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(54) ELECTRONIC ATOMIZATION DEVICE, ELECTRONIC ATOMIZATION DEVICE BODY, AND ATOMIZATION MATERIAL STORAGE DEVICE

(57) An electronic vaporization device is provided. The electronic vaporization device includes a vaporizable material storage device and a body. The vaporizable material storage device is configured to store a vaporizable material. The body is detachably connected to the vaporizable material storage device. The body includes a processing circuit, a power supply, and a detection apparatus. The power supply is electrically connected to the processing circuit, where the processing circuit controls the power supply to provide first electric power to the vaporizable material storage device to vaporize the vaporizable material. The detection apparatus is electrically connected to the processing circuit. When the vaporizable material storage device triggers the detection apparatus, the detection apparatus provides a power adjustment signal to the processing circuit, where the processing circuit controls, in response to the power adjustment signal, the power supply to provide second electric power to the vaporizable material storage device, the second electric power being different from the first electric power.

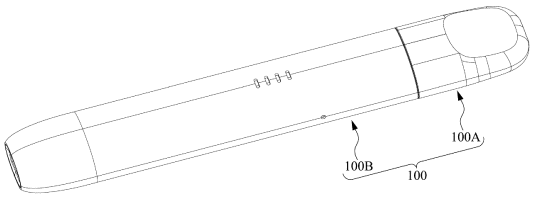

FIG. 1

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Description

TECHNICAL FIELD

[0001] This application relates to an electronic device, and specifically to an electronic vaporization device, an electronic vaporization device body, and a vaporizable material storage device.

BACKGROUND

[0002] In recent years, major manufacturers begin to produce a variety of electronic vaporization device products, including e-liquid electronic vaporization device products that heat and vaporize volatile solutions and generate vapors for users to vape. E-liquid generally includes different flavors of fragrances, which can be vaporized to produce different fragrances.

SUMMARY

[0003] This application provides an electronic vaporization device, an electronic vaporization device body, and a vaporizable material storage device, to provide different electric power to the vaporizable material storage device in a manner different from that of the related art, and to provide users with different using experience.

[0004] This utility model provides an electronic vaporization device. The electronic vaporization device includes a vaporizable material storage device and a body. The vaporizable material storage device is configured to store a vaporizable material. The body is detachably connected to the vaporizable material storage device. The body includes a processing circuit, a power supply, and a detection apparatus. The power supply is electrically connected to the processing circuit, where the processing circuit controls the power supply to provide first electric power to the vaporizable material storage device to vaporize the vaporizable material. The detection apparatus is electrically connected to the processing circuit. When the vaporizable material storage device triggers the detection apparatus, the detection apparatus provides a power adjustment signal to the processing circuit, where the processing circuit controls, in response to the power adjustment signal, the power supply to provide second electric power to the vaporizable material storage device, the second electric power being different from the first electric power.

[0005] In an implementation, the vaporizable material storage device includes electric contact elements, and the body includes electric connection terminals electrically connected to the electric contact elements. The vaporizable material storage device further includes an auxiliary apparatus, wherein when the auxiliary apparatus is connected between the detection apparatus and the electric connection terminals, the detection apparatus is triggered to provide the power adjustment signal.

[0006] In an implementation, the auxiliary apparatus is configured to form a short circuit between the detection apparatus and the electric connection terminal.

[0007] In an implementation, the power adjustment signal indicates potential differences between the detection apparatus and the electric connection terminals.

[0008] In an implementation, the auxiliary apparatus includes an auxiliary elastic piece, one end of the auxiliary elastic piece being connected to the electric contact element.

[0009] In an implementation, the auxiliary apparatus further includes an auxiliary pin, and the vaporizable material storage device further includes a base, the base including a first recess and a second recess, the first recess accommodating the electric contact elements, and the second recess accommodating the auxiliary pin, where the other end of the auxiliary elastic piece is connected to the auxiliary pin.

[0010] In an implementation, the auxiliary elastic piece is disposed in the vaporizable material storage device.

[0011] In an implementation, the auxiliary elastic piece is disposed at an outer surface of the vaporizable material storage device.

[0012] This utility model provides an electronic vaporization device body, including a housing provided with a power supply, one end of the housing being configured to be connected to the vaporizable material storage device. The electronic vaporization device body further includes a processing circuit, a power supply, and a detection apparatus. The power supply is electrically connected to the processing circuit, where the processing circuit controls the power supply to provide first electric power to the vaporizable material storage device to vaporize a vaporizable material in the vaporizable material storage device. The detection apparatus is electrically connected to the processing circuit. When the vaporizable material storage device triggers the detection apparatus, a power adjustment signal is provided to the processing circuit, where the power adjustment signal is used for instructing the processing circuit to control the power supply to provide second electric power to the vaporizable material storage device, the second electric power being different from the first electric power.

[0013] In an implementation, the electronic vaporization device body further includes electric connection terminals. When the vaporizable material storage device is connected to the electronic vaporization device body, the power supply provides the first electric power to the vaporizable material storage device via the electric connection terminals. When the vaporizable material storage device causes a short circuit between the detection apparatus and the electric connection terminal, the detection apparatus provides the power adjustment signal.

[0014] In an implementation, the power adjustment signal indicates potential differences between the detection apparatus and the electric connection terminals.

[0015] This utility model provides a vaporizable material storage device, configured to receive first electric power from an electronic vaporization device body to va-

porize a stored vaporizable material. The vaporizable material storage device includes a base, electric contact elements, and an auxiliary elastic piece. The base includes a first recess. The first recess accommodates the electric contact elements, and electric contact surfaces of the electric contact elements are exposed out of an outer surface of the base. One end of the auxiliary elastic piece is connected to the electric contact element. When the other end of the auxiliary elastic piece is electrically connected to the electronic vaporization device body, the electric contact element receives second electric power to vaporize the vaporizable material, wherein the second electric power is different from the first electric power.

[0016] In an implementation, the base further includes a second recess. The vaporizable material storage device further includes an auxiliary pin. The second recess is configured to accommodate the auxiliary pin, and the other end of the auxiliary elastic piece is connected to the auxiliary pin.

[0017] In an implementation, the auxiliary elastic piece is disposed in the vaporizable material storage device.

[0018] In an implementation, the auxiliary elastic piece is disposed at an outer surface of the base.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The accompanying drawings are provided for further understanding of this application and constitute part of the specification, and explain this application together with the following specific implementations, but do not constitute a limitation to this application. In the accompanying drawings:

FIG. 1 is a schematic diagram of an electronic vaporization device according to some embodiments of this application.

FIG. 2 is a schematic diagram of a demonstrative combination of an electronic vaporization device according to some embodiments of this application.

FIG. 3 is a cross-sectional front view of an electronic vaporization device body according to some embodiments of this application.

FIG. 4 is a schematic diagram of a base of a vaporizable material storage device according to an embodiment of this application.

FIG. 5A is a schematic diagram of a match of an auxiliary apparatus and electric contact elements of a vaporizable material storage device according to an embodiment of this application.

FIG. 5B is a cross-sectional assembly view of an auxiliary apparatus and a base according to an embodiment of this application.

FIG. 6A is a schematic diagram of a match of an auxiliary apparatus and electric contact elements of a vaporizable material storage device according to another embodiment of this application.

FIG. 6B is a cross-sectional assembly view of an auxiliary apparatus and a base according to another embodiment of this application.

FIG. 7A is a schematic diagram of a match of an auxiliary apparatus and electric contact elements of a vaporizable material storage device according to an embodiment of this application.

FIG. 7B is a cross-sectional assembly view of an auxiliary apparatus and a base according to an embodiment of this application.

FIG. 8A is a schematic diagram of a match of an auxiliary apparatus and electric contact elements of a vaporizable material storage device according to another embodiment of this application.

FIG. 8B is a cross-sectional assembly view of an auxiliary apparatus and a base according to another embodiment of this application.

DETAILED DESCRIPTION

[0020] The following disclosure provides many different embodiments or examples for implementing different features of the provided subject matter. The following describes particular examples of members and deployments. Certainly, these are merely examples and are not intended to be limitative. In this application, in the following descriptions, reference formed by the first feature above or on the second feature may include an embodiment formed by direct contact between the first feature and the second feature, and may further include an embodiment in which an additional feature may be formed between the first feature and the second feature to enable the first feature and the second feature to be not in direct contact. In addition, in this application, reference numerals and/or letters may be repeated in examples. This repetition is for the purpose of simplification and clarity, and does not indicate a relationship between the described various embodiments and/or configurations.

[0021] The embodiments of this application are described in detail below. However, it should be understood that, this application provides many applicable concepts that can be implemented in various particular cases. The described particular embodiments are only illustrative and do not limit the scope of this application.

[0022] FIG. 1 is a schematic diagram of a front surface of an electronic vaporization device 100 according to some embodiments of this application.

