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(71) Applicant: **Shenzhen First Union Technology Co., Ltd.**
Shenzhen, Guangdong 518000 (CN)

(72) Inventors:
- **ZHANG, Yunkai**
  Shenzhen, Guangdong 518000 (CN)
- **HU, Ruilong**
  Shenzhen, Guangdong 518000 (CN)
- **LI, Yinzhe**
  Shenzhen, Guangdong 518000 (CN)
- **AI, Xiaobo**
  Shenzhen, Guangdong 518000 (CN)
- **XU, Zhongli**
  Shenzhen, Guangdong 518000 (CN)
- **LI, Yonghai**
  Shenzhen, Guangdong 518000 (CN)

(74) Representative: **Proi World Intellectual Property GmbH**
Obermattweg 12
6052 Hergiswil, Kanton Nidwalden (CH)

(54) ELECTRONIC CIGARETTE ATOMISER AND ELECTRONIC CIGARETTE

(57) An atomizer for electronic cigarette and an electronic cigarette (100'), the atomizer for electronic cigarette comprising an outer shell (10, 10b) and an end cover (20, 20b); a liquid storage cavity (30, 30b, 111') and an atomizing assembly (40, 40b, 10') are arranged inside the outer shell (10, 10b); the atomizing assembly (40, 40b, 10') comprises a porous body (41) and a heat generating body (42, 42a, 22'); the porous body (41) comprises a first side part (413) and a second side part (414) arranged opposite to one another, and an atomizing surface (412, 41b, 211') extending from the first side part (413) to the second side part (414), and the heat generating body (42, 42a, 22') being arranged on the atomizing surface (412, 41b, 211'); the atomizing surface (412, 41b, 211') and the end cover are spaced apart a certain distance and form an atomizing cavity (60, 60b, 121'), the atomizing cavity (60, 60b, 121') being in fluid communication with a smoke outlet channel by means of communication openings, and air inlets (25, 25a, 25b) being disposed on the end cover (20, 20b) or the outer shell (10, 10b); the air inlets (25, 25a, 25b) are arranged close to the first side part (413) along the direction of extension of the atomizing surface (412), and the communication openings are arranged close to the second side part (414) along the direction of extension of the atomizing surface (412), such that the air flow entering the atomizing cavity (60, 60b, 121') from the air inlets (25, 25a, 25b) flows towards the communication openings along the direction of extension of the atomizing surface (412, 41b, 211'). During suction of the atomizer, the air flow passes through the entire atomizing cavity (60, 60b, 121'), so that the aerosols escaping from the atomizing surface can be guided out with the air flow as much as possible to reduce entrapment.

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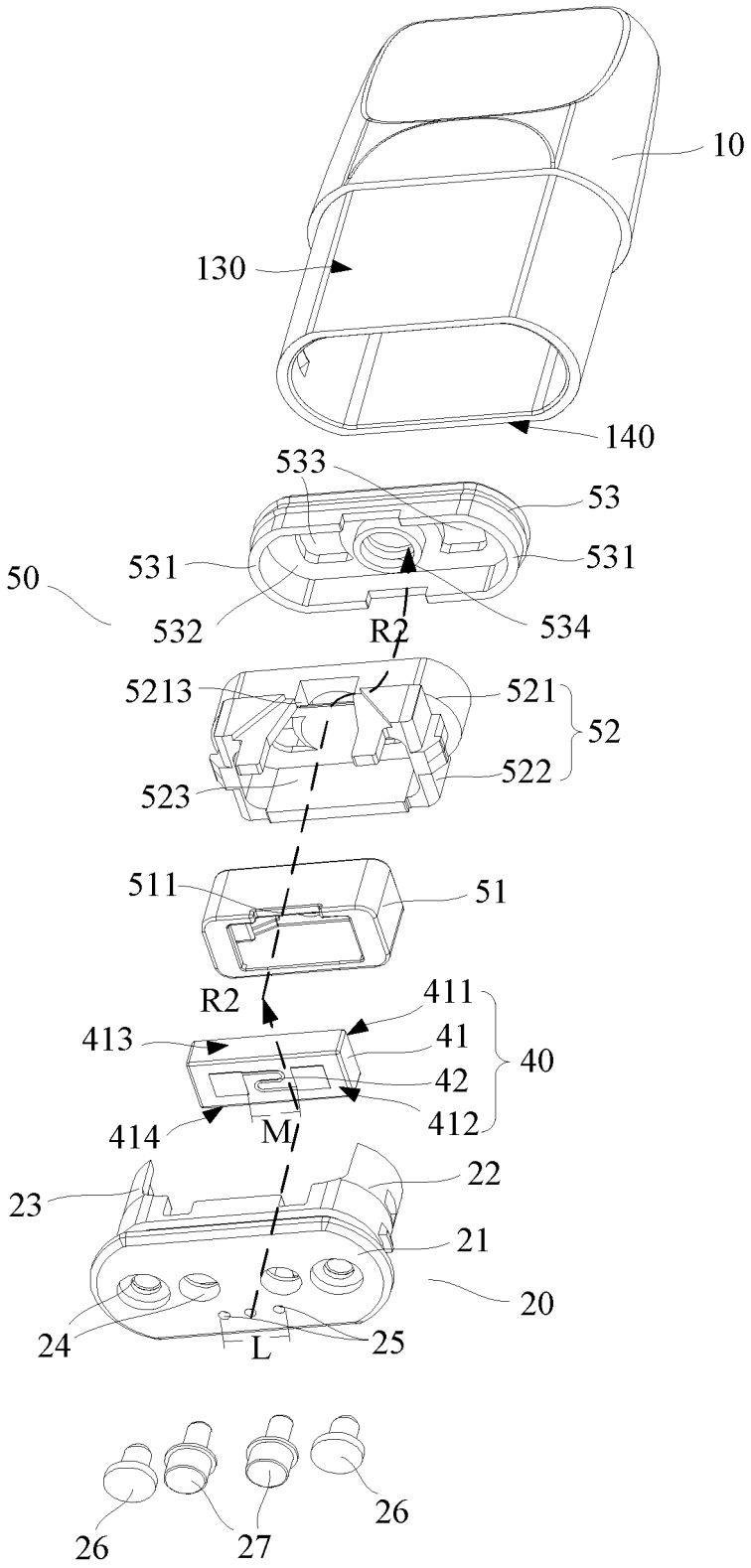
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FIG. 3

Description

TECHNICAL FIELD

[0001] The present disclosure relates to the technical field of electronic cigarettes, and in particular to an atomizer for electronic cigarette and an electronic cigarette.

BACKGROUND

[0002] Electronic cigarette is a product that heats and atomizes an liquid containing nicotine into an aerosol for a user to inhale. The electronic cigarette achieves the atomizing function through an atomizer, for which the structure includes an liquid storage cavity configured for storing an liquid and an atomizing assembly configured for atomizing the liquid in the liquid storage cavity, wherein the atomizing assembly includes a porous body configured for absorbing the liquid from the liquid storage cavity, and a heating body configured for heating and atomizing the liquid absorbed by the porous body. Further, in order to form an aerosol transmission during the smoking process, an outer shell of the atomizer defines corresponding to the heating body an air inlet allowing air to enter and is provided with a smoke conveying pipe configured for outputting the aerosol. During the smoking process of a user, the external air enters the atomizer from the air inlet, and then carries the aerosol to output through the smoke conveying pipe, thereby forming a complete airflow circulation.

[0003] As an existing technology, the patent with application number of 201810150690.7 provides an atomizer for electronic cigarette, which includes a concave ceramic core atomizing assembly different from the conventional ceramic rod; according to the description and the accompanying drawings, the concave ceramic core atomizing assembly includes an atomizing surface opposite to an end cover arranged at the bottom of the outer shell, wherein an atomizing cavity is formed between the atomizing surface and the bottom end cover for the aerosol to escape and release; the end cover defines an air inlet directly opposite to the atomizing surface, meanwhile the atomizing assembly is installed in a silicone sealing sleeve, wherein two sides of the silicone sealing sleeve define a notch, which allows the aerosol in the atomizing cavity to transmit into the airflow pipe until the mouthpiece where it is inhaled.

[0004] In the use of the atomizer of the above structure, when the aerosol inside the atomizing cavity diffuses to distant positions such as corners, it will be retained in the atomizing cavity and then condensed to generate condensed liquid contamination.

SUMMARY

[0005] The embodiment of the present disclosure aims to provide an atomizing assembly and an electronic cigarette including the atomizing assembly, wherein the atomizing assembly can resolve the technical problem in the prior art that the oil guide amount of the liquid is uneasy to control.

[0006] The embodiment of the present disclosure employs the following technical scheme.

[0007] In order to solve the problem in the prior art that the aerosol is retained in the atomizing cavity of the atomizer for electronic cigarette, the embodiment of the present disclosure provides an atomizer for electronic cigarette which reduces the retention of aerosol, improves the efficiency of smoking and reduces the condensed liquid in the atomizing cavity.

[0008] The present disclosure provides an atomizer for electronic cigarette, including an outer shell having an opening end, and an end cover arranged on the opening end, wherein the outer shell is internally provided with a liquid storage cavity configured for storing liquid and an atomizing assembly configured for atomizing the liquid; the atomizing assembly includes a porous body configured for absorbing the liquid from the liquid storage cavity, and a heating body configured for heating and atomizing the liquid absorbed by the porous body to generate an aerosol; the porous body includes a first side part and a second side part arranged opposite to each other and an atomizing surface extending from the first side part to the second side part, and the heating body is arranged on the atomizing surface, wherein the atomizing surface and the end cover are spaced apart a certain distance to form an atomizing cavity configured for accommodating the generated aerosol, the outer shell further defines therein a smoke outlet channel configured for outputting the aerosol in the atomizing cavity to the outside of the outer shell, the atomizing cavity is in fluid communication with the smoke outlet channel by means of a communication opening, and an air inlet in fluid communication with the atomizing cavity is defined on the end cover or the outer shell;

the air inlet is arranged adjacent to the first side part along the direction of extension of the atomizing surface, and the communication opening is arranged adjacent to the second side part along the direction of extension of the atomizing surface, such that an airflow entering the atomizing cavity from the air inlet flows towards the communication opening along the direction of extension of the atomizing surface.

[0009] Preferably, the air inlet is defined on the end cover, staggered with the atomizing surface.

[0010] Preferably, the air inlet is defined deviating from a center of the end cover.

[0011] Preferably, the atomizer for electronic cigarette includes a proximal end and a distal end opposite to each other;

the outer shell includes a length direction extending from the proximal end to the distal end, a width direction perpendicular to the length direction, and a thickness direction perpendicular to both the length direction and the width direction; the outer shell has a greater size along the length direction than the width direction, and has a

greater size along the width direction than the thickness direction.

[0012] Preferably, the atomizing surface is arranged extending along one of the thickness direction or the width direction of the outer shell;
there are at least two air inlets, which are arranged in parallel along the other one of the thickness direction or the width direction of the outer shell, or, the air inlet presents an elongated shape extending along the other one of the thickness direction or the width direction of the outer shell.

[0013] Preferably, the heating body is arranged on the atomizing surface extending along the parallel-arrangement direction of the air inlets.

[0014] Preferably, the at least two air inlets in parallel arrangement have a span greater than a length of extension of the heating body;
or, a length of extension of the air inlet is greater than the length of extension of the heating body.

[0015] Preferably, the outer shell is further internally provided with a sealing assembly configured for sealing the liquid storage cavity, accommodating and holding the atomizing assembly.

