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(54) **ELECTRONIC VAPORIZATION DEVICE**

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CPC ***A24F 40/46*** (2020.01); ***A24F 40/20*** (2020.01); ***A24F 40/42*** (2020.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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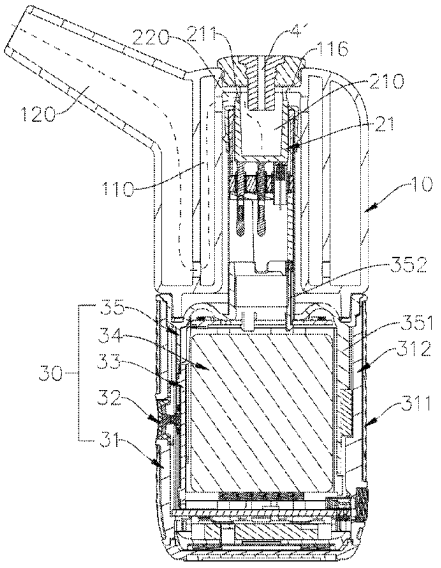
(57) **ABSTRACT**

An electronic vaporization device includes: a nozzle integrated condensation cap; and a heating component accommodated in the nozzle integrated condensation cap, the heating component including a heating bowl, a vaporization cavity for accommodating an aerosol-forming substrate being formed in the heating bowl. An accommodating cavity for accommodating the heating component, and a cooling channel and an inhalation channel in communication with the vaporization cavity in sequence, are formed in the nozzle integrated condensation cap.

24 Claims, 5 Drawing Sheets



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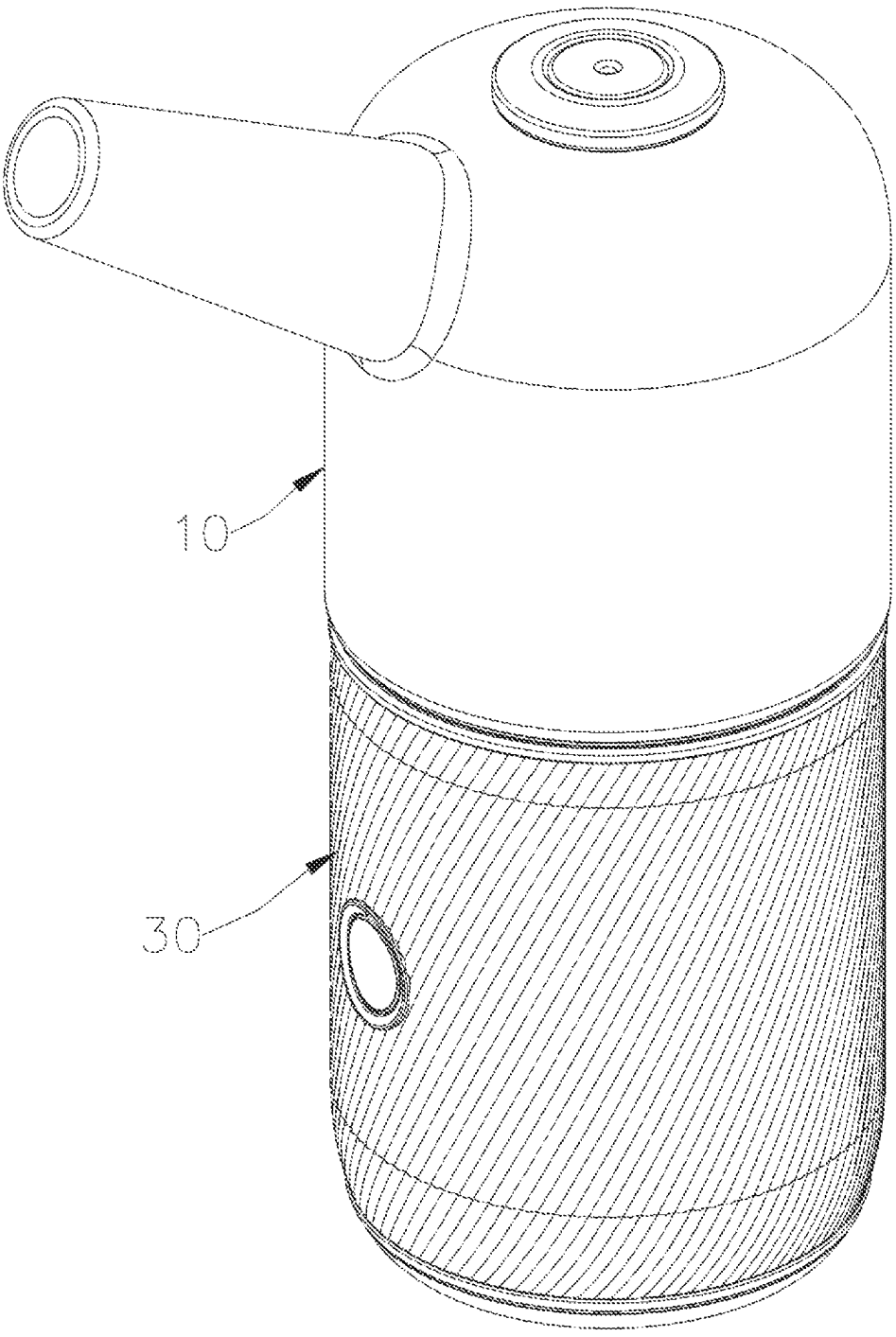

