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(72) Inventors:
• **NINOMIYA, Yu**
Tokyo 130-8603 (JP)
• **OTOKAWA, Takuya**
Tokyo 130-8603 (JP)

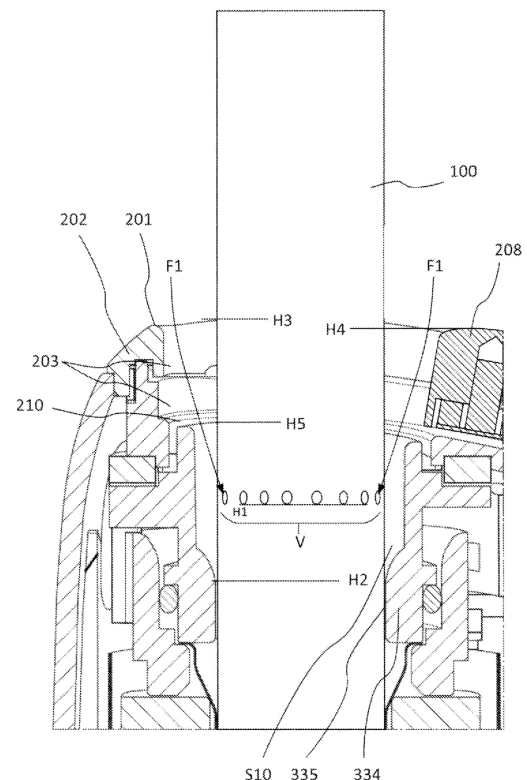
(74) Representative: **Hoffmann Eitle**
Patent- und Rechtsanwälte PartmbB
Arabellastraße 30
81925 München (DE)

(71) Applicant: **Japan Tobacco Inc.**
Tokyo 105-6927 (JP)

(54) **FLAVOR GENERATION SYSTEM**

(57) A flavor-generating system comprises a flavor-generating article and a heat-not-burn flavor inhaler; the flavor-generating article comprises a flavor source and a cooling segment disposed on a downstream side of the flavor source; the cooling segment comprises a ventilation hole for promoting an inflow of air from outside of the flavor-generating article; the flavor inhaler comprises a mouthpiece end, a chamber in which at least part of the flavor-generating article is accommodated, and a cylindrical member disposed on the mouthpiece end side of the chamber; the cylindrical member has a projection on an inner circumferential surface thereof; and the flavor-generating system is configured so that, in an accommodated state, the ventilation hole is positioned between an end portion of the projection on the mouthpiece end side and a position of the flavor inhaler furthest to the mouthpiece end side in a direction of insertion of the flavor-generating article.

[Fig. 17]



EP 4 825 200 A1

Description

TECHNICAL FIELD

5 **[0001]** The present invention relates to a flavor-generating system.

BACKGROUND ART

10 **[0002]** Heat-not-burn flavor-generating systems, which heat a material comprising a flavor source to generate an aerosol, etc. without burning the material, are conventionally known. A flavor-generating article which contains the material comprising the flavor source is accommodated and heated in a flavor inhaler in such a flavor-generating system. In the aerosol-generating system of PTL 1, a ventilation air inlet is positioned within a device cavity for receiving an upstream end of a cartridge assembly.

15 CITATION LIST

PATENT LITERATURE

20 **[0003]** PTL 1: JP 7150812 B2

SUMMARY OF INVENTION

PROBLEM TO BE SOLVED BY THE INVENTION

25 **[0004]** PTL 1 indicates that positioning the ventilation air inlet within the device cavity makes it possible to essentially prevent a user's mouth from obstructing the ventilation air inlet during use of the aerosol-generating system. However, there are structural constraints in PTL 1, for instance the cartridge assembly can only be inserted into and removed from the aerosol-generating device at a limited angle, and unless the cartridge assembly is rigid, there is a risk of the ventilation air inlet being misaligned and covered by a device housing or the like.

30 **[0005]** In light of the situation above, one objective of the present invention lies in providing a flavor-generating system in which a ventilation hole of a flavor-generating article is unlikely to be covered, and structural constraints are reduced.

SOLUTION TO PROBLEM

35 **[0006]** One aspect provides a flavor-generating system. This flavor-generating system comprises a flavor-generating article and a heat-not-burn flavor inhaler; the flavor-generating article comprises a flavor source and a cooling segment disposed on a downstream side of the flavor source; the cooling segment comprises a ventilation hole for promoting an inflow of air from outside of the flavor-generating article; the flavor inhaler comprises a mouthpiece end, a chamber in which at least part of the flavor-generating article is accommodated, and a cylindrical member disposed on the mouthpiece end side of the chamber; the cylindrical member has a projection on an inner circumferential surface thereof; and the flavor-generating system is configured so that, in an accommodated state in which the flavor-generating article is accommodated in the flavor inhaler and positioned at a desired position, the ventilation hole is positioned between an end portion of the projection on the mouthpiece end side and a position of the flavor inhaler furthest to the mouthpiece end side in a direction of insertion of the flavor-generating article.

45 **[0007]** By virtue of this aspect, it is possible to provide a flavor-generating system in which a ventilation hole of a flavor-generating article is unlikely to be covered, and structural constraints are reduced. For example, when the ventilation hole is at least partly covered, this risks affecting aerosol delivery efficiency and it may also no longer be possible to provide a desired flavor because of a change in the proportion of air mixed with the aerosol, but such adverse effects can be inhibited by the aspect above.

50 **[0008]** The cylindrical member may be configured to guide the flavor-generating article to be positioned at the desired position, when the flavor-generating article is inserted into the flavor inhaler.

[0009] In this case, it is possible to inhibit adverse effects such as the flavor-generating article being placed at an unsuitable position so that the ventilation hole is at least partly covered, and there being a drop in heating efficiency.

55 **[0010]** The flavor inhaler may comprise a housing, an opening through which the flavor-generating article is inserted, and a cover; the cover may have an open state for opening the opening and a closed state for closing the opening; and the flavor-generating system may be configured so that, in the accommodated state, the ventilation hole is positioned further to the chamber side than the position of the cylindrical member, the housing, or the cover furthest

to the mouthpiece end side in the insertion direction.

[0011] In this case, the ventilation hole and an air flow path can be flexibly arranged according to the configuration of the flavor inhaler, while covering of the ventilation hole is inhibited.

[0012] A recess may be formed in a face of the housing on the mouthpiece end side; the opening may be formed in a bottom face of the recess; at least part of the cover may be configured to be movable on the inside of the recess; and the flavor-generating system may be configured so that, in the accommodated state, an air flow path is formed between at least one of an inner wall face of the recess and the cover, and the flavor-generating article.

[0013] In this case, an air flow path to the ventilation hole can be maintained, while covering of the ventilation hole is inhibited.

[0014] The chamber may be configured to press at least part of the flavor-generating article from both sides in the accommodated state.

[0015] In this case, misalignment of the ventilation hole can be inhibited, and the risk of the ventilation hole being covered can be further reduced.

[0016] The chamber may be configured to press at least part of the cooling segment from both sides in the accommodated state.

[0017] In this case, the user can check that the flavor-generating article has been properly inserted by a change in insertion resistance.

[0018] The cooling segment may comprise a plurality of the ventilation holes aligned in a circumferential direction.

[0019] In this case, it is possible to produce a more even flow of air inside the flavor-generating article.

[0020] The flavor-generating article may be a tobacco stick.

[0021] In this case, it is possible to provide a tobacco smoking article that can be easily carried by a user.

BRIEF DESCRIPTION OF DRAWINGS

[0022]

[Fig. 1] is an oblique view showing a flavor-generating system according to an embodiment.

[Fig. 2] is an oblique view showing a flavor inhaler according to an embodiment.

[Fig. 3] is a view in cross section showing the flavor inhaler as seen along the arrows 3-3 in fig. 2.

[Fig. 4] is an oblique view of a chamber.

[Fig. 5] is a view in cross section showing the chamber as seen along the arrows 5-5 in fig. 4.

[Fig. 6A] is a view in cross section showing the chamber as seen along the arrows 6A-6A in fig. 5.

[Fig. 6B] is a view in cross section showing the chamber as seen along the arrows 6B-6B in fig. 5.

[Fig. 7] is a view in cross section of the chamber in which a flavor-generating article is accommodated.

[Fig. 8] is an exploded oblique view of a flavor-generating article according to an embodiment.

[Fig. 9] is a schematic view in cross section of the flavor-generating article according to an embodiment.

[Fig. 10] is an enlargement in cross section showing an atomization unit and a control unit when the flavor-generating article is accommodated at a desired position in the flavor inhaler.

[Fig. 11] is a view in cross section schematically showing a first segment.

[Fig. 12] is a cross-sectional enlargement of fig. 11 schematically showing a first filler material.

[Fig. 13] is a conceptual diagram showing a method of measuring a hardness index.

[Fig. 14] is a side view in cross section of a flavor inhaler comprising an insertion guide member according to another embodiment.

[Fig. 15] is a side view in cross section of the insertion guide member.

[Fig. 16] is a bottom view of the insertion guide member.

5 [Fig. 17] is a schematic side view in cross section of the flavor-generating system showing positions of ventilation holes.

EMBODIMENTS OF THE INVENTION

10 **[0023]** Embodiments of the present invention will be described below with reference to the drawings. In the drawings described below, identical or corresponding components are assigned the same reference symbols and duplicate descriptions will not be given. Dimensions of parts in the drawings below are altered, as appropriate, for ease of understanding.

15 **[0024]** Fig. 1 is an oblique view showing a flavor-generating system 1000 according to an embodiment of the present invention. Fig. 2 is an oblique view showing a flavor inhaler 200 according to an embodiment of the present invention. The flavor-generating system 1000 is constructed by applying a flavor-generating article 100 to a flavor inhaler 200 comprising a heating source 40 which will be described later. The flavor-generating article 100 is at least partly accommodated in the flavor inhaler 200 via an opening 210.

20 **[0025]** An X-Y-Z orthogonal coordinate system may be applied to the drawings described in the present specification for convenience of description. In this coordinate system, the Z-axis is oriented vertically upward, the X-Y plane is arranged cutting across the flavor inhaler 200 in a horizontal direction, and the Y-axis is arranged extending from the front surface to the rear surface of the flavor inhaler 200. The Z-axis direction may also refer to a direction of insertion of the flavor-generating article 100 which is accommodated in a chamber 50 to be described later. Furthermore, the X-axis direction may also refer to a device longitudinal direction in a plane orthogonal to the insertion direction of the flavor-generating article 100. The Y-axis direction may also refer to a device short-side direction in a plane orthogonal to the insertion direction of the flavor-generating article 100.

25 **[0026]** The flavor inhaler 200 is configured to generate an aerosol containing a flavor by, for example, heating a stick-type flavor-generating article 100 including a flavor source containing an aerosol source. As an example, the flavor-generating article 100 comprises, on a tip end side in the Z-axis negative direction, a smokable material that contains a flavor source such as tobacco, and an aerosol source, and also comprises a filter in another part. The flavor-generating article 100 is configured to be heated by means of a heat-not-burn flavor inhaler 200 to generate a flavor.

30 **[0027]** It should be noted that, in the embodiments, the flavor-generating article 100 is described as being stick-shaped, but the flavor-generating article used in the flavor inhaler 200 is not limited to that shape. For example, the flavor-generating article may also be configured to contain a cartridge accommodating a liquid aerosol source. Furthermore, this cartridge may include a heater. The flavor-generating article 100 may be a tobacco stick. This makes it possible to provide a tobacco smoking article that can be easily carried by a user.

35 **[0028]** As shown in fig. 1 and 2, the flavor inhaler 200 comprises: a housing 202 formed by an upper housing 204 and a lower housing 206; and a slide cover 208. The housing 202 forms the outermost housing of the flavor inhaler 200 and is of a size that fits in a user's hand. When the user is using the flavor inhaler 200, the user can inhale the aerosol while holding the flavor inhaler 200 in their hand.

40 **[0029]** It should be noted for the housing 202 in this case that the upper housing 204 is formed by a resin such as polycarbonate, for example, and the lower housing 206 is formed by a metal such as aluminum, for example. However, the housing 202 is not limited to the materials above and may also be made of a resin, for example, and it is possible to select any suitable material, such as, in particular, polycarbonate (PC), ABS (acrylonitrile-butadiene-styrene) resin, PEEK (polyether ether ketone), or a polymer alloy containing multiple types of polymers.

45 **[0030]** The upper housing 204 comprises an opening 210 for receiving the flavor-generating article 100, and the slide cover 208 is slidably attached to the upper housing 204 so as to close this opening 210. Specifically, the slide cover 208 is configured to be movable along an outer surface of the upper housing 204 between a closed position for closing the opening 210 of the upper housing 204, and an open position (the position shown in fig. 1 and 2) for opening the opening 210. For example, the user can manually operate the slide cover 208 to move the slide cover 208 between the closed position and the open position. By this means, the slide cover 208 can permit or restrict access to the inside of the flavor inhaler 200 by the flavor-generating article 100.

50 **[0031]** In the flavor-generating system 1000, air drawn in by the user is introduced from the opening 210 into the flavor inhaler 200, flows through the chamber 50 in the Z-axis negative direction, and is supplied to an upstream-side end face of the flavor-generating article 100. That is to say, the flavor-generating system 1000 shown in fig. 1 has what is known as a counterflow-type air flow path. It should be noted that the air flow path is not limited to a counterflow-type, and it may equally be what is known as a bottom-flow-type air flow path, where air is supplied from a bottom

portion of the chamber 50 to the upstream-side end face of the flavor-generating article 100.

[0032] Here, fig. 1 and 2 show the housing 202 of the flavor inhaler 200 in such a way that joining surfaces of the upper housing 204 and the lower housing 206 obliquely cross the X-Y plane, but the housing 202 is not limited to such a configuration. For example, the housing 202 may also be formed from three or more members.

[0033] The flavor inhaler 200 may further comprise a terminal which is not depicted. The terminal may be an interface for connecting the flavor inhaler 200 to an external power source, for example. If the power source of the flavor inhaler 200 is a rechargeable battery, the power source can be charged by connecting the external power source to the terminal so that a current flows from the external power source to the power source. Furthermore, it is also possible to enable data relating to the operation of the flavor inhaler 200 to be sent to an external device by connecting a data transmission cable to the terminal.

[0034] The internal structure of the flavor inhaler 200 according to an embodiment of the present invention will be described next. Fig. 3 is a view in cross section showing the flavor inhaler 200 as seen along the arrows 3-3 shown in fig. 2. As shown in fig. 3, a power source unit 20, an atomization unit 30, and a control unit 80 are provided in an internal space of the housing 202 of the flavor inhaler 200.

[0035] The control unit 80 comprises a board 81. The board 81 may include a microprocessor, etc., for example, and may control the supply of power from the power source unit 20 to the atomization unit 30. This enables the control unit 80 to control heating of the flavor-generating article 100 by the atomization unit 30. Furthermore, the control unit 80 comprises a Bluetooth (registered trademark) interface 82. The control unit 80 can communicate with external equipment via the Bluetooth interface 82.

[0036] The power source unit 20 comprises a power source 21 which is electrically connected to the board 81 of the control unit 80. The power source 21 may be a rechargeable battery or a non-rechargeable battery, for example. The power source 21 is electrically connected to the atomization unit 30 via the board 81. This allows the power source 21 to supply power to the atomization unit 30 to heat the flavor-generating article 100 appropriately.

[0037] The atomization unit 30 comprises: a chamber 50 extending in the longitudinal direction of the flavor-generating article 100; a heating source 40 surrounding part of the chamber 50; a heat insulating portion 32; and a substantially cylindrical insertion guide member 34 (corresponding to an example of the cylindrical member). The chamber 50 has a tubular shape for accommodating the flavor-generating article 100. It should be noted that the chamber 50 may also have what is known as an elliptical shape having a major diameter and a minor diameter in a cross section perpendicular to the longitudinal direction of the flavor inhaler 200. The chamber 50 is preferably formed from a material that is heat resistant and has a low coefficient of thermal expansion, and may, for example, be formed from a metal such as stainless steel, a resin such as PEEK, glass, or ceramic.

[0038] The heating source 40 is configured to contact an outer circumferential surface of the chamber 50 to heat the flavor-generating article 100 accommodated in the chamber 50. The heating source 40 is a heat-generating body which generates heat by means of electrical power from the power source unit 20, which is to say that the temperature thereof rises. The heating source 40 may be a sheet-like heater. The heating source 40 may be provided so as to contact the outer circumferential surface of the chamber 50, or may be provided on an inner face of the chamber 50. The longitudinal length of the heating source 40 is 10 mm here, for example. The heater constituting the heating source 40 may comprise a heating wire. This heater is disposed outside the chamber 50, which functions as an accommodating portion for accommodating the flavor-generating article, and is configured to heat the flavor-generating article 100 accommodated in the chamber 50 from outside the flavor-generating article 100. The flavor inhaler 200 is thus preferably an external heating type flavor inhaler. Moreover, the heating source 40 may be a susceptor arranged in the flavor-generating article 100, and may be configured to be induction-heated by means of an induction coil disposed in the flavor inhaler 200. Alternatively, the heating source 40 may be a microwave absorber, such as water or glycerol contained in the flavor-generating article 100, and may be configured to be heated by means of microwaves from a microwave radiation source disposed in the flavor inhaler 200. Configurations such as these allow the flavor-generating article 100 to be heated without the need to insert a pin-type or other heater into the flavor-generating article 100, and it is possible to inhibit adhesion of parts of the flavor-generating article 100 to such a heater, which would cause a drop in heating efficiency. It should be noted that the flavor inhaler 200 may be of the internal heating type. In this case, a pin heater or blade heater may be used as the heating source 40.

[0039] The heat insulating portion 32 is disposed surrounding the chamber 50 and the heating source 40 and suppresses dissipation of heat to outside of the chamber 50. The heat insulating portion 32 may be an aerogel, for example. The insertion guide member 34 is formed by a resin material such as PEEK, PC or ABS, for example, and is provided between the slide cover 208 (closed position) and the chamber 50. The insertion guide member 34 communicates with the outside of the flavor inhaler 200 when the slide cover 208 is in the open position, guiding insertion of the flavor-generating article 100 into the chamber 50 after the flavor-generating article 100 has been inserted into the insertion guide member 34.

[0040] Fig. 4 is an oblique view of the chamber 50. Fig. 5 is a view in cross section of the chamber 50 as seen along the arrows 5-5 shown in fig. 4. Fig. 6A is a view in cross section of the chamber 50 as seen along the arrows 6A-6A in

fig. 5. Fig. 6B is a view in cross section of the chamber 50 as seen along the arrows 6B-6B shown in fig. 5. Fig. 7 is a view in cross section, as seen along the arrows 6B-6B, of a state in which the flavor-generating article 100 has been placed at a desired position inside the chamber 50.

[0041] As shown in fig. 4 and 5, the chamber 50 may be a cylindrical member comprising: a chamber opening 52 into which the flavor-generating article 100 is inserted, and a cylindrical side wall portion 60 accommodating the flavor-generating article 100.

[0042] As shown in fig. 5 and 6B, the side wall portion 60 comprises contact portions 62 and spaced-apart portions 66. When the flavor-generating article 100 has been placed at a desired position inside the chamber 50, the contact portions 62 contact or press parts of the flavor-generating article 100, and the spaced-apart portions 66 are spaced apart from the flavor-generating article 100. It should be noted that, in the present disclosure, "a desired position inside the chamber 50" means a position at which the flavor-generating article 100 is suitably heated, or a position of the flavor-generating article 100 when the user inhales a flavor. The contact portions 62 each have an inner surface 62a and an outer surface 62b. The spaced-apart portions 66 each have an inner surface 66a and an outer surface 66b. The heating source 40 is arranged on the outer surfaces 62b of the contact portions 62. The heating source 40 is preferably arranged on the outer surfaces 62b of the contact portions 62 without a gap. Moreover, the heating source 40 may comprise an adhesive layer. In that case, the heating source 40 comprising the adhesive layer is preferably arranged on the outer surfaces 62b of the contact portions 62 without a gap.

[0043] As shown in fig. 4 and 5, the outer surfaces 62b of the contact portions 62 are planar. Since the outer surfaces 62b of the contact portions 62 are planar, if strip-shaped electrodes connected to the heating source 40 are disposed on the outer surfaces 62b of the contact portions 62, flexing of the electrodes can be inhibited. As shown in fig. 5 and 6B, the inner surfaces 62a of the contact portions 62 are planar. Furthermore, as shown in fig. 5 and 6B, the contact portions 62 have a uniform thickness.

[0044] As shown in fig. 4 and 5, the chamber 50 preferably has a cylindrical non-holding portion 54 between the chamber opening 52 and the side wall portion 60. In a state in which the flavor-generating article 100 is positioned in a desired position in the chamber 50, gaps may be formed between the non-holding portion 54 and the flavor-generating article 100. Furthermore, as shown in fig. 4 and 5, the chamber 50 preferably has chamber guide portions 58 having tapered surfaces 58a that connect the inner surface of the non-holding portion 54 and the inner surfaces 62a of the contact portions 62.

[0045] As shown in fig. 4, 5 and 6B, the chamber 50 has two contact portions 62 in the circumferential direction of the chamber 50, and the two contact portions 62 face each other and are substantially parallel to each other. The distance between the inner surfaces 62a of the two contact portions 62 is, at least partially, preferably less than the width of the part of the flavor-generating article 100 that is disposed between the contact portions 62 when inserted into the chamber 50.

[0046] As shown in fig. 6B, the inner surfaces 66a of the spaced-apart portions 66 may have a generally arc-shaped cross-section in a plane orthogonal to the longitudinal direction (Z-axis direction) of the chamber 50. Furthermore, the spaced-apart portions 66 are arranged so as to be adjacent to the contact portions 62 in the circumferential direction.

[0047] As shown in fig. 5 and 6A, a step 560 is formed on the bottom portion 56 of the chamber 50. The step 560 is configured to expose at least a portion of the end face of the flavor-generating article 100. Furthermore, the bottom portion 56 may support a portion of the flavor-generating article 100 such that the exposed end face of the flavor-generating article 100 communicates with voids 67 (see fig. 7), which will be described later. The step 560 is not limited to the shape depicted provided that air can be introduced into the flavor-generating article 100.

[0048] Fig. 7 is a view in cross section at the same position as in fig. 6B, of a state in which the flavor-generating article 100 is arranged at the desired position inside the chamber 50. As shown in fig. 7, when the flavor-generating article 100 is arranged at the desired position inside the chamber 50, the flavor-generating article 100 may come into contact with and be pressed by the contact portions 62 of the chamber 50. Meanwhile, voids 67 are formed between the flavor-generating article 100 and the spaced-apart portions 66. The voids 67 may provide communication between the chamber opening 52 and the end face of the flavor-generating article 100 positioned within the chamber 50. This allows air that has flowed in from the chamber opening 52 to pass through the voids 67 and flow into the inside of the flavor-generating article 100. In other words, air flow paths (the voids 67) are formed between the flavor-generating article 100 and the spaced-apart portions 66.

[0049] Fig. 8 is an exploded oblique view of the flavor-generating article 100. Furthermore, fig. 9 is a schematic side view in cross section of the flavor-generating article 100. As shown in fig. 8 and 9, the flavor-generating article 100 comprises: a flavor source 221 for generating a flavor; and a tip-end plug 112 (corresponding to an example of an upstream portion) disposed on the upstream side of the flavor source 221. More specifically, in the example depicted, the flavor-generating article 100 comprises, in order from the tip-end side (i.e., the opposite side to a mouthpiece): the tip-end plug 112; a flavor-generating portion 220; a hollow tube portion 132; a hollow filter 240; and a filter plug 250. These five components are joined by using an outer plug wrap 280, an outer plug wrap 260, and a tipping paper 270.

