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(54) VAPOR GENERATION APPARATUS

(57) This application relates to a vapor generation apparatus, including: a first assembly, including a first support plane, where a first positioning portion that is at least partially exposed is arranged on the first support plane; and a second assembly, rotatably connected to the first assembly, where the second assembly includes a plurality of atomizers and a second support plane, and a second positioning portion that is at least partially exposed is arranged on the second support plane, where the first support plane and the second support plane are arranged opposite to each other, and when the first assembly and the second assembly rotate relative to each other, the first positioning portion is capable of being in interference fit with the second positioning portion, to provide feedback that at least one atomizer in the second assembly is startable.

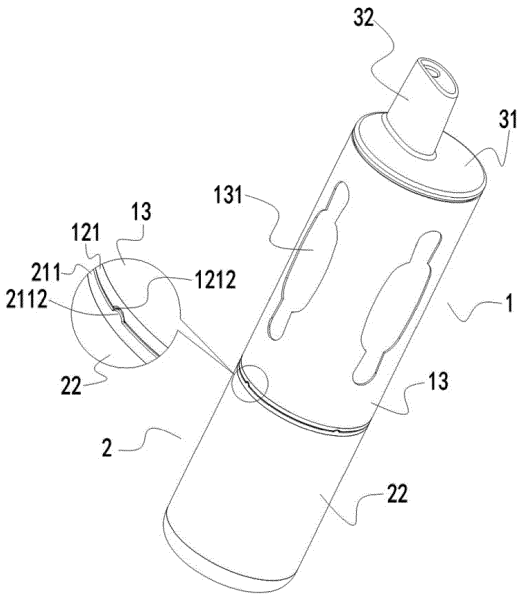

FIG. 1

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Description

TECHNICAL FIELD

[0001] Embodiments of this application relate to the field of vapor generation technologies, and in particular, to a vapor generation apparatus.

BACKGROUND

[0002] A vapor generation apparatus is an apparatus that can atomize a liquid preparation to form a vapor. However, in some example conventional technologies, there is a vapor generation apparatus including a plurality of atomizers that are selectively used. For example, a typical vapor generation apparatus includes a power supply component and an atomization component including a plurality of atomizers. The atomization component rotates relative to the power supply component, to enable one of the atomizers in the atomization component to be electrically connected to an output electrode in the power supply component, so that the atomizer can be started and generates a vapor. However, when the atomizer electrically connected to the power supply component is switched through rotation, a user cannot clearly know whether a next atomizer has been rotated to be electrically connected to the power supply component. Consequently, tactile or visual feedback expected by the user cannot be provided, resulting in poor user experience. In addition, the output electrode of the power supply component is generally arranged as a compressible elastic electrode, and the output electrode can be selectively in electrical contact with one of the atomizers in a longitudinal direction. When the atomizer and the power supply component rotate relative to each other, the output electrode is easy to deviate under a shear force and has a risk of damage.

SUMMARY

[0003] An objective of this application is to provide a vapor generation apparatus having a positioning member, to provide positioning feedback that is more easily perceived by a user in a rotation operation process.

[0004] An embodiment of this application provides a vapor generation apparatus, including:

a first assembly, including a first support plane, where a first positioning portion that is at least partially exposed is arranged on the first support plane; and

a second assembly, rotatably connected to the first assembly, where the second assembly includes a plurality of atomizers and a second support plane, and a second positioning portion that is at least partially exposed is arranged on the second support plane, wherein

the first support plane and the second support plane are arranged opposite to each other, and when the first assembly and the second assembly rotate relative to each other, the first positioning portion is capable of being in interference fit with the second positioning portion, to provide feedback that at least one atomizer in the second assembly is startable.

[0005] In an example, a position of interference fit between the first positioning portion and the second positioning portion is visible on an outer surface of the vapor generation apparatus.

[0006] In an example, one of the first positioning portion and the second positioning portion includes a protrusion, the other of the first positioning portion and the second positioning portion includes a groove, when the first positioning portion is aligned with the second positioning portion, at least a part of the protrusion is located in the groove, and when the first positioning portion and the second positioning portion are staggered, the protrusion is located outside the groove and abuts against the first support plane or the second support plane.

[0007] In an example, when the first positioning portion interferes with the second positioning portion, the second support plane is located at a first position in a longitudinal direction, and when the first positioning portion and the second positioning portion are staggered, the second support plane is located at a second position in the longitudinal direction longitudinally spaced from the first position.

[0008] In an example, the vapor generation apparatus further includes a reinforcing mechanism, where the reinforcing mechanism is configured to provide a driving force for moving the second support plane from the second position to the first position when the first positioning portion rotates to an orientation aligned with the second positioning portion.

[0009] In an example, the first assembly includes a first connection portion, and the second assembly further includes a second connection portion; and

the reinforcing mechanism includes an elastic member that connects the first connection portion and the second connection portion, and when the first positioning portion and the second positioning portion are staggered, the elastic member is in stretched state or a compressed state.

[0010] In an example, the first assembly includes a first connection portion, and the second assembly further includes a second connection portion; and

the reinforcing mechanism includes a first magnetic member arranged on the first connection portion and a second magnetic member arranged on the second connection portion, and when the first positioning portion interferes with the second positioning portion, the first magnetic member and the second magnetic member magnetically attract or repel each other.

[0011] In an example, the second assembly further includes a second holding member for holding the plurality of atomizers, the first assembly further includes a

connection shaft connected to the second connection portion, a support plate, and a connection hole provided on the support plate, and a part of the connection shaft is located in the connection hole and a part of the connection shaft extends in the longitudinal direction in the first assembly;

when the second support plane moves between the first position and the second position, the connection shaft moves in the longitudinal direction in the connection hole, and the second holding member and the second connection portion are located on two opposite sides of the connection hole; and

a size of the second connection portion extending in a horizontal direction is greater than a hole diameter of the connection hole.

[0012] In an example, the first assembly includes a power supply component, and when the first positioning portion interferes with the second positioning portion through rotation, at least one atomizer in the second assembly is electrically connected to the power supply component.

[0013] In an example, the power supply component includes a core and an output electrode group connected to the core, and the output electrode group is fixed on the first holding member; and

when the first positioning portion interferes with the second positioning portion, the output electrode group is electrically connected to one of the atomizers.

[0014] In an example, the first holding member is provided with a sealing member and an air hole in communication with the outside, the sealing member surrounds the air hole, and the sealing member elastically abuts against the second assembly; and

when the first positioning portion interferes with the second positioning portion, the air hole is in fluid communication with one of the atomizers.

[0015] In an example, the first assembly further includes a first housing, and the power supply component is arranged in the first housing;

the second assembly further includes a second housing, and the plurality of atomizers are arranged in the second housing; and

both at least a part of the first positioning portion and at least a part of the second positioning portion are located between the first housing and the second housing.

[0016] In an example, the vapor generation apparatus further includes a suction nozzle component, and the second assembly is rotatably connected between the suction nozzle component and the power supply component, to enable the suction nozzle component to be in fluid communication with at least one atomizer in the second assembly through rotation.

[0017] In an example, the first assembly includes a suction nozzle component, and when the first positioning portion interferes with the second positioning portion through rotation, at least one atomizer in the second assembly is in fluid communication with the suction nozzle component.

[0018] In an example, a quantity of first positioning portions is the same as a quantity of atomizers; and/or a quantity of second positioning portions is the same as a quantity of atomizers.

[0019] In an example, the vapor generation apparatus further includes a damping member, the damping member is fixedly connected to one of the first assembly and the second assembly and is connected to the other of the first assembly and the second assembly with damping, to provide resistance to prevent relative rotation of the first assembly and the second assembly.

[0020] In the vapor generation apparatus, the first assembly is rotatably connected to the second assembly. The first assembly includes the first support plane, and the first positioning portion that is at least partially exposed is arranged on the first support plane. The second assembly includes the second support plane, and the second positioning portion that is at least partially exposed is arranged on the second support plane. The first support plane and the second support plane are arranged opposite to each other, and when the first positioning portion interferes with the second positioning portion through rotation, feedback that at least one atomizer in the second assembly is startable can be provided. Therefore, when the first positioning portion interferes with the second positioning portion, sense experience that makes it easier for a user to perceive can be caused, so that the user clearly learns whether at least one atomizer in the second assembly has been rotated in place and can be started.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] To describe the technical solutions in embodiments of this application or in a conventional technology more clearly, the following briefly describes the accompanying drawings needed for describing the embodiments or the conventional technology. In all the accompanying drawings, similar elements or some elements are generally identified by using similar reference numerals. In the accompanying drawings, some or all elements are not necessarily drawn according to an actual proportion.

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

FIG. 2 is a schematic exploded view of a vapor generation apparatus according to an embodiment of this application;

FIG. 3 is a cross-sectional view of a vapor generation apparatus according to an embodiment of this application;

FIG. 4 is a schematic diagram in which a first positioning portion fits with a second holding member according to an embodiment of this application;
FIG. 5 is a cross-sectional view of FIG. 4 according to this application;
FIG. 6 is a schematic diagram of a first assembly according to an embodiment of this application;
FIG. 7 is a schematic exploded view of a first assembly according to an embodiment of this application;
FIG. 8 is a schematic diagram of a second assembly according to an embodiment of this application; and
FIG. 9 is a cross-sectional view of FIG. 8.