FIG. 1

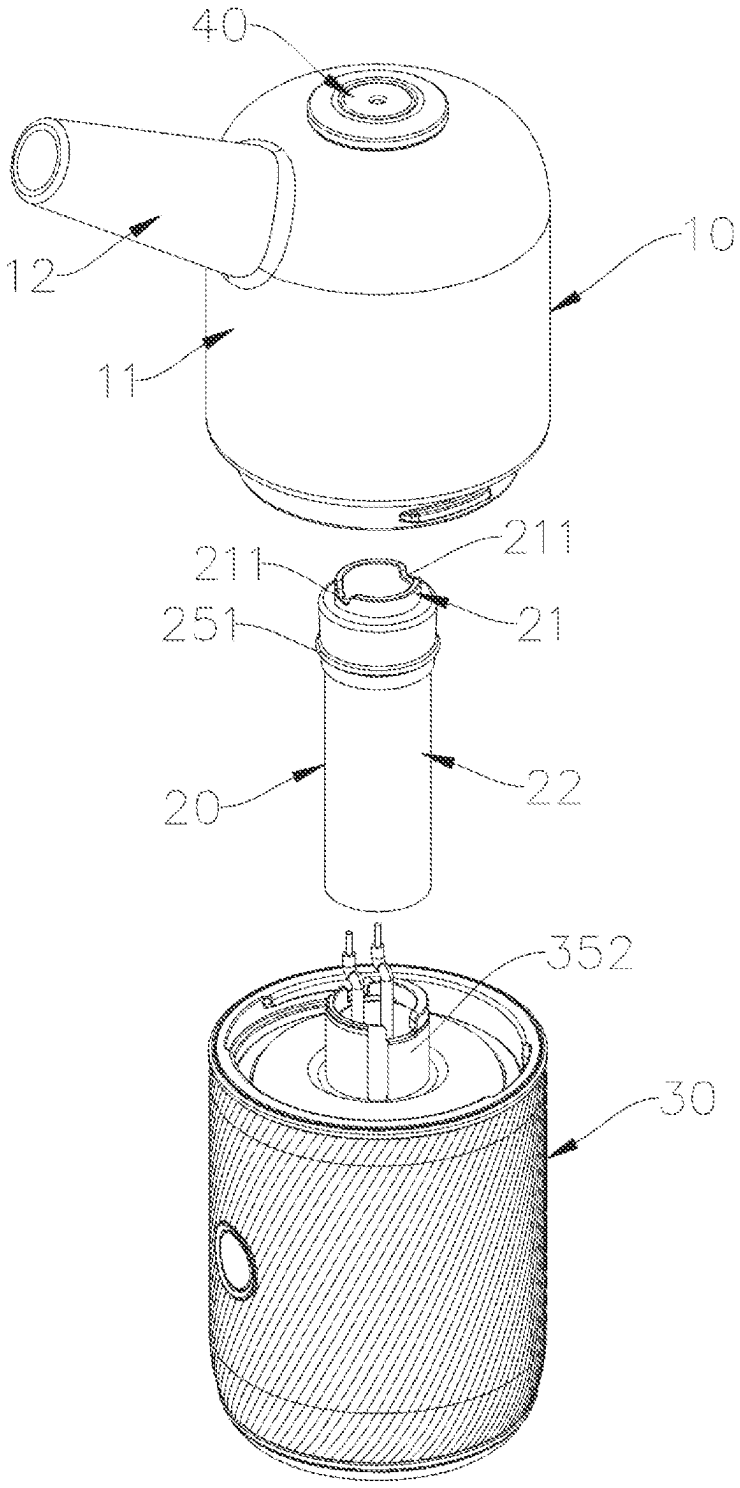

FIG. 2

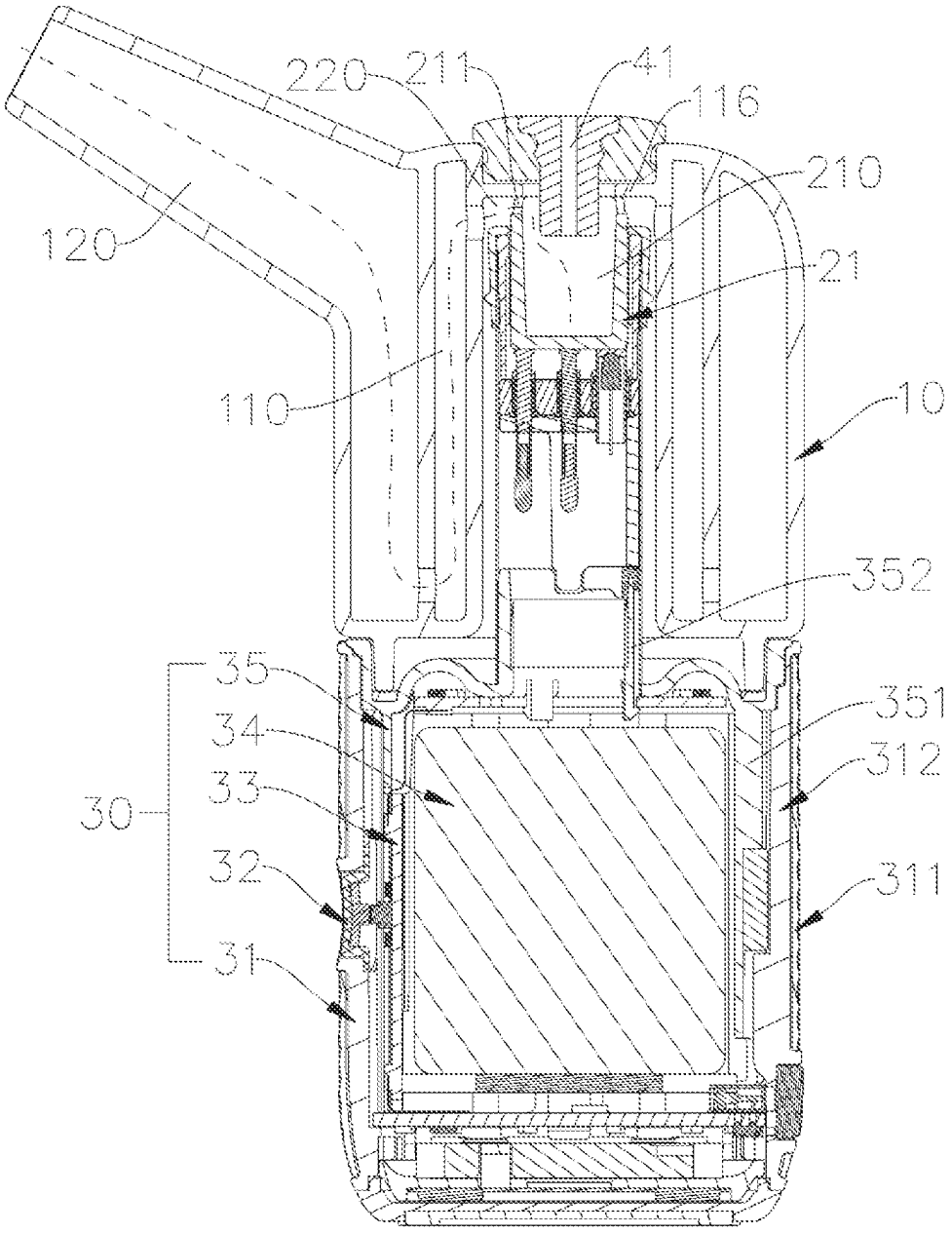

FIG. 3

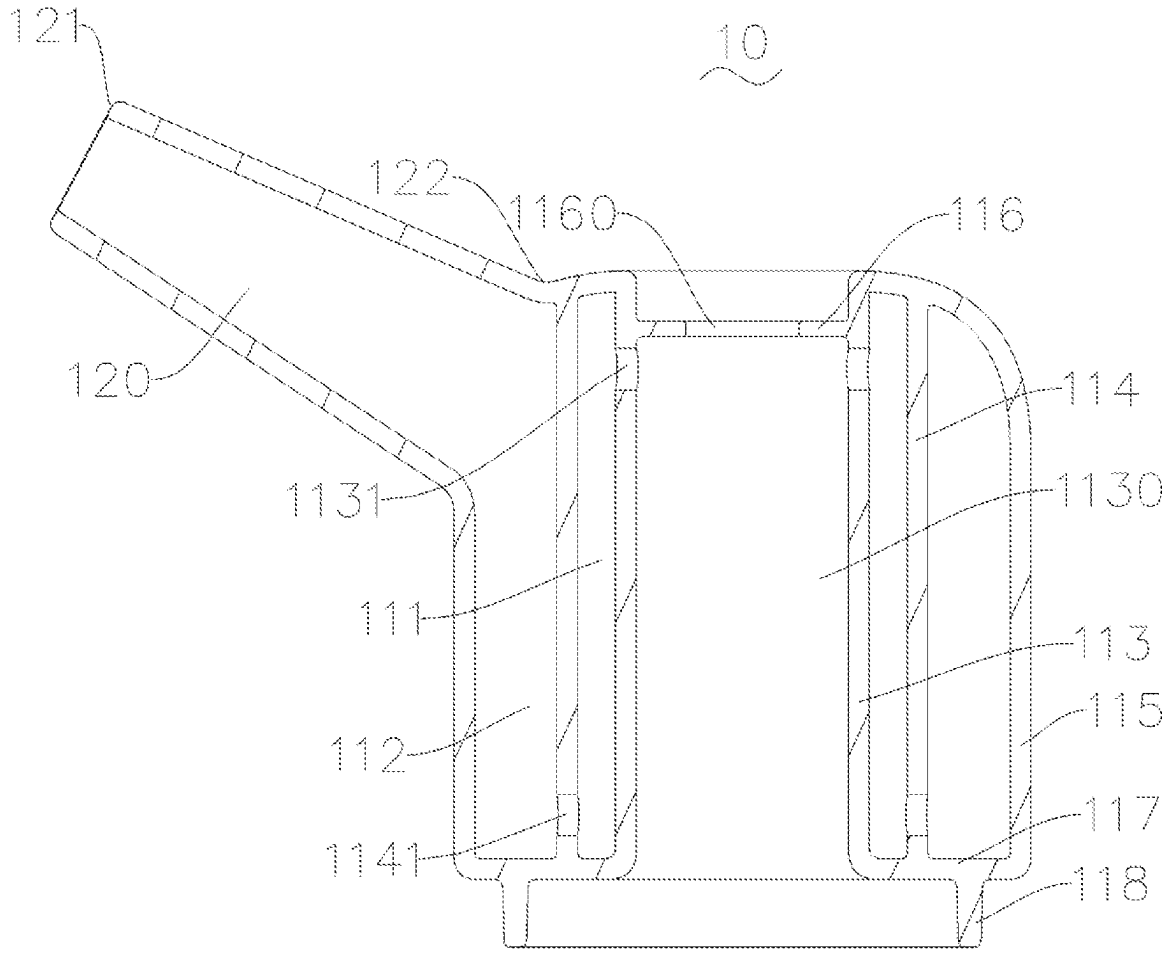
121
10
122
1160
116
120
114
1131
1130
111
113
115
112
117
1141
118

FIG. 4

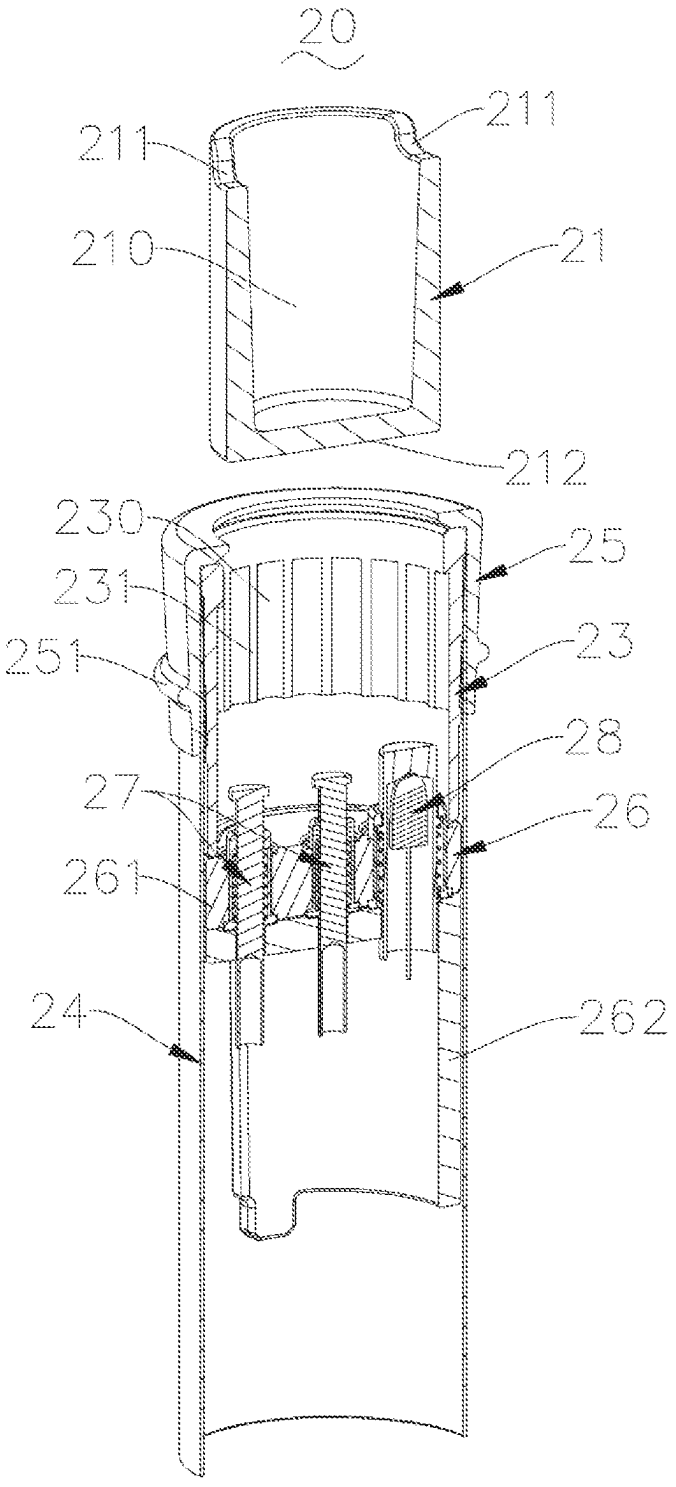

FIG. 5

ELECTRONIC VAPORIZATION DEVICE

CROSS-REFERENCE TO PRIOR APPLICATION

Priority is claimed to Chinese Patent Application No. 202123156423.7, filed on Dec. 15, 2021, the entire disclosure of which is hereby incorporated by reference herein.

