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(54) **AEROSOL GENERATING DEVICE AND AEROSOL ELECTRONIC INHALER**

(57) This application discloses an aerosol generation apparatus and an electronic aerosol inhaler. The aerosol generation apparatus provides at least one implementation. The apparatus includes a shell, and a first liquid holder, a second liquid holder, and a vaporization element located in the shell. The shell extends in an axial direction and has a substrate cavity for accommodating a liquid substrate, the first liquid holder includes a body and a support portion extending from the body into the substrate cavity, the second liquid holder fits with the support portion of the first liquid holder to define a vaporization cavity, the vaporization element is held by the support portion, and an airflow buffer cavity located upstream of the vaporization cavity is formed in the body of the first liquid holder. The aerosol generation apparatus in this implementation enhances desired inhalation experience for the user by improving an airflow path design in the apparatus.

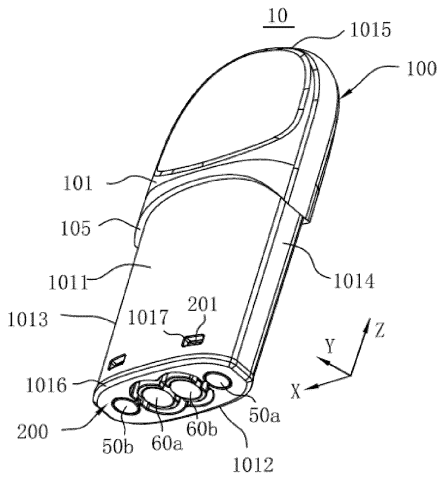

FIG. 1

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Chinese Patent Application No. 202021139269.5, entitled "AEROSOL GENERATION APPARATUS AND ELECTRONIC AEROSOL INHALER" filed with the Chinese Patent Office on June 18, 2020, which is incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] Embodiments of this application relate to the field of e-cigarettes, and specifically, to an aerosol generation apparatus and an electronic aerosol inhaler.

BACKGROUND

[0003] Many electronic aerosol inhalers (such as an e-cigarette or another electronic nicotine delivery system) are formed by two main components (a vaporizer and a power supply apparatus). A typical vaporizer generally has a function of accommodating a liquid substrate, which includes a reservoir for accommodating a liquid and a vaporization element for evaporating the liquid. The vaporization element is generally implemented as a resistive heater such as a heating wire coil. The power supply apparatus generally includes a battery for supplying power to the vaporization element and a control portion for controlling output power of the battery. In existing products, the power supply apparatus generally includes an airflow sensor. During operation, the power supply apparatus may activate the vaporizer to work by detecting when a user performs inhalation on an inhaler through an airflow sensor, to control the battery to supply power to the vaporization element. This activation causes the vaporization element to evaporate a small amount of liquid from the reservoir, which is inhaled by the user together with an airflow after aerosols are generated.

[0004] Such vaporizer is generally configured for one-time use and may be discarded to replace a new vaporizer when internal liquid is exhausted. As a disposable vaporizer, consumers expect a good inhalation feeling, and a total particulate matter (TPM) of aerosols is an important factor affecting the inhalation feeling. For example, patent application CN108883242A discloses a stream supply system, including a flat-shaped container for liquid storage, in which a cotton core having a strong absorbing capacity is used to guide the liquid to a heating wire coil for vaporization. In this way, liquid may be adequately supplied during inhalation, so that the user may obtain a desired TPM.

[0005] However, there are some problems. For example, if an airflow rate through the heating wire coil is relatively fast, liquid substrates that are not vaporized or droplets that are not sufficiently vaporized on the cotton core are likely to enter the airflow and be inhaled by the user, affecting use experience. In view of this, the airflow design is expected to be improved to provide an appropriate inhalation resistance to obtain the desired TPM during inhalation while inhalation of the liquid substrates that are not vaporized can be avoided as much as possible. However, for flat-shaped vaporizers similar to those shown in the above patent application, even those having a smaller flatness from the appearance, it may be extremely difficult to improve an airflow path in the apparatus to reduce the inhalation of the liquid substrates that are not vaporized.

SUMMARY

[0006] The technical problem to be solved by this application is to overcome defects in the related art, and provide an aerosol generation apparatus and an electronic aerosol inhaler which can obtain a desired TPM value while reduce the probability of inhaling an incompletely vaporized liquid substrate during inhalation as much as possible.

[0007] To resolve the foregoing technical problems, this application provides an implementation of an aerosol generation apparatus. The aerosol generation apparatus includes: a shell having an open end, where the shell extends in an axial direction and has a substrate cavity for accommodating a liquid substrate; a first liquid holder, connected to the open end of the shell, where the first liquid holder includes a body and a support portion extending from the body into the substrate cavity; a vaporization element, held by the support portion and configured to vaporize the liquid substrate to generate aerosols; a second liquid holder, provided with an aerosol outlet, where the second liquid holder fits with the support portion of the first liquid holder to define a vaporization cavity, and the vaporization element is at least partially located in the vaporization cavity; and at least one air inlet, configured to guide external air into the aerosol generation apparatus, where an airflow buffer cavity in fluid communication with the air inlet is formed in the body of the first liquid holder, and the airflow buffer cavity is located upstream of the vaporization cavity.

[0008] As an exemplary embodiment, the first liquid holder has a first width dimension perpendicular to the axial direction, and an extension width of the airflow buffer cavity in a first width direction is greater than an extension width of the vaporization cavity in the first width direction.

[0009] As an exemplary embodiment, the vaporization cavity is in fluid communication with the airflow buffer cavity through an airflow hole, and the air inlet and the airflow hole are staggered in the axial direction.

[0010] Further, the first liquid holder has a second width dimension perpendicular to the axial direction, a second width direction is perpendicular to the first width direction, and a maximum dimension of the first liquid holder in the second width direction is less than a maximum dimension in the first width direction.

[0011] As an exemplary embodiment, a ratio of the

maximum dimension of the first liquid holder in the second width direction to the maximum dimension in the first width direction is in a range of 0.2 to 0.4.

[0012] As an exemplary embodiment, the airflow buffer cavity runs through the body in the second width direction.

[0013] As an exemplary embodiment, a first blocking wall and a second blocking wall are spaced apart in the airflow buffer cavity to sequentially divide the airflow buffer cavity into a first buffer cavity, a second buffer cavity, and athird buffer cavity, the second buffer cavity is located between the first buffer cavity and the third buffer cavity and is in fluid communication with the vaporization cavity, and both the first blocking wall and the second blocking wall are provided with notches for transferring an airflow.

[0014] As an exemplary embodiment, a notch on the first blocking wall and a notch on the second blocking wall are respectively adjacent to opposite sides of the body and spaced apart from each other.

[0015] As an exemplary embodiment, a first seal member and a second seal member are arranged between the first liquid holder and the shell, and the airflow buffer cavity is located between the first seal member and the second seal member.

[0016] As an exemplary embodiment, a first accommodating groove for accommodating the first seal member and a second accommodating groove for accommodating the second seal member are provided on an outer peripheral surface of the first liquid holder, and an axial depth of the first accommodating groove is greater than an axial depth of the second accommodating groove.

[0017] As an exemplary embodiment, the first seal member is in a shape of a ring belt, and the first seal member includes at least two seal ribs for abutting against an inner wall of the shell.

[0018] As an exemplary embodiment, the first seal member is formed by at least a part of the second liquid holder extending toward the first liquid holder.

[0019] As an exemplary embodiment, the first liquid holder further includes a substantially cylindrical extension portion extending from the body to the substrate cavity, and the first accommodating groove is provided on an outer peripheral surface of the extension portion.

[0020] As an exemplary embodiment, the vaporization element includes a liquid guide core body and a heating wire surrounding the liquid guide core body, and the second liquid holder fits with the first liquid holder to clamp the liquid guide core body.

[0021] As an exemplary embodiment, the support portion includes a first support arm and a second support arm opposite to each other, a trench for accommodating the liquid guide core body is provided on the first support arm and the second support arm, and the liquid guide core body is accommodated in the trench and an end portion of the liquid guide core body extends into the substrate cavity.

[0022] As an exemplary embodiment, a vent tube for discharging aerosols is further arranged in the substrate cavity, and an end portion of the vent tube is connected to the aerosol outlet of the second liquid holder.

[0023] As an exemplary embodiment, the first liquid holder further includes an extension portion extending from the body to the substrate cavity, the extension portion and the support portion define a liquid slowing cavity, and an end portion of the liquid guide core body extends into the liquid slowing cavity.

[0024] As an exemplary embodiment, at least one liquid guide hole for guiding the liquid substrate to flow into the liquid slowing cavity is provided on the second liquid holder.

[0025] As an exemplary embodiment, the second liquid holder is configured as an elastic body and has a joint surface matching an outer peripheral surface of the liquid guide core body.

[0026] As an exemplary embodiment, the first liquid holder is configured as a rigid body, the second liquid holder is configured as an elastic body fitting with the first liquid holder, and both the first liquid holder and the second liquid holder define a transfer path in which the liquid substrate flows from the substrate cavity into the vaporization cavity.

[0027] As an exemplary embodiment, the shell is at least partially configured to be transparent or translucent, to view the airflow buffer cavity through an outer surface of the shell.

[0028] This application further provides another implementation of an aerosol generation apparatus. The aerosol generation apparatus in this embodiment includes: a reservoir, including a shell, where the shell is provided with a substrate cavity for accommodating a liquid substrate and defines a vent tube for discharging aerosols; a first liquid holder configured as a rigid body, connected to the reservoir; a vaporization element, including a liquid guide core body and a heating body for heating a liquid substrate from the liquid guide core body to generate aerosols; and a second liquid holder configured as an elastic body, including an aerosol outlet in communication with the vent tube, where the second liquid holder fits with the first liquid holder to define a vaporization cavity and a transfer path in communication with the vaporization cavity and the substrate cavity, and the liquid guide core body transfers the liquid substrate through the transfer path, where the first liquid holder is provided with at least one air inlet and an airflow buffer cavity in fluid communication with the air inlet, and the airflow buffer cavity is in fluid communication with the vaporization cavity to introduce an airflow into the vaporization cavity.

[0029] Further, the first liquid holder includes a support portion for holding the liquid guide core body, and the second liquid holder is provided with a groove for accommodating at least a part of the support portion.

