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(54) AEROSOL-GENERATING DEVICE

(57) This application relates to an aerosol-generating device, including: a suction nozzle module, including a first connection component; an atomization module, including a plurality of atomization cores and a plurality of storage cavities for storing an aerosol-generating substrate, where each of the storage cavities is correspondingly in communication with at least one of the atomization cores, to provide the aerosol-generating substrate for the atomization core for atomization to generate an aerosol; and a power supply module, configured to be capable of rotating relative to the atomization module, where a second connection component is connected to the first connection component, where an interference structure is disposed on the first connection component and/or the second connection component, a connection between the first connection component and the second connection component has an unlocked state and a locked state, and the first connection component and the second connection component keep connected in both the unlocked state and the locked state; and the first connection component and the second connection component are capable of keeping relative rotation in the unlocked state, and rotation between the first connection component and the second connection component is restricted in the locked state by the interference structure.

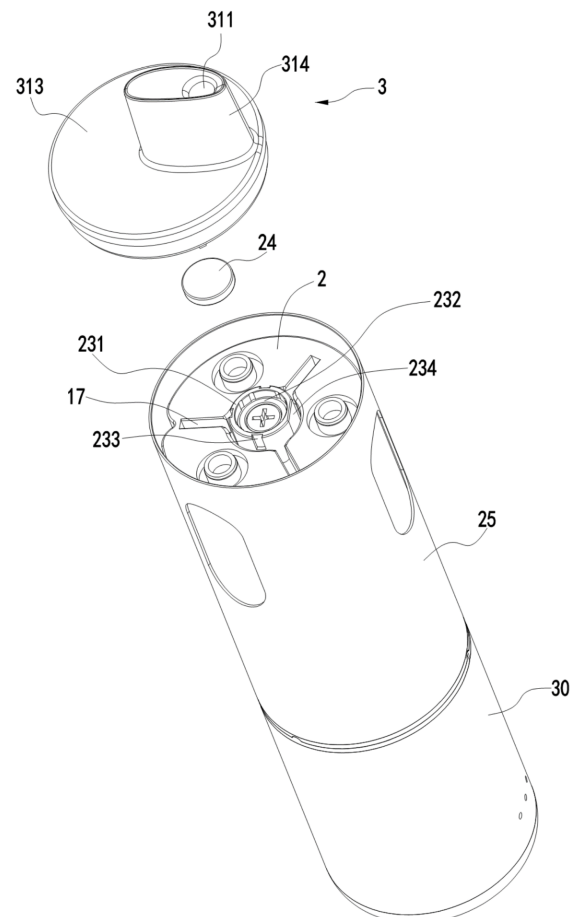


FIG. 4

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Description

TECHNICAL FIELD

[0001] This application relates to the field of aerosol generation technologies, and in particular, to an aerosol-generating device.

BACKGROUND

[0002] An aerosol-generating device is a device that can atomize an aerosol formulation to generate an aerosol. For example, an existing aerosol-generating device includes a power supply electrode, a suction nozzle module, and an atomization assembly including a plurality of atomizers. The atomization assembly is configured to be capable of rotating relative to the power supply electrode, to select an atomizer to be electrically connected to the power supply electrode. In addition, the suction nozzle module is also configured to be capable of rotating relative to the atomization assembly, to select an atomizer to be in communication with the suction nozzle module.

[0003] However, during mounting of the suction nozzle module, the suction nozzle module needs to be aligned, for the suction nozzle module and the power supply electrode to synchronously rotate relative to the atomization assembly, resulting in low mounting efficiency.

SUMMARY

[0004] An objective of this application is to provide an aerosol-generating device that requires no alignment operation on a suction nozzle module during assembly of the suction nozzle module.

[0005] At least one embodiment of this application provides an aerosol-generating device, and the aerosol-generating device includes:

a suction nozzle module, including a first connection component, a suction port, and an air guiding channel in communication with the suction port;
an atomization module, including a plurality of atomization cores and a plurality of storage cavities for storing an aerosol-generating substrate, where each of the storage cavities is correspondingly in communication with at least one of the atomization cores, to provide the aerosol-generating substrate for the atomization core for atomization to generate an aerosol, and the air guiding channel is configured to guide the aerosol to the suction port; and
a power supply module, including a power supply electrode and a second connection component, where the power supply module is configured to be capable of rotating relative to the atomization module; the second connection component is connected to the first connection component, to keep the suction nozzle module on a side of the atomization

module, where

an interference structure is disposed on the first connection component and/or the second connection component, a connection between the first connection component and the second connection component has an unlocked state and a locked state, and the first connection component and the second connection component keep connected in both the unlocked state and the locked state; and
the first connection component and the second connection component are capable of keeping relative rotation in the unlocked state, and rotation between the first connection component and the second connection component is restricted in the locked state by the interference structure, for the power supply electrode and the suction port or the air guiding channel to synchronously rotate relative to the atomization module.

[0006] In an example, a first magnetic component is disposed on the first connection component, a second magnetic component is disposed on the second connection component, and the first connection component and the second connection component keep connected through magnetic attraction between the first magnetic component and the second magnetic component.

[0007] In an example, the power supply module rotates relative to the atomization module around a central axis of the first magnetic component or the second magnetic component.

[0008] In an example, when the first connection component and the second connection component are in the locked state, the power supply electrode is electrically connected to one of the atomization cores, and the atomization core is also in communication with the air guiding channel.

[0009] In an example, when the first connection component and the second connection component are in the unlocked state, there is a first distance between the suction port and the atomization module, when the first connection component and the second connection component are in the locked state, there is a second distance between the suction port and the atomization module, and the first distance is greater than the second distance.

[0010] In an example, at least a part of the second connection component passes through the atomization module, and the atomization module is capable of rotating around a central axis of the second connection component.

[0011] In an example, the interference structure includes a first insertion groove and a first insertion portion, one of the first connection component and the second connection component includes the first insertion groove, and the other includes the first insertion portion; and

[0012] when the first connection component and the second connection component are in the unlocked state, the first insertion portion is not inserted into the first

insertion groove, and when the first connection component and the second connection component are in the locked state, the first insertion portion is inserted into the first insertion groove.

[0013] In an example, the first insertion groove and/or the first insertion portion are/is of a non-centrosymmetric structure.

[0014] In an example, one of the first connection component and the second connection component is provided with a protruding tooth, the other is provided with a tooth groove, and when the first insertion portion is inserted into the first insertion groove, the protruding tooth is located in the tooth groove, for the first connection component and the second connection component to be engaged; and/or

a part of a groove wall of the first insertion groove is a planar groove wall, a part of an outer side wall of the first insertion portion is a planar side wall, and when the first insertion portion is inserted into the first insertion groove, the planar side wall faces the planar groove wall.

[0015] In an example, the atomization module further includes a plurality of air guiding tubes, and each of the atomization cores is disposed corresponding to one of the air guiding tubes, for the air guiding tube to guide, to the air guiding channel, the aerosol generated by the atomization core corresponding to the air guiding tube atomizing the aerosol-generating substrate.

[0016] In an example, the suction nozzle module includes a first part and a second part, the first part includes the suction port, and the first part is configured to keep a static correspondence with the atomization module; and the second part includes the air guiding channel and the first connection component, a quantity of air guiding channels is less than a quantity of the air guiding tubes, and the second part and the first part are rotatably connected, for the power supply electrode and the second part to synchronously rotate relative to the atomization module and the suction port, to select the air guiding tube to be in communication with the air guiding channel.

[0017] In an example, the suction nozzle module includes a first part and a second part, the first part includes the first connection component and the suction port, the second part is provided with a plurality of air guiding channels that are in communication with the plurality of air guiding tubes in a one-to-one correspondence, and the first part is configured to be rotatably connected to the second part, to select, through rotation, the air guiding channel to be in communication with the suction port;

one of the atomization module and the second part is provided with a second insertion groove, and the other includes a second insertion portion; and when the first connection component and the second connection component are in the locked state, at least a part of the second insertion portion is inserted into the second insertion groove, for the power supply electrode and the first part to synchronously rotate relative to the atomization module and the

second part.

[0018] In an example, when the first connection component and the second connection component are in the unlocked state, at least a part of the second insertion portion is inserted into the second insertion groove.

[0019] In an example, the second part is provided with a through hole, at least a part of the first connection component is disposed in the through hole, the first connection component is provided with an anti-detachment portion, and at least a part of the second part is rotatably disposed between the anti-detachment portion and the suction port.

[0020] In an example, the suction nozzle module is removably connected to the power supply module, accommodation space is constructed between the suction nozzle module and the power supply module when the suction nozzle module and the power supply module are connected, the accommodation space is provided to removably accommodate the atomization module, and the atomization module is configured to be irremovably kept in the accommodation space when the suction nozzle module and the power supply module are connected.

[0021] In an example, the power supply module further includes a first outer shell with accommodation space inside, the first outer shell is provided with an assembly hole, and the atomization module is configured to be capable of being assembled into the accommodation space and being removed from the accommodation space through the assembly hole; and the suction nozzle module and the power supply module are removably connected, and the assembly hole is obstructed when the suction nozzle module is connected to the power supply module.

[0022] In an example, when the atomization module is located in the accommodation space, the atomization module and the first outer shell form an interference fit in a transverse direction, for the atomization module and the first outer shell to synchronously rotate relative to the second connection component and the power supply electrode.

[0023] In an example, the power supply module further includes a first support and a connection column extending in a longitudinal direction in the accommodation space, the power supply electrode is held on the first support, and the connection column connects the first support and the second connection component; and when the atomization module is located in the accommodation space, at least a part of the connection column is rotatably disposed inside the atomization module.

[0024] In an example, the power supply module further includes a second support rotatably connected to the first support, and a hollow tube that is connected to the second support and that extends in the longitudinal direction in the accommodation space, and the connection column is rotatably connected to the second connection component through the hollow tube;

when the atomization module is located in the accommodation space, the atomization module and the second support form an interference fit in the transverse direction, for the atomization module, the second support, and the hollow tube to synchronously rotate relative to the connection column and the power supply electrode; and the hollow tube is disposed between the first support and the second connection component, and the hollow tube is configured to be capable of blocking the second connection component and the first support, to prevent the connection column from exiting the hollow tube.

[0025] The aerosol-generating device provided in the foregoing embodiment includes the suction nozzle module, the power supply module, and the atomization module. The suction nozzle module includes the first connection component. The power supply module includes the second connection component. The interference structure is disposed on the first connection component and/or the second connection component, the connection between the first connection component and the second connection component has the unlocked state and the locked state, and the first connection component and the second connection component keep connected in both the unlocked state and the locked state; and the first connection component and the second connection component are capable of keeping relative rotation in the unlocked state, and rotation between the first connection component and the second connection component is restricted in the locked state by the interference structure, for the power supply electrode and the suction port or the air guiding channel to synchronously rotate relative to the atomization module. In this case, the suction nozzle module may be randomly connected to the power supply module or the atomization module. Then, the first connection component and the second connection component are rotated relative to each other, for the first connection component and the second connection component to automatically change from the unlocked state to the locked state, so that the power supply electrode of the power supply module can rotate synchronously with the suction port or the air guiding channel of the suction nozzle module relative to the atomization module, helping improve assembly efficiency.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] To describe technical solutions in specific embodiments of this application or in the related art more clearly, the following briefly introduces the accompanying drawings required for describing the specific embodiments or the related art. In all the accompanying drawings, similar components or parts are usually identified by similar reference numerals. In the accompanying drawings, components or parts are not necessarily drawn to actual scale.

