holding portion 37 will be given later.

[0046] Next, a structure of the chamber 50 will be described. Fig. 4A is a perspective view of the chamber 50. Fig. 4B is a cross-sectional view of the chamber 50 taken along arrows 4B-4B shown in Fig. 4A. Fig. 5A is a cross-sectional view of the chamber 50 taken along arrows 5A-5A shown in Fig. 4B. Fig. 5B is a cross-sectional view of the chamber 50 taken along arrows 5B-5B shown in Fig. 4B. Fig. 6 is a perspective view of the chamber 50 and the heating unit 40. As shown in Figs. 4A and 4B, the chamber 50 may be a cylindrical member including an opening 52 through which the consumable 110 is inserted, a flange portion 52a, and a cylindrical side wall portion 60 for housing the consumable 110. The chamber 50 is desirably formed of a material that has heat resistance and that has small thermal expansion coefficient, and may be formed of metal such as stainless steel, resin such as PEEK, glass, ceramic or the like, for example. The consumable 110 may thus be efficiently heated in the chamber 50.

[0047] As shown in Figs. 4B and 5B, the side wall portion 60 includes a flat portion 62 and a curved portion 66. When the consumable 110 is disposed at a desired position inside the chamber 50, the flat portion 62 contacts or presses a part of the consumable 110, and the curved portion 66 is separate from the consumable 110. Additionally, in the present specification, "desired position inside the chamber 50" refers to a position where the consumable 110 is appropriately heated, or a position of the consumable 110 when the user smokes. The flat portion 62 includes a flat inner surface 62a and a flat outer surface 62b. The curved portion 66 includes an inner surface 66a and an outer surface 66b. As shown in Fig. 6, the heating unit 40 is disposed on the outer surface 62b of the flat portion 62. The heating unit 40 is desirably disposed on the outer surface 62b of the flat portion 62 with no gap in between. Additionally, the heating unit 40 may include an adhesive layer. In this case, the heating unit 40 including the adhesive layer is desirably disposed on the outer surface 62b of the flat portion 62 with no gap in between.

[0048] In the case where a strip-shaped electrode 48 is connected to the heating unit 40 disposed on the outer surface 62b of the flat portion 62 as shown in Fig. 6, because the outer surface 62b of the flat portion 62 is flat, the strip-shaped electrode 48 may be prevented from being warped. Furthermore, as shown in Figs. 4B and 5B, a thickness of the flat portion 62 is uniform.

[0049] As shown in Figs. 4A, 4B, and 5B, the chamber 50 includes two flat portions 62 in a circumferential direction of the chamber 50, and the pair of flat portions 62 are parallel to each other. A distance between at least parts of the inner surfaces 62a of the pair of flat portions 62 is desirably smaller than a width of a part where the consumable 110 that is inserted in the chamber 50 is disposed between the flat portions 62.

[0050] As shown in Fig. 5B, the inner surface 66a of the curved portion 66 may have, as a whole, an arc-shaped cross-section on a plane orthogonal to a longitudinal direction (the Z-axis direction) of the chamber 50. Furthermore, the curved portion 66 is disposed adjacent to the flat portions 62 in the circumferential direction. In other words, the curved portion 66 connects end portions of the pair of flat portions 62.

[0051] As shown in Fig. 4B, the chamber 50 may include a hole 56a in a bottom portion 56 to allow the bottom member 36 shown in Fig. 3 to penetrate and be disposed inside the chamber 50. The bottom member 36 may be fixed on an inside of the bottom portion 56 of the chamber 50 by an adhesive or the like. The bottom member 36 provided on the bottom portion 56 may support a part of the consumable 110 that is inserted in the chamber 50 in such a way that at least a part of an end surface of the consumable 110 is exposed. The bottom member 36 is uneven at the surface where the consumable 110 abuts against, and may, but not limited to, be formed of a resin material such as PEEK, metal, glass, or ceramic.

[0052] As shown in Figs. 4A and 4B, the chamber 50

desirably includes a cylindrical portion 54 between the opening 52 and the side wall portion 60. A gap may be formed between the cylindrical portion 54 and the consumable 110 in a state where the consumable 110 is positioned at the desired position inside the chamber 50. Furthermore, as shown in Figs. 4A and 4B, the chamber 50 desirably includes a guide portion 58 including a tapered surface 58a that connects an inner surface of the cylindrical portion 54 and the inner surfaces 62a of the flat portions 62.

[0053] As shown in Fig. 6, the heating unit 40 includes a heating element 42. The heating element 42 may be a heating track, for example. The heating element 42 may be provided on an outer surface or an inner surface of the chamber 50. The heating element 42 is desirably disposed to heat the flat portion 62 without coming into contact with the curved portion 66 of the chamber 50. In other words, the heating element 42 is desirably disposed only on the outer surface of the flat portion 62. The heating element 42 may include a part for heating the curved portion 66 of the chamber 50 and a part for heating the flat portion 62, and heating capacity may be different between the parts. More specifically, the heating element 42 may heat the flat portion 62 to a temperature higher than that of the curved portion 66. For example, an arrangement density of the heating track of the heating element 42 may be adjusted between the flat portion 62 and the curved portion 66. Furthermore, the heating element 42 may have substantially same heating capacity along an entire circumference of the chamber 50, and may be wound around an outer circumference of the chamber 50. As shown in Fig. 6, in addition to the heating element 42, the heating unit 40 desirably includes an electrically insulating member 44 that covers at least one surface of the heating element 42. In the present disclosure, the electrically insulating member 44 is disposed to cover both surfaces of the heating element 42. The heating element 42 is an example of a heat generating unit of the present disclosure.

[0054] Fig. 7 is a cross-sectional view shown in Fig. 5B, where the consumable 110 is disposed at the desired position inside the chamber 50. As shown in Fig. 7, when the consumable 110 is disposed at the desired position inside the chamber 50, the consumable 110 may be pressed by coming into contact with the flat portion 62 of the chamber 50. A gap 67 is formed between the consumable 110 and the curved portion 66. The gap 67 may communicate with the opening 52 in the chamber 50 and an air passage between the end surface of the consumable 110 positioned inside the chamber 50 and the bottom member 36. Accordingly, air flowing in from the opening 52 in the chamber 50 may pass through the gap 67 and flow into the consumable 110. In other words, an air passage (the gap 67) is formed between the consumable 110 and the curved portion 66.

[0055] Next, a structure of the first holding portion 37 that holds the end portion of the chamber 50 on the Z-axis positive direction side inside the inner housing 10

will be described. Fig. 8 is an enlarged cross-sectional view of the first holding portion 37. Fig. 9 is a perspective view of a gasket 80 and an O-ring 90. Fig. 10 is an enlarged cross-sectional view showing generation of a heat bridge near the gasket 80.

[0056] More specifically, the first holding portion 37 includes the gasket 80 and the O-ring 90. The gasket 80 is formed as an annular member that is disposed around the cylindrical portion 54 of the chamber 50, along an entire circumference of the outer circumferential surface of the chamber 50, and that supports the chamber 50. For example, the gasket 80 may be formed of resin such as polycarbonate or PEEK. The gasket 80 is an example of a support portion of the present disclosure.

[0057] The O-ring 90 engages with the insertion guide member 34 along an entire circumference of the insertion guide member 34 via a pressed portion 92 described later, and also engages with the gasket 80 along an entire circumference of the gasket 80, and thereby supports the insertion guide member 34 and the gasket 80. For example, the O-ring 90 may be formed by an elastic member such as silicon. Furthermore, the O-ring 90 is positioned and fixed to a fixing portion 22 fixed to the inner housing 10.

[0058] A sealing surface 85 is formed at a contact part between the gasket 80 and the O-ring 90, the sealing surface 85 extending along the axial direction (that is, the Z-axis direction) of the chamber 50. The sealing surface 85 is formed on a radially inner side of the chamber 50 than an outer edge of the gasket 80. The first holding portion 37 including the gasket 80 and the O-ring 90 may thus seal in smoke that leaks into the inner housing from between the chamber 50 and the insertion guide member 34, at a position separate from the chamber 50, or in other words, at a position that is thermally separated from the chamber 50.

[0059] As shown in Figs. 8 and 9, the gasket 80 includes a first surface 81a, a first jaw portion 81b, a second surface 82a, a second jaw portion 82b, a tapered surface 84, a protruding portion 86, and a leg portion 88. Furthermore, the tapered surface 84 of the gasket 80 and the tapered surface 58a of the chamber 50 are disposed facing each other while being separated from each other, and a space is formed between the two tapered surfaces. An adhesive reservoir 87 is formed in the space. The gasket 80 and the O-ring 90 are disposed next to each other along the axial direction of the chamber 50. The tapered surface 84 of the gasket 80 is an example of a first tapered surface of the present disclosure. The tapered surface 58a of the chamber 50 is an example of a second tapered surface of the present disclosure.

[0060] Furthermore, as shown in Figs. 8 and 9, the O-ring 90 includes a recessed portion 91, the pressed portion 92, and a positioning portion 93.

[0061] As shown in Figs. 8 and 9, on an inner circumferential surface of the gasket 80, the tapered surface 84, the first surface 81a, the first jaw portion 81b, the second surface 82a, the second jaw portion 82b, the seal-

ing surface 85, and the protruding portion 86 are formed in this order from the Z-axis negative direction side toward the Z-axis positive direction side, concentrically around a center axis of the gasket 80 (that coincides with a center axis of the chamber 50).

[0062] As shown in Fig. 8, the tapered surface 84 of the gasket 80 is a tapered surface that faces the tapered surface 58a of the chamber 50 and that slopes in a direction away from the tapered surface 58a (that is, outward in a radial direction of the chamber 50).

