



(11)

EP 4 470 398 A1

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:

04.12.2024 Bulletin 2024/49

(21) Application number: **23745949.0**

(22) Date of filing: **10.01.2023**

(51) International Patent Classification (IPC):

A24F 40/40 ^(2020.01) **A24F 40/10** ^(2020.01)

A24F 40/42 ^(2020.01) **A24F 40/51** ^(2020.01)

A24F 40/50 ^(2020.01) **A24F 40/46** ^(2020.01)

(86) International application number:

PCT/CN2023/071644

(87) International publication number:

WO 2023/143066 (03.08.2023 Gazette 2023/31)

(84) Designated Contracting States:

**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR**

Designated Extension States:

BA

Designated Validation States:

KH MA MD TN

(30) Priority: **25.01.2022 CN 202210086824**

(71) Applicant: **Shenzhen First Union Technology Co.,
Ltd.
Shenzhen, Guangdong 518000 (CN)**

(72) Inventors:

• **XIE, Yuanqiu
Shenzhen, Guangdong 518000 (CN)**

• **XU, Zhongli
Shenzhen, Guangdong 518000 (CN)**

• **LI, Yonghai
Shenzhen, Guangdong 518000 (CN)**

(74) Representative: **Proi World Intellectual Property
GmbH**

**Obermattweg 12
6052 Hergiswil, Kanton Nidwalden (CH)**

(54) **AEROSOL GENERATING APPARATUS**

(57) An aerosol generating apparatus includes: a housing, inside which a liquid storage cavity (111) for storing a liquid substrate is formed; a first support (23) having first holding space; a power supply assembly (2) accommodated in the first holding space; a second support (121) provided in the housing, where the second support (121) at least partially defines the liquid storage cavity (111) and has second holding space (1212); an atomization assembly (12) at least partially accommodated in the second holding space (1212) and configured to atomize at least part of the liquid substrate from the liquid storage cavity (111) to generate an aerosol; and an electrical contact (212) fixedly connected to the first support (23), where the electrical contact (212) is electrically connected to the power supply assembly (2), the first support (23) includes a connection end adjacent to the second support (121), and a part of the electrical contact (212) extends to the outside of the first support (23) from the connection end and is extendable into the second holding space (1212) to abut against a surface of the atomization assembly (12).

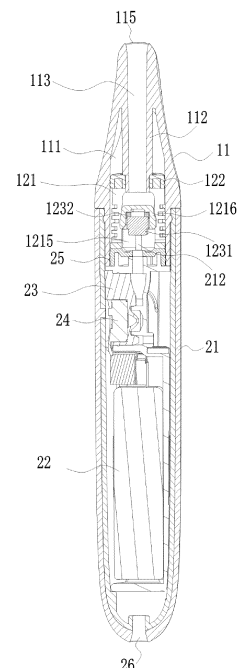


FIG. 3

EP 4 470 398 A1

Description

[0001] This application claims priority to Chinese Patent Application No. 202210086824.X, filed with the China National Intellectual Property Administration on January 25, 2022 and entitled "AEROSOL GENERATING APPARATUS", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] Embodiments of this application relate to the field of aerosol generating technologies, and in particular, to an aerosol generating apparatus.

BACKGROUND

[0003] There are aerosol-providing articles, for example, electronic cigarette apparatuses. These apparatuses usually include a liquid substrate, and the liquid substrate is heated to atomize, so as to generate an inhalable vapor or an aerosol. The liquid substrate may include nicotine, and/or aromatics, and/or aerosol generating substances (such as glycerin), and/or the like.

[0004] A known disposable electronic cigarette apparatus usually includes a battery assembly, an atomization assembly, and a liquid storage cotton. The liquid storage cotton stores the liquid substrate therein because the liquid storage cotton is infiltrated in the liquid substrate, but an e-liquid storage volume is limited. The atomization assembly includes a cotton core for e-liquid guide and an electric heating wire wrapped around the cotton core. The electric heating wire is connected to a wire. The battery assembly includes a battery as a power source and an electrical contact electrically connected to the battery. The electrical contact is electrically connected to the wire connected to the electric heating wire to enable the battery to provide power for the heating wire to heat. This disposable electronic cigarette apparatus has a small e-liquid storage volume, and assembly of the battery assembly, the atomization assembly, and the liquid storage cotton, and another assembly is relatively complex. This is not conducive to improving production efficiency, especially automated assembly.

SUMMARY

[0005] Embodiments of this application provide an aerosol generating apparatus, to facilitate automated assembly production.

[0006] Embodiments of this application provide an aerosol generating apparatus, including:

- a housing, inside which a liquid storage cavity for storing a liquid substrate is formed;
- a first support having first holding space;
- a power supply assembly accommodated in the first holding space;

a second support provided in the housing, where the second support at least partially defines the liquid storage cavity and has second holding space;

an atomization assembly at least partially accommodated in the second holding space and configured to atomize at least part of the liquid substrate from the liquid storage cavity to generate an aerosol; and

an electrical contact fixedly connected to the first support, where the electrical contact is electrically connected to the power supply assembly,

the first support includes a connection end adjacent to the second support, and a part of the electrical contact extends to the outside of the first support from the connection end and is extendable into the second holding space to abut against a surface of the atomization assembly.

[0007] Compared with using a liquid storage cotton to store liquid, in the aerosol generating apparatus, the liquid storage cavity is used to store the liquid substrate, and the liquid storage cavity has a larger liquid storage volume, so that the aerosol generating apparatus has a longer service life, to help improve cost performance and user experience of the aerosol generating apparatus.

The electrical contact can directly extend into the atomization assembly and directly abut against the surface of the atomization assembly, so that a structure of the aerosol generating apparatus is compact, and electrical connection is simplified to facilitate assembly and equipment. In addition, problems such as poor contact and excessive line loss that may occur during transferring by a transition member can be avoided and reduced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] One or more embodiments are exemplarily described with reference to the corresponding figures in the accompanying drawings, and the descriptions are not to be construed as limiting embodiments. Elements in the accompanying drawings that have same reference numerals are represented as similar elements, and unless otherwise particularly stated, the figures in the accompanying drawings are not drawn to scale.

FIG. 1 is a schematic diagram of an aerosol generating apparatus according to an embodiment of this application;

FIG. 2 is a sectional view of an aerosol generating apparatus according to an embodiment of this application;

FIG. 3 is another sectional view of an aerosol generating apparatus according to an embodiment of this application;

FIG. 4 is a sectional view of an atomizer according to an embodiment of this application;

FIG. 5 is a schematic exploded view of an aerosol generating apparatus according to an embodiment of this application;

FIG. 6 is a schematic exploded view of an aerosol generating apparatus according to another embodiment of this application;

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

FIG. 8 is a schematic exploded view of an atomization assembly according to an embodiment of this application;

FIG. 9 is a sectional view of a second support according to an embodiment of this application;

FIG. 10 is a schematic diagram of an atomization core according to an embodiment of this application;

FIG. 11 is a schematic exploded view of an atomization core according to an embodiment of this application;

FIG. 12 is a schematic front view of a first support according to an embodiment of this application;

FIG. 13 is a schematic rear view of a first support according to an embodiment of this application;

FIG. 14 is a schematic exploded view of a part of a first support according to an embodiment of this application; and

FIG. 15 is a rear sectional view of a first support according to an embodiment of this application.

[0009] In the accompanying drawings:

1. atomizer;

11. upper housing; 111. liquid storage cavity; 112. tubular body; 113. aerosol channel; 115. mouth-piece;

12. atomization assembly;

121. second support; 1211. liquid guide hole; 1211a. first liquid guide hole; 1211b. second liquid guide hole;

1212. second holding space; 1213. insertion hole; 1214. air outlet; 1215. atomization cavity; 1216. holding portion; 1217. notch; 1218. stop portion; 1219a. first support portion; 1219b. second support portion; R1. airflow channel; R21. first limiting wall; R22. second limiting wall; R3. first cavity; R4. second cavity; R6. insertion cavity; R7. second air inlet;

A1. first liquid storage portion; A11. first fin; A12. first transverse recess; A13. first longitudinal communication portion; A14. recessed portion; A15. first air inlet; A16. stopping block;

A2. second liquid storage portion; A21. second fin; A22. second transverse recess;

A3. third liquid storage portion; A4. fourth liquid storage portion;

B1. air hole; B11. second end; B2. avoidance recess; 122. second sealing member; 1221. first through hole; 1222. second through hole; 1223. rib;

123. atomization core; 1231. porous body; 1232. first sealing member; 1233. containing space; 1234. first surface; 1235. second surface; 1236. lower surface; 1237. heating element; 1238. upper part; 1239. low-

er part;

2. power supply assembly;

21. lower housing; 211. first receiving cavity; 212. electrical contact;

22. battery; 23. first support; 231. first engaging protrusion; 232. second engaging protrusion; 233. mounting container; 234. air inlet; 235. air outlet; 236. annular wall; 237. negative pressure cavity; 238. support wall;

24. sensor; 25. third sealing member; 26. air inlet hole; 27. air passage; 271. slot; 272. first channel; 28. capillary portion; 281. capillary cavity; 291. first wire; 292. second wire; 293. ear chamber.

15 DETAILED DESCRIPTION

[0010] The technical solutions in embodiments of this application are clearly and completely described below with reference to the accompanying drawings in embodiments of this application. Apparently, the described embodiments are merely some rather than all of embodiments of this application. All other embodiments obtained by a person of ordinary skill in the art based on embodiments of this application without creative efforts shall fall within the protection scope of this application.

[0011] The following terms "first", "second", and "third" are merely used for description, and cannot be understood as an indication or implication of relative importance or an implicit indication of a quantity or a sequence of indicated technical features. All directional indications (such as up, down, left, right, front, and back) in embodiments of this application are merely used to explain relative positional relationships or sport conditions between components in a specific posture (as shown in the accompanying drawings), or the like. If the specific posture changes, the directional indications also change accordingly. In addition, the terms "include", "have", and any variant thereof are intended to cover a non-exclusive inclusion. For example, a process, method, system, product, or device that includes a series of steps or modules is not limited to the listed steps or modules. Instead, a step or module that is not listed is included, or another step or module that is intrinsic to the process, method, product, or device is included.

[0012] Embodiment mentioned in the specification means that particular features, structures, or characteristics described with reference to the embodiment may be included in at least one embodiment of this application. Appearances of phrases in various places in the specification do not all indicate the same embodiment, nor are separate or alternative embodiments mutually exclusive of other embodiments. A person skilled in the art explicitly or implicitly understands that embodiments described in the specification may be combined with other embodiments.

[0013] It should be noted that, when a component is referred to as "being fixed to" another component, the component may be directly on the other component, or an

intervening component may be present. When a component is considered to be "connected to" another component, the component may be directly connected to the another component, or one or more intervening components may be present between the component and the another component. The terms "vertical", "horizontal", "left", and "right" and similar expressions used in this specification are merely used for description, and do not indicate the only implementation.

[0014] An embodiment of this application provides an atomizer 1. Refer to FIG. 4 to FIG. 6. The atomizer 1 includes an upper housing 11 with a mouthpiece 115 and an atomization assembly 12 at least partially located inside the upper housing 11. A liquid storage cavity 111 for storing a liquid substrate and an aerosol channel 113 for transferring an aerosol are formed on the upper housing 11. The atomization assembly 12 is communicated with the liquid storage cavity 111 to receive the liquid substrate in the liquid storage cavity 111. The atomization assembly 12 may atomize the liquid substrate through heating or another manner to generate an aerosol. The aerosol is transferred to the mouthpiece 115 through the aerosol channel 113 for inhalation.

[0015] Refer to FIG. 7 to FIG. 11, the atomization assembly 12 includes an atomization core 123 capable of absorbing, guiding, and atomizing a liquid substrate and a second support 121 for fixing the atomization core 123.

[0016] The second support 121 can be made of a rigid material or a material with relatively high hardness, so that the second support 121 is less likely to deform or have a large deformation when the second support 121 is squeezed to have a good supporting and holding effect. Refer to FIG. 7 to FIG. 9. The second support 121 includes a liquid guide hole 1211, second holding space 1212, an insertion hole 1213, an air outlet 1214, and an atomization cavity 1215. The liquid guide hole 1211 is configured to be communicated with the liquid storage cavity 111, so that the liquid substrate in the liquid storage cavity 111 may enter the liquid guide hole 1211. At least part of the atomization core 123 is held in the second holding space 1212, and the liquid guide hole 1211 is communicated with the second holding space 1212, so that the liquid substrate in the liquid guide hole 1211 can enter the atomization core 123 in the second holding space 1212, and is absorbed and introduced by the atomization core 123. The atomization core 123 has an atomization surface. The atomization core 123 may transfer the received liquid substrate to the atomization surface, so that the liquid substrate is atomized. The atomization surface of the atomization core 123 is located at or faces the atomization cavity 1215, so that the aerosol is formed in the atomization cavity 1215, or the formed aerosol enters the atomization cavity 1215. The atomization cavity 1215 is communicated with the insertion hole 1213 by the air outlet 1214. At least part of the aerosol enters the insertion hole 1213 from the atomization cavity 1215 through the air outlet 1214. The aerosol

channel 113 is defined by an internal hollow tubular body 112. The lower end of the tubular body 112 may be inserted into the insertion hole 1213 to implement connection between the tubular body 112 and the second support 121. The connection between the tubular body 112 and the insertion hole 1213 is a seal connection to prevent aerosol from overflowing from a gap of the connection. The sealing connection may be an interference fit between the tubular body 112 and the insertion hole 1213. Alternatively, there is a flexible sealing member between the tubular body 112 and the insertion hole 1213. The sealing member is used to seal the connection gap between the tubular body 112 and the insertion hole 1213. The tubular body 112 may also be made of a rigid material or a material with relatively high hardness. Details are not limited herein.

