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(54) ELECTRONIC VAPORIZATION SYSTEM AND LIQUID INJECTION DEVICE

(57) The present invention relates to an electronic vaporization system and a liquid injection device. The liquid injection device includes an accommodating cavity configured for detachably mounting an electronic vaporization device, a liquid storage tank, a liquid supply mechanism, and a control assembly, where the control assembly is connected to the liquid supply mechanism, and configured to detect whether the electronic vaporization device is mounted in the accommodating cavity; and the liquid supply mechanism is in communication with the liquid storage tank to conduct or stop liquid supply to the electronic vaporization device. The liquid injection device may need to use the electronic vaporization device to supply liquid to the electronic vaporization device, and when the electronic vaporization device is not used, the electronic vaporization device may not need to store the liquid substrate for a long time, thereby avoiding liquid leakage of the electronic vaporization device during transportation, prolonging the service life of the electronic vaporization device, and improving the user experience.

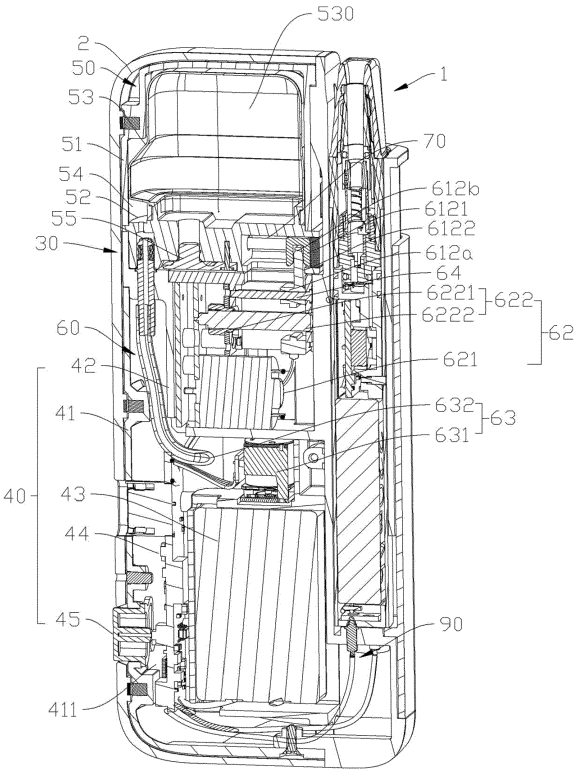

FIG. 2

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Description

FIELD

[0001] The present invention relates to the field of vaporization, and more specifically, to an electronic vaporization system and a liquid injection device.

BACKGROUND

[0002] Vaporization components of an electronic vaporization device in the related electronic vaporization system are generally soaked in a liquid storage cavity for a long time. Due to the long soaking time, the liquid substrate in the liquid storage cavity is easy to deteriorate, and consequently the taste for inhaling of the user is easy to be affected. In addition, the electronic vaporization device is generally prone to liquid leakage during transportation.

SUMMARY

[0003] The technical problem to be resolved in the present invention is to provide an improved electronic vaporization system and a liquid injection device.

[0004] A technical solution adopted by the present invention to resolve the technical problem is to construct a liquid injection device, including an accommodating cavity configured for detachably mounting an electronic vaporization device, a liquid storage tank, a liquid supply mechanism, and a control assembly, where the control assembly is connected to the liquid supply mechanism, and configured to detect whether the electronic vaporization device is mounted in the accommodating cavity; and the liquid supply mechanism is in communication with the liquid storage tank to conduct or stop liquid supply to the electronic vaporization device.

[0005] In some embodiments, the liquid supply mechanism includes a liquid injection connection assembly and a driving unit configured to drive the liquid injection connection assembly, where the driving unit is connected to the control assembly, the liquid injection connection assembly is configured to be in a first position and connected to the electronic vaporization device and in communication with the liquid storage tank; and

[0006] the liquid injection connection assembly is configured to be in a second position and disconnected from the electronic vaporization device.

[0007] In some embodiments, the liquid supply mechanism includes a power assembly connected to the control assembly, and the power assembly is configured to drive or stop the liquid storage tank to output liquid substrate and inject it to the electronic vaporization device through the liquid injection connection assembly.

[0008] In some embodiments, a liquid injection channel is formed on the liquid injection connection assembly.

[0009] In some embodiments, the liquid injection connection assembly includes a slider and a liquid injection member connected to the slider, and the slider is slidable between the first position and the second position.

[0010] In some embodiments, the liquid injection device further includes a liquid storage member that is squeezable to output liquid, where the liquid storage tank is formed in the liquid storage member.

[0011] In some embodiments, the liquid injection device further includes a housing sleeved on a periphery of the liquid storage member, where a spacing is provided between the housing and the liquid storage member; and

[0012] the liquid supply mechanism includes a power assembly, where the power assembly is connected to the control assembly, connected to the spacing, and configured to supply a power source to the spacing when the liquid supply mechanism is connected to the electronic vaporization device, to squeeze the liquid storage member to output a liquid substrate.

[0013] In some embodiments, the liquid injection device includes a receiving cavity that accommodates the control assembly and a holder, where

[0014] the accommodating cavity is formed on the holder; and a partition wall separating the receiving cavity and the accommodating cavity is arranged on the holder, and the partition wall is provided with a through hole that is configured for the liquid supply mechanism to run through to the accommodating cavity.

[0015] In the present invention, an electronic vaporization system is further constructed, including an electronic vaporization device and the liquid injection device according to the present invention, where the electronic vaporization device is detachably mounted in the accommodating cavity of the liquid injection device.

[0016] In some embodiments, the electronic vaporization device includes a liquid storage cavity and a liquid level detection assembly at least partially arranged in the liquid storage cavity, where the liquid level detection assembly is electrically connected to the control assembly of the liquid injection device, and the control assembly is configured to conduct or stop the liquid injection of the liquid supply mechanism of the liquid injection device according to the liquid level information detected by the liquid level detection assembly.

[0017] In some embodiments, the liquid level detection assembly includes a first detection unit and a second detection unit; and the first detection unit and the second detection unit are spaced apart on two opposite sides of the liquid storage cavity.

[0018] In some embodiments, the liquid storage cavity includes a first end and a second end arranged sequentially along the liquid flowing direction;

[0019] the first detection unit includes a first detection portion extending into the liquid storage cavity; the second detection unit includes a second detection portion extending into the liquid storage cavity; and the first detection portion is arranged close to the first end; and

[0020] the second detection portion is arranged close to the second end.

[0021] In some embodiments, the first detection unit

includes a first main body portion; and the first detection portion is arranged at one end of the first main body portion and presents an angle with the first main body portion; and/or

[0022] the second detection unit includes a second main body portion; and the second detection portion is arranged at one end of the second main body portion and presents an angle with the second main body portion.

[0023] In some embodiments, the electronic vaporization device further includes a vaporization shell provided with an assembly opening, and the first main body portion and/or the second main body portion are/is arranged on the vaporization shell and extend/extends toward the assembly opening.

[0024] In some embodiments, the first main body portion and/or the second main body portion form/forms an integral structure with the vaporization shell.

[0025] In some embodiments, the electronic vaporization device further includes a main control board, the liquid level detection assembly is connected to the main control board, and the main control board is connected to the control assembly.

[0026] Implementation of the electronic vaporization system and the liquid injection device in the present invention has the following beneficial effects: The liquid injection device may be connected to the electronic vaporization device and supply liquid to the electronic vaporization device when the electronic vaporization device is mounted in the accommodating cavity; and may be disconnected from the electronic vaporization device and stop supplying liquid to the electronic vaporization device when the electronic vaporization device is removed from the accommodating cavity. Therefore, the electronic vaporization device may need to be used to supply liquid to the electronic vaporization device, and when the electronic vaporization device is not used, the electronic vaporization device may not need to store the liquid substrate for a long time, thereby avoiding liquid leakage of the electronic vaporization device during transportation, prolonging the service life of the electronic vaporization device, and improving the user experience.

[0027] The electronic vaporization system is provided with the liquid injection device, so that the electronic vaporization device can be mounted in the accommodating cavity of the liquid injection device when the electronic vaporization device needs to be used, and the liquid injection device automatically injects liquid into the electronic vaporization device; and when the electronic vaporization device is not in use (such as during transportation), the electronic vaporization device does not need to store the liquid substrate, thereby preventing the liquid substrate in the electronic vaporization device from deteriorating and affecting the user's inhaling experience and avoiding liquid leakage during transportation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] Subject matter of the present invention will be described in even greater detail below based on the exemplary figures. All features described and/or illustrated herein can be used alone or combined in different combinations. The features and advantages of various embodiments will become apparent by reading the following detailed description with reference to the attached drawings, which illustrate the following:

FIG. 1 is a schematic structural diagram of an electronic vaporization system according to a first embodiment of the present invention;

FIG. 2 is an A-A longitudinal cross-sectional view of the electronic vaporization system shown in FIG. 1;

FIG. 3 is a B-B transversal cross-sectional view of an electronic vaporization device in the electronic vaporization system shown in FIG. 1 not mounted to a liquid injection device;

FIG. 4 is a B-B transversal cross-sectional view of an electronic vaporization device in the electronic vaporization system shown in FIG. 1 mounted to a liquid injection device;

FIG. 5 is a schematic structural exploded view of the electronic vaporization system shown in FIG. 1;

FIG. 6 is a schematic structural diagram of an electronic vaporization device of the electronic vaporization system shown in FIG. 5;

FIG. 7 is a C-C longitudinal cross-sectional view of the electronic vaporization device shown in FIG. 6;

FIG. 8 is a schematic structural exploded view of the electronic vaporization device shown in FIG. 5;

FIG. 9 is a schematic structural diagram of a vaporizer of the electronic vaporization device shown in FIG. 8;

FIG. 10 is a D-D longitudinal cross-sectional view of the vaporizer shown in FIG. 9;

FIG. 11 is an E-E longitudinal cross-sectional view of the vaporizer shown in FIG. 9;

FIG. 12 is a schematic partial structural exploded view of the vaporizer shown in FIG. 9;

FIG. 13 is a schematic diagram of a state in which a vaporization shell and an oil-proof and air-permeable structure of the vaporizer shown in FIG. 12 fit each other;

FIG. 14 is a schematic structural diagram of the vaporization shell shown in FIG. 13;

FIG. 15 is an F-F longitudinal cross-sectional view of the vaporization shell shown in FIG. 14;

FIG. 16 is a schematic structural diagram of an oil-proof and air-permeable film of the vaporizer shown in FIG. 13;

FIG. 17 is a schematic diagram of distribution of a liquid level detection assembly of the vaporizer shown in FIG. 15;

FIG. 18 is a schematic structural diagram of a liquid injection device of the electronic vaporization system shown in FIG. 8;

FIG. 19 is a schematic partial structural exploded view of the liquid injection device shown in FIG. 18;

FIG. 20 is a schematic partial structural diagram of the liquid injection device shown in FIG. 19;

FIG. 21 is a schematic structural diagram of a holder of the liquid injection device shown in FIG. 20;

FIG. 22 is a schematic structural diagram of a liquid storage structure of the liquid injection device shown in FIG. 18;

FIG. 23 is a G-G longitudinal cross-sectional view of the liquid storage structure shown in FIG. 22;

FIG. 24 is an H-H longitudinal cross-sectional view of the liquid storage structure shown in FIG. 22;

FIG. 25 is a schematic structural diagram of a base of the liquid storage structure shown in FIG. 23.

FIG. 26 is a schematic structural diagram of the base shown in FIG. 25 from another perspective;

FIG. 27 is an I-I longitudinal cross-sectional view of the base shown in FIG. 25;

FIG. 28 is a schematic structural diagram of a liquid injection member of the liquid injection device shown in FIG. 3;

FIG. 29 is a schematic structural diagram of a pressure relief member of the liquid injection device shown in FIG. 3;

FIG. 30 is a schematic structural diagram of a liquid injection device of an electronic vaporization system according to a second embodiment of the present invention;

FIG. 31 is a J-J longitudinal cross-sectional view of the liquid injection device shown in FIG. 30;

FIG. 32 is a schematic structural diagram of a main unit of the liquid injection device shown in FIG. 30;

FIG. 33 is a schematic diagram of an internal structure of the main unit shown in FIG. 32;

FIG. 34 is a schematic structural diagram of a holder of the liquid injection device shown in FIG. 33;

FIG. 35 is a schematic structural diagram of a liquid storage structure of the liquid injection device shown in FIG. 31;

FIG. 36 is a K-K longitudinal cross-sectional view of the liquid storage structure shown in FIG. 35;

FIG. 37 is a schematic structural diagram of a base of the liquid storage structure shown in FIG. 36;

FIG. 38 is a schematic structural diagram of the base shown in FIG. 37 from another perspective;

FIG. 39 is an L-L longitudinal cross-sectional view of the base shown in FIG. 37;

FIG. 40 is a schematic structural diagram of a liquid flowing member in the liquid storage structure shown in FIG. 35;

FIG. 41 is a schematic structural diagram of a trigger button in the liquid injection device shown in FIG. 32;

FIG. 42 is a schematic structural diagram of a push plate in the liquid injection device shown in FIG. 32;

FIG. 43 is a schematic structural diagram of the push plate shown in FIG. 42 from another perspective; and

FIG. 44 is a cross-sectional view of an electronic vaporization system according to a third embodiment of the present invention.

DETAILED DESCRIPTION

[0029] In order to have a clearer understanding of the technical features, the objectives, and the effects of the present invention, specific implementations of the present invention are now illustrated in detail with reference to the accompanying drawings.

[0030] FIG. 1 to FIG. 5 show a first embodiment of an electronic vaporization system according to the present invention. The electronic vaporization system includes an electronic vaporization device 1 and a liquid injection device 2. The electronic vaporization device 1 is configured to vaporize a liquid substrate for a user to inhale, and has the advantages of convenient transportation, being not prone to liquid leakage, and good user experience. The liquid substrate may include e-liquid, medicinal

liquid, or the like. The liquid injection device 2 may store the liquid substrate and be configured for liquid injection of the electronic vaporization device 1, to provide the liquid substrate for the electronic vaporization device 1. The liquid injection device 2 may be detachably assembled with the electronic vaporization device 1 and arranged independently from the electronic vaporization device 1. In some other embodiments, the liquid injection device 2 is not limited to injecting liquid for the electronic vaporization device 1, and the liquid injection device 2 may further be configured to inject liquid for other vaporization devices. In some embodiments, the liquid injection device 2 may also form an integral structure with the electronic vaporization device 1. The liquid injection device 2 has the advantages of simple operation, high liquid injection efficiency, and being not prone to liquid leakage.

[0031] As shown in FIG. 6 to FIG. 8, in this embodiment, the electronic vaporization device 1 includes a vaporizer 10 and a power supply assembly 20. The vaporizer 10 is configured to vaporize the liquid substrate, and the power supply assembly 20 may be mechanically and/or electrically connected to the vaporizer 10, and configured to supply power to the vaporizer 10.

[0032] As shown in FIG. 9 to FIG. 11, in this embodiment, the vaporizer 10 includes a vaporization shell assembly 11, a vaporization assembly 12, and a pressure relief channel 100. In this embodiment, the vaporization shell assembly 11 is configured to accommodate the vaporization assembly 12 and may accommodate the liquid substrate during use. The vaporization assembly 12 is arranged in the vaporization shell assembly 11, and configured to heat the liquid substrate in the vaporization shell assembly 11 to generate aerosol. The pressure relief channel 100 is formed on the vaporization shell assembly 11 and the vaporization assembly 12, and configured to release the pressure in the liquid storage cavity 1110.

[0033] As shown in FIG. 12 to FIG. 15, in this embodiment, the vaporization shell assembly 11 includes a vaporization shell 111. The vaporization shell 111 may be made of an insulating material. Specifically, the vaporization shell 111 may be made of a plastic material. A cross section of the vaporization shell 111 may be elliptical or rectangular. Certainly, it may be understood that in some other embodiments, the cross section of the vaporization shell 111 is not limited to be elliptical or rectangular, and it may be circular or in other shapes. In this embodiment, the vaporization shell assembly 11 includes a first side 111a, a second side 111b, a third side 111c, and a fourth side 111d. Specifically, the first side 111 a, the second side 111 b, the third side 111 c, and the fourth side 111 d are respectively formed on the vaporization shell 111. The first side 111a and the second side 111b are oppositely arranged, and are arranged in a one-to-one correspondence with two ends of the long side of the cross section of the vaporization shell 111. The third side 111c and the fourth side 111d are oppositely arranged and located between the first side 111a and the second side 111d, and may be arranged in a one-to-one correspondence with two ends of the short side of the cross section of the vaporization shell 111.

[0034] In some embodiments, the vaporization shell 111 has a hollow cylindrical structure, and one end thereof is provided with an assembly opening 1118. A liquid storage cavity 1110 is formed on an inner side of the vaporization shell 111. The liquid storage cavity 1110 is configured to store the liquid substrate. The vaporization shell 111 includes a body 1111 and a fitting portion 1112 arranged at an end of the body 1111. The cross section of the body 1111 may be approximately rectangular. Certainly, it may be understood that in some other embodiments, the cross section of the body 1111 is not limited to being rectangular. The body 1111 has a hollow structure, and one end thereof is provided with the assembly opening 1118. The fitting portion 1112 is arranged at an end of the body 1111 away from the assembly opening 1118, and the cross-sectional area of the fitting portion 1112 gradually decreases in the direction away from the body 1111.

[0035] The vaporization shell 111 further includes an air outlet pipe 1113. The air outlet pipe 1113 is arranged in the fitting portion 1112 and located at the central axis of the fitting portion 1112, and the length of the air outlet pipe is adapted to the height of the fitting portion 1112. A part of the liquid storage cavity 1110 is formed on a periphery of the air outlet pipe 1113 and the fitting portion 1112.

[0036] In this embodiment, the vaporization shell 1112 is provided with a first via 1114 and a second via 1115. The first via 1114 and the second via 1115 are spaced apart on a side wall of the body 1111, arranged close to the assembly opening 1118, and are located on the same cross section of the body 1111. The first via 1114 is configured for connection of the liquid injection device 2, to inject liquid into the liquid storage cavity 1110. The second via 1115 is configured for pressure relief of the liquid storage cavity 1110.

[0037] In this embodiment, micropores 1116 are provided on the side walls of the fitting portion 1112. In this embodiment, the first side 111 a, the second side 111 b, the third side 111 c, and the fourth side 111 d are formed on the fitting portion 1112. A plurality of micropores 1116 are distributed on each of the first side 111a, the second side 11 1b, the third side 111c and the fourth side 111d of the fitting portion 1112. In this embodiment, a plurality of micropores 1116 may also be provided on an end wall of the fitting portion 1112 away from the body 1111. The micropores 1116 are in communication with the liquid storage cavity 1110 and are configured for pressure relief and/or ventilation of the liquid storage cavity 1110. The micropores 1116 can allow gas to pass through, and can absorb the liquid substrate through capillary action, thereby avoiding liquid leakage from the liquid storage cavity 1110. In some embodiments, an oleophobic coating may be arranged on the inner surfaces of the micropores 1116, and the liquid substrate in the liquid storage

cavity 1110 is prevented from leaking out of the micropores 1116 through the oleophobic coating. It may be understood that, in some other embodiments, the oleophobic coating is not limited to being coated on the inner surfaces of the micropores, but may alternatively be coated on the inner side of the entire side wall of the fitting portion 1112.

[0038] In this embodiment, a vent hole 1117 is provided on the end wall of the fitting portion 1112 away from the body 1111, and the vent hole 1117 is distributed on one side of the air outlet pipe 1113, for the gas permeated from the micropores 1116 to enter and be outputted to the exterior of the vaporizer 10.

[0039] In this embodiment, the vaporization shell assembly 11 further includes a suction nozzle 112. The suction nozzle 112 is sleeved on the fitting portion 1112, and can fit with the fitting portion 1112, and be in communication with the air outlet pipe 1113. In some embodiments, the suction nozzle 112 and the vaporization shell assembly 11 are ultrasonically sealed to form a sealed channel.

[0040] The cross-sectional shape of the suction nozzle 112 is adapted to the cross-sectional shape of the fitting portion 1112. The suction nozzle 112 is provided with an air outlet 1121. The air outlet 1121 is in communication with the air outlet pipe 1113, for the user to inhale aerosol. In this embodiment, the inner size of the suction nozzle 112 may be slightly larger than the size of the fitting portion 1112. Specifically, the length and the width of the suction nozzle 112 may be slightly larger than the length and the width of the fitting portion 1112, so that a gap may be provided between the suction nozzle 112 and the fitting portion 1112. The height of the suction nozzle 112 may be larger than the height of the fitting portion 1112, so that a space 1121 is provided between the end surface of the end of the fitting portion 1112 away from the body 1111 and the suction nozzle 112, and the space 1121 may be in communication with the vent hole 1117, and forms part of the pressure relief channel 100.

