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(54) **ATOMISER AND AEROSOL GENERATING DEVICE**

(57) Embodiments of this application provide an atomiser (100) and an aerosol generating device. The atomiser (100) includes a liquid storage cavity (50), an atomisation assembly (10), an airflow channel, and a buffer part (20). The liquid storage cavity (50) is configured to store aerosol generating substrate. The atomisation assembly (10) is configured to atomise the aerosol generating substrate. The atomisation assembly (10) includes an atomisation core (13) and a liquid guiding member configured to conduct the aerosol generating substrate, where the liquid guiding member is in fluid communication with the liquid storage cavity (50). One end of the airflow channel is in communication with the liquid storage cavity (50), and the other end thereof is in communication with the outside of the atomiser (100). The atomiser (100) has a first state and a second state, and the airflow pressure of the airflow channel in the first state is lower than that of the airflow channel in the second state. When the atomiser (100) is in the first state, at least part of the aerosol generating substrate flows to the buffer part (20) through the atomisation assembly (10) and/or the liquid storage cavity (50). The atomiser (100) provided in the embodiments of this application can mitigate liquid leakage while enhancing the consistency of flavour.

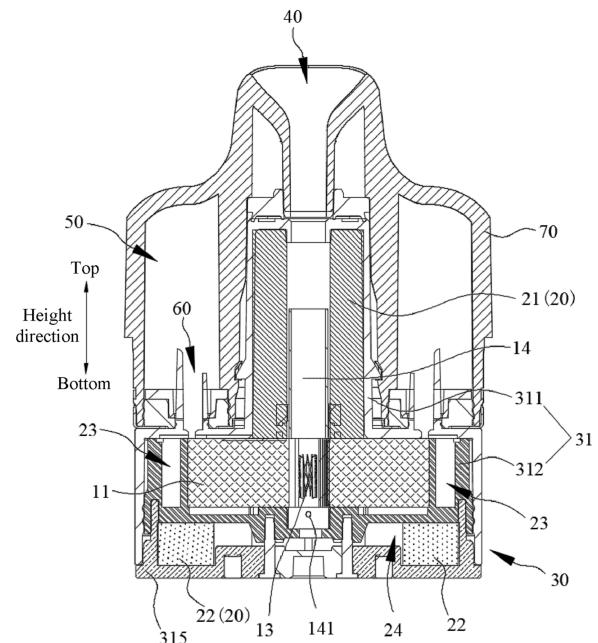


FIG. 2

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Description

to the buffer part through the atomisation assembly and/or the liquid storage cavity.

TECHNICAL FIELD

[0001] This application relates to the technical field of atomisation, and in particular, to an atomiser and an aerosol generating device.

BACKGROUND

[0002] An aerosol generating device generally includes an atomiser and a power supply component electrically connected to the atomiser. When electrically driven by the power supply component, the atomiser is configured to atomise an aerosol generating substrate stored in a liquid storage cavity in various manners such as ultrasonic atomisation, resistive atomisation, electromagnetic atomisation, and heat-not-burn technology, so as to form an aerosol for user inhalation.

[0003] In the related art, the amount of the aerosol generating substrate supplied to the atomisation assembly needs to be appropriate during the puffing process. An excess amount of aerosol generating substrate may lead to liquid leakage, while an insufficient amount of aerosol generating substrate may result in a low concentration of the generated aerosol. Both scenarios may affect the user's inhalation experience. In the related art, there is a problem of significant flavour inconsistency.

SUMMARY

[0004] In view of this, embodiments of this application aim to provide an atomiser and an aerosol generating device, which can not only mitigate liquid leakage but also solve the problem of significant flavour inconsistency.

[0005] To this end, a first aspect of the embodiments of this application provides an atomiser, and the atomiser includes:

a liquid storage cavity, configured to store aerosol generating substrate;

an atomisation assembly, configured to atomise the aerosol generating substrate, the atomisation assembly including an atomisation core and a liquid guiding member configured to conduct the aerosol generating substrate, and the liquid guiding member being in fluid communication with the liquid storage cavity;

an airflow channel, one end of the airflow channel being in communication with the liquid storage cavity, and an other end thereof being in communication with an outside of the atomiser; and

a buffer part, where the atomiser has a first state and a second state, an airflow pressure of the airflow channel for ventilation in the first state is lower than that of the airflow channel for ventilation in the second state, and when the atomiser is in the first state, at least part of the aerosol generating substrate flows

[0006] In some embodiments, in the first state, the airflow pressure of the airflow channel ranges from -500 Pa to -200 Pa; and/or

in the second state, the airflow pressure of the airflow channel ranges from -1000 Pa to -600 Pa.

[0007] In some embodiments, in the first state, a ratio of a total volume of the aerosol generating substrate in the liquid storage cavity to a volume of the liquid storage cavity is less than 0.5. In the second state, a ratio of a total volume of the aerosol generating substrate in the liquid storage cavity to a volume of the liquid storage cavity ranges from 0.5 to 1.

[0008] In some embodiments, the liquid guiding member includes a first liquid guiding member, and the first liquid guiding member is in fluid communication with the liquid storage cavity; the buffer part includes a first liquid storage member, and the first liquid storage member is at least partially in contact with the first liquid guiding member; and when the atomiser is in the first state, at least part of the aerosol generating substrate flows to the first liquid storage member through the first liquid guiding member.

[0009] In some embodiments, a liquid guiding capacity of the first liquid guiding member is greater than that of the first liquid storage member.