[0016] Preferably, the communication opening is defined on the sealing assembly.

[0017] Preferably, a side wall of the atomizing cavity close to the air inlet is provided with a shielding part, a projection of the shielding part on a section perpendicular to the direction of extension of the air inlet at least covers partial of the air inlet, so as to prevent a condensed liquid in the atomizing cavity flowing into the air inlet.

[0018] Preferably, the atomizing cavity further defines therein a collection cavity configured for collecting a condensed liquid formed by aerosol condensation.

[0019] Preferably, the shielding part includes an liquid blocking slope, which is arranged on the side wall of the atomizing cavity obliquely, and the atomizing cavity further defines therein a liquid conveying channel configured for connecting the liquid blocking slope and the collection cavity.

[0020] Preferably, the liquid blocking slope is arranged on the side wall of the atomizing cavity obliquely in a direction away from the air inlet.

[0021] Preferably, the shielding part further includes an air guide slope, which is configured for guiding an airflow entering from the air inlet to flow towards the atomizing surface.

[0022] Preferably, the atomizing cavity is internally provided with a baffle, one end of the baffle close to the atomizing surface and the air guide slope are spaced apart to define an air inlet, and the air inlet faces the heating body.

[0023] Preferably, the direction of extension of the heating body on the atomizing surface is parallel to the length direction of the air inlet

[0024] The present disclosure also provides an electronic cigarette, including an atomizing device configured for atomizing liquid to generate an aerosol for inhalation, and a power device configured for supplying power to the atomizing device, wherein the atomizing device is the atomizer described above.

[0025] With the above atomizer and electronic cigarette product, the airflow inlet and outlet of the atomizing cavity are defined on two opposite sides of the atomizing surface respectively, such that the airflow in the atomizing cavity can pass through the whole atomizing cavity when a user smokes, thus, the aerosol escaping from the atomizing surface can be guided out with the airflow as much as possible to reduce retention, the efficiency of smoking can be improved and the production of condensed liquid can be prevented in the atomizing cavity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] For a better understanding of the technical scheme in the embodiments of the present disclosure, accompanying drawings needed in the description of the embodiments are simply illustrated below. Obviously, the accompanying drawings described below are some embodiments of the present disclosure merely. For the ordinary skill in the field, other accompanying drawings may be obtained according to the structures of these accompanying drawings without creative work.

FIG. 1 is a structure diagram of an atomizer for electronic cigarette according to one embodiment from one perspective.

FIG. 2 is a structure diagram of an atomizer for electronic cigarette shown in FIG. 1 from another perspective.

FIG. 3 is an exploded view of an atomizer for electronic cigarette shown in FIG. 1 from one perspective.

FIG. 4 is an exploded view of an atomizer for electronic cigarette shown in FIG. 1 from another perspective.

FIG. 5 is a sectional view of an atomizer for electronic cigarette shown in FIG. 1 along a length direction.

FIG. 6 is a sectional view of an atomizer for electronic cigarette shown in FIG. 1 along a thickness direction.

FIG. 7 is a diagram of a sealing assembly and an end cover shown in FIG. 4 that are matched to form an airflow path.

FIG. 8 is a structure diagram of an air inlet defined on an end cover according to another embodiment.

FIG. 9 is a sectional view of an atomizer for electronic cigarette according to another embodiment along a length direction.

FIG. 10 is a structure diagram of an electronic cigarette according to one embodiment.

FIG. 11 is an exploded structure diagram of an atomizing assembly according to one embodiment of the present disclosure.

FIG. 12 is a sectional structure diagram of an atomizing assembly according to one embodiment of the present disclosure.

FIG. 13 is an enlarged view of part A shown in FIG. 2.

FIG. 14 is a sectional structure diagram of an atomizing assembly according to another embodiment of the present disclosure.

FIG. 15 is a sectional structure diagram of another section of an atomizing assembly according to one embodiment of the present disclosure.

FIG. 16 is a structure diagram of an atomizing core according to one embodiment of the present disclosure.

FIG. 17 is a structure diagram of a base according to one embodiment of the present disclosure.

FIG. 18 is a structure diagram of a conductive ejector pin according to one embodiment of the present disclosure.

FIG. 19 is a structure diagram of a fixing element according to one embodiment of the present disclosure.

FIG. 20 is an overall structure diagram of an electronic cigarette according to one embodiment of the present disclosure.

DETAILED DESCRIPTION

[0027] For a better understanding of the present disclosure, a detailed description is provided to the present disclosure in conjunction with the drawings and specific embodiments. It is to be noted that when an element is described as "fixed on"/ "fixedly connected to" another element, it may be directly on the other element, or there might be one or more intermediate elements between them. When one element is described as "connected to" another element, it may be directly connected to the another element, or there might be one or more intermediate elements between them. Terms "vertical", "horizontal", "left", "right," "inner", "outer" and similar expressions used in this description are merely for illustration.

[0028] Unless otherwise defined, all technical and scientific terms used in the description have the same meaning as those normally understood by the skill in the technical field of the present disclosure. The terms used in the description of the present disclosure are just for describing specific implementations, not to limit the present disclosure. Terms "and/or" used in the description include any and all combinations of one or more listed items.

[0029] In addition, technical features involved in different embodiments of the present disclosure described below may be mutually combined if no conflict is incurred.

[0030] In the description, the installation includes fixing or limiting one element or device to a particular position or place by means of welding, screwing, clamping, bonding and the like, the element or device can remain stationary at a specific position or place or move within a limited range, and the element or device can be or not be detached after fixed or limited to the particular position or place, which are not limited in the present disclosure.

[0031] The present disclosure provides an atomizer, which is applied to an electronic cigarette product that heats and atomizes liquid. Generally, a tabular atomizer is taken as example to illustrate in one embodiment.

[0032] Referring to FIG. 1 to FIG. 4, which show a structure assembly diagram, a sectional view and an exploded view of an atomizer according to one embodiment, the overall appearance generally presents a tabular shape, including a length direction, a width direction and a thickness direction that are perpendicular to each other in a three-dimensional space and are expressed respectively as L direction, W direction and T direction indicated by a coordinate in FIG. 1 and FIG. 2. The atomizer for electronic cigarette has a greater size along the length direction L than the width direction W, and has a greater size along the width direction W than the thickness direction T. Based on commonly used requirements, two ends of the atomizer along the length direction L are configured as a proximal end 110 and a distal end 120 respectively, wherein the proximal end 110 is configured as one end for installing a mouthpiece cap and inhaling an aerosol, and the distal end 120 is configured as one end of the atomizer to assemble and connect with a power part of the electronic cigarette. In terms of specific components, the atomizer includes:

a hollow tubular outer shell 10 extending along the length direction L of the atomizer; based on different usages, the proximal end 110 of the outer shell 10 is a closed end, on which a smoking port A is defined for a user to suck; the distal end 120 of the outer shell 10 is designed as an opening, on which a detachable end cover 20 is installed, wherein the opening structure of the distal end 120 is used for installing various necessary functional parts inside the outer shell 10. To facilitate the following description and reader's appreciation of the difference in direction(s), referring to FIG. 1 to FIG. 3, the outer shell 10 includes a first side wall 130 and a second side wall 140 that are opposite to each other in the thickness direction T.

[0033] Further, the outer shell 10 is internally provided with an liquid storage cavity 30 configured for storing liquid and an atomizing assembly 40 configured for absorbing the liquid from the liquid storage cavity 30 to heat and atomize; specifically,

[0034] in the sectional structure diagrams shown in FIG. 5 and FIG. 6, a smoke conveying pipe 11 is arranged inside the outer shell 10 along the axial direction, wherein a space between an outer wall of the smoke conveying pipe 11 and an inner wall of the outer shell 10 forms the liquid storage cavity 30 configured for storing an liquid.

[0035] The atomizing assembly 40 is arranged between the liquid storage cavity 30 and the end cover 20; referring to FIG. 3, the structure of the atomizing assembly 40 may include a porous body 41 configured for absorbing the liquid from the liquid storage cavity 30, and a heating body 42 configured for heating and atomizing the liquid absorbed into the porous body 41. As shown in FIG. 3 to FIG. 6, the porous body 41 in the embodiment may roughly present, but not limited to, a block shaped

structure; according to the usage condition, the porous body includes a first side part 413 opposite to the first side wall 130 and a second side part 414 opposite to the second side wall 140, and a liquid absorption surface 411 and an atomizing surface 412 opposite to each other along the axial direction of the outer shell 10, that is, the upper and lower surfaces of the block-shaped porous body 41 shown in FIG. 3, wherein the liquid absorption surface 411 is opposite to the liquid storage cavity 30, directly or indirectly contacting the liquid in the liquid storage cavity 30 so as to absorb the liquid; the pores in the porous body 41 then transfer the liquid to the atomizing surface 412 to be heated and atomized to an aerosol, which then escapes from the atomizing surface 412. A space between the atomizing surface 412 and the end cover 20 forms an atomizing cavity 60 for the aerosol to escape and mix with air.

[0036] In the structure of the porous body 41 shown in FIG. 3, since the liquid absorption surface 411 and the atomizing surface 412 are parallel, the movement direction of both the liquid and the aerosol in the porous body 41 is perpendicular to the plane on which the atomizing surface 412 is located. Thus, the liquid and the aerosol move more smoothly in the porous body 41 and the manufacture is convenient. In some embodiments, the porous body 41 may be made of rigid capillary structures such as porous ceramic, porous glass ceramic and porous glass. The heating body 42 is preferably formed on the atomizing surface 412 by mixing a conductive raw material powder with a printing aid into a slurry and sintering the slurry after the slurry is printed, such that all or most of its surface is tightly combined with the atomizing surface 412. The heating body 42 achieves effects such as high efficiency of atomization, reduction of heat loss, prevention of dry burning or great reduction of dry burning. The heating body 42 may be made of materials such as stainless steel, nickel chromium alloy, iron chromium aluminum alloy and metal titanium in some embodiments.

[0037] Further, referring to FIG. 3 to FIG. 6, in order to install and fix the atomizing assembly 40 and seal the liquid storage cavity 30, a sealing assembly 50 is further arranged inside the outer shell 10, wherein the sealing assembly 50 includes a silicone sleeve 51, a support sleeve 52 and a silicone seat 53, which not only seals the port of the liquid storage cavity 30, but also fixedly holds the atomizing assembly 40 inside.

[0038] The silicone seat 53 is arranged on an end part of the liquid storage cavity 30 facing the distal end 120, with the appearance mated to the cross section of the inner outline of the outer shell 10, for sealing the liquid storage cavity 30 and preventing the liquid leaking from the liquid storage cavity 30. Further, in order to prevent the flexible silicone seat 53 shrinking and deforming to affect the tightness of sealing, a rigid support sleeve 52 is arranged inside the silicone seat 53; the rigid material padding prevents the silicone seat 53 shrinking and deforming, thereby ensuring the silicone seat 53 to tightly seal the liquid storage cavity 30. Meanwhile, in order to prevent the atomizing assembly 40 being directly held inside the rigid support sleeve 52 to result in untight joining and gaps and cause problems such as liquid leaking, a flexible silicone sleeve 51 is sleeved outside the atomizing assembly 40 before the atomizing assembly 40 is arranged inside the support sleeve 52.

[0039] The specific structure and shape can refer to FIG. 3 and FIG. 4, the silicone sleeve 51 roughly presents a tubular sleeve, of which the inner space is configured for accommodating the atomizing assembly 40 and which is sleeved outside the atomizing assembly 40 through a flexible tight fit mode.