[0041] As shown in FIG. 10 and FIG. 11, in this embodiment, the vaporization assembly 12 includes a vaporization bottom base 121, a vaporization base 122, and a heating assembly 123. The vaporization bottom base 121 is configured to block the assembly opening 1118 of the vaporization shell assembly 11 and can be configured for mounting of the vaporization base 122. The vaporization base 122 is arranged on the vaporization bottom base 121 and can be configured for mounting of the heating assembly 123. The heating assembly 123 is configured for heating and vaporizing the liquid substrate in the liquid storage cavity 1110.

[0042] In this embodiment, a liquid inlet channel 1211 is arranged on the vaporization bottom base 121. The liquid inlet channel 1211 is in communication with the liquid storage cavity 1110, and is configured for the liquid substrate injected by the liquid injection device 2 to enter the liquid storage cavity 1110. The vaporization bottom base 121 is provided with a liquid guiding hole 1213. The liquid guiding hole 1213 may be in communication with the liquid storage cavity 1110, and a part of the pressure relief channel 100 may be formed inside the liquid guiding hole for pressure discharge. In this embodiment, tracks are arranged on the vaporization bottom base 121, and the tracks may include a first track 1212 and a second track 1214. The first track 1212 and the second track 1214 may be arranged in a one-to-one correspondence with the first via 1114 and the second via 1115. The first track 1212 is arranged at one end of the liquid inlet channel 1211, and forms a set angle with the liquid inlet channel 1211. The second track 1214 is arranged at one end of the liquid guiding hole 1213, that is, arranged at an end of the pressure relief channel 100, and forms a set angle with the pressure relief channel. In this embodiment, the set angle may be 90 degrees. The track may be configured for moving and guiding of the blocking assembly, and can facilitate the moving and guiding of the liquid injection member 611 and the pressure relief member 70 of the liquid injection device 2.

[0043] In this embodiment, the vaporization base 122 may be columnar, and has a two-end run-through structure. The vaporization base 122 may be inserted on a seal sleeve 126 sleeved on the vaporization bottom base 121, and is in interference fit with the seal sleeve 126. The vaporization base 122 is located at the central axis of the vaporization shell 111, may be arranged coaxially with the air outlet pipe 1113, and is in communication with the air outlet pipe 1113.

[0044] In this embodiment, the heating assembly 123 is arranged in the vaporization base 122. In this embodiment, the heating assembly 123 includes a porous body 1231 and a heating body 1232. The porous body 1231 has a cylindrical structure and is arranged coaxially with the air outlet pipe 1113. In some embodiments, the porous body 1231 may be a ceramic porous body. Certainly, it may be understood that in some other embodiments, the porous body 1231 is not limited to being a ceramic porous body, and may be liquid absorbing cotton. The porous body 1231 has a two-end run-through structure, and a vaporization channel is formed inside. The vaporization channel may be in communication with the air outlet pipe 1113. The heating body 1232 is arranged in the porous body 1231. In some embodiments, the heating assembly 1232 may be a heating wire. Certainly, it may be understood that in some other embodiments, the heating assembly 1232 is not limited to being a heating wire.

[0045] In this embodiment, the vaporization assembly 12 further includes a gas-liquid balance structure 124, and the gas-liquid balance structure 124 is arranged at an end of the heating assembly 123 away from the vaporization bottom base 121. In this embodiment, the gas-liquid balance structure 124 is configured to balance the air pressure in the liquid storage cavity 1110, so that the liquid substrate in the liquid storage cavity 1110 automatically flows to the heating assembly 123, and can be configured to store the leaked liquid and prevent the leaked

liquid from being outputted from the air outlet pipe 1113.

[0046] In this embodiment, the gas-liquid balance structure 124 includes a cylindrical body 1241. The cylindrical body 1241 may have a two-end run-through structure, and is arranged coaxially with the air outlet pipe 1113, and in communication with the heating assembly 123 and the air outlet pipe 1113. In this embodiment, an inner wall of the cylindrical body 1241 is provided with a first trench 1242. The first trench 1242 may be arranged along the axial direction of the cylindrical body 1241, and is a bar-shaped groove. The first trench 1242 may extend from the end surface of the cylindrical body 1241 away from the heating assembly 123 along the axial direction of the cylindrical body 1241 to the middle portion of the cylindrical body 1241. The first trench 1242 is a micro-groove for absorbing and storing at least a part of the condensed liquid leaked from the air outlet pipe 1113. In this embodiment, a side wall of the cylindrical body 1241 is provided with a connection through hole 1243. The connection through hole 1243 is provided in the first trench 1242 and located in the middle portion of the cylindrical body 1241, and may be in communication with the first trench 1242 for output of gas and leaked liquid. An outer side wall of the cylindrical body 1241 is provided with a second trench 1244. The second trench 1244 may be bent, may be in communication with the connection through hole 1243, and may be in communication with the liquid storage cavity 1110. External air may enter the second trench 1244 from the connection through hole 1243, so as to ventilate the liquid storage cavity 1110, and the leaked liquid may alternatively be outputted from the connection through hole 1243 to the second trench 1244, and stored in the second trench 1244. In some embodiments, the leaked liquid may also flow back into the liquid storage cavity 1110 through the second trench 1244, so as to avoid leakage from the air outlet pipe 1113, which affects the user's inhaling experience. In some other embodiments, the second trench 1244 may not be in communication with the liquid storage cavity 1110. That is, the second trench 1244 is only configured to store the leaked liquid.

[0047] In this embodiment, the vaporization assembly 12 further includes a sealing isolation structure 125. The sealing isolation structure 125 may be cylindrical and has a two-end run-through structure, which is sleeved on the periphery of the gas-liquid balance structure 124 and the vaporization base 122. One end of the sealing isolation structure 125 is connected to the air outlet pipe 1113, and the other end thereof may be inserted on the seal sleeve 126 to be in interference fit with the seal sleeve 126. In some embodiments, both the sealing isolation structure 125 and the vaporization base 122 may be provided with a liquid inlet hole corresponding to communication. The liquid inlet hole on the sealing isolation structure 125 may be in communication with the liquid storage cavity 1110, and may be in communication with the second trench 1244 on gas-liquid balance structure 124. Therefore, the liquid substrate in the liquid storage cavity 1110 may enter the heating assembly 123 through the liquid inlet holes on the sealing isolation structure 125 and the vaporization base 122 in sequence. Gas and leaked liquid on the second trench 1244 may enter the liquid storage cavity 1110 through the liquid inlet hole.

[0048] As shown in FIG. 10 to FIG. 13 and FIG. 16, in this embodiment, the vaporizer 1 further includes an oil-proof and air-permeable structure 13. The oil-proof and air-permeable structure 13 is arranged in the vaporization shell assembly 11, may be in communication with the liquid storage cavity 1110 and the pressure relief channel 100, and is configured for discharge of the pressure in the liquid storage cavity 1110 to the pressure relief channel 100 and release of the pressure through the pressure relief channel 100. In this embodiment, the oil-proof and air-permeable structure 13 may be arranged in the suction nozzle 112 and attached to the fitting portion 1112. The oil-proof and air-permeable structure 13 may cover the micropores 1116 on the fitting portion 1112. A gap is provided between the oil-proof and air-permeable structure 13 and the inner wall of the suction nozzle 112, and the gap can form a part of the pressure relief channel 100. The oil-proof and air-permeable structure 13 can prevent the liquid substrate in the liquid storage cavity 1110 from leaking out, and can be configured for pressure relief during liquid injection, to prevent liquid leakage caused by poor pressure relief of the liquid storage cavity 1110.

[0049] In this embodiment, the oil-proof and air-permeable structure 13 may be in a shape of a sheet. Specifically, the oil-proof and air-permeable structure may have a thin film structure. In this embodiment, the oil-proof and air-permeable structure 13 is an oil-proof and air-permeable film. Certainly, it may be understood that in some other embodiments, the oil-proof and air-permeable structure 13 is not limited to being an oil-proof and air-permeable film.

[0050] In this embodiment, there are two oil-proof and air-permeable structures 13, and the two oil-proof and air-permeable structures 13 are arranged on the first side 111a and the second side 111b. Certainly, it may be understood that in some other embodiments, there may be one oil-proof and air-permeable structure 13, and the oil-proof and air-permeable structure 13 may be only arranged on the first side 111a or only arranged on the second side 111b. In this embodiment, the oil-proof and air-permeable structure 13 includes a sheet-shaped body 131 and two extension portions 132, and the two sheet-shaped bodies 131 of the two oil-proof and air-permeable structures 13 may be arranged on the first side 111a and the second side 111b of the fitting portion 1112. The two extension portions 132 of each oil-proof and air-permeable structure 13 are respectively arranged on two opposite sides of the sheet-shaped body 131, and extend toward the third side 111c and the fourth side 111d respectively. By arranging the oil-proof and air-permeable structure 13 on two sides or four sides of the fitting portion 1112, pressure relief can be performed in

a plurality of directions. That is, when the vaporizer 10 is placed in five directions other than the upside-down direction for liquid injection, pressure relief can all be performed, thereby achieving multi-angle pressure relief, ensuring the convenience of liquid injection of the vaporizer 1 and the reliability of pressure relief, and ensuring user experience. In some other embodiments, the oil-proof and air-permeable structure 13 may have only one extension portion extending toward the third side 111c or the fourth side 111d.

[0051] In this embodiment, the vaporizer 10 further includes a vent pipe 14. The vent pipe 14 is arranged in the vaporization shell assembly 11. Specifically, the vent pipe 14 is arranged in the vaporization shell 111, where one end thereof may be connected to the vent hole 1117, and the other end thereof may be inserted from the seal sleeve 126 into the liquid guiding hole 1213, and in communication with the vent hole 1117 and the liquid guiding hole 1213. The vent pipe 14 is a two-end run-through round pipe. Certainly, it may be understood that in some other embodiments, the vent pipe 14 is not limited to being a round pipe, and may be a square pipe or in other shapes. At least a part of the pressure relief channel 100 is formed inside the vent pipe 14.

[0052] In this embodiment, the pressure relief channel 100 is in communication with the liquid storage cavity 1110 through the oil-proof and air-permeable structure 13, and the pressure relief channel 100 includes a first channel section 101, a second channel section 102, a third channel section 103, and a fourth channel section 104 that are sequentially connected. The first channel section 101 is formed in the gap between the oil-proof and air-permeable structure 13 and the inner wall of the suction nozzle 112, the second channel section 102 is formed in the space 1121 formed between the end wall of the fitting portion 1112 and the suction nozzle 112, the third channel section 103 is formed in the vent pipe 14, and the fourth channel section 104 is formed in the liquid guiding hole 1213. By arranging the pressure relief channel 100, pressure relief can be performed during liquid injection of the vaporizer 1, thereby preventing liquid leakage and improving the user experience.

[0053] In this embodiment, blocking assemblies are arranged on the vaporization bottom base 121, and there may be two blocking assemblies, including a first blocking assembly 15 and a second blocking assembly 16. The first blocking assembly 15 and the second blocking assembly 16 are arranged in the first track 1212 and the second track 1214 in a one-to-one correspondence, and are movably arranged. That is, the track is configured for moving and guiding of the blocking assembly. The first blocking assembly 15 is movably arranged at one end of the liquid inlet channel 1211, and blocks or opens the liquid inlet channel 1211 through movement. The second blocking assembly 16 is movably arranged at one end of the pressure relief channel 100, and may block or open the pressure relief channel 100 through movement.

[0054] As shown in FIG. 3 and FIG. 4, in this embodiment, the first blocking assembly 15 includes a first blocking member 151 and a first elastic body 152. The first blocking member 151 may be a ball, and its diameter may be slightly larger than the aperture of the liquid inlet channel 1211, thereby blocking the liquid inlet channel 1211. Certainly, it may be understood that in some other embodiments, the first blocking member 151 may alternatively be a valve pipe. The first elastic body 152 may be a spring. One end of the spring may be connected to the first blocking member 151, and the other end thereof may abut against a wall surface of an end of the first track 1212 away from the first via 1114. Pushed by an external force, the first blocking member 151 may move to the end away from the first via 1114 under the action of the first elastic body 152, thereby making the liquid inlet channel 1211 open. When the external force is withdrawn, the first blocking member 151 may be reset under the action of the first elastic body 152 to block the liquid inlet channel 1211, so as to prevent the liquid substrate in the liquid storage cavity 1110 from leaking out.

[0055] In this embodiment, the second blocking assembly 16 includes a second blocking member 161 and a second elastic body 162. The second blocking member 161 may be a ball, and its diameter may be slightly larger than the aperture of the pressure relief channel 100, thereby blocking the pressure relief channel 100. Certainly, it may be understood that in some other embodiments, the second blocking member 161 may alternatively be a valve pipe. The second elastic body 162 may be a spring. One end of the spring may be connected to the second blocking member 161, and the other end thereof may abut against a wall surface of an end of the second track 1214 away from the second via 1114. Pushed by an external force, the second blocking member 161 may move to the end away from the second via 1114 under the action of the second elastic body 162, thereby making the pressure relief channel 100 open. When the external force is withdrawn, the second blocking member 161 may be reset under the action of the second elastic body 162 to block the pressure relief channel 100, so as to prevent the liquid substrate in the liquid storage cavity 1110 from leaking out. It may be understood that, in some other embodiments, the second blocking assembly 16 may be omitted.

[0056] In this embodiment, the vaporizer 1 further includes a liquid inlet valve 17. The liquid inlet valve 17 is arranged in the first track 1212, arranged close to the first via 1114, and configured to seal the liquid injection member 611 to prevent liquid leakage during liquid injection, and seal the first via 1114 under the action of an elastic force after the liquid injection. The vaporizer 1 further includes a pressure relief valve 18. The pressure relief valve 18 is arranged in the second track 1214, arranged close to the second via 1115, and configured to seal the second via 1115 under the action of an elastic force after the liquid injection.

[0057] As shown in FIG. 12 and FIG. 17, in this embodiment, the vaporizer 1 further includes a liquid level

detection assembly 19. The liquid level detection assembly 19 is mounted on the vaporization shell 111 and at least partially extends into the liquid storage cavity 1110. The liquid level detection assembly 19 is configured to detect a liquid level in the liquid storage cavity 1110, and transmit detected liquid level information to the liquid injection device 2. The liquid level detection assembly 19 directly or indirectly measures and infers the liquid volume in the liquid storage cavity 1110 by detecting the electrical characteristic of the liquid level change (that is, a liquid volume change) in the liquid storage cavity 1110. When the liquid level in the liquid storage cavity 1110 reaches a set threshold, the liquid injection device 2 may stop a liquid injection action according to the liquid level information. When the liquid level of the liquid storage cavity 1110 is lower than the set threshold, the liquid injection device 2 may start the liquid injection action according to the liquid level information, and then automatic liquid injection and automatic starting and stopping can be realized, which avoids leakage due to an excess of the liquid substrate in the liquid storage cavity 1110, and can further prevent dry burning, to avoid production of harmful substances. The set threshold may include a first threshold and a second threshold. The first threshold may be greater than the second threshold. When the first threshold is reached, the liquid injection device 2 may stop liquid injection. When the second threshold is not reached, the liquid injection device 2 may start liquid injection.

[0058] In this embodiment, the liquid level detection assembly 19 includes a first detection unit 191 and a second detection unit 192. The first detection unit 191 and the second detection unit 192 may be spaced apart at two opposite sides of the liquid storage cavity 1110, and may be distributed diagonally in a high-and-low manner, so as to ensure that the liquid storage volume in the liquid storage cavity 1110 can still be detected when vaporizer 1 is placed in five directions other than the upside-down direction. Specifically, the first detection unit 191 and the second detection unit 192 may be arranged in a region of the liquid storage cavity 1110 arranged corresponding to the body 1111 of the vaporization shell 111. The liquid storage cavity 1110 includes a first end and a second end arranged sequentially along the liquid flowing direction; and the first detection unit 191 may be arranged close to the first end, and the second detection unit 192 may be arranged close to the second end. That is, the first detection unit 191 may be arranged higher than the second detection unit 192. In some other embodiments, the first detection unit 191 or the second detection unit 192 may be omitted. Specifically, in this embodiment, the first detection unit 191 includes a first main body portion 1911, a first detection portion 1912, a first conductive connection portion 1913, and a first connection portion 1914. The first main body portion 1911 may be in a shape of a longitudinal sheet, may be arranged on the vaporization shell 111, may extend toward the assembly opening 1118 of the vaporization shell 111, and may form an integral structure with the vaporization shell 111. In some embodiments, the vaporization shell 111 may be made of an insulating material. The first main body portion 1911 is plastic-coated in the vaporization shell 111, then a role of insulating arrangement with other conductive structures is played through the vaporization shell 111, and a role of insulation with the liquid substrate in the liquid storage cavity 1110 may be played. The first detection portion 1912 is arranged at an end of the first main body portion 1911 and connected to the first main body portion 1911 through a first connection portion 1914. The first detection portion 1912 may be bent with the first main body portion 1911. That is, the first connection portion 1914 may form an angle with the first main body portion 1911, and the first detection portion 1912 may form an angle with the first connection portion 1914. In this embodiment, the angle is 90 degrees. The first detection portion 1912 extends into the liquid storage cavity 1110 and is arranged close to the first end of the liquid storage cavity 1110, and may extend toward the second end of the liquid storage cavity 1110. The first conductive connection portion 1913 is arranged at an end of the first main body portion 1911 away from the first detection portion 1912, and may specifically be located at the assembly opening 1118, bent with the first main body portion 1911, and configured to be in conductive connection to the power supply assembly 20, so as to be connected to the main control board in the power supply assembly 20, thereby realizing electrical signal transmission with the main control board 23.

[0059] In this embodiment, the second detection unit 192 includes a second main body portion 1921, a second detection portion 1922, a second conductive connection portion 1923, and a second connection portion 1924. The second main body portion 1921 may be in a shape of a longitudinal sheet, may be arranged on the vaporization shell 111, may extend toward the assembly opening 1118 of the vaporization shell 111, and may form an integral structure with the vaporization shell 111. In this embodiment, the length of the second main body portion 1921 is less than the length of the first main body portion 1911. In some embodiments, the vaporization shell 111 may be made of an insulating material. The second main body portion 1921 is plastic-coated in the vaporization shell 111, then a role of insulating arrangement with other conductive structures is played through the vaporization shell 111, and a role of insulation with the liquid substrate in the liquid storage cavity 1110 may be played. The second detection portion 1922 is arranged at an end of the second main body portion 1921 and connected to the second main body portion 1921 through a second connection portion 1924. The second detection portion 1922 may be bent with the second main body portion 1921. That is, the second connection portion 1924 may form an angle with the second main body portion 1921, and the second detection portion 1922 may form an angle with the second connection portion 1924. In this embodiment, the angle is 90 degrees.

[0060] The second detection portion 1922 extends into the liquid storage cavity 1110 and is arranged close to the second end of the liquid storage cavity 1110, and may extend toward the second end of the liquid storage cavity 1110. The second conductive connection portion 1923 is arranged at an end of the second main body portion 1921 away from the second detection portion 1922, and may specifically be located at the assembly opening 1118, bent with the second main body portion 1921, and configured to be in conductive connection to the power supply assembly 20, so as to be connected to the main control board 23 in the power supply assembly 20, thereby realizing electrical signal transmission with the main control board 23.

[0061] As shown in FIG. 6 and FIG. 8, in this embodiment, the power supply assembly 20 includes a power supply shell 21, a battery 22 arranged in the power supply shell 21, and a main control board 23 arranged in the power supply shell 21 and connected to the battery 22. The power supply shell 21 has a long cylindrical structure with an opening at one end, and an accommodating space is formed inside. The power supply shell 21 may be sleeved on a part of the vaporizer 1, and the power supply shell 21 is provided with a relief hole 211. The relief hole 211 includes a first relief hole 211a and a second relief hole 211b, where the first relief hole 211a is correspondingly arranged and in corresponding communication with the first via 1114. The second relief hole 211b is correspondingly arranged and in corresponding communication with the second via 1115. The main control board 23 may be in conductive connection to the liquid level detection assembly 19 and the heating assembly 123, configured to receive the liquid level information detected by the liquid level detection assembly 19 and transmit the liquid level information to the liquid injection device 2, and configured to start or shut down the heating assembly 123. In this embodiment, the main control board 23 may be connected to the control assembly 44. Specifically, when the electronic vaporization device 1 is mounted on the liquid injection device 2 for liquid injection, the main control board 23 may be electrically connected and/or mechanically connected to the control assembly 44, so that the liquid level detection assembly 19 and the control assembly 44 realize an indirect electrical connection.