[0022] In the drawings:

1: second assembly; 11: atomizer; 111: liquid cup; 112: atomization core; 113: first airway; 12: second holding member; 121: second boss; 1211: second support plane; 1212: second positioning portion; 13: second housing; 131: window; 14: second connection portion; 15: flexible member;
2: first assembly; 21: first holding member; 211: first boss; 2111: first support plane; 2112: first positioning portion; 212: first connection portion; 2121: support plate; 2122: connection hole; 22: second housing; 23: air hole; 24: sealing member; 25: connection shaft;
3: suction nozzle component; 31: base body; 32: nozzle member;
4: power supply component; 41: power supply; 42: circuit board; 43: output electrode group; 431: output electrode;
5: reinforcing mechanism; 51: elastic member; 52: first magnetic member; 53: second magnetic member; 6: airflow detector; 7: LED light; and 8: alignment mark.

DETAILED DESCRIPTION

[0023] The technical solutions in embodiments of this application are clearly and completely described below with reference to the accompanying drawings in the embodiments of this application. Apparently, the described embodiments are merely some rather than all of the embodiments of this application. All other embodiments obtained by a person of ordinary skill in the art based on the embodiments of this application without creative efforts shall fall within the protection scope of this application.

[0024] The terms "first", "second", and "third" in this application are merely intended for a purpose of description, and shall not be understood as indicating or implying relative significance or implicitly indicating the number or sequence of indicated technical features. All directional indications (for example, upper, lower, left, right, front, and rear) in the embodiments of this application are merely used for explaining relative position relationships, movement situations, or the like between the various components in a specific posture (as shown in the accompanying drawings). If the specific posture changes, the directional indications change accordingly. In addition, the terms "include", "have", and any variant thereof are intended to cover a non-exclusive inclusion. For example, a process, method, system, product, or device that includes a series of steps or units is not limited to the listed steps or units, but further optionally includes a step or unit that is not listed, or further optionally includes another step or unit that is intrinsic to the process, method, product, or device.

[0025] "Embodiment" mentioned in the specification means that particular features, structures, or characteristics described with reference to the embodiment may be included in at least one embodiment of this application. The term appearing at different positions of the specification may not refer to the same embodiment or an independent or alternative embodiment that is mutually exclusive with another embodiment. A person skilled in the art explicitly or implicitly understands that the embodiments described in the specification may be combined with other embodiments.

[0026] It should be noted that, when a component is referred to as "being fixed to" another component, the component may be directly on the other component, or an intervening component may be present. When a component is considered to be "connected to" another component, the component may be directly connected to the other component, or one or more intervening components may also be present. The terms "vertical", "horizontal", "left", "right", and similar expressions used in this specification are only for purposes of illustration but not indicate a unique implementation.

[0027] Refer to FIG. 1 to FIG. 3, an embodiment of this application provides a vapor generation apparatus. The vapor generation apparatus includes a first assembly 2 and a second assembly 1. The second assembly 1 includes a plurality of atomizers 11 and a second holding member 12 configured to hold the plurality of atomizers 11. "Plurality of in this application means two or more. In an embodiment shown in FIG. 2, there are a total of four atomizers 11 included in the second assembly 1. The four atomizers 11 are arranged in an array.

[0028] At least two atomizers 11 of the plurality of atomizers 11 may be configured to accommodate different liquid substrates. Different liquid substrates include liquid substrates with different tastes or include liquid substrates with different components and proportions. Certainly, in some embodiments, Liquid substrates accommodated by all the atomizers 11 may be the same.

[0029] The liquid substrate may include liquid containing a tobacco substance that includes a volatile tobacco flavor component, or may be liquid containing a non-tobacco substance. The liquid substrate may contain water, medicinal liquid, solvent, ethanol, plant extract, fragrance, a flavoring agent, vitamin mixture, or the like. The fragrance may include, but is not limited to, areca nut extract, menthol, peppermint, spearmint oil, various fruit

fragrance components, and the like. The flavoring agent may include components that can provide various fragrances or flavors to a user. The vitamin mixture may be a mixture of at least one of vitamin A, vitamin B, vitamin C, and vitamin E, but is not limited thereto. Based on different attributes of the liquid substrate, the vapor generation apparatus may be used in different fields, for example, medical treatment and electronic vapor atomization.

[0030] The atomizer 11 includes a liquid cup 111 configured to accommodate the liquid substrate and an atomization core 112 in fluid communication with the liquid cup 111. The atomization core 112 is configured to atomize the liquid substrate, to enable the liquid substrate to generate a vapor. The atomization core 112 may include a liquid absorbing element and a heating element. The liquid absorbing element may be a porous body or a fiber, and can absorb the liquid substrate and can guide the liquid substrate to an atomization range of the heating element. The heating element is configured to atomize at least a part of the liquid substrate on the liquid absorbing element, to form the vapor. The heating element may be combined on the liquid absorbing element, so that the heating element and the liquid absorbing element can form a whole.

[0031] Each atomizer 11 may further include a first airway 113. The first airway 113 is in fluid communication with the atomization core 112, and the first airway 113 is configured to transfer the vapor. In an example, the atomizer 11 may have an atomization compartment in fluid communication with the liquid cup 111. The atomization core 112 is accommodated in the atomization compartment, and the first airway 113 is in fluid communication with the atomization compartment. Alternatively, refer to FIG. 2, in another example, at least a part of the atomization core 112 is arranged in the airway 113.

[0032] Refer to FIG. 1 and FIG. 2, the vapor generation apparatus further includes a suction nozzle component 3. The suction nozzle component 3 can be selectively in fluid communication with a first airway 113 in any atomizer 11 in the second assembly 1, and at least a part of the suction nozzle component 3 may be held in the mouth of a user, so that the user can inhale a vapor generated by the atomizer by sucking the suction nozzle component 3.

[0033] Refer to FIG. 3, FIG. 5, and FIG. 6, the vapor generation apparatus further includes a power supply component 4. The power supply component 4 includes a core 41. The core 41 may be any suitable battery. The power supply component 4 further includes a circuit board 42 and an output electrode group 43. The circuit board 42 is electrically connected to the core 41 and the output electrode group 43. When the output electrode group 43 is electrically connected to the atomizer 11, the circuit board 42 can control the core 41 to supply power to the output electrode group 43, so that the atomization core 112 in the atomizer 11 electrically connected to the output electrode group 43 can obtain the power and atomize the liquid substrate. An output electrode 431 in the output electrode group 43 may include a positive output electrode and a negative output electrode. The positive output electrode and the negative output electrode are respectively connected to a positive output end and a negative output end of the core 41.

[0034] The first assembly 2 is rotatably connected to the second assembly 1, and a relative position relationship between the plurality of atomizers 11 in the second assembly 1 and the first assembly 2 may be changed through rotation. For example, an atomizer 11 at a non-operating position is rotated to an operating position through rotation, and the atomizer 11 at the operating position can be started and can generate a vapor for the user to inhale or use. For example, when a liquid substrate in the atomizer 11 at the operating position is exhausted, through rotation, a new atomizer 11 having a sufficient liquid substrate is at the operating position instead of the atomizer 11 in which the liquid substrate is exhausted. For example, when there is a requirement of changing an inhalation taste, through rotation, an atomizer 11 with another taste is at the operating position instead of an original atomizer 11.

[0035] It should be noted that, the operating position can be occupied by only one atomizer 11 at the same moment. Alternatively, there can be two or more atomizers 11 at the operating position at same time, so that the user can simultaneously inhale vapors generated by the plurality of atomizers 11.

[0036] In an embodiment, refer to FIG. 1 to FIG. 3, at least a part of the liquid cup 111 of the atomizer 11 is transparent, so that the user can observe a remaining volume of a liquid substrate in the liquid cup 111 through a wall of the liquid cup 111, and the user can determine, based on the remaining volume of the liquid substrate in the atomizer 11, whether the atomizer 11 at the operating position needs to be switched.

[0037] In embodiments shown in FIG. 2 to FIG. 4, the atomizer 11 can be engaged with the second holding member 12 in a longitudinal direction and is hold by the second holding member 12. At least a part of an outer side of the second holding member 12 is open, so that the second holding member 12 cannot block or does not fully block a side wall of the liquid cup 111 in the atomizer 11.

[0038] The second assembly 1 may further include a second housing 13. The second holding member 12 and the plurality of atomizers 11 may be arranged in the second housing 13 or are surrounded by the second housing 13. A window 131 is provided on the second housing 13 or at least a part of the second housing 13 is transparent, so that the user can observe the liquid cup 111 in the atomizer 11 inside the second housing 13 through the window 131 or the second housing 13 and further observe the remaining volume of the liquid substrate in the atomizer 11.

[0039] To facilitate the user determining whether one or more atomizers 11 in the second assembly 1 are rotated to the operating position, or to determine whether one or more atomizers 11 in the second assembly 1 are rotated to a position at which the atomizer can be started, a first

positioning portion 2112 may be arranged on the first assembly 2, and a second positioning portion 1212 is arranged on the second assembly 1. When the first positioning portion 2112 interferes with the second positioning portion 1212, at least one atomizer 11 in the second assembly 1 can be started. Interference includes alignment, contact, embedding, or mutual force interaction, and the like.