[0063] The leg portion 88 of the gasket 80 refers to a part of the gasket 80 where an inner circumferential surface is the tapered surface 84. In other words, a region of the gasket 80 on the Z-axis negative direction side than the first surface 81a is the leg portion 88. The leg portion 88 of the gasket 80 is an example of an extending portion of the present disclosure.

[0064] The first surface 81a of the gasket 80 is an annular surface that is continuous with the tapered surface 84 along the Z-axis direction, and that abuts the cylindrical portion 54 of the chamber 50 while being substantially parallel to the Z-axis direction.

[0065] The first jaw portion 81b of the gasket 80 is continuous with the first surface 81a along the Z-axis direction, and the first jaw portion 81b engages with the flange portion 52a of the chamber 50 to support the chamber 50.

[0066] As described later, the first surface 81a of the gasket 80 is adhered to an outer circumferential surface of the cylindrical portion 54 of the chamber 50 by an adhesive. In the same manner, the first jaw portion 81b of the gasket 80 is adhered to an outer circumferential surface of the flange portion 52a of the chamber 50 by an adhesive. A set of the first surface 81a and the first jaw portion 81b formed on the inner circumferential surface of the gasket 80 is an example of a first abutting surface of the present disclosure. A set of the outer circumferential surface of the cylindrical portion 54 of the chamber 50 and the outer circumferential surface of the flange portion 52a is an example of an adhesion surface of the present disclosure.

[0067] The second surface 82a of the gasket 80 is an annular surface that is continuous with the first jaw portion 81b along the Z-axis direction, and that faces an outer circumferential surface of the insertion guide member 34 near an end portion on the Z-axis negative direction side while extending substantially in parallel to the Z-axis direction. As shown in Fig. 8, the second surface 82a of the gasket 80 abuts an outer circumferential portion of the end portion of the insertion guide member 34 on the Z-axis negative direction side, the insertion guide member 34 abutting the opening 52 in the chamber 50. The second surface 82a of the gasket 80 is an example of a second abutting surface of the present disclosure.

[0068] The second jaw portion 82b of the gasket 80 is formed to connect the second surface 82a and the sealing surface 85 along the Z-axis direction.

[0069] As described above, the sealing surface 85 of the gasket 80 is a contact part between the gasket 80

and the O-ring 90. Furthermore, the protruding portion 86 of the gasket 80 is continuous with the sealing surface 85 along the Z-axis direction, and the protruding portion 86 protrudes in the Z-axis positive direction from a main body portion of the gasket 80 toward the O-ring 90 along the axial direction of the chamber 50.

[0070] More specifically, the recessed portion 91 that faces the protruding portion 86 of the gasket 80 is provided on the O-ring 90. The sealing surface 85 is formed at a contact part between a surface of the protruding portion 86, on a radially inner side of the chamber 50, and a surface of the recessed portion 91, on a radially outer side of the chamber 50. The sealing surface 85 is thus formed by the surface of the protruding portion 86 and the surface of the recessed portion 91 coming into contact with each other at the contact part of the protruding portion 86 of the gasket 80 and the recessed portion 91 of the O-ring 90, and sealability of the sealing surface 85 may be increased, and smoke generated in the chamber 50 may be better prevented from leaking into the inner housing.

[0071] Additionally, the sealing surface 85 is described to be formed at the contact part between the protruding portion 86 and the recessed portion 91, but such a case is not restrictive. The gasket 80 and the O-ring 90 may include, respectively, a first protruding portion and a second protruding portion that protrude toward the O-ring 90 and the gasket 80 along the axial direction of the chamber 50, and a sealing surface may be formed at a contact part between a surface of the first protruding portion, on an axially inner side of the chamber 50, and a surface of the second protruding portion, on an axially outer side of the chamber 50.

[0072] Also in this case, the sealing surface is formed by the surface of the first protruding portion and the surface of the second protruding portion coming into contact with each other at the contact part between the first protruding portion and the second protruding portion, and thus, the sealability of the sealing surface may be increased, and smoke generated in the chamber 50 may be better prevented from leaking into the inner housing 10.

[0073] Furthermore, the pressed portion 92 that is formed as a lip-shaped member that engages with the insertion guide member 34 is formed on an inner circumferential surface of the O-ring 90. At the time when the insertion guide member 34 is attached at the time of manufacture of the flavor inhaler 100, the pressed portion 92 of the O-ring 90 is pressed by the insertion guide member 34 and is bent in the Z-axis negative direction side. A seal is thus formed between the insertion guide member 34 and the pressed portion 92, and smoke generated in the chamber 50 may be prevented from leaking into the inner housing 10. Additionally, for the sake of description, Fig. 8 shows a state where the pressed portion 92 of the O-ring 90 is not bent.

[0074] At this time, the O-ring 90 is desirably biased against the gasket 80 due to the pressed portion 92 being

pressed by the insertion guide member 34. Because the O-ring 90 is biased against the gasket 80, the sealability of the sealing surface 85 may be increased.

[0075] The positioning portion 93 of the O-ring 90 protrudes outward from a main body portion of the O-ring 90 to be engaged with a positioning claw 22a formed on the fixing portion 22. The O-ring 90 is thereby held by the fixing portion 22, and the O-ring 90 and the gasket 80 may operate together to prevent the position of the chamber 50 inside the inner housing from being shifted. The insertion guide member 34 may thereby be easily attached.

[0076] Arrangement of the gasket 80 relative to parts other than the chamber 50 will be described. As shown in Fig. 8, the adhesive reservoir 87 formed between the tapered surface 84 of the gasket 80 and the tapered surface 58a of the chamber 50 is positioned separate in the Z-axis positive direction from the heating element 42 provided on the outer circumferential surface of the chamber 50. Furthermore, as shown in Fig. 8, an outer circumferential surface of the gasket 80 abuts the heat insulating portion 32 that is disposed to surround the chamber 50.

[0077] Generation of a heat bridge HB between the gasket 80 and the heat insulating portion 32 will be described with reference to Fig. 10. In the present disclosure, the heat bridge is a phenomenon where a thermal route is formed between the outer circumferential surface of the gasket 80 and the heat insulating portion 32 and heat generated by the heating element 42 reaches outside a region blocked by the gasket 80 and the heat insulating portion 32. As shown in Figs. 8 and 10, the gasket 80 includes the leg portion 88, and thus, a length along the Z-axis of a region where the outer circumferential surface of the gasket 80 and the heat insulating portion 32 abut each other is greater than in a case where the gasket 80 does not include the leg portion 88. With the flavor inhaler 100 of the present disclosure, the thermal route between the outer circumferential surface of the gasket 80 and the heat insulating portion 32 where the heat generated by the heating element 42 passes through to reach outside the region blocked by the gasket 80 and the heat insulating portion 32 is greater than in the case where the gasket 80 does not include the leg portion 88. Accordingly, with the flavor inhaler 100 of the present disclosure, compared to the case where the gasket 80 does not include the leg portion 88, the heat bridge HB is prevented from being formed, and heat generated by the heating element 42 may be prevented from reaching outside the region blocked by the gasket 80 and the heat insulating portion 32.

<Manufacturing Process of First Holding Portion 37>

[0078] In the following, a manufacturing process of the first holding portion 37 will be described. In a first step, the O-ring 90 is fitted with the gasket 80. More specifically, the recessed portion 91 of the O-ring 90 is caused to engage with the protruding portion 86 of the gasket

80. As described above, in this case, the positioning portion 93 of the O-ring 90 is engaged with the positioning claw 22a of the fixing portion 22 fixed to the inner housing 10.

[0079] In a second step, the outer circumference of the chamber 50 is fitted on the inner circumferential surface of the gasket 80 that is engaged with the O-ring 90. More specifically, the chamber 50 is inserted in an inner circumferential portion of the gasket 80 from vertically above (that is, the Z-axis positive direction side). In this case, the chamber 50 is supported by the gasket 80 by the flange portion 52a of the chamber 50 being engaged with the first jaw portion 81b of the gasket 80. Furthermore, in this case, the cylindrical portion 54 of the chamber 50 abuts the first surface 81a of the gasket 80. Furthermore, in this case, the tapered surface 58a of the chamber 50 and the tapered surface 84 of the gasket 80 face each other while being separated from each other, and a space is formed in between. The space is the region where the adhesive reservoir 87 will be formed later.

[0080] In a third step, the insertion guide member 34 is attached to the chamber 50 that is supported by the gasket 80 that is engaged with the O-ring 90. More specifically, the insertion guide member 34 is inserted into the O-ring 90 and on the inner circumferential surface of the gasket 80 from vertically above (that is, the Z-axis positive direction side), and an end portion of the insertion guide member 34, on the Z-axis negative direction side, is caused to abut the opening 52 in the chamber 50. As described above, in this case, the pressed portion 92 of the O-ring 90 is pressed and bent in the Z-axis negative direction side by the insertion guide member 34, and the O-ring 90 is biased against the gasket 80.

[0081] In a fourth step, the outer circumference of the chamber 50 and an inner circumference of the gasket 80 are adhered by an adhesive. More specifically, the chamber 50 to which the insertion guide member 34 is attached and that is supported by the gasket 80 that is engaged with the O-ring 90 is turned upside down and is placed on a ground surface. In this case, an end portion of the insertion guide member 34 on the Z-axis positive direction side shown in Fig. 8 comes into contact with the ground surface. In this state, an adhesive is injected into a gap between the tapered surface 84 of the gasket 80 and the tapered surface 58a of the chamber 50 from vertically above the ground surface. In this case, the flange portion 52a of the chamber 50 and the first jaw portion 81b of the gasket 80 are adhered by the injected adhesive. In the same manner, the cylindrical portion 54 of the chamber 50 and the first surface 81a of the gasket 80 are adhered by the injected adhesive. Moreover, by appropriately selecting the amount of adhesive to be injected, the adhesive reservoir 87 described above is formed between the tapered surface 84 of the gasket 80 and the tapered surface 58a of the chamber 50.