FIG. 1 is a schematic diagram of an aerosol-generating device according to some embodiments of this application;

FIG. 2 is a cross-sectional view of an aerosol-generating device according to some embodiments of this application;

FIG. 3 is a schematic exploded view of an aerosol-generating device according to some embodiments of this application;

FIG. 4 is a schematic exploded view of an aerosol-generating device according to some embodiments of this application;

FIG. 5 is a schematic diagram of a suction nozzle module according to some embodiments of this application;

FIG. 6 is a schematic exploded view of a suction nozzle module according to some embodiments of this application;

FIG. 7 is a cross-sectional view of a suction nozzle module according to some embodiments of this application; and

FIG. 8 is a schematic exploded view of an aerosol-generating device according to some embodiments of this application.

[0027] In the figures:

100: aerosol-generating device;

1: atomization module; 11: atomization core; 12: storage cavity; 121: first storage cavity; 122: second storage cavity; 13: air guiding tube; 14: storage device; 141: first housing; 142: first separation component; 15: atomizer; 151: second housing; 152: second separation component; 16: liquid storage element; 17: second insertion groove;

2: power supply module; 21: power supply electrode; 22: power supply; 23: second connection component; 231: first insertion portion; 232: first retention groove; 233: tooth groove; 234: planar side wall; 24: second magnetic component; 25: first outer shell; 251: accommodation space; 26: first support; 27: connection column; 28: second support; 29: hollow tube; 30: second outer shell;

3: suction nozzle module; 31: first part; 311: suction port; 312: first connection component; 3121: first insertion groove; 3122: second retention groove; 3123: protruding tooth; 3124: planar groove wall; 3125: anti-detachment portion; 313: base; 314: suction nozzle; 32: second part; 321: air guiding channel; 33: first magnetic component; 34: second insertion portion; 35: shoulder.

DETAILED DESCRIPTION

[0028] The following clearly and completely describes technical solutions in embodiments of this application with reference to the accompanying drawings in embodiments of this application. Apparently, the described em-

bodiments 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.

[0029] The terms "first", "second", and "third" in this application are merely for the purpose of description, and shall not be understood as indicating or implying relative importance or implicitly specifying 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 a relative position relationship or a motion situation between components in a specific posture (as shown in the accompanying drawings). If the specific posture changes, the directional indications change correspondingly. 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 including a series of steps or units is not limited to the listed steps or units, but further optionally includes steps or units that are not listed, or further optionally includes other steps or units inherent to the process, method, product, or device.

[0030] The "embodiment" mentioned in this 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. The phrase appearing in various positions in this specification does not necessarily refer to a same embodiment, nor an independent or alternative embodiment exclusive of another embodiment. A person skilled in the art explicitly or implicitly understands that the embodiments described in this specification may be combined with other embodiments.

[0031] It should be noted that, when a component is considered to be "fixed" to another component, the component may be directly on the another component, or an intermediate component may exist. 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 intermediate components may exist therebetween. The terms "vertical", "horizontal", "left", "right", and similar expressions used herein are merely for the purpose of description, but do not indicate a unique implementation.

[0032] Refer to FIG. 1 to FIG. 3. This application provides an aerosol-generating device 100. The aerosol-generating device 100 includes an atomization module 1, a power supply module 2, and a suction nozzle module 3.

[0033] The suction nozzle module 3 includes a suction port 311 and an air guiding channel 321 in communication with the suction port 311. The suction nozzle module 3 is configured to be capable of being held in a mouth. When the suction nozzle module 3 is held in a mouth, the suction port 311 faces an oral cavity of a user.

[0034] The atomization module 1 includes a plurality of atomization cores 11 and a plurality of storage cavities 12

for storing an aerosol-generating substrate. Each of the storage cavities 12 is correspondingly in communication with at least one of the atomization cores 11, to provide the aerosol-generating substrate for the corresponding atomization core 11 for atomization to generate an aerosol. The air guiding channel 321 is configured to guide the aerosol to the suction port 311, so that the aerosol is discharged through the suction port 311.

[0035] In some embodiments, the aerosol-generating substrate includes nicotine or nicotine salts. The nicotine has a neurostimulatory effect and is used to provide users with pleasure of inhalation. A first aerosol generated from a first aerosol-generating substrate includes nicotine.

[0036] In some embodiments, the aerosol-generating substrate includes a flavoring agent for stimulating user's sense of smell to provide an aroma, or for stimulating user's sense of taste to adjust a flavor.

[0037] The flavoring agent may include a cooling agent. The cooling agent can fresh and cool an aerosol, helping enhance a throat-soothing effect. The cooling agent includes, but is not limited to, at least one of N,2,3-trimethyl-2-isopropylbutamide (WS-23), menthol, peppermint oil, and N-ethyl-p-menthane-3-carboxamide (WS-3).

[0038] The flavoring agent may include a sweetener. The sweetener can enhance sweetness of an aerosol, making the taste better. The sweetener includes, but is not limited to: N-[N-(3,3-dimethylbutyl)]-L- α -aspartyl-L-phenylalanine 1-methyl ester (namely, neotame). The sweetener may further include, but is not limited to, one or more of sucralose, stevioside, neotame, acesulfame potassium, aspartame, glycyrrhizin, saccharin sodium, sodium cyclamate, and mogrosides.

[0039] The flavoring agent may include a tobacco extract. Main ingredients of the tobacco extract include substances having a tobacco aroma, such as tobacco cellulose and tobacco protein, and do not include nicotine or a nicotine-like substance. The tobacco extract can enhance similarity between an aerosol and smoke of a conventional cigarette, so that the aerosol has a flavor of the conventional cigarette.

[0040] The flavoring agent may include an essence. The essence can reduce irritation caused by the tobacco extract. For example, the essence may include at least one of 2-acetylpyrazine, ethyl maltol, and methyl dihydrojasmonate. For example, the essence may further include a throat-soothing ingredient. The throat-soothing ingredient includes, but is not limited to, at least one of syringol, clove leaf oil, clove bud oil, Peru balsam, fennel tincture, anise oil, vanilla bean tincture, tea polyphenols, lemongrass oil, and propylene glycol.

[0041] The aerosol-generating substrate may include both nicotine and a flavoring agent. The aerosol-generating substrate may include a plurality of flavoring agents.

[0042] In some embodiments, at least two storage cavities 12 are provided to store different aerosol-generating substrates, so that the atomization module 1 can generate at least two aerosols with different aromas or

flavors. In some embodiments, at least two storage cavities 12 are provided to store same aerosol-generating substrates.

[0043] In some embodiments, the aerosol-generating substrate includes a solid substrate that is in a solid state at room temperature. The solid substrate may include a tobacco substance containing solid that contains a volatile tobacco-flavor ingredient. The solid substrate may include a solid of a non-tobacco substance.

[0044] In another embodiment, the aerosol-generating substrate further includes a paste-like substrate that is in a paste-like state at room temperature.

[0045] In some embodiments, the atomization module 1 includes an atomization core 11 configured to atomize a liquid substrate to generate an aerosol.

[0046] The atomization core 11 may include a liquid absorbing element and a heating element, and the heating element is disposed on the liquid absorbing element. The liquid absorbing element may be a porous body, and is configured to guide the aerosol-generating substrate to an atomization range of the heating element. The heating element is configured to heat and atomize the aerosol-generating substrate, to generate the aerosol. The porous body may be a fiber, such as a cotton fiber, a polypropylene fiber, a polyester fiber, or a nylon fiber. The porous body may be porous ceramic or porous metal. A structure and ingredients of the porous body are not limited in this application.

[0047] Certainly, the atomization core 11 may further include an ultrasonic element that can generate ultrasonic waves, and the atomization core 11 can atomize a liquid substrate by using the ultrasonic waves to form an aerosol. Certainly, the atomization core may further include another element that can atomize an aerosol-generating substrate to form an aerosol.

[0048] In some embodiments, the atomization module 1 includes an atomization core 11, the atomization core 11 includes a heating element configured to heat a solid substrate, and the heating element releases heat for the solid substrate to generate a volatile substance, to generate an aerosol. The heating element configured to heat the solid substrate may include at least one of an external heating element, an internal heating element, and an air heating element. As used herein, the "external heating element" is a heating element that provides heat or radiates infrared rays from the outside of the solid substrate, to heat the solid substrate. The "internal heating element" is a heating element that provides heat or radiates infrared rays from the inside of the solid substrate, to heat the solid substrate. The "air heating element" is a heating element that is disposed upstream of the solid substrate in a direction of air flow and that is configured to heat air, which then flows into the solid substrate to heat the solid substrate.

[0049] In an embodiment, the atomization module 1 further includes a plurality of air guiding tubes 13, and each of the atomization cores 11 is disposed corresponding to one of the air guiding tubes 13, for the air guiding

tube 13 to guide, to the air guiding channel 321, the aerosol generated by the atomization core 11 corresponding to the air guiding tube 13 atomizing the aerosol-generating substrate, so that the aerosol is discharged through the suction port 311.

[0050] At least one air guiding tube 13 may be disposed in each storage cavity 12, and the air guiding tube 13 may extend in a longitudinal direction in the corresponding storage cavity 12. In some embodiments, at least one atomization core 11 may be disposed in each air guiding tube 13, and the atomization core 11 is in communication with the corresponding storage cavity through the corresponding air guiding tube 13 for fluids.

[0051] In some embodiments, the atomization module 1 includes a storage device 14 and an atomizer 15. The storage device 14 and the atomizer 15 may be manufactured independently and may be stored separately. When the storage device 14 and the atomizer 15 are combined, a flow channel may be established between the storage device 14 and the atomizer 15, so that an aerosol-generating substrate stored in the storage device 14 can be transmitted to the atomizer 15 and then be atomized by the atomizer 15 to generate an aerosol.

[0052] The storage device 14 includes a first housing 141 and a first separation component 142. The first separation component 142 is disposed inside the first housing 141 and separates internal space of the first housing 141 into a plurality of first storage cavities 121 for storing the aerosol-generating substrate. In this case, the plurality of first storage cavities 121 are formed between the first housing 141 and the first separation component 142, and at least a part of a boundary of each first storage cavity 121 is defined by the first housing 141 and/or the first separation component 142. The aerosol-generating substrate may be directly injected into a corresponding first storage cavity 121 for storage. The first housing 141 and the first separation component 142 are integrally formed. For example, the first housing 141 and the first separation component 142 are integrally formed by injection molding, or the first housing 141 and the first separation component 142 form an integral structure by using an insert-forming process.

[0053] The atomizer 15 includes a plurality of atomization cores 11 for atomizing the aerosol-generating substrate to generate the aerosol, and each first storage cavity 121 is correspondingly in communication with at least one atomization core 11, so that the aerosol-generating substrate stored in different first storage cavities 121 can be atomized by different atomization cores 11 to generate the aerosol, or one atomization core 11 can only atomize the aerosol-generating substrate stored in one first storage cavity 121.