[0040] Specifically, the second assembly 1 includes a second support plane 1211. The second positioning portion 1212 is arranged on the second support plane 1211. The first assembly 2 includes a first support plane 2111. The first positioning portion 2112 is arranged on the first support plane 2111. The first support plane 2111 and the second support plane 1211 are arranged opposite to each other, so that when the first assembly and the second assembly 1 rotate relative to each other, the first positioning portion 2112 and the second positioning portion 1212 can correspond to each other at a position, so as to interfere with each other.

[0041] More specifically, the first assembly 2 may include a first holding member 21. The first holding member 21 may be configured to hold or support the power supply component 4, or the first holding member 21 may be configured to connect a nozzle member 32 or a base body 31 in the suction nozzle component 3, or the first holding member 21 is a constituting part of the power supply component 4 or the suction nozzle component 3. The first holding member 21 is configured to hold the first support plane 2111 and the first positioning portion 2112. The first positioning portion 2112 may be integrally formed with the first support plane 2111 or the first holding member 21. Correspondingly, the second holding member 12 can hold or support the second support plane 1211 and the second positioning portion 1212. The second positioning portion 1212 may be integrally formed with the second holding member 12 or the second support plane 1211. It should be noted that, it is optional rather than necessary that the second holding member 12 in the second assembly 1 is configured to hold or support the second support plane 1211 and the second positioning portion 1212. In another embodiment, another member included in the second assembly 1 may alternatively be configured to hold or support the second support plane 1211 and the second positioning portion 1212, and the other member can rotate relative to the first assembly 2 and/or can be connected to the second holding member 12.

[0042] Both at least a part of the first positioning portion 2112 and at least a part of the second positioning portion 1212 are exposed to the outside, are exposed to an outer surface of the vapor generation apparatus, and can be visually observed. The first positioning portion 2112 and the second positioning portion 1212 interfere with each other or are staggered, which can be directly felt by the user's vision. As an example, refer to FIG. 1, a position of interference fit between the first positioning portion 2112 and the second positioning portion 1212 is visible on the outer surface of the vapor generation apparatus.

[0043] In an embodiment, refer to FIG. 1, FIG. 6, and FIG. 8, one of the first positioning portion 2112 and the second positioning portion 1212 includes a protrusion, and the other of the first positioning portion and the second positioning portion includes a groove. When the first positioning portion 2112 interferes with the second positioning portion 1212, at least a part of the protrusion is located in the groove. When the first positioning portion 2112 and the second positioning portion 1212 are staggered, the protrusion is located outside the groove and abuts against the first support plane 2111 or the second support plane 1211. Therefore, when the protrusion slides into the groove from abutting against the first support plane 2111 or the second support plane 1211, the vapor generation apparatus generates vibration feedback and sends sound feedback, and the user can learn, based on a tactile sense of the vibration and an auditory sense of the sound, that the first positioning portion 2112 and the second positioning portion 1212 are rotated to interfere with each other.

[0044] Because both the at least a part of the first positioning portion 2112 and the at least a part of the second positioning portion 1212 are exposed, the vibration and the sound generated through interference between the first positioning portion and the second positioning portion are more obvious and clear and are more easily perceived by the user.

[0045] As an example, when the first positioning portion 2112 interferes with the second positioning portion 1212, the protrusion is located in the groove, and the first support plane 2111 is in contact with or abuts against the second support plane 1211, so that an interaction force between the first holding member 21 and the second holding member 12 is uniformly distributed, and when the protrusion slides into the groove, because the first support plane 2111 and the second support plane 1211 are close to each other, the vibration is more obvious and a vibration range is larger, and because the first support plane 2111 and the second support plane 1211 are close to each other, the sound is more clear and prominent.

[0046] When the first assembly 2 and the second assembly 1 rotate relative to each other, the protrusion and the groove enable the first assembly 2 and the second assembly 1 to move relative to each other in a longitudinal direction. It should be noted that, the longitudinal direction is perpendicular to a direction in which the first assembly 2 and the second assembly 1 rotate relative to each other, and the longitudinal direction may be an extending direction of the atomizer 11 or the vapor generation apparatus.

[0047] Specifically, when the first positioning portion 2112 interferes with the second positioning portion 1212, the at least a part of the protrusion is located in the groove. In this case, the second assembly 1 or the second support plane 1211 directly associated with the second positioning portion 1212 is located at a first position in the longitudinal direction. When the first po-

sitioning portion 2112 and the second positioning portion 1212 are staggered, the protrusion and the groove are staggered and the protrusion abuts against the first support plane 2111 or the second support plane 1211. In this case, the second assembly 1 or the second support plane 1211 directly associated with the second positioning portion 1212 is located at a second position in the longitudinal direction. The first position and the second position are two different positions in the longitudinal direction, and the first position and the second position are spaced apart from each other in the longitudinal direction. When the second support plane 1211 is located at the first position, the first support plane 2111 may abut against the second support plane 1211. When the second support plane 1211 is located at the second position, the first support plane 2111 and the second support plane 1211 may be separated from each other, so that there is a gap between the first support plane and the second support plane.

[0048] In an embodiment, refer to FIG. 3, FIG. 5, FIG. 8, and FIG. 9, the vapor generation apparatus further includes a reinforcing mechanism 5. The reinforcing mechanism is configured to increase strength and force of vibration and sound generated when the first positioning portion 2112 interferes with the second positioning portion 1212, to enhance the vibration and increase the sound, so that the user can more clearly and easily perceive that the first positioning portion 2112 has interfered with the second positioning portion 1212. Specifically, when the first positioning portion 2112 interferes with the second positioning portion 1212, or when the protrusion slides into the groove, the reinforcing mechanism 5 provides a driving force for moving the second support plane 1211 from the second position to the first position. For example, the reinforcing mechanism 5 pushes the second holding member 12 to move from the second position to the first position, to increase the force for fitting between the first positioning portion 2111 and the second positioning portion 1212.

[0049] As an example, refer to FIG. 5, FIG. 8, and FIG. 9, a first connection portion 212 is arranged on the first holding member 21, so that a motion state of the first connection portion 212 is consistent with a motion state of the first holding member 21 or the first assembly. The second assembly 1 further includes a second connection portion 14. The second connection portion 14 is connected to the second holding member 12, so that a motion state of the second connection portion 14 is consistent with a motion state of the second holding member 12 or the second assembly 1.

[0050] When the first positioning portion 2112 interferes with the second positioning portion 1212, the reinforcing mechanism 5 acts on the first connection portion 212 and the second connection portion 14, so that the first connection portion 212 and the second connection portion 14 are separated from each other. For example, when the first positioning portion 2112 interferes with the second positioning portion 1212, the reinforcing mechanism 5 can generate an acting force for separating the first connection portion 212 and the second connection portion 14. In an example, refer to FIG. 3, FIG. 8, and FIG. 9, the reinforcing mechanism 5 includes an elastic member 51, for example, a spring or an elastic rope. The elastic member 51 is connected to the first connection portion 212 and the second connection portion 14. When the first positioning portion 2112 and the second positioning portion 1212 are staggered, there is a relatively large gap between the first support plane 2111 and the second support plane 1211. In this case, the elastic member 51 is in a compressed state. Therefore, when the first positioning portion 2112 interferes with the second positioning portion 1212, the groove provides a recessed space for the protrusion, and the second assembly 1 is pushed downward in the longitudinal direction by an elastic force provided by the elastic member 51, so that the protrusion automatically enters the groove, the first support plane 2111 and the second support plane 1211 are automatically close to each other, and the elastic force provided by the elastic member 51 can further increase force for the protrusion to enter the groove or the first support plane 2111 and the second support plane 1211 to be close to each other. In an example, refer to FIG. 3 and FIG. 5, the reinforcing mechanism 5 includes a first magnetic member 52 arranged on the first connection portion 212 and a second magnetic member 53 arranged on the second connection portion 14. When the first positioning portion 2112 interferes with the second positioning portion 1212, the first magnetic member 52 and the second magnetic member 53 magnetically repel each other, and the second assembly 1 is pushed downward in the longitudinal direction by a magnetic repulsion force, so that the protrusion automatically enters the groove, the first support plane 2111 and the second support plane 1211 are automatically close to each other, and the magnetic repulsion force between the first magnetic member 52 and the second magnetic member 53 increases force of fitting between the first positioning portion 2112 and the second positioning portion 1212.

[0051] Further, refer to FIG. 5 and FIG. 9, the first assembly 2 further includes a connection shaft 25 connected to the second connection portion 14. The connection shaft 25 extends in the longitudinal direction and a part of the connection shaft extends in the longitudinal direction in the second holding member 12. The first connection portion 212 includes a support plate 2121 and a connection hole 2122 provided on the support plate 2121. Apart of the connection shaft 25 is located in the connection hole 2122, and when moving between the first position and the second position, the second support plane 1211 may move up and down in the longitudinal direction in the connection hole 2122. At least a part of the second holding member 12 and the second connection portion 14 are located on two opposite sides of the connection hole 2122. When the reinforcing mechanism 5 includes the elastic member 51, the elastic member 51

is arranged between the support plate 2121 and the second connection portion 14. The elastic member 51 may be always in the compressed state or the elastic member 51 may be in the compressed state only when the first positioning portion 2112 and the second positioning portion 1212 are staggered. When the reinforcing mechanism 5 includes the first magnetic member 52 and the second magnetic member 53 that magnetically repel each other, the first magnetic member 52 is fixed on the support plate 2121, and the second magnetic member 53 is fixed on the second connection portion 14.