[0040] The support sleeve 52 in some embodiments may include a main body 521 roughly presenting an elliptic cylinder shape, and an annular part 522 extending from the main body 521 towards the distal end 120, wherein the space inside the annular part 522 forms a holding cavity 523 configured for accommodating the silicone sleeve 51 and the atomizing assembly 40. The main body 521 defines thereon two first liquid guide holes 5211 and one gas guide hole 5212.

[0041] Further, the main body 521 defines thereon a first gas channel 5213 communicated with the gas guide hole 5212, wherein one end of the first gas channel 5213 runs through the main body to communicate with the gas guide hole 5212, while the other end is on a surface of the main body 521 opposite to the first side wall 130.

[0042] In order for the generated aerosol to smoothly enter the first gas channel 5213 after the atomizing assembly 40 is wrapped by the silicone sleeve 51, the silicone sleeve 51 defines a notch 511 at a position opposite to the first gas channel 5213; after the silicone sleeve 51 is assembled with the support sleeve 52, the notch 511 is communicated with the first gas channel 5213, thereby outputting the aerosol in the holding cavity 523 generated by the atomizing assembly 40 to the first gas channel 5213 through the notch 511.

[0043] The silicone seat 53 includes two opposite clamping walls 531 extending downwards from a bottom surface, and between the two clamping walls 531 is formed an accommodating cavity 532 configured for accommodating the main body 521 of the support sleeve 52. Meanwhile, the silicone seat 53 defines thereon two second liquid guide holes 533 and an insert hole 534 for the smoke conveying pipe 11 to insert into; wherein the two second liquid guide holes 533 correspond to the two first liquid guide holes 5211 on the support sleeve 52, and the insert hole 534 corresponds to the gas guide hole 5212 on the support sleeve 52. Moreover, the two second liquid guide holes 533 face the liquid storage cavity 30 and communicate with the liquid storage cavity to transfer the liquid; the insert hole 534 is connected to the smoke conveying pipe 11. In the preferred mode shown in FIG. 5, a first end of the smoke conveying pipe 11 opposite to the proximal end 110 is communicated with the smoking port A, and a second end opposite to the distal end 120 has the lower end directly inserted into the insert hole 534 to form an airflow channel.

[0044] Referring to FIG. 5, after the sealing assembly 50 is assembled, the two second liquid guide holes 533 on the silicone seat 53 are communicated with the two first liquid guide holes 5211 on the support sleeve 52, to form a complete liquid conveying channel; specifically, the transfer of the liquid can refer to an arrow R1 shown in FIG. 5, that is, flowing onto the liquid absorption surface 411 of the porous body 41 from the liquid storage cavity through the second liquid guide holes 533 and the first liquid guide holes 5211 in sequence, and then getting transferred inside the porous body 41 to the atomizing surface 412 to be atomized. The transfer process of the aerosol can refer to an arrow R2 shown in FIG. 3 to FIG. 7, that is, the aerosol escaping from the atomizing surface 412 passes through in sequence the notch 511 of the silicone sleeve 51, the first gas channel 5213 of the support sleeve 52, the gas guide hole 5212 and the insert hole 534, to finally enter the smoke conveying pipe 11 until the smoking port A where it is inhaled, thus a complete aerosol output channel is formed.

[0045] Referring to FIG. 3 to FIG. 6, the end cover 20 is configured for covering the distal end 120 of the outer shell 10, so as to form a closed internal space with the outer shell. The end cover 20 includes a cover body 21, a first support arm 22 standing on a top surface of the cover body 21, and a second support arm 23 standing on the top surface of the cover body 21 opposite to the first support arm 22, the first support arm 22 and the second support arm 23 are configured for supporting and fixing the sealing assembly 50. Meanwhile, after installed, the atomizing assembly 40 is located between the first support arm 22 and the second support arm 23, such that the atomizing surface 412 is opposite to the cover body 21 and a gap is reserved to form the atomizing cavity 60.

[0046] The cover body 21 in some embodiment may present a tabular shape, its bottom surface is concave with four mounting holes 24 formed thereon, for accommodating two magnetic elements 26 and two electrode poles 27 respectively; the magnetic elements 26 are used for magnetically adsorbing the atomizer of the electronic cigarette and the power device to form a stable mechanical connection. The cover body 21 may also be provided with two electrode poles 27 in electrical connection with the heating body 42 on the atomizing surface 412 of the porous body 41; after the atomizer of the electronic cigarette and the power device are magnetically adsorbed together, the two electrode poles 27 are electrically connected to positive and negative electrodes of the power device respectively, so as to supply power to the heating body 42.

[0047] What more important in the embodiment is to define an air inlet 25 on the cover body 21, for external air to enter the atomizing cavity 60 when a user sucks the smoking port A; the position of the air inlet 25 is not directly opposite to the atomizing surface 412, but located at an end part of the cover body 21 close to the second side wall 140 of the outer shell 10, that is, the air inlet 25 and the notch 511 are located at two sides of the atomizing cavity 60 along the thickness direction of the outer shell 10 respectively, such that the airflow in the atomizing cavity 60 can pass through the whole atomizing cavity 60 when the user smokes.

[0048] Meanwhile, during the arrangement, the heating body 42 is arranged at a central position of the atomizing surface 412, such that the aerosol can be released to the middle of the atomizing cavity 60 as much as possible, thereby reducing the diffusion towards the areas of corners; meanwhile, the heating body 42 and the air inlet 25 are staggered with each other, to prevent the entered airflow dispersing the aerosol and facilitate the concentration of airflow. Further, in a preferred design, as shown in FIG. 7, three or more air inlets 25 are defined in parallel along the width direction, such that the parallel-arrangement direction is perpendicular to the atomizing surface 412 extending along the thickness direction or the airflow direction running through the atomizing cavity 60 along the thickness direction; meanwhile, the heating body 42 is also arranged on the atomizing surface 42 along the width direction, and the span L of arrangement of the air inlets 25 preferably is greater than the length M of extension of the heating body 42 as shown in FIG. 3, so that the aerosol can be carried away within the scope of airflow.

[0049] During the smoking process, the path direction of the airflow can refer to FIG. 6, that is, the external air enters the atomizing cavity 60 from the air inlet 25 close to the second side wall 140, then runs through the whole space of the entire atomizing cavity 60, and then is exported to the first gas channel 5213, the gas guide hole 5212 and the insert hole 534 from the notch 511 close to the first side wall 130, and finally enters the smoke conveying pipe 11 until the smoking port A where it is inhaled. Thus, the aerosol in the atomizing cavity 60 can be carried away as much as possible to reduce retention, which improves the efficiency of smoking and prevents the production of condensed liquid in the atomizing cavity 60.

[0050] Based on variable embodiments of the present disclosure, FIG. 8 shows a shape of another air inlet 25a; there is one air inlet 25a defined on the end cover 20a, which presents a waist-type hole extending along the width direction or an elongated slit and the like, and its length L of extension is greater than the length M of extension of the heating body 42a.

[0051] For the same purpose as above, in one embodiment the inlet and outlet direction of the airflow in the atomizing cavity 60 can be changed to run through the atomizing cavity 60 along the width direction W of the atomizer from the above mode of running through the atomizing cavity 60 along the thickness direction of the atomizer. Specifically, in the deformation implementation the design structure can refer to FIG. 9.

[0052] The atomizer includes an outer shell 10b, and a smoke conveying pipe 11b arranged inside the outer shell 10b along the axial direction, wherein an liquid stor-

age cavity 30b configured for storing an liquid is formed between the smoke conveying pipe 11b and an inner wall of the outer shell 10b.

[0053] The outer shell 10b is also provided with an end cover 20b, an atomizing assembly 40b and a sealing assembly 50b, wherein a porous body of the atomizing assembly 40b includes an atomizing surface 412b opposite to the end cover 20b, and an atomizing cavity 60b is formed between the atomizing surface 412b and the end cover 20b.

[0054] This embodiment is different from the above embodiment in that an air inlet 25b is defined on one side wall of the outer shell 10b along the width direction, so that an airflow enters from one side of the atomizing surface 421b along the width direction, runs through the atomizing surface 60b along the width direction along the direction indicated by an arrow R3 shown in the figure and finally flows out from another side of the atomizing surface 412b along the width direction.

[0055] Of course, in this implementation, it is needed to make a corresponding adjustment to the structure of the airflow channel on the sealing assembly 50b; specifically, on the basis of the above embodiment, the notch 511, the first gas channel 5213 and the gas guide hole 5212 described in the above embodiment that are defined opposite to one side wall along the thickness direction can be adjusted to be opposite to one side wall along the width direction shown in FIG. 8, and they are located on one side of the atomizing surface 412b opposite to the air inlet 25b along the width direction. The technical staff can make a corresponding adjustment to the structure of the parts involved in this airflow mode with reference to the above description to ensure the airflow to largely run through the atomizing cavity 60. Thus, the aerosol in the atomizing cavity 60b can be carried away as much as possible to reduce retention, which improves the efficiency of smoking and prevents the production of condensed liquid in the atomizing cavity 60b.

[0056] The embodiment of the present disclosure further provides an electronic cigarette product; as shown in FIG. 10, the structure includes an atomizing device 100 configured for atomizing an liquid, and a power device 200 configured for supplying power to the atomizing device 100. The atomizing device 100 employs the atomizer described above, the power device 200 is also provided with a conductive Pogo Pin 210 for electrical connection to the electrode pole of the atomizing device 100, and a magnetic body 220 for magnetic adsorption with the magnetic element on the atomizing device 100.

[0057] With the above atomizer and electronic cigarette product, the airflow inlet and outlet of the atomizing cavity are defined close to the two ends respectively, such that the airflow in the atomizing cavity can pass through the whole atomizing cavity when a user smokes, the aerosol in the atomizing cavity can be guided out with the airflow as much as possible to reduce retention, the efficiency of smoking can be improved and the production of condensed liquid can be prevented in the atomizing cavity.

[0058] Referring to FIG. 11 to FIG. 20, the present disclosure further provides another electronic cigarette 100', which includes an atomizing assembly 10' and a battery assembly 20', wherein the atomizing assembly 10' and the battery assembly 20' may be connected in a manner of buckle or thread, the battery assembly 20' may supply power to the atomizing assembly 10' to drive the atomizing assembly 10' to heat an liquid to generate an aerosol for a user to inhale; in the present embodiment, the atomizing assembly 10' includes a main body 1' and an atomizing core 2'. Herein, combined with FIG. 10, the atomizing assembly 10' in the present embodiment is equivalent to the atomizer 10 in the previous embodiment, the atomizing core 2' is equivalent to the atomizing assembly 40 in the previous embodiment, and the battery assembly 20' is equivalent to the power device 200 in the previous embodiment.