[0030] This application further provides another implementation of an aerosol generation apparatus. The aerosol generation apparatus in this embodiment includes: a shell, where the shell is provided with a substrate cavity

for accommodating a liquid substrate, the shell includes a front surface and a rear surface opposite to each other, and the front surface and the rear surface are at least partially transparent or translucent; a first liquid holder, connected to the shell, where the first liquid holder includes a body and a support portion extending from the body into the substrate cavity; a vaporization element, held by the support portion and configured to vaporize the liquid substrate to generate aerosols; a second liquid holder, provided with an aerosol outlet, where the second liquid holder fits with the support portion of the first liquid holder to define a vaporization cavity, and the vaporization element is at least partially located in the vaporization cavity; and at least one air inlet, configured to guide external air into the aerosol generation apparatus, where an airflow buffer cavity in fluid communication with the air inlet is formed in the first liquid holder, and the airflow buffer cavity is in fluid communication with the vaporization cavity to introduce an airflow into the vaporization cavity; and the airflow buffer cavity runs through the body of the first liquid holder and is located between the front surface and the rear surface of the shell, which can view the airflow buffer cavity through the front surface or the rear surface of the shell.

[0031] This application further provides an embodiment of an electronic aerosol inhaler including a vaporization apparatus and a power supply apparatus for supplying power to the vaporization apparatus. The vaporization apparatus may be the aerosol generation apparatus involved in the foregoing embodiments and optimization solutions.

[0032] Further, the power supply apparatus includes a power supply housing and a battery located in the power supply housing, an accommodating cavity is provided at an end of the power supply housing, and the aerosol generation apparatus is capable of being at least partially inserted into the accommodating cavity, to maintain an electrical connection to the power supply apparatus.

[0033] Beneficial effects of this application are as follows: The aerosol generation apparatus provided in the embodiments of this application includes a first liquid holder and a second liquid holder. The first liquid holder fits with the second liquid holder to define a vaporization cavity, and an airflow buffer cavity in fluid communication with the vaporization cavity is formed in the first liquid holder. Therefore, the airflow buffer cavity may increase an appropriate inhalation resistance and an amount of air stored in an upstream space of the vaporization cavity, to ensure that an airflow can smoothly flow into the vaporization cavity, and leakage of non-vaporized liquid substrates is reduced, so that inhalation of liquid substrates of large particles by the user may be avoided while a larger TPM may be obtained, thereby providing a good taste.

BRIEF DESCRIPTION OF THE DRAWINGS

[0034]

FIG. 1 is a schematic diagram of an aerosol generation apparatus according to some embodiments of this application.

FIG. 2A is a front view of the aerosol generation apparatus shown in FIG. 1.

FIG. 2B is a top view of the aerosol generation apparatus shown in FIG. 1.

FIG. 2C is a left view of the aerosol generation apparatus shown in FIG. 1.

FIG. 3 is a cross-sectional view of an aerosol generation apparatus taken along an X-Z axis direction according to some embodiments of this application.

FIG. 4 is a cross-sectional view of an aerosol generation apparatus taken along an X-Y axis direction according to some embodiments of this application.

FIG. 5 is a schematic exploded view of an aerosol generation apparatus according to some embodiments of this application.

FIG. 6 is a schematic diagram of fitting a first liquid holder with a second liquid holder to clamp a vaporization element of an aerosol generation apparatus according to some embodiments of this application.

FIG. 7A to FIG. 7C are schematic structural diagrams of a first liquid holder in an aerosol generation apparatus from different perspectives according to some embodiments of this application.

FIG. 8 is a schematic structural diagram of a second liquid holder in an aerosol generation apparatus according to some embodiments of this application.

FIG. 9 is a longitudinal cross-sectional view of an aerosol generation apparatus according to some other embodiments of this application.

FIG. 10 is a schematic exploded view of the aerosol generation apparatus shown in FIG. 9.

FIG. 11 is a schematic diagram of an embodiment of an electronic aerosol inhaler according to this application.

DETAILED DESCRIPTION

[0035] The structures and use principles of an aerosol generation apparatus and an electronic aerosol inhaler provided in this application are further described below by using the following specific embodiments. The aerosol generation apparatus may be, for example, a vaporizer or another nicotine delivery apparatus, or may be another vaporization apparatus including volatile components inhalable by a human body that is configured for an e-cigarette.

[0036] Referring to FIG. 1 to FIG. 3 together, this application provides an implementation of an aerosol generation apparatus 10. The aerosol generation apparatus 10 is a vaporizer for an e-cigarette. The aerosol generation apparatus 10 includes a reservoir 100, a first liquid holder 200 and a second liquid holder 300 connected to the reservoir 100, and a vaporization element in the reservoir 100. The reservoir 100 includes a flat-shaped shell 101, and a substrate cavity for accommodating a liquid

substrate is included in the shell 101. The vaporization element is configured to vaporize the liquid substrate to form aerosols inhalable by a user. The liquid substrate may be a liquid including nicotine, nicotine salt, or other volatile components that can be biologically absorbed by the human body. The first liquid holder 200 and the second liquid holder 300 fit with the shell 101 to hold the liquid substrate inside the substrate cavity, to prevent the liquid substrate from leaking outside the shell 101 or into an airflow channel in the shell.

[0037] For ease of reference, three direction systems that are perpendicular to one another are constructed, namely, an X-axis direction, a Y-axis direction, and a Z-axis direction perpendicular to the X-axis direction and the Y-axis direction. The aerosol generation apparatus 10 includes a plurality of surfaces extending in the X-axis direction, the Y-axis direction, and the Z-axis direction, where the surfaces are formed with corresponding dimensions. The shell 101 extends in an axial direction (Z-axis direction) and includes a front surface 1011 and a rear surface 1012 that are opposite to each other in the Y-axis direction, a first side surface 1013 and a second side surface 1014 located between the front surface 1011 and the rear surface 1012, and an upper end surface 1015 located upstream and an open end 1016 located downstream. As can be seen from FIG. 1, a width dimension of surfaces of the shell 101 extending in the X-axis direction is significantly greater than a width dimension extending in the Y-axis direction, to visually construct a flat shape.

[0038] As for product assembly, the first liquid holder 200 is inserted into the open end 1016 of the shell 101 and is connected to the open end 1016, to hold other components inside the shell 101. Both the front surface 1011 and the rear surface 1012 are provided with two openings 1017 or grooves that are spaced apart from each other. An outer side surface of the first liquid holder 200 is provided with buckles 201 correspondingly protruded, and the buckles 201 are fitted with the openings 1017 or the grooves to mount the first liquid holder 200 on the shell 101. It may be understood that, the openings or grooves may also be provided on the first side surface 1013 and the second side surface 1014, and the shell 101 is connected to the first liquid holder 200 through the first side surface 1013 and the second side surface 1014.

[0039] To maintain a connection between the aerosol generation apparatus 10 and a power supply apparatus, a magnetic element 50a and a magnetic element 50b that are symmetric along a Y-Z axis plane are mounted on an end surface of the first liquid holder 200. The magnetic element 50a and the magnetic element 50b may be a magnet or a ferromagnetic material capable of attracting magnets, and the aerosol generation apparatus 10 is physically connected to the power supply apparatus through the magnetic element 50a and the magnetic element 50b. A pair of electrodes 60a and 60b are further mounted on the end surface of the first liquid holder 200. The electrode 60a and the electrode 60b are located between the magnetic element 50a and the magnetic element 50b and are also symmetrical along the Y-Z axis plane. The electrode 60a and the electrode 60b are configured to be connected to positive and negative poles of the power supply apparatus, to supply current to the vaporization element.

[0040] In an exemplary implementation, the shell 101 is at least partially transparent or translucent, for example, a transparent plastic shell. In some embodiments, the shell 101 may be made of transparent or translucent plastic materials such as polypropylene (PP) or polyethylene terephthalate-1,4-cyclohexane dimethanol (PCTG). The user may observe a condition in the shell 101 through the surface of the shell 101, such as the front surface 1011 or the rear surface 1012. For example, the user may observe a capacity of the liquid substrate in the substrate cavity through a transparent shell, and an airflow channel in the shell may be viewed through the transparent shell.

[0041] FIG. 2A to FIG. 2C show external schematic diagrams of the aerosol generation apparatus 10 from various perspectives. With reference to FIG. 1 and FIG. 2A, the surfaces of the shell 101 form different width dimensions in a Z direction, including a first portion 104 and a second portion 103 whose outer surface dimension is relatively reduced. The first portion 104 and the second portion 103 may be integrally formed by using transparent plastic. In a case that the aerosol generation apparatus 10 is connected to the power supply apparatus, the second portion 103 may be inserted and hidden in the power supply apparatus, and the first portion 104 is exposed outside the power supply apparatus, for the user to hold and inhale with a lip. A step 105 is formed between the first portion 104 and the second portion 103. A step surface of the step 105 is not flat, but has a certain radius. In a case that the second portion 103 is inserted into an accommodating cavity of a battery apparatus, the step 105 abuts against an end surface of the battery apparatus, and an outer surface of the first portion 104 is bonded to an outer surface of a shell of the battery apparatus to form a continuous complete surface. It is conceivable that the end surface of the battery apparatus also has a matched radius. It may be understood that, the first portion 103 and the second portion 104 may also be separately constructed, and the first portion 103 that is used as a suction nozzle is assembled at an end of the second portion 104 and covers a part of the second portion 104. The substrate cavity is formed in the second portion 104.

[0042] To more conveniently cooperate with inhalation by the user, holding surfaces 102 contacted with the lip are respectively formed on the front surface 1011 and the rear surface 1012 of the first portion 103 in a recess manner, two holding surfaces 102 are recessed inwardly and constructed close to each other to form a thinner thickness, to adapt to a degree of opening and closing the lip during inhalation by the user. Referring to FIG. 2B, an airflow outlet 106 is provided at a center of an upstream end surface 1015, and the vaporization element

may be partially exposed through the airflow outlet 106. When the user smokes, air enters the aerosol generation apparatus 10 through an air inlet and then flows upward through the airflow channel to flow through the vaporization element, and aerosols generated by vaporizing the liquid substrate by the vaporization element are released into the airflow channel, which may be finally discharged from the airflow outlet 106 together with an airflow. During smoking, the user may hold the upstream end surface 1015 of the first portion 103 with the lip to inhale aerosols from the airflow outlet 106. The thickness of a middle portion of the upstream end surface 1015 is designed to be greater than the thickness of two sides, to adapt to the shape of the lip, thereby improving tactile experience during inhalation.

[0043] Referring to FIG. 2C, the front surface 1011 and the rear surface 1012 of the shell 101 are symmetric based on an X-Z axis plane, so that when the user connects the aerosol generation apparatus 10 to the power supply apparatus, the aerosol generation apparatus 10 can be inserted into the accommodating cavity of the power supply apparatus without restriction in both clockwise and counterclockwise directions of rotating 180 degrees about the Z axis, and electrical connection between the aerosol generation apparatus 10 and the power supply apparatus is maintained, thereby improving user experience.

