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(54) **ELECTRONIC CIGARETTE ATOMIZING DEVICE AND ELECTRONIC CIGARETTE**

(57) Provided are an electronic cigarette vaporization component and an electronic cigarette. The electronic cigarette vaporization component includes a housing (1), an atomizing core assembly (2), a lower cover (3), and an air intake splitter plate (4); the housing (1) is internally provided with an atomizing cavity (101) and an air outlet channel (102) which are communicated with each other, one end of the housing (1) is provided with an air suction port (100) communicated with the air outlet channel (102), and the other end of the housing (1) is an open end; the atomizing core assembly (2) is provided in the housing (1); the lower cover (3) covers the open end of the housing (1), and an air intake channel (31) is formed in the lower cover (3); splitter holes (41) are formed in the air intake splitter plate (4), and the air intake channel (31) is communicated with the atomizing cavity (101) by means of the splitter holes (41); and the air intake splitter plate (4) is connected to the inner side of the lower cover (3), and the air intake splitter plate (4) abuts against the air intake channel (31), so as to prevent liquid in the atomizing cavity (101) from leaking.

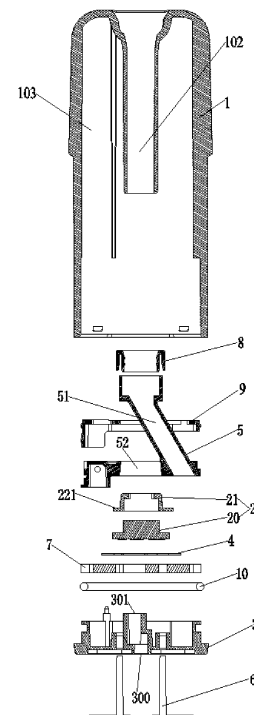


FIG. 2

Description**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] The present disclosure claims priority to Chinese Patent Application No. 202221474371.X filed on June 13, 2022, which is incorporated herein by reference in its entirety.

FIELD

[0002] The present disclosure relates to the field of electronic cigarette technologies, and in particular, to an electronic cigarette vaporization component and an electronic cigarette.

BACKGROUND

[0003] In recent years, with the gradual improvement of people's living standards, their attention to physical health has generally increased, and more and more people have begun to realize the harm of tobacco to their bodies. As a result, the number of users of electronic cigarettes is increasing rapidly. Electronic cigarettes are electronic products that mimic cigarettes, with a similar appearance, smoke, taste, and feel to cigarettes. Electronic cigarette products use atomization of e-liquid to provide users with smoke that can be smoked. The advantage of electronic cigarettes compared to real cigarettes is that their health hazards to users are significantly reduced. And most electronic cigarettes are easy to operate, have a beautiful appearance, and are convenient to carry. Electronic cigarettes generally include power components and atomizers. After the power components supply power to the atomizers, the atomizers heat and atomize the liquid to form smoke for users to inhale.

[0004] There are many problems with electronic cigarettes in prior arts. For example, when a user smokes an electronic cigarette, the outside air flows into the vaporization cavity through the lower cover, mixes with the aerosol in the vaporization cavity, and the mixed gas is inhaled by the user. The existing electronic cigarettes have the drawback of poor mixing of air and aerosols, which affects the user's sensory experience. Moreover, when users smoke electronic cigarettes, external airflow entering the e-cigarette can easily produce noticeable noise, leading to a decrease in user experience. In addition, there is a possibility of liquid matrix and condensate inside electronic cigarettes overflowing from the air inlet and smoke outlet. If the overflow amount is too large, it will seriously affect the user's experience.

[0005] In view of this, it is necessary to propose a new solution to at least solve one of the above-mentioned problems.

SUMMARY

[0006] One purpose of this disclosure is to provide a new solution for an electronic cigarette vaporization component and an electronic cigarette.

[0007] According to the first aspect of the present disclosure, it provides an electronic cigarette vaporization component, including:

a housing, the housing (1) is provided with an vaporization cavity and an air outlet channel that are communicated to each other inside the housing, one end of the housing having an air suction port that is communicated to the air outlet channel, and the other end of the housing being an open end; an vaporization core component, the vaporization core component (2) being disposed inside the housing;

a lower cover, the lower cover (3) being disposed on the open end of the housing, the lower cover being provided with an air inlet channel;

an air inlet splitter plate, the air inlet splitter plate (4) having at least one splitter hole, and the air inlet channel being connected to the vaporization cavity through the splitter hole; the air inlet splitter plate being connected to the inner side of the lower cover and abuts against the air inlet channel to prevent liquid leakage from the vaporization cavity.

[0008] In an embodiment, a locating post is disposed on the lower cover, the air inlet splitter plate is provided with a locating hole, and the locating post can be inserted into the locating hole so that the air inlet splitter plate can be detachably connected to the lower cover.

[0009] In an embodiment, the air inlet channel includes an air intake communicating with the outside and an air outlet communicating with the vaporization cavity, and a plurality of locating posts are formed on the lower cover and distributed around the air outlet, the air inlet splitter plate provides the locating holes at corresponding position.

[0010] In an embodiment, the air inlet splitter plate and the lower cover are positioned by embedding through a concave-convex structure.

[0011] In an embodiment, the air inlet splitter plate is formed with a locating groove on the surface facing the lower cover, and the lower cover is formed with a boss portion around the edge of the air inlet channel, the boss portion is embedded into the locating groove to connect the air inlet splitter plate with the edge of the air inlet channel.

[0012] In an embodiment, the air inlet splitter plate is in sealed connection with the edge of the air inlet channel.

[0013] In an embodiment, the surface of the air inlet splitter plate facing the lower cover is provided with a plug tube, the shape and size of which match the air inlet channel, and the plug tube is inserted into the air inlet channel.

[0014] In an embodiment, the electronic cigarette vaporization component further includes a bracket connected between the air outlet channel and the vaporization core component, and the bracket is sealedly connected to the inner wall of the housing; The bracket is provided with an airflow channel inside, and the first end of the airflow channel is connected to the air outlet channel, and the second end of the airflow channel is connected to the vaporization cavity; the central axis of the airflow channel is offset towards one side of the width direction of the housing relative to the central axis of the air outlet channel.