[0062] As shown in FIG. 18 to FIG. 20, further, in this embodiment, the liquid injection device 2 includes a casing 30, a main unit 40, a liquid storage structure 50, and a liquid supply mechanism 60. The casing 30 is sleeved on a periphery of the main unit 40 and the liquid storage structure 50. The main unit 40 may be detachably connected to the liquid storage structure 50, and configured for controlling the output of the liquid substrate of the liquid storage structure 50. The liquid storage structure 50 is detachably mounted on the main unit 40, and configured to store the liquid substrate. The liquid supply mechanism 60 is configured to output the liquid substrate in the liquid storage structure 50 to the liquid storage cavity 1110 of the electronic vaporization device 1.

[0063] In this embodiment, the casing 30 may be in a shape of a cuboid, and an open hollow structure in arranged on one side. The casing 30 may be detachably assembled with the main unit 40 and the liquid storage structure 50. In some embodiments, the casing 30 may be made of a plastic material or a metal material. It may be understood that, in some other embodiments, the casing 30 is not limited to being in a shape of a cuboid, and may be in a shape of a cylinder or in other shapes.

[0064] In this embodiment, the main unit 40 includes an inner shell 41, a holder 42, a power supply 43, a control assembly 44, and a switch assembly 45. In this embodiment, the inner shell 41 is sleeved on the holder 42, and a receiving cavity 411 is formed inside for accommodating the power supply 43 and the control assembly 44. The holder 42 may be configured to support the liquid storage structure 50 and the electronic vaporization device 1. The power supply 43 is mounted in the receiving cavity 411 and may be arranged close to the holder 42. The control assembly 44 is arranged in the receiving cavity 411, located on a side of the power supply 43 away from the holder 42, and electrically connected to the power supply 43 and the switch assembly 45. The switch assembly 45 is arranged on the inner shell 41, may run through the casing 30, and may be a button switch. The liquid injection device 2 can be started or shut down by pressing the switch assembly 45.

[0065] As shown in FIG. 21, in this embodiment, the holder 42 includes a first support 421, a second support 422 and a partition wall 423. The first support 421 and the second support 422 are arranged on two opposite sides of the partition wall 423 and separated by the partition wall 423.

[0066] In this embodiment, the first support 421 includes a first support portion 421a and a second support portion 421b. The first support portion 421a is mounted in the inner shell 41, has a cylindrical structure with a square cross section, and is in communication with the second support portion 421b. A guide groove 4210 may be formed inside, for sliding guide of a slider module 612 in the liquid injection connection assembly 61 of the liquid supply mechanism 60. It may be understood that, in some other embodiments, the first support portion 421a is not limited to having a square cross section. The second support portion 421b is arranged at one end of the first support portion 421b. The cross section of the second support portion may be square or elliptical, and the size thereof is larger than that of the cross section of the first support portion 421a. A placement groove 4211 may be formed inside the second support portion 421b, and the placement groove 4211 may be configured for placing the liquid storage structure 50. In some other embodiments, the first support portion 421a may be omitted.

[0067] In this embodiment, the second support 422 may be arranged higher than the first support 421 and may be placed outside the casing 30. The second support 422 has a long cylindrical structure with two run-through

ends, and an accommodating cavity 4220 may be formed inside. That is, the accommodating cavity 4220 is formed on the holder 42. The accommodating cavity 4220 is configured to accommodate the electronic vaporization device 1, and during mounting, the electronic vaporization device 1 may be inserted into the accommodating cavity 4220. The accommodating cavity 4220 is separated from the receiving cavity 411 by the partition wall 423. In this embodiment, the partition wall 423 is provided with a through hole 4231. There may be two through holes 4231, and the two through holes 4231 may be provided in a one-to-one correspondence with the first via 1114 and the second via 1115. The through hole 4231 is configured for the liquid supply mechanism 60 to run through to the accommodating cavity 4220, so as to implement liquid injection to the electronic vaporization device 1.

[0068] A charging support 424 is arranged at one end of the second support 422. The charging support 424 is configured to support the electronic vaporization device 1, and may be plug-connected to the electronic vaporization device 1 to realize electrical connection, and then the power supply 43 in the main unit 40 may charge the electronic vaporization device 1, and the control assembly 44 in the main unit 40 may be electrically connected to the electronic vaporization device 1 to realize electrical signal transmission.

[0069] In this embodiment, a cover 425 is sleeved on the second support 422 and a periphery of the charging support 424. The cover 425 can play a protective role, and can make the liquid injection device 2 more beautiful.

[0070] As shown in FIG. 20, in this embodiment, the control assembly 44 may include a control circuit board carrying a conventional circuit (such as a control circuit or a detection circuit), which may be electrically connected to the liquid supply mechanism 60 and the electronic vaporization device 1, thereby realizing that the liquid supply mechanism 60 automatically performs liquid injection on the electronic vaporization device 1. In this embodiment, the control assembly 44 may detect whether the electronic vaporization device 1 is mounted in the accommodating cavity 4220. Specifically, the control assembly 44 may further include a detection element for sensing whether the electronic vaporization device 1 is mounted in the accommodating cavity 4220. The detection element is connected to the control circuit board, and may be a conventional sensor, such as an infrared sensor. Certainly, the detection element may alternatively be a tact switch arranged in the accommodating cavity 4220. It may be understood that, in some other embodiments, the detection element may alternatively be omitted. When the electronic vaporization device 1 is mounted in the accommodating cavity 4220, the liquid supply mechanism 60 is connected to the electronic vaporization device 1, the control assembly 44 may generate a start signal to the liquid supply mechanism 60, and the liquid supply mechanism 60 may start work of liquid supply to the electronic vaporization device 1 according to a start instruction of the control assembly 44. When the electronic vaporization device 1 is removed from the accommodating cavity 4220, the liquid supply mechanism 60 is disconnected from the electronic vaporization device 1, the control assembly 44 may generate a stop signal to the liquid supply mechanism 60, and the liquid supply mechanism 60 may stop the liquid supply work according to a stop instruction of the control assembly 44. In addition, in this embodiment, the control assembly 44 may alternatively stop the liquid supply work of the liquid supply mechanism 60 according to the liquid level information detected by the liquid level detection assembly in the electronic vaporization device 1.

[0071] As shown in FIG. 22 to FIG. 24, in this embodiment, the liquid storage structure 50 is mounted and fixed on a mounting groove 4211, and includes a base 52, a housing 51, and a liquid storage member 53. The housing 51 is sleeved on the base 52. In some embodiments, the housing 51 may be assembled with the base 52 and may be ultrasonically sealed with the base 52. The base 52 is configured to support the housing 51 and the liquid storage member 53. The liquid storage member 53 is mounted in the housing 51 and can be squeezed to output the liquid substrate. A spacing 54 is provided between the liquid storage member 53 and the inner wall of the housing 51. The spacing 54 may form a power source supply tank for power source input.

[0072] In this embodiment, the housing 51 has a cylindrical structure provided with an opening at one end and an approximately rectangular cross section, and its height is less than that of the casing 30. In this embodiment, the housing 51 is made of a hard material, such as a metal or plastic material.

[0073] As shown in FIG. 25 to FIG. 27, in this embodiment, the base 52 may be made of a hard material. Specifically, in this embodiment, the base 52 may be made of plastic. The base 52 includes a base body 521 and a sleeve portion 522 arranged on the base body 521. The cross-sectional shape of the base body 521 is adapted to the cross-sectional shape of the housing 51, and the base body 521 may be inserted into the mounting groove 4211. The sleeve portion 522 protrudes from the base body 521, and its cross-sectional size may be smaller than that of the base body 521. The sleeve portion 522 is configured for sleeving of the housing 51 and the liquid storage member 53.

[0074] In this embodiment, a guide channel 5210 for sliding guide of the slider module 612 of the liquid supply mechanism 60 is arranged on the base body 521, and the guide channel 5210 may extend along the direction perpendicular to the partition wall 423. The guide channel 5210 may be a rectangular channel. A first position and a second position may be defined at two ends of the guide channel 5210. The first position may be arranged close to the partition wall 423, and the second position may be arranged away from the partition wall 423.

[0075] In this embodiment, a liquid storage groove 5220 in communication with the liquid storage member 53 may be formed inside the sleeve portion 522. A boss

5221 is arranged on the sleeve portion 522. In this embodiment, the base 52 is provided with a liquid flowing hole 5222, and the liquid flowing hole 5222 is provided on the top wall of the boss 5221 and the side wall of the boss 5221, so as to facilitate the output of the liquid substrate in the liquid storage member 53. In this embodiment, the sleeve portion 522 is provided with a liquid guide groove 5223, and the liquid guide groove 5223 may be arranged on the bottom wall of the liquid storage groove 5220, located in the middle portion of the liquid storage groove 5220, arranged lower than the bottom wall of the liquid storage groove 5220, and in communication with the liquid flowing hole 5222 on the side surface of the boss 5221, so as to facilitate the collection of the liquid substrate in the liquid storage groove 5220 and guide the liquid substrate to the liquid flowing hole 5222. Certainly, it may be understood that in some other embodiments, the boss 5221 and the liquid guide groove 5223 may be omitted.

[0076] In this embodiment, the liquid storage structure 50 further includes a liquid flowing channel 523, and the liquid flowing channel 523 is in communication with the liquid storage member 53. Specifically, in this embodiment, the liquid flowing channel 523 is arranged on the base 52, formed in the boss 5221, and in communication with the liquid flowing hole 5222, and extends along the height direction of the boss 5221. The liquid flowing channel 523 is configured to output the liquid substrate in the liquid storage member 53 to the liquid supply mechanism 60.

[0077] In this embodiment, the base 52 is provided with a connection through hole 524. The connection through hole 524 is configured to be connected to the power assembly 63 of the liquid supply mechanism 60, and the connection through hole 524 may be in communication with the spacing 54, so as to facilitate the power assembly 63 in inputting a power source to the spacing 54, thereby squeezing the liquid storage member 53 to output the liquid substrate. Specifically, the connection through hole 524 is provided on the base body 521 and is arranged in a run-through manner along the thickness direction of the base body 521. In this embodiment, the connection through hole 524 is located on the periphery of the sleeve portion 522.

[0078] In this embodiment, the base 52 is provided with a liquid injection opening 525. The liquid injection opening 525 is a circular through hole, and may be arranged along the thickness direction of the base 52. The bottom wall of the base body 51 is provided with an accommodating groove 5211, and the liquid injection opening 525 extends to the accommodating groove 5211. The liquid injection opening 525 may be configured to inject the liquid substrate into the liquid storage member 53. When the liquid substrate in the liquid storage member 53 is used up, the liquid storage structure 50 may be removed from the main unit 40, and then liquid may be injected into the liquid storage member 53 through the liquid injection opening 525. The liquid injection opening 525 may be sealed and connected by arranging a sealing plug 55. The sealing plug 55 may be arranged in the accommodating groove 5211 and plugged into the liquid injection opening 525 to avoid liquid leakage when the liquid storage structure 50 is mounted on the main unit 40.

[0079] In this embodiment, a first channel 526 is arranged on the base 52, and the first channel 526 may be in communication with the guide channel 5210 for mounting and guiding of the liquid injection member 611 of the liquid supply mechanism 60. The liquid flowing channel 523 may extend to the first channel 526. The first channel 526 is a two-end run-through channel. The first channel 526 is provided with a first limiting step 5261 and a second limiting step 5262. The first limiting step 5261 and the second limiting step 5262 are spaced apart. The first limiting step 5261 and the second limiting step 5262 are configured for limiting mounting of a partition assembly 56. The first limiting step 5261 and the second limiting step 5262 are both arranged on the side of the liquid flowing channel 523 away from the guide channel 5210, so that when the liquid injection member 611 is inserted into the electronic vaporization device 1, the liquid flowing channel 523 is in communication with the guide channel 5210.

[0080] In this embodiment, a second channel 527 is provided on the base 52. The second channel 527 is parallel to the first channel 526 and in communication with the guide channel 5210, and one end thereof is in communication with the outside. The second channel 527 is configured for mounting and guiding of the pressure relief member 70.

[0081] In this embodiment, the base 52 is provided with an air flow through hole 528. The air flow through hole 528 may be in communication with the liquid storage member 53, and configured for ventilation of the liquid storage member 53, so that it is convenient for liquid flowing of the liquid storage member 53, and the liquid storage cavity 53 can be restored automatically after the liquid supply mechanism 60 finishes liquid supply. The air flow through hole 528 is in communication with the first channel 526, located on a section of the first channel 526 arranged away from the guide channel 5210, and located between the first limiting step 5261 and the second limiting step 5262. When the liquid injection member 611 moves away from the guide channel 5210, gas can be brought into the liquid storage member 53, so that the liquid storage member 53 is restored. Certainly, it may be understood that, the air flow through hole 528 may be omitted.

[0082] As shown in FIG. 23 and FIG. 24, in this embodiment, the liquid storage member 53 may be a flexible member or an elastic member. In this embodiment, the liquid storage member 53 may be a soft plastic part, and may specifically have a capsule structure. The liquid storage member 53 is sleeved on the sleeve portion 522 and fixed with the sleeve portion 522 through interference fit. a liquid storage tank 530 may be formed inside the liquid storage member 53, and the liquid storage tank 530 is

configured to store the liquid substrate.

[0083] In this embodiment, the liquid storage structure 50 further includes a partition assembly 56. The partition assembly 56 is movably arranged in the first channel 526 and may be configured to partition the air flow through hole 528 and the first channel 526, thereby preventing the liquid substrate in the liquid storage tank 530 from leaking from the air flow through hole 528 into the first channel 526 and entering the liquid injection member 611. In some embodiments, the partition assembly 56 includes a third blocking member 561, a third elastic body 562, and a fixing sleeve 563. The third blocking member 561 may be a ball, and the diameter of the third blocking member 561 may be slightly larger than the aperture of the air flow through hole 528. The third blocking member 561 may move between the first limiting step 5261 and the second limiting step 5262, and is limited by the first limiting step 5261 and the second limiting step 5262. The third blocking member 561 may move under the action of the third elastic body 562, and then open or block the air flow through hole 528. One end of the third elastic body 562 may be connected to the third blocking member 561, and the other end thereof extends into the fixing sleeve 563 and abuts against the fixing sleeve 563. The third elastic body 5262 may be a spring. The fixing sleeve 563 is mounted on the side of the first limiting step 5261 away from the second limiting step 5262, and abuts against the first limiting step 5262, which may be configured for mounting and fixing of the third elastic body 5262. When the liquid injection member 611 moves toward the electronic vaporization device 1, the third elastic body 5262 may drive the third blocking member 561 to move toward the second limiting step 5262 to abut against the second limiting step 5262. When the liquid injection member 611 moves away from the electronic vaporization device 1, the third blocking member 561 may be pushed, and the third elastic body 5262 is in a contracted state. The third blocking member 561 may be pushed to the air flow through hole 528.

[0084] In this embodiment, the liquid storage structure 50 further includes a liquid blocking member 57. The liquid blocking member 57 is arranged in the first channel 526, and located on the side of the liquid flowing channel 523 away from the second limiting step 5262. The liquid blocking member 57 is sleeved on the liquid injection member 611 and closely connected to the channel wall of the first channel 526, thereby preventing the liquid substrate in the liquid flowing channel 523 from leaking out of the first channel 526.

[0085] As shown in FIG. 2 to FIG. 4, in this embodiment, when the liquid supply mechanism 60 may be connected to the electronic vaporization device 1 and supply liquid to the electronic vaporization device 1 when the electronic vaporization device 1 is mounted in the accommodating cavity 4220; and may be disconnected from the electronic vaporization device 1 and stop supplying liquid to the electronic vaporization device 1 when the electronic vaporization device 1 is removed from the accommodating cavity 4220. The liquid supply mechanism 60 includes a liquid injection connection assembly 61, a driving unit 62, and a power assembly 63. The liquid injection connection assembly 61 is connected to the liquid storage tank 530 of the liquid storage member 53, that is, the liquid supply mechanism 60 may be in communication with the liquid storage tank 530. The liquid injection connection assembly 61 may be movably arranged under the driving of an external force, connected to the electronic vaporization device 1, in communication with the liquid storage cavity 1110 of the electronic vaporization device 1, and configured to inject the liquid substrate outputted from the liquid storage tank 530 into the liquid storage cavity 1110. The driving unit 62 is connected to the control assembly 44 and may drive, according to a control instruction of the control assembly 44, the liquid injection connection assembly 61 to move.

[0086] The power assembly 63 is connected to the control assembly 44. When the liquid injection connection assembly 61 is connected to the electronic vaporization device 1, a power source may be inputted to the spacing 54 according to the control instruction of the control assembly 44, to squeeze the liquid storage member 53, and then drive the liquid storage member 53 to output the liquid substrate. When the liquid injection connection assembly 61 is disconnected from the electronic vaporization device 1, the power assembly 63 may stop driving the liquid storage tank 530 to output the liquid substrate to a liquid injection channel 611.

[0087] In this embodiment, the liquid injection connection assembly 61 is arranged on the base 52 and may movably arranged under an external force. The liquid injection connection assembly 61 includes a liquid injection member 611 and a slider module 612. The liquid injection member 611 at least partially runs through the first channel 526. The slider module 612 is connected to the liquid injection member 611 and may move under the action of an external force, thereby driving the liquid injection member 611 to move. When the electronic vaporization device 1 is mounted in the accommodating cavity 4220, the slider module 612 of the liquid injection connection assembly 61 may move from the second position to the first position, and when the liquid injection connection assembly 61 moves to the first position, that is, when the slider module 612 moves to the first position, the liquid injection member 61 is connected to the electronic vaporization device 1 and in communication with the liquid storage tank 530. When the electronic vaporization device 1 is removed from the accommodating cavity 4220, the liquid injection connection assembly 61 may move to the second position and be disconnected from the electronic vaporization device 1.

[0088] As shown in FIG. 2 to FIG. 4 and FIG. 28, in this embodiment, the liquid injection member 611 may be tubular, may move along the side wall perpendicular to the electronic vaporization device 1, and is inserted into the electronic vaporization device 1 along the side wall perpendicular to the electronic vaporization device 1 when

the slider module 612 moves to the first position, thereby implementing liquid injection. The liquid injection member 611 includes a first pipe section 6111, a second pipe section 6112, and a first limiting pipe section 6113. The second pipe section 6112, the first limiting pipe section 6113, and the first pipe section 6111 are connected in sequence. When the electronic vaporization device 1 is mounted in the accommodating cavity 4220, the liquid injection member 611 may move toward the partition wall 423, and the first pipe section 611 may sequentially run through the guide channel 5210, the through hole 4231, the first relief hole 211a, and the first via 1114 into the first track 1212, and push the first blocking assembly 15 to move, thereby opening the liquid inlet channel 1211, and being in communication with the liquid inlet channel 1211. The radial dimension of the second pipe section 6112 may be greater than the radial dimension of the first pipe section 6111, and the radial dimension of the second pipe section 6112 may be corresponding to the radial dimension of the second limiting step 5262 in the first channel 526. When there is no liquid injection or the liquid injection is finished, the second pipe section 6112 may be arranged in the first channel 526, and the pipe wall of the second pipe section 6112 may be close to the channel wall of the first channel 526 and a role of sealing is played for the liquid flowing channel 523, thereby having the effect of preventing liquid leakage. The radial dimension of the first limiting pipe section 6113 may be larger than the radial dimension of the second pipe section 6112. The first limiting pipe section 6113 is configured for fitting and limiting with the slider module 612, thereby avoid falling out from the slider module 612. An annular limiting boss is arranged at an end of the first limiting pipe section 6113 connected to the first pipe section 6111. A liquid injection channel 6110 is formed inside the liquid injection member 611, and the liquid injection channel 6110 is formed in the first pipe section 6111, the second pipe section 6112, and the first limiting pipe section 6113, and may be in communication with the liquid flowing channel 523 when the liquid injection member 611 is inserted into the electronic vaporization device 1. The liquid injection channel 6110 may be configured for injecting the liquid substrate in the liquid storage tank 530 into the liquid inlet channel 1211 of the electronic vaporization device 1 and then into the liquid storage cavity 1110. An end of the first pipe section 6111 away from the first limiting pipe section 6113 is provided with a liquid outlet 6114, and the liquid outlet 6114 extends along the side wall of the first pipe section 6111 and is approximately U-shaped. Certainly, it may be understood that in some other embodiments, the liquid outlet 6114 is not limited to being U-shaped. The liquid outlet 6114 extends to the side wall of the first pipe section 6111, and then when the first pipe section 6111 abuts against the first blocking member 151, the liquid substrate in the liquid injection channel 6110 can still be outputted.