[0082] The first holding portion 37 shown in Fig. 8 is formed by the steps described above. Additionally, as described above, Fig. 8 shows a state where the pressed

portion 92 of the O-ring 90 is not bent. Moreover, the manufacturing process of the first holding portion 37 is not limited to the one described above, and details thereof may be changed as appropriate. For example, a change may be made such that attachment of the O-ring 90 and the insertion guide member 34 is performed after the step of injecting the adhesive. For example, in the case where the gasket 80 and the adhesive are both resin materials and the adhesive is not able to easily flow in because the insertion guide member 34 is not attached at the time of injection of the adhesive, it may be possible to subject the insertion guide 34 and the gasket 80 to a more desirable adhering process in a later step.

15 <Advantageous Effects of First Holding Portion 37>

[0083] In the following, advantageous effects of the first holding portion 37 of the present disclosure will be described. With the first holding portion 37 of the present disclosure, the gasket 80 that supports the chamber 50 includes the leg portion 88 that is defined by the tapered surface 84 that faces the tapered surface 58a of the chamber 50 while sloping in a direction away from the tapered surface 58a of the chamber 50. Accordingly, the outer circumferential surface of the chamber 50 and the inner circumferential surface of the gasket 80 are separated from each other near the opening 52 in the chamber 50. Accordingly, a separation space may be secured inside the inner housing 10, between the outer circumferential surface of the chamber 50 and the inner circumferential surface of the gasket 80.

[0084] With the first holding portion 37 of the present disclosure, the first surface 81a and the first jaw portion 81b of the gasket 80 are adhered to the outer circumferential surfaces of the cylindrical portion 54 and the flange portion 52a of the chamber 50. At the time of adhering, the space formed between the leg portion 88 of the gasket 80 and the tapered surface 58a of the chamber 50 may function as a pocket for collecting a member that contributes to the adhering. Accordingly, retainability, adhesion and airtightness between the gasket 80 and the chamber 50 may be improved.

[0085] Particularly, with the first holding portion 37 of the present disclosure, the first surface 81a and the first jaw portion 81b of the gasket 80 are adhered to the outer circumferential surfaces of the cylindrical portion 54 and the flange portion 52a of the chamber 50 by an adhesive. At the time of adhering, the space formed between the leg portion 88 of the gasket 80 and the tapered surface 58a of the chamber 50 may function as a pocket for collecting an adhesive material. Accordingly, retainability, adhesion and airtightness between the gasket 80 and the chamber 50 may be improved.

[0086] With the first holding portion 37 of the present disclosure, the adhesive reservoir 87 is formed between the tapered surface 84 of the gasket 80 and the tapered surface 58a of the chamber 50. Accordingly, a sufficient amount of adhesive may be applied between the outer

circumferential surface of the chamber 50 and the inner circumferential surface of the gasket 80. As a result, airtightness inside the inner housing 10 may be improved, and also, the chamber 50 may be stably supported by the gasket 80.

[0087] With the first holding portion 37 of the present disclosure, the tapered surface 84 that slopes away from the outer circumferential surface of the chamber 50 is provided on the inner circumference of the gasket 80. Accordingly, a sufficient separation space may be secured between the outer circumferential surface of the chamber 50 and the inner circumferential surface of the gasket 80.

[0088] With the first holding portion 37 of the present disclosure, the tapered surface 58a of the chamber 50 is disposed at a position facing the tapered surface 84 of the gasket 80 while being separated therefrom. Accordingly, a sufficient separation space may be secured between the outer circumferential surface of the chamber 50 and the inner circumferential surface of the gasket 80.

[0089] With the first holding portion 37 of the present disclosure, the tapered surface 58a of the chamber 50 that faces the tapered surface 84 of the gasket 80 is disposed between the outer circumferential surfaces of the cylindrical portion 54 and the flange portion 52a of the chamber 50 of the chamber 50 adhered to the first surface 81a and the first jaw portion 81b of the gasket 80 by an adhesive and the heating element 42 provided on the outer circumferential surface of the chamber 50. Accordingly, heat that is generated by the heating element 42 may be prevented from preventing adhering of the inner circumferential surface of the gasket 80 and the outer circumferential surface of the chamber 50 near the opening 52.

[0090] With the first holding portion 37 of the present disclosure, the heat insulating portion 32 is disposed to abut an outer circumference of the gasket 80 supporting the chamber 50. Accordingly, transfer of heat generated by the heating element 42 provided on the outer circumferential surface of the chamber 50 to other members inside the inner housing 10 may be prevented.

[0091] Furthermore, with the first holding portion 37 of the present disclosure, the heat insulating portion 32 abuts an outer circumference of the leg portion 88 of the gasket 80 that extends in the Z-axis negative direction. As described above, because the gasket 80 includes the leg portion 88, the length along the Z-axis of the region where the outer circumferential surface of the gasket 80 and the heat insulating portion 32 abut each other is greater than in a case where the leg portion 88 is not provided. As a result, the thermal route between the outer circumferential surface of the gasket 80 and the heat insulating portion 32 that the heat generated by the heating element 42 passes through to reach outside the region blocked by the gasket 80 and the heat insulating portion 32 is longer compared to the case where the gasket 80 does not include the leg portion 88. Accordingly, with the flavor inhaler 100 of the present disclosure, generation

of the heat bridge HB may be better prevented than in the case where the gasket 80 does not include the leg portion 88, and the heat that is generated by the heating element 42 may be prevented from reaching outside the region blocked by the gasket 80 and the heat insulating portion 32.

[0092] Furthermore, with the first holding portion 37 of the present disclosure, the end portion of the insertion guide member 34, on the Z-axis negative direction side, abuts the opening 52 in the chamber 50, and the second jaw portion 82b of the gasket 80 abuts an outer circumferential portion of an abutting end portion. A set of the chamber 50 for housing the consumable 110 and the insertion guide member 34 is supported by one gasket 80. That is, both the chamber 50 and the insertion guide member 34 may be supported by the gasket 80, and an increase in the number of components may be prevented.

[0093] In the manufacturing process of the first holding portion 37 of the present disclosure, at the time of fitting the outer circumference of the chamber 50 on the inner circumferential surface of the gasket 80 that is engaged with the O-ring 90, a space is formed between the tapered surface 84 that slopes outward in a radial direction of the gasket 80 and the tapered surface 58a that slopes inward in the radial direction of the chamber 50. An adhesive is supplied between the first surface 81a and the first jaw portion 81b of the gasket 80 and the outer circumferential surfaces of the cylindrical portion 54 and the flange portion 52a of the chamber 50 through the space. Accordingly, the adhesive for adhering the inner circumferential surface of the gasket 80 and the outer circumferential surface of the chamber 50 may be appropriately supplied, and the flavor inhaler with improved retainability, adhesion and airtightness may be manufactured.

[0094] Furthermore, in the manufacturing process of the first holding portion 37 of the present disclosure, the chamber 50 to which the insertion guide member 34 is attached and that is supported by the gasket 80 that is engaged with the O-ring 90 is turned upside down and is placed on the ground surface. In this state, one end portion of the chamber 50 where the opening 52 is formed is in contact with the ground surface and the other end portion of the chamber 50 is positioned above the ground surface. An adhesive is supplied in this state between the outer circumferential surface of the chamber 50 and the inner circumferential surface of the gasket 80 through the space between the tapered surface 84 sloping outward in the radial direction of the gasket 80 and the tapered surface 58a sloping inward in the radial direction of the chamber 50. In this case, the space functions as a pocket for collecting the adhesive material, and allowing a sufficient amount of adhesive to be used in adhering.

[0095] Heretofore, the embodiment of the present disclosure has been described, but the present disclosure is not limited to the embodiment described above, and various modifications may be made within the scope of

the technical idea described in the claims, the specification, and the drawings. Any shapes or materials not directly described in the specification and the drawings fall within the scope of the technical idea of the present disclosure as long as the advantageous effects of the present disclosure may be achieved by the same. For example, the flavor inhaler 100 of the present disclosure includes a so-called counter-flow air passage with which air flowing in from the opening 52 in the chamber 50 is supplied to the end surface of the consumable 110, but such a case is not restrictive, and a so-called bottom-flow air passage with which air is supplied from the bottom portion 56 of the chamber 50 into the chamber 50 may instead be provided. Furthermore, the heating element 42 does not have to adopt resistance heating and may instead adopt induction heating. In this case, the heating element 42 may heat the chamber 50 by induction heating. Moreover, in the case where the consumable 110 includes a susceptor, the susceptor of the consumable 110 may be heated by the heating element 42 by induction heating.