[0015] In an embodiment, the air inlet channel comprises an air inlet communicating with the outside and an air outlet communicating with the vaporization cavity, and the air outlet is offset towards the other side of the width direction of the housing relative to the air inlet.

[0016] In an embodiment, the air inlet channel comprises a first channel and a second channel, the first end of the first channel is an air inlet, the first end of the second channel is connected to the second end of the first channel, and the second end of the second channel is an air outlet; in the width direction, the central axis of the second channel is offset towards the side away from the bracket relative to the central axis of the first channel.

[0017] In an embodiment, the air inlet channel further includes a third channel extending along the width direction, the first end of the third channel in the width direction is connected to the second end of the first channel, and the second end of the third channel in the width direction is connected to the first end of the second channel.

[0018] In an embodiment, at least two splitter holes are arranged on the air inlet splitter plate.

[0019] In an embodiment, the air inlet channel comprises an air inlet communicating with the outside and an air outlet communicating with the vaporization cavity, and at least two of the splitter holes are uniformly distributed within the range of the air outlet relative to the air outlet.

[0020] In an embodiment, the air inlet splitter plate is provided with nine splitter holes, and the nine splitter holes are arranged in a three-row and three-column array. In an embodiment, the diameter of the splitter holes ranges from 0.3 to 0.8 mm.

[0021] In an embodiment, the sum of the areas of at least two of the splitter holes is 1.2-1.8 m².

[0022] In an embodiment, the electronic cigarette vaporization component further includes a conductive pin, the conductive pin is threaded through the lower cover; the air inlet splitter plate is provided with an avoided notch for avoiding the conductive pin.

[0023] In an embodiment, the electronic cigarette vaporization component further includes a liquid-absorbing element arranged around the periphery of the air inlet channel, and the air inlet splitter plate is in contact with the liquid-absorbing element.

[0024] In an embodiment, the bracket is provided with an installation groove, and a part of the vaporization core component is disposed in the installation groove.

[0025] In an embodiment, the vaporization core component includes an vaporization core and an vaporization core sealing member sleeved on the outside of the vaporization core, and the vaporization core sealing member is provided with a step portion that abuts against the position of the bracket located at the outer edge of the installation groove.

[0026] In an embodiment, the electronic cigarette vaporization component further includes a first seal element and a second seal element, the first seal element is disposed between the bracket and the air outlet channel; the second seal element is arranged between the bracket and the inner wall of the housing.

[0027] According to the second aspect of the present disclosure, it provides an electronic cigarette, where in that the electronic cigarette includes an electronic cigarette vaporization component according to the first aspect and a power supply.

[0028] In the electronic cigarette vaporization component disclosed, firstly, due to the provision of an air inlet splitter plate, the splitter holes on the air inlet splitter plate can evenly disperse and buffer the airflow. When external air flows from the air inlet channel to the splitter holes on the air inlet splitter plate, the pressure of the external air does not undergo sudden changes. The splitter holes can ensure both the smoothness of air intake and the uniformity of airflow distribution, which stabilizes the size and direction of airflow. Therefore, the airflow can flow at a relatively gentle speed, reducing collision vibrations and thus reducing the airflow noise generated by users when smoking electronic cigarette. In addition, an air inlet splitter plate is arranged to abut against the air inlet channel of the lower cover, which plays a certain seal role in the air inlet channel, thus avoiding the leakage of liquid generated in the electronic cigarette from the air inlet channel to a certain extent.

[0029] Other features of the present disclosure and its advantages will become apparent from the following detailed description of exemplary embodiments of the present disclosure with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] The drawings form a part of the specification and depict embodiments of the present disclosure, together with the description, serve to explain the principles of the present disclosure.

FIG. 1 is a schematic diagram of the cross-sectional structure of an electronic cigarette vaporization component in an embodiment of the present disclosure; FIG. 2 is an exploded structural diagram of an electronic cigarette vaporization component in an embodiment of the present disclosure; Figure 3 is a structural diagram of the lower cover in the embodiment of the present disclosure; Figure 4 is the second structural diagram of the lower

cover in the embodiment of the present disclosure; FIG. 5 is a structural diagram of an air inlet splitter plate in the embodiment of the present disclosure.

Description of the Reference Numbers:

[0031] 1. housing;100. air suction port;101. vaporization cavity;102. air outlet channel;103. liquid storage cavity;2. vaporization core component;20. vaporization core;21. vaporization core sealing member;221,step portion;3. lower cover;31. air inlet channel;311. a first channel;312. a second channel;313. a third channel;32. locating post;300. air inlet;301. air outlet;4. air inlet splitter plate;41. splitter hole;42. locating hole;43. avoided notch;5. bracket;51. airflow channel;52. installation groove;6. conductive pin;7. liquid-absorbing element;8. first seal element;9. second seal element; 10. lower cover seal element.

DETAILED DESCRIPTION

[0032] Various exemplary embodiments of the present disclosure will now be described in detail with reference to the accompanying drawings. It should be noted that the relative arrangement of the components and steps, numerical expressions, and numerical values set forth in these embodiments do not limit the scope of the present disclosure unless otherwise specifically stated.

[0033] The following description of at least one exemplary embodiment is merely illustrative in nature and is in no way intended to limit the disclosure, its application, or uses.

[0034] Technologies and equipment known to those of ordinary skill in the relevant art may not be discussed in detail, but should be considered part of the description where appropriate.

[0035] In all examples shown and discussed herein, any specific values should be construed as merely exemplary, rather than as limitations. Therefore, other examples of the exemplary embodiments may have different values.

[0036] It should be noted that similar labels and letters indicate similar items in the following figures, so once an item is defined in one figure, it does not need to be further discussed in subsequent figures.

[0037] Referring to Figures 1-5, an electronic cigarette vaporization component is provided according to an embodiment of the present disclosure, includes: a housing 1, having an vaporization cavity 101 and an air outlet channel 102 that are communicated to each other inside the housing 1, one end of the housing 1 having an air suction port 100 that is connected to the air outlet channel 102, and the other end of the housing 1 being an open end; an vaporization core component 2, disposed inside the housing 1; a lower cover 3 covering the open end of the housing 1, the lower cover 3 being provided with an air inlet channel 31; an air inlet splitter plate 4 with a splitter hole 41 on it, and the air inlet channel 31 is connected to

the vaporization cavity 101 through the splitter hole 41; the air inlet splitter plate 4 is connected to the inner side of the lower cover 3 and abuts against the air inlet channel 31 to prevent liquid leakage from the vaporization cavity.