[0010] In some embodiments, the liquid guiding member further includes a second liquid guiding member, and the second liquid guiding member is fitted around a peripheral side of the first liquid guiding member; the aerosol generating substrate in the liquid storage cavity is in communication with the first liquid guiding member through the second liquid guiding member; and a liquid guiding capacity of the first liquid guiding member is greater than that of the second liquid guiding member.

[0011] In some embodiments, the atomiser further includes a mounting base, the atomisation assembly is arranged on the mounting base, and the buffer part includes a buffer chamber formed in the mounting base.

[0012] In some embodiments, the buffer chamber includes a first buffer chamber; the mounting base includes an atomising base and a partition wall, where the atomising base is provided with a mounting space, the partition wall is arranged inside the mounting space and divides the mounting space into a mounting cavity and the first buffer chamber, and the atomisation assembly is arranged in the mounting cavity; and when the atomiser is in the first state, at least part of the aerosol generating substrate is buffered into the first buffer chamber through the liquid storage cavity.

[0013] In some embodiments, third capillary channels are formed in a chamber wall of the first buffer chamber, and a subset of the third capillary channels have one end extending towards a bottom wall of the first buffer chamber and an other end in fluid communication with the liquid storage cavity and/or the liquid guiding member.

[0014] A second aspect of the embodiments of this

application provides an aerosol generating device, including a power supply component and the above atomiser, and the power supply component is electrically connected to the atomisation core.

[0015] The embodiments of this application provide the atomiser, the atomisation assembly of the atomiser includes the atomisation core and the liquid guiding member configured to conduct the aerosol generating substrate, and the liquid guiding member is configured to guide the aerosol generating substrate to the atomisation core, so that the atomisation core can generate an aerosol by atomising the aerosol generating substrate. During the puffing process, the aerosol generating substrate in the liquid storage cavity gradually decreases, so that the airflow pressure of the airflow channel in the first state is lower than that of the airflow channel in the second state. As a result, on the one hand, in the second state where the airflow pressure is relatively high, the liquid guiding member can supply the liquid to the atomisation core by virtue of its liquid locking, liquid guiding and liquid storage capacities, and the volume of the aerosol generating substrate consumed per puff is controlled to match the puffing duration and/or puffing power. This facilitates improving the consistency of flavour, thereby solving the problem of significant flavour inconsistency. On the other hand, by arranging the buffer part, at least part of the aerosol generating substrate is enabled to flow to the buffer part through the atomisation assembly and/or the liquid storage cavity in the first state where the airflow pressure is relatively low, so as to reduce the difference in the amount of liquid supplied by the liquid guiding member to the atomisation core between the first state and the second state. This further helps to solve the problem of significant flavour inconsistency. In addition, the problem of liquid leakage caused by the reduction of the airflow pressure can also be solved. That is, the atomiser provided by the embodiments of this application can mitigate liquid leakage while enhancing the consistency of flavour.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016]

FIG. 1 is a schematic structural diagram of an atomiser in some embodiments of this application;
 FIG. 2 is a cross-sectional view of the atomiser in some embodiments of this application;
 FIG. 3 is a cross-sectional view of the atomiser in some embodiments of this application;
 FIG. 4 is a schematic structural diagram of a lower atomising base in some embodiments of this application; and
 FIG. 5 is a schematic structural diagram of the lower atomising base in some embodiments of this application.

[0017] List of reference signs:

10 denotes an atomisation assembly; 11 denotes a first

liquid guiding member; 12 denotes a second liquid guiding member; 13 denotes an atomisation core; 14 denotes a mounting member; 141 denotes an airflow hole; 20 denotes a buffer part; 21 denotes a first liquid storage member; 22 denotes a second liquid storage member; 23 denotes a first buffer chamber; 24 denotes a second buffer chamber; 25 denotes a third capillary channel; 30 denotes a mounting base; 31 denotes an atomising base; 311 denotes an upper atomising base; 312 denotes a lower atomising base; 313 denotes a mounting cavity; 314 denotes an airflow groove; 315 denotes a bottom cover; 32 denotes a partition wall; 40 denotes an air outlet channel; 50 denotes a liquid storage cavity; 60 denotes a liquid inlet channel; 70 denotes a housing; and 100 denotes an atomiser.

DETAILED DESCRIPTION

[0018] It should be noted that the embodiments in this application and the technical features in the embodiments can be combined with each other without conflict. The detailed description in specific implementations should be understood as an explanation of the objective of this application and should not be regarded as an undue limitation on this application.

[0019] In the description of the embodiments of this application, it should be noted that the orientations or positional relationships indicated by the terms such as "top" and "bottom" are based on orientations or positional relationships shown in FIG. 2, which are only for convenience in describing the embodiments of this application and simplifying the description, and do not indicate or imply that the devices or elements referred to need to have particular orientations, or need to be constructed and operated in particular orientations. Therefore, it cannot be construed as a limitation on the embodiments of this application. This application will be further described in detail below with reference to the accompanying figures and specific embodiments.

[0020] One aspect of the embodiments of this application provides an aerosol generating device. Referring to FIG. 1 to FIG. 3, the aerosol generating device includes a power supply component and an atomiser 100 provided in any one of the embodiments of this application. The power supply component is electrically connected to an atomisation core 13.