[0017] Refer to FIG. 7 to FIG. 9. There are two liquid guide holes 1211, that is, a first liquid guide hole 1211a and a second liquid guide hole 1211b, which are symmetrically arranged on opposite sides of the insertion hole 1213. The second support 121 further includes an internal hollow holding portion 1216. The holding portion 1216 includes a side wall and a top wall. The second holding space 1212 is located in the holding portion 1216 and at least part of bounds of the second holding space 1212 is defined by the side wall and the top wall of the holding portion 1216. The side wall of the holding portion 1216 has a notch 1217 communicated with the liquid guide hole 1211. The liquid substrate in the liquid guide hole 1211 flows into the second holding space 1212 through the notch 1217. The top wall of the holding portion 1216 is located directly below the insertion hole 1213 and the top wall of the holding portion 1216 is substantially V-shaped, so that avoidance space between the insertion hole 1213 and the top wall of the holding portion 1216 is formed to form the air outlet 1214.

[0018] Refer to FIG. 8 and FIG. 9, a stop portion 1218 is provided on the outside of the hole wall of the insertion hole 1213 and/or the top wall of the holding portion 1216 and is configured to stop and support the tubular body 112 to prevent the tubular body 112 from excessively entering the insertion hole 1213, or prevent the tubular body 112 from being in contact with the top wall of the holding portion 1216, thereby protecting the holding portion 1216.

[0019] Refer to FIG. 7 to FIG. 9. The second support 121 further includes two support portions arranged opposite to each other, that is, a first support portion 1219a and a second support portion 1219b. The first support portion 1219a is connected to and supports the first liquid guide hole 1211a. The second support portion 1219b is connected to and supports the second liquid guide hole 1211b. The first support portion 1219a and the second support portion 1219b are spaced apart. The holding portion 1216 is located between the two support portions 1219a and 1219b and is connected to the two support portions 1219a and 1219b. Refer to FIG. 7 and FIG. 8. The side wall of the holding portion 1216 is recessed

relative to the outer surfaces of the support portions 1219a and 1219b, so that a step is formed between the support portions 1219a, 1219b, and the holding portion 1216. An airflow channel R1 that communicates the atomization cavity 1215 and the air outlet 1214 is formed in space between the step and the side wall of the holding portion 1216. The aerosol in the atomization cavity 1215 enters the air outlet 1214 through the airflow channel R1.

[0020] Refer to FIG. 7 to FIG. 9. The atomization cavity 1215 is located longitudinally below the second holding space 1212. A part of the atomization core 123 is fixed in the holding portion 1216, and the remaining part is suspended in the atomization cavity 1215. In other words, the lower surface and a partial side surface of the atomization core 123 is not in contact with the second support 121. In a specific embodiment, refer to FIG. 9 and FIG. 10. The atomization core 123 includes containing space 1233, a porous body 1231, and a first sealing member 1232. The porous body 1231 may be of a porous structure such as porous ceramic, with a large quantity of pores to absorb and guide the liquid substrate. The porous body 1231 includes a first surface 1234 and a second surface 1235 surrounding the first surface 1234. The second surface 1235 may be substantially perpendicular to the first surface 1234. The second surface 1235 is a circular surrounding surface, or the second surface 1235 is an annular surface formed by a plurality of planes or stepped surfaces connected end to end. The first surface 1234 is the upper surface of the porous body 1231, and the second surface 1235 is the side surface of the porous body 1231. The first sealing member 1232 is annular, is sealingly connected to the second surface 1235, and partially protrudes from the first surface 1234. The containing space 1233 is defined by the first surface 1234 and a portion of the first sealing member 1232 that protrudes from the first surface 1234. The liquid guide hole 1211 is communicated with the containing space 1233 through the notch 1217, so that the containing space 1233 may be filled with the liquid substrate, and then the liquid substrate penetrates and is transferred from the first surface 1234 into the inside of the atomization core 123 and another surface. The first sealing member 1232 is sealingly connected to the holding portion 1216. In other words, the porous body 1231 is fixed in the holding portion 1216 by the first sealing member 1232. To prevent the liquid substrate from leaking out from a connection position between the first sealing member 1232 and the porous body 1231 and further spreading along the side wall of the holding portion 1216, there is a gap between the inner wall of the holding portion 1216 and the porous body 1231. Therefore, even if the liquid substrate leaks out from the connection position between the first sealing member 1232 and the porous body 1231, the liquid substrate also spreads toward the atomization surface along the second surface 1235 of the porous body 1231, and is finally atomized.

[0021] In embodiments shown in FIG. 7 to FIG. 9, the second holding space 1212 includes a first chamber and

a second chamber with a cross-sectional area larger than that of the first chamber. The second chamber is located below the first chamber, so that the second holding space 1212 is in a shape of an inverted funnel with a small top and a large bottom. The upper end of the porous body 1231 is sealingly connected to a wall of the first chamber by the first sealing member 1232, and the remaining part of the porous body 1231 is suspended in the second chamber, so that there is a gap between the inner wall of the holding portion 1216 and the porous body 1231.

[0022] Refer to FIG. 10 and FIG. 11. A heating element 1237 such as a resistive film or an electric heating sheet is disposed on the lower surface 1236 that is of the atomization core 123 and that is opposite to the first surface 1234, so that the lower surface 1236 of the atomization core 123 and the heating element 1237 form the atomization surface of the atomization core 123. When the heating element 1237 generates heat, aerosol substrate on the atomization surface and the adjacent second surface 1235 may be atomized to form an aerosol. The aerosol enters the air outlet 1214 through the atomization cavity 1215 and the airflow channel R1, then is transferred to the mouthpiece 115 through the aerosol channel 113 in the tubular body 112, and then is inhaled.

[0023] Refer to FIG. 10 and FIG. 11. The atomization core 123 is block-shaped and includes an upper part 1238 and a lower part 1239. The first surface 1234 is the upper surface of the upper part 1238. The first sealing member 1232 is connected to a partial side surface of the upper part 1238 and extends beyond the side surface of the upper part 1238 to form at least part of the containing space 1233. The atomization surface is located in the lower part 1239. The atomization assembly 12 has a length direction and a width opposite. The length of the upper part 1238 in the length direction is equal to the length of the lower part 1239 in the length direction. The width of the upper part 1238 in the width direction is greater than the width of the lower part 1239 in the width direction. Therefore, a part of the second surface 1235 is a stepped surface to enable the atomization surface to have a small area, facilitating positioning a printed circuit of the heating element 1237 on the lower surface of the porous body 1231. Not only does a heating region is more concentrated, but also using the stepped surface as a reference point for machine vision positioning can make the printing of the heating element 1237 more accurate. Refer to FIG. 10 and FIG. 11. The radius of an arc at a side corner of the lower part 1239 is greater than the radius of an arc at a side corner of the upper part 1238. In embodiments shown in FIG. 10 and FIG. 11, the atomization core 123 is symmetrical in both the length direction and the width direction.

[0024] Refer to FIG. 9. The inside of the second support 121 has a cavity and a limiting wall. The atomization cavity 1215 is at least a part of the cavity. The limiting wall is configured to limit the length of the atomization cavity 1215, to reduce space occupied by the atomization cavity 1215. Specifically, refer to FIG. 9. A part of the cavity is

located inside the first support portion 1219a, that is, a first cavity R3. A part of the cavity is located inside the second support portion 1219b, that is, a second cavity R4. The atomization cavity 1215 is located between the first cavity R3 and the second cavity R4. There are two limiting walls, that is, a first limiting wall R21 and a second limiting wall R22. The first limiting wall R21 is provided between the first cavity R3 and the atomization cavity 1215 to separate the first cavity R3 from the atomization cavity 1215. The second limiting wall R22 is located between the second cavity R4 and the atomization cavity 1215 to separate the second cavity R4 from the atomization cavity 1215. The first limiting wall R21 and the second limiting wall R22 are arranged in the length direction, so that the length of the atomization cavity 1215 is limited by a distance between the two limiting walls R21 and R22. A shorter distance between the two limiting walls R21 and R22 indicates a smaller length of the atomization cavity 1215. A longer distance between the two limiting walls R21 and R22 indicates a greater length of the atomization cavity 1215. Space occupied by the atomization cavity 1215 is limited by the two limiting walls R21 and R22 to prevent the aerosol from being wasted due to ineffective diffusion, and to enable more aerosols enter the aerosol channel 113 through the airflow channel R1 and the air outlet 1214. In some embodiments, as shown in FIG. 9, the bottom ends of the first cavity R3 and the second cavity R4 are open to form an insertion cavity R6, to be inserted by the first support 22 in the power supply assembly 2, or inserted by another object, and a buckle structure may be provided in the first cavity R3 and the second cavity R4 to be buckled-connected to inserts inserting into the first cavity R3 and the second cavity R4. In some other embodiments, the first cavity R3 and the second cavity R4 are filled with a filler to be of a solid structure, or the bottom ends of the first cavity R3 and the second cavity R4 are closed, to not be inserted by another foreign object.

[0025] Refer to FIG. 7 and FIG. 8. An air hole B1 and an avoidance recess B2 are further provided on the second support 121. A first end of the air hole B1 is communicated with the liquid guide hole 1211, and a second end B11 is communicated with the avoidance recess B2. The avoidance recess B2 connects the second end B11 of the air hole B1 to the atomization cavity 1215. Air may enter the liquid guide hole 1211 through the avoidance recess B2 and the air hole B1, to balance air pressure between the liquid guide hole 1211 or the liquid storage cavity 111 and the outside to prevent a problem that the liquid substrate cannot enter the containing space 1233 on the atomization core 123 or the liquid in the containing space 1233 cannot permeate into the porous body 1231 due to pressure difference, which affects a transmission rate of the liquid substrate in the porous body 1231.

[0026] However, existence of the air hole B1 inevitably causes the liquid substrate in the liquid guide hole 1211 to penetrate through the air hole B1. In other words, the air hole B1 causes the liquid guide hole 1211 to leak. To

prevent the leakage from contaminating the atomizer 1 or the power supply assembly 2, the first liquid storage portion A1 is provided. The airflow guide groove B2 is communicated with the atomization cavity 1215 by the first liquid storage portion A1. The liquid substrate permeated through the air hole B1 is guided to the first liquid storage portion A1 by the avoidance recess B2, and is held by the first liquid storage portion A1.

[0027] In one embodiment, the second end B11 of the air hole B1 is provided on the inner surface of the second support 121 and communicated with the atomization cavity 1215, so that air in the atomization cavity 1215 may enter the liquid guide hole 1211 from the inside through the air hole B1. The first liquid storage portion A1 may be provided on the outer surface or the inner surface of the second support 121. The avoidance recess B2 provides a path for the liquid substrate penetrating out from the air hole B1 to enter the first liquid storage portion A1.

[0028] In another embodiment, as shown in FIG. 8, the second end B11 of the air hole B1, the avoidance recess B2, and the first liquid storage portion A1 are all provided on the outer surface of the second support 121 to facilitate production of the second support 121.

[0029] Refer to FIG. 8, the avoidance recess B2 is curved to increase a liquid-holding capability of the avoidance recess B2. The physical length of the avoidance recess B2 is increased to increase a liquid storage volume of the avoidance recess B2. Further, the width of the avoidance recess B2 is less than the aperture of the second end B11 of the air hole B1 to limit a volume of the liquid substrate entering the avoidance recess B2 from the second end B11 of the air hole B1, so that more liquid substrates can be held in the air hole B1, thereby effectively preventing the liquid substrate from leaking out through the air hole B1, and/or further, the avoidance recess B2 includes a transverse extension part and a longitudinal extension part. The transverse extension part extends transversely and is transversely connected to the second end B11 of the air hole B1. In other words, a connection position between the avoidance recess B2 and the air hole B1 misaligns from the bottom of the air hole B1, to increase an e-liquid-sealing capacity of the air hole B1 and reduce a rate at which the liquid substrate penetrates outward through the air hole B1, so that e-liquid and juice leakage can be effectively reduced. The longitudinal extension part of the avoidance recess B2 extends longitudinally and is longitudinally connected to the first liquid storage portion A1. The length of the transverse extension part may be less than the length of the longitudinal extension part to increase emptying speed of the avoidance recess B2 and prevent the liquid substrate from blocking the avoidance recess B2 and affecting the air entering the air hole B1 through the avoidance recess B2. The transverse extension part and the longitudinal extension part may be transitioned through an arc-shaped groove. Preferably, the transverse extension part is substantially perpendicular to

the longitudinal extension part, and/or further, the aperture of the second end B11 of the air hole B1 is greater than that of the first end, to facilitate entering of air and hinder an outflow of the liquid substrate.