[0023] The electronic vaporization device 100 may include a vaporizable material storage device 100A and a body 100B. In some embodiments, the vaporizable material storage device 100A and the body 100B may be designed as a unity. In some embodiments, the vaporizable material storage device 100A and the body 100B may be designed as two separate members. In some embodiments, the vaporizable material storage device 100A may be designed to be detachably combined with the body 100B. In some embodiments, when the vaporizable material storage device 100A is combined with the body 100B, the vaporizable material storage device 100A is partly accommodated in the body 100B. In some em-

bodiments, the vaporizable material storage device 100A may be referred to as a cartridge or an e-liquid storage assembly. In some embodiments, the body 100B may be referred to as a main body.

[0024] The body 100B may provide electric power to the vaporizable material storage device 100A. The electric power provided by the body 100B to the vaporizable material storage device 100A may heat a vaporizable material stored in the vaporizable material storage device 100A. The vaporizable material may be a liquid. The vaporizable material may be a solution. The vaporizable material may alternatively be referred to as e-liquid. The e-liquid is edible.

[0025] FIG. 2 is an exemplary schematic combination diagram of the electronic vaporization device 100 according to some embodiments of this application.

[0026] The body 100B has a body casing 22. The body casing 22 has an opening 22h. The opening 22h may accommodate part of the vaporizable material storage device 100A. In some embodiments, the vaporizable material storage device 100A may not have directivity. In some embodiments, the vaporizable material storage device 100A may be detachably combined with the body 100B in either of two different directions (that is, a direction in which a surface 1s faces upward or a direction in which the surface 1s faces downward). From the appearance, the vaporizable material storage device 100A includes a casing 1 and a base 9. The base 9 is located at the bottom of the vaporizable material storage device 100A. When the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, the opening 22h accommodates the base 9 of the vaporizable material storage device 100A.

[0027] FIG. 3 is a cross-sectional front view of the electronic vaporization device body 100B according to some embodiments of this application. In some embodiments, the electronic vaporization device body 100B includes electric connection terminals 31a and 31b, a processing circuit 32, a power supply 33, and a detection apparatus 34. In some embodiments, the processing circuit 32 is electrically connected to the electric connection terminals 31a and 31b, the power supply 33, and the detection apparatus 34. The processing circuit 32 is configured to control components of the electronic vaporization device 100 to collaborate to implement functions of the electronic vaporization device 100.

[0028] In some embodiments, the power supply 33 is electrically connected to the electric connection terminals 31a and 31b. Through the control of the processing circuit 32, the power supply 33 transfers electric power with different magnitudes to the vaporizable material storage device 100A via the electric connection terminals 31a and 31b to heat the vaporizable material stored in the vaporizable material storage device 100A. In some embodiments, the electric connection terminals 31a and 31b are two same terminals disposed symmetrically. A person skilled in the art should understand that the electric power generated by the power supply 33 may be transferred in a form of current, and the current flows into the vaporizable material storage device 100A from one of the electric connection terminals 31a and 31b (for example, the electric connection terminal 31a), and flows into the power supply 33 from the other one of the electric connection terminals 31a and 31b (for example, the electric connection terminal 3 1b), to complete a current loop.

[0029] In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, and if the vaporizable material storage device 100A does not trigger the detection apparatus 34, the processing circuit 32 controls the power supply 33 to provide first electric power PW1 to the vaporizable material storage device 100A. In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, and if the vaporizable material storage device 100A triggers the detection apparatus 34, the detection apparatus 34 provides a power adjustment signal AS to the processing circuit 32, so that the processing circuit 32 controls, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 that is different from the first electric power PW1 to the vaporizable material storage device 100A. In some embodiments, the second electric power PW2 is higher than the first electric power PW1. However, this application does not limit thereto. In other embodiments, the second electric power PW2 may be lower than the first electric power PW1.

[0030] In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, and if the vaporizable material storage device 100A does not form an electrical path between the detection apparatus 34 and one of the electric connection terminals 31a and 31b, the detection apparatus 34 forms an open circuit. In this setting, the processing circuit 32 controls the power supply 33 to provide first electric power PW1 to the vaporizable material storage device 100A. In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, and if the vaporizable material storage device 100A causes a short circuit between the detection apparatus 34 and one of the electric connection terminals 31a and 31b, the detection apparatus 34 is triggered to provide a power adjustment signal AS to the processing circuit 32, so that the processing circuit 32 may control, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A.

[0031] In some embodiments, the power adjustment signal AS is used for indicating potential differences between the detection apparatus 34 and the electric connection terminals 31a and 31b. A person skilled in the art should understand that, when the detection apparatus 34 forms an open circuit, the detection apparatus 34 and the electric connection terminals 31a and 31b cannot form a circuit loop, and therefore, there is no potential

difference. In some embodiments, when the detection apparatus 34 forms an open circuit, the detection apparatus 34 does not provide a power adjustment signal AS. In some embodiments, when the detection apparatus 34 forms an open circuit, the power adjustment signal AS provided by the detection apparatus 34 indicates that there is no potential difference between the detection apparatus 34 and the electric connection terminals 31a and 31b. When the power adjustment signal AS received by the processing circuit 32 indicates that there is no potential difference between the detection apparatus 34 and the electric connection terminals 31a and 31b, the processing circuit 32 controls the power supply 33 to provide first electric power PW1 to the vaporizable material storage device 100A.

[0032] When the vaporizable material storage device 100A causes a short circuit between the detection apparatus 34 and one of the electric connection terminals 31a and 31b (for example, the electric connection terminal 31b), a potential difference between the detection apparatus 34 and the electric connection terminal 31b is zero. When the power adjustment signal AS received by the processing circuit 32 indicates that the potential difference between the detection apparatus 34 and the electric connection terminal 31b is zero, the processing circuit 32 controls the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A.

[0033] It is to be noted that, although it is described herein that the detection apparatus 34 provides the power adjustment signal AS, this application does not limit that the detection apparatus 34 actively provides the power adjustment signal AS to the processing circuit 32. In some embodiments, the processing circuit 32 may detect the potential differences between the detection apparatus 34 and the electric connection terminals 31a and 31b in real time as the power adjustment signal AS. When the power adjustment signal AS indicates that the detection apparatus 34 is in an open circuit, the processing circuit 32 controls the power supply 33 to provide first electric power PW1 to the vaporizable material storage device 100A. When the power adjustment signal AS indicates that the detection apparatus 34 and one of the electric connection terminals 31a and 31b form a short circuit, the processing circuit 32 controls, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A.

[0034] FIG. 4 is a schematic diagram of a base 9 of a vaporizable material storage device 100A according to an embodiment of this application. The base 9 includes an air inlet region 9a, and the air inlet region 9a includes a recess 9a1. The recess 9a1 is provided with an opening 9h1 and an opening 9h2. The opening 9h1 and the opening 9h2 may be disposed within a range of the air inlet region 9a. The opening 9h1 and the opening 9h2 may be disposed within a range of the recess 9a1. The opening 9h1 and the opening 9h2 are in communication with a vaporization chamber inside the vaporizable material storage device 100A. The opening 9h1 and the opening 9h2 are used as air-inlet vents, and air may flow into the vaporizable material storage device 100A through the opening 9h1 and the opening 9h2.

[0035] The base 9 further includes recesses 9h3 and 9h4 disposed at two sides of the air inlet region 9a. The recesses 9h3 and 9h4 may respectively accommodate electric contact elements 9p1 and 9p2, and secure the electric contact elements 9p1 and 9p2 to the base 9. Rod portions 9k1 and 9k2 of the electric contact elements 9p1 and 9p2 pass through the recesses 9h3 and 9h4 and extend to an inner portion of the vaporizable material storage device 100A. The electric contact elements 9p1 and 9p2 may have a current conduction function. After the electric contact elements 9p1 and 9p2 pass through the recesses 9h3 and 9h4, an electric contact surface 9s1 of the electric contact element 9p1 and an electric contact surface 9s2 of the electric contact element 9p2 are exposed out of an outer surface of the base 9. When the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, the electric contact surfaces 9s1 and 9s2 are respectively in contact with the electric connection terminals 31a and 31b, and the electric contact elements 9p1 and 9p2 may provide first electric power PW1 or second electric power PW2 provided by the power supply 33 to the vaporizable material storage device 100A. The electric contact elements 9p1 and 9p2 may include metal. The electric contact elements 9p1 and 9p2 may be attracted by magnetic members. The vaporizable material storage device 100A may be attracted, with the electric contact elements 9p1 and 9p2, by magnetic members disposed inside the body 100B. The vaporizable material storage device 100A may be detachably combined with the body 100B with the electric contact elements 9p1 and 9p2.

[0036] FIG. 5A is a schematic diagram of a match of an auxiliary apparatus 5 and the electric contact elements 9p1 and 9p2 of the vaporizable material storage device 100A according to an embodiment of this application. In some embodiments, the auxiliary apparatus 5 includes an auxiliary elastic piece 5a. In some embodiments, one end of the auxiliary elastic piece 5a is connected to one of the electric contact elements 9p1 and 9p2 (for example, as shown in FIG. 5A, connected to the electric contact element 9p2). In some embodiments, one end of the auxiliary elastic piece 5a is connected to the rod portion 9k2 of the electric contact element 9p2, and the auxiliary elastic piece 5a extends from the rod portion 9k2 of the electric contact element 9p2 to the center of the base 9. In some embodiments, the length of the auxiliary elastic piece 5a extends to a central position of the recess 9a1. In some embodiments, the auxiliary elastic piece 5a may include metal. In some embodiments, when the auxiliary apparatus 5 is connected between the detection apparatus 34 and the electric connection terminal 31a or between the detection apparatus and the electric connection terminal 31b, the detection apparatus 34 is triggered to provide a

power adjustment signal AS.

