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(54) **ATOMIZING APPARATUS AND ATOMIZING DEVICE**
ZERSTÄUBUNGSVORRICHTUNGSGERÄT UND ZERSTÄUBUNGSVORRICHTUNG
APPAREIL D'ATOMISATION ET DISPOSITIF D'ATOMISATION

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Description

TECHNICAL FIELD

[0001] The present disclosure relates to the technical field of atomizing devices, in particular to an atomizing apparatus and an atomizing device.

BACKGROUND

[0002] Portable atomizing device in related art includes a power supply apparatus and an atomizing apparatus detachably mounted on the power supply apparatus. In order to meet different needs of user's taste, experience, or treatment, the atomizing apparatus is provided as a replaceable member, so as to meet the needs of users for various function by replacing the atomizing apparatus or replacing the solution to be atomized in the atomizing apparatus.

[0003] In the atomizing device of related art, the atomizing apparatus is fixed on the power supply apparatus by means of fitting of a concave-convex structure, to facilitate the docking of the atomizing apparatus and the power supply apparatus. However, user needs to rotate the atomizing apparatus, to allow electrical contacts thereof to align with and abut against electrical contacts of the power supply apparatus, so as to achieve electrical connection between the two apparatuses. Such operation reduces the user experience. Or, the atomizing device employs a ring electrode, and the other electrode is disposed at the center, which results in the air inlet needing to be set off-center, thus affects the smoothness of air intake, and likewise causes a reduction of user experience.

[0004] CN 114668180 A discloses an electronic atomization heating e-liquid storage assembly, including a second housing, an e-liquid storage tank housing, an e-liquid storage element, an e-liquid guiding element, and a heating element. The second housing is provided with a second accommodation space. The e-liquid storage tank housing is detachably received in the second accommodation space. The e-liquid storage element is received in the e-liquid storage tank housing. The e-liquid guiding element is in contact with the e-liquid storage element. The heating element includes a heating part, which is configured to heat e-liquid adsorbed in the e-liquid guiding element into a gas state.

[0005] US 2015034107 A1 discloses an electronic cigarette, including an atomizer and a battery rod, a connecting structure, and an elastic structure. The connecting structure includes a first connecting member and a second connecting member; the first connecting member is provided with at least one engaging portion, the second connecting member defines a butt-jointed groove, a wall of the butt-jointed groove extends away from a rabbet of the butt-jointed groove to form at least one channel structure, the channel includes an inserting guide channel, a taking-out guide channel, and a bending channel,

and the bending channel forms a buckled portion; the elastic structure is configured for supplying elasticity towards the rabbet of the butt-jointed groove to the first connecting member, so that the engaging portion is engaged with the buckled portion.

SUMMARY

[0006] The present disclosure provides an atomizing apparatus and an atomizing device, to solve the technical problem in the related art of poor user experience caused by alignment of the electrical contacts of the atomizing apparatus and the power supply apparatus.

[0007] The present invention is set out in the appended set of claims.

[0008] To realize the above objective, the present disclosure adopts the following technical solutions.

[0009] According to a first aspect, the present disclosure provides an atomizing apparatus, configured to combine with a power supply apparatus to form an atomizing device. The atomizing apparatus includes:

an atomizing housing, defined with a vapor outlet communicating with an interior of the atomizing housing; and

an atomizing assembly, disposed inside the atomizing housing and configured to output vapor.

[0010] The atomizing housing is provided with a docking post configured to be inserted into a docking slot of the power supply apparatus as set out in claim 1.

[0011] By adopting the above technical solution:

[0012] First, the atomizing apparatus is provided with the guiding structure, and the guiding structure is provided with the guiding curved surface capable of guiding the atomizing apparatus to rotate with respect to the power supply apparatus, so that the atomizing apparatus can be aligned with the power supply apparatus under its own gravity or a pressure applied by a user to realize the electrical connection therebetween. Thus, it is convenient to operate.

[0013] Second, the guiding structure is arranged on the side surface of the docking post and exposed out of the docking slot, so that users can clearly observe whether the guiding curved surface is in complete fitting with the mating curved surface without multiple times of rotation and adjustment. This improves the user experience.

[0014] Last, the atomizing electrical contact is exposed out of the bottom surface of the docking post, so that the atomizing electrical contact always rotates in a same plane, which facilitates the connection with the power supply electrical contact.

[0015] In an embodiment, at least two guiding structures are symmetrically arranged on the docking post; or, a plurality of guiding structures are uniformly arranged on the docking post along the circumferential direction of the docking post.

[0016] By adopting the above technical solution, users

can insert the docking post into the docking slot at any angle, and the guiding curved surfaces can be guided to the corresponding mating curved surfaces. Even if there is a slight misalignment between the docking post and the docking slot, the misalignment can be corrected in time.

[0017] In an embodiment, the atomizing apparatus further includes a magnetic component configured to adhere to a magnetic mating component of the power supply apparatus and drive the guiding structure to align with the power supply apparatus. The magnetic component is disposed on the bottom surface of the docking post or the side surface of the docking post. Or, the bottom surface of the docking post is defined with an opening for exposing the atomizing assembly, and the magnetic component is disposed on the atomizing assembly.

[0018] By adopting the above technical solution, the magnetic component can guide or assist in correcting the relative angle between the atomizing apparatus and the power supply apparatus, thereby improving the user experience.

[0019] In an embodiment, the guiding curved surface is a guiding arc surface, and an arc length of an outer contour line of the guiding arc surface corresponds to a central angle of 45° to 90°.

[0020] By adopting the above technical solution, it is beneficial to the cooperation between the guiding curved surface and the mating curved surface.

[0021] In an embodiment, a height of the docking post is 25 millimeters (mm) to 35 mm.

[0022] A diameter of the docking post ranges from 10 mm to 20 mm.

[0023] In an embodiment, the height of the docking post is 28 mm to 30 mm.

[0024] The diameter of the docking post ranges from 13 mm to 15 mm.

[0025] By adopting the above technical solution, the docking post with the above height is convenient for users to hold, and is conducive to the insertion/removal of the docking post into/from the docking slot;

[0026] The docking post defines a suitable atomizing chamber, which is conducive to providing suitable vapor, and is also conducive to the insertion/removal of the docking post into/from the docking slot.

[0027] According to a second aspect, the present disclosure provides an atomizing device, including a power supply apparatus and the atomizing apparatus according to any of the foregoing embodiments. The power supply apparatus includes a power supply housing and a power supply member disposed inside the power supply housing. The top of the power supply housing is defined with the docking slot configured to receive the docking post. The power supply member is provided with the power supply electrical contact, and the power supply electrical contact is exposed out of the docking slot.