FIELD

The present invention relates to the field of vaporization, and in particular, to an electronic vaporization device.

BACKGROUND

During operation of an existing electronic vaporization device using a heating bowl for baking, an aerosol-forming substrate (for example, plant leaves, a tobacco paste, or a tobacco shred) filling the heating bowl is heated to generate smoke, and the smoke is condensed by a condensation cap and then outputted for inhalation by a user, so as to prevent smoke with an excessively high temperature from scalding the user. In order to communicate the heating bowl with the condensation cap, a structure of the existing electronic vaporization device is relatively complex, or occupies a relatively large space, which causes inconvenient use for a user, and impedes storage and carrying.

SUMMARY

In an embodiment, the present invention provides an electronic vaporization device, comprising: a nozzle integrated condensation cap; and a heating component accommodated in the nozzle integrated condensation cap, the heating component comprising a heating bowl, a vaporization cavity configured to accommodate an aerosol-forming substrate being formed in the heating bowl, wherein an accommodating cavity configured to accommodate the heating component, and a cooling channel and an inhalation channel in communication with the vaporization cavity in sequence, are formed in the nozzle integrated condensation cap.

BRIEF DESCRIPTION OF THE DRAWINGS

Subject matter of the present disclosure will be described in even greater detail below based on the exemplary figures. All features described and/or illustrated herein can be used alone or combined in different combinations. The features and advantages of various embodiments will become apparent by reading the following detailed description with reference to the attached drawings, which illustrate the following:

FIG. **1** is a schematic three-dimensional structure diagram of an electronic vaporization device according to some embodiments of the present invention.

FIG. **2** is a schematic structural exploded view of the electronic vaporization device shown in FIG. **1**.

FIG. **3** is a schematic structural cross-sectional view of the electronic vaporization device in FIG. **1**.

FIG. **4** is a schematic structural cross-sectional view of a nozzle integrated condensation cap in FIG. **2**.

FIG. **5** is a schematic structural cross-sectional exploded view of a heating component in FIG. **2**.

DETAILED DESCRIPTION

In an embodiment, the present invention provides an improved electronic vaporization device for the foregoing defects in the prior art.

In an embodiment, the present invention provides an electronic vaporization device, including a nozzle integrated condensation cap and a heating component accommodated in the nozzle integrated condensation cap. The heating component includes a heating bowl, and a vaporization cavity configured to accommodate an aerosol-forming substrate is formed in the heating bowl. An accommodating cavity configured to accommodate the heating component and a cooling channel and an inhalation channel in communication with the vaporization cavity in sequence are formed in the nozzle integrated condensation cap.

In some embodiments, the cooling channel includes a first cooling channel in communication with the vaporization cavity and a second cooling channel in communication with the first cooling channel.

In some embodiments, the first cooling channel and the second cooling channel both extend along a longitudinal direction, and airflows in the first cooling channel and the second cooling channel are in opposite directions.

In some embodiments, the first cooling channel is arranged on a periphery of the accommodating cavity, and the second cooling channel is arranged on a periphery of the first cooling channel.

In some embodiments, the nozzle integrated condensation cap includes an outer cap, a first isolating wall, and a second isolating wall.

The first isolating wall is arranged in the outer cap along a longitudinal direction, and an inner wall surface of the first isolating wall defines the accommodating cavity.

The second isolating wall is arranged in the outer cap along a longitudinal direction and is located between the outer cap and the first isolating wall. The first cooling channel is defined between an outer wall surface of the first isolating wall and an inner wall surface of the second isolating wall, and the second cooling channel is defined between an outer wall surface of the second isolating wall and an inner wall surface of the outer cap.

In some embodiments, at least one first air outlet configured to communicate the accommodating cavity with the first cooling channel is arranged on the first isolating wall, and at least one second air outlet configured to communicate the first cooling channel with the second cooling channel is arranged on the second isolating wall. The at least one first air outlet and the at least one second air outlet are respectively located at an upper end and a lower end of the first cooling channel.

In some embodiments, the inhalation channel is in communication with an upper end of the second cooling channel.

In some embodiments, the inhalation channel has an inhalation end away from the second cooling channel and a connection end close to the second cooling channel, and the inhalation end of the inhalation channel is at a higher position than the connection end.

In some embodiments, a pore size of the inhalation channel gradually decreases from the connection end to the inhalation end.

In some embodiments, condense water is provided in the cooling channel.

In some embodiments, the nozzle integrated condensation cap is made of glass.

In some embodiments, a limiting flange that extends inward is formed on an inner wall surface of an upper end of the accommodating cavity, and an upper end of the heating bowl abuts against the limiting flange.

In some embodiments, a through hole in communication with the accommodating cavity is arranged on the limiting flange.

In some embodiments, at least one vent opening configured to communicate the vaporization cavity with the cooling channel is formed on a side wall of the heating bowl.

In some embodiments, the vent opening extends downward from a top surface of the side wall of the heating bowl.

In some embodiments, the heating bowl is made of a ceramic material.

In some embodiments, the heating component further includes a heating body, and the heating bowl is accommodated in the heating body.

In some embodiments, a heating cavity configured to accommodate the heating bowl is formed in the heating body, and an upper end of the heating bowl extends out of the heating cavity.

In some embodiments, a plurality of thermal insulation protrusions that protrude are formed on a cavity wall of the heating cavity, and an outer wall surface of the heating bowl abuts against the plurality of thermal insulation protrusions.

In some embodiments, the heating body includes at least one electrode pole, and an upper end of the at least one electrode pole abuts against a bottom surface of the heating bowl.