[0059] Specifically, referring to FIG. 12, FIG. 14 and FIG. 15, the main body 1 includes an liquid storage cavity 111' configured for storing an liquid, an atomizing cavity 121', and an air inlet channel 122' for external air to enter the atomizing cavity 121'; the atomizing core 2' is arranged in the atomizing cavity 121', the atomizing core 2' is in fluid communication with the liquid storage cavity 111' and can heat the liquid in the liquid storage cavity 111' to generate an aerosol. In the present embodiment, the main body 1' further includes an air outlet channel 112' configured for outputting the aerosol to the outside, wherein the air outlet channel 112' is communicated with the atomizing cavity 121', so that the external air can enter the atomizing cavity 121' from the air inlet channel 122' and drive the aerosol in the atomizing cavity 121' to expel from the air outlet channel 112' to the outside for a user to inhale. More specifically, the atomizing cavity 121' further defines therein a collection cavity 123' configured for collecting a condensed liquid formed by aerosol condensation; in the present embodiment, the collection cavity 123' is located at the bottom of the atomizing cavity 121', so that the condensed liquid is collected into the collection cavity 123' under the action of gravity; a side wall of the atomizing cavity 121' close to the air inlet channel 122' is provided with a shielding part 124', a projection of the shielding part 124' in the direction of extension of the air inlet channel 122' at least covers the section of partial of the air inlet channel 122' perpendicular to the direction of extension, so as to prevent a condensed liquid in the atomizing cavity 121' flowing into the air inlet channel 122'; in this way, when the aerosol generated as the atomizing core 2' heats an liquid is diffused in the atomizing cavity 121', since the temperature of the side wall of the atomizing cavity 121' generally is low, the aerosol will be cooled on the side wall to generate a condensed liquid, and the accumulated condensed liquid will flow downwards along the side wall of the atomizing cavity 121' under the action of gravity; when some condensed liquid flows close to the air inlet channel 122', it will be blocked by the shielding part 124' and cannot enter

the air inlet channel 122'; in addition, if the liquid leaks because of untight sealing between the atomizing core 2' and the liquid storage cavity 111', when the leaked liquid flows close to the air inlet channel 122' along the inner wall of the atomizing cavity 121', it will be blocked by the shielding part 124' too. The condensed liquid or the liquid will only converge into the collection cavity 123', which prevents the condensed liquid or the liquid leaking through the air inlet channel 122' and avoids the atomizing assembly 10' from liquid leaking. The user experience of the electronic cigarette 100' is better. Combined with FIG. 1 to FIG. 10, the air inlet channel 122' in the present embodiment is equivalent to the air inlet 25 in the previous embodiment.

[0060] According to the above electronic cigarette 100', by arranging the collection cavity 123' configured for collecting a condensed liquid in the atomizing cavity 121' of the main body 1' of the atomizing assembly 10', the condensed liquid formed in the atomizing cavity 121' by the aerosol generated when the atomizing core 2' heats the liquid can be collected by the collection cavity 123'; in addition, the shielding part 124' that can block the condensed liquid entering the air inlet channel 122' is arranged on the side wall of the atomizing cavity 121', thus the condensed liquid on the side wall of the atomizing cavity 121' will be blocked by the shielding part 124' when flowing to be above the air inlet channel 122' and cannot flow into the air inlet channel 122', which effectively prevents the condensed liquid leaking through the air inlet channel 122' and avoids the atomizing assembly 10' from liquid leaking. The user experience of the electronic cigarette 100' is better.

[0061] Referring to FIG. 12 to FIG. 13, in one embodiment, the shielding part 124' includes an liquid blocking slope 1241', which is arranged on the side wall of the atomizing cavity 121' obliquely, and the atomizing cavity 121' further defines therein a liquid conveying channel 120' configured for connecting the liquid blocking slope 1241' and the collection cavity 123'. Specifically, in the present embodiment, the liquid blocking slope 1241' is arranged on the side wall of the atomizing cavity 121' obliquely in a direction away from the air inlet channel 122', and an included angle α between the liquid blocking slope 1241' and the inner wall of the atomizing cavity 121' is 30-85 degrees, wherein the α preferably selects 60 degrees. In the present embodiment, the shielding part 124' is arranged between the atomizing cavity 121' and the air inlet channel 122', the aerosol will not enter the air inlet channel 122', nor generate a condensed liquid inside the air inlet channel 122'; the condensed liquid will be generated in the atomizing cavity 121' and the air outlet channel 112' only; due to the included angle α, a hook shaped groove is formed between the liquid blocking slope 1241' and the inner wall of the atomizing surface 121', the condensed liquid will be blocked by the groove when flowing towards the air inlet channel 122' along the inner wall of the atomizing cavity 121' and cannot flow into the air inlet channel 122'; since the atomizing cavity 121' further defines therein a liquid conveying channel 120' configured for connecting the liquid blocking slope 1241' and the collection cavity 123', the condensed liquid inside the groove will flow through the liquid conveying channel 120' to the collection cavity 123' to be collected, which avoids the condensed liquid being accumulated on the liquid blocking slope 1241' to overflow to the air inlet channel 122' and effectively prevents the condensed liquid leaking from the air inlet channel 122'.

[0062] Of course, referring to FIG. 14, in another embodiment, the liquid blocking slope 1241' may extend towards the air inlet channel 122' from the inner wall of the atomizing cavity 121', then included angle β between the liquid blocking slope 1241' and the inner wall of the atomizing cavity 121' is an obtuse angle, wherein β is 100-160 degrees, preferably 135 degrees. In this way, a baffle 125' is arranged between the collection cavity 123' and the air inlet channel 122', and the baffle 125' is configured for isolating the inlet channel 122' from the collection cavity 123'; one end of the baffle 125' close to the atomizing core 2' is spaced apart from the shielding part 124', thus the air entering from the inlet channel 122' flows between the baffle 125' and the shielding part 124'; one end of the liquid blocking slope 1241' away from the side wall of the atomizing cavity 121' extends to be above the collection cavity 123' or into the collection cavity 123', such that the condensed liquid can flow into the collection cavity 123' to be collected along the liquid blocking slope 1241'.

[0063] Referring to FIG. 12 to 13 and FIG. 16, in one embodiment, the atomizing core 2' includes an atomizing surface 211', the atomizing surface 211' preferably is arranged facing the collection cavity 123', the shielding part 124' further includes an air guide slope 1242', which is configured for guiding the air entering from the air inlet channel 122' to flow towards the atomizing surface 211'. Specifically, in the present embodiment, the atomizing core 2' includes a porous substrate 21' and a heating body 22', wherein the heating body 22' is arranged on the porous substrate 21', for example, the heating body 22 may be arranged on an outer surface of the porous substrate 21', or inside the porous substrate 21', through integrally forming. In the present embodiment, the atomizing surface 211' is an outer surface of the porous substrate 21', the heating body 22' preferably selects a printed wire, which is arranged on the atomizing surface 211' through screen printing; the porous substrate 21' is made of a porous material, for example porous ceramic, cellucotton, etc. Further, in the present embodiment, a baffle 125' is arranged between the collection cavity 123' and the air inlet channel 122', one end of the baffle 125 close to the atomizing surface 211' is spaced apart from the air guide slope 1242' to form an air inlet 1221', and the air inlet 1221' faces the heating body 22'; since the heating body 22' is arranged on the atomizing surface 221', the liquid, after flowing onto the atomizing surface 211' from the porous substrate 21', is heated by the heating body 22' to generate an aerosol, the air entering from the

air inlet channel 122' can be blown towards the atomizing surface 211' through the air inlet 1221', to carry the aerosol generated when the heating body 22' on the atomizing surface 211' heats the liquid into the air outlet channel 112' as much as possible, so as to expel the aerosol to the outside for a user to inhale; in this way, the amount of aerosol remained in the atomizing cavity 121' is much less, which reduces the condensed liquid generated on the inner wall of the atomizing cavity 121' and more effectively prevents the liquid leaking through the air inlet channel 122'.

[0064] Further, in the above embodiment, the air inlet 1221' presents a rectangle, the heating body 22' is arranged extending on the atomizing surface 211', and the direction of extension is parallel to the length direction of the air inlet 1221', further, the length of the air inlet 1221' is at least equal to the length of extension of the heating body 22' on the atomizing surface 211', such that the air blown towards the atomizing surface 211' from the air inlet 1221' can completely cove the heating body 22', thereby carrying away the aerosol generated when the heating body 22' heats the liquid as much as possible and reducing the aerosol remained in the atomizing cavity 121'.

[0065] Referring to FIG. 11 to FIG. 12 and FIG. 14 to FIG. 15, the main body 1' includes a shell 11' and a base 12', wherein the liquid storage cavity 111' and the air outlet channel 112' are arranged inside the shell 11'; the base 12' is arranged on one end of the shell 11' and is partially inserted in to the shell 11', and the air inlet channel 122' is defined on the base 12'. Specifically, in the present embodiment, the atomizing cavity 121' is arranged on the base 12', correspondingly, the collection cavity 123' is also arranged on the base 12', and the air inlet channel 122' runs through the base 12', such that the external air can flow into the atomizing cavity 121' through the air inlet channel 122'. During installation, the atomizing core 2' can be installed on the base 12' first, and then the base 12' is installed on the shell 11'. The operation is convenient.

[0066] Further, on the basis of the above embodiment, referring to FIG. 11 to FIG. 12, the atomizing assembly 10' further includes an atomizing cover 3', the atomizing cover 3' and the atomizing core 2' are both arranged inside the atomizing cavity 121', wherein the atomizing core 2' is arranged close to the collection cavity 123', and the atomizing cover 3' covers one side of the atomizing core 2' away from the collection cavity 123'. In the present embodiment, the atomizing cover 3' is fixed in the atomizing cavity 121' of the base 12' after covering the atomizing core 2', wherein the atomizing cover 3' may be fixed on the base 12' through an interference fit with the inner wall of the atomizing cavity 121', the atomizing cover 3' preferably is made of silicone or rubber, thus the atomizing cover 3' has an elasticity, which facilitates the fixed installation on the base 12' and achieves a sealing effect, and avoids the liquid flowing into the collection cavity 123' directly along the inner wall of the atomizing cavity 121'. During installation, the atomizing cover 3' and the atomizing core 2' may be fixed on the base 12' in advance and then the base 12' is installed on one end of the shell 11' to complete the installation of the atomizing assembly 10'. During disassembly, it is only needed to remove the base 12' from the shell 11', then the atomizing cover 3' and the atomizing core 2' can be taken out together. Since the atomizing core 2' is easy to damage or age during usage, the integral assembly or disassembly mode of the atomizing cover 3' and the atomizing core 2' on the base 12' is convenient to replace the atomizing core 2'. The maintenance of the atomizing assembly 10' is convenient.

[0067] Further, referring to FIG. 11 to FIG. 12, the atomizing assembly 10' further includes a conductive ejector pin 4', wherein the number of the conductive ejector pins 4' is 2, the two conductive ejector pins 4' are both electrically connected to the heating body 22' of the atomizing core 2', the conductive ejector pin 4' may be connected to an external power source, such that the heating body 22' is electrified and heated to heat the liquid to generate an aerosol. Specifically, referring to FIG. 17 and FIG. 18, in the present embodiment, the base 12' defines a fixed hole 128 for installing the conductive ejector pin 4', one end of the conductive ejector pin 4' is arranged in the fixed hole 128' while the other end presses against the heating body 22' on the surface of the porous substrate 21'; more specifically, the conductive ejector pin 4' is provided with a flange 41; when one end of the conductive ejector pin 4' is inserted into the fixed hole 128', the flange 41' presses against one end of the fixed hole 128' close to the heating body 22', so as to limit the depth of the conductive ejector pin 4' inserted into the fixed hole 128'. In the present embodiment, the fixed hole 128' runs through the base 12' to communicate with the outside, the conductive ejector pin 4' is exposed out of the outer surface of the base 12' after one end is inserted into the fixed hole 128', for electrical connection to an external power source (for example, battery assembly 20'). During assembly, one end of the conductive ejector pin 4' is inserted into the fixed hole 128' first, then the atomizing cover 3' is covered on the atomizing core 2' and is installed in the base 12' together with the atomizing core 2', meanwhile the heating body 22' of the atomizing core 2' is enabled to press against the conductive ejector pin 4', and finally the base 12' is installed on one end of the shell to complete the assembly of the atomizing assembly 10'. The operation is easy and convenient. Combined with FIG. 1 to FIG. 10, the porous substrate 21' in the present embodiment is equivalent to the porous body 41 in the previous embodiment.