[0021] Another aspect of the embodiments of this application provides an atomiser 100. Referring to FIG. 1 to FIG. 5, the atomiser 100 includes a liquid storage cavity 50, an atomisation assembly 10, an airflow channel, and a buffer part 20. The liquid storage cavity 50 is configured to store aerosol generating substrate. The atomisation assembly 10 is configured to atomise the aerosol generating substrate. The atomisation assembly 10 includes the atomisation core 13 and a liquid guiding member configured to conduct the aerosol generating substrate, where the liquid guiding member is in fluid communication with the liquid storage cavity 50. One end of the

airflow channel is in communication with the liquid storage cavity 50, and the other end thereof is in communication with the outside of the atomiser 100. The atomiser 100 has a first state and a second state, and the airflow pressure of the airflow channel in the first state is lower than that of the airflow channel in the second state. When the atomiser 100 is in the first state, at least part of the aerosol generating substrate flows to the buffer part 20 through the atomisation assembly 10 and/or the liquid storage cavity 50.

[0022] In some embodiments, the atomiser 100 and the power supply component may be mechanically and electrically connected together along the axial direction. Further, the atomiser 100 and the power supply component may be detachably connected by magnetic attraction, threaded connection, snap-fit connection, or the like. Both the atomiser 100 and the power supply component can be replaced or upgraded independently, which reduces replacement costs and saves users' expenses. Certainly, in other embodiments, the atomiser 100 and the power supply component may also be connected to each other in a non-detachable manner.

[0023] In addition, the atomiser 100 and/or the power supply component are/is not limited to a cylindrical shape, and may also be in other shapes such as an elliptic cylindrical shape, a square box shape, or a polygonal columnar shape. For example, in this embodiment, the cross section at the lower end of the atomiser 100 is substantially oval, while the cross section at the upper part of the atomiser 100 is substantially flat.

[0024] It should be noted that the specific type of the aerosol generating device provided in the embodiments of this application is not limited. Exemplarily, the aerosol generating device may be medical atomisation equipment, an air humidifier, or an atomisation device such as an electronic cigarette.

[0025] Exemplarily, referring to FIG. 1 to FIG. 3, the atomiser 100 further includes an air outlet channel 40. The air outlet channel 40 is configured to discharge an aerosol generated by atomisation of the atomisation assembly 10.

[0026] Here, the liquid guiding member is in fluid communication with the liquid storage cavity 50, and the aerosol generating substrate in the liquid storage cavity 50 can be guided to the liquid guiding member, that is, the liquid guiding member is configured to absorb the aerosol generating substrate, and the atomisation core 13 atomises the aerosol generating substrate to generate the aerosol.

[0027] Exemplarily, referring to FIG. 2 to FIG. 3, the atomiser 100 further includes a liquid inlet channel 60, one end of the liquid inlet channel 60 is in communication with the liquid storage cavity 50, and the other end thereof is in fluid communication with the liquid guiding member. That is, the aerosol generating substrate in the liquid storage cavity 50 can be guided to the liquid guiding member through the liquid inlet channel 60.

[0028] Exemplarily, a channel is formed in the liquid

guiding member, and the atomisation core 13 is arranged inside the channel, which enables the atomisation core 13 to heat the aerosol generating substrate on the inner wall of the channel for atomisation. The channel is in communication with the air outlet channel 40, and the generated aerosol mixes with the air entering the channel and then enters the air outlet channel 40 for user inhalation.

[0029] Exemplarily, the center line of the channel substantially coincides with or completely coincides with the center line of the air outlet channel 40, the channel is directly in communication with the air outlet channel 40, and the aerosol generated by atomisation reaches the user without passing through any bends, thereby reducing the aerosol loss and improving the flavour impact.

[0030] Exemplarily, the atomisation core 13 includes a heating element, which heats and atomises the aerosol generating substrate by generating heat.

[0031] It should be noted that the specific structure of the heating element is not limited herein, and the heating element includes but is not limited to a heating sheet, a heating film, a heating mesh, or the like.

[0032] The specific shape of the heating element is not limited herein, and the heating element includes but is not limited to a flat plate shape, a cylindrical shape, a bowl-like shape, or the like.

[0033] Exemplarily, the atomisation core 13 includes a finished core.

[0034] The aerosol generating substrate in the liquid storage cavity 50 is guided to the atomisation assembly 10 for atomisation to generate the aerosol. After the aerosol generating substrate in the liquid storage cavity 50 is consumed, external air enters the liquid storage cavity 50 through the airflow channel to balance the pressure inside the liquid storage cavity 50.

[0035] The airflow pressure of the airflow channel refers to the airflow resistance that the air needs to overcome to enter the liquid storage cavity 50. The higher the airflow pressure of the airflow channel, the higher the corresponding inhalation resistance, and accordingly, the liquid discharge rate of the liquid storage cavity 50 is relatively reduced, i.e., the amount of the aerosol generating substrate flowing out of the liquid storage cavity 50 is relatively reduced. The lower the airflow pressure of the airflow channel, the lower the corresponding inhalation resistance, and accordingly, the liquid discharge rate of the liquid storage cavity 50 is relatively increased, i.e., the amount of the aerosol generating substrate flowing out of the liquid storage cavity 50 is relatively increased.

[0036] Here, there are multiple factors affecting the airflow pressure of the airflow channel. For example, the content of the aerosol generating substrate in the liquid storage cavity 50, the type of the aerosol generating substrate, and the application scenario of the aerosol generating device may all affect the airflow pressure of the airflow channel.