Implementing the present invention brings at least the following beneficial effects: The electronic vaporization device has a simple structure, is convenient to assemble, and is easy to receive and carry.

To provide a clearer understanding of the technical features, objectives, and effects of the present invention, specific implementations of the present invention are described with reference to the accompanying drawings. In the following description, many specific details are provided to facilitate a full understanding of the present invention. However, the present invention may alternatively be implemented in other manners different from those described herein, and a person skilled in the art may make similar modifications without departing from the content of the present invention. Therefore, the present invention is not limited to the embodiments disclosed below.

In the description of the present invention, it should be understood that directions or location relationships indicated by terms "center", "longitudinal", "transversely", "length", "width", "thickness", "upper", "lower", "front", "rear", "left", "right", "vertical", "horizontal", "top", "bottom", "inner", "outer", "clockwise", "counterclockwise" "axial direction", "radial direction" and "circumferential direction" are based on the directions or location relationships shown in the accompanying drawings or the directions or location relationships that are usually placed when the product of the present invention is used, and are merely used for the convenience of describing the present invention and simplifying the description, but are not used to indicate or imply that a device or an element needs to have a particular direction or be constructed and operated in a particular direction, and therefore, cannot be understood as a limitation to the present invention.

In addition, terms "first" and "second" are used merely for the purpose of description, and shall not be construed as indicating or implying relative importance or implying a quantity of indicated technical features. Therefore, features defining "first" and "second" can explicitly or implicitly include at least one of the features. In description of the present invention, "multiple" means at least two, such as two and three unless it is specifically defined otherwise.

In the present invention, unless otherwise explicitly specified or defined, the terms such as "mount", "connect", "connection", and "fix" should be understood in a broad sense. For example, the connection may be a fixed connection, a detachable connection, or an integral connection; or the connection may be a mechanical connection or an electrical connection; or the connection may be a direct connection, an indirect connection through an intermediary, or internal communication between two elements or mutual action relationship between two elements, unless otherwise specified explicitly. A person of ordinary skill in the art can understand specific meanings of the terms in the present invention according to specific situations.

In the present invention, unless explicitly specified or limited otherwise, a first characteristic "on" or "under" a second characteristic may be the first characteristic in direct contact with the second characteristic, or the first characteristic in indirect contact with the second characteristic by using an intermediate medium. In addition, that the first feature is "above", "over", or "on" the second feature may indicate that the first feature is directly above or obliquely above the second feature, or may merely indicate that the horizontal position of the first feature is higher than that of the second feature. That the first feature is "below", "under", and "beneath" the second feature may be that the first feature is right below the second feature or at an inclined bottom of the second feature, or may merely indicate that the horizontal position of the first feature is lower than that of the second feature.

It should be noted that, when a component is referred to as "being fixed to" or "being arranged on" another component, the component may be directly on the another component, or there may be an intermediate component. When one component is considered as "being connected to" another component, the component may be directly connected to the another component, or an intermediate component may simultaneously exist. The terms "vertical", "horizontal", "upper", "lower", "left", "right", and similar expressions used in this specification are merely used for an illustrative purpose, and do not represent the only implementation.

FIG. **1** to FIG. **3** show an electronic vaporization device according to some embodiments of the present invention. The electronic vaporization device may be substantially in a shape of a round column, and may include a main unit **30**, a nozzle integrated condensation cap **10** arranged above the main unit **30** along a longitudinal direction, and a heating component **20** arranged in the nozzle integrated condensation cap **10**. The main unit **30** is configured to supply power to the heating component **20**, and may control turn-on and turn-off of the entire electronic vaporization device. A vaporization cavity **210** configured to accommodate and heat an aerosol-forming substrate is formed in the heating component **20**. The aerosol-forming substrate may be in a form of a plant leave, a paste, or a gel. A cooling channel **110** and an inhalation channel **120** in communication with the vaporization cavity **210** in sequence are formed in the nozzle integrated condensation cap **10**. An aerosol generated after the aerosol-forming substrate is heated and vaporized is cooled through the cooling channel **110** and then outputted through the inhalation channel **120** for inhalation by a user. It may be understood that, in other embodiments, the shape of the electronic vaporization device is not limited to the shape of a round column, but may also be other shapes such as the shape of an elliptical column, the shape of a square column, or the shape of a flat column.

In some embodiments, the main unit **30** may include a shell **31**, a button **32**, a circuit board **33**, a battery **34**, and a holder **35**. The circuit board **33**, the battery **34**, and the holder **35** are all accommodated in the shell **31**. A related control circuit is arranged on the circuit board **33**. The

control circuit is electrically connected to the battery **34** and the heating component **20** for controlling the battery **34** to supply power to the heating component **20**. The button **32** is arranged on a side wall of the shell **31** and is configured to receive an operation performed by a user, so as to turn on the circuit board **33** to control the battery **34** to supply power to the heating component **20**.

The shell **31** may be cylindrical, and may include a cylindrical first shell **311** located outside and a second cylindrical shell **312** located inside. The second shell **312** may be a hard shell, which provides support and protection. The first shell **311** is sleeved outside the second shell **312**. The first shell **311** may be made of a soft material such as a soft glue, which can improve a touch feeling for a user.

In some embodiments, the holder **35** may include a holder body **351** accommodated in the shell **31** and a sleeve portion **352** extending upward from a top wall of the holder body **351**. The holder body **351** may be in a shape of a cylinder having an opening on a side. The battery **34** may be accommodated in the holder body **351**, and the circuit board **33** may be arranged on the side of the holder body **351** having the opening and arranged corresponding to the button **32**. The sleeve portion **352** may be cylindrical, and may be formed by integrally extending upward on the top wall of the holder body **351**. The sleeve portion **352** may extend out of the shell **31** and is configured to be sleeved on and connected to the heating component **2**.

The nozzle integrated condensation cap **10** is arranged above the main unit **30** along the longitudinal direction and may be detachably connected to the main unit **30** by screwing, magnetic connection, engagement, or the like. In some embodiments, the nozzle integrated condensation cap **10** may be made of glass or the like, and may include a cap body **11** and a nozzle **12** connected to the cap body **11**. The inhalation channel **120** is formed in the nozzle **12**, and the cooling channel **110** is formed in the cap body **11**. Condense water may be further provided in the cooling channel **110**. An aerosol passes through the condense water to be condensed and to filter out an impurity in the aerosol for inhalation by the user.