[0028] By adopting the above technical solution, based on the arrangement of the atomizing apparatus, the embodiment also has the advantages of easy operation

and good user experience.

[0029] In an embodiment, a side wall of the docking slot is inclined, and the docking post has a wedge-shaped structure fitting the docking slot.

[0030] By adopting the above technical solution, the docking post fits the docking slot, so that the docking post can be tightly fitted with the docking slot after being completely inserted into the docking slot to achieve sealing therebetween. This avoids external gases from entering the interior of the atomizing device, which may further prevent the gas sensor from failure.

[0031] In an embodiment, the magnetic mating component for mating with the magnetic component is disposed on the bottom or a wall of the docking slot.

[0032] By adopting the above technical solution, the magnetic mating component can be mated with the magnetic component, so that the atomizing apparatus can be guided or assisted to correct the angle relative to the power supply apparatus, thereby improving the user experience.

[0033] In an embodiment, a guiding convex part is provided on either one of the bottom of the docking slot and a docking end of the docking post docking with the docking slot, and a guiding concave part is provided on the other one of the bottom of the docking slot and the docking end of the docking post docking with the docking slot. The guiding convex part abuts against the guiding concave part, to allow the docking post to sealingly abut against the docking slot.

[0034] By adopting the above technical solution, the bottom of the power supply apparatus is provided with a gas sensor electrically connected to the atomizing assembly. When an inhalation of a user at the vapor outlet triggers the gas sensor, which in turn triggers the atomizing assembly to generate vapor. The sealing state between the docking post and the docking slot ensures that the gas sensor can be triggered in time, thereby improving the reliability of the gas sensor.

BRIEF DESCRIPTION OF THE DRAWINGS

[0035] In order to illustrate the technical solutions of the embodiments of the present disclosure more clearly, the accompanying drawings are briefly described below. The drawings described below are some of the embodiments, and it would be obvious for those skilled in the art to obtain other drawings based on these drawings without any creative efforts.

FIG. 1 is a perspective view of an atomizing device according to an embodiment of the present disclosure.

FIG. 2 is an exploded view of a first view of the atomizing device according to an embodiment of the present disclosure.

FIG. 3 is a cross-sectional view of the atomizing device according to an embodiment of the present disclosure.

FIG. 4 is an exploded view of a second view of the atomizing device according to an embodiment of the present disclosure.

FIG. 5 is an exploded view of a third view of the atomizing device according to an embodiment of the present disclosure.

Reference numerals:

[0036]

1. atomizing apparatus; 2. power supply apparatus; 3. magnetic component; 4. magnetic mating component;
11. atomizing housing; 12. docking post; 13. guiding structure; 14. atomizing assembly; 21. docking slot; 22. power supply housing; 23. power supply member;
110. vapor outlet; 131. guiding curved surface; 211. power supply electrical contact; 212. guiding convex part; 121. atomizing electrical contact; 122. guiding concave part; 201. mating curved surface.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0037] In order to make the technical problems to be solved, the technical solutions, and the beneficial effects of the present disclosure clearer, the present disclosure will be further described below with reference to the accompanying drawings and embodiments. It can be understood that the specific embodiments described herein are only used to explain the present disclosure, and are not intended to limit the present disclosure.

[0038] It should be noted that in case an element is "fixed to" or "disposed on" another element, this element may be directly or indirectly located on the another element. In case an element is "connected to" another element, this element may be directly or indirectly connected to the another element.

[0039] It should be understood that the orientations or positional relationships indicated by the terms, such as "length", "width", "upper", "lower", "front", "rear", "left", "right", "vertical", "horizontal", "top", "bottom", "inner", "outer", are based on the orientations or positional relationships shown in the drawings. They are merely for convenience in describing the present disclosure, rather than indicate that a device or an element must have a particular orientation, be constructed and operated in a particular orientation. Therefore, they should not be understood as limitations to the present disclosure.

[0040] In addition, the terms "first" and "second" are merely used for description, and cannot be understood as indicating relative importance or the quantity of technical features. In the present disclosure, "a plurality of" means two or more than two, unless otherwise specifically defined. The specific implementations of the present disclosure are detailed below in conjunction with the specific embodiments.

[0041] As shown in FIG. 1 to FIG. 3, the embodiments of the present disclosure provide an atomizing apparatus 1, which is configured to combine with a power supply apparatus 2 to form an atomizing device. It can be understood that the atomizing device is configured to atomize to-be-atomized solution stored therein into an atomized state, so that users can use, take, or inhale conveniently. The to-be-atomized solution may be water, aromatic liquid, mosquito repellent liquid, liquid medicine, electronic cigarette liquids, and the like. Correspondingly, the atomizing device may be an oral humidifier, an aromatherapy device, a mosquito repellent, a medicinal atomizer, an electronic cigarette, and the like. In some embodiments, the power supply apparatus 2 is electrically connected to the atomizing apparatus 1 to power the atomizing apparatus 1 and make the atomizing device be portable. A heating wire and an atomizing chamber for storing the to-be-atomized solution are disposed in the atomizing apparatus 1. In the embodiments, the to-be-atomized solution includes but is not limited to e-cigarette liquids with different flavors and medical liquids with different therapeutic effects. Since the atomizing apparatus 1 is detachably mounted on the power supply apparatus 2, users can replace the atomizing apparatus 1 or the to-be-atomized solution to meet different use requirements.

[0042] The details are described below with specific implementations.

[0043] The atomizing apparatus 1 of the embodiments includes: an atomizing housing 11 and an atomizing assembly 14.

[0044] The atomizing housing 11 is defined with a vapor outlet 110 communicating with the interior of the atomizing housing 11. It can be understood that, the atomizing housing 11 is configured to protect the atomizing assembly 14, and is defined with the vapor outlet 110 for discharging vapor. The atomizing housing 11 is of a hollow structure, which facilitates to place the atomizing assembly 14 therein.

[0045] The atomizing assembly 14 is disposed inside the atomizing housing 11, and is configured to output vapor. It can be understood that the atomizing assembly 14 is configured to atomize the to-be-atomized solution placed therein into vapor, and output the vapor to the vapor outlet 110.

