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(54) **ELECTRONIC ATOMIZATION DEVICE AND LIQUID STORAGE COMPONENT**

(57) An electronic atomization device (100) and a liquid storage component (200) are provided. The electronic atomization device (100) includes a first housing assembly (101); an atomization assembly (104); and a second housing assembly (201), configured to be connected to the first housing assembly (101) and establish a liquid channel (T1) and an air channel (T2) between a first liquid storage cavity (103) and a second liquid storage cavity (202). A part of a surface of a liquid adsorption element is in communication with the liquid channel (T1), to absorb a liquid substrate from the second liquid storage

cavity (202) through the liquid channel (T1). A port of the air channel (T2) in the first liquid storage cavity (103) is covered by the liquid adsorption element, and the liquid adsorption element is configured to hold a partial amount of the liquid substrate, so that the held liquid substrate is capable of blocking air circulation between the air channel (T2) and the first liquid storage cavity (103), and when the liquid substrate held in the liquid adsorption element is consumed, the air channel (T2) is brought back into communication with an air portion of the first liquid storage cavity (103).

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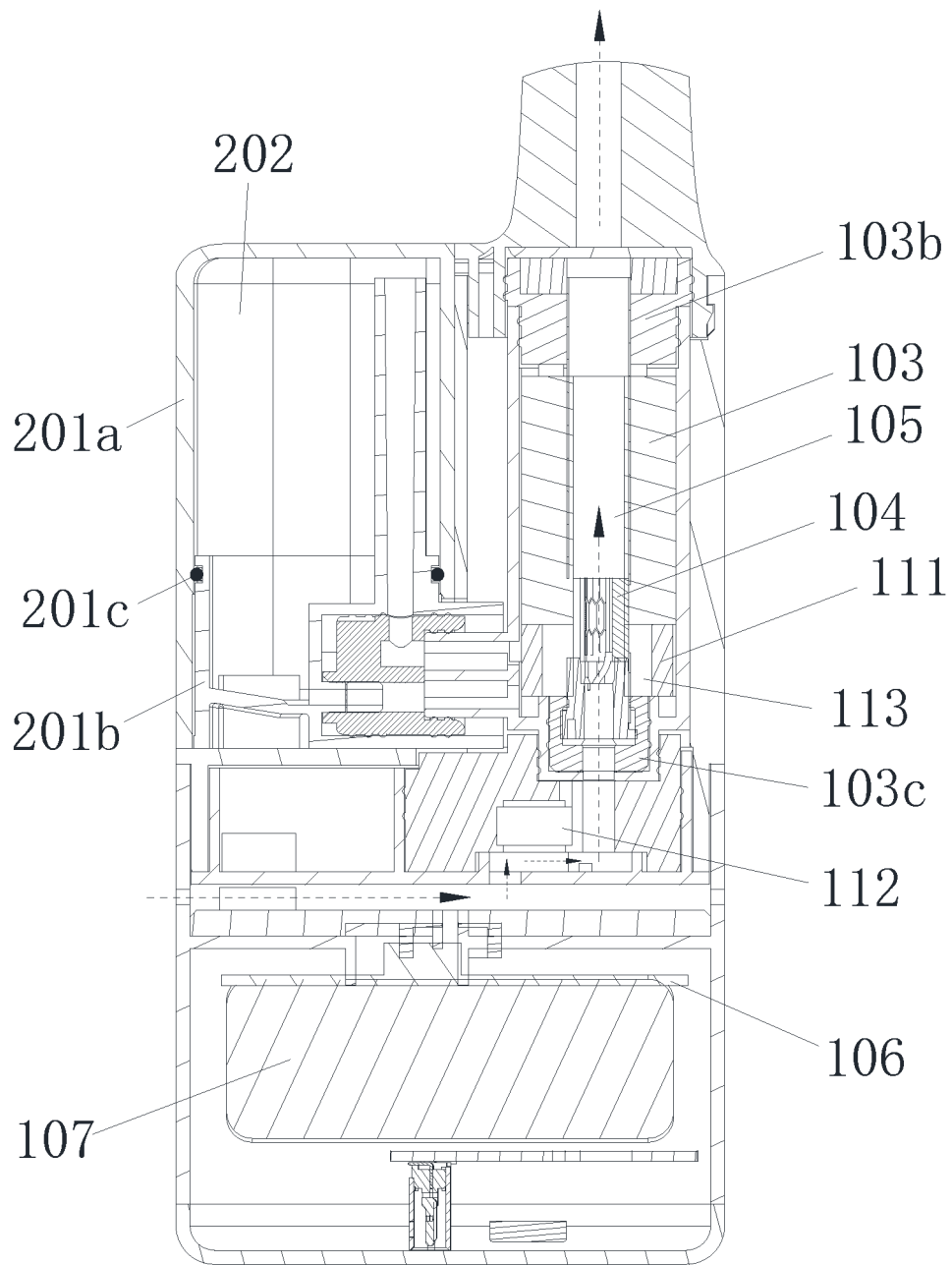


FIG. 3

Description

TECHNICAL FIELD

[0001] This application relates to the field of electronic atomization technologies, and in particular, to an electronic atomization device and a liquid storage component.

BACKGROUND

[0002] An electronic atomization device is an electronic product that generates an aerosol by atomizing a liquid substrate for a user to inhale. The electronic vaporization device generally includes two parts: an atomizer and a power supply assembly. The atomizer has the liquid substrate stored therein and is provided with an atomization assembly for atomizing the liquid substrate. The power supply assembly includes a battery and a circuit board.

[0003] Limited by various factors, for example, costs and regulations, an amount of the liquid substrate stored in the atomizer is generally small. When the liquid substrate is completely consumed, usage may continue through manners, such as liquid injection and atomizer replacement, or the device is directly discarded. On one hand, the manners bring inconvenience to users, degrading user experience, and on the other hand, increase use costs for the users. An existing electronic atomization device may supplement the liquid substrate to the electronic atomization device through a liquid storage component with a large capacity, to reduce use costs for the users, and improving the user experience. However, the device has the following problem. An amount of the liquid substrate supplemented by the liquid storage component to the electronic atomization device is uncontrollable, thereby affecting inhalation experience of the users. For example, when the amount of the liquid substrate supplemented by the liquid storage component to the electronic atomization device is large, the users easily inhale the liquid substrate and liquid leakage easily occurs. However, when the amount of the liquid substrate supplemented by the liquid storage component to the electronic atomization device is small, the atomization assembly has a risk of local overheat caused by a liquid loss.

SUMMARY

[0004] This application is intended to provide an electronic atomization device and a liquid storage component, to control an amount of a liquid substrate transferred to an atomization assembly, thereby improving inhalation experience of a user.

[0005] An aspect of this application provides an electronic atomization device, including:

a first housing assembly, where a first liquid storage cavity is formed in the first housing assembly, and a

liquid adsorption element configured to hold a liquid substrate is arranged in the first liquid storage cavity; an atomization assembly, arranged in the first housing assembly, where the atomization assembly is configured to atomize the liquid substrate from the liquid adsorption element to generate an aerosol; and

a second housing assembly, independent of the first housing assembly, where a second liquid storage cavity configured to store the liquid substrate is formed in the second housing assembly; the second housing assembly is configured to be connected to the first housing assembly, and establish a liquid channel for the liquid substrate to flow and an air channel for air to flow between the first liquid storage cavity and the second liquid storage cavity; a part of a surface of the liquid adsorption element is in communication with the liquid channel, to absorb the liquid substrate from the second liquid storage cavity through the liquid channel; and a port of the air channel in the first liquid storage cavity is covered by the liquid adsorption element, and the liquid adsorption element is configured to hold a partial amount of the liquid substrate, so that the held liquid substrate is capable of blocking air circulation between the air channel and the first liquid storage cavity, and when the liquid substrate held in the liquid adsorption element is consumed, the air channel is brought back into communication with an air portion of the first liquid storage cavity.

[0006] In an example, the air channel is adjacent to the liquid channel.

[0007] In an example, a mouthpiece is arranged on the first housing assembly, and in a longitudinal direction of the first housing assembly, the liquid channel is farther away from the mouthpiece than the air channel.

[0008] In an example, a port of the air channel in the first liquid storage cavity is in communication with the air portion of the first liquid storage cavity through a first gap, and the first gap is at least partially defined between the surface of the liquid adsorption element and an inner wall surface of the first liquid storage cavity.

[0009] In an example, a port of the liquid channel in the first liquid storage cavity is at least partially covered by the liquid adsorption element.

[0010] In an example, a port of the air channel in the first liquid storage cavity and a port of the liquid channel in the first liquid storage cavity are both arranged close to the atomization assembly.

[0011] In an example, a port of the air channel in the first liquid storage cavity and a port of the liquid channel in the first liquid storage cavity are arranged at intervals along an axial direction of the first liquid storage cavity, and the port of the air channel is located above the port of the liquid channel.

[0012] In an example, a spacing distance between the port of the air channel and the port of the liquid channel

ranges from 1 mm to 8 mm.

[0013] In an example, a distance between the port of the air channel and a bottom of the first liquid storage cavity ranges from 2 mm to 10 mm.

[0014] In an example, the port of the air channel in the first liquid storage cavity and the port of the liquid channel in the first liquid storage cavity are both arranged close to the bottom of the first liquid storage cavity.

[0015] In an example, in a longitudinal direction of the second housing assembly, a port of the air channel in the second liquid storage cavity is higher than a port of the liquid channel in the second liquid storage cavity.

[0016] In an example, a port of the air channel in the first liquid storage cavity is in communication with a port of the liquid channel in the first liquid storage cavity through a second gap, and the second gap is defined between the surface of the liquid adsorption element and an inner wall surface of the first liquid storage cavity.

[0017] In an example, the liquid adsorption element includes a liquid guide element at least partially covering the liquid channel and a liquid storage substrate in contact with the liquid guide element.

[0018] In an example, the liquid guide element maintains a spacing from the atomization assembly.

[0019] In an example, the device further includes:

a first through hole and a second through hole, provided at intervals on the first housing assembly; and

a third through hole and a fourth through hole, provided at intervals on the second housing assembly, where

when the second housing assembly is connected to the first housing assembly, the first through hole is engaged with the third through hole to form the air channel, and the second through hole is engaged with the fourth through hole to form the liquid channel.

[0020] In an example, when the electronic atomization device is in a non-use state, the air channel and the air portion of the first liquid storage cavity are blocked by the liquid substrate held in the liquid adsorption element; and when the electronic atomization device is in an inhaled state or in a lag period after being inhaled, the air channel is brought into communication with the air portion of the first liquid storage cavity.

[0021] Another aspect of this application provides an electronic atomization device, including:

a first housing assembly, where a first liquid storage cavity is formed in the first housing assembly, and a liquid adsorption element configured to hold a liquid substrate is arranged in the first liquid storage cavity; a mouthpiece, arranged on the first housing assembly;

an atomization assembly, arranged in the first housing assembly, where the atomization assembly is

configured to atomize the liquid substrate from the liquid adsorption element to generate an aerosol; and

a second housing assembly, where a second liquid storage cavity configured to store the liquid substrate is formed in the second housing assembly, and the second housing assembly is configured to be connected to the first housing assembly, and establish a liquid channel for the liquid substrate to flow and an air channel for air to flow between the first liquid storage cavity and the second liquid storage cavity; and

the air channel and the liquid channel are both arranged close to the atomization assembly, and along a longitudinal direction of the first housing assembly, a position of the liquid channel is farther away from the mouthpiece than that of the air channel.

[0022] Another aspect of this application further provides a liquid storage component, including:

a main body; and

a bottom cover, connected to the main body and defining a second liquid storage cavity configured to store a liquid substrate with the main body, where an air channel for supplementing air to the second liquid storage cavity and a liquid channel for transporting the liquid substrate outward from the second liquid storage cavity are defined on the bottom cover and/or the main body; and

in a longitudinal direction of the liquid storage component, a port of the air channel in the second liquid storage cavity is higher than a port of the liquid channel in the second liquid storage cavity.

[0023] According to the electronic atomization device and the liquid storage component above, the air channel is blocked when the liquid adsorption element absorbs the liquid substrate, and the air channel is unblocked when the liquid substrate in the liquid adsorption element is consumed. In this way, the electronic atomization device can automatically and quantitatively transfer the liquid substrate to the atomization assembly, thereby improving inhalation experience of the user.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] One or more embodiments are exemplarily described with reference to figures in drawings, and the descriptions are not to be construed as a limitation on the embodiments. Elements in the drawings that have the same reference numerals are represented as similar elements, and unless otherwise particularly stated, the figures in the drawings are not drawn to scale.

FIG. 1 is a schematic diagram of an electronic atomization device and a liquid storage component after assembly according to an implementation of this

application;

FIG. 2 is a schematic diagram of an electronic atomization device and a liquid storage component before assembly according to an implementation of this application;

FIG. 3 is a schematic cross-sectional view of FIG. 1;

FIG. 4 is a schematic cross-sectional view of FIG. 2;

FIG. 5 is a schematic diagram of an electronic atomization device from another perspective according to an implementation of this application;

FIG. 6 is a schematic diagram of a liquid storage substrate according to an implementation of this application;

FIG. 7 is a schematic diagram of an atomization assembly according to an implementation of this application;

FIG. 8 is a schematic diagram of a connecting tube according to an implementation of this application;

FIG. 9 is a schematic diagram of a liquid guide element according to an implementation of this application;

FIG. 10 is a schematic diagram of a liquid storage component from another perspective according to an implementation of this application;

FIG. 11 is a schematic exploded view of FIG. 10;

FIG. 12 is another schematic exploded view of FIG. 10;

FIG. 13 is a partial schematic diagram of FIG. 3;

FIG. 14 is a schematic cross-sectional view of another liquid storage component according to an implementation of this application;

FIG. 15 is a schematic cross-sectional view of an electronic atomization device and a liquid storage component after assembly according to another implementation of this application;

FIG. 16 is a partially enlarged schematic diagram of FIG. 15;

FIG. 17 is a schematic diagram of a liquid guide element according to another implementation of this application;

FIG. 18 is a schematic cross-sectional view of an electronic atomization device and a liquid storage component after assembly according to still another implementation of this application;

FIG. 19 is a schematic cross-sectional view of an electronic atomization device and a liquid storage component before assembly according to still another implementation of this application;

FIG. 20 is a simplified schematic diagram of a liquid storage cavity after storing a liquid substrate according to still another implementation of this application;

FIG. 21 is a partial schematic diagram of an electronic atomization device and a liquid storage component after assembly according to still another implementation of this application;

FIG. 22 is a schematic cross-sectional view of an electronic atomization device and a liquid storage component after assembly according to yet another

implementation of this application; and

FIG. 23 is a schematic cross-sectional view of an electronic atomization device and a liquid storage component before assembly according to yet another implementation of this application.

DETAILED DESCRIPTION

[0025] For ease of understanding of this application, this application is described in more detail below with reference to drawings and specific implementations. It should be noted that, when an element is described to be "fixed to" another element, the element may be directly fixed to the another element, or there may be one or more intermediate elements therebetween. When one element is described to be "connected to" another element, the element may be directly connected to the another element, or there may be one or more intermediate elements therebetween. Terms "upper", "lower", "left", "right", "inner", "outer", and similar expressions used in this specification are for illustrative purposes only.

[0026] Unless otherwise defined, meanings of all technical and scientific terms used in this specification are the same as that usually understood by a person skilled in the technical field to which this application belongs. In this specification, terms used in this specification of this application are merely intended to describe the specific implementations, and are not intended to limit this application. A term "and/or" used in this specification includes any or all combinations of one or more related listed items.

[0027] As used herein, terms 'upstream' and 'downstream' are used for describing relative positions of components or portions of the components in an electronic atomization device in a direction of an inhalation airflow.

[0028] As shown in FIG. 1 to FIG. 5, an electronic atomization device 100 provided in an embodiment of this application includes a housing assembly 101. The housing assembly 101 may be composed of a plurality of components, for example, a main housing, a top cover arranged at a top of the main housing, and a bottom cover arranged at a bottom of the main housing. The housing assembly 101 may also be integrally formed.

[0029] The top of the housing assembly 101 is provided with a mouthpiece 102. The mouthpiece 102 and the housing assembly 101 may be formed integrally or separately. The mouthpiece 102 is configured for a user to inhale an aerosol generated through atomization.

[0030] A liquid storage cavity 103 configured to store a first liquid substrate is formed in the housing assembly 101. The first liquid substrate may be a liquid containing a tobacco substance containing a volatile tobacco flavor ingredient, and may also be a liquid containing a non-tobacco substance. For example, the liquid substrate may include water, a solvent, ethanol, a plant extract, flavor, a flavoring agent, or a vitamin mixture. The flavor may include menthol, peppermint, spearmint oil, various

fruity aroma ingredients, and the like, but is not limited thereto. The flavoring agent may include ingredients that may provide various aromas or flavors to a user. The vitamin mixture may be a substance mixed with at least one of a vitamin A, a vitamin B, a vitamin C, and a vitamin E, but is not limited thereto. In addition, the first liquid substrate may include an aerosol forming agent, such as glycerin and propylene glycol.

[0031] The liquid storage cavity 103 is provided with a liquid storage substrate 103a, a sealing member 103b is arranged at an upper end of the liquid storage cavity 103, a sealing member 103c is arranged at a lower end of the liquid storage cavity 103, and the upper end and the lower end of the liquid storage cavity 103 are sealed through the sealing member 103b and the sealing member 103c.

[0032] The liquid storage substrate 103a is made of, for example, a fiber material or a porous material. As shown in FIG. 6, the liquid storage substrate 103a is substantially in a tube-shaped structure. The liquid storage substrate 103a may adsorb and hold the first liquid substrate and provide the first liquid substrate for an atomization assembly 104. When the liquid storage substrate 103a reaches a saturation state after liquid injection is performed, a content of a liquid substrate in the liquid storage substrate 103a ranges from 0.1 ml to 2 ml, for example, 0.5 ml, 0.8 ml, 1 ml, 1.5 ml, or 2 ml. A part of space between an end surface of the liquid storage substrate 103a and the sealing member 103b defines an air portion.

[0033] The atomization assembly 104 is arranged in the housing assembly 101. The atomization assembly 104 is configured to atomize the liquid substrate to generate an aerosol.

[0034] As shown in FIG. 7, the atomization assembly 104 includes a liquid guide element 104a and a heating element 104b. The liquid guide element 104a can absorb the liquid substrate in the liquid storage substrate 103a and transfers the liquid substrate to the heating element 104b. The heating element 104b may be heated by a current supply, and transfers heat to the liquid substrate in contact with the heating element 104b to heat the liquid substrate, thereby generating the aerosol.

[0035] The liquid guide element 104a is configured to be in a tube-shaped structure. It may be understood that, the liquid guide element may also be in a plate-shaped structure or of another regular or irregular shape. The liquid guide element 104a may be made of a flexible fiber material, for example, the liquid guide element is made of a cotton fiber, a non-woven fabric, or a sponge. Alternatively, in another example, the liquid guide element 104a may also be a rigid porous body, for example, a porous ceramic, or a porous glass. An outer side surface of the liquid guide element 104a has a protruding portion 104a1 that protrudes outward along a radial direction.

[0036] The heating element 104b is arranged close to an inner side surface of the liquid guide element 104a, and the heating element may be tightly attached to the inner side surface of the liquid guide element 104a, or the heating element is partially or completely embedded in

the liquid guide element 104a. The heating element 104b may be a resistive heating mesh, a resistive heating coil, or the like. The heating element 104b may be made of a material with an appropriate resistance temperature coefficient characteristic, such as stainless steel 316, titanium, nickel, or a nickel-chromium alloy. In an example, the heating element 104b may be formed through winding by a sheet-shaped or mesh-shaped substrate, and the wound heating element 104b is in a non-closed tube-shaped structure in a circumferential direction. In other words, the heating element is in a tube-shaped structure having a side opening that extends along a length direction of the electronic atomization device 100. A conductive pin 104c and a conductive pin 104d are welded or arranged at two ends of the heating element 104b, to guide a current on the heating element 104b. In another example, the heating element 104b may be arranged as a structure wound on the liquid guide element 104a.