[0037] That at least part of the aerosol generating

substrate is buffered into the buffer part 20 through the atomisation assembly 10 and/or the liquid storage cavity 50 means that: at least part of the aerosol generating substrate may be buffered into the buffer part 20 through the atomisation assembly 10 alone; at least part of the aerosol generating substrate may be buffered into the buffer part 20 through the liquid storage cavity 50 alone; or at least part of the aerosol generating substrate may be buffered into the buffer part 20 through both the atomisation assembly 10 and the liquid storage cavity 50.

[0038] That is, in the first state where the airflow pressure is relatively low, excess aerosol generating substrate is buffered by the buffer part 20. This facilitates reducing leakage of the aerosol generating substrate.

[0039] In the related art, as the aerosol generating substrate in the liquid storage cavity gradually decreases during the puffing process, an increase in the liquid discharge rate of the liquid storage cavity may lead to liquid leakage; whereas a decrease in the liquid discharge rate of the liquid storage cavity helps to mitigate liquid leakage, but may cause dry aerosol during puffing and poor flavour consistency.

[0040] The embodiment of this application provides the atomiser 100, the atomisation assembly 10 of the atomiser 100 includes the atomisation core 13 and the liquid guiding member configured to conduct the aerosol generating substrate, and the liquid guiding member is configured to guide the aerosol generating substrate to the atomisation core 13, so that the atomisation core 13 can generate the aerosol by atomising the aerosol generating substrate. During the puffing process, the aerosol generating substrate in the liquid storage cavity 50 gradually decreases, so that the airflow pressure of the airflow channel in the first state is lower than that of the airflow channel in the second state. As a result, on the one hand, in the second state where the airflow pressure is relatively high, the liquid guiding member can supply the liquid to the atomisation core 13 by virtue of its liquid locking, liquid guiding and liquid storage capacities, and the volume of the aerosol generating substrate consumed per puff is controlled to match the puffing duration and/or puffing power. This facilitates improving the consistency of flavour, thereby solving the problem of significant flavour inconsistency. On the other hand, by arranging the buffer part 20, at least part of the aerosol generating substrate is enabled to flow to the buffer part 20 through the atomisation assembly 10 and/or the liquid storage cavity 50 in the first state where the airflow pressure is relatively low, so as to reduce the difference in the amount of liquid supplied by the liquid guiding member to the atomisation core between the first state and the second state. This further helps to solve the problem of significant flavour inconsistency. In addition, the problem of liquid leakage caused by the reduction of the airflow pressure can also be solved. That is, the atomiser 100 provided by the embodiments of this application can mitigate liquid leakage while enhancing the consistency of flavour. Moreover, the atomiser 100 is simple in structure and low in

cost.

[0041] In some embodiments, in the second state, the airflow pressure of the airflow channel ranges from -1000 Pa to -600 Pa.

[0042] The airflow pressure of the airflow channel may be a point value of any one of -1000 Pa, -990 Pa, -970 Pa, -950 Pa, -900 Pa, -880 Pa, -850 Pa, -830 Pa, -800 Pa, -780 Pa, -750 Pa, -700 Pa, -680 Pa, -650 Pa, -630 Pa, and -600 Pa, or a point value between any two of the above values.

[0043] In this embodiment, by setting the airflow pressure of the airflow channel of the atomiser 100 in the second state within a range of -1000 Pa to -600 Pa, the liquid guiding member can supply the liquid to the atomisation core 13 by virtue of its liquid locking, liquid guiding and liquid storage capacities, and the volume of the aerosol generating substrate consumed per puff is controlled to match the puffing duration and/or puffing power. This facilitates improving the consistency of flavour, thereby solving the problem of significant flavour inconsistency.

[0044] In some embodiments, in the first state, the airflow pressure of the airflow channel ranges from -500 Pa to -200 Pa.

[0045] The airflow pressure of the airflow channel may be a point value of any one of -500 Pa, -480 Pa, -460 Pa, -450 Pa, -410 Pa, -400 Pa, -380 Pa, -370 Pa, -350 Pa, -320 Pa, -300 Pa, -290 Pa, -270 Pa, -260 Pa, -250 Pa, and -200 Pa, or a point value between any two of the above values.

[0046] In this embodiment, by setting the airflow pressure of the airflow channel of the atomiser 100 in the first state within a range of -500 Pa to -200 Pa, and cooperating with the buffer part 20, at least part of the aerosol generating substrate is enabled to be buffered into the buffer part 20 through the atomisation assembly 10 and/or the liquid storage cavity 50, so as to reduce the difference in the amount of liquid supplied by the liquid guiding member between the first state and the second state. This further helps to solve the problem of significant flavour inconsistency. In addition, the problem of liquid leakage caused by the reduction of the airflow pressure can also be solved.

[0047] In some embodiments, in the first state, the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 is less than 0.5. In the second state, the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 ranges from 0.5 to 1.

[0048] That is, the first state and the second state may be determined by the amount of the aerosol generating substrate in the liquid storage cavity. In the high liquid level condition, i.e., when the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 ranges from 0.5 to 1, the airflow pressure is relatively high, and the amount of the aerosol generating substrate

flowing out of the liquid storage cavity 50 consumed per puff is exactly sufficient for a single puff. In the low liquid level condition, i.e., when the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 is less than 0.5, the airflow pressure is relatively low, and the amount of the aerosol generating substrate flowing out of the liquid storage cavity 50 consumed per puff exceeds the amount required for a single puff. In this case, the excess aerosol generating substrate flows to the buffer part through the atomisation assembly and/or the liquid storage cavity.