[0046] The atomizing housing 11 is provided with a docking post 12 configured to be inserted into a docking slot 21 of the power supply apparatus 2, and a guiding structure 13 arranged on a side surface of the docking post 12 along a circumferential direction of the docking post 12. The guiding structure 13 includes a guiding curved surface 131. The guiding curved surface 131 is projecting or concave inward in an axial direction of the docking post 12 with respect to the power supply apparatus 2. Referring to FIG. 4 and FIG. 5, the atomizing assembly 14 is provided with an atomizing electrical contact 121, which is configured to abut against a power supply electrical contact 211 of the power supply apparatus 2.

ratus 2. The atomizing electrical contact 121 is exposed out of a bottom surface of the docking post 12 facing away from the vapor outlet 110. It can be understood that the atomizing housing 11 is provided with the docking post 12 and the guiding structure 13. The docking post 12 is configured to be inserted into the docking slot 21 of the power supply apparatus 2, and the guiding structure 13 is configured to adjust a relative angle between the docking post 12 and the docking slot 21, allowing the atomizing electrical contact 121 to directly face and abut against the power supply electrical contact 211. In some embodiments, the docking post 12 has a post structure, and is in clearance fit with the docking slot 21, so that the docking post 12 can rotate around an axis after it is inserted into the docking slot 21, thereby enabling adjustment of the relative angle between the docking post 12 and the docking slot 21. In order to allow the docking post 12 to automatically adjust the angle relative to the docking slot 21 to make the atomizing electrical contact 121 directly face and abut against the power supply electrical contact 211, the guiding structure 13 is provided with the guiding curved surface 131, and the power supply apparatus 2 is provided with a mating curved surface 201 for fitting with the guiding curved surface 131. In case the guiding curved surface 131 is misaligned with the mating curved surface 201, and the two are close to each other, the mating curved surface 201 can guide the guiding curved surface 131 to move. Specifically, under the action of gravity, the inclined guiding curved surface 131 slips and rotates, until the guiding curved surface 131 is completely in concave-convex fit with the mating curved surface 201. In this case, the relative angle between the docking post 12 and the docking slot 21 is adjusted, allowing the atomizing electrical contact 121 to directly face and abut against the power supply electrical contact 211. In this way, the guiding curved surface 131 can correct the relative angle between the atomizing apparatus 1 and the power supply apparatus 2, thereby realizing the electrical connection between the atomizing apparatus 1 and the power supply apparatus 2.

[0047] It should be noted that the power supply electrical contact 211 and the atomizing electrical contact 121 include but are not limited to conductive pins or conductive sheets. The conductive pins may be elastic. In the embodiments, when the atomizing apparatus 1 and the power supply apparatus 2 have corrected their relative angle by the mutual cooperation of the guiding curved surface 131 and the mating curved surface 201, and at that time the power supply electrical contact 211 and the atomizing electrical contact 121 are squarely facing each other and abutting against each other, both the atomizing apparatus 1 and the power supply apparatus 2 are fixedly connected by way of an interference fit, thereby realizing relative fixation of the atomizing apparatus 1 and the power supply apparatus 2.

[0048] According to the embodiments of the present disclosure, the assembly principle of the atomizing apparatus 1 and the power supply apparatus 2 is as follows:

[0049] The user, who holds the power supply apparatus 2 in one hand and the atomizing apparatus 1 in the other hand, inserts the docking post 12 into the docking slot 21. At this time, the atomizing apparatus 1 is located above the power supply apparatus 2, and the atomizing apparatus 1 is guided under gravity to move along a depth direction of the docking slot 21. During the movement of the atomizing apparatus 1, the guiding curved surface 131 interacts with the mating curved surface 201 to adjust the relative angle between the atomizing apparatus 1 and the power supply apparatus 2. When the guiding curved surface 131 is in complete concave-convex fit with the mating curved surface 201, the atomizing electrical contact 121 and the power supply electrical contact 211 are squarely facing each other and abutting against each other, achieving the electrical connection between the atomizing apparatus 1 and the power supply apparatus 2. It should be noted that in case the atomizing apparatus 1 fails to be guided under its gravity to move along the depth direction of the docking slot 21, the user may manually press and rotate the atomizing apparatus 1. In this case, a complete mating between the atomizing apparatus 1 and the power supply apparatus 2 can be achieved by only rotating the atomizing apparatus 1 less than half a turn.

[0050] By adopting the above technical solution:

First, the atomizing apparatus 1 is defined with the guiding structure 13, and the guiding structure 13 is provided with the guiding curved surface 131 capable of guiding the atomizing apparatus 1 to rotate with respect to the power supply apparatus 2, so that the atomizing apparatus 1 can be aligned with the power supply apparatus 2 under its own gravity or a pressure provided by a user to realize the electrical connection therebetween. Thus, it is convenient to operate.

[0051] Second, the guiding structure 13 is arranged on the side surface of the docking post 12 and is exposed out of the docking slot 21, so that the user can clearly observe whether the guiding curved surface 131 is in complete fitting with the mating curved surface 201 without multiple times of rotation and adjustment. This improves the user experience.

[0052] Last, the atomizing electrical contact 121 is exposed out of the bottom surface of the docking post 12, so that the atomizing electrical contact 121 can always rotate in the same plane, which facilitates the connection of the atomizing electrical contact 121 and the power supply electrical contact 211.

[0053] In some embodiments, at least two guiding structures 13 are symmetrically arranged on the docking post 12. Alternatively, a plurality of guiding structures 13 are uniformly arranged on the docking post 12 along the circumferential direction of the docking post 12.

[0054] The guiding structures 13 are defined with the guiding curved surfaces 131, that is, the guiding curved surfaces 131 are symmetrically arranged on the docking post 12, or are uniformly arranged on the docking post 12 along the axial direction of the docking post 12. It can be

understood that, correspondingly, the power supply apparatus 2 is defined with mating curved surfaces 201 that are in one-to-one correspondence with the guiding curved surfaces 131.

[0055] By adopting the above technical solution, the user can insert the docking post 12 into the docking slot 21 at any relative angle, and the guiding curved surfaces 131 can be guided on the corresponding mating curved surfaces 201. Even if there is a slight misalignment between the docking post 12 and the docking slot 21, the misalignment can be adjusted in time.

[0056] In some embodiments, the atomizing apparatus 1 further includes a magnetic component 3, which is configured to adhere to a magnetic mating component 4 of the power supply apparatus 2, and drive the guiding structures 13 to align with the power supply apparatus 2. The magnetic component 3 is disposed on the bottom surface of the docking post 12 or the side surface of the docking post 12. Alternatively, the bottom surface of the docking post 12 is defined with an opening for exposing the atomizing assembly 14, and the magnetic component 3 is disposed on the atomizing assembly 14.

[0057] It can be understood that the magnetic component 3 is configured to mate with the magnetic mating component 4 disposed on a bottom or a wall of the docking slot 21. Specifically, in case the magnetic component 3 is disposed on the bottom surface of the docking post 12 or the bottom surface of the atomizing assembly 14, the magnetic mating component 4 is disposed on the bottom of the docking slot 21. When the atomizing apparatus 1 is docked with the power supply apparatus 2, that is, when the docking post 12 is inserted into the docking slot 21, the magnetic mating component 4 adheres to the magnetic component 3 to drive the docking post 12 to move along the depth direction of the docking slot 21. In this way, a complete fitting between the guiding curved surfaces 131 and the mating curved surfaces 201 can be achieved without any other external force, thereby allowing the atomizing apparatus 1 and the power supply apparatus 2 to adjust to an appropriate angle. In case the magnetic component 3 is disposed on the side surface of the docking post 12, the magnetic mating component 4 is disposed on the wall of the docking slot 21. In this case, the magnetic cooperation between the magnetic component 3 and the magnetic mating component 4 cannot guide the docking post 12 to move along the depth direction of the docking slot 21, but can assist in positioning the docking post 12 and the docking slot 21 at a relative angle.