[0037] The housing assembly 101 is further provided with an airflow channel 105 to transmit the aerosol generated by the atomization assembly 104 to the mouthpiece 102 for a user to inhale. A lower end of the airflow channel 105 is in communication with an air inlet. The air inlet may be arranged on a side wall of the housing assembly 101. An upper end of the airflow channel 105 is connected to the mouthpiece 102, namely, being in communication with an air outlet (a dashed arrow in figures shows an airflow direction in the airflow channel 105).

[0038] As shown in FIG. 8, a connecting tube 105a is arranged in the housing assembly 101, and a hollow part inside the connecting tube 105a defines a part of the airflow channel 105. The connecting tube 105a extends along an axial direction of the liquid storage cavity 103. An upper end of the connecting tube 105a is connected to the sealing member 103b, and a lower end of the connecting tube 105a is connected to the sealing member 103c. The connecting tube 105a is preferably made of a relatively thin rigid material, such as a glass fiber material or stainless steel.

[0039] In a preferred implementation, the liquid storage substrate 103a is sleeved on the connecting tube 105a; and an inner diameter of the liquid storage substrate 103a is slightly less than an outer diameter of the connecting tube 105a, so that the liquid storage substrate 103a is tightly sleeved on the connecting tube 105a. The atomization assembly 104 is arranged in the connecting tube 105a. The atomization assembly 104 is arranged coaxially with the connecting tube 105a. A side wall of the connecting tube 105a is further provided with a liquid guide port 105a1 provided close to the lower end of the connecting tube 105a, the liquid storage substrate 103a covers the liquid guide port 105a1, and a part of the liquid guide element 104a is exposed in the liquid storage cavity 103 through the liquid guide port 105a1. In this way, the part of the liquid guide element 104a is arranged close to the liquid storage substrate 103a and keeps in contact

with the liquid storage substrate 103a, so that a liquid substrate in the liquid storage cavity 103 flows into the atomization assembly 104 through the liquid guide port 105a1. In other words, the liquid substrate is absorbed by the liquid guide element 104a, and is atomized by the heating element 104b to generate an inhalable aerosol.

[0040] The side wall of the connecting tube 105a is further provided with a notch groove 105a2, and the notch groove 105a2 extends from the lower end of the connecting tube 105a to the upper end of the connecting tube 105a. The protruding portion 104a1 of the liquid guide element 104a extends into the notch groove 105a2, to be exposed in the liquid storage cavity 103. After being assembled, the liquid storage substrate 103a keeps in contact with a part of the protruding portion 104a1, thereby helping the liquid guide element 104a absorb the liquid substrate.

[0041] A circuit 106 is further arranged in the housing assembly 101. The circuit 106 may control overall operation of the electronic atomization device 100. Specifically, the circuit 106 not only controls operations of a battery core 107 and the atomization assembly 104, but also controls operation of another element in the electronic atomization device 100. In addition, the circuit 106 may determine, by checking a state of a component of the electronic atomization device 100, whether the electronic atomization device 100 is operable.

[0042] The circuit 106 includes at least one control unit. The control unit may include a logic gate array or may include a combination of a general-purpose microcontroller and a memory storing a program executable in the microcontroller. In addition, a person skilled in the art should understand that the circuit 106 may include another type of hardware.

[0043] The battery core 107 is configured to provide electric power for operating the electronic atomization device 100. For example, the battery core 107 may provide electric power for the heating element to perform heating, and may provide electric power for operating the circuit 106. In addition, the battery core 107 may provide electric power required to operate another component provided in the electronic atomization device 100.

[0044] The battery core 107 may be, but is not limited to, a lithium iron phosphate (LiFePO₄) battery. For example, the battery core 107 may be a lithium cobaltate (LiCoO₂) battery or a lithium titanate battery. The battery core 107 may be a rechargeable battery or a disposable battery.

[0045] It should be noted that, only the components related to this embodiment are shown in the figure. A person of ordinary skill in the art should understand that the electronic atomization device 100 may further include other general-purpose components besides the components shown in FIG. 1 to FIG. 5. For example, an inhalation detector 112 may also be arranged in the housing assembly 101 and is configured to detect an inhalation action of the user and generate a corresponding electrical signal. In other words, a detection as to whether the

electronic atomization device 100 is inhaled is performed, so that the circuit 106, for example, the control unit, controls operations of the battery core 107, the heating element, or the like based on the electrical signal. For example, the battery core 107 is controlled to provide electric power to the heating element, to enable the heating element to heat and atomize the liquid substrate. A conventional pressure sensor, differential pressure sensor, airflow sensor, or the like may be used as the inhalation detector 112. The inhalation detector 112 is in communication with the airflow channel 105, so that a change of an inhalation flow can be sensed when the user performs inhalation.

[0046] It should be further noted that, in the examples of FIG. 1 to FIG. 5, the foregoing components are integrally formed. The electronic atomization device 100 is a general integrated device. In another example, the electronic atomization device includes an atomizer and a power supply assembly detachably connected to the atomizer. The atomizer is also usually referred to as a cartridge. The power supply assembly is also usually referred to as a cigarette holder. The circuit 106, the battery core 107, and the inhalation detector are located in the power supply assembly. The mouthpiece 102, the first liquid storage cavity 103, and the atomization assembly 104 are located in the atomizer, which is also feasible.

[0047] It should be understood with reference to FIG. 10 to FIG. 13 that the liquid storage component 200 provided in an embodiment of this application includes a housing assembly 201. The housing assembly 201 may be composed of a plurality of components, for example, a main body 201a, a bottom cover 201b, a sealing member 201c, and a sealing member 201d.

[0048] The main body 201a is connected to the bottom cover 201b. In a preferred implementation, the main body 201a is detachably connected to the bottom cover 201b. For example, the main body is in a snap-fit connection with the bottom cover. A part of the bottom cover 201b extends into the main body 201a. The main body 201a and the bottom cover 201b jointly define a liquid storage cavity 202 configured to store a second liquid substrate. In a further implementation, the bottom cover 201b is provided with a liquid injection port 201b1, and the second liquid substrate may be injected into the liquid storage cavity 202 through the liquid injection port 201b1. The liquid injection port 201b1 may be sealed through the sealing member, or may be sealed in another manner, which is not limited in this application. The sealing member 201c is arranged between the bottom cover 201b and the main body 201a, to avoid the second liquid substrate from leaking through a gap between the bottom cover 201b and the main body 201a. In a preferred implementation, an outer surface of the bottom cover 201b is provided with a groove 201b2. The sealing member 201c is in an annular shape and at least a part of the sealing member is accommodated in the groove 201b2, so that sealing between the bottom cover 201b and the

main body 201a is implemented.

[0049] Similar to the first liquid substrate, the second liquid substrate may be a liquid containing a tobacco substance containing a volatile tobacco flavor ingredient, and may also be a liquid containing a non-tobacco substance. For example, the liquid substrate may include water, a solvent, ethanol, a plant extract, flavor, a flavoring agent, or a vitamin mixture. The flavor may include menthol, peppermint, spearmint oil, various fruity aroma ingredients, and the like, but is not limited thereto. The flavoring agent may include ingredients that may provide various aromas or flavors to a user. The vitamin mixture may be a substance mixed with at least one of a vitamin A, a vitamin B, a vitamin C, and a vitamin E, but is not limited thereto. In addition, the second liquid substrate may include an aerosol forming agent, such as glycerin and propylene glycol.

[0050] It should be noted that, compositions or characteristics of the second liquid substrate and the first liquid substrate may be different or the same. For example, in some examples, the compositions of the second liquid substrate and the first liquid substrate are different, or concentrations of the second liquid substrate and the first liquid substrate are different. For example, in some other examples, the compositions of the second liquid substrate and the first liquid substrate are totally the same. The second liquid substrate may be a part of a liquid formula, and the first liquid substrate may be another part of the liquid formula. The second liquid substrate may be introduced into the liquid storage cavity 103 as a supplementary source of the first liquid substrate, so that a quantity of times of inhalation that can be performed on the electronic atomization device is increased.

[0051] A volume of the liquid storage cavity 202 is greater than a volume of the liquid storage cavity 103. Generally, a capacity of the second liquid substrate stored in the liquid storage cavity 202 ranges from 2 ml to 10 ml, for example, 2 ml, 4 ml, 5 ml, 6 ml, 8 ml, or 10 ml. It may be understood that the volume of the liquid storage cavity 202 is slightly greater than the capacity of the stored second liquid substrate. In this way, after storing the second liquid substrate, the liquid storage cavity 202 may be divided into two parts. One part is an air portion, and the other part is a liquid substrate portion. Generally, the liquid storage substrate 103a is not arranged in the liquid storage cavity 202.

[0052] The liquid storage component 200 is independent of the main body of the electronic atomization device 100. For example, when a product is in a packaging state or an unused state, the liquid storage component 200 is separated from the main body of the electronic atomization device 100, namely, the housing assembly 101. The user may assemble the liquid storage component 200 on the housing assembly 101 before use. In an example, the liquid storage component 200 is detachably connected to the electronic atomization device 100. In other words, the housing assembly 201 is detachably connected to the housing assembly 101. For example, the housing as-

sembly is in a snap-fit connection with or in a magnetic connection with the housing assembly. In an example, the liquid storage component 200 is not detachable from the electronic atomization device 100 anymore once after the liquid storage component and the electronic atomization device are connected.

[0053] The housing assembly 101 is further provided with an accommodating cavity 108 for accommodating or containing at least part of the housing assembly 201. Specifically, a shape of the accommodating cavity 108 is adapted to a shape of the housing assembly 201. The accommodating cavity 108 is a notch groove extending through a part of a left side wall and a part of a top wall of the housing assembly 101. The housing assembly 201 may be assembled to or held on the housing assembly 101 from a left side of the housing assembly 101. An inner wall of the accommodating cavity 108 is provided with a slot 108a. An outer wall of the housing assembly 201 is provided with a snap-fit connecting member (not shown). A snap fit of the housing assembly 201 and the housing assembly 101 is implemented through engagement of the slot 108a and the snap-fit connecting member. After the housing assembly 201 is connected to the housing assembly 101, a shell of the electronic atomization device 100 is jointly defined. It may be understood that a connection manner for the housing assembly 201 and the housing assembly 101 is not limited to the foregoing situation.

[0054] When the housing assembly 201 is connected to the housing assembly 101, the liquid storage cavity 103 and the liquid storage cavity 202 are arranged in sequence along a width direction of the electronic atomization device 100. The liquid storage cavity 103 is arranged near a right end of the electronic atomization device 100, and the liquid storage cavity 202 is arranged near a left end of the electronic atomization device 100. It may be understood that arrangements of the liquid storage cavity 103 and the liquid storage cavity 202 are not limited to the foregoing situation.

[0055] When the housing assembly 201 is connected to the housing assembly 101, the air portion of the liquid storage cavity 103 is in communication with the air portion of the liquid storage cavity 202, and the liquid substrate in the liquid storage cavity 202 can be supplemented into the liquid storage cavity 103 in time.

[0056] Specifically, the housing assembly 101 further includes a through hole 109 and a through hole 110 spaced apart from each other. One end of the through hole 109 is in communication with the liquid storage cavity 103, and an other end of the through hole 109 protrudes from a right side wall of the accommodating cavity 108 and is in communication with an outside of the housing assembly 101. One end of the through hole 110 is in communication with the liquid storage cavity 103, and an other end of the through hole 110 protrudes from the right side wall of the accommodating cavity 108 and is in communication with the outside of the housing assembly 101. A liquid substrate can be supplemented to the

liquid storage cavity 103 through the through hole 109, and air can be supplemented to or discharged from the liquid storage cavity 103 through the through hole 110. The through hole 109 may be provided close to the through hole 110. For example, the through hole 109 is provided next to the through hole 110. The through hole 109 and the through hole 110 may also be provided apart by a specific distance. In some examples, an advantage of providing the through hole 109 close to the through hole 110 is that a same sealing member may be used to implement connection between the through hole 109 and the through hole 110 and the liquid storage component, thereby improving sealing reliability.

[0057] In a specific implementation, one end of the through hole 110 may be in communication with the air portion of the liquid storage cavity 103 through a gap between the liquid storage substrate 103a and a wall defining the liquid storage cavity 103. For example, the liquid storage substrate 103a has a notch groove 103a1, and a gap is formed between the notch groove 103a1 and the wall defining the liquid storage cavity 103, so that the through hole 110 is in communication with the air portion of the liquid storage cavity 103. Alternatively, the liquid storage substrate 103a has a vent hole therein, and the through hole 110 is in communication with the air portion of the liquid storage cavity 103 through the vent hole.

[0058] In an example, external air may also be in communication with the air portion of the liquid storage cavity 103 through a gap between the connecting tube 105a and the sealing member 103c.

[0059] When the housing assembly 201 is not connected to the housing assembly 101, the through hole 109 or the through hole 110 may be blocked through a sealing member, for example, may be blocked through a removable silica gel plug or a silica gel cap, or may be blocked through a pierceable thin film member.

[0060] The bottom cover 201b is further provided with an accommodating cavity 201b3, a through hole 201b4, and a through hole 201b5. The accommodating cavity 201b3 is in communication with an outside of the housing assembly 201. One end of the through hole 201b4 is provided close to the bottom of the liquid storage cavity 202 and is in communication with the liquid storage cavity 202, and an other end of the through hole 201b4 is in communication with the accommodating cavity 201b3. In a further implementation, an inclined portion 201b6 inclined toward one end of the through hole 201b4 is further provided at the bottom of the liquid storage cavity 202, and the inclined portion 201b6 is configured to guide the liquid substrate to flow toward an end of the through hole 201b4 without accumulating the liquid substrate at the bottom of the liquid storage cavity 202, thereby improving a utilization rate of the liquid substrate. The through hole 201b5 and the through hole 201b4 are spaced apart from each other. The through hole 201b5 may be adjacent to the through hole 201b4, or may be spaced apart from the through hole 201b4 by a specific distance. Air can be supplemented to or discharged from the liquid storage

cavity 202 through the through hole 201b5. One end of a wall defining the through hole 201b5 extends into the liquid storage cavity 202 and is arranged close to a top of the liquid storage cavity 202, thereby facilitating direct communication with the air portion of the liquid storage cavity 202. An other end of the through hole 201b5 is in communication with the accommodating cavity 201b3.

[0061] At least a part of the sealing member 201d is accommodated in the accommodating cavity 201b3. The sealing member 201d is provided with an accommodating cavity 201d1, a through hole 201d2, and a through hole 201d3. The accommodating cavity 201d1 is in communication with an outside of the housing assembly 201. One end of the through hole 201d2 is provided on a left side wall of the sealing member 201d, and an other end of the through hole 201d2 is in communication with the accommodating cavity 201d1. One end of the through hole 201d3 is provided on a top wall of the sealing member 201d, and an other end of the through hole 201d3 is in communication with the accommodating cavity 201d1.

[0062] As shown in FIG. 4, when the housing assembly 201 is not connected to the housing assembly 101, an other end of the through hole 201b4 or at least a part of a wall defining the through hole 201b4 extends into the through hole 201d2, so that the through hole 201b4 is in communication with the through hole 201d2. However, an other end of the through hole 201b5 and one end of the through hole 201d3 are arranged in a staggered manner, so that the through hole 201b5 is not in communication with the through hole 201d3. In other words, the other end of the through hole 201b5 is closed by the sealing member 201d, thereby closing the through hole 201b5. In this case, the through hole 201d2 and/or the through hole 201d3 may be blocked through another sealing member, for example, may be blocked through a removable silica gel plug or a silica gel cap, or may be blocked through a pierceable thin film member. Because the through hole 201b5 is blocked by the sealing member 201d, in this case, the through hole 201b5 may also be considered not to be blocked through another sealing member.

[0063] When the housing assembly 201 is assembled to the housing assembly 101 from a left side of the housing assembly 101, at least a part of a wall defining the through hole 109 and the through hole 110 extends into or is accommodated in the accommodating cavity 201b3, thereby abutting against the sealing member. The through hole 109 is in communication with the through hole 201d2, and the through hole 110 is in communication with the through hole 201d3, so that the through hole 109 is in communication with the through hole 201b4. Because the through hole 201b5 is blocked by the sealing member 201d, the through hole 110 is not in communication with the through hole 201b5 in an initially connected state.

[0064] When the housing assembly 201 is further assembled to the housing assembly 101 from the left side of the housing assembly 101, the sealing member 201d is

pressed or pushed by the wall defining the through hole 109 and the through hole 110, and is driven to move toward the accommodating cavity 201b3 (in this case, the wall defining the through hole 201b4 moves in the through hole 201d2). When the sealing member 201d is moved into the accommodating cavity 201b3 by a specific distance or is moved in place, for example, when the end of the wall defining the through hole 201d2 abuts against the bottom of the accommodating cavity 201b3, an other end of the through hole 201b5 is aligned with one end of the through hole 201d3, so that the through hole 201b5 is in communication with the through hole 201d3, and then the through hole 110 is in communication with the through hole 201b5. That is, the through hole 201b5 (a first position) is opened. An other end of the through hole 201b4 or at least a part of the wall defining the through hole 201b4 moves in the through hole 201d2. In this way, the air portion of the liquid storage cavity 103 is in communication with the air portion of the liquid storage cavity 202, and the liquid substrate in the liquid storage cavity 202 can be supplemented into the liquid storage cavity 103 in time.

[0065] In this case, the through hole 201b4, the through hole 201d2, and the through hole 109 jointly define a liquid channel T1, thereby providing a fluid path enabling the first liquid substrate and/or the second liquid substrate to flow between the liquid storage cavity 103 and the liquid storage cavity 202. One end of the liquid channel is in communication with the liquid storage cavity 103, and an other end of the liquid channel is in communication with the liquid storage cavity 202. The through hole 201b5, the through hole 201d3, and the through hole 110 jointly define an air channel T2, configured to provide an air path for air exchange between the liquid storage cavity 103 and the liquid storage cavity 202. One end of the air channel T2 is in communication with the air portion of the liquid storage cavity 103, and an other end of the air channel T2 is in communication with the air portion of the liquid storage cavity 202. The air channel T2 can balance an air pressure difference between the liquid storage cavity 103 and the liquid storage cavity 202, so that the second liquid substrate stored in the liquid storage cavity 202 can smoothly flow into the liquid storage cavity 103 through the liquid channel T1, to supplement a liquid substrate for consumption to the liquid storage cavity 103 in time, thereby avoiding that a negative pressure generated as the liquid substrate in the liquid storage cavity 103 is reduced to prevent the remaining liquid substrate from further flowing into the liquid storage cavity 202. In an example, it may be learned from the foregoing that external air may also be in communication with the air portion of the liquid storage cavity 103 through a gap between the connecting tube 105a and the sealing member 103c. Therefore, the external air may further implement air exchange with the air portion of the liquid storage cavity 103 and/or the liquid storage cavity 202.

[0066] In the foregoing implementations, the air channel T2 is arranged adjacent to the liquid channel T1. A

port T1a at one end of the liquid channel T1 and a port T2a at one end of the air channel are arranged at intervals along an axial direction of the electronic atomization device 100 or the liquid storage cavity 103, and the port T2a of the air channel is located above the port T1a of the liquid channel. In some examples, along the axial direction of the electronic atomization device 100, the port T1a of the liquid channel and the port T2a of the air channel are both arranged close to a bottom of the liquid storage cavity 103, that is, the two ports are both arranged away from the mouthpiece 102. In the axial direction of the electronic atomization device 100, the port T1a of the liquid channel is farther away from the mouthpiece 102 of the electronic atomization device 100 relative to the port T2a of the air channel.

[0067] In a further implementation, the liquid storage cavity 103 is further provided with a liquid guide element 111. As shown in FIG. 9, the liquid guide element 111 is substantially in a tube-shaped structure. The liquid guide element 111 and the liquid storage substrate 103a are arranged in sequence along the axial direction of the liquid storage cavity 103. The liquid guide element 111 is arranged close to the through hole 109 and the through hole 110. In other words, the liquid guide element 111 is in communication with the liquid channel, and both the through hole 109 and the through hole 110 are covered by the liquid guide element 111. An upper surface of the liquid guide element 111 keeps in contact with a lower surface of the liquid storage substrate 103a, a lower surface of the liquid guide element 111 is in contact with a bottom of the liquid storage cavity 103, and an outer side surface of the liquid guide element 111 keeps in contact with a wall defining the liquid storage cavity 103. In this way, when the second liquid substrate in the liquid storage cavity 202 flows into the liquid storage cavity 103 through the liquid channel, the second liquid substrate can be absorbed by the liquid guide element 111 and transferred to the liquid storage substrate 103a, and is further indirectly transferred to the liquid guide element 104a in the atomization assembly 104. In other words, the second liquid substrate is absorbed by the liquid guide element 104a in the atomization assembly 104. Through such arrangement, the second liquid substrate stored in the liquid storage cavity 202 is enabled to smoothly flow to the atomization assembly 104, to avoid a problem that due to a relatively fast liquid supply rate, abnormal noise is generated when the user performs inhalation, and the liquid substrate is easily inhaled by the user.