[0054] In some embodiments, as shown in FIG. 2, the atomizer 15 includes a plurality of second storage cavities 122 for storing the aerosol-generating substrate, and each second storage cavity 122 is correspondingly in communication with at least one atomization core 11. When the atomizer 15 is connected to the storage device

14, the plurality of first storage cavities 121 supplement the aerosol-generating substrate for the plurality of second storage cavities 122 in a one-to-one correspondence.

[0055] In some embodiments, as shown in FIG. 2 and FIG. 4, the atomizer 15 includes a second housing 151 and a second separation component 152. The second separation component 152 is disposed inside the second housing 151 and separates internal space of the second housing 151 into a plurality of second storage cavities 122 for storing the aerosol-generating substrate. In this case, the plurality of second storage cavities 122 are formed between the second housing 151 and the second separation component 152, and at least a part of a boundary of each second storage cavity 122 is defined by the second housing 151 and/or the second separation component 152. The aerosol-generating substrate may be directly injected into a corresponding second storage cavity 122 for storage. The second housing 151 and the second separation component 152 are integrally formed. For example, the second housing 151 and the second separation component 152 are integrally formed by injection molding, or the second housing 151 and the second separation component 152 form an integral structure by using an insert-forming process.

[0056] In some embodiments, the atomization module 1 further includes a liquid storage element 16. The liquid storage element 16 has a large quantity of pores and can adsorb a large amount of liquid substrate. The liquid storage element 16 is disposed in the storage cavity 12, and at least a part of liquid substrate stored in the storage cavity 12 is held in the liquid storage element 16, so that leakage of the aerosol-generating substrate from the storage cavity 12 can be prevented. The liquid storage element 16 includes, but is not limited to, one of the following materials: a cotton fiber, a polypropylene fiber, a polyester fiber, a nylon fiber, a porous ceramic material, a polymer fiber, or various combinations of the foregoing materials.

[0057] In some embodiments, the power supply module 2 includes a power supply electrode 21, the power supply electrode 21 is configured to be electrically connected to the atomization module 1, and a power supply 22 may output electric power to the atomization module 1 by using the power supply electrode 21, so that the atomization module 1 atomizes an aerosol-generating substrate to generate an aerosol.

[0058] Further, the power supply module 2 includes the power supply 22, and the power supply 22 may include any suitable battery, for example, may include a lithium battery, a rechargeable battery, or a single-use battery.

[0059] In some embodiments, a quantity of pairs of power supply electrodes 21 is less than a quantity of atomization cores 11, so that only one or only some of the atomization cores 11 can be electrically connected to the power supply electrodes 21, and establish a power supply path with the power supply 22 based on the power supply electrodes 21.

[0060] Further, the power supply electrode 21 is configured to be capable of rotating relative to the atomization module 1, to select an atomization core 11 to be electrically connected to the power supply electrode 21.

[0061] In some embodiments, the suction port 311 is configured to be capable of being in communication with only one or only some of the atomization cores 11. Further, the suction port 311 or the air guiding channel 321 is configured to be capable of rotating relative to the atomization module 1, to select an atomization core 11 to be in communication with the suction port 311.

[0062] In some embodiments, as shown in FIG. 3 to FIG. 8, the suction nozzle module 3 further includes a first connection component 312, and the power supply module 2 further includes a second connection component 23. The power supply module 2 is configured to be capable of rotating relative to the atomization module 1. The second connection component 23 and the first connection component 312 may be connected to keep the suction nozzle module 3 on a side of the atomization module 1.

[0063] Further, an interference structure is disposed on the first connection component 312 and/or the second connection component 23, a connection between the first connection component 312 and the second connection component 23 has an unlocked state and a locked state, and the first connection component 312 and the second connection component 23 can keep connected in both the unlocked state and the locked state.

[0064] Furthermore, the first connection component 312 and the second connection component 23 are capable of keeping relative rotation in the unlocked state, and rotation between the first connection component 312 and the second connection component 23 can be restricted in the locked state by the interference structure, for the power supply electrode 21 and the suction port 311 or the air guiding channel 321 to synchronously rotate relative to the atomization module 1.

[0065] Therefore, the suction nozzle module 3 may be randomly connected to the power supply module 2 or the atomization module 1. Then, the first connection component 312 and the second connection component 23 are rotated relative to each other, for the first connection component 312 and the second connection component 23 to automatically change from the unlocked state to the locked state, so that the power supply electrode 21 of the power supply module 2 can rotate synchronously with the suction port 311 or the air guiding channel 321 of the suction nozzle module 3 relative to the atomization module 1, helping improve assembly efficiency.

[0066] In some embodiments, a first magnetic component 33 is disposed on the first connection component 312, a second magnetic component 24 is disposed on the second connection component 23, and the first connection component 312 and the second connection component 23 keep connected through magnetic attraction between the first magnetic component 33 and the second magnetic component 24. In addition, when the first con-

nection component 312 and the second connection component 23 are in the unlocked state, the first connection component 312 and the second connection component 23 can be kept in a rotatable connection through magnetic attraction between the first magnetic component 33 and the second magnetic component 24.

[0067] Further, the power supply module 2 rotates relative to the atomization module 1 around a central axis of the first magnetic component 33 or the second magnetic component 24, to prevent deviation of a central axis of the suction nozzle module 3 during rotation of the power supply module 2 relative to the atomization module 1.

[0068] In some embodiments, when the first connection component 312 and the second connection component 23 are in the locked state, the power supply electrode 21 is electrically connected to one of the atomization cores 11, and the atomization core 11 is also in communication with the air guiding channel 321 and/or the suction port 311.

[0069] In some embodiments, at least a part of the second connection component 23 passes through the atomization module 1, and the atomization module 1 is capable of rotating around a central axis of the second connection component 23. In this case, the power supply electrode 21 and the suction nozzle module 3 may be disposed on two opposite sides of the atomization module 1.

[0070] In some embodiments, the interference structure includes a first insertion groove 3121 and a first insertion portion 231. One of the first connection component 312 and the second connection component 23 is provided with the first insertion groove 3121, and the other includes the first insertion portion 231. When the first connection component 312 and the second connection component 23 are in the unlocked state, the first insertion portion 231 is not inserted into the first insertion groove 3121. When the first connection component 312 and the second connection component 23 are in the locked state, the first insertion portion 231 is inserted into the first insertion groove 3121.

[0071] Specifically, when the first connection component 312 and the second connection component 23 are in the unlocked state, the first insertion groove 3121 and the first insertion portion 231 are not aligned, so that the first insertion portion 231 is not inserted into the first insertion groove 3121. When the first connection component 312 and the second connection component 23 are in the locked state, the first insertion groove 3121 and the first insertion portion 231 are aligned, so that the first insertion portion 231 can be inserted into the first insertion groove 3121.

[0072] In some embodiments, the first insertion portion 231 is of a non-centrosymmetric structure or is in a non-centrosymmetric shape, so that the first insertion portion 231 after rotating around a point by 180° cannot coincide with the first insertion portion 231 before the rotation. The first insertion groove 3121 is of a non-centrosymmetric

structure or is in a non-centrosymmetric shape, so that the first insertion groove 3121 after rotating around a point by 180° cannot coincide with the first insertion groove 3121 before the rotation. Therefore, the first insertion groove 3121 and the first insertion portion 231 have a unique alignment angle.

[0073] When the first insertion portion 231 is inserted into the first insertion groove 3121, the atomization core electrically connected to the power supply electrode 21 is also in communication with the suction port.

[0074] In some embodiments, the first connection component 312 is configured to be capable of rotating relative to the second connection component 23 when the first insertion portion 231 is not inserted into the first insertion groove 3121, so that the first insertion portion 231 and the first insertion groove 3121 can be aligned through relative rotation of the first connection component 312 and the second connection component 23.

[0075] Further, when the first insertion portion 231 is inserted into the first insertion groove 3121, the first connection component 312 and the second connection component 23 form an interference fit in a transverse direction, so that the first connection component 312 and the second connection component 23 can rotate synchronously, and then the power supply electrode 21 and the suction port 311 or the air guiding channel can synchronously rotate relative to the atomization module 1. Therefore, after the first insertion portion 231 is inserted into the first insertion groove 3121, if the atomization module 1 is driven to rotate relative to the power supply electrode 21, the atomization core 11 electrically connected to the power supply electrode 21 and the atomization core 11 in communication with the suction port 311 can be changed at the same time, and the atomization core 11 electrically connected to the power supply electrode 21 is the same as the atomization core 11 in communication with the suction port 311.

[0076] Therefore, the suction nozzle module 3 may be randomly connected to the power supply module 2 or the atomization module 1. If the first insertion portion 231 is not aligned with the first insertion groove 3121, the first connection component 312 and the second connection component 23 may be rotated relative to each other to align the first insertion portion 231 with the first insertion groove 3121. After the first insertion portion 231 and the first insertion groove 3121 are aligned, the first insertion portion 231 is inserted into the first insertion groove 3121, to enable the first connection component 312 and the second connection component 23 to form an interference fit and keep synchronous rotation. Then, the power supply module 2 may be operated or the suction nozzle module 3 may be operated or another operation component may be operated to enable the power supply electrode 21 and the suction port 311 or the air guiding channel 321 to synchronously rotate relative to the atomization module 1.

[0077] In some embodiments, after the first insertion portion 231 and the first insertion groove 3121 are

aligned, the first insertion portion 231 is configured to be capable of being automatically inserted into the first insertion groove 3121.

[0078] For example, the suction nozzle module 3 includes the first magnetic component 33, the power supply module 2 or the atomization module 1 is provided with the second magnetic component 24, and the second magnetic component 24 is configured to magnetically attract the first magnetic component 33 to enable the first insertion portion 231 to be automatically inserted into the first insertion groove 3121 when the first insertion portion 231 and the first insertion groove 3121 are rotated to be aligned.

[0079] Therefore, because both the first insertion portion 231 and the first insertion groove 3121 are of a non-centrosymmetric structure or in a non-centrosymmetric shape, the first insertion groove 3121 and the first insertion portion 231 have a unique alignment angle or interference fit angle. After the first insertion portion 231 and the first insertion groove 3121 are aligned through relative rotation, the first insertion portion 231 can be automatically inserted into the first insertion groove 3121 through magnetic attraction between the first magnetic component 33 and the second magnetic component 24. In this case, the atomization core 11 electrically connected to the power supply electrode 21 is also in communication with the suction port 311.

[0080] Both the first magnetic component 33 and the second magnetic component 24 may include a magnet. One of the first magnetic component 33 and the second magnetic component 24 may include a magnet, and the other may include a magnetic product that can be magnetically attracted by the magnet, for example, may include an iron plate or an iron block.

[0081] In some embodiments, as shown in FIG. 5, the first magnetic component 33 is kept on the first connection component 312. In some embodiments, as shown in FIG. 3, the second magnetic component 24 is kept on the second connection component 23.

[0082] Further, the connection component including the first insertion portion 231 has a first retention groove 232 for retaining the magnetic component, and the connection component including the first insertion groove 3121 has a second retention groove 3122 for retaining the magnetic component. Further, the first insertion groove 3121 is configured to be in communication with the second retention groove 3122 and provide a channel for the corresponding magnetic component to enter the second retention groove 3122, so that the corresponding magnetic component can pass through the first insertion groove 3121 and then enter the second retention groove 3122 to be retained.

