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(54) **ATOMIZER AND ELECTRONIC ATOMIZATION DEVICE**

(57) This application provides a vaporizer and an electronic vaporization device. The vaporizer includes: a housing; a liquid storage compartment, storing a liquid substrate, and having a first compartment and a second compartment; a liquid channel, located between the first compartment and the second compartment, to provide a flow path for liquid in the first compartment to flow to the second compartment; and a fluid-permeable heating element, in fluid communication with the second compartment, and configured to heat and vaporize the liquid substrate to generate an aerosol; a sealing member, having a blocking arm, where the blocking arm closes a liquid channel when in a first configuration, and opens a liquid channel when in a second configuration; and an electrical contact, movable in a longitudinal direction of the housing, to drive the blocking arm to be configured from the first configuration toward the second configuration. Using the vaporizer, a user can move the electrical contact to drive the blocking arm to open the liquid channel.

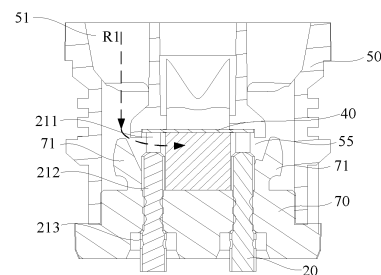


FIG. 11

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Description**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims priority to Chinese Patent Application No. 2021105251843, filed with the China National Intellectual Property Administration on May 7, 2021 and entitled "VAPORIZER AND ELECTRONIC VAPORIZATION DEVICE", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] Embodiments of this application relate to the field of electronic vaporization technologies, and in particular, to a vaporizer and an electronic vaporization device.

BACKGROUND

[0003] Tobacco products (such as cigarettes and cigars) burn tobacco during use to produce tobacco smoke. Attempts are made to replace these tobacco-burning products by making products that release compounds without burning.

[0004] An example of this type of products is an electronic vaporization device that releases compounds by heating rather than burning materials. For example, the materials may be tobacco or other non-tobacco products. These non-tobacco products may include or not include nicotine. In another example, there are aerosol-providing articles, for example, e-cigarette devices. Such devices usually include a liquid substrate and a vaporization assembly; and the liquid substrate is vaporized by the vaporization assembly, to produce an inhalable vapor or aerosol. The known electronic vaporization device cannot prevent the liquid substrate from being transferred to the vaporization assembly before use.

SUMMARY

[0005] An embodiment of this application provides a vaporizer, including a housing; and further including:

a liquid storage compartment, located in the housing and configured to store a liquid substrate, where the liquid storage compartment has a first compartment and a second compartment;
a liquid channel, located between the first compartment and the second compartment, to provide a flow path for liquid in the first compartment to flow to the second compartment; and
a fluid-permeable heating element, in fluid communication with the second compartment, and configured to heat and vaporize the liquid substrate to generate an aerosol.

[0006] An embodiment of this application provides a

vaporizer, including a housing; and further including:

a liquid storage compartment, located in the housing and configured to store a liquid substrate, where the liquid storage compartment has a first compartment and a second compartment;
a liquid channel, located between the first compartment and the second compartment, to provide a flow path for liquid in the first compartment to flow to the second compartment;
a fluid-permeable heating element, in fluid communication with the second compartment, and configured to heat and vaporize the liquid substrate to generate an aerosol;
a sealing member, having a blocking arm that is selectively configured between a first configuration and a second configuration, where the blocking arm closes the liquid channel when in the first configuration, and opens the liquid channel when in the second configuration; and
an electrical contact, configured to supply power to the fluid-permeable heating element by the electrical contact, where the electrical contact is constructed to be movable in a longitudinal direction of the housing, to drive the blocking arm to be configured from the first configuration toward the second configuration.

[0007] Another embodiment of this application provides a vaporizer, including a housing; and further including:

a liquid storage compartment, located in the housing and configured to store a liquid substrate, where the liquid storage compartment has a first compartment and a second compartment;
a liquid channel, located between the first compartment and the second compartment, to provide a flow path for liquid in the first compartment to flow to the second compartment;
a fluid-permeable heating element, in fluid communication with the second compartment, and configured to heat and vaporize the liquid substrate to generate an aerosol;
a sealing member, having a blocking arm configured to close the liquid channel; and
an electrical contact, configured to selectively move from a first position to a second position in a longitudinal direction of the housing, and actuate the blocking arm to cause the blocking arm to open the liquid channel during movement, where the electrical contact is electrically disconnected from the fluid-permeable heating element when at the first position, and is electrically connected to the fluid-permeable heating element when at the second position.

[0008] Another embodiment of this application further provides a vaporizer, including a housing; and further

including:

a liquid storage compartment, located in the housing and configured to store a liquid substrate, where the liquid storage compartment has a first compartment and a second compartment;
 a liquid channel, located between the first compartment and the second compartment, to provide a flow path for liquid in the first compartment to flow to the second compartment;
 a fluid-permeable heating element, in fluid communication with the second compartment, and configured to heat and vaporize the liquid substrate to generate an aerosol;
 a bracket, at least partially defining the second compartment, where the bracket defines a notch on a wall of the second compartment, and the second compartment is in communication with the liquid channel through the notch; and
 a sealing member, having a blocking arm at least partially extending into the notch and configured to close the liquid channel.

[0009] Another embodiment of this application further provides a vaporizer, including a housing; and further including:

a liquid storage compartment, located in the housing and configured to store a liquid substrate, where the liquid storage compartment has a first compartment and a second compartment;
 a liquid channel, located between the first compartment and the second compartment, to provide a flow path for liquid in the first compartment to flow to the second compartment;
 a fluid-permeable heating element, in fluid communication with the second compartment, and configured to heat and vaporize the liquid substrate to generate an aerosol;
 an electrical contact, configured to selectively move from a first position to a second position in a longitudinal direction of the housing, where the electrical contact is electrically disconnected from the fluid-permeable heating element when at the first position, and is electrically connected to the fluid-permeable heating element when at the second position.

[0010] Another embodiment of this application further provides a vaporizer, including a housing; and further including:

a liquid storage compartment, located in the housing and configured to store a liquid substrate, where the liquid storage compartment has a first compartment and a second compartment;
 a liquid channel, located between the first compartment and the second compartment, to provide a flow path for liquid in the first compartment to flow to the

second compartment;
 a liquid guide element, located in the second compartment;
 a fluid-permeable heating element, in contact with the liquid guide element, and configured to heat and vaporize at least a part of the liquid substrate in the liquid guide element to generate an aerosol; and
 an electrical contact, configured to supply power to the fluid-permeable heating element by the electrical contact, where at least a part of the electrical contact extends in the second compartment in a longitudinal direction of the housing and avoids the liquid guide element.

[0011] In a preferred implementation, the electrical contact is constructed to be movable in the longitudinal direction of the housing between a first position and a second position, where

the electrical contact protrudes at least partially relative to a surface of the housing when at the first position; and
 the electrical contact is substantially flush with the surface of the housing when at the second position.

[0012] In a preferred implementation, the electrical contact is electrically disconnected from the fluid-permeable heating element when at the first position, and is electrically connected to the fluid-permeable heating element when at the second position.

[0013] In a preferred implementation, the vaporizer further includes:

a bracket, together with the sealing member, defining the second compartment, where a notch adjacent to the second compartment is provided on the bracket, and the second compartment is in communication with the liquid channel through the notch.

[0014] In a preferred implementation, the blocking arm extends into the notch when in the first configuration to close the liquid channel, and at least partially moves out of the notch when in the second configuration to open the liquid channel.

[0015] In a preferred implementation, the blocking arm has a protruding portion, and the electrical contact is constructed to drive the blocking arm through the protruding portion.

[0016] In a preferred implementation, the electrical contact has a first section and a second section that are sequentially arranged in a longitudinal direction, where a cross-sectional area of the first section is less than a cross-sectional area of the second section.