[0030] Refer to FIG. 7 and FIG. 8. The first liquid storage portion A1 includes a plurality of first fins A11 arranged on the outer surface or the inner surface of the second support 121. A first transverse recess A12 is formed between two neighboring first fins A11, and a first longitudinal communication portion A13 is provided on a first fin A11 between two neighboring first transverse recesses A12, so that the two neighboring first transverse recesses A12 are communicated with each other. The avoidance recess B2 extends through one of the first fins A11 and is communicated with a corresponding first transverse recess A12, so that the liquid substrate can be guided into the first transverse recess A12, to enable the liquid substrate to flow in the first liquid storage portion A1 and to be stored. Refer to FIG. 7 and FIG. 8, the width of the first transverse recess A12 is greater than the width of the avoidance recess B2 to increase a liquid-holding capability of the first transverse recess A12. Specifically, the width of the first transverse recess A12 may be 2 to 10 times the width of the avoidance recess B2, which is not limited.

[0031] The first transverse recess A12 extends transversely, so that a plurality of first transverse recesses A12 may be parallel to each other. The first longitudinal communication portion A13 may longitudinally extend or be inclined relative to a longitudinal direction, so that a plurality of first longitudinal communication portions A13 may be parallel to each other, or at least two first longitudinal communication portions A13 may be non-parallel to each other. The first longitudinal communication portion A13 mainly serves to communicate two neighboring first transverse recesses A12. Both air and liquid may pass through the first longitudinal communication portion A13. In one embodiment, the first longitudinal communication portion A13 may be a through hole provided on the first fin A11. In another embodiment, the first longitudinal communication portion A13 is a recess recessed from the surface of the first fin A11 to have a recess bottom and a recess wall. Refer to FIG. 7 and FIG. 8. The recess wall of the first longitudinal communication portion A13 may be obliquely arranged relative to the recess bottom, so that it is difficult for liquid to creep along the recess wall when passing through the first longitudinal communication portion A13, and the liquid is prevented from spreading to the outer surface of the first fin A11. A width between two recess walls in the first longitudinal communication portion A13 is greater than the width of the avoidance recess B2, to increase a liquid-holding capability of the first longitudinal communication portion A13.

[0032] Refer to FIG. 7 and FIG. 8. A width between two recess walls of a part of the first longitudinal communication portion A13 may be greater than the width of the first transverse recess A12. A width between two recess walls

of a part of the first longitudinal communication portion A13 may be equal to the width of the first transverse recess A12, and widths between two recess walls of at least two first longitudinal communication portions A13 are not equal. Further, in the two neighboring first longitudinal communication portions A13, the cross-sectional area or the width between the two recess walls of a lower first longitudinal communication portion A13 is larger, so that the liquid in an upper first transverse recess A12 conveniently enters a lower first transverse recess A12, and the liquid substrate is prevented from spreading to the outer surface of the first fin A11 because the liquid substrate accumulates in the upper first transverse recess A12, and/or further, at least two first longitudinal communication portions A13 are staggered to be non-coaxial, thereby preventing the liquid substrate from entering the lower first transverse recess A12 through the first longitudinal communication portions A13 when the liquid substrate does not fully fill the upper first transverse recess A12. Therefore, the first longitudinal communication portions A13 are staggered, so that the first transverse recess A12 is fully utilized, thereby enhancing a liquid-holding capability of the first liquid storage portion A1. In another embodiment, the widths between the two recess walls of all the first longitudinal communication portions A13 may be equal and the first longitudinal communication portions A13 may be coaxially arranged.

[0033] Refer to FIG. 7 and FIG. 8. Recess bottoms of at least part of the first longitudinal communication portions A13 have arc surfaces. In some embodiments, a recess bottom of at least one first longitudinal communication portion A13 may be at least partially an arc surface, or at least partially a plane surface, or at least partially a stepped surface. In some embodiments, at least one recess bottom of at least one first longitudinal communication portion A13 is a plane surface or a stepped surface. In some embodiments, a recess wall of at least one first longitudinal communication portion A13 is arc-shaped or has an arc-shaped structure. An arc surface is arranged in the first longitudinal communication portion A13, to increase spreading speed of the liquid substrate in the first longitudinal communication portion A13, and prevent the liquid substrate from blocking the first longitudinal communication portion A13, which affects passage of air.

[0034] Refer to FIG. 7 and FIG. 8. A recess bottom of a part of the first transverse recesses A12 is partially recessed to form a recessed portion A14. The depth of the recessed portion A14 is greater than the depth of the recess bottom of a first transverse recess A12 that is adjacent to the recessed portion A14 and that is among the first transverse recesses A12. The recessed portion A14 may store more liquid substrates, thereby increasing the liquid-holding capability of the first liquid storage portion A1 and preventing the liquid substrate from spreading to the outer surface of the first fin A11.

[0035] Refer to FIG. 7 and FIG. 8. The first liquid storage portion A1 has a first air inlet A15. The first liquid

storage portion A1, the avoidance recess B2, and the air hole B1 form an air channel for air to enter the liquid guide hole 1211 from the first air inlet A15. The first air inlet A15 is communicated with the airflow channel R1. Air in the airflow channel R1 may enter a corresponding first transverse recess A12 through the first air inlet A15, enter the avoidance recess B2 along the first transverse recess A12 and the corresponding first longitudinal communication portion A13, and enter the liquid guide hole 1211 through the air hole B1 to further balance air pressure inside and outside the liquid guide hole 1211.

[0036] The air hole B1 is provided on a wall of at least one liquid guide hole 1211 of two liquid guide holes 1211. In an embodiment, as shown in FIG. 8, the air hole B1 is provided on the side wall of the liquid guide hole 1211 corresponding to the first support portion 1219a, and the first liquid storage portion B2 is provided on the outer surface of the first support portion 1219a. Each first transverse recess A12 is roughly horizontally U-shaped and arranged on the outer surface of the first support portion 1219a. In addition, an end of the at least one first transverse recess A12 is open to form a first air inlet A15, to be transversely communicated with the airflow channel R1. In some embodiments, two ends of some first transverse recesses A12 are first air inlets A15, and are horizontally and respectively communicated with the airflow channels R1 located at opposite sides of the second support 121, so that the air in the airflow channel R1 may enter the first transverse recesses A12 through the first air inlet A15, then enter the air hole B1 through the avoidance recess B2 communicated with the first liquid storage portion A1, and finally enter the liquid guide hole 1211 to balance the air pressure.

[0037] Refer to FIG. 7 and FIG. 8. For each first air inlet A15, a stopping block A16 is arranged in the corresponding first transverse recess A12. The stopping block A16 is sealingly connected to the bottom wall and side wall of the corresponding first transverse recess A12. The stopping block A16 is arranged neighboring the first air inlet A15 to prevent the liquid substrate in the corresponding first transverse recess A12 from entering the first air inlet A15 and flowing out of the first transverse recess A12. Therefore, the liquid-holding capability of the first transverse recess A16 is increased. In addition, the liquid substrate flowing out from another first air inlet A15 above the corresponding first air inlet A15 and the liquid substrate spreading along steps between the holding portion 1216 and the support portions 1219a and 1219b are prevented from entering the first transverse recess A12 through the corresponding first air inlet A15, so that an e-liquid-locking capability of the first air inlet A15 is increased. In other words, the stopping block A16 may prevent the liquid substrate in the corresponding first transverse recess A12 from overflowing and can prevent outside liquid substrate from flowing in the first transverse recess A12. Refer to FIG. 7 and FIG. 8. There is a step difference between the first air inlet A15 and the outside of the side wall of the holding portion 1216, so that the liquid

substrate flowing out from the another first air inlet A15 above the corresponding first air inlet A15 may spread to a lower first air inlet A15 and the outside of the side wall of the holding portion 1216. In other words, the liquid substrate is enabled to creep along the wall of the airflow channel R1, so that the airflow channel R1 has a specific liquid-holding capability.

[0038] Refer to FIG. 7 and FIG. 8. Each stopping block A15 is recessed relative to the first fin A11 connected to the stopping block A15. The recess forms an air passage for air to pass through, so that the air entering from the first air inlet A15 may bypass the stopping block A16 and enter the first transverse recess A12. In other words, the height of the stopping block A16 perpendicular to a corresponding recess bottom is less than the recess depth of the corresponding first transverse recess A12, so that the stopping block A16 can prevent the liquid substrate from passing through, but allow the air to pass through the recess relative to the first fin A11.

[0039] Refer to FIG. 7 and FIG. 8. An end of the uppermost first transverse recess A12 closest to the avoidance recess B2 in the first liquid storage portion A1 is closed, so that there is no first air inlet A 15. An end of another first transverse recess A12 is open, so that there is a first air inlet A15. The end of the uppermost first transverse recess A12 in the first liquid storage portion A1 faces the air outlet 1214. The end is closed to ensure that more aerosols flow into the aerosol channel 113 with a suction action, instead of being diverted into the first transverse recess A12 and condensed in the first transverse recess A12 to form condensate, increasing a liquid-holding burden of the first transverse recess A12.

[0040] As shown in FIG. 8, the side wall of the liquid guide hole 1211 corresponding to the second support portion 1219b is complete, and no air hole B1 and avoidance recess B2 are provided on the side wall. A second liquid storage portion A2 is provided on the outer surface of the second support portion 1219b. The second liquid storage portion A2 includes a plurality of second fins A21 transversely extending, and a second transverse recess A22 is formed between two neighboring second fins A21. A difference between the second liquid storage portion A2 and the first liquid storage portion A1 is that the second fin A21 does not have a channel for communicating two neighboring second transverse recesses A22. In other words, the second transverse recesses A22 are independent of each other, and there is no air channel for guiding air into the liquid guide hole 1211 in the second liquid storage portion A2.

[0041] As shown in FIG. 7 and FIG. 8, a third liquid storage portion A3 is further provided on the first support portion 1219a. The third liquid storage portion A3 is located below the first liquid storage portion A1, and there is no channel communicating the first liquid storage portion A1 with the third liquid storage portion A3 on a public fin shared by the third liquid storage portion A3 and the first liquid storage portion A1. Another structure of the third liquid storage portion A3 may have the same char-

acteristic as the first liquid storage portion A1. A fourth liquid storage portion A4 is further provided on the second support portion 1219b. The fourth liquid storage portion A4 is located below the second liquid storage portion A2, and there is no channel communicating the second liquid storage portion A2 with the fourth liquid storage portion A4 on a public fin shared by the fourth liquid storage portion A4 and the second liquid storage portion A2. Another structure of the fourth liquid storage portion A4 may have the same characteristic as the first liquid storage portion A1.

[0042] Refer to FIG. 7 and FIG. 8. The atomization assembly 12 further includes a second sealing member 122. The second sealing member 122 provides a seal between the upper housing 11 and the second support 121. As shown in FIG. 4, FIG. 7, and FIG. 8, the second sealing member 122 has a top wall attached to the upper surface of the second support 121 and a surrounding wall surrounding at least part of the side wall of the second support 121. The top wall is connected to the surrounding wall. The top wall is provided with a first through hole 1221 corresponding to the liquid guide hole 1211 and a second through hole 1222 corresponding to the insertion hole 1213. The surrounding wall covers the second end B11 of the air hole B1 and the avoidance recess B2. Therefore, the second end B11 of the air hole B1 and the avoidance recess B2 are hidden in the second sealing member 122. The surrounding wall has a protruding rib 1223 to be used as an interference fit portion to be interference fit with the inside of the upper housing 11 to implement sealing connection. There may be one or more 1223 ribs, all of which are arranged around the outside of the surrounding wall in the transverse direction. The second end B11 of the air hole B1 may be arranged to avoid the rib 1223 or may be arranged directly facing the rib 1223. This is not limited herein. The liquid substrate in the liquid storage cavity 111 passes through the first through hole 1221 on the second sealing member 122 and enters the e-liquid guide hole 1211 in the second support 121. The tubular body 112 defining the aerosol channel 113 passes through the second through hole 1222 and enters the insertion hole 1213. The second sealing member 122 further has an extension portion extending to the insertion hole 1213 for sealing connection between the tubular body 112 and the insertion hole 1213.

[0043] Refer to FIG. 2 to FIG. 4. The second support 121 is at least partially located in the upper housing 11. The second liquid storage portion A2, the third liquid storage portion A3, and the fourth liquid storage portion A4 are located in the upper housing 11, and the outer surfaces of the fins in the second liquid storage portion A2, the third liquid storage portion A3, and the fourth liquid storage portion A4 abut against the inner wall of the upper housing 11.

[0044] Refer to FIG. 4 and FIG. 9. A lower part of the atomization cavity 1215 is open to form a second air inlet R7. Air enters the atomization cavity 1215 through the second air inlet R7, enters the aerosol channel 113

through the airflow channel R1 and the air outlet 1214 from the atomization cavity 1215. Air enters the first liquid storage portion A1 through the first air inlet A15 from the atomization cavity 1215 and the airflow channel R1, and finally enters the liquid guide hole 1211.

[0045] An embodiment of this application provides an aerosol generating apparatus. Refer to FIG. 1 to FIG. 3. In an embodiment, the aerosol generating apparatus includes the atomizer 1 according to any one of the foregoing embodiments, and further includes a battery assembly 2. The battery assembly 2 is configured to be electrically connected to an atomization core 123 to supply power to enable the atomization core 123 to atomize a liquid substrate.