[0044] FIG. 3 and FIG. 5 show internal structures of the aerosol generation apparatus 10. The aerosol generation apparatus 10 includes a reservoir 100, and a first liquid holder 200, a second liquid holder 300, and a vaporization element 400 configured in a shell 101 of the reservoir 100. The shell 101 includes a substrate cavity 111 for accommodating a liquid substrate and defines a vent tube 110 for discharging aerosols. The vent tube 110 is substantially located at a center of the shell 101 and is made of a transparent material the same as the shell 101. The substrate cavity 111 is at least partially formed by a space between the vent tube 110 and the shell 101.

[0045] The first liquid holder 200 is made of a rigid material that is not susceptible to compression deformation, for example, opaque plastic. The second liquid holder 300 may be made of an elastic material such as silicone that may be elastically deformed. The first liquid holder 200 fit with the second liquid holder 300 to clamp the vaporization element in the reservoir 100. The first liquid holder 200 is connected to an open end of the reservoir 100, and the second liquid holder 300 is mounted between the first liquid holder 200 and the vent tube 110. The first liquid holder 200 and the second liquid holder 300 define apart of the substrate cavity 111, and fit with the shell 101 and the vent tube 110 to hold the liquid substrate in the substrate cavity 111, to prevent the liquid substrate from leaking into the vent tube 110 or outside the shell 101.

[0046] The vaporization element 400 includes a liquid guide core body 401 and a heating body 402 for heating a liquid substrate from the liquid guide core body 401 to generate aerosols. According to some embodiments, the liquid guide core body 401 is substantially configured as an elongated cylinder or rod, and the liquid guide core body 401 is generally made of a flexible material such as natural cotton, rayon cotton, fiberglass, or sponge, which guides liquids based on an internal capillary effect and may be compressed. In some embodiments, the heating body 402 adopts a spiral-shaped heating coil made of a material having an appropriate impedance such as nickel alloy, nickel-chromium alloy, ferrochromium-aluminum alloy, and the like, and the heating coil is wound on a middle portion of the liquid guide core body 401. It may be understood that, the heating body 402 may also be a strip-shaped heating strip with a certain width wound on a surface of the liquid guide core body 401, or may be a mesh-shaped heating body surrounded on the surface of the liquid guide core body 401, to increase a contact area of the heating body 402 and the surface of the liquid guide core body 401, thereby increasing a TPM value of generated aerosols.

[0047] As shown in FIG. 3, the second liquid holder 300 fits with the first liquid holder 200 to define a vaporization cavity 205 and a transfer path (not shown) in communication with the vaporization cavity 205 and the substrate cavity 110. The transfer path is provided with an appropriate hole for the liquid guide core body 401 to pass through. The heating body 402 and a part of the liquid guide core body 401 are located in the vaporization cavity 205, and two ends of the liquid guide core body 401 pass through the transfer path and extend outside the vaporization cavity 205, thereby conducting, through the transfer path, the liquid substrate to the heating body 402 for heating and vaporization.

[0048] The first liquid holder 200 is provided with at least one air inlet and an airflow buffer cavity 204 in fluid communication with the air inlets, the airflow buffer cavity 204 is in fluid communication with the vaporization cavity 205 to introduce an airflow into the vaporization cavity 205, and the vaporization cavity 205 is in fluid communication with the vent tube 110 above. In some embodiments, the air inlet includes an air inlet 107a and an air inlet 107b provided on the first liquid holder 200. During inhalation, an external airflow is guided into the airflow buffer cavity 204 by the air inlet 107a and the air inlet 107b and mixed, and then flow into the vaporization cavity 205, and the airflow reaches the airflow outlet 106 together with aerosols generated in the vaporization cavity 205 through the vent tube 110. It may be understood that, the air inlet may also be provided on the shell 101 or defined by a gap between the shell 101 and the first liquid holder 200. This is not limited in this application.

[0049] To ensure sealing performance of the apparatus, a first seal member 500 and a second seal member 600 are arranged between the first liquid holder 200 and the shell 101, and the airflow buffer cavity 204 is located between the first seal member 500 and the second seal member 600. The first seal member 500 can prevent liq-

uids in the substrate cavity 111 from leaking into the airflow buffer cavity 204 and the vaporization cavity 205. In particular, the vaporization element is in an inoperative state within a time interval of two times of inhalation by the apparatus, residual aerosols in the vaporization cavity 205 are likely to be condensed to condensate, and consequently, the condensate flows into the airflow buffer cavity 204 below. The second seal member 600 may prevent the condensate in the airflow buffer cavity 204 from leaking outside the apparatus.

[0050] In some embodiments, the first liquid holder 200 includes a body 202 and a support portion 203 extending from the body 202 into the substrate cavity 111, and the liquid guide core body 402 in the vaporization element is retained inside the shell by the support portion 203. As shown in FIG. 5, the support portion 203 preferably includes a first support arm 2031a and a second support arm 2031b opposite to each other, and the first support arm 2031a and the second support arm 2031b are connected through two side walls and surrounds a part of the vaporization cavity 205. A trench 2032 for accommodating the liquid guide core body 401 is provided on the first support arm 2031a and the second support arm 2031b, and the trench 2032 is configured to partially define the transfer path. The liquid guide core body 401 is accommodated in the trench 2032 and an end portion of the liquid guide core body 401 extends into the substrate cavity 111.

[0051] During assembly, the first seal member 500, the second seal member 600, and the magnetic elements 50a and 50b are first mounted on the first liquid holder 200, and then the vaporization element 400 is mounted on the first liquid holder 200. Specifically, the liquid guide core body 401 wound with a heating wire 402 is arranged on the support portion 203, two pins of the heating wire 402 pass through reserved holes in the body 202 to a bottom end surface and are bent to be inserted into two electrode mounting holes, and then the electrodes 60a and 60b are mounted to the electrode mounting holes, to maintain contact with the two pins of the heating wire 402 in an extruded manner, so that the electrodes 60a and 60b are electrically connected to the heating wire 402. The second liquid holder 300 is assembled onto a bracket portion 203 after the vaporization element 400 is mounted, so that the first liquid holder 200, the vaporization element 400, and the second liquid holder 300 are assembled into a module. Finally, the assembled module is inserted into the shell 101 from the open end 1016, so that the first liquid holder 200 is snap-connected to the shell 101, and a flange 2021 for positioning against the open end 1016 is arranged on an end portion of the first liquid holder 200. In addition, an aerosol outlet 301 in communication with the vent tube 110 is provided on the second liquid holder 300, and a connection portion 1101 with a smaller outer diameter is arranged at an end of the vent tube 110. The connecting portion 1101 is inserted into the aerosol outlet 301, to maintain a sealing connection between the second liquid holder 300 and the vent tube 110.

[0052] FIG. 4 is a cross-sectional view of an aerosol generation apparatus 10 along another cross-section. According to an airflow direction, the airflow buffer cavity 204 formed in the body 202 of the first liquid holder 200 is located upstream of the vaporization cavity 205, the vaporization cavity 205 and the airflow buffer cavity 204 are spaced apart from each other on the first liquid holder 200 in the Z-axis direction, and the vaporization cavity 205 is in fluid communication with the airflow buffer cavity 204 through an airflow hole 206. In some exemplary embodiments, the airflow hole 206 is designed as a waist-shaped hole in a shape of a strip or a gap extending in the Y-axis direction, or is designed as a plurality of airflow holes arranged in the Y-axis direction. The airflow hole 206 is substantially axially aligned with a portion of the liquid guide core body 401 wound with the heating wire 402, so that air in the airflow buffer cavity 204 may be directly blown to the heating wire 402 through the airflow hole 206, and aerosols generated near the heating wire are continuously cooled during inhalation by the user, thereby reducing the temperature of aerosols inhaled in the mouth.

[0053] As an exemplary embodiment, the shell 101 of the reservoir 100 includes a front surface 1011 and a rear surface 1012 opposite to each other, and the front surface 1011 and the rear surface 1012 are at least partially transparent or translucent. For specific details, reference may be made to the description of the material of the shell 101. In the Y-axis direction, the airflow buffer cavity 204 in the first liquid holder 200 runs through the body 202 of the first liquid holder 200. In other words, the airflow buffer cavity 204 runs through the body 202 from one side surface to the other opposite side surface. As can be seen from FIG. 4, the airflow buffer cavity 204 is located between the front surface 1011 and the rear surface 1012 of the shell 101. Therefore, the user may view the airflow buffer cavity 204 through the front surface 1011 or the rear surface 1012 of the shell 101, so that the user may observe retention of condensate in the airflow buffer cavity 204 through the shell. As a further exemplary solution, a condensate absorbing material, for example, a fiber material such as cotton may be arranged in the airflow buffer cavity 204 and is configured to absorb condensate entering the airflow buffer cavity 204, to prevent excess condensate from unnecessarily flowing in the airflow buffer cavity 204, thereby reducing a risk of liquid leakage and preventing the condensate from being inhaled by the user together with an airflow.

[0054] Based on the existing vaporizers products for e-cigarettes, in a case that an airflow rate near the heating body in the vaporization cavity is relatively fast, a non-vaporized liquid substrate is likely to be carried into the airflow and inhaled by the user, affecting the use experience. In view of this, it is necessary to change an upstream airflow path into the vaporization cavity.

[0055] FIG. 6 provides a new airflow path configuration in which the first liquid holder 200 has a first width dimen-

sion perpendicular to the axial direction (Z-axis direction), an extension width L2 of the airflow buffer cavity 204 in a first width direction (X-axis direction) is greater than an extension width L1 of the vaporization cavity 205 in the first width direction, so that an air containment volume of airflow buffer cavity 204 is greater than that of the vaporization cavity 205, greatly increasing the amount of air stored in the upstream space of the vaporization cavity 205, and an airflow entering the vaporization cavity 205 from the airflow buffer cavity 204 is more moderate. In addition, the air inlet 107a and the air inlet 107b on the first liquid holder 200 are staggered with the airflow hole 206 in the axial direction, which may further slow an airflow rate of flowing into the vaporization cavity 205. On the other hand, staggered airflow hole 206 and air inlets may also reduce direct leakage of condensate in the vaporization cavity 205 from the air inlets to the outside to a certain extent.

[0056] Referring to FIG. 6 and FIG. 7B, a first accommodating groove 501 for accommodating the first seal member 500 and a second accommodating groove 601 for accommodating the second seal member 600 are provided on an outer peripheral surface of the first liquid holder 200, and an axial depth of the first accommodating groove 501 is greater than an axial depth of the second accommodating groove 601. In some embodiments, the first seal member 500 is in a shape of a ring belt, and the first seal member 500 includes at least two seal ribs 502 for abutting against an inner wall of the shell 101, thereby improving the sealing performance.