[0068] In the foregoing implementations, a material of the liquid guide element 111 may be the same as or different from a material of the liquid storage substrate 103a. A density of the liquid guide element 111 is greater than a density of the liquid storage substrate 103a. In this way, in one aspect, it is ensured that the liquid guide element 111 can vigorously absorb the liquid substrate in the liquid channel, so that the liquid substrate in the liquid guide element 111 is smoothly transferred to the liquid storage substrate 103a. In another aspect, supersatura-

tion of the liquid storage substrate 103a can be mitigated through the liquid guide element 111, and a probability of leakage of the liquid substrate is reduced. In another example, the liquid guide element 111 and the liquid storage substrate 103a use a same fiber material, and both the liquid guide element and the liquid storage substrate can absorb the liquid substrate from the liquid channel, namely, the through hole 109, and transfer the liquid substrate to the atomization assembly 104. The liquid guide element 111 and the liquid storage substrate 103a may be filled in the liquid storage cavity 103 as a liquid adsorption element of an integral structure.

[0069] In the foregoing implementations, because the outer side surface of the liquid guide element 111 keeps in contact with the wall defining the liquid storage cavity 103, to avoid the air channel from being blocked, a specific gap J1 may be defined between the wall (namely, the inner wall surface of the liquid storage cavity 103) defining the liquid storage cavity 103 and an outer side surface of the liquid guide element 111, so that air in the liquid storage cavity 103 can flow to the foregoing gap J1 through the notch groove 103a1 on the side wall of the liquid storage substrate 103a, and enter the air channel through the gap J1, to supplement the air to the liquid storage cavity 202, thereby achieving an air pressure balance between the liquid storage cavity 103 and the liquid storage cavity 202.

[0070] In the foregoing implementations, the port T2a at one end of the air channel, namely, the port at one end of the through hole 110, is covered by the liquid guide element 111. When the liquid guide element 111 and the liquid storage substrate 103a absorb the liquid substrate, the air channel T2 may be blocked by the liquid substrate held in the liquid guide element 111 and the liquid storage substrate 103a. For example, as shown in FIG. 13, when a level of the liquid substrate absorbed by the liquid guide element 111 and the liquid storage substrate 103a reaches a schematic line Y (the schematic line Y may be a horizontal line, or may be a non-horizontal line) in the figure, the port T2a of the through hole 110 at one end of the liquid storage cavity 103 is blocked, and the gap J1 between the liquid guide element 111 and the through hole 110 is also blocked by the liquid substrate seeping out from the liquid guide element 111 and/or the liquid storage substrate 103a, so that air exchange cannot be implemented between the liquid storage cavity 103 and the liquid storage cavity 202 through the air channel T2, and the air pressure difference between the liquid storage cavity and the liquid storage cavity causes the liquid storage cavity 202 to gradually reduce and even stop supplementing the liquid substrate to the liquid storage cavity 103.

[0071] When the electronic atomization device 100 is inhaled (the liquid substrate in the liquid guide element 111 and the liquid storage substrate 103a is consumed) and the horizontal schematic line Y the liquid substrate gradually descends, the liquid substrate blocked in the air channel T2 and the foregoing gap J1 is also absorbed by

the liquid guide element 111. When the level of the liquid substrate descends to a position below the through hole 110, the through hole 110 is brought into communication with the air portion in the liquid storage cavity 103, air communication is implemented again between the liquid storage cavity 103 and the liquid storage cavity 202 through the air channel T2, and the liquid storage cavity 202 restores to supplement the liquid substrate to the liquid storage cavity 103 (dashed arrows in the figure, where one is a flow direction of air in the air channel T2, and the other is a flow direction of a liquid substrate in the liquid channel T1). In this way, repeatedly, through a mechanism of alternately blocking and unblocking the air channel T2 by the liquid substrate held in the liquid guide element 111 and the liquid storage substrate 103a, the liquid storage cavity 202 can automatically and quantitatively provide the liquid substrate to the atomization assembly 104, and the liquid supply can be automatically restored when the liquid substrate near the atomization assembly 104 is reduced due to consumption, thereby improving inhalation experience of the user, and avoiding adverse risks such as liquid leakage and abnormal noise during inhalation caused by excessive liquid substrate provided for the atomization assembly 104.

[0072] In the foregoing implementations, when the electronic atomization device 100 is in a non-use state, the air channel T2 and the air portion of the liquid storage cavity 103 are blocked by the liquid substrate held in the liquid adsorption element (the liquid guide element 111 and the liquid storage substrate 103a). When the electronic atomization device 100 is in an inhalation state or during a lag period after being inhaled, the air channel T2 is brought into communication with the air portion of the liquid storage cavity 103.

[0073] In the foregoing implementations, when an amount of the liquid substrate absorbed by the liquid guide element 111 and the liquid storage substrate 103a reaches a first preset amount, the port T2a of the through hole 110 at one end of the liquid storage cavity 103 is blocked. When an amount of the liquid substrate in the liquid guide element 111 and the liquid storage substrate 103a is consumed by a second preset amount, the port T2a of the through hole 110 at one end of the liquid storage cavity 103 is unblocked. The first preset amount is substantially the same as the second preset amount. Being substantially the same means that a difference between the two amounts is within 20 microliters (μL), or within 15 μL , or within 10 μL , or within 6 μL , or within 4 μL .

[0074] In an example, if a spacing distance between the port T1a of the through hole 109 at one end of the liquid storage cavity 103 and the port T2a of the through hole 110 at one end of the liquid storage cavity 103 is excessively large, excessive liquid substrate is easily provided for the atomization assembly 104. Generally, the port T1a of the through hole 109 at one end of the liquid storage cavity 103 and the port T2a of the through hole 110 at one end of the liquid storage cavity 103 are both arranged close to the atomization assembly 104

(along a horizontal direction of the liquid storage cavity 103). A longitudinal spacing distance between the port T1a of the through hole 109 at one end of the liquid storage cavity 103 and the port T2a of the through hole 110 at one end of the liquid storage cavity 103 ranges from 1 mm to 8 mm, so that the liquid substrate provided from the liquid storage cavity 202 is substantially maintained in a surrounding region of the atomization assembly 104. Therefore, in a product design, a spacing between the through hole 109 and the through hole 110 can be adjusted to control an appropriate amount of the liquid substrate provided for the atomization assembly 104. During a specific implementation, the foregoing spacing distance may range from 2 mm to 8 mm, or from 2 mm to 6 mm, or from 2 mm to 4 mm.

[0075] In an example, a distance between the port T1a of the through hole 109 at one end of the liquid storage cavity 103 or the port T2a of the through hole 110 at one end of the liquid storage cavity 103 and the atomization assembly 104 along a horizontal direction of the liquid storage cavity 103 ranges from 2 mm to 8 mm. During a specific implementation, the distance may range from 2 mm to 6 mm, or from 2 mm to 5 mm, or from 2 mm to 4 mm.

[0076] Correspondingly, an axial distance between the port T2a of the through hole 110 at one end of the liquid storage cavity 103 and the bottom of the liquid storage cavity 103 ranges from 2 mm to 10 mm. During a specific implementation, the distance may range from 2 mm to 8 mm, or from 2 mm to 6 mm, or from 2 mm to 4 mm, or from 2 mm to 3 mm. The distance is at least one factor affecting the amount of the liquid substrate provided for the atomization assembly 104.

[0077] Correspondingly, an axial distance between the upper surface and the lower surface of the liquid guide element 111 ranges from 2 mm to 12 mm. During a specific implementation, the distance may range from 2 mm to 10 mm, or from 2 mm to 8 mm, or from 2 mm to 6 mm, or from 2 mm to 4 mm.

[0078] In the foregoing implementations, the liquid guide element 111 is sleeved on the connecting tube 105a. In other words, the liquid guide element 111 is arranged around the connecting tube 105a. The liquid guide element 111 is located between the liquid channel and the atomization assembly 104. An inner diameter of the liquid guide element 111 is greater than an outer diameter of the connecting tube 105a, so that an interval space is maintained between an inner side surface of the liquid guide element 111 and an outer side surface of the connecting tube 105a, and a spacing is maintained between the liquid guide element 111 and the atomization assembly 104. In this way, when the second liquid substrate in the liquid storage cavity 202 flows into the liquid storage cavity 103 through the liquid channel, the second liquid substrate can be absorbed by the liquid guide element 111 and transferred to the liquid storage substrate 103a, thereby being indirectly transferred to the atomization assembly 104. In this way, the liquid guide element 111 can adjust or mitigate a rate at which the

liquid channel provides the liquid substrate for the atomization assembly 104, to avoid that excessive liquid is provided for the atomization assembly 104, thereby causing abnormal noise to be generated by the atomization assembly 104 during inhalation. In addition, the liquid guide element 111 is not in direct contact with the atomization assembly 104, and the liquid storage substrate 103a is in only partial contact with the atomization assembly 104 (the liquid storage substrate 103a covers only a part of the atomization assembly 104 in a longitudinal direction or an axial direction), thereby avoiding supersaturation of the liquid absorbed by the atomization assembly 104, and reducing a risk that the liquid substrate leaks from the liquid storage cavity 103 to the outside (for example, leaks to the circuit 106).

[0079] In the foregoing implementations, an axial distance between the bottom of the liquid storage cavity 103 and the liquid guide port 105a1 of the connecting tube 105a is greater than an axial distance between the bottom of the liquid storage cavity 103 and the lower surface of the liquid storage substrate 103a, or the axial distance between the bottom of the liquid storage cavity 103 and the liquid guide port 105a1 of the connecting tube 105a is greater than the axial distance between the upper surface and the lower surface of the liquid guide element 111. In this way, when the second liquid substrate in the liquid storage cavity 202 flows into the liquid storage cavity 103 through the liquid channel, the second liquid substrate is not directly absorbed by the liquid guide element 104a in the atomization assembly 104 through the liquid guide port 105a1. That is, a rate of the liquid substrate to the liquid guide element 104a is facilitated to mitigate.

[0080] In the foregoing implementations, because the protruding portion 104a1 of the liquid guide element 104a extends into the notch groove 105a2 of the connecting tube 105a, the protruding portion is exposed in the interval space between the inner side surface of the liquid guide element 111 and the outer side surface of the connecting tube 105a, and the liquid substrate in the interval space can be absorbed by the liquid guide element 104a, so that the risk that the liquid substrate leaks from the liquid storage cavity 103 to the outside is reduced.

[0081] In a further implementation, because the liquid substrate in the liquid storage cavity 202 may flow into the through hole 201b5 (for example, flow into the through hole in a liquid injection process, or flow into the through hole in a horizontal placing or inversion process), in a process of assembling the housing assembly 201 to the housing assembly 101, the sealing member 201d can be pushed to move from a start position (referring to a position of the sealing member 201d shown in FIG. 4) to an end position (referring to a position of the sealing member 201d shown in FIG. 3) in the accommodating cavity 201b3, and a space of the accommodating cavity 201b3 is compressed. In this case, air in the compressed space may be discharged toward the through hole 201b5 through the gap between the sealing member 201d and

the accommodating cavity 201b3, and then the liquid substrate in the through hole 201b5 is discharged and returns to the liquid storage cavity 202, thereby avoiding blocking of the air channel by the liquid substrate. The gap between the sealing member 201d and the accom-

[0082] In some examples, in a process in which the sealing member 201d moves from the start position to the end position, the air channel between the two liquid storage cavities is closed, and the liquid channel between the two liquid storage cavities is always in communication. In other words, when the sealing member 201d is pushed in a stroke until the through hole 201b5 and the through hole 201d3 are brought into communication with each other, the space of the accommodating cavity 201b3 may be continuously compressed, to increase an air pressure inside the liquid storage cavity 202. This helps force the liquid substrate in the liquid storage cavity 202 to be transferred to the liquid storage cavity 103.

[0083] In a further implementation, a plurality of protrusions 201d5 are further provided on an outer surface of the sealing member 201d, and the protrusions 201d5 abut against an inner surface of the liquid storage cavity 202, thereby forming a good sealing effect. It may be seen from FIG. 11 or FIG. 12 that at least one protrusion 201d5 exists between one end of the vent groove 201d4 and the through hole 201d3. In this way, when an other end of the through hole 201b5 is aligned with one end of the through hole 201d3, the vent groove 201d4 may be spaced apart from the through hole 201b5 through the at least one protrusion 201d5, thereby ensuring air tightness of the air channel.

[0084] It should be noted that, in the foregoing examples, the through hole 109 and the through hole 110 are provided next to each other, the through hole 201b4 and the through hole 201b5 are also provided next to each other correspondingly, and the foregoing functions are implemented by the separate sealing member 201d. In another example, the through hole 109 is spaced apart from the through hole 110 by a specific distance, the through hole 201b4 is also spaced apart from the through hole 201b5 by a specific distance correspondingly, and the foregoing functions are implemented by two independent sealing members, which is also feasible.

[0085] It should be noted that, the main body of the foregoing electronic atomization device 100 and the liquid storage component 200 are independent of each other. Before the main body of the electronic atomization device 100 is not connected to the liquid storage component 200 (that is, before the housing assembly 101 is not connected to the housing assembly 201), the main body may be used alone and inhaled, and the atomization assembly 104 only atomizes the first liquid substrate.

After the main body is connected to the liquid storage component 200 (that is, after the housing assembly 101 is connected to the housing assembly 201), the atomization assembly 104 may not only atomize the first liquid substrate, but also atomize the second liquid substrate. A combination of the main body and the liquid storage component 200 may also be referred to as an electronic atomization device. In another example, after an atomizer or a cartridge is first combined with a power supply assembly (or a tobacco stem) for use, the atomizer or the cartridge is then connected to the liquid storage component 200 for use.

[0086] It should be noted that, a plurality of liquid storage components 200 may be provided.

[0087] It should be noted that, in another example, before the housing assembly 201 is not connected to the housing assembly 101, the electronic atomization device cannot be used or inhaled. That is, only after the housing assembly 201 is connected to the housing assembly 101, the electronic atomization device may be used and inhaled. In this case, the atomization assembly 104 may not only atomize the first liquid substrate, but also atomize the second liquid substrate.

[0088] It should be noted that, in some examples, the foregoing housing assembly 201 is not provided with an airflow channel. In another example, some of the airflow channels may be arranged in the housing assembly 201. When the housing assembly 201 is connected to the housing assembly 101, the airflow channel in the housing assembly 201 is in communication with the airflow channel in the housing assembly 101, thereby forming a complete airflow channel, to transmit the aerosol generated by the atomization assembly 104.

[0089] It should be noted that, in another example, when the housing assembly 201 is connected to the housing assembly 101, the liquid storage cavity 202 is arranged around at least part of the liquid storage cavity 103.

[0090] It should be noted that, in another example, the through hole 109 may be in communication with the through hole 201d2, or the through hole 110 may be in communication with the through hole 201d3 respectively through an independent connecting member, which is also feasible. In this case, an internal channel of the connecting member may also form a part of the liquid channel or a part of the air channel.

[0091] It should be noted that, in another example, a switch member may be arranged on the liquid channel (the air channel), and the switch member is configured to selectively open or close the liquid channel (the air channel). The switch member includes a manually operated switch member, to selectively open or close the liquid channel (the air channel) under a manual operation of the user. The switch member includes an electrically operated switch member, to selectively open or close the liquid channel (the air channel) under an electrical operation, which is also feasible.

[0092] As shown in FIG. 14, in another example, one

end of the wall defining the through hole 201b5 extends into the liquid storage cavity 202, but is not arranged close to the top of the liquid storage cavity 202, which is also feasible. When a liquid substrate is injected into the liquid storage cavity 202, the liquid substrate may flow into the through hole 201b5. When the housing assembly 201 is connected to the housing assembly 101, the liquid substrate in the through hole 201b5 may be discharged and returned to the liquid storage cavity 202, and the liquid substrate in the liquid storage cavity 202 may also flow into the through hole 201d3 and then flow toward the through hole 110. When a negative pressure is generated as the liquid substrate in the liquid storage cavity 103 is reduced, the negative pressure may also expel the liquid substrate in the through hole 201b5, the through hole 201d3, and the through hole 110 into the liquid storage cavity 202. In this case, air bubbles generated by the negative pressure may be discharged to the air portion of the liquid storage cavity 202 through the liquid substrate in the liquid storage cavity 202, to balance an air pressure difference between the liquid storage cavity 103 and the liquid storage cavity 202, so that the second liquid substrate stored in the liquid storage cavity 202 can smoothly flow into the liquid storage cavity 103 through the liquid channel, to supplement a liquid substrate for consumption to the liquid storage cavity 103 in time.

[0093] FIG. 15 to FIG. 17 show an electronic atomization device 100 and a liquid storage component 200 according to another embodiment of this application. In the examples of FIG. 15 to FIG. 17, for components having the same reference numerals and descriptions thereof, refer to the examples of FIG. 1 to FIG. 13. It should be noted that, in the examples in FIG. 15 to FIG. 17, the wall defining the through hole 201b5 is the same as that shown in FIG. 14. It may be understood that the structure shown in FIG. 1 to FIG. 13 may also be used.

[0094] In the examples in FIG. 15 to FIG. 17, a difference from the examples in FIG. 1 to FIG. 13 is that the port T1a at one end of the liquid channel T1 and the port T2a at one end of the air channel T2 are in communication with each other through a microchannel in the liquid storage cavity 103. Specifically, the ports may be in communication with each other through the gap J2 between the liquid guide element 111 and the wall defining the liquid storage cavity 103, so that the liquid channel is in communication with the air channel. An objective of such arrangement is that when the product is shaken or in different placing postures such as in a horizontal placing state or an inversion state, air bubbles may enter the liquid channel T1 and block the liquid channel. A liquid pressure difference is generated due to a height difference (a height difference h of the port T2b at one end of the through hole 201b5 and the port T1b at one end of the through hole 109) between the port T2b of the air channel

T2 in the liquid storage cavity 202 and the port T1b of the liquid channel T1 in the liquid storage cavity 202, so that the air bubbles can flow to the air channel T2 through the gap J2 between the liquid guide element 111 and the wall defining the liquid storage cavity 103, and then are discharged to the air portion of the liquid storage cavity 202, thereby unblocking the liquid channel T1 (a dashed arrow in the figure indicates a flow direction of the air bubbles in the liquid channel T1). It may be understood that the height difference between the port T2b of the air channel T2 in the liquid storage cavity 202 and the port T1b of the liquid channel T1 in the liquid storage cavity 202 also helps the liquid storage cavity 202 supplement the liquid substrate to the liquid storage cavity 103 through the liquid channel T1.

[0095] In the examples of FIG. 15 to FIG. 17, a difference from the examples of FIG. 1 to FIG. 13 is that by setting a reasonable axial distance of the liquid guide element 111, a port at one end of the through hole 109 is covered by the liquid guide element 111, and a port at one end of the through hole 110 may not be completely covered by the liquid guide element 111 or may be partially covered by the liquid guide element 111, but is covered by the liquid adsorption element after the liquid guide element 111 and the liquid storage substrate 103a are combined. To prevent the air channel T2 from being blocked, a specific gap J1 may be defined between the wall defining the liquid storage cavity 103 and the outer side surface of the liquid storage substrate 103a. The air portion in the liquid storage cavity 103 may be in communication with external air. In this way, the air in the liquid storage cavity 103 can enter the gap J1 between the foregoing wall of the liquid storage cavity 103 and the outer side surface of the liquid storage substrate 103a through the notch groove 103a1 on the liquid storage substrate 103a, and the air can be supplemented to the liquid storage cavity 202 through the air channel T2. Alternatively, the notch groove 103a1 is not provided. The gap between the wall defining the liquid storage cavity 103 and the outer side surface of the liquid storage substrate 103a is in communication with the air portion of the liquid storage cavity 103 to implement air communication, which is also feasible.