[0068] Referring to FIG. 15 and FIG. 19, in one embodiment, the base 12' is provided with a clamping protrusion 129', the shell 11' defines a clamping groove 113' mated to the clamping protrusion 129', and the base 12' is fixed on the shell 11' by means of the mating between the clamping protrusion 129' and the clamping groove 113'. In the present embodiment, there are at least two

clamping protrusions 129', the number of the clamping grooves 113' corresponds to the number of the clamping protrusions 129'; by means of the mating between the clamping protrusion 129' and the clamping groove 113', the base 12' can be fixed on the shell 11' conveniently and quickly. Of course, in some other embodiments, the base 12' and the shell 11' can also be fixedly connected through thread.

[0069] Further, referring to FIG. 15 and FIG. 17, two opposite sides of the base 12' are provided with an elastic arm 126' extending towards the liquid storage cavity 111', the elastic arm 126' is spaced apart from the outer sidewall of the base 12', and the clamping protrusion 129' is arranged on one side of the elastic arm 126' away from the base 12'. When the base 12' is inserted into the shell 11', the clamping protrusion 129' on the elastic arm 126' presses against the inner wall of the shell 11', and the elastic arm 126' will incline and bend towards the outer sidewall of the base 12'; since the elastic arm 126' and the outer side of the base 12' are spaced apart with each other, enough space is reserved for the elastic arm 126' to bend, and the base 12 gets a smaller resistance when being inserted into the shell 11'. The installation is more labor efficient.

[0070] Further, referring to FIG. 15, the clamping protrusion 129' presents a semicircular shape along a section parallel to a direction of extension of the elastic arm 126', and the shape of the clamping groove 113' is adapted to the clamping protrusion 129'. In the present embodiment, the elastic arm 126' extends towards the inside of the shell 11' from the middle of the base 12', and the section of the clamping protrusion 129' is a semicircle, ensuring the clamping protrusion 129' to be steadily matched with the clamping grooves 113'; moreover, when the base 12' needs to be removed from the shell 11', since the elastic arm 126' is spaced apart from the outer wall of the base 12', the clamping protrusion 129' is easily disengaged from the clamping grooves 113' when the base 12' is pulled out, thus the disassembly of the base 12' is simpler and saves more time and labor.

[0071] Referring to FIG. 11 to FIG. 12, the above atomizing assembly 10' further includes a silicone ring 5', the base 12' defines a ring groove 127' mated with the silicone ring 5' on the circumference thereof, the silicone ring 5' is sleeved on the ring groove 127' and projects from the circumference surface of the base 12', when the base 12 is installed on the shell, the silicone ring 5' is located between the outer wall of the base 12' and the inner wall of the shell 11', to function as sealing, thereby preventing the liquid in the shell 11' leaking between the base 12' and the inner wall of the shell 11'.

[0072] Referring to FIG. 11 to FIG. 12, the atomizing assembly 10' further includes a fixing element 6' and a sealing element 7', the fixing element 6' is arranged between the atomizing core 2' and the liquid storage cavity 111', and the sealing element 7' is sleeved on one side of the fixing element 6' close to the liquid storage cavity 111'. In the present embodiment, the fixing element 6' preferably is made of plastic, the sealing 7' preferably is made of silicone or rubber, the sealing element 7' and the fixing element 6' define a liquid outlet hole 71' and an liquid guide hole 61 that are communicated respectively, the liquid in the liquid storage cavity 111' flows through the liquid outlet hole 71' and the liquid guide hole 61 in sequence and then flows onto the atomizing core 2' to be heated to generate an aerosol. By arranging the fixed element 6' sleeved with the sealing element 7' between the atomizing core 2' and the liquid storage cavity 111', not only the liquid storage cavity 111' is sealed, but the liquid in the liquid storage cavity 111' can flow through the liquid outlet hole 71' and the liquid guide hole 61 only, which can prevent the liquid flowing onto other parts of the atomizing assembly 10', and avoid the atomizing assembly 10' from liquid leaking.

[0073] Referring to FIG. 19, in the above embodiment, the fixing element 6' is provided with a clamping buckle 62', the inner wall of the shell 11' defines a clamping groove 114' mated with the clamping buckle 62', and the fixing element 6' is fixed in the shell 11' through the mating between the clamping buckle 62' and the clamping groove 114'. As the fixing element 6' is fixed in the shell 11' through the mating between the clamping buckle 62' and the clamping groove 114', not only the fixing element 6' can be steadily installed inside the shell 11', but the installation is convenient. Meanwhile, since the fixing element 6' is fixed inside the shell 11' first, during the uninstallation of the base 12', the steady connection between the fixing element 6' and the shell 11' will not be impacted when the atomizing core 2' and the atomizing sleeve are installed or uninstalled together with the base 12'.

[0074] Finally, it should be noted that the above embodiments are merely to illustrate, but to limit, the technical scheme of the present disclosure. Under the thought of the present disclosure, technical features in the above embodiments or different embodiments may be combined, steps may be implemented in any order, and there exist many other changes of different aspects for what described above; for conciseness, they are not provided in detail. Although the present disclosure is described in detail with reference to the above embodiments, the ordinary skill in the art should understand that modifications are still possible for the technical schemes described in each above embodiment or partial technical schemes can be equivalently substituted; however, these modifications or substitutions do not get the essence of the technical scheme departed from the scope of the corresponding technical scheme in each embodiment of the present disclosure.

Claims

1. An atomizer for electronic cigarette, comprising an outer shell having an opening end, and an end cover arranged on the opening end, wherein the outer shell

is internally provided with a liquid storage cavity configured for storing liquid and an atomizing assembly configured for atomizing the liquid; the atomizing assembly comprises a porous body configured for absorbing the liquid from the liquid storage cavity, and a heating body configured for heating and atomizing the liquid absorbed by the porous body to generate an aerosol; the porous body comprises a first side part and a second side part arranged opposite to each other and an atomizing surface extending from the first side part to the second side part, and the heating body is arranged on the atomizing surface, wherein the atomizing surface and the end cover are spaced apart a certain distance to form an atomizing cavity configured for accommodating the generated aerosol, the outer shell further defines therein a smoke outlet channel configured for outputting the aerosol in the atomizing cavity to the outside of the outer shell, the atomizing cavity is in fluid communication with the smoke outlet channel by means of a communication opening, and an air inlet in fluid communication with the atomizing cavity is defined on the end cover or the outer shell;
the air inlet is arranged adjacent to the first side part along the direction of extension of the atomizing surface, and the communication opening is arranged adjacent to the second side part along the direction of extension of the atomizing surface, such that an airflow entering the atomizing cavity from the air inlet flows towards the communication opening along the direction of extension of the atomizing surface.

2. The atomizer for electronic cigarette according to claim 1, wherein the air inlet is defined on the end cover, staggered with the atomizing surface.

3. The atomizer for electronic cigarette according to claim 2, wherein the air inlet is defined deviating from a center of the end cover.

4. The atomizer for electronic cigarette according to any one of claims 1 to 3, wherein the atomizer comprises a proximal end and a distal end opposite to each other;
the outer shell comprises a length direction extending from the proximal end to the distal end, a width direction perpendicular to the length direction, and a thickness direction perpendicular to both the length direction and the width direction; the outer shell has a greater size along the length direction than the width direction, and has a greater size along the width direction than the thickness direction.

5. The atomizer for electronic cigarette according to claim 4, wherein the atomizing surface is arranged extending along one of the thickness direction or the width direction of the outer shell;
there are at least two air inlets, which are arranged in parallel along the other one of the thickness direction or the width direction of the outer shell, or, the air inlet presents an elongated shape extending along the other one of the thickness direction or the width direction of the outer shell.

6. The atomizer for electronic cigarette according to claim 5, wherein the heating body is arranged on the atomizing surface extending along the parallel-arrangement direction of the air inlets.

7. The atomizer for electronic cigarette according to claim 6, wherein the at least two air inlets in parallel arrangement have a span greater than a length of extension of the heating body;
or, a length of extension of the air inlet is greater than the length of extension of the heating body.

8. The atomizer for electronic cigarette according to any one of claims 1 to 3, wherein the outer shell is further internally provided with a sealing assembly configured for sealing the liquid storage cavity, accommodating and holding the atomizing assembly.

9. The atomizer for electronic cigarette according to claim 8, wherein the communication opening is defined on the sealing assembly.

10. The atomizer for electronic cigarette according to any one of claims 1 to 3, wherein a side wall of the atomizing cavity close to the air inlet is provided with a shielding part, a projection of the shielding part on a section perpendicular to the direction of extension of the air inlet at least covers partial of the air inlet, so as to prevent a condensed liquid in the atomizing cavity flowing into the air inlet.

11. The atomizer for electronic cigarette according to claim 10, wherein the atomizing cavity further defines therein a collection cavity configured for collecting a condensed liquid formed by aerosol condensation.

12. The atomizer for electronic cigarette according to claim 11, wherein the shielding part comprises an liquid blocking slope, which is arranged on the side wall of the atomizing cavity obliquely, and the atomizing cavity further defines therein a liquid conveying channel configured for connecting the liquid blocking slope and the collection cavity.

13. The atomizer for electronic cigarette according to claim 12, wherein the liquid blocking slope is arranged on the side wall of the atomizing cavity obliquely in a direction away from the air inlet.

14. The atomizer for electronic cigarette according to claim 10, wherein the shielding part further comprises an air guide slope, which is configured for guiding

an airflow entering from the air inlet to flow towards the atomizing surface.

15. The atomizer for electronic cigarette according to claim 14, wherein the atomizing cavity is internally provided with a baffle, one end of the baffle close to the atomizing surface and the air guide slope are spaced apart to define an air inlet, and the air inlet faces the heating body.

16. The atomizer for electronic cigarette according to claim 15, wherein the direction of extension of the heating body on the atomizing surface is parallel to the length direction of the air inlet.

17. An electronic cigarette, comprising an atomizing device configured for atomizing liquid to generate an aerosol for inhalation, and a power device configured for supplying power to the atomizing device, wherein the atomizing device is the atomizer according to any one of claims 1 to 16.

