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(54) **ELECTRONIC ATOMIZING DEVICE**

(57) This application discloses an electronic vaporization device, including: a first storage unit, configured to store a first liquid; a second storage unit, configured to store a second liquid; a vaporization unit, configured to vaporize the liquid to produce an aerosol for a user to inhale; a first liquid delivery channel, which is fluidly communicated with the first storage unit and the vaporization unit to accordingly deliver the first liquid to the vaporization unit; a second liquid delivery channel, which is fluidly communicated with the second storage unit and the vaporization unit to accordingly deliver the second liquid to the vaporization unit; where the first liquid delivery channel and the second liquid delivery channel are configured to deliver the corresponding liquid to the vaporization unit at different times. This application can increase the liquid storage amount of the electronic vaporization device through the first storage unit and the second storage unit. In addition, the first liquid delivery channel and the second liquid delivery channel deliver the liquid to the vaporization unit at different times, which can extend the storage time of the liquid and prevent deterioration and tastelessness.

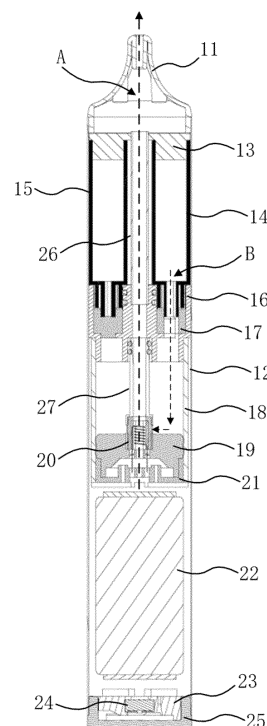


FIG. 2

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Application No. 202110038111.1, filed with China National Intellectual Property Administration on January 12, 2021 and entitled "ELECTRONIC VAPORIZATION DEVICE", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] This application relates to the technical field of a smoking set, and in particular, to an electronic vaporization device.

BACKGROUND

[0003] An electronic vaporization device that converts a nicotine-containing liquid aerosol-forming matrix into aerosol through heating and vaporization of a vaporization core is an electronic device that imitates a cigarette and has a smoke, a taste and a sensation similar to those of the cigarette. This nicotine-containing aerosol produced by vaporization does not contain harmful carcinogens such as tar, which is commonly found in ordinary cigarette smoke, and is considered a healthy alternative to the cigarette for a traditional smoker. In addition, this electronic vaporization device has good portability, does not produce an open flame, does not produce second-hand smoke, has environmental protection characteristics, and hence is preferred by many smokers.

[0004] The problem with the electronic vaporization device in the related art is as follows: when the liquid aerosol-forming matrix is not used up, the electronic vaporization device tends to deteriorate and become tasteless if the electronic vaporization device is left for too long, reducing the user's vaping experience.

SUMMARY

[0005] This application provides an electronic vaporization device to solve the problem that the liquid aerosol-forming matrix in the electronic vaporization device in the related art tends to deteriorate and become tasteless.

[0006] According to a first aspect, this application provides an electronic vaporization device, including:

- a first storage unit, configured to store a first liquid;
- a second storage unit, configured to store a second liquid;
- a vaporization unit, configured to vaporize the liquid to produce an aerosol for a user to inhale;
- a first liquid delivery channel, which is fluidly communicated with the first storage unit and the vaporization unit to accordingly deliver the first liquid to the vaporization unit; and
- a second liquid delivery channel, which is fluidly com-

municated with the second storage unit and the vaporization unit to accordingly deliver the second liquid to the vaporization unit; where the first liquid delivery channel and the second liquid delivery channel are configured to deliver the corresponding liquid to the vaporization unit at different times.

[0007] Advantageously, the liquid storage amount of the electronic vaporization device can be increased through the first storage unit and the second storage unit. In addition, the first liquid delivery channel and the second liquid delivery channel are configured to deliver the corresponding liquid to the vaporization unit at different times, that is, the first liquid delivery channel and the second liquid delivery channel deliver the first liquid and the second liquid to the vaporization unit at different times. The second liquid can be delivered after the first liquid is delivered, thereby prolonging the storage time of the second liquid and preventing deterioration and tastelessness.

[0008] In an example, the first storage unit and the second storage unit are independent of each other so that the first liquid is not delivered to the second storage unit and the second liquid is not delivered to the first storage unit.

[0009] Advantageously, the first storage unit and the second storage unit are independent of each other, so that the first liquid and the second liquid are not tainted by other odor each other when the first liquid and the second liquid have different flavors. If one of the liquids becomes tasteless and deteriorated, the liquid does not contaminate the other liquid.

[0010] In one example, the first liquid delivery channel and the second liquid delivery channel are independent of each other so that the first liquid is not delivered through the second liquid delivery channel and the second liquid is not delivered through the first liquid delivery channel.

[0011] In one example, the first liquid delivery channel and the second liquid delivery channel are partially shared so that the first liquid or the second liquid can be delivered through the shared portion of the liquid delivery channel.

[0012] Advantageously, the first liquid delivery channel and the second liquid delivery channel are partially shared, which can save the internal space of the electronic vaporization device, with compact and reasonable structure design.

[0013] In an example, the first liquid delivery channel and the second liquid delivery channel are opened or closed in an expected or predetermined manner.

[0014] In an example, the first storage unit and the second storage unit are configured to be moved simultaneously to open or close the liquid delivery channel.

[0015] In an example, the first storage unit and the second storage unit are configured to rotate about a length direction of the electronic vaporization device.

[0016] In an example, at least a portion of the first liquid

delivery channel and at least a portion of the second liquid delivery channel are configured to be moved simultaneously to open or close the liquid delivery channel.

[0017] In an example, the electronic vaporization device further includes a switch component configured to open or close the liquid delivery channel.

[0018] In an example, the first liquid delivery channel and the second liquid delivery channel are configured to be able to be closed simultaneously.

[0019] Advantageously, the first liquid delivery channel and the second liquid delivery channel are arranged to be closed simultaneously, which on the one hand can realize the completely sealed form of the storage unit and avoid the phenomenon of oil leakage during long time storage and transportation or under an environment of high altitude and high pressure, and on the other hand can avoid contact with air and prevent the liquid from deterioration, tastelessness or volatilization.

[0020] In an example, the first liquid delivery channel is configured to be in a normally open state.

[0021] Advantageously, one of the liquid delivery channels is configured to be in the normally open state, which simplifies structural design on the one hand and opening operation on the other.

[0022] In an example, the second storage unit is configured to be moved to open or close the second liquid delivery channel.

[0023] In an example, the electronic vaporization device further includes a buffer unit. The first liquid or the second liquid is delivered to the vaporization unit through the buffer unit.

[0024] In an example, the vaporization unit is at least partially placed in the buffer unit.

in an example, the first storage unit and the second storage unit are fluidly communicated with each other. The first liquid can be delivered to the second storage unit and to the vaporization unit through the second liquid delivery channel, thereby forming the first liquid delivery channel.

[0025] The first liquid delivery channel is opened in order after the second liquid delivery channel.

[0026] In an example, the second liquid delivery channel is configured to be in the normally open state.

[0027] In an example, the first storage unit is configured to be moved to open or close the first liquid delivery channel.

[0028] Advantageously, the first liquid delivery channel can be conveniently opened or closed by the movement of the first storage unit.

[0029] In an example, the first storage unit is configured to rotate about the length direction of the electronic vaporization device.

[0030] In an example, the first storage unit is configured to be moved up and down along the length direction of the electronic vaporization device.

[0031] In an example, the electronic vaporization device further includes an outer housing. The outer housing has at least one visual window through which the user

can observe the amount of the liquid stored in the first storage unit and/or the second storage unit.

BRIEF DESCRIPTION OF THE DRAWINGS

[0032] The objective implementation, functional features and advantages of this application are further illustrated with reference to the accompanying drawings by using the embodiments. One or more embodiments are described by using examples with reference to diagrams in accompanying drawings corresponding to the embodiments. These example descriptions do not constitute a limitation to the embodiments. Elements with the same reference signs in the accompanying drawings indicate similar elements. Unless otherwise stated, the diagrams in the accompanying drawings do not constitute a proportional limitation.