[0096] FIG. 18 to FIG. 21 show an electronic atomization device 100 and a liquid storage component 200 according to still another embodiment of this application. In the examples of FIG. 18 to FIG. 21, for components having the same reference numerals and descriptions thereof, refer to the examples of FIG. 1 to FIG. 13.

[0097] In the examples shown in FIG. 18 to FIG. 21, the liquid adsorption element includes the liquid storage substrate 103a, but the liquid guide element 111 is not provided. Alternatively, the liquid guide element 111 and the liquid storage substrate 103a is filled in the liquid storage cavity 103 as the liquid adsorption element of an integral structure.

[0098] Generally, a capacity of the first liquid substrate stored in the liquid storage cavity 103 ranges from 0.1 ml

to 2 ml, such as 0.5 ml, 0.8 ml, 1 ml, or 1.5 ml. It may be understood that a volume of the liquid storage cavity 103 is slightly greater than the capacity of the stored first liquid substrate. In this way, after storing the first liquid substrate, the liquid storage cavity 103 may be divided into two parts. As shown in FIG. 20, one part is an air portion A1 above a liquid level A, and the other part is a liquid substrate portion A2 below the liquid level A.

[0099] The liquid storage substrate 103a is made of, for example, a fiber material or a porous material, and the liquid storage cavity 103 is filled with fiber cotton. The liquid storage substrate 103a is configured to adsorb and hold the first liquid substrate and provide the first liquid substrate for the atomization assembly 104. When the liquid storage substrate 103a reaches a saturation state after liquid injection is performed, a content of a liquid substrate in the liquid storage substrate 103a ranges from 0.1 ml to 2 ml, for example, 0.5 ml, 0.8 ml, 1 ml, 1.5 ml, or 2 ml. As shown in FIG. 20, after the liquid storage substrate 103a absorbs the first liquid substrate and approaches to saturation, the liquid storage cavity 103 may be divided into two parts by using an end surface of the liquid storage substrate 103a as an interface. One space that is not occupied by the liquid storage substrate 103a inside the liquid storage cavity 103 is the air portion, and the other space that is occupied by the liquid storage substrate 103a may be considered as the liquid substrate portion.

[0100] In the examples of FIG. 18 to FIG. 21, the atomization assembly 104 includes a liquid transfer unit and a heating element.

[0101] The liquid transfer unit can transfer the liquid substrate in the liquid storage cavity 103 to the heating element. For example, the liquid transfer unit may be cotton fibers, ceramic fibers, glass fibers, or a porous material, such as porous ceramics or porous glass, but is not limited thereto. The liquid transfer unit may be configured as a tubular structure, a plate structure, or another regular or irregular shape.

[0102] The heating element is configured to heat and atomize the liquid substrate to generate the aerosol. The heating element may be a metal wire, a conductive trace, a metal plate, a ceramic heater, or the like, but is not limited thereto. In addition, the heating element may be composed of a conductive heating wire such as a nickel-chromium wire. The heating element may be made of a material with a suitable temperature coefficient of resistance, for example, stainless steel 316, titanium, nickel, nickel-chromium alloy, or the like. The heating element may be arranged as a structure wound on the liquid transfer unit. The heating element may be heated through current supply and transfer heat to the liquid substrate in contact with the heating element to heat the liquid substrate, thereby generating the aerosol.

[0103] It should be noted that, the atomization assembly 104 is not limited to the foregoing implementation. In another example, the heating element may also be a susceptor that can be penetrated by a changing magnetic

field to generate heat, or an infrared heater that radiates infrared rays. In another example, the heating element may also be replaced by an ultrasonic atomizer.

[0104] In the examples of FIG. 18 to FIG. 21, a lower end of the airflow channel 105 is in communication with an air inlet. The air inlet may be arranged on a side wall of the housing assembly 101. An upper end of the airflow channel 105 is connected to the mouthpiece 102, namely, being in communication with an air outlet (a dashed arrow in figures shows an airflow direction in the airflow channel 105). The liquid storage cavity 103 is arranged around at least a part of the airflow channel 105. The atomization assembly 104 is arranged in the airflow channel 105, or the atomization assembly 104 is constructed as a tubular structure, whose internal hollow part defines a part of the airflow channel 105. A liquid passing hole is provided on the wall defining the airflow channel 105, to be in communication with the liquid storage cavity 103 and the atomization assembly 104, so that the liquid substrate in the liquid storage cavity 103 can be transferred to the atomization assembly 104 and atomized.

[0105] In the examples of FIG. 18 to FIG. 21, the volume of the liquid storage cavity 202 is greater than the volume of the liquid storage cavity 103. Generally, a capacity of the second liquid substrate stored in the liquid storage cavity 202 ranges from 2 ml to 10 ml, such as 4 ml, 5 ml, 6 ml, or 8 ml. It may be understood that the volume of the liquid storage cavity 202 is slightly greater than the capacity of the stored second liquid substrate. In this way, after storing the second liquid substrate, the liquid storage cavity 202 may be divided into two parts. One part is an air portion, and the other part is a liquid substrate portion. This may be understood with reference to FIG. 20. Generally, the liquid storage substrate is not arranged in the liquid storage cavity 202.

[0106] In the examples of FIG. 18 to FIG. 21, when the housing assembly 201 is connected to the housing assembly 101, the air portion of the liquid storage cavity 103 is in communication with the air portion of the liquid storage cavity 202, and the liquid substrate portion of the liquid storage cavity 103 is in communication with the liquid substrate portion of the liquid storage cavity 202.

[0107] In the examples of FIG. 18 to FIG. 21, one end of the through hole 110 may be in direct communication with the air portion of the liquid storage cavity 103. In another example, one end of the through hole 110 may be in communication with the air portion other than the liquid storage substrate 103a. In a specific implementation, one end of the through hole 110 may be in communication with the air portion of the liquid storage cavity 103 through the gap between the liquid storage substrate 103a and the wall defining the liquid storage cavity 103. For example, an inner surface of the wall defining the liquid storage cavity 103 has a bump, and the bump abuts against the outer surface of the liquid storage substrate 103a, so that a gap is formed between the liquid storage substrate 103a and the wall defining the liquid storage cavity 103, and then the through hole 110 is in commu-

nication with the air portion of the liquid storage cavity 103. Alternatively, one end of the through hole 110 extends to the air portion (that is, provided close to the mouthpiece 102) of the liquid storage cavity 103 after passing through the liquid storage substrate 103a, thereby being in communication with the air portion of the liquid storage cavity 103. It may be seen from FIG. 18, FIG. 19, and FIG. 21 that one end of the through hole 110 is covered by the liquid storage substrate 103a, and one end of the through hole 109 is not completely covered by the liquid storage substrate 103a or is partially covered by the liquid storage substrate 103a.

[0108] In the examples of FIG. 18 to FIG. 21, the air channel T2 is arranged adjacent to the liquid channel T1. The port T1a at one end of the liquid channel and the port T2a at one end of the air channel are arranged at intervals along an axial direction of the electronic atomization device 100 or the liquid storage cavity 103, and the port T2a of the air channel is located above the port T1a of the liquid channel. In some examples, along the axial direction of the electronic atomization device 100, the port T1a of the liquid channel and the port T2a of the air channel are both arranged close to a bottom of the liquid storage cavity 103, that is, the two ports are both arranged away from the mouthpiece 102. In the axial direction of the electronic atomization device 100, the port T1a of the liquid channel is farther away from the mouthpiece 102 of the electronic atomization device 100 relative to the port T2a of the air channel.

[0109] In the examples of FIG. 18 to FIG. 21, when the liquid storage substrate 103a absorbs the liquid substrate, the air channel T2 may be blocked by the liquid substrate held in the liquid storage substrate 103a. For example, as shown in FIG. 21, when the level of the liquid substrate absorbed by the liquid storage substrate 103a reaches the schematic line Y (the schematic line Y may be a horizontal line, or may be a non-horizontal line) in the figure, the port T2a of the through hole 110 at one end of the liquid storage cavity 103 is blocked, and the gap between the liquid storage substrate 103a and the through hole 110 is also blocked by the liquid substrate seeping out from the liquid storage substrate 103a, so that air exchange cannot be implemented between the liquid storage cavity 103 and the liquid storage cavity 202 through the air channel T2, and the air pressure difference between the liquid storage cavity and the liquid storage cavity causes the liquid storage cavity 202 to gradually reduce and even stop supplementing the liquid substrate to the liquid storage cavity 103.

[0110] When the electronic atomization device 100 is inhaled (the liquid substrate in the liquid storage substrate 103a is consumed) and the horizontal schematic line Y the liquid substrate gradually descends, the liquid substrate blocked in the air channel T2 and the foregoing gap is also absorbed by the liquid storage substrate 103a. When the level of the liquid substrate descends to a position below the through hole 110, the through hole 110 is brought into communication with the air portion in

the liquid storage cavity 103, air communication is implemented again between the liquid storage cavity 103 and the liquid storage cavity 202 through the air channel T2, and the liquid storage cavity 202 restores to supplement the liquid substrate to the liquid storage cavity 103 (dashed arrows in the figure, where one is the flow direction of the air in the air channel T2, and the other is the flow direction of the liquid substrate in the liquid channel T1). In this way, repeatedly, through a mechanism of alternately blocking and unblocking the air channel T2 by the liquid substrate held in the liquid storage substrate 103a, the liquid storage cavity 202 can automatically and quantitatively provide the liquid substrate to the atomization assembly 104, and the liquid supply can be automatically restored when the liquid substrate near the atomization assembly 104 is reduced due to consumption, thereby improving inhalation experience of the user, and avoiding adverse risks such as liquid leakage and abnormal noise during inhalation caused by excessive liquid substrate provided for the atomization assembly 104.

[0111] When the electronic atomization device 100 is in a non-use state, the air channel T2 and the air portion of the liquid storage cavity 103 are blocked by the liquid substrate held in the liquid storage substrate 103a. When the electronic atomization device 100 is in an inhalation state or during a lag period after being inhaled, the air channel T2 is brought into communication with the air portion of the liquid storage cavity 103.

[0112] In the examples of FIG. 18 to FIG. 21, when the amount of the liquid substrate absorbed by the liquid storage substrate 103a reaches the first preset amount, the port of the through hole 110 at one end of the liquid storage cavity 103 is blocked. When the amount of the liquid substrate in the liquid storage substrate 103a is consumed by the second preset amount, the port of the through hole 110 at one end of the liquid storage cavity 103 is unblocked. The first preset amount is substantially the same as the second preset amount. Being substantially the same means that a difference between the two preset amounts is within 20 μL , or within 15, or within 10, or within 6, or within 4.

[0113] In the examples of FIG. 18 to FIG. 21, if a spacing distance between the port T1a of the through hole 109 at one end of the liquid storage cavity 103 and the port T2a of the through hole 110 at one end of the liquid storage cavity 103 is excessively large, excessive liquid substrate is easily provided for the atomization assembly 104. Generally, the port of the through hole 109 at one end of the liquid storage cavity 103 and the port of the through hole 110 at one end of the liquid storage cavity 103 are both arranged close to the atomization assembly 104 (along a horizontal direction of the liquid storage cavity 103). The longitudinal spacing distance between the port of the through hole 109 at one end of the liquid storage cavity 103 and the port of the through hole 110 at one end of the liquid storage cavity 103 ranges from 1 mm to 8 mm, so that the liquid substrate provided

from the liquid storage cavity 202 is substantially maintained in a surrounding region of the atomization assembly 104. Therefore, in a product design, a spacing between the through hole 109 and the through hole 110 can be adjusted to control an appropriate amount of the liquid substrate provided for the atomization assembly 104. During a specific implementation, the foregoing spacing distance may range from 2 mm to 8 mm, or from 2 mm to 6 mm, or from 2 mm to 4 mm.

[0114] In the examples of FIG. 18 to FIG. 21, a distance between the port T1a of the through hole 109 at one end of the liquid storage cavity 103 or the port T2a of the through hole 110 at one end of the liquid storage cavity 103 and the atomization assembly 104 along a horizontal direction of the liquid storage cavity 103 ranges from 2 mm to 8 mm. During a specific implementation, the distance may range from 2 mm to 6 mm, or from 2 mm to 5 mm, or from 2 mm to 4 mm.

[0115] In the examples of FIG. 18 to FIG. 21, the axial distance between T2a of the through hole 110 at one end of the liquid storage cavity 103 and the bottom of the liquid storage cavity 103 ranges from 2 mm to 10 mm. During a specific implementation, the distance may range from 2 mm to 8 mm, or from 2 mm to 6 mm, or from 2 mm to 4 mm, or from 2 mm to 3 mm. The distance is at least one factor affecting the amount of the liquid substrate provided for the atomization assembly 104.

[0116] FIG. 22 and FIG. 23 show an electronic atomization device 100 and a liquid storage component 200 according to yet another embodiment of this application. In the examples of FIG. 22 and FIG. 23, for components having the same reference numerals and descriptions thereof, refer to the foregoing examples.

[0117] Different from the foregoing examples, in the examples of FIG. 22 and FIG. 23, before the housing assembly 201 is not connected to the housing assembly 101, the electronic atomization device cannot be used or inhaled. That is, only after the housing assembly 201 is connected to the housing assembly 101, the electronic atomization device may be used and inhaled. In this case, the atomization assembly 104 may not only atomize the first liquid substrate, but also atomize the second liquid substrate.

[0118] Different from the foregoing examples, in the examples of FIG. 22 and FIG. 23, the mouthpiece 102 is arranged on the housing assembly 201.

[0119] Different from the foregoing examples, no airflow channel is arranged in the housing assembly 201 in the foregoing examples. In the examples of FIG. 22 and FIG. 23, the airflow channel includes a first airflow channel 105a and a second airflow channel 105b. The first airflow channel 105a is arranged in the housing assembly 101, and the second airflow channel 105b is arranged in the housing assembly 201. When the housing assembly 201 is connected to the housing assembly 101, the first airflow channel 105a is in communication with the second airflow channel 105b, to transmit an aerosol generated by the atomization assembly 104 (T3 in the figure is the

airflow direction of the airflows in the first airflow channel 105a and the second airflow channel 105b). The liquid storage cavity 103 is arranged around at least part of the first airflow channel 105a, and the liquid storage cavity 202 is arranged around at least part of the second airflow channel 105b. A lower end of the first airflow channel 105a is in communication with an air inlet (for example, may be arranged on a bottom wall of the housing assembly 101). The upper end of the first airflow channel 105a is in communication with the lower end of the second airflow channel 105b. For example, the upper end of the first airflow channel 105a may extend into the second airflow channel 105b, and the upper end of the second airflow channel 105b is connected to the mouthpiece 102, namely, in communication with an air outlet.

[0120] Different from the foregoing examples, in the examples in FIG. 22 to FIG. 23, when the housing assembly 201 is connected to the housing assembly 101, the liquid storage cavity 103 and the liquid storage cavity 202 are substantially arranged in sequence along a length direction of the electronic atomization device. The liquid storage cavity 103 is arranged near a bottom end of the electronic atomization device, and the liquid storage cavity 202 is arranged near a top of the electronic atomization device.

[0121] Similar to the foregoing examples, the liquid storage substrate 103a is arranged in the liquid storage cavity 103, and the liquid storage substrate 103a is arranged on the sealing member 103c.

[0122] Different from the foregoing examples, in the examples of FIG. 22 and FIG. 23, one end of the through hole 109 is in communication with the liquid storage cavity 103, and an other end of the through hole 109 protrudes from a top wall of the housing assembly 101. One end of the through hole 110 is in communication with the air portion of the liquid storage cavity 103, and an other end of the through hole 110 protrudes from the top wall of the housing assembly 101. The liquid storage substrate 103a covers one end of the through hole 110 (an upper surface of the liquid storage substrate 103a keeps in contact with an end surface of the through hole 110, referring to an end of the through hole 110 shown as D in the figure), and one end of the through hole 109 is not covered by the liquid storage substrate 103a. In another example, one end of the through hole 109 is covered by the liquid storage substrate 103a, which is also feasible. In another optional example, an air guide tube forming the through hole 110 is inserted inside the liquid storage substrate 103a, so that an air inlet port of the through hole 110 is covered by the liquid storage substrate 103a.

[0123] Different from the foregoing examples, in the examples of FIG. 22 and FIG. 23, one end of the through hole 201b4 is in communication with the liquid substrate portion of the liquid storage cavity 202, and an other end of the through hole 201b4 protrudes from a bottom wall of the housing assembly 201. One end of the through hole 201b5 is passed through the liquid storage cavity 202 and is in communication with the air portion of the liquid

storage cavity 202. An other end of the through hole 201b5 extends to the bottom wall of the housing assembly 201.

[0124] Different from the foregoing examples, in the examples of FIG. 22 and FIG. 23, when the housing assembly 201 is connected to the housing assembly 101, an other end of the through hole 201b4 extends into the through hole 109, so that the liquid substrate portion of the liquid storage cavity 103 is in communication with the liquid substrate portion of the liquid storage cavity 202 (T1 in the figure is the flow direction of the liquid substrate in the liquid channel). An other end of the through hole 110 extends into the through hole 201b5, so that the air portion of the liquid storage cavity 103 is in communication with the air portion of the liquid storage cavity 202.

[0125] Different from the foregoing examples, in the examples of FIG. 22 and FIG. 23, two through holes 110 and two through holes 201b5 are spaced apart from each other along a thickness direction of the electronic atomization device. Through a plurality of air channels, air pressures in the liquid storage cavity 103 and the liquid storage cavity 202 may be better balanced.

[0126] Similar to the foregoing examples, when the liquid substrate absorbed by the liquid storage substrate 103a reaches the schematic line Y in the figure, one end of the through hole 110 is blocked, air communication cannot be implemented between the liquid storage cavity 103 and the liquid storage cavity 202 through the air channel T2, and an accumulated air pressure difference prevents the liquid substrate from flowing from the liquid storage cavity 202 to the liquid storage cavity 103, so that the liquid storage cavity 202 reduces or even stops supplementing the liquid substrate to the liquid storage cavity 103. When the electronic atomization device 100 is inhaled to consume the liquid substrate, the horizontal schematic line Y of the liquid substrate descends, the liquid substrate blocked in the air channel is also absorbed by the liquid storage substrate 103a, so that the through hole 110 is unblocked. Air communication is implemented again between the liquid storage cavity 103 and the liquid storage cavity 202 through the air channel T2. The air in the liquid storage cavity 103 may enter the through hole 110 again through pores inside the fiber material of the liquid storage substrate 103a, and the liquid storage cavity 202 restores to supplement the liquid substrate to the liquid storage cavity 103 (dashed arrows in the figure, where one is the flow direction of the air in the air channel, and the other is the flow direction of the liquid substrate in the liquid channel). In this way, repeatedly, the liquid substrate can be automatically and quantitatively provided for the atomization assembly 104 through the liquid storage substrate, thereby improving inhalation experience of the user.

[0127] Similar to the foregoing examples, when the amount of the liquid substrate absorbed by the liquid storage substrate 103a reaches the first preset amount, the end of the through hole 110 located at the liquid storage cavity 103 is blocked. When the amount of the

liquid substrate in the liquid storage substrate 103a is consumed by the second preset amount, the through hole 110 is unblocked. The first preset amount is substantially the same as the second preset amount. Being substantially the same means that a difference between the two preset amounts is within 20 μL , or within 15 μL , or within 10 μL , or within 6 μL , or within 4 μL .

[0128] Similar to the foregoing examples, the axial distance between the end of the through hole 110 located at the liquid storage cavity 103 and the bottom of the liquid storage cavity 103 ranges from 5 mm to 20 mm. During a specific implementation, the distance may range from 5 mm to 15 mm, or from 5 mm to 10 mm. The distance is also at least one factor affecting the amount of the liquid substrate provided for the atomization assembly 104.

[0129] Similar to the foregoing examples, the housing assembly 101 is further provided with the accommodating cavity 108 for accommodating a part of the housing assembly 201. It may be understood that, in another example, the housing assembly 201 is provided with an accommodating cavity for accommodating or containing at least part of the housing assembly 101, which is also feasible.