[0050] There is no particular restriction on the airflow resistance in the long axis direction per single flavor-generat-

ing article 100, in other words, the airflow resistance over the whole length, but it is preferably between 40 mmH₂O and 400 mmH₂O from the point of view of ease of drawing. In this case the user can be provided with comfortable drawing resistance. The airflow resistance is measured by using a filter airflow resistance measurement instrument produced by Cerulean, for example, in accordance with the ISO standard method (ISO6565:2015). The airflow resistance denotes an air pressure difference between one end face (a first end face) and another end face (a second end face) when air at a predetermined air flow rate (17.5 cc/sec) flows from the first end face to the second end face in a state in which air does not pass through the side face of the flavor-generating article 100. The units are generally expressed in mmH₂O. The relationship between airflow resistance and length of a heat-not-burn cigarette is known to be a proportional relationship in a normal length range (a length of 5 mm-200 mm), and the airflow resistance of the heat-not-burn cigarette doubles when the length doubles. Moreover, the airflow resistance when ventilation holes V are formed in the flavor-generating article 100 is preferably between 30 mmH₂O and 170 mmH₂O, from the same point of view as mentioned above.

[0051] The rod-shaped flavor-generating article 100 preferably has a columnar shape satisfying a shape in which the aspect ratio as defined below is 1 or greater. w is the width of a bottom face of a columnar body (in the present specification, this is the width of the bottom face on the flavor-generating portion 220 side), h is the height, and preferably $h \geq w$. In the present specification, the long axis direction is the direction represented by h. Thus, for the sake of convenience, the direction represented by h is still referred to as the long axis direction even when $w \geq h$. There is no limitation as to the shape of the bottom face, and it may be polygonal, rounded-corner polygonal, circular, or elliptical, etc. The width w is the diameter when the bottom face is circular, the major diameter when the bottom face is elliptical, and the diameter of a circumscribed circle or the major diameter of a circumscribed ellipse when the bottom face is polygonal or rounded-corner polygonal.

[0052] There is no particular restriction on the length h of the flavor-generating article 100 in the long axis direction, and it is normally 40 mm or greater, preferably 45 mm or greater, and more preferably 50 mm or greater, for example. Furthermore, the length h is normally 100 mm or less, preferably 90 mm or less, and more preferably 80 mm or less.

[0053] There is no particular restriction on the width w of the bottom face of the columnar body constituting the flavor-generating article 100, and it is normally 5 mm or greater, and preferably 5.5 mm or greater, for example. Furthermore, the width w is normally 10 mm or less, preferably 9 mm or less, and more preferably 8 mm or less.

[0054] There is no particular restriction on a ratio (hollow tube portion 132 : filter segment) between the lengths of the hollow tube portion 132 and the filter segment (total length of the hollow filter 240 and the filter plug 250), in the length of the flavor-generating article 100, but from the viewpoint of the amount of flavoring delivered and the appropriate aerosol temperature, this ratio is normally 0.60-1.40:0.60-1.40, preferably 0.80-1.20:0.80-1.20, more preferably 0.85-1.15:0.85-1.15, even more preferably 0.90-1.10:0.90-1.10, and particularly preferably 0.95-1.05:0.95-1.05. By setting the ratio of the lengths of the hollow tube portion 132 and the filter segment (hollow filter 240 and filter plug 250) within the above ranges, a balance is achieved between the cooling effect, the effect of suppressing losses due to adhesion of the generated vapor and aerosol to the inner wall of the hollow tube portion 132, and the function of the filter in adjusting the volume of air and the flavor, thereby making it possible to achieve the effect of providing a pleasing and intense flavor. In particular, a longer hollow tube portion 132 can promote aerosol particle formation, etc. and produce a good flavor, but if it is too long, substances passing through will end up adhering to the inner wall.

[0055] The flavor-generating portion 220 is disposed adjacently downstream of the tip-end plug 112. The flavor-generating portion 220 comprises: the flavor source 221, and a wrapping paper 222 wrapped around the flavor source 221. There is no particular restriction on the form of the flavor-generating portion 220 provided that it has a well-known form, and it is normally in a form in which the flavor source 221 is wrapped with the wrapping paper 222. The flavor-generating portion 220 is formed by wrapping the flavor source 221 with the wrapping paper 222 so that the flavor source 221 is on the inside. The flavor source 221 may contain a tobacco filling material. There is no particular restriction on the tobacco filling material, and it is possible to use a first tobacco filling material or a second tobacco filling material which will be described later. Furthermore, in the specification of this application, dried tobacco molded articles such as cut tobacco, tobacco sheets or tobacco grains may be referred to simply as "dried tobacco leaf". Furthermore, the flavor-generating portion 220 may comprise a mating portion which mates with the heating source 40 for heating the tobacco product.

[0056] The flavor-generating portion 220 formed by wrapping the flavor source 221 with the wrapping paper 222 preferably has a columnar shape, in which case the aspect ratio, which is expressed by the height in the long axis direction of the flavor-generating portion 220 to the width of the bottom face of the flavor-generating portion 220, is preferably 1 or greater. There is no limitation as to the shape of the bottom face, and it may be polygonal, rounded-corner polygonal, circular, or elliptical, etc. The width of the bottom face is the diameter when the bottom face is circular, the major diameter when the bottom face is elliptical, and the diameter of a circumscribed circle or the major diameter of a circumscribed ellipse when the bottom face is polygonal or rounded-corner polygonal.

[0057] The length of the flavor-generating portion 220 in the long axis direction may be appropriately varied according to the size of the product, but it is normally 10 mm or greater and preferably 12 mm or greater, and is normally 70

mm or less, preferably 50 mm or less, more preferably 30 mm or less, even more preferably 25 mm or less, and still more preferably 20 mm or less.

[0058] Furthermore, there is no particular restriction on the ratio of the length of the flavor-generating portion 220 to the overall length of the flavor-generating article 100 in the long axis direction, but, from the point of view of a balance between delivery amount and aerosol temperature, this ratio is normally 10% or greater and preferably 20% or greater, and is normally 80% or less, preferably 70% or less, more preferably 60% or less, even more preferably 50% or less, particularly preferably 45% or less, and most preferably 40% or less.

[0059] There is no particular restriction on the content of dried tobacco leaf in the flavor-generating portion 220, but between 150 mg/rod portion and 800 mg/rod portion may be cited, and between 200 mg/rod portion and 600 mg/rod portion is preferred.

[0060] The description will start from the first tobacco filling material (also referred to simply as the "first filling material"). There is no particular limitation as to the material of the cut tobacco contained in the first filling material, and it is possible to use a well-known material such as lamina or midrib. Furthermore, in order to produce cut tobacco, ground tobacco may be formed by grinding dried tobacco leaves to an average particle size of 20 μm -200 μm , then the material may be homogenized and processed into a sheet, and the homogenized sheet may be cut. In addition, the cut tobacco may be of what is known as the "strand-type", where the wrapping paper 222 is packed with a material obtained by cutting, in the longitudinal direction of the flavor-generating portion 220 and substantially horizontally, a homogenized sheet having a length similar to that of the flavor-generating portion 220 in the longitudinal direction. Furthermore, the width of the cut tobacco is preferably 0.5 mm-2.0 mm in order to fill the wrapping paper 222.

[0061] Various types of tobacco may be used for the tobacco leaves used in the production of the cut tobacco and the homogenized sheet. Examples that may be cited include flue-cured, Burley, Oriental, or native type, and other *Nicotiana tabacum* and *Nicotiana rustica* varieties, and mixtures thereof. A suitable blend of the abovementioned varieties may be used in a mixture to achieve the intended taste. Details on the abovementioned tobacco varieties are disclosed in "Encyclopedia of Tobacco, Tobacco Academic Studies Center, March 31, 2009". Several conventional methods are known for producing the homogenized sheet, that is, methods for grinding tobacco leaves and processing them into a homogenized sheet. According to a first method, a paper sheet is produced by using a papermaking process. According to a second method, a suitable solvent such as water is mixed with ground tobacco leaves and homogenized, after which the homogenized material is thinly cast on a metal plate or a metal plate belt and dried, to produce a cast sheet. According to a third method, a suitable solvent such as water is mixed with ground tobacco leaves and homogenized, and the homogenized material is extruded into the form of a sheet and shaped to produce a calendered sheet. Details on the abovementioned types of homogenized sheets are disclosed in "Encyclopedia of Tobacco, Tobacco Academic Studies Center, March 31, 2009".

[0062] The amount of moisture contained in the tobacco filling material is 10 wt%-15 wt%, and preferably 11 wt%-13 wt% with respect to the total weight of the tobacco sheet, for example. A moisture content such as this inhibits the formation of wrapping stains and improves rolling suitability during production of the flavor-generating portion 220. There is no particular restriction on the size or method of preparation of the cut tobacco contained in the first tobacco filling material. For example, a material obtained by cutting dried tobacco leaves to a width of 0.5 mm-2.0 mm may be used for the first tobacco filling material. Furthermore, when ground material is used in the homogenized sheet, dried tobacco leaves may be ground to an average particle size of around 20 μm -200 μm , then homogenized and formed into a sheet which may then be cut to widths of 0.5 mm-2.0 mm for use as the first tobacco filling material.

[0063] The first tobacco filling material may comprise an aerosol base material for generating an aerosol. There is no particular limitation as to the type of aerosol base material, and various types of natural extracts and/or components thereof may be selected, according to the application. Aerosol base materials that may be cited include glycerol, propylene glycol, triacetin, 1,3-butanediol, and mixtures thereof.

[0064] There is no particular limitation as to the amount of the aerosol base material contained in the first tobacco filling material, and the amount is normally 5 wt% or greater and preferably 10 wt% or greater, and normally 50 wt% or less, and preferably 15 wt% or greater and 25 wt% or less, with respect to the total amount of tobacco filling material, from the viewpoint of sufficient aerosol generation and imparting a good flavor.

[0065] The first tobacco filling material may contain a flavoring. There is no particular limitation as to the type of flavoring, and, from the point of view of imparting a pleasant flavor, examples of flavorings that may be cited include: acetanisole, acetophenone, acetylpyrazine, 2-acetylthiazole, alfalfa extract, amyl alcohol, amyl butyrate, trans-anethole, star anise oil, apple juice, Peru Balsam oil, beeswax absolute, benzaldehyde, benzoin resinoid, benzyl alcohol, benzyl benzoate, benzyl phenylacetate, benzyl propionate, 2,3-butanedione, 2-butanol, butyl butyrate, butyric acid, caramel, cardamom oil, carob absolute, β -carotene, carrot juice, L-carvone, β -caryophyllene, cassia bark oil, cedar wood oil, celery seed oil, chamomile oil, cinnamaldehyde, cinnamic acid, cinnamyl alcohol, cinnamyl cinnamate, citronella oil, DL-citronellol, clary sage extract, cocoa, coffee, cognac oil, coriander oil, cuminaldehyde, davana oil, δ -decalactone, γ -decalactone, decanoic acid, dill herb oil, 3,4-dimethyl-1,2-cyclopentanedione, 4,5-dimethyl-3-hydroxy-2,5-dihydrofuran-2-one, 3,7-dimethyl-6-octenoic acid, 2,3-dimethylpyrazine, 2,5-dimethylpyrazine, 2,6-dimethylpyr-

azine, 2-ethyl methylbutyrate, ethyl acetate, ethyl butyrate, ethyl hexanoate, ethyl isovalerate, ethyl lactate, ethyl laurate, ethyl levulinate, ethyl maltol, ethyl octanoate, ethyl oleate, ethyl palmitate, ethyl phenylacetate, ethyl propionate, ethyl stearate, ethyl valerate, ethyl vanillin, ethyl vanillin glucoside, 2-ethyl-3,(5 or 6)-dimethylpyrazine, 5-ethyl-3-hydroxy-4-methyl-2(5H)-furanone, 2-ethyl-3-methylpyrazine, eucalyptol, fenugreek absolute, genet absolute, gentian root infusion, geraniol, geranyl acetate, grape juice, guaiacol, guava extract, γ -heptalactone, γ -hexalactone, hexanoic acid, cis-3-hexen-1-ol, hexyl acetate, hexyl alcohol, hexyl phenylacetate, honey, 4-hydroxy-3-pentenoic acid lactone, 4-hydroxy-4-(3-hydroxy-1-butenyl)-3,5,5-trimethyl-2-cyclohexen-1-one, 4-(para-hydroxyphenyl)-2-butanone, 4-hydroxyundecanoic acid sodium, immortelle absolute, β -ionone, isoamyl acetate, isoamyl butyrate, isoamyl phenylacetate, isobutyl acetate, isobutyl phenylacetate, jasmine absolute, kola nut tincture, labdanum oil, lemon terpeneless oil, glycyrrhiza extract, linalool, linalyl acetate, lovage root oil, maltol, maple syrup, menthol, menthone, acetic acid L-menthyl, paramethoxybenzaldehyde, methyl-2-pyrrolyl ketone, methyl anthranilate, methyl phenylacetate, methyl salicylate, 4'-methylacetophenone, methylcyclopentenolone, 3-methylvaleric acid, mimosa absolute, molasses, myristic acid, nerol, nerolidol, γ -nonalactone, nutmeg oil, δ -octalactone, octanal, octanoic acid, orange flower oil, orange oil, orris root oil, palmitic acid, ω -pentadecalactone, peppermint oil, petitgrain Paraguay oil, phenethyl alcohol, phenethyl phenylacetate, phenylacetic acid, piperonal, plum extract, propenyl guaethol, propyl acetate, 3-propylidene phthalide, prune juice, pyruvic acid, raisin extract, rose oil, rum, sage oil, sandalwood oil, spearmint oil, styrax absolute, marigold oil, tea distillate, α -terpineol, terpinyl acetate, 5,6,7,8-tetrahydroquinoxaline, 1,5,5,9-tetramethyl-13-oxacyclo(8.3.0.0(4.9))tridecane, 2,3,5,6-tetramethylpyrazine, thyme oil, tomato extract, 2-tridecanone, triethyl citrate, 4-(2,6,6-trimethyl-1-cyclohexenyl)-2-buten-4-one, 2,6,6-trimethyl-2-cyclohexen-1,4-dione, 4-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-4-one, 2,3,5-trimethylpyrazine, γ -undecalactone, γ -valerolactone, vanilla extract, vanillin, veratraldehyde, violet leaf absolute, N-ethyl-p-menthane-3-carboamide (WS-3), and ethyl-2-(p-menthane-3-carboxamide) acetate (WS-5), with menthol being especially preferred. Furthermore, one type of these flavorings may be used alone, or two or more types may be used in combination.

[0066] There is no particular limitation as to the amount of flavoring contained in the first tobacco filling material, and, from the point of view of imparting a good flavor, the content is normally 10,000 ppm or greater, preferably 20,000 ppm or greater, and more preferably 25,000 ppm or greater, and is normally 70,000 ppm or less, preferably 50,000 ppm or less, more preferably 40,000 ppm or less, and even more preferably 33,000 ppm or less.

[0067] There is no particular limitation as to the packing density of the first tobacco filling material, and it is normally 250 mg/cm³ or greater and preferably 300 mg/cm³ or greater, and normally 400 mg/cm³ or less, and preferably 350 mg/cm³ or less, from the viewpoint of ensuring the performance of the flavor-generating article 100 and imparting a good flavor.

[0068] The second tobacco filling material is formed from a tobacco sheet which is packed in a filled object (e.g., the wrapping paper 222). There may be one tobacco sheet, or two or more tobacco sheets. When the second tobacco filling material comprises one tobacco sheet, for example, there may be cited a form of filling in which a tobacco sheet having one side of comparable length with the longitudinal direction of the filled object is folded multiple times along creases substantially parallel to the longitudinal direction of the filled object (forming what is known as a "gathered sheet"). As the abovementioned form of filling, there may also be cited a form in which a tobacco sheet having one side of comparable length with the longitudinal direction of the filled object is wound around a longitudinal axis of the filled material.

[0069] When the second tobacco filling material comprises two or more tobacco sheets, for example, there may be cited a form of filling in which a plurality of tobacco sheets each having one side of comparable length with the longitudinal direction of the filled object are wound about a longitudinal axis of the filled object so that the plurality of tobacco sheets are concentrically arranged. "Concentrically arranged" means that the centers of all of the tobacco sheets are arranged at substantially the same position. Furthermore, there is no particular restriction on the number of tobacco sheets, and forms with two sheets, three sheets, four sheets, five sheets, six sheets or seven sheets may be cited. The two or more tobacco sheets may all have the same composition or physical properties, or some or all of the tobacco sheets may have different compositions or physical properties. Furthermore, the tobacco sheets may each have the same thickness or different thicknesses.

[0070] The second tobacco filling material may be produced by preparing multiple tobacco sheets with different widths, constructing a laminate which is stacked in such a way that the width decreases from the bottom portion toward the top portion, and winding and shaping this laminate by passing the laminate through a winding tube. By virtue of this production method, the plurality of tobacco sheets are concentrically arranged about the longitudinal axis while also extending in the longitudinal direction. Furthermore, a longitudinally-extending mating portion may be formed between the longitudinal axis and the tobacco sheet on the innermost layer.

[0071] In this production method, the laminate is preferably constructed so that non-contact portions are formed between adjacent tobacco sheets after the laminate has been wound and shaped. When non-contact portions (gaps) where there is no contact between tobacco sheets are present between the plurality of tobacco sheets, this makes it possible to maintain a flavor flow path to enhance the efficiency of delivering flavor components. Meanwhile, high heat

transfer efficiency can be ensured because heat from the heater can be transferred to the outer tobacco sheets through the contacting parts of the plurality of tobacco sheets. Examples that may be cited of methods for providing non-contacting portions, where the tobacco sheets are not in contact with each other, between the plurality of tobacco sheets include: a method of using embossed tobacco sheets; a method of laminating the tobacco sheets without bonding the entire surfaces of adjacent tobacco sheets; a method of laminating the tobacco sheets with partial bonding between adjacent tobacco sheets; or a method of constructing a laminate by laminating the tobacco sheets with light bonding between adjacent tobacco sheets over the entire surface or a portion thereof so that the tobacco sheets peel after the winding and shaping. When a flavor-generating portion 220 including the wrapping paper 222 is prepared, the wrapping paper 222 may be arranged on the bottommost portion of the laminate. Furthermore, it is also possible to form a mating portion by forming the second tobacco filling material with a cylindrical dummy such as a mandrel placed on the topmost portion of the laminate, and then removing this dummy.

[0072] There is no particular limitation as to the packing density of the second tobacco filling material, and it is normally 250 mg/cm³ or greater and preferably 300 mg/cm³ or greater, and normally 400 mg/cm³ or less, and preferably 350 mg/cm³ or less, from the viewpoint of ensuring the performance of the flavor-generating article 100 and imparting a good flavor.

[0073] The tobacco sheet may comprise an aerosol base material which generates an aerosol as it is heated. An aerosol source such as a polyol, including glycerol, propylene glycol or 1,3-butanediol is added as the aerosol base material. The amount of this aerosol base material which is added is preferably 5 wt%-50 wt%, and more preferably 15 wt%-25 wt%, with respect to the dry weight of the tobacco sheet.

[0074] The tobacco sheet may be appropriately produced by well-known methods such as sheet-forming, slurry or rolling. Moreover, the homogenized sheet described above in relation to the first tobacco filling material may also be used. In the case of sheet-forming, the tobacco sheet may be produced by a method comprising the following steps. 1) Dried tobacco leaf is coarsely ground, extracted with water and then separated into water extract and residue. 2) The water extract is dried under reduced pressure and concentrated. 3) Pulp is added to the residue, the materials are fiberized using a refiner and then formed into paper. 4) The concentrated water extract is added to a sheet formed from the paper and dried to form a tobacco sheet. In this case, a step for removing some of the components such as nitrosamines may also be added (see JP 2004-510422 A). In the case of a slurry process, the tobacco sheet may be produced by a method comprising the following steps. 1) Ground tobacco leaf is mixed with water, pulp, and a binder. 2) The mixture is thinly spread (cast) and dried. In this case, a step may be added where the slurry that has been obtained by mixing the ground tobacco leaf with water, pulp, and a binder is exposed to ultraviolet or X-ray radiation to remove some components such as nitrosamine.

[0075] In addition to the above, a nonwoven fabric tobacco sheet produced by means of a method comprising the following steps may also be used, as disclosed in WO 2014/104078 A1. 1) Granular tobacco leaf and a binder are mixed. 2) The mixture is interposed between nonwoven fabrics. 3) The laminate is molded into a fixed shape by means of thermal fusion bonding, and a tobacco sheet in the form of a nonwoven fabric is obtained. The tobacco leaf starting material used in the methods above may be the same type as described above in relation to the first tobacco filling material.

[0076] There is no particular limitation as to the composition of the tobacco sheet, but, for example, the content of tobacco starting material (tobacco leaf) is preferably 50 wt%-95 wt% with respect to the total weight of the tobacco sheet. Furthermore, the tobacco sheet may comprise a binder, and examples of such binders which may be cited include: guar gum, xanthan gum, CMC (carboxymethylcellulose), and CMC-Na (carboxymethylcellulose sodium salt), etc. The amount of binder is preferably 1 wt%-10 wt% with respect to the total weight of the tobacco sheet. The tobacco sheet may further comprise other additives. Examples of other additives which may be cited include fillers such as pulp. Furthermore, when several tobacco sheets are used in this embodiment, these tobacco sheets may all have the same composition or physical properties, or some or all of the tobacco sheets may have different compositions or physical properties.

[0077] There is no restriction on the thickness of each tobacco sheet, and the thickness is preferably 150 μm-1000 μm, and more preferably 200 μm-600 μm, from the point of view of a balance between heat transfer and strength. The tobacco sheets may have the same thickness or different thicknesses.

[0078] The flavor-generating portion 220 may contain dried tobacco leaf (tobacco leaves which have been dried) and a flavoring-containing material incorporating the flavoring in a polysaccharide gel. The flavoring-containing material is a material incorporating the flavoring in a polysaccharide gel, and blending the flavoring-containing material into the flavor-generating portion 220 makes it possible to suppress variations in the amount of flavoring delivered with each puff, and to sustain a good flavor from the start of smoking until the later stages. The present inventors infer that the reasons for this are as follows. The flavor-generating article 100 is first of all inserted into the flavor inhaler 200 shown in fig. 1 and preheating is performed for a given time, after which smoking is started, but it is thought that if the flavoring is directly blended into the flavor-generating portion 220, the flavoring is volatilized during the preheating, with the majority thereof being delivered during the initial period of smoking, and the amount of flavoring delivered in

the later stages of smoking is therefore insufficient. In contrast to this, when the flavoring-containing material is blended into the flavor-generating portion 220, volatilization of the flavoring during preheating is inhibited because the flavoring is coated with the polysaccharide gel, and the flavoring is gradually released during smoking. It is therefore inferred that a sufficient delivery amount of the flavoring can also be maintained in the later stages of smoking.