[0058] By adopting the above technical solution, the magnetic component 3 can guide or assist in adjusting the relative angle between the atomizing apparatus 1 and the power supply apparatus 2, thereby improving the user experience.

[0059] In some embodiments, at least two magnetic components 3 are symmetrically arranged on the docking post 12 or the atomizing assembly 14. Alternatively, a plurality of magnetic components 3 are uniformly ar-

ranged on the docking post 12 or the atomizing assembly 14 along the circumferential direction. It can be understood that the relative position of the magnetic components 3 with respect to the atomizing electrical contact 121 is fixed, and the relative position of the magnetic mating components 4 with respect to the power supply electrical contact 211 is fixed. In this way, in case the magnetic component 3 and the magnetic mating component 4 attract each other and directly faces each other, the atomizing electrical contact 121 directly faces and abuts against the power supply electrical contact.

[0060] By adopting the above technical solution, the user can insert the docking post 12 into the docking slot 21 at any relative angle, and the magnetic component 3 can fit well with the magnetic mating component 4. Even if there is a slight misalignment between the docking post 12 and the docking slot 21, the misalignment can be adjusted in time.

[0061] In an embodiment, the guiding curved surface 131 is a guiding cambered surface, and an arc length of an outer contour line of the guiding arc surface corresponds to a central angel of 45° to 90°.

[0062] Preferably, the arc length of the outer contour line of the guiding arc surface corresponds to a central angel of 50°, 60° or 70°.

[0063] By adopting the above technical solution, it is beneficial to the cooperation between the guiding curved surface 131 and the mating curved surface 201.

[0064] In an embodiment, a height of the docking post 12 is 25 mm to 35 mm.

[0065] Preferably, the height of the docking post 12 is 25 mm to 35 mm. Illustratively, the height of the docking post 12 is 28 mm, 30 mm, or 32 mm.

[0066] By adopting the above technical solution, the docking post 12 with the above height is convenient for users to hold, and is conducive to the insertion/removal of the docking post 12 into/from the docking slot 21.

[0067] In an embodiment, a diameter of the docking post 12 ranges from 10 mm to 20 mm.

[0068] Preferably, the diameter of the docking post 12 ranges from 13 mm to 15 mm. Illustratively, the diameter of the docking post 12 is 12 mm, 14 mm, 16 mm, or 18 mm.

[0069] By adopting the above technical solution, the docking post 12 can define a suitable atomizing chamber, which is conducive to providing suitable vapor, and is also conducive to the insertion/removal of the docking post 12 into/from the docking slot 21.

[0070] According to a second aspect, an atomizing device is provided, which includes a power supply apparatus 2 and the foregoing atomizing apparatus 1. The power supply apparatus 2 includes a power supply housing 22 and a power supply member 23 disposed inside the power supply housing 22. The top of the power supply housing 22 is defined with the docking slot 21 configured to receive the docking post 12. The power supply member 23 is provided with the power supply electrical contact 211. The power supply electrical contact 211 is exposed

out of the docking slot 21.

[0071] In some embodiments, the mating curved surface 201 for mating with the guiding curved surface 131 is defined at the top of the power supply housing 22. The mating curved surface 201 adapts to the shape of the guiding curved surface 131. In case the guiding convex surface is convex toward the power supply apparatus 2, the mating curved surface 201 is an inward concave curved surface; and in case the guiding convex surface is concave toward the power supply apparatus 2, the mating curved surface 201 is a convex curved surface.

[0072] By adopting the above technical solution, based on the arrangement of the atomizing apparatus 1, the embodiment also has the advantages of easy operation and good user experience.

[0073] In some embodiments, a side wall of the docking slot 21 is inclined, and the docking post 12 has a wedge-shaped structure fitting with the docking slot 21.

[0074] By adopting the above technical solution, the docking post 12 fits the docking slot 21, so that the docking post 12 can be tightly fitted with the docking slot 21 after being completely inserted into the docking slot 21, thereby achieving sealing therebetween. This avoids external gases from entering into the interior of the atomizing device, which may further prevent the gas sensor from sensing failure.

[0075] In some embodiments, the magnetic mating component 4 mating with the magnetic component 3 is disposed on the bottom or the wall of the docking slot 21.

[0076] In case the magnetic component 3 is disposed on the bottom surface of the docking post 12 or the bottom surface of the atomizing assembly 14, the magnetic mating component 4 is disposed on the bottom of the docking slot 21. When the atomizing apparatus 1 is docked with the power supply apparatus 2, that is, when the docking post 12 is inserted into the docking slot 21, the magnetic mating component 4 adheres to the magnetic component 3 to drive the docking post 12 to move along the depth direction of the docking slot 21. In this way, a complete fitting between the guiding curved surface 131 and the mating curved surface 201 can be achieved without any other external force, thereby allowing the atomizing apparatus 1 and the power supply apparatus 2 to adjust to an appropriate angle. In case the magnetic component 3 is disposed on the side surface of the docking post 12, the magnetic mating component 4 is disposed on the wall of the docking slot 21. In this case, the magnetic cooperation between the magnetic component 3 and the magnetic mating component 4 cannot guide the docking post 12 to move along the depth direction of the docking slot 21, but can assist in positioning the docking post 12 and the docking slot 21 at a relative angle.

[0077] By adopting the above technical solution, the magnetic mating component 4 can be mated with the magnetic component 3, so that the atomizing apparatus 1 can be guided or assisted to adjust the angle relative to the power supply apparatus 2, thereby improving the

user experience.

[0078] In some embodiments, a guiding convex part 212 is provided on either one of the bottom of the docking slot 21 and the docking end of the docking post 12 docking with the docking slot 21, and a guiding concave part 122 is provided on the other one of the bottom of the docking slot 21 and the docking end of the docking post 12 docking with the docking slot 21. The guiding convex part 212 abuts against the guiding concave part 122, to allow the docking post 12 to sealingly abut against the docking slot 21.

[0079] It can be understood that the bottom of the power supply apparatus 2 is provided with a gas sensor electrically connected to the atomizing assembly 14. When a user inhales at the vapor outlet 110, the gas sensor may be triggered, which further triggers the atomizing assembly 14 to produce the vapor. The sealed state needs to be maintained between the docking post 12 and the docking slot 21, to ensure that the gas sensor is triggered in time, thereby improving the reliability of the gas sensor.

