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(71) Applicant: **STANLEY BRANDS MANAGEMENT LIMITED**
SAI YING PUN (HK)

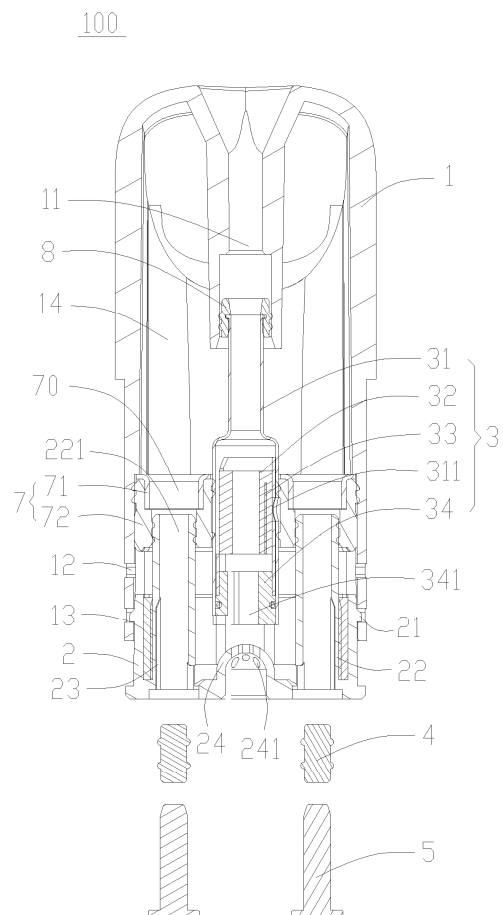
(72) Inventor: **HE, WEI**
Shenzhen, 518100 (CN)

(74) Representative: **Lin Chien, Mon-Yin**
Gloria Fuertes 1, 2° D
28342 Valdemoro Madrid (ES)

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(54) **ATOMIZER FOR SEPARATING TOBACCO LIQUID FROM ATOMIZING CORE AND ASSEMBLY METHOD THEREOF**

(57) An atomizer (100) for separating tobacco liquid from an atomizing core (3) includes an outer housing (1), a base (2), the atomizing core (3), a liquid blocking member (7), liquid injection sealing plugs (4), and conductive probes (5). The outer housing (1) is provided with a mouthpiece channel (11) and a cavity body (14). The base (2) is arranged on the outer housing (1). The base (2) is equipped with protruding columns (22). The protruding columns (22) are provided with a liquid injection channel (221). The atomizing core (3) is arranged on the base (2) or the outer housing (1). The atomizing core (3) is provided with a liquid inlet hole (311). The liquid blocking member (7) is positioned between the atomizing core (3) and an inner wall of the outer housing (1). The liquid blocking member (7) is provided with a first through hole (70) in communication with the cavity body (14). The liquid injection sealing plugs (4) are arranged in the liquid injection channel (221). The conductive probes (5) are at least partially placed in the liquid injection channel (221).



A-A

FIG. 4**EP 4 825 212 A1**

Description**TECHNICAL FIELD**

[0001] The present invention relates to the technical field of electronic cigarettes, particularly to an atomizer for separating tobacco liquid from an atomizing core and an assembly method thereof.

BACKGROUND ART

[0002] As is well known, electronic cigarettes generally include a main unit and a cartridge detachably connected to the main unit. The main unit is generally equipped with a circuit board, a battery, and other structures. The cartridge is used for storing tobacco liquid and is configured with an atomizing core electrically connected to the circuit board. When the cartridge is assembled to the main unit, turning on or off of the atomizing core can be controlled via the main unit, thereby facilitating the use by a user. Specifically, in a traditional cartridge, a cavity body for storing tobacco liquid is in communication with the interior of the atomizing core. After the production of the cartridge is completed, tobacco liquid is prone to seep into the atomizing core during transportation or storage, which can easily cause the problem of tobacco liquid leaking from a mouthpiece.

SUMMARY

[0003] The main purpose of the present invention is to provide an atomizer for separating tobacco liquid from an atomizing core and an assembly method thereof, aiming to solve the problem of tobacco liquid easily seeping into the atomizing core before an existing cartridge is used by a user after leaving the factory.

[0004] In order to solve the above technical problem, a technical solution provided by the present invention is as follows.

[0005] An atomizer for separating tobacco liquid from an atomizing core includes:

an outer housing, wherein the outer housing is provided with a mouthpiece channel and a cavity body, the cavity body is used for storing tobacco liquid, and the mouthpiece channel is placed inside the cavity body;

a base, wherein the base is arranged on the outer housing, the base is equipped with protruding columns, and the protruding column is provided with a liquid injection channel for injecting liquid into the cavity body;

the atomizing core, wherein the atomizing core is arranged on the base or the outer housing, the atomizing core is provided with a liquid inlet hole,

and a part of the atomizing core is placed in the mouthpiece channel;

a liquid blocking member, wherein the liquid blocking member is arranged between the atomizing core and an inner side wall of the outer housing, the liquid blocking member is provided with a first through hole in communication with the cavity body, and the protruding column is placed inside the first through hole;

liquid injection sealing plugs, wherein the liquid injection sealing plug is arranged in the liquid injection channel; and

conductive probes, wherein the conductive probe is at least partially placed in the liquid injection channel, and the conductive probe is electrically connected to the atomizing core.

[0006] The liquid inlet hole is configured to be sealed by the liquid blocking member when the atomizing core is in a first position. The liquid inlet hole is also configured to be in communication with the cavity body when a bottom housing moves relative to the outer housing to drive the atomizing core to move from the first position to a second position.

[0007] Furthermore, the protruding column is provided with an exhaust slot in a side wall of the liquid injection channel for exhaust when the liquid injection sealing plug is installed in the liquid injection channel.

[0008] Furthermore, a height of the exhaust slot is greater than three-quarters of a height of the conductive probe. A bottom portion of the liquid injection sealing plug abuts against a top portion of the conductive probe.

[0009] Furthermore, a top surface of the exhaust slot is a guiding surface. The guiding surface is an inclined surface or an arc surface.

[0010] Furthermore, the atomizing core includes a sleeve, a bottom housing, a first liquid absorbing cotton, and a heating member. The heating member is electrically connected to the conductive probe.

[0011] The bottom housing is connected to the sleeve. The first liquid absorbing cotton is arranged inside the sleeve. The heating member is arranged inside the first liquid absorbing cotton. The liquid inlet hole is defined in the sleeve. The liquid inlet hole corresponds to a position of the first liquid absorbing cotton. A top portion of the sleeve is placed in the mouthpiece channel. A bottom portion of the sleeve is placed in the base.

[0012] The conductive probe is electrically connected to the heating member through a conductive wire. The outer housing is provided with a wire passing hole in communication with the liquid injection channel. A second through hole is defined in the bottom housing. The conductive wire passes through the second through

hole and the wire passing hole.

[0013] A first sealing ring is provided between the sleeve and a side wall of the mouthpiece channel.

[0014] Furthermore, the base is provided with a first mounting slot next to the protruding column. A bottom portion of the atomizing core is placed in the first mounting slot. A middle portion of a bottom surface of the first mounting slot arches upwards to form a guiding protrusion. The guiding protrusion is positioned at the bottom portion of the atomizing core. A cross-sectional area of the guiding protrusion gradually increases from top to bottom. An air inlet hole is defined in a middle portion of the guiding protrusion or in a position near the middle portion of the guiding protrusion.

[0015] Furthermore, the air inlet hole is honeycomb-shaped.

[0016] Furthermore, the base is also provided with second mounting slots in communication with a bottom portion of the first mounting slot. The second mounting slot is positioned next to the protruding column. A second liquid absorbing cotton is provided inside the second mounting slot.

[0017] Furthermore, a total number of the protruding columns is two, and the two protruding columns are distributed on both sides of the first mounting slot. A total number of the second mounting slots is two, and the two second mounting slots are distributed on both sides of the first mounting slot.

[0018] Furthermore, a first position limiting step is provided on the inner side wall of the outer housing. The liquid blocking member includes a sealing rubber member and a support member. The support member is made of a hard material. The first through hole penetrates through the sealing rubber member and the support member.

[0019] The support member includes a support wall placed inside the first through hole and a position limiting ring bent outward from the support wall. The position limiting ring is positioned between the liquid blocking member and the first position limiting step. A height of the support wall is less than a height of the liquid blocking member.

[0020] Furthermore, the sealing rubber member is formed with a second position limiting step on a side wall of the first through hole. A bottom portion of the support wall abuts against the second position limiting step.

[0021] Furthermore, a second sealing ring and a third sealing ring are provided between the liquid blocking member and the atomizing core. When the atomizing core is in the first position, the second sealing ring and the third sealing ring are positioned above and below the liquid inlet hole, respectively. When the atomizing core is in the second position, both the second sealing ring and the third sealing ring are positioned below the liquid inlet hole. A fourth sealing ring is arranged between the liquid blocking member and the protruding column.

[0022] Furthermore, a joint structure is provided between the base and the outer housing. The joint structure includes a first engaging block, a first engaging opening, and a second engaging opening. The first engaging opening and the second engaging opening are used in conjunction with the first engaging block. The first engaging opening is positioned above the second engaging opening. The first engaging block is placed in the first engaging opening when the atomizing core is in the first position, and the first engaging block is placed in the second engaging opening when the atomizing core is in the second position.

[0023] Furthermore, the first engaging block is arranged on an outer side wall of the bottom housing. The first engaging opening and the second engaging opening are both defined in the outer housing.

[0024] The present invention also provides an assembly method for an atomizer, applied to the atomizer described above, including the following steps:

assembling a liquid blocking member, the base, and the atomizing core onto the outer housing to form a first assembly body, wherein the atomizing core is placed in the first position;

injecting liquid into a cavity body through the liquid injection channel and a first through hole;

assembling a liquid injection sealing plug into the liquid injection channel;

organizing the conductive wire; and

assembling the conductive probe into the liquid injection channel.

