



(11) **EP 4 516 136 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
05.03.2025 Bulletin 2025/10

(51) International Patent Classification (IPC):
A24F 40/40 ^(2020.01) **A24F 40/46** ^(2020.01)

(21) Application number: **22943474.1**

(52) Cooperative Patent Classification (CPC):
A24F 40/40; A24F 40/46

(22) Date of filing: **19.10.2022**

(86) International application number:
PCT/CN2022/126251

(87) International publication number:
WO 2023/226286 (30.11.2023 Gazette 2023/48)

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR**

(30) Priority: **23.05.2022 CN 202221261325 U**
23.05.2022 CN 202221251880 U
23.05.2022 CN 202221251888 U
23.05.2022 CN 202221261272 U

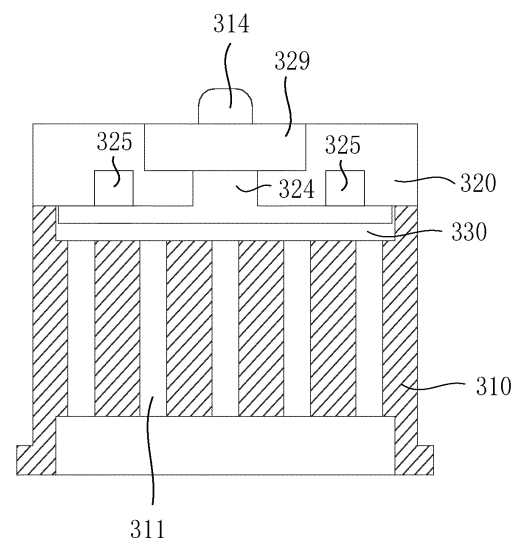
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(54) **ELECTRONIC ATOMIZER AND AEROSOL GENERATION DEVICE**

(57) Provided is an electronic atomizer and an aerosol generating device. The electronic atomizer includes a heat generating body, a heat generating pipe, and a directional heating assembly. The heat generating body is configured to generate heat. The heat generating pipe is connected to the heat generating body and conducts the heat from the heat generating body. A cigarette is placed in the heat generating pipe. The cigarette is fixed in the heat generating pipe and is attached to an inner wall of the heat generating pipe. The directional heating assembly is disposed in the heat generating pipe and is located between the heat generating body and the cigarette, and is configured to transfer a thermal airflow generated by the heat generating body to a local position of the cigarette. The electronic atomizer and the aerosol generating device provided in the present invention enable the user to have a good balance of nicotine content during inhalation and a longer inhalation time, thereby improving the user experience.



Description

Cross Reference to Related Applications

[0001] The present application claims the priority of Chinese Patent Application No. 202010795986.1, No. 202221261325.1, No. 20221261272.3, No. 202221251888.2 filed on May 23, 2022, the disclosures of which are incorporated herein by reference.

Technical Field

[0002] This disclosure relates to the field of electronic technologies, and in particular, to an electronic atomizer and an aerosol generating device.

Background

[0003] Smoking articles (e. g., cigarettes, cigars, and the like) burn tobacco during usage to produce tobacco smoke. For these types of articles, inhalable aerosols or vapors are delivered by heating but not burning, which may be referred to as electronic atomizers or aerosol generating devices.

[0004] Conventional circumferential electronic atomizers or aerosol generating devices generally adopt a bottom thermal airflow-based heating manner, and the intake is generally a direct intake manner, in which the airflow directly passes through a cigarette. When using an electronic atomizer or an aerosol generating device, after the temperature of an airflow rises, nicotine is easily taken out entirely, which results in too high nicotine content in the first few sips of inhalation and lower nicotine content in the subsequent sips, thus the balance of nicotine content is poor and the inhalation time is too short.

Summary

[0005] Provided are an electronic atomizer and an aerosol generating device, which enable a user to have a good balance of nicotine content during inhalation and a longer inhalation time, so as to improve the user experience.

[0006] To solve the foregoing technical problem, a first technical solution provided in the present application is to provide an electronic atomizer, which includes a heat generating body, a heat generating pipe, and a directional heating assembly. The heat generating body is configured to generate heat. The heat generating pipe is connected to the heat generating body and is configured to conduct the heat from the heat generating body. A cigarette is placed in the heat generating pipe. The cigarette is fixed in the heat generating pipe and is attached to an inner wall of the heat generating pipe. The directional heating assembly is disposed in the heat generating pipe and located between the heat generating body and the cigarette, and configured to transfer a thermal airflow

generated by the heat generating body to a local position of the cigarette.

[0007] Alternatively, the directional heating assembly includes a heat exchange core and a guide component.

5 The heat exchange core is disposed between the guide component and the heat generating body, the heat exchange core is provided with multiple air inlet holes distributed in an array, one end of the air inlet hole is opposite to the guide component, and the other end of the air inlet hole is opposite to the heat generating body.

10 **[0008]** The guide component is fixed to the heat exchange core, and a cavity is defined between the guide component and the air inlet holes. The guide component is provided with an air outlet on one side of the guide component facing the cigarette; where the air outlet faces the local position of the cigarette, and the air outlet, the cavity, and the air inlet holes are in communication.

15 **[0009]** Alternatively, the air outlet includes multiple air outlet holes, and the multiple air outlet holes are disposed at an edge of the guide component, penetrate through the guide component, and opposite to an edge of the cigarette.

20 **[0010]** Alternatively, both the heat exchange core and the guide component are cylindrical, and the plurality of air outlet holes are uniformly distributed around a central axis of the guide component. The guide component is provided with a protrusion at a bottom thereof, the protrusion is opposite to the heat exchange core and is disposed at the center of the guide component. A surface of the protrusion is arc-shaped, and a height of the protrusion gradually decreases from a top to a bottom of the protrusion.

25 **[0011]** Alternatively, the air outlet includes a primary air outlet hole and at least two secondary air outlet holes, the primary air outlet hole is disposed at a center of the guide component, penetrates through the guide component, and opposite to a center of the cigarette. The secondary air outlets penetrate through the guide component and have a diameter smaller than the primary air outlet, and at least two of the secondary air outlets are uniformly arranged around the primary air outlets.

30 **[0012]** Alternatively, the guide component is provided with a flow guide post at a top thereof, the flow guide post is disposed on one side of the guide component facing the cigarette and is located at a center of the guide component, and the primary air outlet hole penetrates through the flow guide post.

35 **[0013]** Compared with a heating non-combustion electronic atomizer in which a heat generating body directly faces a cigarette so that a thermal airflow passing through the heat generating body directly heats the whole cigarette, the electronic atomizer provided in the first solution additionally provides the directional heating assembly between the cigarette and the heat generating body, the thermal airflow is directed to a local position of the cigarette by the directional heating assembly, such that the thermal airflow takes out nicotine from the local position of the cigarette. Thus, gradual delivery of nico-

tine is realized, the inhalation balance of the cigarette is improved, and the use time of the cigarette is prolonged, thereby improving the user experience.

[0014] In order to solve the above technical problem, a second technical solution provided in the present application is providing an aerosol generating device, the aerosol generating device includes a heat generating pipe and an air heat exchange and guide device. The heat generating pipe is used for placing a cigarette. The air heat exchange and guide device is fixed in the heat generating pipe and is configured to heat gas entering the interior of the aerosol generating device from the outside and guide the gas to a local area of the cigarette. The air heat exchange and guide device is an integrated structure.

[0015] Alternatively, the air heat exchange and guide device includes a heat exchange core, a guide member, and a support. The heat exchange core is provided with multiple air inlet holes, and the heat exchange core is configured to heat the gas passing through the air inlet holes. The guide member is disposed between the cigarette and the heat exchange core. The guide member is provided with an air outlet hole, and the air outlet hole is opposite to a local area of the bottom of the cigarette. The support is disposed between the heat exchange core and the guide member, one end of the support is connected to the heat exchange core and the other end of the support is connected the guide member, the heat exchange core and the guide member are separated by the support.

[0016] Optionally, the support is cylindrical and located in a middle area of the air heat exchange and guide device, and a central axis of the support coincides with a central axis of the air heat exchange and guide device.

[0017] The air outlet hole is disposed at an edge of the guide member and is isolated from the support.

[0018] Alternatively, the guide member includes a bottom plate, a fixing ring, and a top block, the air outlet hole is disposed at the bottom plate, the fixing ring is disposed around the bottom plate and protrudes from the bottom plate in a direction towards the cigarette, and the top block is disposed on one side of the bottom plate facing the cigarette, located in a central area of the bottom plate, abuts against the cigarette, and is isolated from the air outlet hole.

[0019] Alternatively, the support is annular and located in an edge area of the air heat exchange and guide device, and a central axis of the support coincides with a central axis of the air heat exchange and guide device. The air outlet hole is disposed in a middle area of the guide member and isolated from the support.

[0020] Compared with the solution of directly guiding the thermal airflow to the whole bottom of the cigarette, in the second solution, the airflow entering the interior of the product is first heated via the air heat exchange and guide device, forming a thermal airflow, and then the thermal airflow is guided to a local area of a cigarette, rather than quick delivering nicotine in all areas of the cigarette at the beginning, nicotine in the local area of the cigarette is

delivered, so that gradual delivery of nicotine is realized, and the inhalation balance of the cigarette is improved. Furthermore, in the present solution, the air heat exchange and guide device is designed as an integrated structure, and the functions of heating and air guiding are achieved at the same time. Compared with the solution in which the two structures are designed to respectively achieve one function respectively, the present solution can achieve the effects of improving stability and reducing assembly steps.

[0021] In order to solve the described technical problem, a third technical solution provided in the present application is to provide an aerosol generating device. The aerosol generating device includes a heat generating pipe, a heat exchange core, and a guide member. The heat generating pipe is used for placing a cigarette. The heat exchange core is provided with multiple air inlet holes. The air inlet holes are in communication with the outside, and the heat exchange core is configured to heat the gas entering the air inlet holes from the outside. The guide member is provided with an air inlet channel and an air outlet hole. The air inlet channel is in communication with the outside, and configured to guide an external airflow to a first area of the cigarette. The air outlet hole is in communication with an air inlet hole of the heat exchange core, and configured to guide an airflow heated by the heat exchange core to a second area of the cigarette. The first area and the second area do not overlap.

[0022] Alternatively, the guide member comprises a bottom plate, a snap ring, and an air guide post. The bottom plate is of a circular plate-like structure, and the air outlet hole is disposed on the bottom plate. The snap ring is disposed around the bottom plate, the air guide post penetrates through the bottom plate and is isolated from the air outlet hole, and the interior of the air guide post is hollow to form an air inlet channel.

[0023] The heat exchange core is provided with a hollow channel inside. The air inlet hole is isolated from the hollow channel, and the air guide post penetrates through the hollow channel.

[0024] Alternatively, an end of the air guide post protrudes from a surface of the heat exchange core away from the guide member.

[0025] Alternatively, the guide member is provided with only one air guide post, the air guide post is located at a center of the guide member, and a central axis of the air guide post coincides with a central axis of the guide member.

[0026] The guide member is provided with multiple air outlet holes, and the multiple air outlet holes are arranged around the air guide post.

[0027] Alternatively, the guide member is provided with multiple air guide posts and one air outlet hole, the air outlet hole is located at a center of the guide member, and the multiple air guide posts are arranged around the air outlet hole.

[0028] Alternatively, one end of the guide post facing

the cigarette protrudes from the bottom plate and is attached to the cigarette.

[0029] Compared to the solution of guiding the thermal airflow heated by the heat exchange core to the whole area of the cigarette, in the third solution, the thermal airflow is guided to the second area of the cigarette through the air outlet hole in the guide member, and the external cold airflow is guided to the first area of the cigarette directly through the air inlet channel in the guide member, both the first area and the second area are local areas of the cigarette. The thermal airflow acts on the cigarette, so that the cigarette is baked, leading to the delivery of nicotine, and the cold airflow acts on another part of the cigarette, which can neutralize the thermal airflow and avoid the mouth of the user from being burned by the excessively high temperature of the smoke; in addition, this part of cigarette is protected from being easily baked, so as to achieve the effect of slow nicotine delivery, thereby avoiding the problems that the inhalation taste of the cigarette continuously decreases and the inhalation balance is poor.

[0030] In order to solve the described technical problem, a fourth technical solution provided in the present application is providing an electronic atomizer. The electronic atomizer includes a heat generating pipe, a heat exchange core, and a guide component. A cigarette is placed in the heat generating pipe, and the cigarette is fixed in the heat generating pipe and is attached to an inner wall of the heat generating pipe. The heat exchange core is fixed at one end of the heat generating pipe, the heat exchange core is provided with multiple air inlet holes distributed in an array, and the heat exchange core is configured to heat the gas entering the electronic atomizer. The guide component is disposed between the heat exchange core and the cigarette. The guide component is fixed to the heat exchange core. A cavity is defined between the guide component and the heat exchange core. The guide component is provided with an air outlet on one side of the guide component facing the cigarette. The air outlet faces a local position of the cigarette; and the air outlet, the cavity, and the air inlet hole are in communication.

[0031] Alternatively, the air outlet includes multiple air outlet holes, and the multiple air outlet holes are arranged at an edge of the guide component, penetrate through the guide component, and opposite to an edge of the cigarette.

[0032] Alternatively, both the heat exchange core and the guide component are cylindrical, and the plurality of air outlet holes are uniformly distributed around a central axis of the guide component.

[0033] The guide component includes a bottom plate and a side plate, the bottom plate is cylindrical, the side plate is annular, the side plate is disposed around the bottom plate and perpendicularly connected to the bottom plate, and two ends of the side plate protrudes from the bottom plate; the bottom plate is provided with a protrusion on a surface of the bottom plate facing the

heat exchange core, the protrusion is opposite to the heat exchange core, and the protrusion is disposed at the center of the guide component.

[0034] A surface of the protrusion is arc-shaped, and a height of the protrusion gradually decreases from a center to an edge of the protrusion.

[0035] Alternatively, the height of the protrusion is less than a distance between an end of the side plate facing the heat exchange core and the bottom plate.

[0036] Alternatively, the air outlet hole overlaps the edge of the protrusion and penetrates through the edge of the protrusion.

[0037] The electronic atomizer provided in the fourth solution guides the thermal airflow to the local position of the cigarette via the guide component, so that the thermal airflow brings out nicotine in the local position of the cigarette, thereby realizing gradual delivery of nicotine, improving the inhalation balance of the cigarette, and also prolonging the use time of the cigarette, and improving the user experience.