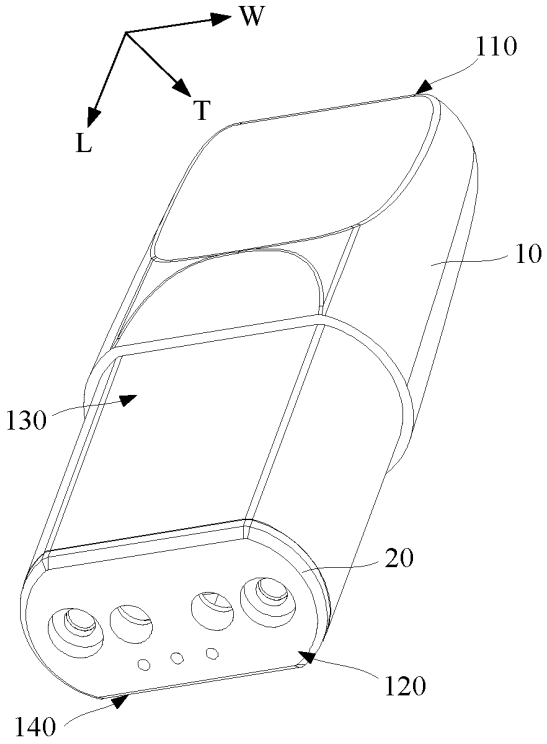


FIG. 1

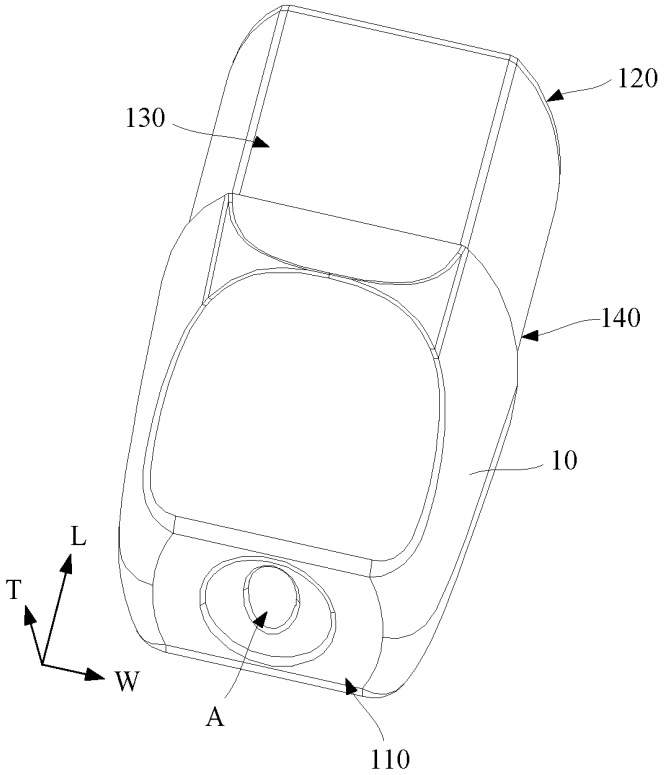
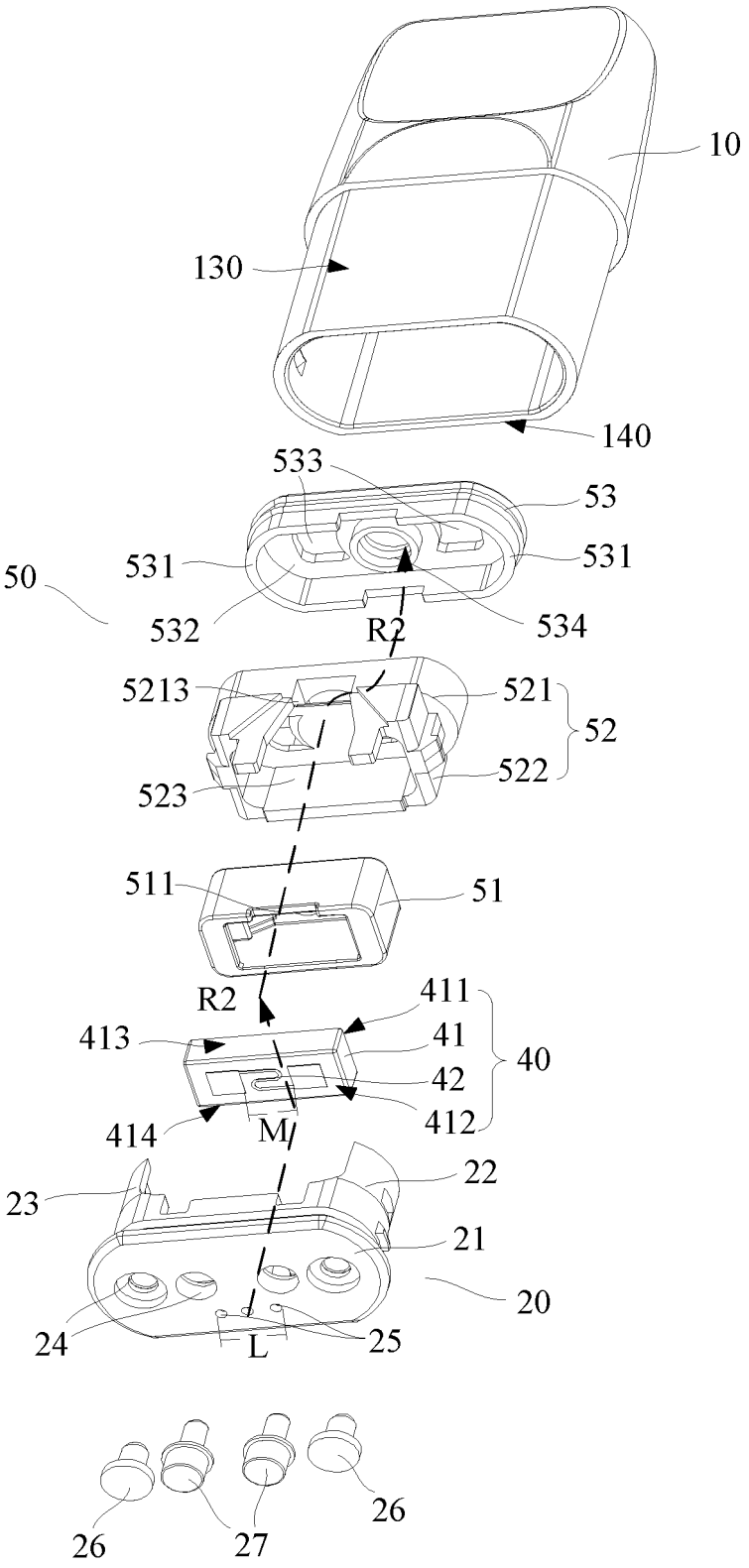


FIG. 2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R2
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R2
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M
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L
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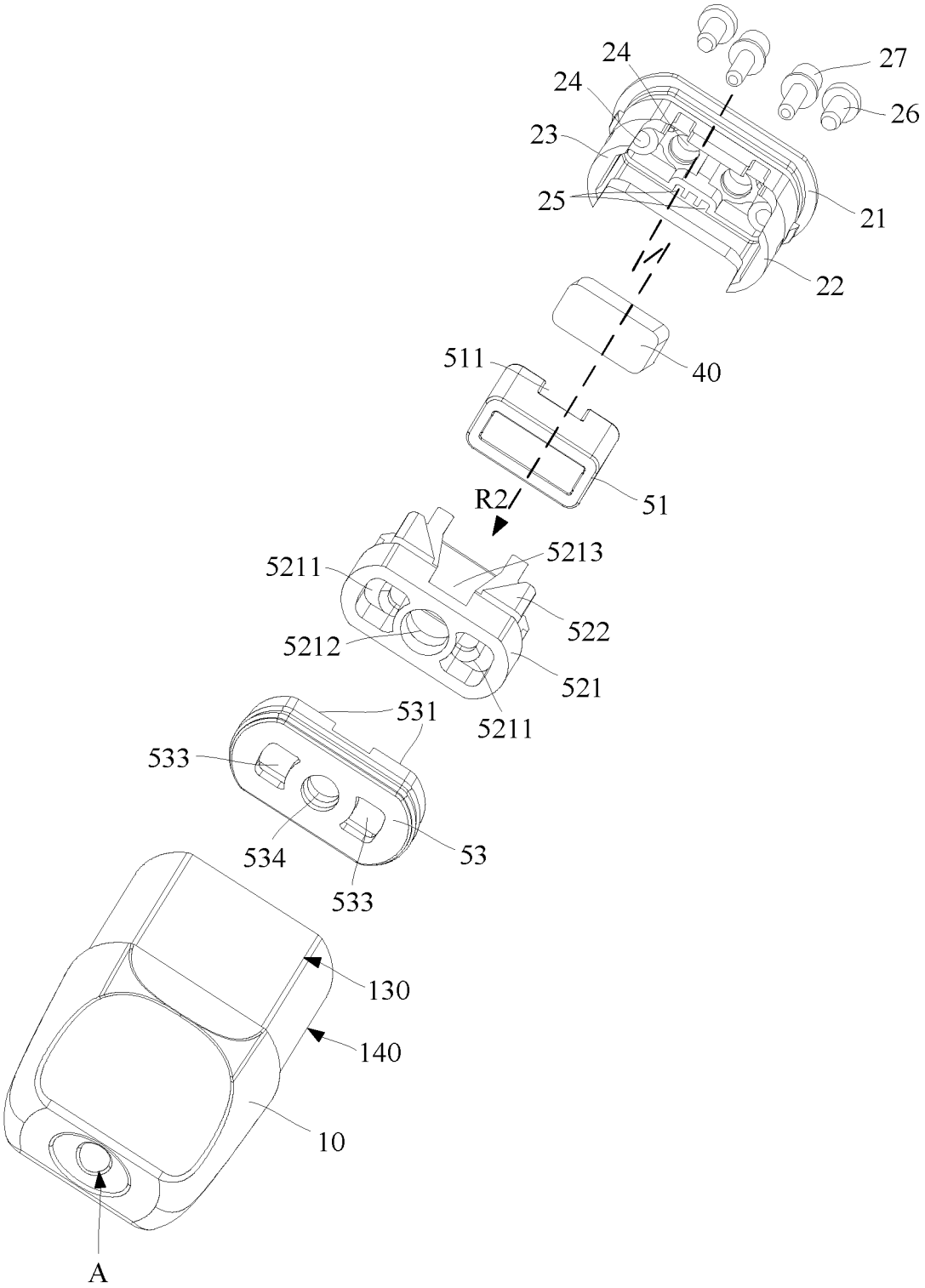
27

FIG. 3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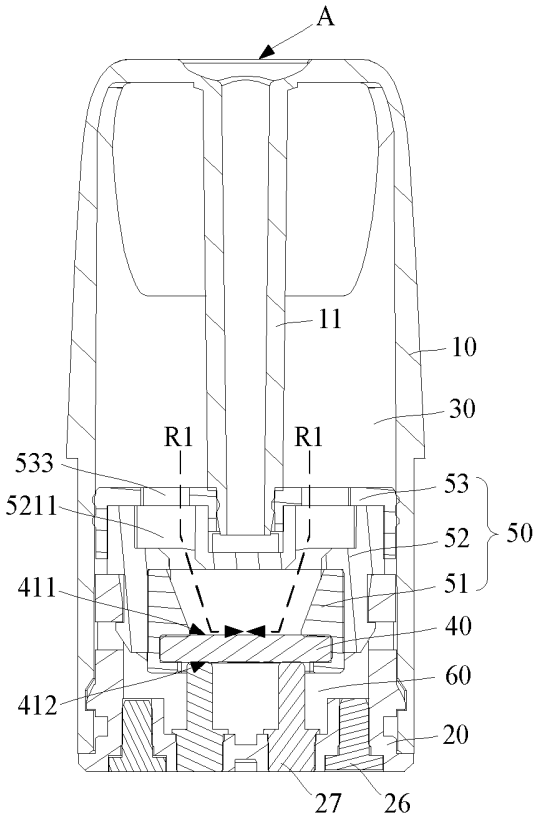
A

FIG. 4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R1
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52
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27
26