REFERENCE SIGNS LIST

[0096]

10 inner housing
 20 power source unit
 21 power source
 22 fixing portion
 22a positioning claw
 30 atomizing unit
 32 heat insulating portion
 34 insertion guide member
 36 bottom member
 37 first holding portion
 38 second holding portion
 40 heating unit
 42 heating element
 44 electrically insulating member
 48 electrode
 50 chamber
 52 opening
 52a flange portion
 54 cylindrical portion
 56 bottom portion
 56a hole
 58 guide portion
 58a tapered surface
 62 flat portion
 62a inner surface
 62b outer surface
 66 curved portion
 66a inner surface
 66b outer surface
 67 gap
 80 gasket
 81a first surface

81b first jaw portion
 82a second surface
 82b second jaw portion
 84 tapered surface
 5 85 sealing surface
 86 protruding portion
 88 leg portion
 90 O-ring
 91 recessed portion
 10 92 pressed portion
 93 positioning portion
 100 flavor inhaler
 101 outer housing
 102 slide cover
 15 103 switch unit
 110 consumable
 111 smokable substance
 112 first rolling paper
 113 second rolling paper
 20 114 cylindrical member
 115 filter portion
 116 hollow filter portion
 117 lip release agent
 HB heat bridge
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Claims

1. A flavor inhaler comprising:
 - 30 an accommodating portion in which an opening portion is formed on one end, the accommodating portion being for housing at least a part of a consumable through the opening portion; and
 - 35 a support portion that supports the accommodating portion, the support portion including a first abutting surface provided to surround an outer circumference of the opening portion of the accommodating portion, and an extending portion extending from the first abutting surface in a direction away from the opening portion, wherein
 - 40 the extending portion of the support portion and a part of an outer circumference of the accommodating portion that faces the extending portion are separated from each other such that a space is formed in between.
2. The flavor inhaler according to claim 1, wherein the first abutting surface of the support portion is adhered to an adhesion surface on the outer circumference of the accommodating portion.
3. The flavor inhaler according to claim 2, wherein the first abutting surface of the support portion is adhered to the adhesion surface by an adhesive.
4. The flavor inhaler according to claim 3, wherein an

adhesive reservoir for retaining the adhesive is formed in the space between the extending portion and the part of the outer circumference of the accommodating portion that faces the extending portion.

5. The flavor inhaler according to any one of claims 1 to 4, wherein the extending portion of the support portion includes a first tapered surface that faces the outer circumference of the accommodating portion and that slopes away from the outer circumference of the accommodating portion.

6. The flavor inhaler according to any one of claims 1 to 5, wherein a second tapered surface is provided on the outer circumference of the accommodating portion, the second tapered surface facing the extending portion of the support portion and sloping away from the extending portion.

7. The flavor inhaler according to any one of claims 2 to 6, wherein a heat generating unit is provided on the outer circumference of the accommodating portion, the heat generating unit being separated from the adhesion surface across a part facing the extending portion of the support portion.

8. The flavor inhaler according to claim 7, further comprising a heat insulating portion that abuts an outer circumference of the support portion.

9. The flavor inhaler according to claim 8, wherein the heat insulating portion abuts an outer circumference of the extending portion of the support portion.

10. The flavor inhaler according to any one of claims 1 to 9, further comprising a guide portion that is cylindrical, one end portion of the guide portion abutting an opening surface of the opening portion of the accommodating portion, wherein the support portion further includes a second abutting surface that abuts an outer circumference of the one end portion of the guide portion.

11. A flavor inhaler manufacturing method comprising:

forming, on an inner circumference of a support portion, a first abutting surface, and a first tapered surface that is connected to the first abutting surface and that slopes outward in a radial direction of the support portion, forming an adhesion surface on an outer circumference of an accommodating portion that includes an opening portion on one end and that houses at least a part of a consumable through the opening portion, inserting the accommodating portion on the inner circumference of the support portion such

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that the first abutting surface and the adhesion surface abut each other and such that a space is formed between the first tapered surface and a part of the outer circumference of the accommodating portion that faces the first tapered surface; and

adhering the inner circumference of the support portion and the outer circumference of the accommodating portion by supplying an adhesive between the first abutting surface and the adhesion surface through the space between the first tapered surface and the outer circumference of the accommodating portion.

12. The flavor inhaler manufacturing method according to claim 11, further comprising forming a second tapered surface at the part of the outer circumference of the accommodating portion that faces the first tapered surface, the second tapered surface sloping away from the first tapered surface.

13. The flavor inhaler manufacturing method according to claim 11 or 12, comprising supplying an adhesive between the first abutting surface and the adhesion surface through the space between the first tapered surface and the outer circumference of the accommodating portion in a state where the accommodating portion that is inserted on the inner circumference of the support portion is disposed in such a way that the one end of the accommodating portion is on a vertically lower side and an other end is on a vertically upper side.