Brief Description of the Drawings

[0038] The accompanying drawings, which are included to provide a further understanding of the embodiments of the present application and constitute a part of the specification, are used for illustrating the embodiments of the present application, and together with the description, explain the principle of the present application. Apparently, the accompanying drawings in the following description show merely some embodiments of the present application, and persons of ordinary skill in the art may still derive other drawings from these accompanying drawings without creative efforts. In the drawings:

FIG 1 is a partial schematic diagram of an electronic atomizer provided in the present application.

FIG 2 is a schematic exploded view of an electronic atomizer provided in a first embodiment of the present application.

Fig. 3 is a schematic sectional view of a guide component provided in the first embodiment of the present application.

Fig. 4 is a schematic diagram of a guide component provided in a second embodiment of the present application.

FIG 5 is a schematic diagram of a directional heating assembly provided in a third embodiment of the present application.

FIG 6 is a cross-sectional view of the directional heating assembly provided in the third embodiment of the present disclosure.

FIG 7 is a schematic diagram of a guide component provided in the third embodiment of the present application.

FIG 8 is a schematic diagram of a heat exchange core provided in the third embodiment of the present application. 5

Fig. 9 is an exploded view of an aerosol generating device provided in a fourth embodiment of the present application. 10

Fig. 10 is a three-dimensional schematic diagram of an air heat exchange and guide device provided in the fourth embodiment of the present application; 15

FIG 11 is a schematic front view of the air heat exchange and guide device provided in the fourth embodiment of the present application.

FIG 12 is a top view of the air heat exchange and guide device provided in the fourth embodiment of the present application. 20

FIG 13 is a bottom view of the air heat exchange and guide device provided in the fourth embodiment of the present application. 25

Fig. 14 is an exploded view of an aerosol generating device provided in a fifth embodiment of the present application. 30

Fig. 15 is a schematic diagram of a combination of a heat exchange core and a guide member provided in the fifth embodiment of the present application. 35

Fig. 16 is a schematic diagram illustrating separation of the heat exchange core and the guide member provided in the fifth embodiment of the present application; 40

Fig. 17 is a schematic diagram of the heat exchange core provided in the fifth embodiment of the present application. 45

Fig. 18 is a schematic diagram of the guide member provided in the fifth embodiment of the present application.

FIG 19 is a partial schematic view of another electronic atomizer provided in the present application. 50

FIG 20 is an exploded schematic view of another electronic nebulizer provided herein. 55

Fig. 21 is a schematic sectional view of a guide component provided in a sixth embodiment of the present application.

Fig. 22 is a three-dimensional diagram of a heat exchange core and a guide component provided in a seventh embodiment of the present application.

Fig. 23 is a cross-sectional view of the heat exchange core and the guide component provided in the seventh embodiment of the present application.

Fig. 24 is a schematic diagram of the guide component provided in the seventh embodiment of the present application.

Fig. 25 is a schematic diagram of the heat exchange core provided in the seventh embodiment of the present application.

Detailed Description

[0039] It is to be understood that the terminology used herein, specific structural and functional details disclosed, are for the purpose of describing particular embodiments only and are representative, but this application may be embodied in many alternate forms and should not be construed as limited to only the embodiments set forth herein.

[0040] In the description of the present application, the terms "first" and "second" are only used for the purpose of description, rather than being understood as indicating relative importance, or implicitly indicating the number of indicated technical features. Thus, unless otherwise specified, the features defined as "first" and "second" may explicitly or implicitly include one or more of the features. The meaning of "a plurality of" is two or more. The term "comprising" and any variations thereof, means exclusive inclusion, which means there may be or including one or more other features, integers, steps, operations, elements, components, and/or combinations thereof.

[0041] In addition, terms such as "central," "lateral," "upper," "lower," "left," "right," "vertical," "horizontal," "top," "bottom," "inner," and "outer" indicate orientation or positional relationship, which are described based on the orientation or relative positional relationship shown in the accompanying drawings, and are only used for simplifying the description of the present application, rather than indicating that the device or element referred to must have a particular orientation, and be constructed and operated in a particular orientation, and therefore cannot be construed as a limitation to the present application.

[0042] In addition, unless specified or limited otherwise, the terms "mounted", "connected", and "coupled" should be used broadly, and may be, for example, fixed connections, detachable connections, or integral connections; may also be mechanical or electrical connections; may also be direct connections, may also be indirect connections via intervening structures, or may be inner communications of two elements. The specific meanings of the above terms in the present application can be understood by those skilled in the art according to

specific situations.

[0043] Fig. 1 is a partial schematic diagram of an electronic atomizer provided in a first embodiment of the present application. As shown in Fig. 1, the electronic atomizer 10 includes a heat generating body 100, a heat generating pipe 200, and a directional heating assembly 300. The heat generating body 100 may be made of ceramics or other heating materials to generate heat. The heat generating pipe 200 is connected to the heat generating body 100, and is configured to conduct the heat from the heat generating body 100. A cigarette 400 is placed in the heat generating pipe 200. The cigarette 400 is fixed in the heat generating pipe 200 and is attached to an inner wall of the heat generating pipe 200. The heat generating pipe 200 preheats the cigarette 400, thereby increasing a smoke generating speed of the cigarette 400. The directional heating assembly 300 is disposed in the heat generating pipe 200 and located between the heating member 100 and the cigarette 400. The directional heating assembly 300 is configured to transfer the thermal airflow generated by the heat generating body 100 to a local position of the cigarette 400. The local position may be a central position of the cigarette 400, may also be an edge position of the cigarette 400, and may also be a left area, a right area, an upper area or a lower area, etc. of the cigarette 400. The directional heating assembly 300 can be adjusted according to actual needs. The electronic atomizer 10 may further include a battery and other structures, which are not listed one by one herein.

[0044] Compared with a heating non-combustion type electronic atomizer 10 in which the heat generating body 100 directly faces the cigarette 400 and the thermal airflow from the heat generating body 100 directly heats the whole cigarette 400, the electronic atomizer 10 provided in the present application additionally has a directional heating assembly 300 between the cigarette 400 and the heat generating body 100, and the thermal airflow is directed to a local position of the cigarette 400 by means of the directional heating assembly 300, such that the thermal airflow brings out nicotine at the local position of the cigarette 400, thus gradual delivery of nicotine is realized, the inhalation balance of the cigarette 400 is improved, and the use time of the cigarette 400 is prolonged, thereby improving the user experience.

[0045] The directional heating component 300 may be an integrated structure or a split structure. When the directional heating component 300 is the split structure, as shown in Figs. 2 and 5, the directional heating assembly 300 includes a heat exchange core 310 and a guide component 320. The heat exchange core 310 is disposed between the guide component 320 and the heat generating body 100. The heat exchange core 310 is provided with multiple air inlet holes 311 distributed in an array. One end of the air inlet hole 311 is opposite to the guide component 320, and the other end of the air inlet hole 311 is opposite the heat generating body 100. The guide component 320 is fixed to the heat exchange core 310,

and a cavity 330 is defined between the guide component 320 and the air inlet hole 311. The guide component 320 has an air outlet 321 on one side of the guide component 320 facing the cigarette 400, the air outlet 321 faces a local position of the cigarette 400, and the air outlet 321, the cavity 330, and the air inlet hole 311 are in communication.

[0046] The directional heating assembly 300 is made of a material that is resistant to high temperature and has a poor thermal conductivity, that is, both the heat exchange core 310 and the guide component 320 are made of a material that is resistant to high temperature and has a poor thermal conductivity. As such, firstly, overheating inside the electronic atomizer 10 is avoided, and secondly, the smoking efficiency of the cigarette 400 is prevented from being accelerated by the high temperature generated by the directional heating assembly 300 and affecting the user experience. Specifically, the directional heating assembly 300 may be made of high temperature silica gel, ceramic materials such as alumina and zirconia, and may also be made of other inorganic materials such as glass and metal.

[0047] Furthermore, the directional heating assembly 300 is divided into the heat exchange core 310 and the guide component 320, it is more convenient to install and the guide component 320 can be replaced more easily as needed, so that more combination forms can be obtained for the heat exchange core 310 and the guide component 320. With regard to the design of the multiple air inlet holes 311 in the heat exchange core 310, compared with the solution in which the heat exchange core 310 is designed to be annular and the air inlet holes 311 have only one large hole, such a design of the present application can avoid the concentration of the thermal airflow, so that the thermal airflow will be more uniform after passing through the heat exchange core 310. In addition, a space region is further defined between the guide component 320 and the heat exchange core 310, that is, a cavity 330 is defined between the guide component 320 and the air inlet hole 311, so that the thermal airflow passing through the air inlet hole 311 can slow down and converge in the cavity 330, and then evenly pass through the air outlet 321, thereby further improving the even heating performance of the cigarette 400.

[0048] For specific structures of the guide component 320 and the directional heating assembly 300, reference may be made to the following embodiments for details. It should be noted that, although the present application provides three specific designs, it does not mean that only the three designs of the guide component 320 and the directional heating assembly 300 can be adopted in the present application.

Embodiment 1

[0049] As shown in Fig. 2, as a first embodiment provided in the present application, in this embodiment, the air outlet 321 of the guide component 320 includes multi-

ple air outlet holes 322, and the multiple air outlet holes 322 are arranged at an edge of the guide component 320, penetrate through the guide component 320, and opposite to the periphery of the cigarette 400.

[0050] After passing through the heat exchange core 310, the thermal airflow enters the guide component 320 and is diverted to surrounding areas. The thermal airflow first takes out some nicotine at the periphery of the cigarette 400. The cigarette 400 is continuously baked and the gap between the cut tobacco is enlarged, so that the airflow spreads towards the middle, and then nicotine in the middle of the cigarette 400 is continuously taken out, thereby gradual delivery of nicotine is realized, thereby improving the inhalation balance of the cigarette 400. Furthermore, since the cigarette 400 is inserted into the heat conducting pipe, the heat conducting pipe can pre-heat the cigarette 400 when being heated, and both the thermal airflow and the heat conducting pipe act on the periphery of the cigarette 400, the effect of the thermal airflow and the heat conducting pipe on the periphery of the cigarette 400 is improved, so that part of nicotine on the periphery of the cigarette 400 is more easily brought out.

[0051] In this embodiment, both the heat exchange core 310 and the guide component 320 are cylindrical, and sidewalls of both the heat exchange core 310 and the guide component 320 protrude from a middle area. In this way, after the heat exchange core 310 and the guide component 320 abut against the cigarette 400, a cavity 330 is defined between the heat exchange core 310 and the guide component 320, a cavity can also be defined between the guide component 320 and the cigarette 400, so as to improve airflow exchange, and at the same time, prevent the thermal airflow from always concentrating only at one position of the cigarette 400 and leading to a problem of poor inhalation balance of the cigarette 400. Furthermore, the multiple air outlet holes 322 are evenly distributed around a central axis of the guide component 320, so that the periphery of the cigarette 400 is evenly subjected to the action of the thermal airflow.

[0052] Further, as shown in Fig. 3, a protrusion 323 is disposed at the bottom of the guide component 320. The protrusion 323 is opposite to the heat exchange core 310 and is disposed at the center of the guide component 320. The surface of the protrusion 323 is arc-shaped, and the height of the protrusion 323 gradually decreases from the top to the bottom of the protrusion 323. After the thermal airflow passes through the multiple air inlet holes 311 in the heat exchange core 310, because the air inlet holes 311 at the edge of the heat exchange core 310 correspond to the multiple air outlet holes 322 in the guide component 320, the thermal airflow can quickly passes through the air outlet hole 322 after passing through the air inlet holes 311 at the edge of the heat exchange core 310; the thermal airflow passing through the air inlet holes 311 in other areas of the heat exchange core 310 is blocked by the protrusion 323, guided along the side wall of the protrusion 323, and can also quickly pass through

the air outlet 322 of the guide component 320, thereby avoiding the disturbance caused by the collision of airflows.

5 Embodiment 2

[0053] As shown in Fig. 4, a second embodiment provided in the present application differs from the first embodiment in that, in this embodiment, the air outlet 321 are designed differently. Compared with the solution in which multiple air outlets 322 are designed at the edge of the guide component 320 to form the air outlet 321 in the first embodiment, one air outlet hole 322 is disposed at the center of the guide component 320 to form the air outlets 321 in this embodiment. Specifically, the air outlet 321 includes a primary air outlet hole 324. The primary air outlet hole 324 is disposed at the center of the guide component 320, runs through the guide component 320, and is opposite to the center of the cigarette 400.

[0054] In this embodiment, after passing through the heat exchange core 310, the airflow enters the guide component 320 and converges in the middle area of the cigarette 400. After the temperature is raised, the thermal airflow takes out some nicotine in the middle of the cigarette 400. The cigarette 400 is continuously baked, so that the gap between the cut tobacco is enlarged, and the thermal airflow spreads all around, and then nicotine in all other parts of the cigarette 400 is continuously taken out, as such, nicotine is gradually delivered, thereby improving the inhalation balance of the cigarette 400. Furthermore, the heat conducting pipe heats the periphery of the cigarette 400, the thermal airflow passing through the guide component 320 acts on the center of the cigarette 400, the inhalation balance of the cigarette 400 can be further improved based on the above two aspects.

Embodiment 3

[0055] As shown in Figs. 5 and 6, a third embodiment is provided in the present disclosure. Compared with the second embodiment, the air outlet 321 in this embodiment not only include a primary air outlet hole 324 disposed in the central area of the guide component 320, but also include at least two secondary air outlet holes 325 arranged around the primary air outlet hole 324. Similarly, the secondary air outlet holes 325 and the primary air outlet hole 324 both penetrate through the guide component 320, thereby allowing airflow to pass through.

[0056] On the basis of the second embodiment, in this embodiment, a secondary air outlet hole 325 is further provided, thus increasing the flow area of the airflow, so that a larger amount of nicotine in the cigarette 400 is brought out by the thermal airflow, and improving the smoke sensing of the electronic atomizer 10. Furthermore, the diameter of the primary air outlet hole 324 is greater than the diameter of the secondary air outlet hole 325, so that more thermal airflow is gathered in the

central area of the cigarette 400, avoiding affecting the inhalation balance of the cigarette 400. The number of the secondary air outlet holes 325 is preferably three, and the three secondary air outlet holes 325 are arranged at equal intervals, so that the thermal airflow passing through the secondary air outlet holes 325 is evenly applied to the cigarette 400, thereby also avoiding affecting the inhalation balance of the cigarette 400.

[0057] As shown in Fig. 5, the guide component 32 is provided with a flow guide post 326 on the top thereof. The flow guide post 326 is disposed on one side of the guide component 320 facing the cigarette 400. The flow guide post 326 is located at a center of the guide component 320. The primary air outlet hole 324 penetrates through the flow guide post 326. The flow guide post 326 thus disposed abuts against the cigarette 400, and the thermal airflow passing through the primary air outlet hole 324 directly acts at the center of the cigarette 400. Since the secondary air outlet hole 325 is separated from the cigarette 400 by the flow guide post 326, a space region is defined between the secondary air outlet hole 325 and the cigarette 400. After the thermal airflow passes through the secondary air outlet hole 325, the thermal airflow is mixed in the space region and then uniformly acts on a periphery area of the cigarette 400, thus improving the balance of thermal airflow diffusion.