[0037] FIG. 5B is a cross-sectional assembly view of the auxiliary apparatus 5 and the base 9 according to an embodiment of this application. In the embodiment of FIG. 5B, the auxiliary elastic piece 5a extends from the rod portion 9k2, and therefore, when some or all members of the vaporizable material storage device 100A are combined with each other, the auxiliary elastic piece 5a is embedded in the base 9. In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, the detection apparatus 34 passes through the recess 9a1 of the base 9 to be connected to the other end of the auxiliary elastic piece 5a, and one of the electric connection terminals 31a and 31b (for example, the electric connection terminal 31b) is electrically connected to the electric contact element 9p2. The auxiliary elastic piece 5a is connected between the detection apparatus 34 and the electric connection terminal 31b, and further a short circuit is formed between the detection apparatus 34 and the electric connection terminal 31b. The detection apparatus 34 is triggered to provide a power adjustment signal AS to the processing circuit 32, wherein the power adjustment signal AS indicates that a short circuit is formed between the detection apparatus 34 and the electric connection terminal 31b. The processing circuit 32 controls, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A.

[0038] FIG. 6A is a schematic diagram of a match of the auxiliary apparatus 5 and electric contact elements 9p1 and 9p2 of the vaporizable material storage device 100A according to another embodiment of this application. The embodiment of FIG. 6A is roughly the same as that of FIG. 5A, and the different only lies in that one end of the auxiliary elastic piece 5a is connected to the electric contact surface 9s2 of the electric contact element 9p2, and the auxiliary elastic piece 5a extends from the electric contact surface 9s2 of the electric contact element 9p2 to the center of the base 9.

[0039] FIG. 6B is a cross-sectional assembly view of the auxiliary apparatus 5 and the base 9 according to another embodiment of this application. The auxiliary elastic piece 5a extends from the electric contact surface 9s2, and therefore, when some or all members of the vaporizable material storage device 100A are combined with each other, the auxiliary elastic piece 5a is exposed out of an outer surface of the base 9. In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, the detection apparatus 34 is connected to the other end of the auxiliary elastic piece 5a, and one of the electric connection terminals 31a and 31b (for example, the electric connection terminal 31b) is electrically connected to the electric contact element 9p2. The auxiliary elastic piece 5a is connected between the detection apparatus 34 and the electric connection terminal 31b, and further a short circuit is formed between the detection apparatus 34 and the electric connection terminal 31b. The detection apparatus 34 is triggered to provide a power adjustment signal AS to the processing circuit 32, wherein the power adjustment signal AS indicates that a short circuit is formed between the detection apparatus 34 and the electric connection terminal 31b. The processing circuit 32 controls, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A.

[0040] FIG. 7A is a schematic diagram of a match of an auxiliary apparatus 6 and the electric contact elements 9p1 and 9p2 of the vaporizable material storage device 100A according to an embodiment of this application. In some embodiments, the auxiliary apparatus 6 includes an auxiliary elastic piece 6a and an auxiliary pin 6p. In some embodiments, one end of the auxiliary elastic piece 6a is connected to one of the electric contact elements 9p1 and 9p2 (for example, as shown in FIG. 7A, connected to the electric contact element 9p2). In some embodiments, one end of the auxiliary elastic piece 6a is connected to the rod portion 9k2 of the electric contact element 9p2, and the auxiliary elastic piece 6a extends from the rod portion 9k2 of the electric contact element 9p2 to the center of the base 9. The other end of the auxiliary elastic piece 6a is connected to a rod portion 6k of the auxiliary pin 6p. In some embodiments, when some or all members of the vaporizable material storage device 100A are combined with each other, the recess 9a1 of the base 9 accommodates the auxiliary pin 6p, and an electric contact surface 6s of the auxiliary pin 6p is exposed out of an outer surface of the base 9. In some embodiments, the auxiliary elastic piece 6a and the auxiliary pin 6p may include metal. In some embodiments, when the auxiliary apparatus 6 is connected between the detection apparatus 34 and the electric connection terminal 31a or between the detection apparatus 34 and the electric connection terminal 31b, the detection apparatus 34 is triggered to provide a power adjustment signal AS.

[0041] FIG. 7B is a cross-sectional assembly view of the auxiliary apparatus 6 and the base 9 according to an embodiment of this application. In the embodiment of FIG. 7B, the auxiliary elastic piece 6a extends from the rod portion 9k2, and therefore, when some or all members of the vaporizable material storage device 100A are combined with each other, the auxiliary elastic piece 6a is embedded in the base 9. In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, the detection apparatus 34 is electrically connected to the electric contact surface 6s of the auxiliary pin 6p, and one of the electric connection terminals 31a and 31b (for example, the electric connection terminal 31b) is electrically connected to the electric contact element 9p2. The auxiliary elastic piece 6a and the auxiliary pin 6p are connected between the detection apparatus 34 and the electric connection terminal 31b, and further a short circuit is

formed between the detection apparatus 34 and the electric connection terminal 31b. The detection apparatus 34 is triggered to provide a power adjustment signal AS to the processing circuit 32, wherein the power adjustment signal AS indicates that a short circuit is formed between the detection apparatus 34 and the electric connection terminal 31b. The processing circuit 32 controls, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A.

[0042] FIG. 8A is a schematic diagram of a match of the auxiliary apparatus 6 and the electric contact elements 9p1 and 9p2 of the vaporizable material storage device 100A according to another embodiment of this application. The embodiment of FIG. 8A is roughly the same as that of FIG. 7A, and the different only lies in that one end of the auxiliary elastic piece 6a is connected to the electric contact surface 9s2 of the electric contact element 9p2, and the other end of the auxiliary elastic piece 6a is connected to the electric contact surface 6s of the auxiliary pin 6p.

[0043] FIG. 8B is a cross-sectional assembly view of the auxiliary apparatus 6 and the base 9 according to an embodiment of this application. In the embodiment of FIG. 7B, the auxiliary elastic piece 6a extends from the electric contact surface 9s2 to the electric contact surface 6s, and therefore, when some or all members of the vaporizable material storage device 100A are combined with each other, the auxiliary elastic piece 6a is exposed out of an outer surface of the base 9. In some embodiments, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, the detection apparatus 34 is electrically connected to the electric contact surface 6s of the auxiliary pin 6p, and one of the electric connection terminals 31a and 31b (for example, the electric connection terminal 31b) is electrically connected to the electric contact element 9p2. The auxiliary elastic piece 6a and the auxiliary pin 6p are connected between the detection apparatus 34 and the electric connection terminal 31b, and further a short circuit is formed between the detection apparatus 34 and the electric connection terminal 31b. The detection apparatus 34 is triggered to provide a power adjustment signal AS to the processing circuit 32, wherein the power adjustment signal AS indicates that a short circuit is formed between the detection apparatus 34 and the electric connection terminal 31b. The processing circuit 32 controls, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A.

[0044] Briefly summarize this application, when the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, and if the vaporizable material storage device 100A can provide an electrical path to cause a short circuit between the detection apparatus 34 and one of the electric connection terminals 31a and 31b, the processing circuit 32 controls the power supply 33 to provide relatively large second electric power PW2 to the vaporizable material storage device 100A, to provide a relatively large amount of vapor and increase the flavor when vaping. When the vaporizable material storage device 100A does not cause a short circuit between the detection apparatus 34 and one of the electric connection terminals 31a and 31b, the processing circuit 32 controls the power supply 33 to provide relatively small first electric power PW1 to the vaporizable material storage device 100A. In this setting, the user may use different vaporizable material storage devices 100A according to own preferences to obtain different using experience.

[0045] In the foregoing embodiments, the processing circuit 32 controls the power supply 33 to provide power according to a potential difference signal (the detection apparatus 34 is in an open circuit or a short circuit). However, this application does not limit thereto. In other embodiments, the detection apparatus 34 may be a sensor. For example, the detection apparatus 34 may be a pressure sensor. When the vaporizable material storage device 100A is combined with the electronic vaporization device body 100B, a corresponding portion of the vaporizable material storage device 100A provides pressure to trigger the detection apparatus 34 to provide a power adjustment signal AS to the processing circuit 32, so that the processing circuit 32 controls, in response to the power adjustment signal AS, the power supply 33 to provide second electric power PW2 to the vaporizable material storage device 100A. Provided that the detection apparatus 34 can be triggered by the vaporizable material storage device 100A and the power supply 33 may be controlled to provide electric power with different magnitudes to the vaporizable material storage device 100A, the detailed structure shall fall within the invention of this application.