[0057] FIG. 7A and FIG. 7B show shapes and structures of a first liquid holder 200 from different perspectives. A first blocking wall 2044 and a second blocking wall 2045 are spaced apart in the airflow buffer cavity 204 to sequentially divide the airflow buffer cavity 204 into a first buffer cavity 2041, a second buffer cavity 2042, and a third buffer cavity 2043, the second buffer cavity 2042 is located between the first buffer cavity 2041 and the third buffer cavity 2043 and is in fluid communication with the vaporization cavity 205, and both the first blocking wall 2044 and the second blocking wall 2045 are provided with notches for transferring an airflow. Therefore, dividing the airflow buffer cavity 204 into three communicated spaces may further moderate a flow rate of the airflow while ensuring a sufficient amount of air storage, to provide an appropriate inhalation resistance to the user.

[0058] Referring to FIG. 7B, according to some exemplary embodiments, a notch 2046 on the first blocking wall 2044 and a notch 2047 on the second blocking wall 2045 are adjacent to opposite sides of the body and arranged in a staggered manner. The notch 2046 guides air in the first buffer cavity 2041 to the second buffer cavity 2042, and the notch 2047 guides air in the third buffer cavity 2043 to the second buffer cavity 2042. In other words, the notch 2046 is adjacent to the front surface 1011 of the shell 101, while the notch 2047 is adjacent to the rear surface 1012 of the shell 101. Thus, it is conceivable that such a configuration may make an airflow in the first buffer cavity 2041 and the third buffer cavity 2043 on the left and right sides to be converged into the second buffer cavity 2042 in a staggered manner. During inhalation by the user, the airflow enters the second buffer cavity 2042 from the left and right sides and forms a swirling turbulence, and then converged into the vaporization cavity 205 above, and therefore the airflow is more moderate.

[0059] To facilitate positioning of the seal member, a first accommodating groove 501 for accommodating the first seal member 500 and a second accommodating groove 601 for accommodating the second seal member 600 are provided on an outer peripheral surface of the first liquid holder 200. The first accommodating groove 501 and the second accommodating groove 601 are substantially annular, and an axial depth of the first accommodating groove 501 in the axial direction is greater than an axial depth of the second accommodating groove 601.

[0060] Referring to FIG. 7C, the first liquid holder 200 has a second width dimension perpendicular to the axial direction (Z-axis direction), a second width direction (Y-axis direction) is perpendicular to the first width direction (X-axis direction), and a maximum dimension L3 of the first liquid holder 200 in the second width direction is less than a maximum dimension L4 in the first width direction. For existing flat-shaped vaporizer products, it is not possible to design the appearance to be flat enough, that is, a ratio of dimensions between the second width dimension and the first width dimension cannot be small enough, which mainly because it is not possible to construct the airflow path in a small enough space to improve the airflow rate. In this embodiment, a ratio of the maximum dimension L3 of the first liquid holder 200 in the second width direction to the maximum dimension L4 in the first width direction is limited to be in a range of 0.2 to 0.4, which is much smaller than a dimensional ratio of the conventional product, and therefore, the vaporizer has a smaller flatness than the conventional vaporizer product from the appearance. On the other hand, the foregoing design of the airflow buffer cavity extending in the X-axis direction may provide a sufficient air storage space in a small enough volume, that is, the aerosol generation apparatus 10 provided in this application is applicable to a product having a smaller flatness from the appearance.

[0061] With reference to FIG. 6 and FIG. 7B, according to some embodiments, the first liquid holder 200 further includes an extension portion 207 extending from the body 202 to the substrate cavity 111. The extension portion 207 is substantially cylindrical, the first accommodating groove 501 is provided on an outer peripheral surface of the extension portion 207, and a flange 2071 extending radially is arranged at an upper end portion of the extension portion 207. The flange 2071 is configured to position the first seal member 500 in the first accommodating groove 501. The extension portion 207 and the support portion 203 (including two support arms) define

two liquid slowing cavity 208, and two end portions of the liquid guide core body 401 extend into the liquid slowing cavity 208. An upper end of the liquid slowing cavity 208 is open. In a case that the first liquid holder 200 is mounted in the shell 101, the liquid slowing cavity 208 is in communication with the substrate cavity 111, while a space of the liquid slowing cavity 208 is relatively small. which may slow down a speed at which the liquid substrate flows into the vaporization cavity 205 through the liquid guide core body 401, to prevent excess liquid substrates from entering the vaporization cavity 205 and not being fully heated.

[0062] FIG. 8 provides a structure of an embodiment of a second liquid holder 300. The second liquid holder 300 is made of an elastic material such as silicone, and includes a body 303. An end of the body 303 is provided with an aerosol outlet 301, where the aerosol outlet 301 running through the body 303, and the other end of the body 303 includes a substantially square-shaped hollow cylinder 305 extending toward the support portion 203 of the first liquid holder 200. An elastic arms 304a and an elastic arms 304b are respectively arranged on two sides of the cylinder 305 in a suspended state, grooves 306 are defined between the elastic arms 304a and 304b and the cylinder 305. The support portion 203 of the first liquid holder 200 is at least partially located in the groove 306, to achieve sealing fit between the first liquid holder 200 and the second liquid holder 300.

[0063] Two seal portions 307 are respectively connected between the elastic arms 304a and 304b and the cylinder 305. The seal portions 307 extend into the groove 306, and the width of the seal portions 307 in the Y-axis direction is substantially the same as the width of the trench 2032 on the support portion 203, so that two liquid holders may enter the trench 2032 during assembly of the seal portions 307 and define, together with the support portion 203, openings for the liquid guide core body 401 to pass through, where the openings form a liquid transfer path flowing from the substrate cavity to the vaporization cavity.

[0064] Since the liquid guide core body 401 includes a fiber material, the fiber material is compressible. The first liquid holder 200 and the second liquid holder 300 are configured to prevent liquid in the substrate cavity 111 from entering the vaporization cavity 205 directly from paths other than those capable of transferring only through the liquid guide core body 401. It may be understood that, tight sealing of the outer surface of the liquid guide core body 401 may improve the sealing performance, but overly tight sealing may cause the liquid guide core body 401 to be compressed and affect liquid absorbing performance, making it difficult for the liquid substrate to flow to the heating element through the liquid guide core body 401, which is not desirable in the product design. As an improvement scheme in some embodiments, two seal portions 307 have joint surfaces 302 matching the outer peripheral surface of the liquid guide core body 401, where the joint surfaces 302 are arc-shaped and extend in a length direction of the liquid guide core body 401 by a distance. In a case that the first liquid holder 200 and the second liquid holder 300 are combined, the two seal portions 307 contact with a region near the end portion of the liquid guide core body 401 through the joint surfaces 302, so that the seal portions 307 may only slightly deform and provide the smallest possible feedback force to the liquid guide core body 401, thereby providing a good seal effect while ensuring that the absorbing performance of the liquid guide core body 401 is not affected.

[0065] FIG. 9 and FIG. 10 provide an aerosol generation apparatus 10a according to another embodiment. The aerosol generation apparatus 10a includes a reservoir 100 and a first liquid holder 200a, a second liquid holder 300a, and a vaporization element 400 mounted inside the reservoir 100. The first liquid holder 200a has a support portion 203a, the support portion 203a and the second liquid holder 300a enclose to define a vaporization cavity 205a, and an airflow buffer cavity 204a in communication with the atomization cavity 205a is provided on the first liquid holder 200a, the airflow buffer cavity 204a being located upstream of the vaporization cavity 205a. The first liquid holder 200a has an upwardly extending extension portion 207a, the extension portion 207a and the support portion 203a enclose a liquid slowing cavity 208a, an outer diameter of the extension 207a is less than other portions of the first liquid holder 200a, so that a first seal groove 501a is formed between the extension portion 207a and the reservoir 100, the first seal member 500a being located in the first seal groove 501a. The second liquid holder 300a is made of a silicone material, the second liquid holder 300a includes a silicone body, and an aerosol outlet 301a is provided at an upper end of the silicone body. The first seal member 500a described above is formed by extending at least a portion of the second liquid holder 300a toward the first liquid holder 200a, in particular, the lower end of the silicone body toward the first liquid holder 200a into a sleeve (first seal member 500a) that may surround the periphery of the extension portion 207a, the sleeve being greater than in the X-axis direction than the silicone body, the top of the sleeve being provided with two liquid guide holes 310a and 310b for introducing the flow of the liquid substrate into the liquid slowing cavity 208a, a structure that can reduce assembly parts and simplify an assembly process.

[0066] FIG. 11 provides an embodiment of an electronic aerosol inhaler. The electronic aerosol inhaler includes an aerosol generation apparatus 10a and a power supply apparatus 80. The power supply apparatus 80 supplies power to the aerosol generation apparatus 10a for operation. The aerosol generation apparatus 10a includes a reservoir 100a. The power supply apparatus 80 includes a power supply housing 801, and a battery 802, a control circuit board, a bracket, and the like in the power supply housing 801. One end of the power supply housing 801 is provided with an accommodating cavity 803, and the

other end is provided with a charging interface 808, such as a USB Type-C interface, for charging the battery 802 with an external power source.

[0067] The aerosol generation apparatus 10a includes an insert portion 103a and an exposed portion 104. The insert portion 103a and the exposed portion 104 have different outer diameters to form a step 105a through which the aerosol generation apparatus 10a may be inserted through the insert portion 103a and accommodated in the accommodating cavity 803 to maintain an electrical connection with the power supply apparatus 80. The bottom of the accommodating cavity 803 has two magnetic elements 806 and two electrodes 807 where the electrodes 807 are telescopic and protrude from the bottom of the accommodating cavity 803. When the insertion portion 103a is accommodated in the accommodating cavity 803, the step 105a abuts against the end portion 8011 of the power supply housing 801, the magnetic element on the bottom of the aerosol generation apparatus 10a is attracted to the magnetic element 806 in the accommodating cavity 803, so that the insertion portion 103a remains in the accommodating cavity 803 and compresses the electrodes 807, energizing the electrodes 807 and electrodes on the aerosol generation apparatus 10a.

[0068] Air inlets 804 are provided on two sides of the power supply housing 801, and the air inlets 804 are in communication with the accommodating cavity 803 and are substantially aligned with the bottom of the accommodating cavity 803. Below the bottom wall of the accommodating cavity 803 is a cavity 805 mounted with an airflow sensor disposed adjacent to the reception cavity 803 and in airflow communication with the intake hole 804. When the user inhales, the gap between the aerosol generation apparatus 10a and the bottom wall of the accommodating cavity 803 creates a negative pressure, thereby forcing external air from the air inlets 804 into the gap, the airflow sensor generates the above negative pressure response signal and feeds it back to the controller, which controls the output power of the battery 802 to the vaporization elements in the aerosol generation apparatus 10a to initiate vaporization.

[0069] The foregoing embodiments are merely some implementations of this specification listed for ease of understanding the contents of the application, which are not any limitations on the technical solutions of this application, nor are exhaustive of all possible embodiments. Therefore, any minor improvements or equivalent replacements made to the structures, processes, or steps of this application shall fall within the protection scope of this application.