[0079] Components of the flavoring-containing material are described below. There is no particular limitation as to the type of flavoring, and, from the point of view of imparting a favorable taste, examples of flavorings that may be cited include: acetanisole, acetophenone, acetylpyrazine, 2-acetylthiazole, alfalfa extract, amyl alcohol, amyl butyrate, trans-anethole, star anise oil, apple juice, Peru Balsam oil, beeswax absolute, benzaldehyde, benzoin resinoid, benzyl alcohol, benzyl benzoate, benzyl phenylacetate, benzyl propionate, 2,3-butanedione, 2-butanol, butyl butyrate, butyric acid, caramel, cardamom oil, carob absolute, β -carotene, carrot juice, L-carvone, β -caryophyllene, cassia bark oil, cedar wood oil, celery seed oil, chamomile oil, cinnamaldehyde, cinnamic acid, cinnamyl alcohol, cinnamyl cinnamate, citronella oil, DL-citronellol, clary sage extract, cocoa, coffee, cognac oil, coriander oil, cuminaldehyde, davana oil, δ -decalactone, γ -decalactone, decanoic acid, dill herb oil, 3,4-dimethyl-1,2-cyclopentanedione, 4,5-dimethyl-3-hydroxy-2,5-dihydrofuran-2-one, 3,7-dimethyl-6-octenoic acid, 2,3-dimethylpyrazine, 2,5-dimethylpyrazine, 2,6-dimethylpyrazine, 2-ethyl methylbutyrate, ethyl acetate, ethyl butyrate, ethyl hexanoate, ethyl isovalerate, ethyl lactate, ethyl laurate, ethyl levulinate, ethyl maltol, ethyl octanoate, ethyl oleate, ethyl palmitate, ethyl phenylacetate, ethyl propionate, ethyl stearate, ethyl valerate, ethyl vanillin, ethyl vanillin glucoside, 2-ethyl-3,(5 or 6)-dimethylpyrazine, 5-ethyl-3-hydroxy-4-methyl-2(5H)-furanone, 2-ethyl-3-methylpyrazine, eucalyptol, fenugreek absolute, genet absolute, gentian root infusion, geraniol, geranyl acetate, grape juice, guaiacol, guava extract, γ -heptalactone, γ -hexalactone, hexanoic acid, cis-3-hexen-1-ol, hexyl acetate, hexyl alcohol, hexyl phenylacetate, honey, 4-hydroxy-3-pentenoic acid lactone, 4-hydroxy-4-(3-hydroxy-1-butenyl)-3,5,5-trimethyl-2-cyclohexen-1-one, 4-(para-hydroxyphenyl)-2-butanone, 4-hydroxyundecanoic acid sodium, immortelle absolute, β -ionone, isoamyl acetate, isoamyl butyrate, isoamyl phenylacetate, isobutyl acetate, isobutyl phenylacetate, jasmine absolute, kola nut tincture, labdanum oil, lemon terpeneless oil, glycyrrhiza extract, linalool, linalyl acetate, lovage root oil, maltol, maple syrup, menthol, menthone, acetic acid L-menthyl, paramethoxybenzaldehyde, methyl-2-pyrrolol ketone, methyl anthranilate, methyl phenylacetate, methyl salicylate, 4'-methylacetophenone, methylcyclopentenolone, 3-methylvaleric acid, mimosa absolute, molasses, myristic acid, nerol, nerolidol, γ -nonalactone, nutmeg oil, δ -octalactone, octanal, octanoic acid, orange flower oil, orange oil, orris root oil, palmitic acid, ω -pentadecalactone, peppermint oil, petitgrain Paraguay oil, phenethyl alcohol, phenethyl phenylacetate, phenylacetic acid, piperonal, plum extract, propenyl guaethol, propyl acetate, 3-propylidene phthalide, prune juice, pyruvic acid, raisin extract, rose oil, rum, sage oil, sandalwood oil, spearmint oil, styrax absolute, marigold oil, tea distillate, α -terpineol, terpinyl acetate, 5,6,7,8-tetrahydroquinoxaline, 1,5,5,9-tetramethyl-13-oxacyclo(8.3.0.0(4.9))tridecane, 2,3,5,6-tetramethylpyrazine, thyme oil, tomato extract, 2-tridecanone, triethyl citrate, 4-(2,6,6-trimethyl-1-cyclohexenyl)-2-buten-4-one, 2,6,6-trimethyl-2-cyclohexen-1,4-dione, 4-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-4-one, 2,3,5-trimethylpyrazine, γ -undecalactone, γ -valerolactone, vanilla extract, vanillin, veratraldehyde, violet leaf absolute, N-ethyl-p-menthane-3-carboxamide (WS-3), and ethyl-2-(p-menthane-3-carboxamide) acetate (WS-5), with menthol being especially preferred. Furthermore, one type of these flavorings may be used alone, or two or more types may be used in combination.

[0080] The amount of flavoring contained in the flavoring-containing material is normally 18 mass% or greater, preferably 50 mass% or greater, and more preferably 60 mass% or greater, and is normally 90 mass% or less, and preferably 80 mass% or less, although this also depends on the type of flavoring and the type of polysaccharide, etc.

[0081] There is no particular limitation as to the type of polysaccharide, but it is preferably a single-component system comprising carrageenan, agar, gellan gum, tamarind gum, psyllium seed gum, or konjac glucomannan; or is preferably a composite system comprising a combination of two or more components selected from the group consisting of carrageenan, locust bean gum, guar gum, agar, gellan gum, tamarind gum, xanthan gum, tara gum, konjac glucomannan, starch, cassia gum, and psyllium seed gum. These polysaccharides form a gel simply by heating at 30°C-90°C in an aqueous solution so there is no need for a gelling agent such as a metal chloride when the flavoring-containing material is prepared, which is desirable because it means that no undesirable components such as chloride decomposition products are produced in mainstream smoke during smoking.

[0082] An emulsifier which is used to emulsify the starting material during preparation of the flavoring-containing material may also be included. There is no particular limitation as to the type of emulsifier, and examples that may be cited include lecithin, glycerol fatty acid ester, polyglycerol fatty acid ester, sorbitan fatty acid ester, polyoxyethylene sorbitan fatty acid ester, propylene glycol fatty acid ester, and sucrose fatty acid ester, etc., with lecithin being preferred. Moreover, one type of these emulsifiers may be used alone, or two or more types may be used in combination.

[0083] There is no particular limitation as to the method of preparing the flavoring-containing material, and it may be prepared in accordance with a well-known method. Well-known methods that may be cited include the methods disclosed in WO 2011/118040 A1, JP 2013-099349 A, and WO 2012/118034 A1, etc. More specifically, the flavoring-containing material may be prepared by means of a method comprising the following steps (i) and (ii), for example:

- (i) a step in which a polysaccharide and water mixture is heated, normally at 30°C-90°C, preferably at 60°C-90°C, to prepare a polysaccharide aqueous solution; and
- (ii) a step in which a flavoring is kneaded with the aqueous solution, with the addition of an emulsifier as required, in order to obtain an emulsion slurry.

[0084] The amount of flavoring-containing material contained in the flavor-generating portion 220 also depends on the amount of flavoring contained in the flavoring-containing material, but the content is normally 1 mass% or greater and preferably 5 mass% or greater, and normally 20 mass% or less, and preferably 10 mass% or less, with respect to the dried tobacco leaf. Furthermore, the flavor-generating portion 220 comprises the flavoring-containing material such that the content of flavoring contained in the flavoring-containing material is normally 1 mg or greater, preferably 5 mg or greater, and more preferably 10 mg or greater, and normally 30 mg or greater, and preferably 20 mg or less. By setting the amount of flavoring-containing material contained in the flavor-generating portion 220 within this range, it is not only possible to impart a favorable taste, it is also possible to suppress variations in the amount of flavoring delivered with each puff from the start of smoking until the later stages, and furthermore to ensure a sufficient delivery amount throughout all stages of smoking, including the start, middle and end.

[0085] There is no particular limitation as to the form of blending the flavoring-containing material with the flavor-generating portion 220, and the flavoring-containing material may be arranged inside and/or outside the wrapping paper 222 wrapped around the flavor source 221, the wrapping paper 222 may be impregnated with the flavoring-containing material, or the flavoring-containing material may be blended into the tobacco filling material. When the flavoring-containing material is arranged inside and/or outside the wrapping paper 222 wrapped around the flavor source 221, the wrapping paper 222 may be coated with the emulsion slurry, or the emulsion slurry may be successively cast onto a base material and dried to form a flavoring-containing sheet which is then wrapped around the flavor source 221 together with the wrapping paper. The wrapping paper 222 impregnated with the flavouring-containing material may be produced by impregnating the wrapping paper 222 with the emulsion slurry and then drying the materials. Furthermore, when the flavoring-containing material is blended into the tobacco filling material, the dried tobacco leaf may be coated or impregnated with the emulsion slurry, or the abovementioned flavoring-containing sheet or cut material or ground material therefrom may be mixed with dried tobacco.

[0086] As shown in fig. 8 and 9, the flavor source 221 may be block-shaped, or may be cylindrical, for example. When the flavor source 221 is cylindrical, a void extending in the direction of adjacency of the flavor source 221 and the tip-end plug 112 may be formed on the inside of the flavor source 221. In this case, the flavor source 221 is positioned on the outside of the flavor-generating article 100, and the void is positioned on the inside of the flavor source 221, so when the flavor-generating article 100 is heated from the outside in the flavor inhaler 200, the flavor source 221 can be efficiently heated. Furthermore, when a flavor inhaler 200 which heats the flavor-generating article 100 from the outside is used, the flavor source 221 is not disposed on the inside of the flavor-generating article 100, which would be a position that is not conducive to heat transmission or conducive to contributing to vapor or aerosol generation, so it is possible to save on the amount of flavor source 221 while inhibiting a reduction in the amount of vapor or aerosol. The cylindrical flavor source 221 may be formed into a cylindrical shape by rounding a sheet-shaped flavor source 221, for example.

[0087] There is no particular restriction on the configuration of the wrapping paper 222 used in the flavor-generating article 100, and it may take a general form. Specifically, the wrapping paper may comprise pulp as its main component, for example. Pulps which may be used include wood pulps such as softwood pulp and hardwood pulp, flax pulp, hemp pulp, sisal pulp, and esparto, etc., and it is possible to use a pulp which is generally used in a wrapping paper for a tobacco product, and the wrapping paper may be obtained by a papermaking process employing one or more of these pulps. These pulps may be used alone, or several types of pulps may be combined in any proportions for use. Forms of pulp which may be used include chemical pulp, ground pulp, chemiground pulp, and thermomechanical pulp, etc. which are obtained by means of kraft digestion, acid/neutral/alkaline sulfite digestion, and soda digestion, etc.

[0088] The wrapping paper may be produced by using the abovementioned pulp in a paper making process employing a Fourdrinier machine, a cylinder paper machine, or a round-short combination paper machine, etc., then adjusting the texture and homogenizing the resulting paper. It should be noted that, if necessary, a wet strength agent can be added to impart water resistance to the wrapping paper, or a sizing agent can be added to adjust a printing condition of the wrapping paper. A papermaking internal sizing agent and a paper manufacturing additive may further be added to the wrapping paper. Papermaking internal sizing agents may include, for example, aluminum sulfate, various types of anionic, ionic, nonionic or amphoteric yield improving agents, water filtration improving agents, and paper strength agents, etc. Paper manufacturing additives may include, for example, dyes, pH regulators, defoaming agents, pitch control agents, and slime control agents, etc.

[0089] The basis weight of the base paper of the wrapping paper is normally 30 gsm or greater, and preferably 35 gsm or greater, for example. Meanwhile, the basis weight is normally 70 gsm or less, preferably 50 gsm or less, and even more preferably 45 gsm or less. There is no particular limitation as to the thickness of the wrapping paper having

the characteristics above, but it is preferably 40 μm or greater, and is normally 100 μm or less, preferably 75 μm or less, and more preferably 60 μm or less, from the viewpoint of rigidity and air permeability, and ease of making adjustments during papermaking. Square or rectangular may be cited as shapes of the wrapping paper of the flavor-generating article 100. In the case of a wrapping paper 222 for wrapping the flavor source 221 (for producing the flavor-generating portion 220), the length of one side of the wrapping paper 222 may be around 12 mm-70 mm, and the length of the other side (the side connecting to said one side) may be 15 mm-28 mm, may preferably be 22 mm-24 mm, and may even more preferably be around 23 mm.

[0090] When the flavor source 221 is wrapped into a columnar shape by the wrapping paper 222, an end portion of the wrapping paper 222 in the width direction may be glued to an end portion on the opposite side with an overlap of around 2 mm, for example. As a result, the wrapping paper 222 has the shape of a columnar paper tube internally filled with the flavor source 221. The size of a rectangular wrapping paper 222 may be determined by the size of the flavor-generating portion 220. In the case of a wrapping paper for joining and wrapping the flavor-generating portion 220 and another member adjacent to the flavor-generating portion 220, the length of one side may be 20 mm-60 mm, and the length of the other side (the side connecting to said one side) may be 15 mm-28 mm.

[0091] In addition to the abovementioned pulp, the wrapping paper may also comprise a loading material. The content of the loading material may be 10 wt% or greater and less than 60 wt%, and is preferably 15 wt%-45 wt%, with respect to the total weight of the wrapping paper. The content of the loading material is preferably 15 wt%-45 wt% when the basis weight of the wrapping paper is in the preferred range (35 gsm-50 gsm). In addition, the content of the loading material is preferably 25 wt%-45 wt% when the basis weight of the wrapping paper is greater than 35 gsm and no greater than 50 gsm. Calcium carbonate, titanium dioxide, or kaolin, etc. may be used as the loading material, but calcium carbonate is preferably used from the point of view of improving flavor and whiteness, etc.

[0092] Various auxiliaries other than the base paper and the loading material may also be added to the wrapping paper. A water-resistance improving agent may be added to the wrapping paper in order to improve water resistance, for example. Water-resistance improving agents may include wet-strength agents (WS agents) and sizing agents. The wet strength agent may comprise, for example, a urea formaldehyde resin, a melamine formaldehyde resin, and polyamide epichlorohydrin (PAE), etc. Furthermore, the sizing agent may comprise, for example, rosin soap, alkyl ketene dimer (AKD), alkenyl succinic anhydride (ASA), and high saponification polyvinyl alcohol having a degree of saponification of 90% or greater, etc. A paper strength agent may be added to the wrapping paper as an auxiliary. The paper strength agent may comprise, for example, polyacrylamide, cationic starch, oxidized starch, CMC, polyamide epichlorohydrin resin, and polyvinyl alcohol, etc. Using a minute amount of oxidized starch in particular as an auxiliary in the wrapping paper is known to improve air permeability (e.g., see JP 2017-218699 A).

[0093] A coating agent may be added to at least one of the front surface and the rear surface of the wrapping paper. There is no particular restriction on the coating agent, but a coating agent that can form a film on the surface of the paper and reduce liquid permeability is preferred. Examples of coating agents that may be cited include polysaccharides such as alginic acid and salts thereof (e.g., sodium salt), and pectin; cellulose derivatives such as ethyl cellulose, methyl cellulose, carboxymethyl cellulose, and nitrocellulose; and starch and derivatives thereof (e.g., ether derivatives such as carboxymethyl starch, hydroxyalkyl starch, and cationic starch, and ester derivatives such as acetate starch, phosphate starch, and octenyl succinate starch).

[0094] As shown in fig. 8 and 9, the tip-end plug 112 is positioned at the tip end of the flavor-generating article 100 and is configured to cover the end portion of the flavor source 221. This makes it possible to prevent the flavor source 221 from falling out from the flavor-generating article 100. Specifically, the tip-end plug 112 comprises a first filler material 211, and a first inner plug wrap 212 wrapped around the first filler material 211. The tip-end plug 112 may further include an aerosol source carried by the first filler material 211.

[0095] There is no particular restriction on the material of the first inner plug wrap 212 and a well-known material may be used. The first inner plug wrap 212 may contain a filler such as calcium carbonate, or the like. There is no particular restriction on the thickness of the first inner plug wrap 212, and it is normally 20 μm -140 μm , preferably 30 μm -130 μm , and more preferably 30 μm -120 μm . There is no particular restriction on the basis weight of the first inner plug wrap 212, but it is normally 20 gsm-100 gsm, preferably 22 gsm-95 gsm, and more preferably 23 gsm-90 gsm. Furthermore, the first inner plug wrap 212 may be coated or uncoated, but is preferably coated with a desired material from the viewpoint of allowing functions other than strength and structural rigidity to be imparted.

[0096] As shown in fig. 8, the flavor-generating article 100 preferably has a downstream portion 130 disposed on the downstream side of the flavor source 221. In this case, the vapor or aerosol generated by the flavor source 221 can be cooled and filtered in the downstream portion 130. Specifically, the downstream portion 130 preferably includes the filter plug 250. This enables the vapor or aerosol generated by the flavor source to be cooled and filtered in the filter plug 250.

[0097] The filter plug 250 is positioned in the end portion, on the mouthpiece side, of the flavor-generating article 100. The filter plug 250 comprises a second filler material 251, and a second inner plug wrap 252 wrapped around the second filler material 251. There is no particular restriction as to the filter material used in the second filler material

251, provided that it has the general functions of a filter. Examples of general functions of the filter which may be cited include adjusting the amount of air which is mixed when the aerosol, etc. is drawn in, lightening the flavor, and lightening nicotine and tar, etc., but the filter material used in the second filler material 251 need not have all of these functions. Furthermore, in an electrically heated tobacco product, which generates fewer components and tends to have a lower filling ratio of tobacco filling material than a cigarette product, an important function of the filter also lies in preventing the tobacco filling material from falling out, while controlling a filtration function.

[0098] The filter plug 250 has a substantially circular shape in a cross section orthogonal to the longitudinal direction. The diameter of the circle may be suitably varied according to the size of the product, but it is normally 4.0 mm-9.0 mm, preferably 4.5 mm-8.5 mm, and more preferably 5.0 mm-8.0 mm. It should be noted that when the filter plug 250 does not have the abovementioned circular cross section, the diameter which is applied is the diameter of a circle having the same area as the area of the cross section thereof.

[0099] The circumferential length of the filter plug 250 in a cross section orthogonal to the longitudinal direction may be appropriately varied according to the size of the product, but it is normally 14.0 mm-27.0 mm, preferably 15.0 mm-26.0 mm, and more preferably 16.0 mm-25.0 mm.

[0100] The length of the filter plug 250 in the longitudinal direction may be appropriately varied according to the size of the product, but is normally 15 mm-35 mm, preferably 17.5 mm-32.5 mm, and more preferably 20.0 mm-30.0 mm. The shape and dimensions of the filter material used in the second filler material 251 may be suitably adjusted so that the shape and dimensions of the filter plug 250 are in the ranges above.

[0101] A material produced by means of a production method, discussed hereinafter, for example, may be used for the filter material constituting the second filler material 251 of the filter plug 250, and it is also possible to use a commercially available product. Furthermore, there is no particular restriction on the form of the filter plug 250, and it is possible to form a plain filter comprising a single filter segment, or a multi-segment filter comprising multiple filter segments, such as a dual filter or a triple filter, or the like.

[0102] The filter plug 250 may be produced by a well-known method, and when synthetic fibers such as a cellulose acetate tow are used as the material of the second filler material 251, for example, the filter plug 250 may be produced by means of a method in which a polymer solution comprising a polymer and a solvent are spun and then crimped. For this method, it is possible to use the method disclosed in WO 2013/067511 A1, for example. The airflow resistance and additives which are added to the second filler material 251 (well-known adsorbents and flavorings (e.g., menthol), granular activated charcoal, and flavoring retention agents, etc.) may be appropriately designed in the production of the filter plug 250.

[0103] There is no particular restriction on the form of the second filler material 251 constituting the filter plug 250, and a well-known form may be adopted. For example, a component obtained by processing cellulose acetate tow into a cylindrical shape may be used as the second filler material 251. There is no particular limitation as to the single-yarn fineness and total fineness of the cellulose acetate tow, but in the case of a filter plug 250 having a circumference of 22 mm, the single-yarn fineness is preferably 5 g/9000 m-12 g/9000 m, and the total fineness is preferably 12,000 g/9000 m-35,000 g/9000 m. Cross-sectional shapes of the fibers of cellulose acetate tow that may be cited include circular, elliptical, Y-shaped, I-shaped, and R-shaped, etc. In the case of a filter filled with cellulose acetate tow, triacetin may be added in an amount of 5 wt%-10 wt% with respect to the weight of the cellulose acetate tow, in order to improve filter hardness. Furthermore, a paper filter filled with sheet-like paper pulp may also be used instead of the acetate filter.

[0104] There is no particular restriction on the density of the second filler material 251, but it is normally 0.10 g/cm³-0.25 g/cm³, preferably 0.11 g/cm³-0.24 g/cm³, and more preferably 0.12 g/cm³-0.23 g/cm³.

[0105] The filter plug 250 may include the second inner plug wrap 252 (wrapping paper) wrapped around the second filler material 251, discussed hereinafter, from the viewpoint of improving strength and structural rigidity. There is no particular restriction on the form of the second inner plug wrap 252, and it may include a seam comprising one or more lines of adhesive. There is no particular limitation as to the adhesive, but it may comprise a vinyl acetate-based adhesive or a hot-melt adhesive, and the hot-melt adhesive may comprise polyvinyl alcohol. Furthermore, if the filter segment comprises two or more segments, the outer plug wrap 260 is preferably wrapped around both of these two or more segments on the outer side of the second inner plug wrap 252 and the third inner plug wrap 242.

[0106] There is no particular restriction on the material of the second inner plug wrap 252, and a well-known material may be used, and it may furthermore include a filler such as calcium carbonate, etc. There is no particular restriction on the thickness of the second inner plug wrap 252, and it is normally 20 μm-140 μm, preferably 30 μm-130 μm, and more preferably 30 μm-120 μm. There is no particular restriction on the basis weight of the second inner plug wrap 252, but it is normally 20 gsm-100 gsm, preferably 22 gsm-95 gsm, and more preferably 23 gsm-90 gsm. Furthermore, the second inner plug wrap 252 may be coated or uncoated, but is preferably coated with a desired material from the viewpoint of allowing functions other than strength and structural rigidity to be imparted.

[0107] As shown in fig. 8 and fig. 9, the hollow filter 240 and the filter plug 250 may be connected by the outer plug wrap 260 (outside wrap paper), for example. The outer plug wrap 260 may be a cylindrical paper, for example.

[0108] The second filler material 251 may comprise a crushable additive release container (e.g., a capsule) comprising a crushable outer shell made of gelatin or the like. There is no particular restriction on the form of the capsule (also referred to as an "additive release container" in this technical field), and a well-known form may be adopted. For example, it is possible to adopt a crushable additive release container comprising a crushable outer shell made of gelatin or the like. In this case, when a capsule is ruptured before use, during use or after use by a tobacco product user, a liquid or a substance (normally a flavorant) contained inside the capsule is released, the liquid or substance is then transmitted to tobacco smoke while the tobacco product is being used, and is transmitted to the ambient environment after use.

[0109] There is no particular limitation as to the form of the capsule, and it may be an easily-breakable capsule, for example, and the shape thereof is preferably spherical. Any of the abovementioned additives may be contained as the additive included in the capsule, but a flavorant or activated carbon is especially preferably contained. Furthermore, one or more types of materials serving as an aid to filtering smoke may be added as an additive. There is no particular limitation as to the form of the additive, and it is normally a liquid or a solid. It should be noted that use of a capsule containing an additive is well known in this technical field. Easily-breakable capsules and methods for producing same are well known in this technical field. Examples of flavorants include: menthol, spearmint, peppermint, fenugreek, or clove, and medium-chain fatty acid triglycerides (MCT), etc. The flavorant is menthol, or menthol, etc. may be used in combination.

[0110] A flavoring may be added to the second filler material 251 in this embodiment. By adding a flavoring to the second filler material 251, the amount of flavoring delivered during use is increased as compared to the prior art, where flavoring is added to the tobacco filling material constituting the tobacco rod. The degree of increase in the amount of flavoring delivered is further increased according to the position of a ventilation hole provided in the hollow tube portion 132 which will be described later. There is no particular restriction on the method of adding the flavoring to the second filler material 251, and the flavoring should be added so as to be roughly uniformly dispersed in the second filler material 251 which has the flavoring added thereto. As the amount of flavoring added to the second filler material 251, there may be cited a form in which the flavoring is added to a 10-100 vol% portion of the second filler material 251. The method of addition may comprise adding the flavoring in advance to the second filler material 251, before the filter segment is constructed, or adding the flavoring after a filter cigarette has been constructed.