[0049] It can be understood that the higher the content of the aerosol generating substrate in the liquid storage cavity 50, the greater the airflow resistance that the air needs to overcome to enter the liquid storage cavity 50, and for example, the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 ranges from 0.5 to 1. Conversely, the lower the content of the aerosol generating substrate in the liquid storage cavity 50, the smaller the airflow resistance that the air needs to overcome to enter the liquid storage cavity 50, and for example, the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 ranges from 0.5 to 1.

[0050] Exemplarily, when the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 is less than 0.5, the airflow pressure of the airflow channel correspondingly ranges from -500 Pa to -200 Pa, and the atomiser 100 is in the first state under this condition.

[0051] Exemplarily, when the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50 ranges from 0.5 to 1, the airflow pressure of the airflow channel correspondingly ranges from -1000 Pa to -600 Pa, and the atomiser 100 is in the second state under this condition.

[0052] In this embodiment, by taking into account the ratio of the total volume of the aerosol generating substrate in the liquid storage cavity 50 to the volume of the liquid storage cavity 50, i.e., by accounting for the variation in the content of the aerosol generating substrate in the liquid storage cavity 50 during usage, the liquid guiding member is configured to supply liquid to the atomisation core 13 accordingly by virtue of its liquid locking, liquid guiding and liquid storage capacities, and the volume of the aerosol generating substrate consumed per puff is controlled to match the puffing duration and/or puffing power. This further facilitates improving the consistency of flavour, thereby solving the problem of significant flavour inconsistency. In addition, combined with the buffer part 20, the atomiser 100 is enabled to further mitigate liquid leakage while enhancing the consistency of flavour.

[0053] Certainly, the application scenario of the aerosol generating device may also affect the pressure inside the liquid storage cavity. Exemplarily, when the external ambient temperature rises, the air inside expands upon heating, which increases the pressure in the liquid storage cavity 50. In this case, at least part of the aerosol generating substrate is buffered into the buffer part 20 through the atomisation assembly 10 and/or the liquid storage cavity 50. When the external ambient temperature drops, the air inside contracts upon cooling, which reduces the pressure in the liquid storage cavity 50. In this case, the aerosol generating substrate stored in the buffer part 20 can be reversely drawn back into the liquid storage cavity 50, thereby maintaining the pressure balance of the liquid storage cavity 50 and enabling the liquid guiding member to adsorb enough aerosol generating substrate. In addition, the system can still maintain stable operation when the external air pressure changes, especially in environments where the external air pressure is lower than the atmospheric pressure, such as high altitudes. In such cases, the external air pressure is lower than the internal pressure of the liquid storage cavity 50, so that the aerosol generating substrate inside the liquid storage cavity 50 may flow out under the effect of pressure difference. The outflowing aerosol generating substrate may then be buffered in the buffer part 20, thereby maintaining the pressure balance of the liquid storage cavity 50.

[0054] In some embodiments, referring to FIG. 2 to FIG. 3, the liquid guiding member includes a first liquid guiding member 11, and the first liquid guiding member 11 is in fluid communication with the liquid storage cavity 50. The buffer part 20 includes a first liquid storage member 21, and the first liquid storage member 21 is at least partially in contact with the first liquid guiding member 11. When the atomiser 100 is in the first state, at least part of the aerosol generating substrate flows to the first liquid storage member 21 through the first liquid guiding member 11.

[0055] That is, a channel is formed in the first liquid guiding member 11, and the atomisation core 13 is arranged inside the channel of the first liquid guiding member 11.

[0056] There are various ways of contact between the first liquid storage member 21 and the first liquid guiding member 11. For example, the first liquid storage member 21 and the first liquid guiding member 11 may be in end surface contact, side surface (inner or outer side surface) contact, or both end surface and side surface (inner or outer side surface) contact.

[0057] The first liquid storage member 21 is at least partially in contact with the first liquid guiding member 11. When there is an excess amount of aerosol generating substrate on the first liquid guiding member 11, that is, when the supply volume of the aerosol generating substrate increases under the same service conditions, the excess aerosol generating substrate may be guided to the first liquid storage member 21 through the first liquid guiding member 11. In this way, the volume of the aerosol

generating substrate flowing to the atomisation assembly 10 may be allowed to be matched with the volume of the aerosol generating substrate required for consumption. This helps to solve the problem of liquid leakage during puffing.