[0130] It should be noted that, the specification of this application and the accompanying drawings thereof illustrate preferred embodiments of this application. However, this application may be implemented in various different forms, and is not limited to the embodiments described in this specification. These embodiments are not intended to be an additional limitation on the content of this application, and are provided for the purpose of providing a more thorough and comprehensive understanding of the content disclosed in this application. In addition, the foregoing technical features are further combined with each other to form various embodiments not listed above, which are all deemed to be within the scope of the description of this application. Further, a person of ordinary skill in the art may make improvements or modifications according to the foregoing descriptions, and all of the improvements and modifications shall fall within the protection scope of the appended claims of this application.

Claims

1. An electronic atomization device, comprising:

a first housing assembly, wherein a first liquid storage cavity is formed in the first housing assembly, and a liquid adsorption element configured to hold a liquid substrate is arranged in the first liquid storage cavity;
an atomization assembly, arranged in the first housing assembly, wherein the atomization assembly is configured to atomize the liquid substrate from the liquid adsorption element to generate an aerosol; and

- a second housing assembly, independent of the first housing assembly, wherein a second liquid storage cavity configured to store the liquid substrate is formed in the second housing assembly; the second housing assembly is configured to be connected to the first housing assembly, and establish a liquid channel for the liquid substrate to flow and an air channel for air to flow between the first liquid storage cavity and the second liquid storage cavity;
 a part of a surface of the liquid adsorption element is in communication with the liquid channel, to absorb the liquid substrate from the second liquid storage cavity through the liquid channel; and a port of the air channel in the first liquid storage cavity is covered by the liquid adsorption element, and the liquid adsorption element is configured to hold a partial amount of the liquid substrate, so that the held liquid substrate is capable of blocking air circulation between the air channel and the first liquid storage cavity, and when the liquid substrate held in the liquid adsorption element is consumed, the air channel is brought back into communication with an air portion of the first liquid storage cavity.
2. The electronic atomization device according to claim 1, wherein the air channel is adjacent to the liquid channel.
 3. The electronic atomization device according to claim 2, wherein a mouthpiece is arranged on the first housing assembly, and in a longitudinal direction of the first housing assembly, the liquid channel is farther away from the mouthpiece than the air channel.
 4. The electronic atomization device according to claim 1, wherein a port of the air channel in the first liquid storage cavity is in communication with the air portion of the first liquid storage cavity through a first gap, and the first gap is at least partially defined between the surface of the liquid adsorption element and an inner wall surface of the first liquid storage cavity.
 5. The electronic atomization device according to claim 1, wherein a port of the liquid channel in the first liquid storage cavity is at least partially covered by the liquid adsorption element.
 6. The electronic atomization device according to claim 1, wherein a port of the air channel in the first liquid storage cavity and a port of the liquid channel in the first liquid storage cavity are both arranged close to the atomization assembly.
 7. The electronic atomization device according to claim 1, wherein a port of the air channel in the first liquid storage cavity and a port of the liquid channel in the first liquid storage cavity are arranged at intervals along an axial direction of the first liquid storage cavity, and the port of the air channel is located above the port of the liquid channel.
 8. The electronic atomization device according to claim 7, wherein a spacing distance between the port of the air channel and the port of the liquid channel ranges from 1 mm to 8 mm.
 9. The electronic atomization device according to claim 7, wherein a distance between the port of the air channel and a bottom of the first liquid storage cavity ranges from 2 mm to 10 mm.
 10. The electronic atomization device according to claim 7, wherein the port of the air channel in the first liquid storage cavity and the port of the liquid channel in the first liquid storage cavity are both arranged close to the bottom of the first liquid storage cavity.
 11. The electronic atomization device according to claim 1, wherein in a longitudinal direction of the second housing assembly, a port of the air channel in the second liquid storage cavity is higher than a port of the liquid channel in the second liquid storage cavity.
 12. The electronic atomization device according to claim 11, wherein a port of the air channel in the first liquid storage cavity is in communication with a port of the liquid channel in the first liquid storage cavity through a second gap, and the second gap is defined between the surface of the liquid adsorption element and an inner wall surface of the first liquid storage cavity.
 13. The electronic atomization device according to claim 1, wherein the liquid adsorption element comprises a liquid guide element at least partially covering the liquid channel and a liquid storage substrate in contact with the liquid guide element.
 14. The electronic atomization device according to claim 13, wherein the liquid guide element maintains a spacing from the atomization assembly.
 15. The electronic atomization device according to claim 1, further comprising:
 - a first through hole and a second through hole, provided at intervals on the first housing assembly; and
 - a third through hole and a fourth through hole, provided at intervals on the second housing assembly, wherein when the second housing assembly is con-

connected to the first housing assembly, the first through hole is engaged with the third through hole to form the air channel, and the second through hole is engaged with the fourth through hole to form the liquid channel.

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16. The electronic atomization device according to claim 1, wherein when the electronic atomization device is in a non-use state, the air channel and the air portion of the first liquid storage cavity are blocked by the liquid substrate held in the liquid adsorption element; and when the electronic atomization device is in an inhaled state or in a lag period after being inhaled, the air channel is brought into communication with the air portion of the first liquid storage cavity.

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17. An electronic atomization device, comprising:

a first housing assembly, wherein a first liquid storage cavity is formed in the first housing assembly, and a liquid adsorption element configured to hold a liquid substrate is arranged in the first liquid storage cavity; 20

a mouthpiece, arranged on the first housing assembly; 25

an atomization assembly, arranged in the first housing assembly, wherein the atomization assembly is configured to atomize the liquid substrate from the liquid adsorption element to generate an aerosol; and 30

a second housing assembly, wherein a second liquid storage cavity configured to store the liquid substrate is formed in the second housing assembly, and the second housing assembly is configured to be connected to the first housing assembly, and establish a liquid channel for the liquid substrate to flow and an air channel for air to flow between the first liquid storage cavity and the second liquid storage cavity; and 35

the air channel and the liquid channel are both arranged close to the atomization assembly, and along a longitudinal direction of the first housing assembly, a position of the liquid channel is farther away from the mouthpiece than that of the air channel. 40 45

18. A liquid storage component, comprising:

a main body; and

a bottom cover, connected to the main body and defining a second liquid storage cavity configured to store a liquid substrate with the main body, wherein 50

an air channel for supplementing air to the second liquid storage cavity and a liquid channel for transporting the liquid substrate outward from the second liquid storage cavity are defined on the bottom cover and/or the main body; and 55

in a longitudinal direction of the liquid storage component, a port of the air channel in the second liquid storage cavity is higher than a port of the liquid channel in the second liquid storage cavity.