Claims

1. An aerosol generation apparatus, comprising:

a shell having an open end, wherein the shell extends in an axial direction and has a substrate cavity for accommodating a liquid substrate;

a first liquid holder, connected to the open end of the shell, wherein the first liquid holder comprises a body and a support portion extending from the body into the substrate cavity;

a vaporization element, held by the support portion and configured to vaporize the liquid substrate to generate aerosols;

a second liquid holder, provided with an aerosol outlet, wherein the second liquid holder fits with the support portion of the first liquid holder to define a vaporization cavity, and the vaporization element is at least partially located in the vaporization cavity; and

at least one air inlet, configured to guide external air into the aerosol generation apparatus, wherein

an airflow buffer cavity in fluid communication with the air inlet is formed in the body of the first liquid holder, and the airflow buffer cavity is located upstream of the vaporization cavity.

2. The aerosol generation apparatus according to claim 1, wherein the first liquid holder has a first width dimension perpendicular to the axial direction, and an extension width of the airflow buffer cavity in a first width direction is greater than an extension width of the vaporization cavity in the first width direction.

3. The aerosol generation apparatus according to claim 2, wherein the vaporization cavity is in fluid communication with the airflow buffer cavity through an airflow hole, and the air inlet and the airflow hole are staggered in the axial direction.

4. The aerosol generation apparatus according to claim 2, wherein the first liquid holder has a second width dimension perpendicular to the axial direction, a second width direction is perpendicular to the first width direction, and a maximum dimension of the first liquid holder in the second width direction is less than a maximum dimension in the first width direction.

5. The aerosol generation apparatus according to claim 4, wherein a ratio of the maximum dimension of the first liquid holder in the second width direction to the maximum dimension in the first width direction is in a range of 0.2 to 0.4.

6. The aerosol generation apparatus according to claim 4, wherein the airflow buffer cavity runs through the body in the second width direction.

7. The aerosol generation apparatus according to claim 1, wherein a first blocking wall and a second blocking wall are spaced apart in the airflow buffer cavity to sequentially divide the airflow buffer cavity into a first

buffer cavity, a second buffer cavity, and a third buffer cavity, the second buffer cavity is located between the first buffer cavity and the third buffer cavity and is in fluid communication with the vaporization cavity, and both the first blocking wall and the second blocking wall are provided with notches for transferring an airflow.

8. The aerosol generation apparatus according to claim 7, wherein a notch on the first blocking wall and a notch on the second blocking wall are respectively adjacent to opposite sides of the body and spaced apart from each other.

9. The aerosol generation apparatus according to claim 1, wherein a first seal member and a second seal member are arranged between the first liquid holder and the shell, and the airflow buffer cavity is located between the first seal member and the second seal member.

10. The aerosol generation apparatus according to claim 9, wherein a first accommodating groove for accommodating the first seal member and a second accommodating groove for accommodating the second seal member are provided on an outer peripheral surface of the first liquid holder, and an axial depth of the first accommodating groove is greater than an axial depth of the second accommodating groove.

11. The aerosol generation apparatus according to claim 10, wherein the first seal member is in a shape of a ring belt, and the first seal member comprises at least two seal ribs for abutting against an inner wall of the shell.

12. The aerosol generation apparatus according to claim 9, wherein the first seal member is formed by at least a part of the second liquid holder extending toward the first liquid holder.

13. The aerosol generation apparatus according to claim 10, wherein the first liquid holder further comprises a substantially cylindrical extension portion extending from the body to the substrate cavity, and the first accommodating groove is provided on an outer peripheral surface of the extension portion.

14. The aerosol generation apparatus according to claim 1, wherein the vaporization element comprises a liquid guide core body and a heating wire surrounding the liquid guide core body, and the second liquid holder fits with the first liquid holder to clamp the liquid guide core body.

15. The aerosol generation apparatus according to claim 14, wherein the support portion comprises a first support arm and a second support arm opposite to each other, a trench for accommodating the liquid guide core body is provided on the first support arm and the second support arm, and the liquid guide core body is accommodated in the trench and an end portion of the liquid guide core body extends into the substrate cavity.

16. The aerosol generation apparatus according to claim 14, wherein a vent tube for discharging aerosols is further arranged in the substrate cavity, and an end portion of the vent tube is connected to the aerosol outlet of the second liquid holder.

17. The aerosol generation apparatus according to claim 14, wherein the first liquid holder further comprises an extension portion extending from the body to the substrate cavity, the extension portion and the support portion define a liquid slowing cavity, and an end portion of the liquid guide core body extends into the liquid slowing cavity.

18. The aerosol generation apparatus according to claim 17, wherein at least one liquid guide hole for guiding the liquid substrate to flow into the liquid slowing cavity is provided on the second liquid holder.

19. The aerosol generation apparatus according to claim 14, wherein the second liquid holder is configured as an elastic body and has a joint surface matching an outer peripheral surface of the liquid guide core body.

20. The aerosol generation apparatus according to claim 1, wherein the first liquid holder is configured as a rigid body, the second liquid holder is configured as an elastic body fitting with the first liquid holder, and both the first liquid holder and the second liquid holder define a transfer path in which the liquid substrate flows from the substrate cavity into the vaporization cavity.

21. The aerosol generation apparatus according to claim 1, wherein the shell is at least partially configured to be transparent or translucent, to view the airflow buffer cavity through an outer surface of the shell.

22. An aerosol generation apparatus, comprising:

a reservoir, comprising a shell, wherein the shell is provided with a substrate cavity for accommodating a liquid substrate and a vent tube for discharging aerosols;

a first liquid holder configured as a rigid body, connected to the reservoir;

a vaporization element, comprising a liquid guide core body and a heating body for heating a liquid substrate from the liquid guide core body to generate aerosols; and

a second liquid holder configured as an elastic body, comprising an aerosol outlet in communication with the vent tube, wherein the second liquid holder fits with the first liquid holder to define a vaporization cavity and a transfer path in communication with the vaporization cavity and the substrate cavity, and the liquid guide core body transfers the liquid substrate through the transfer path, wherein

the first liquid holder is provided with at least one air inlet and an airflow buffer cavity in fluid communication with the air inlet, and the airflow buffer cavity is in fluid communication with the vaporization cavity to introduce an airflow into the vaporization cavity.

23. The aerosol generation apparatus according to claim 22, wherein the first liquid holder comprises a support portion for holding the liquid guide core body, and the second liquid holder is provided with a groove for accommodating at least a part of the support portion.

24. An aerosol generation apparatus, comprising:

a shell, wherein the shell is provided with a substrate cavity for accommodating a liquid substrate, the shell comprises a front surface and a rear surface opposite to each other, and the front surface and the rear surface are at least partially transparent or translucent;

a first liquid holder, connected to the shell, wherein the first liquid holder comprises a body and a support portion extending from the body into the substrate cavity;

a vaporization element, held by the support portion and configured to vaporize the liquid substrate to generate aerosols;

a second liquid holder, provided with an aerosol outlet, wherein the second liquid holder fits with the support portion of the first liquid holder to define a vaporization cavity, and the vaporization element is at least partially located in the vaporization cavity; and

at least one air inlet, configured to guide external air into the aerosol generation apparatus, wherein

an airflow buffer cavity in fluid communication with the air inlet is formed in the first liquid holder, and the airflow buffer cavity is in fluid communication with the vaporization cavity to introduce an airflow into the vaporization cavity; and the airflow buffer cavity runs through the body of the first liquid holder and is located between the front surface and the rear surface of the shell, to view the airflow buffer cavity through the front surface or the rear surface of the shell.

25. An electronic aerosol inhaler, comprising a vaporization apparatus and a power supply apparatus for supplying power to the vaporization apparatus, wherein the vaporization apparatus comprises the aerosol generation apparatus according to any one of claims 1 to 24.

26. The electronic aerosol inhaler according to claim 25, wherein the power supply apparatus comprises a power supply housing and a battery located in the power supply housing, an accommodating cavity is provided at an end of the power supply housing, and the aerosol generation apparatus is capable of being at least partially inserted into the accommodating cavity, to maintain an electrical connection to the power supply apparatus.