[0058] Exemplarily, when the atomiser 100 is in the second state, at the beginning of puffing, the first liquid guiding member 11 is in a relatively saturated state (e.g., with a saturation degree of approximately 80%), and the first liquid storage member 21 is not wetted by the aerosol generating substrate, or is only wetted by a small amount of the aerosol generating substrate at a relatively low saturation degree. In this case, the volume of the aerosol generating substrate flowing to the atomisation assembly 10 through the first liquid guiding member 11 matches the volume of the aerosol generating substrate required for consumption. This helps to improve the consistency of flavour. As puffing proceeds, the content of the aerosol generating substrate in the liquid storage cavity 50 decreases, or the airflow pressure of the airflow channel falls to within the range corresponding to the first state due to other factors. In this case, the volume of the aerosol generating substrate flowing to the atomisation assembly 10 through the first liquid guiding member 11 exceeds the volume of the aerosol generating substrate required for consumption. By arranging the first liquid storage member 21 at one end of the first liquid guiding member 11, the excess aerosol generating substrate may be guided to the first liquid storage member 21 through the first liquid guiding member 11, which ensures that the volume of the aerosol generating substrate flowing to the atomisation assembly 10 matches the volume of the aerosol generating substrate required for consumption. This helps to reduce liquid leakage during puffing. In addition, when the aerosol generating substrate in the liquid storage cavity 50 is exhausted, or when the volume of the aerosol generating substrate flowing to the atomisation assembly 10 through the first liquid guiding member 11 is insufficient to meet the consumption demand due to the reduced content of the aerosol generating substrate in the liquid storage cavity 50, the aerosol generating substrate stored in the first liquid storage member 21 may be guided to the first liquid guiding member 11 under capillary action and/or gravity. This enables the reuse of the aerosol generating substrate, and further improves the utilisation rate of the aerosol generating substrate and solves the problem of waste caused by leakage of the aerosol generating substrate.

[0059] In some other embodiments, at least part of the aerosol generating substrate may also flow to the first liquid storage member 21 through the liquid storage cavity 50.

[0060] In some embodiments, referring to FIG. 2 to FIG. 3, the liquid guiding capacity of the first liquid guiding member 11 is greater than that of the first liquid storage member 21.

[0061] Exemplarily, the density of the first liquid guiding

member 11 is greater than that of the first liquid storage member 21.

[0062] In this way, the liquid storage capacity of the first liquid guiding member 11 is enabled to be weaker than that of the first liquid storage member 21.

[0063] In this embodiment, by designing the liquid guiding capacity of the first liquid guiding member 11 to be greater than that of the first liquid storage member 21, on the one hand, this helps to improve the liquid supply efficiency of the first liquid guiding member 11, and can prevent the first liquid storage member 21 from absorbing the aerosol generating substrate inside the first liquid guiding member 11 when the atomiser 100 is in the second state, thereby improving the liquid supply reliability of the first liquid guiding member 11. On the other hand, this also ensures that the liquid storage capacity of the first liquid storage member 21 is stronger than that of the first liquid guiding member 11, which in turn helps to solve the problem of liquid leakage during puffing when the atomiser 100 is in the first state.

[0064] In some embodiments, referring to FIG. 2 to FIG. 3, the first liquid storage member 21 is arranged above the first liquid guiding member 11.

[0065] That is, the first liquid storage member 21 is abutted against the top end of the first liquid guiding member 11.

[0066] In this embodiment, by arranging the first liquid storage member 21 above the first liquid guiding member 11, when the atomiser 100 is in the first state, this further facilitates the aerosol generating substrate stored in the first liquid storage member 21 to be guided to the first liquid guiding member 11 under capillary action and gravity, thereby enabling the reuse of the aerosol generating substrate.

[0067] In some embodiments, referring to FIG. 2 to FIG. 3, the liquid guiding member further includes a second liquid guiding member 12, and the second liquid guiding member 12 is fitted around the peripheral side of the first liquid guiding member 11. The aerosol generating substrate in the liquid storage cavity 50 is in communication with the first liquid guiding member 11 through the second liquid guiding member 12. The liquid guiding capacity of the first liquid guiding member 11 is greater than that of the second liquid guiding member 12.

[0068] Exemplarily, the density of the first liquid guiding member 11 is greater than that of the second liquid guiding member 12.

[0069] That is, the liquid guiding member includes the first liquid guiding member 11 and the second liquid guiding member 12, the aerosol generating substrate in the liquid storage cavity 50 sequentially flows through the second liquid guiding member 12 and the first liquid guiding member 11, and then the first liquid guiding member 11 supplies the aerosol generating substrate to a heating element.

[0070] Here, the second liquid guiding member 12 is fitted around the peripheral side of the first liquid guiding member 11, that is, the second liquid guiding member 12

is arranged along the radial direction of the first liquid guiding member 11.

[0071] The density of the first liquid guiding member 11 is greater than that of the second liquid guiding member 12. In this way, the liquid guiding capacity of the first liquid guiding member 11 is enabled to be greater than that of the second liquid guiding member 12.

[0072] In this embodiment, by configuring the liquid guiding member to include the first liquid guiding member 11 and the second liquid guiding member 12, i.e., by adopting a staged liquid-guiding design, the flow resistance of the aerosol generating substrate is increased. This helps to solve the problem of liquid leakage during puffing.

[0073] In some embodiments, the first liquid guiding member 11 and the second liquid guiding member 12 are designed into a split structure. In some other embodiments, the first liquid guiding member 11 and the second liquid guiding member 12 are designed into an integrated structure.

[0074] In some embodiments, referring to FIG. 2 to FIG. 3, the first liquid guiding member 11 is provided with first capillary channel, and the second liquid guiding member 12 is provided with second capillary channel. The first capillary channel extends along the height direction of the atomiser 100, while the extension direction of the second capillary channel is perpendicular to the height direction of the atomiser 100.

[0075] Exemplarily, the first capillary channel extends along the axial direction of the first liquid guiding member 11, and the second capillary channel extends along the radial direction of the first liquid guiding member 11.

[0076] Exemplarily, the second liquid guiding member 12 adopts a transverse fiber structure, so that the second capillary channel extends along the radial direction of the first liquid guiding member 11. This facilitates increasing the flow velocity of the aerosol generating substrate in the second liquid guiding member 12 along the radial direction of the first liquid guiding member 11.