[0111] There is no particular limitation as to the type of flavoring, and, from the point of view of imparting a pleasant flavor, examples of flavorings that may be cited include: acetanisole, acetophenone, acetylpyrazine, 2-acetylthiazole, alfalfa extract, amyl alcohol, amyl butyrate, trans-anethole, star anise oil, apple juice, Peru Balsam oil, beeswax absolute, benzaldehyde, benzoin resinoid, benzyl alcohol, benzyl benzoate, benzyl phenylacetate, benzyl propionate, 2,3-butanedione, 2-butanol, butyl butyrate, butyric acid, caramel, cardamom oil, carob absolute, β -carotene, carrot juice, L-carvone, β -caryophyllene, cassia bark oil, cedar wood oil, celery seed oil, chamomile oil, cinnamaldehyde, cinnamic acid, cinnamyl alcohol, cinnamyl cinnamate, citronella oil, DL-citronellol, clary sage extract, cocoa, coffee, cognac oil, coriander oil, cuminaldehyde, davana oil, δ -decalactone, γ -decalactone, decanoic acid, dill herb oil, 3,4-dimethyl-1,2-cyclopentanedione, 4,5-dimethyl-3-hydroxy-2,5-dihydrofuran-2-one, 3,7-dimethyl-6-octenoic acid, 2,3-dimethylpyrazine, 2,5-dimethylpyrazine, 2,6-dimethylpyrazine, 2-ethyl methylbutyrate, ethyl acetate, ethyl butyrate, ethyl hexanoate, ethyl isovalerate, ethyl lactate, ethyl laurate, ethyl levulinate, ethyl maltol, ethyl octanoate, ethyl oleate, ethyl palmitate, ethyl phenylacetate, ethyl propionate, ethyl stearate, ethyl valerate, ethyl vanillin, ethyl vanillin glucoside, 2-ethyl-3,(5 or 6)-dimethylpyrazine, 5-ethyl-3-hydroxy-4-methyl-2(5H)-furanone, 2-ethyl-3-methylpyrazine, eucalyptol, fenugreek absolute, genet absolute, gentian root infusion, geraniol, geranyl acetate, grape juice, guaiacol, guava extract, γ -heptalactone, γ -hexalactone, hexanoic acid, cis-3-hexen-1-ol, hexyl acetate, hexyl alcohol, hexyl phenylacetate, honey, 4-hydroxy-3-pentenoic acid lactone, 4-hydroxy-4-(3-hydroxy-1-butenyl)-3,5,5-trimethyl-2-cyclohexen-1-one, 4-(para-hydroxyphenyl)-2-butanone, 4-hydroxyundecanoic acid sodium, immortelle absolute, β -ionone, isoamyl acetate, isoamyl butyrate, isoamyl phenylacetate, isobutyl acetate, isobutyl phenylacetate, jasmine absolute, kola nut tincture, labdanum oil, lemon terpeneless oil, glycyrrhiza extract, linalool, linalyl acetate, lovage root oil, maltol, maple syrup, menthol, menthone, acetic acid L-menthyl, paramethoxybenzaldehyde, methyl-2-pyrrolyl ketone, methyl anthranilate, methyl phenylacetate, methyl salicylate, 4'-methylacetophenone, methylcyclopentenolone, 3-methylvaleric acid, mimosa absolute, molasses, myristic acid, nerol, nerolidol, γ -nonalactone, nutmeg oil, δ -octalactone, octanal, octanoic acid, orange flower oil, orange oil, orris root oil, palmitic acid, ω -pentadecalactone, peppermint oil, petitgrain Paraguay oil, phenethyl alcohol, phenethyl phenylacetate, phenylacetic acid, piperonal, plum extract, propenyl guaethol, propyl acetate, 3-propylidene phthalide, prune juice, pyruvic acid, raisin extract, rose oil, rum, sage oil, sandalwood oil, spearmint oil, styrax absolute, marigold oil, tea distillate, α -terpineol, terpinyl acetate, 5,6,7,8-tetrahydroquinoxaline, 1,5,5,9-tetramethyl-13-oxacyclo(8.3.0.0(4.9))tridecane, 2,3,5,6-tetramethylpyrazine, thyme oil, tomato extract, 2-tridecanone, triethyl citrate, 4-(2,6,6-trimethyl-1-cyclohexenyl)-2-buten-4-one, 2,6,6-trimethyl-2-cyclohexen-1,4-dione, 4-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-4-one, 2,3,5-trimethylpyrazine, γ -undecalactone, γ -valerolactone, vanilla extract, vanillin, veratraldehyde, violet leaf absolute, N-ethyl-p-menthane-3-carboamide (WS-3), and ethyl-2-(p-menthane-3-carboxamide) acetate (WS-5), with menthol being especially preferred. Further-

more, one type of these flavorings may be used alone, or two or more types may be used in combination.

[0112] The filter plug 250 in this embodiment may comprise the second filler material 251, and activated charcoal may be added to at least a portion of the second filler material 251. The amount of activated charcoal which is added may be $15.0 \text{ m}^2/\text{cm}^2$ - $80.0 \text{ m}^2/\text{cm}^2$, as a value which is specific surface area of activated charcoal $\times$ weight of activated charcoal / cross-sectional area of second filler material 251 in a direction perpendicular to air flow direction, in one flavor-generating article 100. For convenience, the abovementioned "specific surface area of activated charcoal $\times$ weight of activated charcoal / cross-sectional area of second filler material 251 in a direction perpendicular to air flow direction" may also be expressed as "surface area of activated charcoal per unit cross-sectional area". The surface area of activated charcoal per unit cross-sectional area may be calculated on the basis of the specific surface area of the activated charcoal added to the second filler material 251 of one flavor-generating article 100, the weight of activated charcoal added, and the cross-sectional area of the second filler material 251. It should be noted that the activated charcoal need not be uniformly dispersed in the filter material to which it is added, and it is not necessary for the range above to be satisfied over the entire cross section of the filter material (the cross section in a direction perpendicular to the air flow direction).

[0113] In this embodiment, as a result of the surface area of activated charcoal per unit cross-sectional area being within the range above, components generated by heating can be delivered in the desired amount to the user, and the user can also be provided with the desired sense of flavor. If the surface area of activated charcoal per unit cross-sectional area is smaller than the lower limit of the range above, then the effect of adding the activated charcoal cannot be sufficiently achieved. Meanwhile, if the surface area of activated charcoal per unit cross-sectional area is greater than the upper limit of the range above, then the components generated by heating decrease more than necessary. The surface area of activated charcoal per unit cross-sectional area is more preferably $17.0 \text{ m}^2/\text{cm}^2$ or greater, and even more preferably $35.0 \text{ m}^2/\text{cm}^2$ or greater. Meanwhile, the surface area of activated charcoal per unit cross-sectional area is more preferably $77.0 \text{ m}^2/\text{cm}^2$ or less, and even more preferably $73.0 \text{ m}^2/\text{cm}^2$ or less.

[0114] The surface area of activated charcoal per unit cross-sectional area may be adjusted, for example, by adjusting the specific surface area of the activated charcoal and the added amount thereof, and by adjusting the cross-sectional area of the second filler material 251 in the direction perpendicular to air flow direction. The surface area of activated charcoal per unit cross-sectional area is calculated on the basis of the filter material to which the activated charcoal is added. When the filter plug 250 is formed from multiple filter materials, the calculation above is based on the cross-sectional area and length of only the filter material to which the activated charcoal is added.

[0115] Examples of activated charcoal which may be used in this embodiment that may be cited include those comprising wood, bamboo, coconut shell, walnut shell, and coal, etc. as a starting material. Furthermore, as the activated charcoal which may be used in this embodiment, activated charcoal having a BET specific area of $1100 \text{ m}^2/\text{g}$ - $1600 \text{ m}^2/\text{g}$ may be used, activated charcoal having a BET specific surface area of $1200 \text{ m}^2/\text{g}$ - $1500 \text{ m}^2/\text{g}$ may preferably be used, and activated charcoal having a BET specific surface area of $1250 \text{ m}^2/\text{g}$ - $1380 \text{ m}^2/\text{g}$ may more preferably be used. The BET specific surface area may be determined by the nitrogen gas adsorption method (BET multipoint method).

[0116] Furthermore, as the activated charcoal which may be used in this embodiment, activated charcoal having a pore volume of $400 \text{ }\mu\text{L/g}$ - $800 \text{ }\mu\text{L/g}$ may be used, activated charcoal having a pore volume of $500 \text{ }\mu\text{L/g}$ - $750 \text{ }\mu\text{L/g}$ may preferably be used, and activated charcoal having a pore volume of $600 \text{ }\mu\text{L/g}$ - $700 \text{ }\mu\text{L/g}$ may more preferably be used. The pore volume may be calculated from a maximum adsorption amount obtained using the nitrogen gas adsorption method.

[0117] In this embodiment, the amount of activated charcoal which is added per unit length, in the air flow direction, of the second filler material 251 to which the activated charcoal has been added, is preferably 5 mg/cm - 50 mg/cm , more preferably 8 mg/cm - 40 mg/cm , and even more preferably 10 mg/cm - 35 mg/cm . In this embodiment, the surface area of the activated charcoal per unit cross-sectional area may be adjusted to the desired value as a result of the specific surface area of the activated charcoal and the amount of activated charcoal added being in the ranges above.

[0118] Furthermore, for the activated charcoal which may be used in this embodiment, the cumulative 10 vol% particle size (particle size D10) of activated charcoal particles is preferably $250 \text{ }\mu\text{m}$ - $1200 \text{ }\mu\text{m}$. Furthermore, the cumulative 50 vol% particle size (particle size D50) of activated charcoal particles is preferably $350 \text{ }\mu\text{m}$ - $1500 \text{ }\mu\text{m}$. It should be noted that D10 and D50 are measured by means of a laser diffraction scattering method. Apparatuses suitable for this measurement that may be cited include the "LA-950" laser diffraction/scattering particle size distribution measurement apparatus produced by HORIBA, Ltd. A powder is poured into cells of the apparatus together with pure water, and the particle size is detected on the basis of light scattering information of the particles. The measurement conditions used in this apparatus are as follows.

Measurement mode: manual flow mode-type cell measurement

Dispersion medium: ion exchange water

Dispersion method: measurement after 1 minute of ultrasound irradiation

Refractive index: 1.92-0.00i (sample refraction)/1.33-0.00i (dispersion medium refractive index)

Number of measurements: two measurements with different samples

[0119] In this embodiment, there is no particular restriction on the method of adding the activated charcoal to the second filler material 251, and the activated charcoal should be added so as to be roughly uniformly dispersed in the second filler material 251 to which the activated charcoal is added.

[0120] It should be noted that a commercially available article may be used for the filter plug 250, for example. Furthermore, there is no particular restriction on the form of the filter plug 250, and it is possible to form a filter comprising a single filter segment, or a multi-segment filter comprising multiple filter segments, such as a dual filter or a triple filter, or the like. When the filter plug 250 comprises a single filter segment, the second filler material 251 to which activated charcoal is added serves as the filter plug 250 without further modification. Meanwhile, when the filter plug 250 is formed by multiple filter segments, the second filler material 251 comprising the filter material to which activated charcoal has been added is preferably disposed on the upstream side of the filter material constituting the mouthpiece end. When the flavor-generating article 100 comprises activated charcoal, a solid filter is preferably disposed on the downstream side of the activated charcoal. Meanwhile, activated charcoal may also be added to the filter material constituting the mouthpiece end. It should be noted that when the filter segments constitute a multi-segment filter, the length of the filter segments, which is the basis for the amount of activated charcoal added, corresponds to the length of the filter material to which the activated charcoal has been added. The amount of activated charcoal added is, for example, 4.0 mg-24.0 mg, preferably 4.5 mg-23.0 mg, and more preferably 10.5 mg-22.0 mg, in terms of weight in relation to all of the filter segments.

[0121] The downstream portion 130 may further comprise the hollow tube portion 132 and the hollow filter 240. The hollow filter 240 is disposed adjacently downstream of the hollow tube portion 132. The hollow filter 240 comprises: a filtration material 241, and a third inner plug wrap 242 wrapped around the filtration material 241. The third inner plug wrap 242 which is used may be the same as a plug wrap used in cigarettes. The third inner plug wrap 242 may be omitted. Furthermore, the hollow filter 240 may be omitted.

[0122] The hollow filter 240 may comprise: a filtration material 241 having one or more hollow portions; and a third inner plug wrap 242 covering the filtration material 241. The hollow filter 240 has the function of increasing the strength of the downstream portion 130. The filtration material 241 may be formed, for example, as a rod having an inner diameter of ϕ 1.0 mm- ϕ 5.0 mm packed with a high density of cellulose acetate fibers, a plasticizer comprising triacetin being added thereto in an amount of 6 mass%-20 mass%, in relation to the mass of cellulose acetate, and the plasticizer being cured. The filtration material 241 has a high packing density of fibers, so only the air and aerosol flow through the hollow portion during drawing, with virtually none flowing through the filtration material 241. The filtration material 241 inside the hollow filter 240 is a fiber filled layer, and the user will therefore have little sense of incongruity when touching the outside during use.

[0123] The hollow filter 240 may comprise the third inner plug wrap 242 (wrapping paper) wrapped around the filtration material 241, from the point of view of improving strength and structural rigidity. There is no particular restriction on the form of the third inner plug wrap 242, and it may include a seam comprising one or more lines of adhesive. There is no particular limitation as to the type of adhesive, but it may comprise a vinyl acetate-based adhesive or a hot-melt adhesive. The hot-melt adhesive may comprise polyvinyl alcohol. Furthermore, when the hollow filter 240 comprises two or more segments, the third inner plug wrap 242 is preferably wrapped around both of these two or more segments.

[0124] There is no particular restriction on the material of the third inner plug wrap 242, and a well-known material may be used, and it may furthermore comprise a filler such as calcium carbonate, etc. There is no particular restriction on the thickness of the third inner plug wrap 242, and it is normally 20 μ m-140 μ m, preferably 30 μ m-130 μ m, and more preferably 30 μ m-120 μ m. There is no particular restriction on the basis weight of the third inner plug wrap 242, but it is normally 20 gsm-100 gsm, preferably 22 gsm-95 gsm, and more preferably 23 gsm-90 gsm. Furthermore, the third inner plug wrap 242 may be coated or uncoated, but is preferably coated with a desired material from the point of view of enabling functions other than strength and structural rigidity to be imparted.

[0125] The hollow tube portion 132 is a rod-shaped member which is adjacently interposed between the flavor-generating portion 220 and the hollow filter 240 or the filter plug 250 (when there is no hollow filter 240), and is normally provided with a cavity which is cylindrical or the like, the circumferential cross section thereof forming a hollow (enclosed space). The length of the hollow tube portion 132 in the long axis direction may be appropriately varied according to the size of the product, but it is normally 15 mm or greater and preferably 20 mm or greater, and is normally 40 mm or less, preferably 35 mm or less, and more preferably 30 mm or less. By setting the length of the hollow tube portion 132 in the long axis direction at or above the abovementioned lower limit, it is possible to ensure a sufficient cooling effect and to obtain a pleasant flavor, and by setting the length at or below the abovementioned upper

limit, it is possible to inhibit loss caused by adhesion of the generated vapor and aerosol to an inner wall of the hollow tube portion 132.

[0126] When the hollow tube portion 132 is filled with a sheet, etc. for cooling (e.g., a polylactic acid sheet, etc. packed in a gathered form), there is no particular restriction on the total surface area of the hollow tube portion 132, and it may be 300 mm²/mm-1000 mm²/mm, for example. This surface area is the surface area per length (mm) of the hollow tube portion 132 in the air flow direction. The total surface area of the hollow tube portion 132 is preferably 400 mm²/mm or greater and more preferably 450 mm²/mm, while preferably being 600 mm²/mm or less, and more preferably 550 mm²/mm or less.

[0127] The hollow tube portion 132 preferably comprises an internal structure having a large total surface area. Accordingly, in a preferred embodiment, the hollow tube portion 132 may be formed by a sheet which is a thin material that is creased and then fluted, gathered and folded in order to form channels. When the hollow tube portion 132 has many folds or flutes, this increases the total surface area of the hollow tube portion 132. There is no particular restriction on the thickness of the material constituting the hollow tube portion 132, and it may be 5 μm-500 μm, or may be 10 μm-250 μm.

[0128] As shown in fig. 8 and 9, the hollow tube portion 132 may be provided with ventilation holes V (also referred to as a "ventilation filter" in this technical field) which are in the circumferential direction and concentric. The presence of the ventilation holes V allows air to flow into the hollow tube portion 132 from the outside during use, and enables a reduction in the temperature of air and components flowing in from the flavor-generating portion 220. The ventilation holes V may be provided in a region lying at least 4 mm in the direction of the hollow tube portion 132 side from a boundary between the hollow tube portion 132 and the hollow filter 240 or the filter plug 250 (when there is no hollow filter 240). In this case, the ventilation holes V can not only enhance the cooling capability of the hollow tube portion 132, but also can also suppress stagnation of components generated by means of heating inside the hollow tube portion 132, and increase the amount of delivery of those components. It should be noted that when an aerosol base material is used in the flavor-generating portion 220, a vapor containing the aerosol base material and the tobacco flavor component generated as a result of the flavor-generating article 100 being heated is liquefied by a reduction in temperature caused by contact with external air, making it possible to promote aerosol generation.

[0129] Furthermore, if concentric ventilation holes V are treated as a single group of perforations, then there may be one group of perforations, or there may be two or more groups of perforations. When there are two or more groups of perforations, the groups of perforations are preferably not provided in a region lying less than 4 mm in the direction of the hollow tube portion 132 side from the boundary between the hollow tube portion 132 and the hollow filter 240 or the filter plug 250 (when there is no hollow filter 240), from the point of view of increasing the amount of delivery of components generated by means of heating.

[0130] Furthermore, when the hollow tube portion 132 is wrapped with the tipping paper 270, perforations are preferably provided in the tipping paper 270 at positions directly above the ventilation holes V provided in the hollow tube portion 132. When a flavor-generating article 100 such as this is produced, it is possible to prepare a tipping paper 270 in which perforations have been provided in such a way as to lie over the ventilation holes V, and then to wrap this tipping paper 270 around, but from the perspective of ease of production, a flavor inhalation article 100 is preferably produced by using a hollow tube portion 132 without the ventilation holes V, after which holes simultaneously penetrating the hollow tube portion 132 and the tipping paper 270 are preferably formed.

[0131] The region where the ventilation holes V are present is preferably a region lying at least 4.5 mm, more preferably a region lying at least 5 mm, and even more preferably a region lying at least 5.5 mm in the direction of the hollow tube portion 132 side from the boundary between the hollow tube portion 132 and the hollow filter 240 or the filter plug 250 (when there is no hollow filter 240), from the point of view of increasing delivery of components generated by means of heating. Furthermore, the region where the ventilation holes V are present is preferably a region lying no more than 15 mm, more preferably a region lying no more than 10 mm, and even more preferably a region lying no more than 7 mm in the direction of the hollow tube portion 132 side from the boundary, from the point of view of ensuring a cooling function.

[0132] The region where the ventilation holes V are present is preferably a region lying at least 24 mm, preferably a region lying at least 24.5 mm, preferably a region lying at least 25 mm, and more preferably a region lying at least 25.5 mm in the direction of the hollow tube portion 132 side from the second end 102 on the mouthpiece side of the flavor-generating article 100, from the point of view of increasing delivery of components generated by means of heating. Furthermore, the region where the ventilation holes V are present is preferably a region lying no more than 35 mm, more preferably a region lying no more than 30 mm, and even more preferably a region lying no more than 27 mm in the direction of the hollow tube portion 132 side from the second end 102 of the flavor-generating article 100, from the point of view of ensuring a cooling function.

[0133] Furthermore, when the axial length of the hollow tube portion 132 is 20 mm or greater, the region where the ventilation holes V are present is preferably a region lying at least 5 mm, more preferably a region lying at least 10 mm, and even more preferably a region lying at least 13 mm in the direction of the hollow tube portion 132 side from the

boundary between the hollow tube portion 132 and the flavor-generating portion 220, from the point of view of ensuring a cooling function. Furthermore, when the axial length of the hollow tube portion 132 is 20 mm or greater, the region where the ventilation holes V are present is preferably no more than 16 mm, more preferably a region lying no more than 15.5 mm, even more preferably a region lying no more than 15 mm, and particularly preferably a region lying no more than 14.5 mm, from the boundary between the hollow tube portion 132 and the flavor-generating portion 220, from the point of view of improving delivery of components generated by means of heating.

[0134] The ventilation holes V may be provided so that an air inflow ratio from the ventilation holes V when the article is sucked by an automatic smoking machine at 17.5 ml/sec (a volume ratio of air that has flowed in from the ventilation holes V when the ratio of air sucked from the mouthpiece end is 100 vol%) is 10-90 vol%, preferably 50-80 vol%, and more preferably 55-75 vol%. This air inflow ratio may be achieved by selecting a number of ventilation holes V per group of perforations from a range of 5-50, and by selecting the diameter of the ventilation holes V from a range of 0.1-0.5 mm. The air inflow ratio may be measured by a method based on ISO9512, using a wound article measurement machine (e.g., SODIMAX d74/SODIM, produced by S.A.S.).

[0135] There is no particular restriction on the configuration of the outer plug wrap 280, and it may take a general form. Specifically, the outer plug wrap 280 may comprise pulp as its main component, for example. Pulps which may be used include wood pulps such as softwood pulp and hardwood pulp, flax pulp, hemp pulp, sisal pulp, and esparto, etc., and it is possible to use a pulp which is generally used in a wrapping paper for a tobacco article, and the outer plug wrap 280 may be obtained by a papermaking process employing one or more of these pulps. These pulps may be used alone, or several types of pulps may be combined in any proportions for use. Forms of pulp which may be used include chemical pulp, ground pulp, chemiground pulp, and thermomechanical pulp, etc. which are obtained by means of kraft digestion, acid/neutral/alkaline sulfite digestion, and soda digestion, etc. It should be noted that a commercially available article may be used for the outer plug wrap 280. There is no particular restriction on the shape of the outer plug wrap 280, and it may have a square or rectangular shape, for example.

[0136] There is no particular restriction on the basis weight of the outer plug wrap 280, but it is normally 20 gsm-70 gsm, preferably 30 gsm-50 gsm, and more preferably 34 gsm-38 gsm. There is no particular restriction on the thickness of the outer plug wrap 280, but it is normally 30 mm-80 mm, preferably 33 mm-50 mm, and more preferably 35 mm-40 mm, for example. There is no particular restriction on the air permeability of the outer plug wrap 280, and it is normally 0 CORESTA units-30,000 CORESTA units, and preferably greater than 0 CORESTA units and no greater than 10,000 CORESTA units. The air permeability is a value measured in accordance with ISO 2965:2009, and is expressed as the flow rate (cm³) of a gas passing through a surface area of 1 cm² per minute at a differential pressure of 1 kPa on both surfaces of the paper. 1 CORESTA unit (1 C.U.) constitutes cm³/(min·cm²) under 1 kPa.

[0137] The outer plug wrap 280 may comprise a loading material. Examples of loading materials which may be cited include metal carbonates such as calcium carbonate and magnesium carbonate, metal oxides such as titanium oxide, titanium dioxide, and aluminum oxide, metal sulfates such as barium sulfate and calcium sulfate, metal sulfides such as zinc sulfide, quartz, kaolin, talc, diatomaceous earth, and gypsum, etc. The outer plug wrap 280 preferably comprises calcium carbonate, especially from the point of view of improving whiteness and opaqueness, and increasing heating rate. These loading materials may be used alone, or two or more may be used in combination.

[0138] Various types of auxiliaries may be added to the outer plug wrap 280. The outer plug wrap 280 may comprise a water-resistance improving agent, for example. Water-resistance improving agents may include wet-strength agents (WS agents) and sizing agents. The wet strength agent may comprise, for example, a urea formaldehyde resin, a melamine formaldehyde resin, and polyamide epichlorohydrin (PAE), etc. Furthermore, the sizing agent may comprise, for example, rosin soap, alkyl ketene dimer (AKD), alkenyl succinic anhydride (ASA), and high saponification polyvinyl alcohol having a degree of saponification of 90% or greater, etc.

[0139] A coating agent may be added to at least one of the front surface and the back surface of the outer plug wrap 280. There is no particular restriction on the coating agent, but a coating agent that can form a film on the surface of the paper and reduce liquid permeability is preferred.

[0140] There is no particular restriction on the configuration of the tipping paper 270, and it may take a general form. Specifically, the tipping paper 270 may comprise pulp as its main component, for example. Pulps which may be used include wood pulps such as softwood pulp and hardwood pulp, flax pulp, hemp pulp, sisal pulp, and esparto, etc., and it is possible to use a pulp which is generally used in a wrapping paper for a tobacco article, and the tipping paper 270 may be obtained by a papermaking process employing one or more of these pulps. These pulps may be used alone, or several types of pulps may be combined in any proportions for use. Forms of pulp which may be used include chemical pulp, ground pulp, chemiground pulp, and thermomechanical pulp, etc. which are obtained by means of kraft digestion, acid/neutral/alkaline sulfite digestion, and soda digestion, etc. It should be noted that a commercially available article may be used for the tipping paper 270. There is no particular restriction on the shape of the tipping paper 270, and it may have a square or rectangular shape, for example. Furthermore, the flavor-generating article 100 may include one tipping paper 270, but it may equally include multiple tipping papers 270.