[0052] A size of the second connection portion 14 extending in a horizontal direction is greater than a size of the connection hole 2122, to prevent the second connection portion 14 from passing through the connection hole 2122, so that the first holding member 21 and the second holding member 12 are not separable.

[0053] It should be noted that, it is optional rather than necessary that when the first positioning portion 2112 interferes with the second positioning portion 1212, the reinforcing mechanism 5 enables the first connection portion 212 and the second connection portion 14 to be separated from each other. Alternatively, in another example, when the first positioning portion interferes with the second positioning portion, the reinforcing mechanism acts on the first connection portion and the second connection portion, so that the first connection portion and the second connection portion are close to each other. For example, when the first positioning portion interferes with the second positioning portion, the reinforcing mechanism can generate an acting force for pulling the first connection portion and the second connection portion together. In an example, the reinforcing mechanism includes an elastic member, for example, a spring or an elastic rope. The elastic member is connected to the first connection portion and the second connection portion. When the first positioning portion and the second positioning portion are staggered, there is a relatively large gap between the first support plane and the second support plane. In this case, the elastic member is in a stretched state. Therefore, when the first positioning portion interferes with the second positioning portion, the groove provides a recessed space for the protrusion, and under elastic resilience of the elastic member, the protrusion automatically enters the groove, the first support plane and the second support plane are automatically close to each other, and the elastic force provided by the elastic member can further increase force for the protrusion to enter the groove or the first support plane and the second support plane to be close to each other. In an example, the reinforcing mechanism includes a first magnetic member arranged on the first connection portion and a second magnetic member arranged on the second connection portion. When the first positioning portion interferes with the second positioning portion, the first magnetic member and the second magnetic member magnetically attract each other, and through a magnetic attraction force, the protrusion automatically enters the groove, the first support plane and the second support plane are automatically close to each other, and the magnetic attraction force between the first magnetic member and the second magnetic member increases force of fitting between the first positioning portion and the second positioning portion.

[0054] Based on a first aspect of this application, the first assembly 2 includes the power supply component 4. Therefore, the power supply component 4 and the second assembly 1 can rotate relative to each other. When the first positioning portion 2112 interferes with the second positioning portion 1212 through rotation, feedback that at least one atomizer 11 in the second assembly 1 is electrically connected to the power supply component 4 can be provided.

[0055] In an embodiment shown in FIG. 6, the power supply component 4 has only one output electrode group 43, so that the power supply component 4 can supply power to only one atomizer 11 of the plurality of atomizers 11 in the second assembly 1 at same time, and only the atomizer 11 can be started and generates a vapor. Therefore, in this embodiment, the power supply component 4 and the second assembly 1 may rotate relative to each other, to switch the atomizer 11 at the operating position, so that one atomizer 11 of the plurality of atomizers 11 is electrically connected to the unique output electrode group 43 in the power supply component 4, and the remaining atomizers 11 are not electrically connected to the power supply component 4.

[0056] Alternatively, in another embodiment, the power supply component may have a plurality of output electrode groups. The plurality of output electrode groups are respectively electrically connected to the plurality of atomizers, and a power supply may be controlled through the circuit board to supply power to one or more atomizers, so that one or more atomizers can be started and generate a vapor. Therefore, in this embodiment, the power supply component and the second assembly may rotate relative to each other, to switch the atomizer at the operating position, so that one or more atomizers of the plurality of atomizers are electrically connected to one or more output electrode groups in the power supply component, and some atomizers in the second assembly are not electrically connected to the power supply component.

[0057] In some embodiments of this application, when the second support plane 1211 moves between the first position and the second position, the atomizer 11 in the second assembly 1 can move in the longitudinal direction with the second support plane 1211.

[0058] Therefore, when the first positioning portion 2112 interferes with the second positioning portion 1212 through rotation, the second support plane 1211 is located at the first position in the longitudinal direction. In this case, an output electrode 431 in the output electrode group 43 abuts against a corresponding atomizer 11 in the second assembly 1 and is electrically connected to the corresponding atomizer 11. When the first position-

ing portion 2112 and the second positioning portion 1212 are staggered through rotation, the second support plane 1211 is located at the second position in the longitudinal direction longitudinally spaced from the first position. In this case, the output electrode 431 in the output electrode group 43 is separated from the atomizer 11 in the second assembly 1 or an acting force of abutment between the output electrode 431 and the second assembly 1 is reduced.

[0059] Therefore, when the second support plane 1211 is located at the second position in the longitudinal direction and the first holding member 21 and the second holding member 12 rotate relative to each other, the output electrode 431 can keep spaced from or keep no contact with the second assembly 1, or the output electrode 431 and the second assembly 1 can maintain a relatively small abutment acting force. Therefore, the output electrode 431 can be prevented from deviating due to a shear force, and the output electrode 431 or the output electrode of the atomizer 11 can be prevented from being damaged or deformed.

[0060] Based on the first aspect, in an embodiment, refer to FIG. 6, an air hole 23 in communication with the outside is provided on the first holding member 21. When the user sucks the suction nozzle component 3, external air enters the atomizer 11 at the operating position through the air hole 23 and then enters an oral cavity of the user through the suction nozzle component 3.

[0061] Further, a sealing member 24 is further arranged on the first holding member 21. The sealing member 24 surrounds the air hole 23, the sealing member 24 elastically abuts against the second assembly 1, and the sealing member 24 and the first holding member 21 may be combined through a two-color injection molding process or a two-time injection molding process.

[0062] There may be only one air hole 23 on the first holding member 21. Therefore, the sealing member 24 may surround the air hole 23, and the sealing member 24 elastically abuts against the second assembly 1 and surrounds a periphery of an air inlet of the atomizer 11 at the operating position. Therefore, during inhalation, the external air can be prevented from entering the atomizer 11 at the non-operating position and gas in the atomizer 11 at the non-operating position can be prevented from entering the atomizer 11 in an operating state. This is beneficial to ensure a taste of inhalation.

[0063] Alternatively, there may be a plurality of air holes on the first holding member. The sealing member is provided with a plurality of annular holes. The plurality of annular holes are respectively provided around different air holes. Alternatively, there are a plurality of sealing members, and the plurality of sealing members respectively surround different air holes. When the first positioning portion interferes with the second positioning portion, the plurality of annular holes on the sealing member or the plurality of sealing members respectively surround peripheries of air inlets of different atomizers. Therefore, during inhalation, gas in the atomizer at the non-operating position can be prevented from entering the atomizer in the operating state. This is beneficial to ensure a taste of inhalation.

[0064] Based on the first aspect, in an embodiment, refer to FIG. 3, the vapor generation apparatus may include an airflow detector 6. The airflow detector 6 may determine, based on an airflow change in the vapor generation apparatus, whether the vapor generation apparatus is being sucked, and when detecting that the vapor generation apparatus is being sucked, the airflow detector can control the core 41 to supply power to the atomizer 11 at the operating position, so that the atomization core 112 in the atomizer 11 atomizes a liquid substrate to generate a vapor.

[0065] Based on the first aspect, in an embodiment, refer to FIG. 3 and FIG. 7, the first assembly 2 further includes a first housing 22. The power supply component 4 is arranged in the first housing 22, and the power supply component 4 and the first housing 22 have motion consistency. Both the first housing 22 and the second housing 13 extend in the longitudinal direction. A part of the first holding member 21 extends in a horizontal direction to form a first boss 211. At least a part of the first boss 211 is located between the first housing 22 and the second housing 13. A part of the second holding member 12 extends in the horizontal direction to form a second boss 121. At least a part of the second boss 121 is located between the first housing 22 and the second housing 13. The first support plane 2111 and the first positioning portion 2112 are formed on the first boss 211 and are constituting parts of the first boss 211. The second support plane 1211 and the second positioning portion 1212 are formed on the second boss 121 and are constituting parts of the second boss 121. Therefore, both at least a part of the first support plane 2111 and at least a part of the second support plane 1211 are located between the first housing 22 and the second housing 13, and both at least a part of the first positioning portion 2112 and at least a part of the second positioning portion 1212 are located between the first housing 22 and the second housing 13, so that the first housing 22 and the second housing 13 do not block outer sides of the first positioning portion 2112 and the second positioning portion 1212.

[0066] As an example, refer to FIG. 5, at least a part of the first holding member 21 or at least a part of the second holding member 12 is made of a transparent material. The first boss 211 or the second boss 121 is made of a transparent material. An LED light 6 is arranged in the vapor generation apparatus. When the LED light 6 emits light, the transparent material inside the first housing 22 or the second housing 13 can guide the light to the first boss 211 or the second boss 121. Because an outer side of the first boss 211 and an outer side of the second boss 121 are not blocked and are exposed, the light can be perceived by the user's vision. Therefore, when the LED light 6 emits the light, the first boss 211 or the second boss 121 can generate light, so that an appearance of the vapor generation apparatus is more beautiful, to improve

user experience.

[0067] Based on the first aspect, in an embodiment, the suction nozzle component 3 is rotatably connected to the second assembly 1, so that the suction nozzle component 3 is in fluid communication with at least one atomizer 11 in the second assembly 1 through rotation.