FIG. 5

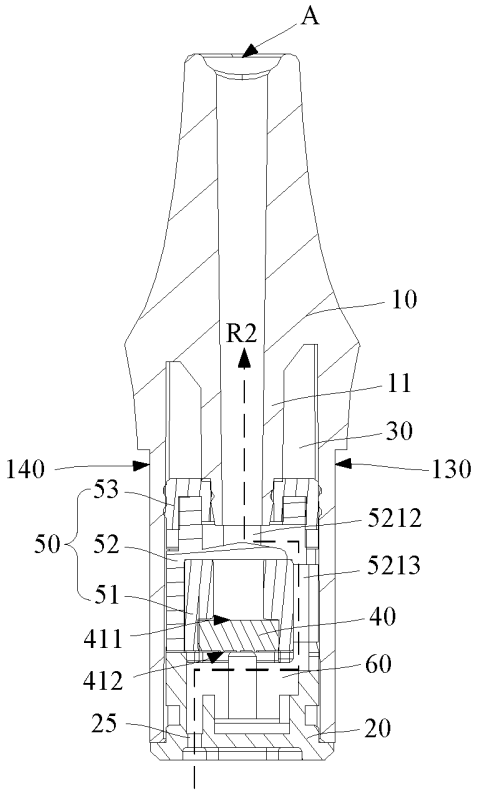
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FIG. 6

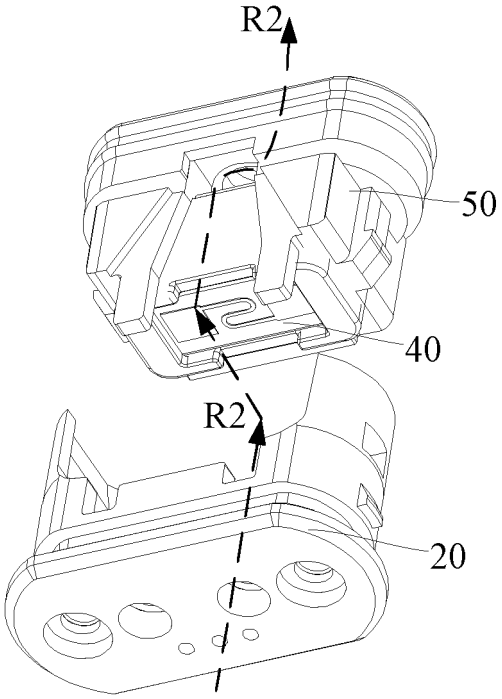

FIG. 7

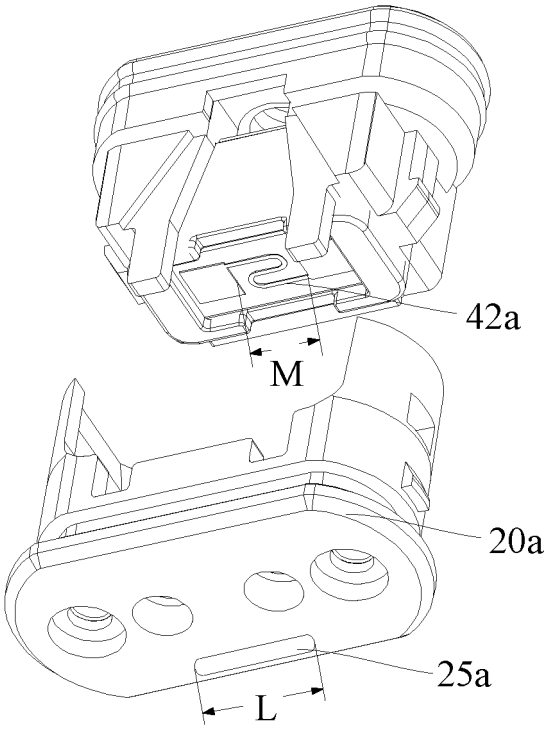

FIG. 8

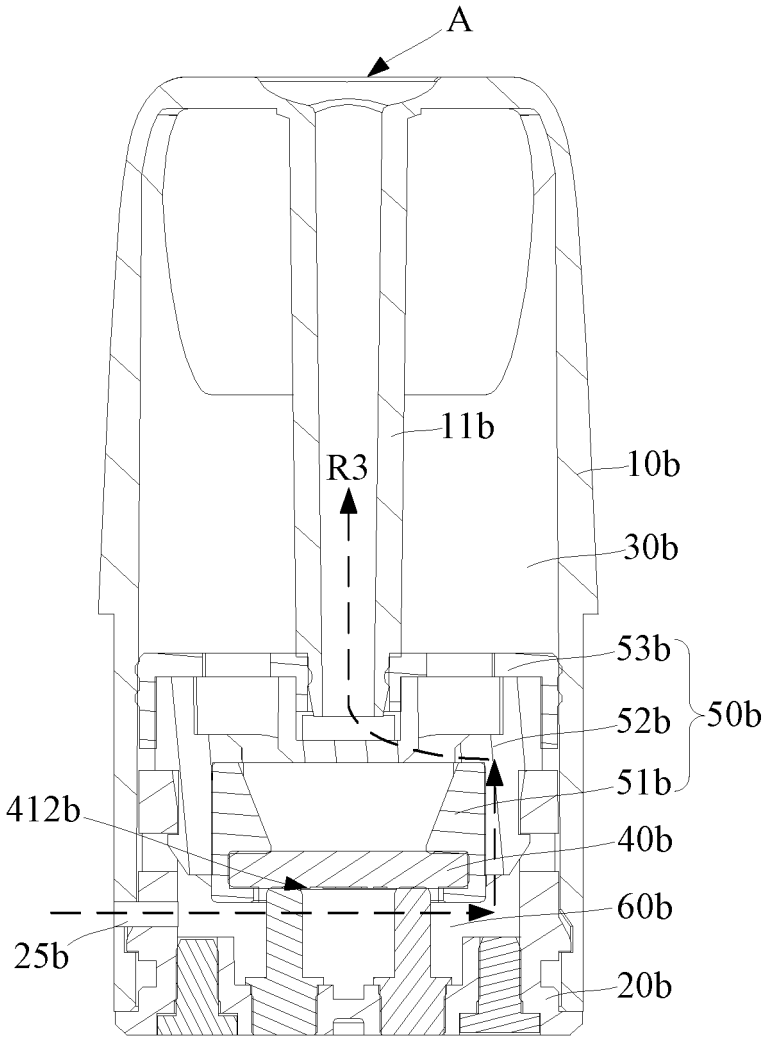

FIG. 9

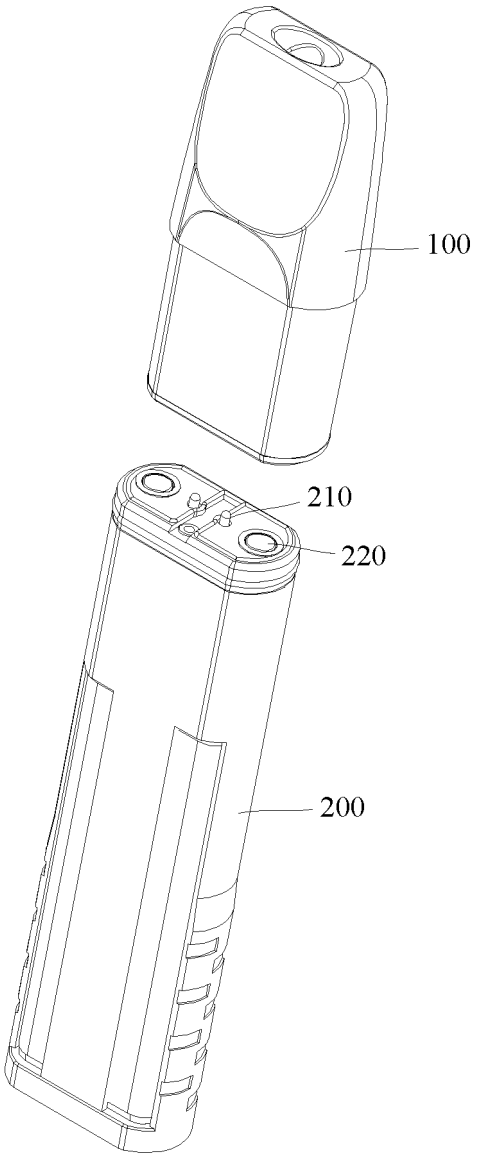

FIG. 10

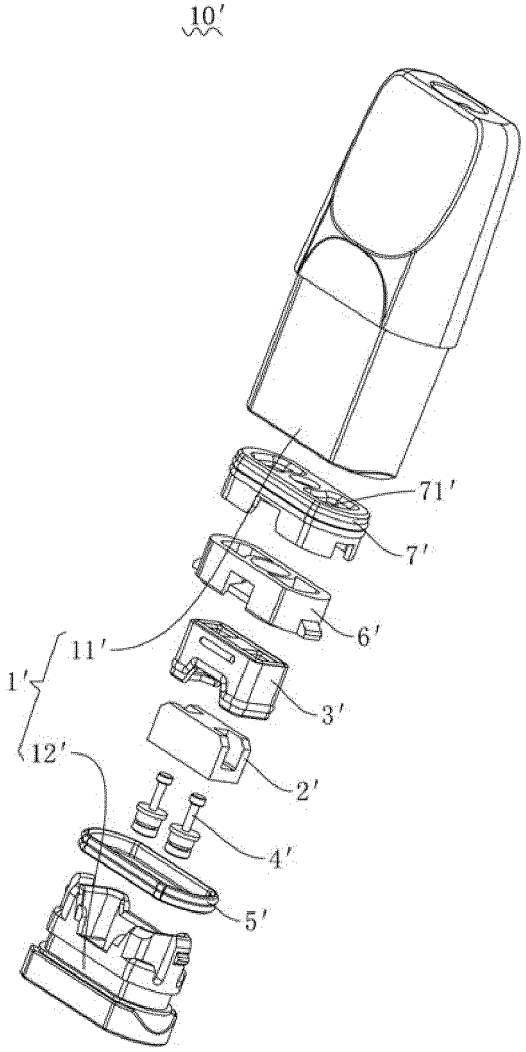

FIG. 11

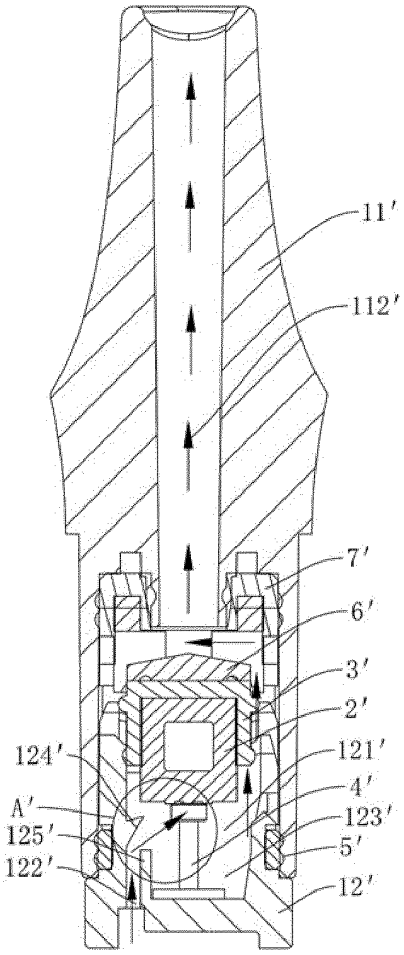
11′
112′
7′
6′
3′
2′
121′
4′
123′
5′
12′
124′
A′
125′
122′