[0141] There is no particular restriction on the basis weight of the tipping paper 270, but it is normally 32 gsm-40

gsm, preferably 33 gsm-39 gsm, and more preferably 34 gsm-38 gsm, for example. There is no particular restriction on the air permeability of the tipping paper 270, and it is normally 0 CORESTA units-30,000 CORESTA units, and preferably greater than 0 CORESTA units and no greater than 10,000 CORESTA units. The air permeability is a value measured in accordance with ISO 2965:2009, and is expressed as the flow rate (cm^3) of a gas passing through a surface area of 1 cm^2 per minute at a differential pressure of 1 kPa on both surfaces of the paper. 1 CORESTA unit (1 C.U.) constitutes $\text{cm}^3/(\text{min} \cdot \text{cm}^2)$ under 1 kPa.

[0142] The tipping paper 270 may comprise a loading material. Examples of loading materials which may be cited include metal carbonates such as calcium carbonate and magnesium carbonate, metal oxides such as titanium oxide, titanium dioxide, and aluminum oxide, metal sulfates such as barium sulfate and calcium sulfate, metal sulfides such as zinc sulfide, quartz, kaolin, talc, diatomaceous earth, and gypsum, etc. The tipping paper 270 preferably comprises calcium carbonate, especially from the point of view of improving whiteness and opaqueness, and increasing heating rate. These loading materials may be used alone, or two or more may be used in combination.

[0143] Various auxiliaries may be added to the tipping paper 270. The tipping paper 270 may comprise a water-resistance improving agent, for example. Water-resistance improving agents may include wet-strength agents (WS agents) and sizing agents. The wet strength agent may comprise, for example, a urea formaldehyde resin, a melamine formaldehyde resin, and polyamide epichlorohydrin (PAE), etc. Furthermore, the sizing agent is, for example, rosin soap, alkyl ketene dimer (AKD), alkenyl succinic anhydride (ASA), and high saponification polyvinyl alcohol having a degree of saponification of 90% or greater, etc.

[0144] A coating agent may be added to at least one of the front surface and the back surface of the tipping paper 270. There is no particular restriction on the coating agent, but a coating agent that can form a film on the surface of the paper and reduce liquid permeability is preferred.

[0145] A portion of an outer surface of the tipping paper 270 may be coated with a lip-release material. A lip-release material means a material for assisting in easy separation, substantially without adhesion, of the lips and the tipping paper 270 when the user holds the mouthpiece of the flavor-generating article 100 in their mouth. The lip-release material may comprise ethyl cellulose or methyl cellulose, etc., for example. For example, the outer surface of the tipping paper 270 may be coated with a lip-release material by applying an ethyl cellulose-based or methyl cellulose-based ink to the outer surface of the tipping paper 270. In this embodiment, the lip-release material is provided at least on a predetermined mouthpiece region contacted by the user's lips when the user holds the mouthpiece in their mouth. More specifically, the lip-release material may be provided on the outer surface of the tipping paper 270 between the second end 102 (end portion of the filter plug 250) and the ventilation holes V.

[0146] A mode of joining of the components constituting the flavor-generating article 100 will be described next. In fig. 8, gaps are provided between the components to make it easier to see how the components are joined, but the components of the actual flavor-generating article 100 are adjacent without gaps, as shown in fig. 9. In the flavor-generating article 100 shown in fig. 8, the five components are joined by using the outer plug wrap 280, the outer plug wrap 260, and the tipping paper 270. Specifically, as shown in fig. 8, the outer plug wrap 280 joins the tip-end plug 112, the flavor-generating portion 220, and the hollow tube portion 132. Here, the outer plug wrap 280 is wound so as to cover the whole of the tip-end plug 112 and the flavor-generating portion 220, and part of the hollow tube portion 132. This joined body will be referred to as a first joined body 285. Furthermore, the outer plug wrap 260 is wound so as to join the hollow filter 240 and the filter plug 250 while also covering same in their entirety. This joined body will be referred to as a second joined body 265. The tipping paper 270 further joins the first joined body 285 and the second joined body 265. Here, the tipping paper 270 covers the whole of the second joined body 265 and part of the first joined body 285, while exposing the first joined body 285 at its upstream end. It should be noted that in the example shown in fig. 8, the outer plug wrap 280 exposes the hollow tube portion 132 at its downstream end, without covering the hollow tube portion 132 as far as its downstream end, but the hollow tube portion 132 may equally be covered as far as its downstream end. In this case, perforations are preferably provided in the outer plug wrap 280 at positions directly above the ventilation holes V provided in the hollow tube portion 132. As a result, the ventilation holes V are preferably provided so as to penetrate through the tipping paper 270, the outer plug wrap 280, and the hollow tube portion 132. It should be noted that fig. 8 and 9 show an example, but there is no particular limitation as to the types, positions and number of filters in the flavor-generating article 100, and the manner of connection thereof, etc.

[0147] As shown in fig. 1, when the flavor-generating article 100 has been suitably inserted into the chamber 50 of the flavor inhaler 200, part of the flavor-generating article 100 may be exposed to the outside of the flavor inhaler 200. Specifically, in the state shown in fig. 1, part or all of the second joined body 265 shown in fig. 8 may be exposed to the outside of the flavor inhaler 200. Furthermore, in the state shown in fig. 1, part of the hollow tube portion 132 shown in fig. 8 may be exposed to the outside of the flavor inhaler 200. In this case, the ventilation holes V formed in the hollow tube portion 132 may be exposed to the outside of the flavor inhaler 200, or may be positioned on the inside of the flavor inhaler 200 (upstream of the opening 210 for insertion of the flavor-generating article 100). The ventilation holes V formed in the hollow tube portion 132 are preferably located on the inside of the flavor inhaler 200 so that the ventilation holes V cannot easily be obstructed by the user.

[0148] The airflow resistance and hardness, etc. of each segment of the flavor-generating article 100 will be described below. As shown in fig. 9, the flavor-generating article 100 comprises: a first segment 11, a flavor-generating segment 12, a cooling segment 13, and a second segment 14. The flavor-generating article 100 comprises: a first end 101 inserted into the flavor inhaler 200, and a second end 102 on the opposite side to the first end 101. In the example depicted, the flavor-generating article 100 extends in the longitudinal direction along a center axis AX, with the first end 101 and the second end 102 being formed at each of the two ends thereof along the longitudinal direction. In the following, unless explicitly stated otherwise, the "radial direction" and "circumferential direction" denote the radial direction and circumferential direction of a rotational coordinate system centered on the center axis AX or a center axis AX1 to be described below.

[0149] The first segment 11, the flavor-generating segment 12, the cooling segment 13, and the second segment 14 are arranged in that order from the first end 101 toward the second end 102. The first segment 11 comprises the tip-end plug 112. The flavor-generating segment 12 comprises the flavor-generating portion 220. The cooling segment 13 comprises the hollow tube portion 132. The second segment 14 comprises the filter plug 250 disposed on the second end 102 side, and the hollow filter 240 disposed on the first end 101 side. It should be noted that the position of the filter plug 250 is not limited to the position shown in fig. 9, and the positions of the filter plug 250 and the hollow filter 240 may be switched, for example. Furthermore, the hollow filter 240 may be omitted from the flavor-generating article 100 shown in fig. 9, or the second segment 14 may include three or more filters.

[0150] When a flavor is to be inhaled by using the flavor-generating article 100, the first end 101 is inserted into the chamber 50, and the flavor-generating article 100 is positioned at a desired position in the chamber 50. In the example depicted, the desired position is a position where the heater constituting the heating source 40 and the flavor-generating segment 12 are overlapping in the longitudinal direction, for example. The flavor-generating segment 12 is then heated, and the user inhales from the second end 102.

[0151] The positional relationship of the flavor-generating article 100 and the flavor inhaler 200 to which the flavor-generating article 100 is applied will be described. Fig. 10 is an enlargement in cross section showing the atomization unit 30 and the control unit 80 when the flavor-generating article 100 is accommodated at the desired position in the flavor inhaler 200. It should be noted that the flavor-generating article 100 is shown in a simplified form in fig. 10. The flavor source 221 comprises: a first part 122 which overlaps the heating source 40 of the flavor inhaler 200 in the longitudinal direction of the flavor-generating article 100; and a second part 123 which does not overlap the heating source 40 of the flavor inhaler 200, when the flavor-generating article 100 is accommodated at the desired position in the flavor inhaler 200. The first part 122 is directly heated by means of the heating source 40 to generate the vapor or aerosol, and the second part 123 is heated by means of heat transfer from the heating source 40 to generate the vapor or aerosol. Specifically, the second part 123 is heated by means of heat transfer from the first part 122 which is heated first, and by means of heat transfer from members such as the chamber 50 of the flavor inhaler 200 which are warmed by means of the heating source 40.

[0152] By setting the longitudinal length of the first part 122 at between 40% and 60% of the longitudinal length of the flavor source 221 and at no greater than 10 mm, the vapor or aerosol can also be generated from the second part 123, making it possible to ensure the desired amount of vapor, even if the length of the heating source 40 is less than the length of the flavor source 221. Furthermore, the second part 123 is heated later than the first part 122 so that the vapor or aerosol is still generated by latter-stage puffing actions, therefore making it possible to maintain stable delivery during use of the flavor inhaler 200.

[0153] Furthermore, as shown in fig. 10, the longitudinal length of the heating source 40 overlapping the first part 122 is the same as the longitudinal length of the first part 122, being between 40% and 60% of the longitudinal length of the flavor source 221 and no greater than 10 mm. By making the heating source 40 shorter than the overall length of the flavor source 221, it is thus possible to reduce power consumption by the flavor inhaler 200.

[0154] Furthermore, the first part 122 includes the downstream end portion of the flavor source 221, as shown in fig. 10. That is to say, the flavor source 221 does not comprise the first part 122 disposed on the upstream side and the second part 123 disposed on the downstream side, and the second part 123 is not present on the downstream side of the first part 122. It is therefore possible to suppress agglomeration of the vapor or aerosol, which has been generated by the flavor source 221, in the second part 123 that is not directly heated by means of the heating source 40.

[0155] The first segment 11 is a segment disposed on the first end 101 side of the flavor-generating segment 12. The first segment 11 preferably extends from the first end 101 as far as the end portion of the flavor-generating segment 12 on the first end 101 side. The first segment 11 comprises the tip-end plug 112 including the first filler material 211 and the first inner plug wrap 212. A hole or a slit for insertion of a heater such as a pin-type heater is preferably not formed in the first segment 11. This makes it possible to reduce the risk of leakage of vapor from the first segment 11 when the flavor-generating article 100 is used in an external heating-type flavor inhaler 200. Furthermore, if a hole or a slit is provided in the center of the end face of the first segment 11, there is a risk of reduced delivery of flavor components, especially at the start of heating, because of air being introduced in the vicinity of the center of the first segment 11 which is not directly heated, but such a risk can be mitigated.

[0156] Hereinafter, a segment being "solid" includes a case in which the space enabling communication between the first end 101 side and the second end 102 side of that segment is filled with an air-permeable filler material. This means that the filler material may be formed by a material which is fibrous or porous, etc. Furthermore, a segment being "filled" means that filler material is provided to the extent that airflow resistance is derived in the segment.

[0157] The tip-end plug 112 constituting the first segment 11 is preferably solid. In the first segment 11, the space enabling communication between the first end 101 side and the second end 102 side of the first segment 11 is filled with the first filler material 211. This makes it possible to reduce the risk of leakage of vapor from the first segment 11 and to reduce the risk of a reduction in delivery of flavor components, as mentioned above.

[0158] Fig. 11 is a view in the cross section b-b in fig. 9, and is a view in transverse section of the first segment 11 perpendicular to the long axis direction. In the first segment 11, the inside of the cylindrical first inner plug wrap 212 forms an internal space SP1 enabling communication between the first end 101 side and the second end 102 side of the first segment 11. The internal space SP1 is filled with the first filler material 211. Filling the first segment 11 with the first filler material 211 closes off the internal space SP1 of the first segment 11 and prevents the flavor source 221, etc. arranged in the flavor-generating segment 12 from falling out from the first end 101.

[0159] Hereinafter, the airflow resistance per segment of the first segment 11 will be referred to as first airflow resistance, and the airflow resistance per segment of the second segment 14 will be referred to as second airflow resistance. The first airflow resistance may be lower than the second airflow resistance. Here, the airflow resistance is measured by using a filter airflow resistance measurement instrument produced by Cerulean, for example, in accordance with the ISO standard method (ISO6565:2015). The airflow resistance denotes an air pressure difference between one end face (a first end face) and another end face (a second end face) when air at a predetermined air flow rate (17.5 cc/min) flows from the first end face to the second end face in a state in which air does not pass through the side face of the relevant object.

[0160] If the first airflow resistance is high, then the flavor-generating article 100 will have excessively high airflow resistance overall, making it difficult for the user to draw, because the second segment 14 including the filter plug 250 and the flavor-generating segment 12 containing cut tobacco or the like can also have relatively high airflow resistance. In this case, if the second airflow resistance of the second segment 14 is reduced in an attempt to reduce the overall airflow resistance of the flavor-generating article 100, it may become difficult to adjust the filtration capability of the filter disposed in the second segment 14. These problems can be suppressed in this embodiment when the first airflow resistance is lower than the second airflow resistance.

[0161] The first airflow resistance is preferably 50 mmH₂O or less, more preferably 40 mmH₂O or less, even more preferably 30 mmH₂O or less, and still more preferably 20 mmH₂O or less. The user can easily draw when the first airflow resistance is small. If the first airflow resistance is excessively small, then there is an increased risk of leakage of vapor from the first segment 11, and an increased risk of a reduction in delivery of flavor components at the start of heating, etc. because of air being introduced into part of the first segment 11 which is not directly heated. From this point of view, the first airflow resistance is preferably greater than 0 mmH₂O, and at least 10 mmH₂O. In light of the above, the first airflow resistance is preferably greater than 0 mmH₂O, and no greater than 50 mmH₂O.

[0162] A ratio of the first airflow resistance to the airflow resistance over the entire length of the flavor-generating article 100 is preferably 30% or less, and more preferably 25% or less. This ratio being low makes it easy to adjust the amount of flavor source 221 and the filtration capability of the filter plug 250, etc. disposed in the second segment 14. Hereinafter, the "entire length" denotes the length along the longitudinal direction of the flavor-generating article 100.

[0163] The first filler material 211 in the first segment 11 preferably comprises at least one of cellulose acetate, paper and nonwoven fabric. This makes it possible to easily produce the first segment 11 while adjusting the first airflow resistance. The first filler material 211 more preferably comprises paper from the same point of view and from the point of view of environmental protection. The paper contained in the first filler material 211 is preferably glassine paper because this can be neatly creased by means of a crimping treatment or the like, and can be thinly formed with limited airflow resistance. The crimping treatment here is a treatment for forming creases or unevenness in a sheet by passing the sheet between multiple rollers, enabling the hardness and airflow resistance of the sheet to be varied.

[0164] Fig. 12 is a cross-sectional enlargement of the part in fig. 11 indicated by the arc R1. In the example depicted, the first segment 11 is filled with the first filler material 211 which is in the form of a sheet. The first filler material 211 in the form of a sheet is arranged to extend in the longitudinal direction of the flavor-generating article 100 and is arranged radially in relation to the center axis AX. By virtue of such a configuration, the first segment 11 can be easily produced while lowering the airflow resistance for a longitudinal flow. The first filler material 211 in the form of a sheet may be folded and arranged radially so as to extend back and forth in the radial direction. The first filler material 211 may thus be formed from a sheet which is shaped into a corrugated form and folded in the direction of arrangement of the corrugations. This sheet is preferably paper. The first filler material 211 is formed when a corrugated sheet such as above is folded in the direction of arrangement of the corrugations so as to form a cylindrical shape overall. Here, a plurality of air flow passages extending in the length direction of the first filler material 211 may be formed reaching to the upstream end and the downstream end of the first filler material 211. Alternatively, the first filler material 211 in the

form of a sheet may be folded and arranged in the first segment 11 with longitudinally-extending creases formed at multiple random positions. The first filler material 211 in the form of a sheet may be folded or rolled up in any form, and arranged in the first segment 11. It should be noted that there is no particular limitation as to the method for filling the first segment 11 with the first filler material 211, and a nonwoven fabric or the like may be cut to any size and packed inside the first inner plug wrap 212.

[0165] Paper used as a paper filter in a smoking article may be used as the paper serving as the first filler material 211. The thickness of the paper serving as the first filler material 211 is 20 μm -1500 μm , for example, and the basis weight is 20 g/m^2 -50 g/m^2 , for example. The paper serving as the first filler material 211 preferably has a rectangular shape, in which case one side thereof may have largely the same length as the length of the tip-end plug 112, and the other side thereof may have a length of 100 mm-300 mm. The thickness, basis weight and size of the paper used as the first filler material 211 have been described, but these values denote values for the paper prior to a shaping treatment (e.g., fluting treatment, etc.). When the first filler material 211 comprises a material other than paper and is in the shape of a sheet, such a first filler material 211 may have the same thickness and size as for the paper. The first filler material 211 need not contain a tobacco material such as cut tobacco or sheet tobacco.

[0166] Fig. 13 is a conceptual diagram showing a method of measuring a hardness index, which is an index indicating the hardness of each segment and of the flavor-generating article 100. In this embodiment, a diameter ratio described below is used as the hardness index. In the measurement, a load corresponding to a weight of 300 g is applied vertically to a measurement subject S1 in a direction from the first end 101 side towards the second end 102 side (the longitudinal direction). The pressure is applied for a time of 10 seconds. In fig. 13, the load is schematically shown by an arrow A10, which is the point at which downward pressure is vertically applied to the longitudinally-extending center axis AX of the measurement subject S1 which is placed on a horizontal surface. This measurement is performed by means of a device such as a Sodim-H hardness module from Korber Technologies GmbH. The arithmetic average diameter for the whole circumference about the center axis AX of the measurement subject S1 before application of the load is assumed to be an average diameter D1. The minimum diameter after application of the load is assumed to be a minimum diameter D2. The diameter ratio is assumed to be the ratio of the minimum diameter D2 to the average diameter D1. There is less deformation with respect to the load when the diameter ratio is higher, meaning that the measurement subject S1 is hard. The hardnesses of the first segment 11, the flavor-generating segment 12, the cooling segment 13, and the second segment 14 may be measured while these segments are contained in the flavor-generating article 100, or the hardnesses may be measured with the segments separated.

[0167] The diameter ratio of the first segment 11 will be referred to below as the "first diameter ratio". The first diameter ratio is preferably 70% or greater and more preferably 80% or greater. If the first diameter ratio is excessively low, then the first segment 11 will be too soft, making it difficult for the user to grip or making handling more difficult during production, and this leads to a drop in producibility of the flavor-generating article 100. The first diameter ratio is preferably 90% or less and more preferably 85% or less. If the first diameter ratio is excessively high, then a hard first segment 11 will be produced, therefore making processing difficult during production, and this leads to a drop in producibility of the flavor-generating article 100. In light of the above, the first diameter ratio is preferably 70%-90%.

[0168] The diameter ratio of the second segment 14 will be referred to below as the "second diameter ratio". A ratio of the second diameter ratio to the first diameter ratio is preferably 1-1.2. As a result, it is possible to suitably adjust producibility or ease of gripping of the flavor-generating article 100, while also making the second end side 102 that forms the mouthpiece relatively hard so that it is easy for the user to draw. The upper limit of the diameter ratio is 100%, as will be understood from the definitions above.

[0169] A ratio of the diameter ratio of the flavor-generating segment 12 to the first diameter ratio may be set at 0.8-1.4. As a result, it is possible to ensure that there is not an excessively large difference between the hardness of the first segment 11 and the hardness of the flavor-generating segment 12, and to further inhibit a drop in producibility of the flavor-generating article 100.

[0170] The overall length of the first segment 11 is preferably 10 mm or less, and more preferably 8 mm or less. The flavor-generating article 100 can be constructed in a compact manner when the first segment 11 is short. If the first segment 11 is excessively short, then production of the first segment 11 or connection with other segments, etc. becomes more difficult, so the overall length of the first segment 11 is preferably 5 mm or greater. In light of the above, the overall length of the first segment 11 is preferably 5 mm-10 mm. The tip-end plug 112 constituting the first segment 11 may be produced to a predetermined length, and may then be produced by being cut to any length.

[0171] As shown in fig. 9, the flavor-generating segment 12 comprises the flavor source 221, and the cylindrical wrapping paper 222 covering the flavor source 221. The space in the flavor source 221 enabling communication between the first end 101 side and the second end 102 side of the flavor-generating segment 12 is preferably filled with a third filler material 300. This allows more of the flavor source 221 to be arranged in the flavor-generating segment 12. For example, the flavor-generating segment 12 may be filled with the first tobacco filling material such as cut tobacco, or the second tobacco filling material such as a tobacco sheet, as the third filler material 300. When the third filler material 300 is in the form of a sheet, the third filler material 300 may be arranged with folds, or may be

arranged concentrically around the center axis AX. There is no particular limitation as to the form of filling provided that the flavor-generating segment 12 can be formed with the desired airflow resistance. The flavor-generating segment 12 is preferably solid.

[0172] The airflow resistance per segment of the flavor-generating segment 12 is preferably 10 mmH₂O or greater, and preferably 15 mmH₂O or greater. A high airflow resistance enables more of the flavor source 221 to be arranged in the flavor-generating segment 120. If the airflow resistance is excessively high, it becomes difficult for the user to draw, so the airflow resistance is preferably 50 mmH₂O or less, more preferably 40 mmH₂O or less, and even more preferably 30 mmH₂O or less. In light of the above, the airflow resistance is preferably 10 mmH₂O-50 mmH₂O.

[0173] The diameter ratio of the flavor-generating segment 12 is preferably 70%-95% from the point of view of ease of gripping of the flavor-generating article 100 or producibility during manufacture.

[0174] The cooling segment 13 is disposed on the downstream side of the flavor source 221 and is formed by the abovementioned hollow tube portion 132. The cooling segment 13 comprises the ventilation holes V for promoting an inflow of air from outside of the flavor-generating article 100.

[0175] The second segment 14 is a segment disposed on the second end 102 side of the flavor-generating segment 12. The second segment 14 comprises: the filter plug 250 and hollow filter 240 arranged alongside each other in the longitudinal direction; and the outer plug wrap 260 covering the filter plug 250 and the hollow filter 240. There is no particular restriction on the second segment 14, provided that it has the function of a filter for adjusting the flow of air during flavor inhalation and for adjusting the amount of flavor or other materials mixed in, etc.

[0176] The second segment 14 comprises the hollow filter 240, thereby making it possible to increase the hardness and to suppress curving and bending of the second segment 14 which may function as a mouthpiece.

[0177] The second airflow resistance, which is the airflow resistance per segment of the second segment 14 is preferably 10 mmH₂O or greater, and preferably 15 mmH₂O or greater. If the second airflow resistance is excessively low, then the second segment 14 becomes softer, which makes it difficult to roll during production, and connection with other segments employing the tipping paper 270 becomes more difficult. The second airflow resistance is preferably 50 mmH₂O or less, more preferably 40 mmH₂O or less, and even more preferably 30 mmH₂O or less. If the second airflow resistance is excessively high, it becomes difficult for the user to draw. In light of the above, the second airflow resistance is preferably 10 mmH₂O-50 mmH₂O.

[0178] The second diameter ratio, which is the diameter ratio of the second segment 140, is preferably 85%-95% from the point of view of ease of drawing by the user or producibility during manufacture.