[0058] For the arrangement of the heat exchange core 310 and the guide component 320, with reference to Figs. 7 and 8, the heat exchange core 310 includes a first main body 312, a first outer wall 313, and at least two lugs 314. The first outer wall 313 surrounds the first main body 312, the bottom of the first outer wall 313 protrudes from the bottom of the first main body 312, and the top of the first outer wall 313 protrudes from the top of the first main body 312. The air inlet hole 311 penetrates through the first main body 312. The lug 314 is arranged on one side of the first outer wall 313 facing the cigarette 400. The guide component 320 includes a second main body 327 and a second outer wall 328. The second outer wall 328 surrounds the second main body 327, the bottom of the second outer wall 328 protrudes from the bottom of the second main body 327, and the top of the second outer wall 328 protrudes from the top of the second main body 327. The main air outlet hole 324 and the secondary air outlet hole 325 respectively penetrates the first main body 312. The first outer wall 313 abuts against the second outer wall 328, the second outer wall 328 is provided with at least two grooves 329, and the grooves 329 are snapped with the lugs 314 respectively. The first main body 312 is opposite to the second main body 327, and the cavity 330 is defined between the first main body 312 and the second main body 327.

[0059] In this embodiment, the first outer wall 313 of the heat exchange core 310 abuts against the second outer wall 328 of the guide component 320, so as to prevent the thermal airflow from flowing out through the gap between the two, thereby improving the utilization rate of the thermal airflow. In addition, the heat exchange core

310 and the guide component 320 are further limited in position through snapping between the lugs 314 and the grooves 329, so as to facilitate alignment and installation, and to prevent relative rotation of the heat exchange core 310 and the guide component 320, thereby avoid affecting the effect of the thermal airflow.

[0060] As shown in Fig. 9, the present application discloses an aerosol generating device. The aerosol generating device including a heat generating pipe 500 and an air heat exchange and guide device 700. The heat generating pipe 500 is used for placing a cigarette 600, the air heat exchange and guide device 700 is fixed in the heat generating pipe 500, and is configured to heat and guide the gas entering the interior of the aerosol generating device 20 from the outside into a local area of the cigarette 600. The air heat exchange and guide device 700 is an integrated structure.

[0061] Compared with the solution of directly guiding the thermal airflow to the whole bottom part of the cigarette 600, in the present application, the airflow entering the interior of the product is firstly heated by the air heat exchange and guide device 700 to form a thermal airflow, and then the thermal airflow is guided to the local area of the cigarette 600, so that nicotine in the local area of the cigarette 600 is delivered, which can prevent nicotine in all the regions of the cigarette 600 from being quickly delivered at the beginning, so that nicotine is gradually delivered, improving the inhalation balance of the cigarette 600. Furthermore, in the present application, the air heat exchange and guide device 700 is designed as an integrated structure, and implements both heating and air guiding functions. Compared with the solution in which the two structures implement one function individually, the present disclosure can achieve the effect of improving stability and reducing assembly steps.

[0062] Specifically, as shown in Fig. 10, the air heat exchange and guide device 700 comprises a heat exchange core 710, a guide member 720 and a support 730. The heat exchange core 710 is provided with multiple air inlet holes 711, and the heat exchange core 710 is configured to heat the gas passing through the air inlet holes 711. The guide member 720 is disposed between the cigarette 600 and the heat exchange core 710. The guide member 720 is provided with an air outlet hole 721, and the air outlet hole 721 is opposite to a local area of the bottom of the cigarette 600. The support 730 is disposed between the heat exchange core 710 and the guide member 720, and one end of the support 730 is connected to the heat exchange core 710 and the other end of the support 730 is connected to the guide member 720 to separate the heat exchange core 710 from the guide member 720.

[0063] The local position at the bottom of the cigarette 600 may be a central position of the cigarette 600, may also be an edge position of the cigarette 600, and may also be a left area, a right area, an upper area or a lower area of the cigarette 600, etc. By designing the air heat exchange and guide device 700 to be an integrated

structure of the heat exchange core 710, the guide member 720, and the support 730, the heat exchange core 710 heats the airflow, and the guide member 720 guides the airflow to a local area at the bottom of a cigarette 600. The heat exchange core 710 and the current guide 720 are connected via the support 730, and a space region is defined between the heat exchange core 710 and the guide member 720. So that the thermal airflow passing through the air inlet hole 711 is gathered in the space region, and finally the gathered airflow acts on the cigarette 600 through the air outlet hole 721 of the guide member. By heating the cigarette 600, the balance of the baking of the cigarette 600 is improved.

[0064] Furthermore, because the heat exchange core 710 is made of a thermal conductive material, by designing the heat exchange core 710, the guide member 720, and the support 730 to be an integrated structure, the guide member 720 and the support 730 can also be thermal conductive. Preferably, the air heat exchange and guide device 700 is made of a metal material, in this case, the thermal conductivity effect of the heat exchange core 710 is better, the air entering the product can be heated more quickly, and the guide member 720 can also rapidly generate heat. The air outlet holes 721 in the guide member 720 can further heat the thermal airflow, so that the thermal airflow is maintained in a high temperature state, to improve the effect on the cigarette 600.

[0065] The following fourth embodiment is provided in the present application to specifically describe the solution of heating the periphery area of the cigarette 600.

[0066] Fig. 10 is a three-dimensional schematic diagram of an air heat exchange and guide device provided in a fourth embodiment of the present application, FIG 11 is a schematic front view of the air heat exchange and guide device provided in the fourth embodiment of the present application. With reference to Figs. 2 and 3, the air heat exchange and guide device 700 in the fourth embodiment of the present application heats the airflow entering the product, and the heated airflow is guided to the periphery area of the cigarette 600. Correspondingly, the support 730 is cylindrical and is located in the middle area of the air heat exchange and guide device 700. The central axis of the support 730 coincides with the central axis of the air heat exchange and guide device 700. The air outlet 721 is disposed at an edge of the guide member 720 and is isolated from the support 730.

[0067] Specifically, the guide member 720 includes a bottom plate 722, a fixing ring 723 and a top block 724. The air outlet hole 721 is disposed at the bottom plate 722, and the fixing ring 723 is disposed around the bottom plate 722. The fixing ring 723 protrudes from the bottom plate 722 in a direction towards the cigarette 600. The top plate is disposed on one side of the bottom plate 722 facing the cigarette 600. The top plate is located in a central area of the bottom plate 722 and abuts against the cigarette 600. The top block 724 is isolated from the air outlet hole 721.

[0068] With aid of the top block 724 of the guide mem-

ber 720, the cigarette 600 is inserted into the heat generating pipe 500, as such, the fixing ring 723 can also fix the bottom of the cigarette 600, improving the stability of the cigarette 600. Furthermore, the cigarette 600 also abuts against the top block 724 to shield a middle area of the cigarette 600, thereby preventing the thermal airflow from acting on the middle area of the cigarette 600. Thus, the thermal airflow is more concentrated at the periphery of the cigarette 600, and nicotine delivery is further delayed.

[0069] Further, the top block 724 is designed as a circular arc and protrudes towards the cigarette 600, i. e. the center the top block 724 faces away from the cigarette 600. The top block 724 is of an axisymmetric structure, and the center of the top block 724 is located on the central axis of the bottom plate 722, so that the thermal airflow is evenly applied to the entire periphery of the cigarette 600. Meanwhile, the arc-shaped top block 724 also avoids completely sealing the bottom of the cigarette 600. The thermal airflow passing through the air outlet hole 721 may also be diffused to the middle area, and the thermal airflow may slowly heat the central part of the cigarette 600 to achieve a pre-heating effect. When the cigarette 600 is heated for a period of time, nicotine in the central area of the cigarette 600 starts to be delivered. In this case, the releasing effect of nicotine in the central area of the cigarette 600 is good, and the user's inhalation effect can be enhanced.

[0070] Furthermore, as shown in Fig. 12, Fig. 12 is a top view of the air heat exchange and guide device provided in the fourth embodiment of the present application. An edge of the top block 724 may be tangent to an edge of the air outlet hole 721, and the edge of the air outlet hole 721 is tangent to an inner edge of the fixing ring 723, thereby making full use of the guide member and preventing the thermal airflow from gathering at a boundary between the fixing ring 723 and the bottom plate 722.

[0071] In addition, as shown in Fig. 13, Fig. 13 is a bottom view of the air heat exchange and guide device provided in the fourth embodiment of the present application. With regard to the design of the air inlet holes 711 in the heat exchange core 710, in the present application, the multiple air inlet holes 711 in the heat exchange core 710 are distributed in an array around the central axis of the heat exchange core 710. The air inlet hole 711 is isolated from the support 730, as such, the thermal airflow can be prevented from being accumulated due to the holes in the heat exchange core 710 at the bottom of the support and cannot act on the cigarette 600 and causing waste of the thermal airflow.

[0072] In the fourth embodiment of the present application, the radius of the support 730 does not exceed one third of the radius of the heat exchange core 710, which prevents the cross-sectional area of the support 730 from being too large and the arrangement area of the air inlet holes 711 and the air outlet holes 721 being reduced. In addition, heat transfer of the heat exchange core 710 can be reduced by reducing the volume of the support 730, so

as to prevent nicotine in the cigarette 600 from being delivered quickly once the top block 724 is attached to the cigarette 600.

[0073] When the central area of the cigarette 600 is heated, the support 730 is annular and located in the edge area of the air heat exchange and guide device 700, and the central axis of the support 730 coincides with the central axis of the air heat exchange and guide device 700. The air outlet hole 721 is disposed in a middle area of the guide member 720 and is isolated from the support 730. The thermal airflow can be gathered in the central area of the guide member 720 through the air outlet hole 721, so that the aerosol generating device 20 quickly delivers nicotine in the central area of the cigarette 600 first, and then delivers nicotine around the periphery of the cigarette 600, as such, nicotine is delivered gradually, and the balance of smoke generating can be improved.

[0074] As shown in Fig. 14, Fig. 14 is an exploded view of an aerosol generating device 30 provided in a fifth embodiment of the present application. Disclosed is an aerosol generating device 30. The aerosol generating device 30 includes a heat generating pipe 800, a heat exchange core 900, and a guide member 1000. The heat generating pipe 800 is used for placing a cigarette 1100. The heat exchange core 900 is provided with multiple air inlet holes 910, and the air inlet holes 910 are in communication with the outside. The heat exchange core 900 heats the gas entering the air inlet holes 910 from the outside. The heat exchange core 900 is connected to the heat generating pipe 800, the heat generating pipe 800 generates heat and transfers the heat to the heat exchange core 900, so that the heat exchange core 900 generates heat. The guide member 1000 is provided with an air inlet channel 1001 and an air outlet hole 1002. The air inlet channel 1001 is in communication with the outside, and guides an external airflow to a first area of the cigarette 1100. The air outlet hole 1002 is in communication with the air inlet hole 910 of the heat exchange core 900, and guides the airflow heated by the heat exchange core 900 to a second area of the cigarette 1100, where the first area and the second area do not overlap, and both the first area and the second area are local areas of the cigarette 1100.

[0075] Compared with the solution in which the thermal airflow heated by the heat exchange core 900 is led to all the areas of the cigarette 1100, in the present application, in addition to using an air outlet hole 1002 in the guide member 1000 to guide the thermal airflow to a second area of the cigarette 1100, the cold airflow from the outside is directly guided to the first area of the cigarette 1100 via the air inlet channel 1001 in the guide member 1000. The first area and the second area are both local areas of the cigarette 1100. Because the external temperature is low and cannot be used to bake the cigarette 1100, compared with the thermal airflow heated by the heat exchange core 900, the external airflow has a lower temperature and is therefore referred as cold airflow, "cold airflow" does not mean that the external airflow

needs to be cooled down. The thermal airflow acts on the cigarette 1100, so that the cigarette 1100 is baked, which causes nicotine to be delivered, and the cold airflow acts on the other part of the cigarette 1100, so that the thermal airflow can be neutralized, thus avoiding excessive temperature of smoke gas that may cause burning of the lips of the user. In addition, this part of the cigarette 1100 is protected from being easily baked, so as to achieve the effect of slow nicotine delivery, thereby avoiding the problems that the inhalation mouthfeel of the cigarette 1100 continuously decreases and the inhalation balance is poor.

[0076] Specifically, Fig. 15 and 16 are schematic diagrams of a heat exchange core and a guide member provided in the fifth embodiment of the present application when being combined and separated, respectively. The guide member 1000 includes a bottom plate 1003, a snap ring 1004 and an air guide post 1005. The bottom plate 1003 is a circular plate-shaped structure, and the air outlet hole 1002 is disposed on the bottom plate 1003. The snap ring 1004 is disposed around the bottom plate 1003. The air guide post 1005 penetrates through the bottom plate 1003 and is isolated from the air outlet 1002. The interior of the air guide post 1005 is hollow to form the air inlet channel 1001. A hollow channel is formed inside the heat exchange core 900. The air inlet hole 910 is isolated from the hollow channel, and the air guide post 1005 penetrates through the hollow channel.

[0077] The air guide post 1005 penetrates through the heat exchange core 900, and the air inlet channel 1001 is arranged inside the air guide post 1005, such that external air enters the air inlet hole 910 and the air inlet channel 1001 of the heat exchange core 900 from one direction after entering the product, and thus there is no need to additionally arrange other air holes to guide external air into the air inlet channel 1001, which greatly simplifies the structure design and reduces the manufacturing difficulty. The air guide post 1005 penetrates through the heat exchange core 900, it can not only improve stability of the heat exchange core 900 and the current guide 1000, but also facilitate installation and alignment.

[0078] Certainly, the air guide post 1005 may also adopt other designs, for example, the air guide post 1005 may not penetrate through the heat exchange core 900 but directly penetrate through the side wall of the heat generating pipe 800, or the shape of the heat exchange core 900 can be changed, the heat exchange core 900 can be designed to be a semi-cylindrical shape or other shapes. It is also feasible that the heat exchange core 900 is spaced apart from the heat generating pipe 800 by a gap, and the air guide post 1005 can be designed along the gap.

[0079] With respect to one end of the air guide post 1005, after the air guide post 1005 penetrates through the heat exchange core 900, the end of the air guide post 1005 also protrudes from one side of the heat exchange core 900 away from the guide member 1000, thereby

ensuring that external air may enter the air inlet channel 1001 first, preventing an airflow heated by the heat exchange core 900 from entering the air inlet channel 1001 and affecting the inhalation balance.