[0025] The present invention has the following beneficial effects. Compared with the prior art, in the present invention, the liquid inlet hole of the atomizing core is sealed by the liquid blocking member in the first position. In this state, the tobacco liquid is separated from an inner portion of the atomizing core to prevent the tobacco liquid from entering the atomizing core during transportation of the atomizer of the present invention after leaving the factory, thus avoiding the problem of easy tobacco liquid ingestion by the user when using the atomizer, and solving the problem of tobacco liquid easily seeping into the atomizing core before an existing cartridge is used by the user after leaving the factory. Moreover, the user can press the base and the outer housing during use, so as to make the base and the outer housing move relative to each other to drive the atomizing core to move from the first position to the second position, so that the liquid inlet hole in the atomizing core is in communication with the cavity body, and the tobacco liquid enters the atomizing core through the liquid inlet hole, so that when the atomizing core is working during use, the tobacco liquid is ato-

mized for the user to inhale.

[0026] Furthermore, in the present invention, the first through hole in the liquid blocking member and the liquid injection channel in the base are configured, so that after the liquid blocking member, the base, and the atomizing core are assembled to the outer housing, tobacco liquid is injected into the cavity body through the liquid injection channel and the first through hole. Then, the liquid injection sealing plug and the conductive probe are sequentially assembled into the liquid injection channel to facilitate the injection of the tobacco liquid into the cavity body. This structure is simple and can prevent tobacco liquid leakage, making it convenient for the user to assemble and form the atomizer of the present invention, and solving the problems that an existing liquid injection structure is tedious and costs are increased.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] Implementations of the present disclosure will now be described, by way of embodiment, with reference to the attached figures. It should be understood, the drawings are shown for illustrative purpose only, for ordinary person skilled in the art, other drawings obtained from these drawings without paying creative labor by an ordinary person skilled in the art should be within scope of the present disclosure.

FIG. 1 is a perspective view of the present invention.

FIG. 2 is an exploded view of the present invention.

FIG. 3 is a top view of the present invention.

FIG. 4 is a cross-sectional view of the present invention taken along a line A-A in FIG. 3.

FIG. 5 is a cross-sectional view of the present invention taken along a line A-A in FIG. 3 with an atomizing core in a first position.

FIG. 6 is a cross-sectional view of the present invention taken along a line A-A in FIG. 3 with an atomizing core in a second position.

FIG. 7 is a cross-sectional view of a base of the present invention taken along a line A-A in FIG. 3.

FIG. 8 is a perspective view of a base of the present invention.

FIG. 9 is a perspective view of a base of the present invention from another angle of view.

FIG. 10 is a perspective view of an outer housing of the present invention.

FIG. 11 is an exploded view of an atomizing core of the present invention.

FIG. 12 is a structural diagram of a sealing rubble member of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0028] It will be appreciated that for simplicity and clarity of illustration, where appropriate, reference numerals have been repeated among the different figures to indicate corresponding or analogous elements. In addition, numerous specific details are set forth in order to provide a thorough understanding of the exemplary embodiments described herein. However, it will be understood by those of ordinary skill in the art that the exemplary embodiments described herein may be practiced without these specific details. In other instances, methods, procedures, and components have not been described in detail so as not to obscure the related relevant feature being described. Also, the description is not to be considered as limiting the scope of the exemplary embodiments described herein. The drawings are not necessarily to scale and the proportions of certain parts may be exaggerated to better illustrate details and features of the present disclosure.

[0029] The term "comprising" when utilized, means "including, but not necessarily limited to"; it specifically indicates open-ended inclusion or membership in the so-described combination, group, series, and the like. The disclosure is illustrated by way of example and not by way of limitation in the figures of the accompanying drawings in which like references indicate similar elements. It should be noted that references to "an" or "one" embodiment in this disclosure are not necessarily to the same embodiment, and such references can mean "at least one". In addition, the terms "first" and "second" are used for descriptive purposes only and cannot be understood as indicating or implying relative importance or implying the number of indicated technical features. Thus, the features defined as "first" and "second" may explicitly or implicitly include one or more of the features. In the description of embodiments of the application, "a plurality of" means two or more, unless otherwise specifically defined.

[0030] FIGS. 1-12 show an atomizer 100 for separating tobacco liquid from an atomizing core in an embodiment of the present invention.

[0031] The atomizer 100 includes an outer housing 1, a base 2, the atomizing core 3, a liquid blocking member 7, liquid injection sealing plugs 4, and conductive probes 5. The outer housing 1 is provided with a mouthpiece channel 11 and a cavity body 14. The cavity body 14 is used for storing tobacco liquid. The mouthpiece channel 11 is placed inside the cavity body 14. The base 2 is arranged on the outer housing 1. The base 2 is equipped with protruding columns 22. The protruding column 22 is provided with a liquid injection

channel 221 for injecting liquid into the cavity body 14. The atomizing core 3 is arranged on the base 2 or the outer housing 1. The atomizing core 3 is provided with a liquid inlet hole 311. A part of the atomizing core 3 is placed in the mouthpiece channel 11. The liquid blocking member 7 is positioned between the atomizing core 3 and an inner side wall of the outer housing 1. The liquid blocking member 7 is provided with a first through hole 70 in communication with the cavity body 14. The protruding column 22 is placed inside the first through hole 70. The liquid injection sealing plug 4 is arranged in the liquid injection channel 221. The conductive probe 5 is at least partially placed in the liquid injection channel 221. The conductive probe 5 is electrically connected to the atomizing core 3. The liquid inlet hole 311 is configured to be sealed by the liquid blocking member 7 when the atomizing core 3 is in a first position. The liquid inlet hole 311 is also configured to be in communication with the cavity body 14 when a bottom housing 34 moves relative to the outer housing 1 to drive the atomizing core 3 to move from the first position to a second position.

[0032] In the present invention, the liquid inlet hole 311 of the atomizing core 3 is sealed by the liquid blocking member 7 in the first position. In this state, the tobacco liquid is separated from an inner portion of the atomizing core 3 to prevent the tobacco liquid from entering the atomizing core 3 during transportation of the atomizer 100 of the present invention after leaving the factory, thus avoiding the problem of easy tobacco liquid ingestion by a user when using the atomizer 100, and solving the problem of tobacco liquid easily seeping into the atomizing core 3 before an existing cartridge is used by the user after leaving the factory. Moreover, the user can press the base 2 and the outer housing 1 during use, so as to make the base 2 and the outer housing 1 move relative to each other to drive the atomizing core 3 to move from the first position to the second position, so that the liquid inlet hole 311 in the atomizing core 3 is in communication with the cavity body 14, and the tobacco liquid enters the atomizing core 3 through the liquid inlet hole 311, so that when the atomizing core 3 is working during use, the tobacco liquid can be atomized for the user to inhale.

[0033] Furthermore, in the present invention, the first through hole 70 in the liquid blocking member 7 and the liquid injection channel 221 in the base 2 are configured, so that after the liquid blocking member 7, the base 2, and the atomizing core 3 are assembled to the outer housing 1, tobacco liquid is injected into the cavity body 14 through the liquid injection channel 221 and the first through hole 70. Then, the liquid injection sealing plug 4 and the conductive probe 5 are sequentially assembled into the liquid injection channel 221 to facilitate the injection of the tobacco liquid into the cavity body 14. This structure is simple and can prevent tobacco liquid leakage, making it convenient for the user to assemble and form the atomizer 100 of the present

invention, and solving the problems that an existing liquid injection structure is tedious and costs are increased.

[0034] In one embodiment, the protruding column 22 is provided with an exhaust slot 23 in a side wall of the liquid injection channel 221 for exhaust. By using the exhaust slot 23, after the cavity body 14 is injected with tobacco liquid, it is convenient to assemble the liquid injection sealing plug 4 and the conductive probe 5 into the liquid injection channel 221, and the problem of excessive pressure in the cavity body 14 causing liquid leakage when the liquid injection sealing plug 4 is assembled can also be avoided, so as to play an exhaust role when the liquid injection sealing plug 4 is installed in the liquid injection channel 221.

[0035] Specifically, the liquid injection sealing plug 4 is made of a soft rubber material, so as to be placed inside the liquid injection channel 221 to seal the cavity body 14 and prevent the leakage of tobacco liquid.

[0036] In one embodiment, a height of the exhaust slot 23 is greater than three-quarters of a height of the conductive probe 5. It should be understood that the exhaust slot 23 is slightly positioned below the liquid injection sealing plug 4 for effective exhaust. Of course, in other embodiments, under the sealing effect of the liquid injection sealing plug 4 on the cavity body 14, a top portion of the exhaust slot 23 can also extend to be opposite to a side wall of the liquid injection sealing plug 4.

[0037] In one embodiment, a top surface of the exhaust slot 23 is a guiding surface 231. By using the guiding surface 231, a guiding effect can be achieved when the liquid injection sealing plug 4 is assembled to a position close to a top portion of the liquid injection channel 221, thereby facilitating the installation of the liquid injection sealing plug 4. Specifically, the guiding surface 231 can be an inclined surface or an arc surface, or a combination of an inclined surface and an arc surface.

[0038] In one embodiment, the atomizing core 3 includes a sleeve 31, a bottom housing 34, a first liquid absorbing cotton 32, and a heating member 33. The heating member 33 is electrically connected to the conductive probe 5. The heating member 33 is configured for atomizing the tobacco liquid during operation. The bottom housing 34 is connected to the sleeve 31. The first liquid absorbing cotton 32 is arranged inside the sleeve 31. The heating member 33 is arranged inside the first liquid absorbing cotton 32. The liquid inlet hole 311 is defined in the sleeve 31. The liquid inlet hole 311 corresponds to a position of the first liquid absorbing cotton 32. A top portion of the sleeve 31 is placed in the mouthpiece channel 11. A bottom portion of the sleeve 31 is placed in the base 2. The conductive probe 5 is electrically connected to the heating member 33 through a conductive wire 30. The outer housing 1 is provided with a wire passing hole 27 in communication with the liquid injection channel 221. A second through

hole 341 is defined in the bottom housing 34. The conductive wire 30 passes through the second through hole 341 and the wire passing hole 27 to achieve electrical connection between the conductive probe 5 and the heating member 33. A first sealing ring 8 is provided between the sleeve 31 and a side wall of the mouthpiece channel 11 to prevent the leakage of the tobacco liquid from a gap between the sleeve 31 and the side wall of the mouthpiece channel 11.