[0038] The electronic cigarette vaporization component provided by the embodiment of the present disclosure mainly consists of a housing 1, an vaporization core component 2, and a lower cover 3. The housing 1 has a storage space inside, which includes an vaporization cavity 101, an air outlet channel 102, and a liquid storage cavity 103. The liquid storage cavity 103 contains a liquid matrix, such as e-liquid. The vaporization core component 2 can be disposed in the storage space, and includes an vaporization core 20 that forms aerosols of e-liquid in the liquid storage cavity 103 in the vaporization cavity 101. For example, the vaporization core 20 may include a porous body and a heating element provided on the porous body. The porous body may have a liquid-absorbing surface and an atomizing surface, wherein the liquid-absorbing surface may be in communication with the liquid storage cavity 103, and the atomizing surface may be in communication with the vaporization cavity 101. The liquid storage cavity 103 can accommodate a liquid matrix, such as e-liquid. The e-liquid in the liquid storage cavity 103 can be introduced into the porous body through the liquid-absorbing surface and can flow to the atomizing surface under the capillary action of the porous body. Since the heating element is arranged on the atomizing surface and can be connected to the electrical connector, heat will be generated when the heating element is energized, which can heat the e-liquid near the atomizing surface to form aerosol.

[0039] In short, the working principle of the electronic cigarette vaporization component provided by the embodiment of the present disclosure is that the e-liquid stored in the e-cigarette liquid storage cavity 103 continuously permeates through the liquid-absorbing surface of the porous body, and the liquid-absorbing surface absorbs the e-liquid and transfers it to the atomizing surface. When the user inhales with the electronic cigarette vaporization component, the internal sensor is triggered, sending a signal to drive the heating element on the atomizing surface to heat the e-liquid to produce aerosol. The e-liquid is heated and atomized in the vaporization cavity 101, and the external airflow enters through the air inlet channel 31 of the lower cover 3, carrying away the smoke in the vaporization cavity 101. It then passes through the air outlet channel 102 and finally enters the user's mouth through the air suction port 100.

[0040] In the electronic cigarette vaporization component provided by the embodiment of the present disclosure, firstly, due to the provision of the air inlet splitter plate 4, the splitter holes 41 on the air inlet splitter plate 4 can evenly disperse and buffer airflow. When external air flows from the air inlet channel 31 to the splitter hole 41 on the air inlet splitter plate 4, the pressure of the external air does not undergo sudden changes. The splitter hole 41 can ensure both the smoothness of air intake and the

uniformity of airflow distribution, which stabilizes the size and direction of airflow. Therefore, the airflow can flow at a relatively gentle speed, reducing collision vibrations and thus reducing the airflow noise generated by users when smoking electronic cigarette. In addition, the air inlet splitter plate 4 is connected to the inner side of the lower cover 3 and abuts against the air inlet channel 31 of the lower cover 3, which can prevent liquid (such as e-liquid or condensate) generated in the electronic cigarette from leaking from the air inlet channel 31 to a certain extent, and improve the experience of user.

[0041] Referring to Figures 1-5, in an embodiment, the lower cover 3 is formed with a locating post 32, the air inlet splitter plate 4 is provided with a locating hole 42, and the locating post 32 can be inserted into the locating hole 42 so that the air inlet splitter plate 4 can be detachably connected to the lower cover 3.

[0042] In this specific example, when installing the air inlet splitter plate 4, the locating post 32 provided on the lower cover 3 can be inserted into the locating hole 42 on the air inlet splitter plate 4. Such connection is simple and easy to operate, and if air inlet splitter plate 4 is damaged, it is also very convenient to remove the damaged air inlet splitter plate 4 from the lower cover 3 for replacement. Moreover, such connection will improve the stability of the installation of the air inlet splitter plate 4 on the lower cover 3, and ensure the seal effect of the air inlet splitter plate 4 on the air inlet channel 31.

[0043] Referring to Figures 1-5, in an embodiment, the air inlet channel 31 includes an air inlet 300 communicating with the outside and an air outlet 301 communicating with the vaporization cavity 101, and a plurality of locating posts 32 are formed on the lower cover 3 and distributed around the air outlet 301, the air inlet splitter plate 4 provides the locating holes 42 at corresponding position.

[0044] In this specific example, the air inlet splitter plate 4 connects to the lower cover 3 at multiple locations, thereby further improves the stability of the installation of the air inlet splitter plate 4 on the lower cover 3 and ensures the seal effect of the air inlet splitter plate 4 and the air inlet channel 31.

[0045] In an embodiment, the air inlet splitter plate 4 and the lower cover 3 are positioned by vaporization component through a concave-convex structure.

[0046] In this embodiment, the fitting between the air inlet splitter plate 4 and the lower cover 3 through a concave-convex structure can improve the tightness of the connection between the air inlet splitter plate 4 and the lower cover 3, further avoid the leakage of liquid generated in the electronic cigarette from the air inlet channel 31.

[0047] In a specific example, the air inlet splitter plate 4 is formed with a locating groove on the surface facing the lower cover 3, and the lower cover 3 is formed with a boss portion around the edge of the air inlet channel 31, the boss portion is embedded into the locating groove to connect the air inlet splitter plate 4 with the edge of the air inlet channel 31.

[0048] In this specific example, the fitting between the air inlet splitter plate 4 and the lower cover 3 is achieved through a concave convex structure, specifically; the convex part located at the edge of the air inlet channel 31 on the lower cover 3 is embedded in the locating groove on the air inlet splitter plate 4. This can further improve the tightness of the connection between the air inlet splitter plate 4 and the edge of the air inlet channel 31, and ensure that the liquid generated in the electronic cigarette will not leak from the air inlet channel 31.

[0049] In an embodiment, the air inlet splitter plate 4 is in sealed connection with the edge of the air inlet channel 31.

[0050] In this specific example, the air inlet splitter plate 4 forms a sealed connection with the edge of the air inlet channel 31, that is, the surface of the air inlet splitter plate 4 is sealed against the end face of the air inlet channel 31, so that the air inlet splitter plate 4 plays a certain seal role on the air inlet channel 31, further ensure that the liquid generated in the electronic cigarette will not leak from the air inlet channel 31.