[0077] Exemplarily, the first liquid guiding member 11 adopts a vertical fiber structure, so that the first capillary channel extends along the axial direction of the first liquid guiding member 11. This facilitates increasing the flow velocity of the aerosol generating substrate along the axial direction of the first liquid guiding member 11, thereby expanding the liquid supply range of the liquid guiding member.

[0078] Exemplarily, the first liquid storage member 21 adopts a vertical fiber structure, so that a capillary channel of the first liquid storage member 21 extends along the axial direction of the first liquid storage member 21. This facilitates the flow of the aerosol generating substrate between the first liquid storage member 21 and the first liquid guiding member 11, thereby enhancing the liquid storage capacity of the first liquid storage member 21. In some embodiments, the density of the first liquid guiding member 11 ranges from 0.1 g/cm³ to 0.12 g/cm³. The density of the first liquid guiding member 11 may be a

point value of any one of 0.1 g/cm³, 0.105 g/cm³, 0.11 g/cm³, 0.115 g/cm³ and 0.12 g/cm³, or a point value between any two of the above values.

[0079] In this embodiment, by setting the density of the first liquid guiding member 11 within a range of 0.1 g/cm³ to 0.12 g/cm³, an appropriate density is achieved. This ensures that the first liquid guiding member 11 possess a certain level of liquid locking, liquid guiding and liquid storage capacities. The volume of the aerosol generating substrate flowing from the first liquid guiding member 11 to the atomisation assembly 10 is enabled to match the volume of the aerosol generating substrate consumed per puff, the puffing duration, and the puffing power.

[0080] In some embodiments, the density of the second liquid guiding member 12 ranges from 0.07 g/cm³ to 0.09 g/cm³. The density of the second liquid guiding member 12 may be a point value of any one of 0.07 g/cm³, 0.075 g/cm³, 0.08 g/cm³, 0.085 g/cm³ and 0.09 g/cm³, or a point value between any two of the above values.

[0081] In this embodiment, by setting the density of the second liquid guiding member 12 within a range of 0.07 g/cm³ to 0.09 g/cm³, an appropriate density is achieved. This facilitates the realization of staged liquid guiding, thereby increasing the flow resistance of the aerosol generating substrate, and also improving the flow velocity of the aerosol generating substrate in the second liquid guiding member 12 along the radial direction of the first liquid guiding member 11.

[0082] In some embodiments, the density of the first liquid storage member 21 ranges from 0.06 g/cm³ to 0.07 g/cm³. The density of the first liquid storage member 21 may be a point value of any one of 0.06 g/cm³, 0.065 g/cm³ and 0.07 g/cm³, or a point value between any two of the above values.

[0083] In this embodiment, by setting the density of the first liquid storage member 21 within a range of 0.06 g/cm³ to 0.07 g/cm³, an appropriate density is achieved. This facilitates the realization of staged liquid guiding, thereby increasing the flow resistance of the aerosol generating substrate, and also improving the flow velocity of the aerosol generating substrate in the second liquid guiding member 12 along the radial direction of the first liquid guiding member 11.

[0084] In some embodiments, referring to FIG. 2 to FIG. 5, the atomiser 100 further includes a mounting base 30, the atomisation assembly 10 is arranged on the mounting base 30, and the buffer part 20 includes a buffer chamber formed in the mounting base 30.

[0085] Exemplarily, the atomiser 100 includes a housing 70, and an accommodating area is provided inside the housing 70.

[0086] Exemplarily, the mounting base 30 is at least partially arranged in the accommodating area, and the mounting base 30 and the housing 70 together define the liquid storage cavity 50.

[0087] Certainly, in some other embodiments, the liquid storage cavity 50 may also be formed by the housing

70 alone.

[0088] Exemplarily, the air outlet channel 40 may be formed in the housing 70, or alternatively, the air outlet channel 40 may be formed jointly by the mounting base 30 and the housing 70.

[0089] In this embodiment, the buffer part 20 is provided with a buffer chamber, such that at least part of the aerosol generating substrate is buffered into the buffer chamber through the atomisation assembly 10 and/or the liquid storage cavity 50. The provision of the buffer chamber facilitates increasing the buffer capacity for the aerosol generating substrate, thereby further solving the problem of liquid leakage.

[0090] In some embodiments, referring to FIG. 2 to FIG. 3, the buffer chamber includes a first buffer chamber 23. The mounting base 30 includes an atomising base 31 and partition wall 32, where the atomising base 31 is provided with a mounting space, and the partition wall 32 is arranged inside the mounting space and divides the mounting space into a mounting cavity 313 and the first buffer chamber 23. The atomisation assembly 10 is arranged in the mounting cavity 313. When the atomiser 100 is in the first state, at least part of the aerosol generating substrate is buffered into the first buffer chamber 23 through the liquid storage cavity 50.

[0091] Exemplarily, the atomising base 31 includes an upper atomising base 311 and a lower atomising base 312, and the mounting space is defined between the upper atomising base 311 and the lower atomising base 312.

[0092] Here, the upper atomising base 311 and the lower atomising base 312 may be of a split structure or an integrated structure.

[0093] Here, the upper atomising base 311 and the lower atomising base 312 may be made of the same material or different materials.

[0094] In some embodiments, the lower atomising base 312 may be made of an injection-molded part or a rubber part.