[0179] The flavor-generating article 100 according to this embodiment may be produced with an airflow resistance which is adjusted by adjusting the amount, materials or shape, etc. of the filler materials which fill segments including the first segment 11 and the second segment 14. Furthermore, the flavor-generating article 100 may be produced with a hardness which is adjusted by adjusting the amount, materials or shape of the filler materials which fill each segment, and by adjusting the thickness or materials of wrappers such as the first inner plug wrap 212 and the outer plug wrap 260 which are provided covering each segment.

[0180] Fig. 14 is an enlargement in cross section of a flavor inhaler 200 according to another embodiment. Fig. 14 shows a side view in cross section of the chamber 50 and the insertion guide member 34, parallel to the direction of insertion of the flavor-generating article 100. The end of the flavor inhaler 200 on the side where the opening 210 for insertion of the flavor-generating article 100 is formed is assumed to be a mouthpiece end 201. The cylindrical insertion guide member 34 is positioned on the opening 210 side, in other words the mouthpiece end 201 side, of the chamber 50, and the interior of the insertion guide member 34 communicates with the interior of the chamber 50. The flavor inhaler 200 may have a cylindrical gasket 36 disposed radially outward, with respect to a center axis AX1 of the insertion guide member 34, from an end portion of the chamber 50 on the chamber opening 52 side. The gasket 36 has a rib 37 on its inner circumferential surface on the chamber 50 side, and is configured such that a projecting portion 53 of the chamber 50 that projects radially outward from the tip end of the chamber 50 on the chamber opening 52 side is supported by the rib 37. The projecting portion 53 is further pressed in the insertion direction by an end face of the insertion guide member 34 from the opposite side to the rib 37.

[0181] The flavor inhaler 200 may have a sealing member 38 such as an O-ring positioned between the gasket 36 and the insertion guide member 34. This makes it possible to inhibit undesirable components, such as sidestream smoke generated by heating with the heating source 40, from adversely affecting equipment, etc., inside the flavor inhaler 200. The sealing member 38 is preferably disposed in contact with the inner circumferential surface of the gasket 36 and the outer circumferential surface of the insertion guide member 34. It should be noted that there is no particular limitation as to the mode of connection of the insertion guide member 34 and the chamber 50, which may be sealed with an adhesive, rather than an O-ring being provided.

[0182] Fig. 15 and 16 are a side view in cross section and a bottom view, respectively, showing an example of the insertion guide member 34. The insertion guide member 34 has projections 334, and in the example depicted, the projections 334 comprise a pair of first projections 334A and a pair of second projections 334B. Fig. 15 is a view in cross section of the insertion guide member 34 cut along the center axis AX1, showing the arrangement of the first

projections 334A and the second projections 334B in the direction of insertion of the flavor-generating article 100 Fig. 16 is a bottom view of the insertion guide member 34, showing the arrangement of the first projections 334A and the second projections 334B in the circumferential direction of the flavor-generating article 100. The chamber 50 and the insertion guide member 34 are preferably arranged coaxially, as in the example depicted. By arranging the first

projections 334A and the second projections 334B spaced apart from one another, the range of contact between the flavor-generating article 100 and the insertion guide member 34 is reduced. As a result, when the flavor-generating article 100 is withdrawn after flavor inhalation, breaking or bending of the flavor-generating article 100 can be inhibited. **[0183]** As shown in fig. 15 and 16, the first projections 334A and the second projections 334B may have different shapes. As shown in fig. 15, the pair of first projections 334A extend along the center axis AX1, and in a cross section of the insertion guide member 34 passing through the center axis AX1, the first projections 334A each have an inclined portion 336 that approaches the center axis AX1 closer toward the chamber 50 side in the insertion direction. The inclined portions 336 may be substantially linear or may be arc-shaped. Preferably, the inclined portions 336 have a convex shape facing radially inward. The first projections 334A press and grip the inserted flavor-generating article 100 from both sides. The insertion guide member 34 may thus be configured to guide the flavor-generating article 100 to be positioned at the desired position, when the flavor-generating article 100 is inserted into the flavor inhaler 200. This makes it possible to inhibit adverse effects such as the flavor-generating article 100 being placed at an unsuitable position so that the ventilation holes V are at least partly covered, and there being a drop in heating efficiency. For example, when the ventilation holes V are at least partly covered, this risks affecting aerosol delivery efficiency and it may also no longer be possible to provide a desired flavor because of a change in the proportion of air mixed with the aerosol.

[0184] As shown in fig. 16, the pair of second projections 334B have an inner circumferential surface curving along an imaginary circle 326 centered on the center axis AX1. The second projections 334B thus preferably have a concave shape facing radially inward. The second projections 334B can restrict the angle of the flavor-generating article 100 when the flavor-generating article 100 is withdrawn after flavor inhalation, thereby inhibiting breaking or bending of the flavor-generating article 100. From the viewpoint of ensuring that the angle of the flavor-generating article 100 is not excessively restricted, which would make it difficult to withdraw the flavor-generating article 100, the radius of the imaginary circle 326 is preferably greater than the radius of the flavor-generating article 100. In this embodiment, the inner circumferential surface of the cylindrical insertion guide member 34 thus comprises the projections 334, thereby facilitating insertion or removal of the flavor-generating article 100, and also allowing for a more flexible configuration. For example, a counterflow-type air flow path can also be easily formed by communication between the opening 210 and the voids 67. From such a perspective, the projections 334 are not particularly limited to the example depicted. For example, the insertion guide member 34 may have between 1 and 3, or 5 or more projections 334 with identical or different shapes.

[0185] Fig. 17 is a schematic side view in cross section of the flavor-generating system 1000 showing positions of the ventilation holes V. As described above, the cooling segment 13 (fig. 9) may have the plurality of ventilation holes V aligned in the circumferential direction with axial symmetry about the center axis AX of the flavor-generating article 100, in order to produce a more even flow of air. A state in which the flavor-generating article 100 is accommodated in the flavor inhaler 200 and positioned at the desired position will be referred to as an "accommodated state". In this embodiment, the flavor-generating system 1000 is configured so that, in the accommodated state, the ventilation holes V are positioned further to the mouthpiece end 201 side than end portions of the projections 334 on the mouthpiece end 201 side. This makes it possible to inhibit adverse effects such as the ventilation holes V being covered by the projections 334, etc. of the insertion guide member 34 or by another member, and there being a change in aerosol delivery efficiency. It should be noted that the ventilation holes V may be arranged at one or more positions in the insertion direction.

[0186] The end of a part of the flavor inhaler 200 and a part of the flavor-generating article 100 accommodated in the flavor inhaler 200 furthest to the mouthpiece end 201 side in the insertion direction will be referred to below as the "upper end", and the end on the opposite side in the insertion direction will be referred to below as the "lower end", as appropriate. The positions of the ventilation holes V are assumed to be positions at the lower ends (the ends on the first end 101 side) of the ventilation holes V. The abovementioned "end portions of the projections 334 on the mouthpiece end 201 side" refer to the upper ends of contact faces 335 of the projections 334 which contact the flavor-generating article 100. Furthermore, "positioned further to the mouthpiece end 201 side than end portions of the projections 334 on the mouthpiece end 201 side" includes a case in which the ventilation holes V are not covered by the contact faces 335, but parts of the projections 334 other than the contact faces 335 are facing the ventilation holes V without contact. If we define heights along the insertion direction, then a first height H1, which is the height of the lower ends (ends on the first end 101 side) of the ventilation holes V, may be greater than a second height H2, which is the height of the upper ends of the contact faces 335 of the projections 334. The flavor-generating article 1000 may thus be configured so that no part of the ventilation holes V is covered by the contact faces 335, and the ventilation holes V are entirely exposed in a space S10 on the mouthpiece end 201 side of the projections 334. This inhibits

adverse effects on aerosol delivery efficiency, etc.

[0187] For example, a length from the support face for the flavor-generating article 100 on the bottom portion 56 (fig. 5) of the chamber 50 to the upper ends of the contact faces 335 of the insertion guide member 34 can be made shorter than a length from the first end 101 (fig. 9) of the flavor-generating article 100 to the positions of the ventilation holes V.

[0188] The flavor-generating system 1000 is preferably configured so that the ventilation holes V are positioned further to the chamber 50 side than the position of the flavor inhaler 200 furthest to the mouthpiece end 201 side in the insertion direction. This makes it possible to inhibit adverse effects such as the ventilation holes V being covered by the user's fingers or mouth, etc., and there being a change in aerosol delivery efficiency. Here, "positioned further to the chamber 50 side than the position of the flavor inhaler 200 furthest to the mouthpiece end 201 side" includes a case in which the ventilation holes V are partly exposed outside of the flavor inhaler 200. For example, this also includes a case such as half of the ventilation holes V on the second end 102 (fig. 9) side being exposed outside of the mouthpiece end 201. Moreover, the slide cover 208 (corresponding to an example of a cover) is arranged at the mouthpiece end 201, and the slide cover 208 may include the position of the flavor inhaler 200 furthest to the mouthpiece end 201 side. Furthermore, the cover of the opening 210 is not limited to the slide cover 208, provided that it has an open state for opening the opening 210 and a closed state for closing the opening 210, and it may also move or rotate in a manner that does not involve sliding.

[0189] For example, a length from the support face for the flavor-generating article 100 on the bottom portion 56 (fig. 5) of the chamber 50 to the upper end of the mouthpiece end 201 can be made longer than the length from the first end 101 (fig. 9) of the flavor-generating article 100 to the positions of the ventilation holes V.

[0190] This embodiment is configured so that the ventilation holes V are positioned between the end portions of the projections 334 on the mouthpiece end 201 side and the position of the flavor inhaler 200 furthest to the mouthpiece end 201 side in the insertion direction. This makes it possible to inhibit adverse effects such as the ventilation holes V being covered by a member of the flavor inhaler 200 or the user's fingers, etc., and there being a change in aerosol delivery efficiency. Moreover, all of the ventilation holes V of the flavor-generating article 100 are preferably positioned between the end portions of the projections 334 on the mouthpiece end 201 side and the position of the flavor inhaler 200 furthest to the mouthpiece end 201 side in the insertion direction.

[0191] As shown in fig. 17, an air flow path F1 enabling communication between the ventilation holes V and the outside of the flavor-generating system 1000 in the accommodated state may be formed in the flavor-generating system 1000. The flavor inhaler 200 may have recesses 203 formed in the face of the housing 202 on the mouthpiece end 201 side. The opening 210 through which the flavor-generating article 100 is inserted may be formed on bottom faces of the recesses 203. In this case, the flavor-generating system 1000 may be configured so that, in the accommodated state, the air flow path F1 is formed between the inner wall face of the recesses 203 and the flavor-generating article 100. Furthermore, as shown in fig. 17, the slide cover 208 or a portion thereof may be configured to be movable on the inside of the recesses 203. In this case, in the accommodated state, and especially when the slide cover 208 is in the open position, it is possible to maintain the air flow path F1 between the slide cover 208 and the flavor-generating article 100. It is thus possible to maintain an air flow path to the ventilation holes V while inhibiting covering of the ventilation holes V by forming the air flow path F1 between at least one of the inner wall face of the recesses 203 and the slide cover 208, and the flavor-generating article 100. The air flow path F1 may also be called a ventilation hole air flow path through which air is introduced into the ventilation holes V. It should be noted that the air flow path F1 in the example depicted also includes a portion of the counterflow-type air flow path, but this is not limiting.

[0192] As shown in fig. 17, the first height H1 of the ventilation holes V may be lower than a third height H3 of the housing 202 furthest to the mouthpiece end 201 side. Furthermore, the first height H1 of the ventilation holes V may be lower than a fourth height H4 of the slide cover 208 furthest to the mouthpiece end 201 side. Alternatively, the first height H1 of the ventilation holes V may be lower than a fifth height H5 of the insertion guide member 34 furthest to the mouthpiece end 201 side. The flavor-generating system 1000 may thus be configured so that, in the accommodated state, the ventilation holes V are positioned further to the chamber 50 side than the position of the insertion guide member 34, the housing 202, or the slide cover 208 furthest to the mouthpiece end 201 side in the insertion direction. This enables the ventilation holes V and the air flow path F1 to be flexibly arranged according to the configuration of the flavor inhaler 200, while covering of the ventilation holes V is inhibited.

[0193] As described above in relation to fig. 7, etc. the chamber 50 of this embodiment may be configured to press at least part of the flavor-generating article 100 from both sides in the accommodated state. This makes it possible to inhibit misalignment of the ventilation holes V using the frictional force from pressing, and the risk of the ventilation holes V being covered can be reduced. For example, as shown in fig. 7, the inner surfaces 62a of the contact portions 62 of the chamber 50 press the flavor-generating article 100 from both sides, and misalignment of the flavor-generating article 100 can be inhibited by the frictional force acting between the inner surfaces 62a and the outer circumferential surface of the flavor-generating article 100.

[0194] The chamber 50 is preferably configured to press at least part of the cooling segment 13 (fig. 9) from both

sides in the accommodated state. As can be seen from fig. 7 and 10, the contact portions 62 of the chamber 50 may be configured to press the cooling segment 13 from both sides. The cooling segment 13 has a different structure from the flavor-generating portion 220, so when the flavor-generating article 100 is inserted up to the position inside the chamber 50 where the cooling segment 13 is pressed, the user will be able to check that the flavor-generating article 100 has been properly inserted by the change in insertion resistance. By virtue of this configuration, there is a greater possibility of the flavor-generating article 100 being suitably placed at the desired position, and the risk of the ventilation holes V being covered can be further reduced. From this perspective, the cooling segment 13 is preferably harder than the flavor-generating portion 220, for example.

[0195] Embodiments of the present invention have been described above, but the present invention is not limited to those embodiments, and various modifications are possible within the scope of the technical concept disclosed in the claims, specification and drawings. Moreover, any shape or material not directly stated in the specification or drawings is also within the scope of the technical concept of the invention of the present application, provided that it exhibits the action and effect of the invention of the present application.

[0196] According to a first aspect of the present invention, a flavor-generating system comprises a flavor-generating article and a heat-not-burn flavor inhaler; the flavor-generating article comprises a flavor source and a cooling segment disposed on a downstream side of the flavor source; the cooling segment comprises a ventilation hole for promoting an inflow of air from outside of the flavor-generating article; the flavor inhaler comprises a mouthpiece end, a chamber in which at least part of the flavor-generating article is accommodated, and a cylindrical member disposed on the mouthpiece end side of the chamber; the cylindrical member has a projection on an inner circumferential surface thereof; and the flavor-generating system is configured so that, in an accommodated state in which the flavor-generating article is accommodated in the flavor inhaler and positioned at a desired position, the ventilation hole is positioned between an end portion of the projection on the mouthpiece end side and a position of the flavor inhaler furthest to the mouthpiece end side in a direction of insertion of the flavor-generating article.

[0197] According to a second aspect of the present invention, which is in accordance with the first aspect, the cylindrical member is configured to guide the flavor-generating article to be positioned at the desired position, when the flavor-generating article is inserted into the flavor inhaler.

[0198] According to a third aspect of the present invention, which is in accordance with the first or second aspect, the flavor inhaler comprises a housing, an opening through which the flavor-generating article is inserted, and a cover; the cover has an open state for opening the opening and a closed state for closing the opening; and the flavor-generating system is configured so that, in the accommodated state, the ventilation hole is positioned further to the chamber side than the position of the cylindrical member, the housing, or the cover furthest to the mouthpiece end side in the insertion direction.

[0199] According to a fourth aspect of the present invention, which is in accordance with the third aspect, a recess is formed in a face of the housing on the mouthpiece end side; the opening is formed in a bottom face of the recess; at least part of the cover is configured to be movable on the inside of the recess; and the flavor-generating system is configured so that, in the accommodated state, an air flow path is formed between at least one of an inner wall face of the recess and the cover, and the flavor-generating article.

[0200] According to a fifth aspect of the present invention, which is in accordance with any of the first to fourth aspects, the chamber is configured to press at least part of the flavor-generating article from both sides in the accommodated state.

[0201] According to a sixth aspect of the present invention, which is in accordance with the fifth aspect, the chamber is configured to press at least part of the cooling segment from both sides in the accommodated state.

[0202] According to a seventh aspect of the present invention, which is in accordance with any of the first to sixth aspects, the cooling segment comprises a plurality of the ventilation holes aligned in a circumferential direction.

[0203] According to an eighth aspect of the present invention, which is in accordance with any of the first to seventh aspects, the flavor-generating article is a tobacco stick.

REFERENCE SIGNS LIST

[0204]

- 11: First segment
- 12: Flavor-generating segment
- 13: Cooling segment
- 14: Second segment
- 20: Power source unit
- 30: Atomization unit
- 34: Insertion guide member

40: Heating source
 50: Chamber
 62: Contact portion
 80: Control unit
 100: Flavor-generating article
 101: First end of flavor-generating article
 102: Second end of flavor-generating article
 200: Flavor inhaler
 201: Mouthpiece end
 203: Recess
 208: Slide cover
 210: Opening
 220: Flavor-generating portion
 221: Flavor source
 334: Projection
 334A: First projection
 334B: Second projection
 335: Contact face
 1000: Flavor-generating system
 AX: Center axis of flavor-generating article
 AX1: Center axis of insertion guide member
 H1: First height
 H2: Second height
 H3: Third height
 H4: Fourth height
 H5: Fifth height
 F1: Air flow path
 V: Ventilation hole

Claims

1. A flavor-generating system comprising a flavor-generating article and a heat-not-burn flavor inhaler, wherein

the flavor-generating article comprises a flavor source and a cooling segment disposed on a downstream side of the flavor source,
 the cooling segment comprises a ventilation hole for promoting an inflow of air from outside of the flavor-generating article,
 the flavor inhaler comprises a mouthpiece end, a chamber in which at least part of the flavor-generating article is accommodated, and a cylindrical member disposed on the mouthpiece end side of the chamber,
 the cylindrical member has a projection on an inner circumferential surface thereof, and
 the flavor-generating system is configured so that, in an accommodated state in which the flavor-generating article is accommodated in the flavor inhaler and positioned at a desired position, the ventilation hole is positioned between an end portion of the projection on the mouthpiece end side and a position of the flavor inhaler furthest to the mouthpiece end side in a direction of insertion of the flavor-generating article.

2. The flavor-generating system as claimed in claim 1, wherein the cylindrical member is configured to guide the flavor-generating article to be positioned at the desired position, when the flavor-generating article is inserted into the flavor inhaler.

3. The flavor-generating system as claimed in claim 1 or 2, wherein the flavor inhaler comprises a housing, an opening through which the flavor-generating article is inserted, and a cover,

the cover has an open state for opening the opening and a closed state for closing the opening, and the flavor-generating system is configured so that, in the accommodated state, the ventilation hole is positioned further to the chamber side than the position of the cylindrical member, the housing, or the cover furthest to the mouthpiece end side in the insertion direction.

4. The flavor-generating system as claimed in claim 3, wherein
a recess is formed in a face of the housing on the mouthpiece end side,

the opening is formed in a bottom face of the recess,

at least part of the cover is configured to be movable on the inside of the recess, and

the flavor-generating system is configured so that, in the accommodated state, an air flow path is formed
between at least one of an inner wall face of the recess and the cover, and the flavor-generating article.

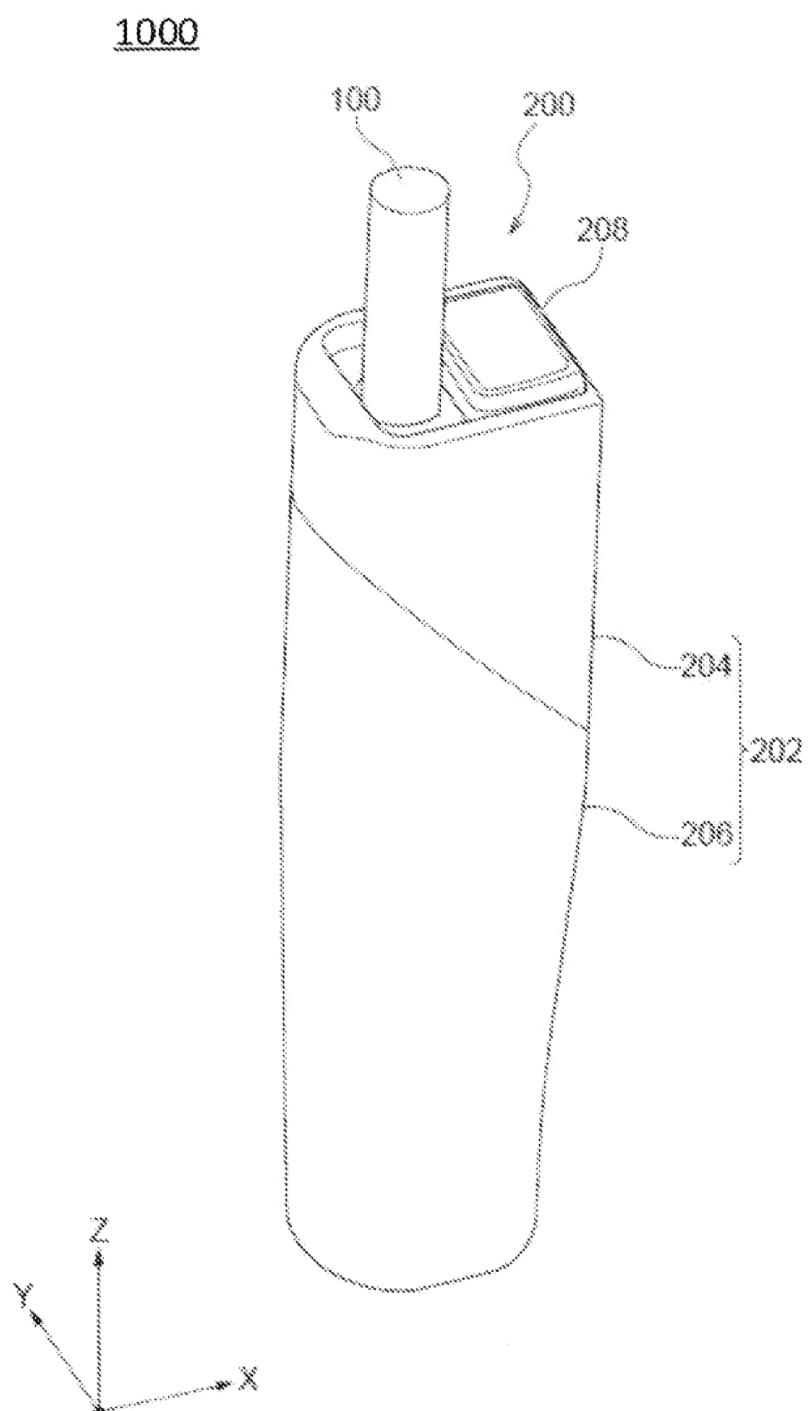
5. The flavor-generating system as claimed in any one of claims 1 to 4, wherein the chamber is configured to press
at least part of the flavor-generating article from both sides in the accommodated state.

6. The flavor-generating system as claimed in claim 5, wherein the chamber is configured to press at least part of the
cooling segment from both sides in the accommodated state.