FIG. 1 is a schematic diagram of an electronic vaporization device provided by an embodiment of this application.

FIG. 2 is a sectional schematic diagram of an electronic vaporization device provided by an embodiment of this application.

FIG. 3 is a schematic diagram of a vaporization unit in an electronic vaporization device provided by an embodiment of this application.

FIG. 4 is a schematic diagram of a connecting member in an electronic vaporization device provided by an embodiment of this application.

FIG. 5 is a schematic diagram of another angle of view of a connecting member in an electronic vaporization device provided by an embodiment of this application.

FIG. 6 is a schematic diagram of a sealing member in an electronic vaporization device provided by an embodiment of this application.

FIG. 7 is a schematic diagram of another angle of view of a sealing member in an electronic vaporization device provided by an embodiment of this application.

FIG. 8 is a schematic diagram of an electronic vaporization device with a plurality of storage units provided by an embodiment of this application.

FIG. 9 is a sectional schematic diagram of another electronic vaporization device provided by an embodiment of this application; and

FIG. 10 is a sectional schematic diagram of yet another electronic vaporization device provided by an embodiment of this application.

DETAILED DESCRIPTION

[0033] It is to be understood that the specific embodiments described herein are merely used to explain this application but are not intended to limit this application. In order to facilitate the understanding of this application, the following is a more detailed description of this appli-

cation in conjunction with the accompanying drawings and specific embodiments. To be sure, when an element is represented as "being fixed to" another element, the element can be directly on the other element, or be provided with one or more centered elements. When one element is represented as "being connected to" another element, the element can be directly connected to another element or be provided with one or more centered elements. The terms "upper", "lower", "left", "right", "inside", "outside" and other similar expressions used herein are only for objectives of description.

[0034] In addition, terms "first" and "second" are used merely for the objective of description, and shall not be construed as indicating or implying relative importance or implicitly indicating a quantity of indicated technical features. Therefore, a feature defined by "first" or "second" can explicitly indicate or implicitly include at least one of such features. In addition, the technical solutions between the various embodiments can be combined with each other, but shall be based on what can be achieved by a person skilled in the art. When a combination of technical solutions is contradictory or cannot be achieved, it should be construed that such a combination of technical solutions does not exist, and also does not fall within the scope of protection required by the present disclosure.

[0035] Unless otherwise defined, meanings of all technical and scientific terms used in this specification are the same as those usually understood by a person skilled in the art to which this application belongs. The terms used herein are merely intended to describe the objective of embodiments of this application, but are not intended to limit this application. The term "and/or" as used in this specification includes any and all combinations of one or more of the relevant listed items.

[0036] As shown in FIG. 1 to FIG. 2, an electronic vaporization device 10 includes a suction nozzle 11, an outer housing 12, an oil tank cover 13, an oil tank shell 14, an oil tank shell 15, an oil tank shell 18, a connecting member 16, a sealing member 17, a sealing member 19, a vaporization unit 20, a vaporization seat 21, a battery 22, a fixing member 23, an airflow sensor 24, and a bottom base 25.

the outer housing 12 is cylindrical and hollow inside. The outer housing 12 has an upper open end and a lower open end. One end of the suction nozzle 11 can be fixed in the upper open end. One end of the bottom base 25 can be fixed in the lower open end, thus forming a receiving space. Components such as the oil tank cover 13, the oil tank shell 14, the oil tank shell 15, the oil tank shell 18, the connecting member 16, the sealing member 17, the sealing member 19, the vaporization unit 20, the vaporization seat 21, the battery 22, the fixing member 23, and the airflow sensor 24 are provided in the receiving space.

[0037] The oil tank shell 14 and the oil tank shell 15 have an open end and a liquid outlet. The oil tank shell 18 has an upper open end and a lower open end. The

open ends of the oil tank shell 14 and the oil tank shell 15 are sealed partially by the oil tank cover 13. The liquid outlets of the oil tank shell 14 and the oil tank shell 15 are connected to the upper open end of the oil tank shell 18 via the connecting member 16. The vaporization seat 21 is arranged at the lower open end of the oil tank shell 18. The sealing member 17 is provided between the liquid outlets of the oil tank shell 14 and the oil tank shell 15 as well as the connecting member 16. The sealing member 19 is provided between the vaporization seat 21 and the lower open end of the oil tank shell 18.

[0038] The vaporization seat 21 is provided with an air inlet. The electronic vaporization device 10 also includes an airflow channel. The airflow channel extends from the air inlet of the vaporization seat 21 to the outlet end of the suction nozzle 11 (shown by a dashed arrow A in the figure). In this example, the airflow channel is formed by an upper pipe 26, a lower pipe 27, and the connecting member 16. One end of the upper pipe 26 is fixed in a through hole of the oil tank cover 13, and the other end of the upper pipe 26 is fixed in the connecting member 16. One end of the lower pipe 27 is fixed to the connecting member 16, and the other end of the lower pipe 27 is fixed to the sealing member 19. The sealing member 19 is provided with an airflow through hole. Thus, an airflow flows from an air inlet, passes through the airflow through hole of the sealing member 19, the lower pipe 27, the connecting member 16, and the upper pipe 26, and flows out of the outlet end of the suction nozzle 11.

[0039] A first storage unit is formed among the inner surface of the oil tank shell 14, a part of the oil tank cover 13, and the liquid outlet of the oil tank shell 14 for storing the first liquid. A second storage unit is formed among the inner surface of the oil tank shell 15, a part of the oil tank cover 13, and the liquid outlet of the oil tank shell 15 for storing the second liquid. A buffer unit is formed among the inner surface of the oil tank shell 18, the outer surface of the lower pipe 27, and the connecting member 16 for buffer the first liquid or the second fluid. It can be understood that the two storage units are arranged, which can increase the liquid storage amount of the electronic vaporization device 10. In this example, only the first storage unit and the second storage unit are shown about a length direction of the electronic vaporization device 10 (the direction shown by the dashed arrow A in the figure). It is easily conceivable that more than two storage units can be provided about the length direction of the electronic vaporization device 10.

[0040] The compositions of the first liquid and the second liquid can be the same or different. The liquid can be a liquid containing a tobacco-containing substance containing a volatile tobacco flavor component, and can also be a liquid containing a non-tobacco substance. For example, the liquid can include a mixture of water, a solvent, ethanol, a plant extract, a flavor, a flavoring agent, or a vitamin. The flavor can include menthol, mentha piperita, spearmint oil, various fruit flavoring ingredients, but are not limited thereto. The flavoring agent can include

ingredients that can provide a user with a variety of scents or relishes. The vitamin mixture can be a substance mixed with at least one of, but not limited to, vitamin A, vitamin B, vitamin C and vitamin E. Alternatively, the liquid can include an aerosol-forming agent such as glycerol and propylene glycol.

[0041] As will be understood in conjunction with FIG. 3, the vaporization unit 20 includes a liquid delivery unit 201, a heating element 202, a lead wire 203, and a lead wire 204. The liquid delivery unit 201 is pipe-shaped. The heating element 202 is spirally provided on the inner surface of the liquid delivery unit 201 or embedded in the liquid delivery unit 201. The lead wire 203 and the lead wire 204 are connected to one end of the heating element 202, respectively, for coupling with the battery 22 provided under the vaporization seat 21. It will be understood that both the sealing member 19 and the vaporization seat 21 are provided with via holes of the lead wire 203 and the lead wire 204.

[0042] The vaporization unit 20 is provided in the lower pipe 27. The lower pipe 27 is provided with a liquid inlet. In this way, the first liquid and/or the second liquid, buffered by the buffer unit, flows into or is delivered to the vaporization unit 20 via the liquid inlet. After being energized, the heating element 202 heats the liquid delivered by the liquid delivery unit 201 to generate aerosol for the user to inhale. The aerosol flows out of the outlet end of the suction nozzle 11 when the airflow of the airflow channel flows through the inner surface of the pipe-shaped liquid delivery unit 201. To be sure, the vaporization unit 20 is not limited to this form. For example: the liquid delivery unit 201 can be placed across the airflow channel with two ends in the oil tank shell 18. The heating element 202 is spirally wound on the liquid delivery unit 201. For example: the vaporization unit 20 includes a common porous substrate in the related art and a heat producing element printed on the porous substrate. The porous substrate delivers the first liquid and/or the second liquid buffered by the buffer unit to the heat producing element. The porous substrate can be plate-shaped, pipe-shaped, and the like.