[0017] In a preferred implementation, the first section is configured to abut against the fluid-permeable heating element when at the second position to form an electrical connection.

[0018] In a preferred implementation, the second section is configured to drive the blocking arm during movement.

[0019] In a preferred implementation, at least a part of the electrical contact extends in the second compartment.

[0020] In a preferred implementation, a liquid guide element in contact with the fluid-permeable heating element is arranged in the second compartment.

[0021] In a preferred implementation, a hole or a recessed structure for avoiding the electrical contact is formed on the liquid guide element.

[0022] In a preferred implementation, the housing has a proximal end and a distal end that is away from the proximal end; the second compartment has a first opening facing the proximal end; and the fluid-permeable heating element crosses the first opening.

[0023] In a preferred implementation, the fluid-permeable heating element is planar.

[0024] In a preferred implementation, at least a part of the fluid-permeable heating element is constructed to be mesh-shaped.

[0025] In a preferred implementation, the fluid-permeable heating element has a first surface and a second surface facing away from the first surface, and the second surface is in fluid communication with the second compartment.

[0026] In a preferred implementation, the housing has an air inlet and an air outlet; and the vaporizer further includes: an airflow pathway, extending from the air inlet to the air outlet.

[0027] In a preferred implementation, the first surface of the fluid-permeable heating element defines at least a part of the airflow pathway.

[0028] In a preferred implementation, at least a part of the airflow pathway extends between the first compartment and the second compartment.

[0029] In a preferred implementation, the first compartment is located between the fluid-permeable heating element and the air outlet.

[0030] In a preferred implementation, a liquid guide element, located in the second compartment, to absorb the liquid substrate, where

the fluid-permeable heating element is in contact with the liquid guide element, to heat and vaporize at least a part of the liquid substrate in the liquid guide element to generate an aerosol; and an electrical contact, configured to supply power to the fluid-permeable heating element by the electrical contact, where at least a part of the electrical contact extends in the second compartment in a longitudinal direction of the housing and avoids the liquid guide element.

[0031] In a preferred implementation, the vaporizer further includes:

an electrical contact, configured to supply power to the fluid-permeable heating element by the electrical contact, where at least a part of the electrical contact extends

in the second compartment in a longitudinal direction of the housing.

[0032] Another embodiment of this application further provides an electronic vaporization device, including a vaporizer for vaporizing a liquid substrate to generate an aerosol and a power supply mechanism for supplying power to the vaporizer, where the vaporizer includes the foregoing vaporizer.

[0033] Using the vaporizer, a user can move the electrical contact to drive the blocking arm to open the liquid channel.

BRIEF DESCRIPTION OF THE DRAWINGS

[0034] One or more embodiments are exemplarily described with reference to the corresponding figures in the accompanying drawings, and the descriptions do not constitute a limitation on the embodiments. Components in the accompanying drawings that have same reference numerals are represented as similar components, and unless otherwise particularly stated, the figures in the accompanying drawings are not drawn to scale.

FIG. 1 is a schematic structural diagram of an electronic vaporization device according to an embodiment of this application;

FIG. 2 is a schematic structural diagram of an embodiment of a vaporizer in FIG. 1;

FIG. 3 is a schematic exploded view of a vaporizer in FIG. 2 from a perspective;

FIG. 4 is a schematic exploded view of the vaporizer in FIG. 2 from another perspective;

FIG. 5 is a schematic cross-sectional view of the vaporizer in FIG. 2 from a perspective;

FIG. 6 is a schematic cross-sectional view of the vaporizer in FIG. 2 from another perspective;

FIG. 7 is a schematic structural diagram of a bracket in FIG. 3 from another perspective;

FIG. 8 is a schematic cross-sectional view of a bracket in FIG. 7 from a perspective;

FIG. 9 is a schematic cross-sectional view of a liquid guide element and a fluid-permeable heating element in FIG. 3 after being assembled behind a bracket;

FIG. 10 is a schematic diagram of the vaporizer in FIG. 2 conducting a first compartment by using a second electrical contact;

FIG. 11 is a schematic cross-sectional view after operating the second electrical contact in FIG. 10 to conduct the first compartment;

FIG. 12 is a schematic structural diagram of a second electrical contact from another perspective;

FIG. 13 is a schematic structural diagram of a fluid-permeable heating element from another perspective;

FIG. 14 is a schematic structural diagram of a liquid guide element from another perspective;

FIG. 15 is a schematic structural diagram of a liquid

guide element according to another embodiment;
and

FIG. 16 is a schematic structural diagram of a sealing base according to another embodiment.

DETAILED DESCRIPTION

[0035] For ease of understanding of this application, this application is described in further detail below with reference to the accompanying drawings and specific implementations.

[0036] An embodiment of this application provides an electronic vaporization device. Referring to FIG. 1, the electronic vaporization device includes: a vaporizer 100, configured to store a liquid substrate and vaporize the liquid substrate to generate an aerosol; and a power supply mechanism 200, configured to supply power to the vaporizer 100.

[0037] In an optional implementation, as shown in FIG. 1, the power supply mechanism 200 includes: a receiving cavity 270, arranged at an end in a length direction and configured to receive and accommodate at least a part of the vaporizer 100; and a first electrical contact 230, at least partially exposed on a surface of the receiving cavity 270, configured to be electrically connected to the vaporizer 100 to supply power to the vaporizer 100 when at least a part of the vaporizer 100 is received and accommodated in the power supply mechanism 200.

[0038] According to a preferred implementation shown in FIG. 1, an end portion of the vaporizer 100 opposite to the power supply mechanism 200 in the length direction is provided with a second electrical contact 21, so that when at least a part of the vaporizer 100 is received in the receiving cavity 270, the second electrical contact 21 forms conductivity by coming into contact with and abutting against the first electrical contact 230.

[0039] A sealing member 260 is arranged inside the power supply mechanism 200, and at least a part of an internal space of the power supply mechanism 200 is separated through the sealing member 260 to form the receiving cavity 270. In the preferred implementation shown in FIG. 1, the sealing member 260 is configured to extend in a cross section direction of the power supply mechanism 200, and is preferably prepared by a flexible material such as silica gel, so as to prevent the liquid substrate seeping from the vaporizer 100 to the receiving cavity 270 from flowing to a controller 220, a sensor 250, and other components inside the power supply mechanism 200.

[0040] In the preferred implementation shown in FIG. 1, the power supply mechanism 200 further includes a battery cell 210, located at another end facing away from the receiving cavity 270 in the length direction, and configured to supply power; and a controller 220, arranged between the battery cell 210 and an accommodating cavity, and operably guiding a current between the battery cell 210 and the first electrical contact 230.

[0041] In use, the power supply mechanism 200 in-

cludes a sensor 250, configured to sense an inhalation flow generated by the vaporizer 100 during inhalation, so that the controller 220 controls the battery cell 210 to output the current to the vaporizer 100 according to a detection signal of the sensor 250.

[0042] Further, in the preferred implementation shown in FIG. 1, a charging interface 240 is arranged on another end of the power supply mechanism 200 facing away from the receiving cavity 270, and is configured to supply power to the battery cell 210.

[0043] FIG. 2 to FIG. 5 are schematic structural diagrams of an embodiment of a vaporizer 100 in FIG. 1 in an "oil-core separation" state. The vaporizer includes: a main housing 10. According to FIG. 2 and FIG. 3, the main housing 10 is generally in a flat cylindrical shape; and the main housing 10 has a proximal end 110 and a distal end 120 opposite to each other in a length direction. According to a requirement of common use, the proximal end 110 is configured as an end for a user to inhale the aerosol and a suction nozzle or an air outlet A for the user to inhale is arranged at the proximal end 110. The distal end 120 is used as an end combined with the power supply mechanism 200, and the distal end 120 of the main housing 10 is an opening on which a detachable end cap 20 is mounted. The opening structure is configured to mount necessary functional components inside the main housing 10.