Fig. 1A

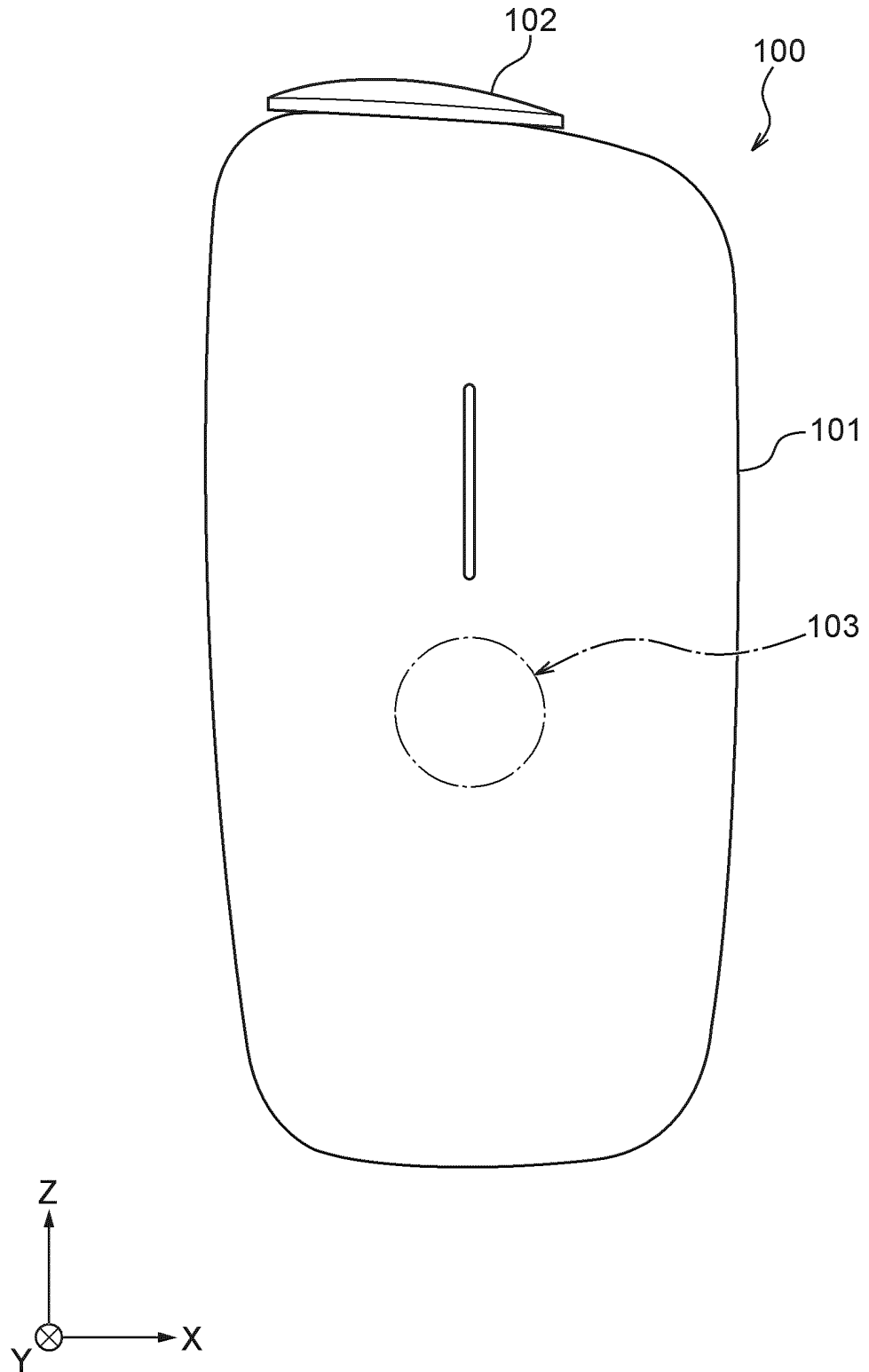


Fig. 1B

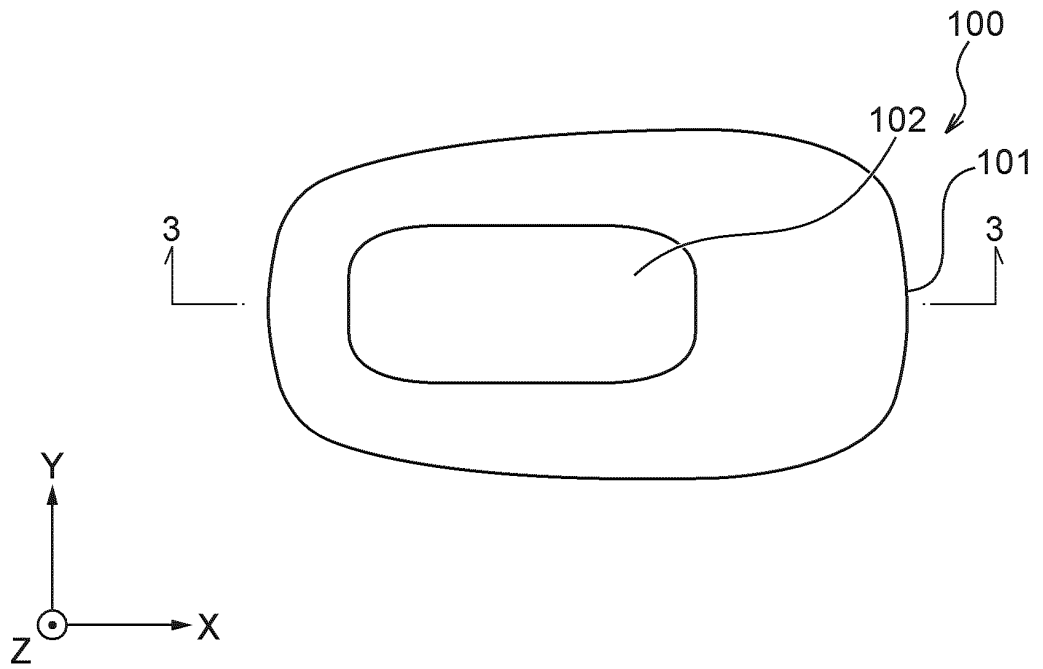


Fig. 1C

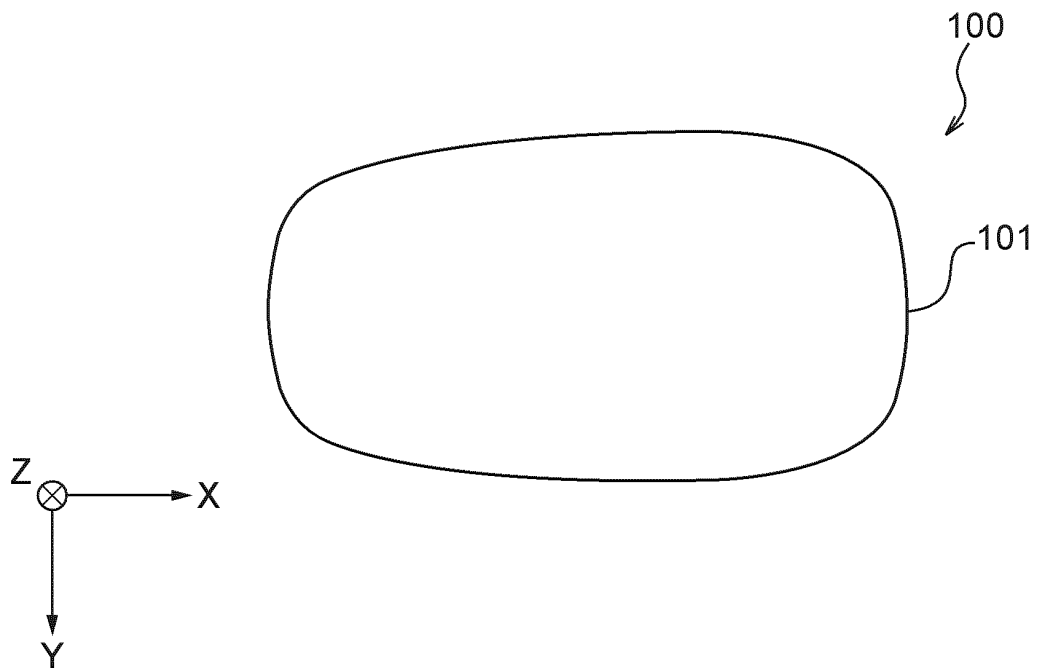


Fig. 2

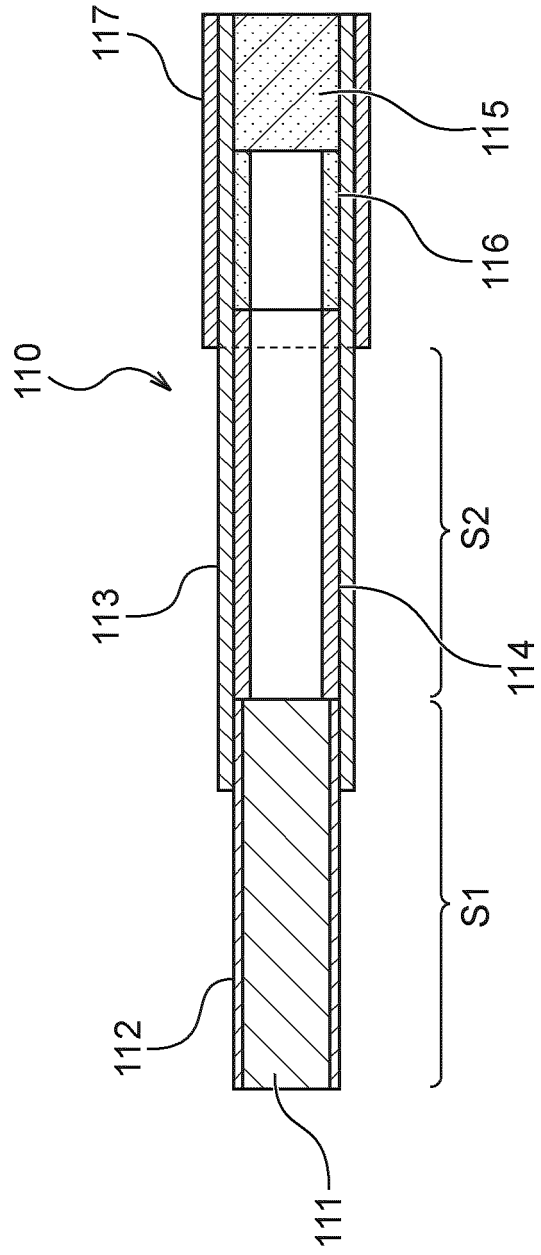


Fig. 3

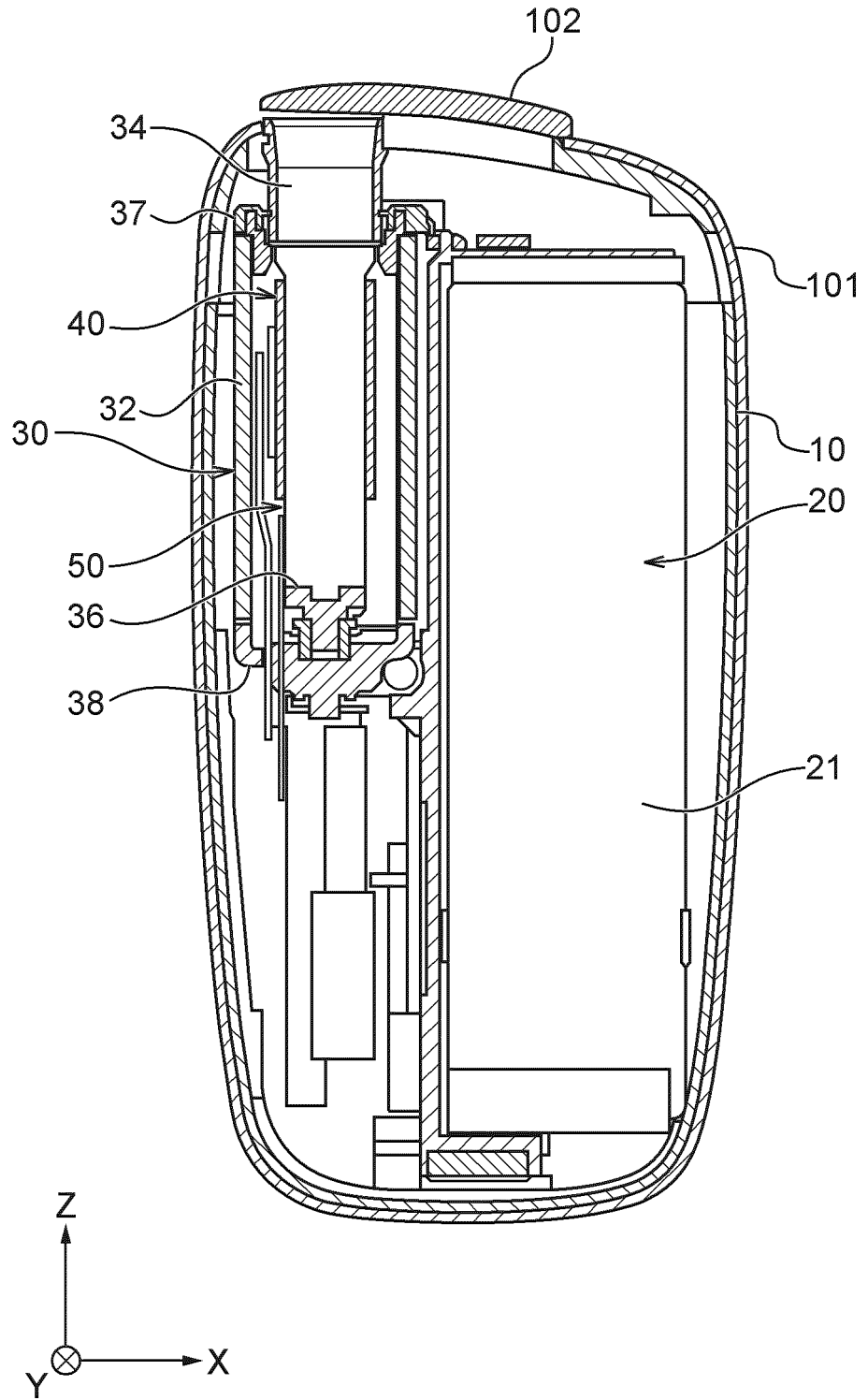


Fig. 4A

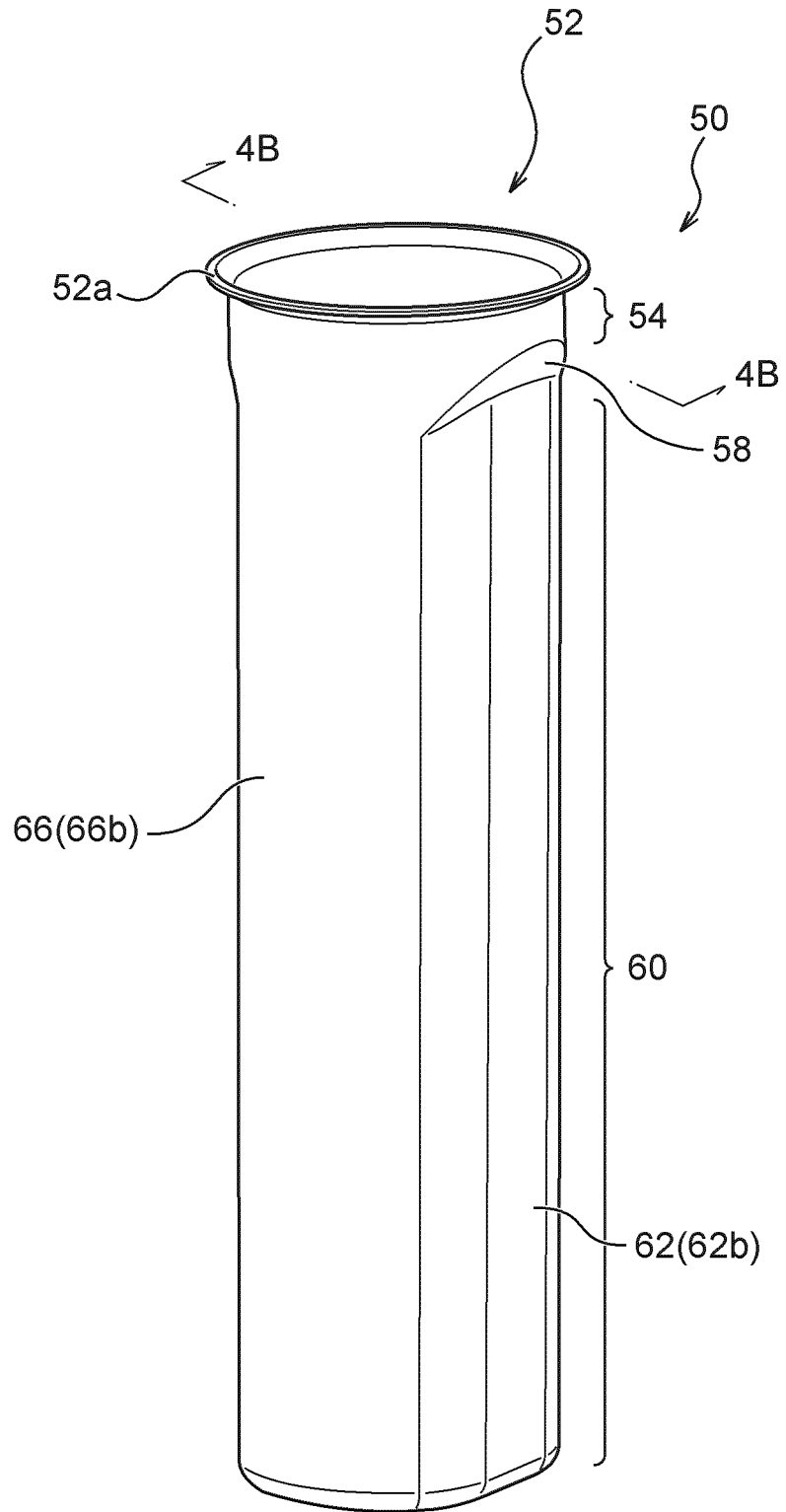


Fig. 4B

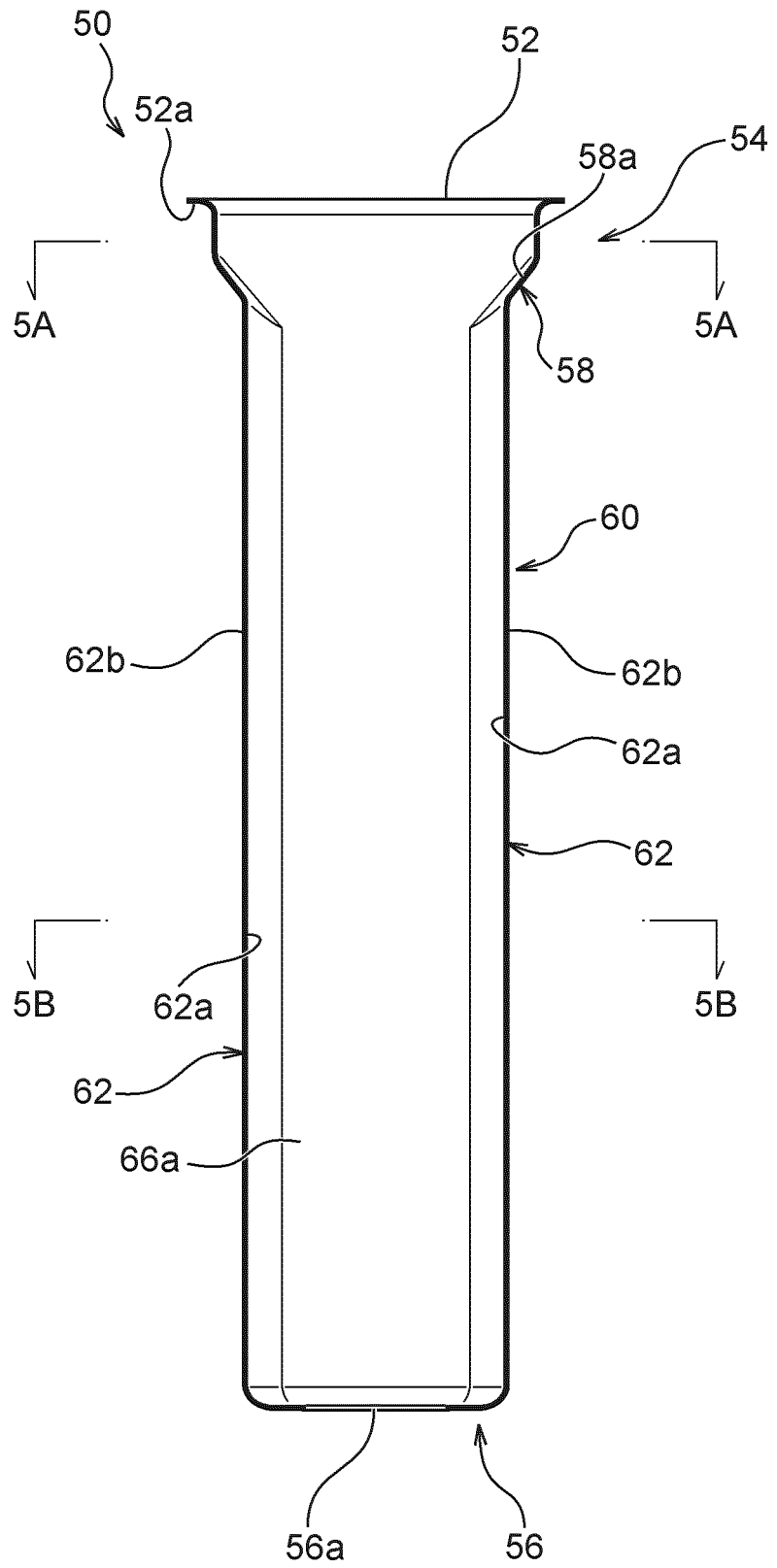


Fig. 5A

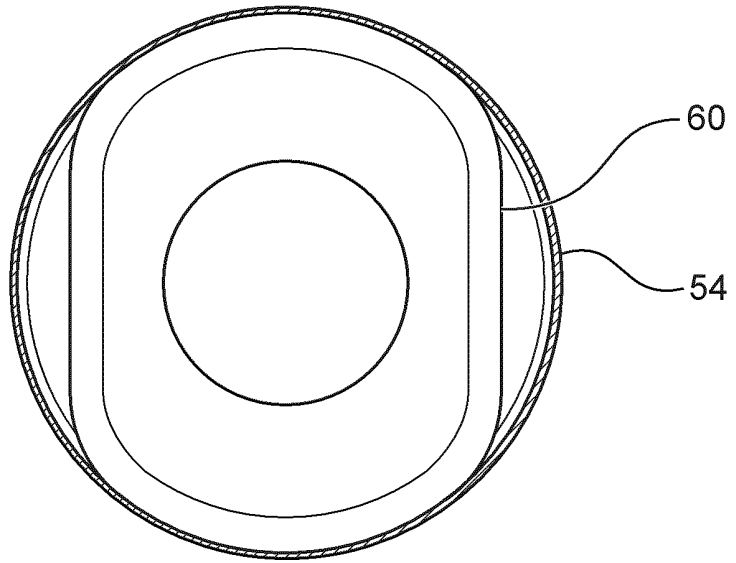


Fig. 5B

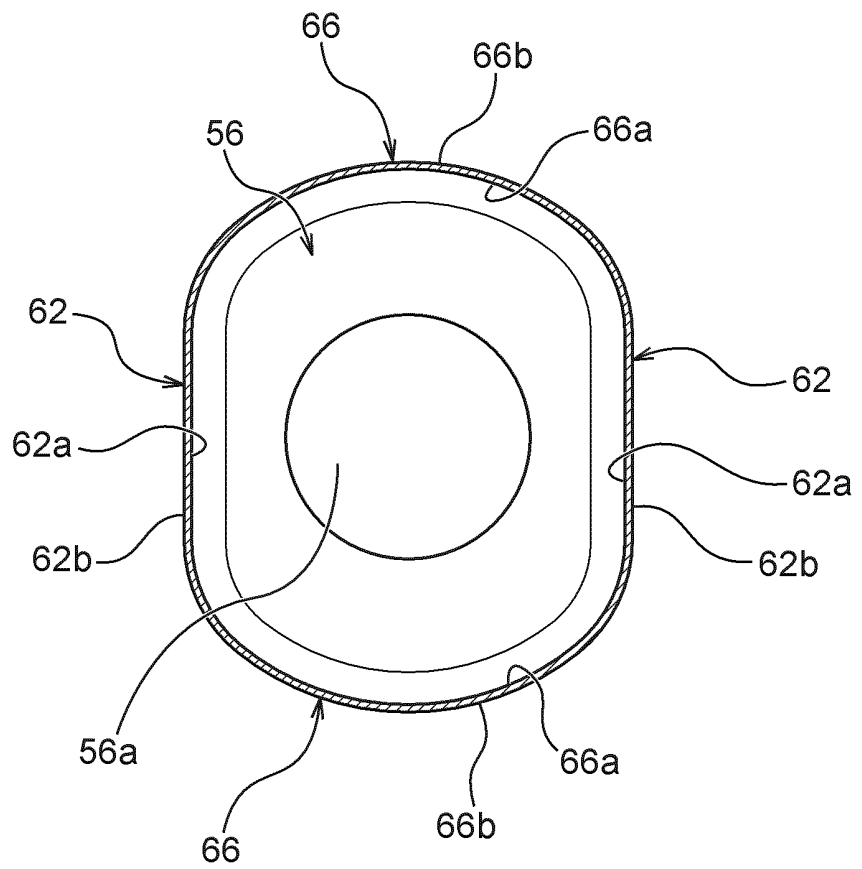


Fig. 6

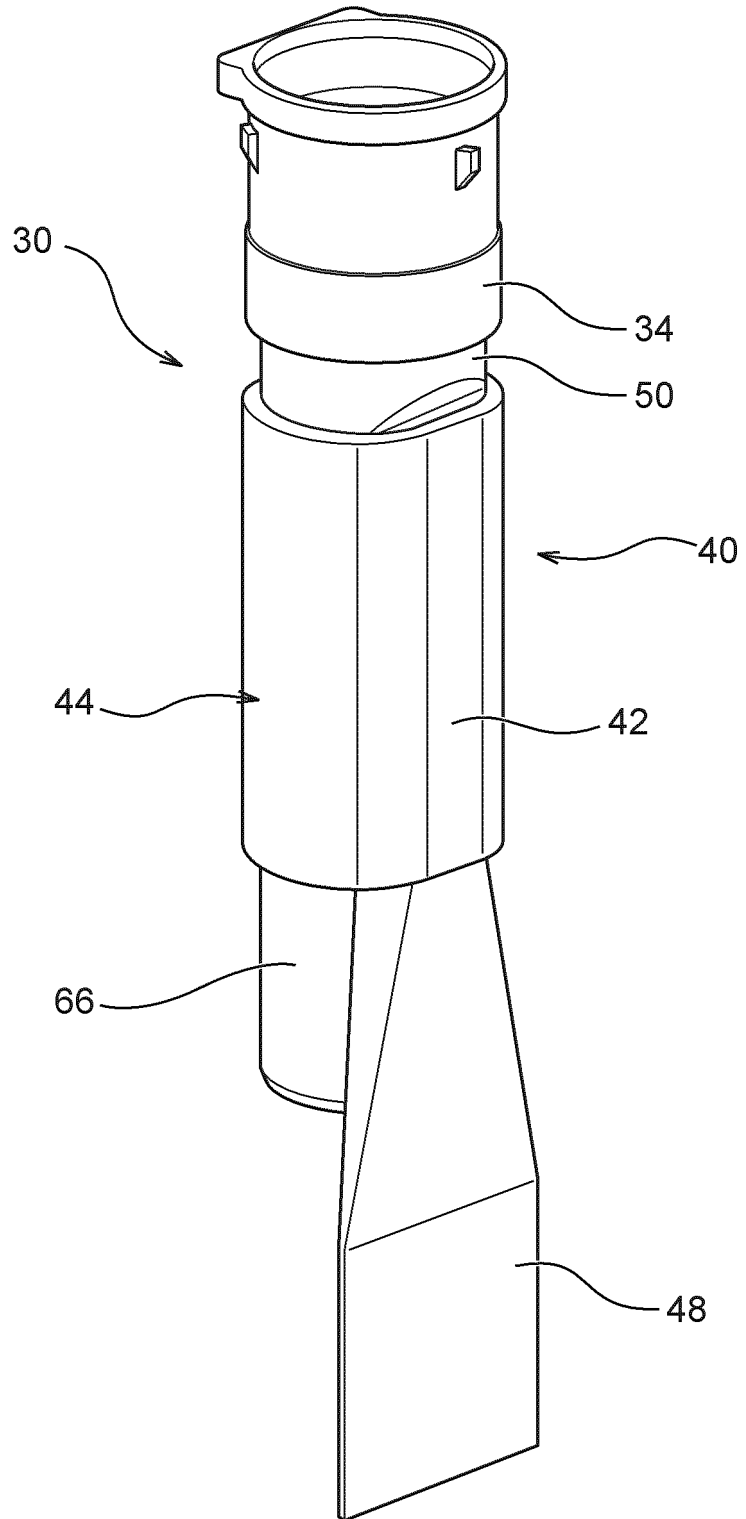


Fig. 7

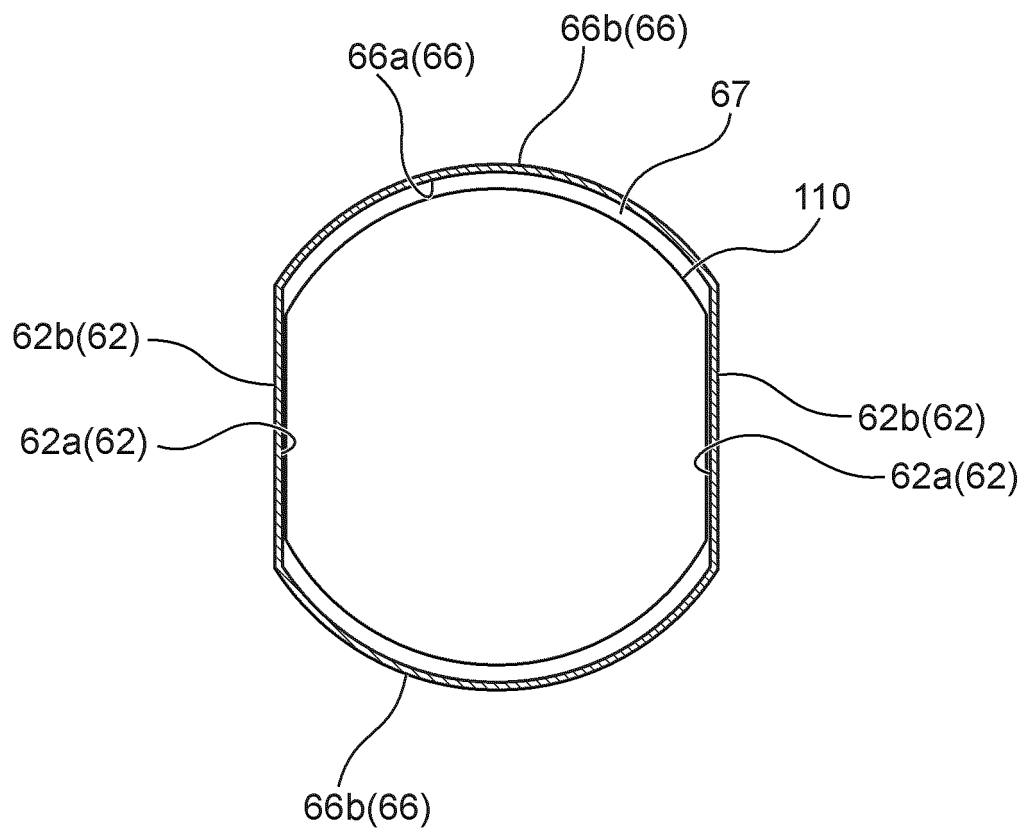


Fig. 8

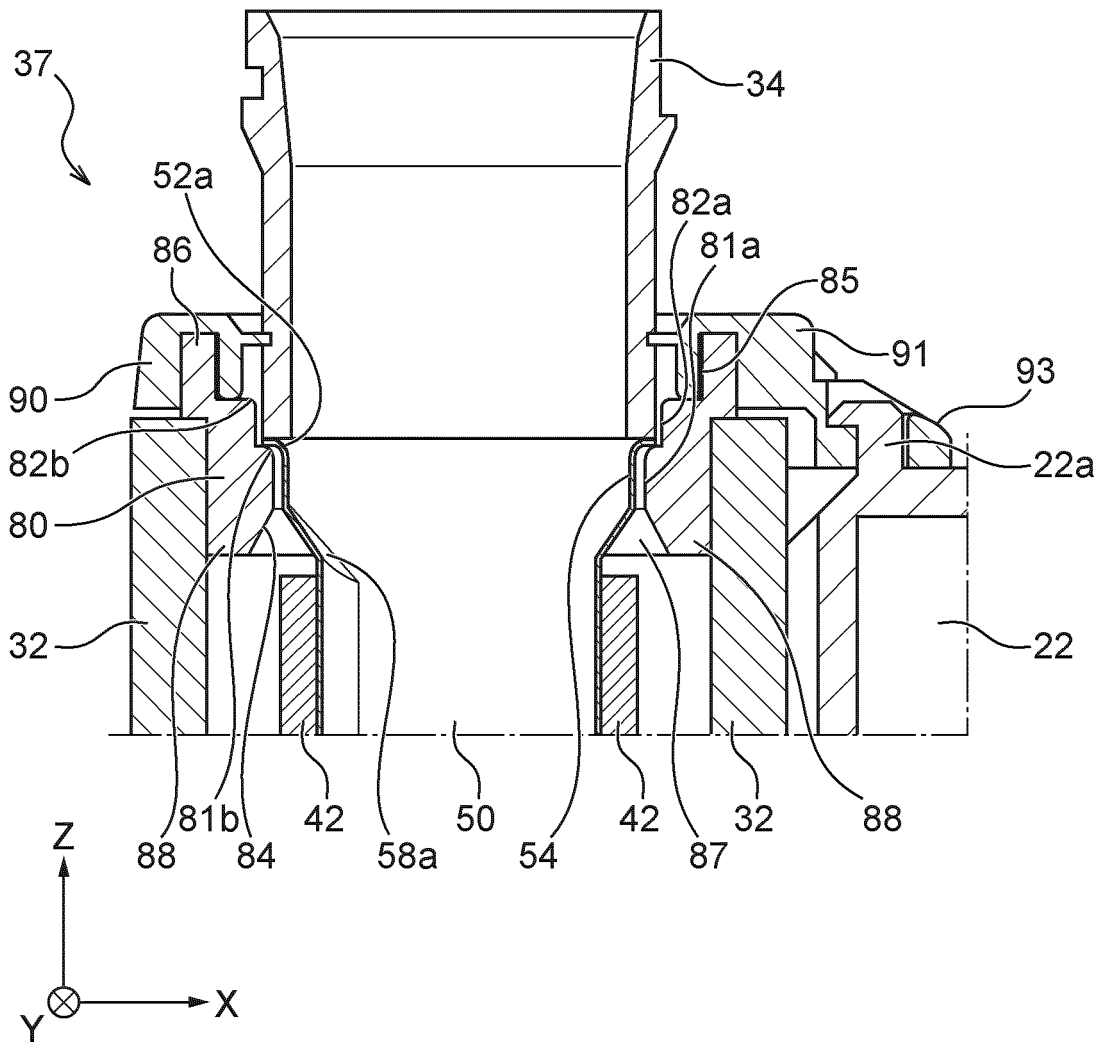


Fig. 9

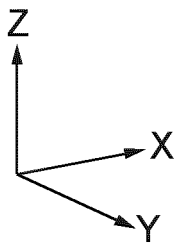
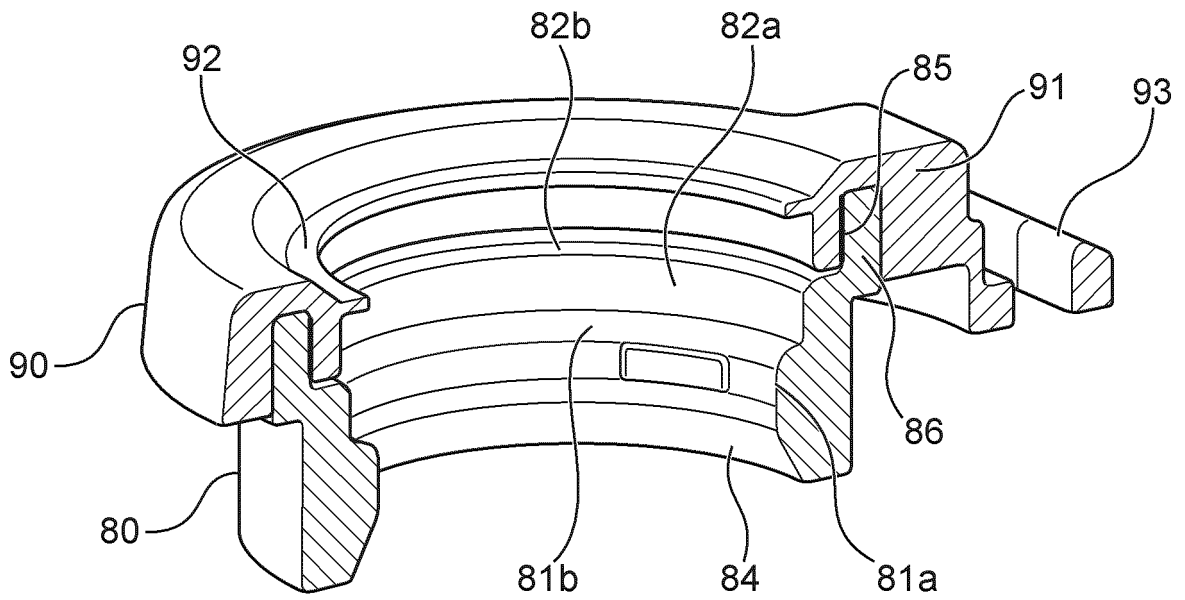
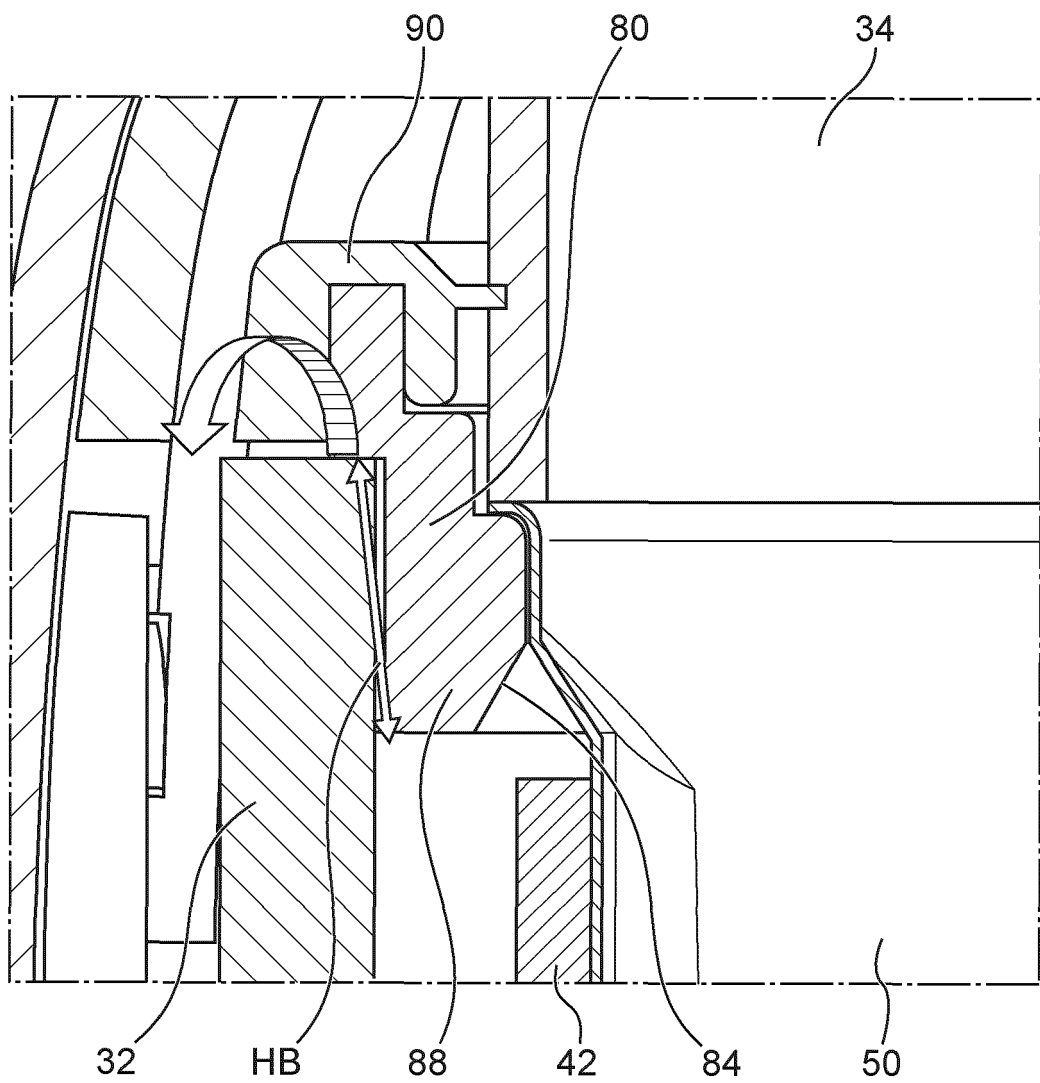


Fig. 10



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2020/046279