[0043] To be understood in conjunction with FIG. 4-FIG. 7 that the connecting member 16 includes an outer pipe 161. The outer pipe 161 is closed at one end and opened at the other end. The connecting member 16 further includes an outer pipe 162 extending from the closed end of the outer pipe 161 toward the vaporization seat 21. The outer pipe 162 has an outer diameter smaller than that of the outer pipe 161 so as to form a step surface 1611 at the closed end of the outer pipe 161. The connecting member 16 further includes an inner pipe 163. The inner pipe 163 passes through the closed end of the outer pipe 161. The inner surface of the inner pipe 163 forms a part of the airflow channel. The upper pipe 26 is inserted at one end of the inner pipe 163. The lower pipe 27 is inserted at the other end of the inner pipe 163. The closed end of the outer pipe 161 also has a liquid through hole 164 and a liquid through hole 165. Both the liquid

through hole 164 and the liquid through hole 165 are located between the outer surface of the inner pipe 163 and the inner surface of the outer pipe 162. The sealing member 17 includes an outer pipe 171, an inner pipe 172, and an extending portion extending from the outer surface of the inner pipe 172 to the inner surface of the outer pipe 171. One end of the extending portion is recessed to form a receiving space 173, and the other end of the extending portion has a protruding sealing portion 174. The sealing member 17 further includes a liquid through hole 175 passing through the extending portion.

[0044] When assembled, the liquid outlets of both the oil tank shell 14 and the oil tank shell 15 are received between the inner surface of the outer pipe 161 and the outer surface of the inner pipe 163. The upper open end of the oil tank shell 18 abuts against the step surface 1611. The sealing member 17 is also provided between the inner surface of the outer pipe 161 and the outer surface of the inner pipe 163. The inner pipe 163 is inserted in the inner pipe 172, so that a gap between the liquid outlets of the oil tank shell 14 and the oil tank shell 15 as well as the connecting member 16 is sealed with the sealing member 17. The liquid outlet of the oil tank shell 14 is aligned with and fluidly communicated with the liquid through hole 175 and the liquid through hole 165. The liquid outlet of the oil tank shell 15 is aligned with the sealing portion 174 and the liquid through hole 164. The liquid through hole 164 is sealed with the sealing portion 174.

[0045] After assembled, the first liquid stored in the first storage unit flows into the buffer unit through the liquid outlet of the oil tank shell 14, the liquid through hole 175, and the liquid through hole 165, and then flows into the vaporization unit 20 through the liquid inlet of the lower pipe 27, thus forming a first liquid delivery channel. Because the liquid through hole 164 is sealed with the sealing portion 174, the second liquid stored in the second storage unit cannot flow into the liquid through hole 164 and thus cannot flow into the buffer unit and the vaporization unit 20.

[0046] After assembled, the airflow channel, the sealing member 17, the connecting member 16, and the oil tank shell 18 are fixed. However, the suction nozzle 11, the first storage unit, and the second storage unit can all rotate simultaneously about the length direction of the electronic vaporization device 10 (in the direction shown by the dashed arrow A in the figure). Specifically, the liquid outlets of the oil tank shell 14 and the oil tank shell 15 are moved circumferentially along the annular surface of the receiving space 173. In practice, the user can hold the suction nozzle 11 to rotate the suction nozzle by 180° counterclockwise or clockwise so that the liquid outlet of the oil tank shell 15 is aligned with and fluidly communicated with the liquid through hole 175 and the liquid through hole 165. The liquid outlet of the oil tank shell 14 is aligned with the sealing portion 174 and the liquid through hole 164. The liquid through hole 164 is sealed with the sealing portion 174. After operation, the second

liquid stored in the second storage unit flows into the oil tank shell 18 through the liquid outlet of the oil tank shell 15, the liquid through hole 175, and the liquid through hole 165, and in turn flows into the vaporization unit 20 through the liquid inlet of the lower pipe 27, thus forming a second liquid delivery channel. Because the liquid through hole 164 is sealed with the sealing portion 174, the first liquid stored in the first storage unit cannot flow into the liquid through hole 164, and thus cannot flow into the oil tank shell 18 and the vaporization unit 20. The suction nozzle 11 is held again and rotated by 180° counterclockwise or clockwise to return to an initial state.

[0047] Further, a visual window 121 and a visual window 122 can be provided on the outer housing 12. The storage amount of the first liquid stored in the oil tank shell 14 can be observed through the visual window 121. The storage amount of the liquid buffered in the oil tank shell 18 can be observed through the visual window 122. When the first liquid stored in the first storage unit is used up, the suction nozzle 11 is held again and rotated by 180° counterclockwise or clockwise to open the second liquid delivery channel so that the second liquid stored in the second storage unit is used. In this way, the first liquid delivery channel and the second liquid delivery channel are opened in turn so that the first liquid delivery channel and the second liquid delivery channel deliver the first liquid and the second liquid to the vaporization unit at different times. Before not used, the second liquid stored in the second storage unit is always in a sealed state, does not come into contact with air, is not deteriorated and become tasteless.

[0048] It can be known from the above description that the first liquid delivery channel and the second liquid delivery channel are partially shared, i.e., both share the liquid through hole 175, the liquid through hole 165, the buffer unit, and the liquid inlet of the lower pipe 27. However, both the first liquid and the second liquid flow into the common liquid delivery channel through different liquid outlets. The first liquid stored in the first storage unit cannot be delivered to the second storage unit. The second liquid stored in the second storage unit cannot be delivered to the first storage unit, i.e., the first storage unit and the second storage unit are independent of each other. Therefore, the first liquid and second liquid are not tainted by other odor with each other when the first liquid and second liquid have different flavors. If one of the liquids becomes tasteless and deteriorated, the liquid does not contaminate the other liquid. In other examples, it is feasible that the buffer unit is not arranged. In other examples, it is feasible for the first liquid delivery channel and the second liquid delivery channel not to have the common liquid delivery channel, i.e., the first liquid delivery channel and the second liquid delivery channel are independent of each other. The first liquid is not delivered through the second liquid delivery channel. The second liquid is not delivered through the first liquid delivery channel. In this way, the storage unit and the vaporization unit are fluidly communicated with each other through the

separate liquid delivery channels.

[0049] From the above description, it can be learned that the first storage unit and the second storage unit are moved simultaneously. In other examples, it is also feasible that the first storage unit and the second storage unit are moved at different times. The first storage unit is first moved to open or close the first liquid delivery channel. The second storage unit is then moved to open or close the second liquid delivery channel. At this point, the first liquid delivery channel and the second liquid delivery channel can be opened or closed in an expected or predetermined manner. For example, initially, the first liquid delivery channel and the second liquid delivery channel are both in a closed state. The first storage unit is moved first to open the first liquid delivery channel (the second liquid delivery channel is in the closed state). After the first liquid is used up, the second storage unit is moved to open the second liquid delivery channel (the first liquid delivery channel can or cannot be closed). It is conceivable that the first liquid delivery channel and the second liquid delivery channel can be opened or closed in an expected or predetermined manner, which is not limited to those listed above, as long as the first liquid delivery channel and the second liquid delivery channel deliver the first liquid and the second liquid to the vaporization unit at different times.

[0050] From the above description, it can be learned that the first storage unit and the second storage unit are moved simultaneously so that the first liquid delivery channel and the second liquid delivery channel are opened or closed. In other examples, it is also feasible that at least a portion of the first liquid delivery channel and at least a portion of the second liquid delivery channel are configured to be moved simultaneously to open or close the liquid delivery channel. Taking a structure shown in FIG. 2 as an example, with a reasonable structural design, the connecting member 16 is moved to open or close the liquid delivery channel.