[0046] As used herein, the terms "approximately", "basically", "substantially", and "about" are used to describe and consider small variations. When used in combination with an event or a situation, the terms may refer to an example in which an event or a situation occurs accurately and an example in which the event or situation occurs approximately. As used herein with respect to a given value or range, the term "about" generally means in the range of ± 10%, ±5%, ±1%, or ±0.5% of the given value or range. The range may be indicated herein as from one endpoint to another endpoint or between two endpoints. Unless otherwise specified, all ranges disclosed herein include endpoints. The term "substantially coplanar" may refer to two surfaces within a few micrometers (μm) positioned along the same plane, for example, within 10 μm, within 5 μm, within 1 μm, or within 0.5 μm positioned along the same plane. When reference is made to "substantially" the same numerical value or characteristic, the term may refer to a value within ± 10%, ±5%, ±1%, or ±0.5% of the average of the values.

[0047] As used herein, the terms "approximately", "basically", "substantially", and "about" are used to describe and explain small variations. When used in combination

with an event or a situation, the terms may refer to an example in which an event or a situation occurs accurately and an example in which the event or situation occurs approximately. For example, when being used in combination with a value, the term may refer to a variation range of less than or equal to ±10% of the value, for example, less than or equal to ±5%, less than or equal to ±4%, less than or equal to ±3%, less than or equal to ±2%, less than or equal to ±1%, less than or equal to ±0.5%, less than or equal to ±0.1%, or less than or equal to ±0.05%. For example, if a difference between two values is less than or equal to ±10% of an average value of the value (for example, less than or equal to ±5%, less than or equal to ±4%, less than or equal to ±3%, less than or equal to ±2%, less than or equal to ±1%, less than or equal to ±0.5%, less than or equal to ±0.1%, or less than or equal to ±0.05%), it may be considered that the two values are "substantially" or "approximately" the same. For example, being "basically" parallel may refer to an angular variation range of less than or equal to ±10° with respect to 0°, for example, less than or equal to ±5°, less than or equal to ±4°, less than or equal to ±3°, less than or equal to ±2°, less than or equal to ±1°, less than or equal to ±0.5°, less than or equal to ±0.1°, or less than or equal to ±0.05°. For example, being "substantially" perpendicular may refer to an angular variation range of less than or equal to ±10° with respect to 90°, for example, less than or equal to ±5°, less than or equal to ±4°, less than or equal to ±3°, less than or equal to ±2°, less than or equal to ±1°, less than or equal to ±0.5°, less than or equal to ±0.1°, or less than or equal to ±0.05°.

[0048] For example, two surfaces can be deemed to be coplanar or substantially coplanar if a displacement between the two surfaces is no greater than 5 μm, no greater than 2 μm, no greater than 1 μm, or no greater than 0.5 μm. A surface can be deemed to be planar or substantially planar if a displacement between any two points on the surface with respect to a plane is no greater than 5 μm, no greater than 2 μm, no greater than 1 μm, or no greater than 0.5 μm.

[0049] As used herein, the terms "conductive", "electrically conductive" and "electrical conductivity" refer to an ability to transport an electric current. Electrically conductive materials typically indicate those materials that exhibit little or no opposition to the flow of an electric current. One measure of electrical conductivity is Siemens per meter (S/m). Typically, an electrically conductive material is a material having a conductivity greater than approximately 104 S/m, such as at least 105 S/m or at least 106 S/m. The electrical conductivity of a material can sometimes vary with temperature. Unless otherwise specified, the electrical conductivity of a material is measured at room temperature.

[0050] As used herein, singular terms "a", "an", and "the" may include plural referents unless the context clearly dictates otherwise. In the description of some embodiments, assemblies provided "on" or "above" another assembly may encompass a case in which a previous assembly is directly on a latter assembly (for example, in physical contact with the latter assembly), and a case in which one or more intermediate assemblies are located between the previous assembly and the latter assembly.

[0051] As used herein, for ease of description, space-related terms such as "under", "below", "lower portion", "above", "upper portion", "lower portion", "left side", "right side", and the like may be used herein to describe a relationship between one member or feature and another member or feature as shown in the figures. In addition to orientation shown in the figures, space-related terms are intended to encompass different orientations of the device in use or operation. A device may be oriented in other ways (rotated 90 degrees or at other orientations), and the space-related descriptors used herein may also be used for explanation accordingly. It should be understood that when a member is "connected" or "coupled" to another member, the member may be directly connected to or coupled to another member, or an intermediate member may exist.

[0052] Several embodiments of this disclosure and features of details are briefly described above. The embodiments described in this disclosure may be easily used as a basis for designing or modifying other processes and structures for realizing the same or similar objectives and/or obtaining the same or similar advantages introduced in the embodiments in the specification. Such equivalent construction does not depart from the spirit and scope of this disclosure, and various variations, replacements, and modifications can be made without departing from the spirit and scope of this disclosure.

Claims

1. An electronic vaporization device, comprising:

a vaporizable material storage device, configured to store a vaporizable material;
and
a body, detachably connected to the vaporizable material storage device, comprising:

a processing circuit;
a power supply, electrically connected to the processing circuit, wherein the processing circuit controls the power supply to provide first electric power to the vaporizable material storage device to vaporize the vaporizable material; and
a detection apparatus, electrically connected to the processing circuit and configured to provide a power adjustment signal to the processing circuit when the vaporizable material storage device triggers the detection apparatus, wherein the processing circuit

controls, in response to the power adjustment signal, the power supply to provide second electric power to the vaporizable material storage device, the second electric power being different from the first electric power.

2. The electronic vaporization device of Claim 1, wherein the vaporizable material storage device comprises an electric contact element, the body comprises electric connection terminals electrically connected to the electric contact element, and the vaporizable material storage device further comprises:
an auxiliary apparatus, configured to trigger the detection apparatus to provide the power adjustment signal when the auxiliary apparatus is connected between the detection apparatus and the electric connection terminals.

3. The electronic vaporization device of Claim 2, wherein the auxiliary apparatus is configured to form a short circuit between the detection apparatus and the electric connection terminal.

4. The electronic vaporization device of Claim 3, wherein the power adjustment signal indicates potential differences between the detection apparatus and the electric connection terminals.

5. The electronic vaporization device of Claim 4, wherein the auxiliary apparatus comprises an auxiliary elastic piece, one end of the auxiliary elastic piece being connected to the electric contact element.

6. The electronic vaporization device of Claim 5, wherein the auxiliary apparatus further comprises an auxiliary pin, and the vaporizable material storage device further comprises a base, the base comprising a first recess and a second recess, the first recess accommodating the electric contact elements, and the second recess accommodating the auxiliary pin, wherein the other end of the auxiliary elastic piece is connected to the auxiliary pin.

7. The electronic vaporization device of Claim 5 or 6, wherein the auxiliary elastic piece is disposed in the vaporizable material storage device.

8. The electronic vaporization device of Claim 5 or 6, wherein the auxiliary elastic piece is disposed at an outer surface of the vaporizable material storage device.

9. An electronic vaporization device body, comprising a housing in which a power supply is provided, one end of the housing being configured to be connected to a vaporizable material storage device, wherein the electronic vaporization device body comprises:
a processing circuit;
a power supply, electrically connected to the processing circuit, wherein the processing circuit controls the power supply to provide first electric power to the vaporizable material storage device to vaporize a vaporizable material in the vaporizable material storage device; and
a detection apparatus, electrically connected to the processing circuit and configured to provide a power adjustment signal to the processing circuit when the vaporizable material storage device triggers the detection apparatus, wherein the power adjustment signal is used for instructing the processing circuit to control the power supply to provide second electric power to the vaporizable material storage device, the second electric power being different from the first electric power.

10. The electronic vaporization device body of Claim 9, further comprising:
electric connection terminals, wherein when the vaporizable material storage device is connected to the electronic vaporization device body, the power supply provides the first electric power to the vaporizable material storage device via the electric connection terminals, wherein
when the vaporizable material storage device causes a short circuit between the detection apparatus and the electric connection terminal, the detection apparatus provides the power adjustment signal.

11. The electronic vaporization device body of Claim 10, wherein the power adjustment signal indicates potential differences between the detection apparatus and the electric connection terminals.

12. A vaporizable material storage device, configured to receive first electric power from an electronic vaporization device body to vaporize a stored vaporizable material, comprising:
a base, comprising a first recess;
an electric contact element, wherein the first recess accommodates the electric contact element, and an electric contact surface of the electric contact element is exposed out of an outer surface of the base; and
an auxiliary elastic piece, with one end connected to the electric contact element, wherein when the other end of the auxiliary elastic piece is electrically connected to the electronic vaporization device body, the electric contact element receives second electric power to vaporize the vaporizable material, the second electric power being different from the first electric power.

13. The vaporizable material storage device of Claim 12, wherein the base further comprises a second recess, and the vaporizable material storage device further comprises:
an auxiliary pin, wherein the second recess is configured to accommodate the auxiliary pin, and the other end of the auxiliary elastic piece is connected to the auxiliary pin.