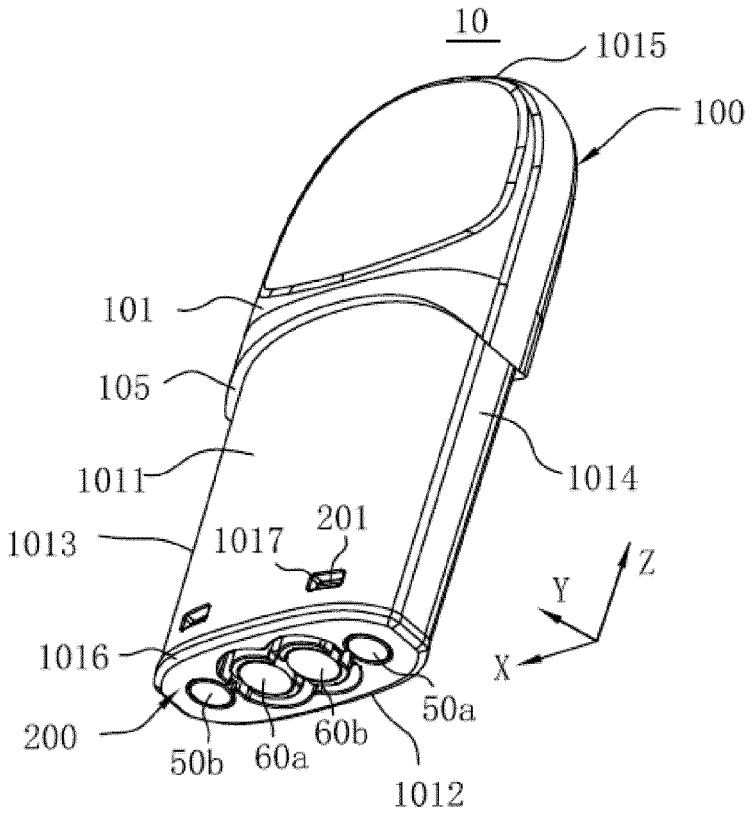


FIG. 1

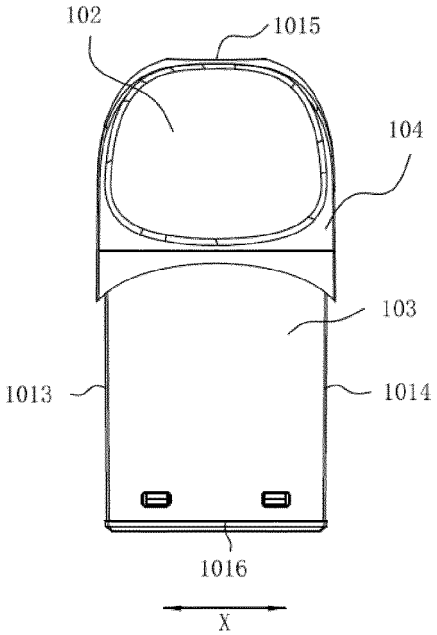


FIG. 2A

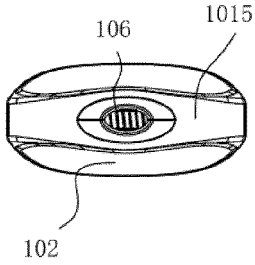


FIG. 2B

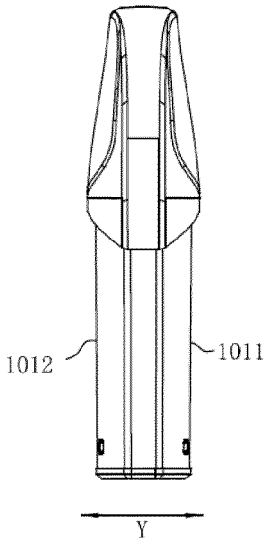
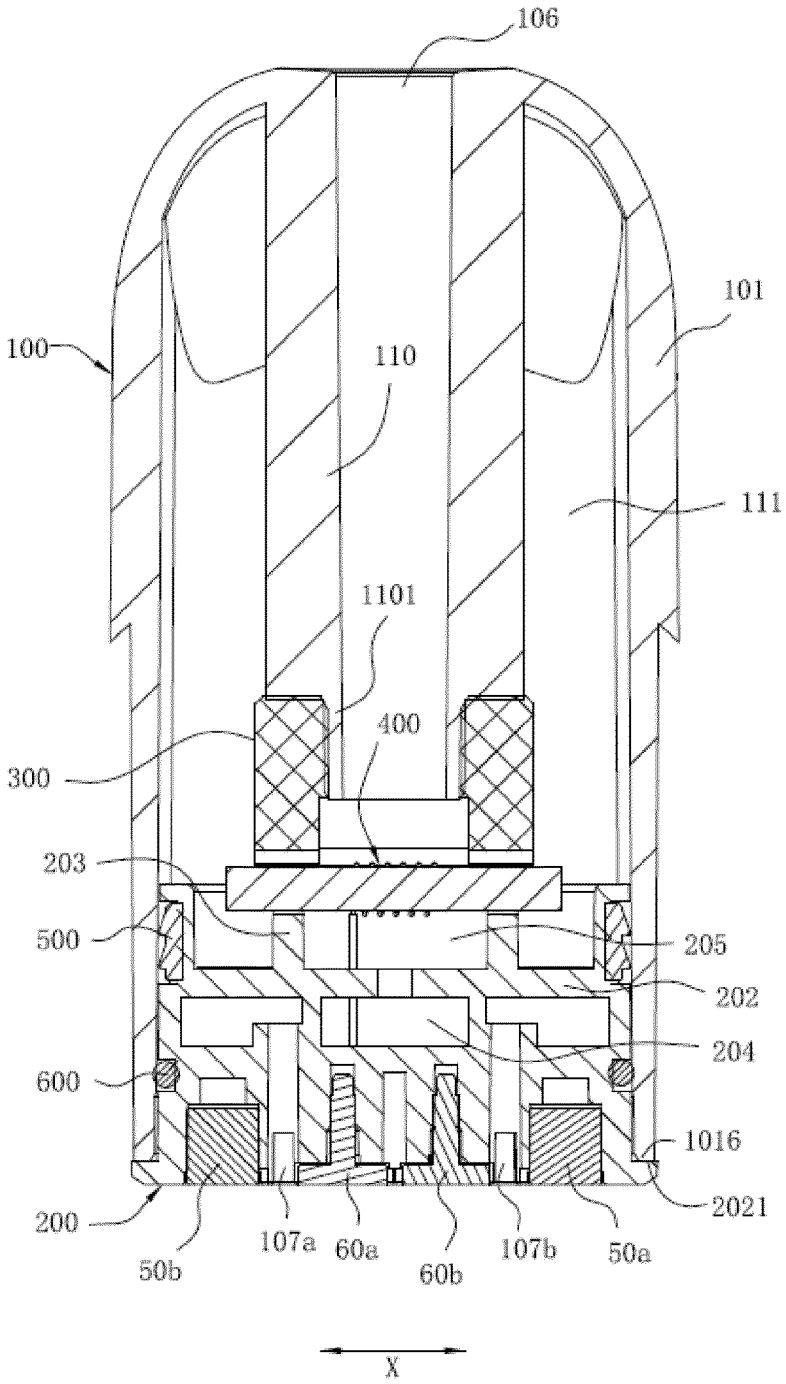


FIG. 2C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110
111
1101
400
300
203
500
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204
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1016
2021
200
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107a
60a
60b
107b
50a
X

FIG. 3

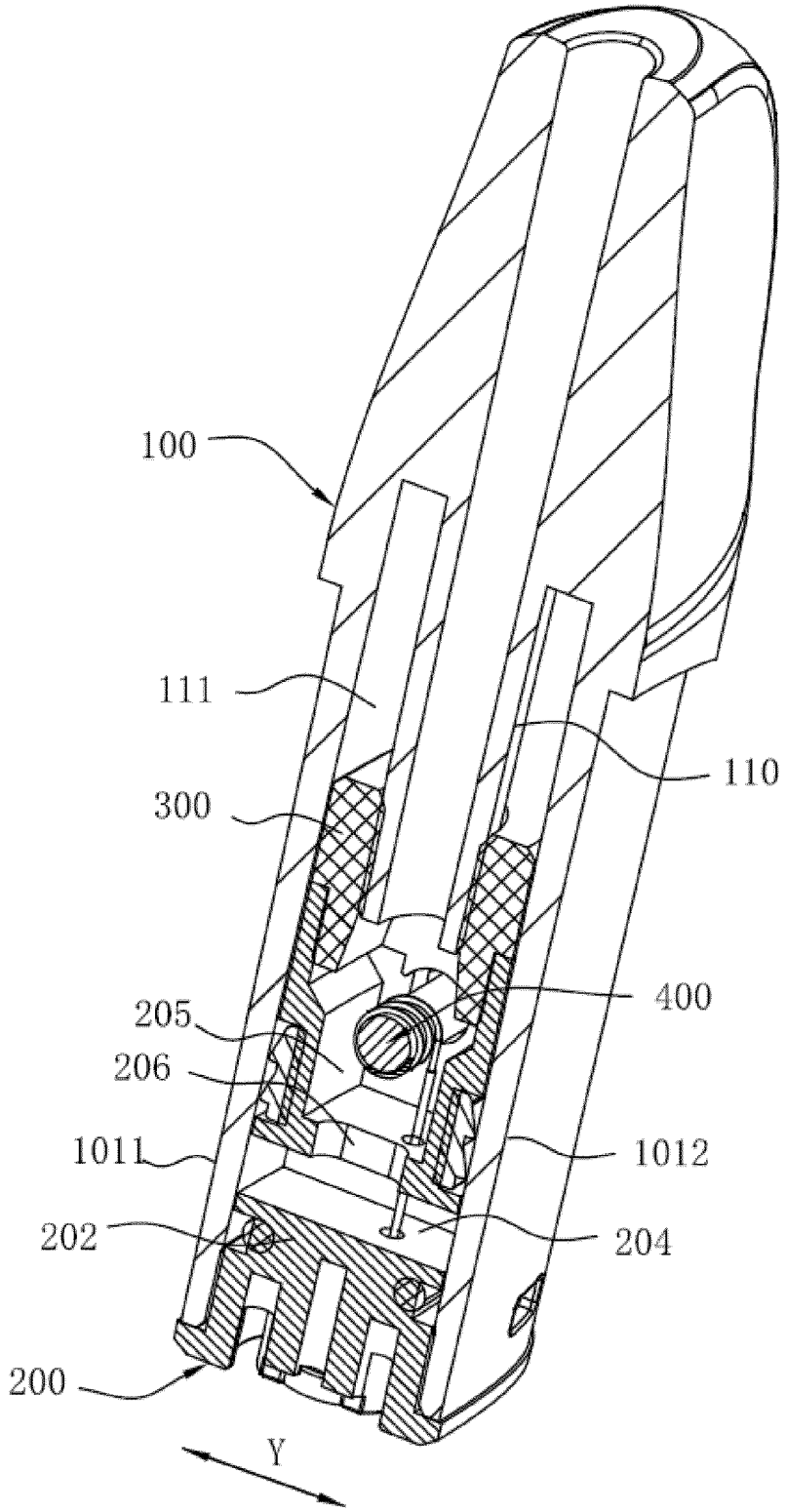
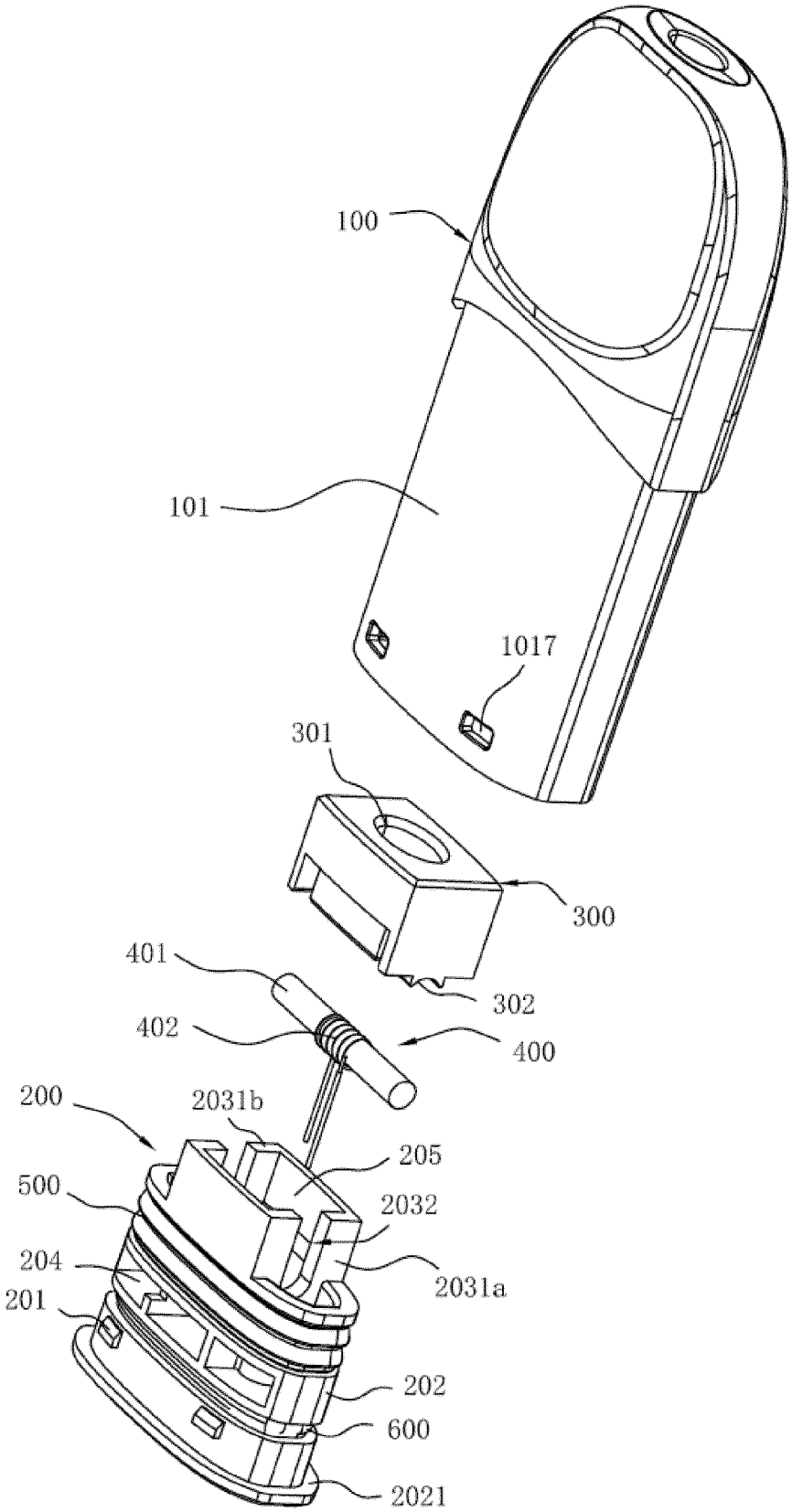


