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(54) **FLAVOR INHALER AND FLAVOR INHALING SYSTEM**

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(57) **ABSTRACT**

A flavor inhaler that includes a heater comprising a plurality of heating elements and at least one first electrode, wherein the plurality of heating elements are stacked with the at least one first electrode interposed therebetween.

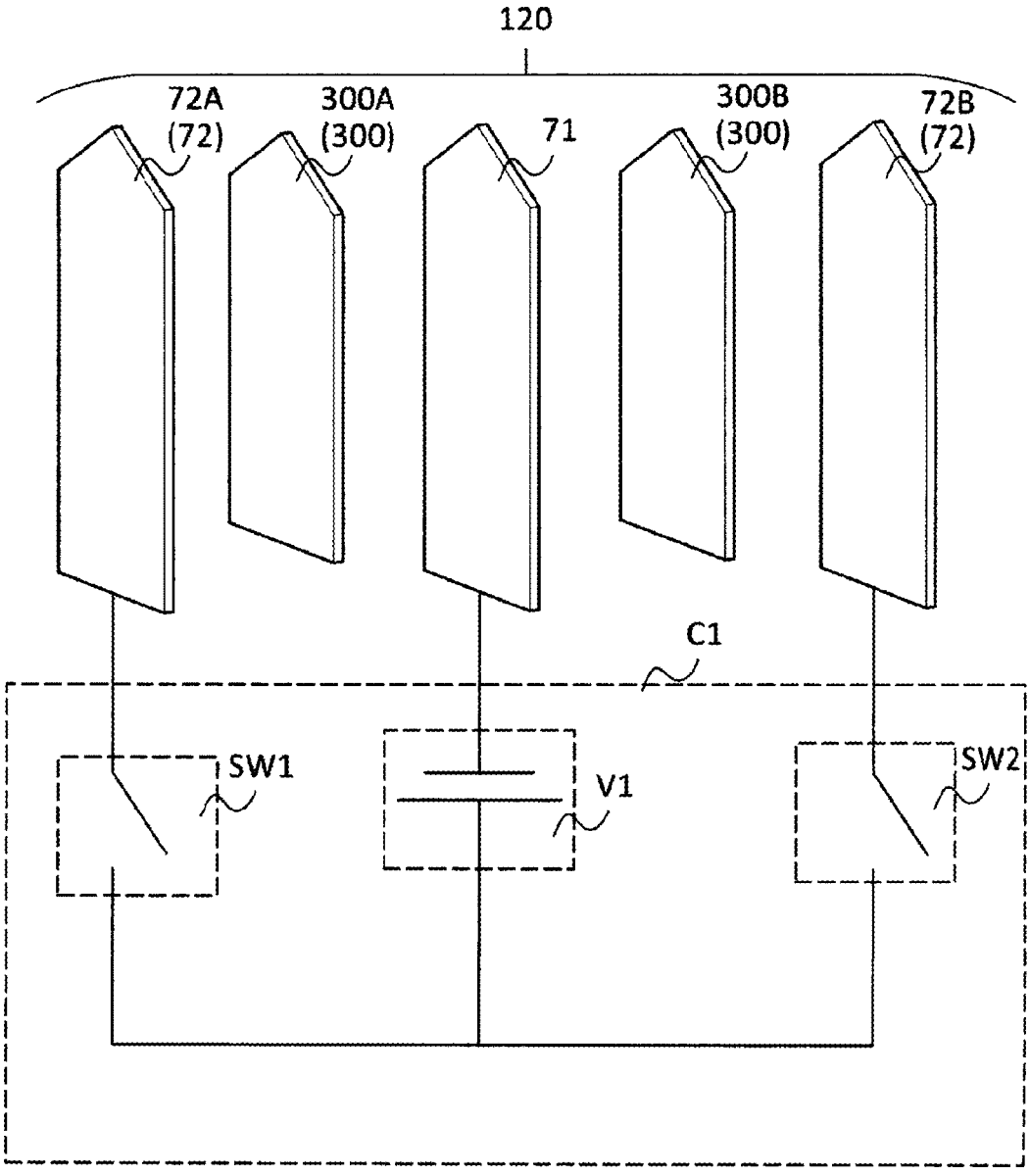


Fig. 1