[0068] Based on the first aspect, in an embodiment, the second assembly 1 is rotatably connected between the suction nozzle component 3 and the power supply component 4, so that the suction nozzle component 3 is in fluid communication with at least one atomizer 11 in the second assembly 1 through rotation. Specifically, two opposite ends of the connection shaft 25 are respectively connected to the suction nozzle component 3 and the power supply component 4. The second holding member 12 or the plurality of atomizers 11 in the second assembly 1 can rotate around the connection shaft 25 and rotate relative to the suction nozzle component 3 and the power supply component 4 by rotating around the connection shaft 25. When the second holding member 12 or the plurality of atomizers 11 rotate, the connection shaft 25, the suction nozzle component 3, and the power supply component 4 may maintain motion consistency, for example, keep no rotation simultaneously.

[0069] The suction nozzle component 3 includes the base body 31 and the nozzle member 32 arranged on the base body 31. At least a part of the nozzle member 32 may be held in the mouth of the user. The nozzle member 32 is arranged away from a central axis of the base body 31. When the first positioning portion 2112 interferes with the second positioning portion 1212, the nozzle member 32 can correspond to or can be aligned with one output electrode group 43 in the power supply component 4 in the longitudinal direction. Therefore, the second holding member 12 or the plurality of atomizers 11 rotate, one atomizer 11 of the plurality of atomizers 11 can be electrically connected to the output electrode group 43 in the power supply component 4, and the atomizer 11 electrically connected to the power supply component 4 can be further in fluid communication with the suction nozzle component 3.

[0070] In some embodiments of this application, connection between the second holding member 12 and the connection shaft 25 enables the second assembly 1 and the connection shaft 25 to move up and down together in the longitudinal direction. Therefore, the atomizer 11 in the second assembly 1 can move in the longitudinal direction with the second support plane 1211.

[0071] In the embodiment shown in FIG. 2, the second assembly 1 further includes a flexible member 15. The flexible member 15 is elastic and includes silicone, rubber, a spring, or the like. The flexible member 15 elastically abuts against the base body 31. Therefore, the suction nozzle component 3 can apply a longitudinal acting force to the second assembly 1 through the flexible member 15, so that when the first positioning portion 2112 interferes with the second positioning portion 1212, the first positioning portion 2112 is aligned with the second positioning portion 1212, and the suction nozzle component 3 can provide, through the flexible member 15, a driving force for moving the second support plane 1211 from the second position to the first position, that is, the flexible member 15 may be a constituting part of a reinforcing structure. When the first positioning portion 2112 and the second positioning portion 1212 are staggered, the flexibility of the flexible part 15 enables the second support plane 1211 to move from the first position to a recessed space of the first position.

[0072] It should be noted that, a third positioning member that is at least partially exposed may be arranged on the suction nozzle component 3. A fourth positioning member that is at least partially exposed may be arranged on the second assembly 1. When the third positioning member interferes with the fourth positioning member, the suction nozzle component 3 is in fluid communication with at least one atomizer 11. The third positioning member and the fourth positioning member may have same features as the first positioning portion 2112 and the second positioning portion 1212. Details are not described herein again.

[0073] Based on the first aspect, in an embodiment, the first support plane 2111 and the second support plane 1211 are arranged opposite to each other in the longitudinal direction. In the longitudinal direction, the second assembly 1 is located between the suction nozzle component 3 and the power supply component 4.

[0074] Based on the first aspect, in an embodiment, refer to FIG. 4 and FIG. 6, one first positioning portion 2112 and/or one second positioning portion 1212 has an alignment mark 8. When the first assembly and the second assembly 1 are assembled, a mark on the first housing 22 and/or a mark on the second housing 13 may be aligned by using the alignment mark 8, so that the first assembly and the second assembly 1 are engaged in a preset direction.

[0075] Based on the first aspect, in an embodiment, refer to FIG. 3, there is a damping member 16 between the first assembly 2 and the second assembly 1. The damping member 16 is fixed on one of the first assembly 2 and the second assembly 1 and is rotatably connected to the other of the first assembly and the second assembly with damping, to provide resistance for preventing relative rotation of the first assembly 2 and the second assembly 1. Therefore, when an external force that drives the relative rotation of the first assembly 2 and the second assembly 1 is revoked or reduced to be less than rotation damping provided by the damping member 16, the first assembly 2 and the second assembly 1 can be maintained at a rotation stop position, so as to prevent switching of the atomizer 11 electrically connected to the power supply component 4 without expectation, which helps a stable and reliable electrical connection between the power supply component 4 and the atomizer 11 at the operating position.

[0076] As an example, the damping member 16 provides resistance for preventing the relative rotation of the

first assembly 2 and the second assembly 1 as a friction force. For example, the damping member 16 includes a damping ring made of a material like silicone or rubber with a relatively high friction coefficient and wear resistance. The damping ring can be fixed or arranged on the first holding member 21, and may be supported by the first support plane 2111. The second holding member 12 is arranged on a periphery of the damping ring and rotates relative to the damping ring, so that the damping ring is sandwiched between an inner side of the second holding member 12 and an outer side of the first holding member 21.

[0077] Based on a second aspect of this application, the first assembly 1 includes a suction nozzle component 3. Therefore, the suction nozzle component 3 and the second assembly 1 can rotate relative to each other. When the first positioning portion 2112 interferes with the second positioning portion 1212 through rotation, feedback that at least one atomizer 11 in the second assembly 1 is in fluid communication with the suction nozzle component 3 can be provided.

[0078] In the embodiment shown in FIG. 1, a nozzle member 32 in the suction nozzle component 3 is arranged away from a central axis of a base body 31 in the suction nozzle component 3, and the nozzle member 32 is configured to be in fluid communication with only one atomizer 11 at same time, so that only the atomizer 11 can be started and generates a vapor.

[0079] Therefore, in this embodiment, the suction nozzle component 3 and the second assembly 1 may rotate relative to each other, to switch the atomizer 11 at the operating position, so that one atomizer 11 of the plurality of atomizers 11 is in fluid communication with the unique suction nozzle component 3, and the remaining atomizers 11 are fluid isolated from the suction nozzle component 3.

[0080] Based on the second aspect, in an embodiment, the power supply component has a plurality of output electrode groups. The plurality of output electrode groups are electrically connected to the plurality of atomizers in a one-to-one correspondence.

[0081] Based on the second aspect, the vapor generation apparatus may have a selection switch or a plurality of independent switches. After the suction nozzle component 3 is in fluid communication with one of the atomizers 11 through rotation, the power supply component 4 may be controlled through the switch to supply power to the atomizer 11.

[0082] Alternatively, the vapor generation apparatus includes a plurality of air inlet channels and a plurality of airflow detectors 6, the plurality of air inlet channels are respectively in communication with the plurality of atomizers 11 in a one-to-one correspondence, and the plurality of airflow detectors 6 respectively detect airflow changes in the plurality of air inlet channels. After the suction nozzle component 3 is in fluid communication with one of the atomizers 11 through rotation, the user may directly suck the suction nozzle component 3. External air enters the atomizer 11 in fluid communication with the suction nozzle component 3 through a corresponding air inlet channel, and a corresponding airflow detector 6 determines that the atomizer 11 corresponding to the airflow detector is inhaled because a change of an airflow is detected. Therefore, the power supply component 4 is automatically controlled to supply power to the atomizer 11, so that the atomizer 11 generates a vapor.

[0083] Based on the second aspect, the power supply component 4 and the second assembly 1 may have motion consistency, and the power supply component and the second assembly may not rotate relative to each other.

[0084] Based on any one of the foregoing embodiments, a quantity of first positioning portions 2112 may be the same as a quantity of atomizers 11, and/or a quantity of second positioning portions 1212 may be the same as a quantity of atomizers 11. It should be noted that, the specification of this application and the accompanying drawings thereof illustrate preferred embodiments of this application, but are not limited to the embodiments described in this specification, furthermore, a person of ordinary skill in the art may make improvements or modifications according to the foregoing description, and all the improvements and modifications shall fall within the protection scope of the attached claims of this application.

Claims

1. A vapor generation apparatus, comprising:

a first assembly (2), comprising a first support plane (2111), wherein a first positioning portion (2112) that is at least partially exposed is arranged on the first support plane (2111); and
a second assembly (1), rotatably connected to the first assembly (2), wherein the second assembly (1) comprises a plurality of atomizers (11) and a second support plane (1211), and a second positioning portion (1212) that is at least partially exposed is arranged on the second support plane (1211), wherein
the first support plane (2111) and the second support plane (1211) are arranged opposite to each other, and when the first assembly (2) and the second assembly (1) are rotatable relative to each other, the first positioning portion (2112) is capable of being in interference fit with the second positioning portion (1212), to provide feedback that at least one atomizer (11) in the second assembly (1) is startable.

2. The vapor generation apparatus according to claim 1, wherein a position of interference fit between the first positioning portion (2112) and the second positioning portion (1212) is visible on an outer surface of

the vapor generation apparatus.

3. The vapor generation apparatus according to claim 1, wherein one of the first positioning portion (2112) and the second positioning portion (1212) comprises a protrusion, the other of the first positioning portion (2112) and the second positioning portion (1212) comprises a groove, when the first positioning portion (2112) is aligned with the second positioning portion (1212), at least a part of the protrusion is located in the groove, and when the first positioning portion (2112) and the second positioning portion (1212) are staggered, the protrusion is located outside the groove and abuts against the first support plane (2111) or the second support plane (1211).