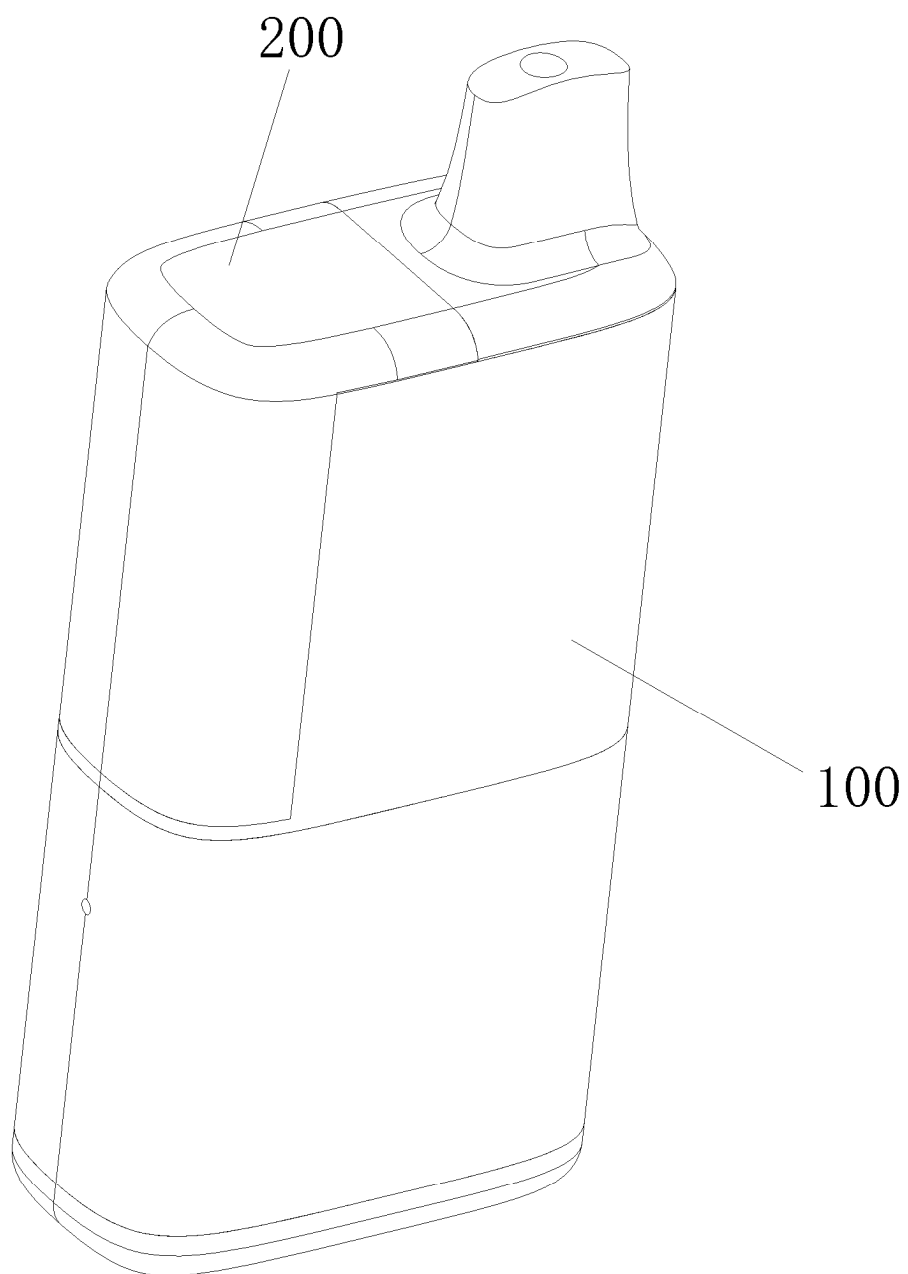


FIG. 1

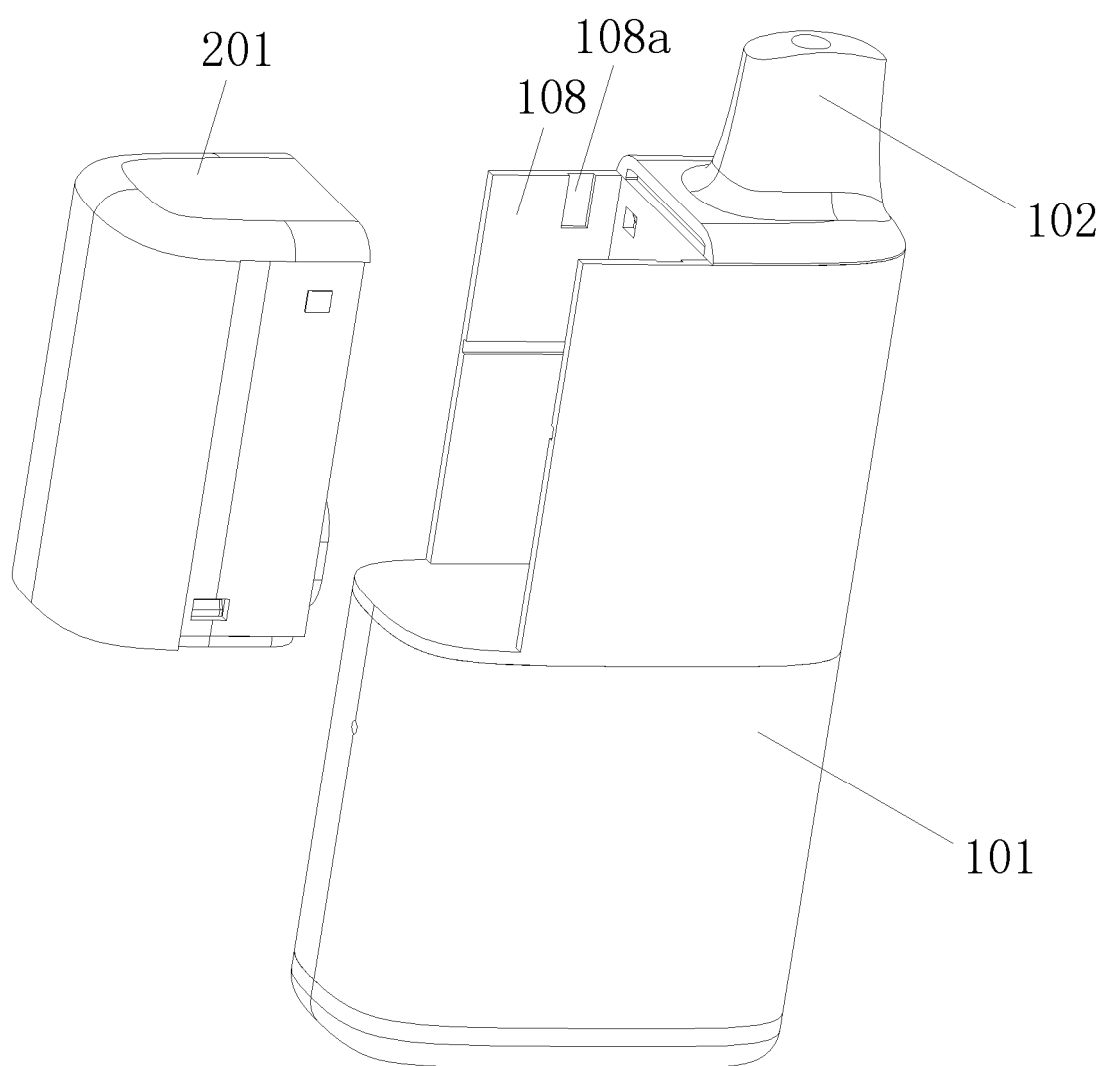


FIG. 2

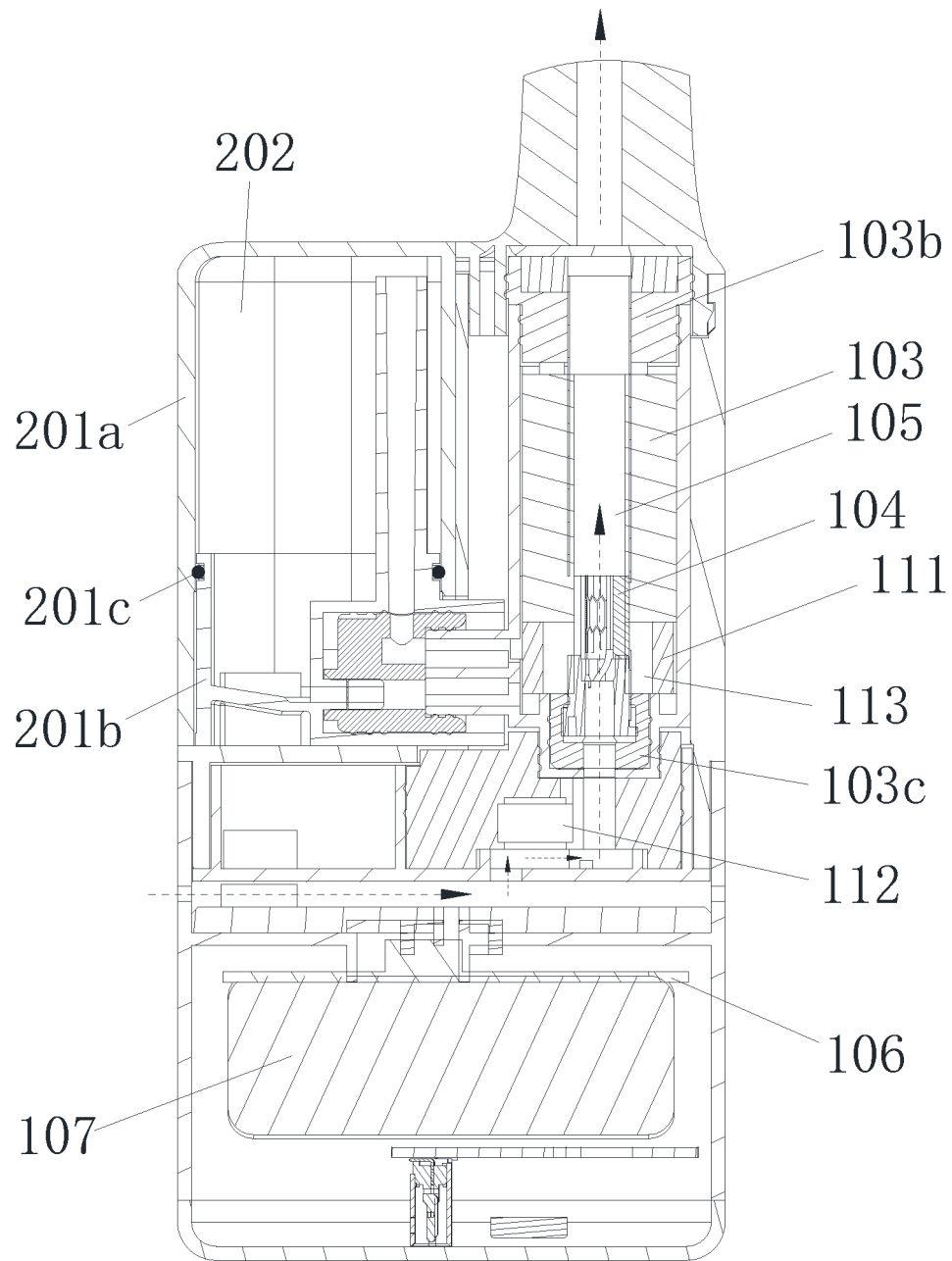


FIG. 3

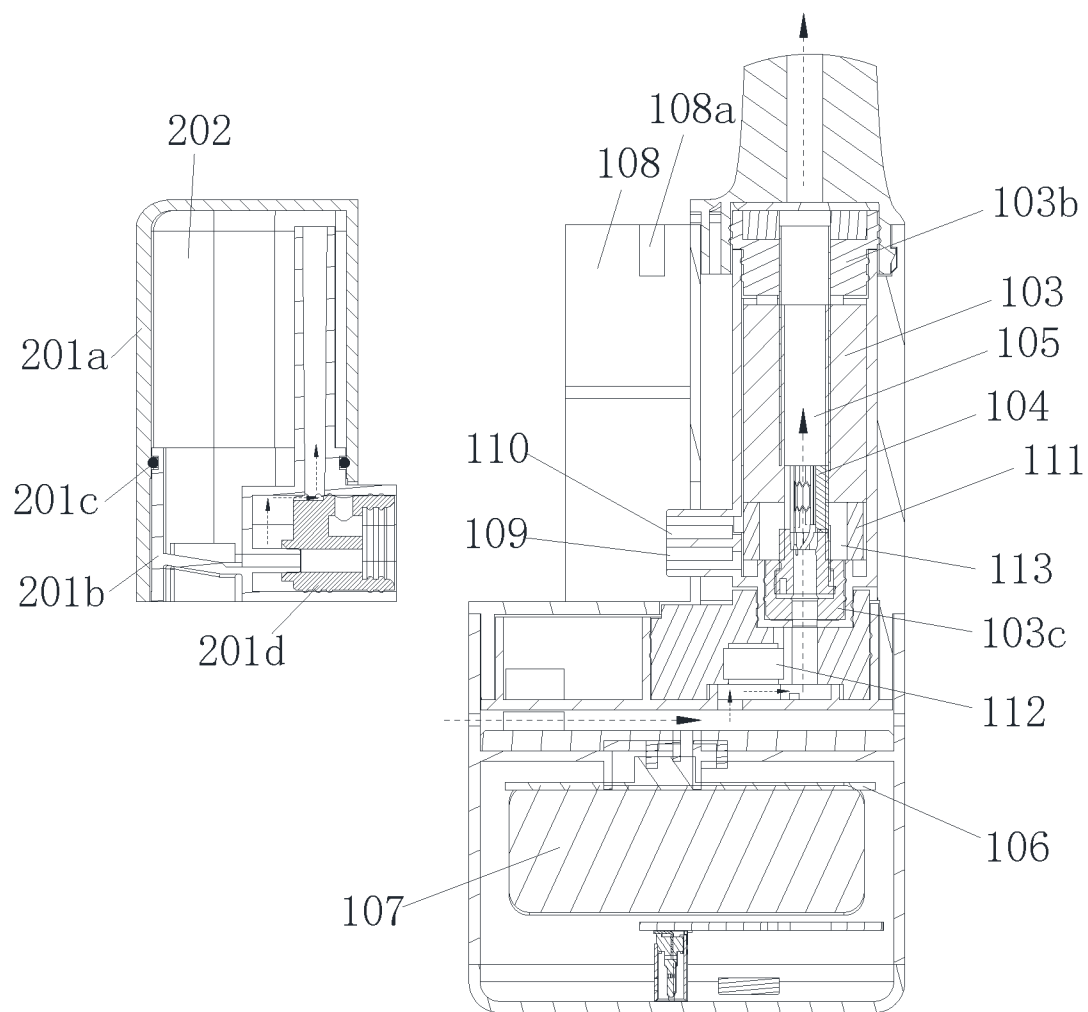


FIG. 4

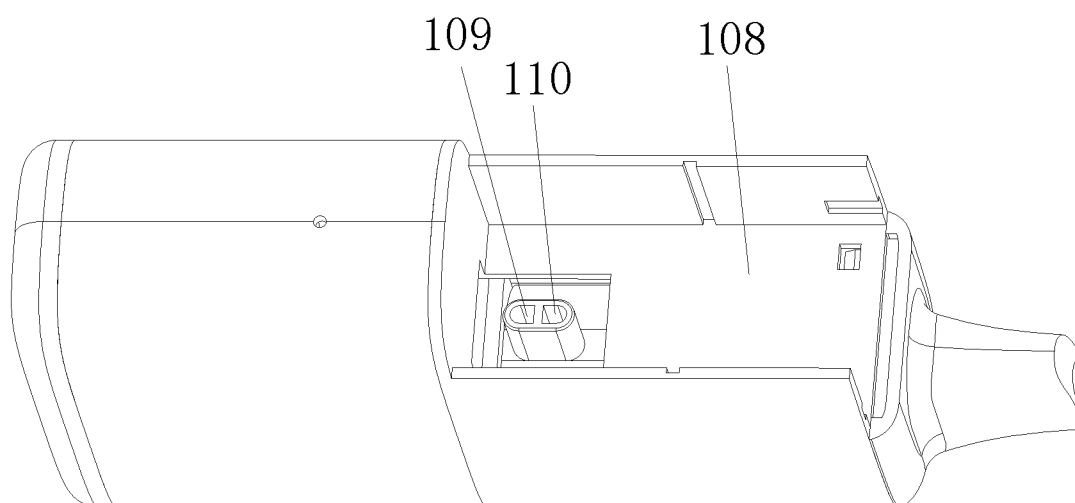


FIG. 5

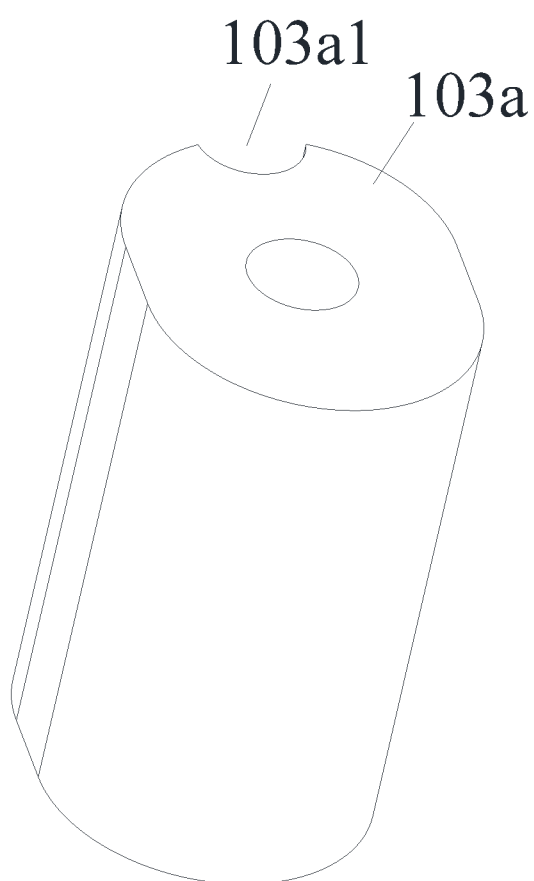


FIG. 6

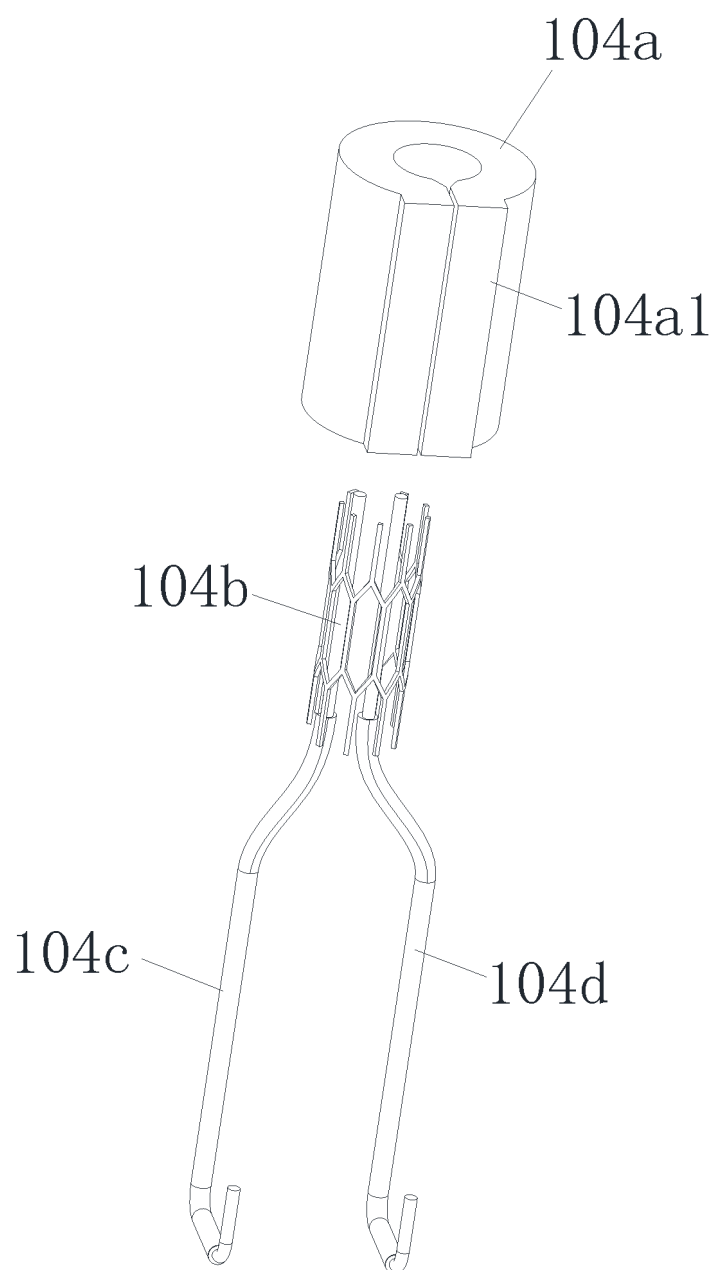


FIG. 7

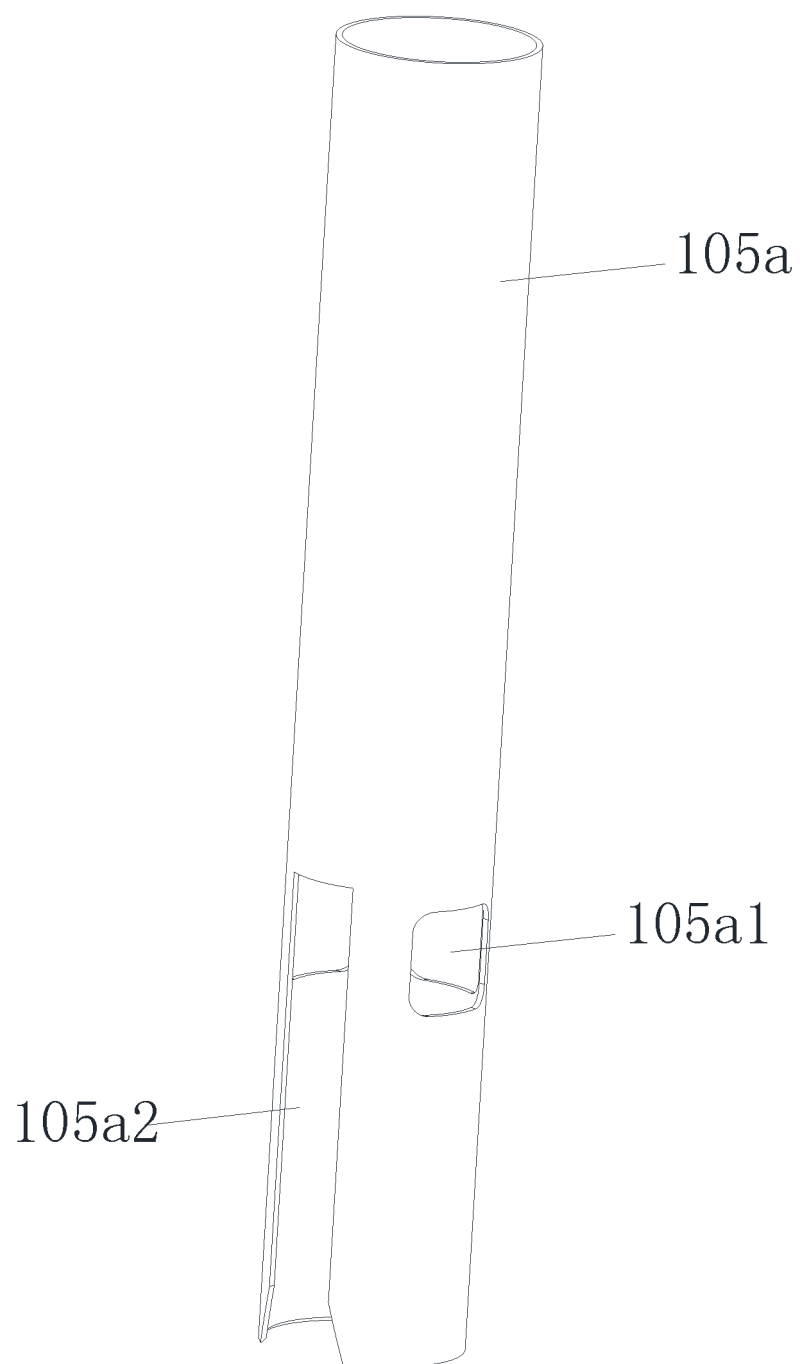


FIG. 8

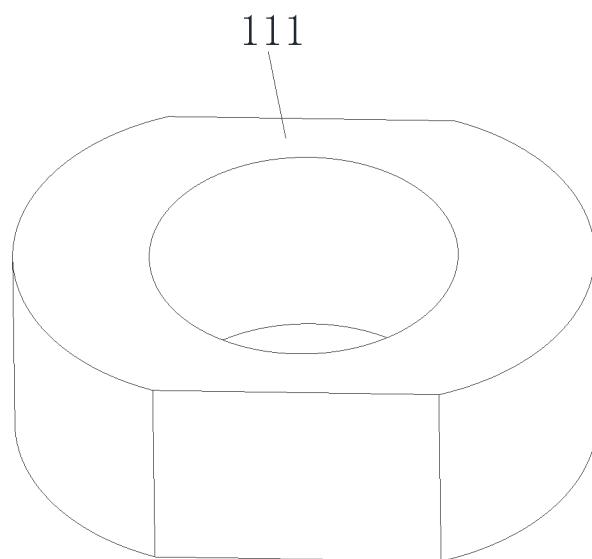


FIG. 9

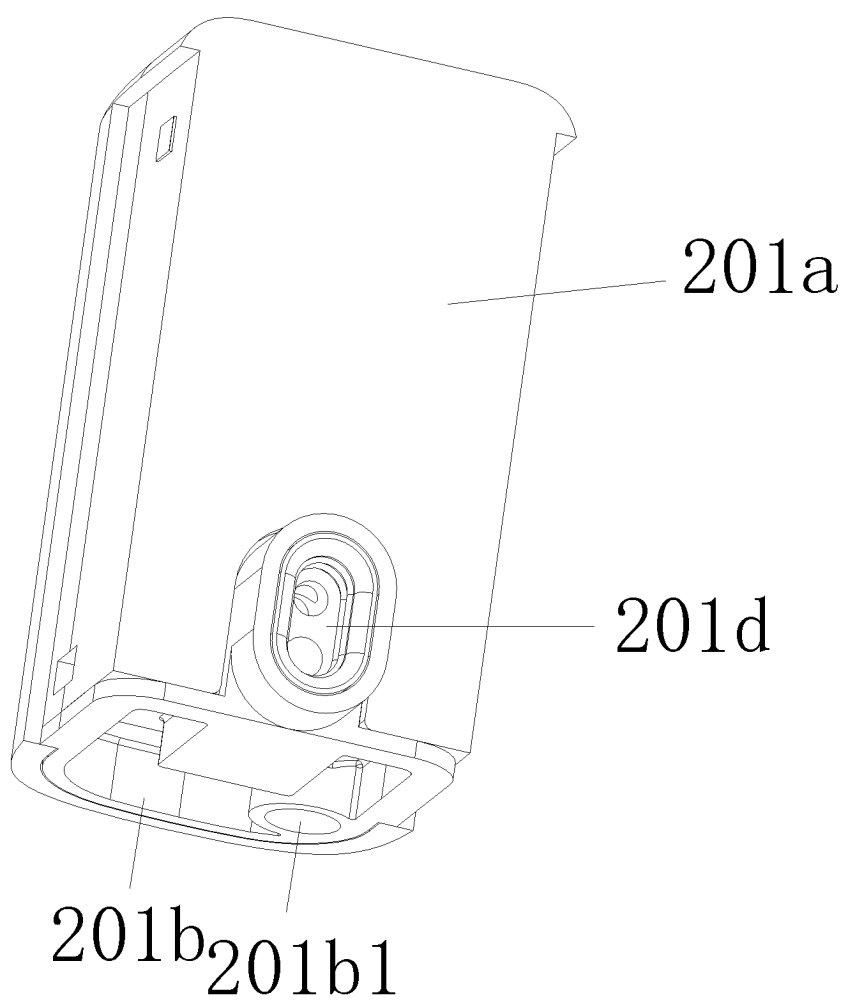


FIG. 10

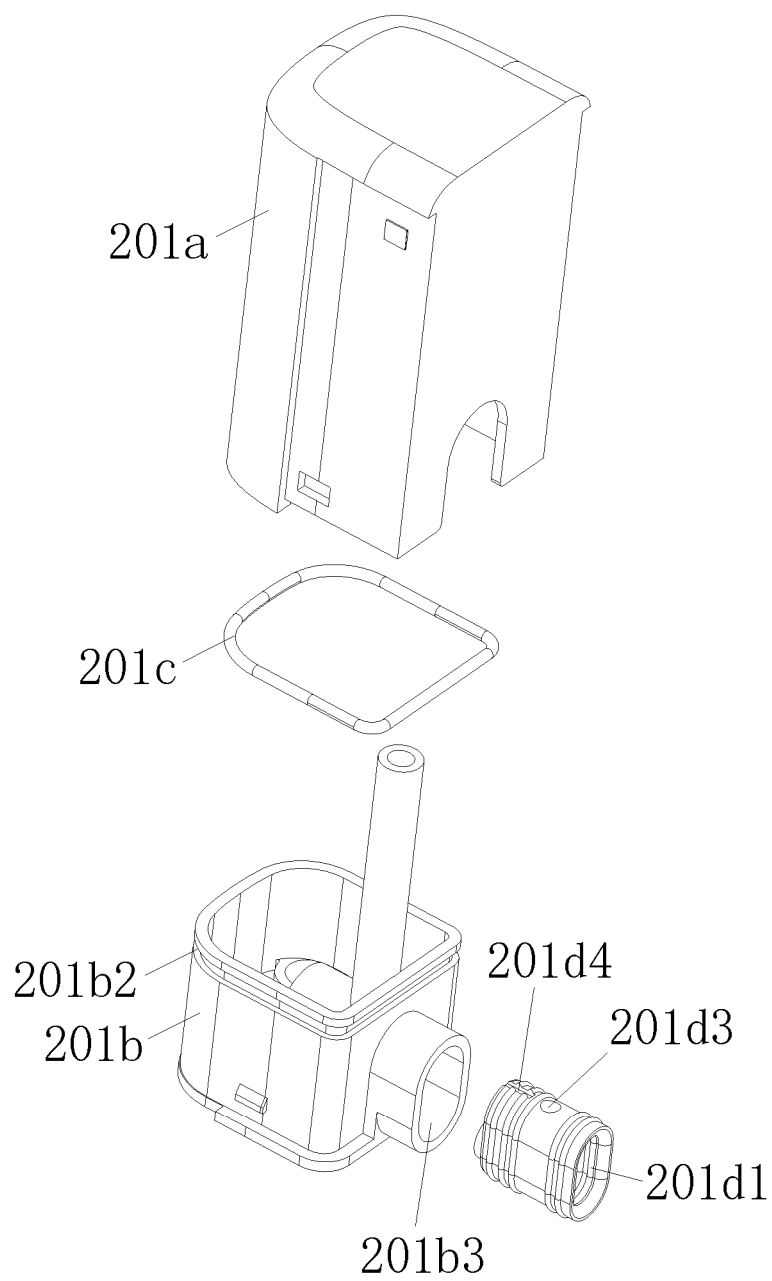


FIG. 11

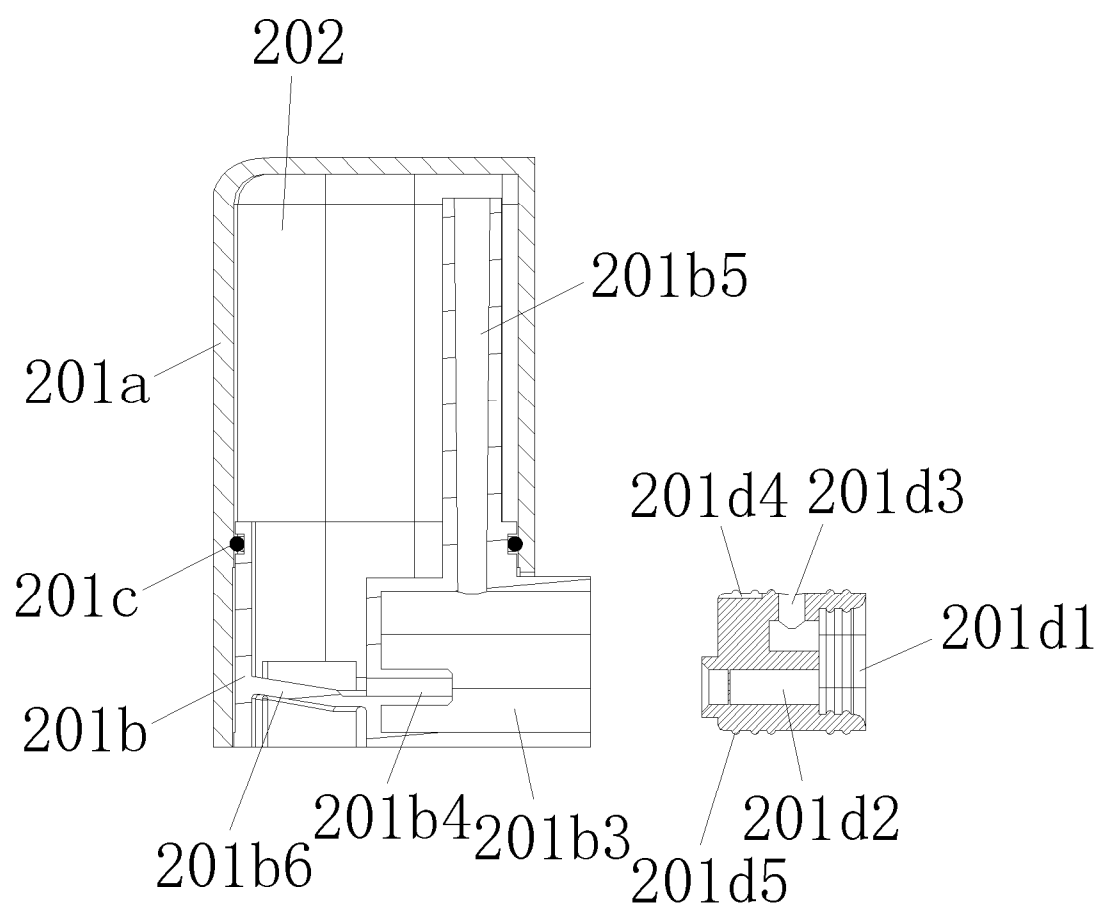


FIG. 12

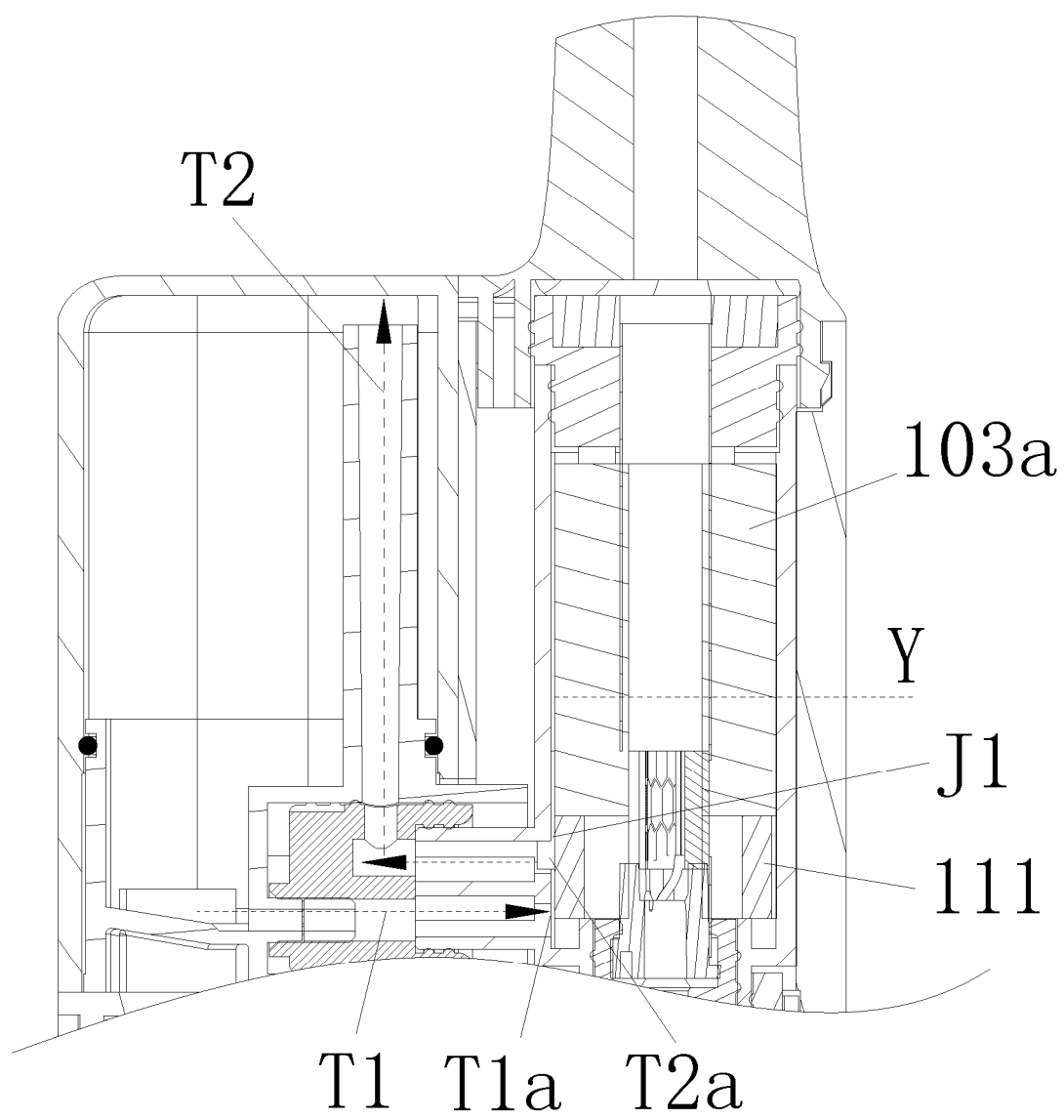


FIG. 13

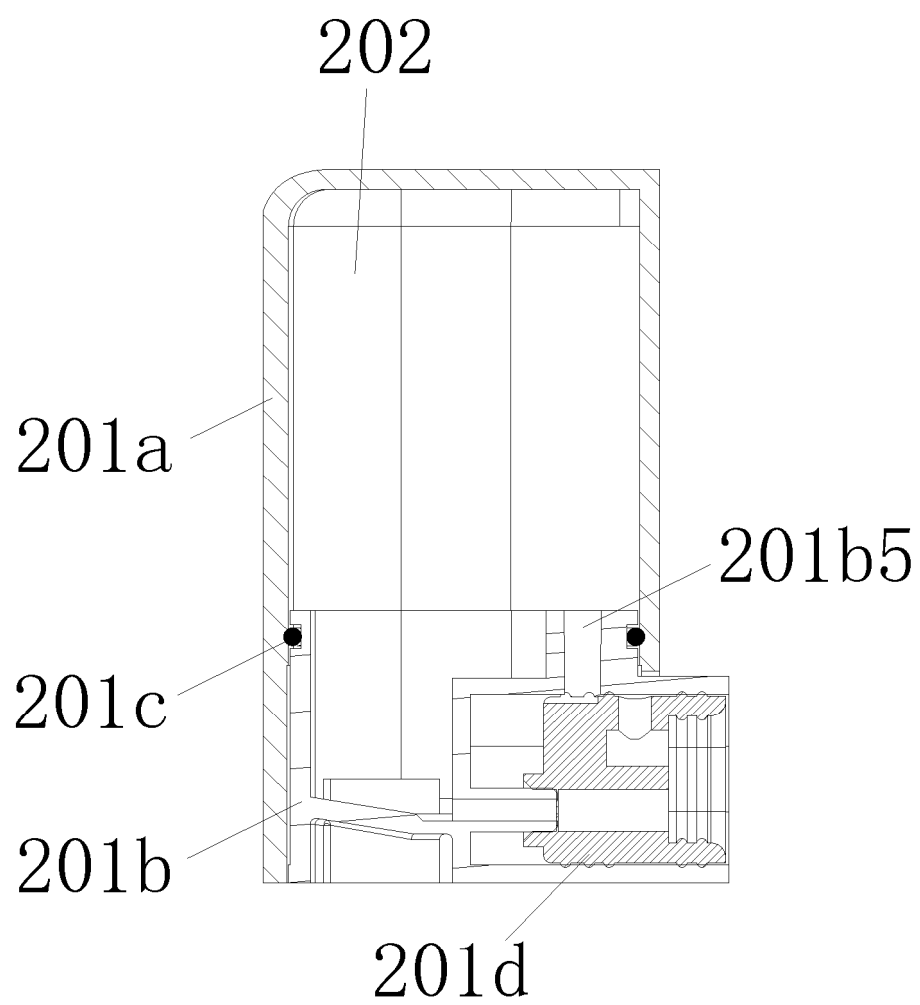


FIG. 14

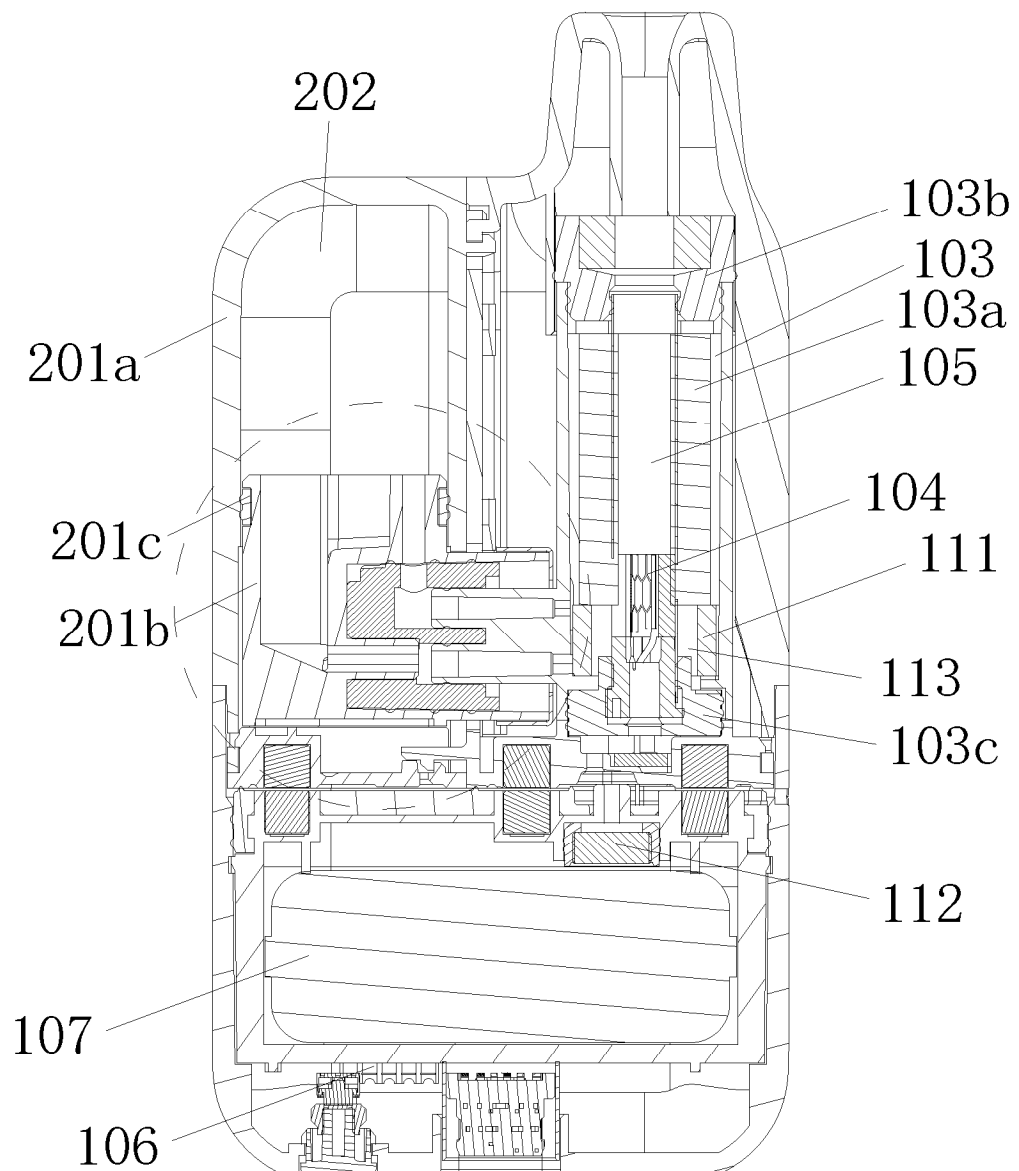


FIG. 15

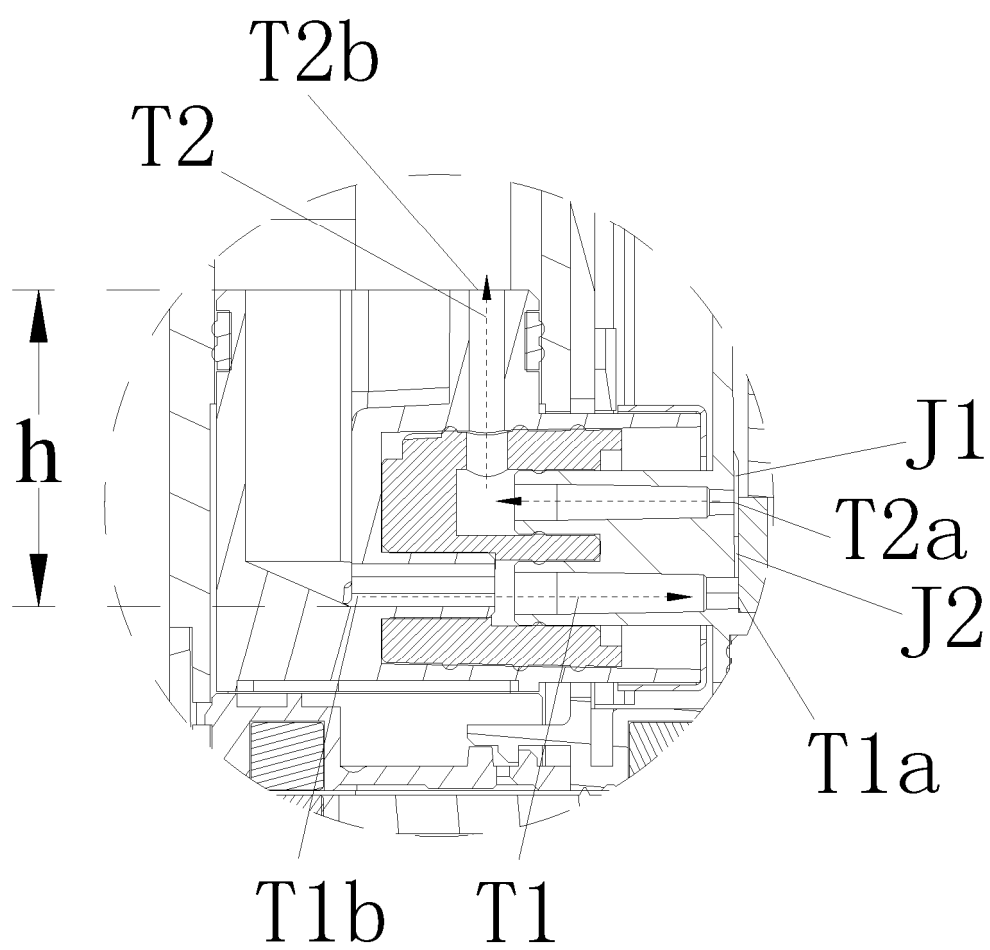


FIG. 16

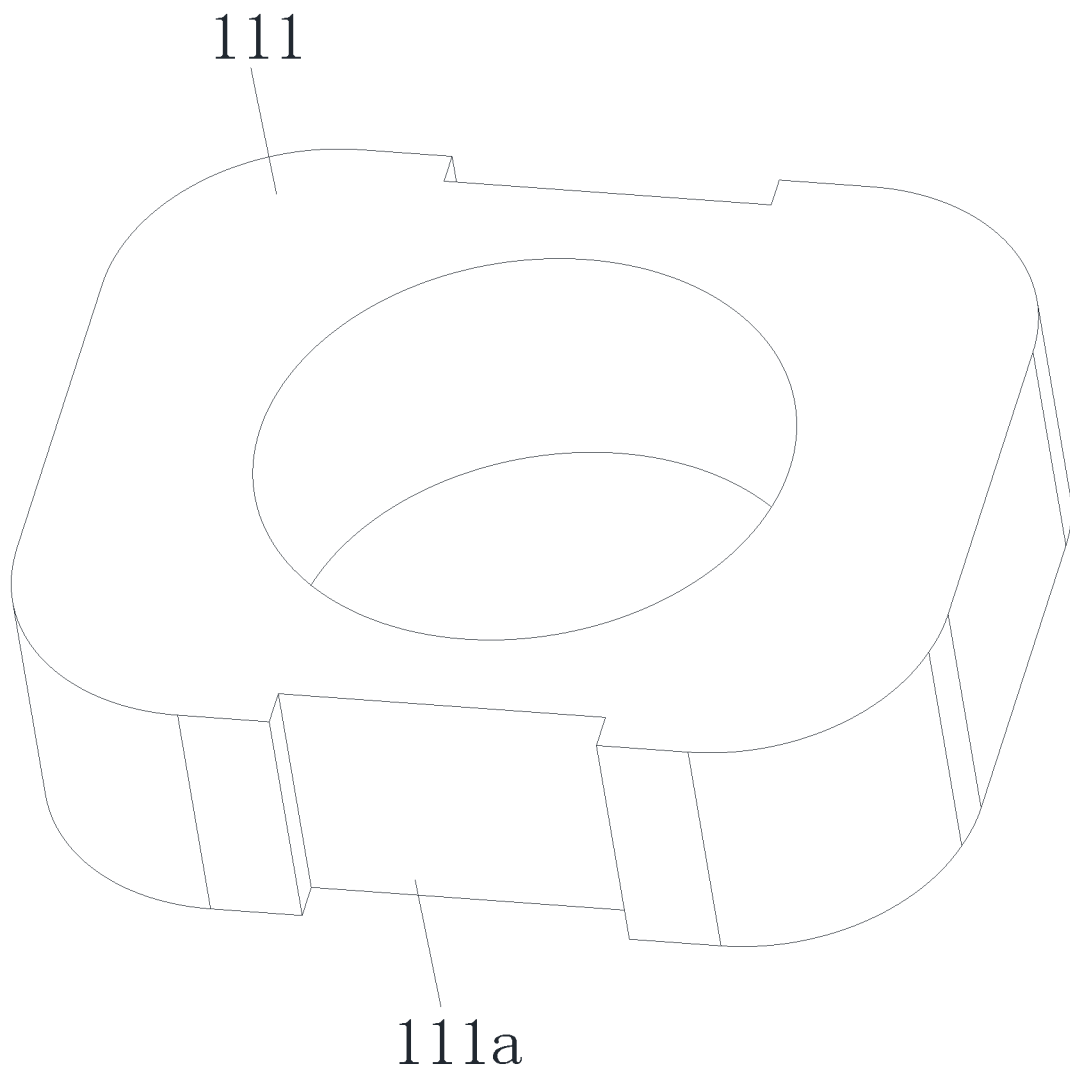


FIG. 17

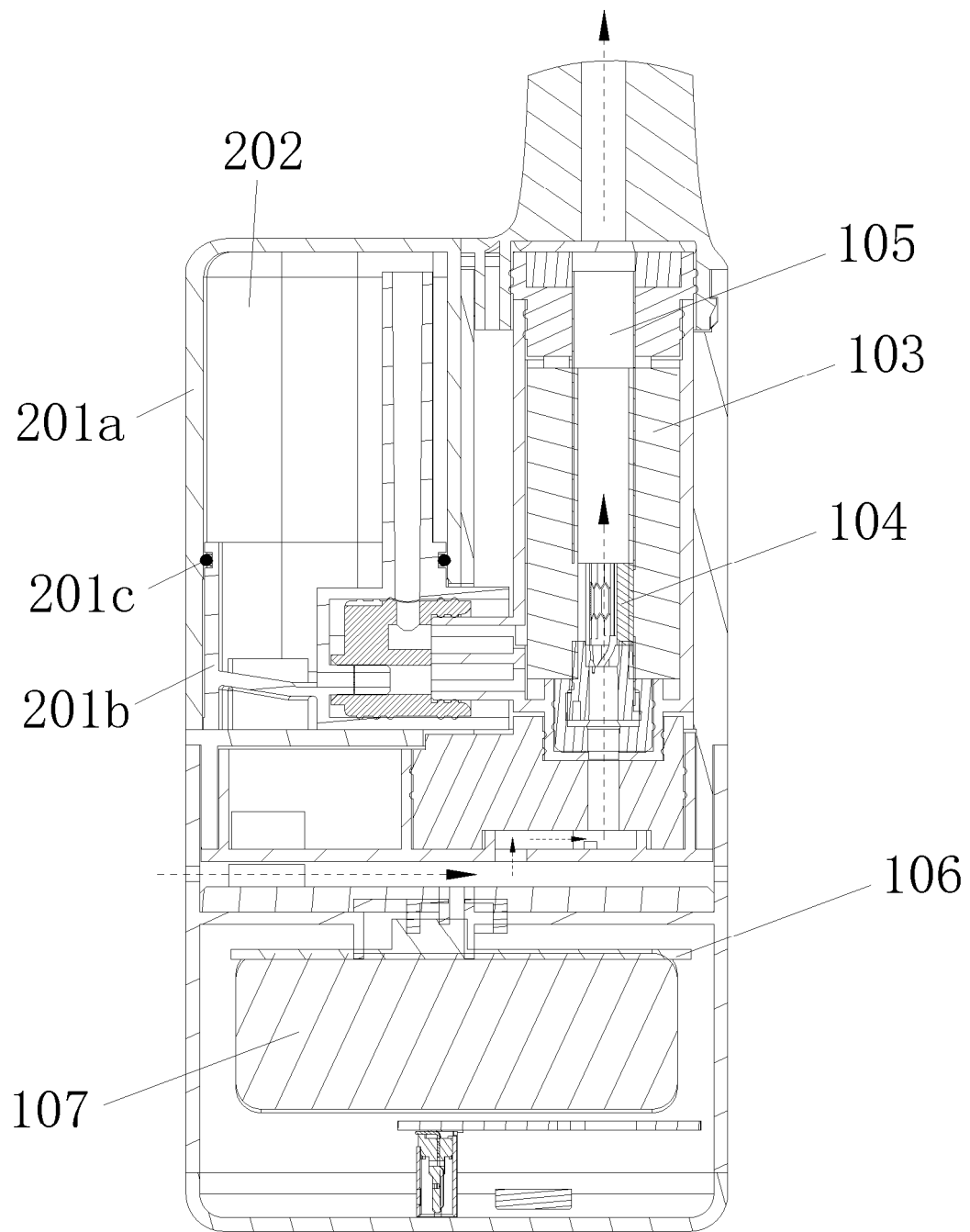


FIG. 18

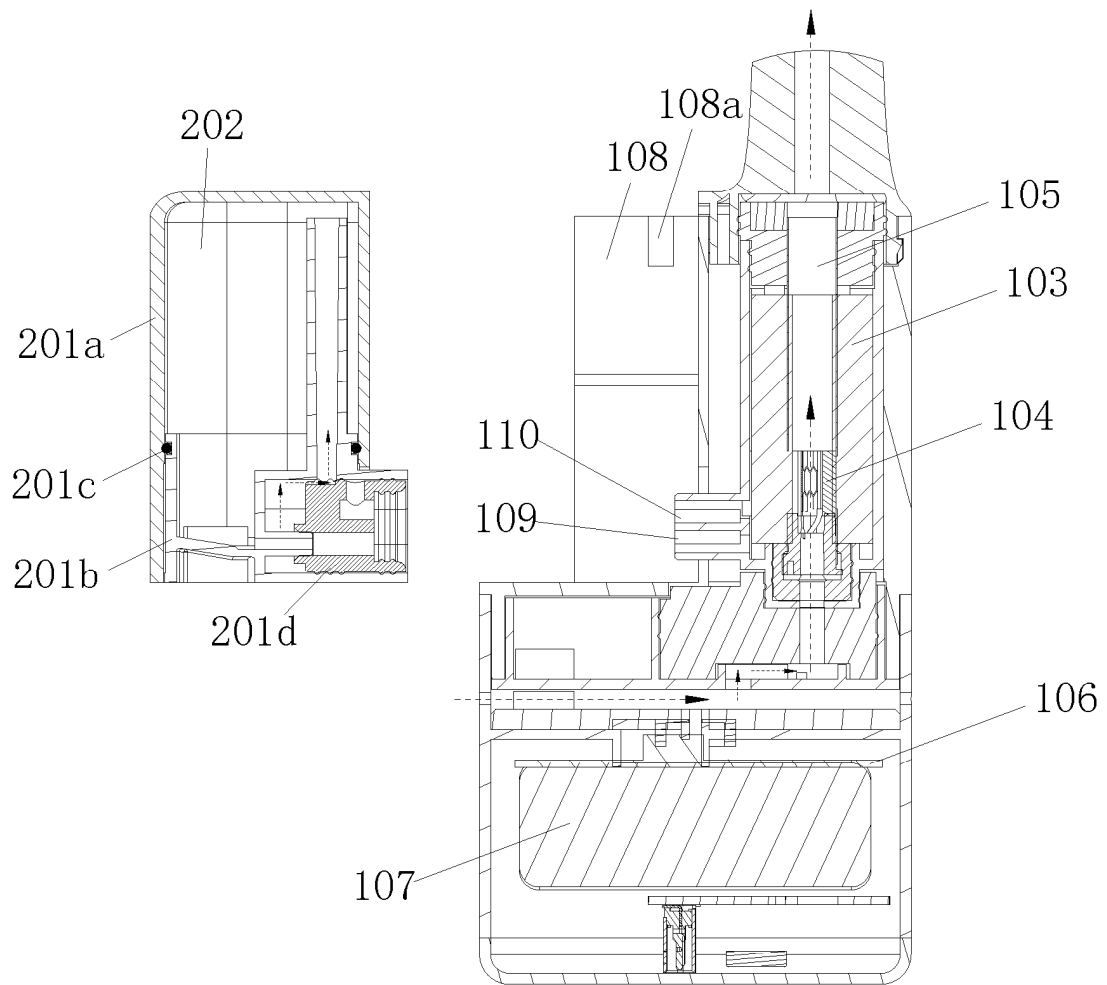


FIG. 19

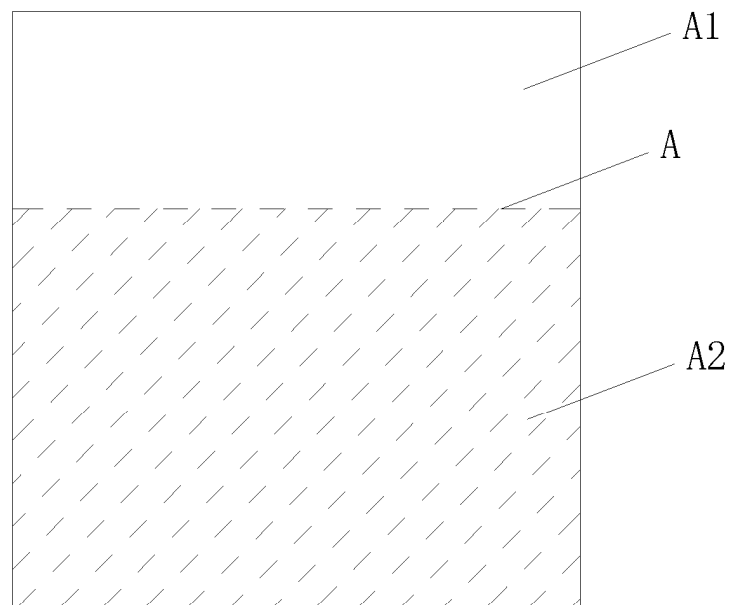


FIG. 20

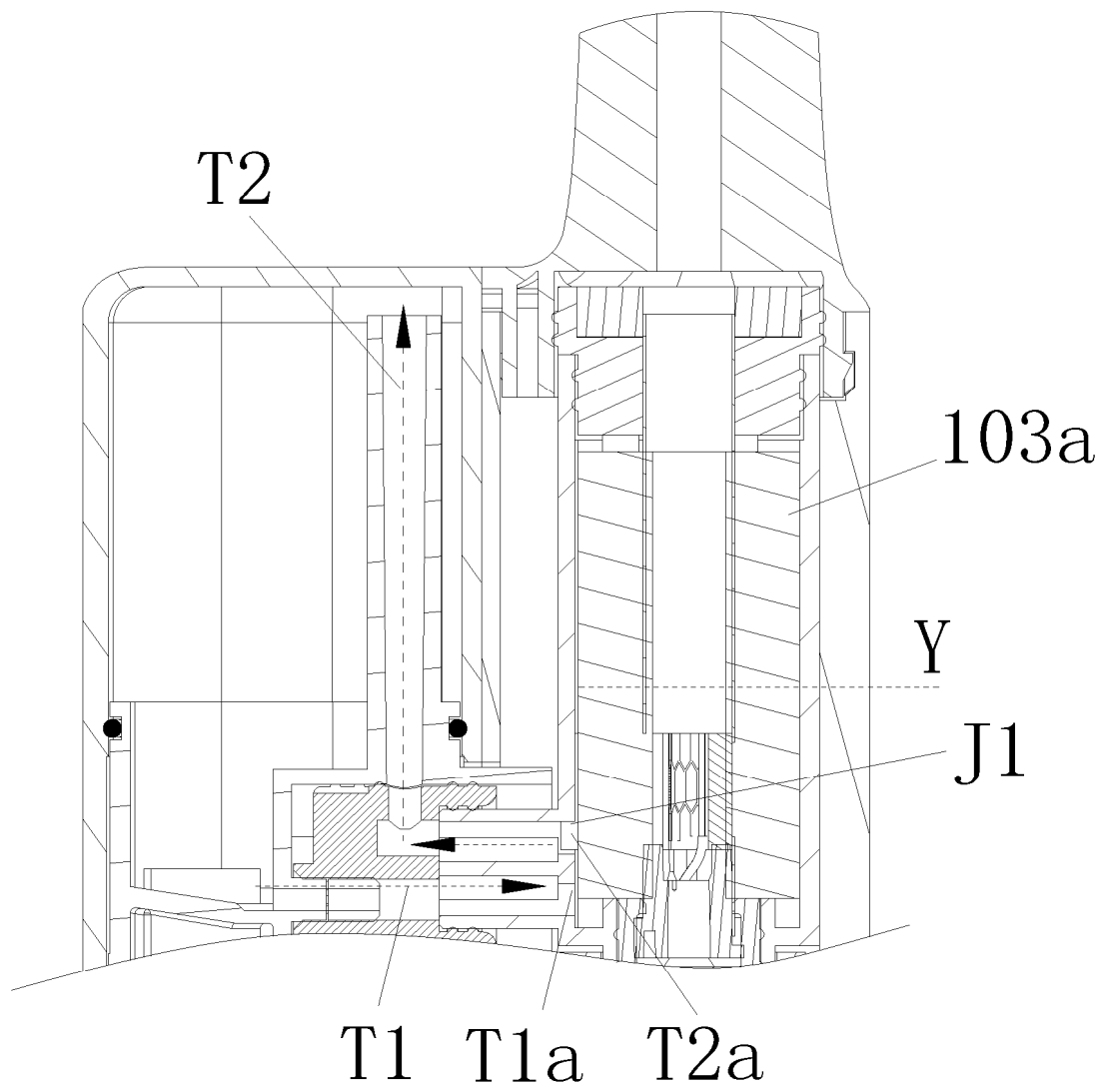


FIG. 21

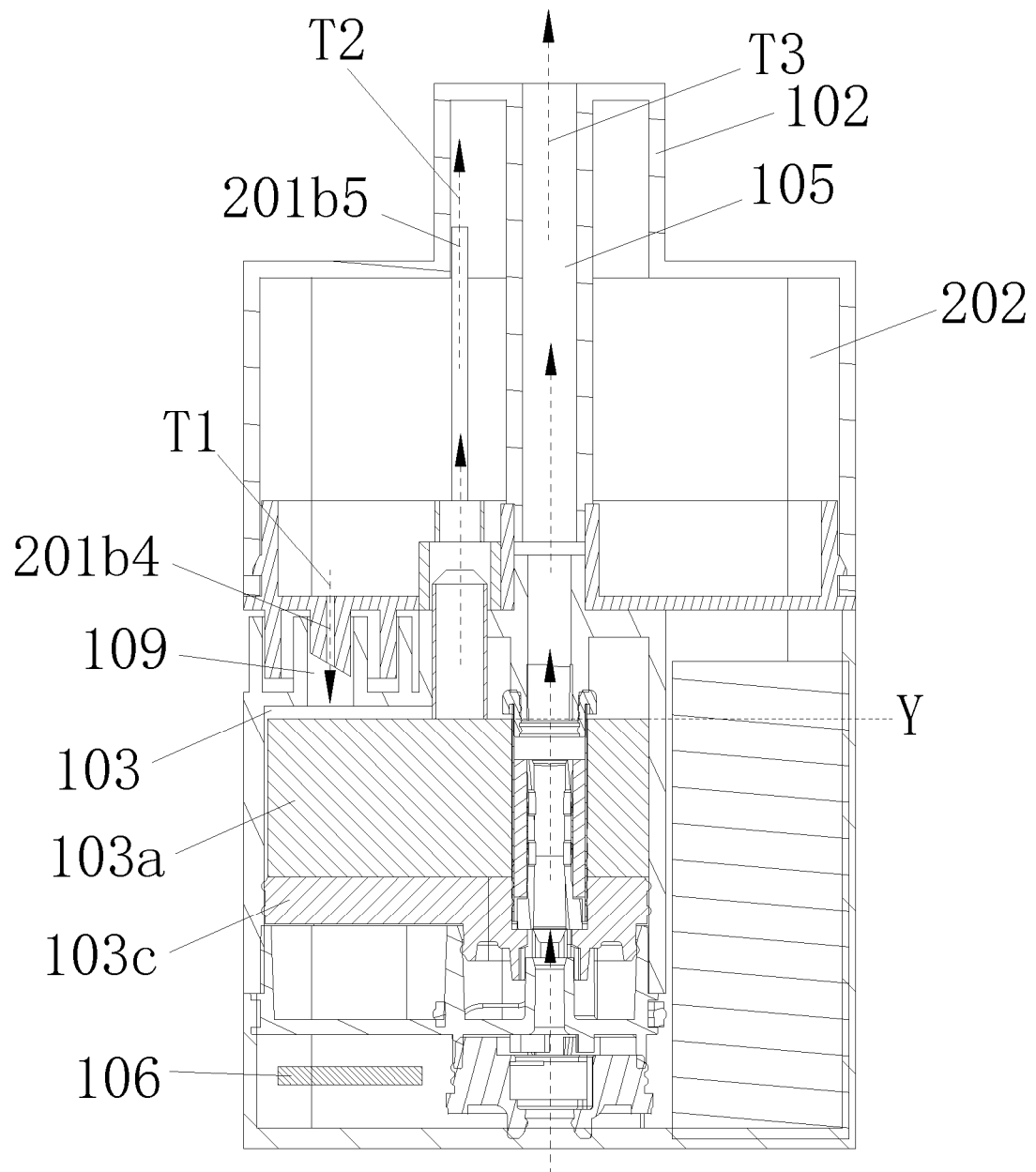


FIG. 22

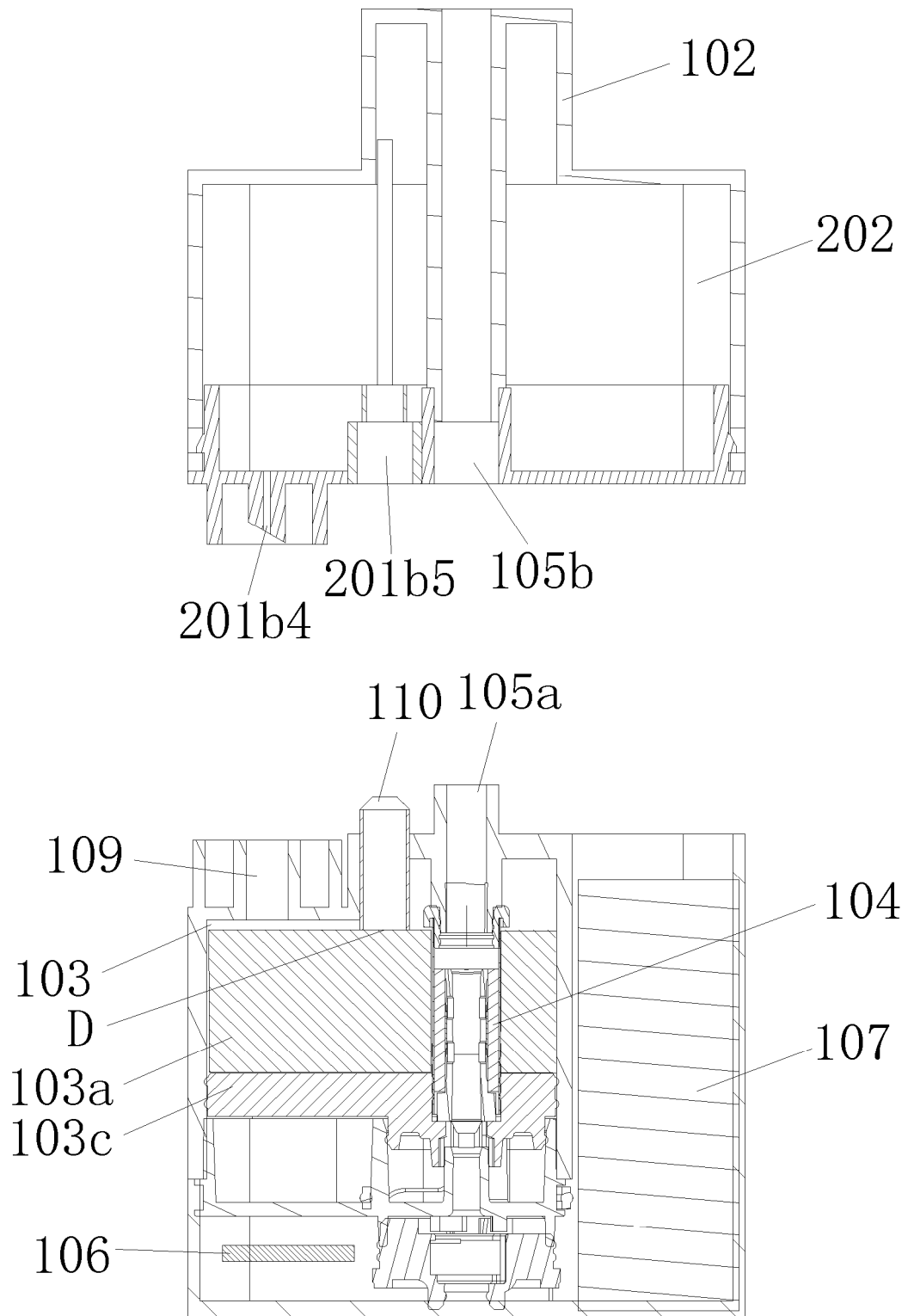


FIG. 23

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2024/083174

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/46(2020.01)i; A24F 40/485(2020.01)i

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)