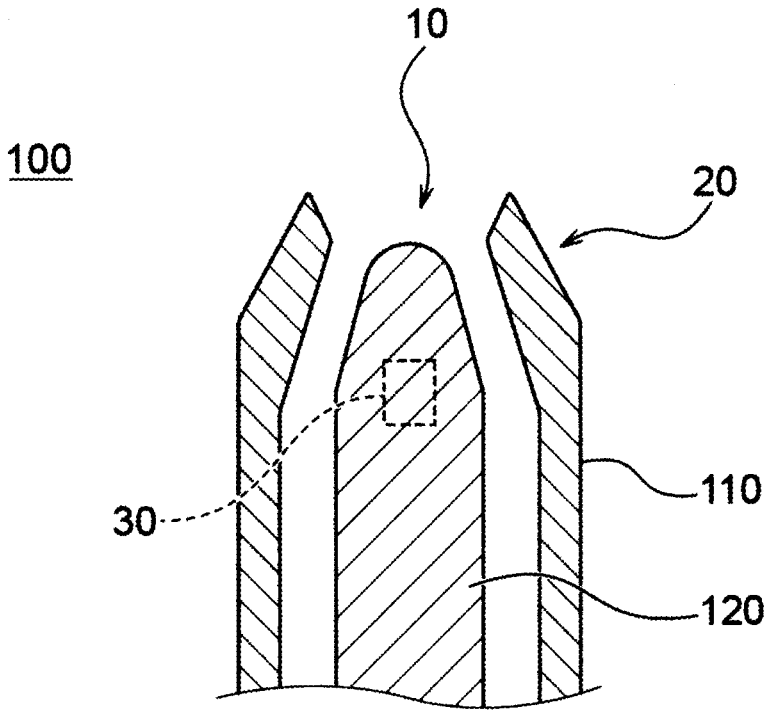


Fig. 2

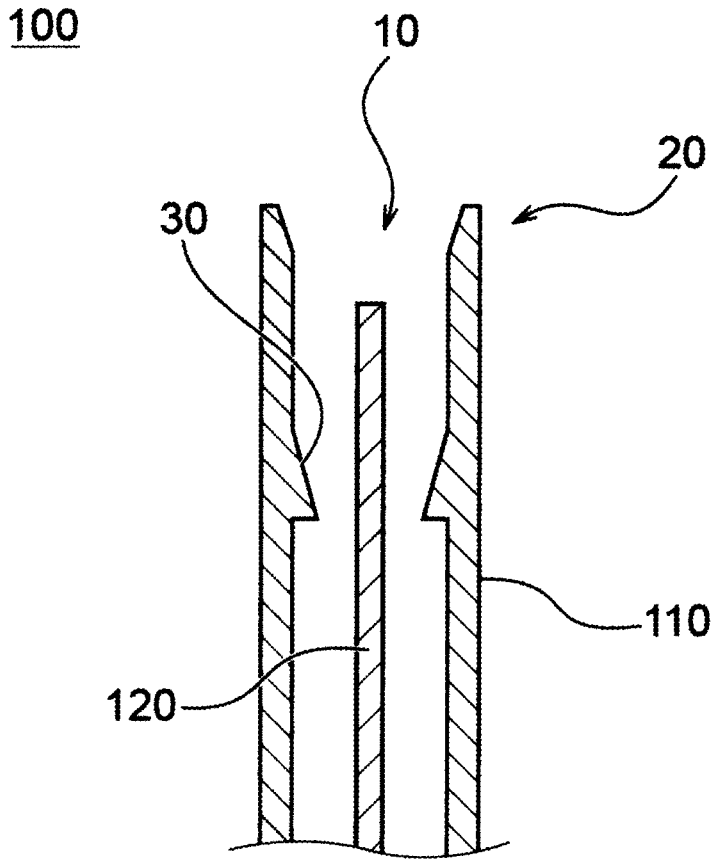


Fig. 3

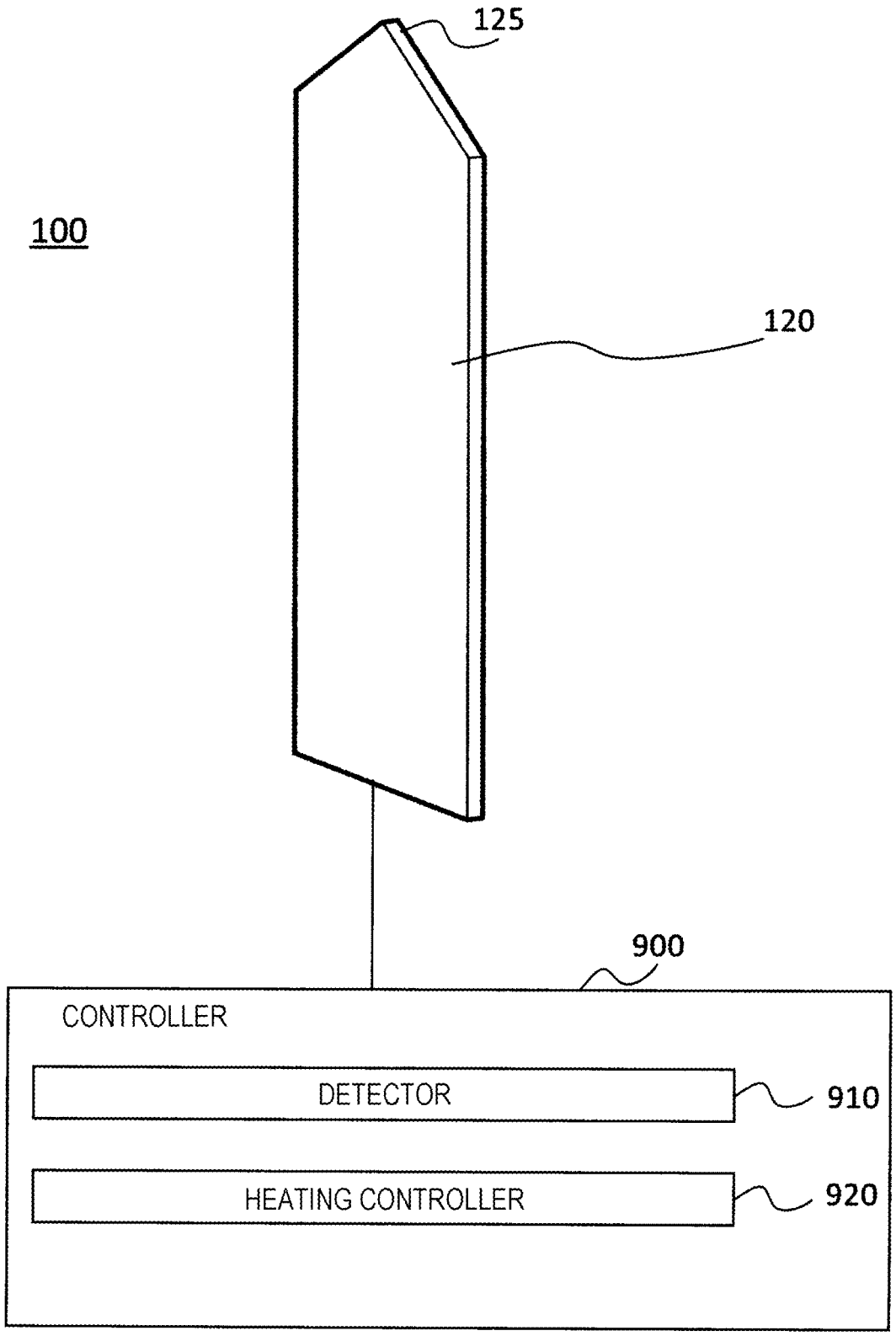

125
100
120
900
CONTROLLER
DETECTOR
910
HEATING CONTROLLER
920

Fig. 4

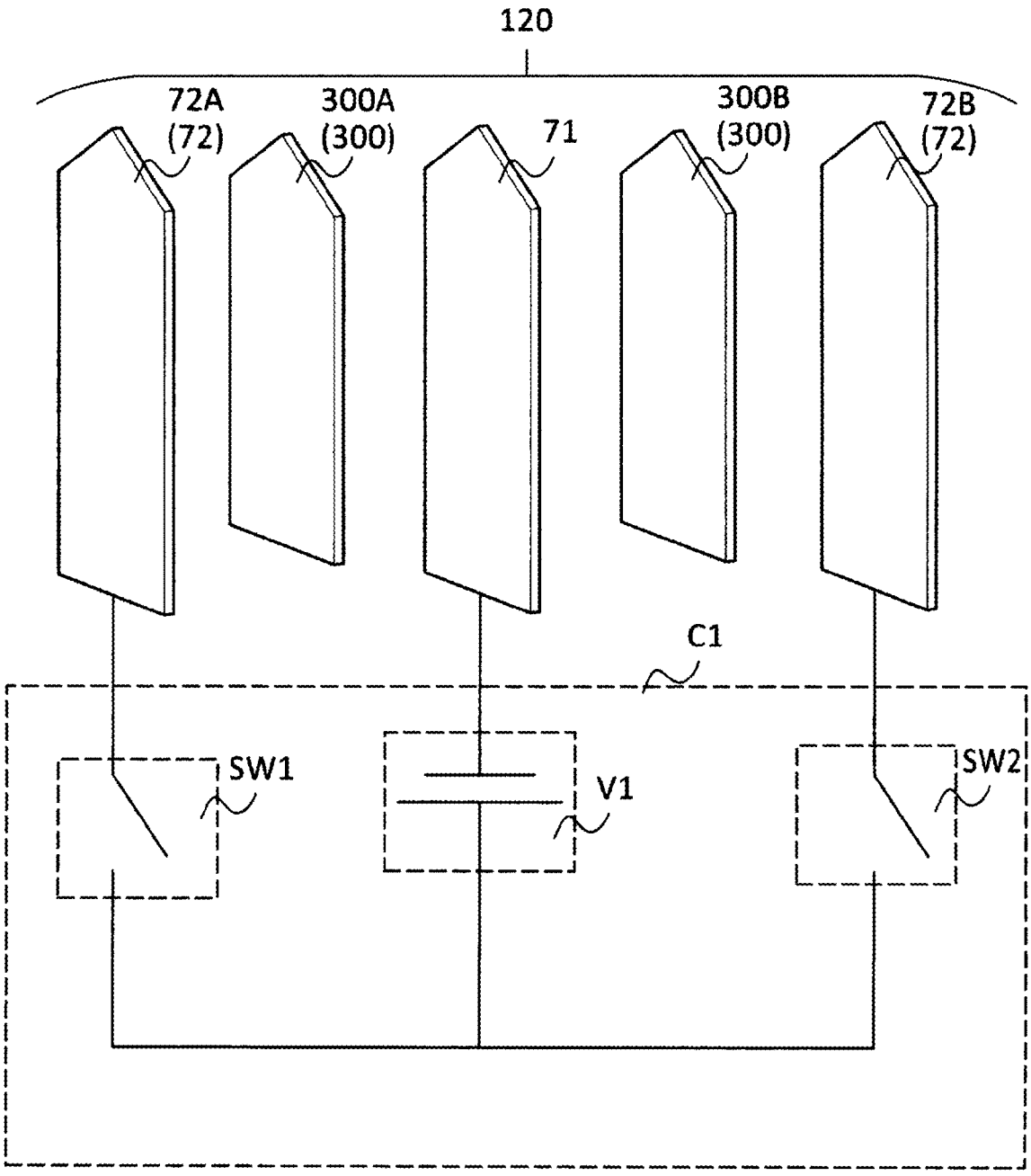


Fig. 5A

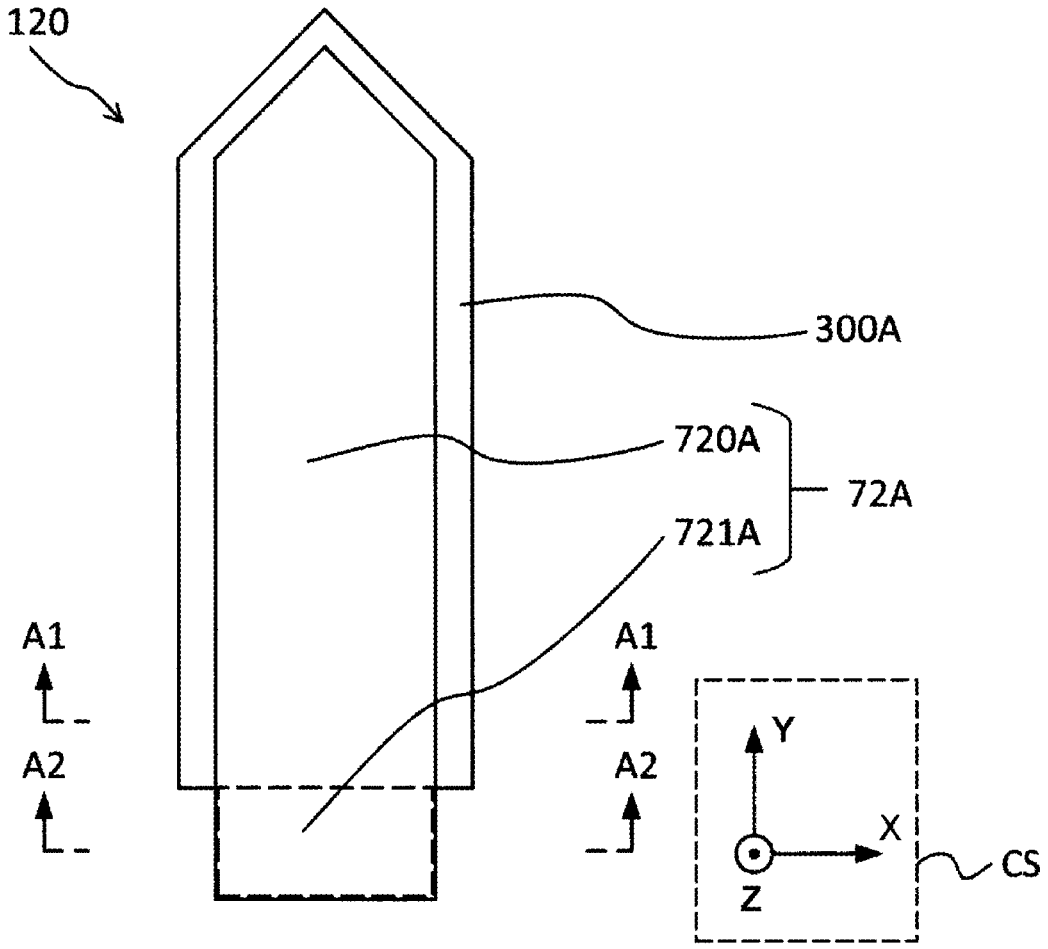


Fig. 5B

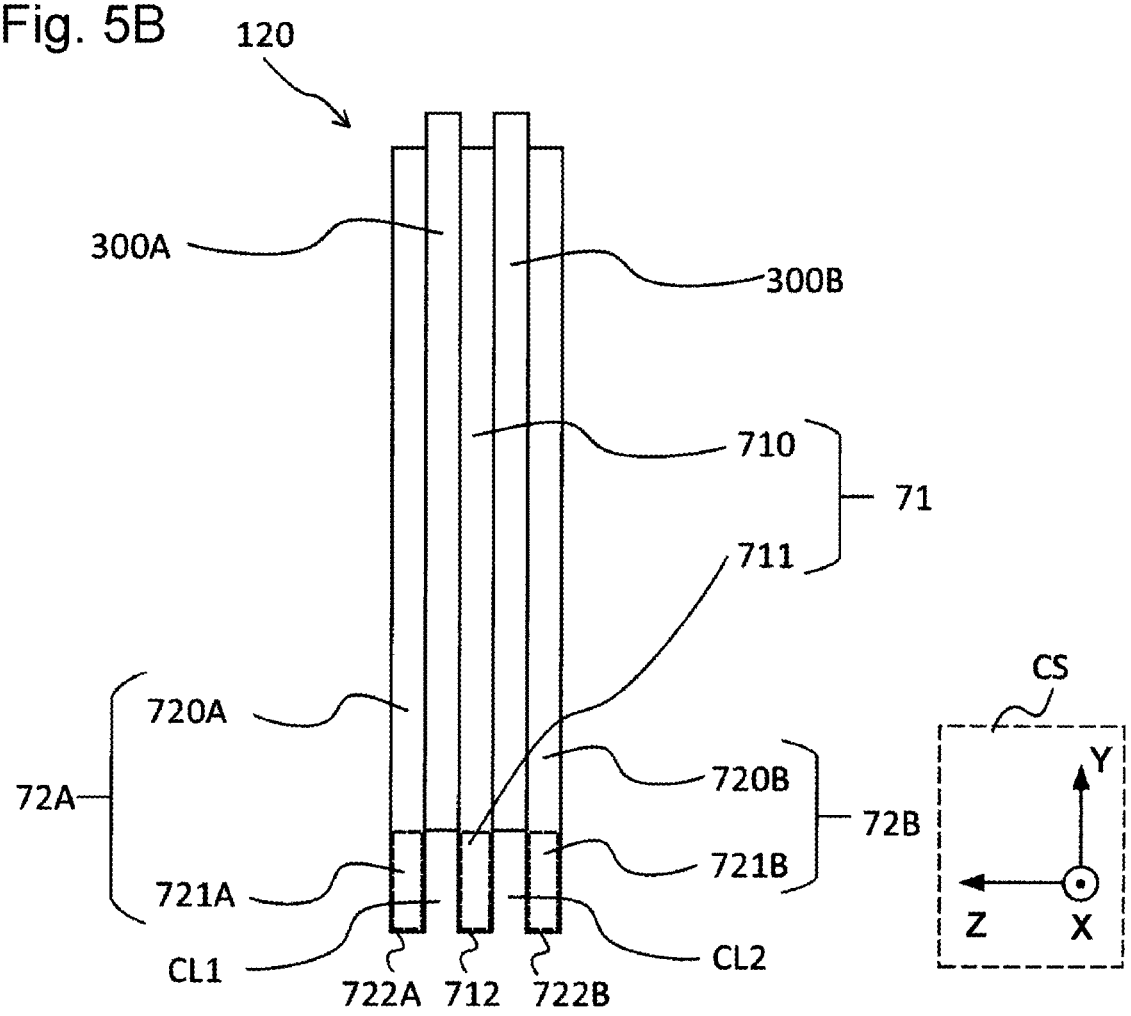

120
300A
300B
710
71
711
CS
720A
72A
720B
72B
Y
721A
721B
Z
X
CL1
CL2
722A
712
722B

Fig. 6A

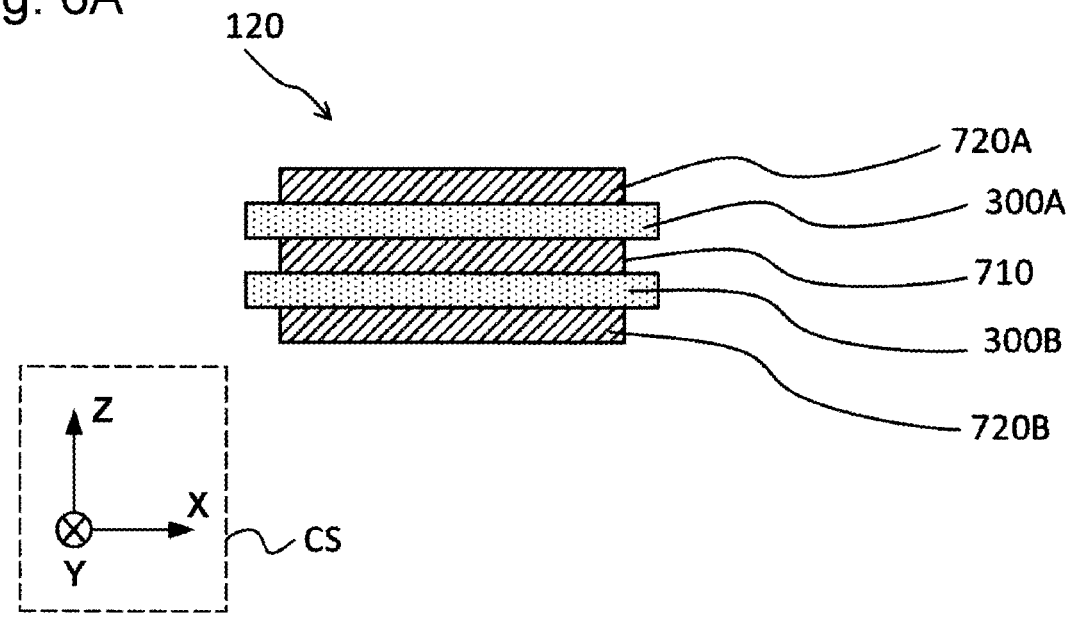