FIG. 4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101
1017
301
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401
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200
2031b
205
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2032
204
2031a
201
202
600
2021

FIG. 5

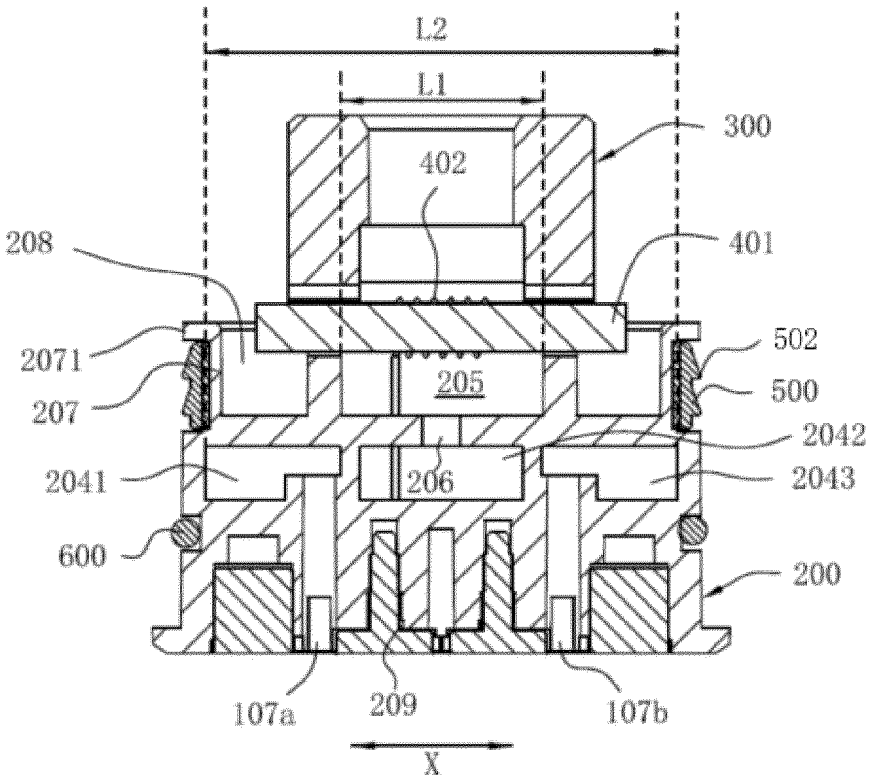
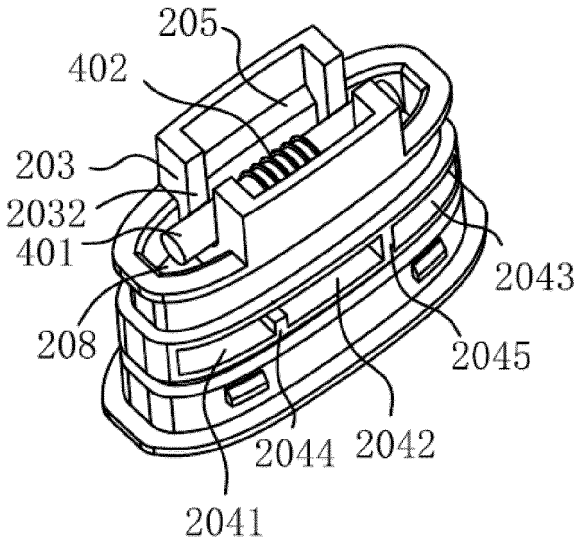

L2
L1
300
402
208
401
2071
502
205
207
500
2042
2041
206
2043
600
200
107a
209
107b
X

FIG. 6


205
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203
2032
401
2043
208
2045
2044
2042
2041