[0089] In this embodiment, the slider module 612 includes a slider 6121 and a push plate 6122. The slider 6121 may be in a shape of a cuboid. The slider 6121 is arranged on the liquid storage structure 50. Specifically, the slider 6121 is arranged on the base 52, mounted in the guide channel 5210, and arranged in the guide channel 5210 for sliding. The slider may slide between the second position and the first position. The slider 6121 may be sleeved on the liquid injection member 611 and fixed with the first limiting pipe section 6113 of the liquid injection member 611 through interference fit. The slider 6121 performs sliding, and may can drive the liquid injection member 611 to move back and forth, and then drive the liquid injection member 611 to be inserted into the electronic vaporization device 1 or pulled out from the electronic vaporization device 1. The slider 6121 can be detachably connected to the push plate 6122. Specifically, in this embodiment, the slider 6121 may be clamped with the push plate 6122, so that the holder 43 can be detachably connected to the base 52 of the liquid storage structure 50. In this embodiment, the middle axis of the slider 6121 is provided with a clamping hole. Certainly, it may be understood that in some other embodiments, the central axis of the slider 6121 is not limited to being provided with a clamping hole, or may be provided with a clamping groove. The clamping hole or the clamping groove may be configured for clamping of the push plate 6122. The push plate 6122 is arranged in the main unit 40. Specifically, the push plate is located on the holder 42 and located in the first support 421, and protrudes from the placement groove 4211. The push plate 6122 may push the slider 6121 to slide under the action of an external force. In this embodiment, the push plate 6122 includes a push plate body 612a and a clamping bone 612b. The push plate body 612a may be mounted in the guide groove 4210 of the first support 421, and may be connected to the driving unit 63, and may move back and forth in the guide groove 4210 under drive by the driving unit 63, and then may drive the slider 6121 to move back and forth along the guide channel 5210. The clamping bone 612b may run from the guide groove 4210 into the placement groove 4211, when the liquid storage structure 50 is placed on the placement groove 4211, the clamping bone 612b may be inserted into the clamping hole, thereby being connected to the slider 6121, and simultaneously clamping the liquid storage structure 50 with the holder 42. That is, the clamping structure arranged between the holder 42 and the liquid storage structure 50 may be the clamping bone 612b and the clamping hole.

[0090] In this embodiment, the driving unit 62 may be an electric drive assembly. Certainly, it may be understood that in some other embodiments, the driving unit 62 is not limited to being an electric drive assembly. The driving unit 62 may be connected to the push plate 6122, and may drive, by receiving a control instruction from the control assembly 44, the slider module 612 to slide toward the partition wall 423, or to slide away from the partition wall 423, or to stop sliding. In this embodiment, the driving unit 62 includes a drive motor 621 and a trans-

mission mechanism 622. The drive motor 621 may be connected to the transmission mechanism 622 for driving the transmission mechanism 622 for transmission. In this embodiment, the drive motor 621 may change the moving direction of the slider module 612 through forward and reverse rotation. The drive motor 621 may be connected to the control assembly 44, and may be started or shut down by the control assembly 44. The transmission mechanism 622 may be connected to the push plate 6122, and may drive the push plate 6122 to move under the drive of the drive motor 621. In this embodiment, the transmission mechanism 622 includes a sliding sleeve 6221 and a transmission screw 6222, and one end of the transmission screw 6222 is connected to the drive motor 621. The sliding sleeve 6221 is sleeved on the transmission screw 6222 and connected to the push plate 6122 through arrangement of a connecting piece 64. The drive motor 621 may drive the transmission screw 622 to rotate, and then drive the sliding sleeve 6221 to slide on the transmission screw 6222, thereby driving the push plate 6122 to move.

[0091] In this embodiment, the power assembly 63 is mounted in the main unit 40 and runs into the placement groove 4211 of the first support 421. Specifically, the power assembly 63 may be arranged in the receiving cavity 411. In this embodiment, the power assembly 63 includes a power pump 631 and a connection pipeline 632. In this embodiment, the power pump 631 may be an air pump. The power pump 631 may be connected to the control assembly 44, and may be started or shut down according to the control instruction of the control assembly 44. The connection pipeline 632 may be connected to the power pump 631 for outputting a power source to the spacing 54 to squeeze the liquid storage member 53 to output the liquid substrate. Specifically, the power source may be gas. When the liquid storage structure 50 is mounted on the holder 42, one end of the connection pipeline 632 may be connected to the connection through hole 524, thereby realizing gas input into the spacing 54. It may be understood that, in some other embodiments, the power source is not limited to gas, and the power assembly 63 is not limited to including a power pump 631 and a connection pipeline 632.

[0092] As shown in FIG. 2 to FIG. 4 and FIG. 29, in this embodiment, the liquid injection device 2 further includes a pressure relief member 70. The pressure relief member 70 is arranged in the liquid storage structure 50, specifically located on the base 52, and movably mounted in the second channel 527, and may run through the second channel 527, and be inserted into the electronic vaporization device 1. In this embodiment, the pressure relief member 70 may be connected to the slider module 612, and then may be driven to move by sliding of the slider module 612. When the slider module 612 moves to the first position, the pressure relief member 70 is connected to the electronic vaporization device 1 and may release the pressure of the electronic vaporization device 1; and when the slider module 612 moves to the second position, the pressure relief member 70 may be disconnected from the electronic vaporization device 1. Specifically, the slider 6121 may be sleeved on the pressure relief member 70 and simultaneously be connected to the pressure relief member 70 and the liquid injection member 611. The pressure relief member 70 and the liquid injection member 611 are spaced apart. Specifically, the pressure relief member 70 and the liquid injection member 611 may be spaced apart along the width direction of the guide channel 5210, and are parallel to each other. That is, when the liquid injection member 611 is inserted into the electronic vaporization device 1, the pressure relief member 70 is also inserted into the electronic vaporization device 1, and when the liquid injection member 611 injects liquid, the electronic vaporization device 1 may perform pressure relief simultaneously, thereby improving the safety of use of the electronic vaporization device 1, to ensure the smooth progress of the liquid injection. It should be noted that, during the withdrawal process of the pressure relief member 70, the process in which the liquid injection member 611 seals the liquid flowing channel 523 is shorter than the process in which the liquid injection member 611 is withdrawn from the electronic vaporization device 1, thereby preventing the liquid substrate in the liquid storage structure 50 from leaking after the liquid injection member 611 is withdrawn from the electronic vaporization device 1.

[0093] In this embodiment, the pressure relief member 70 is tubular and has a hollow structure with two run-through ends, and a pressure transmission channel 710 may be formed inside. The pressure relief member 70 may move along the side wall perpendicular to the electronic vaporization device 1, and may be inserted into the electronic vaporization device 1 along the side wall perpendicular to the electronic vaporization device 1 when the slider module 612 moves to the first position, thereby avoiding the problem of liquid mixing during liquid changing. In this embodiment, the pressure relief member 70 includes a third pipe section 71, a fourth pipe section 72, and a second limiting pipe section 73. The third pipe section 71, the second limiting pipe section 73, and the fourth pipe section 72 are sequentially connected, and the pressure transmission channel 710 is formed in the third pipe section 71, the second limiting pipe section 73, and the fourth pipe section 72. The third pipe section 71 may run through the base 52 and run through the partition wall 423 to be inserted into the second track 1214 sequentially from the first relief hole 211b and the second via 1115, so that the second blocking assembly 16 can be moved away from the second via 1115, to open the pressure relief channel 100 and communicate the pressure transmission channel 710 with the pressure relief channel 100. The radial dimension of the fourth pipe section 72 is larger than the radial dimension of the third pipe section 71. The fourth pipe section 72 may be arranged in the second channel 527. The radial dimension of the second limiting pipe section 73 may be greater than the radial dimension of the fourth pipe section 72,

and is configured for limiting and mounting with the slider 6121.

[0094] In this embodiment, the liquid injection device 2 further includes a position detection assembly 80. The position detection assembly 80 is mounted on the holder 42. Specifically, the position detection assembly is mounted on the first support portion 421a of the first support 421, connected to the control assembly 44, and configured to detect a position of the liquid injection connection assembly 61. Specifically, the position detection assembly 80 may detect a position of the slider module 612, and then know a position of the liquid injection member 611. In addition, the position detection assembly 80 may transmit the detected position information to the control assembly 44, thereby realizing liquid injection into the electronic vaporization device 1 more accurately. When the liquid injection connection assembly 61 is at the first position, that is, the slider module 612 is at the first position, and the liquid injection member 611 is in communication with the electronic vaporization device 1, the control assembly 44 may start the power assembly 63 to drive the liquid storage tank 530 to output the liquid substrate. When the liquid injection connection assembly 61 is located at the second position, that is, when the slider module 612 is located at the second position, and the liquid injection member 611 is disconnected from the electronic vaporization device 1, the control assembly 44 may enter the standby state. In this case, the power assembly 63 is in a shut-down state.

[0095] As shown in FIG. 20, in this embodiment, the position detection assembly 80 includes a first detection unit 81 and a second detection unit 82. The first detection unit 81 is arranged corresponding to the first position. Specifically, the first detection unit may be located in the first support portion 421a of the first support 421, and arranged corresponding to the first position. The second detection unit 82 corresponds to the second position. Specifically, the second detection unit is located in the first support portion 421a and is arranged corresponding to the second position. Both the first detection unit 81 and the second detection unit 82 are connected to the control assembly 44.

[0096] In this embodiment, both the first detection unit 81 and the second detection unit 82 may be connected to the control assembly 44 by arranging a conductive structure, and the conductive structure may be selected to be a wire. When the slider module 612 slides to the first position, the slider module 612 may be in contact with the first detection unit 81, and the first detection unit 81 may transmit position information of the slider module 612 to the control assembly 44. The control assembly 44 sends a control instruction to the power assembly 63, and the power assembly 63 is started, and may output a power source to the spacing 54, to squeeze the liquid storage member 53 to output the liquid substrate. When the slider module 612 slides to the second position, the slider module 612 may be in contact with the second detection unit 82, and the second detection unit 82 may transmit the position information of the slider module 612 to the control assembly 44. The control assembly 44 may enter the standby state.

[0097] In this embodiment, the first detection unit 81 may include two first detection electrodes 811 that are opposite and spaced apart. When sliding to the first position, the push plate 6122 may be engaged between the two first detection electrodes 811, and conduct the two first detection electrodes 811. It may be understood that, in some other embodiments, the first detection unit 81 is not limited to including two first detection electrodes 811. In some embodiments, the first detection unit 81 may be a position sensor or other conventional position detection devices.

[0098] In this embodiment, the second detection unit 82 may include two second detection electrodes 821 that are opposite and spaced apart. When sliding to the second position, the push plate 6122 may be engaged between the two second detection electrodes 821, and conduct the two second detection electrodes 821. It may be understood that, in some other embodiments, the second detection unit 82 is not limited to including two second detection electrodes 821. In some embodiments, the second detection unit 82 may be a position sensor or other conventional position detection devices.

[0099] As shown in FIG. 2 and FIG. 4, in this embodiment, the liquid injection device 2 further includes a charging structure 90. The charging structure 90 may be connected to the control assembly 44 and may be connected to a charging support 424. When the electronic vaporization device 1 is mounted in the accommodating cavity 4220, the liquid injection device 2 can not only inject liquid into the electronic vaporization device 1, but also charge the electronic vaporization device 1 through the charging structure 90.

[0100] When the electronic vaporization device 1 is mounted in the accommodating cavity 4220, the control assembly 44 detects that there is an electronic vaporization device 1 in the accommodating cavity 4220, and the control assembly 44 may send a control instruction to the drive motor 621. The drive motor 621 may rotate in a first direction, to drive transmission of the transmission mechanism 622, thereby driving the entire liquid injection connection assembly 61 to move from the second position to the first position, that is, driving the slider module 612 to move from the second position to the first position, and then driving the liquid injection member 611 to run from the partition wall 423 to the accommodating cavity 4220 and runs into the first track 1212 of the electronic vaporization device 1, to communicate the liquid injection channel 6110 with the liquid inlet channel 1211, and simultaneously driving the pressure relief member 70 to run from the partition wall 423 to the accommodating cavity 4220, and run into the second track 1214 of the electronic vaporization device 1, to communicate the pressure transmission channel 710 with the pressure relief channel 100 for pressure relief.

[0101] The push plate 6122 slides to the first position

and is engaged between the two first detection electrodes 811. When detecting that the push plate 6122 slides to the first position, the first detection unit 81 transmits position information of the liquid injection connection assembly 61 to the control assembly 44. The control assembly 44 sends a start instruction to the power assembly 63, to start the power assembly 63 to output the power source to the spacing 54, to squeeze the liquid storage member 53 to output the liquid substrate. When detecting that the liquid level in the liquid storage cavity 1110 reaches a first threshold, the liquid level detection assembly 19 sends liquid level information to the main control board 23, and the liquid level information is sent to the control assembly 44 through the main control board 23. The control assembly 44 sends a stop instruction to the power assembly 63, and sends a control instruction to the drive motor 621, so that the drive motor 621 rotates in a second direction, to drive transmission of the transmission mechanism 622 in the opposite direction, thereby driving the slider module 612 to move in the direction of the second position, and then driving the liquid injection member 611 to be withdrawn from the electronic vaporization device 1 and reset. When the slider module 612 slides to the second position, the push plate 6122 is engaged between the two second detection electrodes 821, and when the second detection unit 82 can detect that the push plate 6122 slides to the second position, the position information of the liquid injection connection assembly 61 is transmitted to the control assembly 44, and the control assembly 44 stops driving the power assembly 63 and the drive motor 621, and enters a standby state. That is, the entire liquid injection device 2 is shut down and in a standby state. When the user needs to inhale, the electronic vaporization device 1 may be pulled out from the accommodating cavity 4220.

[0102] FIG. 30 to FIG. 36 show a second embodiment of an electronic vaporization system according to the present invention, and a difference from the first embodiment lies in that the first support portion 421a of the holder 42 may be omitted, and the position detection assembly 80 may also be omitted.

[0103] As shown in FIG. 37 to FIG. 39, the boss 5221 of the base 52 may be omitted. The liquid guide groove 5223 in the base 52 may be omitted, the liquid storage groove 5220 in the base 52 may be contracted, and the liquid flowing hole 5222 may be provided on the bottom wall of the liquid storage groove 5220.

[0104] As shown in FIG. 36 and FIG. 40, the liquid storage structure 50 further includes a liquid flowing member 58. In this embodiment, the liquid flowing member 58 may be made of a flexible material as a whole. Certainly, it may be understood that in some other embodiments, the liquid flowing member 58 is not limited to being made of a flexible material. The liquid flowing member 58 is mounted in the accommodating groove 5211 and may be configured to communicate the liquid flowing hole 5222 with the liquid injection member 611. In this embodiment, the liquid flowing member 58 includes a liquid flowing portion 581 and a sealing portion 582, and the liquid flowing portion 581 is in a shape of a square block. The sealing portion 582 is connected to one side of the liquid flowing portion 581 and has an integral structure with the liquid flowing portion 581. The sealing portion 582 is configured to seal the liquid injection opening 525. An insertion channel 5811 connected to the liquid injection member 611 and for moving of the liquid injection member 611 is provided on the liquid flowing portion 581, and the liquid flowing portion 581 is further provided with a liquid inlet through hole 5812 in communication with the liquid flowing hole 5222. The liquid inlet through hole 5812 is in communication with the insertion channel 5811. When the liquid injection member 611 moves to the first position, the liquid substrate in the liquid storage tank 530 may enter the insertion channel 5811 from the liquid inlet through hole 5812, and enter the liquid injection channel 6110 from the end of the liquid injection member 611. When the liquid injection member 611 moves to the second position, the liquid injection member 611 may be inserted into the insertion channel 5811, and its wall surface may cover an output end of the liquid inlet through hole 5812, thereby sealing the liquid inlet through hole 5812.

[0105] In this embodiment, the driving unit 62 may be a manual driving mechanism. The driving unit 62 may include a trigger structure 623. The trigger structure 623 may cooperate with the liquid injection connection assembly 61. Specifically, the trigger structure may be connected to the liquid injection connection assembly 61, and configured to apply a force to the liquid injection connection assembly 61, so as to drive the liquid injection connection assembly 61 to move, and trigger the power assembly 63. The liquid substrate in the liquid storage tank 530 is outputted to the liquid injection connection assembly 61 through the power assembly 63, and the liquid is injected into the electronic vaporization device 1 through the liquid injection connection assembly 61.

[0106] As shown in FIG. 31 and FIG. 41, in this embodiment, the trigger structure 623 includes a trigger button 6231, and the trigger button 6231 may run through from the casing 30. The trigger button 6231 may be connected to the liquid injection connection assembly 61. Specifically, in this embodiment, the trigger button 6231 may be connected to the push plate 6122. In this embodiment, the trigger button 6231 includes a pressing portion 623a and a connection protrusion 623b. The pressing portion 623a may run through the casing 30 for pressing by the user. The connection protrusion 623b may be arranged in the receiving cavity 411 and connected to the push plate 6122 of the slider module 612. In this embodiment, the connection protrusion 623b is provided with a U-shaped groove 623c, and one end of the U-shaped groove 623c is provided with a connection opening connected to the push plate 6122. A limiting clamping platform 623d is arranged on the inner side wall of the U-shaped groove 623c and close to the connection opening, and the limiting clamping platform 623d may coop-

erate with the push plate 6122 for limiting. A connecting convex column 623e is arranged on an end surface of an end of the connection protrusion 623b away from the pressing portion 623a. There may be two connecting convex columns 623e. The two connecting convex columns 623e may be located on two opposite sides of the connection opening, and may be inserted into the push plate 6122.

[0107] In this embodiment, the trigger structure 623 further includes a guiding rod 6232 and an elastic member 6233. The guiding rod 6232 may extend along a direction perpendicular to the partition wall 423, and is configured for guiding and connecting the liquid injection connection assembly 61. Specifically, in this embodiment, the guiding rod 6232 may run through the push plate 6122, and then be connected to the push plate 6122, and may be configured for the movement guiding of the push plate 6122. The elastic member 6233 is sleeved on the guiding rod 6232, and one end may abut against the push plate 6122, and the other end may abut against the holder 43. Specifically, the elastic member 6233 may be a spring, and one end thereof may abut against the push plate 6122, and the other end thereof may abut against the partition wall 423. When the external force for acting on the trigger structure 623 is withdrawn, the liquid injection connection assembly 61 is driven to reset.

[0108] In some other embodiments, the trigger structure 623 is not limited to being a trigger button. In some other embodiments, the trigger structure may be a sense switch. The sense switch may be arranged in the casing 30, and may cooperate with the liquid injection connection assembly 61 and the power assembly 63. Specifically, the sense switch may be connected to the control assembly 44, and may be configured to sense whether the user performs inhaling with the electronic vaporization device 1. When the user performs inhaling with the electronic vaporization device 1, an instruction may be sent to the control assembly 44 to trigger the movement of the liquid injection connection assembly 61 and trigger the power assembly 63 to output the liquid substrate in the liquid storage tank 530 to the liquid injection connection assembly 61, to inject liquid into the electronic vaporization device 1, thereby realizing the automatic triggering of the user's inhaling. In some embodiments, the sense switch may be a pneumatic switch, and the pneumatic switch can sense the pressure change of the electronic vaporization device 1.

[0109] As shown in FIG. 42 and FIG. 43, in this embodiment, the push plate 6122 further includes a touch portion 612c. The touch portion 612c is arranged at an end of the push plate body 612a away from the clamping bone 612b and extends downward along the longitudinal direction of the push plate body 612a. The touch portion 612c may be configured to touch a switch 633 of the power assembly 63.

[0110] In this embodiment, the push plate 6122 further includes a cylinder 612e. The cylinder 612e is arranged on the push plate body 612a, may protrude toward the trigger button 6231, and may run through the connection opening of the trigger button 6231 and be clamped to the limiting clamping platform 623d. The cylinder 612e has a two-end run-through structure, and a channel for the guiding rod 6232 to run through may be formed inside. The push plate body 612a is provided with an insertion hole 612d, and the insertion hole 612d may be provided corresponding to the connecting convex column 623e, and configured for insertion of the connecting convex column 623e. In this embodiment, an annular mounting groove 612f is provided on a side of the push plate body 612a opposite to the protruding direction of the cylinder 612e, and the annular mounting groove 612f may be configured for mounting the elastic member 6233 therein. One end of the elastic member 6233 may abut against the groove wall of the annular mounting groove 612f, and the other end thereof may abut against the holder 43.