[0080] Furthermore, the diameter of the hollow channel is greater than the diameter of the air guide post 1005, and the air guide post 1005 does not contact the heat exchange core 900, thereby preventing the high temperature generated by the heat exchange core 900 from acting on the air guide post 1005 and affecting the temperature of the cold air.

[0081] The other end of the air guide post 1005, i. e., the end facing the cigarette 1100, protrudes from the bottom plate 1003 and is attached to the cigarette 1100. In this way, the external cold airflow, after entering the air inlet channel 1001, directly acts on the cigarette 1100, as such, the external cold airflow will not mix with the thermal air and reduce the temperature of the thermal air, so that the heating effect will not become poor, or the thermal air will not encounter cold to form steam which causes the cigarette 1100 to be damp and is not easy to smoke.

[0082] In a fifth embodiment of the present application, the guide component 1000 is made of a heat-resistant material, so as to prevent a high temperature generated by the heat generating pipe 800 and the heat exchange core 900 from acting on the guide member, so that the guide member 1000 will not generate a high temperature which may accelerate nicotine delivery in the cigarette 1100 and reduce the inhalation taste of the cigarette 1100.

[0083] With regard to the design of the air guide post 1005, the fifth embodiment of the present application provides two specific implementations, the first implementation is that there is only one air guide post 1005 in the guide member 1000, the air guide post 1005 is located in the center of the guide member 1000, and the central axis of the air guide post 1005 is coincident with the central axis of the guide member. Correspondingly, the guide member 1000 is provided with multiple air outlet holes 1002, the multiple air outlet holes 1002 are arranged around the air guide post 1005, and the hollow channel in the heat exchange core 900 is arranged correspondingly.

[0084] At this time, the cold airflow acts on the central area of the cigarette 1100 through the air inlet channel 1001, and the thermal airflow acts on the periphery area of the cigarette 1100 through the air outlet hole 1002, the periphery of the cigarette 1100 is subjected to effects of the thermal airflow and the heat generating pipe 800, and nicotine starts to be delivered. Then the thermal airflow gradually spreads towards the center of the cigarette 1100, and nicotine in the central area of the cigarette 1100 is brought out, so that nicotine is delivered slowly, thereby improving the inhalation taste and the inhalation balance of the cigarette 1100.

[0085] In a second implementation, the guide member 1000 is provided with multiple air guide posts 1005 and one air outlet hole 1002. Correspondingly, the air outlet

hole 1002 is located at the center of the guide member 1000, the multiple air guide posts 1005 surround the air outlet hole 1002, and multiple hollow channels in the heat exchange core 900 are arranged in one-to-one correspondence with the multiple air guide posts 1005. At this time, the cold airflow acts on the periphery area of the cigarette 1100 through the air inlet channel 1001, and the thermal airflow acts on the central area of the cigarette 1100 through the air outlet hole 1002. The central area of the cigarette 1100 is acted by a thermal airflow and starts to deliver nicotine, and then the thermal airflow gradually spreads towards the periphery of the cigarette 1100, and nicotine in the periphery area of the cigarette 1100 is brought out, so that nicotine is delivered slowly, and the inhalation taste and the inhalation balance of the cigarette 1100 can also be improved. The position of the air guide posts 1005 can also be in other designs and can be adjusted according to actual needs.

[0086] As shown in Figs. 17 and 18, Fig. 17 is a schematic diagram of the heat exchange core according to the fifth embodiment of the present application, Fig. 18 is a schematic diagram of the guide member according to the fifth embodiment of the present application. The heat exchange core 900 includes a body 920, an outer wall 930, and a snap strip 940. The body 920 is a cylinder, the hollow channel and the air inlet holes 910 are disposed on the body 920, and the outer wall 930 is disposed around the body 920. The outer wall 930 protrudes from the body 920 at one side facing the guide member 1000, and the snap strip 940 is arranged at one side of the outer wall 930 facing the guide member 1000. One side of the bottom plate 1003 facing the heat exchange core 900 protrudes from the snap ring 1004, an edge of the bottom plate 1003 abuts against an inner edge of the outer wall 930, the snap ring 1004 is provided with a snap opening 1006, and the snap opening 1006 corresponds to the snap strip 940.

[0087] Compared with a solution of directly bonding the heat exchange core 900 and the guide member 1000, in the fifth embodiment of the present application, the heat exchange core 900 and the guide member 1000 are connected together in a snap-fit manner, which can not only improve the stability between the heat exchange core 900 and the guide member 1000, but also define a cavity between the heat exchange core 900 and the guide member 1000; and after thermal air enters the cavity, the thermal air can be buffered and then evenly pass through the air outlet hole 1002, thereby improving the heating balance.

[0088] Further, the heat exchange core 900 further includes a limiting block 950, where the limiting block 950 is disposed on one side of the outer wall 930 away from the guide member 1000 and is disposed around the outer wall 930. During installation of the heat exchange core 900, the limiting block 950 can abut against the heat generating pipe 800, thereby preventing the heat exchange core 900 and the guide member 1000 from dropping into the heat generating pipe 800 and affecting installation efficiency.

[0089] FIG 19 is a partial schematic diagram of another electronic atomizer provided in the present application. FIG. 20 is an exploded schematic diagram of another electronic atomizer provided in the present application. As shown in FIGS. 19 and 20, the electronic atomizer 40 includes a heat generating pipe 1200, a heat exchange core 1300, and a guide component 1400. A cigarette 1500 is placed in the heat generating pipe 1200, and the cigarette 1500 is fixed in the heat generating pipe 1200 and is attached to an inner wall of the heat generating pipe 1200. The heat exchange core 1300 is fixed at one end of the heat generating pipe 1200, the heat exchange core 1300 is provided with multiple air inlet holes 1301 distributed in an array, and the heat exchange core 1300 heats the gas entering the electronic atomizer 40. The guide component 1400 is disposed between the heat exchange core 1300 and the cigarette 1500. The guide component 1400 is fixed to the heat exchange core 1300, and a cavity 1600 is defined between the guide component 1400 and the heat exchange core 1300. The guide component 1400 has an air outlet hole 1401 on one side of the guide component 1400 facing the cigarette 1500. The air outlet hole 1401 faces a local position of the cigarette 1500. The air outlet hole 1401, the cavity 1600, and the air inlet hole 1301 are in communication.

[0090] After the external airflow enters the electronic atomizer 40 and passes through the air inlet hole 1301 of the heat exchange core 1300, the heat exchange core 1300 heats the airflow to form the thermal airflow. Then, the guide component 1400 guides the thermal airflow to a local position at the bottom of the cigarette 1500, and the local position may be a central position of the cigarette 1500, may also be an edge position of the cigarette 1500, and may also be a left area, a right area, an upper area or a lower area of the cigarette 1500. The guide component 1400 can be adjusted according to actual needs. The electronic atomizer 40 further includes a battery and other structures, which are not listed one by one herein.

[0091] Compared with the heating non-combustion type electronic atomizer 40 in which the thermal airflow is directly applied to the bottom of the whole cigarette 1500, the electronic atomizer 40 provided in the present application guides the thermal airflow to a local position of the cigarette 1500 via the guide component 1400, so that the thermal airflow takes out nicotine at the local position of the cigarette 1500, as such, nicotine is delivered gradually, the inhalation balance of the cigarette 1500 is improved, the use time of the cigarette 1500 is prolonged, and the user experience is improved.

[0092] As shown in Fig. 20, the heat exchange core 1300 is connected to the heat generating pipe 1200, and is heated by the heat generating pipe 1200 or by other heat generating members disposed at the bottom of the heat exchange core 1300. The guide component 1400 is made of a material with high temperature resistance and poor thermal conductivity, so that firstly, overheating inside the electronic atomizer 40 is avoided, and secondly, the high temperature generated by the guide component

1400 is prevented from increasing the smoke generating efficiency of the cigarette 1500 and affecting the user experience. Specifically, the guide component 1400 may be made of high temperature silica gel, ceramic materials such as alumina and zirconia, or other inorganic materials such as glass and metal.

[0093] Furthermore, the heat exchange core 1300 and the guide component 1400 are designed as separate structures, so that it is more convenient to install, and it is easier to replace the guide component 1400 as needed, so that more combination forms can be obtained for the heat exchange core 1300 and the guide component 1400. With regard to the design of the multiple air inlet holes 1301 in the heat exchange core 1300, the air inlet hole 1301 has a relatively small aperture and a relatively large number, which is beneficial to improving the balance of air intake and improving the thermal conductivity effect of air intake, so that the airflow can be heated quickly after entering the air inlet holes 1301. In addition, a space region is further defined between the guide component 1400 and the heat exchange core 1300, that is, a cavity 1600 is defined between the guide component 1400 and the air inlet holes 1301, so that the airflow passing through the air inlet hole 1301 can slow down and converge in the cavity 1600, and then evenly pass through the air outlet 1401, thereby further improving the balance of heating of the cigarette 1500.

[0094] For specific structures of the guide component 1400 and the heat exchange core 1300, reference may be made to the following embodiments. It should be noted that, although two specific designs are provided in the following, it does not mean that only these manners can be adopted for the guide 1400 and the heat exchange core 1300.

Embodiment 6

[0095] As shown in Fig. 20, as a sixth embodiment provided in the present application, in the sixth embodiment, an air outlet 1401 of the guide component 1400 includes multiple air outlet holes 1402, and the multiple air outlet holes 1402 are arranged at an edge of the guide component 1400, penetrate through the guide component 1400, and opposite to the periphery of the cigarette 1500.

[0096] After passing through the guide component 1400, the thermal airflow is led to the periphery of the cigarette 1500, and the thermal airflow first takes out a part of nicotine from the periphery of the cigarette 1500. The cigarette 1500 is continuously baked and the gap between the cut tobacco is enlarged, as a result, the airflow spreads towards the middle, and then nicotine in the middle of the cigarette 1500 is continuously taken out, thereby realizing the gradual delivery of nicotine and improving the inhalation balance of the cigarette 1500. Furthermore, since the cigarette 1500 is inserted in the heat generating pipe 1200, when the heat generating pipe 1200 is heated, the cigarette 1500 can be preheated.

Both the thermal airflow or the heat generating pipe 1200 acts on the periphery of the cigarette 1500, which can improve the effect on the periphery of the cigarette 1500, so that part of nicotine on the periphery of the cigarette 1500 is more easily taken out.

[0097] In the sixth embodiment, both the heat exchange core 1300 and the guide piece 1400 are cylindrical, and sidewalls of both the heat exchange core 1300 and the guide piece 1400 are higher than the middle area. In this way, after the heat exchange core 1300 and the guide component 1400 abut against the cigarette 1500, a cavity 1600 is defined in the middle area of the heat exchange core 1300 and the guide component 1400, a cavity 1600 may also be defined between the guide component 1400 and the cigarette 1500, so as to improve airflow exchange, and at the same time, prevent the thermal airflow from always concentrating only at one position of the cigarette 1500 and resulting in poor inhalation balance of the cigarette 1500. Furthermore, the multiple air outlet holes 1402 are evenly distributed around the central axis of the guide component 1400, so that a periphery of the cigarette 1500 is evenly affected by the thermal airflow.

[0098] Further, as shown in Fig. 21, the guide component 1400 includes a bottom plate 1403 and a side plate 1404. The bottom plate 1403 is cylindrical, the side plate 1404 is annular, the side plate 1404 is disposed around the bottom plate 1403 and is vertically connected to the bottom plate 1403. Two ends of the side plate 1404 protrude from the bottom plate 1403. The bottom plate 1403 is provided with a protrusion 1405 on one side of the bottom plate 1403 facing the heat exchange core 1300. The protrusion 1405 is opposite to the heat exchange core 1300, and the protrusion 1405 is disposed at the center of the guide component 1400. The surface of the protrusion 1405 is arc-shaped, and the height of the protrusion 1405 gradually decreases from the center to the edge of the protrusion 1405.

[0099] After the thermal airflow passes through the multiple air inlet holes 1301 in the heat exchange core 1300, since the air inlet holes 1301 at the edge of the heat exchange core 1300 correspond to the multiple air outlet holes 1402 in the guide component 1400, after passing through the air inlet holes 1301 at the edge of the heat exchange core 1300, the thermal airflow quickly passes through the air outlet holes 1402; the airflow passing through the air inlet holes 1301 in other areas of the heat exchange core 1300 is blocked by the protrusion 1405, guided along the arc-shaped outer wall 1303 of the protrusion 1405, and quickly pass through the air outlet duct 1402 of the guide component 1400, thereby preventing the air flow from colliding and disturbing.

[0100] Furthermore, the height of the protrusion 1405 is less than the distance between one end of the side plate 1404 facing the heat exchange core 1300 and the bottom plate 1403, so as to prevent the protrusion 1405 from blocking the thermal airflow and causing the thermal airflow to flow back, thereby preventing the airflow from

being disordered.

[0101] In the sixth embodiment, the protrusion 1405 has a central symmetric structure, the central axis of the protrusion 1405 is coincident with the central axis of the guide component 1400, and the height of the protrusion 1405 gradually decreases from the center to the edge of the protrusion 1405. The area of the protrusion 1405 can be increased, so that the edge of the protrusion 1405 extends to the side plate 1404. In this case, the air outlet hole 1402 overlaps the edge of the protrusion 1405, and the air outlet hole 1402 penetrates through the edge of the protrusion 1405, so that the bottom of the air outlet hole 1402 is in an arc shape. Such a design makes it easier to guide the thermal airflow to the air outlet hole 1402.

[0102] On the other side of the bottom plate 1403, one side of the bottom plate 1403 facing the cigarette 1500 is a flat surface, and the flat surface can be attached to the cigarette 1500, so that the air outlet hole 1402 directly acts on the periphery of the cigarette 1500 without being buffered by a space region, thereby making the thermal airflow more concentrated on the periphery of the cigarette 1500, and further improving the balance of nicotine content when the user is smoking.

Embodiment 7

[0103] As shown in Fig. 22 to Fig. 25, a seventh embodiment provided in the present application differs from the sixth embodiment in that, in the sixth embodiment, the heat exchange core 1300 and the guide component 1400 are designed in a regular and simple structure, and are connected in an adhesive manner, while in the seventh embodiment, the heat exchange core 1300 and the guide component 1400 are designed in different manners, and the heat exchange core 1300 is connected to the guide component 1400 in a snap-fit manner.