120
720A
300A
710
300B
720B
Z
X
Y
CS

Fig. 6B

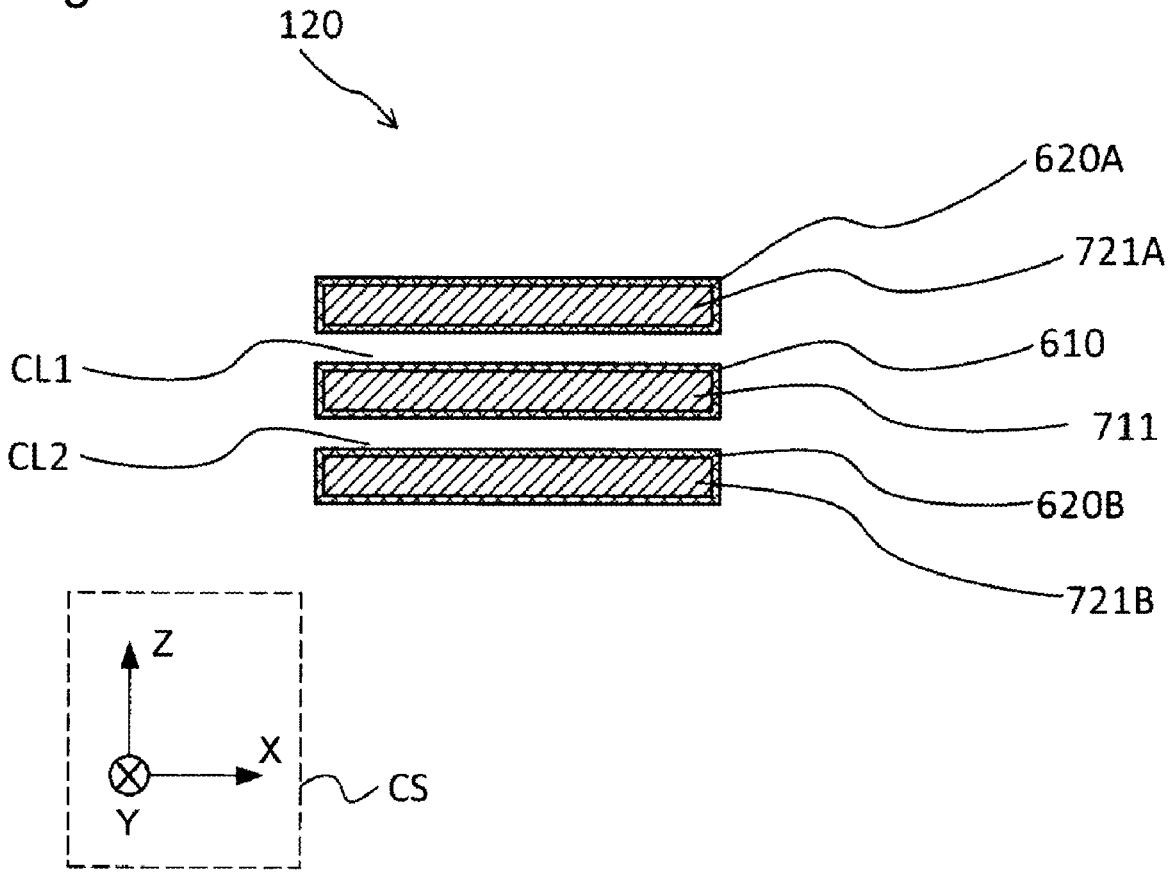


Fig. 7A

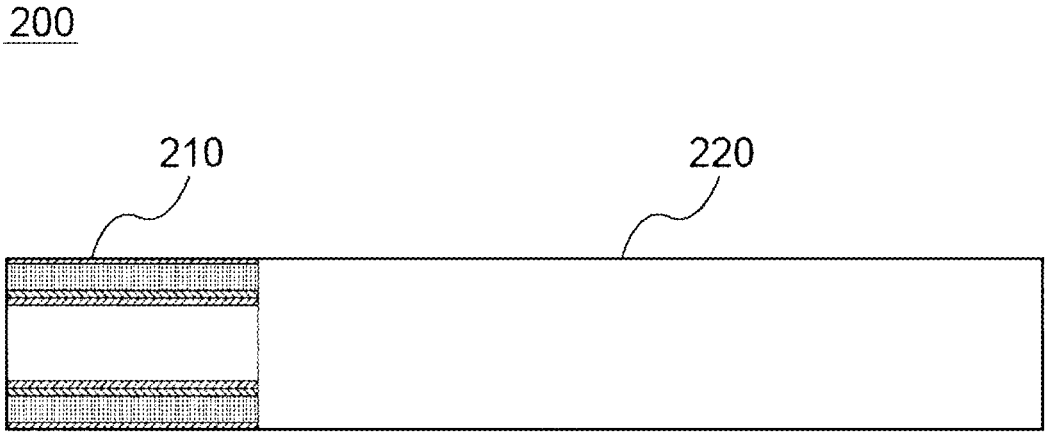


Fig. 7B

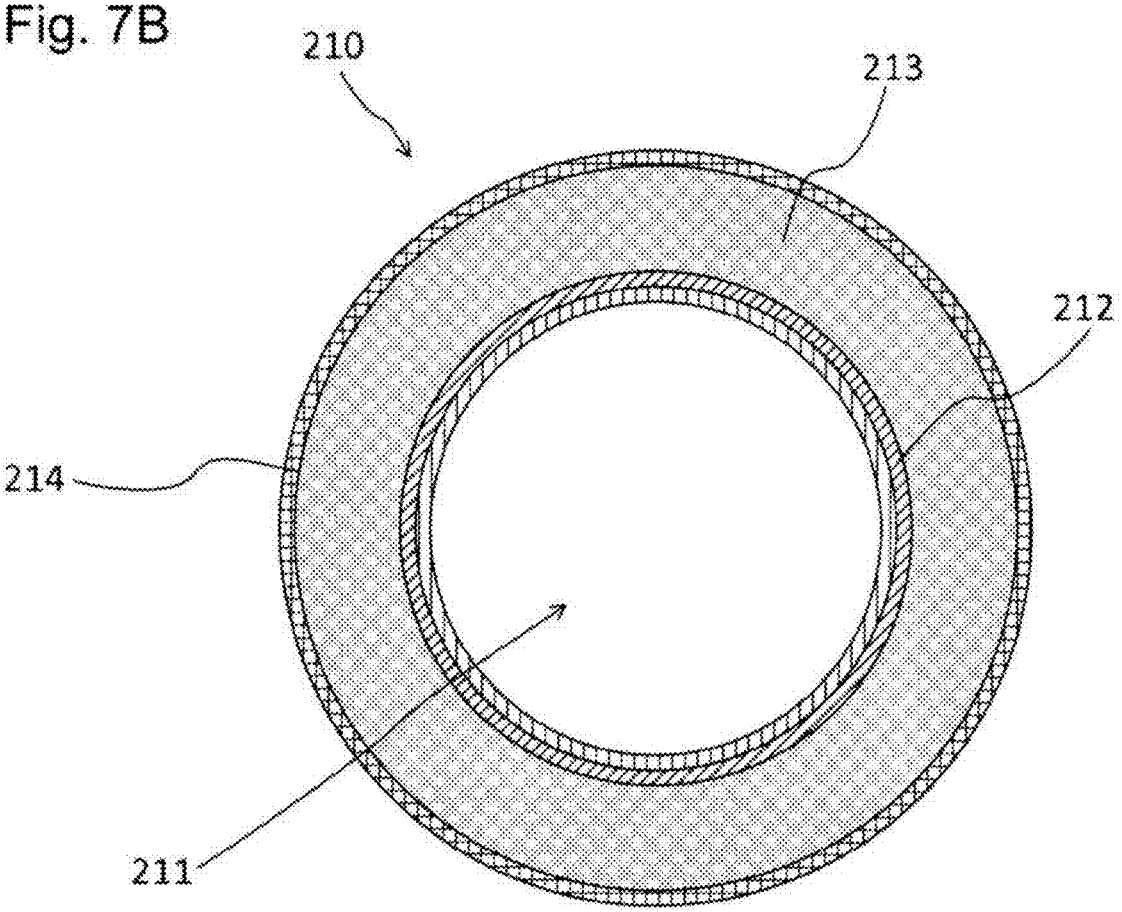

210
213
212
214
211

Fig. 8

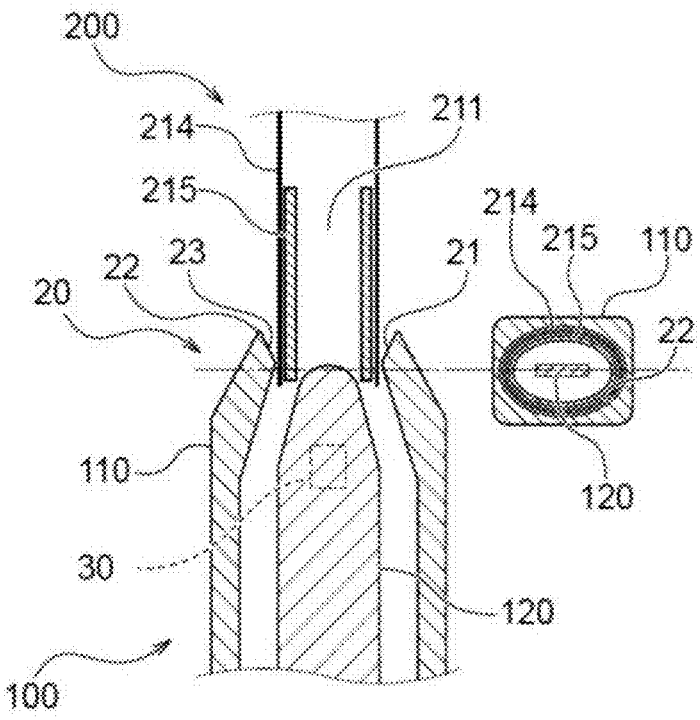

200
214
211
215
214
215
110
23
21
22
20
22
110
120
30
120
100

Fig. 9

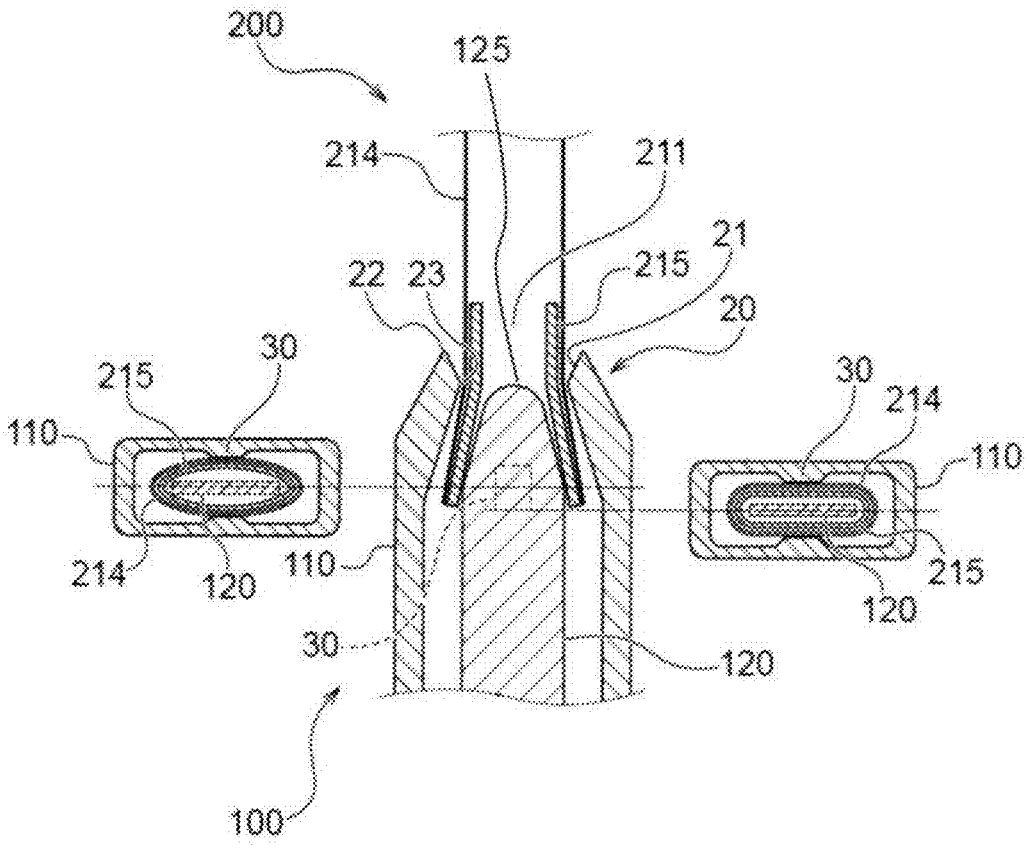

200
125
214
211
21
22
23
215
20
30
215
110
30
214
110
214
120
110
215
120
30
120
100