[0111] As shown in FIG. 31, in this embodiment, the power assembly 63 further includes a switch 633. The switch 633 is arranged in the receiving cavity 411, connected to the power pump 631, and configured to start or shut down the power pump 631. When the liquid injection connection assembly 61 is at the first position, the liquid injection connection assembly 61 or the trigger structure 623 may touch the switch 633 to start the power pump 631 to work. That is, when the slider module 612 moves to the first position, the slider module 612 may trigger the switch 633 through the touch portion 612c. When the external force is withdrawn from the trigger structure 623, the liquid injection connection assembly 61 moves from the first position to the second position, and the liquid injection connection assembly 61 or the trigger structure 623 may be disconnected from the switch 633. That is, when the push plate 6122 moves to the second position, the touch portion 612c is separated from the switch 633, and the switch 633 can be reset, and then the power pump 631 is shut down.

[0112] FIG. 44 shows a third embodiment of an electronic vaporization system according to the present invention, and a difference from the first embodiment lies in that the liquid storage structure 50 of the liquid injection device 2 may be the liquid storage structure 50 in the second embodiment, and the partition assembly 56 may be omitted.

[0113] While the invention has been illustrated and described in detail in the drawings and foregoing description, such illustration and description are to be considered illustrative or exemplary and not restrictive. It will be understood that changes and modifications may be made by those of ordinary skill within the scope of the following claims. In particular, the present invention covers further embodiments with any combination of features from different embodiments described above and below. Additionally, statements made herein characterizing the invention refer to an embodiment of the invention and not necessarily all embodiments.

[0114] The terms used in the claims should be construed to have the broadest reasonable interpretation

consistent with the foregoing description. For example, the use of the article "a" or "the" in introducing an element should not be interpreted as being exclusive of a plurality of elements. Likewise, the recitation of "or" should be interpreted as being inclusive, such that the recitation of "A or B" is not exclusive of "A and B," unless it is clear from the context or the foregoing description that only one of A and B is intended. Further, the recitation of "at least one of A, B and C" should be interpreted as one or more of a group of elements consisting of A, B and C, and should not be interpreted as requiring at least one of each of the listed elements A, B and C, regardless of whether A, B and C are related as categories or otherwise. Moreover, the recitation of "A, B and/or C" or "at least one of A, B or C" should be interpreted as including any singular entity from the listed elements, e.g., A, any subset from the listed elements, e.g., A and B, or the entire list of elements A, B and C.

Claims

1. A liquid injection device, comprising:

an accommodating cavity (4220) configured for detachably mounting an electronic vaporization device (1);
a liquid storage tank (530);
a liquid supply mechanism (60); and
a control assembly (44),
wherein the control assembly (44) is connected to the liquid supply mechanism (60), and configured to detect whether the electronic vaporization device (1) is mounted in the accommodating cavity (4220), and
wherein the liquid supply mechanism (60) is in communication with the liquid storage tank (530) to conduct or stop liquid supply to the electronic vaporization device (1).

2. The liquid injection device of claim 1, wherein the liquid supply mechanism (60) comprises a liquid injection connection assembly (61) and a driving unit (62) configured to drive the liquid injection connection assembly (61),

wherein the driving unit (62) is connected to the control assembly (44),
wherein the liquid injection connection assembly (61) is configured to be in a first position and connected to the electronic vaporization device (1) and in communication with the liquid storage tank (530), and
wherein the liquid injection connection assembly (61) is configured to be in a second position and disconnected from the electronic vaporization device (1).

3. The liquid injection device of claim 2, wherein the liquid supply mechanism (60) comprises a power assembly (63) connected to the control assembly (44), and
wherein the power assembly (63) is configured to drive or stop the liquid storage tank (530) to output liquid substrate and inject it to the electronic vaporization device (1) through the liquid injection connection assembly (61).

4. The liquid injection device of claim 2, wherein a liquid injection channel (6111) is formed on the liquid injection connection assembly (61).

5. The liquid injection device of claim 3 or 4, wherein the liquid injection connection assembly (61) comprises a slider (6121) and a liquid injection member (611) connected to the slider (6121), and
wherein the slider (6121) is slidable between the first position and the second position.

6. The liquid injection device of claim 1, further comprising:

a liquid storage member (53) that is squeezable to output liquid,
wherein the liquid storage tank (530) is formed in the liquid storage member (53).

7. The liquid injection device of claim 6, further comprising:

a housing (51) sleeved on a periphery of the liquid storage member (53),
wherein a spacing (54) is provided between the housing (51) and the liquid storage member (53),
wherein the liquid supply mechanism (60) comprises a power assembly (63) connected to the control assembly (44) and connected to the spacing (54), and
wherein the power assembly (63) is configured to supply a power source to the spacing (54) when the liquid supply mechanism (60) is connected to the electronic vaporization device (1), to squeeze the liquid storage member (53) to output liquid substrate.

8. The liquid injection device of claim 1, further comprising:

a receiving cavity (411) that accommodates the control assembly (44); and
a holder (42),
wherein the accommodating cavity (4220) is formed on the holder (42),
wherein a partition wall (423) separating the receiving cavity (411) and the accommodating

cavity (4220) is arranged on the holder (42), and wherein the partition wall (423) is provided with a through hole (4231), and the liquid supply mechanism (60) runs through the through hole (4231) to the accommodating cavity (4220).

9. An electronic vaporization system, comprising:

an electronic vaporization device (1);
and the liquid injection device (2) of any one of claims 1 to 8,
wherein the electronic vaporization device (1) is detachably mounted in the accommodating cavity (4220) of the liquid injection device (2).

10. The electronic vaporization system of claim 9, wherein the electronic vaporization device (1) comprises a liquid storage cavity (1110) and a liquid level detection assembly (19) at least partially arranged in the liquid storage cavity (1110),

wherein the liquid level detection assembly (19) is electrically connected to the control assembly (44) of the liquid injection device (2), and
wherein the control assembly (44) is configured to conduct or stop the liquid injection of the liquid supply mechanism (60) of the liquid injection device (2) according to the liquid level information detected by the liquid level detection assembly (19).

11. The electronic vaporization system of claim 10, wherein the liquid level detection assembly (19) comprises a first detection unit (191) and a second detection unit (192), and the first detection unit (191) and the second detection unit (192) are spaced apart on two opposite sides of the liquid storage cavity (1110).

12. The electronic vaporization system of claim 11, wherein the liquid storage cavity (1110) comprises a first end and a second end arranged sequentially along the liquid flowing direction,

wherein the first detection unit (191) comprises a first detection portion (1912) extending into the liquid storage cavity (1110),
wherein the second detection unit (192) comprises a second detection portion (1922) extending into the liquid storage cavity (1110), and
wherein the first detection portion (1912) is arranged close to the first end, and the second detection portion (1922) is arranged close to the second end.

13. The electronic vaporization system of claim 12, wherein the first detection unit (191) comprises a first main body portion (1911), and the first detection portion (1912) is arranged at one end of the first main body portion (1911) and presents an angle with the first main body portion (1911), and/or
wherein the second detection unit (192) comprises a second main body portion (1921), and the second detection portion (1922) is arranged at one end of the second main body portion (1921) and presents an angle with the second main body portion (1921).

14. The electronic vaporization system of claim 13, wherein the electronic vaporization device (1) further comprises a vaporization shell (111) provided with an assembly opening (1118), and
wherein the first main body portion (1911) and/or the second main body portion (1921) are/is arranged on the vaporization shell (111) and extend/extends toward the assembly opening (1118).

15. The electronic vaporization system of claim 14, wherein the first main body portion (1911) and/or the second main body portion (1921) form/forms an integral structure with the vaporization shell (111).

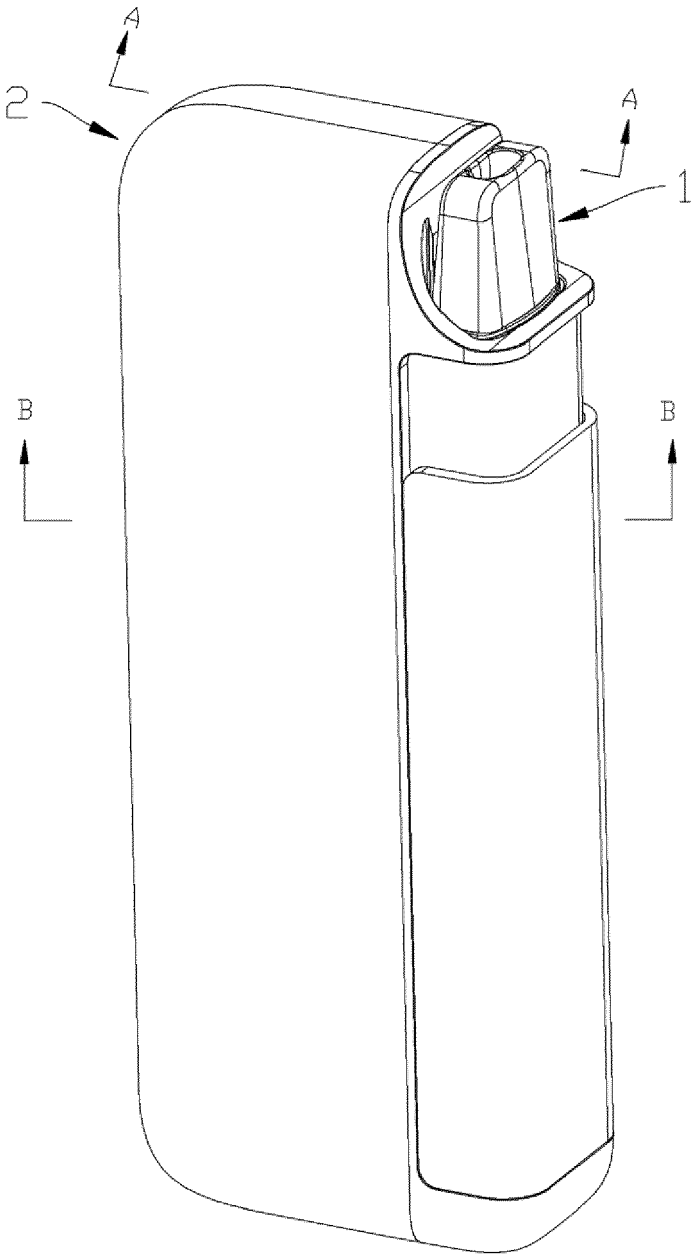
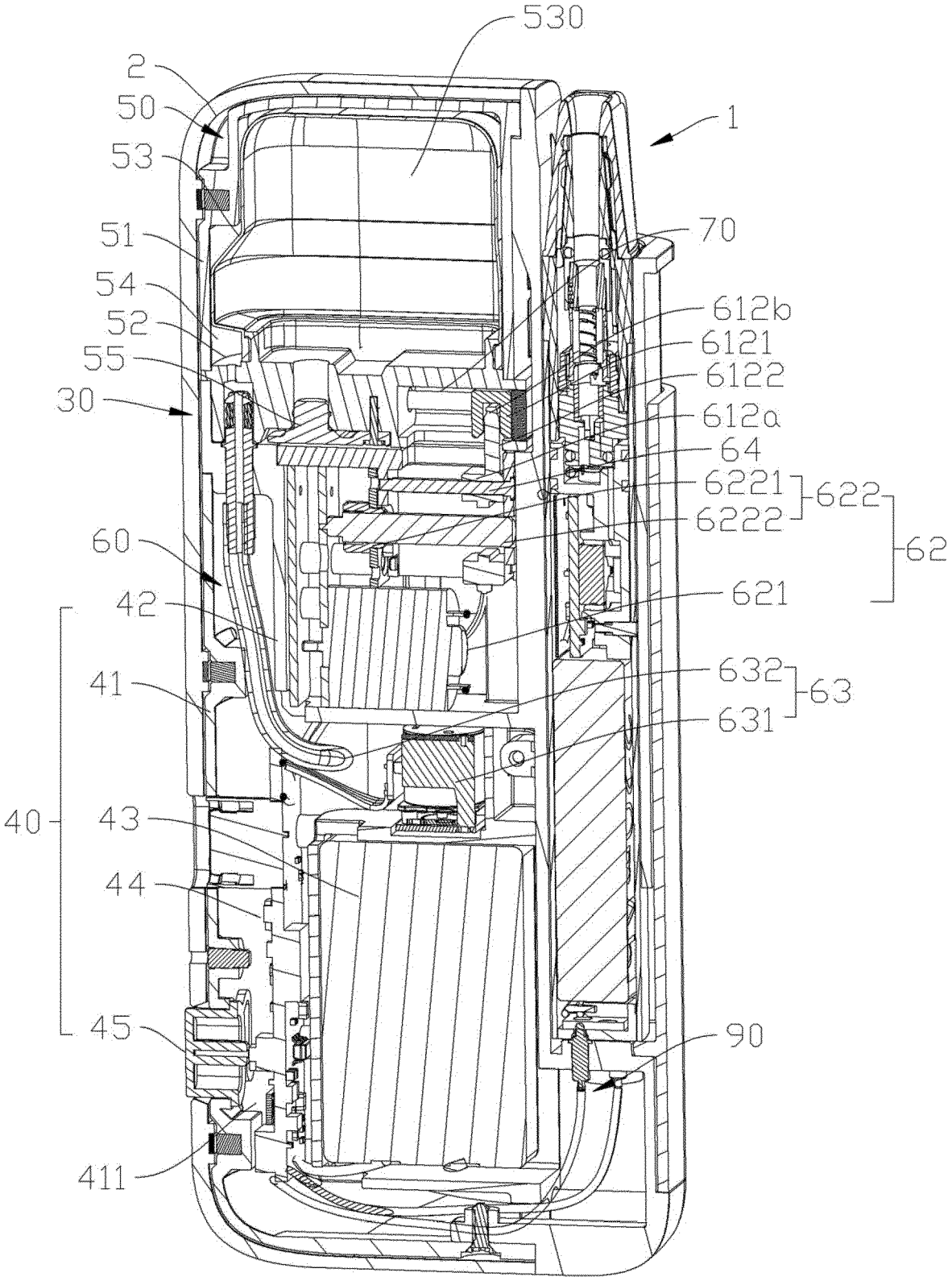


FIG. 1


530
2
50
53
1
70
51
54
52
55
30
612b
6121
6122
612a
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6222
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632
63
41
631
40
43
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45
90
411

FIG. 2

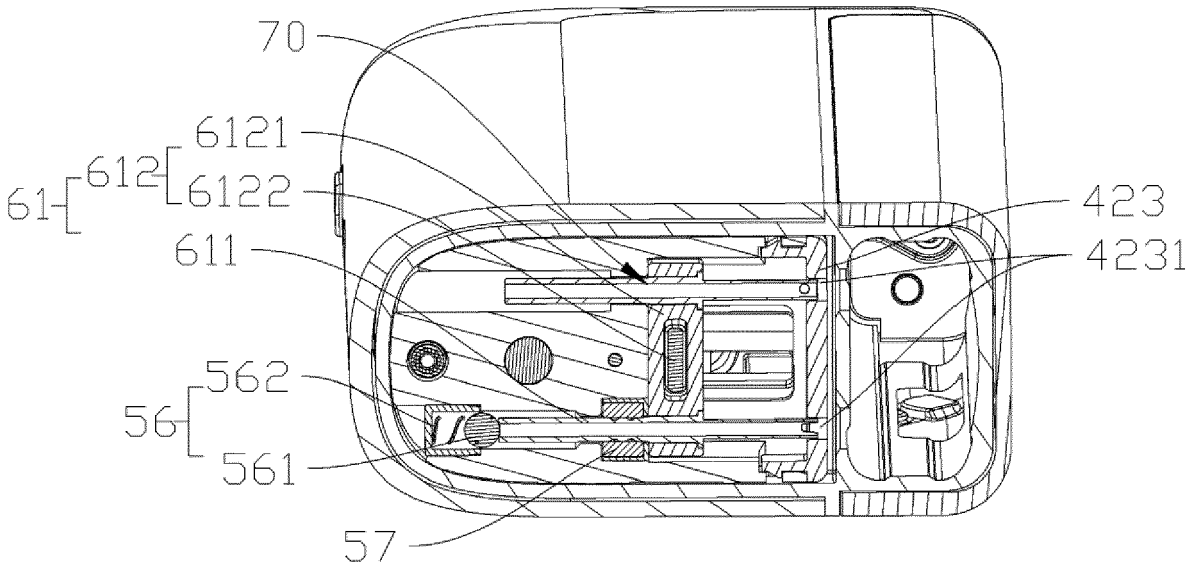
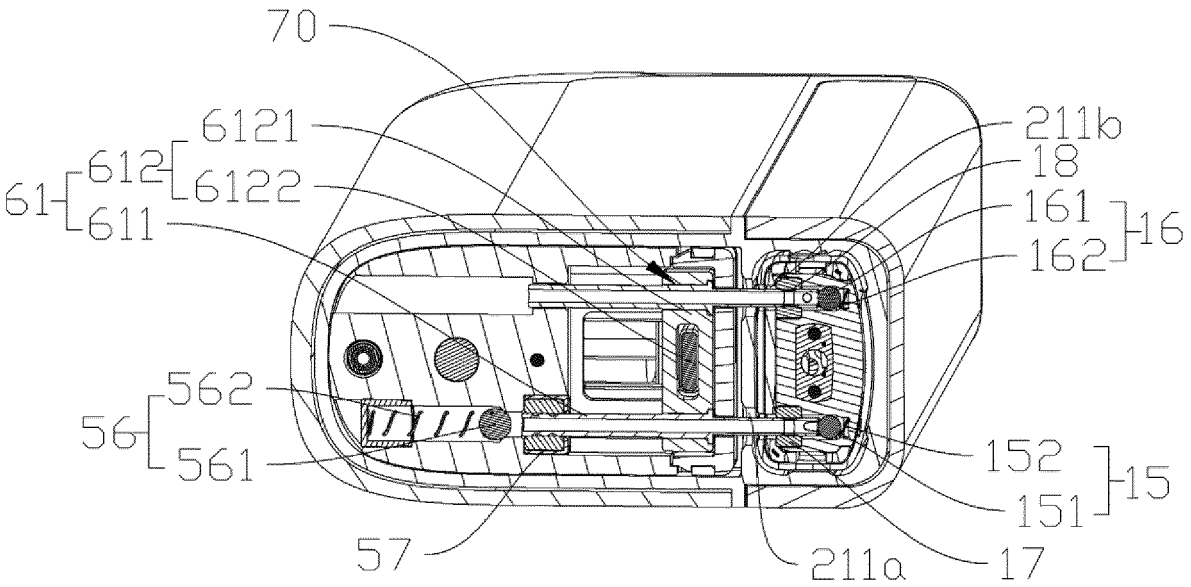


FIG. 3


70
6121
612
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61
611
562
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211b
18
161
16
162
152
15
151
211a
17