[0051] In an embodiment, the surface of the air inlet splitter plate 4 facing the lower cover 3 is provided with a plug tube, the shape and size of which match the air inlet channel 31, and the plug tube is inserted into the air inlet channel 31.

[0052] In this specific example, a plug tube on the air inlet splitter plate 4 to match and plug into the air inlet channel 31 can further improve the seal effect of air inlet splitter plate 4 and the air inlet channel 31.

[0053] Referring to Figures 1-5, in an embodiment, the electronic cigarette vaporization component further includes a bracket 5 connected between the air outlet channel 102 and the vaporization core component 2, and the bracket 5 is sealed connected to the inner wall of the housing 1; The bracket 5 is provided with an airflow channel 51 inside, and the first end of the airflow channel 51 is connected to the air outlet channel 102, and the second end of the airflow channel 51 is connected to the vaporization cavity 101; the central axis of the airflow channel 51 is offset towards one side of the width direction of the housing 1 relative to the central axis of the air outlet channel 102.

[0054] In the electronic smoke device provided in this disclosed embodiment, one end of the housing 1 has an air suction port 100, which is connected to the air outlet channel 102. The other end of the housing 1 is an open end, that is, the air outlet channel 102 roughly extends in the direction from the open end to the position of the air suction port 100. The lower cover 3 is set at the open end and connects to the housing 1, and the open end can be closed by the lower cover 3. A vaporization cavity 101 is formed between the lower cover 3 and the vaporization core component 2. There is an air inlet channel 31 opened in the lower cover 3. When the user sucks, the outside air can enter the air inlet channel 31, and the air in the air inlet channel 31 can flow to the vaporization cavity 101. At this time, the air can mix with the aerosol in the

vaporization cavity 101, and the mixed gas can enter the air outlet channel 102, and finally enter the user's mouth through the suction port 100 connected to the air outlet channel 102.

[0055] It should be noted that due to the bracket 5 connected between the air outlet channel 102 and the vaporization cavity 101, and the airflow channel 51 opened inside the bracket 5 to connect to the vaporization cavity 101 and the air outlet channel 102, the gas mixed with air and aerosol (hereinafter referred to as the mixed gas) will first pass through the airflow channel 51 and then enter the air outlet channel 102. Due to the fact that the airflow channel 51 is not vertically arranged, but rather the central axis of the airflow channel 51 is offset relative to the central axis of the exhaust channel 102, the airflow channel 51 can extend the path of the mixed gas flow, provide a certain buffering effect on the rise of the mixed gas, and avoid the mixed gas from directly entering the mouth and causing excessive stimulation to the user's mouth, thereby improving the taste of suction.

[0056] Referring to Figures 1-5, in an embodiment, the air inlet channel 31 comprises an air inlet 300 communicating with the outside and an air outlet 301 communicating with the vaporization cavity 101, and the air outlet 301 is offset towards the other side of the width direction of the housing 1 relative to the air inlet 300.

[0057] In this specific example, there is an air inlet 300 on the side of the lower cover 3 near the outside, and an air outlet 301 on the side of the lower cover 3 near the vaporization core component 2. The air inlet 300 and the air outlet 301 are respectively connected to the air inlet channel 31. When the user inhales, the external air can enter the air inlet channel 31 through the air inlet 300, and the air in the air inlet channel 31 can flow to the vaporization cavity 101 through the air outlet 301. At this time, the air can mix with the aerosol in the vaporization cavity 101, and the mixed gas can enter the air outlet channel 102, and finally enter the user's mouth through the air suction port 100 connected to the air outlet channel 102. The air outlet 301 is also offset relative to the air inlet 300, and the direction of the offset of the air outlet 301 relative to the air inlet 300 is opposite to the direction of the offset of the central axis of the airflow channel 51 relative to the central axis of the air outlet channel 102; Specifically, the central axis of the airflow channel 51 is offset towards one side of the width direction of the housing 1 relative to the central axis of the air outlet channel 102, while the air outlet 301 is offset towards the other side of the width direction of the housing 1 relative to the air inlet 300. Therefore, when the external air flows into the air inlet channel 31 from the air inlet 300, it flows towards the position of the air outlet 301 located on the side away from the airflow channel 51, that is, enters the vaporization cavity 101 from the side away from the airflow channel 51, prolongs the airflow path, thereby prolongs the residence time of air in the vaporization cavity 101, improves the mixing degree of air and aerosol, and allows the air flowing in from the lower cover 3 to mix more fully with the aerosol in the vaporization

cavity 101. The mixed gas in the vaporization cavity 101 then enters the airflow channel 51 and then enters the outlet channel 102, that is, the fully mixed smoke can optimize the user's suction experience.

[0058] Furthermore, the housing 1 has a length direction, a width direction, and a thickness direction, and the air outlet channel 102 extends approximately along the length direction. Among them, the dimension of housing 1 in the length direction can be greater than the dimension in the width direction, and the dimension in the width direction can be greater than the dimension in the thickness direction. At this time, housing 1 can be a thin strip structure, and the corresponding electronic cigarette can be an ultra-thin electronic cigarette.

[0059] Referring to Figures 5, in an embodiment, the air inlet channel 31 comprises a first channel 311 and a second channel 312, the first end of the first channel 311 is an air inlet 300, the first end of the second channel 312 is connected to the second end of the first channel 311, and the second end of the second channel 312 is an air outlet 301; in the width direction, the central axis of the second channel 312 is offset towards the side away from the bracket 5 relative to the central axis of the first channel 311.

[0060] For example, the air inlet channel 31 extends in the up-down direction, with the first channel 311 located below the second channel 312. The lower end of the first channel 311 is the air inlet 300, and the lower end of the second channel 312 is directly or indirectly connected to the upper end of the first channel 311. The upper end of the second channel 312 is the air outlet 301. In the left-right direction, the axis of the first channel 311 is offset from the axis of the second channel 312. The cross-section of the first channel 311 perpendicular to the length direction may partially coincide with or completely offset the cross-section of the second channel 312 perpendicular to the length direction, both of which are within the scope of protection of this disclosure.

[0061] In this embodiment, setting the central axis of the second channel 312 further away from the bracket 5 can facilitate the offset of the air outlet 301 relative to the air inlet 300 in the width direction towards the side away from the bracket 5.