[0046] Refer to FIG. 1 to FIG. 3. The aerosol generating apparatus further includes a lower housing 21, a power supply assembly 2, and a first support 23. The power supply assembly 2 includes a battery 22 and a sensor 24. The first support 23 has first holding space. The power supply assembly 2 is held in the first holding space. The lower housing 21 is arranged at the outermost periphery to provide a good appearance and feel, and protect inside elements such as the battery 22 and the first support 23. The first support 23 is configured to fix the battery 22, the sensor 24, and the like. The battery 22 is electrically connected to the atomization core 123.

[0047] Specifically, the power supply assembly 2 includes a first receiving cavity 211 that is arranged on one end in a longitudinal direction and configured to receive and accommodate at least a part of the atomizer 1, and an electrical contact 212 that is at least partially exposed on a surface of a first receiving cavity 211 and configured to be electrically connected to the atomizer 1 to supply power to the atomizer 1 when at least a part of the atomizer 1 is received and accommodated in the power supply assembly 2.

[0048] According to the preferred embodiments shown in FIG. 2 and FIG. 3, one end of the electrical contact 212 extends upward in the longitudinal direction. When at least a part of the atomizer 1 is received in the first receiving cavity 211, the electrical contact 212 may extend into the second support 121 to be in direct contact with a heating element 1237 on the lower surface of the atomization core 123 to supply power to enable the heating element 1237 to generate heat. The other end of the electrical contact 212 is electrically connected to the battery 22 via a wire or an electrode to take electricity from the battery 22. Certainly, it is not excluded that the electrical contact 212 is indirectly in contact with the heating element 1237 on the atomization core 123 after extending into the second support 121.

[0049] A third sealing member 25 is arranged in the power supply assembly 2, and at least a part of internal space of the power supply assembly 2 is separated by the sealing member 25 to form the first receiving cavity 211. In the preferred embodiments shown in FIG. 2, FIG. 3, and FIG. 6, the sealing member 25 is configured to extend along a cross-section direction of the power sup-

ply assembly 2, and is preferably prepared by a flexible material, to prevent the liquid substrate penetrating from the atomizer 1 through the first receiving cavity 211 from flowing to components such as a controller and a sensor 24 inside the power supply assembly 2.

[0050] In the preferred embodiments shown in FIG. 2 and FIG. 3, the power supply assembly 2 further includes the battery 22 at the other end that is in the longitudinal direction and that is away from the first receiving cavity 211, and configured to supply power; and the sensor 24 disposed between the battery 22 and the first receiving cavity 211. The sensor 24 is configured to sense inhalation airflow generated during inhalation through a mouthpiece 115 of the atomizer 1, to control the battery 22 to output a current to the atomizer 1 based on a detection signal of the sensor 24. Refer to FIG. 2 and FIG. 3. The battery 22 is electrically connected with the electrical contact 212 via the sensor 24. The sensor 24 forms a control element for electrical connection between the battery 22 and the electrical contact 212. The control element may be a switching element. When the sensor 24 detects that a preset condition is met by detecting air pressure, an airflow, or another parameter, it may be determined that there is an inhalation action at the mouthpiece 115, and then the battery 22 is electrically connected to the electrical contact 212, so that the electrical contact 212 may supply power to enable the atomization core 123 to atomize the liquid substrate.

[0051] Further, in the preferred embodiments shown in FIG. 2 and FIG. 3, the power supply assembly 2 is provided with an air inlet hole 26 on the other end away from the first receiving cavity 211, and the outside air enters the power supply assembly 2 through the air inlet hole 26, and then enters the atomizer 1 from the second air inlet R7 below the atomization cavity 1215 in the atomizer 1.

[0052] In some embodiments, the first support 23 further has a mounting container 233 for mounting the sensor 24, and the mounting container 233 is configured to communicate the air inlet hole 26 with the atomization cavity 1215. During inhalation on the mouthpiece 115, the outside air enters the mounting container 233 through the air inlet hole 26, enters the atomization cavity 1215 through the mounting container 233, and finally enters a mouth through the aerosol channel 113.

[0053] In embodiments shown in FIG. 12 to FIG. 15, an air passage 27 is provided inside the mounting container 233, and at least one through hole penetrates the bottom of the mounting container 233 to form an air inlet 234. The air inlet 234 communicates the air inlet hole 26 with the air passage 27. Air enters the mounting container 233 through the air inlet 234 and flows along the air passage 27. An air outlet 235 is further provided on the wall of the mounting container 233. The air outlet 235 communicates the air passage 27 with the atomization cavity 1215. The air in the mounting container 233 enters the atomization cavity 1215 through the air outlet 235.

[0054] The sensor 24 is configured to detect the air flow

or air pressure in at least a local region in the mounting container 233, and control the battery 22 to output a current, a voltage, or an electric power to the electrical contact 212 based on a detection result, to enable the heating element 1237 to heat.

[0055] In embodiments shown in FIG. 12 to FIG. 15, an annular wall 236 is further arranged in the mounting container 233. The annular wall 236 and the bottom of the mounting container 233 jointly define a negative pressure cavity 237. The negative pressure cavity 237 may be located in a central region of the mounting container 233, and the annular wall 236 abuts against and supports the sensor 24. Preferably, the annular wall 236 is sealingly connected to the sensor 24. Air cannot pass through a connection position between the annular wall 236 and the sensor 24. The annular wall 236 has a breach allowing air to pass through. The air passage 27 includes a channel arranged outside the annular wall 236 and a slot 271 formed by the gap. The channel arranged outside the annular wall 236 may be a first channel 272 that is communicated with the air inlet 234 and the air outlet 235 and surrounds the annular wall 236 by about 360 degrees. The slot 271 communicates the first channel 272 with the negative pressure cavity 237. During inhalation on the mouthpiece 115, the air in the negative pressure cavity 237 flows into the first channel 272 through the slot 271. In addition, the outside air flows into the first channel 272 through the air inlet 234, and the air in the first channel 272 enters the atomization cavity 1215 through the air outlet 235, to form negative pressure in the negative pressure cavity 237. The sensor 24 may be an air pressure sensor. The air pressure sensor may determine whether there is an inhalation action based on a pressure difference between two sides of a detection surface of the air pressure sensor. A detection surface of the sensor 24 is located in the negative pressure cavity 237 or faces the negative pressure cavity 237. When there is negative pressure in the negative pressure cavity 237, the negative pressure may be detected by the sensor, so that the sensor 24 may determine that there is an inhalation action, and then may control the electrical contact 212 to output a current, a voltage, or an electric power to the heating element 1237, to enable the heating element 1237 to heat. After the inhalation is stopped, the outside air enters the first channel 272 through the air inlet 234, and the air flows in the first channel 272 and enters the negative pressure cavity 237 through the slot 271, to balance the air pressure inside and outside the negative pressure cavity 237. Therefore the sensor 24 is reset to control the electrical contact 212 to stop outputting the current, the voltage, or the electric power to the heating element 1237.

[0056] Refer to FIG. 14 and FIG. 15. An orientation of the slot 271 is staggered from the air outlet 235. A staggered angle between the slot 271 and the air outlet 235 may be 90 degrees, but this is not limited thereto. An angle between the air inlet 234 and the air outlet 235 in the first channel 272 may be a diagonal of 180 degrees. The

air entering the first channel 272 from the air inlet 234 is divided into two parts, which may be gathered at the air outlet 235 after respectively flowing around half of the first channel 272 and then enter the atomization cavity 1215. Condensate is formed by the aerosol in the atomization cavity 1215. Alternatively, after the inhalation is stopped, the aerosol flows back to the first channel 272 through the air outlet 235, and then the condensate formed by condensation is also divided into two parts, which flow into the air inlet 234 after flowing around half of the first channel 272, and flow out of the mounting container 233 through the air inlet 234. One of functions of making the first channel 272 into a ring shape is to increase the length of a physical path of the first channel 272, to further increase an e-liquid-locking capability of the mounting container 233, so that at least part of the condensate may stay in the mounting container 233.

[0057] Refer to FIG. 14 and FIG. 15. The breach forming the slot 271 is recessed from the end of the annular wall 236 far away from the bottom of the mounting container 233 toward the bottom of the mounting container 233, but a depth of the recess is less than a maximum height of the annular wall 236 protruding from the bottom of the mounting container 233. In other words, the recess is not in contact with the bottom of the mounting container 233, so that a threshold crossing between the first channel 272 and the negative pressure cavity 237 is formed on the bottom wall of the breach. The threshold can prevent the liquid in the first channel 272 from entering the negative pressure cavity 237, to protect the sensor 24 from an effect of the condensate. In addition, the orientation of the slot 271 is staggered from the air outlet 235, so that the aerosol flowing back to the mounting container 233 may be ensured to flow along the first channel 272 and be condensed before entering the slot 271, to ensure that the interior of the negative pressure cavity 237 is in a dry state without the aerosol and the condensate, so that the sensor 24 always maintains high sensitivity without being affected by the aerosol and the condensate in long-term work.

[0058] Refer to FIG. 13 and FIG. 15. The back of the first support 23 or the bottom of the mounting container 233 has a capillary portion 28. The capillary portion 28 is connected to the air inlet 234, and the liquid in the first channel 272 may flow into or spread into the capillary portion 28 through the air inlet 234 to be stored. The capillary portion 28 may include a plurality of capillary cavities 281. Two neighboring capillary cavities 281 are communicated with each other. A plurality of capillary cavities 281 may be provided on two opposite sides of the mounting container 233, to increase a reservoir capacity and prevent excessive condensate from overflowing through the air inlet hole 26. Preferably, the capillary cavities 281 are provided transversely.

[0059] In some embodiments, the electrical contact 212 is connected to the battery 22 via the sensor 24. The sensor 24 is configured as a switching element on a circuit between the battery 22 and the electrical contact

212. When the sensor 24 determines that there is an inhalation action by detecting an airflow, or air pressure, or another parameter, the circuit between the battery 22 and the electrical contact 212 is on, otherwise the circuit between the battery 22 and the electrical contact 212 is off.

[0060] Refer to FIG. 12 and FIG. 13. There are two electrical contacts 212. A lower end of one electrical contact 212 is connected to a negative electrode of the battery 22 by welding a first wire 291, and a lower end of the other electrical contact 212 is connected to the sensor 24 by welding a second wire 292. The sensor 24 is connected to a positive electrode and the negative electrode of the battery 22. Refer to FIG. 15. The first support 23 has an ear chamber 293 for the lower end of the electrical contact 212 to insert. An output electrode of the sensor 24 is located in the ear chamber 293, so that the electrical contact 212 is electrically connected to the sensor 24 in the ear chamber 293, and is further connected to the battery 22 via the sensor 24 to take electricity from the battery 22. In the ear chamber 293, the electrical contact 212 may be connected to the output electrode of the sensor 24 by abutting, thereby facilitating assembly without welding.

[0061] In some other embodiments, a flexible supporting seat for holding the sensor 24 is further disposed in the mounting container 233. The annular wall 236 supports the flexible supporting seat and may be sealingly connected to the flexible supporting seat to prevent airflow from passing through a connection gap between the annular wall 236 and the flexible supporting seat and to enable the sensor 24 to be stably fixed in the mounting container 233. The electrical contact 212 may be partially inserted into the flexible supporting seat, so that the electrical contact 212 may not only be electrically connected to the sensor 24 in the flexible supporting seat, but also be further fixed.

[0062] Refer to FIG. 6 and FIG. 12 to FIG. 15. The first support 23 has a support wall 238 for supporting the third sealing member 25. The third sealing member 25 is configured to seal connection between the atomization assembly 12 and the first support 23. The third sealing member 25 is flatly laid on the outer surface of the support wall 238, and the support wall 238 supports the atomization assembly 12 by using the third sealing member 25. A mounting hole for fixing the electrical contact 212 is provided on the support wall 238. An upper end of the electrical contact 212 extends upward and projects out of the mounting hole and continues to extend upward until extending to the inside of the atomization assembly 12 and abutting against the heating element 1237. The lower end of the electrical contact 212 may extend downward and project out of the mounting hole, and then is connected to the battery 22 via a wire or an electrode. One end of the mounting hole faces the atomization cavity 1215, and the other end faces the capillary portion 28. A sidewall of the upper end of the mounting hole projects out of the support wall 238, so that a protrusion is

formed on the support wall 238 to prevent condensate on the support wall 238 from spreading into the mounting hole. Condensate may be condensed on a surface of the electrical contact 212 located in the atomization cavity 1215. When a volume of condensate on the surface of the electrical contact 212 is large, the condensate spreads down along the electrical contact 212 to enter the mounting hole, so that the mounting hole may guide the condensate into the capillary portion 28 for storage to prevent the condensate from spreading along the lower housing 21 and flowing out of the lower housing 21.

[0063] The mounting container 233 for mounting the sensor 24 is used as a part of an air path between the air inlet hole 26 and the atomization cavity 1215 to simplify the air path and the first support, and may collect and guide the condensate from the atomization cavity 1215, to help keep the aerosol generating apparatus clean and tidy, and improve user experience.