IPC: A24F47/-,A24F40/-

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

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

CNTXT, CNABS, WPABS, VEN, WEB OF KNOWLEDGE: 电子烟, 雾化装置, 气溶胶, 储液腔, 液体基质, 通孔, 液体通道, 空气通道, 储液介质, 密封件, 导液元件, E-cigarette, e-cigar, atomiz+, atomizing+, Aerosol, liquid reservoir chamber, liquid matrix, through hole, liquid channel, air channel, liquid reservoir medium, seal, liquid guiding element

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2023082674 A1 (SHENZHEN WOODY VAPES TECHNOLOGY CO., LTD.) 19 May 2023 (2023-05-19) description, paragraphs 1-85, and figures 1-14	1-18
Y	CN 209002926 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 21 June 2019 (2019-06-21) description, paragraphs 1-117, and figures 1-13	1-18
Y	CN 108741233 A (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 06 November 2018 (2018-11-06) description, paragraphs 1-92, and figures 1-13	1-18
Y	CN 115226949 A (HAINAN MOORE BROTHERS TECHNOLOGY CO., LTD.) 25 October 2022 (2022-10-25) description, paragraphs 1-73, and figures 1-16	1-18
Y	CN 219353065 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 18 July 2023 (2023-07-18) description, paragraphs 1-103, and figures 1-16	1-18

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

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"E" earlier application or patent but published on or after the international filing date	"&" document member of the same patent family
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

25 September 2024

Date of mailing of the international search report

26 September 2024

Name and mailing address of the ISA/CN

China National Intellectual Property Administration (ISA/
CN)
China No. 6, Xitucheng Road, Jimenqiao, Haidian District,
Beijing 100088

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2024/083174

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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 108451039 A (CHANGZHOU PATENT ELECTRONIC TECHNOLOGY CO., LTD.) 28 August 2018 (2018-08-28) entire document	1-18
A	CN 207125315 U (CHANGZHOU PATENT ELECTRONIC TECHNOLOGY CO., LTD.) 23 March 2018 (2018-03-23) entire document	1-18
A	US 2023134641 A1 (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 04 May 2023 (2023-05-04) entire document	1-18

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2024/083174

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
WO	2023082674	A1	19 May 2023	None			
CN	209002926	U	21 June 2019	None			
CN	108741233	A	06 November 2018	None			
CN	115226949	A	25 October 2022	None			
CN	219353065	U	18 July 2023	None			
CN	108451039	A	28 August 2018	None			
CN	207125315	U	23 March 2018	None			
US	2023134641	A1	04 May 2023	WO	2021204285	A1	14 October 2021
				EP	4133953	A1	15 February 2023
				EP	4133953	A4	20 September 2023