[0062] Referring to Figures 5, in an embodiment, the air inlet channel 31 further includes a third channel 313 extending along the width direction, the first end of the third channel 313 in the width direction is connected to the second end of the first channel 311, and the second end of the third channel 313 in the width direction is connected to the first end of the second channel 312.

[0063] In this embodiment, by connecting the third channel 313 to the first channel 311 and the second channel 312, it is advantageous to change the direction of the airflow flowing into the air inlet channel 31 through the air inlet 300, thereby reducing the difficulty of opening the air inlet channel 31.

[0064] Referring to Figure 5, in an embodiment, at least two splitter holes 41 are arranged on the air inlet splitter

plate 4.

[0065] In this specific example, arranging multiple splitter holes 41 on the air inlet splitter plate 4 can more evenly disperse the airflow and improve the smoothness of the air intake.

[0066] Referring to Figures 1-5, in an embodiment, the air inlet channel 31 comprises an air inlet 300 communicating with the outside and an air outlet 301 communicating with the vaporization cavity 101, and at least two of the splitter holes 41 are uniformly distributed within the range of the air outlet 301 relative to the air outlet 301.

[0067] In this specific example, the evenly distributed splitter holes 41 can better buffer the airflow, slow down the flow velocity of the airflow, and enable the airflow to enter the vaporization cavity 101 uniformly. When external gas enters the internal structure of the electronic cigarette vaporization component through the air inlet channel 31 of the lower cover 3, multiple evenly distributed splitter holes 41 can better reduce the collision vibration of the airflow on the atomizing surface, thereby further achieve the effect of reducing noise.

[0068] Referring to Figures 1-5, in an embodiment, the air inlet splitter plate 4 is provided with nine splitter holes 41, and the nine splitter holes 41 are arranged in a three-row and three-column array.

[0069] In this specific example, nine splitter holes 41 arranged in an array of three rows and three columns can ensure the smoothness of air intake and a more uniform distribution of air flow, which has the effect of making the size and direction of air flow more stable, thereby further ensuring the reduction of air flow noise generated by users during suction.

[0070] Referring to Figures 1-5, in an embodiment, the diameter of the splitter holes 41 ranges from 0.3 to 0.8 mm.

[0071] In this specific example, the aperture range of the splitter holes 41 is set to 0.3~0.8mm. This is because a small aperture of the splitter hole 41 will affect the smoothness of airflow. When the aperture of the splitter hole 41 is too large, it may cause leakage of condensate from the splitter hole 41. Therefore, in this embodiment, the aperture range of the splitter holes 41 is set to 0.3~0.8mm, which can ensure the smoothness of air intake and avoid the occurrence of condensate leakage.

[0072] Referring to Figures 1-5, in an embodiment, the sum of the areas of at least two of the splitter holes 41 is 1.2-1.8 m².

[0073] In this specific example, when the sum of the areas of the splitter holes 41 is within the range of 1.2-1.8m², a good intake buffering effect and leakage prevention effect can be achieved.

[0074] Referring to Figures 1-5, in an embodiment, the thickness range of the air inlet splitter plate 4 is 0.1~0.3mm.

[0075] If the thickness of the air inlet splitter plate 4 is too thin, it will weaken the airflow buffering effect of the splitter holes 41 on it; if the thickness of the air inlet splitter plate 4 is too thick, it will occupy too much space in the

vaporization cavity 101. Therefore, in this specific example, the thickness range of the air inlet splitter plate 4 is set to 0.1~0.3mm.

[0076] Referring to Figures 1-5, in an embodiment, the electronic cigarette vaporization component further includes a conductive pin 6, the conductive pin 6 is threaded through the lower cover 3; the air inlet splitter plate 4 is provided with an avoided notch 43 for avoiding the conductive pin 6.

[0077] In this specific example, the conductive pin 6 is threaded through the lower cover 3 and comes into contact with the heating element of the vaporization core 20, forming an electrical connection. conductive pin 6 is used to form an electrical connection between vaporization core component 2 and other power supply device. A part of the structure of the air inlet splitter plate 4 is set over the conductive pin 6, and the avoided notch 43 opened on it can form an avoidance effect on the conductive pin 6, avoiding positional interference between the air inlet splitter plate 4 and the conductive pin 6.

[0078] Referring to Figures 1-5, in an embodiment, the electronic cigarette vaporization component further includes a liquid-absorbing element 7 arranged around the periphery of the air inlet channel 31, and the air inlet splitter plate 4 is in contact with the liquid-absorbing element 7.

[0079] In this specific example, the liquid-absorbing element 7 set around the air inlet channel 31 can absorb the condensed liquid generated during atomization in the chamber due to uneven wall heating and cooling; the air inlet splitter plate 4 is in contact with the liquid-absorbing element 7, which can prevent the liquid-absorbing element 7 from moving.

[0080] Referring to Figures 1-5, in an embodiment, the bracket 5 is provided with an installation groove 52, and a part of the vaporization core component 2 is disposed in the installation groove 52.

[0081] In this specific example, the installation groove 52 on the bracket 5 plays a role in installing and locating the vaporization core component 2.

[0082] Referring to Figures 1-5, in an embodiment, the vaporization core component 2 includes a vaporization core 20 and a vaporization core sealing member 21 sleeved on the outside of the vaporization core 20, and the vaporization core sealing member 21 is provided with a step portion 221 that abuts against the position of the bracket 5 located at the outer edge of the installation groove 52.

[0083] In this specific example, the step portion 221 provided on the vaporization core sealing member 21 is in contact with the outer edge of the installation groove 52, which can improve the stability of the installation of the vaporization core component 2.

[0084] Referring to Figures 1-5, in an embodiment, the electronic cigarette vaporization component further includes a first seal element 8 and a second seal element 9, the first seal element 8 is disposed between the bracket 5 and the air outlet channel 102; the second seal element 9

is arranged between the bracket 5 and the inner wall of the housing 1.

[0085] In this specific example, the first seal element 8 can ensure the seal between the bracket 5 and the air outlet channel 102, and the second seal element 9 can ensure the seal between the bracket 5 and the inner wall of the housing 1; thus preventing unnecessary conductivity in the liquid storage cavity 103 and effectively avoiding oil leakage.

[0086] Furthermore, the electronic cigarette vaporization component also includes a lower cover seal element 10, which is in contact with the inner wall of the housing 1 and forms the seal between the lower cover 3 and the inner wall of the housing 1.