[0104] Specifically, the heat exchange core 1300 includes a main body 1302, an outer wall 1303, and at least two snap strips 1304. The outer wall 1303 is disposed around the main body 1302, the bottom of the outer wall 1303 protrudes from the bottom of the main body 1302 and the top of the outer wall 1303 protrudes from the top of the main body 1302. The air inlet hole 1301 penetrates through the main body 1302, and the snap strips 1304 are arranged on one side of the outer wall 1303 facing the cigarette 1500. The guide component 1400 includes a bottom plate 1403 and a side plate 1404. The bottom plate 1403 is cylindrical. The side plate 1404 is annular. The side plate 1404 is disposed around the bottom plate 1403 and is vertically connected to the bottom plate 1403. Two ends of the side plate 1404 protrude from the bottom plate 1403. The outer wall 1303 abuts against the side plate 1404. The side plate 1404 is provided with at least two snap grooves 1406. The snap grooves 1406 are snapped with the snap strips 1304 in a one-to-one correspondence. The bottom plate 1403 is opposite to the main body 1302, and the cavity 1600 is defined between

the bottom plate 1403 and the main body 1302.

[0105] In the seventh embodiment, the heat exchange core 1300 and the guide component 1400 are fixed in a snap-fit manner, and the outer wall 1303 of the heat exchange core 1300 and the side plate 1404 of the guide component 1400 abut against each other, thereby preventing the thermal airflow from flowing out through a gap between the two, and improving a utilization rate of the thermal airflow. In addition, the heat exchange core 1300 and the guide component 1400 are further positioned through snapping between the snap strip 1304 and the snap groove 1406, so as to facilitate alignment and installation, and prevent relative rotation of the heat exchange core 1300 and the guide component 1400, thereby avoid affecting the effect of the thermal airflow.

[0106] In addition, the heat exchange core 1300 further includes a limiting portion 1305. The limiting portion 1305 is disposed around the outer wall 1303, is disposed at one end of the outer wall 1303 away from the guide component 1400, and abuts against an end of the heat generating pipe 1200. Because only one end of the heat exchange core 1300 is provided with the limiting portion 1305, installation of the heat exchange core 1300 and the guide component 1400 is prevented from being upside down. Furthermore, when fixing the heat exchange core 1300, the heat exchange core 1300 is prevented from dropping into the heat generating pipe 1200 and reducing installation efficiency.

[0107] The foregoing is a further detailed description of the present application with reference to specific optional implementations, and it cannot be determined that the specific implementation of the present application is only limited to these descriptions. For a person of ordinary skill in the art to which this application belongs, on the premise of not departing from the concept of this application, a number of simple deductions or replacements can also be made, and all of which should be considered to belong to the scope of protection of this application.

Claims

1. An electronic atomizer, comprising:

a heat generating body configured to generate heat;
a heat generating pipe connected to the heat generating body and configured to conduct heat from the heat generating body, the heat generating pipe being for placing a cigarette inside, the cigarette being fixed in the heat generating pipe and attached to an inner wall of the heat generating pipe;
a directional heating assembly, disposed in the heat generating pipe and located between the heat generating body and the cigarette, and configured to transfer a thermal airflow generated by the heat generating body to a local

position of the cigarette.

2. The electronic atomizer according to claim 1, wherein the directional heating assembly comprises a heat exchange core and a guide component, the heat exchange core is disposed between the guide component and the heat generating body, the heat exchange core is provided with a plurality of air inlet holes distributed in an array, one end of the air inlet hole is opposite to the guide component, and the other end of the air inlet hole is opposite to the heat generating body, and wherein the guide component is fixed to the heat exchange core, and a cavity is defined between the guide component and the air inlet holes; the guide component is provided with an air outlet on one side of the guide component facing the cigarette; wherein the air outlet faces the local position of the cigarette, and the air outlet, the cavity, and the air inlet holes are in communication.
3. The electronic atomizer according to claim 2, wherein the air outlet comprises a plurality of air outlet holes, and the plurality of air outlet holes are disposed at an edge of the guide component, penetrate through the guide component, and opposite to an edge of the cigarette.
4. The electronic atomizer according to claim 3, wherein both the heat exchange core and the guide component are cylindrical, and the plurality of air outlet holes are uniformly distributed around a central axis of the guide component; wherein the guide component is provided with a protrusion at a bottom thereof, the protrusion is opposite to the heat exchange core and is disposed at the center of the guide component; a surface of the protrusion is arc-shaped, and a height of the protrusion gradually decreases from a top to a bottom of the protrusion.
5. The electronic atomizer according to claim 2, wherein the air outlet comprises a primary air outlet hole and at least two secondary air outlet holes, the primary air outlet hole is disposed at a center of the guide component, penetrates through the guide component, and opposite to a center of the cigarette; wherein the secondary air outlets penetrate through the guide component and have a diameter smaller than the primary air outlet, and at least two of the secondary air outlets are uniformly arranged around the primary air outlets.
6. The electronic atomizer according to claim 5, wherein the guide component is provided with a flow guide post at a top thereof, the flow guide post is disposed on one side of the guide component facing the cigarette and is located at a center of the guide component, and the primary air outlet hole penetrates

through the flow guide post.

7. An aerosol generating device, comprising:

a heat generating pipe for placing a cigarette; 5
an air heat exchange and guide device, fixed in
the heat generating pipe and configured to heat
gas entering an interior of the aerosol generating
device from outside and guide the gas to a local
area of the cigarette, and wherein 10
the air heat exchange and guide device is of an
integrated structure.

8. The aerosol generating device according to claim 7, wherein the air heat exchange and guide device comprises: 15

a heat exchange core, wherein the heat ex-
change core is provided with a plurality of air
inlet holes, and the heat exchange core is con- 20
figured to heat gas passing through the air inlet
holes;
a guide member disposed between the cigarette
and the heat exchange core, wherein the guide
member is provided with an air outlet hole, and 25
the air outlet hole is opposite to a local area at a
bottom of the cigarette; and
a support, disposed between the heat exchange
core and the guide member, wherein one end of
the support is connected to the heat exchange 30
core and the other end of the support is con-
nected the guide member, the heat exchange
core and the guide member are separated by the
support. 35

**9. The aerosol generating device according to claim 8, wherein the support is cylindrical and located in a middle area of the air heat exchange and guide device, and a central axis of the support coincides with a central axis of the air heat exchange and guide device, and wherein 40
the air outlet hole is disposed at an edge of the guide member and is isolated from the support.**

**10. The aerosol generating device according to claim 9, wherein the guide member comprises a bottom plate, a fixing ring, and a top block, the air outlet hole is disposed at the bottom plate, the fixing ring is disposed around the bottom plate and protrudes from the bottom plate in a direction towards the cigarette, and the top block is disposed on one side of the bottom plate facing the cigarette, located in a central area of the bottom plate, abuts against the cigarette, and is isolated from the air outlet hole. 45
50**

11. The aerosol generating device according to claim 8, wherein the support is annular and located in an edge area of the air heat exchange and guide device, 55

and a central axis of the support coincides with a central axis of the air heat exchange and guide device, and wherein
the air outlet hole is disposed in a middle area of the guide member and isolated from the support.

12. An aerosol generating device, comprising:

a heat generating pipe for placing a cigarette;
a heat exchange core, provided with a plurality
of air inlet holes, the air inlet holes being in
communication with outside, and the heat ex-
change core being configured to heat gas en-
tering the air inlet holes from the outside; and
a guide member, provided with an air inlet chan-
nel and an air outlet hole, the air inlet channel
being in communication with the outside and
configured to guide an external airflow to a first
area of the cigarette; the air outlet hole being in
communication with an air inlet hole of the heat
exchange core and configured to guide an air-
flow heated by the heat exchange core to a
second area of the cigarette, wherein the first
area and the second area do not overlap.

**13. The aerosol generating device according to claim 12, wherein the guide member comprises a bottom plate, a snap ring, and an air guide post, the bottom plate is of a circular plate-like structure, and the air outlet hole is disposed on the bottom plate; the snap ring is disposed around the bottom plate, the air guide post penetrates through the bottom plate and is isolated from the air outlet hole, and an interior of the air guide post is hollow to form the air inlet channel, and wherein 35
the heat exchange core is provided with a hollow channel inside, the air inlet hole is isolated from the hollow channel, and the air guide post penetrates through the hollow channel. 40**

14. The aerosol generating device according to claim 13, wherein an end of the air guide post protrudes from a surface of the heat exchange core away from the guide member.

15. The aerosol generating device according to claim 13, wherein the guide member is provided with only one air guide post, the air guide post is located at a center of the guide member, and a central axis of the air guide post coincides with a central axis of the guide member, and wherein 50

the guide member is provided with a plurality of
air outlet holes, and the plurality of air outlet
holes are arranged around the air guide post; or
the guide member is provided with a plurality of
air guide posts and one air outlet hole, the air
outlet hole is located at a center of the guide

member, and the plurality of air guide posts are arranged around the air outlet hole.

16. The aerosol generating device according to claim 13, wherein one end of the guide post facing the cigarette protrudes from the bottom plate and is attached to the cigarette.

17. An electronic atomizer, comprising a heat generating pipe, a heat exchange core, and a guide component, wherein the heat generating pipe is for placing a cigarette inside, and the cigarette is fixed in the heat generating pipe and attached to an inner wall of the heat generating pipe; the heat exchange core is fixed to one end of the heat generating pipe, the heat exchange core is provided with a plurality of air inlet holes distributed in an array, and the heat exchange core is configured to heat gas entering the electronic atomizer; the guide component is disposed between the heat exchange core and the cigarette; the guide component is fixed to the heat exchange core; a cavity is defined between the guide component and the heat exchange core; one side of the guide component facing the cigarette is provided with an air outlet; the air outlet faces a local position of the cigarette; and the air outlet, the cavity, and the air inlet holes are in communication.

18. The electronic atomizer according to claim 17, wherein the air outlet comprises a plurality of air outlet holes, and the plurality of air outlet holes are arranged at an edge of the guide component, penetrate through the guide component, and opposite to an edge of the cigarette.

19. The electronic atomizer according to claim 18, wherein both the heat exchange core and the guide component are cylindrical, and the plurality of air outlet holes are uniformly distributed around a central axis of the guide component, and wherein

the guide component comprises a bottom plate and a side plate, the bottom plate is cylindrical, the side plate is annular, the side plate is disposed around the bottom plate and perpendicularly connected to the bottom plate, and two ends of the side plate protrudes from the bottom plate; the bottom plate is provided with a protrusion on a surface of the bottom plate facing the heat exchange core, the protrusion is opposite to the heat exchange core, and the protrusion is disposed at the center of the guide component, and wherein
a surface of the protrusion is arc-shaped, and a height of the protrusion gradually decreases from a center to an edge of the protrusion.

20. The electronic atomizer according to claim 19,

wherein the height of the protrusion is less than a distance between an end of the side plate facing the heat exchange core and the bottom plate.

21. The electronic atomizer according to claim 19, wherein the air outlet hole overlaps the edge of the protrusion and penetrates through the edge of the protrusion.