14. The vaporizable material storage device of Claim 12 or 13, wherein the auxiliary elastic piece is disposed in the vaporizable material storage device.

15. The vaporizable material storage device of Claim 12 or 13, wherein the auxiliary elastic piece is disposed at an outer surface of the base.

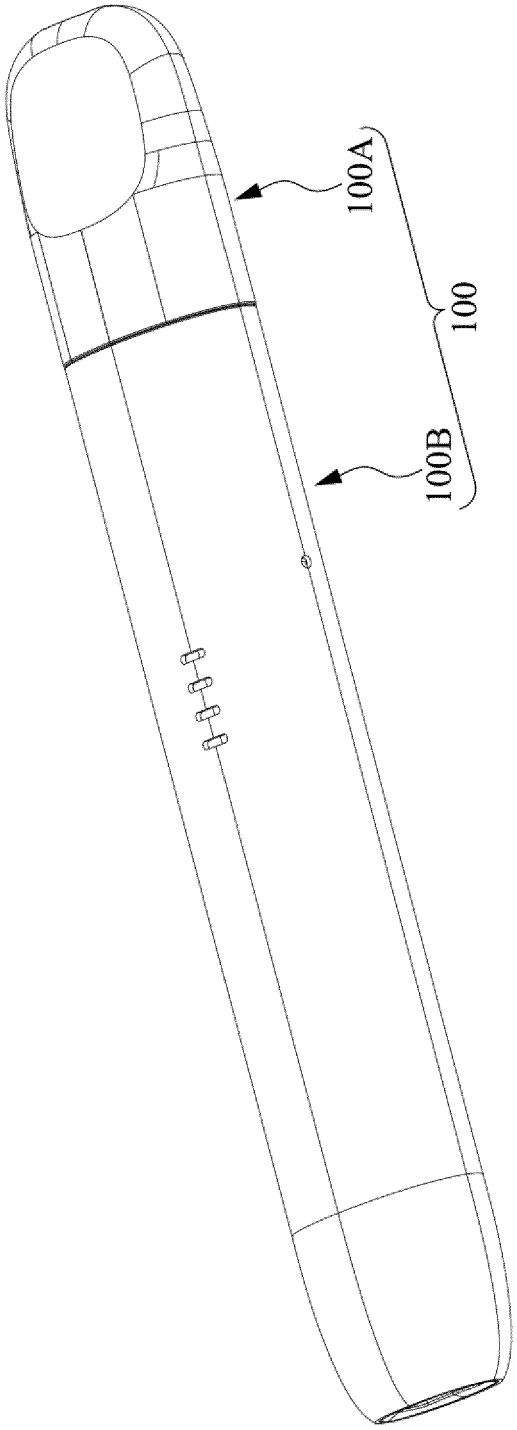

FIG. 1

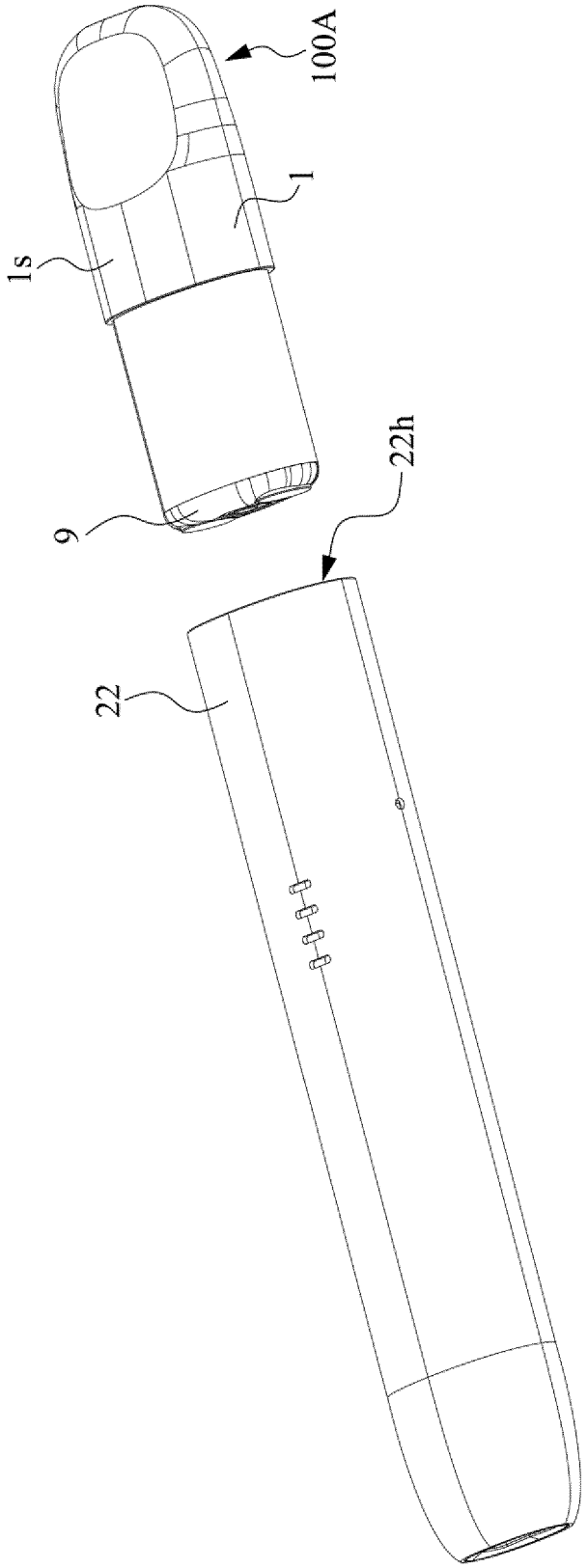

FIG. 2

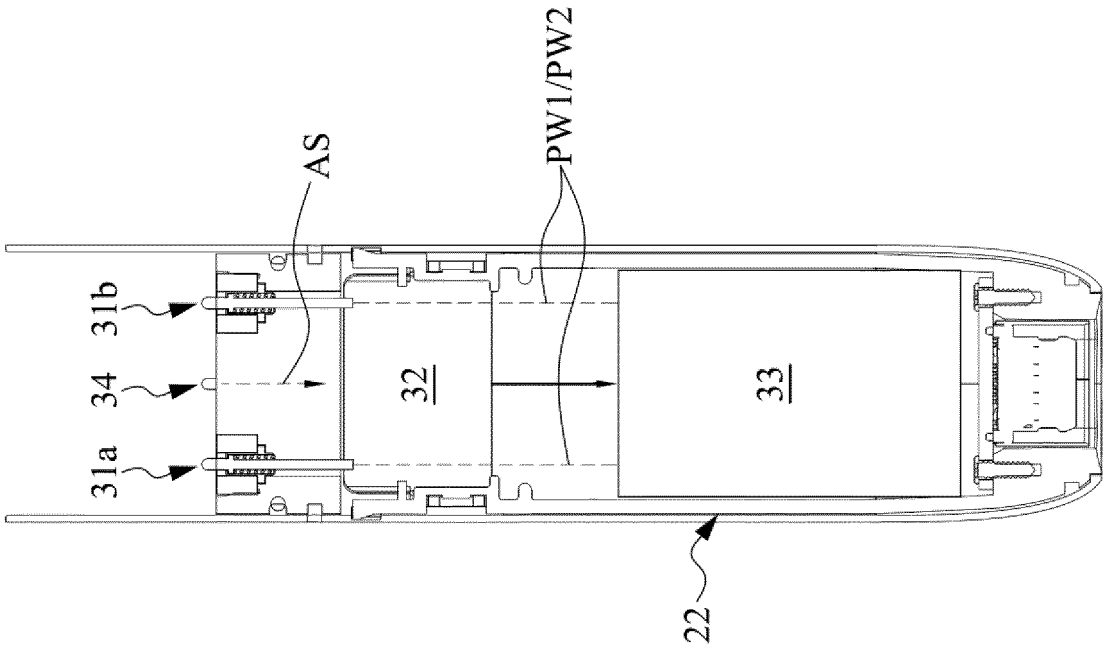

FIG. 3

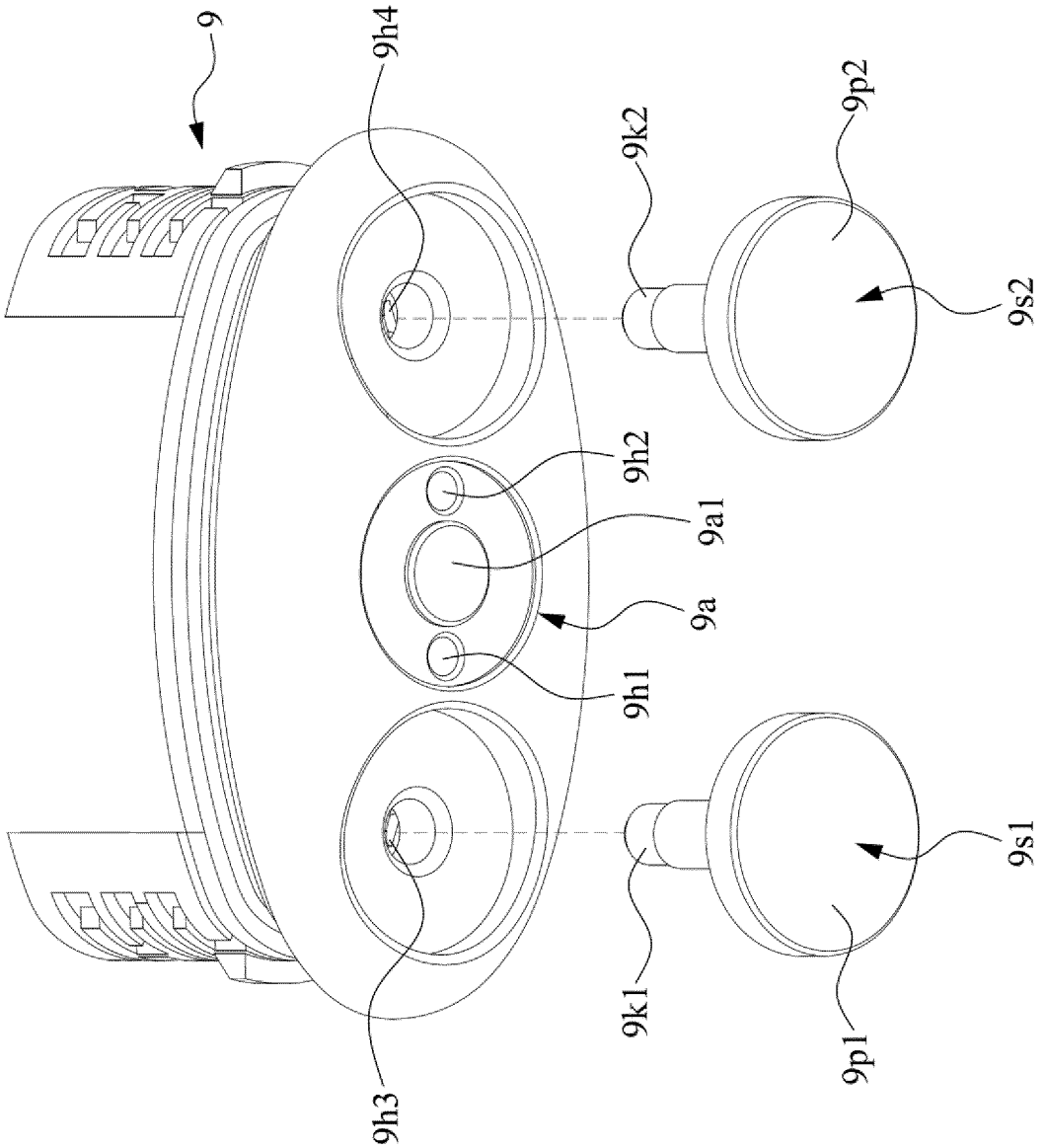

FIG. 4

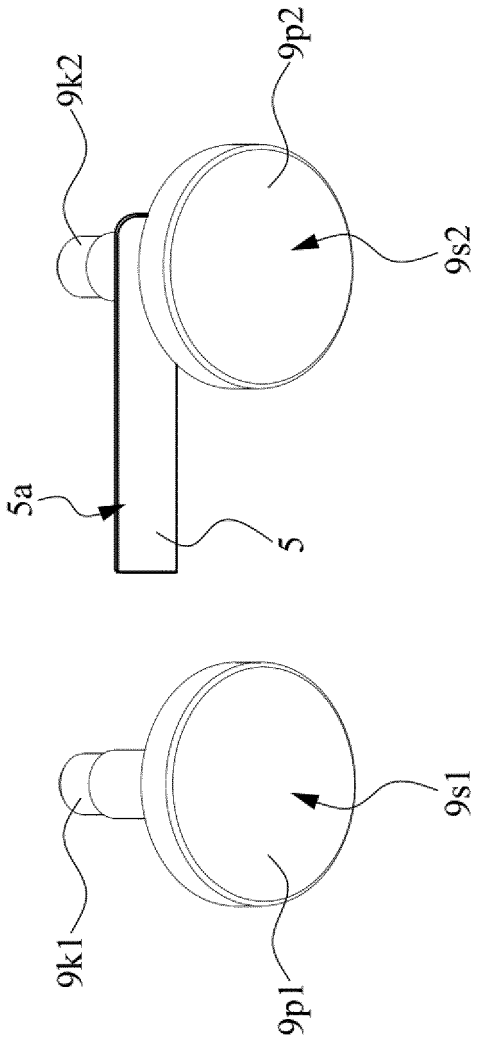

FIG. 5A

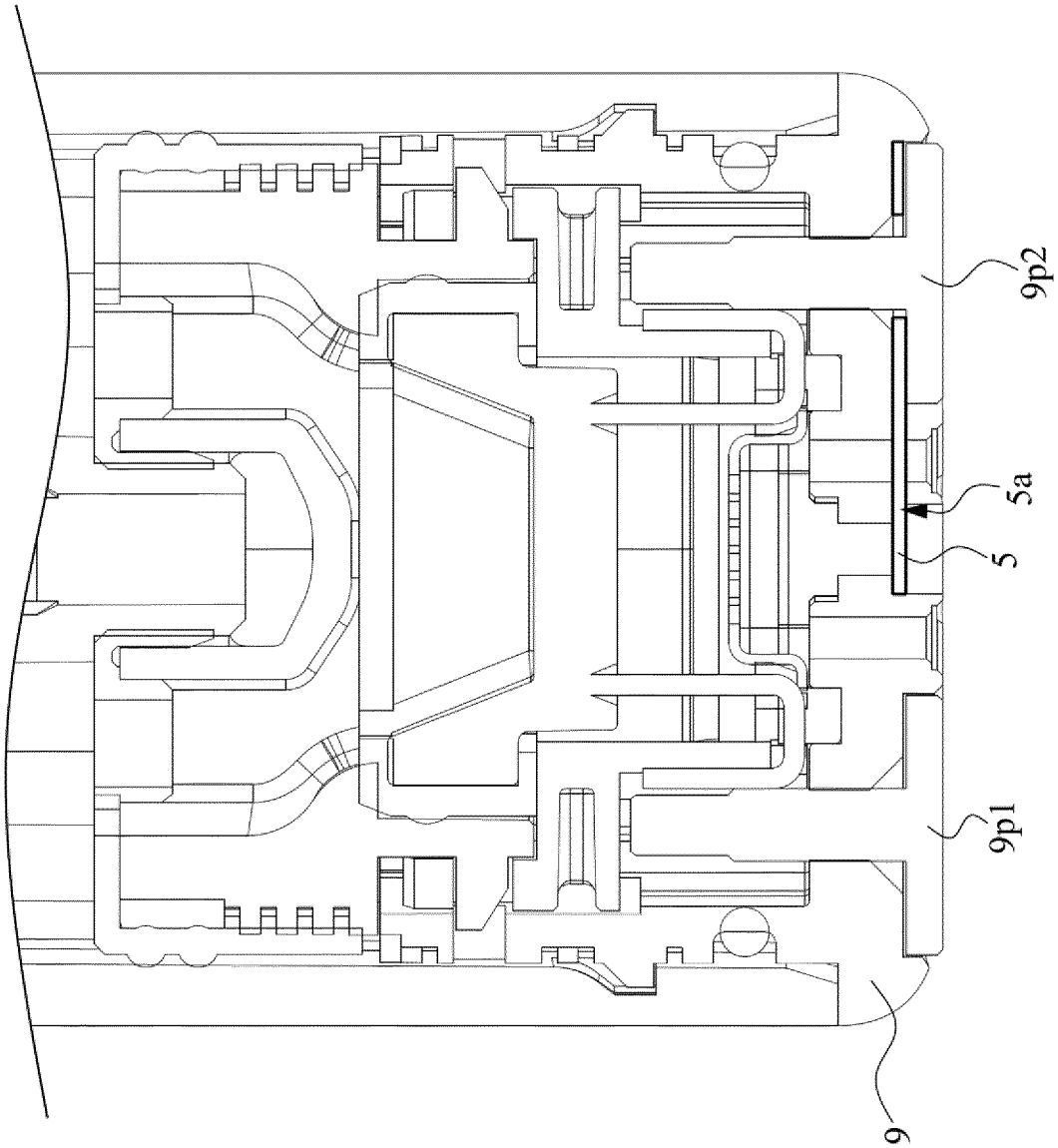

FIG. 5B

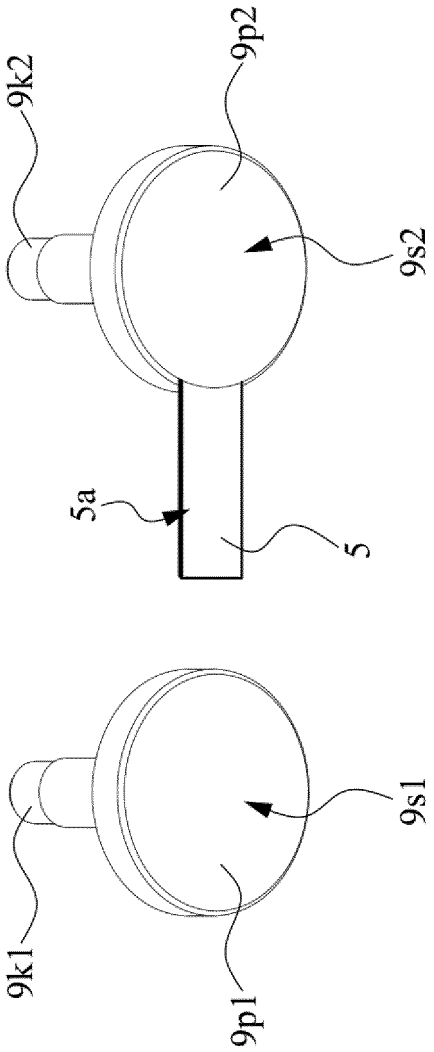

FIG. 6A

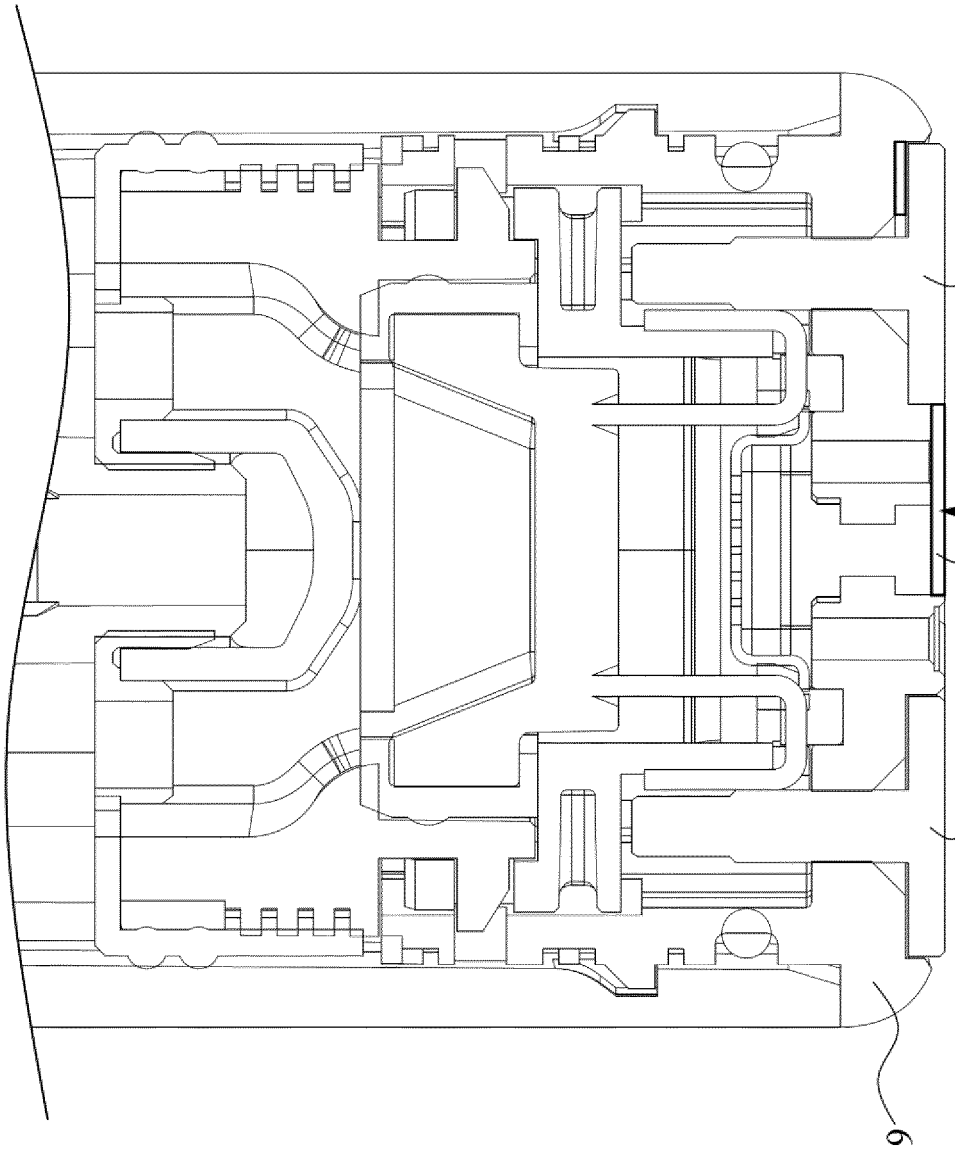

FIG. 6B

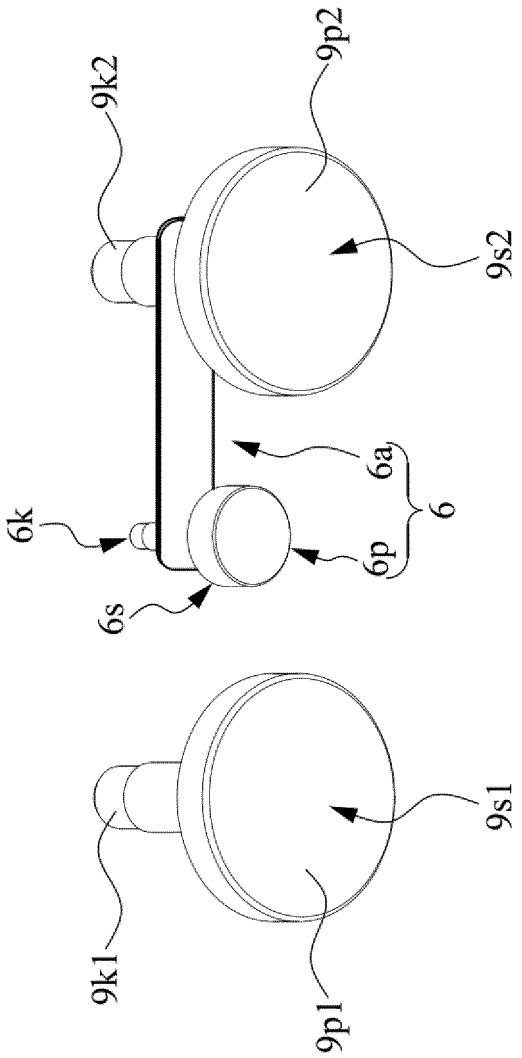

FIG. 7A

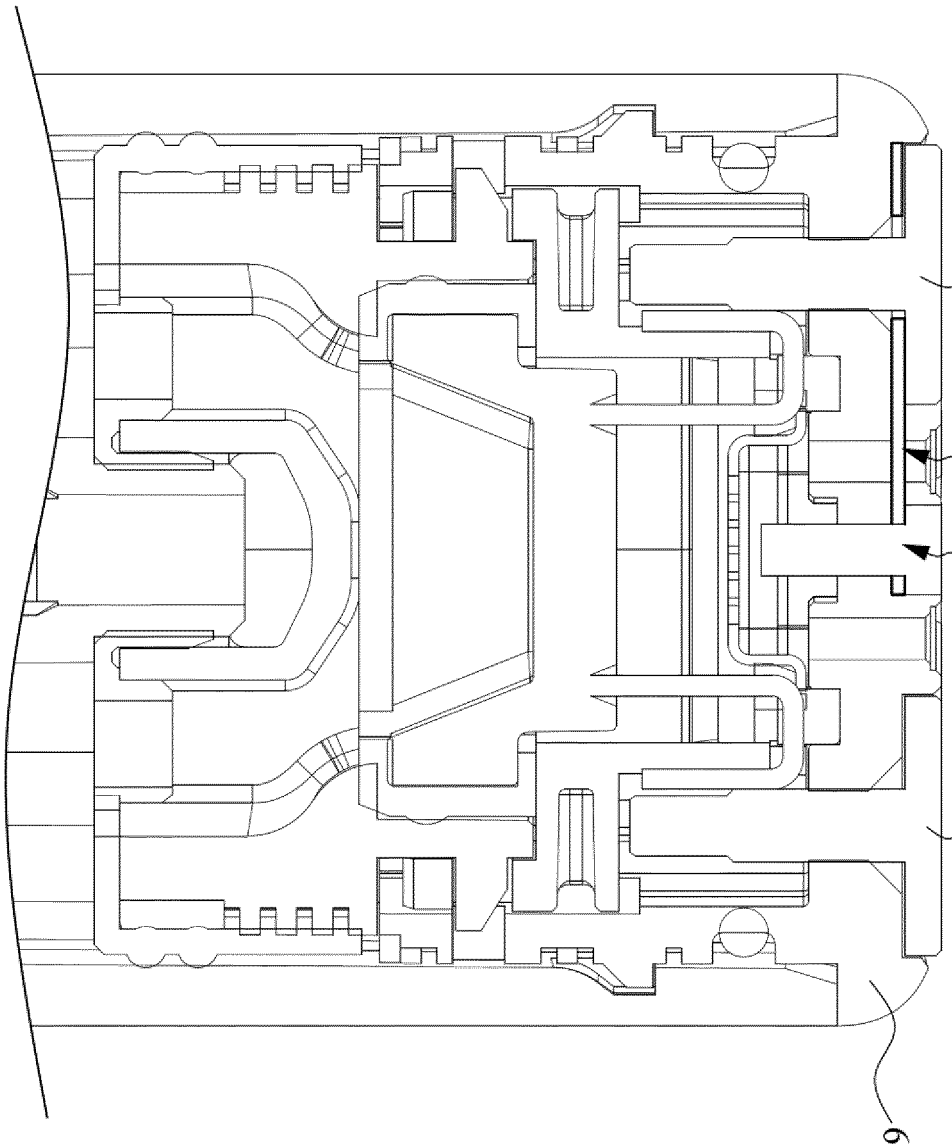

FIG. 7B

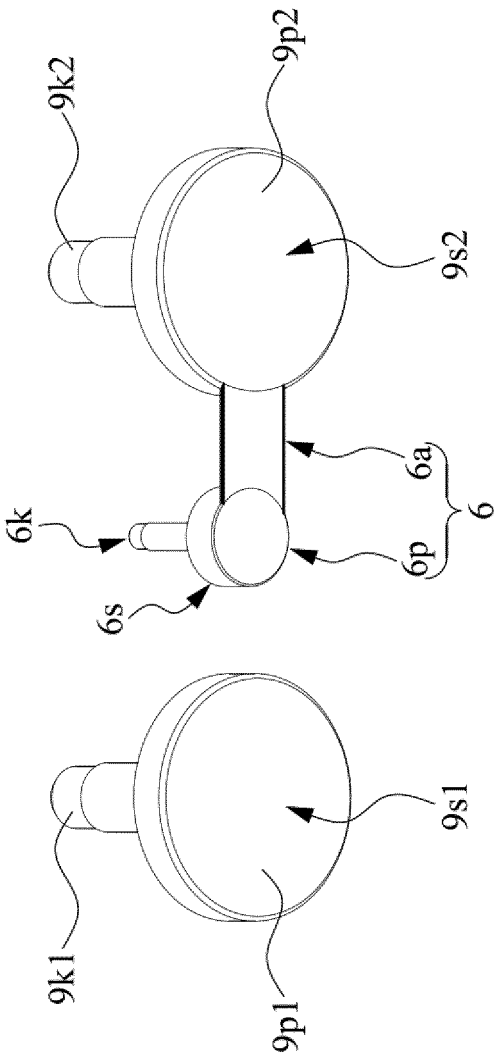

FIG. 8A

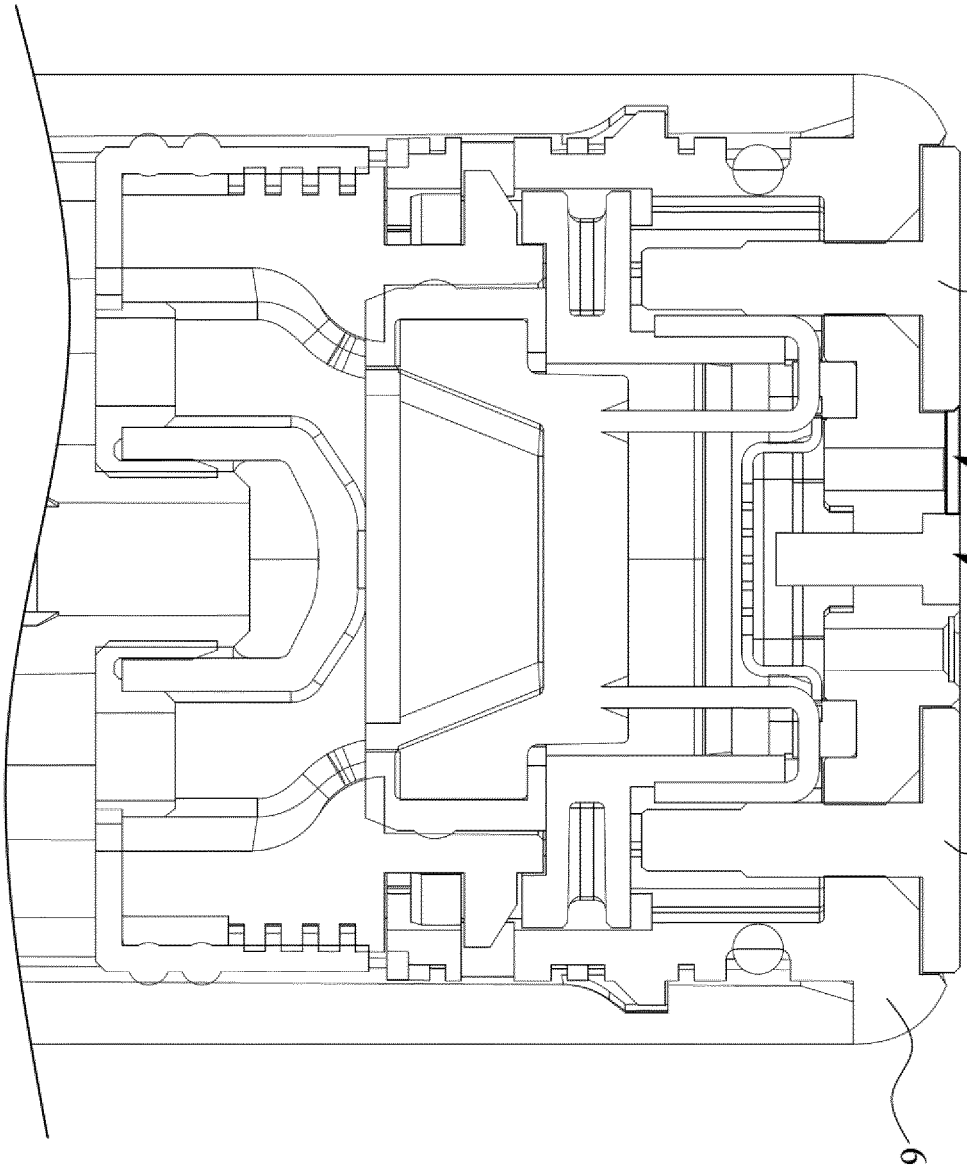