[0087] According to another embodiment disclosed herein, there is provided an electronic cigarette including an electronic cigarette vaporization component as described above and a power source.

[0088] Since the electronic cigarette vaporization component in this embodiment is the electronic cigarette vaporization component described in any of the above embodiments, the electronic cigarette in this embodiment has the beneficial effects described in any of the above embodiments of the electronic cigarette vaporization component, which will not be repeated here.

[0089] The focus of the previous embodiments is on the differences between each embodiment. As long as the optimization features between each embodiment are not contradictory, they can be combined to form a better embodiment. Considering the simplicity of the writing, they will not be repeated here.

[0090] Although specific embodiments of this disclosure have been described in detail through examples, those skilled in the art should understand that the above examples are for illustration purposes only and not to limit the scope of this disclosure. Technicians in this field should understand that modifications can be made to the above embodiments without departing from the scope and spirit of this disclosure. The scope of this disclosure is limited by the appended claims.

Claims

1. An electronic cigarette vaporization component, comprising:

a housing (1), the housing (1) is provided with a vaporization cavity (101) and an air outlet channel (102) that are communicated to each other, one end of the housing (1) having an air suction port (100) that is connected to the air outlet channel (102), and the other end of the housing (1) being an open end;

a vaporization core component (2), the vaporization core component (2) being disposed in the housing (1);

a lower cover (3), the lower cover (3) being

disposed on the open end of the housing (1), the lower cover (3) being provided with an air inlet channel (31);

an air inlet splitter plate (4), the air inlet splitter plate (4) having at least one splitter hole (41), and the air inlet channel (31) being connected to the vaporization cavity (101) through the splitter hole (41); the air inlet splitter plate (4) being connected to the inner side of the lower cover (3) and abuts against the air inlet channel (31) to prevent liquid leakage from the vaporization cavity (101).

2. The electronic cigarette vaporization component according to claim 1, wherein a locating post (32) is disposed on the lower cover (3), the air inlet splitter plate (4) is provided with a locating hole (42), and the locating post (32) can be inserted into the locating hole (42) so that the air inlet splitter plate (4) can be detachably connected to the lower cover (3).

3. The electronic cigarette vaporization component according to claim 2, wherein the air inlet channel (31) comprises an air inlet (300) communicating with the outside and an air outlet (301) communicating with the vaporization cavity (101), and a plurality of locating posts (32) are formed on the lower cover (3) and distributed around the air outlet (301), the air inlet splitter plate (4) provides the locating holes (42) at corresponding position.

4. The electronic cigarette vaporization component according to any one of claims 1 to 3, wherein the air inlet splitter plate (4) and the lower cover (3) are positioned by embedding through a concave-convex structure.

5. The electronic cigarette vaporization component according to claim 4, wherein the air inlet splitter plate (4) is formed with a locating groove on the surface facing the lower cover (3), and the lower cover (3) is formed with a boss portion around the edge of the air inlet channel (31), the boss portion is embedded into the locating groove to connect the air inlet splitter plate (4) with the edge of the air inlet channel (31).

6. The electronic cigarette vaporization component according to claim 4, wherein the air inlet splitter plate (4) is in sealed connection with the edge of the air inlet channel (31).

7. The electronic cigarette vaporization component according to any one of claims 1 to 6, wherein the surface of the air inlet splitter plate (4) facing the lower cover (3) is provided with a plug tube, the shape and size of the plug tube match the air inlet channel (31), and the plug tube is inserted into the air inlet channel (31).

8. The electronic cigarette vaporization component according to any one of claims 1 to 7, wherein the electronic cigarette vaporization component further comprises a bracket (5), the bracket (5) is connected between the air outlet channel (102) and the vaporization core component (2), and the bracket (5) is sealedly connected to the inner wall of the housing (1); an airflow channel (51) is provided in the bracket (5), the first end of the airflow channel (51) is connected to the air outlet channel (102), the second end of the airflow channel (51) is connected to the vaporization cavity (101); the central axis of the airflow channel (51) is offset towards one side of the width direction of the housing (1) relative to the central axis of the air outlet channel (102). 5
9. The electronic cigarette vaporization component according to claim 8, wherein the air inlet channel (31) comprises an air inlet (300) communicating with the outside and an air outlet (301) communicating with the vaporization cavity (101), and the air outlet (301) is offset towards the other side of the width direction of the housing (1) relative to the air inlet (300). 10
10. The electronic cigarette vaporization component according to claim 9, wherein the air inlet channel (31) comprises a first channel (311) and a second channel (312), a first end of the first channel (311) is an air inlet (300), a first end of the second channel (312) is connected to a second end of the first channel (311), and the second end of the second channel (312) is an air outlet (301); in the width direction, the central axis of the second channel (312) is offset towards the side away from the bracket (5) relative to the central axis of the first channel (311). 15
11. The electronic cigarette vaporization component according to claim 10, wherein the air inlet channel (31) further comprises a third channel (313), the third channel (313) is extended along the width direction, a first end of the third channel (313) in the width direction is connected to a second end of the first channel (311), and a second end of the third channel (313) in the width direction is connected to the first end of the second channel (312). 20
12. The electronic cigarette vaporization component according to any one of claims 1 to 11, wherein at least two splitter holes (41) are arranged on the air inlet splitter plate (4). 25
13. The electronic cigarette vaporization component according to claim 12, wherein the air inlet channel (31) comprises an air inlet (300) communicating with the outside and an air outlet (301) communicating with the vaporization cavity (101), and at least two of the splitter holes (41) are uniformly distributed within the range of the air outlet (301) relative to the air outlet (301). 30
14. The electronic cigarette vaporization component according to claim 12, wherein the air inlet splitter plate (4) is provided with nine splitter holes (41), and the nine splitter holes (41) are arranged in a three-row and three-column array. 35
15. The electronic cigarette vaporization component according to any one of claims 1 to 14, wherein the diameter of the splitter holes (41) ranges from 0.3mm to 0.8 mm. 40
16. The electronic cigarette vaporization component according to claim 12, wherein the sum of the areas of at least two of the splitter holes (41) ranges from 1.2m to 1.8 m². 45
17. The electronic cigarette vaporization component according to any one of claims 1 to 16, wherein the electronic cigarette vaporization component further comprises a conductive pin (6), the conductive pin (6) is penetrating through the lower cover (3); the air inlet splitter plate (4) is provided with an avoided notch (43) for avoiding the conductive pin (6). 50
18. The electronic cigarette vaporization component according to any one of claims 1 to 17, wherein the electronic cigarette vaporization component further comprises a liquid-absorbing element (7), the liquid-absorbing element (7) is arranged around the periphery of the air inlet channel (31), and the air inlet splitter plate (4) is in contact with the liquid-absorbing element (7). 55
19. The electronic cigarette vaporization component according to claim 8, wherein the bracket (5) is provided with an installation groove (52), and a part of the vaporization core component (2) is disposed in the installation groove (52).
20. The electronic cigarette vaporization component according to claim 19, wherein the vaporization core component (2) comprises a vaporization core (20) and an vaporization core sealing member (21) sleeved on the outside of the vaporization core (20), and the vaporization core sealing member (21) is provided with a step portion (221), the step portion (221) abuts against the position of the bracket (5) located at the outer edge of the installation groove (52).
21. The electronic cigarette vaporization component according to claim 8, wherein the electronic cigarette vaporization component further comprises a first seal element (8) and a second seal element (9), the first seal element (8) is disposed between the bracket (5) and the air outlet channel (102); the