As shown in FIG. **3** and FIG. **4**, in some embodiments, the cap body **11** may include an outer cap **115** and a first isolating wall **113** and a second isolating wall **114** arranged in the outer cap **115**. The outer cap **115** may be substantially cylindrical, and an outer diameter of the outer cap **115** may be the same as an outer diameter of the shell **31**. The outer cap **115** has an annular bottom wall **117**. The bottom wall **117** may cover a lower end of the cooling channel **110**. An annular connection portion **118** that integrally extends downward may be further formed on the bottom wall **117**. An outer wall surface of the connection portion **118** may be provided with external threads, and an inner wall surface of the holder body **351** or an inner wall surface of the shell **31** is correspondingly provided with internal threads, so that the cap body **11** and the main unit **30** are screwed together.

The first isolating wall **113** may be formed by integrally extending downward on an inner side of a top wall of the outer cap **115**. The first isolating wall **113** may be annular and may be arranged coaxially with the outer cap **115**. An inner wall surface of the first isolating wall **113** defines an accommodating cavity **1130** configured to accommodate the heating component **20**, and a lower end of the accommodating cavity **1130** is open to facilitate insertion of the heating component **20**. A limiting flange **116** that extends inward along a transverse direction may be formed on an inner wall surface of an upper end of the first isolating wall **113**. The limiting flange **116** may be configured to limit a position of the heating bowl **21** in the accommodating cavity **1130** along a longitudinal direction. In some embodiments, a through hole **1160** configured to communicate the accommodating cavity **110** with the outside may be further arranged on the limiting flange **116**. The electronic vaporization device may further include a seal plug **40**. The seal plug **40** may be arranged on a top of the outer cap **115** and abut against the limiting flange **116**. A vent hole **41** may be formed on the seal plug **40** along a longitudinal direction. The vent hole **41** may be coaxially arranged with the accommodating cavity **110** and is configured to communicate the accommodating cavity **110** with the outside.

The second isolating wall **114** may be formed by integrally extending downward on the inner side of a top wall of the outer cap **115**. The second isolating wall **114** may be annular and may be arranged coaxially with the outer cap **115**. The second isolating wall **114** is located between the outer cap **115** and the first isolating wall **113**, and is spaced apart from the outer cap **115** and from the first isolating wall **113**. A first cooling channel **111** is defined between an inner wall surface of the second isolating wall **114** and an outer wall surface of the first isolating wall **113**, and a second cooling channel **112** is defined between an outer wall surface of the second isolating wall **114** and an inner wall surface of the outer cap **115**. That is to say, the accommodating cavity **110**, the first cooling channel **111**, and the second cooling channel **112** all extend along the longitudinal direction. The first cooling channel **111** is annular and is arranged on a periphery of the accommodating cavity **110**, and the second cooling channel **112** is annular and is arranged on a periphery of the first cooling channel **111**. Since the first cooling channel **111** and the second cooling channel **112** are annular, a relatively large accommodating space is available for accommodating a condensate.

At least one first air outlet **1131** configured to communicate the accommodating cavity **110** with the first cooling channel **111** is arranged on the first isolating wall **113**, and at least one second air outlet **1141** configured to communicate the first cooling channel **111** with the second cooling channel **112** is arranged on the second isolating wall **114**. The first air outlet **1131**, the first cooling channel **111**, the second air outlet **1141**, and the second cooling channel **112** are in communication in sequence and form the cooling channel **110**. In this embodiment, two first air outlets **1131** are symmetrically arranged on two sides of the first isolating wall **113** in a circumferential direction. Two second air outlets **1141** are symmetrically arranged on two sides of the second isolating wall **114** in a circumferential direction. The two second air outlets **1141** may be respectively arranged corresponding to the two first air outlets **1131**. That is to say, a line connecting the two second air outlets **1141** may be parallel to a line connecting the two first air outlets **1131**. It may be understood that, in other embodiments, one or more first air outlets **1131** and one or more second air outlet **1141** may be arranged. In other embodiments, an included angle may be formed between the line connecting the two second air outlets **1141** and the line connecting the two first air outlets **1131**. For example, the included angle is 90 degrees.

Preferably, flowing directions of a vapor in the first cooling channel **111** and the second cooling channel **112** are opposite. The first air outlet **1131** is arranged on a side wall of the upper end of the first isolating wall **113**, and may be located below the limiting flange **116** and close to the limiting flange **116**. The second air outlet **1141** may be arranged on a side wall of the lower end of the second isolating wall **114** and close to the bottom wall **117**. The upper end of the second cooling channel **112** is in commu-

nication with the inhalation channel **120**, so that the cooling channel **110** is relatively long, thereby realizing more effective condensation and filtering. As shown by dashed lines in FIG. **3**, the vapor generated in the vaporization cavity **210** enters an upper end of the first cooling channel **111** through the first air outlet **1131**, and flows downward in the first cooling channel **111** to the second air outlet **1141** at the lower end, and then enters the second cooling channel **112** through the second air outlet **1141** and flows upward in the second cooling channel **112**, and is finally outputted through the inhalation channel **120**.

The nozzle **12** may be tubular. An inner wall surface thereof defines the inhalation channel **120**. The nozzle **12** may be arranged on a side of the outer cap **115** corresponding to one of the second air outlets **1141**, and may be formed by integrally extending on an outer wall surface of the outer cap **115**. The nozzle **12** has an inhalation end **121** away from the outer cap **115** and a connection end **122** connected to the outer cap **115**. The nozzle **12** may be arranged obliquely upward, so that the inhalation end **121** is at a higher position than the connection end **122**, which facilitates inhalation by the user. An outer diameter and an inner diameter of the nozzle **12** may gradually decrease from the connection end **122** toward the inhalation end **121**, so that a pore size of the inhalation channel **120** gradually decreases from the connection end **122** toward the inhalation end **121**. In this way, the vapor at the inhalation end **121** is more concentrated, and inhalation experience is more desirable. In addition, the outer diameter of the nozzle **12** at the inhalation end **121** is relatively small, which helps the user hold the nozzle in the mouth.

As shown in FIG. **3** and FIG. **5**, the heating component **20** may be cylindrical, may be accommodated in the accommodating cavity **110**, and includes a heating body **22**, a heating bowl **21** accommodated in the heating body **22**, and a heating element arranged in the heating bowl **21**.