FIG. 7A

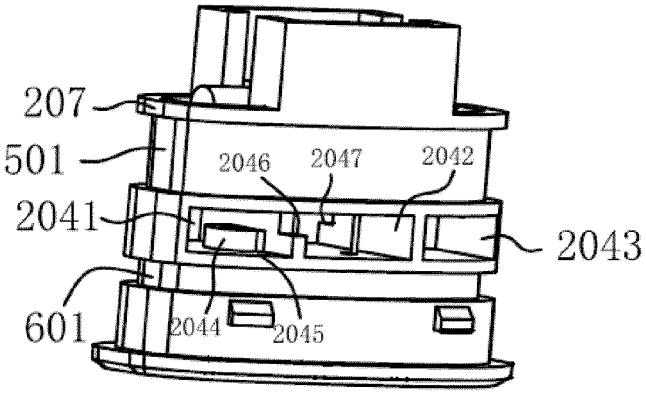

FIG. 7B

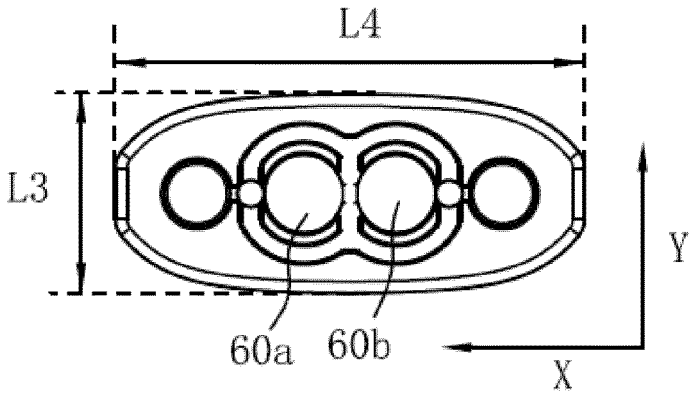

FIG. 7C

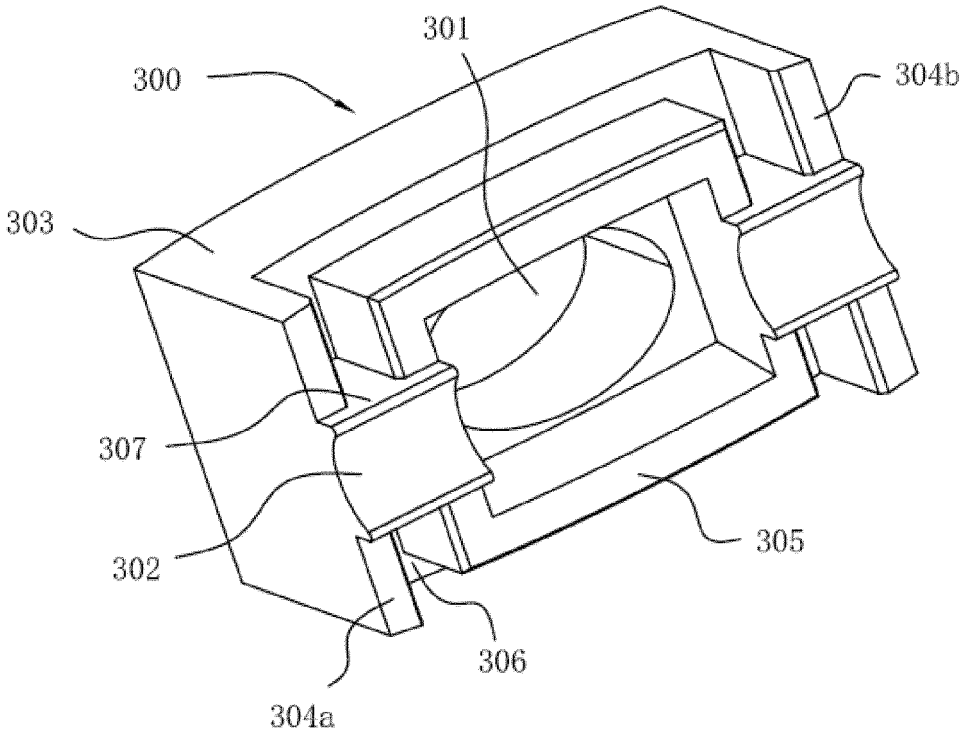

FIG. 8

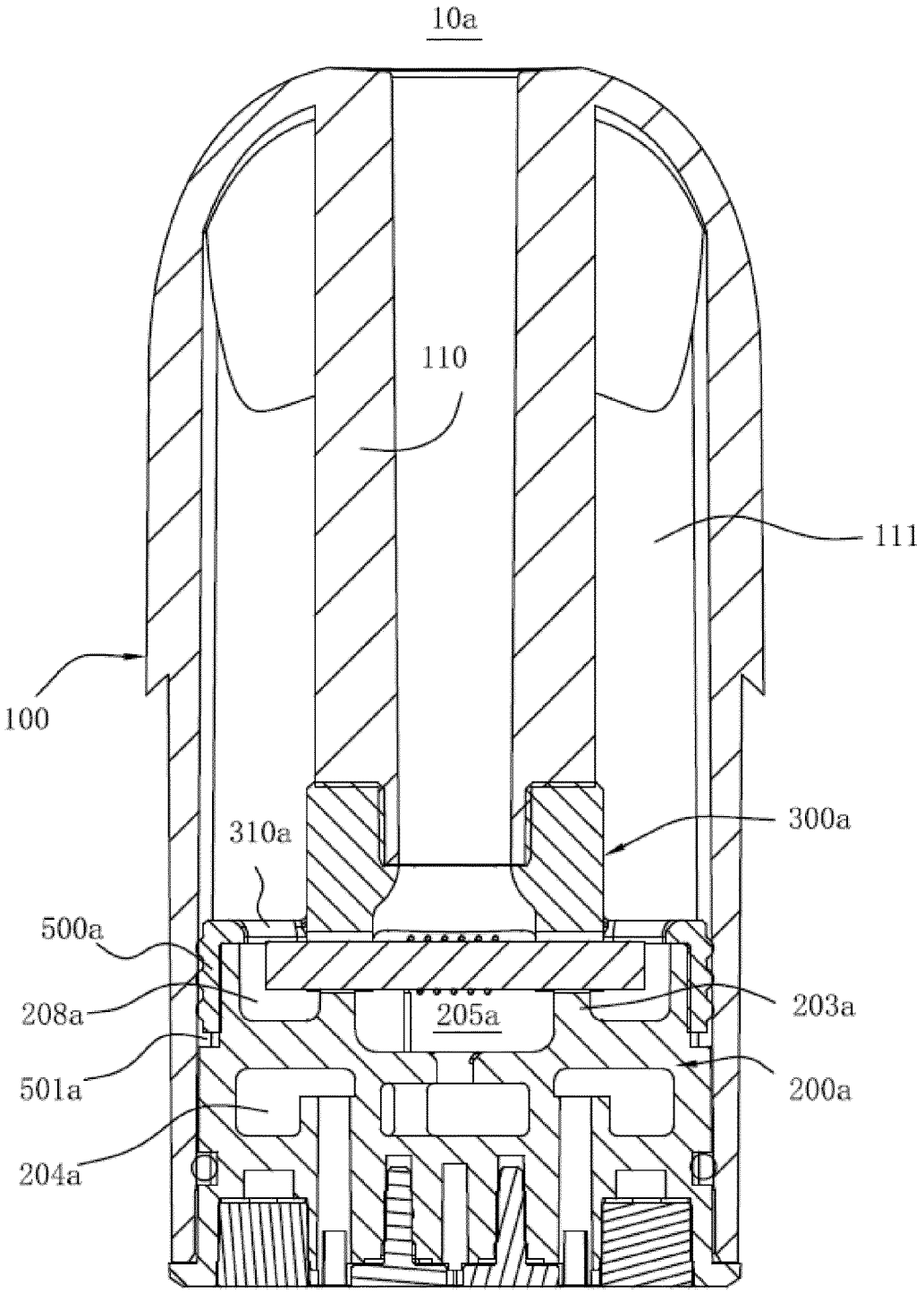

FIG. 9

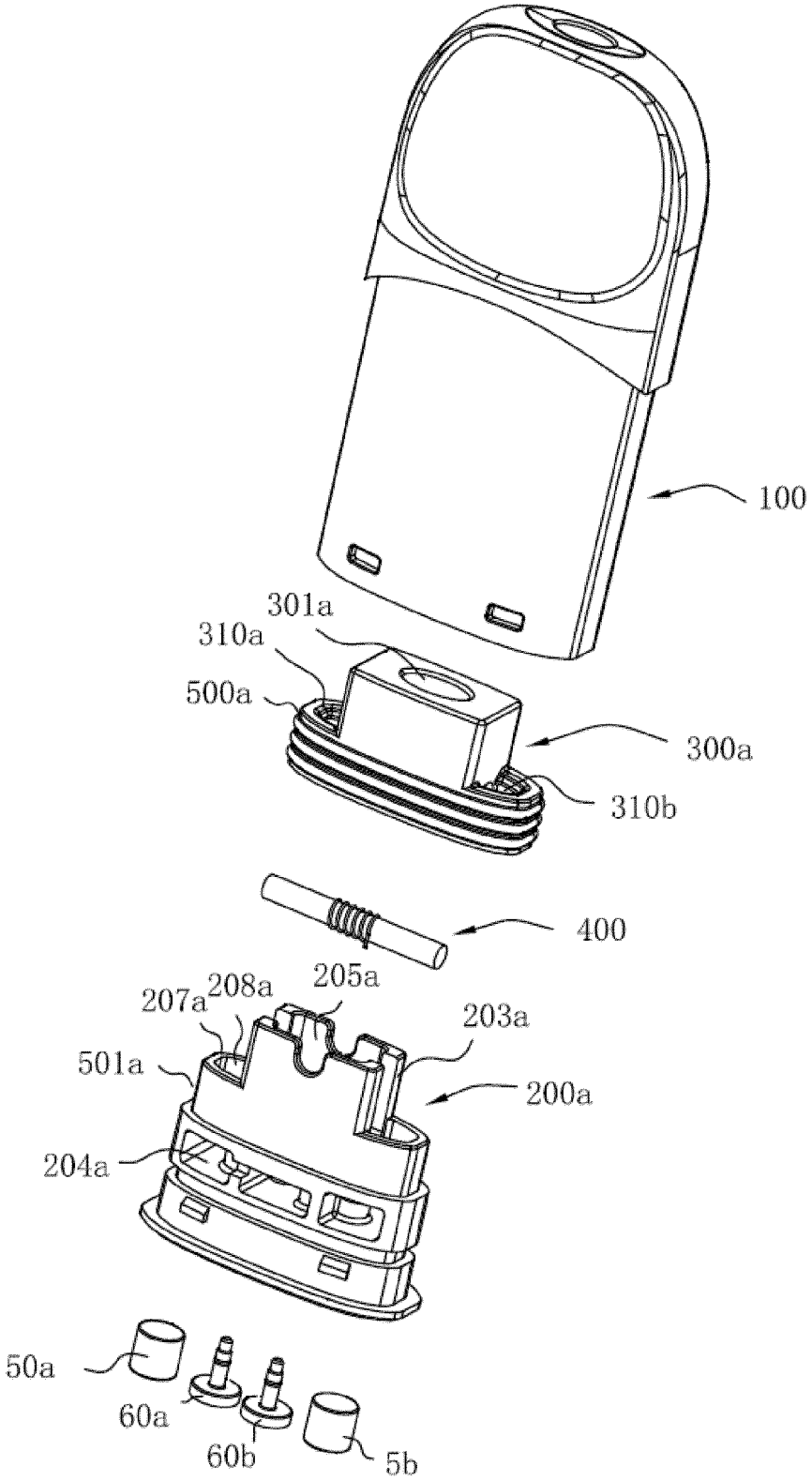
100
301a
310a
500a
300a
310b
400
205a
207a
208a
203a
501a
200a
204a
50a
60a
60b
5b

FIG. 10

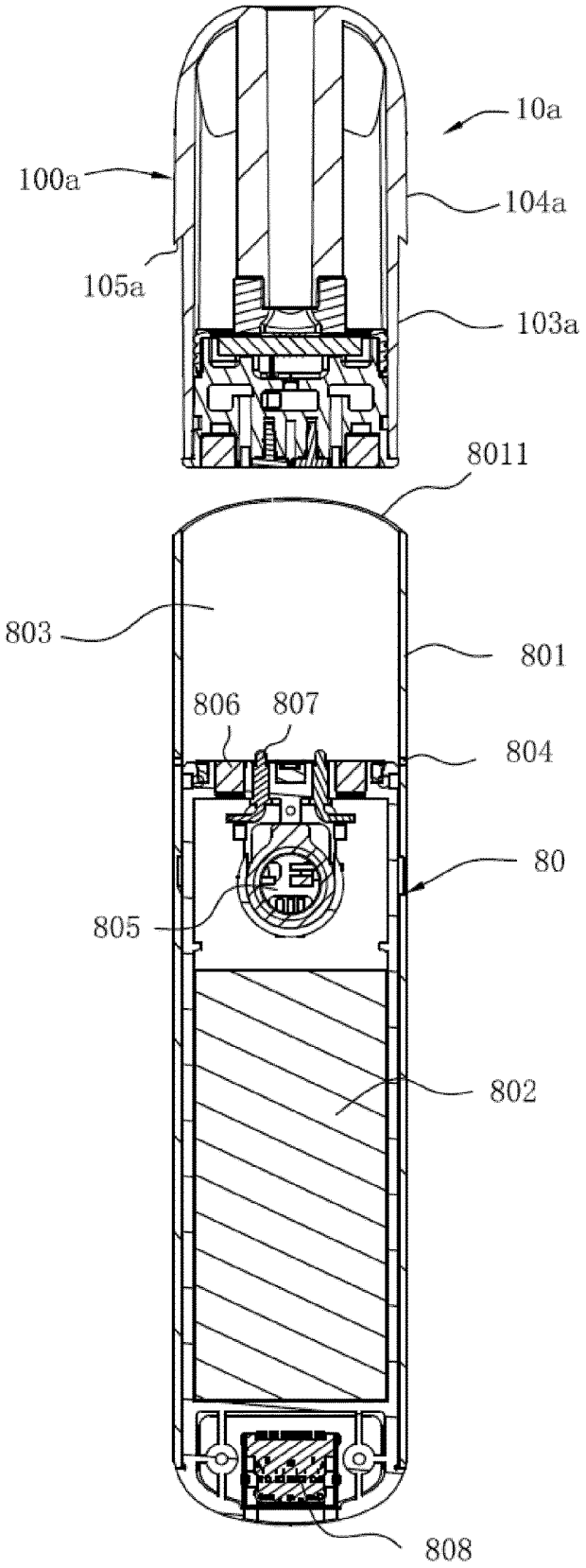

FIG. 11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2021/100965

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/10(2020.01)i; A24F 40/40(2020.01)i; A24F 40/46(2020.01)i; A24F 47/00(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)

A24F

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)

CNABS; CNTXT; CNKI; VEN; USTXT; WOTXT; EPTXT: 深圳市合元科技, 戴朋新, 吴泽鑫, 徐中立, 李永海, 雾化, 气流, 缓冲, 平稳, 平缓, 均匀, 抽吸, 阻力, atomiz+, flow, air current, airstream, buff+, cushion, calm, mild, pump, resistance

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 212852492 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 02 April 2021 (2021-04-02) claims 1-26	1-26
X	CN 207476948 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 12 June 2018 (2018-06-12) description, paragraphs [0023]-[0027], and figures 1-6	1, 9, 14-16, 19-26
A	CN 210226908 U (SHENZHEN IJOY TECHNOLOGY CO., LTD.) 03 April 2020 (2020-04-03) entire document	1-26
A	CN 104605482 A (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 13 May 2015 (2015-05-13) entire document	1-26
A	CN 210611013 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 26 May 2020 (2020-05-26) entire document	1-26
A	CN 110353320 A (SHENZHEN RELX TECH. CO., LTD.) 22 October 2019 (2019-10-22) entire document	1-26

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

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Date of the actual completion of the international search	Date of mailing of the international search report
11 August 2021	**30 August 2021**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088** **China** Facsimile No. **(86-10)62019451**	Authorized officer Telephone No.

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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.
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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