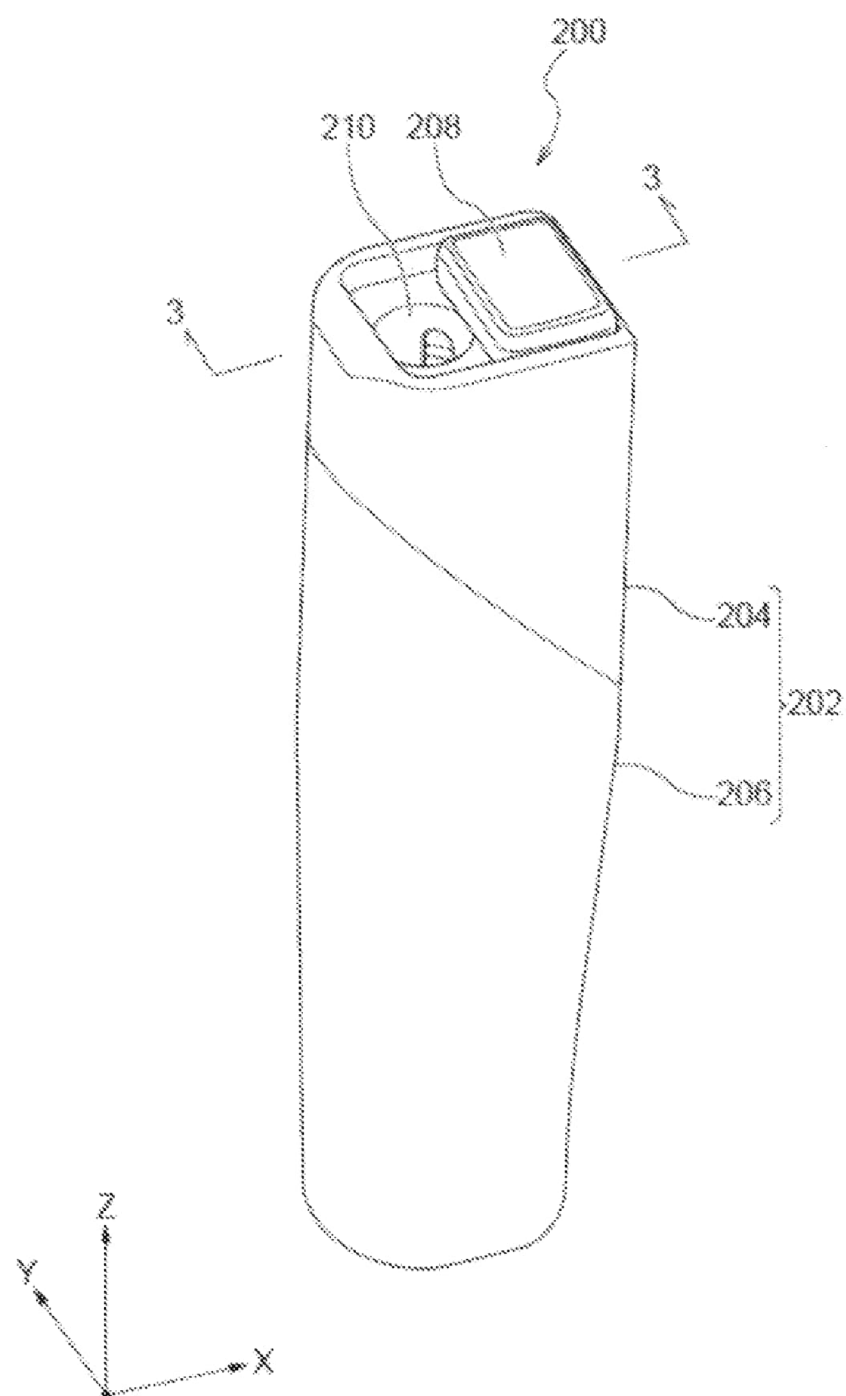
7. The flavor-generating system as claimed in any one of claims 1 to 6, wherein the cooling segment comprises a
plurality of the ventilation holes aligned in a circumferential direction.

8. The flavor-generating system as claimed in any one of claims 1 to 7, wherein the flavor-generating article is a
tobacco stick.

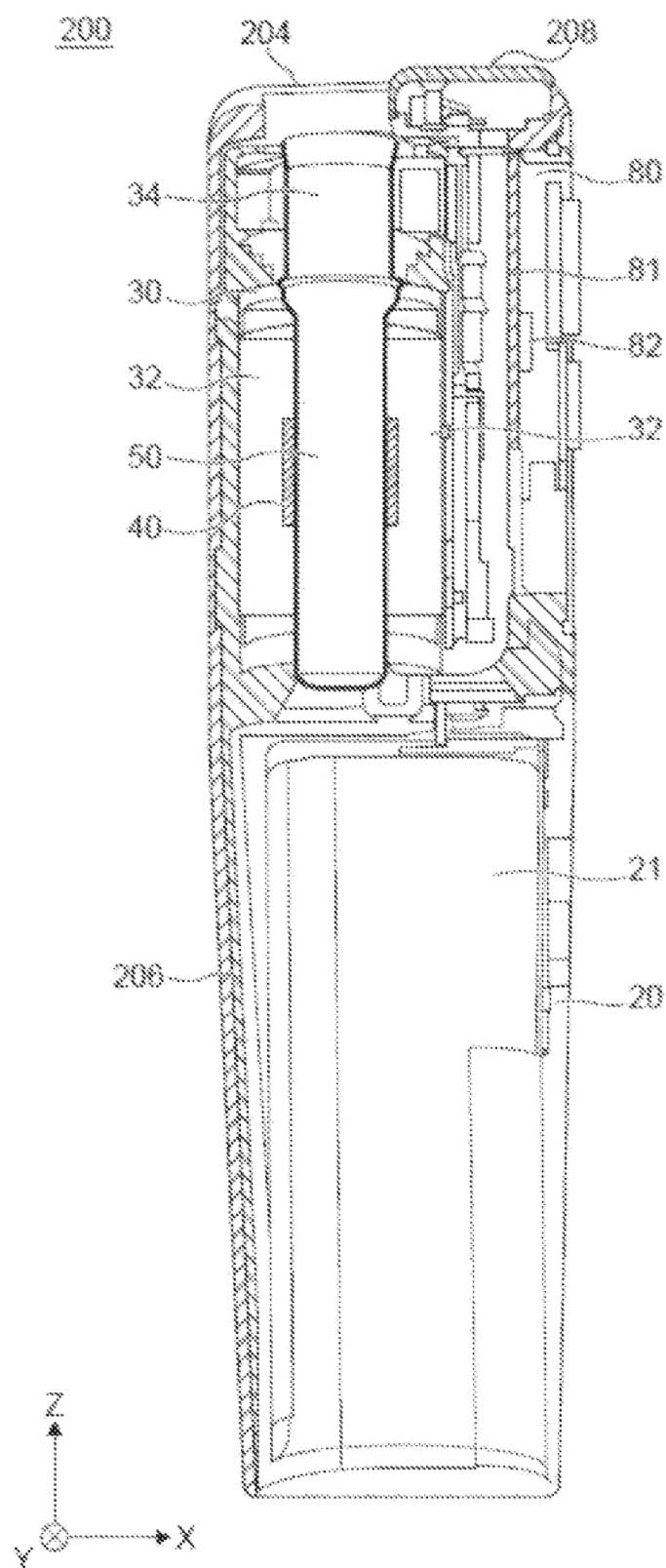
[Fig. 1]



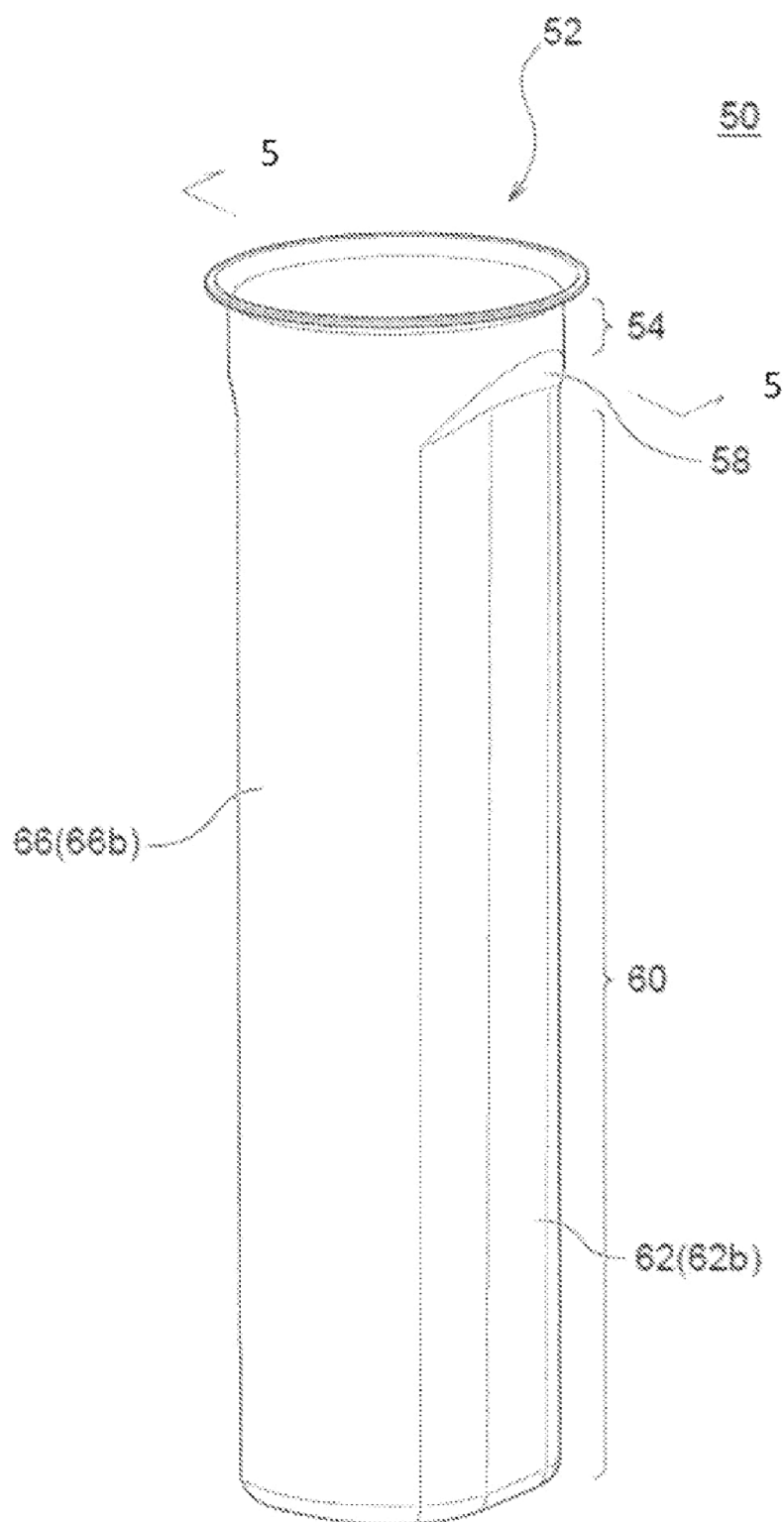
[Fig. 2]



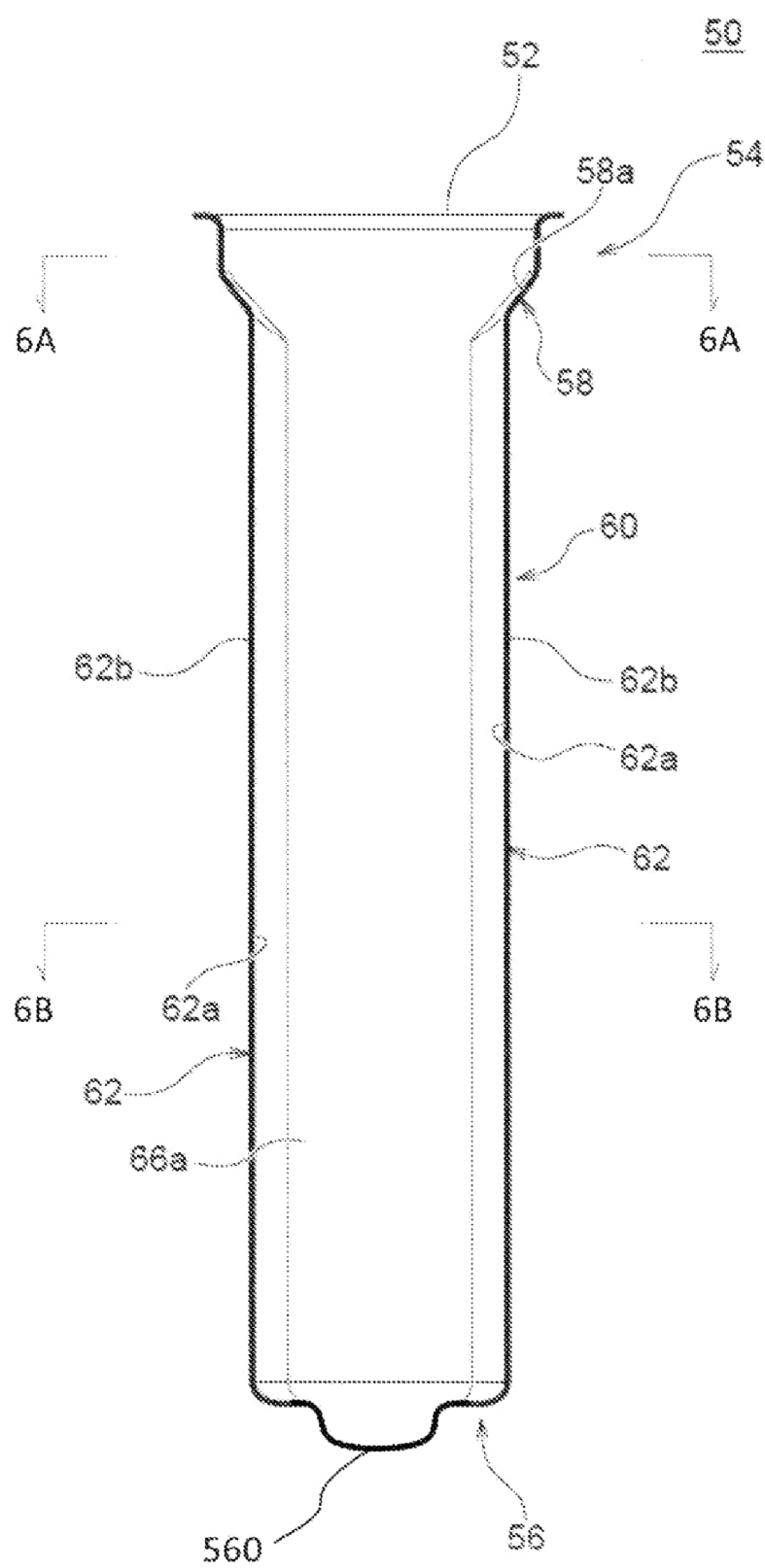
[Fig. 3]



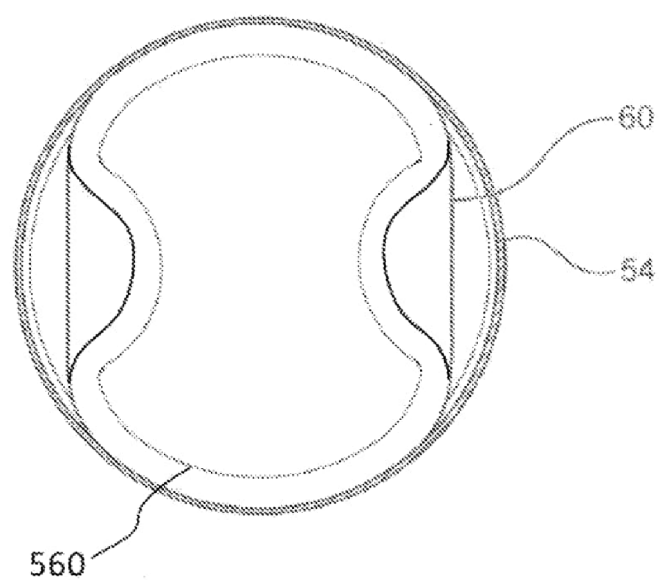
[Fig. 4]



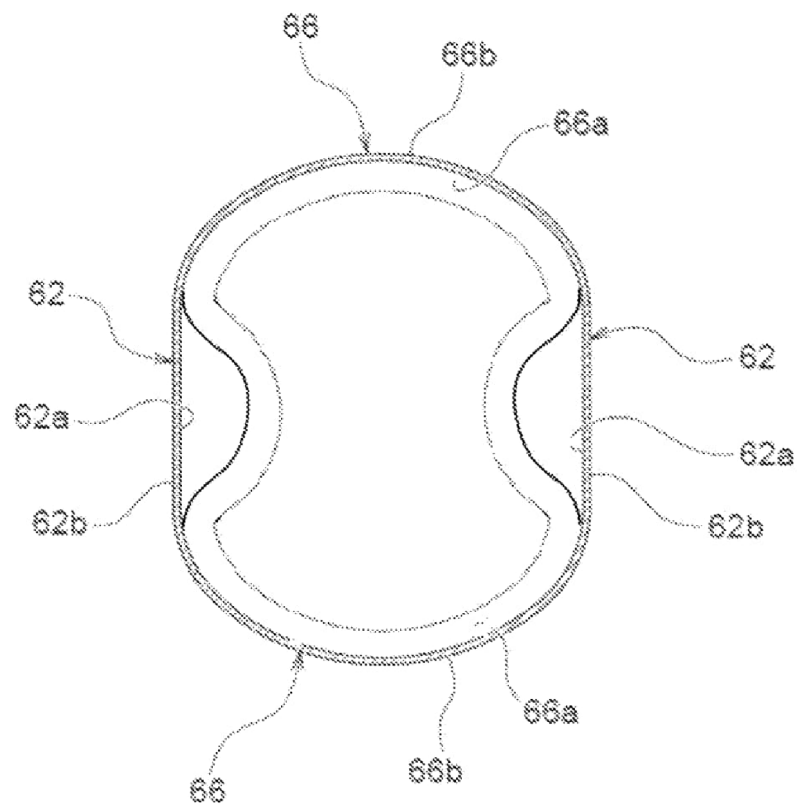
[Fig. 5]



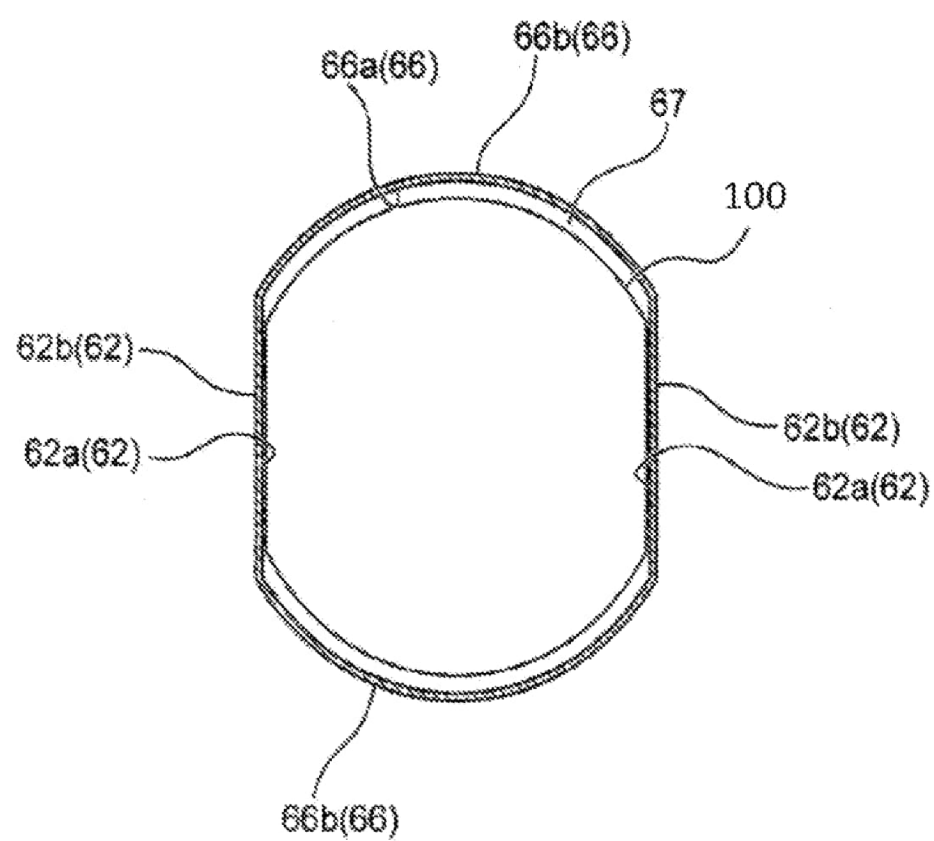
[Fig. 6A]



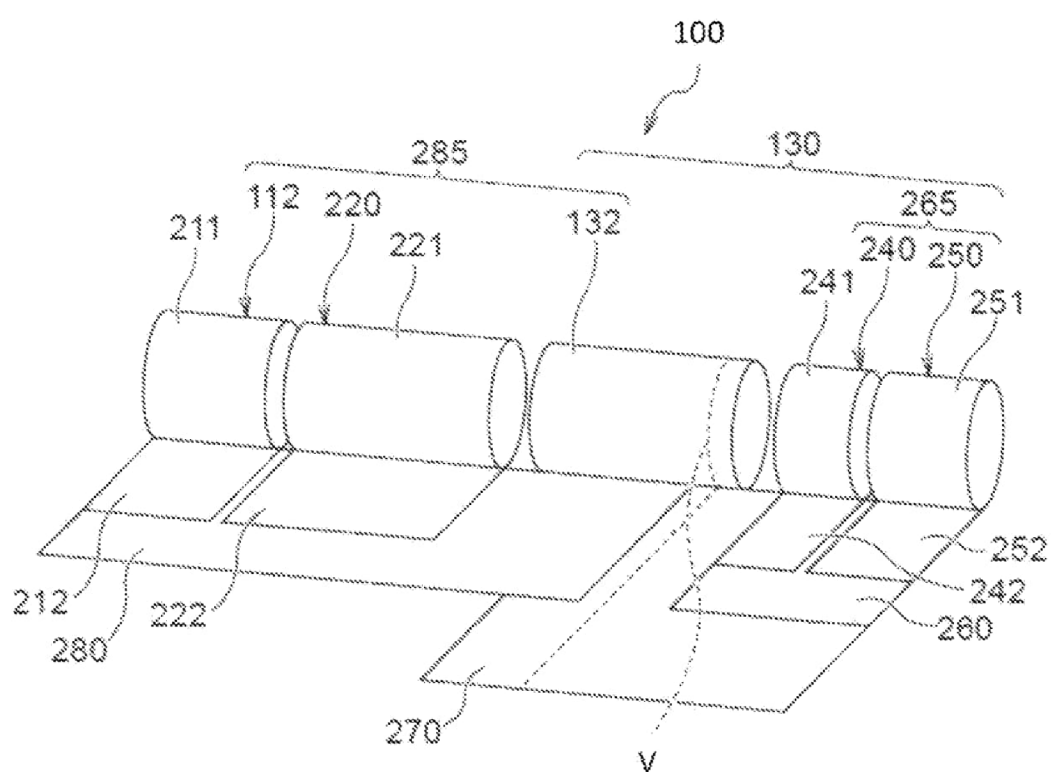
[Fig. 6B]