The heating bowl **21** may be cylindrical, and an inner wall surface of the heating bowl **21** defines the vaporization cavity **210** configured to accommodate the aerosol-forming substrate. The heating bowl **21** may be made of a ceramic material, for example, an environmentally friendly ceramic material such as alumina, aluminum nitride, or silicon nitride, which is harmless to a human body when heated at a high temperature. The heating bowl **21** has a heating surface **212**. The heating element may be arranged on the heating surface **212**. The heating element is configured to heat and vaporize the aerosol-forming substrate after being electrified, so as to generate an aerosol for inhalation by the user. Specifically, in this embodiment, the heating surface **212** configured to arrange the heating element is formed on a bottom surface of the heating bowl **21**. The heating element may be a heating film and may be formed on the heating surface **212** by screen printing or the like. It may be understood that, in other embodiments, the heating element is not limited to the heating film. For example, the heating element may alternatively be a metal heating sheet.

An upper end of the heating bowl **21** may extend out of the heating body **22** and abut against the limiting flange **116**. At least one vent opening **211** configured to communicate the vaporization cavity **210** with the first air outlet **1131** may be further formed on a side wall of the heating bowl **21**. In this embodiment, two vent openings **211** are symmetrically arranged on two sides of the heating bowl **21** in a circumferential direction. Each of the vent openings **211** may be formed by extending downward on a top surface of the side wall of the heating bowl **21**. The two vent openings **211** may be respectively arranged corresponding to the two first air outlets **1131**. That is to say, a line connecting the two second vent openings **211** may be parallel to the line connecting the two first air outlets **1131**. It may be understood that, in other embodiments, an included angle may be formed between the line connecting the two vent openings **211** and the line connecting the two first air outlets **1131**. For example, the included angle is 90 degrees.

A vent gap **220** is formed between an upper end surface of the heating body **22** and a lower end surface of the limiting flange **116** to communicate the vent opening **211** with the first air outlet **1131**. In some embodiments, the heating body **22** may include a heating tube **23**, a fixed tube **24**, a seal sleeve **25**, a base component **26**, at least one electrode pole **27**, and at least one temperature detection element **28**.

The heating tube **23** is sleeved outside the heating bowl **21**. A lower end surface of the heating tube **23** may abut against an upper end surface of the base component **26**. The heating tube **23** may be tubular. An inner wall surface of the heating tube **23** defines a heating cavity **230** configured to accommodate the heating bowl **21**. A plurality of thermal insulation protrusions **231** that protrude inward along a radial direction may be formed on a cavity wall of the heating cavity **230**. Each thermal insulation protrusion **231** may extend along an axial direction of the heating cavity **230**. The plurality of thermal insulation protrusions **231** may be evenly distributed at intervals along a circumferential direction of the heating cavity **230**. An outer wall surface of the heating bowl **21** may abut against the plurality of thermal insulation protrusions **231**, which can greatly reduce a direct contact area between the heating bowl **21** and the heating tube **23**, thereby facilitating thermal insulation.

An upper end of the fixed tube **24** is sleeved outside the heating tube **23**, and a lower end of the fixed tube **24** may be sleeved on the sleeve portion **352** of the main unit **30**. The seal sleeve **25** is sleeved outside the upper end of the fixed tube **24**, and may be made of an elastic material such as silica gel. An annular flange **251** that extends outward along a radial direction may be formed on an outer wall surface of the seal sleeve **25**. The annular flange **251** abuts against a cavity wall of the accommodating cavity **110** and is hermetically engaged with the cavity wall of the accommodating cavity **110**, so that air leakage can be prevented.

The base component **26** is arranged in the fixed tube **24**, and may be made of a ceramic material, such as zirconia ceramic. In some embodiments, the base component **26** may include a base body **261** and an extension **262** extending downward from an outer side of a bottom of the base body **261**. A lower end of the extension **262** may abut against the sleeve portion **352**.

The at least one electrode pole **27** and the at least one temperature detection element **28** may be sleeved on the base body **261** along a longitudinal direction. In this embodiment, two electrode poles **27** are arranged. The two electrode poles **27** are respectively electrically connected to two electrodes of the heating element. The electrode pole **27** may be an elastic electrode pole. An upper end of the electrode pole **27** may abut against the bottom surface of the heating bowl **21** to support the heating bowl **21**, and is in contact with and connected to the heating element. One temperature detection element **28** may be arranged, which may be a temperature-sensing elastic pin. An upper end of the temperature detection element **28** may abut against the bottom surface of the heating bowl **21** to support the heating bowl **21**.

During assembly of the electronic vaporization device, the heating component **20** may be inserted into the sleeve

portion **352** of the main unit **30** first, and then the nozzle integrated condensation cap **10** may be screwed to the main unit **30**. The electronic vaporization device has a simple structure and is convenient to assemble, which ensures portability and beauty of the electronic vaporization device while realizing functions.

It can be understood that the foregoing technical features can be used in any combination without limitation.

While the invention has been illustrated and described in detail in the drawings and foregoing description, such illustration and description are to be considered illustrative or exemplary and not restrictive. It will be understood that changes and modifications may be made by those of ordinary skill within the scope of the following claims. In particular, the present invention covers further embodiments with any combination of features from different embodiments described above and below. Additionally, statements made herein characterizing the invention refer to an embodiment of the invention and not necessarily all embodiments.

The terms used in the claims should be construed to have the broadest reasonable interpretation consistent with the foregoing description. For example, the use of the article "a" or "the" in introducing an element should not be interpreted as being exclusive of a plurality of elements. Likewise, the recitation of "or" should be interpreted as being inclusive, such that the recitation of "A or B" is not exclusive of "A and B," unless it is clear from the context or the foregoing description that only one of A and B is intended. Further, the recitation of "at least one of A, B and C" should be interpreted as one or more of a group of elements consisting of A, B and C, and should not be interpreted as requiring at least one of each of the listed elements A, B and C, regardless of whether A, B and C are related as categories or otherwise. Moreover, the recitation of "A, B and/or C" or "at least one of A, B or C" should be interpreted as including any singular entity from the listed elements, e.g., A, any subset from the listed elements, e.g., A and B, or the entire list of elements A, B and C.

What is claimed is:

1. An electronic vaporization device, comprising:

a nozzle integrated condensation cap comprisinq:

an outer cap and a seal plug, wherein the seal plug is positioned on the top of the outer cap and the nozzle is formed adjacent to the seal plug and on a side of the outer cap; and

a heating component accommodated in the nozzle integrated condensation cap, the heating component comprising a heating bowl, a vaporization cavity being formed in the heating bowl, the vaporization cavity being configured to accommodate an aerosol-forming substrate,

wherein an accommodating cavity is formed in the nozzle integrated condensation cap, the accommodating cavity being configured to accommodate the heating component,

wherein a cooling channel and an inhalation channel are formed in the nozzle integrated condensation cap, the cooling channel and the inhalation channel collectively being in communication with the vaporization cavity in sequence, and

wherein a limiting flange formed on an inner wall surface of an upper end of the accommodating cavity extends inward in a transverse direction of the electronic vaporization device.