second seal element (9) is arranged between the bracket (5) and the inner wall of the housing (1).

- 22.** An electronic cigarette, wherein the electronic cigarette comprises an electronic cigarette vaporization component according to any one of claims 1-21 and a power supply.

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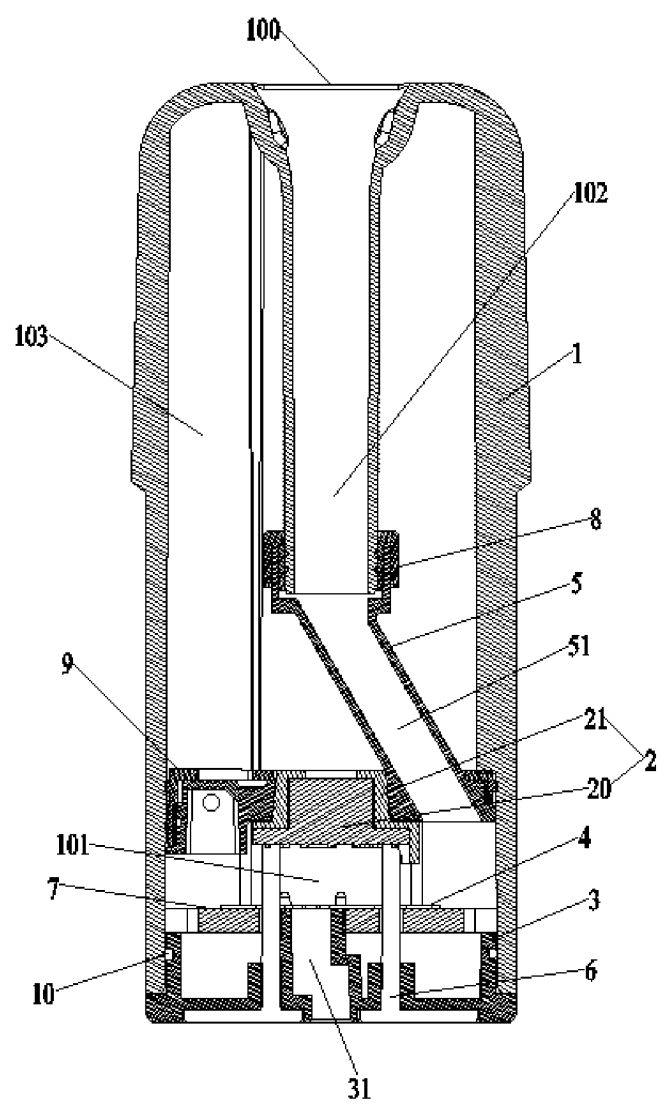