Claims

1. An atomizing apparatus (1), configured to combine with a power supply apparatus (2) to form an atomizing device, wherein, the atomizing apparatus (1) comprises:

an atomizing housing (11), defined with a vapor outlet (110) communicating with an interior of the atomizing housing (11); and

an atomizing assembly (14), disposed inside the atomizing housing (11) and configured to output generated vapor;

wherein, the atomizing housing (11) is provided with a docking post (12) configured to be inserted into a docking slot (21) of the power supply apparatus (2); the atomizing assembly (14) is provided with an atomizing electrical contact (121) configured to abut against a power supply electrical contact (211) of the power supply apparatus (2), and the atomizing electrical contact (121) is exposed out of a bottom surface of the docking post (12) facing away from the vapor outlet (110);

characterized in that, the power supply apparatus (2) is provided with a mating curved surface (201), the atomizing housing (11) is further provided with a guiding structure (13) arranged on a side surface of the docking post (12) along a circumferential direction of the docking post (12), the guiding structure (13) is provided with a guiding curved surface (131) for fitting the mating curved surface (201), and the guiding structure (13) is projecting or concave inward in an axial direction of the docking post (12) with

- respect to the power supply apparatus (2); and the mating curved surface (201) is configured to guide the guiding curved surface (131) to allow a relative angle between the docking post (12) and the docking slot (21) to be adjusted during a process of inserting the docking post (12) into the docking slot (21), so as to allow the atomizing electrical contact (121) to directly face and abut against the power supply electrical contact (211).
2. The atomizing apparatus (1) according to claim 1, wherein at least two guiding structures (13) are symmetrically arranged on the docking post (12); or, a plurality of guiding structures (13) are uniformly arranged on the docking post (12) along the circumferential direction of the docking post (12).
 3. The atomizing apparatus (1) according to claim 1, wherein the atomizing apparatus (1) further comprises a magnetic component configured to adhere to a magnetic mating component of the power supply apparatus (2) and drive the guiding structure (13) to align with the power supply apparatus (2); the magnetic component is disposed on the bottom surface of the docking post (12) or the side surface of the docking post (12); or the bottom surface of the docking post (12) is defined with an opening for exposing the atomizing assembly (14), and the magnetic component is disposed on the atomizing assembly (14).
 4. The atomizing apparatus (1) according to any one of claims 1 to 3, wherein the guiding curved surface (131) is a guiding arc surface, and an arc length of an outer contour line of the guiding arc surface corresponds to a central angle of 45° to 90°.
 5. The atomizing apparatus (1) according to any one of claims 1 to 3, wherein a height of the docking post (12) is 25 mm to 35 mm, and a diameter of the docking post (12) ranges from 10 mm to 20 mm.
 6. The atomizing apparatus (1) according to claim 5, wherein the height of the docking post (12) is 28 mm to 30 mm, and the diameter of the docking post (12) ranges from 13 mm to 15 mm.
 7. An atomizing device, **characterized in that**, the atomizing device comprises a power supply apparatus (2) and the atomizing apparatus (1) of any one of claims 1 to 6, wherein the power supply apparatus (2) comprises a power supply housing (22) and a power supply member (23) disposed inside the power supply housing (22), the top of the power supply housing (22) is defined with the docking slot (21) configured to receive the docking post (12), the power supply member (23) is provided with the power supply electrical contact (211), and the power

supply electrical contact (211) is exposed out of the docking slot (21).

8. The atomizing device according to claim 7, wherein a side wall of the docking slot (21) is inclined, and the docking post (12) has a wedge-shaped structure fitting the docking slot (21).
9. The atomizing device according to claim 7, wherein the magnetic mating component for mating with the magnetic component is disposed on the bottom or a wall of the docking slot (21).
10. The atomizing device according to claim 7, wherein a guiding convex part (212) is provided on either one of the bottom of the docking slot (21) and a docking end of the docking post (12) docking with the docking slot (21), and a guiding concave part (122) is provided on the other one of the bottom of the docking slot (21) and the docking end of the docking post (12) docking with the docking slot (21), and the guiding convex part (212) abuts against the guiding concave part (122), to allow the docking post (12) to sealingly abut against the docking slot (21).

Patentansprüche

1. Zerstäubungsvorrichtung (1), die so konfiguriert ist, dass sie mit einer Stromversorgungsvorrichtung (2) kombiniert werden kann, um ein Zerstäubungsgerät zu bilden, wobei die Zerstäubungsvorrichtung (1) umfasst:

ein Zerstäubungsgehäuse (11), das mit einem Dampfauslass (110) versehen ist, der mit dem Inneren des Zerstäubungsgehäuses (11) in Verbindung steht; und

eine Zerstäubungsbaugruppe (14), die im Inneren des Zerstäubungsgehäuses (11) angeordnet und so konfiguriert ist, dass sie erzeugten Dampf ausgibt;

wobei das Zerstäubungsgehäuse (11) mit einem Andockpfosten (12) versehen ist, der so konfiguriert ist, dass er in einen Andockschlitz (21) der Stromversorgungsvorrichtung (2) eingesetzt werden kann; wobei die Zerstäubungsbaugruppe (14) mit einem elektrischen Zerstäubungskontakt (121) versehen ist, der so konfiguriert ist, dass er an einem elektrischen Stromversorgungskontakt (211) der Stromversorgungsvorrichtung (2) anliegt, und wobei der elektrische Zerstäubungskontakt (121) aus einer Bodenfläche des Andockpfostens (12) herausragt, die von dem Dampfauslass (110) weg zeigt;

dadurch gekennzeichnet, dass die Stromversorgungsvorrichtung (2) mit einer gekrümmten