Fig. 10

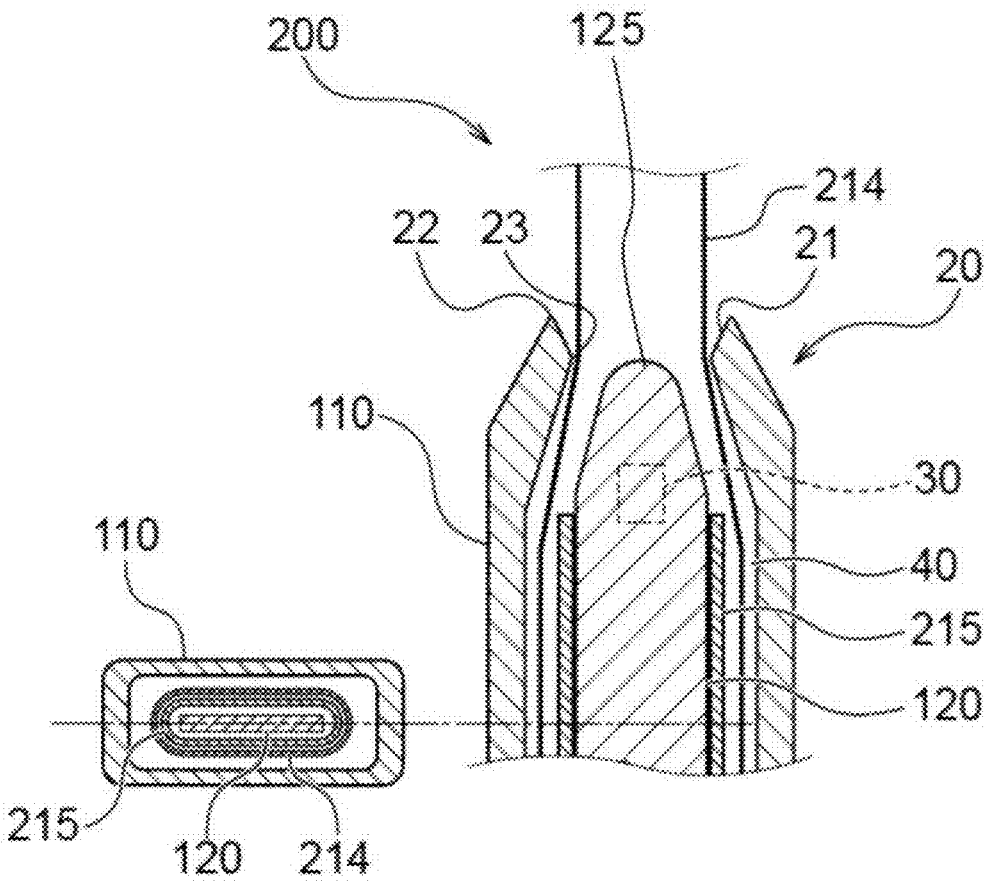


Fig. 11

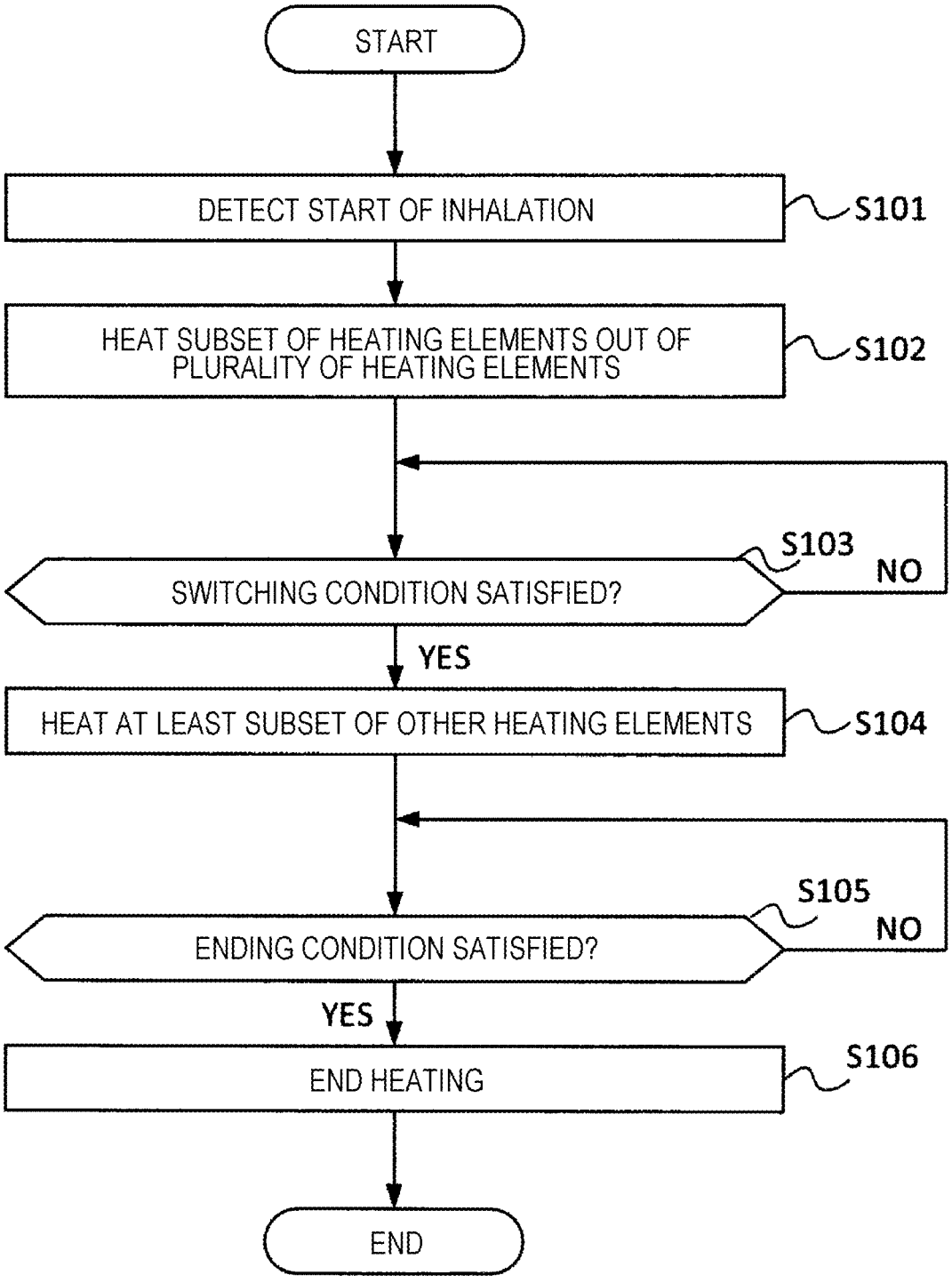

START
DETECT START OF INHALATION
S101
HEAT SUBSET OF HEATING ELEMENTS OUT OF PLURALITY OF HEATING ELEMENTS
S102
S103
SWITCHING CONDITION SATISFIED?
NO
YES
HEAT AT LEAST SUBSET OF OTHER HEATING ELEMENTS
S104
S105
ENDING CONDITION SATISFIED?
NO
YES
END HEATING
S106
END

Fig. 12

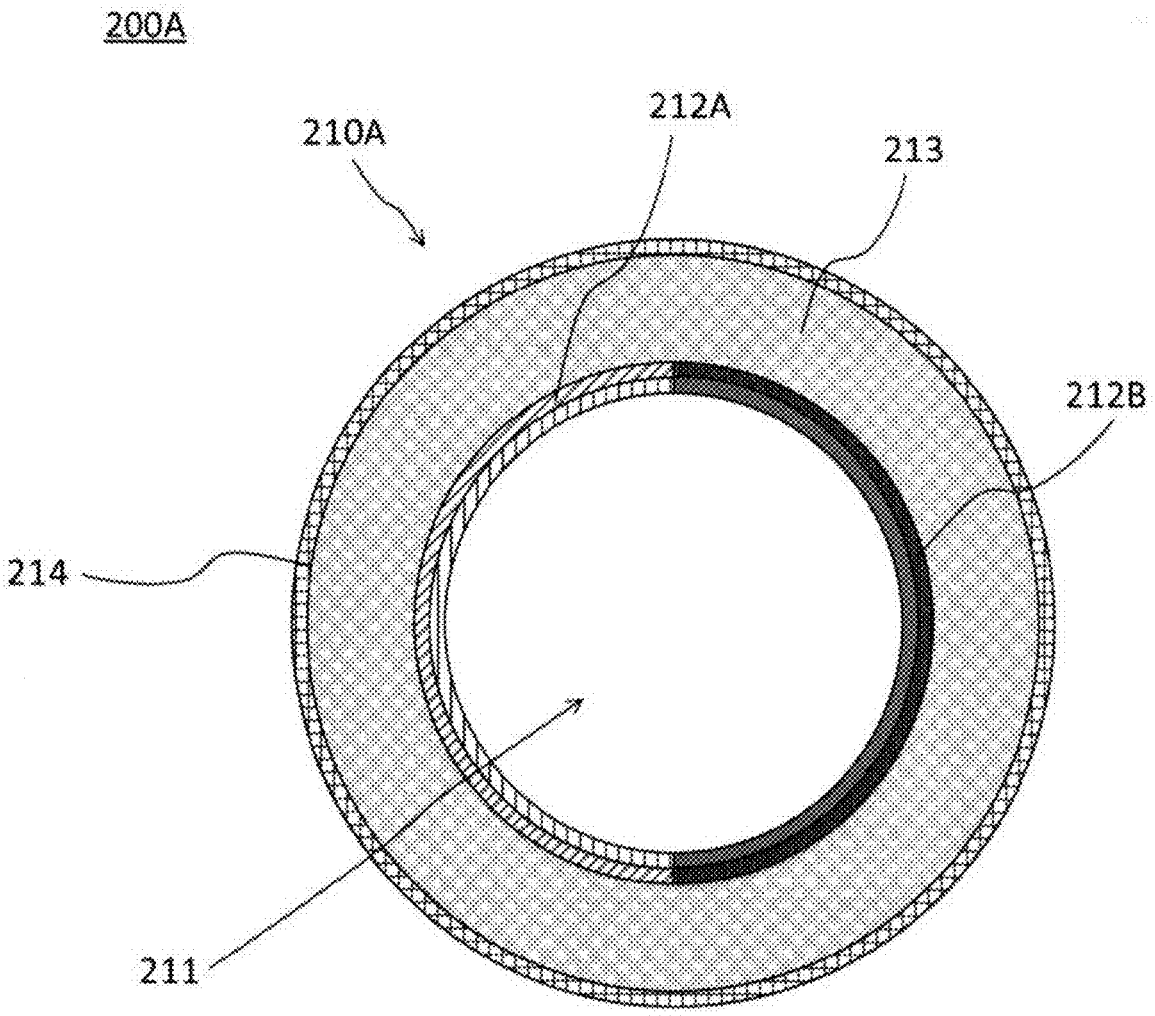


Fig. 13A

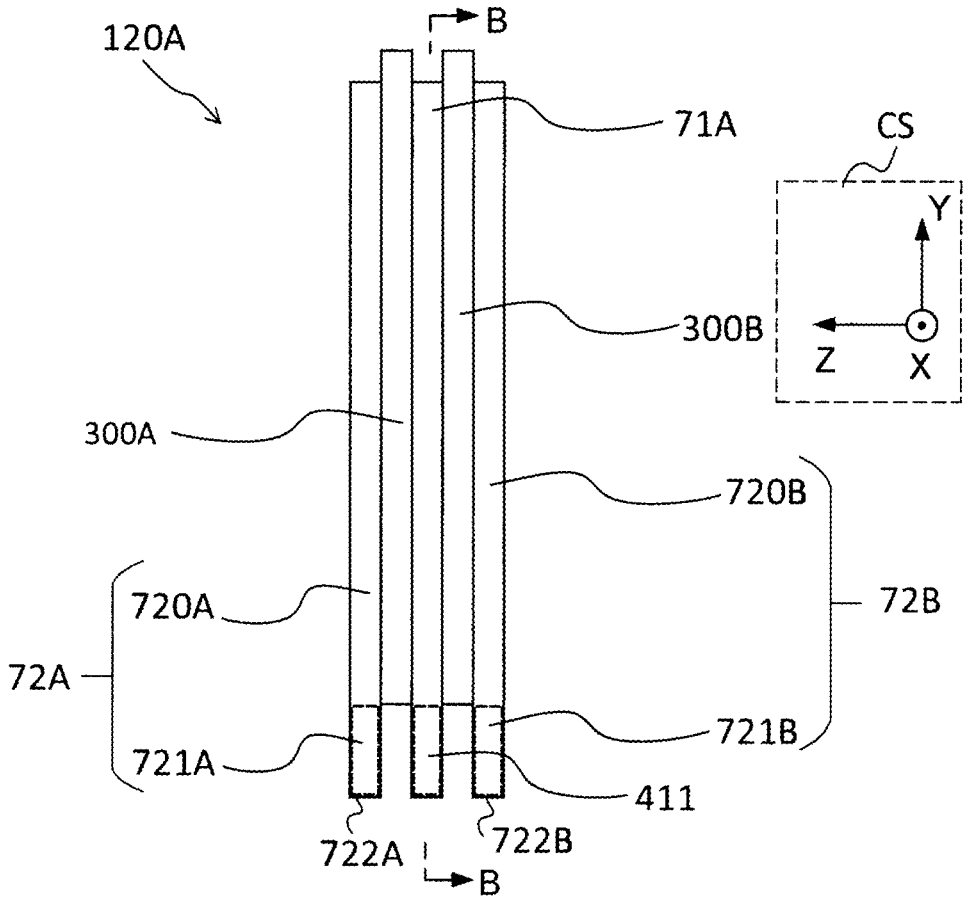
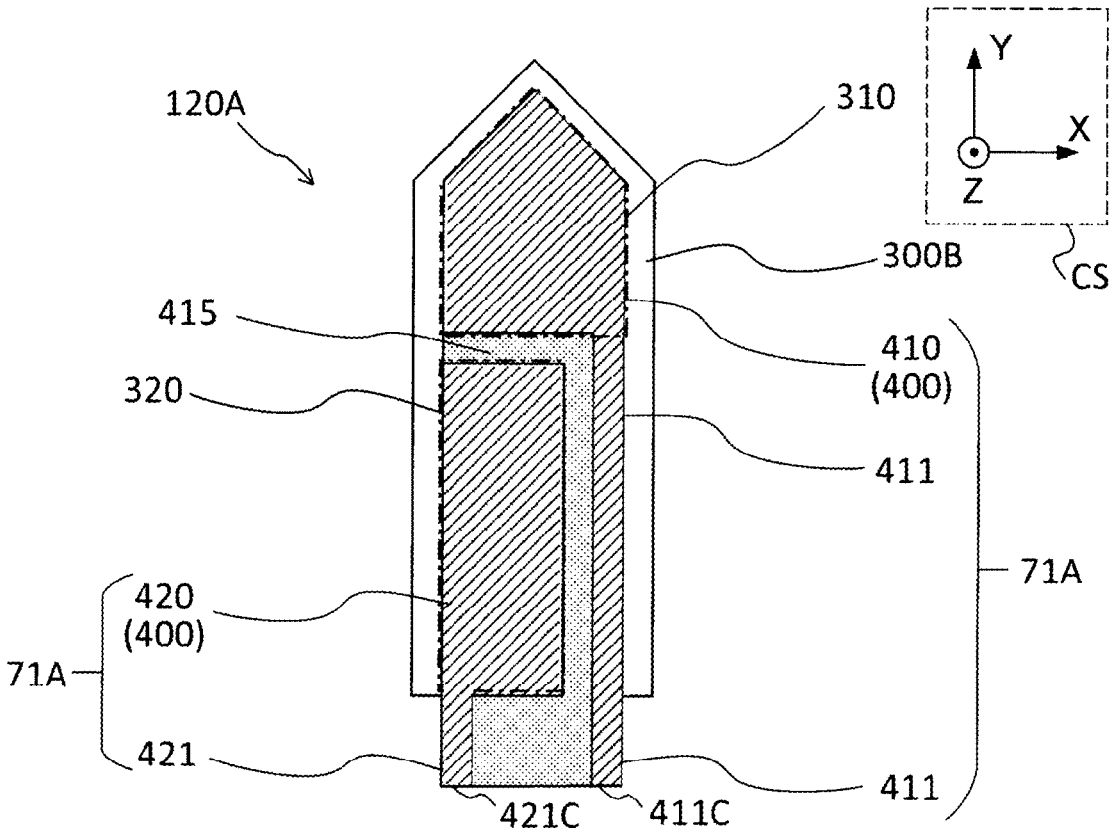