[0051] From the above description, it can be learned that the first storage unit and the second storage unit are moved simultaneously so that the first liquid delivery channel and the second liquid delivery channel are opened or closed. In other examples, one switch component can be provided in the first liquid delivery channel and the second liquid delivery channel to open or close the first liquid delivery channel and the second liquid delivery channel. For example: a moving component is provided between the connecting member 16 and the oil tank shell 18. The outer housing 12 is provided thereon with an operating portion through which the moving component can be controlled to open or close the liquid delivery channel. It is easily conceivable and also feasible that the two moving components are arranged to open or close the first liquid delivery channel and the second liquid delivery channel, respectively.

[0052] From the above description, it can be learned that when the first storage unit and the second storage unit are moved simultaneously, one of the first liquid de-

livery channel and the second liquid delivery channel is open, and the other of the first liquid delivery channel and the second liquid delivery channel is closed. In other examples, the first liquid delivery channel and the second liquid delivery channel are configured to be able to be closed simultaneously. For example: initially, both the first liquid delivery channel and the second liquid delivery channel are both in the closed state. When the first liquid in the first storage unit needs to be used, the first storage unit and the second storage unit are moved simultaneously. When the first liquid delivery channel is opened, the second liquid delivery channel is still in the closed state. After the first liquid in the first storage unit is used up, the first storage unit and the second storage unit are moved simultaneously. The second liquid delivery channel is opened. The first liquid delivery channel is closed. After the first storage unit and the second storage unit are moved simultaneously again, the first liquid delivery channel and the second liquid delivery channel are both closed.

[0053] From the above description, it can be learned that the common liquid delivery channel is in a normally open state. The first liquid delivery channel is also in an open state. The moving travel of the first storage unit has a position for opening the first liquid delivery channel (e.g., rotating for a second time by 180° counterclockwise or clockwise), and a position for closing the first liquid delivery channel (e.g., rotating for a first time by 180° counterclockwise or clockwise). The moving travel of the second storage unit has a position for opening the second liquid delivery channel (e.g., rotating for a first time by 180° counterclockwise or clockwise), and a position for closing the second liquid delivery channel (e.g., rotating for a second time by 180° counterclockwise or clockwise). In other examples, it is also feasible for the first liquid delivery channel to be in the normally open state. In this case, the second storage unit can be only moved so that the second liquid delivery channel can be opened or closed.

[0054] From the above description, it can be learned that the first storage unit and the second storage unit are moved simultaneously. In other examples, the first storage unit and the second storage unit are not moved. It is also feasible to move the buffer unit. Alternatively, it is feasible that the vaporization unit 20 is moved.

[0055] The battery 22 provides power to the electronic vaporization device 10. The battery 22 can be a disposable battery. The capacity of the battery 22 needs to be designed to be sufficient to meet the needs of the heating and vaporization of the first liquid and the second liquid. In other examples, the battery 22 can also be a rechargeable battery.

[0056] The fixing member 23 is fixed to the bottom base 25. The fixing member 23 is configured to fix the airflow sensor 24. Referring back to FIG. 1, the bottom base 25 has an air inlet 251. The airflow flows into and through the airflow sensor 24 through the air inlet 251. The airflow sensor 24 can sense and feed sensing signals to a circuit

board (not shown), thus in turn controlling the heating of the vaporization unit 20.

[0057] FIG. 1 to FIG. 7 are described with two storage units as an example. It is also mentioned in the preceding text that it is feasible to set more than two storage units. For better understanding, the following is described in conjunction with FIG. 8.

[0058] As shown in FIG. 8, the electronic vaporization device 10 includes four storage units a, b, c, and d. All of the four storage units are arranged around the airflow channel f. The specific structures of the storage unit and the airflow channel can be referred in the foregoing contents. In this example, the four storage units are all independent of each other. Each of the storage units is fluidly communicated with the vaporization unit through at least one of the liquid delivery channels. For ease of description, each of the storage units a1, b1, c1, and d1 is fluidly communicated with the vaporization unit through one liquid delivery channel. Similar to the foregoing, the four liquid delivery channels deliver the liquid to the vaporization unit at different times and can be opened or closed in an expected or predetermined manner. For example: the storage units a1, b1, c1, and d1 are opened in the order of a1, b1, c1, and d1. Alternatively, the storage unit a1 is first opened. The storage unit b1 is then opened. The storage units c1 and d1 are opened simultaneously. Alternatively, the storage units a1 and b1 are opened simultaneously, and then the storage units c1 and d1 are opened simultaneously. Alternatively, the storage unit a1 is first opened, and then the storage units b1, c1, and d1 are opened simultaneously.

[0059] Referring to FIG. 9, unlike embodiments of FIG. 1 to FIG. 7,

in this example, the electronic vaporization device 10 only includes an oil tank shell 214 and an oil tank shell 215. The upper pipe 26 is integrally formed with the oil tank shell 214. The first storage unit is formed among the oil tank cover 13, the inner surface of the oil tank shell 214, and the liquid outlet of the oil tank shell 214 for storing the first liquid. A second storage unit is formed among the connecting member 16, the inner surface of the oil tank shell 215, the outer surface of the lower pipe 27, and the sealing member 19 for storing the second fluid.

[0060] In this example, the first liquid stored in the first storage unit flows into the second storage unit through the liquid outlet of the oil tank shell 214, the liquid through hole 175, and the liquid through hole 165, and in turn flows into the vaporization unit 20 through the liquid inlet of the lower pipe 27, thereby forming the first liquid delivery channel (shown in B and C of the figure). The second liquid stored in the second storage unit flows into the vaporization unit 20 through the liquid inlet of the lower pipe 27, thus forming the second liquid delivery channel (shown in C in the figure). That is, the second liquid delivery channel is a part of the first liquid delivery channel.

[0061] In this example, the oil tank shell 215 is fixed, and the second liquid delivery channel is in the normally open state. The first storage unit can rotate about the

length direction of the electronic vaporization device 10 (in the direction shown by the dashed arrow A in the figure). The moving travel of the first storage unit can have a position for opening the first liquid delivery channel (rotating by 180° counterclockwise or clockwise) and a position for closing the first liquid delivery channel (rotating by 180° counterclockwise or clockwise). In use, the second liquid delivery channel is first in an open state. The first liquid delivery channel is opened after the second liquid stored in the second storage unit is used up. FIG. 8 shows a situation after the first liquid delivery channel is opened.

[0062] Referring to FIG. 10, unlike the embodiment of FIG. 9,

the electronic vaporization device 10 includes an oil tank shell 314, an oil tank shell 315, a first connecting member 3161, a second connecting member 3162, a first sealing member 3171, and a second sealing member 3172. The oil tank shell 314 is connected to the oil tank shell 315 via the first connecting member 3161 and the second connecting member 3162. One end of the first connecting member 3161 is inserted in the second connecting member 3162. A gap between the first connecting member 3161 and the oil tank shell 314 is sealed with the first sealing member 3171. A gap between the first connecting member 3161 and the second connecting member 3162 is sealed with the second sealing member 3172.

[0063] The suction nozzle 11, the upper pipe 26, and the oil tank shell 314 are integrally formed. The first storage unit is formed between the inner surface of the oil tank shell 314 and the liquid outlet of the oil tank shell 214 for storing the first liquid. A second storage unit is formed among the connecting member 3162, the inner surface of the oil tank shell 315, the outer surface of the lower pipe 27, and the sealing member 19 for storing the second fluid.

[0064] After assembled, the first sealing member 3171, the second connecting member 3162, and the oil tank shell 315 are fixed. The oil tank shell 314, the first sealing member 3171, and the first connecting member 3161 are moved up and down, i.e., moved along the length direction of the electronic vaporization device 10. When the first connecting member 3161 is moved downward a certain distance, an oil guide hole provided on the side wall of the first connecting member 3161 is fluidly communicated with the second storage unit that stores the second liquid. FIG. 9 shows a situation when the first liquid delivery channel is not opened.