[0044] Further, in a specific implementation shown in FIG. 2 to FIG. 4, the second electrical contact 21 penetrates into the vaporizer 100 from a surface of the end cap 20, so that at least a part of the second electrical contact 21 is exposed outside the vaporizer 100, so as to form electrical conduction through by coming into contact with the first electrical contact 230. In addition, a first air inlet channel 23 is further provided on the end cap 20, configured to allow external air into the vaporizer 100 during inhalation.

[0045] Referring to FIG. 4, FIG. 5, FIG. 7, and FIG. 8, a first compartment 12 and a second compartment 54 that are configured to store the liquid substrate are arranged in the housing 10. Specifically, a vapor-gas transmission pipe 11 arranged in an axial direction is arranged in the main housing 10; and the first compartment 12 configured to store the liquid substrate is further arranged in the main housing 10. In an implementation, at least a part of the vapor-gas transmission pipe 11 extends in the first compartment 12, and the first compartment 12 is formed by space between an outer wall of the vapor-gas transmission pipe 11 and an inner wall of the main housing 10.

[0046] The second compartment 54 is defined and formed by a bracket 50 arranged in the main housing 10. The second compartment 54 is in fluid communication with the first compartment 12 through a liquid guide channel 51 of the bracket, and further receives the liquid substrate flowing from the first compartment 12. Certainly, the first compartment 12 and the second compartment 54 are sequentially arranged in a longitudinal direction

of the main housing 10. According to the figures, the first compartment 12 has a larger space than the second compartment 54, and further has a larger liquid storage volume than the first compartment 12 during use.

[0047] Further, referring to FIG. 7, a lower end that is of the second compartment 54 defined by the bracket 50 and that faces the end cap 20 is open, making it convenient to mount a vaporization assembly in the second compartment 54. In addition, after assembly, the open lower end of the second compartment 54 is plugged or sealed by a sealing base 70 made of a flexible material, such as silicone, to prevent leakage of the liquid substrate.

[0048] A plug-in hole 52 is provided on the bracket 50, for the vapor-gas transmission pipe 11 to be plugged in the plug-in hole 52. In addition, the main housing 10 is further arranged on a sealing element 60. The sealing element 60 is configured to seal a gap between the main housing 10 and the bracket 50, and a gap between the vapor-gas transmission pipe 11 and the bracket 50, to prevent leakage of the liquid substrate in the first compartment 12.

[0049] According to FIG. 3 and FIG. 4, a liquid guide hole 61 opposite to the liquid guide channel 51 is further provided on the sealing element 60, configured to allow the liquid substrate in the first compartment 12 to flow into the liquid guide channel 51. In addition, a gas pipe avoidance hole 62 is further provided on the sealing element 60, configured to allow the vapor-gas transmission pipe 11 to penetrate the gas pipe avoidance hole 62 and be inserted into the plug-in hole 52 of the bracket 50.

[0050] Further, referring to FIG. 3, FIG. 4, and FIG. 5, the vaporization assembly usually includes a capillary liquid guide element 30 configured to absorb the liquid substrate and a fluid-permeable heating element 40 combined with the liquid guide element. The fluid-permeable heating element 40 heats at least a part of the liquid substrate of the liquid guide element 30 to generate the aerosol during power on. In an optional implementation, the liquid guide element 30 includes flexible fibers such as cotton fibers, non-woven fabrics, and sponge, or includes porous materials with a micro-porous structure, such as porous ceramics. The fluid-permeable heating element 40 may be combined onto the liquid guide element 30 through printing, deposition, sintering, physical assembly, or the like, or wound on the liquid guide element 30.

[0051] Further, referring to schematic diagrams shown in FIG. 5 and FIG. 6, the liquid guide element 30 is assembled in the second compartment 54, and the fluid-permeable heating element 40 is combined onto the liquid guide element 30, to heat at least a part of the liquid substrate in the liquid guide element 30 to generate the aerosol for inhalation. The fluid-permeable heating element 40 is sheet-shaped or mesh-shaped and is arranged perpendicular to the axial direction of the main housing 10; and a lower surface of the fluid-permeable heating element 40 is combined onto the liquid guide element 30.

[0052] Referring to FIG. 5 and FIG. 8, the bracket 50

further has a vaporization chamber 57 located between the plug-in hole 52 and the second compartment 54. After the fluid-permeable heating element 40 is assembled in the second compartment 54, an upper surface of the fluid-permeable heating element 40 is exposed to the vaporization chamber 57. Therefore, a generated aerosol penetrates the fluid-permeable heating element 40, is released into the vaporization chamber 57, and is finally output to the vapor-gas transmission pipe 11.

[0053] Referring to an airflow design of the vaporizer 100 shown in FIG. 3 to FIG. 5 during inhalation, the first air inlet channel 23 of the end cap 20 is arranged on a side close to a thickness direction of the vaporizer 100. A window 53 is arranged on a side of the bracket 50 close to the thickness direction, configured to allow the air entering the first air inlet channel 23 to enter the vaporization chamber 57 through the window 53. During inhalation, an airflow path enters, as shown in FIG. 3 to FIG. 5, the vaporizer 100 through the first air inlet channel 23 on the end cap 20 in the longitudinal direction, then enters the vaporization chamber 57 passing through the window 53 in the thickness direction of the vaporizer 100, and carries the aerosol in the vaporization chamber 57 in the longitudinal direction and is released through the vapor-gas transmission pipe 11 to the suction nozzle or the air outlet A to be inhaled by the user.

[0054] In FIG. 5, the first air inlet channel 23 includes a form of several air holes with a circular cross section; and in other variant implementations, the first air inlet channel 23 may alternatively be, for example, a form of a long hole with an elongated cross section as adopted by the applicant in CN211211432U.

[0055] For a specific structure of the fluid-permeable heating element 40, refer to FIG. 13. The structure includes:

a mesh-shaped heating portion 42, which may be formed by etching, laser cutting, or the like, and is mainly configured to heat; and a first conductive connection portion 41 located on one side of the mesh-shaped heating portion 42 in the length direction and a second conductive connection portion 43 located on the other side of the mesh-shaped heating portion 42. In use, the second electrical contact 21 supplies power to the mesh-shaped heating portion 42 by abutting against or being connected to the first conductive connection portion 41 and the second conductive connection portion 43.

[0056] Alternatively, in other variant implementations, the fluid-permeable heating element 40 may adopt a porous heating film that allows fluid to penetrate pores as described in the patent No. CN201510854348.1. Alternatively, in more implementations, the fluid-permeable heating element 40 may be a perforated plate, or a planar track, for example, a heating element that is a sheet after being unfolded and that has a through hole set provided by the applicant in the patent No. CN209234993U.

[0057] To facilitate the second electrical contact 21 to smoothly abut against the first conductive connection portion 41 and the second conductive connection portion

43, correspondingly, the liquid guide element 30 shown in FIG. 14 has an avoidance portion 31 configured to avoid the second electrical contact 21. Specifically, the avoidance portion 31 is a recess formed on the liquid guide element 30. After assembly, the second electrical contact 21 penetrates the avoidance portion 31 and then abuts against the fluid-permeable heating element 40.

[0058] Certainly, further according to an implementation, the liquid guide element 30 has a first surface 310 and a second surface 320 that face away from each other in the longitudinal direction. In use, the second surface 320 attaches to the sealing base 70 to provide a stop, and the first surface 310 is configured for combination with the fluid-permeable heating element 40. Certainly, the fluid-permeable heating element 40 needs to cover or block the avoidance portion 31. Specifically, mainly the first conductive connection portion 41 and the second conductive connection portion 43 cover or block the avoidance portion 31, so that the second electrical contact 21 can penetrate the avoidance portion 31 and abut against the first conductive connection portion 41 and the second conductive connection portion 43.