[0039] In one embodiment, the base 2 is provided with a first mounting slot 25 next to the protruding column 22. A bottom portion of the atomizing core 3 is placed in the first mounting slot 25, that is, a bottom portion of the sleeve 31 is placed in the first mounting slot 25. A middle portion of a bottom surface of the first mounting slot 25 arches upwards to form a guiding protrusion 24. The guiding protrusion 24 is positioned at the bottom portion of the atomizing core 3. A cross-sectional area of the guiding protrusion 24 gradually increases from top to bottom. An air inlet hole 241 is defined in a middle portion of the guiding protrusion 24 or in a position near the middle portion of the guiding protrusion 24. The air inlet hole 241 is used in conjunction with a main unit, so that when the user uses the atomizer 100 of the present invention, an airflow can be inhaled by the user from the air inlet hole 241, the first through hole 70, the sleeve 31, and the mouthpiece channel 11, so that the user can inhale the atomized tobacco liquid. In addition, a middle portion of the guiding protrusion 24 protrudes, that is, the guiding protrusion 24 is higher in the middle portion and lower on both sides, so that even if the tobacco liquid leaks from an inner portion of the atomizing core 3, the tobacco liquid can flow from a higher position to a lower position, thereby preventing the tobacco liquid from leaking out of the air inlet hole 241.

[0040] Specifically, the air inlet hole 241 is honeycomb-shaped. The honeycomb-shaped air inlet hole 241 has small holes, making it difficult for tobacco liquid to leak out. Of course, in other embodiments, the air inlet hole 241 may not be honeycomb-shaped. For example, a total number of the air inlet hole 241 is one, two, etc., as long as an air inlet function can be achieved.

[0041] In one embodiment, the base 2 is also provided with second mounting slots 26 in communication with a bottom portion of the first mounting slot 25. The second mounting slot 26 is positioned next to the protruding column 22. A second liquid absorbing cotton 6 is provided inside the second mounting slot 26. Using the second liquid absorbing cotton 6 to absorb the tobacco liquid leaked from the atomizing core 3 can effectively prevent the tobacco liquid from leaking out of the base 2.

[0042] In one embodiment, a total number of the protruding columns 22 is two, and the two protruding columns 22 are distributed on both sides of the first mounting slot 25, that is, a total number of the liquid

injection channels 221 is two. A total number of the second mounting slots 26 is two, and the two second mounting slots 26 are distributed on both sides of the first mounting slot 25. Specifically, a total number of the conductive wires 30 is two, and the two conductive wires 30 are a positive electrode and a negative electrode, respectively. A total number of the conductive probes 5 is also two, and the two conductive probes 5 are respectively connected to the positive electrode and the negative electrode of the conductive wires 30. The protruding columns 22 are arranged to be two in number to adapt to the use of the two conductive probes 5.

[0043] Of course, in other embodiments, the total number of the protruding columns 22 may be one, that is, the total number of the liquid injection channel 221 is only one, and two conductive probes 5 may be spaced apart using insulation and simultaneously arranged in the liquid injection channel 221. Alternatively, in other embodiments, the total number of the protruding columns 22 may also be three, four, etc., and two conductive probes 5 may be configured to correspond to two of the liquid injection channels 221.

[0044] Specifically, the conductive probe 5 may be in interference fit with a side wall of the liquid injection channel 221 to be fixedly assembled with the base 2, or may be fixed to the base 2 by gluing and buckling.

[0045] In one embodiment, a first position limiting step 15 is provided on the inner side wall of the outer housing 1. The liquid blocking member 7 includes a sealing rubber member 72 and a support member 71. The support member 71 is made of a hard material. The first through hole 70 penetrates through the sealing rubber member 72 and the support member 71. The support member 71 includes a support wall 712 placed inside the first through hole 70 and a position limiting ring 711 bent outward from the support wall 712. The position limiting ring 711 is positioned between the liquid blocking member 7 and the first position limiting step 15. The sealing rubber member 72 is adapted to the inner side wall of the outer housing 1 to prevent tobacco liquid from leaking out of a gap between the sealing rubber member 72 and the inner side wall of the outer housing 1, thus providing a sealing effect. By using the support member 71, the sealing rubber member 72 can be supported, and the tightness between the sealing rubber member 72 and the inner side wall of the outer housing 1 can be enhanced under the support of the support member 71, so as to improve the sealing performance between the sealing rubber member 72 and the inner side wall of the outer housing 1. Moreover, by using the first position limiting step 15 to block the position limiting ring 711, an assembly position between the liquid blocking member 7 and the outer housing 1 can be limited, so that the liquid blocking member 7 can be assembled in place. A height of the support wall 712 is less than a height of the liquid blocking member 7, so that the sealing rubber member

72 can cooperate with an outer side wall of the protruding column 22, which can prevent the tobacco liquid in the cavity 14 from leaking out from a gap between a side wall of the first through hole 70 and the outer side wall of the protruding column 22, thereby playing a sealing role.

[0046] In one embodiment, the sealing rubber member 72 is formed with a second position limiting step 723 on a side wall of the first through hole 70. A bottom portion of the support wall 712 abuts against the second position limiting step 723 to better support the sealing rubber member 72.

[0047] In one embodiment, a second sealing ring 721 and a third sealing ring 722 are provided between the liquid blocking member 7 and the atomizing core 3. When the atomizing core 3 is in the first position, the second sealing ring 721 and the third sealing ring 722 are positioned above and below the liquid inlet hole 311, respectively. When the atomizing core 3 is in the second position, both the second sealing ring 721 and the third sealing ring 722 are positioned below the liquid inlet hole 311. Therefore, when the atomizing core 3 is in the first position, the cavity body 14 and the liquid inlet hole 311 are sealed, and when the atomizing core 3 is in the second position, the cavity body 14 and the liquid inlet hole 311 are in communication. A fourth sealing ring 724 is arranged between the liquid blocking member 7 and the protruding column 22.

[0048] Specifically, the liquid blocking member 7 is made of a soft rubber material. The second sealing ring 721 and the third sealing ring 722 are both formed by the liquid blocking member 7 protruding outward, that is, the second sealing ring 721, the third sealing ring 722, and the liquid blocking member 7 are integrally formed by injection molding. Of course, in other embodiments, the liquid blocking member 7 can also be made of a hard material, that is, it can be sealed with the atomizing core 3 through the cooperation of the second sealing ring 721 and the third sealing ring 722.

[0049] In one embodiment, a joint structure 20 is provided between the base 2 and the outer housing 1. The joint structure 20 includes a first engaging block 21, a first engaging opening 12, and a second engaging opening 13. The first engaging opening 12 and the second engaging opening 13 are used in conjunction with the first engaging block 21. The first engaging opening 12 is positioned above the second engaging opening 13. The first engaging block 21 is placed in the first engaging opening 12 when the atomizing core 3 is in the first position, and the first engaging block 21 is placed in the second engaging opening 13 when the atomizing core 3 is in the second position, so as to better limit a position between the base 2 and the outer housing 1 when in the first position and the second position, so that the user can better understand the need to assemble the atomizing core 3 at the first position during product assembly, and before use, the user can better understand the need to move the atomizing

core 3 to the second position, which is convenient for the user to use and avoids the atomizing core 3 from failing to move into place.

[0050] Specifically, the first engaging block 21 is arranged on an outer side wall of the bottom housing 34. The first engaging opening 12 and the second engaging opening 13 are both defined in the outer housing 1. Of course, in other embodiments, the first engaging opening 12 and the second engaging opening 13 are both positioned in the outer side wall of the bottom housing 34, and the first engaging block 21 is positioned on an inner wall of the outer housing 1.

[0051] The base 2 is provided with a magnet for easy connection and use of a main unit of an electronic cigarette. Alternatively, the connection between the outer housing 1 and the main unit can be achieved through a buckle, interference fit, etc.

[0052] Based on the structure of the atomizer 100 described above, this embodiment also provides an assembly method for the atomizer 100.

[0053] Specifically, the assembly method includes the following steps:

S1: assembling the liquid blocking member 7, the base 2, and the atomizing core 3 onto the outer housing 1 to form a first assembly body, wherein the atomizing core 3 is placed in the first position; it should be understood that in this step, other parts except the liquid injection sealing plug 4 and the conductive probe 5 are first assembled together to form the first assembly body;

S2: injecting liquid into the cavity body 14 through the liquid injection channel 221 and the first through hole 70;

S3: assembling the liquid injection sealing plug 4 into the liquid injection channel 221;

S4: organizing the conductive wire 30; and

S5: assembling the conductive probe 5 into the liquid injection channel 221.

[0054] Through the above method, it is convenient to inject tobacco liquid into the cavity body 14 and subsequently seal the cavity body 14. This method is simple, easy to operate, and convenient for the production and manufacturing of the product. Moreover, with the exhaust slot 23 that is in communication with the liquid injection channel 221, it is convenient to assemble the liquid injection sealing plug 4 and the conductive probe 5 into the liquid injection channel 221, and the problem of excessive pressure in the cavity body 14 causing liquid leakage when the liquid injection sealing plug 4 is assembled can also be avoided.

[0055] In the step of S1, the conductive wire 30 can also be welded to the conductive probe 5 first, so that

the conductive probe 5 can be directly assembled after liquid injection. Of course, in other assembly methods, after the liquid injection sealing plug 4 is assembled into the liquid injection channel 221, the conductive wire 30 can be welded to the conductive probe 5, and then the conductive probe 5 can be assembled.

[0056] The above description only describes embodiments of the present disclosure, and is not intended to limit the present disclosure; various modifications and changes can be made to the present disclosure. Any modifications, equivalent substitutions, and improvements made within the spirit and scope of the present disclosure are intended to be included within the scope of the present disclosure.