[0064] An embodiment of this application provides a power supply assembly 2. The power supply assembly 2 is different from the foregoing power supply assembly 2 in that the power supply assembly 2 includes the atomization assembly 12 according to any one of the foregoing embodiments. As shown in FIG. 2 to FIG. 4, the battery assembly 2 includes the atomization assembly 12, the lower housing 21, the first support 23, and the battery 22. The lower housing 21 is arranged at the periphery of the first support 23 to provide a good appearance and feel, and protect inside elements such as the battery 22 and the first support 23. The first support 23 is configured to fix the battery 22. The battery 22 is electrically connected to the atomization core 123. Accommodating space for accommodating the battery 22 and the first support 23 is formed in the lower housing 21. The second support 121 is connected to the first support 23, so that the atomization assembly 12 and the first support 23 form an integrated structure.

[0065] Specifically, a first connection portion is provided on the atomization assembly 12. A second connection portion is provided on the first support 23. The first connection portion and the second connection portion are mutually matched and connected, so that the atomization assembly 12 and the first support 23 are fixed to each other. In some embodiments, the first connection portion and the second connection portion may be elements such as magnets or electromagnets fixed to each other based on an attraction force. In some other embodiments, the first connection portion and the second connection portion may be of mutually buckled structures, to be fixed to each other by buckling. In some other embodiments, the first connection portion and the second connection portion may be of mutually threaded structures, to be fixed to each other through threaded engagement. In some other embodiments, the first connection portion and the second connection portion are plugs or sockets, and are fixed to each other through interference fit. In some other embodiments, the first connection portion and the second connection portion

may alternatively be of other structures to be fixed to each other.

[0066] Refer to FIG. 2, FIG. 3 and FIG. 5, the liquid storage cavity 111 for storing a liquid substrate and an aerosol channel 113 for transferring an aerosol are formed in the upper housing 11 matched with the power supply assembly 2 of the atomization assembly 12. The liquid storage cavity 111 is configured to be communicated with the liquid guide hole 1211 to inject the liquid substrate into the liquid guide hole 1211. The aerosol channel 113 is configured to connect an air outlet of the atomization assembly 12 to a mouthpiece 115 located on the upper housing 11. The mouthpiece 115 is configured to be held in a mouth, and the mouth inhale an aerosol generated by the aerosol generating apparatus through the mouthpiece 115.

[0067] The upper housing 11 has a hollow chamber, and a part of the hollow chamber is a second receiving cavity. The second receiving cavity is configured to receive the atomization assembly 12 and a part of the first support 23. A remaining part of the hollow chamber is the liquid storage cavity 111. A lower end of the liquid storage cavity 111 is closed by the atomization assembly 12 after the atomization assembly 12 in the power supply assembly 2 having the atomization assembly 12 is inserted into the second receiving cavity.

[0068] In embodiments shown in FIG. 2 and FIG. 9, a clamping slot is provided on the second support 121. There may be two clamping slots, that is, a first clamping slot and a second clamping slot. The first clamping slot may be provided in the first cavity R3 and the second clamping slot may be provided in the second cavity R4. An engaging protrusion is provided on the first support 23. There may be two engaging protrusions, that is, a first engaging protrusion 231 and a second engaging protrusion 232. The first engaging protrusion 231 extends into the first cavity R3 and is buckled-connected to the first clamping slot, and the second engaging protrusion 232 extends into the second cavity R4 and is buckled-connected to the second clamping slot, so that the atomization assembly 12 and the first support 23 are integrated into a whole. The clamping slots and engaging protrusions here may be the foregoing first connection portion and second connection portion. The first support 23 is fixedly connected to the lower housing 21. The first support 23 may be fixed with the battery 22, the sensor 24, a controller, and the like, so that the atomization assembly 12 forms an integrated structure with the first support 23, the lower housing 21, the battery 22, the sensor 23, the controller, and the like to be assembled with the upper housing 11 as a whole. In some embodiments, as shown in FIG. 5, the atomization assembly 12 partially projects from the lower housing 21, so that the atomization assembly 12 can be inserted into the upper housing 11 more deeply than the lower housing 21. Therefore, the assembly of the aerosol generating apparatus may be: (1) The first support 23 provided with the power supply assembly 2 and the second support 121 provided with the atomiza-

tion assembly 12 are assembled with each other. Specifically, the first engaging protrusion 231 and second engaging protrusion 232 extending from the first support 23 may be respectively extended into the first clamping slot and the second clamping slot on the second support 121, so that the first engaging protrusion 231 and second engaging protrusion 232 may be respectively buckled-connected to the first clamping slot and the second clamping slot, to enable the first support 23 and the second support 121 to be fixed with each other to form a whole body. (2) The whole body is sealingly assembled to the upper housing 11 which is filled with the liquid substrate or to the upper housing 11 which is not filled with the liquid substrate yet. The second support 121 is inserted into the upper housing 11, and the first support 23 is mutually fixed to the upper housing 11 by the second support 121, or the first support 23 is directly connected to the upper housing 11 to be fixed to each other, so that the liquid substrate is in contact with the atomization assembly 12 in the second support 121, or the liquid storage cavity 111 is communicated with the second holding space 1212 in the second support 121. Therefore, after the aerosol generating apparatus is transported to a destination, the liquid substrate is injected into the liquid storage cavity 111, to prevent the liquid substrate in the aerosol generating apparatus from deteriorating or leaking during long-distance transportation or suspension of use and long-term storage.

[0069] More specifically, when the aerosol generating apparatus is assembled, the upper housing 11 is inverted first, and then the liquid substrate is injected into the liquid storage cavity 111 in the upper housing 11. Then, the power supply assembly 2 with the atomization assembly 12 is assembled to the upper housing 11, so that the atomization assembly 12 seals an opening of the liquid storage cavity 111. In addition, a cavity wall of the second receiving cavity of the upper housing 11 is located between the atomization assembly 12 and the lower housing 21, and is fixed to the lower housing 21 by buckling, magnetic attraction, screw thread, shrapnel extrusion, or the like. The aerosol generating apparatus including the power supply assembly 2 having the atomization assembly 12 and the upper housing 11 may be a disposable product, so that no charging interface may be provided on the power supply assembly 2. Compared with a conventional disposable aerosol generating apparatus using e-liquid-absorbing cotton to store e-liquid, a liquid storage volume of the liquid storage cavity 111 in the upper housing 11 is much larger than that of the e-liquid-absorbing cotton, so that the disposable aerosol generating apparatus according to this application can have a longer service life and can improve satisfaction and experience of the user. Compared with a situation in which the upper housing 11 and the atomization assembly 12 are combined into a whole to form the atomizer 1, and then the atomizer 1 and the power supply assembly 2 without the atomization assembly 12 are combined into an aerosol generating apparatus, the power supply assembly 2 with

the atomization assembly 12 and the upper housing 11 may be kept in a separated state before being transported to a sale place or sold. Before the sale place is reached or sale, e-liquid is injected into the upper housing 11 in the foregoing manner, and then the power supply assembly 2 with the atomization assembly 12 and the upper housing 11 are assembled to make an aerosol generating apparatus capable of generating an aerosol. Therefore, a problem that the aerosol generating apparatus is filled with e-liquid in advance causing e-liquid or juice leaking due to long-distance transportation or temporary storage in a warehouse can be avoided, which reduces a quality of products and causes losses to a user or a merchant.

[0070] In some other embodiments, the first support 23 in the aerosol generating apparatus may be fixedly connected to the upper housing 11 (including by buckle connection, magnetic connection, screw connection, or the like) instead of the second support 121. For the aerosol generating apparatus, the assembly process is as follows. (1) A liquid substrate is injected into the liquid storage cavity 111 in the upper housing 11, so that the second support 121 provided with the atomization assembly 12 is sealingly connected to the upper housing 11 to seal the liquid substrate in the liquid storage cavity 111, and ensure that the liquid substrate can be transferred to the atomization assembly 12 for atomizing by the atomization assembly 12, so that the upper housing 11 and the second support 121 provided with the atomization assembly 12 form a whole body, such as a cartridge. (2) The whole body is assembled to the first support 23 provided with the power supply assembly 2, to form an aerosol generating apparatus. The aerosol generating apparatus may be reused by replacing the cartridge when the liquid substrate is exhausted.

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

Claims

1. An aerosol generating apparatus, comprising:

- a housing, inside which a liquid storage cavity for storing a liquid substrate is formed;
- a first support having first holding space;
- a power supply assembly accommodated in the first holding space;
- a second support provided in the housing, wherein the second support at least partially defines the liquid storage cavity and has second

- holding space;
 an atomization assembly at least partially accommodated in the second holding space and configured to atomize at least part of the liquid substrate from the liquid storage cavity to generate an aerosol; and
 an electrical contact fixedly connected to the first support, wherein the electrical contact is electrically connected to the power supply assembly, the first support comprises a connection end adjacent to the second support, and a part of the electrical contact extends to the outside of the first support from the connection end and is extendable into the second holding space to abut against a surface of the atomization assembly.
2. The aerosol generating apparatus according to claim 1, wherein the second support comprises a liquid guide hole communicated with the second holding space, the atomization assembly comprises a porous body at least partially disposed in the second holding space to receive the liquid substrate and a heating element combined with the porous body, and the electrical contact is in contact with the heating element.
 3. The aerosol generating apparatus according to claim 1, wherein an atomization cavity is defined between the connection end of the first support and the inner surface of the second holding space.
 4. The aerosol generating apparatus according to claim 3, wherein an air hole and an airflow guide groove are further provided on the outer surface of the second support, the air hole is communicated with the liquid guide hole, the airflow guide groove is communicated with the air hole and the atomization cavity or the external, and the air hole and the airflow guide groove provide an air channel for air to enter the liquid guide hole.
 5. The aerosol generating apparatus according to claim 2, wherein the upper end of the porous body is sealingly connected to a wall of the second holding space by a first sealing member, and a part of the porous body is suspended in the second holding space.
 6. The aerosol generating apparatus according to claim 5, wherein the second holding space comprises a first chamber and a second chamber with a cross-sectional area larger than the first chamber, a part of the porous body is accommodated in the first chamber, and other parts are suspended in the second chamber.
 7. The aerosol generating apparatus according to claim 1, wherein the aerosol generating apparatus further comprises a sensor electrically connected to the power supply assembly, the first support has a mounting container for mounting the sensor, as well as an air inlet and an air outlet, the inside of the mounting container has an air passage communicated between the air inlet and the air outlet, and the sensor is configured to detect changes in airflow in the air passage.
 8. The aerosol generating apparatus according to claim 7, wherein an annular wall is disposed in the mounting container, the inside of the annular wall has a detection cavity, a detection surface of the sensor is located at or faces the detection cavity, and at least part of the air passage surrounds the detection cavity.
 9. The aerosol generating apparatus according to claim 8, wherein a slot communicating the air passage with the detection cavity is provided on the annular wall.
 10. The aerosol generating apparatus according to claim 7, wherein the mounting container and a port of the air inlet are correspondingly arranged on two opposite sides of the first support, and the air inlet extends from one side of the first support to the mounting container on the other side.
 11. The aerosol generating apparatus according to claim 10, wherein a capillary portion for attracting condensate liquid is provided on one side of the first support near the port of the air inlet.
 12. The aerosol generating apparatus according to claim 7, wherein the first support comprises an ear chamber separated from the mounting container by a wall and a mounting hole communicated with the ear chamber, and the electrical contact passes through the mounting hole, partially extends into the ear chamber, and is electrically connected to the sensor in the ear chamber.
 13. The aerosol generating apparatus according to claim 7, wherein a flexible supporting seat for holding the sensor is further disposed in the mounting container, and the electrical contact is partially inserted into the flexible supporting seat.
 14. The aerosol generating apparatus according to claim 2, wherein the second support comprises a first limiting wall and a second limiting wall extending into the second holding space, and the atomization cavity is substantially defined between the first limiting wall and the second limiting wall.
 15. The aerosol generating apparatus according to any

one of claims 1 to 14, wherein
the housing comprises an upper housing and a lower
housing, the liquid storage cavity is defined in the
upper housing and the second support is accommodated in the upper housing, the first support is connected to the second support or the upper housing, to enable the electrical contact to support the atomization assembly located in the second holding space.

16. The aerosol generating apparatus according to claim 2, wherein the first support further comprises a first engaging protrusion and a second engaging protrusion extending from the connection end, and the first buckle and the second engaging protrusion extend into the second support and are buckled-connected to the second support.