[0059] In another variant implementation shown in FIG. 15, a liquid guide element 30a is substantially a square block, and an avoidance portion 31a is a through hole penetrating from a second surface 320a to a first surface 310a.

[0060] Alternatively, in other more variant implementations, the liquid guide element 30/30a may be in another regular or irregular shape; and the avoidance portion 31/31a may be a structure of a hole or a groove.

[0061] Further, referring to FIG. 8 and FIG. 9, a top wall of the second compartment 54 of the bracket 50 has an abutting portion 56; and the second compartment 54 has a first opening 541 formed between the abutting portion 56. After assembly, the fluid-permeable heating element 40 is fixed by abutting against the abutting portion 56. In addition, the fluid-permeable heating element 40 crosses the first opening 541. Certainly, during specific assembly, upper surfaces of the first conductive connection portion 41 and the second conductive connection portion 43 of the fluid-permeable heating element 40 abut against the abutting portion 56.

[0062] According to FIG. 8 and FIG. 9, the abutting portion 56 is aligned with the avoidance portion 31 of the porous body 30 or the second electrical contact 21 in the longitudinal direction.

[0063] Further, according to FIG. 6 to FIG. 11, the second compartment 54 defined by the bracket 50 is selectively in communication with the first compartment 12 in the main housing 10, to selectively receive the liquid substrate flowing from the first compartment 12, thereby preventing the liquid substrate in the first compartment 12 from flowing to the vaporization assembly before the vaporizer 100 is used, that is, implementing the "oil-core separation". Specifically,

a notch 55 is provided on a wall of the second compartment 54 defined by the bracket 50 adjacent to the liquid

guide channel 51, and the liquid substrate flowing from the liquid guide channel 51 enters the second compartment 54 through the notch 55.

[0064] The sealing base 70 has a blocking arm 71 extending toward the notch 55, and after assembly, the blocking arm 71 plugs or blocks or seals the notch 55. The blocking arm 71 can further drive or push the blocking arm 71 to move or tilt through a moving operation of the second electrical contact 21, and further open or communicate with the notch 55, so that the liquid substrate flowing from the liquid guide channel 51 can enter the second compartment 54.

[0065] A specific shape of the second electrical contact 21 is, referring to FIG. 12, generally cylindrical or needle-like, and the second electrical contact has a first section 211 and a second section 212 sequentially arranged in the longitudinal direction. An outer diameter of the first section 211 is less than that of the second section 212. The second electrical contact 21 can move in the longitudinal direction, and has a first position as shown in FIG. 2, FIG. 6, and FIG. 9, and a second position as shown in FIG. 10 and FIG. 11. Specifically,

at the first position, the second electrical contact 21 at least partially protrudes relative to the surface of the end cap 20. At the first position, the second electrical contact 21 is kept in the end cap 20, but a front end of the first section 211 of the second electrical contact 21 does not abut against or contact the fluid-permeable heating element 40, and is kept at a distance with the fluid-permeable heating element 40. In addition, at the first position, the second section 212 of the second electrical contact 21 does not abut against or contact the blocking arm 71, and the blocking arm 71 is in a state of sealing or blocking the notch 55.

[0066] In use, the user pushes the second electrical contact 21, by pressing or in other manners, to move in the longitudinal direction from the first position by a specific distance to the second position, so that at the second position, the front end of the first section 211 abuts against the fluid-permeable heating element 40. During movement, the second section 212 of the second electrical contact 21 with a larger outer diameter pushes or drives the blocking arm 71 to move or bend toward the liquid guide channel 51, to further at least partially open the notch 55 and form communication shown in FIG. 11. In this case, the liquid substrate in the first compartment 12 can flow along the inside of the liquid guide channel 12, and enters the second compartment 54 through the notch 55 to be absorbed by the liquid guide element 30, as shown by an arrow R1 in FIG. 4 and FIG. 11.

[0067] Further, referring to FIG. 12, the second electrical contact 21 further has a positioning engaging protrusion 213 configured to provide a stop or positioning retention for the second electrical contact 21 at the first position and the second position. Specifically, when the second electrical contact 21 is at the first position, the positioning engaging protrusion 213 generally abuts against a surface of a mounting hole accommodating the

second electrical contact 21 of the end cap 20, for example, as shown in FIG. 6. When the user presses the second electrical contact 21 with force, an external force is enough to overcome a friction force between the positioning engaging protrusion 213 and the end cap 20, so that the positioning engaging protrusion 213 is engaged into the mounting hole of the end cap 20 and move, until the positioning engaging protrusion 213 abuts against the sealing base 70 and forms a stop at the second position, as shown in FIG. 11.

[0068] According to FIG. 9, the outer diameter of the first section 211 is smaller, and when the second electrical contact 21 is at the first position, the first section 211 abuts against or contacts the blocking arm 71 or the like, but cannot drive the blocking arm 71 to move or bend.

[0069] In addition, according to a preferable implementation shown in FIG. 10, a tail end of the second electrical contact 21 is flush with the surface of the end cap 20 at the second position. In other words, compared to the first position, the second electrical contact 21 does not protrude relative to the surface of the end cap 20 at the second position.

[0070] To facilitate movement or deformation of the blocking arm 71 under driving of the second electrical contact 21, further, referring to FIG. 16, a hole 72 configured to allow the second electrical contact 21 to penetrate is provided on the sealing base 70, and the blocking arm 71 is shaped and constructed with a protruding portion 711. The protruding portion 711 at least partially covers the hole 72 in the longitudinal direction, and is further configured to allow the second electrical contact 21 to actuate the protruding portion 711 during movement, causing the blocking arm 71 to move or deform. In a more preferred implementation, the protruding portion 711 is obliquely arranged.

[0071] It should be noted that, the specification of this application and the accompanying drawings thereof illustrate preferred embodiments of this application, but are not limited to the embodiments described in this specification. Further, a person of ordinary skill in the art may make improvements or modifications according to the foregoing description, and all the improvements and modifications shall fall within the protection scope of the appended claims of this application.

Claims

1. A vaporizer, comprising a housing, and further comprising:

a liquid storage compartment, located in the housing and configured to store a liquid substrate, wherein the liquid storage compartment has a first compartment and a second compartment;

a liquid channel, located between the first compartment and the second compartment, to provide

a flow path for liquid in the first compartment to flow to the second compartment; and a fluid-permeable heating element, in fluid communication with the second compartment, and configured to heat and vaporize the liquid substrate to generate an aerosol.

2. The vaporizer according to claim 1, further comprising:

a sealing member, having a blocking arm that is selectively configured between a first configuration and a second configuration, wherein the blocking arm closes the liquid channel when in the first configuration, and opens the liquid channel when in the second configuration; and an electrical contact, configured to supply power to the fluid-permeable heating element by the electrical contact, wherein the electrical contact is constructed to be movable in a longitudinal direction of the housing, to drive the blocking arm to be configured from the first configuration toward the second configuration.

3. The vaporizer according to claim 2, wherein the electrical contact is constructed to be movable in the longitudinal direction of the housing from a first position to a second position, wherein

the electrical contact protrudes at least partially relative to a surface of the housing when at the first position; and the electrical contact is substantially flush with the surface of the housing when at the second position.

4. The vaporizer according to claim 3, wherein the electrical contact is electrically disconnected from the fluid-permeable heating element when at the first position, and is electrically connected to the fluid-permeable heating element when at the second position.

5. The vaporizer according to any one of claims 2 to 4, further comprising:

a bracket, together with the sealing member, defining the second compartment, wherein a notch adjacent to the second compartment is provided on the bracket, and the second compartment is in communication with the liquid channel through the notch.