FIG. 4

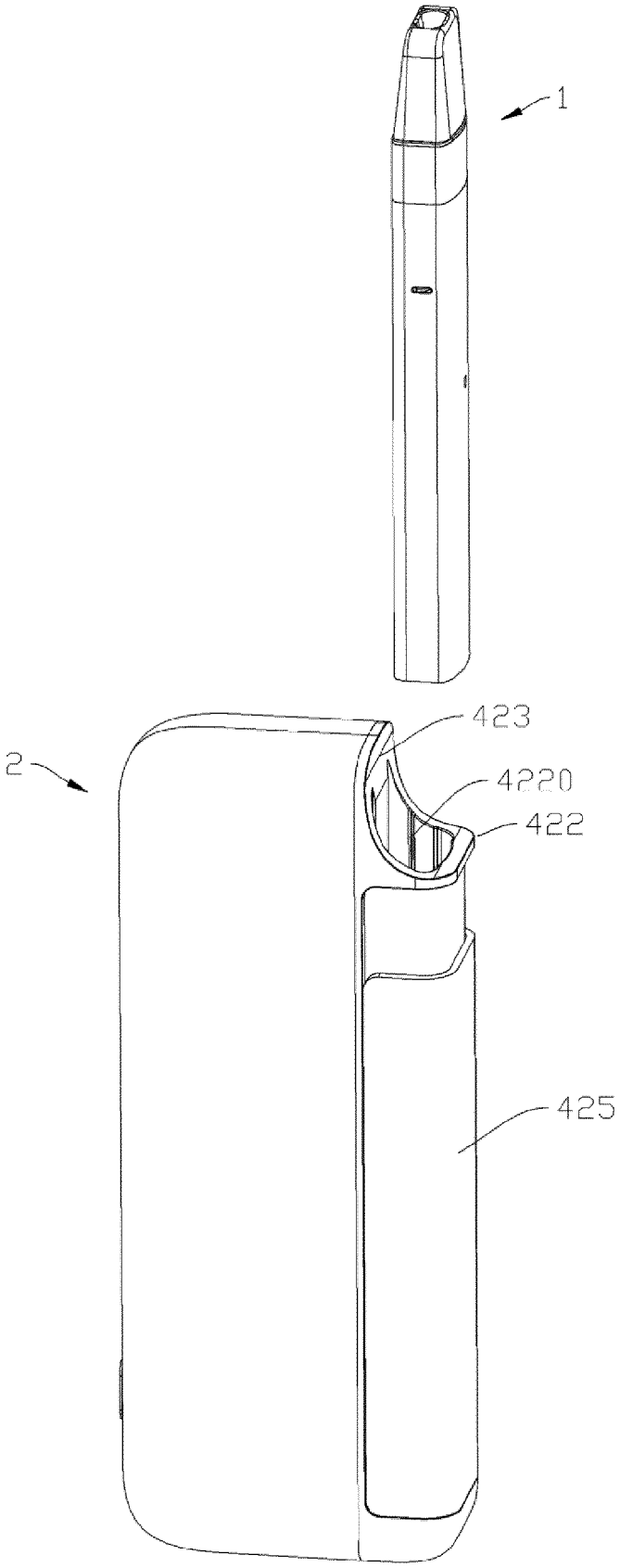

FIG. 5

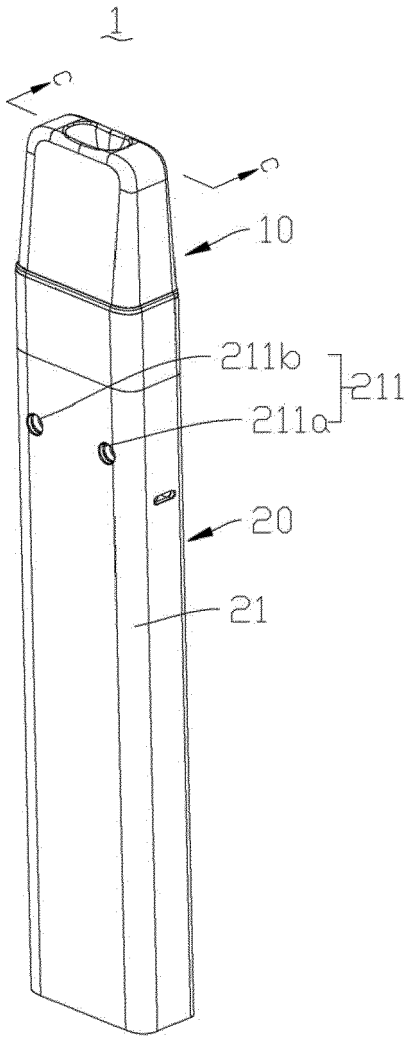

FIG. 6

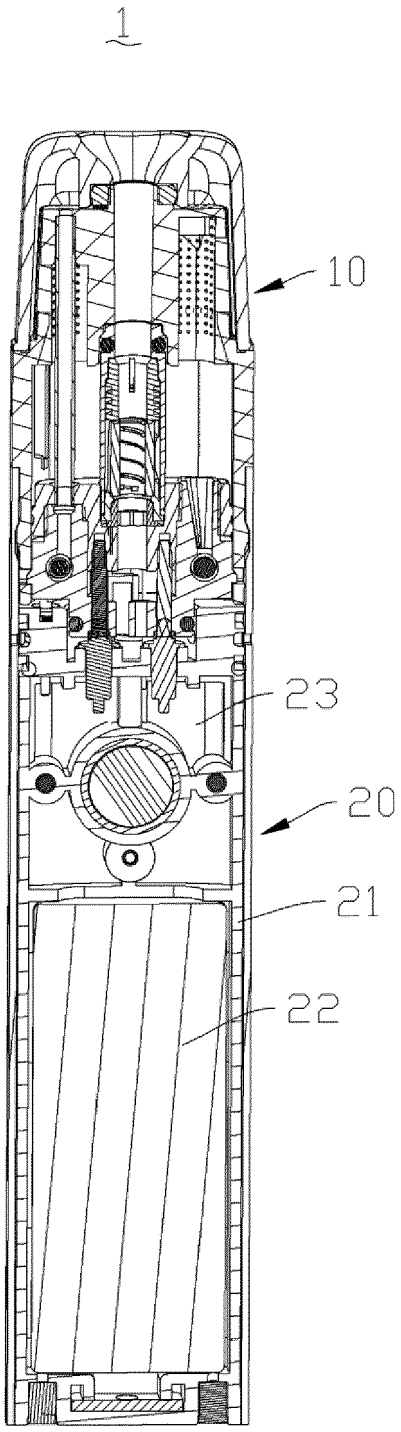

FIG. 7

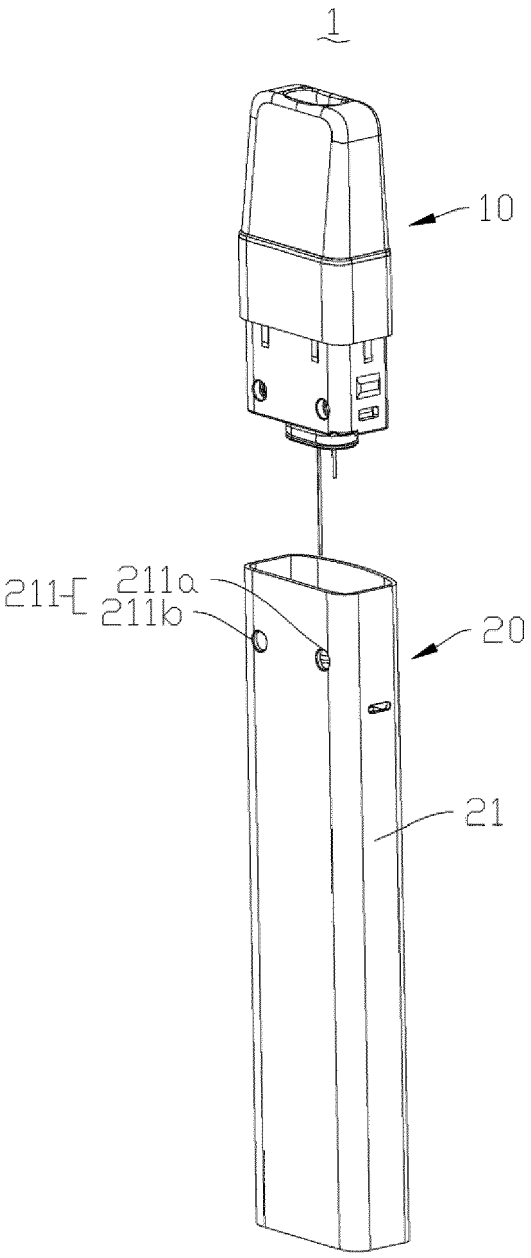

FIG. 8

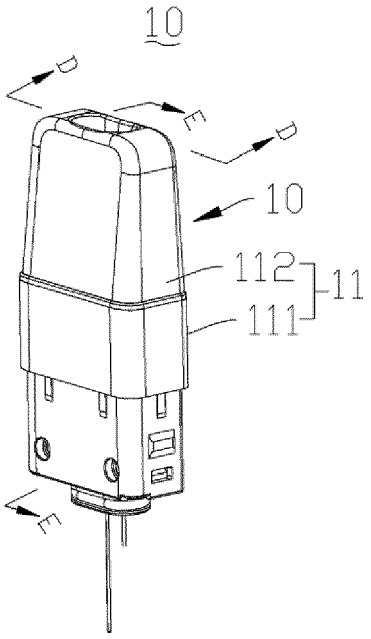
10
D
E
D
10
112
11
111
E

FIG. 9

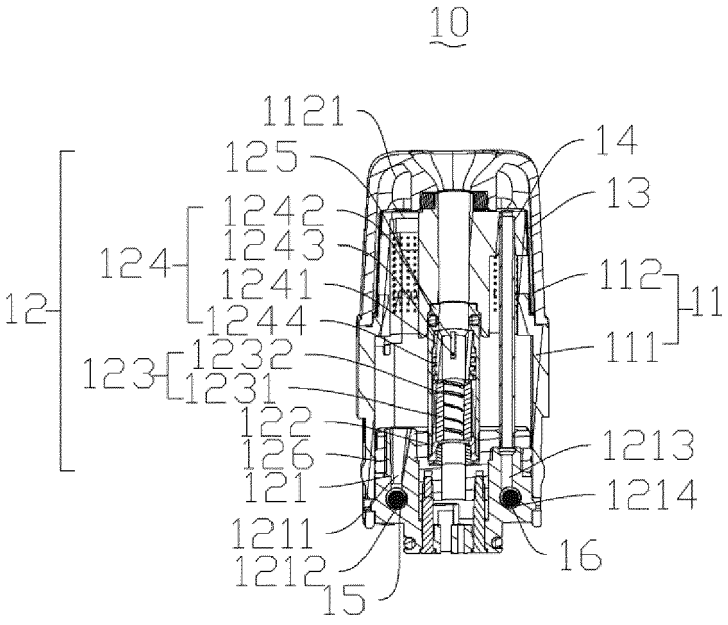
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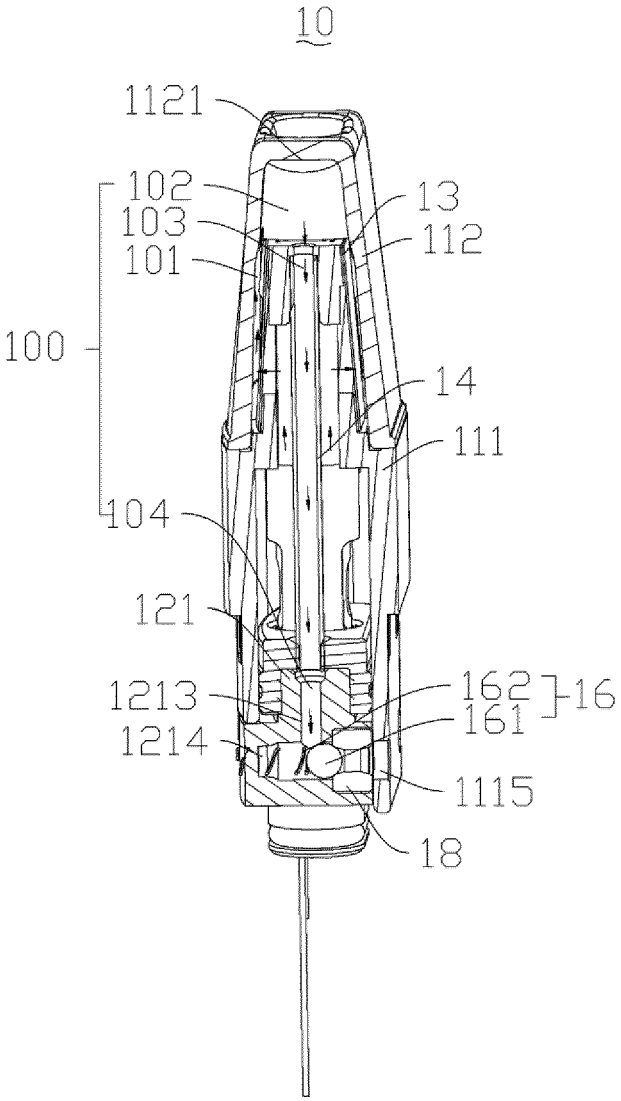
FIG. 10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1214
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161
16
1115
18

FIG. 11

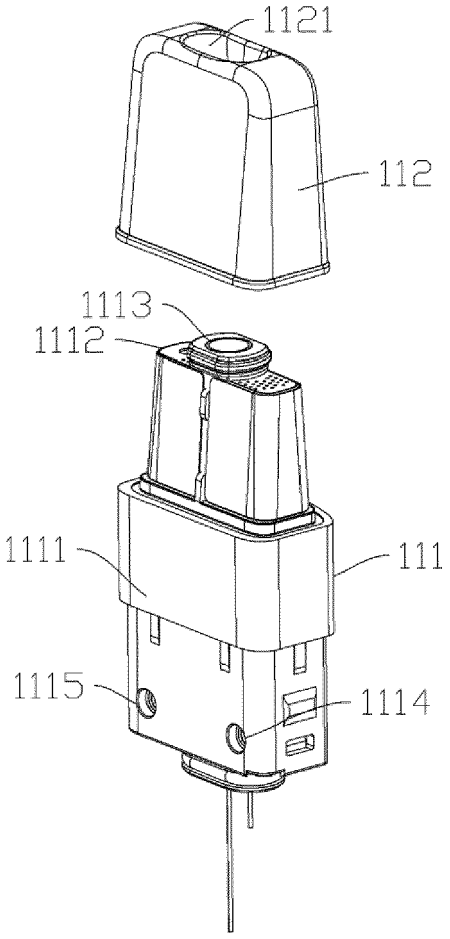
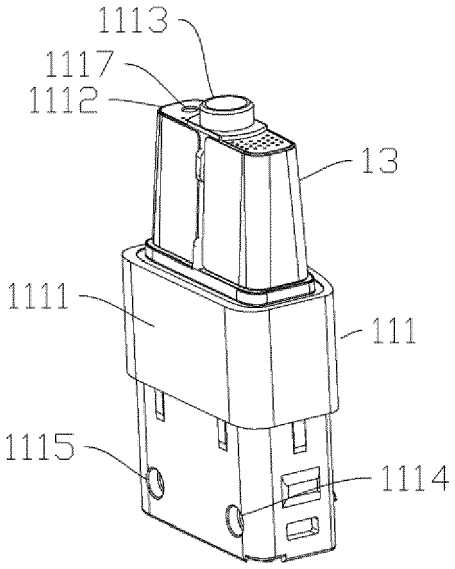


FIG. 12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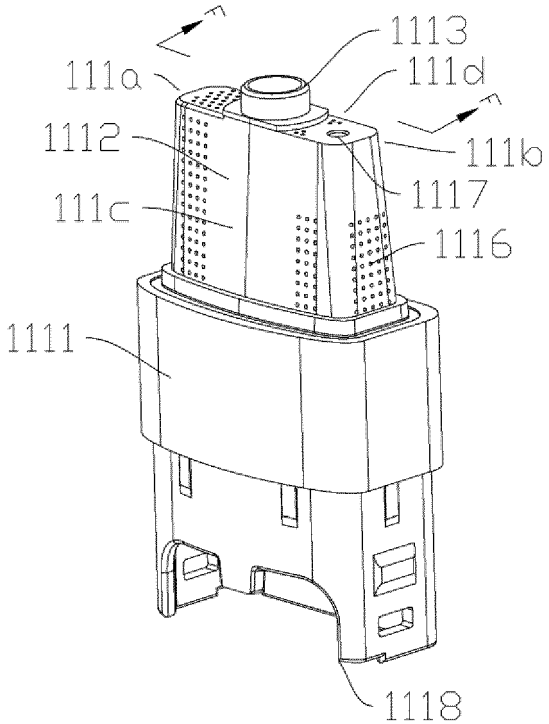
1111
111
1115
1114

FIG. 13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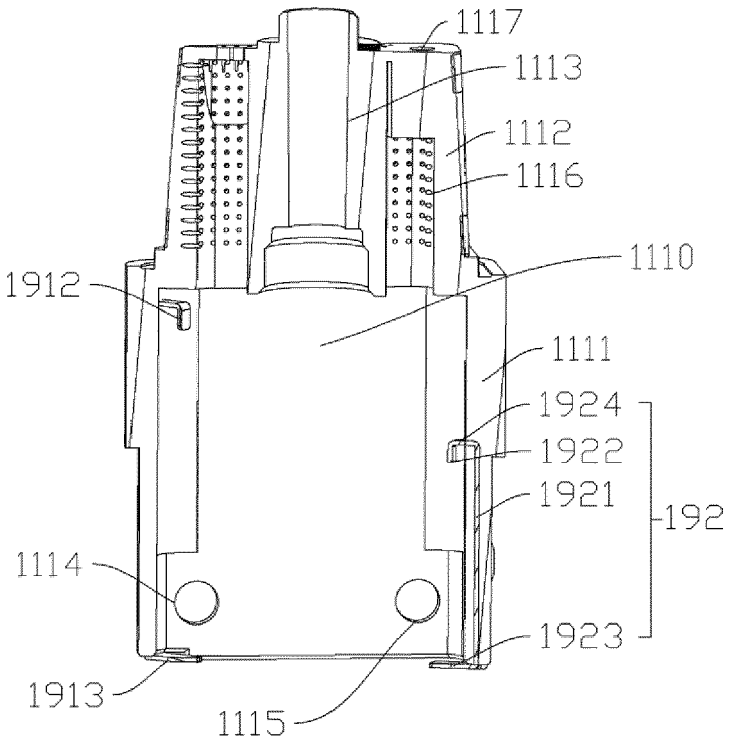
111c
1116
1111
1118

FIG. 14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1921
192
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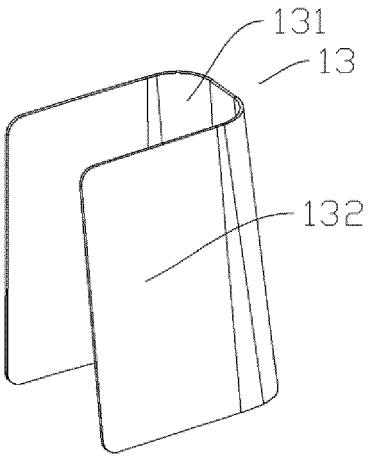
FIG. 15