120A
B
71A
CS
Y
300B
Z
X
300A
720B
72B
720A
72A
721B
721A
411
722A
722B
B

Fig. 13B


120A
310
Y
X
Z
300B
CS
415
410
(400)
320
411
71A
420
(400)
71A
421
411
421C
411C

FLAVOR INHALER AND FLAVOR INHALING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present invention contains subject matter related to PCT Application No. PCT/JP2021/045066 filed on Dec. 8, 2021, the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

[0002] The present invention relates to a flavor inhaler and a flavor inhaling system.

BACKGROUND ART

[0003] Known flavor inhalers are used for inhaling a flavor without burning a material. Various heaters used for such flavor inhalers have been proposed (see PTL 1). As one of such heaters, a heater in which a heating element and a conductive wire are stacked has been proposed (see PTL 2).

CITATION LIST

Patent Literature

[0004] PTL 1: Chinese Unexamined Utility Model Registration Application Publication No. 209807157

[0005] PTL 2: Chinese Unexamined Patent Application Publication No. 201810872487

SUMMARY OF INVENTION

Technical Problem

[0006] An object of the present invention is to provide a flavor inhaler and a flavor inhaling system including a heater with which heating can be more flexibly controlled.

Solution to Problem

[0007] According to a first embodiment, a flavor inhaler is provided. This flavor inhaler includes a heater in which a plurality of heating elements are stacked with at least one first electrode interposed therebetween.

[0008] According to the first embodiment, heating can be more flexibly controlled by using the plurality of heating elements. Accordingly, release of a flavor component from the flavor inhaler can be more flexibly controlled.

[0009] The gist of a second embodiment is that, in the first embodiment, the plurality of heating elements include a first heating element and a second heating element, the first heating element, the second heating element, and the first electrode have respective planar shapes, and the first heating element and the second heating element are disposed so as to face each other with the first electrode interposed therebetween.

[0010] According to the second embodiment, the planar heater in which the first heating element, the first electrode, and the second heating element are stacked in this order can be provided. Accordingly, a compact structure is achieved, and a voltage can be efficiently applied.

[0011] The gist of a third embodiment is that, in the first or second embodiment, the flavor inhaler further includes a second electrode stacked outside an outermost heating element out of the plurality of heating elements. At least one of the first electrode and the second electrode includes a planar supporting member having conductivity.

[0012] According to the third embodiment, since the heater can be supported by the first electrode or the second electrode, a malfunction and destruction of the heater due to deformation can be suppressed. Furthermore, since the first electrode or the second electrode also serves as a supporting body, the heater and the flavor inhaler can have a compact structure. In addition, the flavor inhaler can be efficiently manufactured.

[0013] The gist of a fourth embodiment is that, in the third embodiment, the supporting member includes stainless steel.

[0014] According to the fourth embodiment, since stainless steel has high stiffness and high durability, a malfunction and destruction of the heater due to deformation can be further suppressed.

[0015] The gist of a fifth embodiment is that, in the third or fourth embodiment, in at least one electrode out of the first electrode and the second electrode, a connection electrode is formed along a plane in which an adjacent heating element adjacent to the at least one electrode extends, and the connection electrode protrudes in a longitudinal direction of the adjacent heating element from a range in which the adjacent heating element extends.

[0016] According to the fifth embodiment, electrical connection between the connection electrode and a circuit outside the heater is facilitated.

[0017] The gist of a sixth embodiment is that, in the fifth embodiment, the connection electrode has a connection portion at an end surface thereof or near the end surface thereof to be connected to an outer portion, and an insulation treatment is applied to a surface of the connection electrode other than the connection portion.

[0018] According to the sixth embodiment, shorting between connection electrodes and between the connection electrode and another electrode can be suppressed.

[0019] The gist of a seventh embodiment is that, in the fifth or sixth embodiment, no electrode other than the connection electrode protrudes from the range in which the adjacent heating element extends along the plane in which the adjacent heating element extends.

[0020] According to the seventh embodiment, shorting between the electrode other than the connection electrode and the other electrode can be suppressed.

[0021] The gist of an eighth embodiment is that, in the third to seventh embodiments, at least one electrode out of the first electrode and the second electrode includes a plurality of current-carrying regions, and the plurality of current-carrying regions are disposed so as to respectively face a plurality of heating portions of the heating element adjacent to the at least one electrode.

[0022] According to the eighth embodiment, heating of each of the plurality of heating portions of the heating element can be controlled, and accordingly, heating by using the heater can be still more flexibly controlled.

[0023] The gist of a ninth embodiment is that, in the first to eighth embodiments, the first electrode includes a thermally insulative material.

[0024] According to the ninth embodiment, thermal transmission between the plurality of heating elements can be suppressed, and accordingly, the temperature of each of the heating elements can be more accurately controlled. Fur-

thermore, heat generated by the heating elements can be efficiently directed toward a consumer product.

[0025] The gist of a tenth embodiment is that, in the first to ninth embodiments, the flavor inhaler further includes a heating controller configured to control a voltage or a current applied to each of the plurality of heating elements.

[0026] According to the tenth embodiment, the plurality of heating elements can be more flexibly controlled.

[0027] The gist of an eleventh embodiment is that, in the tenth embodiment, the heating controller controls the voltage to heat a subset of the plurality of heating elements, and after that, heat at least a subset of the other heating elements.

[0028] According to the eleventh embodiment, the temperature of a flavor generating substrate heated by the heating element heated before the other increases quickly. This can reduce a time period from a time at which the flavor inhaler is started to a time at which a user of the flavor inhaler (hereinafter, simply referred to as the user) can inhale the flavor.

[0029] The gist of a twelfth embodiment is that, in the first to eleventh embodiments, the plurality of heating elements include a positive temperature coefficient (PTC) element.

[0030] According to the twelfth embodiment, due to the characteristic of the PTC element, the current is unlikely to flow through the PTC element when the temperature increases to the predetermined temperature. Accordingly, complex control is not necessary, and a safe flavor inhaler can be provided.

[0031] According to a thirteenth embodiment, a flavor inhaling system is provided. This flavor inhaling system includes a consumer product having a flavor component and the flavor inhaler according to any one of the first to twelfth embodiments.

[0032] According to the thirteenth embodiment, heating can be more flexibly controlled by using the plurality of heating elements. Accordingly, release of the flavor component from the flavor inhaling system can be more flexibly controlled.

[0033] The gist of a fourteenth embodiment is that, in the thirteenth embodiment, the consumer product includes a plurality of portions having identical or different flavor components disposed at positions respectively facing the plurality of heating elements when inhalation is performed.

[0034] According to the fourteenth embodiment, release of the flavor components can be more flexibly controlled. Furthermore, the flavor components can be disposed in the plurality of portions depending on a taste of the user, convenience, or the like.

BRIEF DESCRIPTION OF DRAWINGS

[0035] FIG. **1** is a sectional view illustrating a main portion of a flavor inhaler according to an embodiment in a width direction of a heater.

[0036] FIG. **2** is a sectional view illustrating the main portion of the flavor inhaler according to the embodiment in a thickness direction of the heater.

[0037] FIG. **3** is a conceptual view illustrating the heater and a controller according to the present embodiment.

[0038] FIG. **4** is an exploded view schematically illustrating the structure of the heater according to the embodiment.

[0039] FIG. **5**A is a plan view schematically illustrating the heater according to the embodiment.

[0040] FIG. **5**B is a side view schematically illustrating the heater according to the embodiment.

[0041] FIG. **6**A is a conceptual view illustrating a section taken along line A**1**-A**1** of FIG. **5**A

[0042] FIG. **6**B is a conceptual view illustrating a section taken along line A**2**-A**2** of FIG. **5**A

[0043] FIG. **7**A is a schematic side sectional view illustrating a consumer product according to the embodiment.

[0044] FIG. **7**B is a conceptual view illustrating a section of a cigarette portion perpendicular to a longitudinal direction of the consumer product illustrated in FIG. **7**A.

[0045] FIG. **8** is a sectional view illustrating a state in which the consumer product is contained in the flavor inhaler.

[0046] FIG. **9** is a sectional view illustrating a state in which the consumer product is contained in the flavor inhaler.

[0047] FIG. **10** is a sectional view illustrating a state in which the consumer product is contained in the flavor inhaler.

[0048] FIG. **11** is a flowchart illustrating a flow of a method for releasing a flavor according to the embodiment.

[0049] FIG. **12** is a conceptual view illustrating a section of a cigarette portion perpendicular to a longitudinal direction of a consumer product according to a first modification.

[0050] FIG. **13**A is a side view schematically illustrating a heater according to a second modification.

[0051] FIG. **13**B illustrates a section taken along line B-B of FIG. **13**A.

DESCRIPTION OF EMBODIMENTS

[0052] Hereinafter, an embodiment according to the present invention will be described with reference to the drawings. In the drawings described below, the same or equivalent elements are denoted by the same reference numerals, thereby omitting duplicate description thereof. Although description will be made with a cigarette stick as an example of a consumer product in the following embodiment, the consumer product is not limited to a cigarette as long as a product generates a flavor when heated.

[0053] FIG. **1** is a sectional view illustrating a main portion of a flavor inhaler **100** according to an embodiment of the present invention in a width direction of a heater **120**. FIG. **2** is a sectional view illustrating the main portion of the flavor inhaler **100** in a thickness direction of the heater **120**.

[0054] As illustrated in FIGS. **1** and **2**, the flavor inhaler **100** includes a housing **110** and the heater **120**. The housing **110** has an opening **10** at one end and functions as a container that is contains at least part of a consumer product **200** (FIG. **7**A) inserted into the opening **10** through the opening **10**. The housing **110** can be formed of, for example, resin and particularly formed of polycarbonate (PC), acrylonitrile-butadiene-styrene (ABS) resin, polyether ether ketone (PEEK), a polymer alloy including a plurality of types of polymers, or the like. Alternatively, the housing can be formed of metal such as aluminum. Here, the housing **110** has a structure in which the sectional area of a section perpendicular to a longitudinal direction of the housing **110** is minimized at a portion near the opening **10**.

[0055] The housing **110** also has a shaping guide (guide portion) **20** and a pressure rib (urging portion) **30**. The shaping guide **20** defines the opening **10** and deforms in section the consumer product **200** inserted into the housing **110** such that the shape of the consumer product **200** corresponds to the shape of the heater **120**. The pressure rib **30** is provided at an inner circumferential surface of the

housing **110** and urges the consumer product **200** inserted into the housing **110** toward the heater **120** so as to deform the consumer product **200**.