[0065] To be sure, a preferred embodiment of this application is given in the specification of this application and the accompanying drawings. However, this application can be implemented in many different forms and is not limited to the embodiments described in this specification. These embodiments are not intended as additional limitations to the content of this application and are provided for the objective of providing a more thorough and comprehensive understanding of the disclosure of this application. Moreover, the foregoing technical fea-

tures are further combined to form various embodiments not listed above, and all such embodiments shall be construed as falling within the scope of this application. Further, for a person skilled in the art, improvements or transformations can be made in accordance with the above description, and all such improvements and transformations shall fall within the scope of protection of the claims appended to this application.

Claims

1. An electronic vaporization device, comprising:

a first storage unit, configured to store a first liquid;
a second storage unit, configured to store a second liquid;
a vaporization unit, configured to vaporize the liquid to produce an aerosol for a user to inhale;
a first liquid delivery channel, which is fluidly communicated with the first storage unit and the vaporization unit to accordingly deliver the first liquid to the vaporization unit;
a second liquid delivery channel, which is fluidly communicated with the second storage unit and the vaporization unit to accordingly deliver the second liquid to the vaporization unit;
the first liquid delivery channel and the second liquid delivery channel being configured to deliver the corresponding liquid to the vaporization unit at different times.

2. The electronic vaporization device of claim 1, wherein the first storage unit and the second storage unit are independent of each other so that the first liquid is not delivered to the second storage unit, and the second liquid is not delivered to the first storage unit.

3. The electronic vaporization device of claim 2, wherein the first liquid delivery channel and the second liquid delivery channel are independent of each other so that the first liquid is not delivered through the second liquid delivery channel, and the second liquid is not delivered through the first liquid delivery channel.

4. The electronic vaporization device of claim 2, wherein the first liquid delivery channel and the second liquid delivery channel are partially shared so that the first liquid or the second liquid are delivered through a shared portion of the liquid delivery channel.

5. The electronic vaporization device of any one of claims 2 to 4, wherein the first liquid delivery channel and the second liquid delivery channel are opened or closed in an expected or predetermined manner.

6. The electronic vaporization device of claim 5, wherein the first storage unit and the second storage unit are configured to be moved simultaneously to open or close the liquid delivery channel.
7. The electronic vaporization device of claim 6, wherein the first storage unit and the second storage unit are configured to rotate about a length direction of the electronic vaporization device.
8. The electronic vaporization device of claim 5, wherein at least a part of the first liquid delivery channel and at least a part of the second liquid delivery channel are configured to be moved simultaneously to open or close the liquid delivery channel.
9. The electronic vaporization device of claim 5, wherein the electronic vaporization device further comprises a switch component configured to open or close the liquid delivery channel.
10. The electronic vaporization device of any one of claims 5 to 8, wherein the first liquid delivery channel and the second liquid delivery channel are configured to be able to be closed simultaneously.
11. The electronic vaporization device of claim 5, wherein the first liquid delivery channel is configured to be in a normally open state.
12. The electronic vaporization device of claim 10, wherein the second storage unit is configured to be moved to open or close the second liquid delivery channel.
13. The electronic vaporization device of any one of claims 2 to 12, wherein the electronic vaporization device further comprises a buffer unit, and the first liquid or the second liquid is delivered to the vaporization unit through the buffer unit.
14. The electronic vaporization device of claim 13, wherein the vaporization unit is placed at least partially in the buffer unit.
15. The electronic vaporization device of claim 1, wherein the first storage unit and the second storage unit are fluidly communicated with each other; the first liquid can be delivered to the second storage unit and to the vaporization unit through the second liquid delivery channel, forming the first liquid delivery channel, wherein the first liquid delivery channel is opened in order after the second liquid delivery channel.
16. The electronic vaporization device of claim 15, wherein the second liquid delivery channel is configured to be in a normally open state.
17. The electronic vaporization device of claim 16, wherein the first storage unit is configured to be moved to open or close the first liquid delivery channel.
18. The electronic vaporization device of claim 17, wherein the first storage unit is configured to rotate about the length direction of the electronic vaporization device.
19. The electronic vaporization device of claim 17, wherein the first storage unit is configured to be moved up and down along the length direction of the electronic vaporization device.
20. The electronic vaporization device of any one of claims 1 to 19, wherein the electronic vaporization device further comprises an outer housing; the outer housing has at least one visual window through which the user can observe the amount of the liquid stored in the first storage unit and/or the second storage unit.