20

25

30

35

40

45

50

55

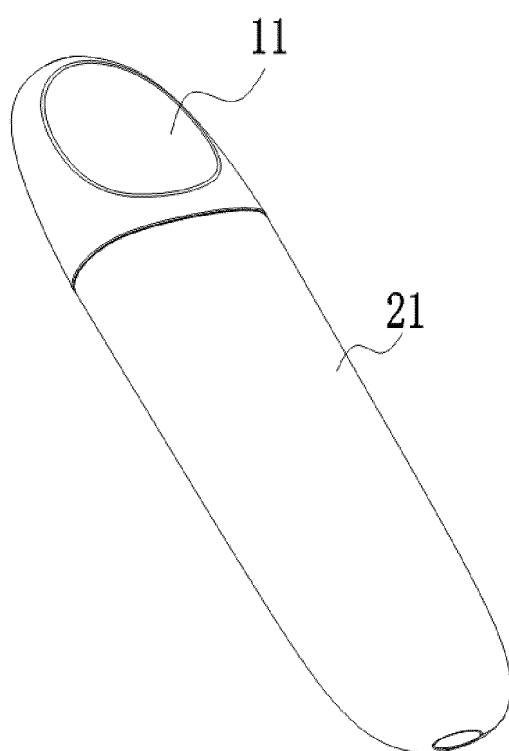


FIG. 1

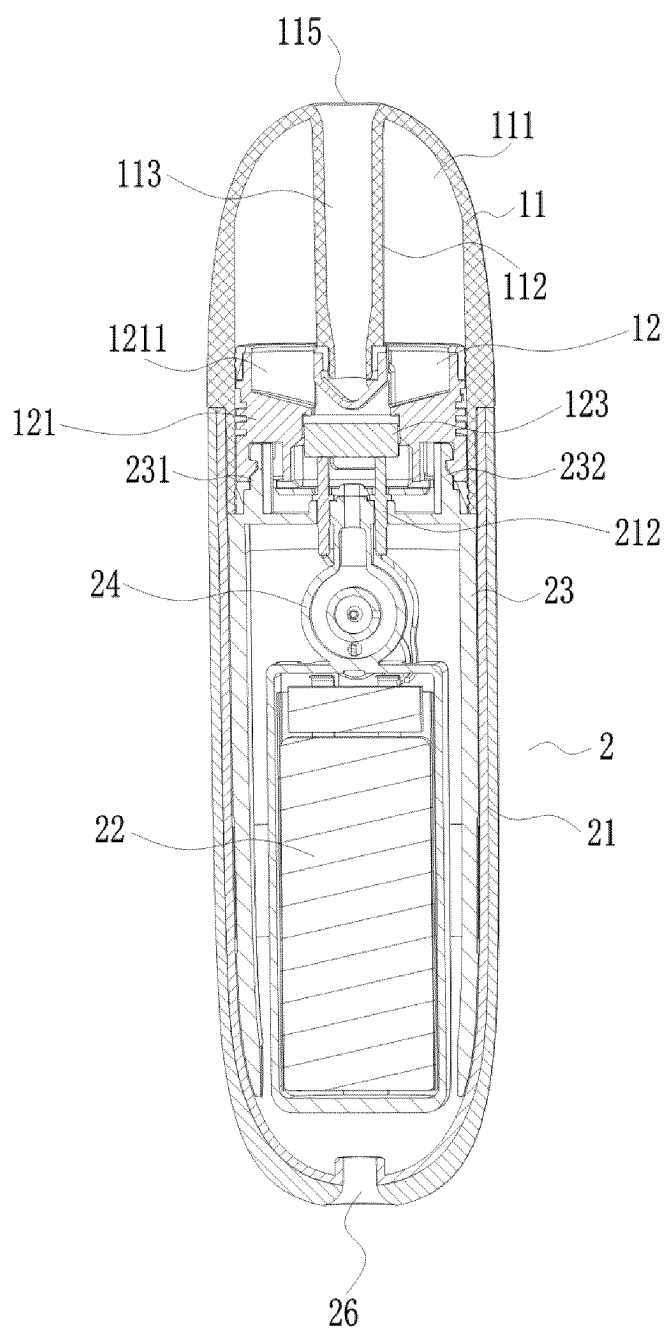


FIG. 2

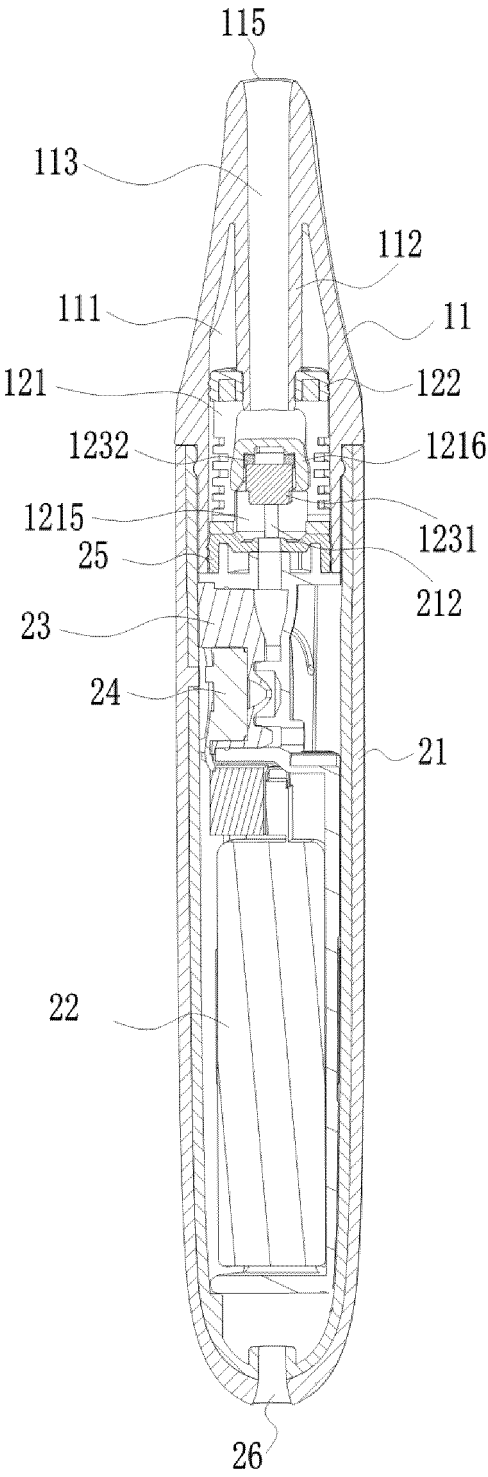


FIG. 3

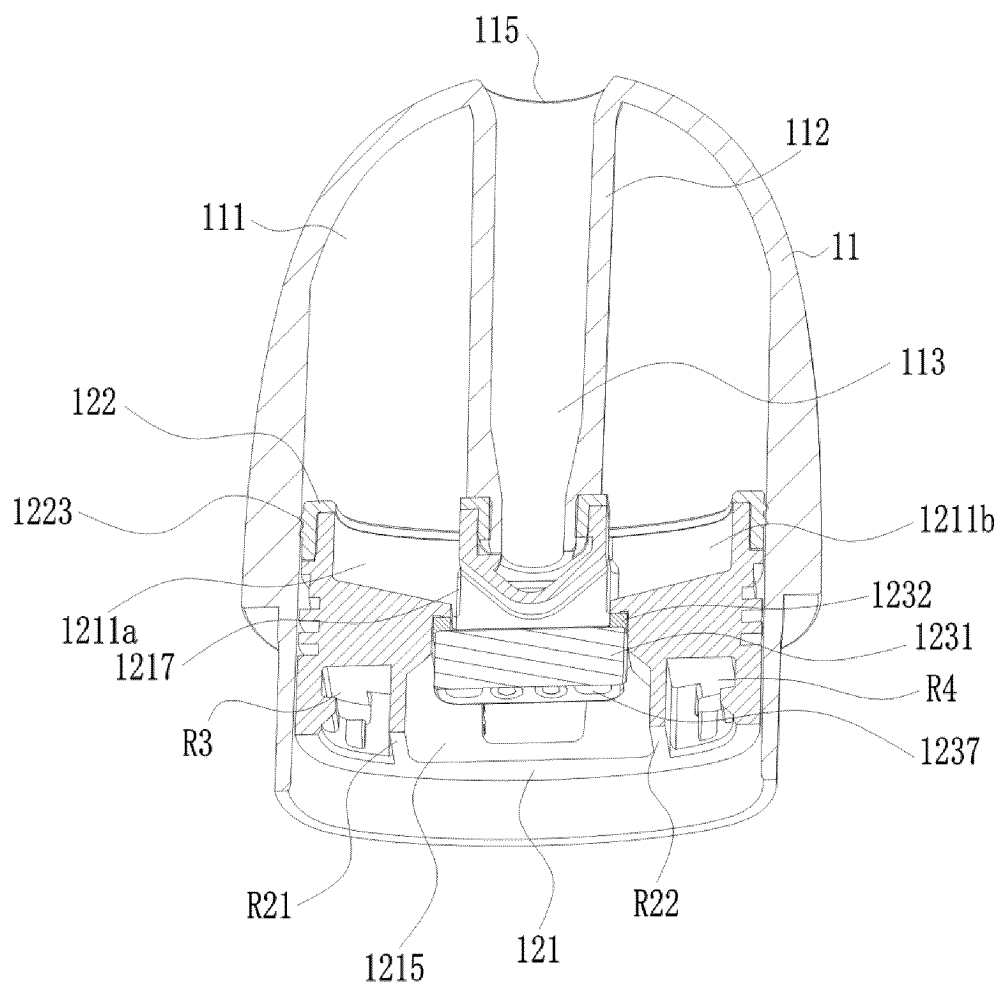


FIG. 4

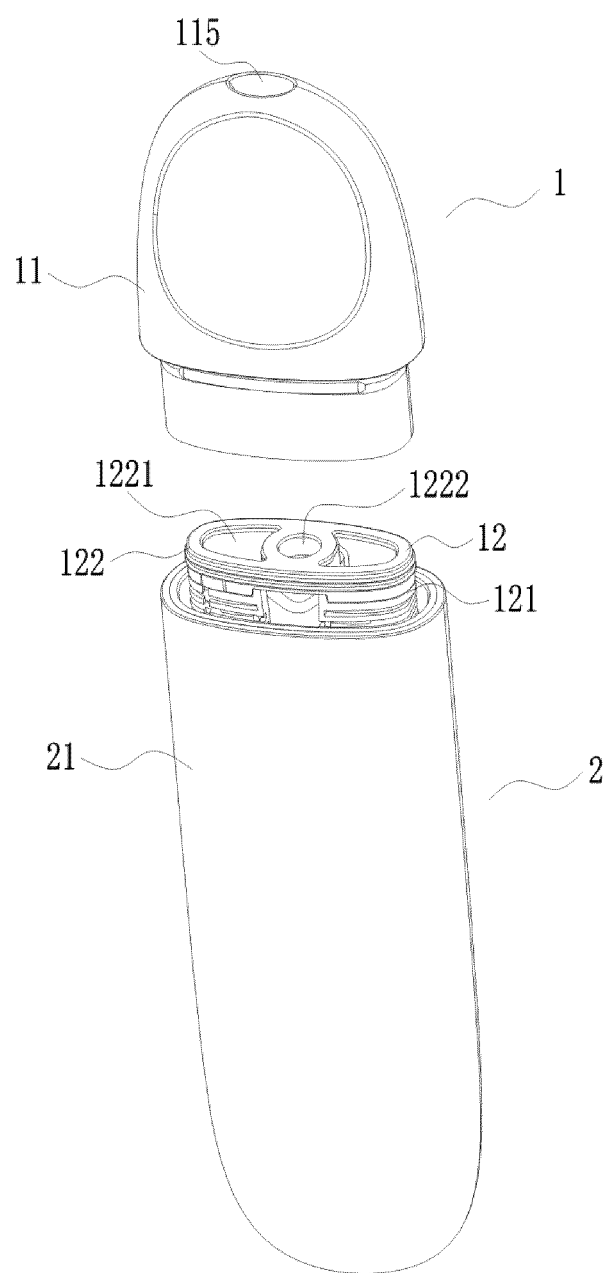


FIG. 5

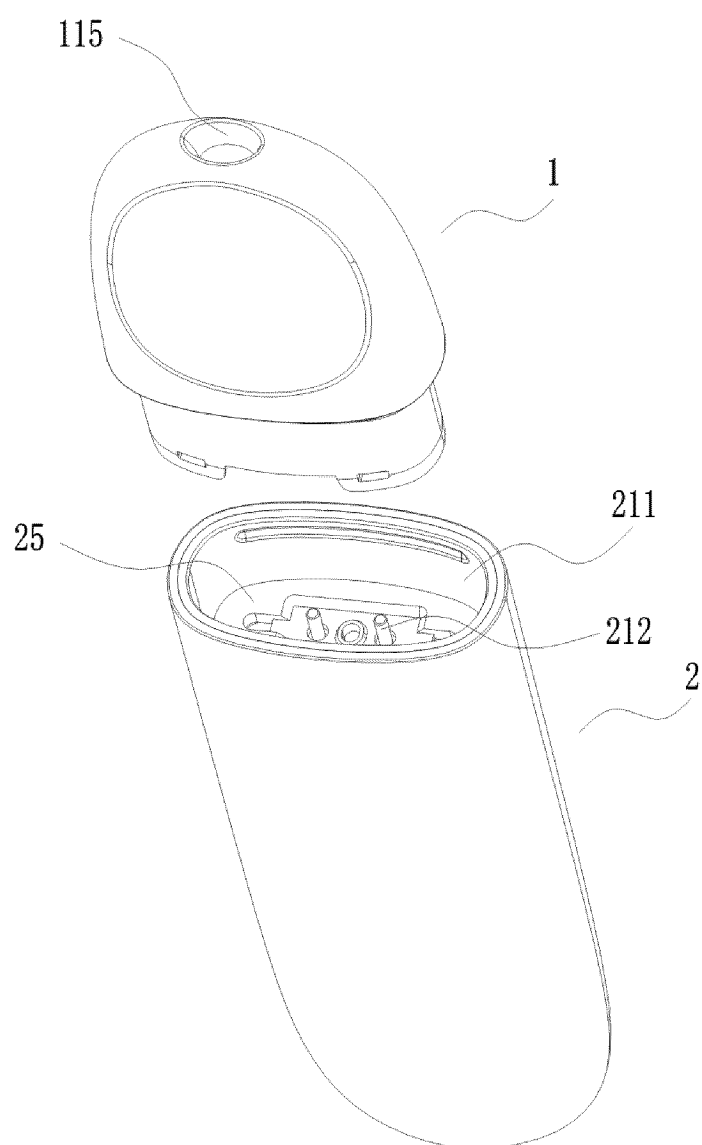


FIG. 6

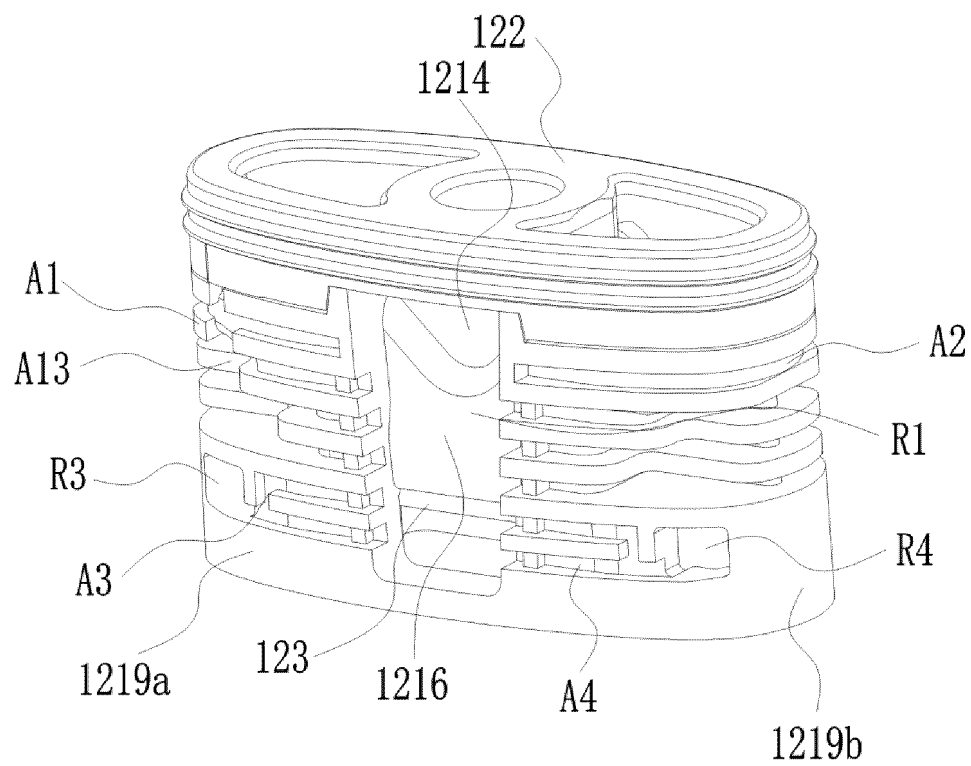


FIG. 7

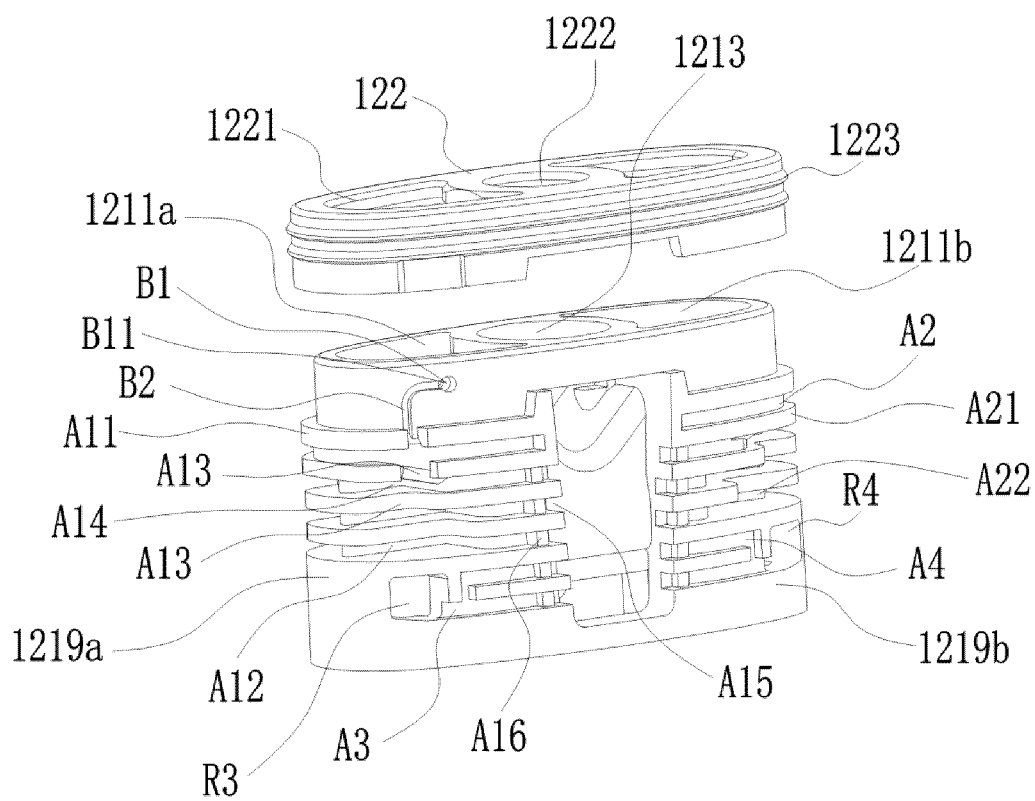


FIG. 8

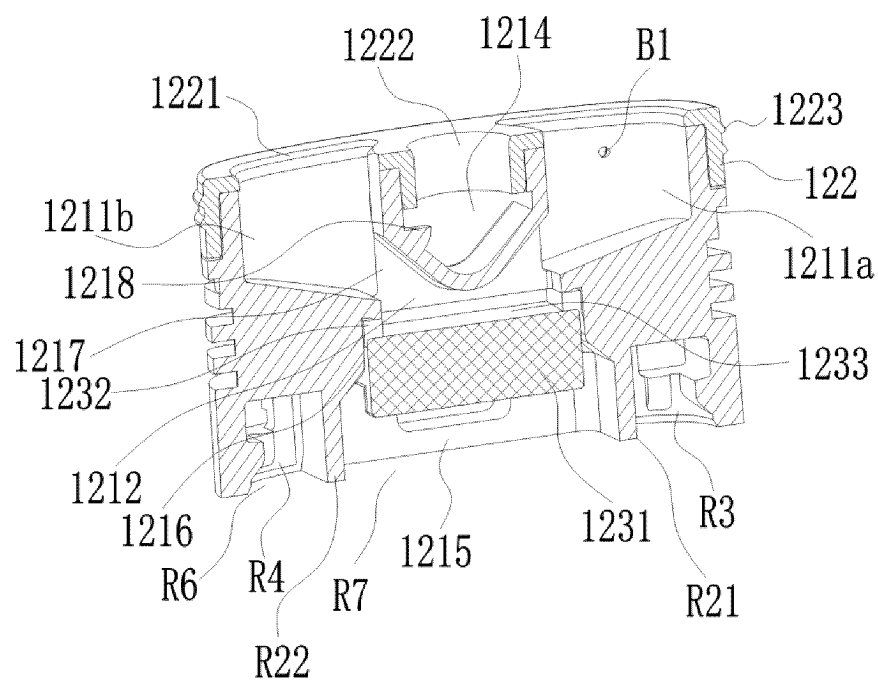


FIG. 9

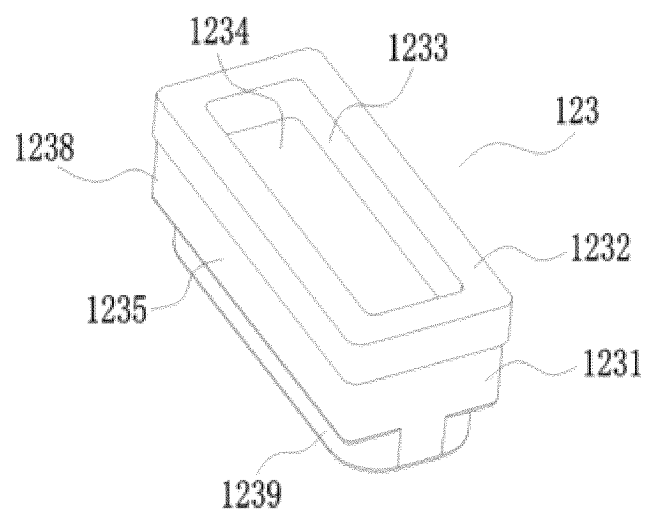


FIG. 10

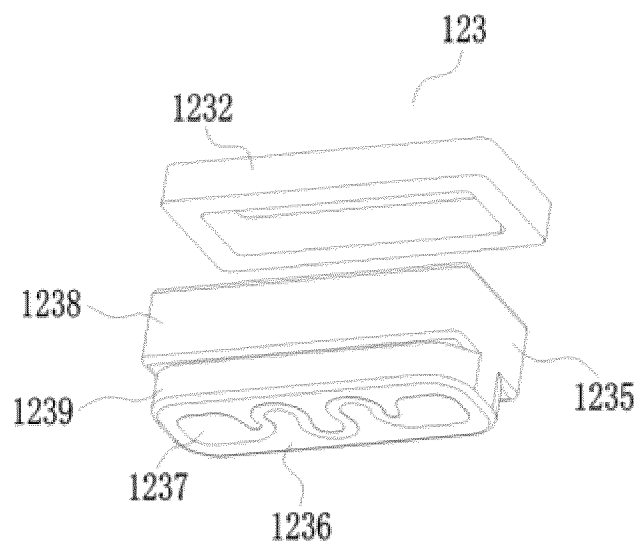


FIG. 11

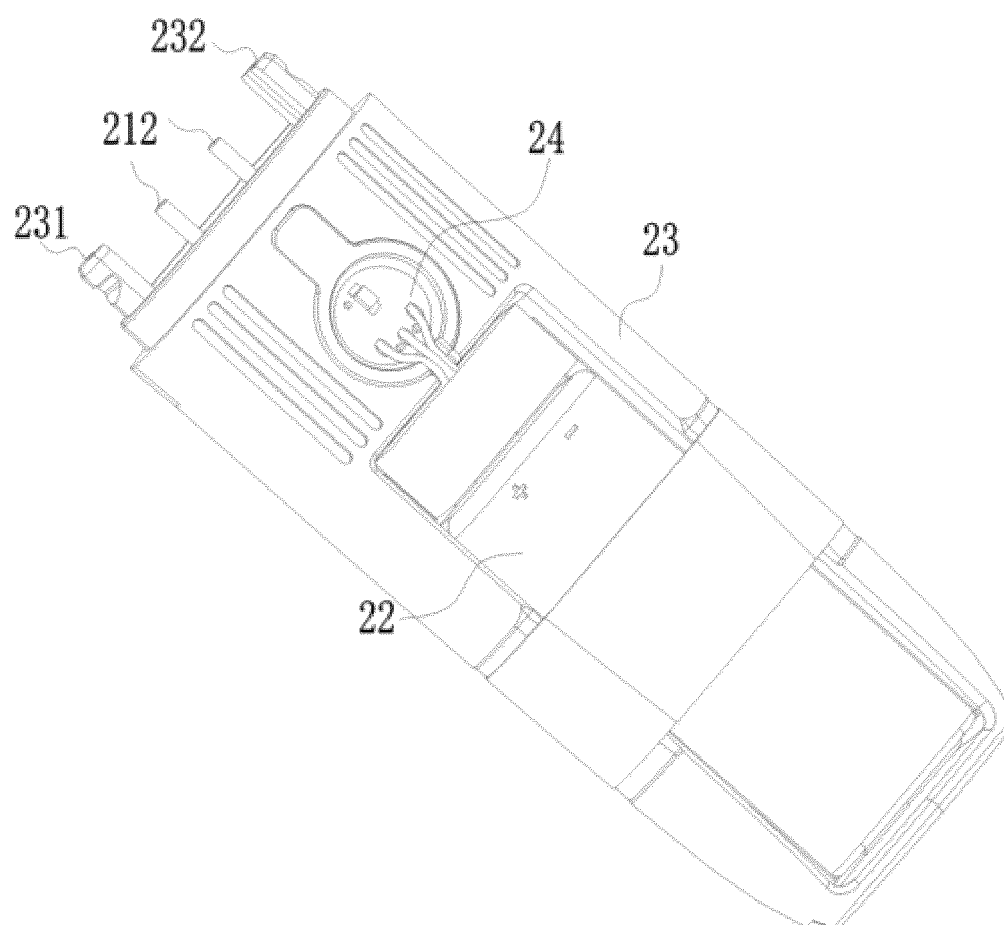


FIG. 12

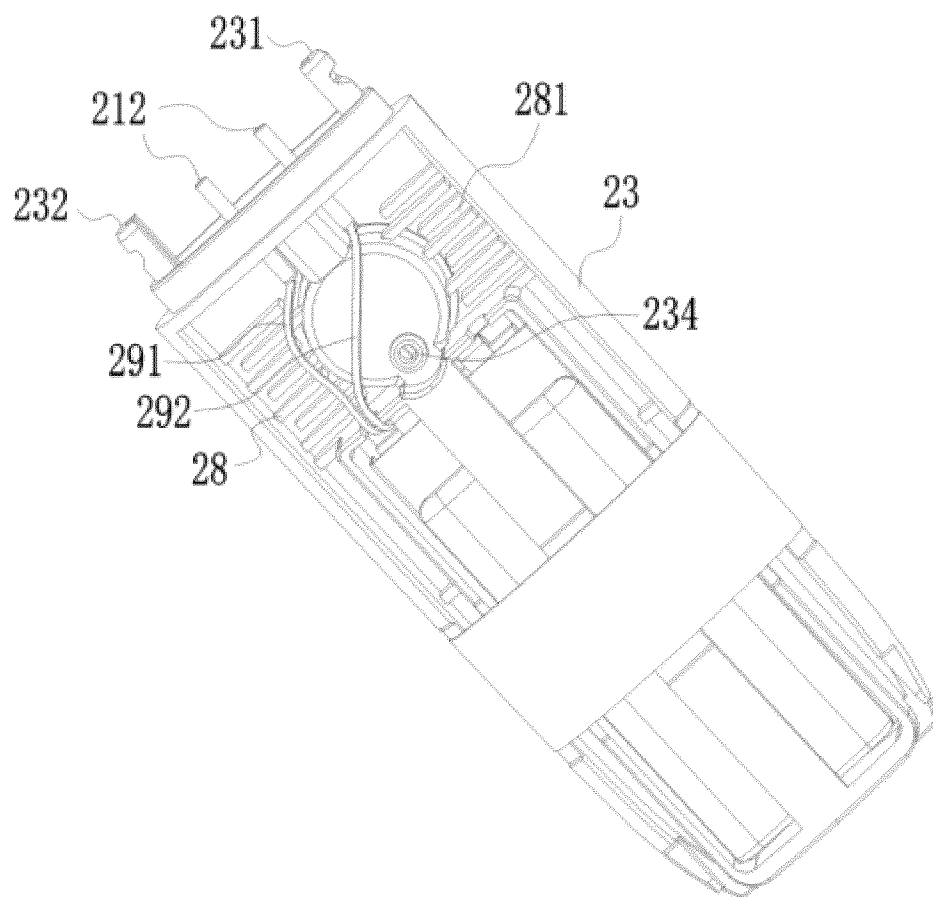


FIG. 13

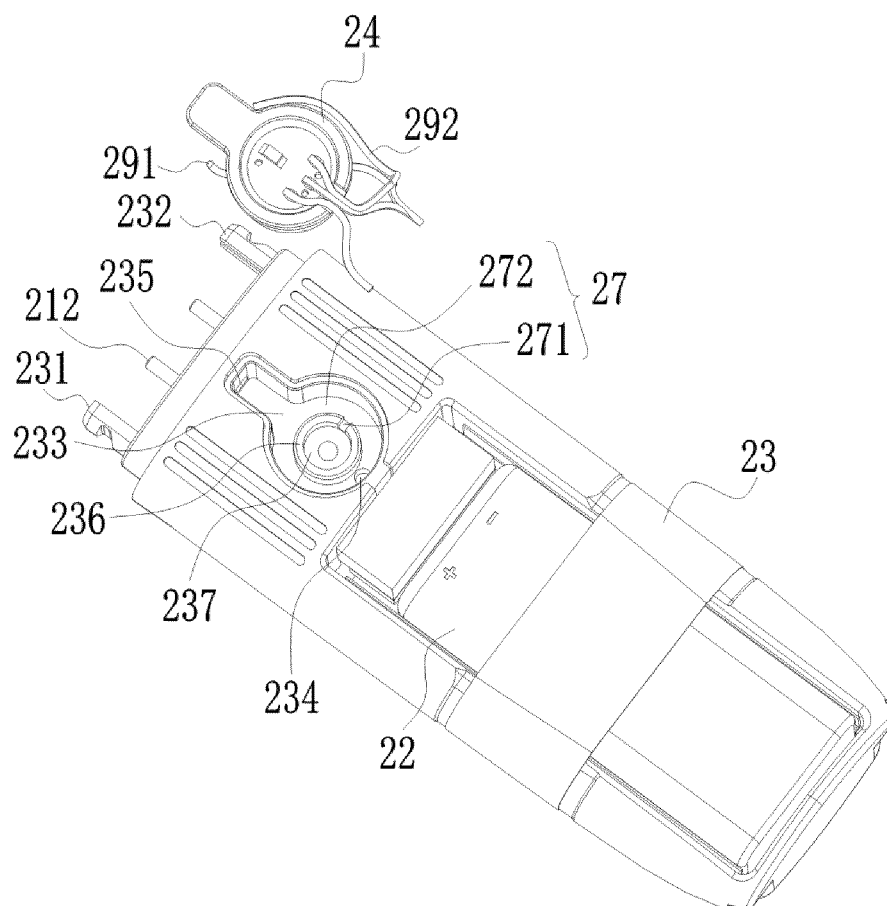


FIG. 14

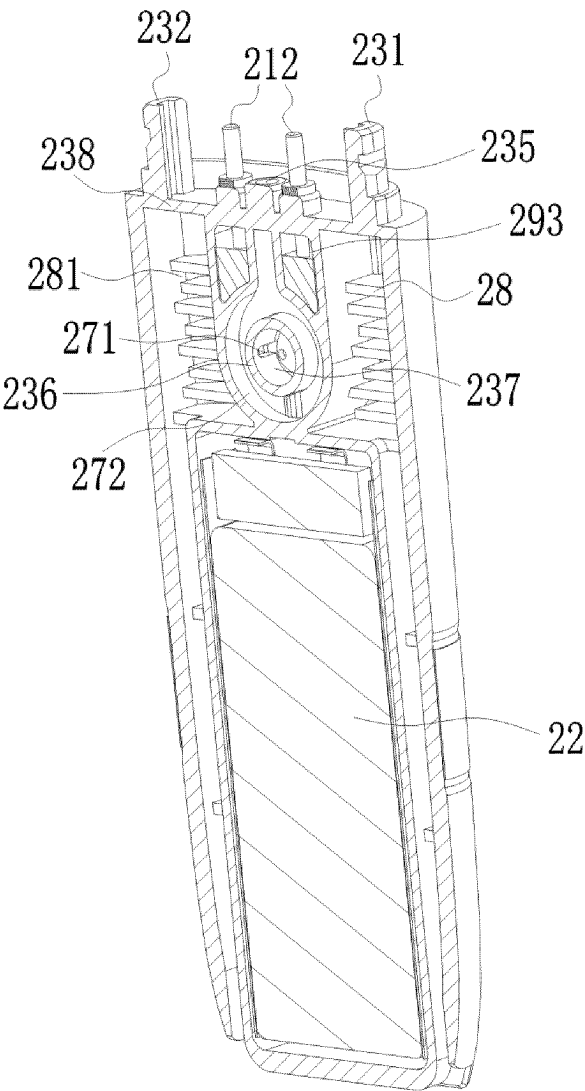


FIG. 15

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/071644

A. CLASSIFICATION OF SUBJECT MATTERA24F40/40(2020.01)i; A24F40/10(2020.01)i; A24F40/42(2020.01)i; A24F40/51(2020.01)i; A24F40/50(2020.01)i;
A24F40/46(2020.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A24F, A61M

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

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

WPABS, CNTXT; ENTXT, VEN, CNKI, 万方, WANFANG, 读秀, DUXIU, ISI Web of Knowledge, Elsevier Science, ACS, RSC; 气, 雾, 烟, 咪头, 雾化, 蒸气, 蒸汽, 蒸发, 气溶胶, 电触头, 电接点, 电触点, 触点, 触头, 电接触, 接点, 接头, 电极, 导电, 引脚, air, gas, flow+, outlet+, breath+, atomi+, miaow?, vapo?r+, steam+, aerosol, evaporat+, spray+, heat+, hot+, electric +, electrode?, contact+, pin+, conduct+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 210782921 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 19 June 2020 (2020-06-19) description, paragraphs 18-127, and figures 1-12	1-16
PX	CN 115299640 A (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 08 November 2022 (2022-11-08) claims 1-16, description, paragraphs 4-106, and figures 1-15	1-16
X	CN 211746949 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 27 October 2020 (2020-10-27) description, paragraphs 3-52, and figures 1-5	1-16
X	CN 209235001 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 13 August 2019 (2019-08-13) description, paragraphs 4-115, and figures 1-16	1-16

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

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“D” document cited by the applicant in the international application