FIG. 1

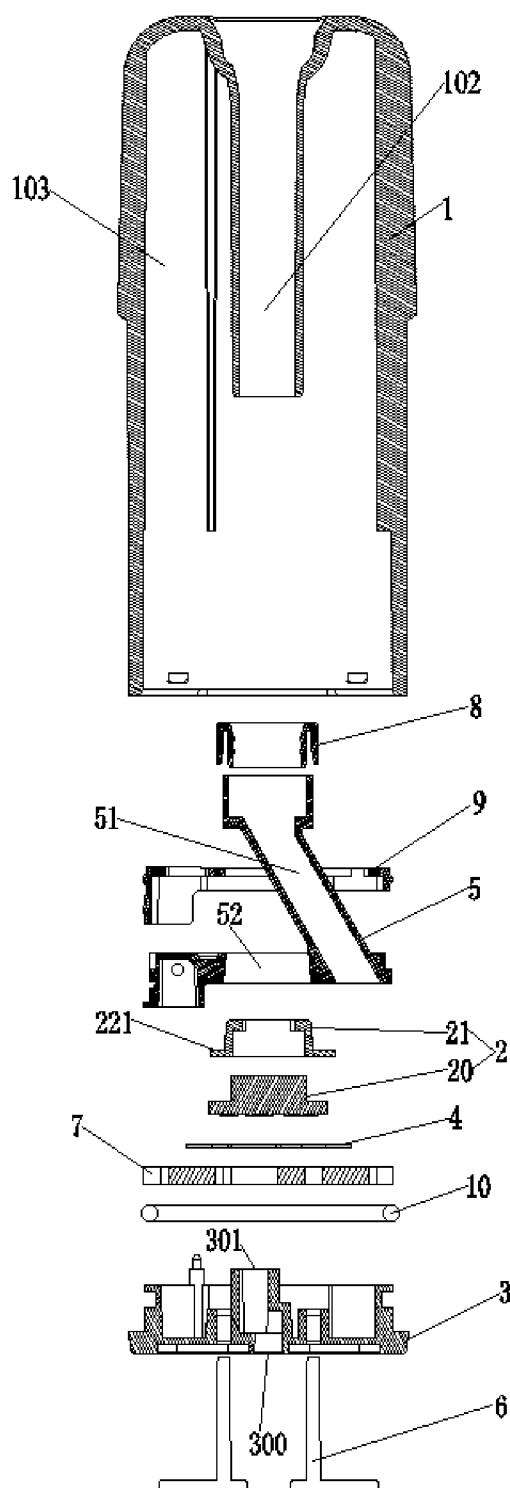


FIG. 2

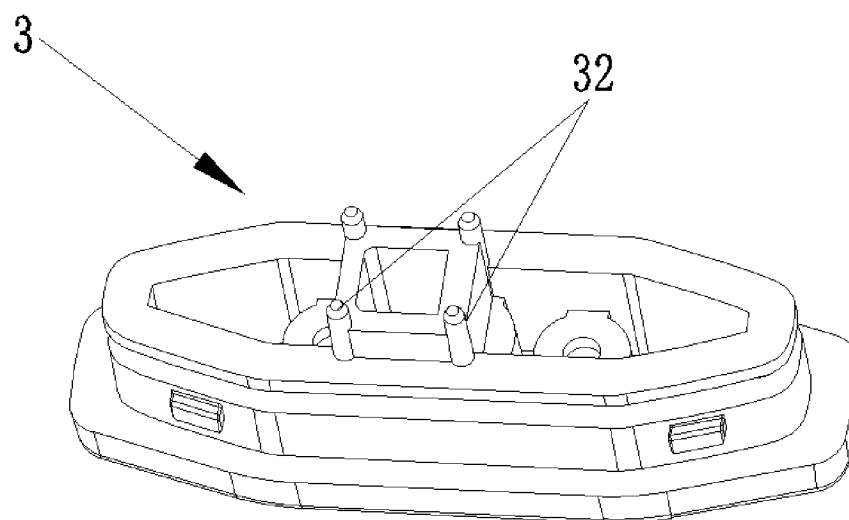


FIG. 3

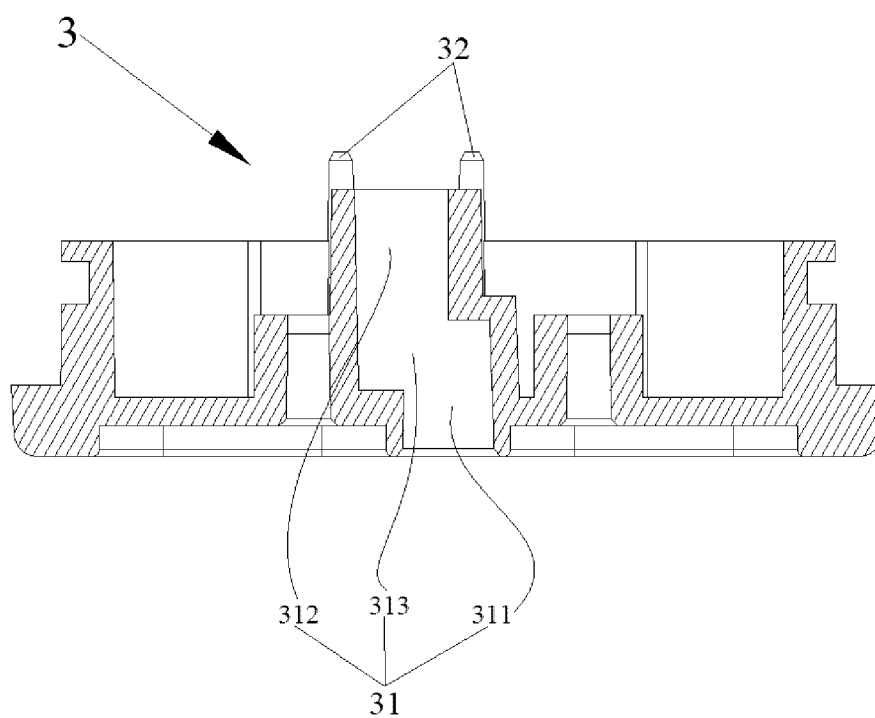


FIG. 4

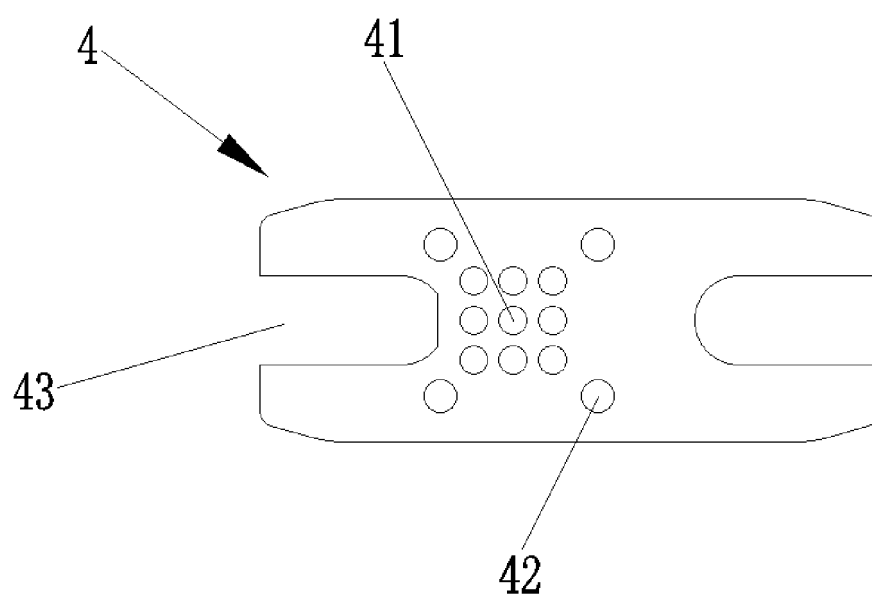


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/078817

A. CLASSIFICATION OF SUBJECT MATTER A24F40/40(2020.01)i According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC: A24F40 A24F47		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNTXT; ENTXT; VEN; ENTXT: 气, 进, 入, 孔, 口, 分流, 分散, 均匀, 匀化, 抵靠, 抵接, 紧贴, 紧挨, 多, 若干, 噪音, flow, gas, air, entrance, inlet, hole?, splitter, distribut+, uniform+, dispers+, separat+, several, some, lot of, noise		
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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* 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	
Date of the actual completion of the international search 13 May 2023	Date of mailing of the international search report 30 May 2023	
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088	Authorized officer Telephone No.	

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/078817

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