[0056] Furthermore, an inlet (not illustrated) is provided on an opposite side of the housing **110** from the opening **10**, that is, at a bottom portion of the housing **110**. When air is supplied to the consumer product **200** inserted into the housing **110** through this inlet, a bottom flow-type flavor inhaler **100** is configured. When the inlet is provided on the opposite side of the housing **110** from the opening **10**, the structure of the housing **110** near the opening **10** can be simplified. As long as the consumer product **200** can be secured to the heater **120** at a desired accuracy, the shape of the housing **110** is not particularly limited. For example, the shaping guide **20** or the pressure rib **30** is not necessarily provided.

[0057] The heater **120** is a positive temperature coefficient (PTC) heater having a planar shape that is inserted into the consumer product **200** having been contained in the housing **110** and heats the consumer product **200** from inside. Furthermore, the heater **120** changes the external shape of the consumer product **200** inserted into the housing **110** to follow the shape of the heater **120**.

[0058] The PTC heater uses a resistor having a characteristic (PTC characteristic) with which, when a certain temperature (referred to as Curie temperature) is reached, electricity does not flow through the resistor due to a sudden increase in electric resistance. When using the PTC characteristic, the PTC heater can maintain the temperature at a temperature lower than or equal to a certain temperature without a control device or the like that stops the heater from heating when the temperature reaches a temperature higher than or equal to a predetermined temperature. The heater **120** may be a PTC heater including, as the resistor, barium titanate ($BaTiO_3$) having a PTC characteristic. In such a case, since the Curie temperature of barium titanate can be set to 350° C., the heater **120** can heat the consumer product **200** at a preferred temperature lower than 350° C.

[0059] FIG. **3** is a conceptual view schematically illustrating the heater **120** and a controller **900** that controls the heater **120**. The heater **120** is illustrated in a perspective view in FIG. **3**. As will be described later, although the heater **120** includes a plurality of heating elements and a plurality of layers at least including a first electrode, illustration of the details is omitted in FIG. **3**. The flavor inhaler **100** includes the controller **900** electrically connected to the heater **120**. The controller **900** includes a detector **910** and a heating controller **920**.

[0060] The heater **120** has a projection **125** formed on one side in a longitudinal direction. When the heater **120** is inserted into the consumer product **200**, the projection **125** is inserted first. Accordingly, the side of the heater **120** where the projection **125** is formed is a side close to the outside when the consumer product **200** is contained in the housing **110**, and this side is a downstream side of a flow path of air in inhalation. From this viewpoint, in the longitudinal direction of the heater **120**, the side where the projection **125** is formed is referred to as the downstream side and an opposite side from the downstream side is referred to as an upstream side in the embodiment below.

[0061] FIG. **4** is an exploded view schematically illustrating the structure of the heater **120**. FIG. **5**A is a general plan view schematically illustrating the heater **120** seen from a side of a second electrode **72**A. FIG. **5**B is a side view schematically illustrating the heater **120**. FIGS. **6**A and **6**B schematically respectively illustrate a section taken along line A**1**-A**1** of FIG. **5**A and a section taken along line A**2**-A**2** of FIG. **5**A.

[0062] The heater **120** includes a plurality of heating elements **300**A and **300**B, a first electrode **71**, and a plurality of second electrodes **72**A and **72**B. The second electrode **72**A, the heating element **300**A, the first electrode **71**, the heating element **300**B, and the second electrode **72**B are stacked in this order, and the adjacent layers are electrically connected (see FIG. **5**B). Hereinafter, when the heating elements **300**A and **300**B are not distinguished from each other, each of the heating elements **300**A and **300**B is referred to as the heating element **300**. Hereinafter, when the plurality of second electrodes **72**A and **72**B are not distinguished from each other, each of the second electrodes **72**A and **72**B is referred to as the second electrode **72**. Hereinafter, the heating element **300** extends in the longitudinal direction along the XY plane. The Y axis extends in the longitudinal direction, the X axis extends perpendicular to the Y axis, and the Z axis extends perpendicular to the XY plane (see the coordinate system CS).

[0063] The flavor inhaler **100** includes a circuit C**1**. The circuit C**1** is electrically connected to the first electrode **71**, the second electrode **72**A, and the second electrode **72**B. The circuit C**1** is configured so as to apply a voltage between the first electrode **71** and the second electrode **72**A and between the first electrode **71** and the second electrode **72**B. In the illustrated example, the circuit C**1** includes a direct-current power source V**1**, a first switch SW**1**, and a second switch SW**2**. The direct-current power source V**1** is electrically connected to the first electrode **71**. The first switch SW**1** is electrically connected to the direct-current power source V**1** and the second electrode **72**A. The second switch SW**2** is electrically connected to a direct-current power source V**2** and the second electrode **72**B. The first switch SW**1** and the second switch SW**2** are arranged in parallel. The heating controller **920** can control each of the first switch SW**1** and the second switch SW**2**. Thus, heating of the heating element **300**A and heating of the heating element **300**B can be controlled independently of each other. Although a simple circuit configuration is illustrated in FIG. **4** for ease of understanding, the form of the circuit C**1** is not particularly limited as long as the heating of the heating elements **300**A and **300**B can be controlled.

[0064] The heating element **300** is preferably the PTC element. Due to the above-described PTC characteristic, a current is unlikely to flow through the PTC element when the temperature increases to the predetermined temperature. Accordingly, when the PTC element is used as the heating element **300**, complex control is not necessary, and a safe flavor inhaler can be provided.

[0065] The heating element **300** has a planar shape extending in the longitudinal direction. The shape of the heating element **300** is not particularly limited. However, when the heating element **300** has a planar shape, the heating element **300** can have a more compact structure due to the stacking, and the voltage can be efficiently applied. Thus, the heating element **300** preferably has a planar shape.

[0066] As illustrated in FIGS. **5**A and **5**B, the first electrode **71** includes a first electrode main body **710** and a first connection electrode **711**. The first connection electrode **711** is formed on the upstream side of the first electrode main body **710**. A connection portion **712** connected to the circuit

C1 is formed at an end surface of the first connection electrode **711** on the upstream side. The second electrode **72**A includes a second electrode main body **720**A and a second connection electrode **721**A. The second connection electrode **721**A is formed on the upstream side of the second electrode main body **720**A. A connection portion **722**A is formed at an end surface of the second connection electrode **721**A on the upstream side. The second electrode **72**B includes a second electrode main body **720**B and a second connection electrode **721**B. The second connection electrode **721**B is formed on the upstream side of the second electrode main body **720**B. A connection portion **722**B connected to the circuit C1 is formed at an end surface of the second connection electrode **721**B on the upstream side.

[0067] According to the present embodiment, the first electrode **71** refers to an electrode disposed between the plurality of heating elements **300** and electrically connected to each of the plurality of heating elements **300**. The heater **120** may have a structure in which the heater **120** includes three or more heating elements **300** and two or more first electrodes **71** and each of the first electrodes **71** is disposed between the heating elements **300** facing each other. As described above, in the heater **120**, the plurality of heating elements **300** are stacked with at least one first electrode **71** interposed therebetween. Thus, by using the plurality of heating elements **300**, heating of a cigarette portion **210** (FIG. **7**A) can be more flexibly controlled. Accordingly, release of a flavor component from the flavor inhaler **100** can be more flexibly controlled. Furthermore, when a single first electrode **71** is used to heat the plurality of heating elements **300**, the heater **120**, the flavor inhaler **100**, and a flavor inhaling system can have a compact structure. In addition, the heater **120**, the flavor inhaler **100**, and a flavor inhaling system can be efficiently manufactured.

[0068] When the heating element **300**A is defined as a first heating element and the heating element **300**B is defined as a second heating element, the first heating element, the second heating element, and the first electrode **71** each have a planar shape, and the first heating element and the second heating element are disposed so as to face each other with the first electrode **71** interposed therebetween. In the flavor inhaler **100** according to the present embodiment, the plurality of heating elements **300** preferably include such a first heating element and a second heating element. Thus, the planar heater **120** in which the first heating element, the first electrode **71**, and the second heating element are stacked in this order can be provided. Accordingly, a more compact structure is achieved, and the voltage can be efficiently applied to the first heating element and the second heating element.

[0069] The second electrodes **72** refer to electrodes stacked outside heating elements **300** out of the plurality of heating elements **300** disposed outermost. In the example illustrated in FIG. **5**B, the heater **120** includes two heating elements **300**. Accordingly, both the heating element **300**A and the heating element **300**B are the heating elements **300** disposed outermost.

[0070] The first electrode **71** and the second electrodes **72** have a planar shape extending in the longitudinal direction. The shape of the first electrode **71** or the second electrodes **72** is not particularly limited. However, when the first electrode **71** or the second electrodes **72** have a planar shape, a more compact structure can be obtained due to the stacked structure, and the voltage can be efficiently applied to the heating elements **300**. Thus, the first electrode **71** or the second electrodes **72** preferably have a planar shape. The material of the first electrode **71** or the second electrodes **72** is not particularly limited as long as the material has conductivity. From the viewpoint of facilitating processing of the heater **120**, the first electrode **71** and the second electrodes **72** are preferably a conductive adhesive or metal electrodes. Examples of the conductive adhesive can include, for example, a so-called anisotropic conductive adhesive in which conductive particles are uniformly dispersed in an epoxy-based adhesive.

[0071] At least one of the first electrode **71** and the second electrodes **72** includes a conductive supporting member having a planar shape. Thus, a malfunction and destruction of the heater **120** due to deformation can be suppressed. Furthermore, since the first electrode **71** or the second electrode **72** also serves as a supporting body, the heater **120**, the flavor inhaler **100**, and the flavor inhaling system can have a compact structure. In addition, the heater **120**, the flavor inhaler **100**, and the flavor inhaling system can be efficiently manufactured. From the viewpoints of stiffness and durability, the supporting member preferably includes stainless steel. Conductive or non-conductive supporting member having a planar shape may be disposed outside the second electrode **72**, thereby to support the heater **120**.

[0072] The first electrode **71** preferably includes a thermally insulative material. This can suppress thermal transmission between the plurality of heating elements **300** via the first electrode **71**, and accordingly, the temperature of each of the heating elements **300** can be more accurately controlled. Furthermore, heat generated by the heating elements **300** can be efficiently directed toward the consumer product **200**. Examples of the thermally insulative material include, for example, silica aerogel and carbon aerogel. The first electrode **71** itself may have a porous structure.

[0073] As illustrated in FIGS. **5**A, **5**B, and **6**A, the second electrode main body **720**A, the heating element **300**A, the first electrode main body **710**A, the heating element **300**B, and the second electrode main body **720**B are stacked in this order. Meanwhile, in the heater **120**, the first connection electrode **711**, the second connection electrode **721**A, and the second connection electrode **721**B are formed so as to protrude toward the upstream side in the longitudinal direction and have respective connection portions **712**, **722**A, and **722**B formed at respective end portions. The first connection electrode **711** faces the second connection electrode **721**A with a clearance CL1 interposed therebetween and the second connection electrode **721**B with a clearance CL2 interposed therebetween.

[0074] As described above, in at least one electrode out of the first electrode **71** and the second electrodes **72**, a connection electrode is preferably formed as follows: the connection electrode is formed along a plane (XY plane) in which the heating element **300** adjacent to the electrode (adjacent heating element) extends, and the connection electrode protrudes in the longitudinal direction of the heating element from a range in which the adjacent heating element **300** extends. This facilitates electrical connection to the circuit C1 in the connection portions **712**, **722**A, and **722**B. The connection portions **712**, **722**A, and **722**B may be provided in surfaces respectively connected to the end surfaces in the first connection electrode **711**, the second connection electrode **721**A, and the second connection electrode **721**B, that is, surfaces along the longitudinal direction

(Y axis direction). For example, lead wires can be connected to the surfaces near the respective end surfaces of the first connection electrode **711**, the second connection electrode **721**A, and the second connection electrode **721**B.

[0075] As illustrated in FIG. **6**B, in the first connection electrode **711** and the second connection electrodes **721**A and **721**B, the surfaces other than connection portions **712**, **722**A, and **722**B are coated. A coating **610** is formed on the surface of the first connection electrode **711**. A coating **620**A and a coating **620**B are respectively formed on the surface of the second connection electrode **721**A and the surface of the second connection electrode **721**B. Accordingly, shorting in a direction perpendicular to the longitudinal direction (Y axis direction) of the heating elements **300** can be prevented. From the viewpoint of suppressing the shorting, the first electrode main body **710** and the second electrode main bodies **720**A and **720**B may be coated.

[0076] In contrast, as illustrated in FIGS. **5**A and **6**A, electrodes other than the first connection electrode **711** and the second connection electrodes **721**A and **721**B, that is, the first electrode main body **710** and the second electrode main body **720**A and **720**B do not protrude from the range in which the adjacent heating elements **300** extend along the plane (XY plane) in which the adjacent heating elements **300** extend. For example, as illustrated in FIG. **5**A, the second electrode main body **720**A is formed within a range of an XY plane in which the adjacent heating element **300**A extends in top view and does not protrude from the range. With such a configuration, shorting in the Z axis direction perpendicular to the plane in which the heating elements **300** extend can be suppressed. From the viewpoint of suppressing the shorting, preferably, none of the electrodes other than the first connection electrode **711** and the second connection electrodes **721**A and **721**B protrude from the range of the XY plane in which all the heating elements **300** extend.