Claims

1. An atomizer (100) for separating tobacco liquid from an atomizing core (3), comprising:

an outer housing (1), **characterized in that** the outer housing (1) is provided with a mouthpiece channel (11) and a cavity body (14), the cavity body (14) is used for storing tobacco liquid, and the mouthpiece channel (11) is placed inside the cavity body (14);

a base (2), wherein the base (2) is arranged on the outer housing (1), the base (2) is equipped with protruding columns (22), and the protruding column (22) is provided with a liquid injection channel (221) for injecting liquid into the cavity body (14);

the atomizing core (3), wherein the atomizing core (3) is arranged on the base (2) or the outer housing (1), the atomizing core (3) is provided with a liquid inlet hole (311), and a part of the atomizing core (3) is placed in the mouthpiece channel (11);

a liquid blocking member (7), wherein the liquid blocking member (7) is arranged between the atomizing core (3) and an inner side wall of the outer housing (1), the liquid blocking member (7) is provided with a first through hole (70) in communication with the cavity body (14), and the protruding column (22) is placed inside the first through hole (70);

liquid injection sealing plugs (4), wherein the liquid injection sealing plug (4) is arranged in the liquid injection channel (221); and

conductive probes (5), wherein the conductive probe (5) is at least partially placed in the liquid injection channel (221), and the conductive probe (5) is electrically connected to the atomizing core (3);

wherein the liquid inlet hole (311) is configured to be sealed by the liquid blocking member (7) when the atomizing core (3) is in a first position;

and the liquid inlet hole (311) is also configured to be in communication with the cavity body (14) when a bottom housing (34) moves relative to the outer housing (1) to drive the atomizing core (3) to move from the first position to a second position.

2. The atomizer (100) according to claim 1, **characterized in that**, the protruding column (22) is provided with an exhaust slot (23) in a side wall of the liquid injection channel (221) for exhaust when the liquid injection sealing plug (4) is installed in the liquid injection channel (221).

3. The atomizer (100) according to claim 2, **characterized in that**, a height of the exhaust slot (23) is greater than three-quarters of a height of the conductive probe (5); and a bottom portion of the liquid injection sealing plug (4) abuts against a top portion of the conductive probe (5).

4. The atomizer (100) according to claim 2, **characterized in that**, a top surface of the exhaust slot (23) is a guiding surface (231); and the guiding surface (231) is an inclined surface or an arc surface.

5. The atomizer (100) according to claim 1, **characterized in that**, the atomizing core (3) comprises a sleeve (31), the bottom housing (34), a first liquid absorbing cotton (32), and a heating member (33); and the heating member (33) is electrically connected to the conductive probe (5);

the bottom housing (34) is connected to the sleeve (31); the first liquid absorbing cotton (32) is arranged inside the sleeve (31); the heating member (33) is arranged inside the first liquid absorbing cotton (32); the liquid inlet hole (311) is defined in the sleeve (31); the liquid inlet hole (311) corresponds to a position of the first liquid absorbing cotton (32); a top portion of the sleeve (31) is placed in the mouthpiece channel (11); and a bottom portion of the sleeve (31) is placed in the base (2).

the conductive probe (5) is electrically connected to the heating member (33) through a conductive wire (30); the outer housing (1) is provided with a wire passing hole (27) in communication with the liquid injection channel (221); a second through hole (341) is defined in the bottom housing (34); and the conductive wire (30) passes through the second through hole (341) and the wire passing hole (27);

a first sealing ring (8) is provided between the sleeve (31) and a side wall of the mouthpiece channel (11).

6. The atomizer (100) according to claim 1, **characterized in that**, the atomizing core (3) is provided with a liquid inlet hole (311); and the liquid inlet hole (311) is configured to be sealed by the liquid blocking member (7) when the atomizing core (3) is in a first position;

terized in that, the base (2) is provided with a first mounting slot (25) next to the protruding column (22); a bottom portion of the atomizing core (3) is placed in the first mounting slot (25); a middle portion of a bottom surface of the first mounting slot (25) arches upwards to form a guiding protrusion (24); the guiding protrusion (24) is positioned at the bottom portion of the atomizing core (3); a cross-sectional area of the guiding protrusion (24) gradually increases from top to bottom; and an air inlet hole (241) is defined in a middle portion of the guiding protrusion (24) or in a position near the middle portion of the guiding protrusion (24).

7. The atomizer (100) according to claim 6, **characterized in that**, the air inlet hole (241) is honeycomb-shaped.
8. The atomizer (100) according to claim 6, **characterized in that**, the base (2) is also provided with second mounting slots (26) in communication with a bottom portion of the first mounting slot (25); the second mounting slot (26) is positioned next to the protruding column (22); and a second liquid absorbing cotton is provided inside the second mounting slot (26).
9. The atomizer (100) according to claim 8, **characterized in that**, a total number of the protruding columns (22) is two; the two protruding columns (22) are distributed on both sides of the first mounting slot (25); a total number of the second mounting slots (26) is two; and the two second mounting slots (26) are distributed on both sides of the first mounting slot (25).
10. The atomizer (100) according to claim 1, **characterized in that**, a first position limiting step (15) is provided on the inner side wall of the outer housing (1); the liquid blocking member (7) comprises a sealing rubber member (72) and a support member (71); the support member (71) is made of a hard material; and the first through hole (70) penetrates through the sealing rubber member (72) and the support member (71); the support member (71) comprises a support wall (712) placed inside the first through hole (70) and a position limiting ring (711) bent outward from the support wall (712); the position limiting ring (711) is positioned between the liquid blocking member (7) and the first position limiting step (15); and a height of the support wall (712) is less than a height of the liquid blocking member (7).
11. The atomizer (100) according to claim 10, **characterized in that**, the sealing rubber member (72) is formed with a second position limiting step (723) on a side wall of the first through hole (70); and a

bottom portion of the support wall (712) abuts against the second position limiting step (723).

12. The atomizer (100) according to claim 1, **characterized in that**, a second sealing ring (721) and a third sealing ring (722) are provided between the liquid blocking member (7) and the atomizing core (3); when the atomizing core (3) is in the first position, the second sealing ring (721) and the third sealing ring (722) are positioned above and below the liquid inlet hole (311), respectively; when the atomizing core (3) is in the second position, both the second sealing ring (721) and the third sealing ring (722) are positioned below the liquid inlet hole (311); and a fourth sealing ring (724) is arranged between the liquid blocking member (7) and the protruding column (22).
13. The atomizer (100) according to claim 1, **characterized in that**, a joint structure (20) is provided between the base (2) and the outer housing (1); the joint structure (20) comprises a first engaging block (21), a first engaging opening (12), and a second engaging opening (13); the first engaging opening (12) and the second engaging opening (13) are used in conjunction with the first engaging block (21); the first engaging opening (12) is positioned above the second engaging opening (13); the first engaging block (21) is placed in the first engaging opening (12) when the atomizing core (3) is in the first position; and the first engaging block (21) is placed in the second engaging opening (13) when the atomizing core (3) is in the second position.
14. The atomizer (100) according to claim 13, **characterized in that**, the first engaging block (21) is arranged on an outer side wall of the bottom housing (34); and the first engaging opening (12) and the second engaging opening (13) are both defined in the outer housing (1).
15. An assembly method for the atomizer (100), applied to the atomizer (100) as claimed in claim 5, comprising the following steps:
 - assembling the liquid blocking member (7), the base (2), and the atomizing core (3) onto the outer housing (1) to form a first assembly body, wherein the atomizing core (3) is placed in the first position;
 - injecting liquid into the cavity body (14) through the liquid injection channel (221) and the first through hole (70);
 - assembling a liquid injection sealing plug (4) into the liquid injection channel (221);
 - organizing the conductive wire (30); and
 - assembling the conductive probe (5) into the

liquid injection channel (221).

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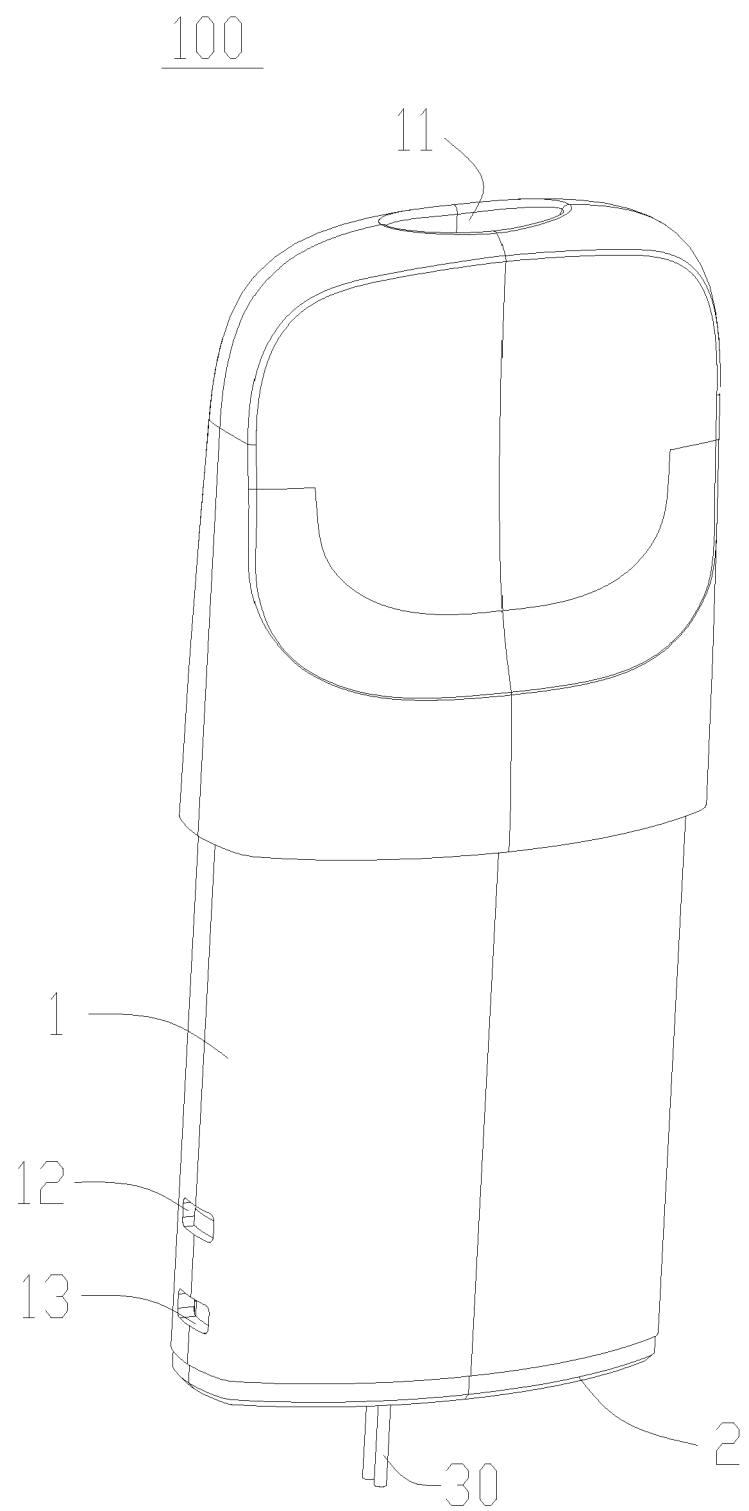