[0083] For example, as shown in FIG. 6, the first connection component 312 is provided with the first insertion groove 3121, and then the first connection component 312 is further provided with the second retention groove 3122. The first magnetic component 33 may be retained in the second retention groove 3122 and then retained on

the first connection component 312. An area of the first insertion groove 3121 is greater than or equal to an area of the second retention groove 3122, so that the first magnetic component 22 can pass through the first insertion groove 3121 and be assembled into the second retention groove 3122, and then be retained in the second retention groove 3122.

[0084] For example, as shown in FIG. 4, the second connection component 23 includes the first insertion portion 231, and then the second connection component 231 is provided with the first retention groove 232. The second magnetic component 24 may be retained in the first retention groove 232 and then retained on the second connection component 23. Further, the first retention groove 232 is provided on the first insertion portion 231, so that when the first insertion portion 231 is inserted into the first insertion groove 3121, at least a part of the second magnetic component 24 is also located in the first insertion groove 3121. Furthermore, an end that is of the first retention groove 232 and that faces the suction nozzle module 2 is open, for assembly of the second magnetic component 24.

[0085] In the embodiment shown in FIG. 2, when the first insertion portion 231 is inserted into the first insertion groove 3121, the first magnetic component 33 and the second magnetic component 24 are disposed face-to-face, and may be in direct contact.

[0086] In some embodiments, as shown in FIG. 4 and FIG. 5, one of the first connection component 312 and the second connection component 23 is provided with a protruding tooth 3123, the other is provided with a tooth groove 233, and when the first insertion portion 231 is inserted into the first insertion groove 3121, the protruding tooth 3123 is located in the tooth groove 233, for the first connection component 312 and the second connection component 23 to be engaged, so that the first connection component 312 and the second connection component 23 can rotate synchronously.

[0087] For example, the first connection component 312 includes the protruding tooth 3123. The protruding tooth 3123 may be disposed in the first insertion groove 3121 and spaced apart from a groove wall of the first insertion groove 3121. Alternatively, as shown in FIG. 5, the protruding tooth 3123 may be located in the first insertion groove 3121 and connected to a groove wall of the first insertion groove 3121.

[0088] The second connection component 23 includes the tooth groove 233. As shown in FIG. 4, the tooth groove 233 may be recessed inward from an outer side wall of the first insertion portion 231, or may be recessed, in a direction away from the suction nozzle module 3, from an end surface that is of the second connection component 231 and that faces the suction nozzle module 3.

[0089] The protruding tooth 3123 and the corresponding tooth groove 233 may have matching sizes, to reduce lateral play of the protruding tooth 3123 inserted into the tooth groove 233.

[0090] There may be same quantities of protruding teeth 3123 and tooth grooves 233.

[0091] There may be only one protruding tooth 3123 and one corresponding tooth groove 233, or there may be only one tooth groove 233 and one corresponding protruding tooth 3123, so that the first insertion groove 3121 and the first insertion portion 231 are of a non-centrosymmetric structure or in a non-centrosymmetric shape.

[0092] There may be a plurality of protruding teeth 3123 and a plurality of corresponding tooth grooves 233. In an example, at least two protruding teeth 3123 have different shapes or sizes, so that the first insertion groove 3121 is of a non-centrosymmetric structure or in a non-centrosymmetric shape. Correspondingly, at least two tooth grooves 233 have different shapes or sizes, so that the first insertion portion 231 is of a non-centrosymmetric structure or in a non-centrosymmetric shape. In an example, the plurality of protruding teeth 3123 are distributed in the first insertion groove 3121 in a non-centrosymmetric manner. Correspondingly, the plurality of tooth grooves 233 are distributed on the first insertion portion 231 in a non-centrosymmetric manner.

[0093] In some embodiments, as shown in FIG. 5, a part of a groove wall of the first insertion groove 3121 is a planar groove wall 3124, a part of an outer side wall of the first insertion portion 231 is a planar side wall 234, and when the first insertion portion 231 is inserted into the first insertion groove 3121, the planar side wall 234 faces the planar groove wall 3124. In this case, the first insertion groove 3121 is a non-circular groove, and the first insertion portion 231 has a non-circular cross-section, so that when the first insertion portion 231 is inserted into the first insertion groove 3121, the first connection component 312 and the second connection component 23 can form an interference fit in a transverse direction, and then the first connection component 312 and the second connection component 23 can rotate synchronously.

[0094] There may be only one planar groove wall 3124 and one planar side wall 234, so that the first insertion groove 3121 and the first insertion portion 231 are of a non-centrosymmetric structure or in a non-centrosymmetric shape.

[0095] There may be a plurality of planar groove walls 3124 and/or a plurality of planar side walls 234. However, a distribution or shape of one or more planar groove walls 3124 allows the first insertion groove 3121 to be of a non-centrosymmetric structure or in a non-centrosymmetric shape, and a distribution or shape of one or more planar side walls 234 allows the first insertion portion 231 to be of a non-centrosymmetric structure or in a non-centrosymmetric shape.

[0096] In some embodiments, not shown in the figure, the suction nozzle module includes a first part and a second part. The first part includes the suction port, and the first part is configured to keep a static correspondence with the atomization module. The second part includes the air guiding channel and the first connection component, so that the air guiding channel can keep a

static correspondence with the first connection component. A quantity of air guiding channels is less than a quantity of air guiding tubes (for example, there may be only one air guiding channel). Moreover, the second part and the first part are rotatably connected, so that the power supply electrode and the second part can synchronously rotate relative to the atomization module and the suction port, to select the air guiding tube to be in communication with the air guiding channel. The air guiding tube in communication with the air guiding channel may be in communication with the suction port through the air guiding channel, and the atomization core corresponding to the air guiding tube in communication with the air guiding channel is electrically connected to the power supply electrode. When the power supply electrode is driven to rotate relative to the atomization module, the power supply electrode may further rotate relative to the first part at the same time, and the second part including the first connection component can synchronously rotate with the power supply electrode, so that the second part can rotate relative to the first part and the atomization module at the same time. Therefore, in a process of selecting the air guiding tube to be in communication with the air guiding channel, the atomization module and the first part including the suction port can keep static together.

[0097] In some embodiments, as shown in FIG. 6 and FIG. 7, the suction nozzle module 3 includes a first part 31 and a second part 32, the first part 31 includes the first connection component 312 and the suction port 311, the second part 32 is provided with a plurality of air guiding channels 321 that are in communication with the plurality of air guiding tubes 13 in a one-to-one correspondence, and the first part 31 is configured to be rotatably connected to the second part 32, to select, through rotation, the air guiding channel 321 to be in communication with the suction port 311. The atomization core 11 corresponding to the air guiding channel 321 in communication with the suction port 311 is also electrically connected to the power supply electrode 21, so that the atomization core 11 can obtain electric power to generate an aerosol, and the generated aerosol can be guided to the suction port 311 through the corresponding air guiding tube 13 and air guiding channel 321.

[0098] Further, the second part 32 and the atomization module 1 form an interference fit in a transverse direction, so that the second part 32 can keep a static correspondence with the atomization module 1. In this case, when the first insertion portion 231 is inserted into the first insertion groove 3121, the power supply electrode 21 and the first part 31 including the first connection component 312 may synchronously rotate relative to the atomization module 1 and the second part 32.

[0099] When the power supply electrode 21 is driven to rotate relative to the atomization module 1, the power supply electrode 21 may further rotate relative to the second part 32 at the same time, and the first part 31 including the first connection component 312 can syn-

chronously rotate with the power supply electrode 21, so that the first part 31 can rotate relative to the second part 32 and the atomization module 1 at the same time. Therefore, in a process of selecting the air guiding channel 321 to be in communication with the suction port 311, the atomization module 1 and the second part 32 including the air guiding channel 321 can keep static together.

[0100] Furthermore, as shown in FIG. 4 and FIG. 5, one of the atomization module 1 and the second part 32 is provided with a second insertion groove 17, and the other includes a second insertion portion 34. When the first insertion portion 231 is inserted into the first insertion groove 3121, at least a part of the second insertion portion 34 is inserted into the second insertion groove 17, so that the atomization module 1 and the second part 32 form an interference fit in a transverse direction.

[0101] When the first insertion portion 231 is not inserted into the first insertion groove 3121, at least a part of the second insertion portion 34 may also be inserted into the second insertion groove 17. This helps keep the suction nozzle module 3 and the atomization module 1 connected in a process in which the first connection component 312 and the second connection component 23 rotate relative to each other.

[0102] In the embodiment shown in FIG. 2, the second part 32 is located between the first part 31 and the atomization module 1, the second part 32 is provided with a through hole, at least a part of the first connection component 312 is disposed in the through hole, and the second part 32 is configured to be rotatable around the first connection component 312.

[0103] In the embodiment shown in FIG. 7, the first connection component 312 is provided with an anti-detachment portion 3125, at least a part of the second part 32 is rotatably disposed between the suction port 311 and the anti-detachment portion 3125, and the anti-detachment portion 3125 is configured to prevent detachment of the second part 32 from the first part 31. Further, the first part 31 further includes a base 313 and a suction nozzle 314 connected to the base 313, the suction port 311 is provided on the suction nozzle 314, the first connection component 312 is connected to the base 313 and is located on a side that is of the base 313 and that faces away from the suction nozzle 314, and at least a part of the second part 32 is rotatably disposed between the base 313 and the anti-detachment portion 3125.

[0104] In some embodiments, the suction nozzle module 3 is removably connected to the power supply module 2, accommodation space 251 is constructed between the suction nozzle module 3 and the power supply module 2 when the suction nozzle module 3 and the power supply module 2 are connected, the accommodation space 251 is provided to removably accommodate the atomization module 1, and the atomization module 1 is configured to be irremovably kept in the accommodation space 251 when the suction nozzle module 3 and the power supply module 2 are connected. Therefore, only after the suction nozzle module 3 is removed from the power supply

module 2, the atomization module 1 can be removed from the power supply module 2, or a new atomization module 1 can be connected to the power supply module 2.

[0105] The suction nozzle module 3 and the power supply module 2 can implement a removable connection between the suction nozzle module 3 and the power supply module 2 through magnetic attraction between the first magnetic component 33 and the second magnetic component 24.

[0106] It may be understood that the suction nozzle module 3 may also be connected to the atomization module 1 in a removable manner, so that the suction nozzle module 3, the atomization module 1, and the power supply module 2 can be separated from each other and can be assembled with each other.

[0107] In some embodiments, as shown in FIG. 3, the power supply module 2 further includes a first outer shell 25 with accommodation space 251 inside, the first outer shell 25 is provided with an assembly hole, and the atomization module 1 is configured to be capable of being assembled into the accommodation space 251 and being removed from the accommodation space 251 through the assembly hole; and the suction nozzle module 3 and the power supply module 2 are removably connected, and the assembly hole is obstructed when the suction nozzle module 3 is connected to the power supply module 2. Therefore, when the suction nozzle module 3 and the power supply module 2 are connected, removal of the atomization module 1 from the accommodation space 251 can be prevented and assembly of the atomization module 1 into the accommodation space 251 can be prevented.

[0108] In some embodiments, when the atomization module 1 is located in the accommodation space 251, the atomization module 1 may rotate relative to the first outer shell 25, so that the atomization module 1 can be rotatably accommodated in the first outer shell 25.