FIG. 8B

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2021/097155

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/42(2020.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A24F

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

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

CNABS; CNTXT; CNKI; VEN; USTXT; WOTXT; EPTXT, 深圳雾芯科技有限公司, 陈琛, 电子雾化, 电子烟, 存储, 储存, 烟弹, 烟杆, 储油, 侦测, 触发, 功率, 调整, 电触, 短路, 电位差, 端子, atomizing, electronic cigarette, storing, smoke cartridge, tobacco stem, oil storage, detecting, triggering, short-circuiting potential difference, terminal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 211458857 U (SHENZHEN RELX TECH. CO., LTD.) 11 September 2020 (2020-09-11) description paragraphs 44-47, 91-94 and figures 1-2, 14-16	1, 9-11
X	CN 110754694 A (DONGGUAN BINHAO ELECTRONIC CO., LTD.) 07 February 2020 (2020-02-07) description, paragraphs 17-22 and figures 1-3	1, 9-11
A	CN 110464053 A (DONGGUAN HAWEI ELECTRONIC TECHNOLOGY CO., LTD.) 19 November 2019 (2019-11-19) entire document	1-15
A	CN 210299493 U (SHENZHEN IVPS TECHNOLOGY CO., LTD.) 14 April 2020 (2020-04-14) entire document	1-15
A	CN 106579563 A (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 26 April 2017 (2017-04-26) entire document	1-15
A	CN 110652043 A (东莞市美迪云电子科技有限公司) 07 January 2020 (2020-01-07) entire document	1-15

☑ 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
"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	Date of mailing of the international search report
26 August 2021	**01 September 2021**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China** Facsimile No. **(86-10)62019451**	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2021/097155

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 109363256 A (郑灵月) 22 February 2019 (2019-02-22) entire document	1-15
A	US 2017135404 A1 (REEVELL TONY) 18 May 2017 (2017-05-18) entire document	1-15
A	TW 512731 U (BOU TE LI CO LTD) 21 November 2015 (2015-11-21) entire document	1-15

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2021/097155

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 211458857 U	11 September 2020	None	
CN 110754694 A	07 February 2020	None	
CN 110464053 A	19 November 2019	None	
CN 210299493 U	14 April 2020	None	
CN 106579563 A	26 April 2017	WO 2018113714 A1	28 June 2018
		CN 106579563 B	04 August 2020
CN 110652043 A	07 January 2020	None	
CN 109363256 A	22 February 2019	None	
US 2017135404 A1	18 May 2017	US 2020253284 A1	13 August 2020
		US 10674764 B2	09 June 2020
TW 512731 U	21 November 2015	TW M512731 U	21 November 2015

Form PCT/ISA/210 (patent family annex) (January 2015)