FIG. 1

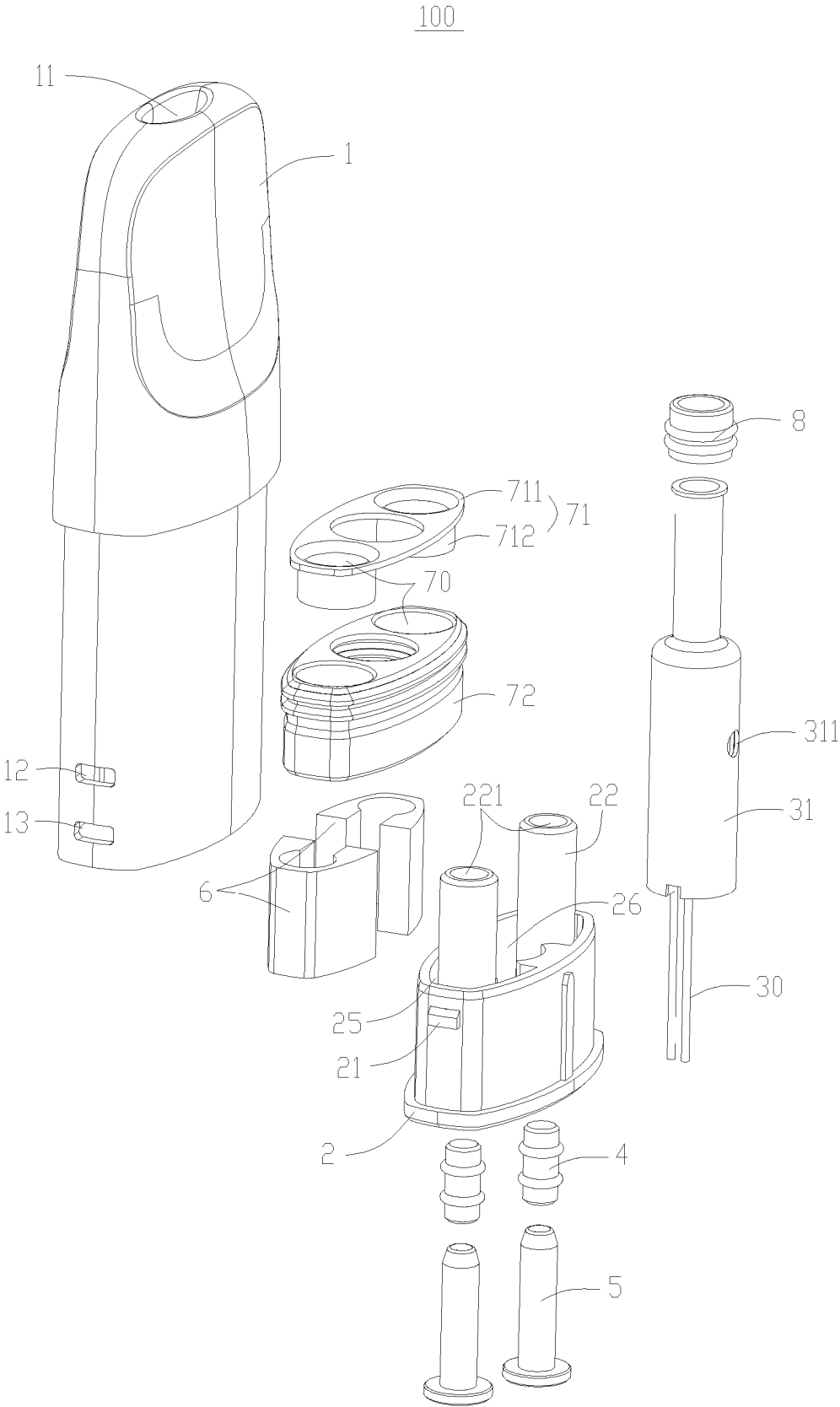


FIG. 2

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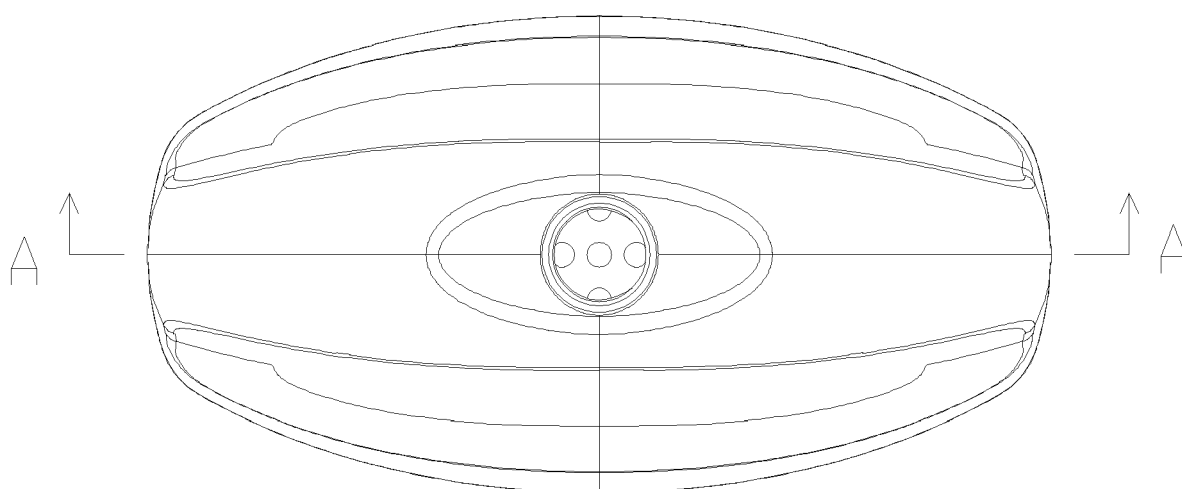
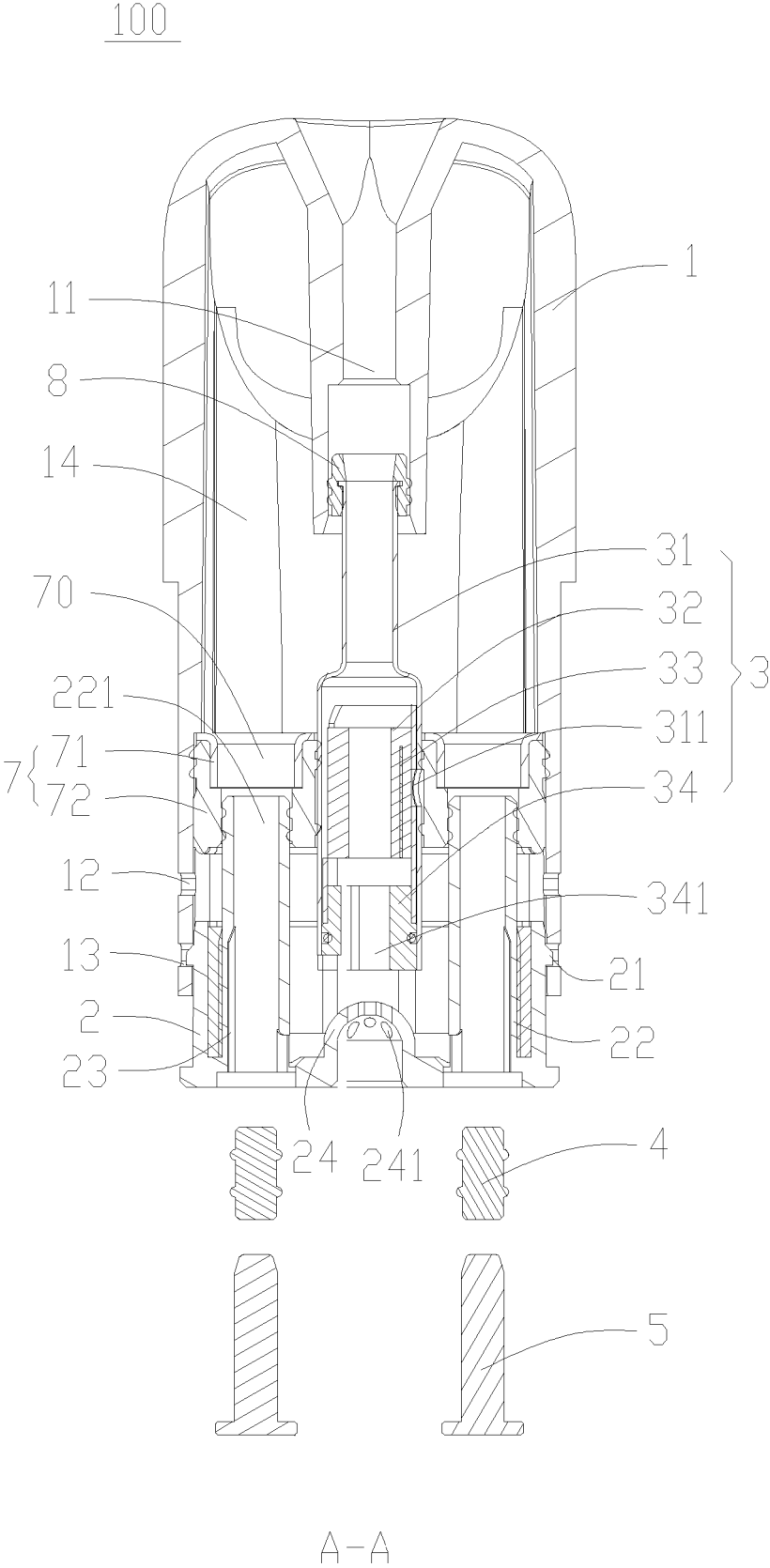