[0109] In some embodiments, when the atomization module 1 is located in the accommodation space 251, the atomization module 1 and the first outer shell 25 form an interference fit in a transverse direction, for the atomization module 1 and the first outer shell 25 to synchronously rotate relative to the second connection component 23 and the power supply electrode 21.

[0110] In some embodiments, the suction nozzle module 3 is configured to keep connected with the power supply module 2 or the atomization module 1 through magnetic attraction between the first magnetic component 33 and the second magnetic component 24 in a process in which the first connection component 312 rotates relative to the second connection component 23. In addition, when the first insertion portion 231 is not inserted into the first insertion groove 3121, there is a first distance between the suction port 311 and the atomization module 1. When the first insertion portion 231 is inserted into the first insertion groove 3121, there is a second distance between the suction port 311 and the

atomization module 1. The first distance is greater than the second distance.

[0111] Therefore, in a case that the first insertion portion 231 is not inserted into the first insertion groove 3121, the first connection component 312 is rotated relative to the second connection component 23, so that the first connection component 312 and the second connection component 23 are aligned. Then, the first insertion portion 231 is automatically inserted into the first insertion groove 3121. A sound and vibration generated during insertion serve as an insertion indication signal, and a change from the first distance to the second distance can also generate a visual signal to indicate whether the first insertion portion 231 has been inserted into the first insertion groove 3121.

[0112] In some embodiments, as shown in FIG. 5, the suction nozzle module 3 has a shoulder 35. When the first insertion portion 231 is not inserted into the first insertion groove 3121, an end portion that is of the first outer shell 25 and that is adjacent to the suction nozzle module 3 has a large gap with the shoulder 35 in a longitudinal direction, and the shoulder 35 is located outside the first outer shell 25. When the first insertion portion 231 is inserted into the first insertion groove 3121, the end portion that is of the first outer shell 25 and that is adjacent to the suction nozzle module 3 contacts the shoulder 35 in the longitudinal direction, or has a small gap with the shoulder 35 in the longitudinal direction, so that a part of the suction nozzle module 3 is kept outside the first outer shell 25, for a user to hold. The user can observe a longitudinal distance between the shoulder 25 and the end portion that is of the first outer shell 25 and that is adjacent to the suction nozzle module 3, to determine whether the first insertion portion 231 is inserted into the first insertion groove 3121.

[0113] In some embodiments, when the first insertion portion 231 is not inserted into the first insertion groove 3121, a part of the second part 32 of the suction nozzle module 3 is exposed outside the first outer shell 25. When the first insertion portion 231 is inserted into the first insertion groove 3121, the suction nozzle module 3 descends, and the second part 32 of the suction nozzle module 3 is completely concealed in the first outer shell 25.

[0114] In some embodiments, as shown in FIG. 2 and FIG. 8, the power supply module 2 further includes a first support 26 and a connection column 27 extending in a longitudinal direction in the accommodation space 251. The power supply electrode 21 is held on the first support 26, so that the power supply electrode 21 can keep a static correspondence with the first support 26. The connection column 27 connects the first support 26 and the second connection component 23. The first support 26 and the second connection component 23 may be located at two opposite ends of the connection column 27.

[0115] When the atomization module 1 is located in the accommodation space 251, at least a part of the con-

nection column 27 is rotatably disposed inside the atomization module 1, so that the atomization module 1 can rotate around the connection column 27, or the connection column 27 can rotate inside the atomization module 1.

[0116] Preferably, the first support 26 and the connection column 27 are integrally formed by injection molding.

[0117] In some embodiments, as shown in FIG. 2 and FIG. 8, the power supply module 2 further includes a second support 28 rotatably connected to the first support 26 and a hollow tube 29 that is connected to the second support 28 and that extends in the longitudinal direction in the accommodation space 251, so that the hollow tube 29 can keep a static correspondence with the second support 28. Preferably, the hollow tube 29 and the second support 28 are integrally formed by injection molding.

[0118] The connection column 27 is rotatably connected to the second connection component 23 through the hollow tube 29. When the atomization module 1 is located in the accommodation space 251, the atomization module 1 and the second support 28 form an interference fit in the transverse direction, for the atomization module 1, the second support 28, and the hollow tube 29 to synchronously rotate relative to the connection column 27 and the power supply electrode 21.

[0119] The hollow tube 29 is disposed between the first support 26 and the second connection component 23, and the hollow tube 29 is configured to be capable of blocking the second connection component 23 and the first support 26, to prevent the connection column 27 from exiting the hollow tube 29. In this case, the first support 26 and the second support 28 can keep connected, so that detachment of the second support 28 from the first support 26 can be prevented or detachment of the hollow tube 29 from the connection column 27 can be prevented when the atomization module 1 is removed from the accommodation space 251.

[0120] Further, an outer radius of the second connection component is greater than an inner radius of the hollow tube. The radius is defined as a maximum distance between a center and an edge. The connection column may be connected to the second connection component through assembly. Specifically, after the hollow tube is sleeved on the connection column, the connection column is connected to the second connection component.

[0121] In some embodiments, at least a part of the second support 28 is disposed in the first outer shell 25, and the second support 28 and the first outer shell 25 form an interference fit in a transverse direction, so that the second support 28, the hollow tube 29, and the first outer shell 25 can synchronously rotate relative to the connection column 27. The second support 28 and the first outer shell 25 may be integrally formed through insert molding. The second support 28 may be at least partially fitted into the first outer shell 25 by riveting and be integrated with the first outer shell 25.

[0122] One of the first support 26 and the second support 28 may be provided with a protrusion, and the other may be provided with a groove. In a process of relative rotation of the first support 26 and the second support 28, when the protrusion is rotated to the corresponding groove, vibration and/or a sound is generated, to indicate that the power supply electrode 21 has been electrically connected to one or more atomization cores 11. In addition, an interference fit between the protrusion and the groove in a transverse direction can provide resistance to rotation of the first support 26 relative to the second support 28, to prevent an electrical disconnection between the power supply electrode 21 and the corresponding atomization core 11 in an unexpected case.

[0123] In some embodiments, as shown in FIG. 3 and FIG. 4, the power supply module 2 further includes a second outer shell 30, at least a part of the first support 26 is held in the second outer shell 30, and the power supply 22 may also be held in the second outer shell 30. The first outer shell 25 may rotate relative to the second outer shell 30.

[0124] 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 the embodiments described in this specification. Further, a person of ordinary skill in the art may make improvements or variations according to the foregoing descriptions, and all these improvements and variations shall fall within the protection scope of the claims of this application.

Claims

1. An aerosol-generating device (100), comprising:

a suction nozzle module (3), comprising a first connection component (312), a suction port (311), and an air guiding channel (321) in communication with the suction port (311);
 an atomization module (1), comprising a plurality of atomization cores (11) and a plurality of storage cavities (12) for storing an aerosol-generating substrate, wherein each of the storage cavities (12) is correspondingly in communication with at least one of the atomization cores (11), to provide the aerosol-generating substrate for the atomization core (11) for atomization to generate an aerosol, and the air guiding channel (321) is configured to guide the aerosol to the suction port (311); and
 a power supply module (2), comprising a power supply electrode (21) and a second connection component (23), wherein the power supply module (2) is configured to be capable of rotating relative to the atomization module (1); the second connection component (23) is connected to

the first connection component (312), to keep the suction nozzle module (3) on a side of the atomization module (1), wherein
 an interference structure is disposed on the first connection component (312) and/or the second connection component (23), and a connection between the first connection component (312) and the second connection component (23) has an unlocked state and a locked state, and the first connection component (312) and the second connection component (23) keep connected in both the unlocked state and the locked state; and
 the first connection component (312) and the second connection component (23) are capable of keeping relative rotation in the unlocked state, and rotation between the first connection component (312) and the second connection component (23) is restricted in the locked state by the interference structure, for the power supply electrode (21) and the suction port (311) or the air guiding channel (321) to synchronously rotate relative to the atomization module (1).

2. The aerosol-generating device (100) according to claim 1, wherein a first magnetic component (33) is disposed on the first connection component (312), a second magnetic component (24) is disposed on the second connection component (23), and the first connection component (312) and the second connection component (23) keep connected through magnetic attraction between the first magnetic component (33) and the second magnetic component (24), wherein preferably:

the power supply module (2) rotates relative to the atomization module (1) around a central axis of the first magnetic component (33) or the second magnetic component (24); or
 when the first connection component (312) and the second connection component (23) are in the locked state, the power supply electrode (21) is electrically connected to one of the atomization cores (11), and the atomization core (11) is also in communication with the air guiding channel (321); or
 when the first connection component (312) and the second connection component (23) are in the unlocked state, there is a first distance between the suction port (311) and the atomization module (1), when the first connection component (312) and the second connection component (23) are in the locked state, there is a second distance between the suction port (311) and the atomization module (1), and the first distance is greater than the second distance.

3. The aerosol-generating device (100) according to claim 1 or 2, wherein at least a part of the second connection component (23) passes through the atomization module (1), and the atomization module (1) is capable of rotating around a central axis of the second connection component (23). 5
4. The aerosol-generating device (100) according to claim 1, wherein the interference structure comprises a first insertion groove (3121) and a first insertion portion (231), one of the first connection component (312) and the second connection component (23) comprises the first insertion groove (3121), and the other comprises the first insertion portion (231); and 10
when the first connection component (312) and the second connection component (23) are in the unlocked state, the first insertion portion (231) is not inserted into the first insertion groove (3121), and when the first connection component (312) and the second connection component (23) are in the locked state, the first insertion portion (231) is inserted into the first insertion groove (3121). 15
5. The aerosol-generating device (100) according to claim 4, wherein the first insertion groove (3121) and/or the first insertion portion (231) are/is of a non-centrosymmetric structure. 20
6. The aerosol-generating device (100) according to claim 4, wherein one of the first connection component (312) and the second connection component (23) is provided with a protruding tooth (3123), the other is provided with a tooth groove (233), and when the first insertion portion (231) is inserted into the first insertion groove (3121), the protruding tooth (3123) is located in the tooth groove (233), for the first connection component (312) and the second connection component (23) to be engaged; and/or 25
a part of a groove wall of the first insertion groove (3121) is a planar groove wall (3124), a part of an outer side wall of the first insertion portion (231) is a planar side wall (234), and when the first insertion portion (231) is inserted into the first insertion groove (3121), the planar side wall (234) faces the planar groove wall (3124). 30
7. The aerosol-generating device (100) according to claim 1, wherein the atomization module (1) further comprises a plurality of air guiding tubes (13), and each of the atomization cores (11) is disposed corresponding to one of the air guiding tubes (13), so that the aerosol generated by atomization of the aerosol-generating substrate via the corresponding atomizing core (11) is guided by the air guide tube (13) to the air guide channel (321). 35
8. The aerosol-generating device (100) according to claim 7, wherein the suction nozzle module (3) comprises a first part (31) and a second part (32), the first part (31) comprises the suction port (311), and the first part (31) is configured to keep a static correspondence with the atomization module (1); and the second part (32) comprises the air guiding channel (321) and the first connection component (312), the number of air guiding channels (321) is smaller than that of the air guiding tubes (13), and the second part (32) and the first part (31) are rotatably connected, so that the power supply electrode (21) and the second part (32) rotate synchronously relative to the atomization module (1) and the suction port (311) to select the air guiding tube (13) to be in communication with the air guiding channel (321). 40
9. The aerosol-generating device (100) according to claim 7, wherein the suction nozzle module (3) comprises a first part (31) and a second part (32), the first part (31) comprises the first connection component (312) and the suction port (311), the second part (32) is provided with a plurality of air guiding channels (321) that are in communication with the plurality of air guiding tubes (13) in a one-to-one correspondence, and the first part (31) is configured to be rotatably connected to the second part (32), to select, through rotation, the air guiding channel (321) to be in communication with the suction port (311); 45
one of the atomization module (1) and the second part (32) is provided with a second insertion groove (17), and the other comprises a second insertion portion (34); and when the first connection component (312) and the second connection component (23) are in the locked state, at least a part of the second insertion portion (34) is inserted into the second insertion groove (17), so that the power supply electrode (21) and the first part (31) rotate synchronously relative to the atomization module (1) and the second part (32). 50
10. The aerosol-generating device (100) according to claim 9, wherein when the first connection component (312) and the second connection component (23) are in the unlocked state, at least a part of the second insertion portion (34) is inserted into the second insertion groove (17). 55
11. The aerosol-generating device (100) according to claim 9, wherein the second part (32) is provided with a through hole, at least a part of the first connection component (312) is disposed in the through hole, the first connection component (312) is provided with an anti-detachment portion (3125), and at least a part of the second part (32) is rotatably disposed between the anti-detachment portion (3125) and the suction port (311).