[0077] Referring back to FIG. **3**, the controller **900** includes a processing device such as a printed circuit board (PCB). This processing device includes a CPU and memory and controls operation of the flavor inhaler **100**.

[0078] The detector **910** detects the start of inhalation. The detector **910** detects an operation performed by a user on an input device such as a push button or a slide switch (not illustrated). Alternatively, the detector **910** detects puff action performed by the user. After the detection, the detector **910** performs a process so as to cause the heating controller **920** to start application of the voltage for heating.

[0079] The heating controller **920** electrically controls each of the first electrode **71**, the second electrode **72**A, and the second electrode **72**B to control heating of each of the heating element **300**A and the heating element **300**B. The heating controller **920** is preferably configured to control the voltage applied to the heating element **300**A or a current flowing through the heating element **300**A and the voltage applied to the heating element **300**B or a current flowing through the heating element **300**B so that the voltage applied to the heating element **300**A or the current flowing through the heating element **300**A and the voltage applied to the heating element **300**B or the current flowing through the heating element **300**B can be controlled independently of each other. In this case, the heating controller **920** is configured to control heating of the heating element **300**A and heating of the heating element **300**B so that the heating of the heating element **300**A and the heating of the heating element **300**B can be controlled independently of each other.

[0080] In the example according to the present embodiment, after heating the heating element **300**A, the heating controller **920** electrically controls the first electrode **71**, the second electrode **72**A, and the second electrode **72**B so as to heat the heating element **300**B. When the heating element **300**A being a subset of the heating elements is heated ahead of the other as described above, the temperature of a flavor generating substrate heated by the heating element **300**A having been heated before increases quickly. This can reduce a time period from a time at which the flavor inhaler **100** is started to a time at which the user can inhale the flavor.

[0081] The heating controller **920** heats the heating element **300**A when the detector **910** performs a process indicating detection of the start of inhalation. The heating controller **920** starts the heating of the heating element **300**B when a switching condition has been satisfied. The switching condition is a lapse of a predetermined time period from the start of the heating of the heating element **300**A, the presence of input by the user via an input device (not illustrated), or the like. For example, the following configuration is possible: a button is disposed in the flavor inhaler **100**, and the heating controller **920** starts the heating of the heating element **300**B when the user presses the button. When the heating of the heating element **300**B is started, whether to stop the heating of the heating element **300**A is not particularly limited.

[0082] The heating controller **920** ends the heating of the heating element **300**B when an ending condition has been satisfied. The ending condition is a lapse of a predetermined time from the start of the heating, the fact that the number of times of the puff action performed by the user exceeds a certain value, or the like. The control performed by the heating controller **920** is not limited to the above-described example and can be appropriately set depending on the desired form of heating. For example, the heating element **300**A may be heated after the heating of the heating element **300**B.

[0083] FIG. **7**A is a schematic side sectional view illustrating the consumer product **200** according to the present embodiment. FIG. **7**B is a sectional view illustrating a section of the cigarette portion **210** perpendicular to the longitudinal direction of the consumer product **200** illustrated in FIG. **7**A. The consumer product **200** includes the cigarette portion (non-insertion portion) **210** and a paper tube **220**. The cigarette portion **210** has, at the center, a through hole **211** into which the heater **120** is inserted. Furthermore, the cigarette portion **210** includes a two-layer structure including a flavor release layer (annular sheet) **212** and an elastic deformation layer (annular sheet) **213** disposed so as to surround the heater **120** to be inserted. A wrapper **214** is wrapped around an outer circumference of the elastic deformation layer **213**.

[0084] The flavor release layer **212** includes, for example, a cigarette sheet and a non-cigarette sheet that is disposed at an outer circumference of the cigarette sheet and carries glycerine. The flavor release layer **212** is heated by the heater **120** to release a volatile chemical compound including a flavor. The flavor release layer **212** may include only one of the cigarette sheet and the non-cigarette sheet. The elastic deformation layer **213** includes, for example, a nonwoven fabric sheet, a corrugated sheet, a non-cigarette sheet, or the like and elastically deformable in its thickness direction (that is, a radial direction of the elastic deformation

layer **213** having a cylindrical shape). When the heater **120** is inserted, the elastic deformation layer **213** contributes to the deformation of the consumer product **200** to follow the shape of the heater **120**.

[0085] Accordingly, when the heater **120** is inserted into the through hole **211**, the elastic deformation layer **213** elastically deforms in the thickness direction relative to the heater **120**. Thus, the elastic deformation layer **213** becomes likely to be brought into contact with or move close to the heater **120**. Thus, the flavor release layer **212** can be brought into better contact with or move closer to the heater **120**, and accordingly, the consumer product **200** can be efficiently heated.

[0086] The paper tube **220** cools the volatile chemical compound released from the flavor release layer **212**. The cigarette portion **210** includes the flavor release layer **212** and the elastic deformation layer **213** disposed so as to surround the heater **120** to be inserted. Thus, when the heater **120** is inserted into the consumer product **200**, the consumer product **200** can be easily deformed. The sectional shape of the consumer product **200** may be circular or elliptical.

[0087] Here, the non-cigarette sheet may include the flavor generating substrate. The flavor generating substrate is a material providing a flavor and smoke taste and preferably a cigarette material. The flavor generating substrate can include a flavor agent. The flavor agent is a substance providing flavor and taste. The flavor agent may be a natural flavor agent or a synthetic flavor agent. As the flavor agent, a single type of a flavor agent may be used or a mixture of a plurality of types of flavor agents may be used. Furthermore, as the flavor agent, any flavor agent can be used as long as the flavor agent is a generally used flavor agent such as, for example, an essential oil, a natural flavor agent, or a synthetic flavor agent. The flavor agent may be a liquid or a solid and may have any material properties. Furthermore, the flavor generating substrate may include an algefacient or a tasting agent.

[0088] Furthermore, the cigarette sheet can include, for example, a cigarette, a polyhydric alcohol, or the like. A single type of or a combination of two or more types of the polyhydric alcohols can be used for the cigarette sheet. The polyhydric alcohol can also be added to the above-described elastic deformation layer **213**. The cigarette sheet can be formed into a sheet shape by mixing a binder with a powdery cigarette and the polyhydric alcohol.

[0089] Next, the relationships among the consumer product **200**, the housing **110**, and the heater **120** when the consumer product **200** is contained in the flavor inhaler **100**, that is, the consumer product **200** is inserted from one end side toward the other end side of the housing **110** are described. FIGS. **8** to **10** are sectional views illustrating states in which the consumer product **200** is contained in the flavor inhaler **100**. Here, when the consumer product **200** is applied to the flavor inhaler **100**, the flavor inhaling system is configured. Referring to FIGS. **8** to **10**, the flavor release layer **212** and the elastic deformation layer **213** of the consumer product **200** is indicated as a single annular sheet **215**.

[0090] FIG. **8** illustrates a state in which the consumer product **200** is passing through the shaping guide **20** in a section of the heater **120** in the width direction and a section perpendicular to the longitudinal direction of the housing **110** at an entrance portion **22** of the shaping guide **20**. FIG. **9** illustrates a state in which the consumer product **200** is passing through the pressure rib **30** in the section of the heater **120** in the width direction and the section perpendicular to the longitudinal direction of the housing **110** at an intermediate portion the pressure rib **30** and an end portion of the pressure rib **30** on the other end side. FIG. **10** illustrates a state in which the consumer product **200** is contained in a predetermined containing position in the housing **110** in the section of the heater **120** in the width direction and the section perpendicular to the longitudinal direction of the housing **110** near an end portion of the heater **120** on the other end side.

[0091] As illustrated in FIG. **8**, the shaping guide **20** has a tapered portion **21**, the entrance portion **22**, and a contact portion **23**. The tapered portion **21** has a structure in which the size of the tapered portion **21** increases toward the one end of the housing **110** and guides the insertion of the consumer product **200** into the flavor inhaler **100**. The entrance portion **22** is provided at an end portion of the housing **110** and has a structure in which the entrance portion **22** has an elliptical section, the large diameter of the entrance portion **22** is greater than or equal to the large diameter of the consumer product **200** after the consumer product **200** has been contained in the housing **110**, and the small diameter of the entrance portion **22** is substantially the same as the diameter of the consumer product **200** before the consumer product **200** is contained in the housing **110**. Furthermore, the contact portion **23** is provided at the inner circumferential surface of the housing **110** and has a structure in which the contact portion **23** has an elliptical section, and a minimum length of the inner circumference of the contact portion **23** is substantially equal to the length of an outer circumference of the consumer product **200**. Thus, when the consumer product **200** passes through the shaping guide **20**, the entire circumference of the consumer product **200** is brought into contact with the contact portion **23**, and accordingly, the sectional shape of the consumer product **200** can be changed follow the shape of the entrance portion **22**.

[0092] As illustrated in FIG. **9**, the heater **120** has the projection **125** having a narrow end on the one side. This can facilitate the insertion of the heater **120** into the consumer product **200**. The heater **120** has a structure in which the width of the heater **120** increases toward the other end side. Thus, as the consumer product **200** is passing through the shaping guide **20** and being inserted, the external shape of the consumer product **200** is changed to follow the shape of the heater **120**. Specifically, the consumer product **200** extends in the width direction of the heater **120**. Thus, the consumer product **200** can be brought into close contact with the heater **120**, and heat transfer efficiency from the heater **120** to the consumer product **200** can be improved. Furthermore, when the heater **120** extends the consumer product **200**, fall of the consumer product **200** can be prevented.

[0093] Specifically, the heater **120** has a planar shape and changes the external shape of the consumer product **200** inserted into the housing **110** so that the consumer product **200** has an elliptical sectional shape. At this time, the large diameter of the consumer product **200** after the consumer product **200** has been contained in the housing **110** is greater than the diameter of the consumer product **200** before the consumer product **200** is contained in the housing **110**, and the small diameter of the consumer product **200** after the consumer product **200** has been contained in the housing **110** is smaller than the diameter of the consumer product **200**

before the consumer product **200** is contained in the housing **110**. The heater **120** changes the external shape of the consumer product **200** inserted into the housing **110** so that the consumer product **200** has an elliptical sectional shape. This reduces the distance of the housing **110** in the lateral direction occupied by the consumer product **200**. Accordingly, the thickness of the housing **110** can be reduced. Furthermore, the heater **120** changes the external shape of the consumer product **200** inserted into the housing **110** so that the consumer product **200** has an elliptical sectional shape. This can increase the contact area between the heater **120** and the consumer product **200**. Thus, heat transfer efficiency from the heater **120** to the consumer product **200** can be improved.

[0094] As illustrated in FIG. **10**, in a state in which the consumer product **200** is contained in the predetermined containing position in the housing **110**, an air layer **40** is formed between the consumer product **200** and the housing **110** at the entire circumference of the consumer product **200**. Since the heat conductivity is low in the air layer **40**, the consumer product **200** and the housing **110** can be thermally insulated from each other, and accordingly, the amount of energy required to heat the consumer product **200** can be reduced. Furthermore, the entrance portion **22** is in contact with consumer product **200** throughout the outer circumference of the consumer product **200** to seal the air layer **40**. This suppresses convection of air in the air layer **40**.

[0095] FIG. **11** is a flowchart illustrating a flow of a method for releasing a flavor according to the present embodiment. This method for releasing is performed by the controller **900**. According to this method for releasing, the heating elements **300**A and **300**B are independently heated and controlled. Thus, releasing of the flavor component can be flexibly controlled. Furthermore, when the inhalation is started, a subset of the plurality of heating elements **300** is heated, and accordingly, the time period required to start generating the flavor can be reduced.

[0096] In step S**101**, the detector **910** detects the start of inhalation performed by the user. After the step S**101**, step S**102** is performed. In step S**102**, the heating controller **920** heats the heating element **300**A being a subset of the plurality of heating elements **300**. After the step S**102**, step S**103** is performed.

[0097] In step S**103**, the heating controller **920** determines whether the switching condition has been satisfied. When the switching condition has been satisfied, a positive determination is made in step S**103**, and step SS**104** is performed. When the switching condition has not been satisfied, a negative determination is made in step S**103**, and step S**103** is repeated.

[0098] In step S**104**, the heating controller **920** heats the heating element **300**B being at least a subset of heating elements other than the heating element **300**A. After the step S**104**, step S**105** is performed.

[0099] In step S**105**, the heating controller **920** determines whether the ending condition has been satisfied. When the ending condition has been satisfied, a positive determination is made in step S**105**, and step SS**106** is performed. When the ending condition has not been satisfied, a negative determination is made in step S**105**, and step S**105** is repeated.

[0100] In step S**106**, the heating controller **920** ends the heating. When step S**106** is ended, the process is ended.

[0101] In the flavor inhaler **100** and the method for releasing a flavor according to the present embodiment, the heating controller **920** controls the heater **120** so as to heat the heating element **300**A being a subset of the plurality of heating elements **300**, and after that, heat the heating element **300**B being at least a subset of the other heating elements **300**. This can reduce a time period required to allow the user to inhale the flavor.