- Gegenfläche (201) versehen ist, das Zerstäubungsgehäuse (11) ferner mit einer Führungsstruktur (13) versehen ist, die an einer Seitenfläche des Andockpfostens (12) entlang einer Umfangsrichtung des Andockpfostens (12) angeordnet ist, die Führungsstruktur (13) mit einer gekrümmten Führungsfläche (131) zum Anpassen der gekrümmten Gegenfläche (201) versehen ist, und die Führungsstruktur (13) in einer axialen Richtung des Andockpfostens (12) in Bezug auf die Stromversorgungsvorrichtung (2) nach innen vorsteht oder konkav ist; und dass die gekrümmte Gegenfläche (201) so konfiguriert ist, dass sie die gekrümmte Führungsfläche (131) führt, um zu ermöglichen, dass ein relativer Winkel zwischen dem Andockpfosten (12) und dem Andockschlitz (21) während eines Prozesses des Einsetzens des Andockpfostens (12) in den Andockschlitz (21) eingestellt werden kann, um zu ermöglichen, dass der elektrische Zerstäubungskontakt (121) direkt dem elektrischen Stromversorgungskontakt (211) gegenübersteht und an diesen anliegt.
2. Zerstäubungsvorrichtung (1) nach Anspruch 1, wobei mindestens zwei Führungsstrukturen (13) symmetrisch an dem Andockpfosten (12) angeordnet sind; oder eine Vielzahl von Führungsstrukturen (13) gleichmäßig an dem Andockpfosten (12) entlang der Umfangsrichtung des Andockpfostens (12) angeordnet sind.
 3. Zerstäubungsvorrichtung (1) nach Anspruch 1, wobei die Zerstäubungsvorrichtung (1) ferner eine magnetische Komponente umfasst, die so konfiguriert ist, dass sie an einer magnetischen Gegenkomponente der Stromversorgungsvorrichtung (2) haftet und die Führungsstruktur (13) zur Ausrichtung mit der Stromversorgungsvorrichtung (2) antreibt; wobei die magnetische Komponente auf der Bodenfläche des Andockpfostens (12) oder der Seitenfläche des Andockpfostens (12) angeordnet ist; oder wobei die Bodenfläche des Andockpfostens (12) mit einer Öffnung zum Freilegen der Zerstäubungsbaugruppe (14) definiert ist, und wobei die magnetische Komponente auf der Zerstäubungsbaugruppe (14) angeordnet ist.
 4. Zerstäubungsvorrichtung (1) nach einem der Ansprüche 1 bis 3, wobei die gekrümmte Führungsfläche (131) eine Führungsbogenfläche ist und eine Bogenlänge einer äußeren Konturlinie der Führungsbogenfläche einem zentralen Winkel von 45° bis 90° entspricht.
 5. Zerstäubungsvorrichtung (1) nach einem der Ansprüche 1 bis 3, wobei eine Höhe des Andockpfostens (12) 25 mm bis 35 mm beträgt und ein Durchmesser des Andockpfostens (12) im Bereich von 10 mm bis 20 mm liegt.
 6. Zerstäubungsvorrichtung (1) nach Anspruch 5, wobei eine Höhe des Andockpfostens (12) 28 mm bis 30 mm beträgt und ein Durchmesser des Andockpfostens (12) im Bereich von 13 mm bis 15 mm liegt.
 7. Zerstäubungsgerät, **dadurch gekennzeichnet, dass** das Zerstäubungsgerät eine Stromversorgungsvorrichtung (2) und die Zerstäubungsvorrichtung (1) nach einem der Ansprüche 1 bis 6 umfasst, wobei die Stromversorgungsvorrichtung (2) ein Stromversorgungsgehäuse (22) und ein Stromversorgungselement (23) umfasst, das in dem Stromversorgungsgehäuse (22) angeordnet ist, wobei die Oberseite des Stromversorgungsgehäuses (22) mit dem Andockschlitz (21) definiert ist, der konfiguriert ist, um den Andockpfosten (12) aufzunehmen, wobei das Stromversorgungselement (23) mit dem elektrischen Stromversorgungskontakt (211) versehen ist, und wobei der elektrische Stromversorgungskontakt (211) aus dem Andockschlitz (21) heraus freigelegt ist.
 8. Zerstäubungsgerät nach Anspruch 7, wobei eine Seitenwand des Andockschlitzes (21) geneigt ist und der Andockpfosten (12) eine keilförmige Struktur aufweist, die in den Andockschlitz (21) passt.
 9. Zerstäubungsgerät nach Anspruch 7, wobei die magnetische Gegenkomponente zum Zusammenpassen mit der magnetischen Komponente am Boden oder an einer Wand des Andockschlitzes (21) angeordnet ist.
 10. Zerstäubungsgerät nach Anspruch 7, wobei ein konvexes Führungsteil (212) entweder am Boden des Andockschlitzes (21) oder an einem Andockende des Andockpfostens (12), der an den Andockschlitz (21) andockt, vorgesehen ist, und ein konkaves Führungsteil (122) an dem anderen von dem Boden des Andockschlitzes (21) und dem Andockende des Andockpfostens (12), das an den Andockschlitz (21) andockt, vorgesehen ist, und wobei das konvexe Führungsteil (212) an dem konkaven Führungsteil (122) anliegt, um es dem Andockpfosten (12) zu ermöglichen, abdichtend am Andockschlitz (21) anzuliegen.

Revendications

1. Dispositif d'atomisation (1), configuré pour se combiner avec un dispositif d'alimentation électrique (2) pour former un équipement d'atomisation, dans lequel le dispositif d'atomisation (1) comprend :

un boîtier d'atomisation (11), comportant une sortie de vapeur (110) en communication avec un intérieur du boîtier d'atomisation (11) ; et un ensemble d'atomisation (14), disposé à l'intérieur du boîtier d'atomisation (11) et configuré pour fournir une vapeur générée ; dans lequel, le boîtier d'atomisation (11) est pourvu d'un poteau d'aboutement (12) configuré pour être inséré dans une fente d'aboutement (21) du dispositif d'alimentation électrique (2) ; l'ensemble d'atomisation (14) est pourvu d'un contact électrique d'atomisation (121) configuré pour être abouté contre un contact électrique d'alimentation électrique (211) du dispositif d'alimentation électrique (2), et le contact électrique d'atomisation (121) est exposé à l'extérieur d'une surface inférieure du poteau d'aboutement (12) à l'opposé de la sortie de vapeur (110) ;

caractérisé en ce que, le dispositif d'alimentation électrique (2) est pourvu d'une surface courbe d'adaptation (201), le boîtier d'atomisation (11) est pourvu en outre d'une structure de guidage (13) disposée sur une surface latérale du poteau d'aboutement (12) selon une direction circonférentielle du poteau d'aboutement (12), la structure de guidage (13) est pourvue d'une surface courbe de guidage (131) pour s'adapter à la surface courbe d'adaptation (201), et la structure de guidage (13) fait saillie ou se rétracte vers l'intérieur dans une direction axiale du poteau d'aboutement (12) par rapport au dispositif d'alimentation électrique (2) ; et la surface courbe d'adaptation (201) est configurée pour guider la surface courbe de guidage (131) afin de permettre un angle relatif entre le poteau d'aboutement (12) et la fente d'aboutement (21) pendant un processus d'insertion du poteau d'aboutement (12) dans la fente d'aboutement (21), afin de permettre au contact électrique d'atomisation (121) de faire directement face et d'être abouté contre le contact électrique d'alimentation électrique (211).