12. The aerosol-generating device (100) according to claim 1, wherein the suction nozzle module (3) is removably connected to the power supply module (2), and an accommodation space (251) is constructed between the suction nozzle module (3) and the power supply module (2) when the suction nozzle module (3) and the power supply module (2) are connected, and the accommodation space (251) is provided to removably accommodate the atomization module (1), and the atomization module (1) is configured to be irremovably kept in the accommodation space (251) when the suction nozzle module (3) and the power supply module (2) are connected.
13. The aerosol-generating device (100) according to claim 1, wherein the power supply module (2) further comprises a first outer shell (25) with an accommodation space (251) inside, the first outer shell (25) is provided with an assembly hole, and the atomization module (1) is configured to be capable of being assembled into the accommodation space (251) and being removed from the accommodation space (251) through the assembly hole; and the suction nozzle module (3) is removably connected to the power supply module (2), and the assembly hole is obstructed when the suction nozzle module (3) is connected to the power supply module (2), wherein preferably:
wherein when the atomization module (1) is located in the accommodation space (251), the atomization module (1) and the first outer shell (25) form an interference fit in a transverse direction, so that the atomization module (1) and the first outer shell (25) rotate synchronously relative to the second connection component (23) and the power supply electrode (21).
14. The aerosol-generating device (100) according to any one of claims 12 to 13, wherein the power supply module (2) further comprises a first support (26) and a connection column (27) extending in a longitudinal direction in the accommodation space (251), the power supply electrode (21) is held on the first support (26), and the connection column (27) connects the first support (26) and the second connection component (23); and
when the atomization module (1) is located in the accommodation space (251), at least a part of the connection column (27) is rotatably disposed inside the atomization module (1).
15. The aerosol-generating device (100) according to claim 14, wherein the power supply module (2) further comprises a second support (28) rotatably connected to the first support (26), and a hollow tube (29) that is connected to the second support (28) and that extends in the longitudinal direction in the accommodation space (251), and the connection col-

umn (27) is rotatably connected to the second connection component (23) through the hollow tube (29);

when the atomization module (1) is located in the accommodation space (251), the atomization module (1) and the second support (28) form an interference fit in the transverse direction, so that the atomization module (1), the second support (28), and the hollow tube (29) rotate synchronously relative to the connection column (27) and the power supply electrode (21); and

the hollow tube (29) is disposed between the first support (26) and the second connection component (23), and the hollow tube (29) is configured to be capable of blocking the second connection component (23) and the first support (26), to prevent the connection column (27) from exiting the hollow tube (29).