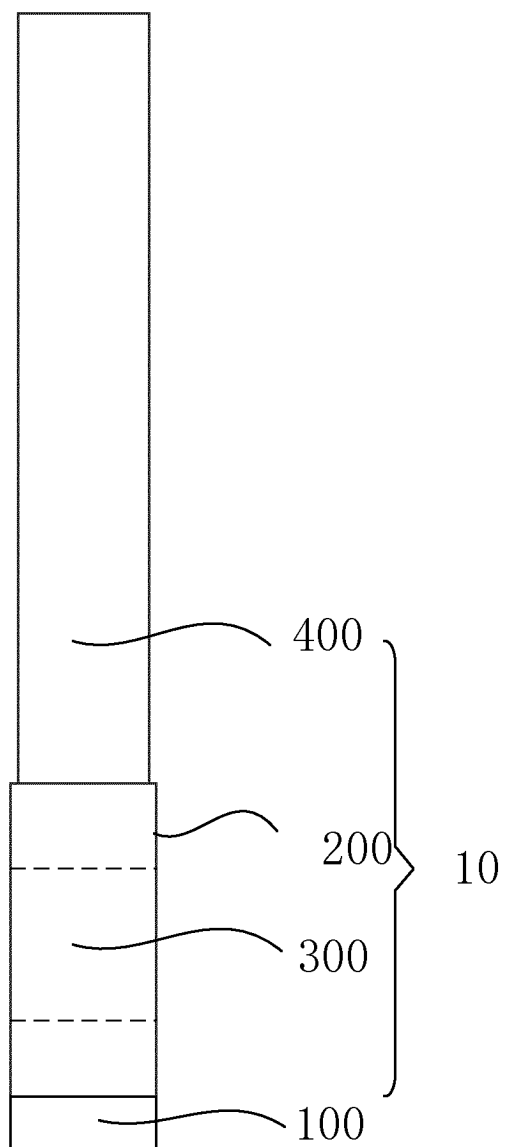


FIG. 1

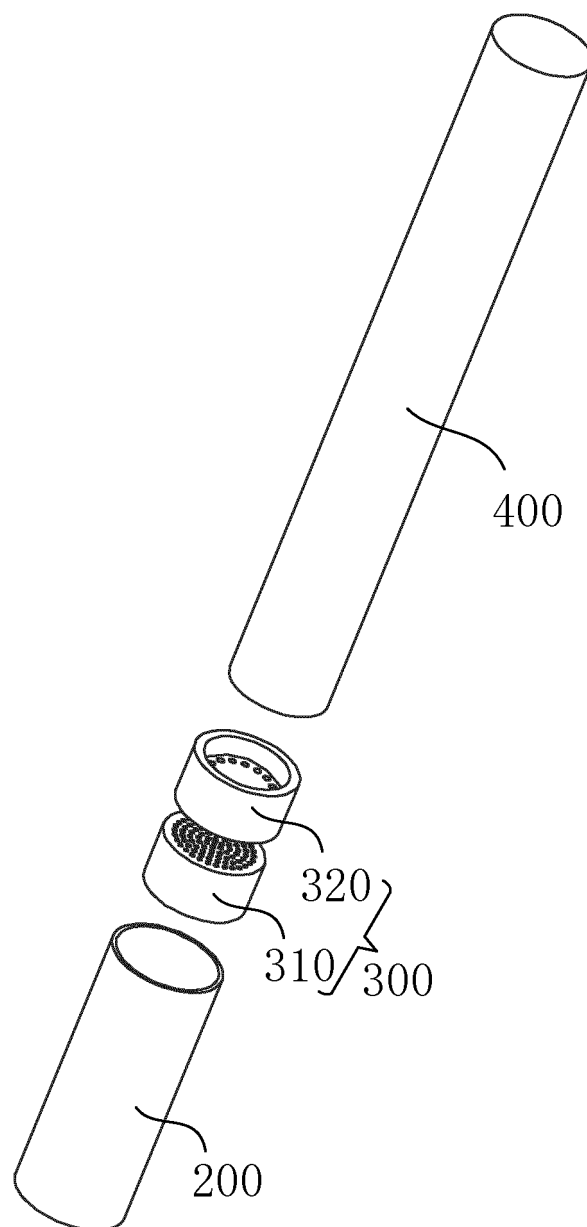


FIG. 2

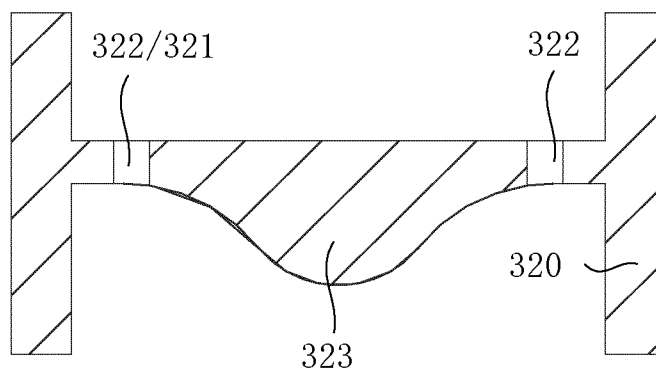


FIG. 3

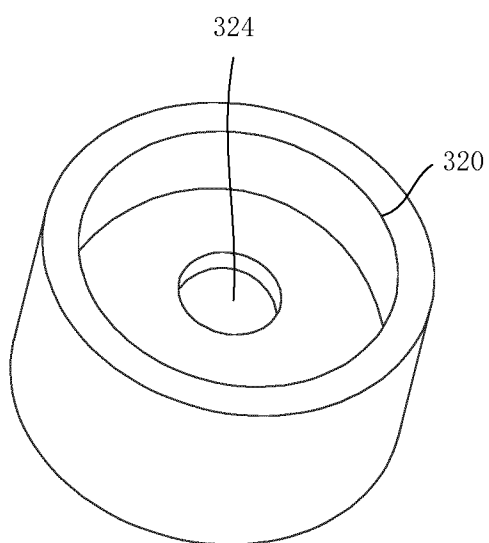


FIG. 4

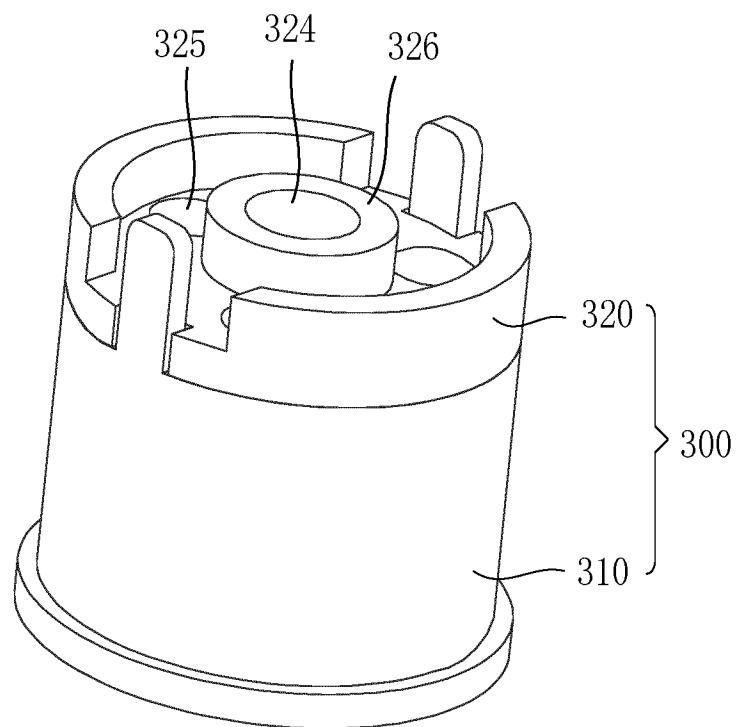


FIG. 5

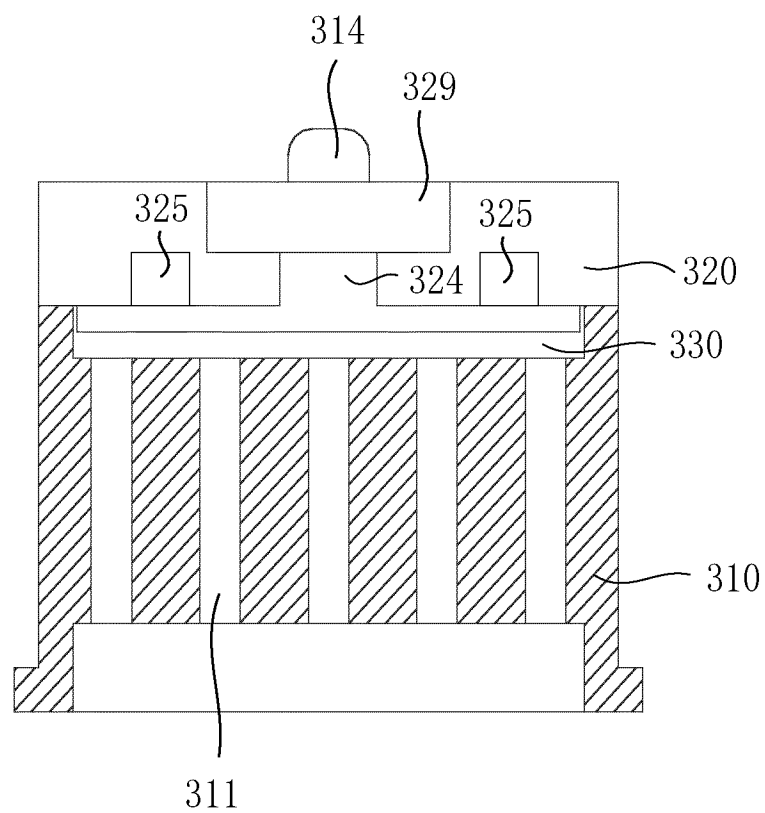


FIG. 6

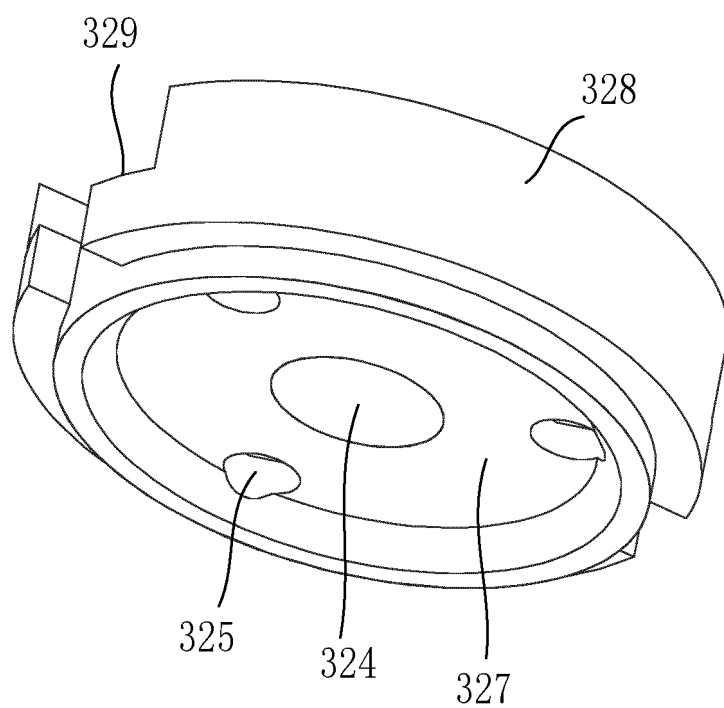


FIG. 7

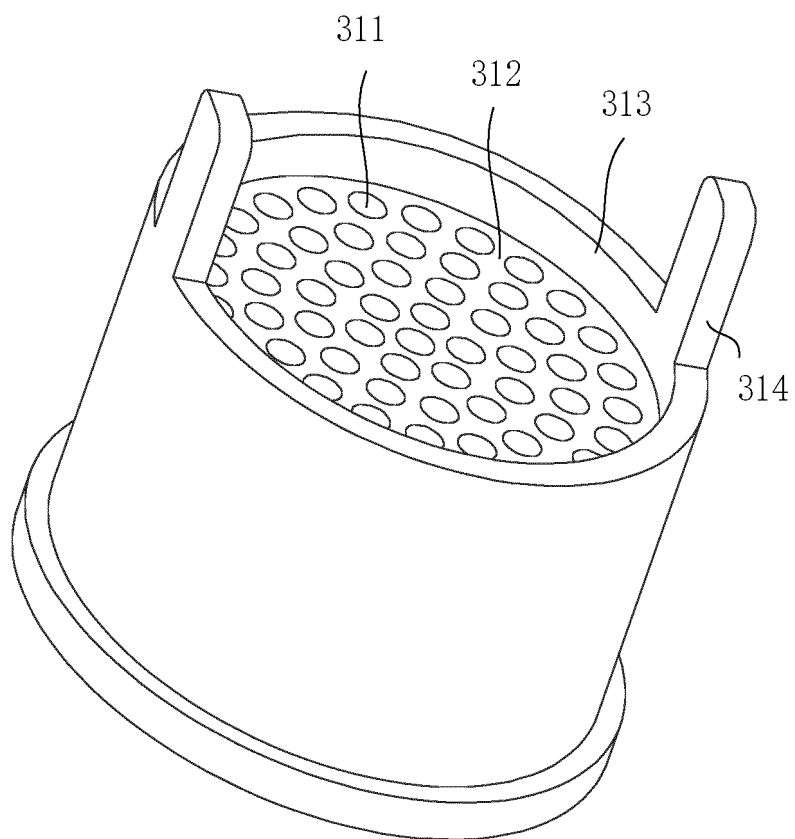


FIG. 8

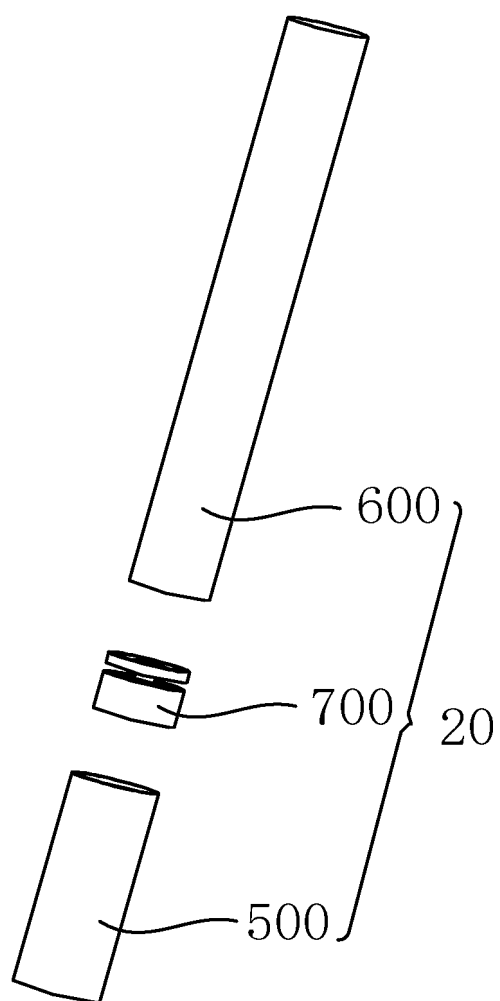


FIG. 9

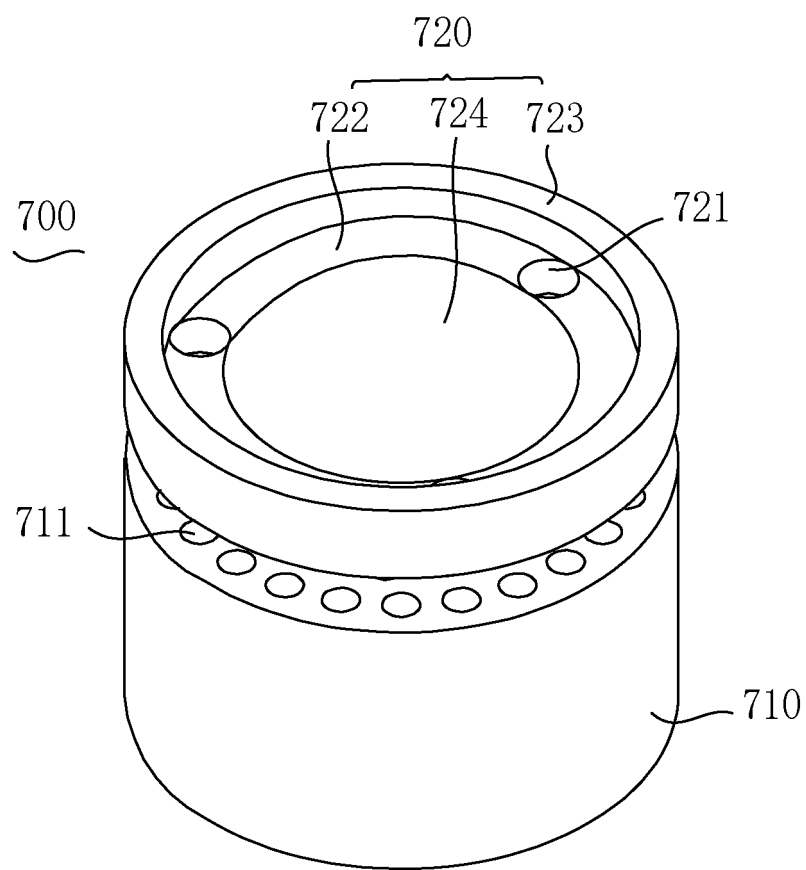


FIG. 10

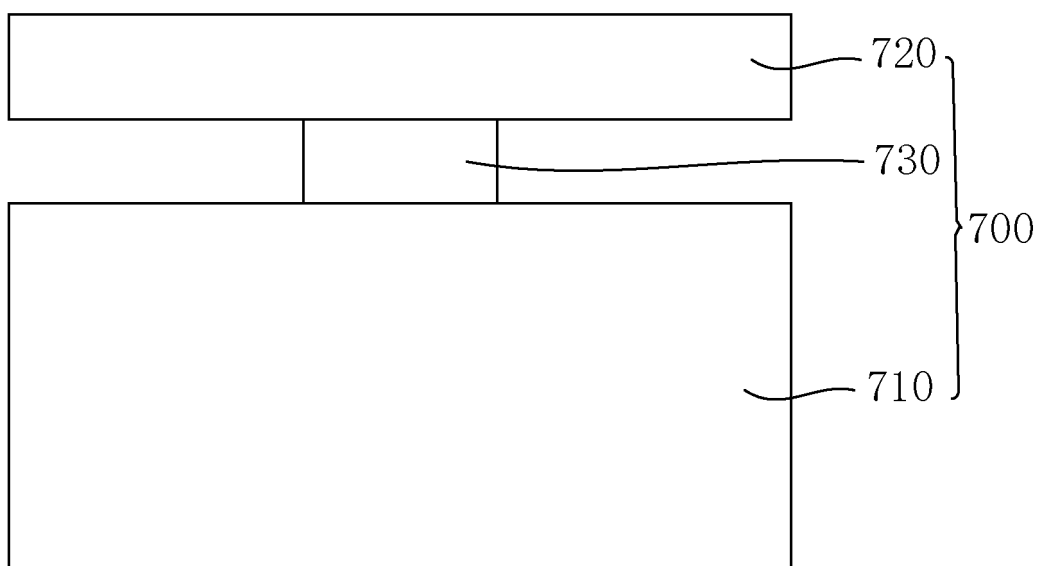


FIG. 11

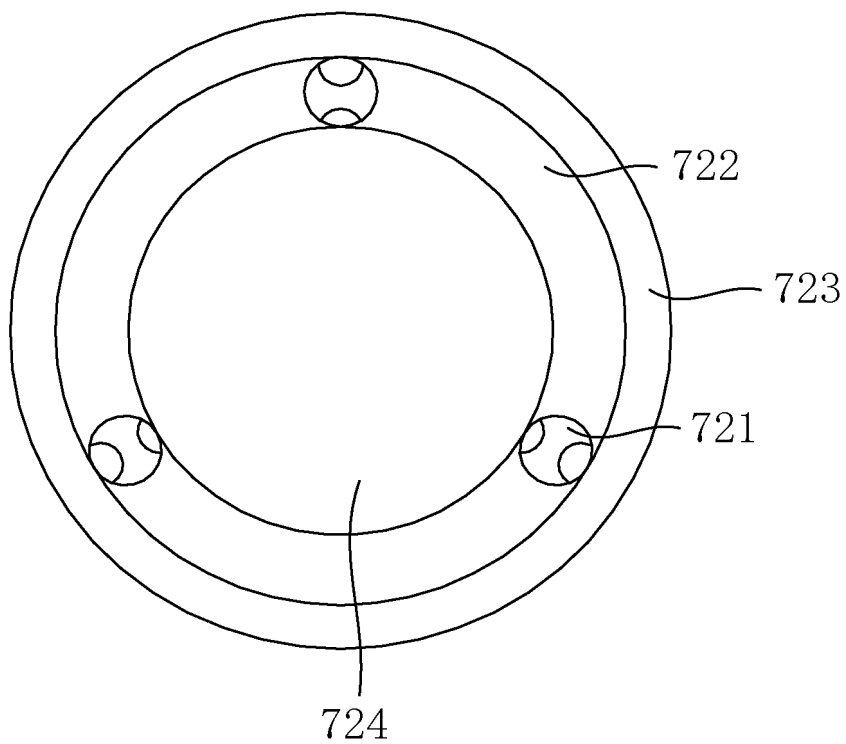


FIG. 12

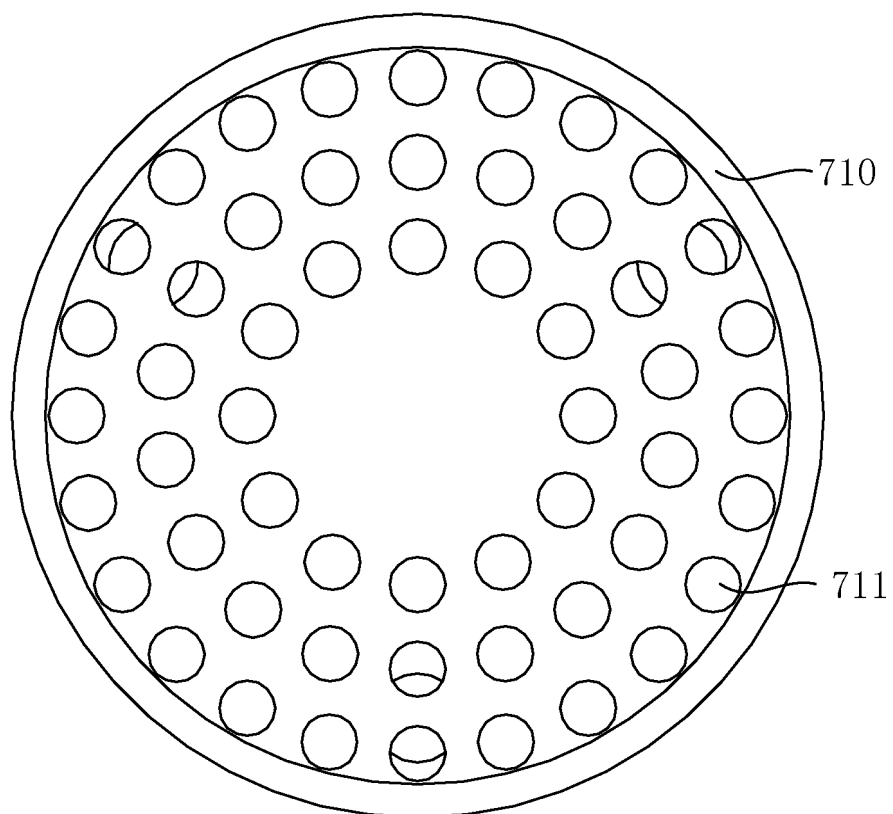


FIG. 13

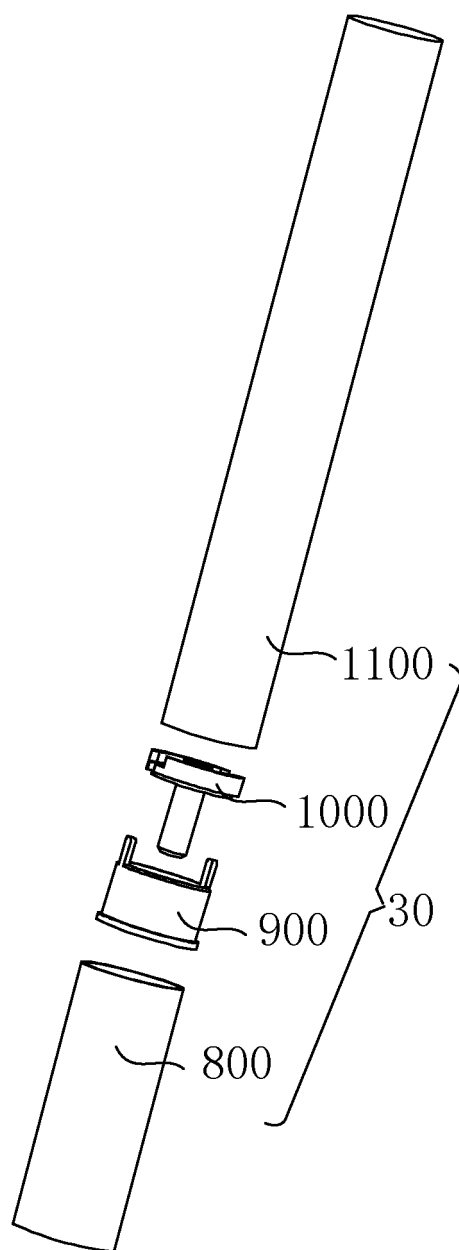


FIG. 14

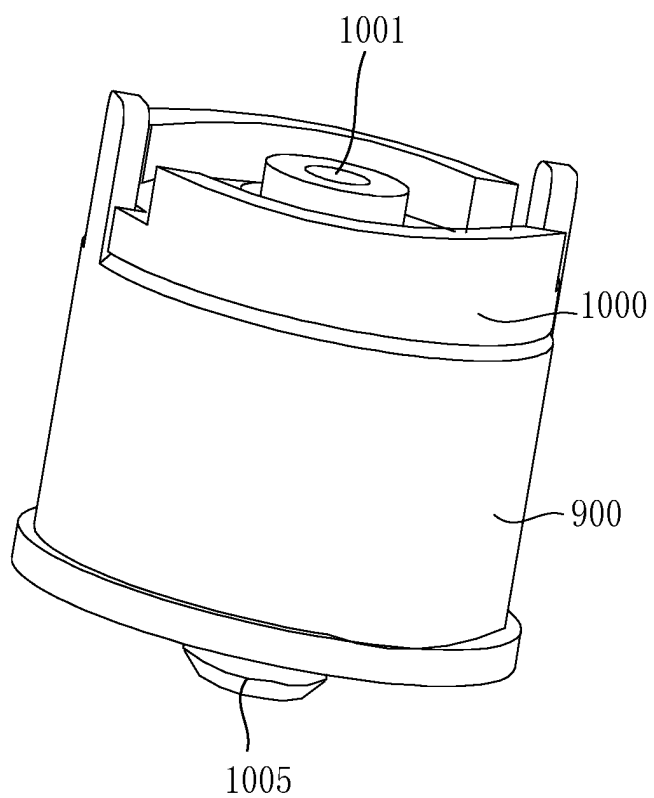


FIG. 15

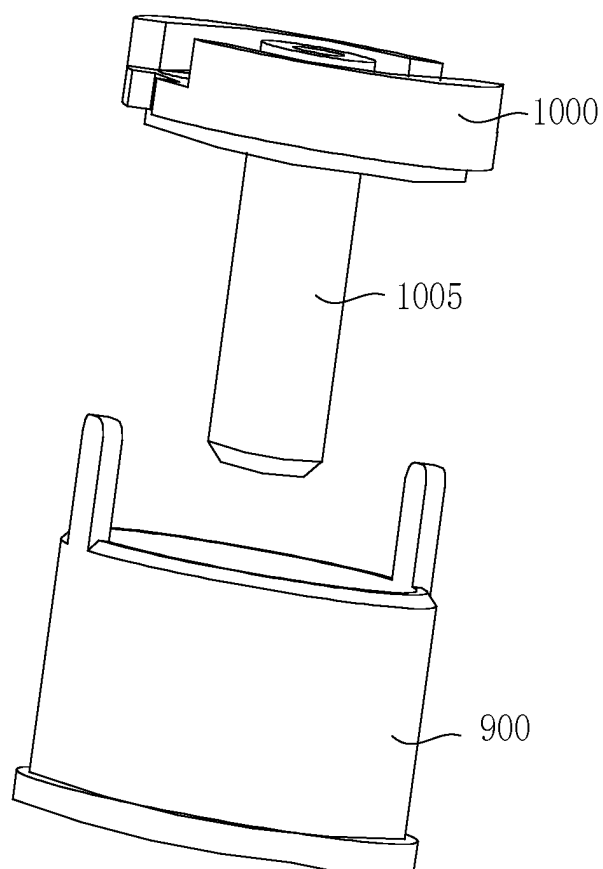


FIG. 16

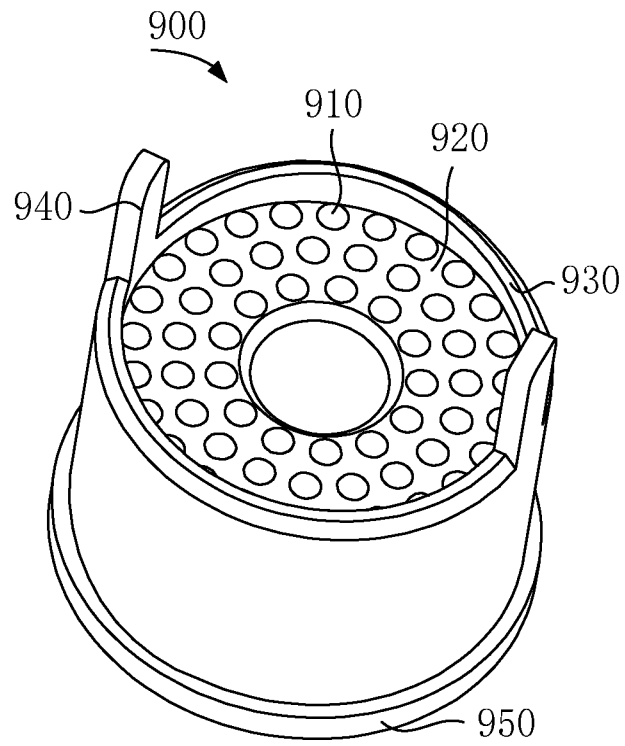


FIG. 17

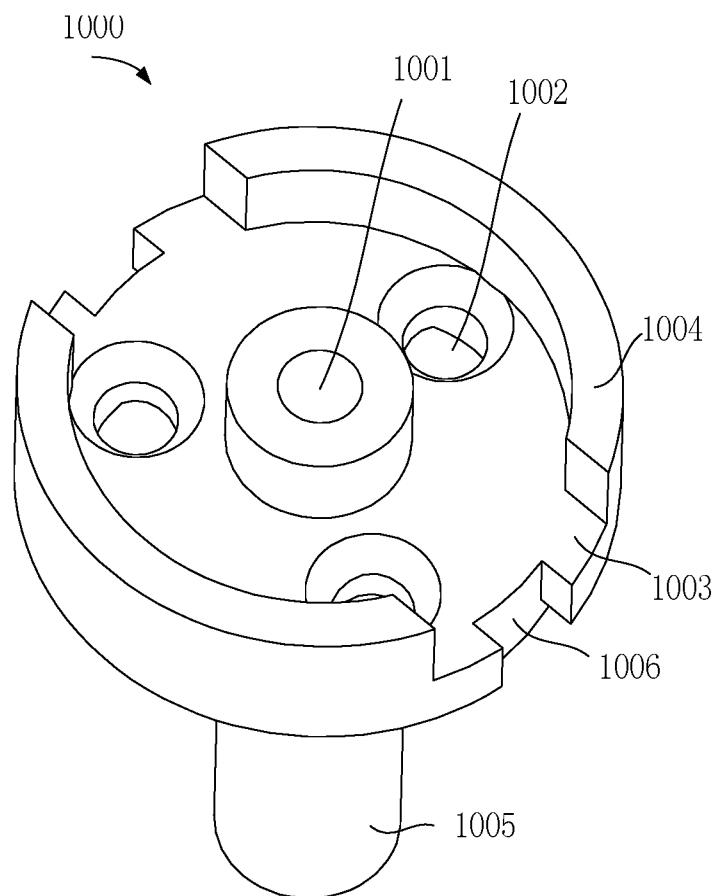


FIG. 18

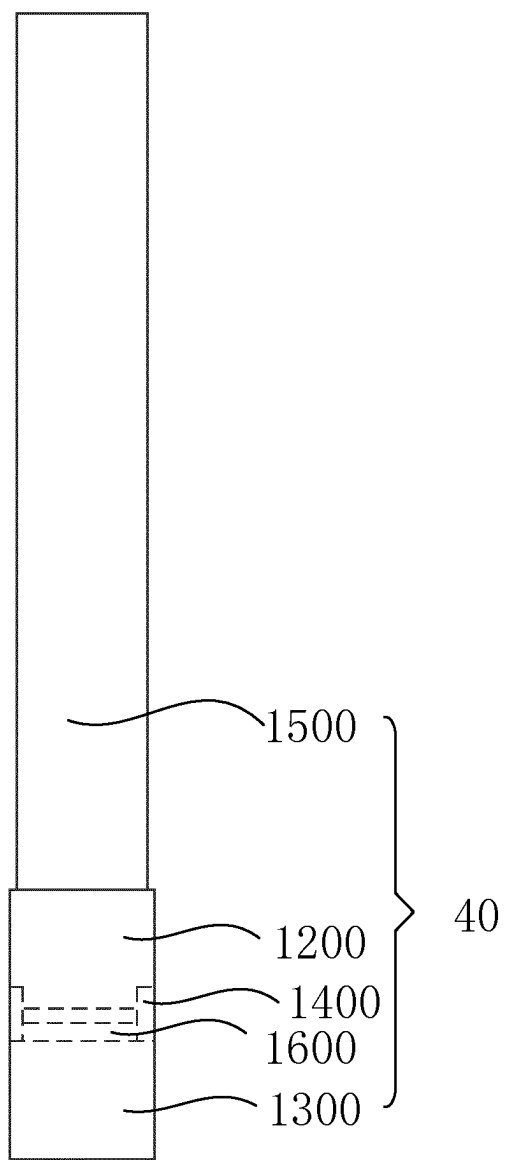


FIG. 19

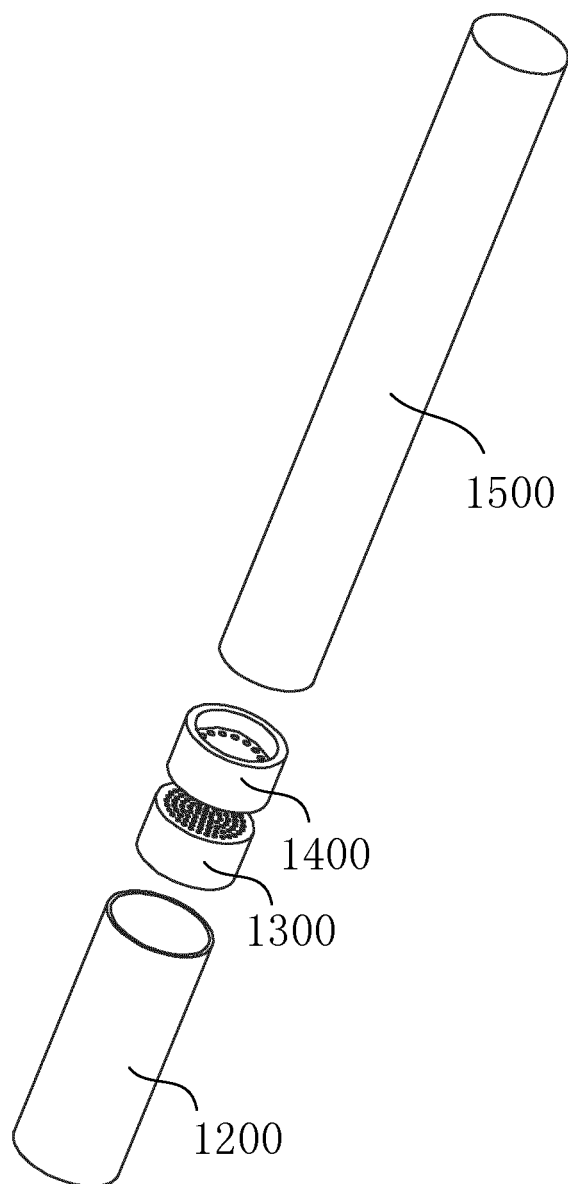


FIG. 20

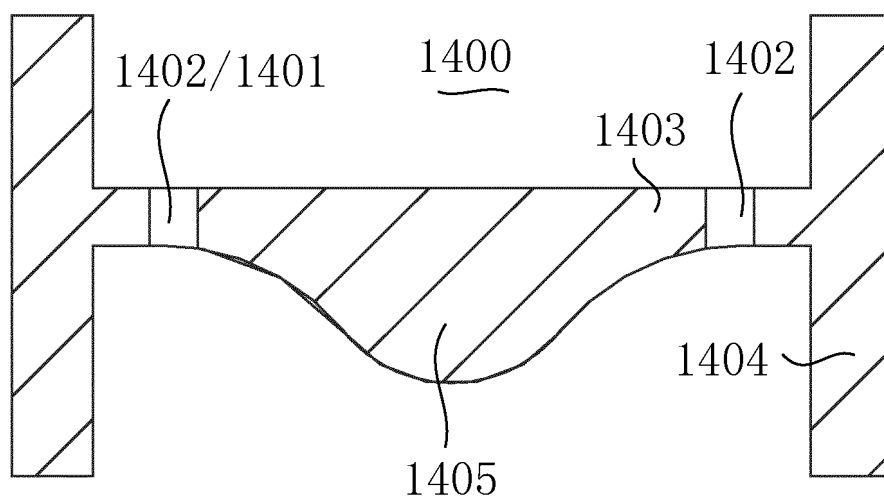


FIG. 21

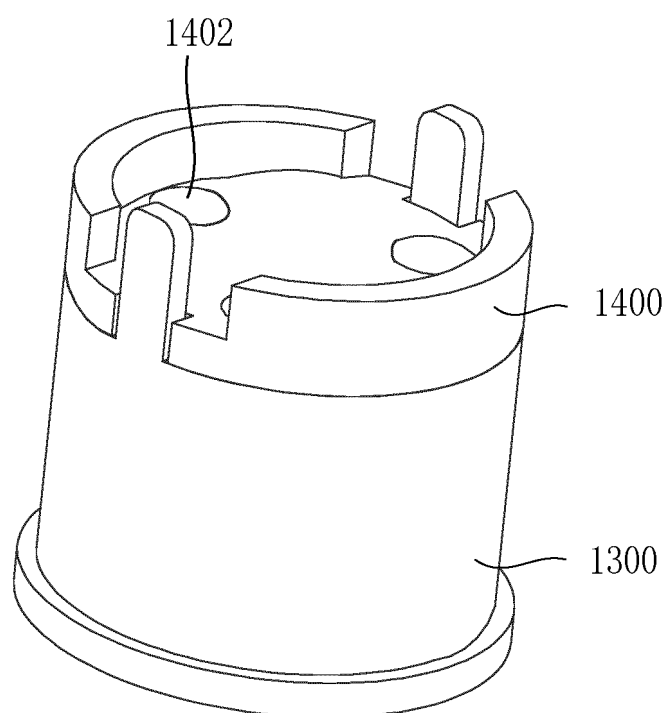


FIG. 22

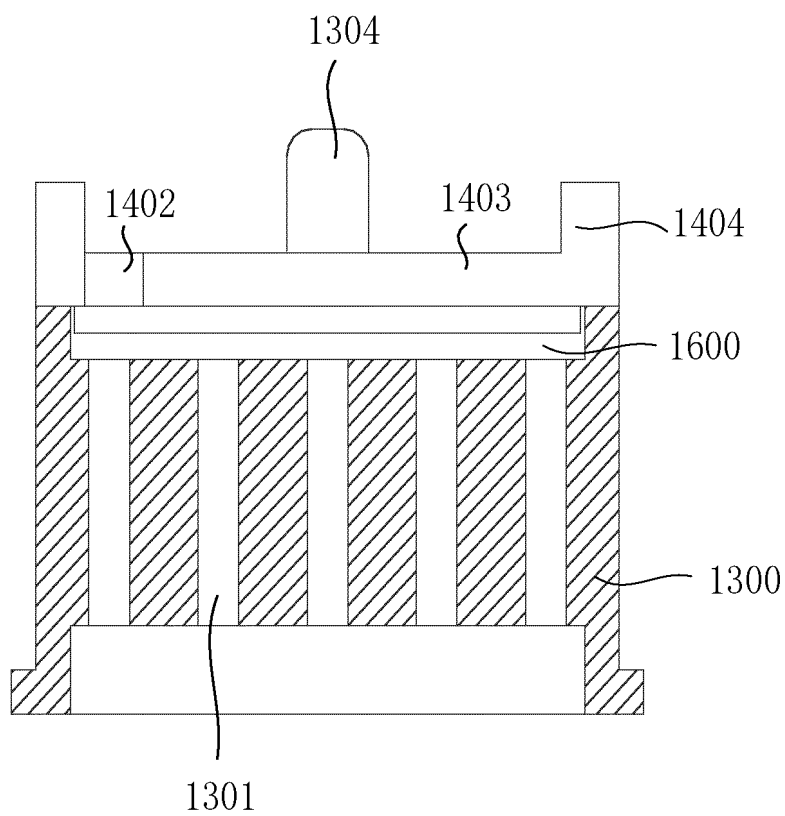