2. The electronic vaporization device of claim **1**, wherein the cooling channel comprises a first cooling channel in communication with the vaporization cavity and a second cooling channel in communication with the first cooling channel.

3. The electronic vaporization device of claim **2**, wherein the first cooling channel and the second cooling channel both extend along a longitudinal direction, and wherein airflows in the first cooling channel and the second cooling channel are in opposite directions.

4. The electronic vaporization device of claim **2**, wherein the first cooling channel is arranged on a periphery of the accommodating cavity, and

wherein the second cooling channel is arranged on a periphery of the first cooling channel.

5. The electronic vaporization device of claim **2**, wherein the nozzle integrated condensation cap comprises a first isolating wall, and a second isolating wall,

wherein the first isolating wall is arranged in the outer cap along a longitudinal direction, and an inner wall surface of the first isolating wall defines the accommodating cavity,

wherein the second isolating wall is arranged in the outer cap along a longitudinal direction and is located between the outer cap and the first isolating wall,

wherein the first cooling channel is defined between an outer wall surface of the first isolating wall and an inner wall surface of the second isolating wall, and

wherein the second cooling channel is defined between an outer wall surface of the second isolating wall and an inner wall surface of the outer cap.

6. The electronic vaporization device of claim **5**, wherein at least one first air outlet configured to communicate the accommodating cavity with the first cooling channel is arranged on the first isolating wall,

wherein at least one second air outlet configured to communicate the first cooling channel with the second cooling channel is arranged on the second isolating wall, and

wherein the at least one first air outlet and the at least one second air outlet are respectively located at an upper end and a lower end of the first cooling channel.

7. The electronic vaporization device of claim **2**, wherein the inhalation channel is in communication with an upper end of the second cooling channel.

8. The electronic vaporization device of claim **7**, wherein the inhalation channel has an inhalation end away from the second cooling channel and a connection end close to the second cooling channel, and

wherein the inhalation end of the inhalation channel is at a higher position than the connection end.

9. The electronic vaporization device of claim **8**, wherein a pore size of the inhalation channel gradually decreases from the connection end to the inhalation end.

10. The electronic vaporization device of claim **1**, wherein condensed water is provided in the cooling channel.

11. The electronic vaporization device of claim **1**, wherein the nozzle integrated condensation cap comprises glass.

12. The electronic vaporization device of claim **1**,

wherein an upper end of the heating bowl abuts against the limiting flange.

13. The electronic vaporization device of claim **12**, wherein a through hole in communication with the accommodating cavity is arranged on the limiting flange.

14. The electronic vaporization device of claim **1**, wherein at least one vent opening configured to communicate the vaporization cavity with the cooling channel is formed on a side wall of the heating bowl.

15. The electronic vaporization device of claim 14, wherein the vent opening extends downward from a top surface of the side wall of the heating bowl.

16. The electronic vaporization device of claim 1, wherein the heating bowl comprises a ceramic material.

17. The electronic vaporization device of claim 1, wherein the heating component further comprises a heating body, and

wherein the heating bowl is accommodated in the heating body.

18. The electronic vaporization device of claim 17, wherein a heating cavity configured to accommodate the heating bowl is formed in the heating body, and

wherein an upper end of the heating bowl extends out of the heating cavity.

19. The electronic vaporization device of claim 18, wherein a plurality of thermal insulation protrusions that protrude are formed on a cavity wall of the heating cavity, and

wherein an outer wall surface of the heating bowl abuts against the plurality of thermal insulation protrusions.

20. The electronic vaporization device of claim 17, wherein the heating body comprises at least one electrode pole, and

wherein an upper end of the at least one electrode pole abuts against a bottom surface of the heating bowl.

21. An electronic vaporization device, comprising:

a nozzle integrated condensation cap; and

a heating component accommodated in the nozzle integrated condensation cap, the heating component comprising a heating bowl, a vaporization cavity being formed in the heating bowl, the vaporization cavity being configured to accommodate an aerosol-forming substrate,

wherein an accommodating cavity is formed in the nozzle integrated condensation cap, the accommodating cavity being configured to accommodate the heating component,

wherein a cooling channel and an inhalation channel are formed in the nozzle integrated condensation cap, the cooling channel and the inhalation channel collectively being in communication with the vaporization cavity in sequence,

wherein the cooling channel comprises a first cooling channel in communication with the vaporization cavity and a second cooling channel in communication with the first cooling channel,

wherein the nozzle integrated condensation cap comprises an outer cap, a first isolating wall, and a second isolating wall,

wherein the first isolating wall is arranged in the outer cap along a longitudinal direction, and an inner wall surface of the first isolating wall defines the accommodating cavity,

wherein the second isolating wall is arranged in the outer cap along a longitudinal direction and is located between the outer cap and the first isolating wall,

wherein the first cooling channel is defined between an outer wall surface of the first isolating wall and an inner wall surface of the second isolating wall, and

wherein the second cooling channel is defined between an outer wall surface of the second isolating wall and an inner wall surface of the outer cap.

22. The electronic vaporization device of claim 21, wherein at least one first air outlet configured to communicate the accommodating cavity with the first cooling channel is arranged on the first isolating wall,

wherein at least one second air outlet configured to communicate the first cooling channel with the second cooling channel is arranged on the second isolating wall, and

wherein the at least one first air outlet and the at least one second air outlet are respectively located at an upper end and a lower end of the first cooling channel.

23. An electronic vaporization device, comprising:

a nozzle integrated condensation cap; and

a heating component accommodated in the nozzle integrated condensation cap, the heating component comprising a heating bowl, a vaporization cavity being formed in the heating bowl, the vaporization cavity being configured to accommodate an aerosol-forming substrate,

wherein an accommodating cavity is formed in the nozzle integrated condensation cap, the accommodating cavity being configured to accommodate the heating component,

wherein a cooling channel and an inhalation channel are formed in the nozzle integrated condensation cap, the cooling channel and the inhalation channel collectively being in communication with the vaporization cavity in sequence, and

wherein at least one vent opening configured to communicate the vaporization cavity with the cooling channel is formed on a side wall of the heating bowl.

24. The electronic vaporization device of claim 23, wherein the vent opening extends downward from a top surface of the side wall of the heating bowl.

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