131
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132

FIG. 16

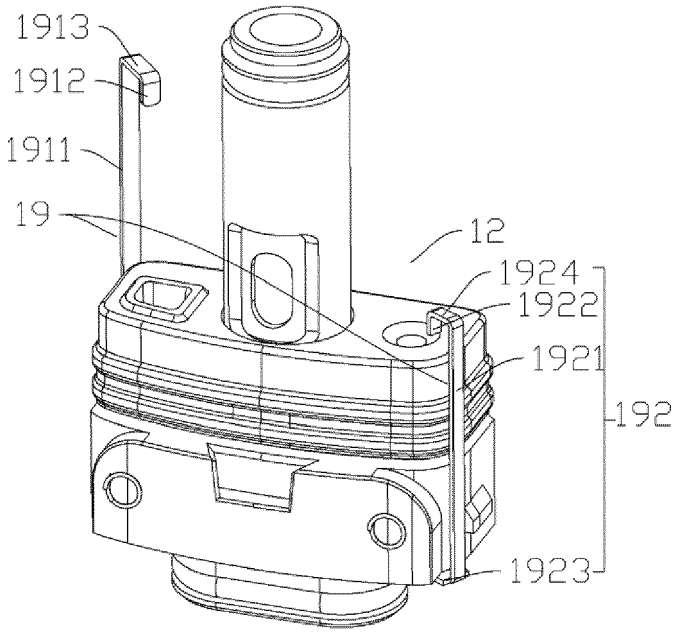

FIG. 17

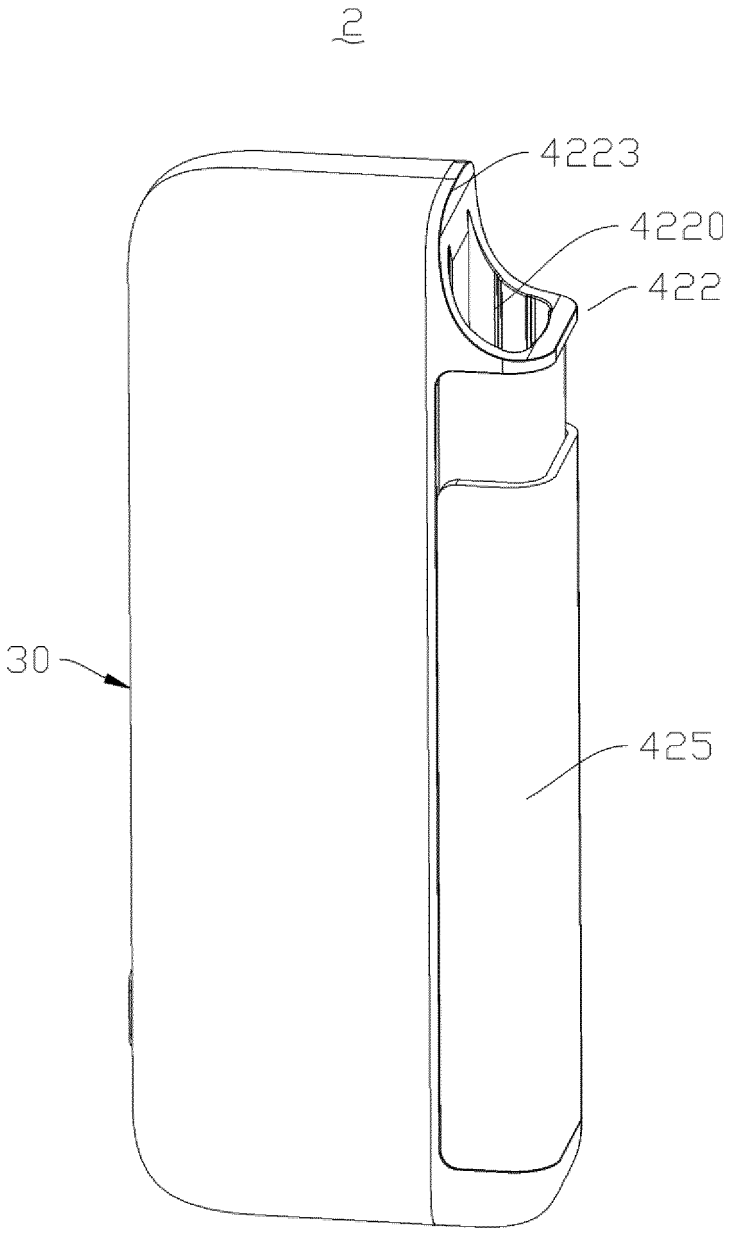

FIG. 18

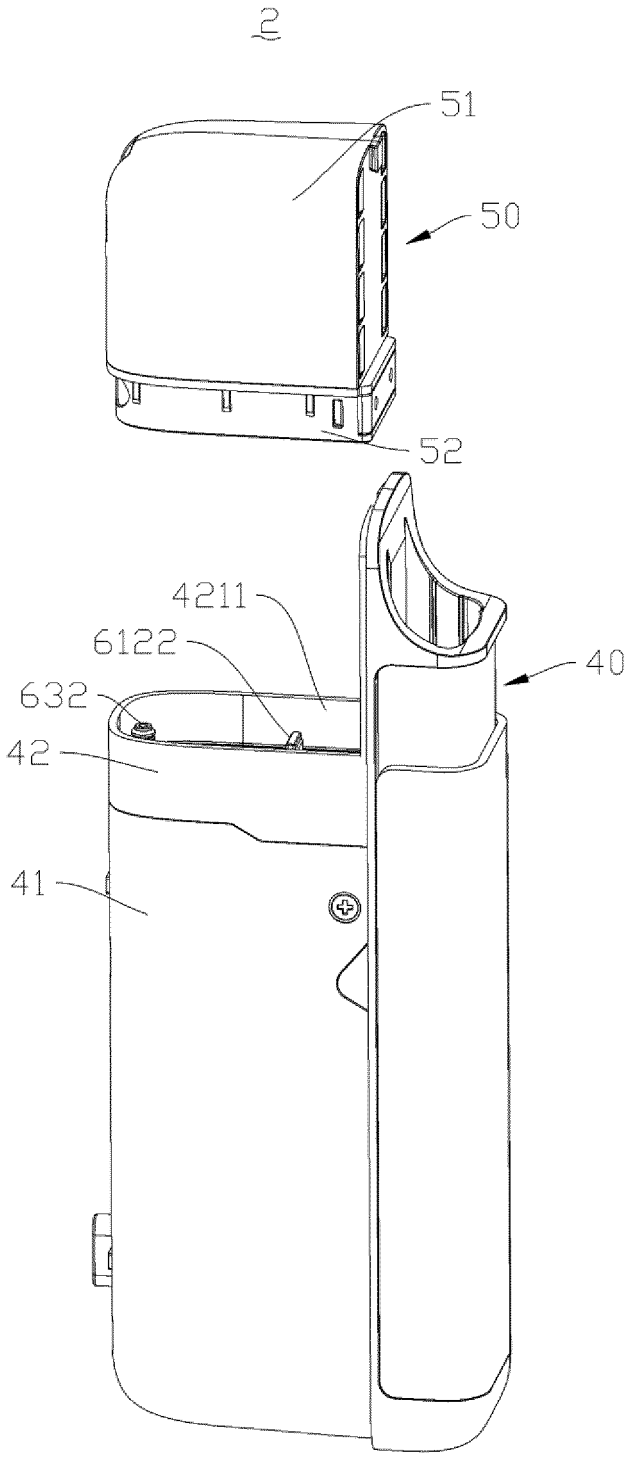

FIG. 19

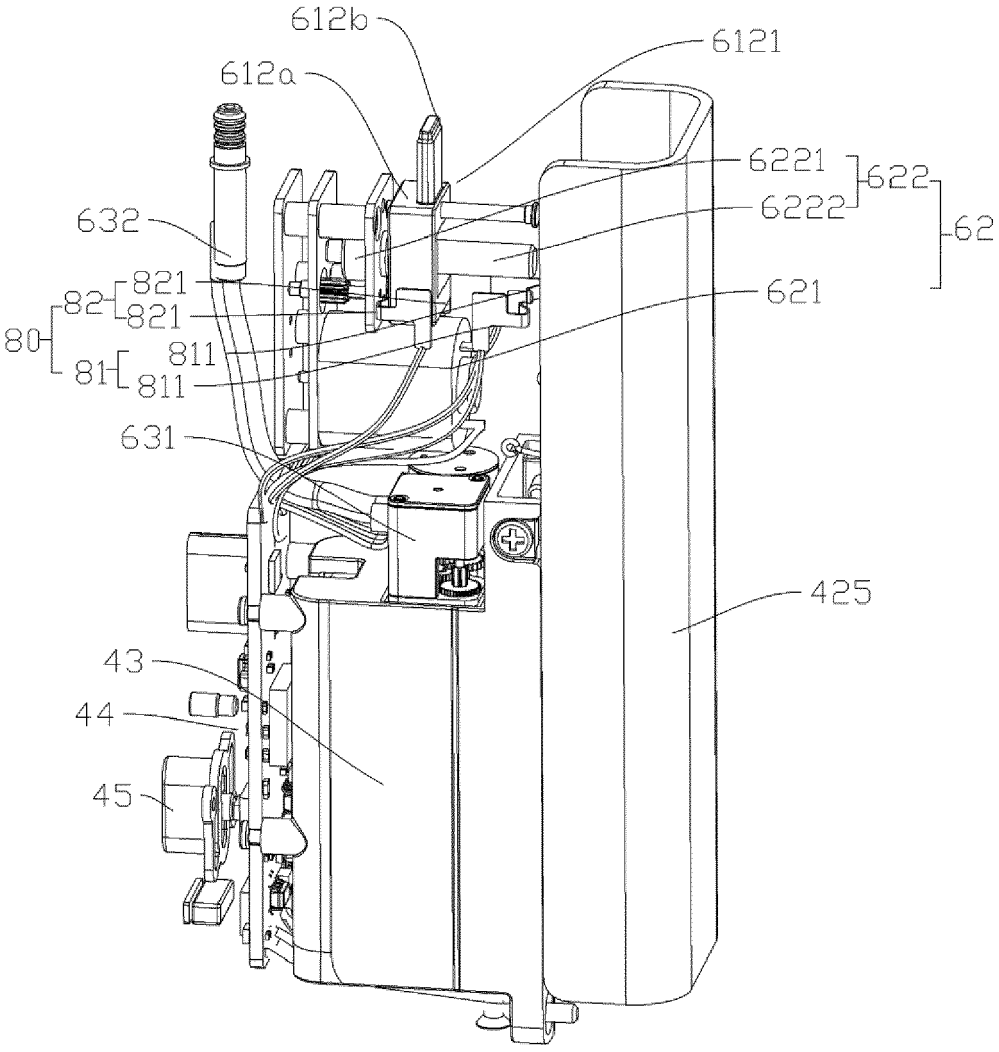
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FIG. 20