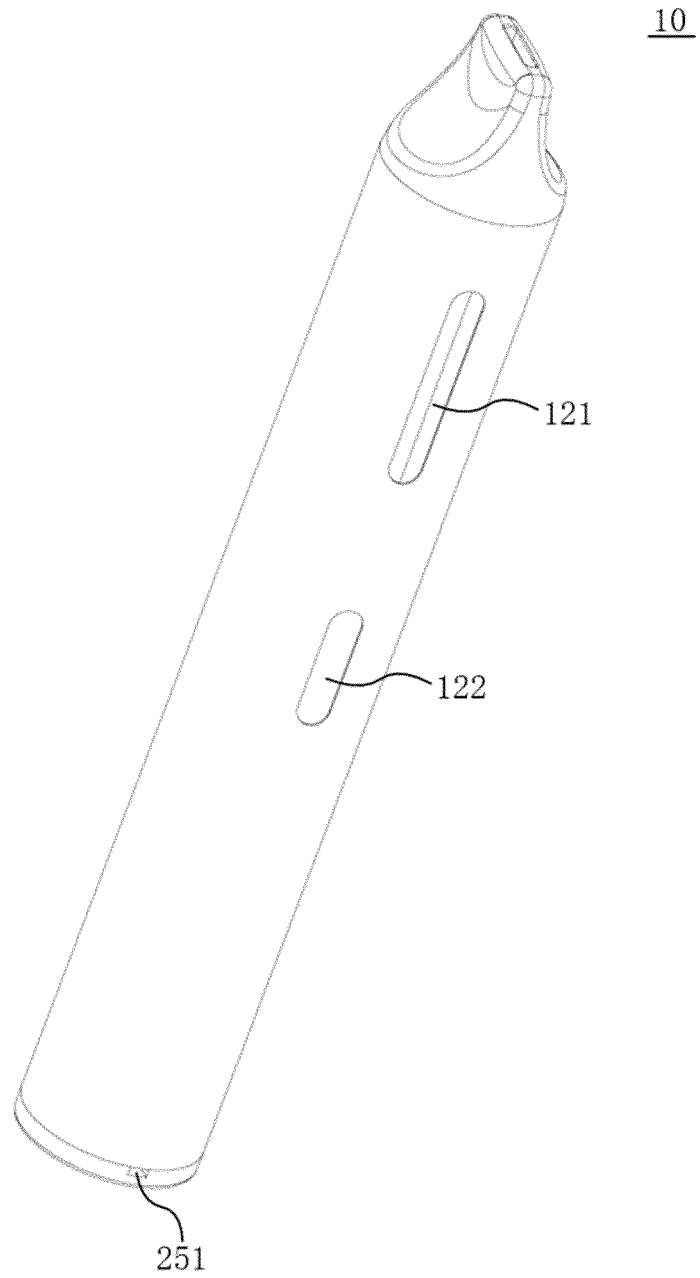


FIG. 1

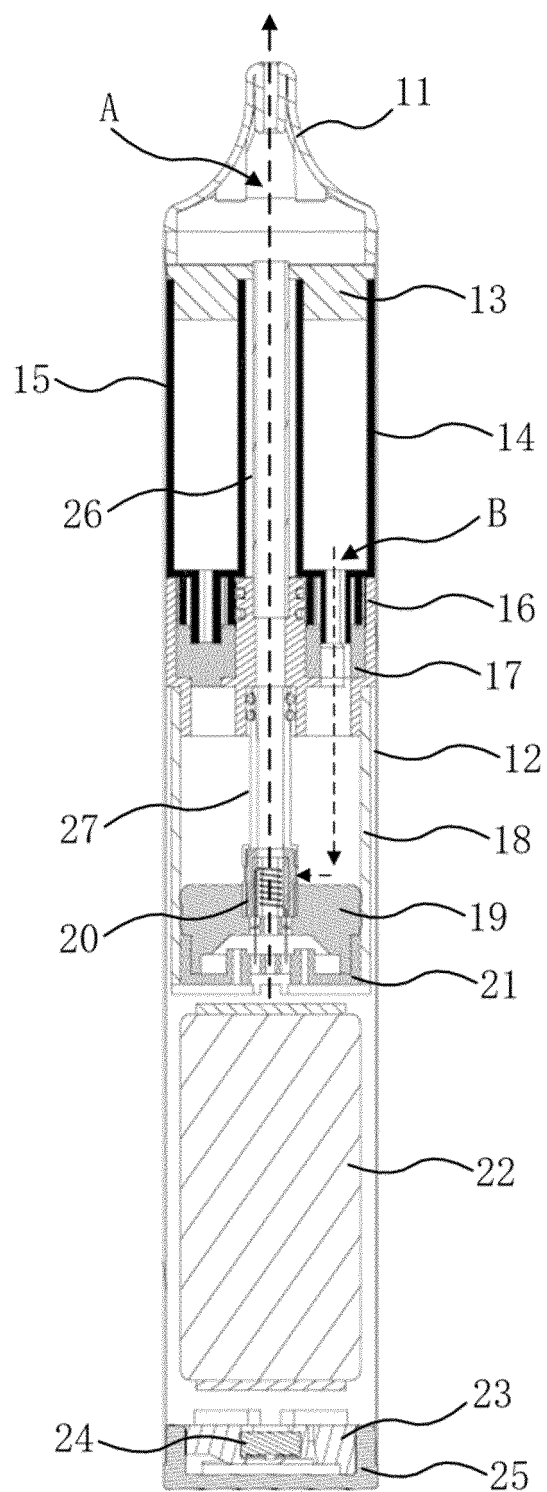


FIG. 2

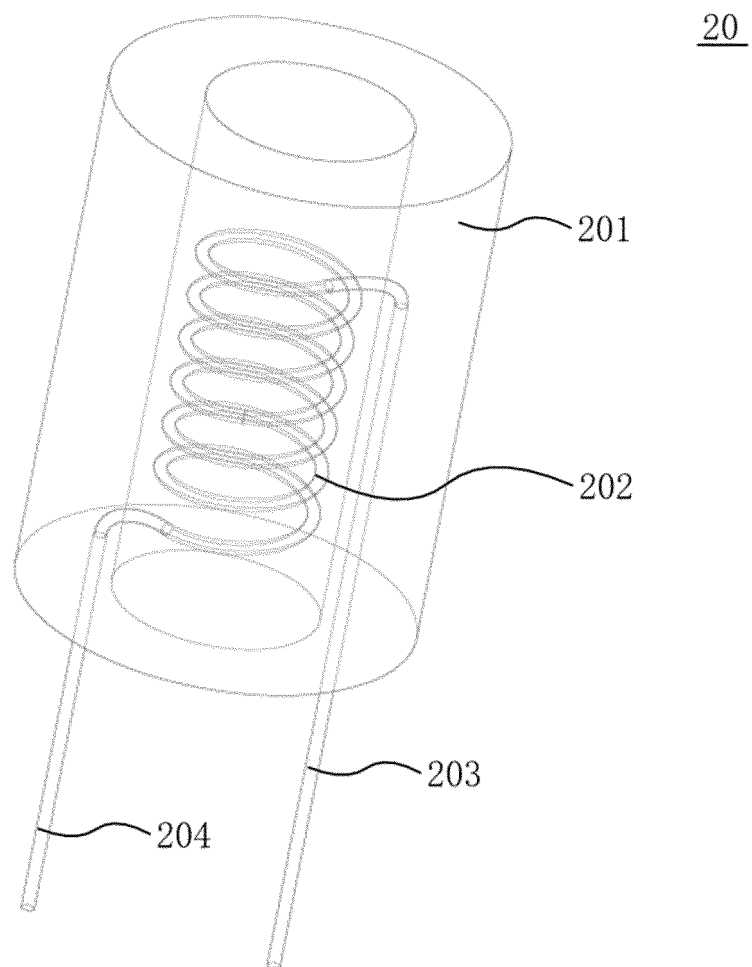


FIG. 3

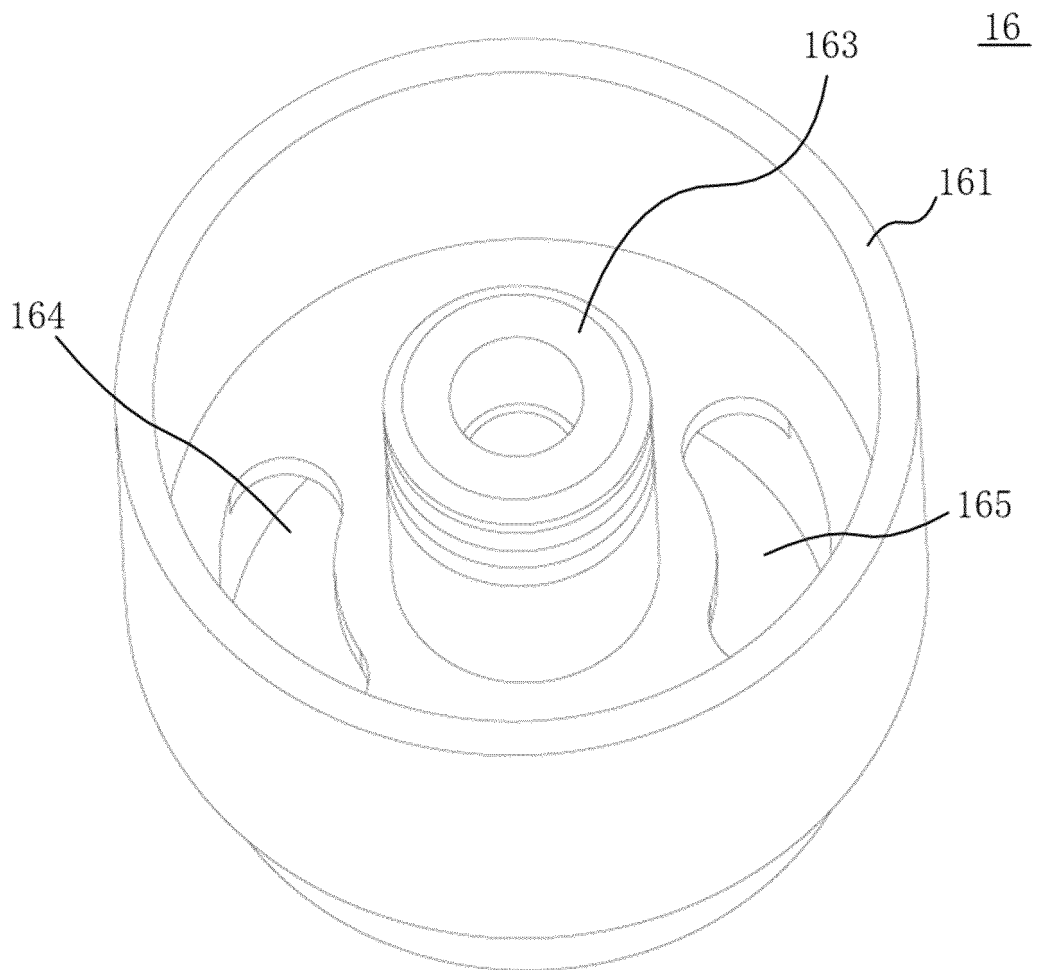


FIG. 4

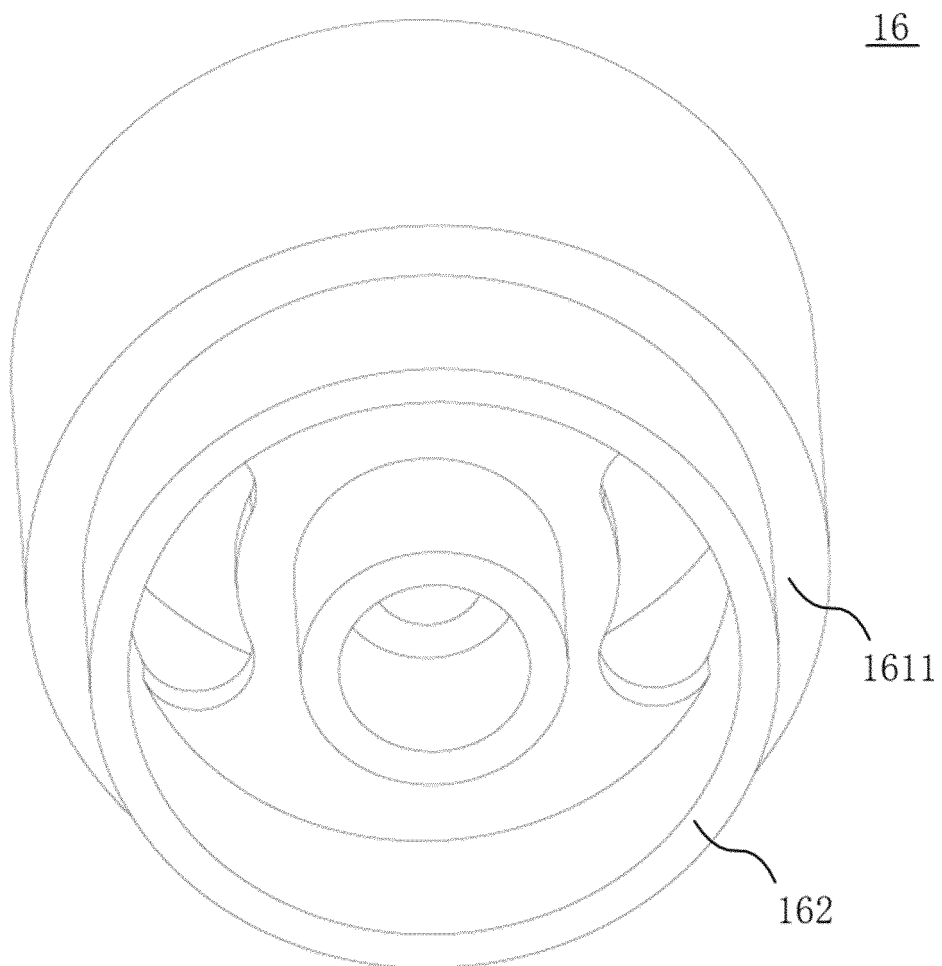


FIG. 5

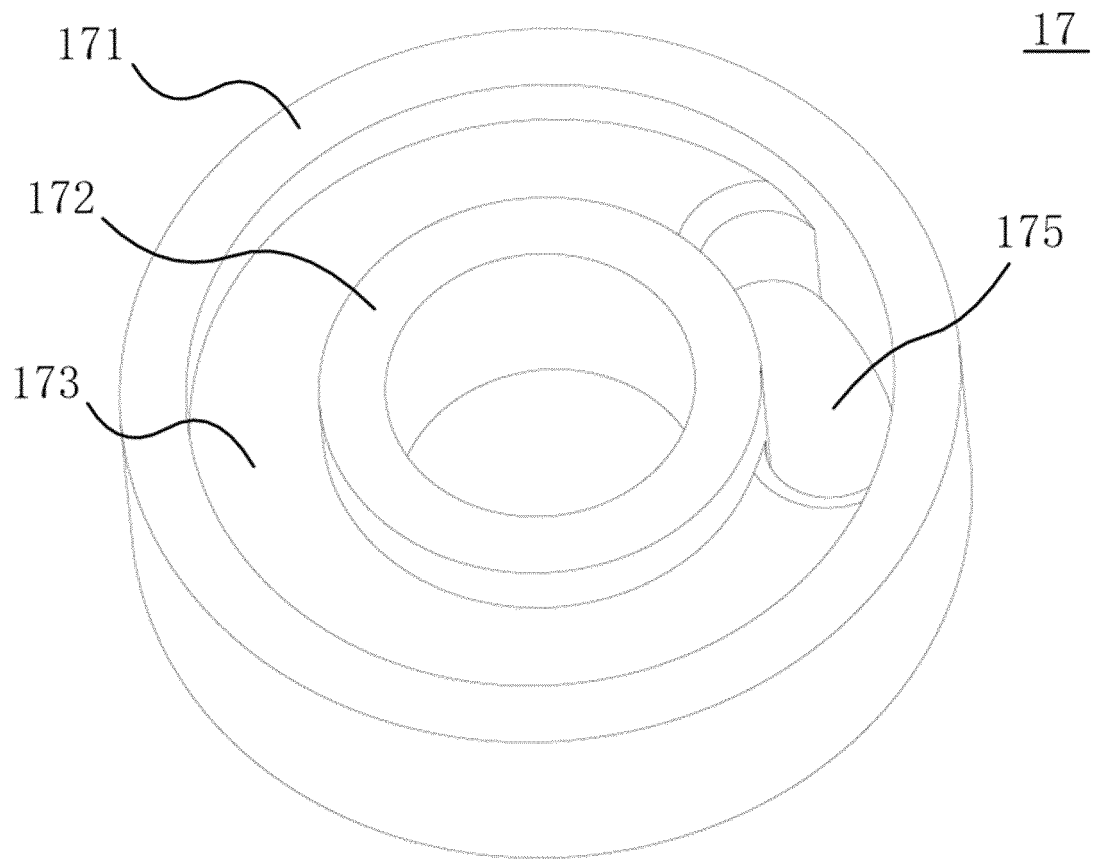


FIG. 6

17

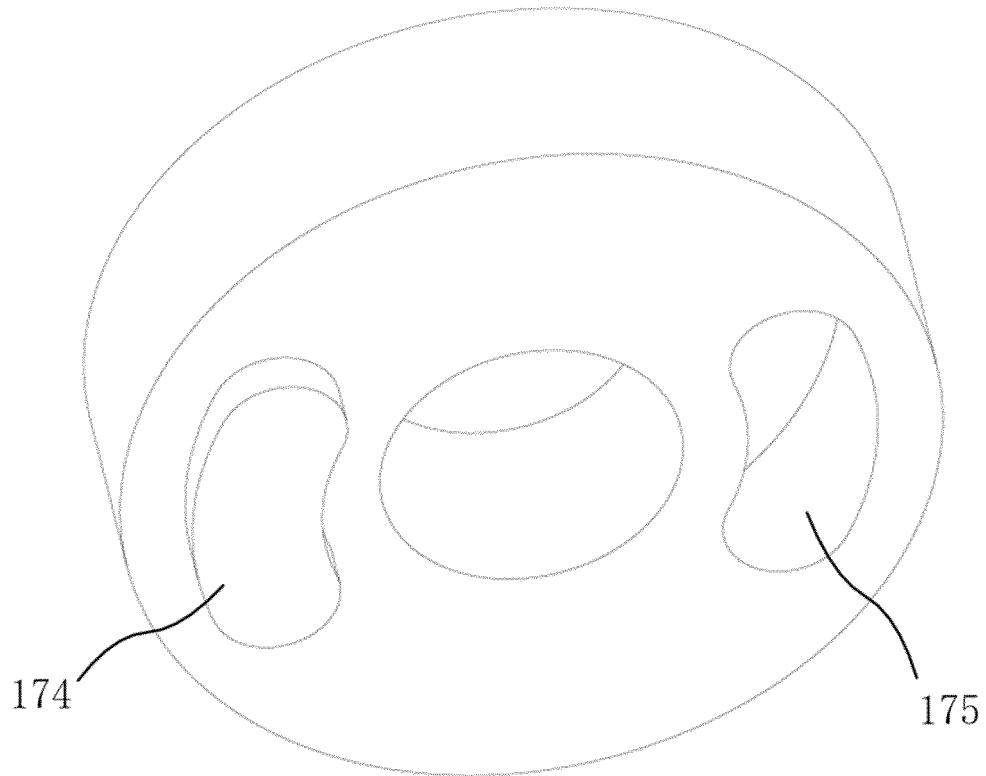


FIG. 7

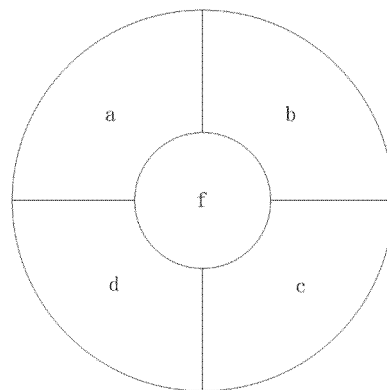


FIG. 8

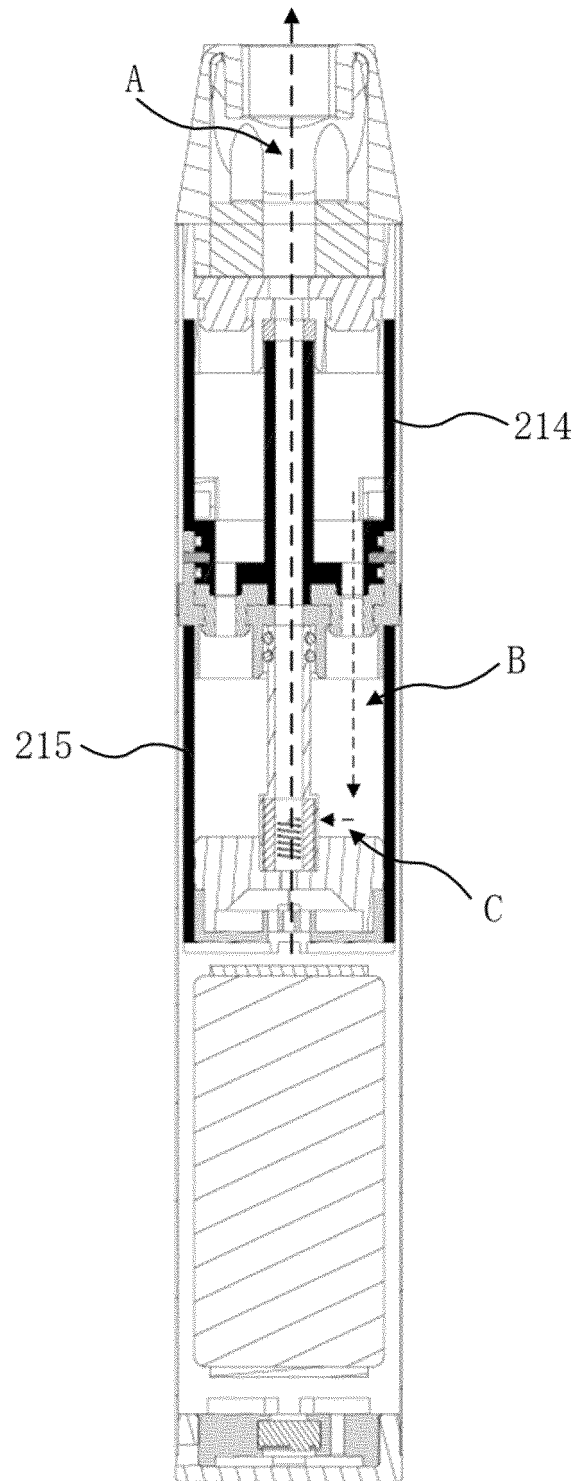


FIG. 9

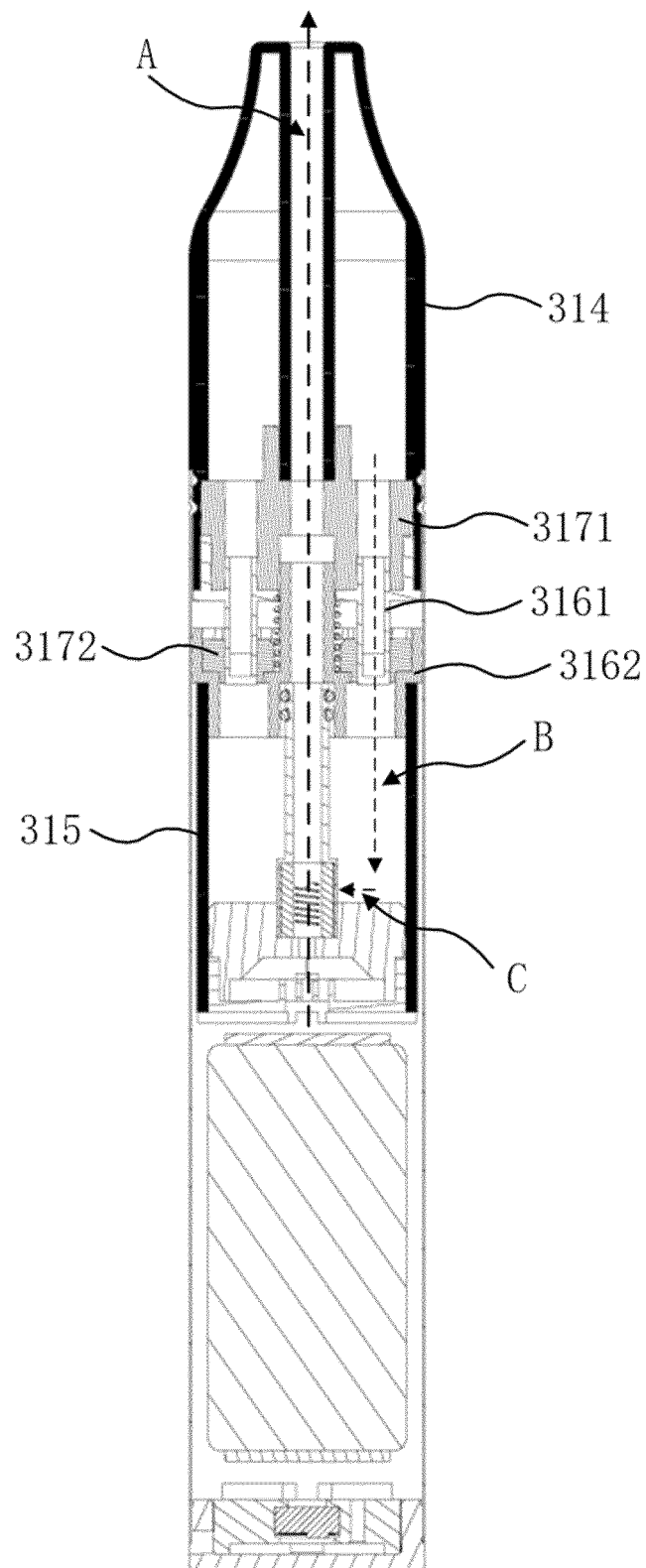


FIG. 10

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/071379

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/10(2020.01)i; A24F 40/40(2020.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A24F; A24B; H05B; A61M; H04L