FIG. 12

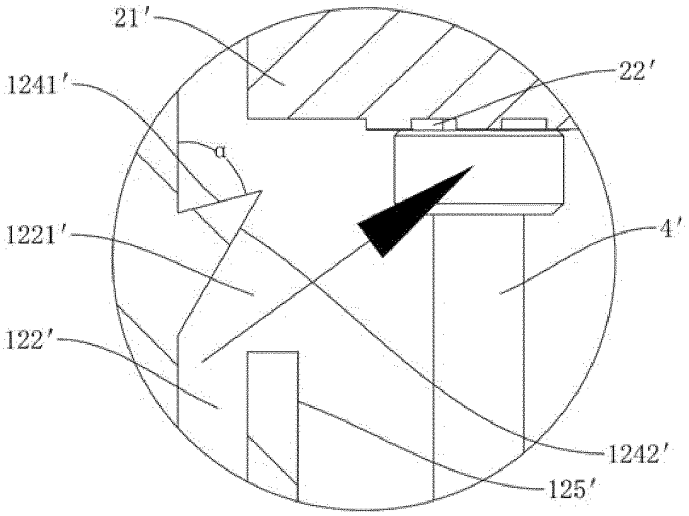
21′
1241′
α
1221′
122′
22′
4′
1242′
125′

FIG. 13

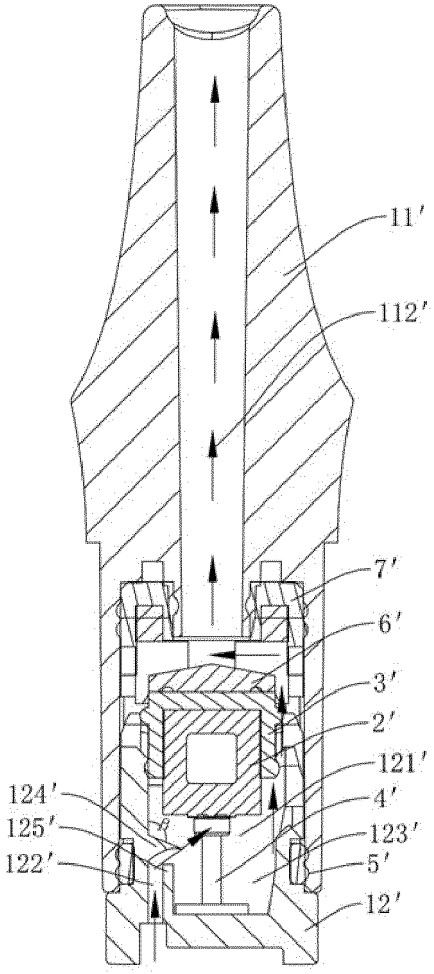

FIG. 14

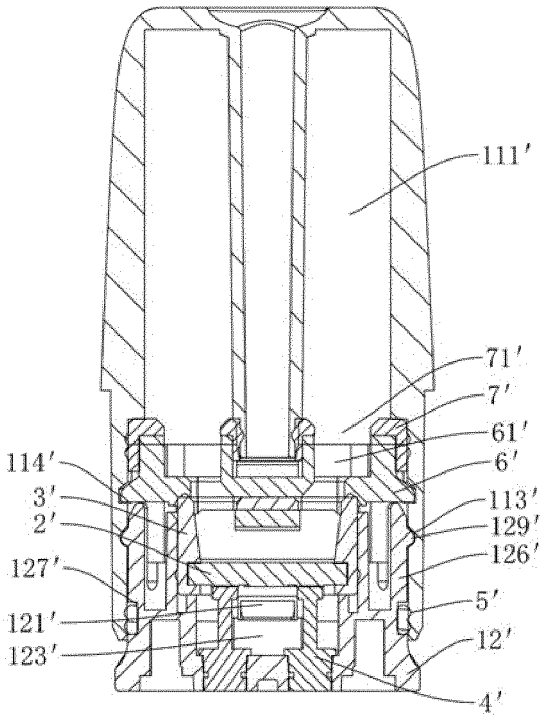

FIG. 15

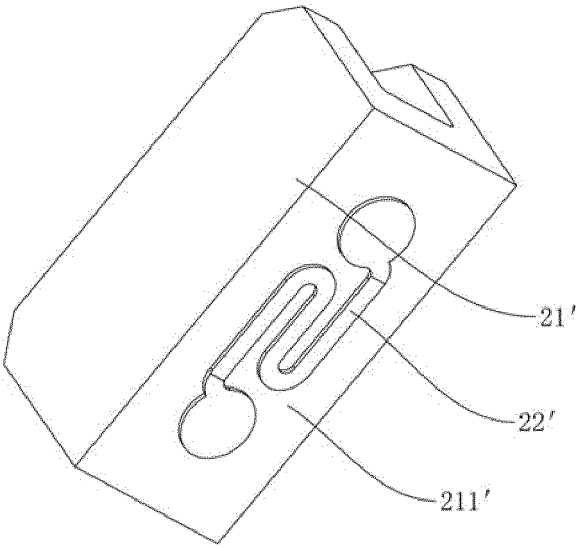

FIG. 16

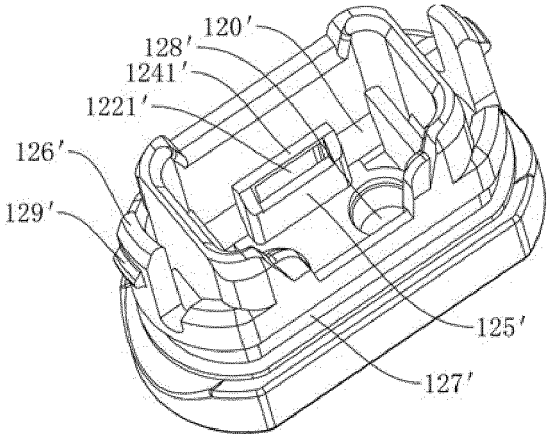

FIG. 17

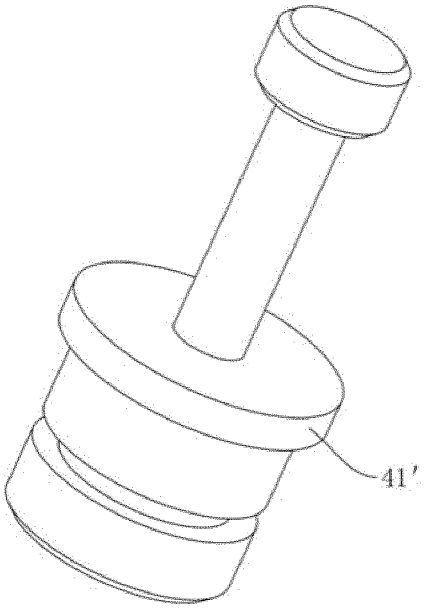

FIG. 18

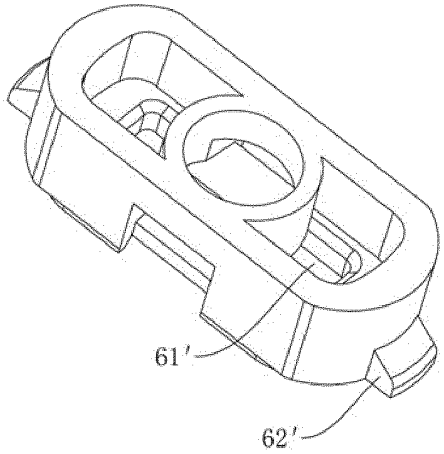

FIG. 19

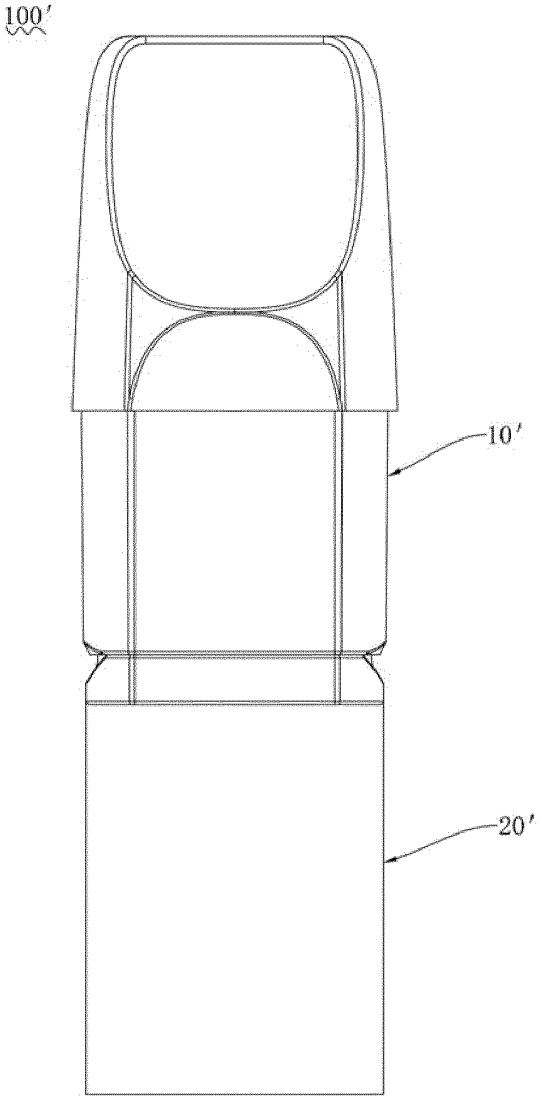

FIG. 20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2020/098587

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/40(2020.01)i; A24F 40/46(2020.01)i; A24F 40/10(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

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, WPI, EPODOC: 深圳市合元科技, 雾化, 电子烟, 凝结, 冷凝, 遮, 挡, 阻, 防, 斜, 进气, atomi+, vapori+, electronic 2d cigarette, condens+, shield+, inclin+, tilt+, inlet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 210611013 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 26 May 2020 (2020-05-26) description, paragraphs [0006]-[0019], and figures 1-10	1-9, 17
X	CN 206079042 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 12 April 2017 (2017-04-12) description, paragraphs [0022]-[0034], and figures 1-3	1-9, 17
X	CN 206620836 U (CHINA TOBACCO HUNAN INDUSTRIAL CO., LTD.) 10 November 2017 (2017-11-10) description, paragraph [0025], and figure 2	1-9, 17
Y	CN 206079042 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 12 April 2017 (2017-04-12) description, paragraphs [0022]-[0034], and figures 1-3	10-16
Y	CN 103237469 A (PHILIP MORRIS PRODUCTS S.A.) 07 August 2013 (2013-08-07) description paragraphs [0094]-[0101], figure 8	10-16
A	CN 204146318 U (SHENZHEN FIRSTUNION TECHNOLOGY CO., LTD.) 11 February 2015 (2015-02-11) entire document	1-17

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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 September 2020	**28 September 2020**

Name and mailing address of the ISA/CN	Authorized officer
China National Intellectual Property Administration (ISA/CN) **No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088** **China**	
Facsimile No. **(86-10)62019451**	Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2020/098587

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 207370092 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICES CO., LTD.) 18 May 2018 (2018-05-18) entire document	1-17
A	US 2018310614 A1 (XU, Yongjie James) 01 November 2018 (2018-11-01) entire document	1-17

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2020/098587

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 210611013 U	26 May 2020	None	
CN 206079042 U	12 April 2017	None	
CN 206620836 U	10 November 2017	EP 3597056 A1	22 January 2020
		WO 2018188638 A1	18 October 2018
CN 103237469 A	07 August 2013	KR 102045233 B1	15 November 2019
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CN 204146318 U	11 February 2015	None	
CN 207370092 U	18 May 2018	None	
US 2018310614 A1	01 November 2018	US 10368579 B2	06 August 2019

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 201810150690 A **[0003]**