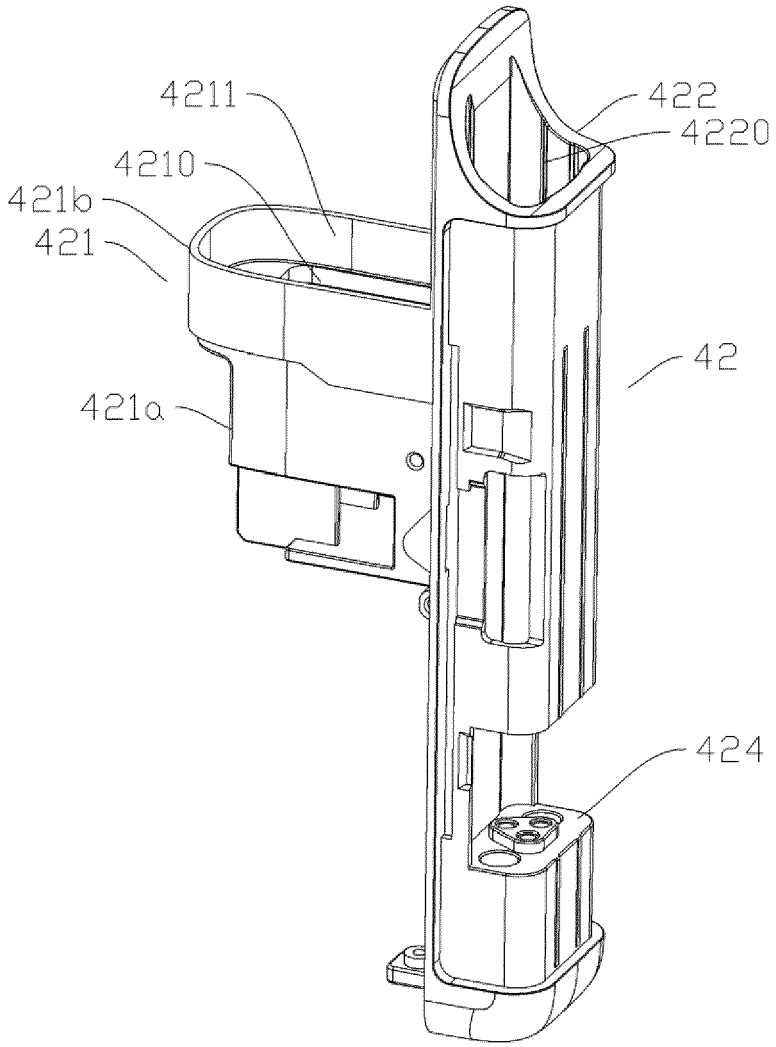


FIG. 21

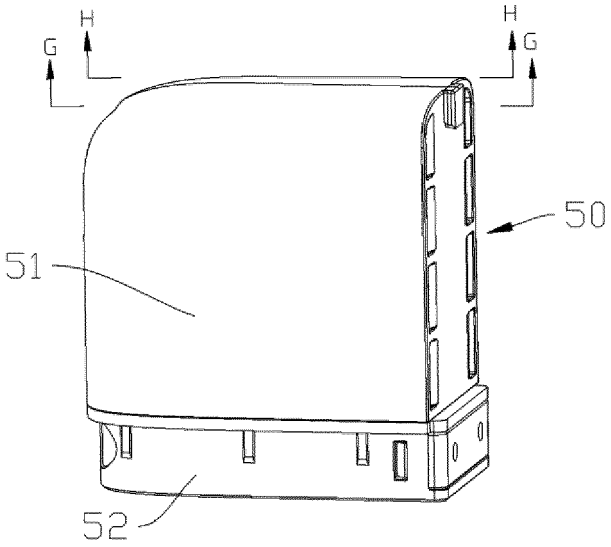


FIG. 22

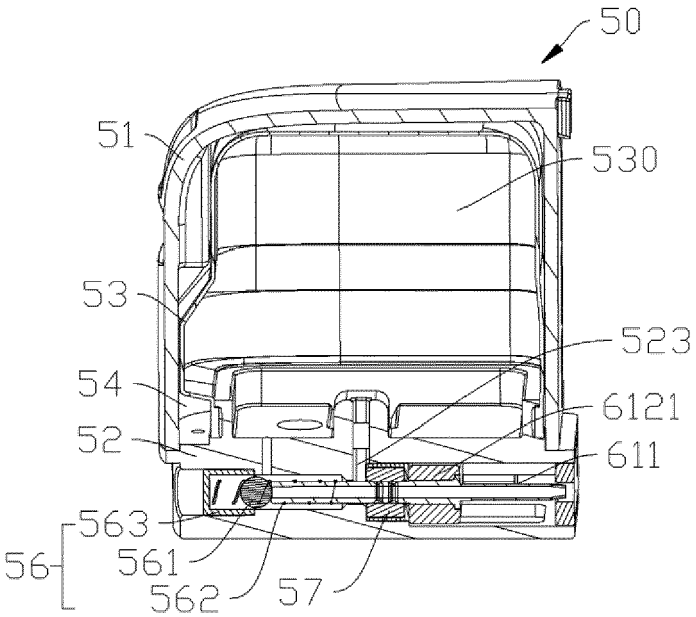


FIG. 23

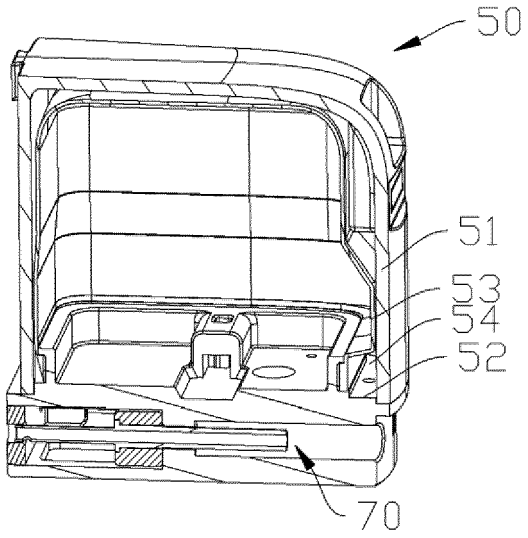


FIG. 24

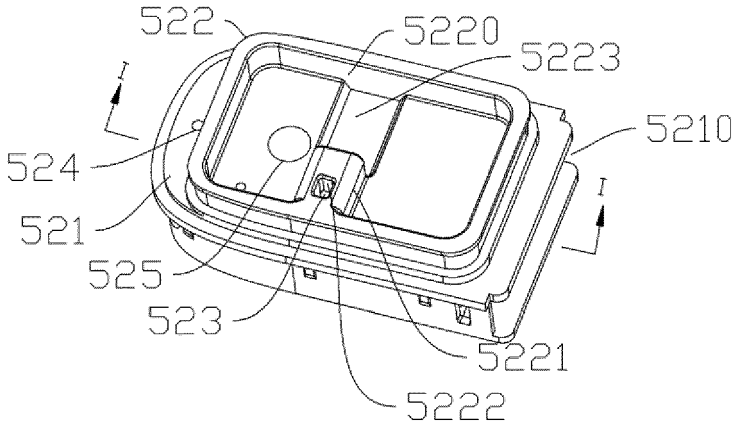


FIG. 25

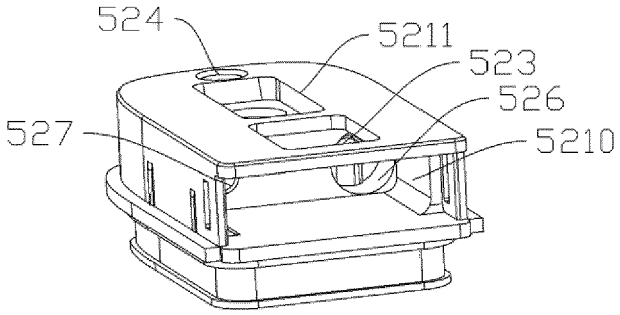


FIG. 26

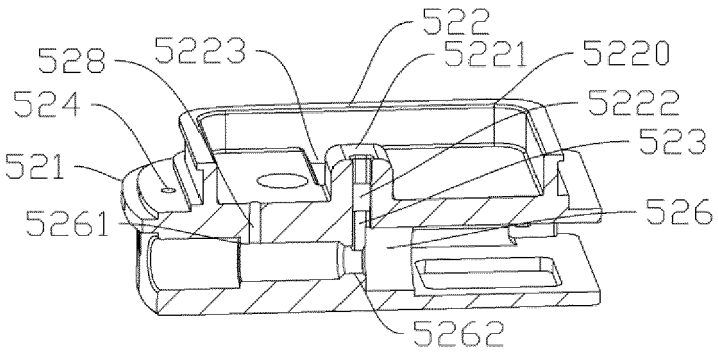


FIG. 27

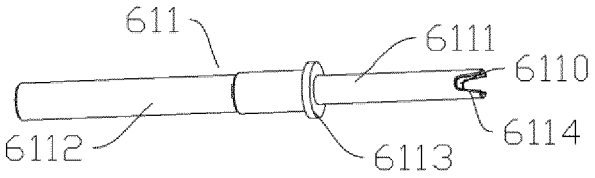


FIG. 28

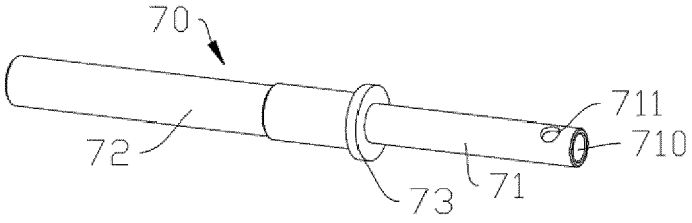


FIG. 29

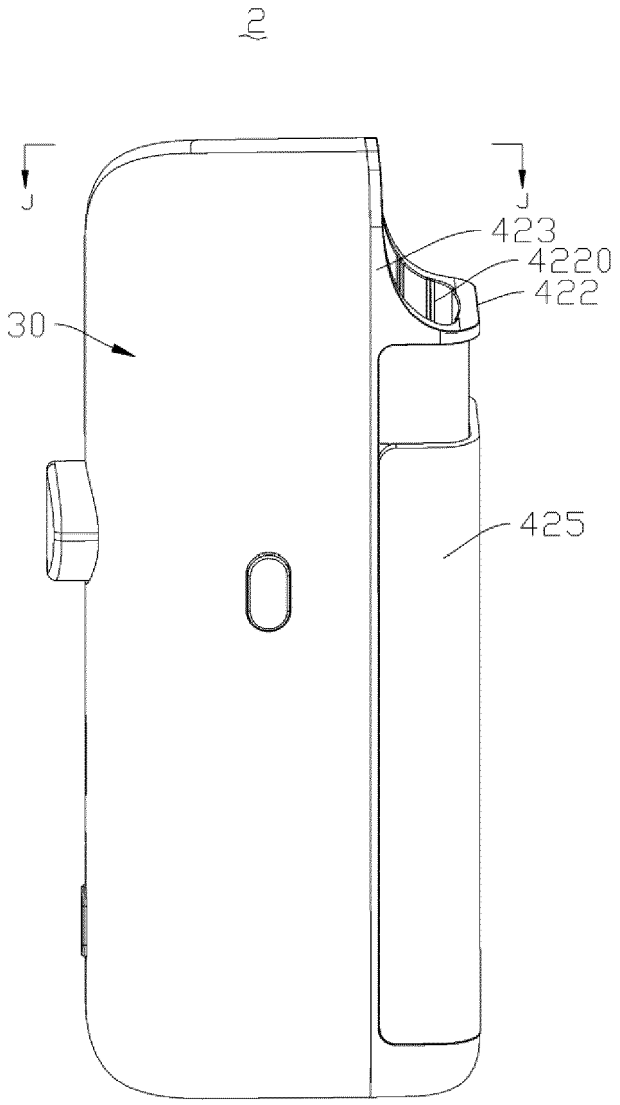


FIG. 30

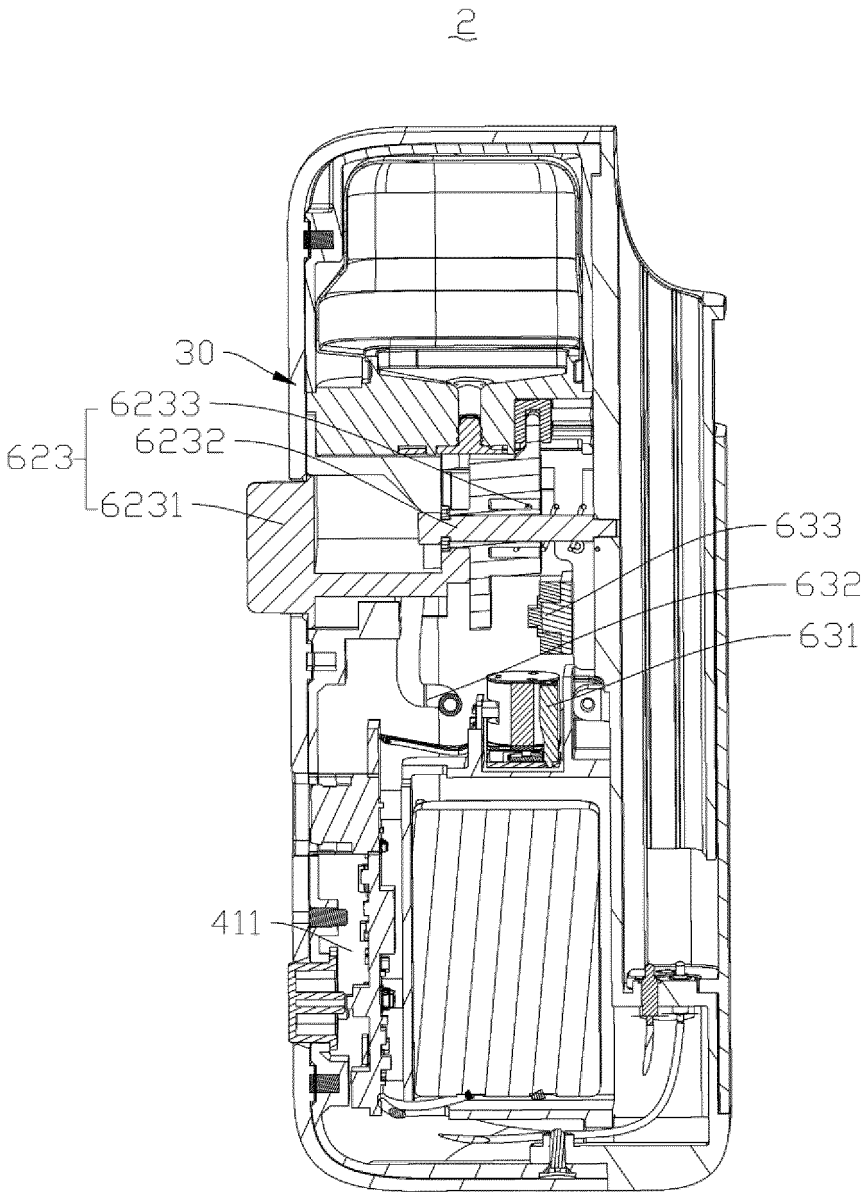


FIG. 31

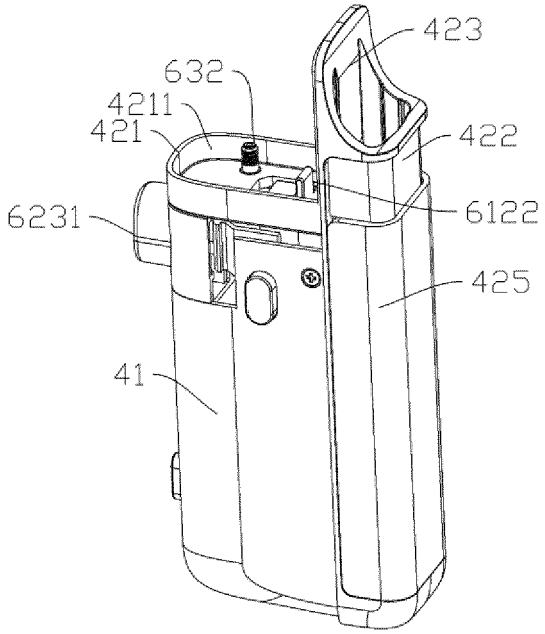
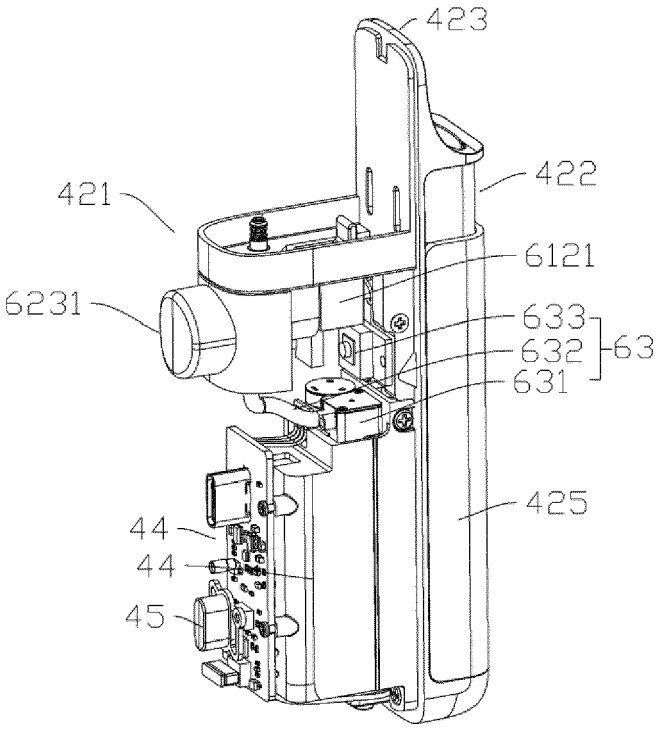

423
632
4211
421
422
6231
6122
425
41

FIG. 32


423
421
422
6121
6231
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632
631
63
425
44
44
45

FIG. 33

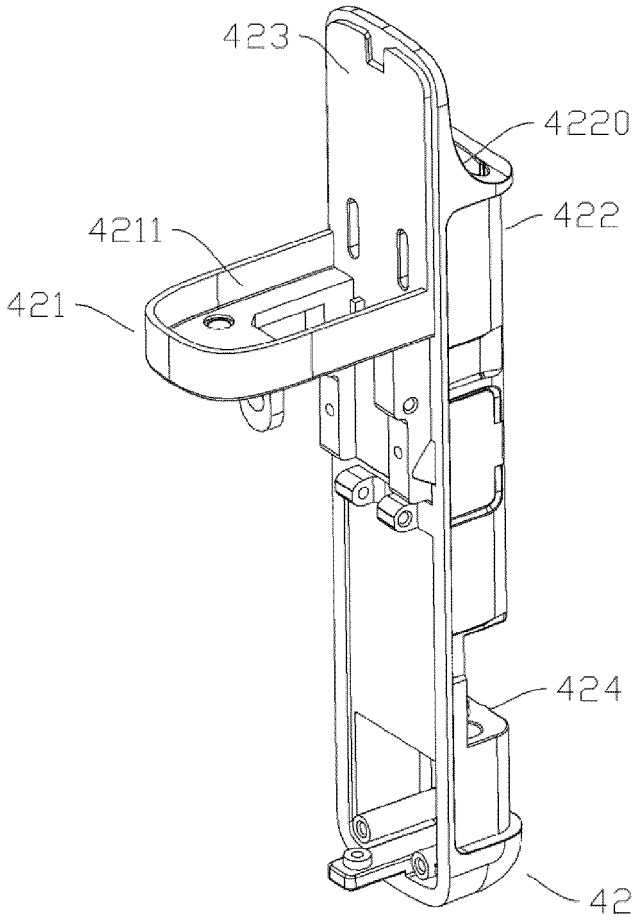

FIG. 34

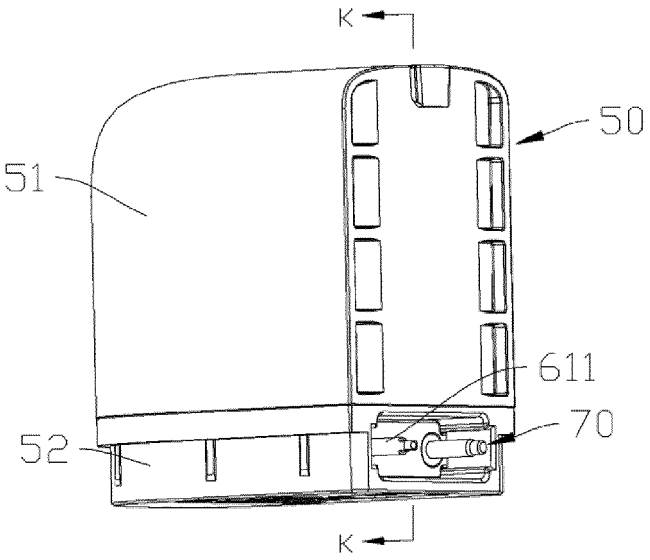

FIG. 35

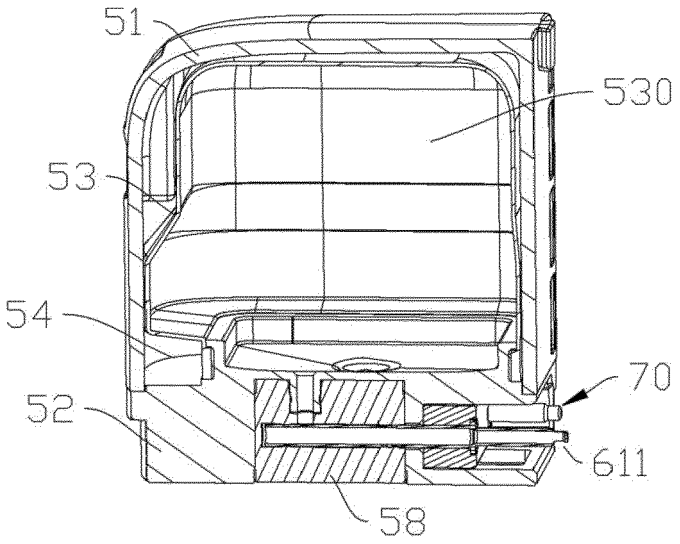

FIG. 36

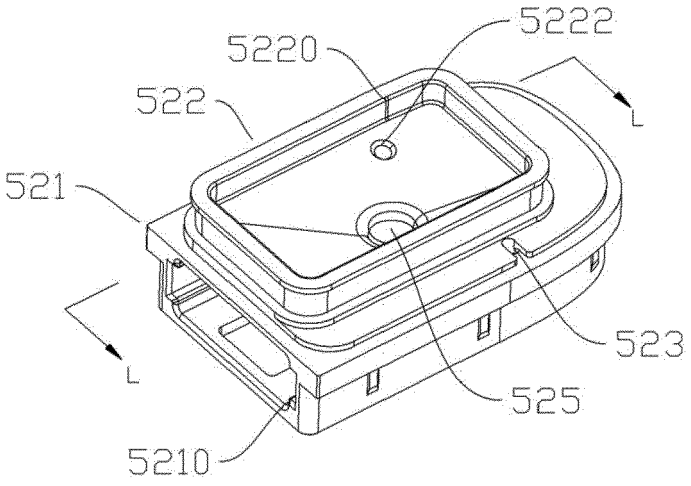

FIG. 37

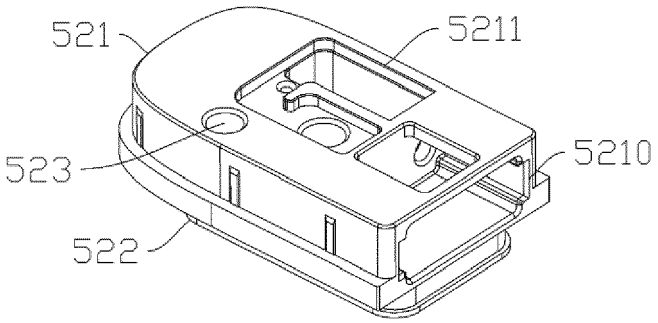

FIG. 38

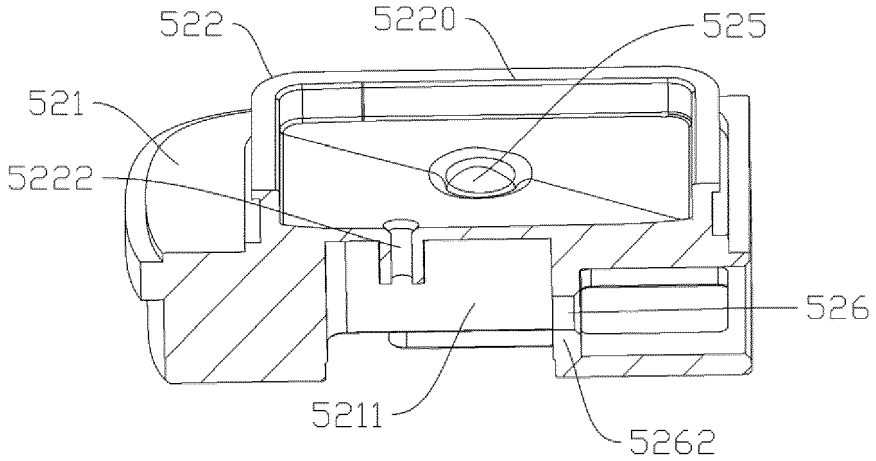

FIG. 39

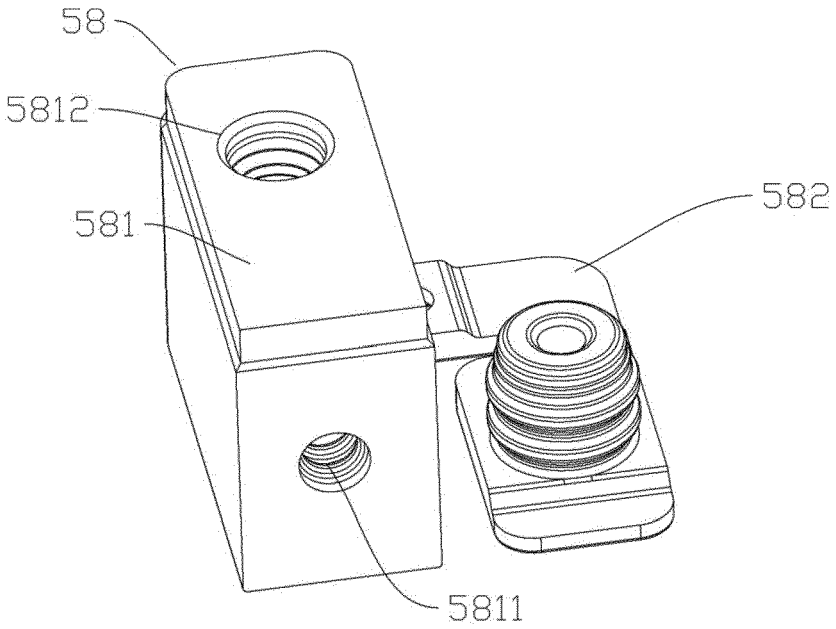

FIG. 40

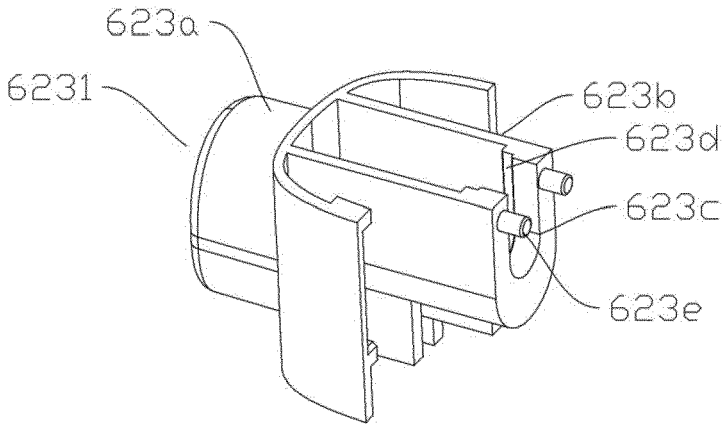

FIG. 41

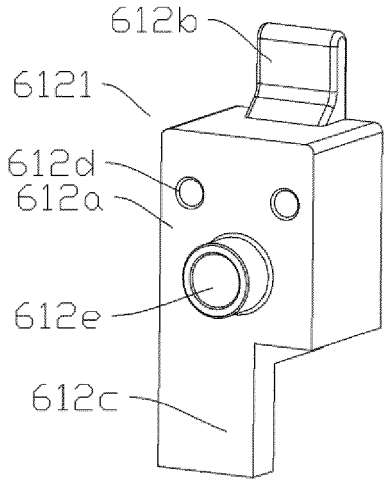

FIG. 42

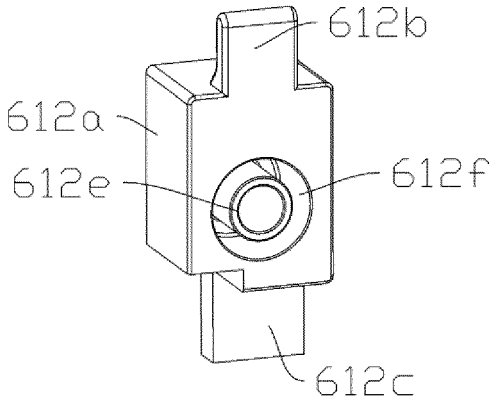

FIG. 43

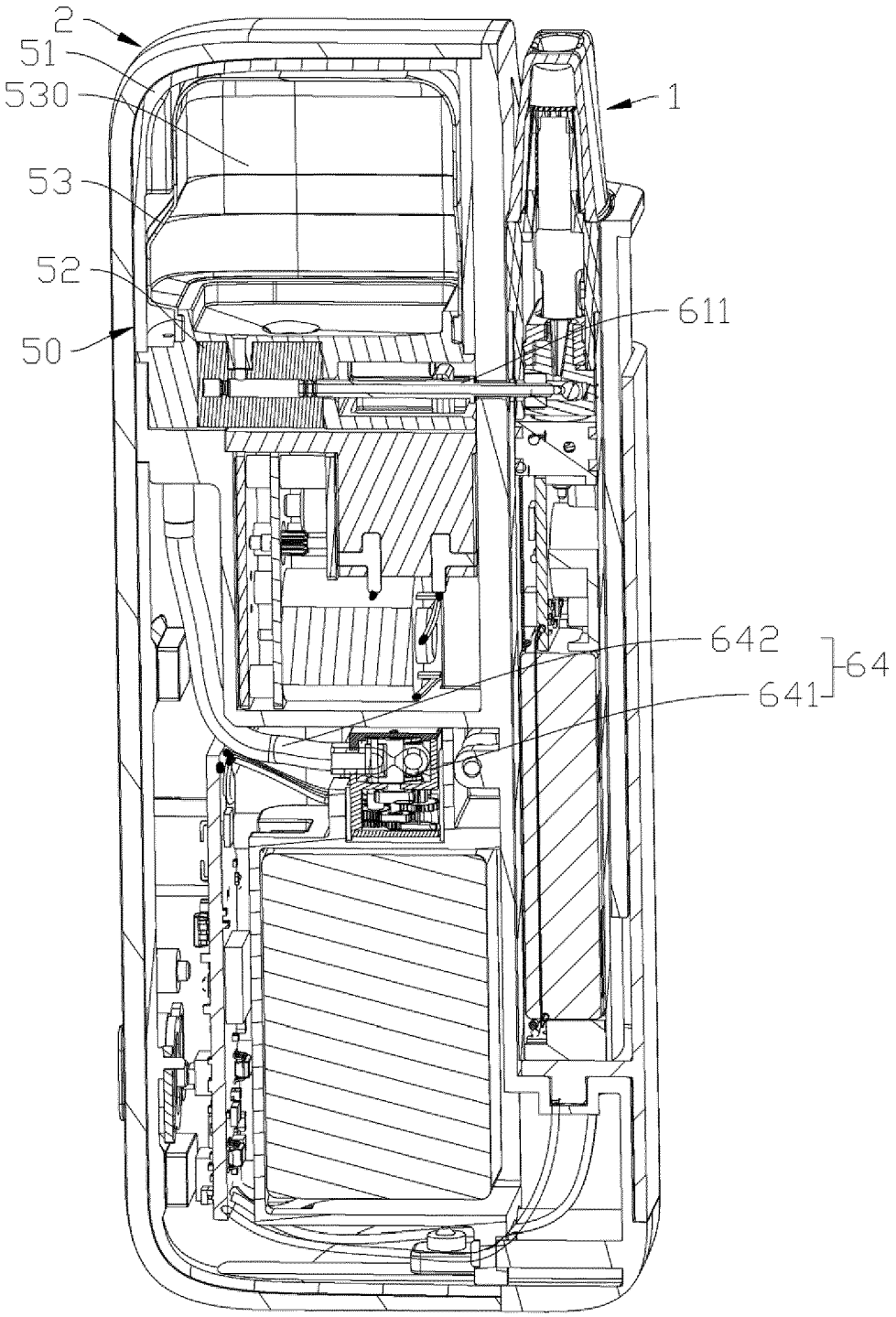

FIG. 44