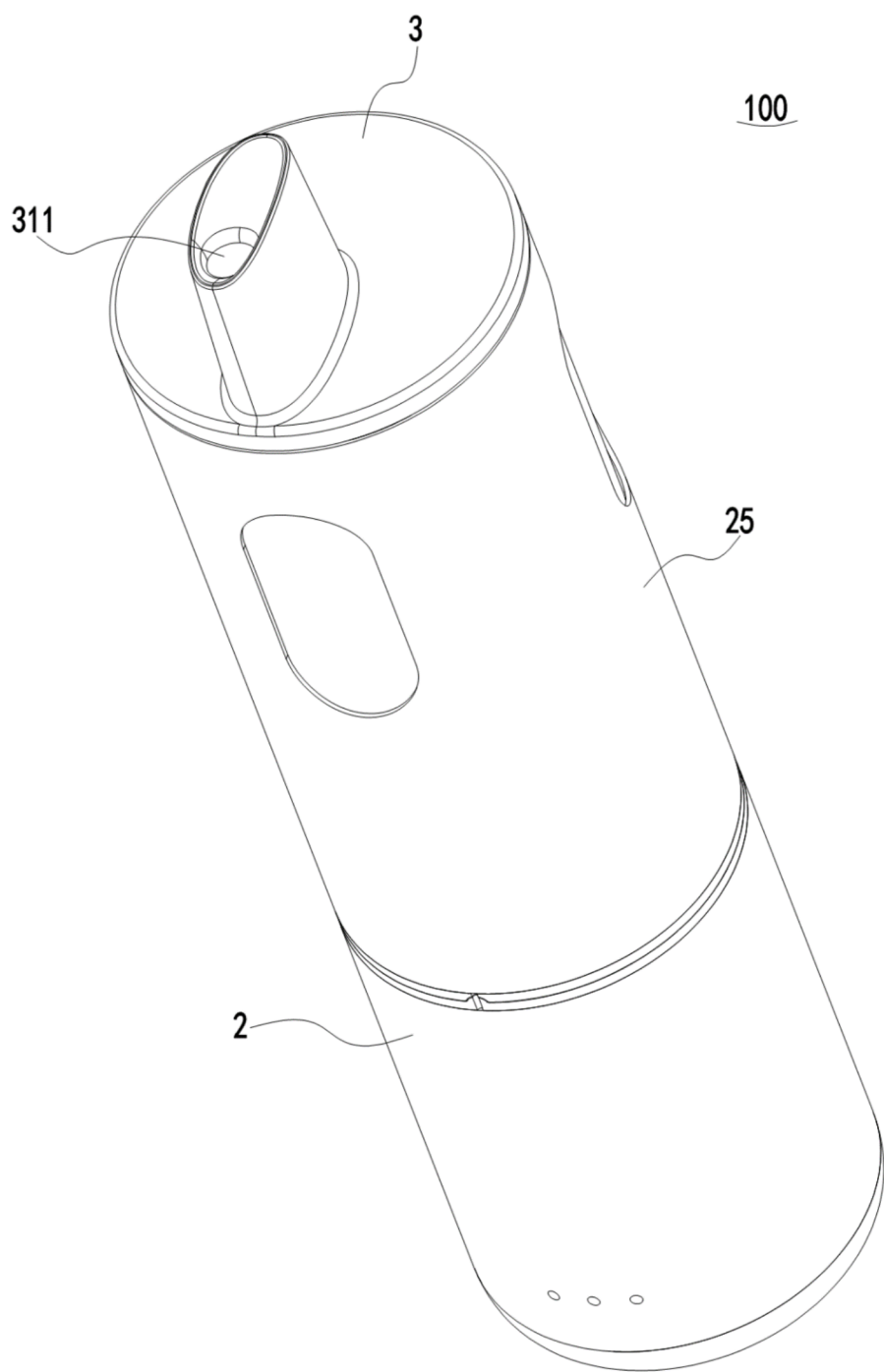


FIG. 1

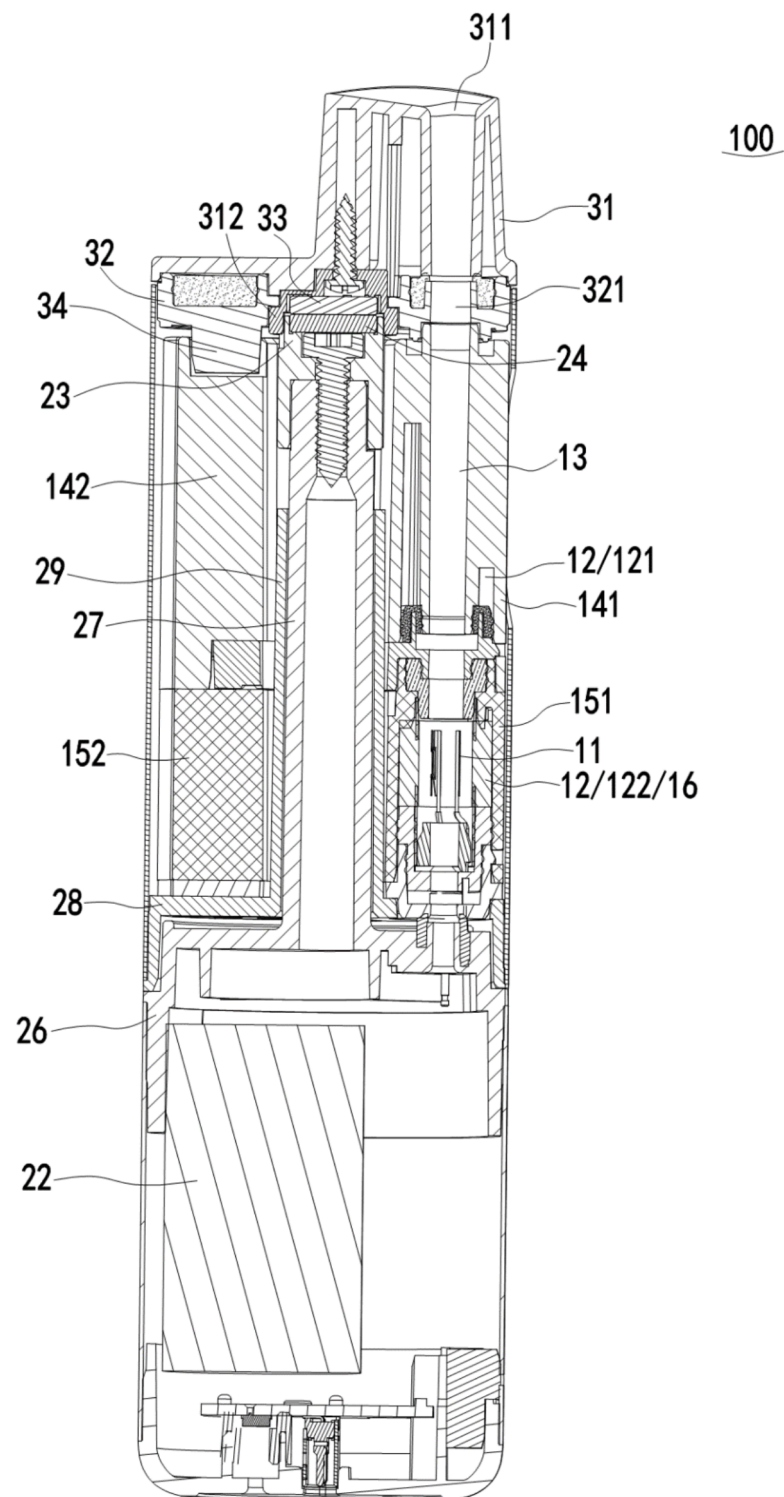


FIG. 2

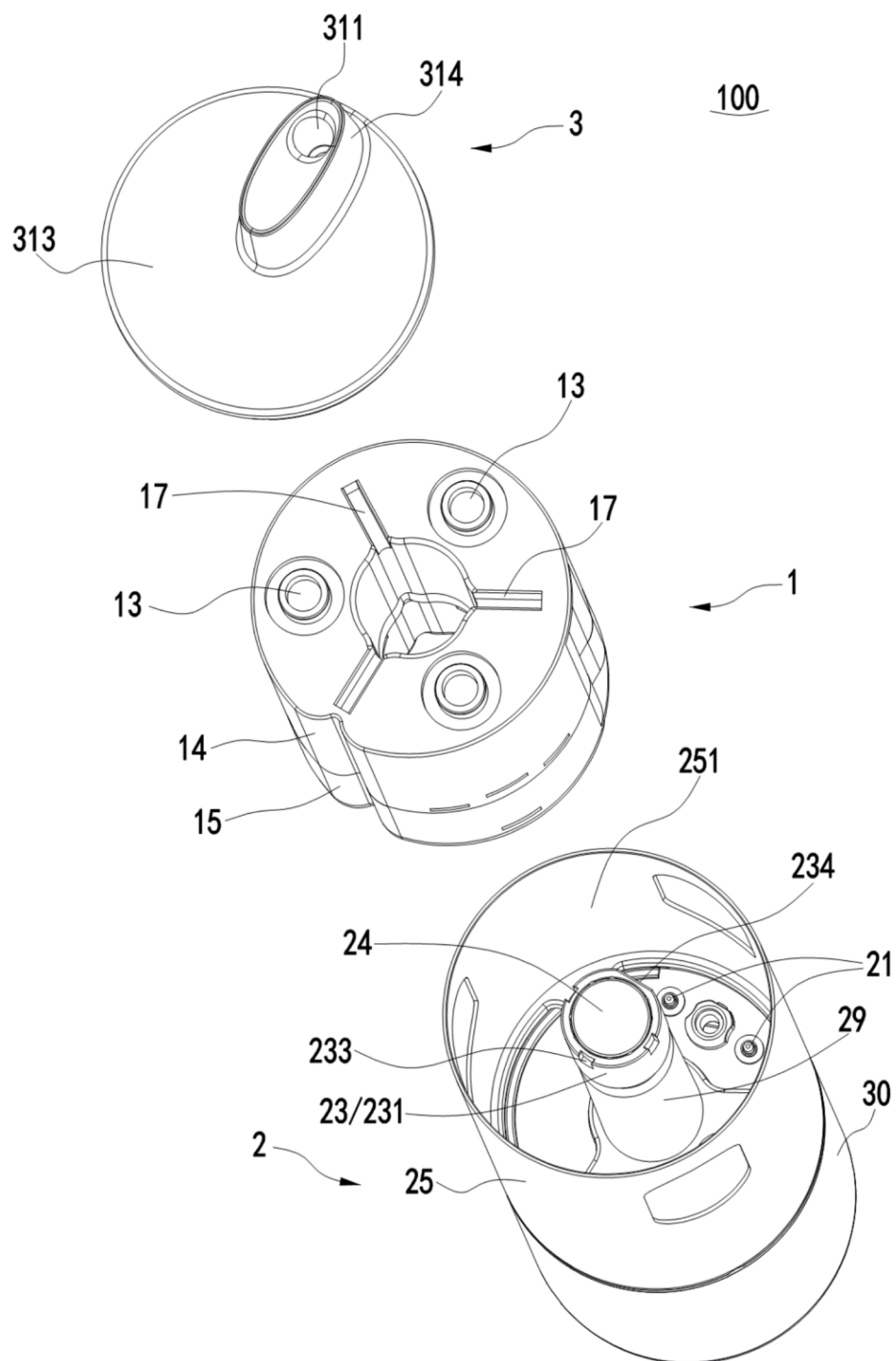


FIG. 3

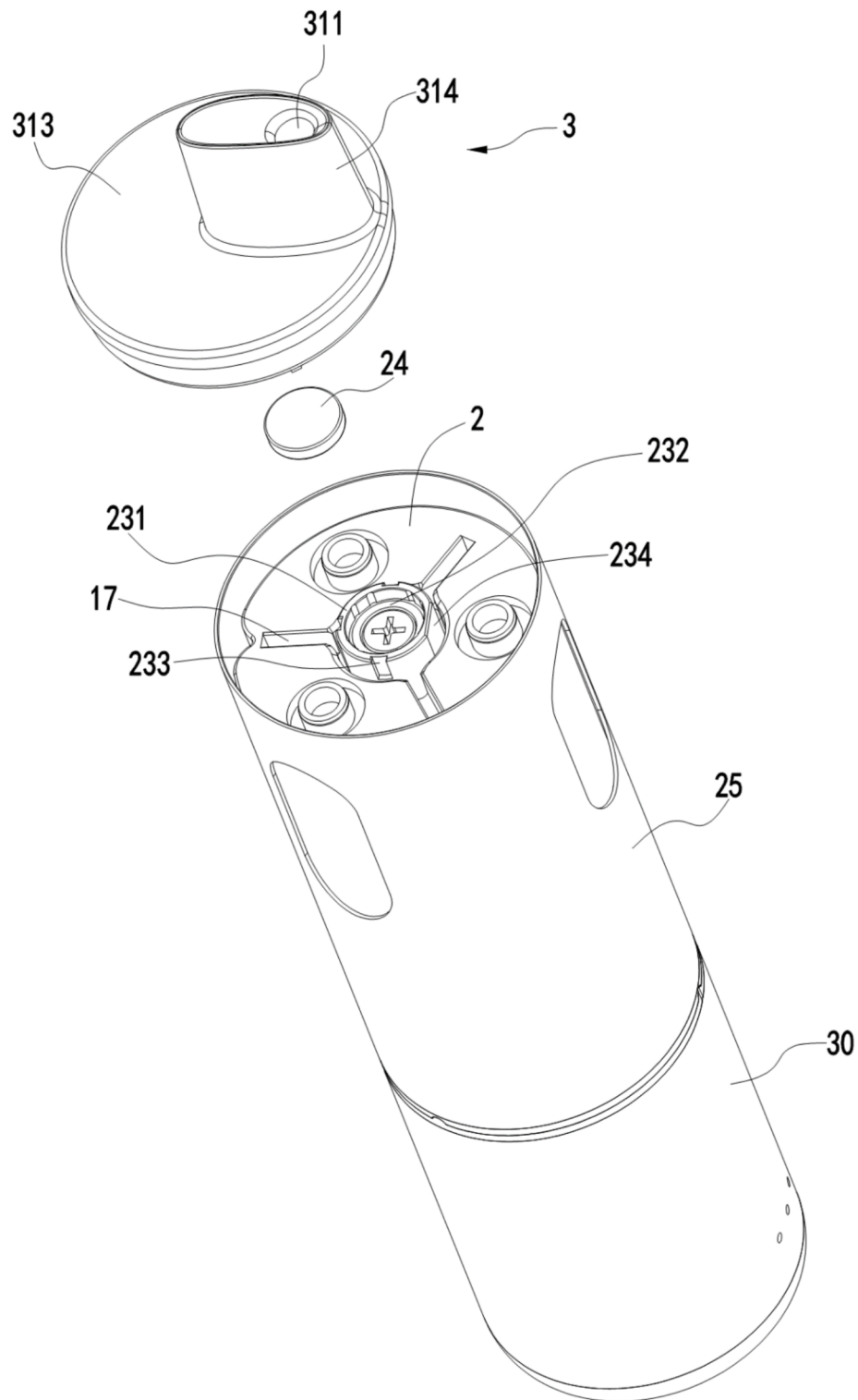


FIG. 4

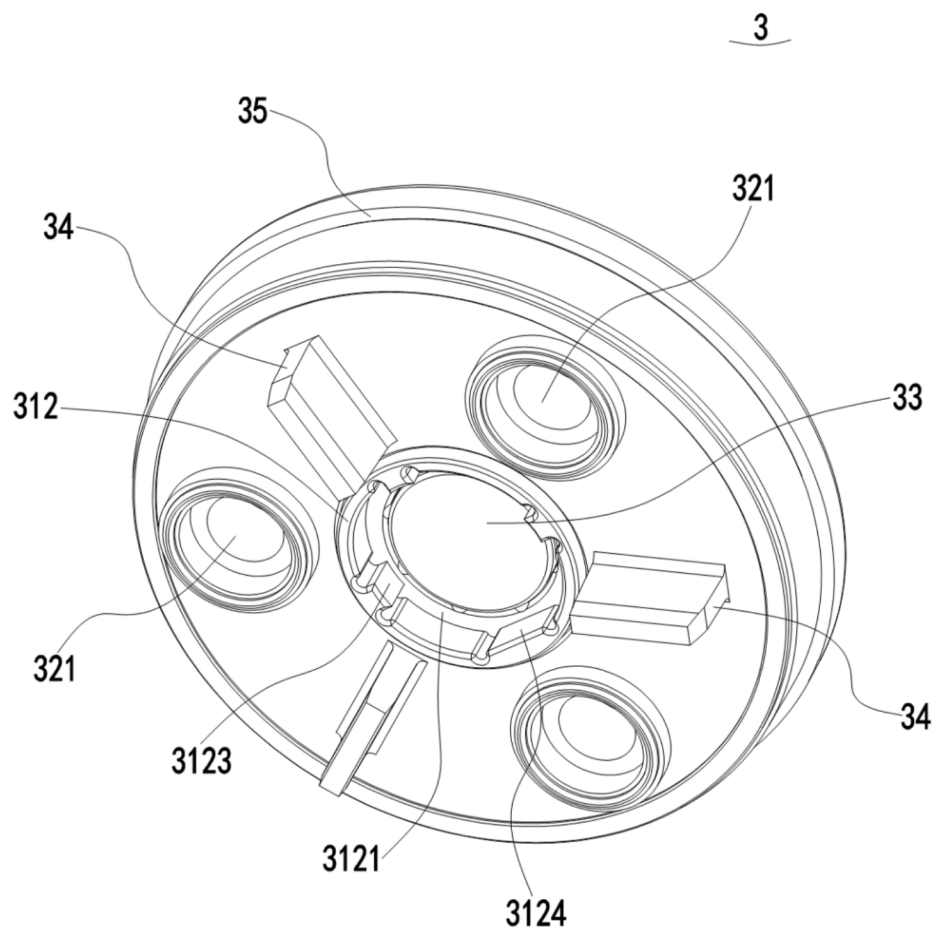


FIG. 5

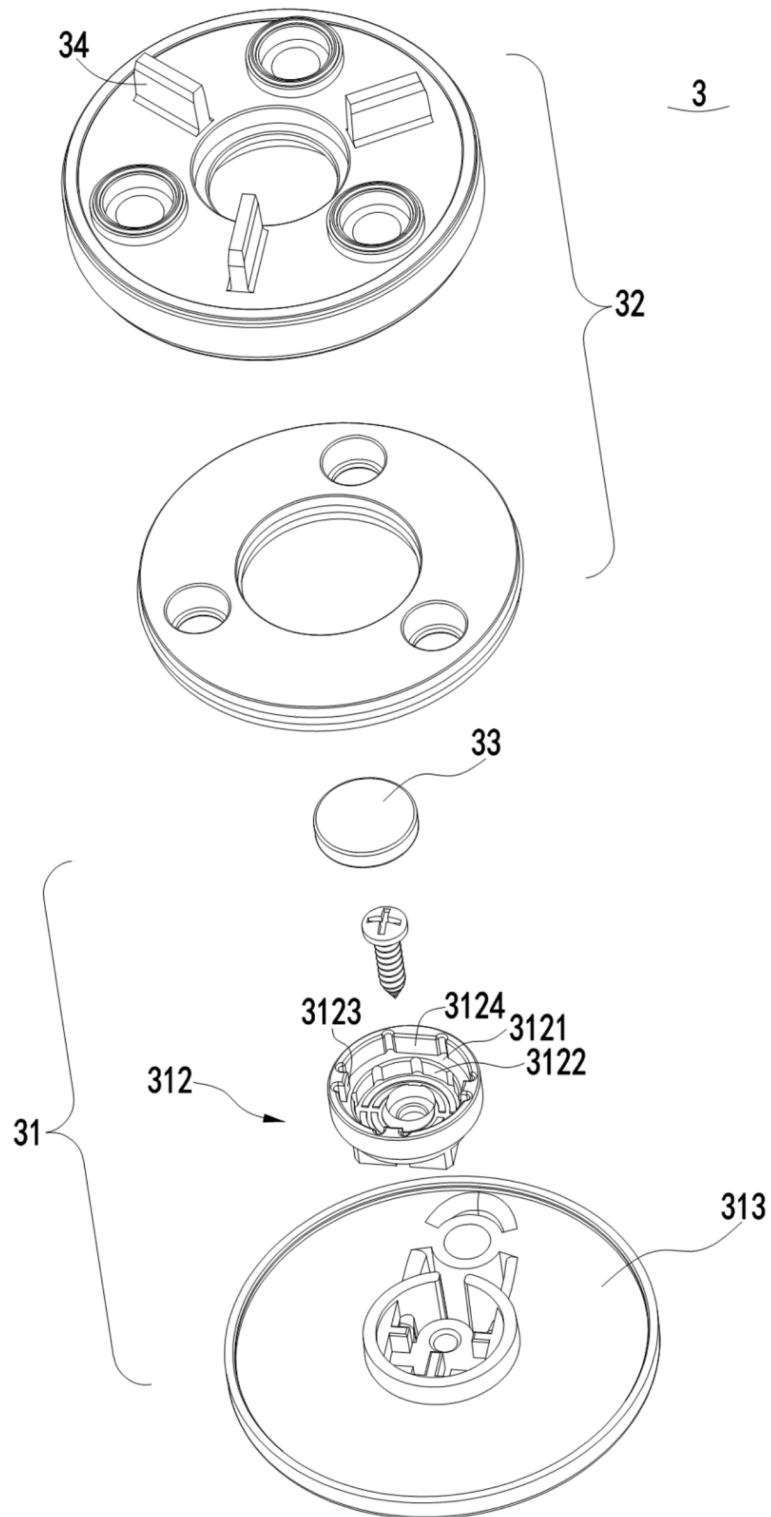


FIG. 6

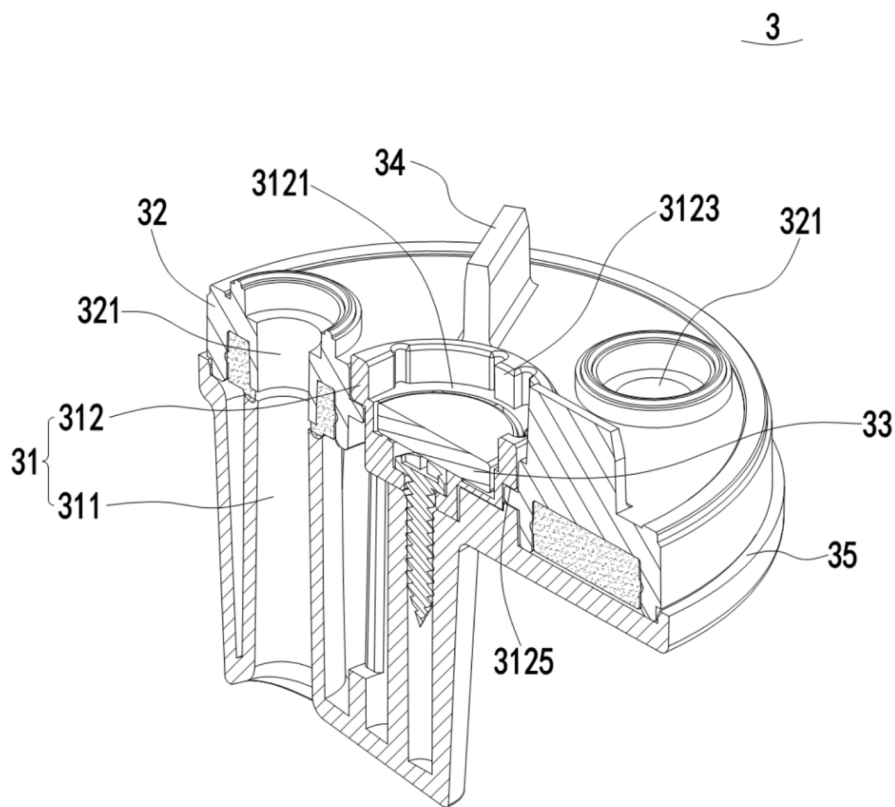


FIG. 7

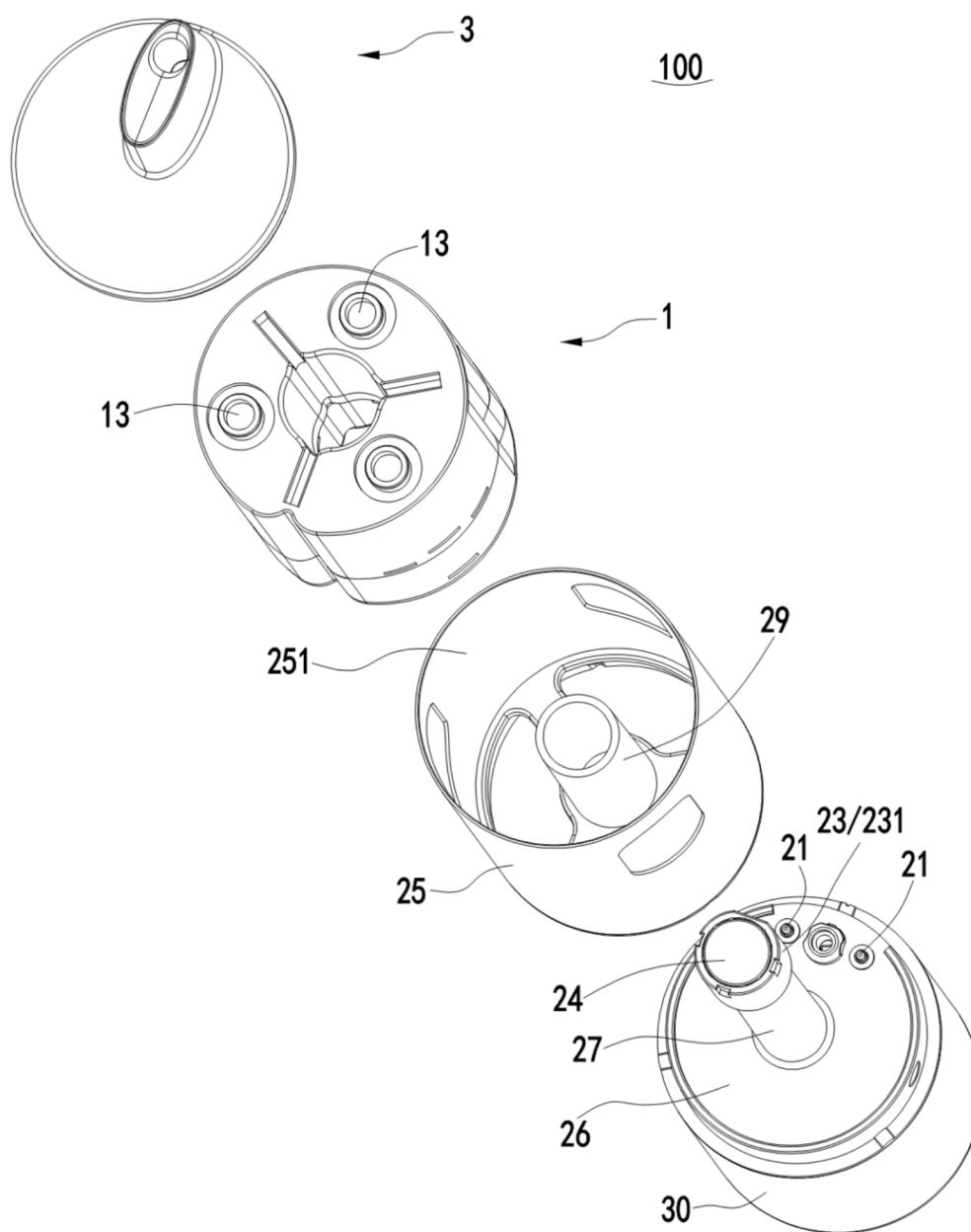


FIG. 8



EUROPEAN SEARCH REPORT

Application Number

EP 26 16 9749

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 4 527 218 A2 (SHENZHEN FIRST UNION TECH CO [CN]) 26 March 2025 (2025-03-26)	1,2,4-7, 12,13	INV. A24F40/40
Y	* paragraph [0026] - paragraph [0103]; figures 1-7 *	3,8-11, 14,15	A24F40/485
Y	GB 2 626 092 A (SHENZHEN FIRST UNION TECH CO; SHENZHEN FIRST UNION TECH CO [CN] ET AL.) 10 July 2024 (2024-07-10) * page 6, line 16 - page 17, line 29; figures 1-14 *	3,8,14, 15	ADD. A24F40/10 A24F40/30
Y	CN 220 109 154 U (SHENZHEN FIRST UNION TECH CO) 1 December 2023 (2023-12-01) * paragraph [0055] - paragraph [0091]; figures 1-7 *	9-11	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A24F
Place of search		Date of completion of the search	Examiner
Munich		12 August 2026	Dartis, Daniel
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ON EUROPEAN PATENT APPLICATION NO.

EP 26 16 9749

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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12-08-2026

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
	EP 4527218 A2	26-03-2025	CN 220875919 U	03-05-2024
			EP 4527218 A2	26-03-2025
15	-----			
	GB 2626092 A	10-07-2024	CN 221962861 U	08-11-2024
			EP 4570085 A1	18-06-2025
			GB 2626092 A	10-07-2024
20	-----			
	CN 220109154 U	01-12-2023	CN 220109154 U	01-12-2023
			EP 4461147 A1	13-11-2024
			EP 4640087 A2	29-10-2025
			GB 2626093 A	10-07-2024
25	-----			
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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82