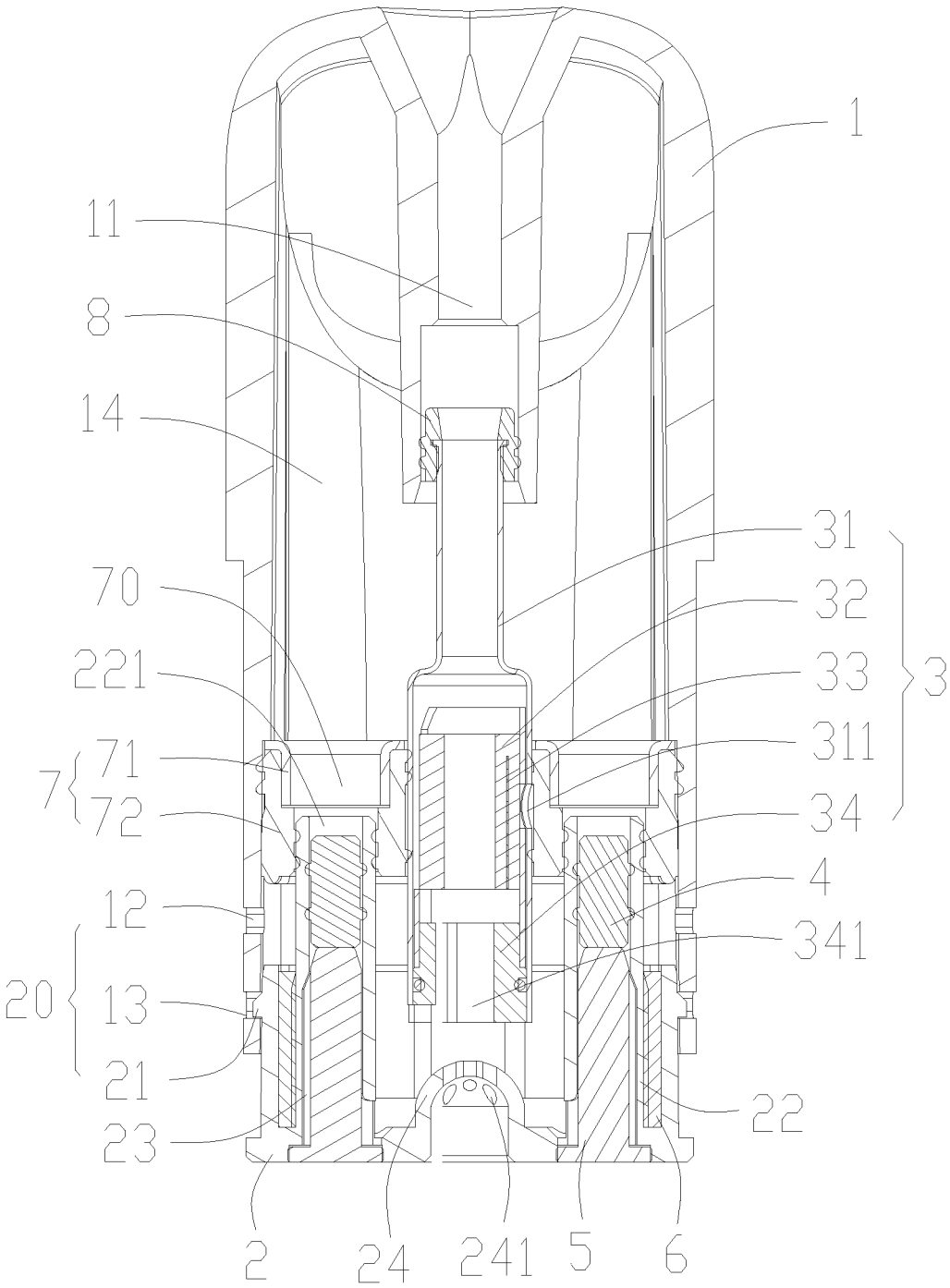


FIG. 3



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A-A

FIG. 5

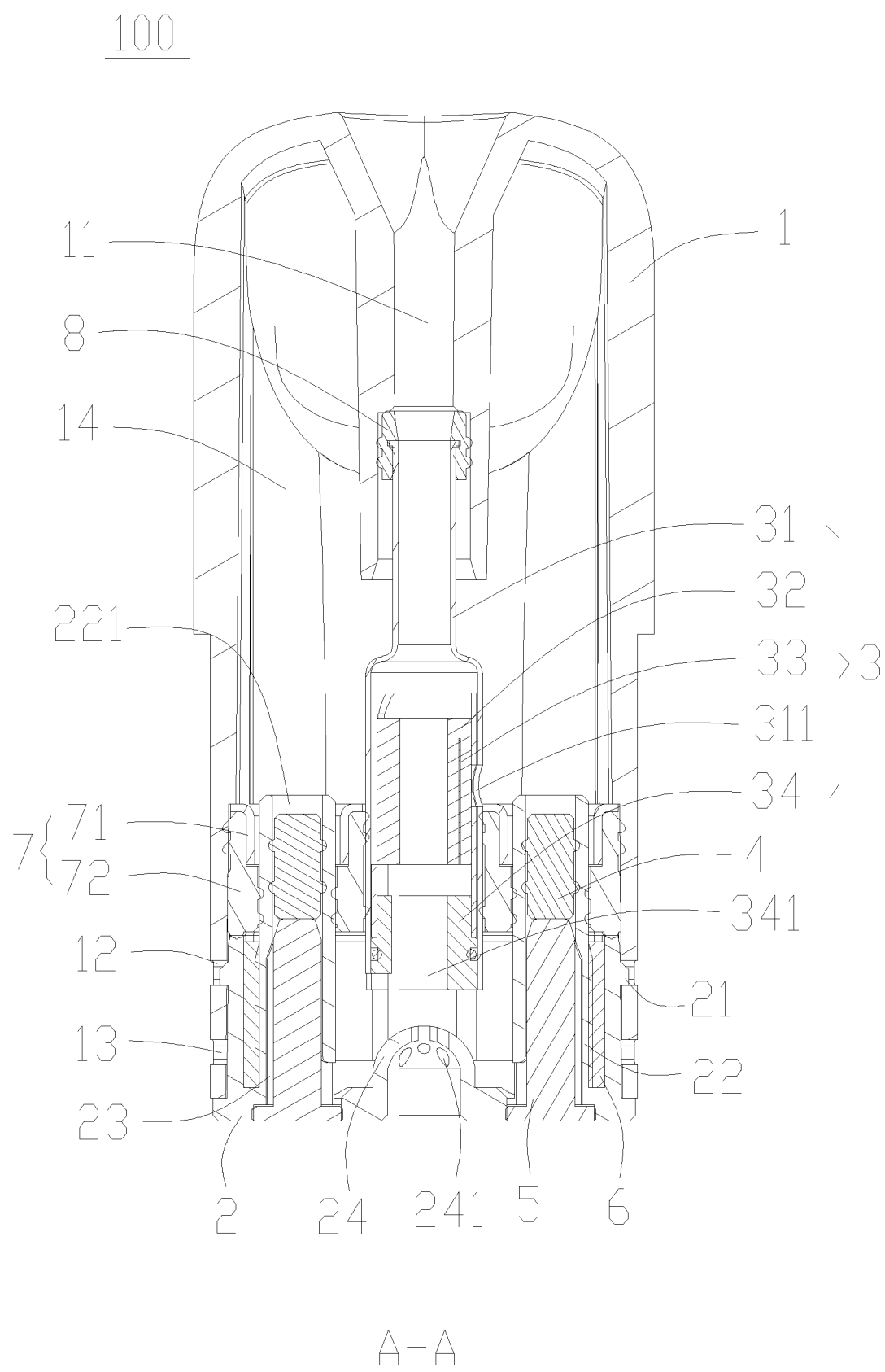
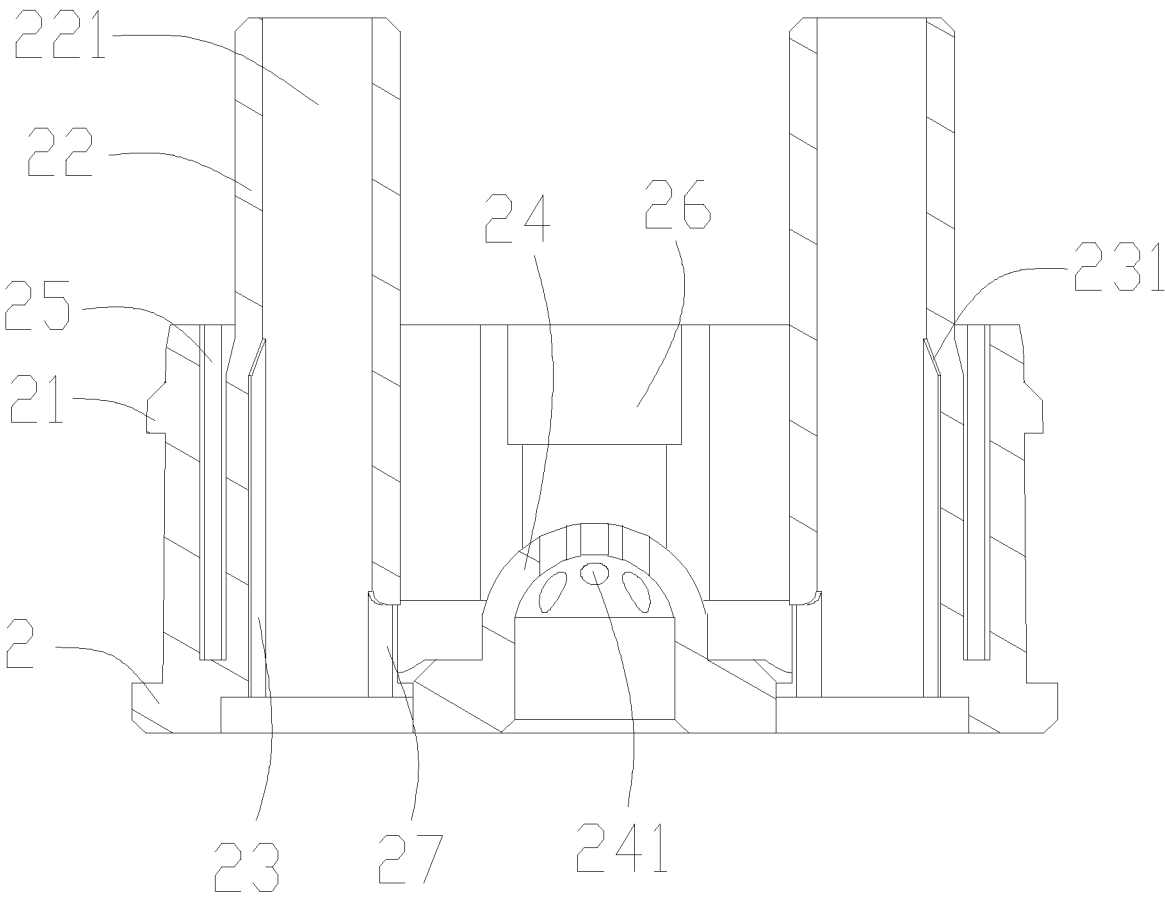