4. The vapor generation apparatus according to claim 3, wherein when the first positioning portion (2112) interferes with the second positioning portion (1212), the second support plane (1211) is located at a first position in a longitudinal direction, and when the first positioning portion (2112) and the second positioning portion (1212) are staggered, the second support plane (1211) is located at a second position in the longitudinal direction longitudinally spaced from the first position.

5. The vapor generation apparatus according to claim 4, wherein the vapor generation apparatus further comprises a reinforcing mechanism (5), wherein the reinforcing mechanism (5) is configured to provide a driving force for moving the second support plane (1211) from the second position to the first position when the first positioning portion (2112) rotates to an orientation aligned with the second positioning portion (1212).

6. The vapor generation apparatus according to claim 4, wherein the first assembly (2) further comprises a first connection portion (212), and the second assembly (1) further comprises a second connection portion (14); and

the reinforcing mechanism (5) comprises an elastic member (51) that connects the first connection portion (212) and the second connection portion (14), and when the first positioning portion (2112) and the second positioning portion (1212) are staggered, the elastic member (51) is in stretched state or a compressed state; or
the reinforcing mechanism (5) comprises a first magnetic member (52) arranged on the first connection portion (212) and a second magnetic member (53) arranged on the second connection portion (14), and when the first positioning portion (2112) interferes with the second positioning portion (1212), the first magnetic member (52) and the second magnetic member (53) magnetically attract or repel each other.

7. The vapor generation apparatus according to claim 6, wherein the second assembly (1) further comprises a second holding member (12) for holding the plurality of atomizers (11), the first assembly (2) further comprises a connection shaft (25) connected to the second connection portion (14), a support plate (2121), and a connection hole (2122) provided on the support plate (2121), and a part of the connection shaft (25) is located in the connection hole (2122) and a part of the connection shaft (25) extends in the longitudinal direction in the first assembly (2);

when the second support plane (1211) moves between the first position and the second position, the connection shaft (25) moves in the longitudinal direction in the connection hole (2122), and the second holding member (12) and the second connection portion (14) are located on two opposite sides of the connection hole (2122); and
a size of the second connection portion (14) extending in a horizontal direction is greater than a hole diameter of the connection hole (2122).

8. The vapor generation apparatus according to any one of claims 1 to 6, wherein the first assembly (2) further comprises a power supply component (4), and when the first positioning portion (2112) interferes with the second positioning portion (1212) through rotation, at least one atomizer (11) in the second assembly (1) is electrically connected to the power supply component (4).

9. The vapor generation apparatus according to claim 8, wherein the power supply component (4) comprises a core and an output electrode group (43) connected to the core, and the output electrode group (43) is fixed on the first holding member (21); and
when the first positioning portion (2112) interferes with the second positioning portion (1212), the output electrode group (43) is electrically connected to one of the atomizers (11).

10. The vapor generation apparatus according to claim 8, wherein the first holding member (21) is provided with a sealing member (24) and an air hole (23) in communication with the outside, the sealing member (24) surrounds the air hole (23), and the sealing member (24) elastically abuts against the second assembly (1); and
when the first positioning portion (2112) interferes with the second positioning portion (1212), the air hole (23) is in fluid communication with one of the atomizers (11).

11. The vapor generation apparatus according to claim 8, wherein the first assembly (2) further comprises a first housing, and the power supply component (4) is arranged in the first housing;

the second assembly (1) further comprises a second housing, and the plurality of atomizers (11) are arranged in the second housing; and
at least a part of the first positioning portion (2112) and at least a part of the second positioning portion (1212) are located between the first housing and the second housing.

12. The vapor generation apparatus according to claim 8, wherein the vapor generation apparatus further comprises a suction nozzle component (3), and the second assembly (1) is rotatably connected between the suction nozzle component (3) and the power supply component (4), to enable the suction nozzle component (3) to be in fluid communication with at least one atomizer (11) in the second assembly (1) through rotation.

13. The vapor generation apparatus according to any one of claims 1 to 6, wherein the first assembly (2) further comprises a suction nozzle component (3), and when the first positioning portion (2112) interferes with the second positioning portion (1212) through rotation, at least one atomizer (11) in the second assembly (1) is in fluid communication with the suction nozzle component (3).

14. The vapor generation apparatus according to any one of claims 1 to 6, wherein a quantity of first positioning portions (2112) is the same as a quantity of atomizers (11); and/or
a quantity of second positioning portions (1212) is the same as a quantity of atomizers (11).

15. The vapor generation apparatus according to any one of claims 1 to 6, wherein the vapor generation apparatus further comprises a damping member (16), the damping member (16) is fixedly connected to one of the first assembly (2) and the second assembly (1) and is rotatably connected to the other of the first assembly (2) and the second assembly (1) with damping, to provide resistance to prevent relative rotation of the first assembly (2) and the second assembly (1).