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

19 May 2023

Date of mailing of the international search report

23 May 2023

Name and mailing address of the ISA/CN

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

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/071644

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 214629861 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 09 November 2021 (2021-11-09) description, paragraphs 6-126, and figures 1-21	1-16
X	CN 214962616 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 03 December 2021 (2021-12-03) description, paragraphs 4-171, and figures 1-26	1-16
X	CN 215347020 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 31 December 2021 (2021-12-31) description, paragraphs 5-76, and figures 1-11	1-16
X	CN 215347030 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 31 December 2021 (2021-12-31) description, paragraphs 5-89, and figures 1-12	1-16
X	CN 215347044 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 31 December 2021 (2021-12-31) description, paragraphs 5-75, and figures 1-13	1-16
PX	CN 216983577 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 19 July 2022 (2022-07-19) description, paragraphs 20-122, and figures 1-18	1-12, 14-16
PX	CN 217184820 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 16 August 2022 (2022-08-16) claims 1-16, description, paragraphs 4-106, and figures 1-15	1-16
PX	CN 217609534 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 21 October 2022 (2022-10-21) description, paragraphs 12-85, and figures 1-11	1-7, 14-16
A	CN 213587425 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 02 July 2021 (2021-07-02) entire document	1-16
A	CN 214431782 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 22 October 2021 (2021-10-22) entire document	1-16
A	US 2018168225 A1 (PHILIP MORRIS PRODUCTS SA) 21 June 2018 (2018-06-21) entire document	1-16
A	US 2021100287 A1 (SHENZHEN YOUNE INFORMATION TECHNOLOGY CO., LTD) 08 April 2021 (2021-04-08) entire document	1-16
A	WO 2019052748 A1 (PHILIP MORRIS PRODUCTS SA) 21 March 2019 (2019-03-21) entire document	1-16

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2023/071644

5

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report				Publication date (day/month/year)		Patent family member(s)		Publication date (day/month/year)