FIG. 6



A-A

FIG. 7

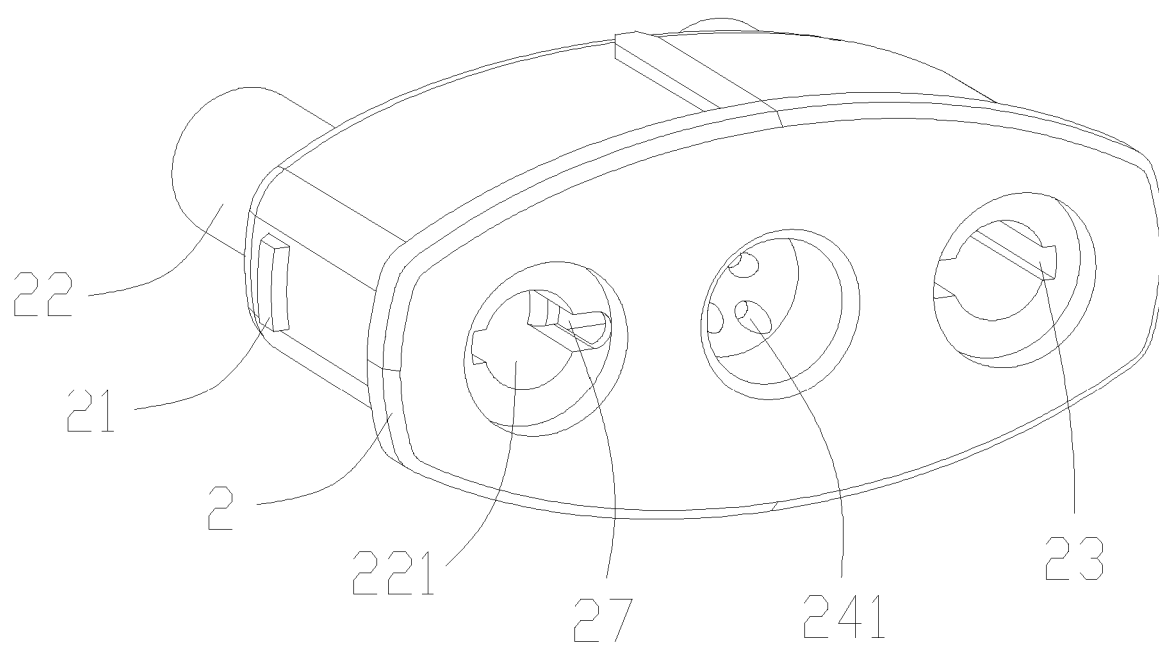


FIG. 8

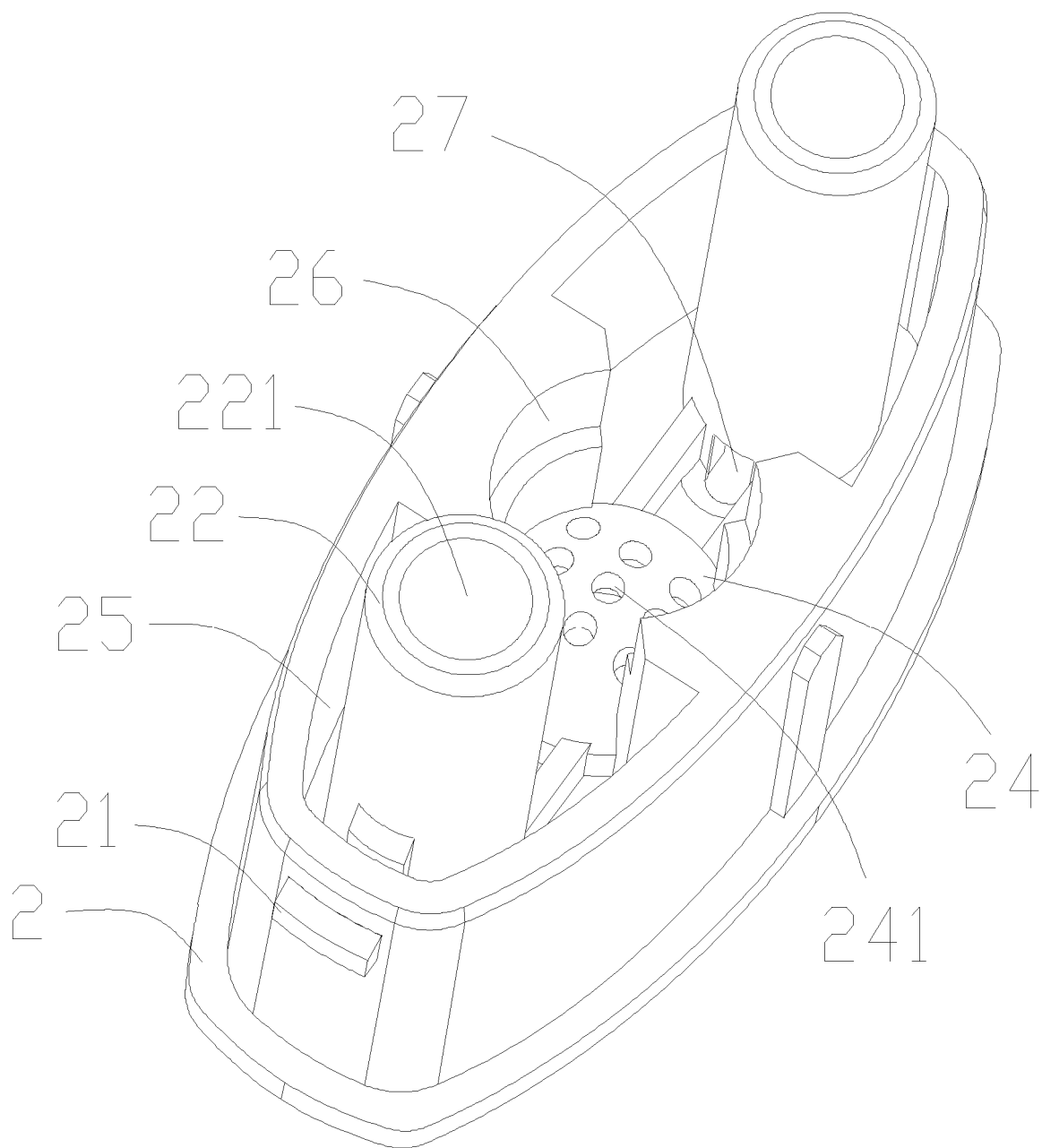


FIG. 9

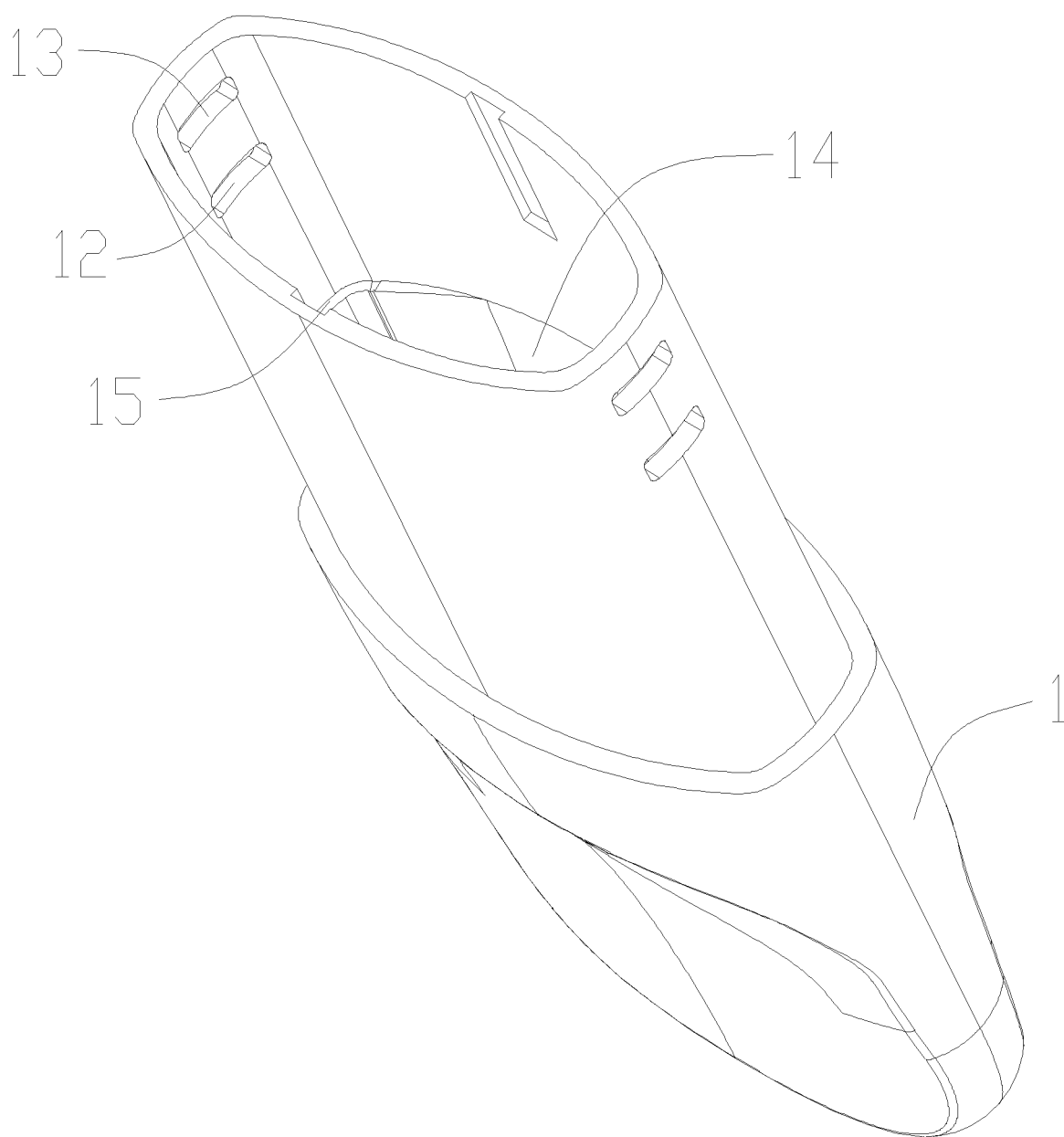


FIG. 10

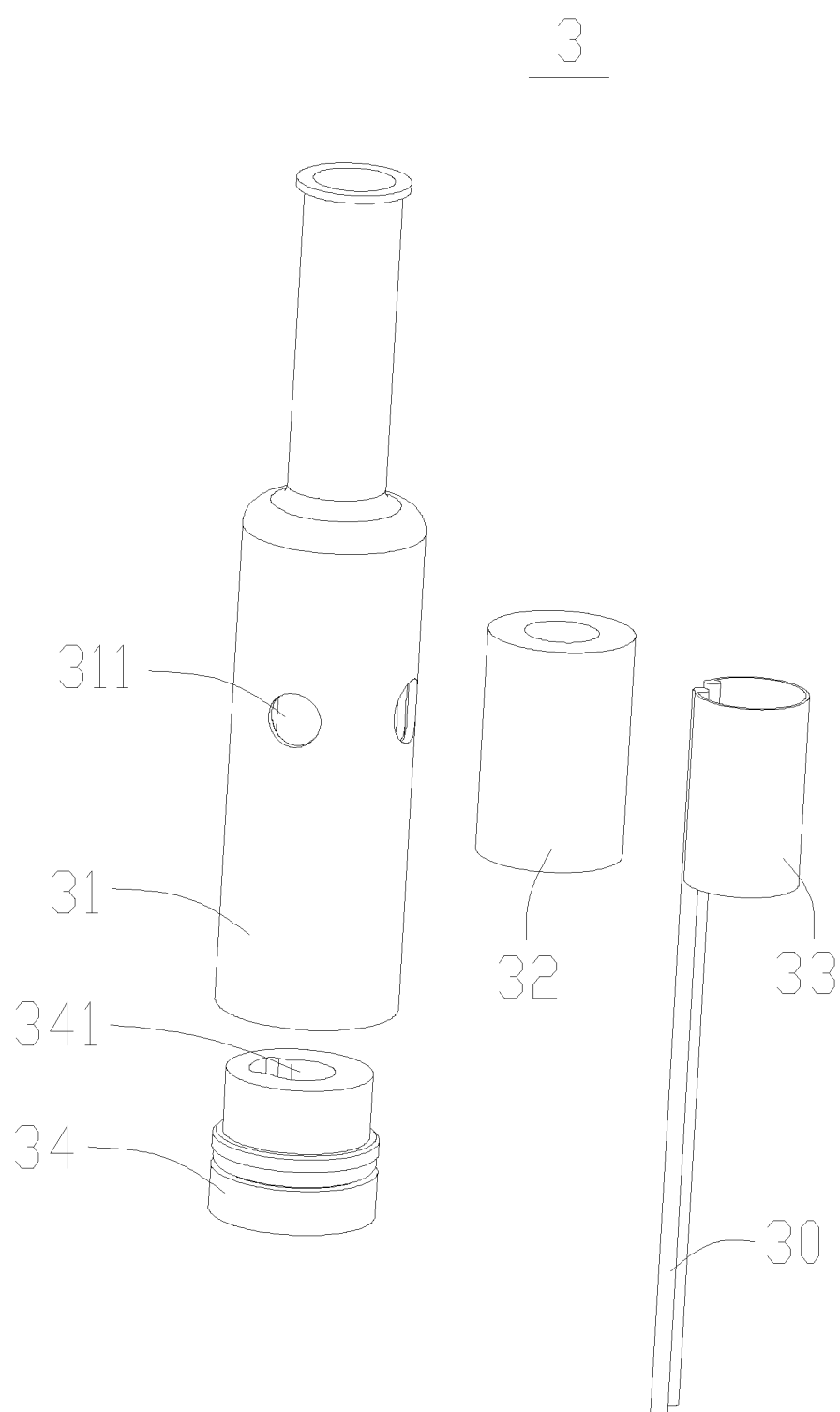


FIG. 11

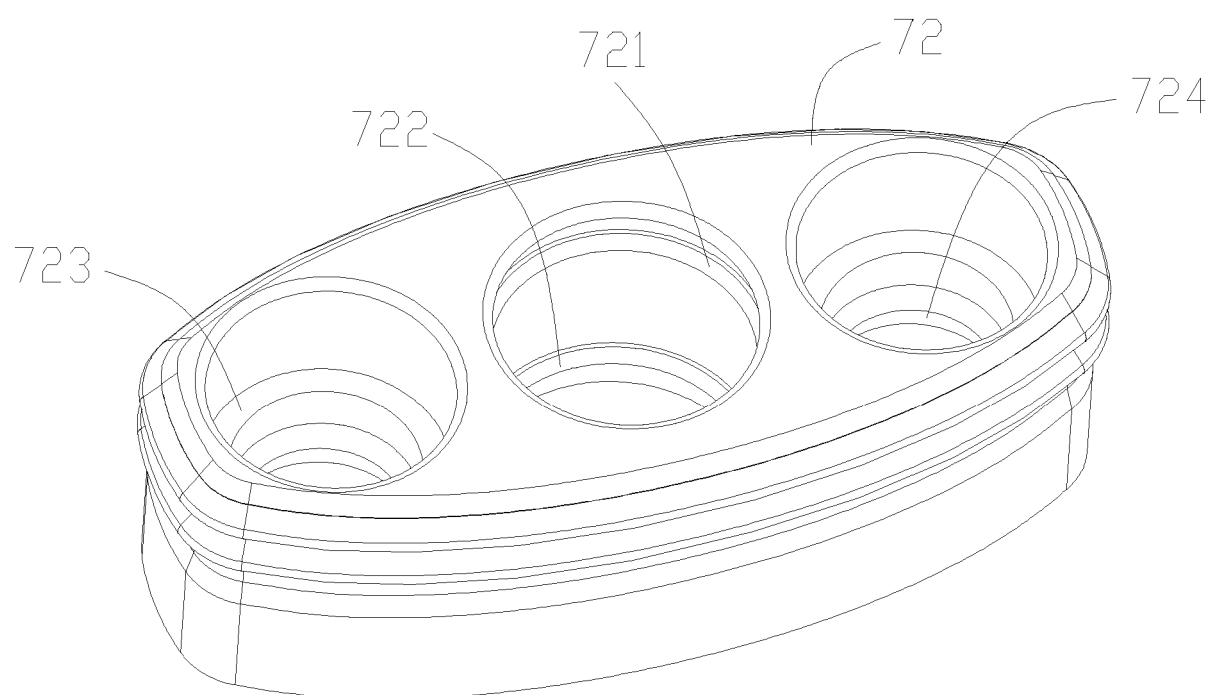


FIG. 12



EUROPEAN SEARCH REPORT

Application Number

EP 25 17 8118

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	WO 2025/043794 A1 (IMIRACLE HK LTD [CN]) 6 March 2025 (2025-03-06)	1-11, 13-15	INV. A24F40/42
A	* paragraphs [0003], [0005], [0035], [0038], [0042], [0048], [0049], [0051], [0059], [0060]; figures 1-5, 8 *	12	ADD. A24F40/10
Y	US 2024/164444 A1 (XU SHENGYANG [CN] ET AL) 23 May 2024 (2024-05-23)	1-11, 13-15	
A	* paragraphs [0004], [0126]; figures 3B, 3C, 4E *	12	
A	CN 119 385 339 A (SHENZHEN GEEKVAPE TECH CO LTD) 7 February 2025 (2025-02-07) * figures 1-4 * * 2nd par.; page 12 * * 3rd par.; page 14 *	1-15	
			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 October 2025	Leal, Filipe
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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23-10-2025

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			WO 2021138830 A1	15-07-2021
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