6. The vaporizer according to claim 5, wherein the blocking arm extends into the notch when in the first configuration to close the liquid channel, and at least partially moves out of the notch when in the second configuration to open the liquid channel.

7. The vaporizer according to any one of claims 2 to 4,

wherein the blocking arm has a protruding portion, and the electrical contact is constructed to drive the blocking arm through the protruding portion.

8. The vaporizer according to any one of claims 2 to 4, wherein the electrical contact has a first section and a second section that are sequentially arranged in a longitudinal direction, wherein a cross-sectional area of the first section is less than a cross-sectional area of the second section.
9. The vaporizer according to claim 8, wherein the first section is configured to abut against the fluid-permeable heating element when at the second position to form an electrical connection.
10. The vaporizer according to claim 8, wherein the second section is configured to drive the blocking arm during movement.
11. The vaporizer according to any one of claims 2 to 4, wherein at least a part of the electrical contact extends in the second compartment.
12. The vaporizer according to any one of claims 2 to 4, wherein a liquid guide element in contact with the fluid-permeable heating element is arranged in the second compartment.
13. The vaporizer according to claim 12, wherein a hole or a recessed structure for avoiding the electrical contact is formed on the liquid guide element.
14. The vaporizer according to any one of claims 2 to 4, wherein the housing has a proximal end and a distal end that is away from the proximal end; the second compartment has a first opening facing the proximal end; and the fluid-permeable heating element crosses the first opening.
15. The vaporizer according to any one of claims 2 to 4, wherein the housing has an air inlet and an air outlet; and the vaporizer further comprises:
an airflow pathway, extending from the air inlet to the air outlet, wherein at least a part of the airflow pathway extends between the first compartment and the second compartment.

16. The vaporizer according to claim 1, further comprising:

a bracket, at least partially defining the second compartment, wherein the bracket defines a notch on a wall of the second compartment, and the second compartment is in communication with the liquid channel through the notch; and a sealing member, having a blocking arm at least

partially extending into the notch and configured to close the liquid channel.

17. The vaporizer according to claim 1, further comprising:
an electrical contact, configured to selectively move from a first position to a second position in a longitudinal direction of the housing, wherein the electrical contact is electrically disconnected from the fluid-permeable heating element when at the first position, and is electrically connected to the fluid-permeable heating element when at the second position.

18. The vaporizer according to claim 1, further comprising:

a liquid guide element, located in the second compartment, to absorb the liquid substrate, wherein

the fluid-permeable heating element is in contact with the liquid guide element, to heat and vaporize at least a part of the liquid substrate in the liquid guide element to generate an aerosol; and

an electrical contact, configured to supply power to the fluid-permeable heating element by the electrical contact, wherein at least a part of the electrical contact extends in the second compartment in a longitudinal direction of the housing and avoids the liquid guide element.

19. The vaporizer according to claim 1, further comprising:

an electrical contact, configured to supply power to the fluid-permeable heating element by the electrical contact, wherein at least a part of the electrical contact extends in the second compartment in a longitudinal direction of the housing.

20. An electronic vaporization device, comprising a vaporizer for vaporizing a liquid substrate to generate an aerosol and a power supply mechanism for supplying power to the vaporizer, wherein the vaporizer comprises the vaporizer according to any one of claims 1 to 19.