2. Dispositif d'atomisation (1) selon la revendication 1, dans lequel au moins deux structures de guidage (13) sont disposées de manière symétrique sur le poteau d'aboutement (12) ; ou, une pluralité de structures de guidage (13) sont disposées de manière uniforme sur le poteau d'aboutement (12) selon la direction circonférentielle du poteau d'aboutement (12).
3. Dispositif d'atomisation (1) selon la revendication 1, dans lequel le dispositif d'atomisation (1) comprend en outre un composant magnétique configuré pour adhérer à un composant d'adaptation magnétique du dispositif d'alimentation électrique (2) et entraîner

la structure de guidage (13) à s'aligner avec le dispositif d'alimentation électrique (2) ; le composant magnétique est disposé sur la surface inférieure du poteau d'aboutement (12) ou sur la surface latérale du poteau d'aboutement (12) ; ou la surface inférieure du poteau d'aboutement (12) comporte une ouverture pour exposer l'ensemble d'atomisation (14), et le composant magnétique est disposé sur l'ensemble d'atomisation (14).

4. Dispositif d'atomisation (1) selon l'une quelconque des revendications 1 à 3, dans lequel la surface courbe de guidage (131) est une surface de guidage en arc, et une longueur d'arc d'une ligne de contour extérieure de la surface de guidage en arc correspond à un angle central de 450 à 90°.
5. Dispositif d'atomisation (1) selon l'une quelconque des revendications 1 à 3, dans lequel une hauteur du poteau d'aboutement (12) est de 25 mm à 35 mm, et un diamètre du poteau d'aboutement (12) est compris entre 10 mm et 20 mm.
6. Dispositif d'atomisation (1) selon la revendication 5, dans lequel la hauteur du poteau d'aboutement (12) est de 28 mm à 30 mm, et le diamètre du poteau d'aboutement (12) est compris entre 13 mm et 15 mm.
7. Équipement d'atomisation, **caractérisé en ce que**, l'équipement d'atomisation comprend un dispositif d'alimentation électrique (2) et un dispositif d'atomisation (1) selon l'une quelconque des revendications 1 à 6, dans lequel dispositif d'alimentation électrique (2) comprend un boîtier d'alimentation électrique (22) et un élément d'alimentation électrique (23) disposés à l'intérieur du boîtier d'alimentation électrique (22), la partie supérieure du boîtier d'alimentation électrique (22) comporte la fente d'aboutement (21) configurée pour recevoir le poteau d'aboutement (12), l'élément d'alimentation électrique (23) est pourvu du contact électrique d'alimentation électrique (211), et le contact électrique d'alimentation électrique (211) est exposé à l'extérieur de la fente d'aboutement (21) .
8. Équipement d'atomisation selon la revendication 7, dans lequel une paroi latérale de la fente d'aboutement (21) est inclinée, et le poteau d'aboutement (12) présente une structure en forme de coin s'adaptant à la fente d'aboutement (21).
9. Équipement d'atomisation selon la revendication 7, dans lequel le composant d'adaptation magnétique pour s'adapter au composant magnétique est disposé sur le fond ou une paroi de la fente d'aboutement (21).

10. Équipement d'atomisation selon la revendication 7, dans lequel une partie convexe de guidage (212) est prévue sur une du fond de la fente d'aboutement (21) et d'une extrémité d'aboutement du poteau d'aboutement (12) étant abouté à la fente d'aboutement (21), et une partie concave de guidage (122) est prévue sur l'autre de la fente d'aboutement (21) et de l'extrémité d'aboutement du poteau d'aboutement (12) étant abouté à la fente d'aboutement (21), et la partie convexe de guidage (212) est aboutée contre la partie concave de guidage (122), afin de permettre au poteau d'aboutement (12) d'être abouté de manière étanche contre la fente d'aboutement (21).

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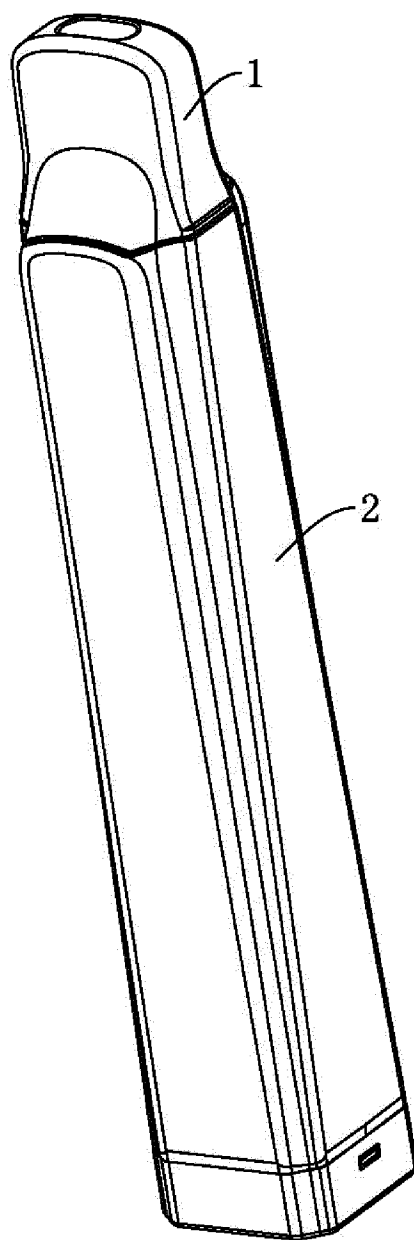