CN	210782921	U		19 June 2020		None		
CN	115299640	A		08 November 2022		None		
CN	211746949	U		27 October 2020		None		
CN	209235001	U		13 August 2019		None		
CN	214629861	U		09 November 2021		None		
CN	214962616	U		03 December 2021		None		
CN	215347020	U		31 December 2021		None		
CN	215347030	U		31 December 2021		None		
CN	215347044	U		31 December 2021		None		
CN	216983577	U		19 July 2022		None		
CN	217184820	U		16 August 2022		None		
CN	217609534	U		21 October 2022		None		
CN	213587425	U		02 July 2021		None		
CN	214431782	U		22 October 2021		None		
US	2018168225	A1		21 June 2018	PL	3319464	T3	09 January 2023
					US	2020260787	A1	20 August 2020
					US	10750780	B1	25 August 2020
					RU	2020128439	A	02 October 2020
					RU	2020128439	A3	28 December 2020
					RU	2746843	C2	21 April 2021
					JP	2018523990	A	30 August 2018
					JP	6882994	B2	02 June 2021
					US	10729181	B2	04 August 2020
					US	2021045441	A1	18 February 2021
					EP	3319464	A1	16 May 2018
					EP	3319464	B1	14 September 2022
					WO	2017005471	A1	12 January 2017
					KR	20180027432	A	14 March 2018
					RU	2017145299	A3	12 August 2019
					RU	2017145299	A	09 September 2020
					EP	3821730	A1	19 May 2021
					JP	2021137017	A	16 September 2021
					JP	2021058210	A	15 April 2021
					JP	6890710	B2	18 June 2021
					CA	2985529	A1	12 January 2017
					CA	2985529	C	18 April 2023
					MX	2017016687	A	26 March 2018
					US	2021352967	A1	18 November 2021
					US	11224254	B2	18 January 2022
					IL	255497	A	31 January 2018
US	2021100287	A1		08 April 2021	WO	2020228343	A1	19 November 2020
WO	2019052748	A1		21 March 2019	JP	2023029530	A	03 March 2023
					JP	2020533995	A	26 November 2020
					JP	7254779	B2	10 April 2023
					EP	3684203	A1	29 July 2020
					EP	3684203	B1	08 February 2023
					RU	2022103042	A	01 March 2022
					IL	272286	A	31 March 2020

Form PCT/ISA/210 (patent family annex) (July 2022)

5

10

15

20

25

30

35

40

45

50

55

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/071644

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
		KR 20200054181 A	19 May 2020
		PH 12020500083 A1	07 December 2020
		PL 3684203 T3	17 April 2023
		RU 2020113626 A	20 October 2021
		RU 2020113626 A3	08 April 2022
		MX 2020002695 A	20 July 2020
		BR 112020003506 A2	25 August 2020
.....			

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 202210086824X [0001]