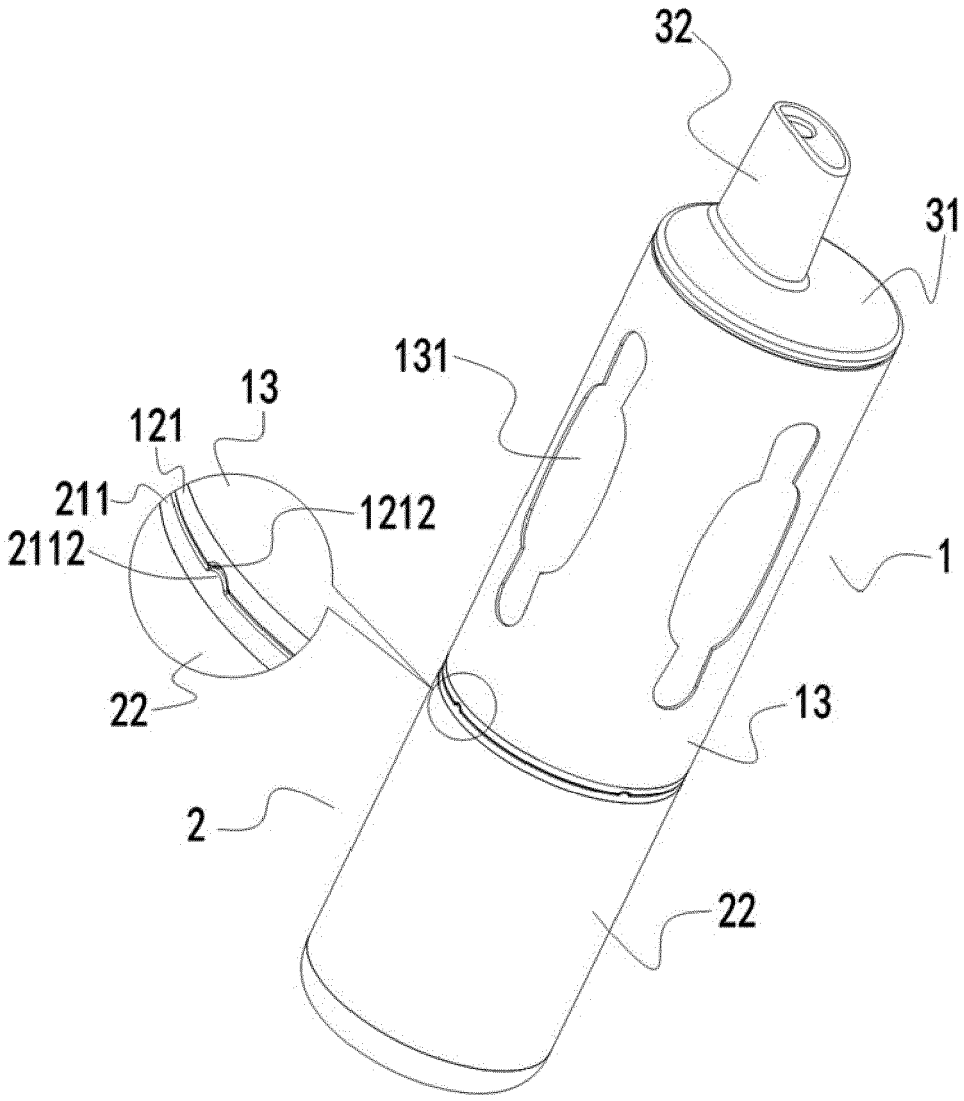

FIG. 1

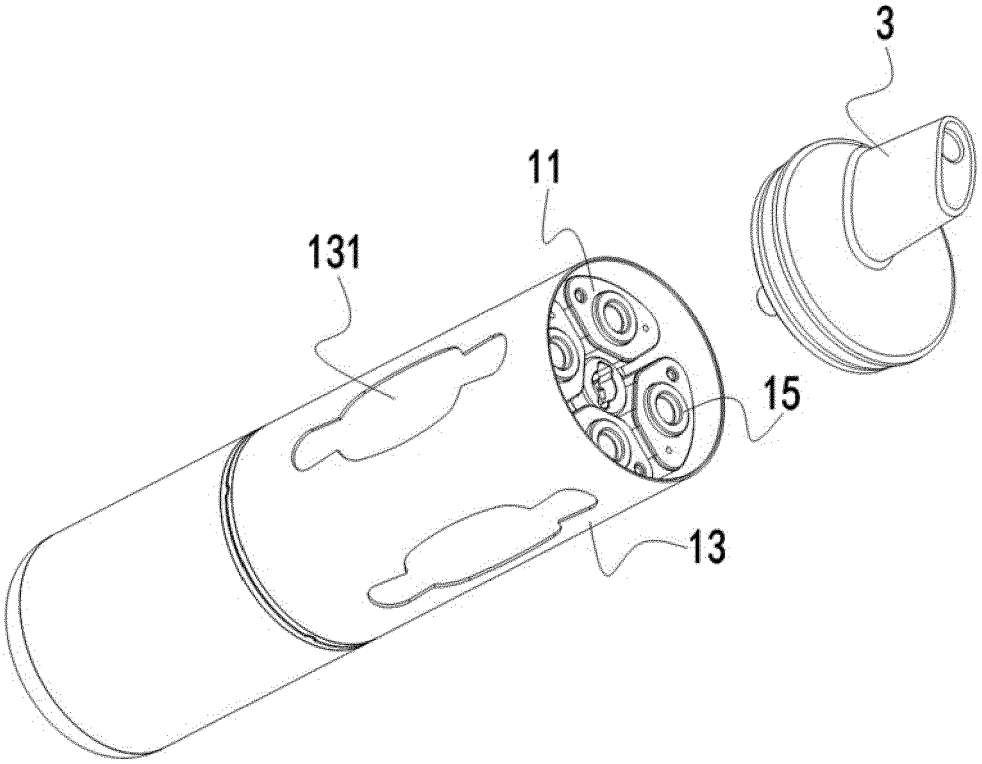

FIG. 2

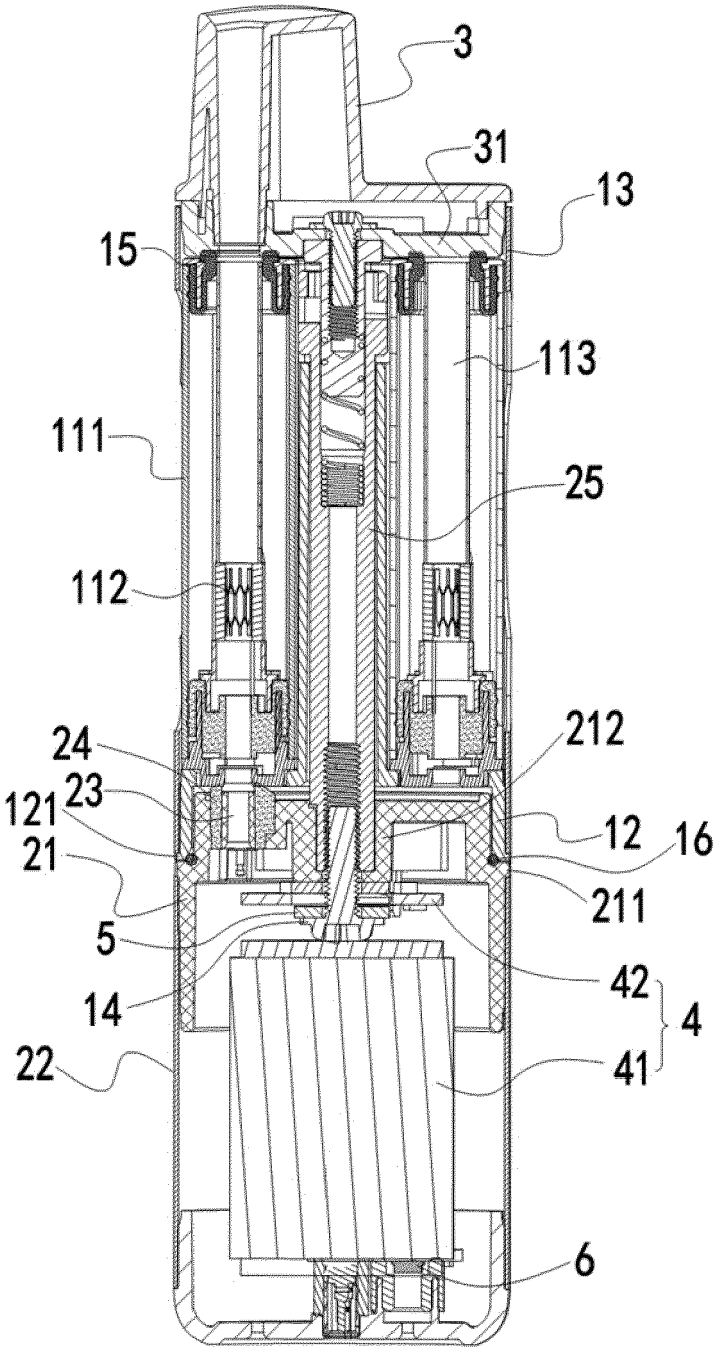

FIG. 3

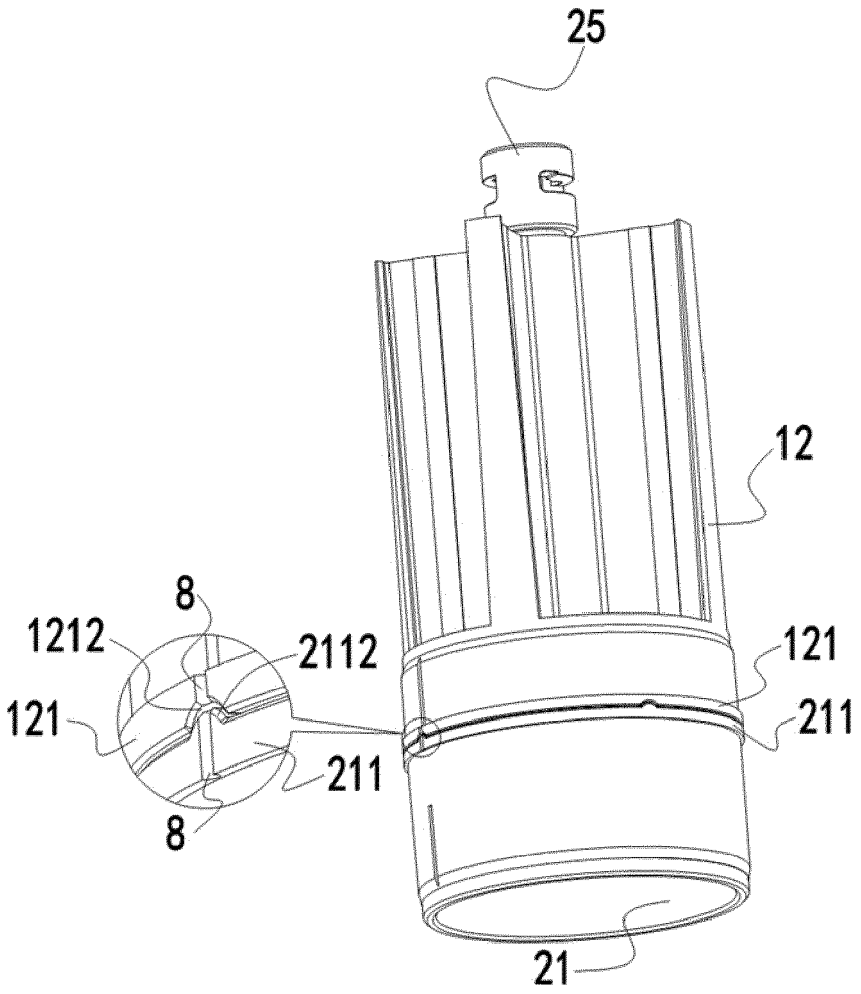

FIG. 4

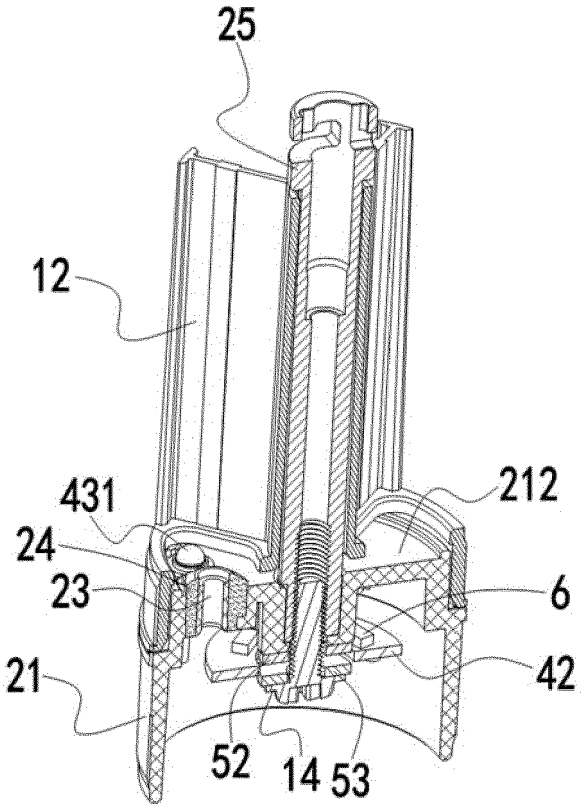

FIG. 5

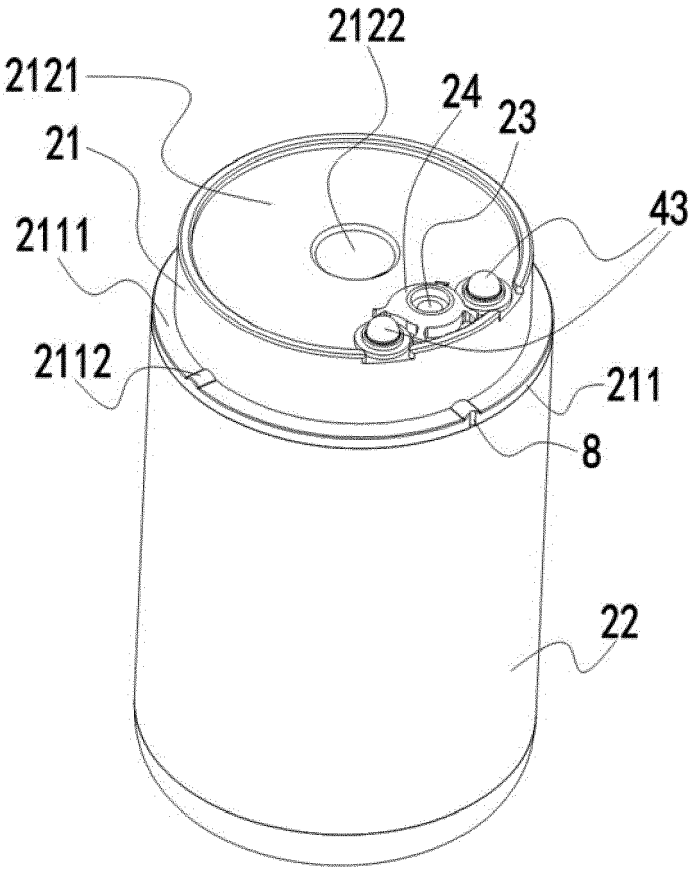

FIG. 6

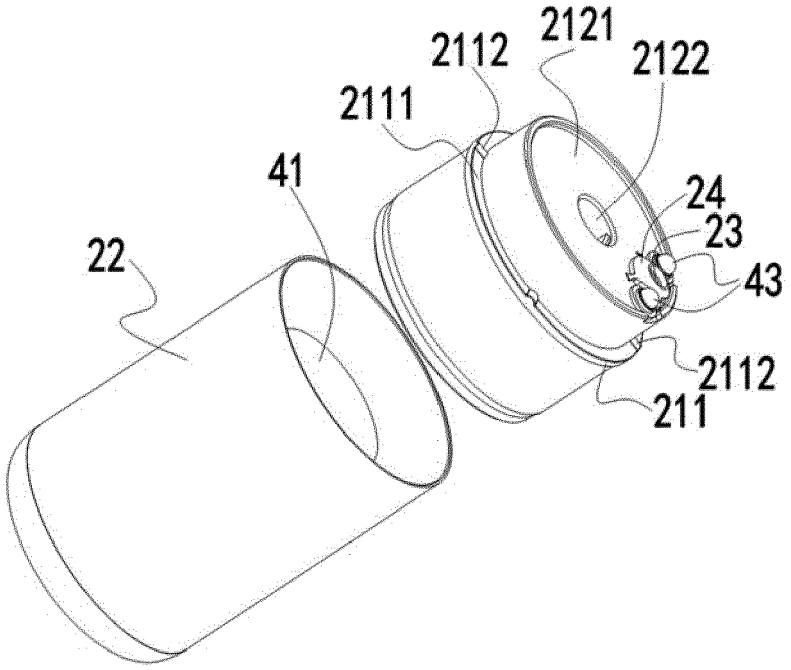

FIG. 7

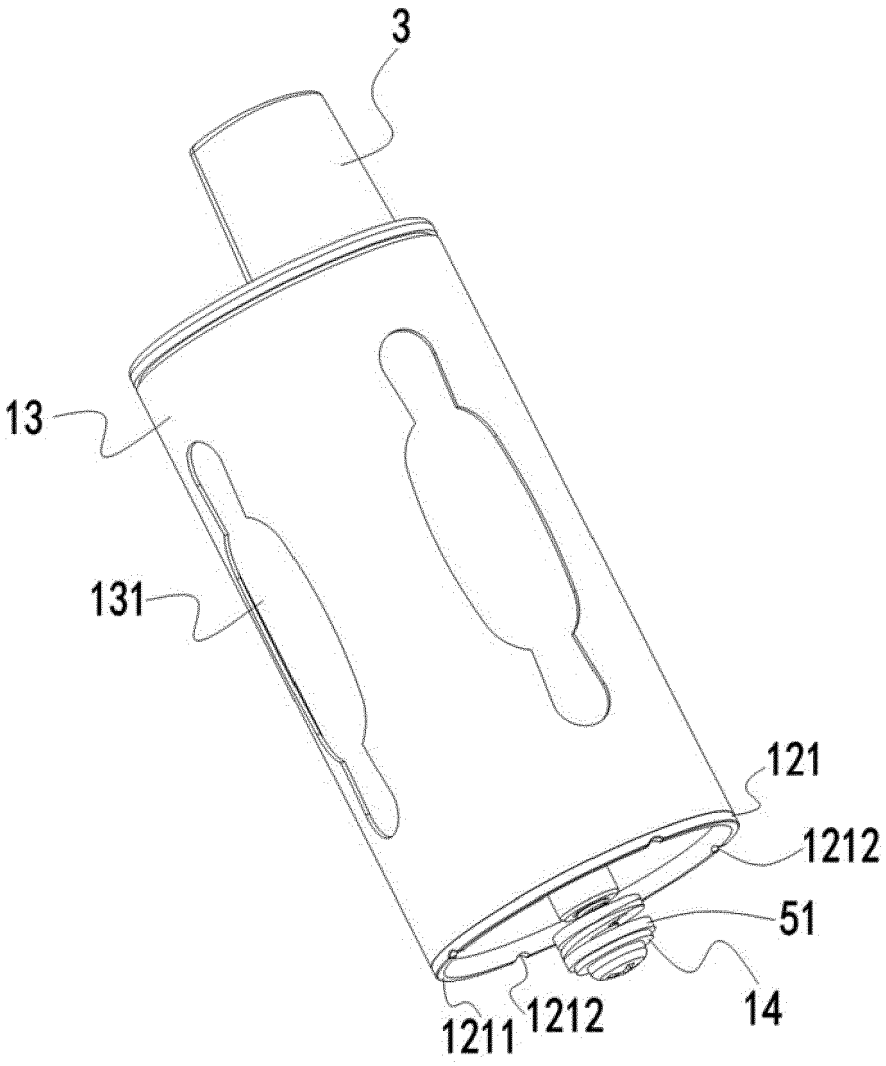

FIG. 8

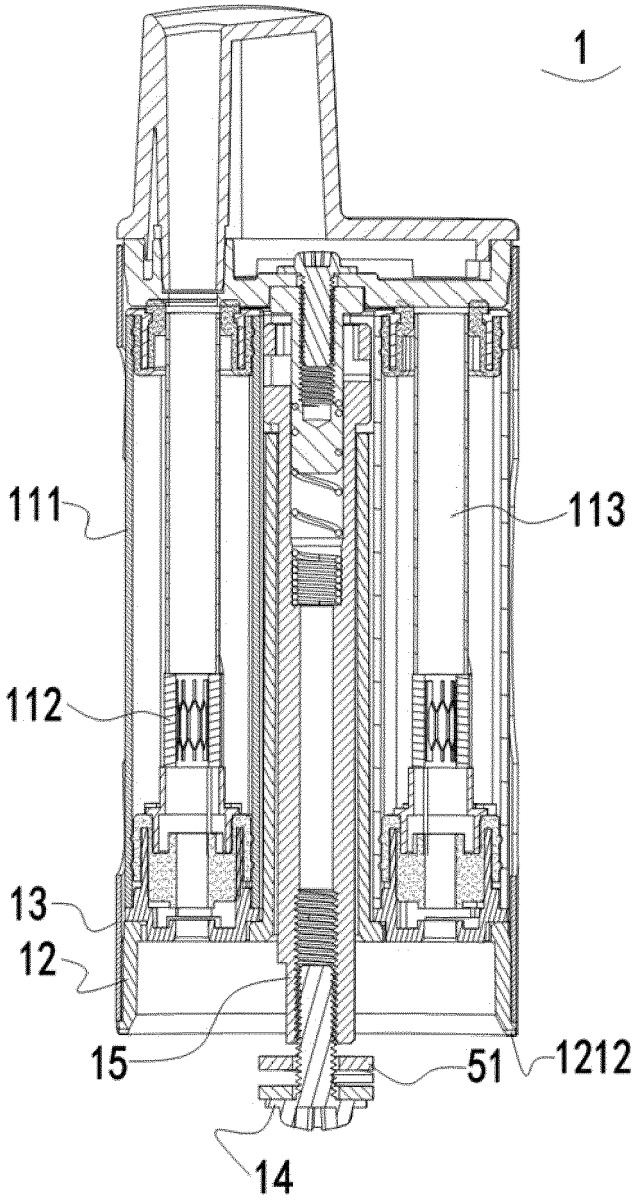

FIG. 9

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Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 24 16 3383

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2016/366940 A1 (LIU QIUMING [CN]) 22 December 2016 (2016-12-22) * paragraph [0033] - paragraph [0058]; figures 1-7 *	1-15	INV. A24F40/30 A24F40/40

TECHNICAL FIELDS SEARCHED (IPC)

A24F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	23 July 2024	Klintebäck, Daniel

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 24 16 3383

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23-07-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2016366940 A1	22-12-2016	CN 106028856 A	12-10-2016
		US 2016366940 A1	22-12-2016
		WO 2015127663 A1	03-09-2015

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