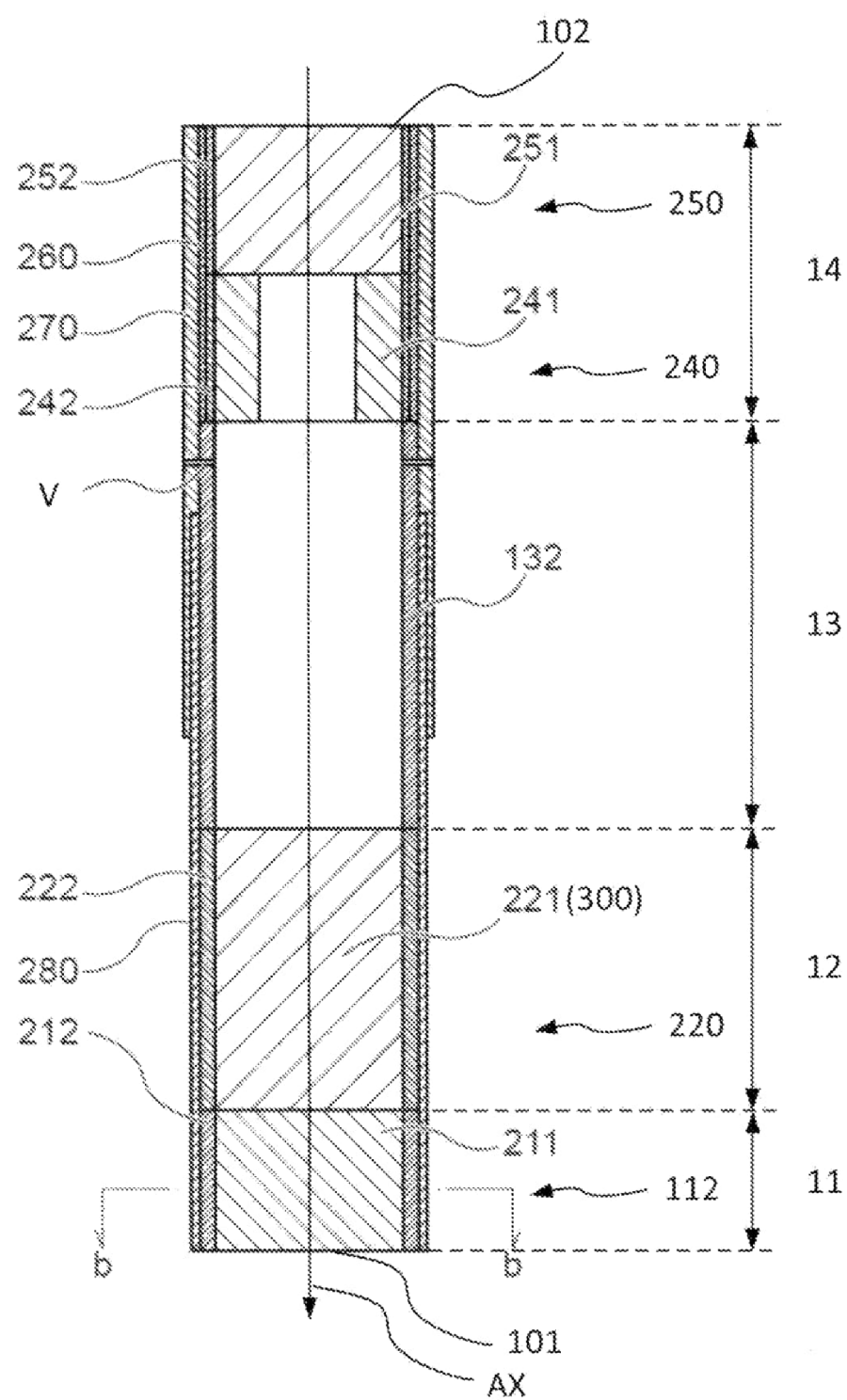
[Fig. 7]



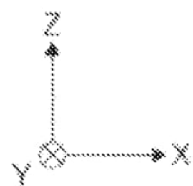
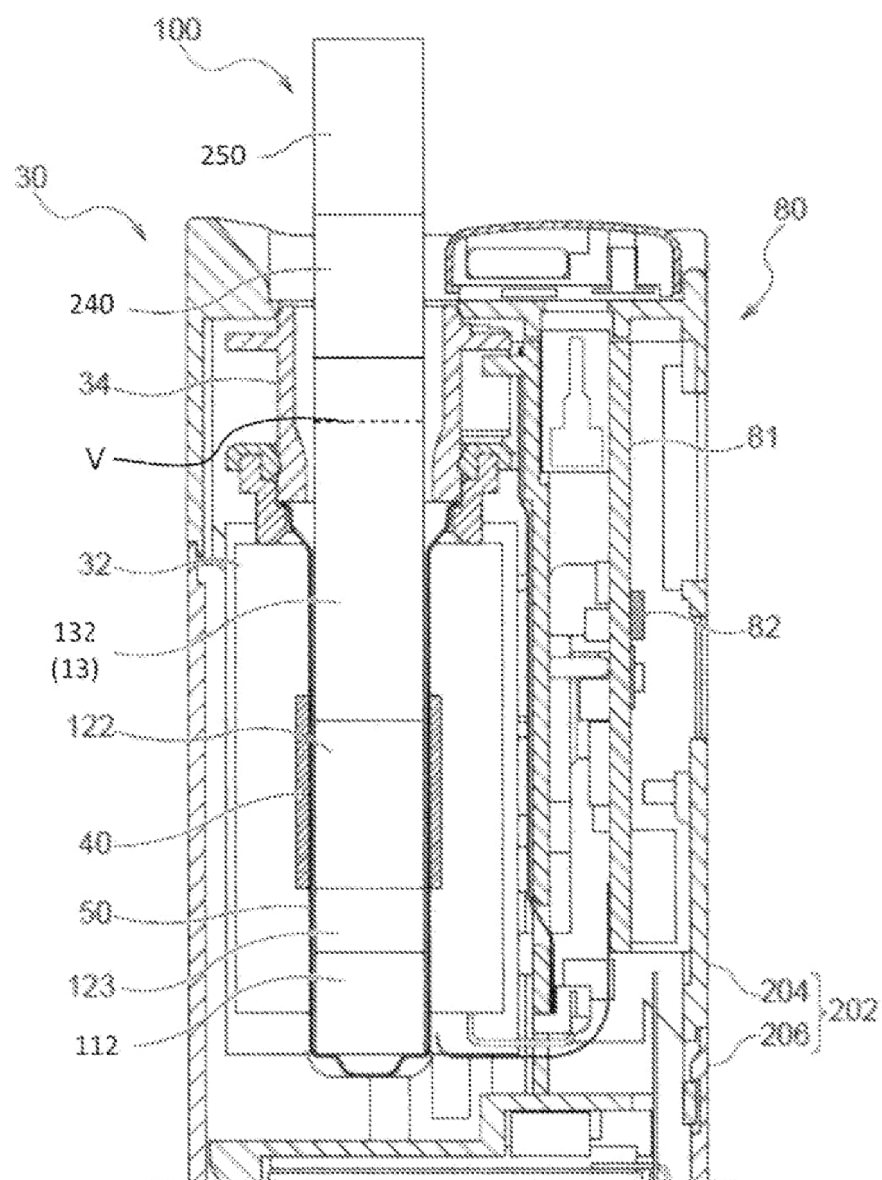
[Fig. 8]



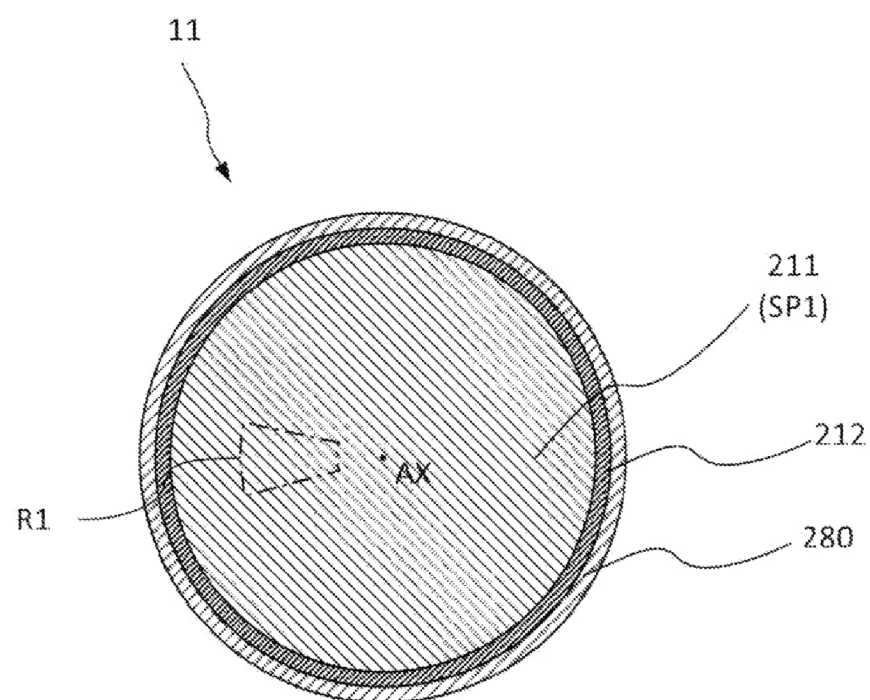
[Fig. 9]



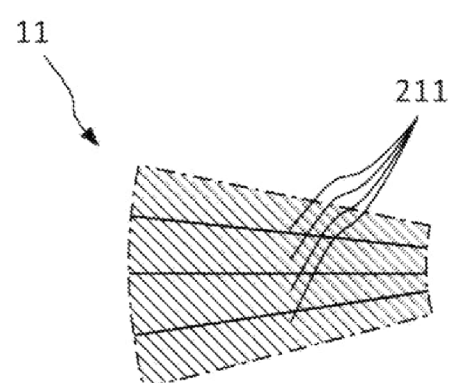
[Fig. 10]



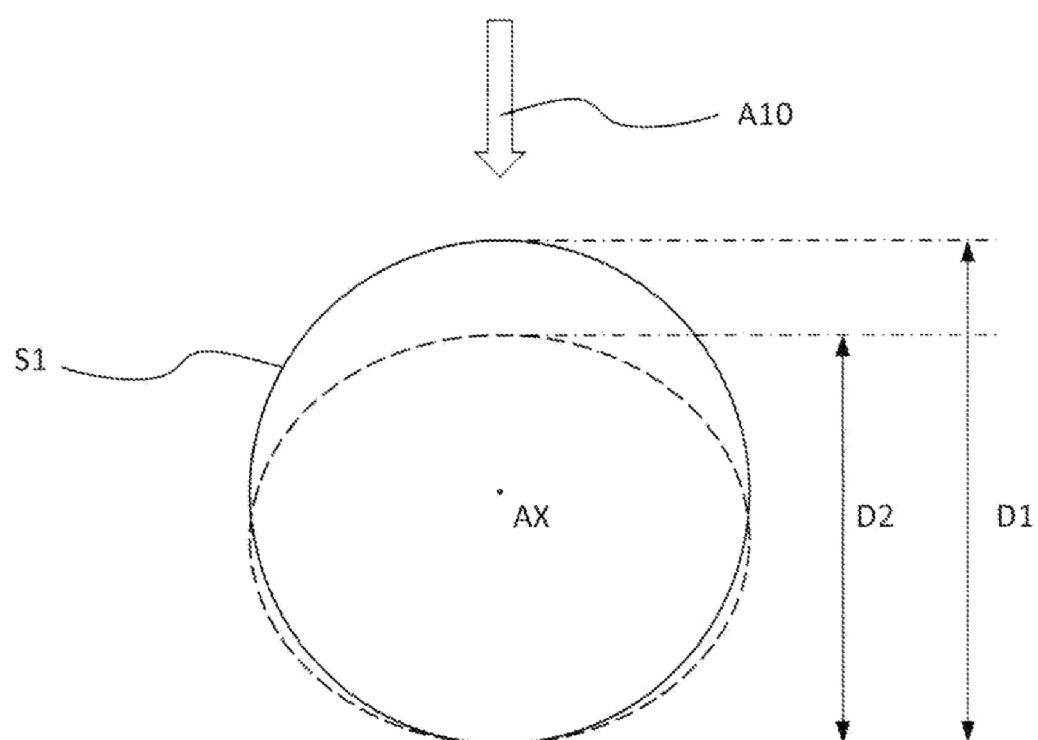
[Fig. 11]



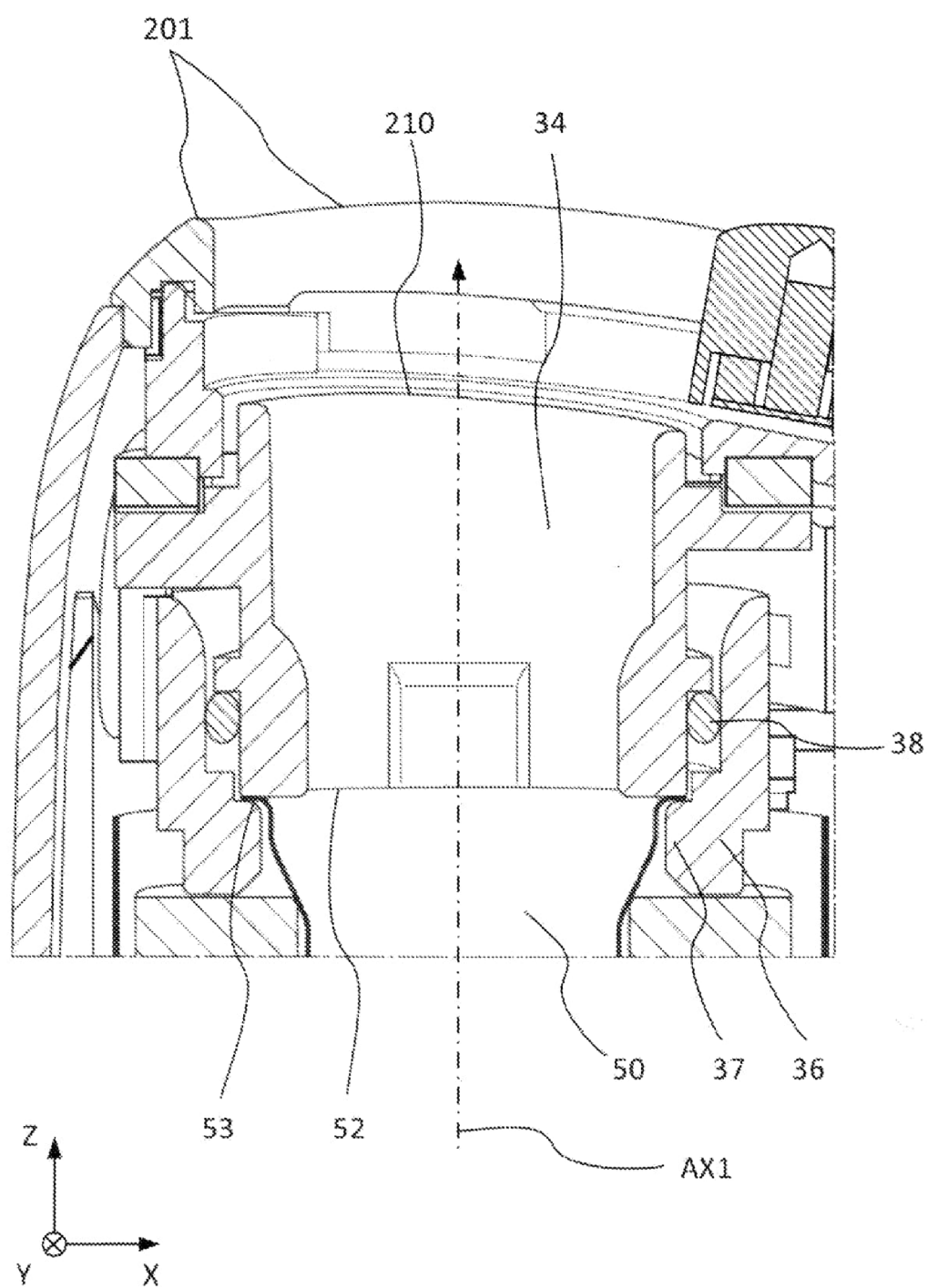
[Fig. 12]



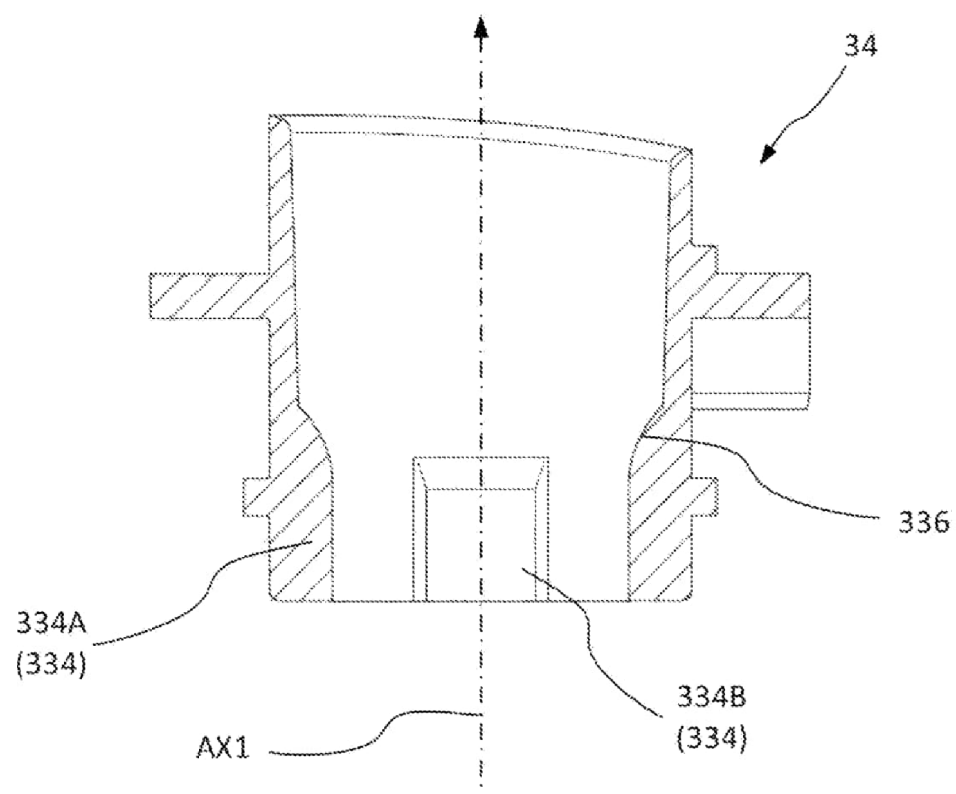
[Fig. 13]



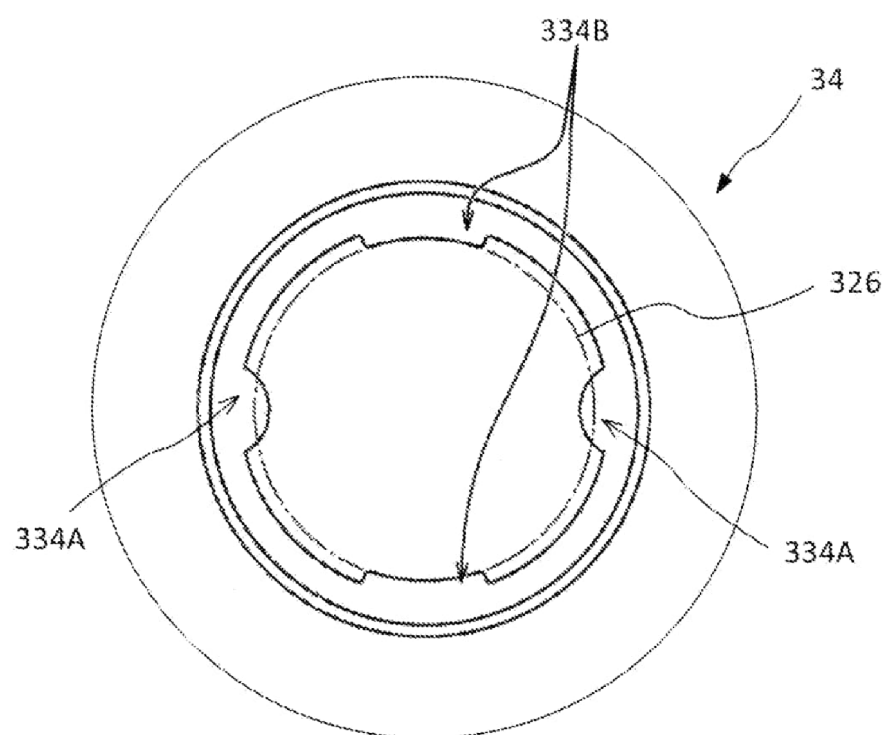
[Fig. 14]



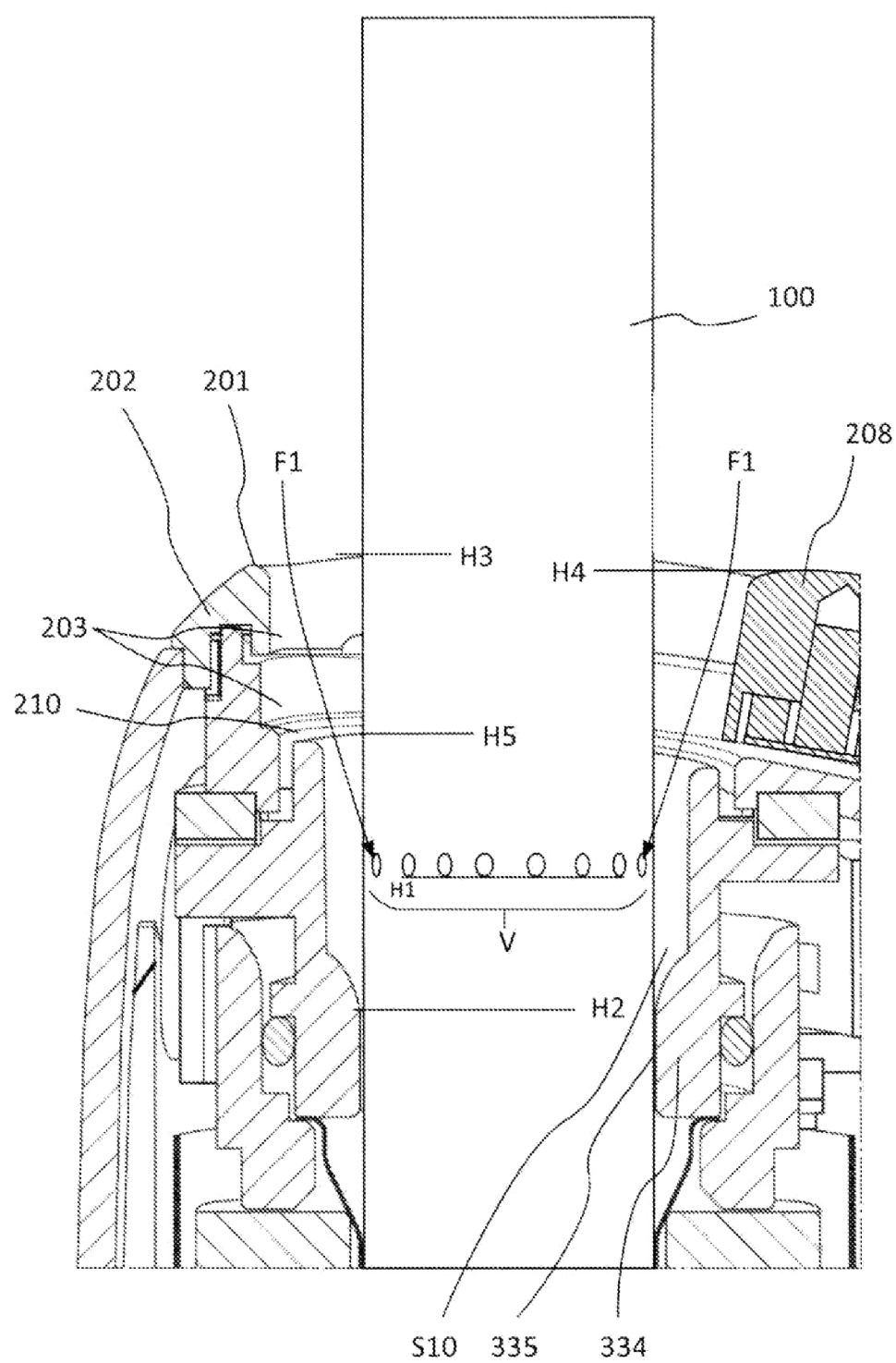
[Fig. 15]



[Fig. 16]



[Fig. 17]



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2023/044375

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/40(2020.01)i; A24F 40/20(2020.01)i
FI: A24F40/40; A24F40/20

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; A24F40/20

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

Published examined utility model applications of Japan 1922-1996
Published unexamined utility model applications of Japan 1971-2024
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	CN 218104922 U (SHENZHEN SMOORE TECHNOLOGY LIMITED) 23 December 2022 (2022-12-23) paragraphs [0034]-[0044], [0050], fig. 1, 3-4	1-2, 7-8
Y		3-6
Y	JP 2023-506997 A (NICOVENTURES TRADING LTD.) 20 February 2023 (2023-02-20) paragraph [0164], fig. 7-10	3-4
Y	JP 2022-169002 A (JAPAN TOBACCO INC.) 09 November 2022 (2022-11-09) paragraphs [0046]-[0047], fig. 4-6	5-6

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

☒ See patent family annex.

* Special categories of cited documents:

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

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Name and mailing address of the ISA/JP

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

Authorized officer

Telephone No.

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