FIG.1

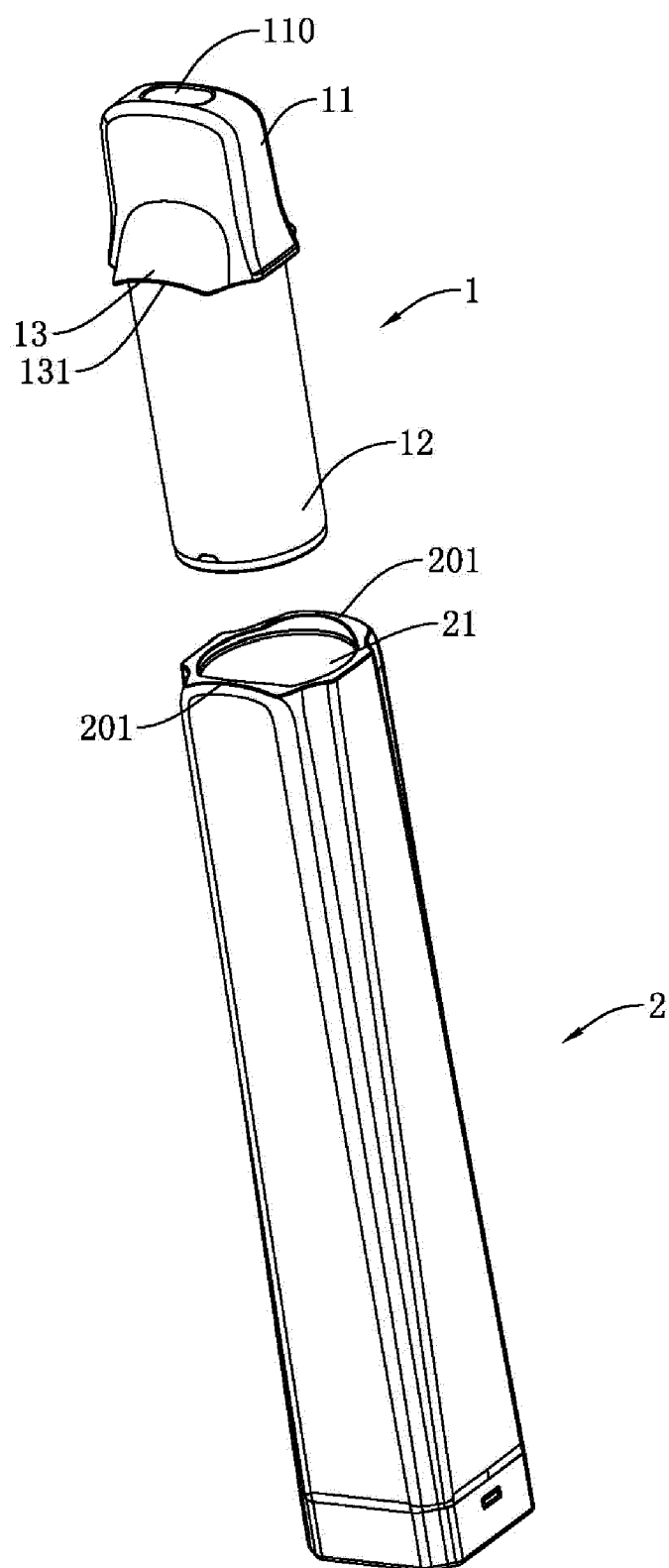


FIG.2

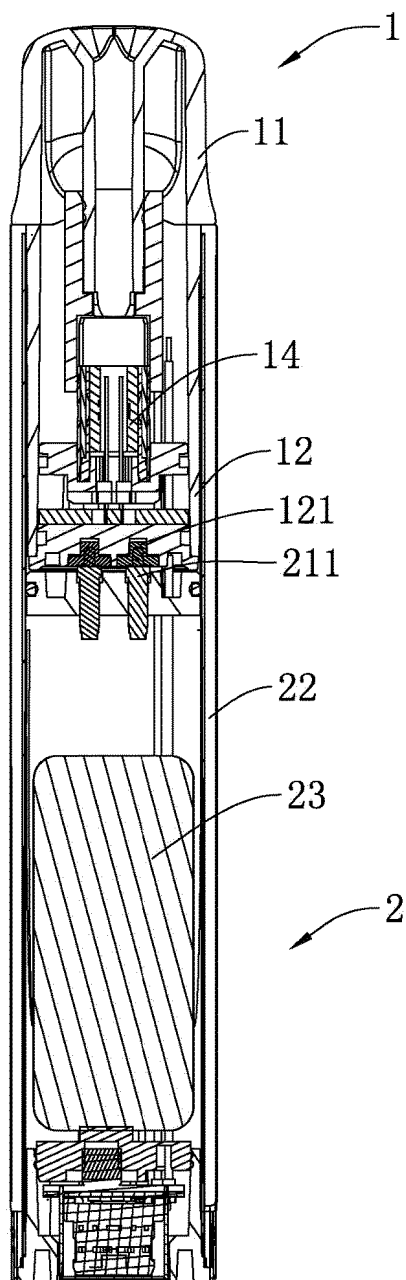


FIG.3

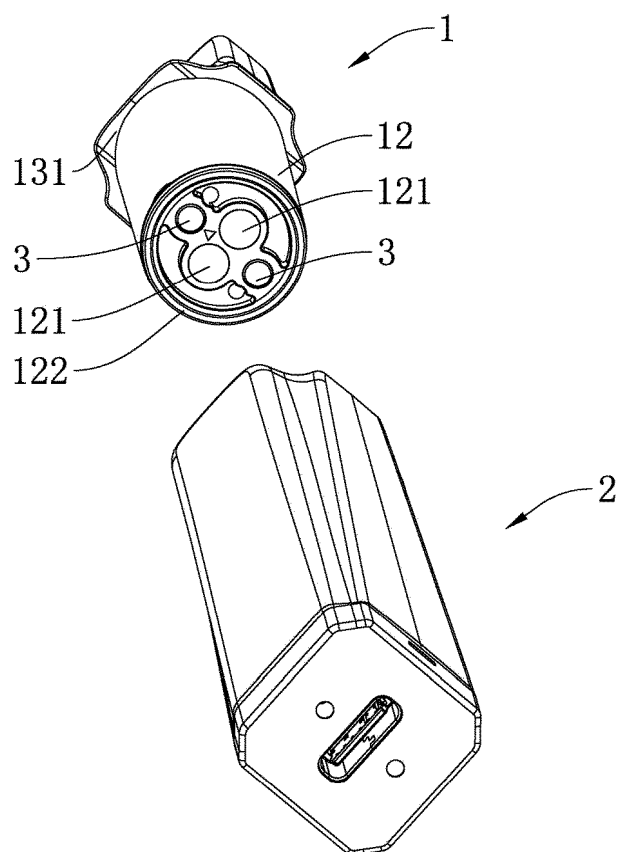


FIG. 4

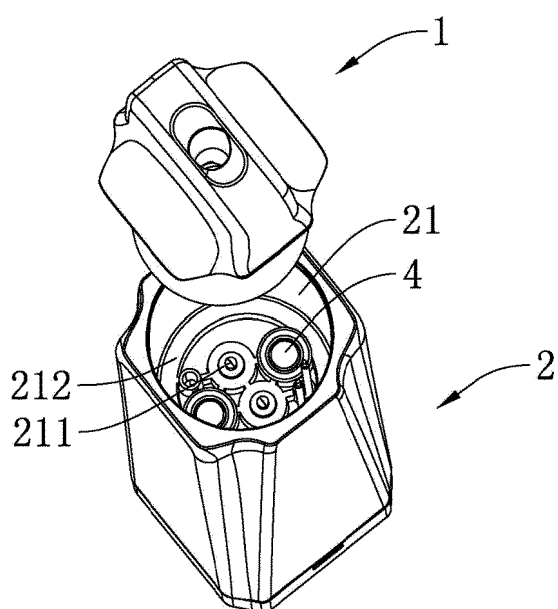


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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