[0102] Modifications described below are also within the scope of the present invention and able to be combined with the above-described embodiment or other modifications. In the following modifications, portions and the like indicating structures or functions the same as or similar to those of the above-described embodiment are denoted by the same reference numerals, thereby omitting the description as appropriate.

(First Modification)

[0103] In the above-described embodiment, the consumer product may include a plurality of flavor release layers containing respective flavor components.

[0104] FIG. **12** is a conceptual view illustrating a section of a cigarette portion perpendicular to the longitudinal direction of a consumer product according to the present modification. A consumer product **200**A is different from the consumer product **200** of the above-described embodiment in that the consumer product **200**A includes a cigarette portion **210**A instead of the above-described cigarette portion **210** (see FIG. **7**A).

[0105] The cigarette portion **210**A includes a first flavor release layer **212**A and a second flavor release layer **212**B. The first flavor release layer **212**A and the second flavor release layer **212**B are disposed on respective sides of the through hole **211** into which the heater **120** is inserted. Accordingly, when the consumer product **200**A is contained in the housing **110**, the first flavor release layer **212**A and the second flavor release layer **212**B can be disposed at respective positions facing the heating element **300**A and the heating element **300**B (or at the respective positions facing the heating element **300**B and **300**A). The first flavor release layer **212**A can be heated by a subset of the heating elements out of the plurality of heating elements **300**, and the second flavor release layer **212**B can be heated by the other heating element **300** out of the plurality of heating elements **300**. A mark or the like for positioning is preferably provided in the consumer product **200**A so that, when the consumer product **200**A is contained in the housing **110**, the first flavor release layer **212**A and the second flavor release layer **212**B are disposed at the respective positions facing the corresponding heating elements **300**.

[0106] From the viewpoint of providing a flavor inhaling system that allows the flavor to change, the first flavor release layer **212**A and the second flavor release layer **212**B preferably contain different flavor components. However, the flavor component disposed in the first flavor release layer **212**A or the second flavor release layer **212**B is not particularly limited. The first flavor release layer **212**A and the second flavor release layer **212**B may include the same flavor component. The cigarette portion **210**A may include three or more flavor release layers including the same or different flavor components.

[0107] In the flavor inhaling system according to the present modification, the consumer product **200**A includes the first flavor release layer **212**A and second flavor release

layer **212**B being a plurality of portions including the same or different flavor components. The first flavor release layer **212**A and the second flavor release layer **212**B are configured so that, when inhalation is performed, the first flavor release layer **212**A and the second flavor release layer **212**B are disposed at the positions facing the respective heating elements **300**. Accordingly, release of the flavor components from the flavor inhaling system can be more flexibly controlled. Furthermore, the flavor components can be disposed in the plurality of portions depending on a taste of the user, convenience, or the like.

(Second Modification)

[0108] In the above-described embodiment, the first electrode may include a plurality of different current-carrying regions that heat different portions of the heating elements.

[0109] FIG. **13**A is a side view schematically illustrating a heater **120**A according to the present modification. FIG. **13**B is a sectional view taken along line B-B of FIG. **13**A. The heater **120**A is different from the heater **120** of the above-described embodiment in that the heater **120**A includes a first electrode **71**A instead of the above-described first electrode **71**.

[0110] The first electrode **71**A includes a plurality of current-carrying regions **400** and a plurality of connection regions **411** and **421**. The plurality of current-carrying regions **400** include a downstream region **410** and an upstream region **420**. The downstream region **410** is formed on the downstream side of the upstream region **420**. In the heating element **300**B adjacent to the first electrode **71**A, a portion facing the downstream region **410** is referred to as a first heating section **310**, and a portion facing the upstream region **420** is referred to as a second heating section **320**. Although a first heating section and a second heating section are similarly set in the heating element **300**A, description of thereof is omitted.

[0111] The first heating section **310** is interposed between the downstream region **410** and the second electrode main body **720**B in the normal direction (hereinafter, simply referred to as the normal direction, and corresponding to the Z axis direction) to a plane (XY plane) in which the planar heating element **300**B extends. The first heating section **310** is in contact with and electrically connected to the downstream region **410** and the second electrode main body **720**B. The first heating section **310** is heated by a current generated due to a voltage applied across the downstream region **410** and the second electrode **72**B. The second heating section **320** is interposed between the upstream region **420** and the second electrode main body **720**A in the normal direction. The second heating section **320** is in contact with and electrically connected to the upstream region **420** and the second electrode main body **720**B. The second heating section **320** is heated by a current generated due to a voltage applied across the upstream region **420** and the second electrode **72**B.

[0112] In the illustrated example, the downstream region **410** has planar shape and has, in top view, a pentagonal shape and the upstream region **420** has a planar shape and has, in top view, a rectangular shape. However, as long as the downstream region **410** and the upstream region **420** can be disposed so as to face respective different portions of the adjacent heating element **300**, the shape or the size of the downstream region **410** or the upstream region **420** is not particularly limited.

[0113] The downstream region **410** is electrically connected to the controller **900** via the connection region **411**. The connection region **411** is disposed in the longitudinal direction of the heating element **300** on the upstream side of the downstream region **410**. The connection region **411** is electrically connected to the downstream region **410** at a first end thereof and connected to a conductive wire of the heater **120**A outside the heater **120**A via a connection portion **411**C at a second end thereof. The connection portion **411**C is an end surface on the upstream side of the connection region **411**. The upstream region **420** is electrically connected to the controller **900** via the connection region **421**. The connection region **421** is disposed in the longitudinal direction on the upstream side of the upstream region **420**. The connection region **421** is electrically connected to the upstream region **420** at a first end thereof and connected to a conductive wire of the heater **120**A outside the heater **120**A via a connection portion **421**C at a second end thereof. The connection portion **421**C is an end surface on the upstream side of the connection region **421**.

[0114] From the viewpoint of preventing shorting, a non-current-carrying region **415** is disposed between a region including the downstream region **410** and the connection region **411** and a region including the upstream region **420** and the connection region **421**. From the viewpoint similar to the above description, an insulation treatment is applied, with a coating (not illustrated), to portions of the surfaces of the connection regions **411** and **421** other than the connection portions **411**C and **421**C. The material of neither this coating on the surfaces nor the non-current-carrying region **415** is particularly limited. For example, a coating with a glass can be used. Other than the connection regions **411** and **421**, no electrode protrudes from a range in which the heating element **300** extends along the plane (XY plane) in which the planar heating element **300** extends. The reason for this is to suppress shorting that would otherwise be caused.

[0115] The material of the current-carrying regions **400**, the connection region **411**, or the connection region **421** is not particularly limited as long as these regions are conductive. The current-carrying regions **400**, the connection region **411**, and the connection region **421** preferably include metal or a conductive adhesive.

[0116] According to the present modification, the heating controller **920** can electrically control the downstream region **410**, the upstream region **420**, the second electrode **72**A, and the second electrode **72**B so that these regions and the electrodes are electrically controlled independently of each other. Accordingly, heating of the first heating section **310** and the second heating section **320** of the heating element **300**B and a first heating section and a second heating section set in the heating element **300**A similarly to those of the heating element **300**B can be controlled independently of each other.

[0117] Preferably, when the detector **910** detects the start of the inhalation, the heating controller **920** heats the first heating section **310** disposed on the most downstream side. An aerosol released due to heating performed by the first heating section **310** disposed on the downstream side is unlikely to be blocked by other portions of the cigarette portion **210** because of a small distance to the paper tube **220**. This can suppress reduction of the amount of the aerosol inhaled by the user immediately after the start of the inhalation. However, the configuration in which the first

heating section **310** is heated first is not necessarily used. The positions or the number of the plurality of current-carrying regions **400** is not particularly limited. The positions and the number of the plurality of current-carrying regions **400** can be appropriately set depending on the form of the control of heating. For example, the plurality of current-carrying regions **400** may be arranged in a direction perpendicular to the flow path of air (Z axis direction).

[0118] Alternatively or additionally, similarly to the current-carrying regions **400**, a plurality of current-carrying regions may be provided in the second electrode **72**A or the second electrode **72**B. In this case, current-carrying regions **400** facing each other with a single heating element **300** interposed therebetween preferably have a similar size and a similar shape. In this way, one of the current-carrying regions **400** preferably has a shape and a size based on the current-carrying region **400** facing the one current-carrying region **400** with the heating element **300** interposed therebetween. Thus, the temperature of the heating section disposed between these current-carrying regions **400** can be more accurately controlled.

[0119] In the flavor inhaler according to the present modification, one or more electrodes out of the first electrode **71**A and the second electrodes **72** include a plurality of current-carrying regions **400**. In the first electrode **71**A as the example of such an electrode, the plurality of current-carrying regions **400** are disposed so as to respectively face the first heating section **310** and the second heating section **320** that are a plurality of heating portions of the heating element **300**B adjacent to the first electrode **71**A. This allows control of heating of each of these heating portions of the heating element **300**, and accordingly, heating by using the heater **120**A can be still more flexibly controlled.

[0120] The embodiment according to the present invention has been described above. However, the above-described embodiment according to the present invention is intended to facilitate understanding of the present invention and does not limit the present invention. The present invention can be changed or improved without departing from the gist thereof and includes equivalents thereof. In addition, the elements described in the claims and the description can be combined or omitted to an extent that at least part of the above-described problem can be solved or at least a subset of the effects is produced.

REFERENCE SIGNS LIST

[0121] **10** opening
[0122] **20** shaping guide
[0123] **30** pressure rib
[0124] **71**, **71**A first electrode
[0125] **72**, **72**A, **72**B second electrode
[0126] **100** flavor inhaler
[0127] **110** housing
[0128] **120**, **120**A heater
[0129] **200**, **200**A consumer product
[0130] **210**, **210**A cigarette portion
[0131] **212** flavor release layer
[0132] **212**A first flavor release layer
[0133] **212**B second flavor release layer
[0134] **220** paper tube
[0135] **300**, **300**A, **300**B heating element
[0136] **310** first heating section
[0137] **320** second heating section
[0138] **400** current-carrying region
[0139] **410** downstream region
[0140] **411**, **421** connection region
[0141] **411**C, **421**C, **712**, **722**A, **722**B connection portion
[0142] **420** upstream region
[0143] **610**, **620**A, **620**B coating
[0144] **710** first electrode main body
[0145] **711** first connection electrode
[0146] **720**A, **720**B second electrode main body
[0147] **721**A, **721**B second connection electrode
[0148] **900** controller
[0149] **910** detector
[0150] **920** heating controller
[0151] C**1** circuit

1. A flavor inhaler comprising:
a heater comprising a plurality of heating elements and at least one first electrode, wherein the plurality of heating elements are stacked with the at least one first electrode interposed therebetween.

2. The flavor inhaler according to claim **1**,
wherein the plurality of heating elements include a first heating element and a second heating element,
the first heating element, the second heating element, and the first electrode have respective planar shapes, and
the first heating element and the second heating element are disposed so as to face each other with the first electrode interposed therebetween.

3. The flavor inhaler according to claim **1**, further comprising:
a second electrode stacked outside an outermost heating element out of the plurality of heating elements,
wherein at least one of the first electrode and the second electrode includes a planar supporting member having conductivity.

4. The flavor inhaler according to claim **3**,
wherein the supporting member includes stainless steel.

5. The flavor inhaler according to claim **3**, further comprising a connection electrode,
wherein, in at least one electrode out of the first electrode and the second electrode, the connection electrode is formed along a plane in which an adjacent heating element adjacent to the at least one electrode extends, and the connection electrode protrudes in a longitudinal direction of the adjacent heating element from a range in which the adjacent heating element extends.

6. The flavor inhaler according to claim **5**,
wherein the connection electrode has a connection portion at an end surface thereof or near the end surface thereof to be connected to an outer portion, and an insulation treatment is applied to a surface of the connection electrode other than the connection portion.

7. The flavor inhaler according to claim **5**,
wherein no electrode other than the connection electrode protrudes from the range in which the adjacent heating element extends along the plane in which the adjacent heating element extends.

8. The flavor inhaler according to claim **3**,
wherein at least one electrode out of the first electrode and the second electrode includes a plurality of current-carrying regions, and
the plurality of current-carrying regions are disposed so as to respectively face a plurality of heating portions of the heating element adjacent to the at least one electrode.

9. The flavor inhaler according to claim **1**,
wherein the first electrode includes a thermally insulative material.

10. The flavor inhaler according to claim **1**, further comprising:
a heating controller configured to control a voltage or a current applied to each of the plurality of heating elements.

11. The flavor inhaler according to claim **10**,
wherein the heating controller controls the voltage to heat a subset of the plurality of heating elements, and after that, heat at least a subset of the other heating elements.

12. The flavor inhaler according to claim **1**,
wherein, the plurality of heating elements include a positive temperature coefficient element.

13. A flavor inhaling system comprising:
a consumer product having a flavor component; and
the flavor inhaler according to claim **1**.

14. The flavor inhaling system according to claim **13**,
wherein the consumer product includes a plurality of portions having identical or different flavor components disposed at positions respectively facing the plurality of heating elements when inhalation is performed.

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