FIG. 23

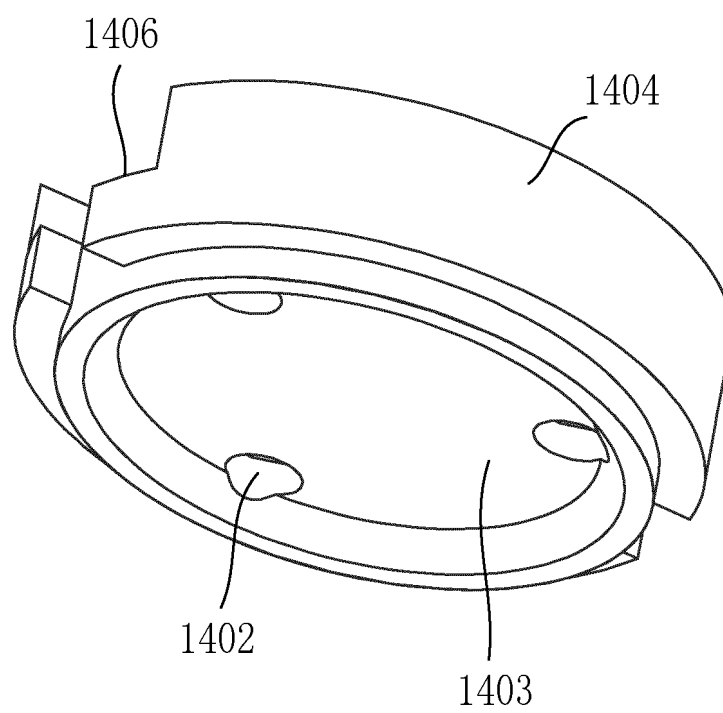


FIG. 24

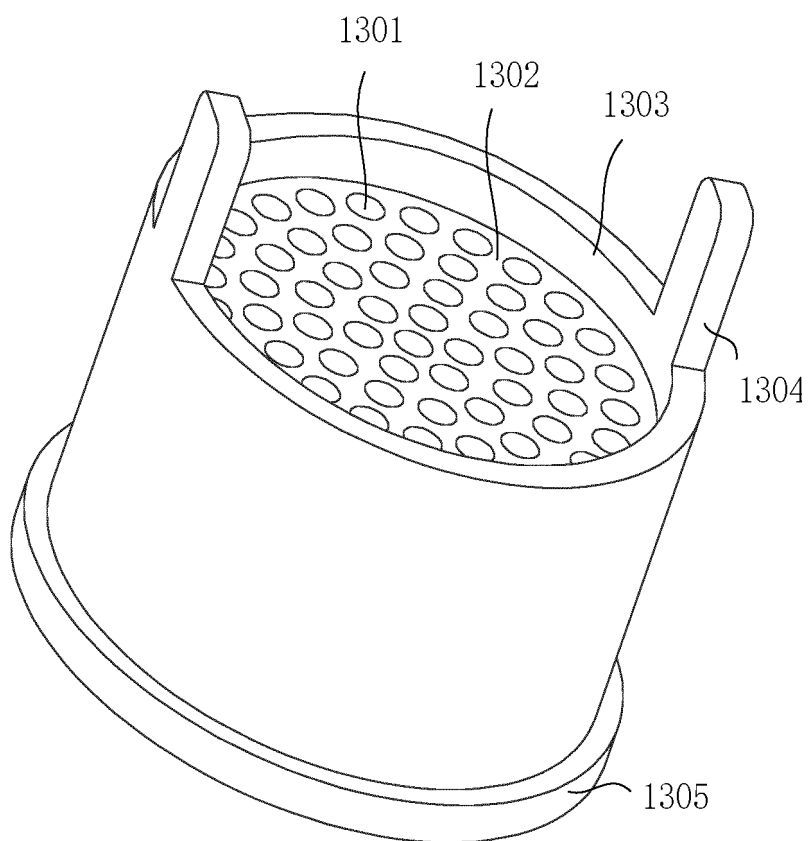


FIG. 25

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/126251

5	A. CLASSIFICATION OF SUBJECT MATTER		
	A24F 40/40(2020.01)i; A24F 40/46(2020.01)i		
	According to International Patent Classification (IPC) or to both national classification and IPC		
10	B. FIELDS SEARCHED		
	Minimum documentation searched (classification system followed by classification symbols)		
	IPC: A24F 40/-; A24F 47/-; A61M 11/-; A61M 15/-		
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
	CNKI, CNTXT, ENTXT, VEN: 电子烟, 雾化器, 加热, 发热, 换热芯, 气溶胶, 烟支, 烟叶, 烟弹, 导流, 引流, 气孔, electronic, electrical, atomiz+, heat+, heat exchange core, aerosol, ciagr+, smoking, tobacco, guid+, air, hole, inlet, opening		
20	C. DOCUMENTS CONSIDERED TO BE RELEVANT		
	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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	Y	US 2022053833 A1 (XIAMEN FENGTAO CERAM CO., LTD.) 24 February 2022 (2022-02-24) description, paragraphs 48-75, and figures 1-5	1-21
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	☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
40	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "D" document cited by the applicant in the international application "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
45			
	Date of the actual completion of the international search		Date of mailing of the international search report
	14 February 2023		16 February 2023
50	Name and mailing address of the ISA/CN		Authorized officer
	China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088		
55	Facsimile No. (86-10)62019451		Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.

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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
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A	CN 109907380 A (SHENZHEN KANGBOTE TECH DEVELOPMENT CO., LTD.) 21 June 2019 (2019-06-21) entire document	1-21
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Information on patent family members

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Information on patent family members

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REFERENCES CITED IN THE DESCRIPTION

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