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

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

CNPAT, CNKI, EPODOC, WPI: 深圳市合元科技有限公司, 电子烟, 雾化, 第一, 第二, 存储, 储液, 容器, 通道, 同时, 替换, 更换, 壳体, 外壳, 旋转, 盖, 屏蔽, 网, 通道, 孔, electronic atomization equipment, smoke, first, second, case, store, stock, coat, cover, lid, cap, channel, hole

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	CN 104540406 A (R.J. REYNOLDS TOBACCO COMPANY) 22 April 2015 (2015-04-22) description, paragraphs [0009]-[0146], and figures 1-5	1-20
X	US 2016331037 A1 (LUNATECH, L.L.C.) 17 November 2016 (2016-11-17) description, paragraphs [0006]-[0206], and figures 1-20	1-20
A	US 2018235280 A1 (FONTEM HOLDINGS 1 B.V.) 23 August 2018 (2018-08-23) entire document	1-20
A	TW 201836492 A (MICROJET TECHNOLOGY CO., LTD.) 16 October 2018 (2018-10-16) entire document	1-20
A	CN 108135284 A (FONTEM HOLDINGS 1 B.V.) 08 June 2018 (2018-06-08) entire document	1-20
A	CN 210538899 U (LIU, Yingze) 19 May 2020 (2020-05-19) entire document	1-20

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

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

“&” document member of the same patent family

Date of the actual completion of the international search

17 March 2022

Date of mailing of the international search report

06 April 2022

Name and mailing address of the ISA/CN

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Facsimile No. (86-10)62019451

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2022/071379

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