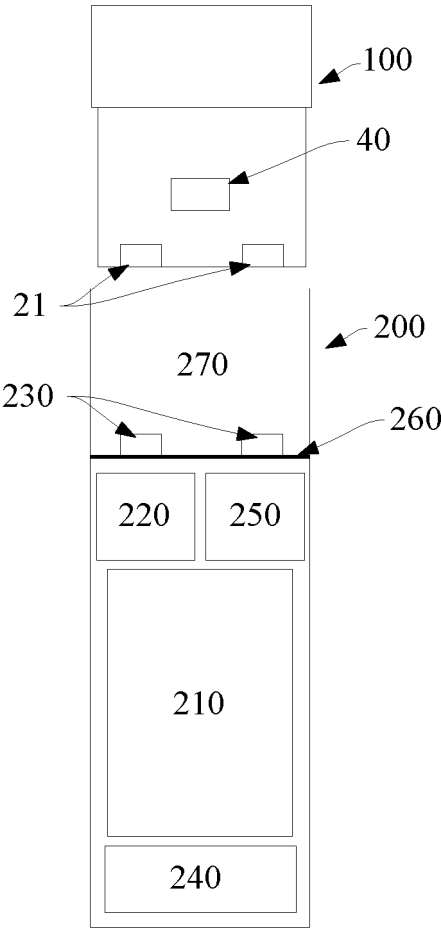


FIG. 1

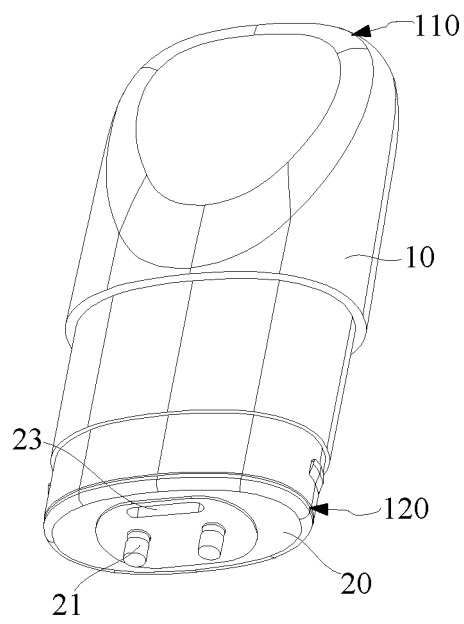


FIG. 2

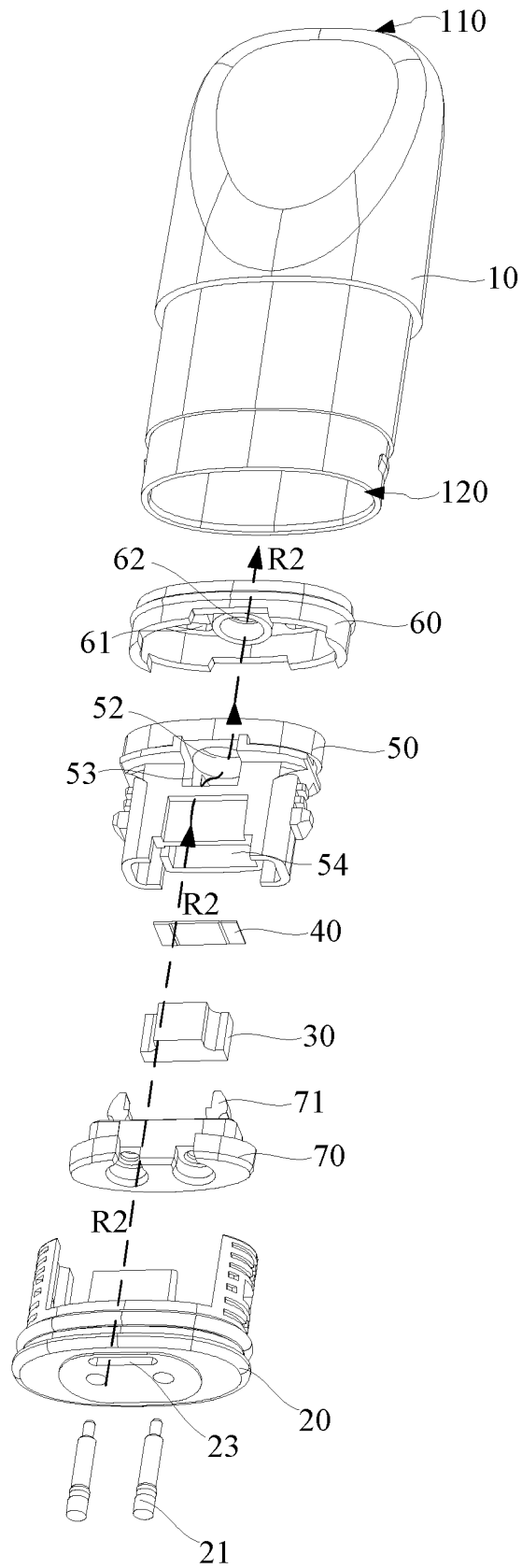


FIG. 3

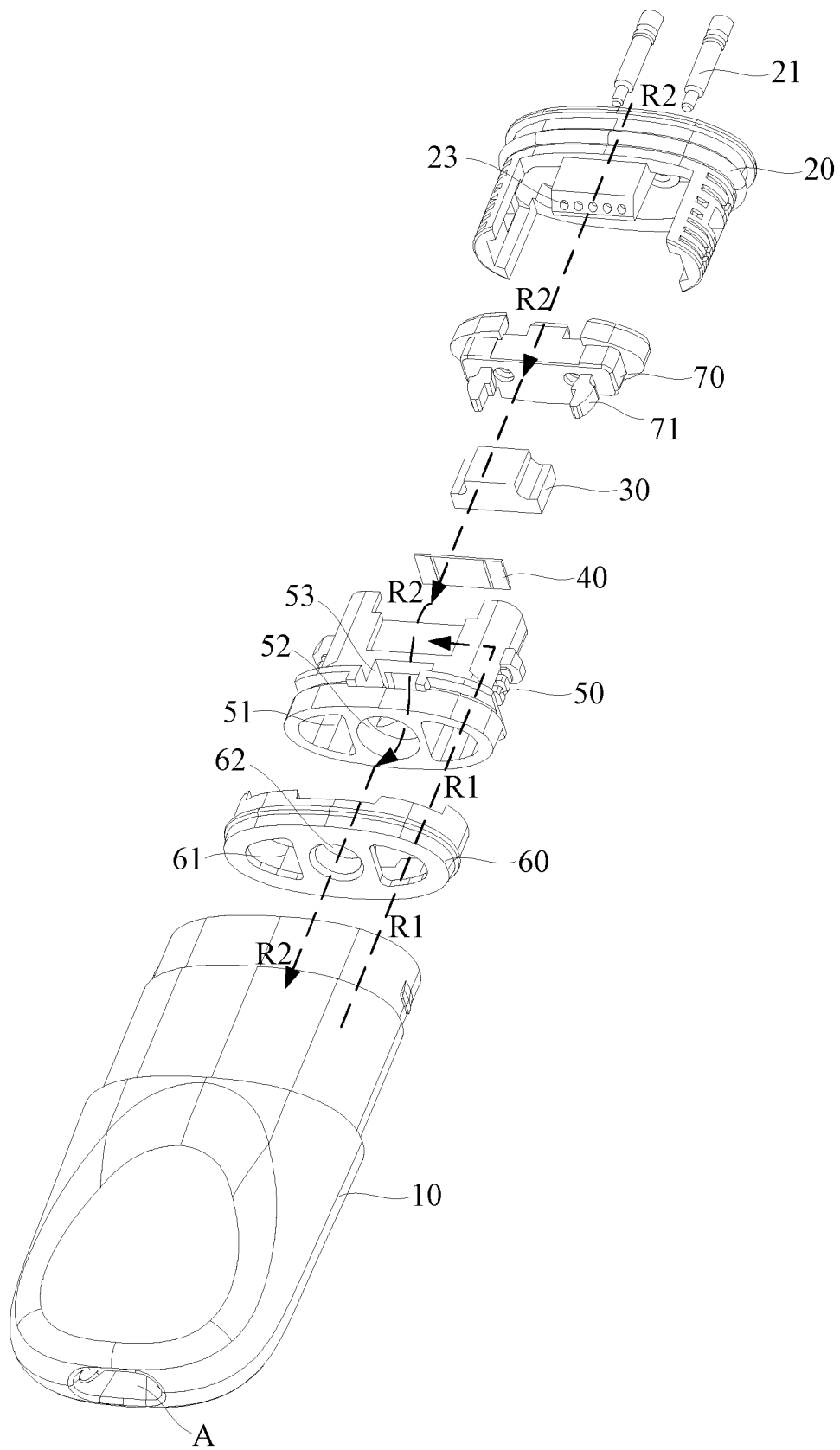


FIG. 4

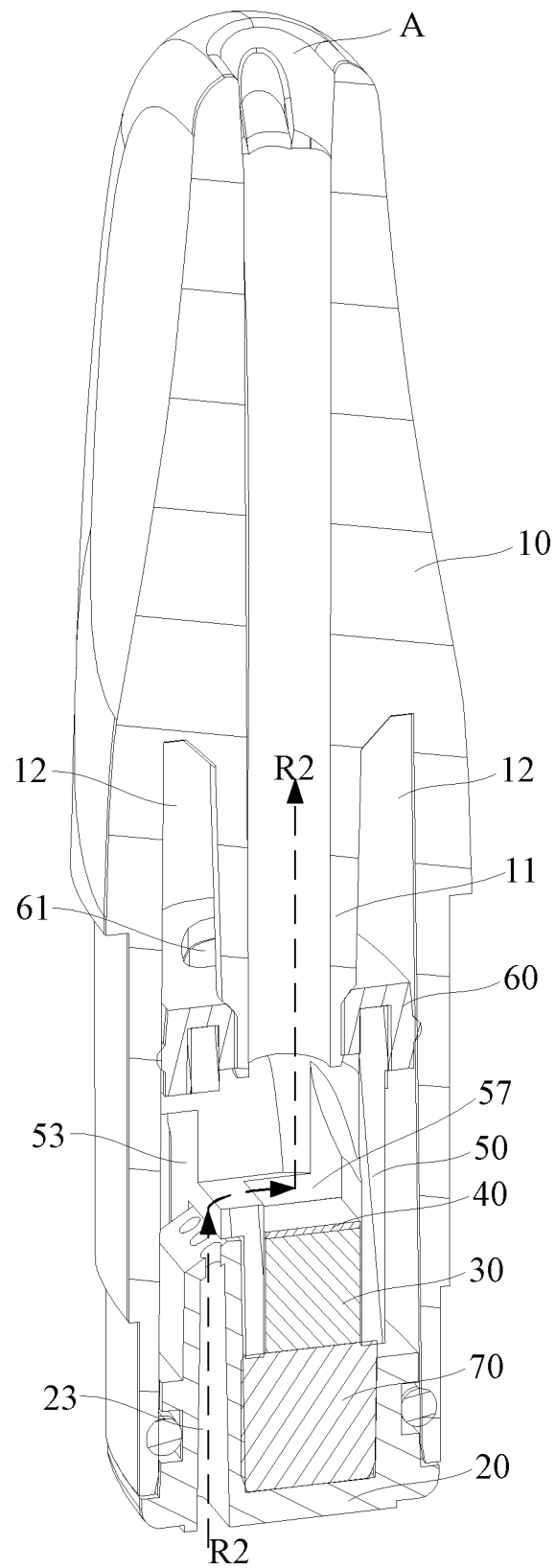


FIG. 5

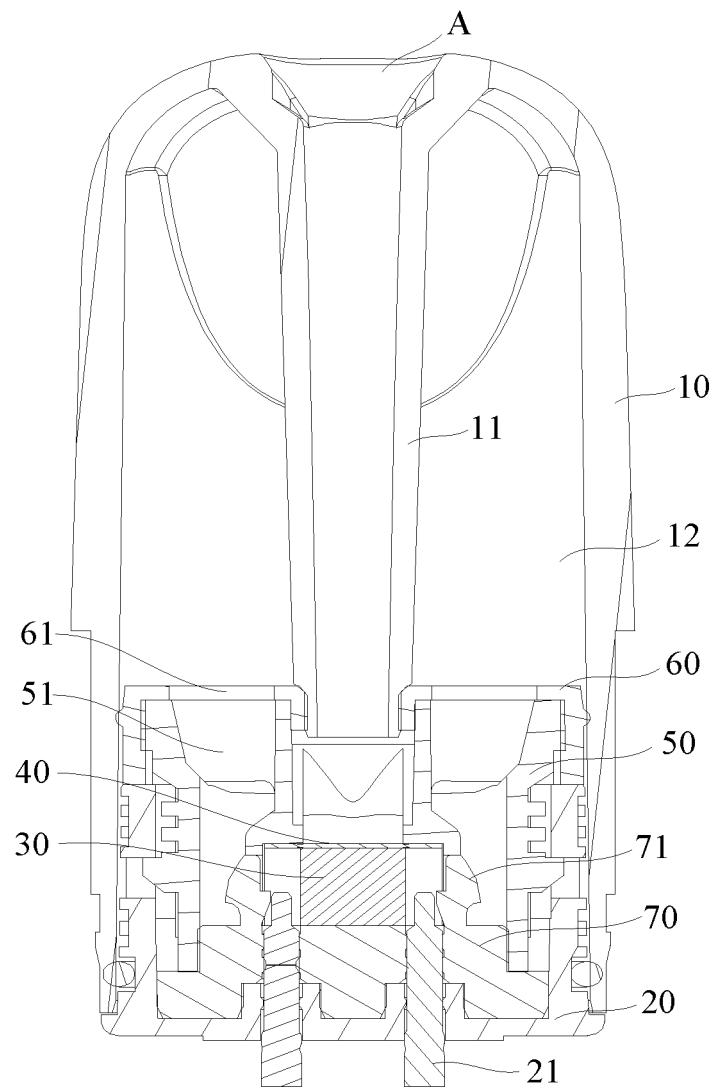


FIG. 6

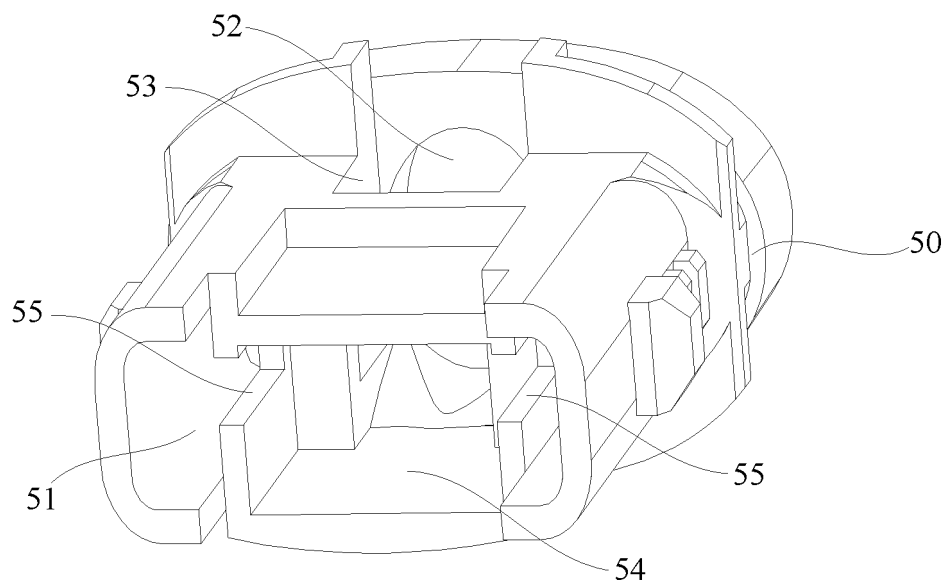


FIG. 7

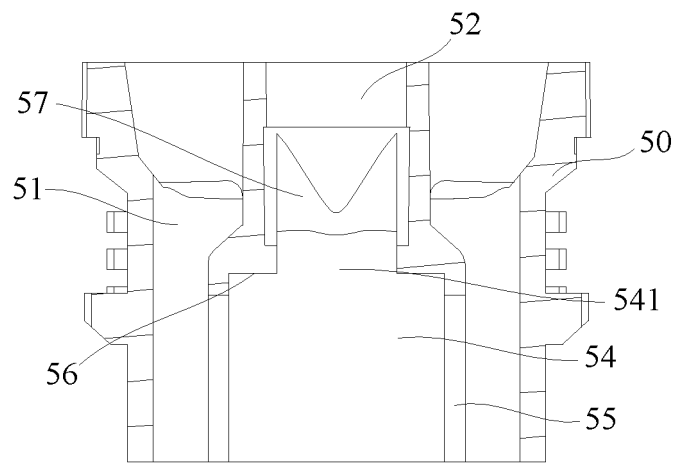


FIG. 8

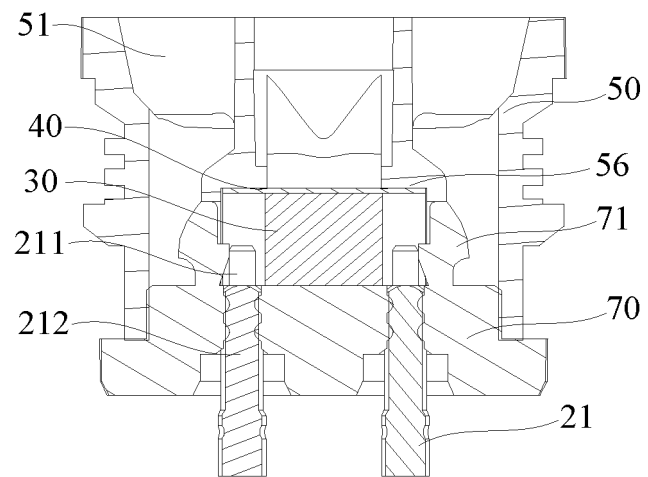


FIG. 9

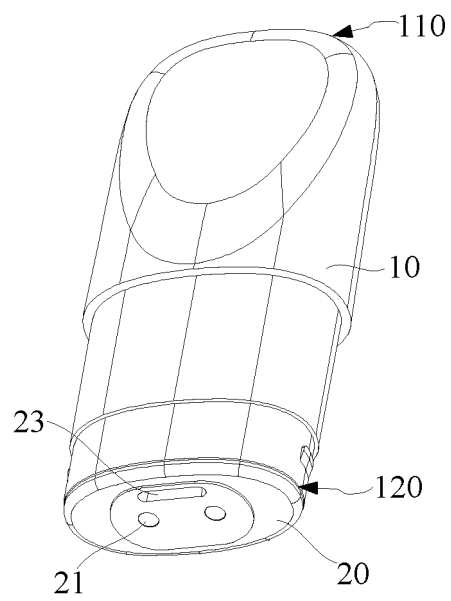


FIG. 10

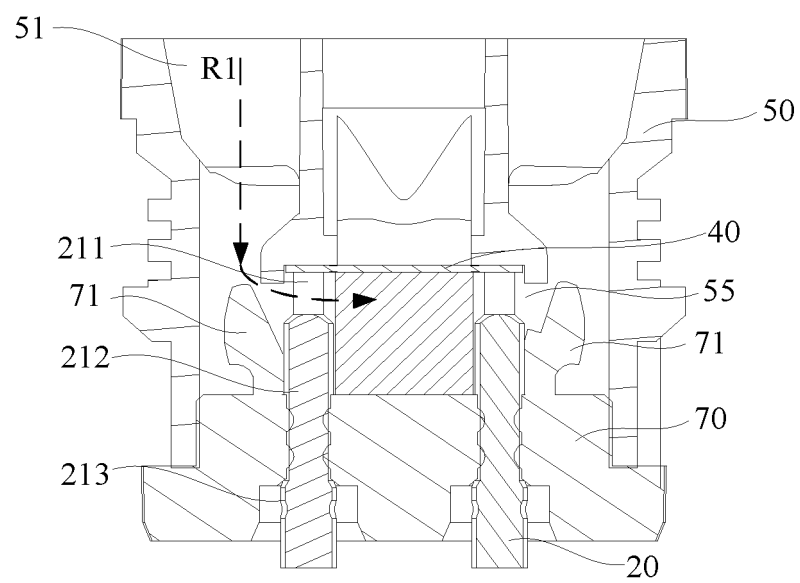


FIG. 11

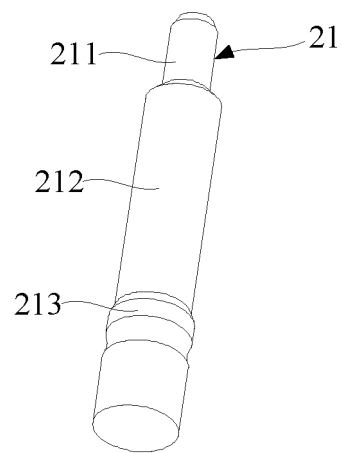


FIG. 12

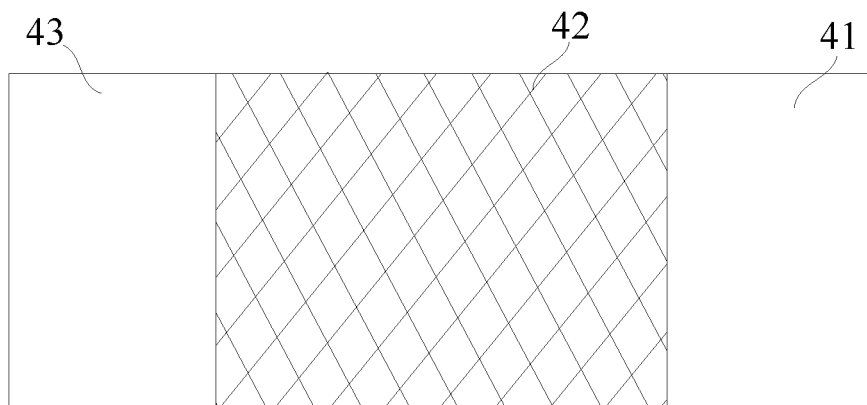


FIG. 13

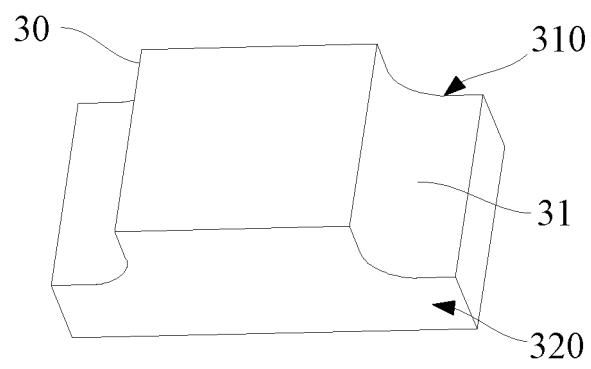


FIG. 14

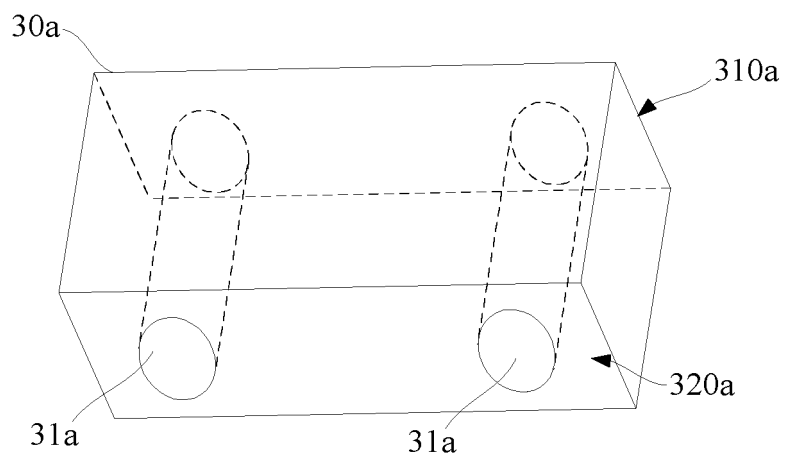


FIG. 15

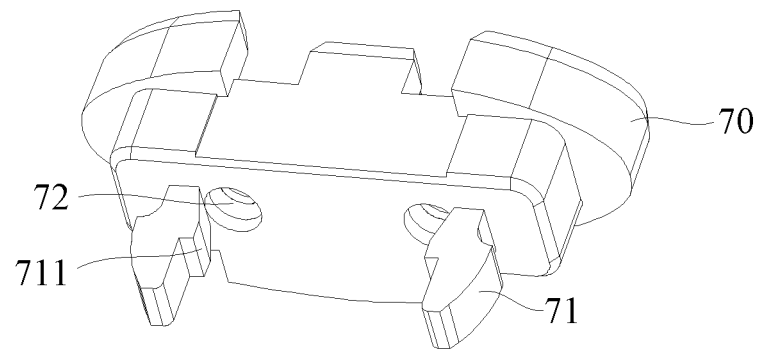


FIG. 16

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/090991

A. CLASSIFICATION OF SUBJECT MATTER 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) A24F40,A61M11,A61M5 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, ENTXT, CJFD, CNKI, WPABSC, VEN: 电子烟, 雾化器, 流体, 连通, 导通, 储液腔, 隔室, 打开, 关闭, atomizer?, pulverizer?, conduct+, liquid??. cavit??. open, clos+																		