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/40 (2020.01) i

FI: A24F40/40

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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)

A24F40/40, A24F47/00

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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 1971-2021

Registered utility model specifications of Japan 1996-2021

Published registered utility model applications of Japan 1994-2021

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2020-516261 A (KT&G CORPORATION) 11 June 2020	1-3
Y	(2020-06-11) paragraphs [0035]-[0107], fig. 1-4	4-5, 7-11, 13
A		6, 12
Y	JP 2019-176716 A (NIDEC CORPORATION) 10 October	4-5, 7-11, 13
A	2019 (2019-10-10) paragraphs [0072], [0107]-	6, 12
	[0137], fig. 6-8, 11-16	
Y	JP 2020-14463 A (SHENZHEN SMOORE TECHNOLOGY LTD.)	7-10
A	30 January 2020 (2020-01-30) paragraphs [0033],	6, 12
	[0036], fig. 5-7	
Y	JP 2019-528737 A (BRITISH AMERICAN TOBACCO	10
A	(INVESTMENTS) LTD.) 17 October 2019 (2019-10-17)	6, 12
	paragraphs [0025]-[0026], fig. 2-5	

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 Further documents are listed in the continuation of Box C.
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Date of the actual completion of the international search
03 February 2021 (03.02.2021)Date of mailing of the international search report
16 February 2021 (16.02.2021)

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Authorized officer

Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No. PCT/JP2020/046279
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2020-053707 A (NGK SPARK PLUG CO., LTD.) 02 April 2020 (2020-04-02) entire text, all drawings	6, 12

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/JP2020/046279

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JP 2020-516261 A	11 Jun. 2020	US 2020/0163380 A1 paragraphs [0055]- [0127], fig. 1-4 WO 2018/190603 A1 EP 3610745 A1 CN 110494054 A	
JP 2019-176716 A	10 Oct. 2019	US 2019/0267858 A1 paragraphs [0089], [0124]-[0155], fig. 6-8, 11-16 EP 3531538 A1 CN 110190691 A	
JP 2020-14463 A	30 Jan. 2020	EP 3598905 A1 paragraphs [0024], [0027], fig. 5-7 CN 108851244 A	
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JP 2020-053707 A	02 Apr. 2020	RU 2709939 C1 (Family: none)	

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REFERENCES CITED IN THE DESCRIPTION

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