C. DOCUMENTS CONSIDERED TO BE RELEVANT																		
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 215684785 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 01 February 2022 (2022-02-01) description, paragraphs [0006]-[0029]</td> <td>1-20</td> </tr> <tr> <td>PX</td> <td>CN 215684865 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 01 February 2022 (2022-02-01) description, paragraphs 41-57, and figures 1-13</td> <td>1-20</td> </tr> <tr> <td>PX</td> <td>CN 113261699 A (SHENZHEN VFOLK TECHNOLOGY CO., LTD.) 17 August 2021 (2021-08-17) description, paragraphs 81-117, and figures 1-4</td> <td>1, 20</td> </tr> <tr> <td>PX</td> <td>CN 214509399 U (SHENZHEN IVPS TECHNOLOGY CO., LTD.) 29 October 2021 (2021-10-29) description, paragraphs 32-44, and figures 1-5</td> <td>1, 20</td> </tr> <tr> <td>PX</td> <td>CN 213785367 U (SHENZHEN YOUME NETWORK TECHNOLOGY CO., LTD.) 27 July 2021 (2021-07-27) description, paragraphs 29-39, and figures 1-6</td> <td>1, 20</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 215684785 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 01 February 2022 (2022-02-01) description, paragraphs [0006]-[0029]	1-20	PX	CN 215684865 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 01 February 2022 (2022-02-01) description, paragraphs 41-57, and figures 1-13	1-20	PX	CN 113261699 A (SHENZHEN VFOLK TECHNOLOGY CO., LTD.) 17 August 2021 (2021-08-17) description, paragraphs 81-117, and figures 1-4	1, 20	PX	CN 214509399 U (SHENZHEN IVPS TECHNOLOGY CO., LTD.) 29 October 2021 (2021-10-29) description, paragraphs 32-44, and figures 1-5	1, 20	PX	CN 213785367 U (SHENZHEN YOUME NETWORK TECHNOLOGY CO., LTD.) 27 July 2021 (2021-07-27) description, paragraphs 29-39, and figures 1-6	1, 20
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Date of the actual completion of the international search 28 June 2022	Date of mailing of the international search report 18 July 2022																	
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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INTERNATIONAL SEARCH REPORT

International application No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

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