[0095] In some embodiments, the atomising base 31 is provided with liquid inlet channel 60, and the liquid inlet channel 60 is in communication with the liquid storage cavity 50.

[0096] Specifically, a liquid inlet column protrudes from the atomising base 31, which is internally provided with the liquid inlet channel 60, and the communication between the liquid inlet channel 60 and the liquid storage cavity 50 is achieved by inserting the liquid inlet column into the liquid storage cavity 50.

[0097] In some other embodiments, the liquid inlet channel 60 may also be formed jointly by the housing 70 and the atomising base 31. Exemplarily, the first buffer chamber 23 is defined between the partition wall 32 and the side wall of the mounting space. Here, the number of the first buffer chamber 23 may be one or multiple.

[0098] The term "multiple" as used in the embodiments of this application refers to a quantity of two or more.

[0099] Exemplarily, the first buffer chamber 23 may be

in fluid communication with the liquid storage cavity 50, alternatively with the liquid inlet channel 60, alternatively with the liquid guiding member, or simultaneously in fluid communication with at least two of the liquid storage cavity 50, the liquid inlet channel 60, and the liquid guiding member.

[0100] Exemplarily, a capillary channel is formed in the side wall of the mounting space, and the first buffer chamber 23 is in communication with the liquid inlet channel 60 through the capillary channel.

[0101] In this embodiment, by arranging the partition wall 32 to divide the mounting space into the mounting cavity 313 and the first buffer chamber 23, as puffing proceeds, the content of the aerosol generating substrate in the liquid storage cavity 50 decreases, or the airflow pressure of the airflow channel falls to within the range corresponding to the first state due to other factors. In such cases, the aerosol generating substrate in the liquid storage cavity 50 may be buffered into the first buffer chamber 23. This helps to solve the problem of liquid leakage during puffing.

[0102] In addition, in the embodiments where the first liquid storage member 21 is provided, as puffing proceeds, the content of the aerosol generating substrate in the liquid storage cavity 50 decreases, or the airflow pressure of the airflow channel falls to within the range corresponding to the first state due to other factors. In such cases, the volume of the aerosol generating substrate flowing to the atomisation assembly 10 through the first liquid guiding member 11 exceeds the volume of the aerosol generating substrate required for consumption. By arranging the first liquid storage member 21 at one end of the first liquid guiding member 11, the excess aerosol generating substrate may be guided to the first liquid storage member 21 through the first liquid guiding member 11. After a certain amount of the aerosol generating substrate is stored in the first liquid storage member 21, the remaining excess aerosol generating substrate may be further buffered into the first buffer chamber 23. This facilitates increasing the buffer capacity for the aerosol generating substrate.

[0103] In some embodiments, referring to FIG. 1 to FIG. 3, third capillary channels 25 are formed in the chamber wall of the first buffer chamber 23, and a subset of the third capillary channels 25 have one end extending towards the bottom wall of the first buffer chamber 23, and the other end in fluid communication with the liquid storage cavity 50 and/or the liquid guiding member.

[0104] Here, the third capillary channel 25 may be in fluid communication with the liquid storage cavity 50, alternatively with the liquid guiding member, or simultaneously with both the liquid storage cavity 50 and the liquid guiding member.

[0105] In this embodiment, when the aerosol generating substrate in the liquid storage cavity 50 is exhausted, or when the volume of the aerosol generating substrate flowing to the atomisation assembly 10 through the first liquid guiding member 11 is insufficient to meet the con-

sumption demand due to the reduced content of the aerosol generating substrate in the liquid storage cavity 50, by providing the third capillary channel 25 in the chamber wall of the first buffer chamber 23, the aerosol generating substrate stored in the first buffer chamber 23 may be guided to the liquid storage cavity 50 and/or the liquid guiding member under capillary action of the third capillary channel 25. This enables the reuse of the aerosol generating substrate, and further improves the utilisation rate of the aerosol generating substrate and solves the problem of waste caused by leakage of the aerosol generating substrate.

[0106] It should be noted that the specific structure of the airflow channel is not limited herein.

[0107] Exemplarily, the airflow channel is formed by gaps between the first liquid guiding member 11 and the atomising base 31 and/or gaps inside the first liquid guiding member 11.

[0108] Exemplarily, the airflow channel is formed by gaps between the second liquid guiding member 12 and the atomising base 31 and/or gaps inside the second liquid guiding member 12.

[0109] Exemplarily, the airflow channel is formed by the gaps between the first liquid guiding member 11 and the atomising base 31 and/or the gaps inside the first liquid guiding member 11, as well as the gaps between the second liquid guiding member 12 and the atomising base 31 and/or the gaps inside the second liquid guiding member 12.

[0110] Exemplarily, the airflow channel is formed by the gaps between the first liquid guiding member 11 and the atomising base 31 and/or the gaps inside the first liquid guiding member 11, as well as gaps between the first liquid storage member 21 and the atomising base 31 and/or gaps inside the first liquid storage member 21.

[0111] Exemplarily, the airflow channel is formed by the gaps between the first liquid guiding member 11 and the atomising base 31 and/or the gaps inside the first liquid guiding member 11, the gaps between the second liquid guiding member 12 and the atomising base 31 and/or the gaps inside the second liquid guiding member 12, as well as the gaps between the first liquid storage member 21 and the atomising base 31 and/or the gaps inside the first liquid storage member 21.

[0112] In some embodiments, referring to FIG. 1 to FIG. 3, the mounting base 30 includes the atomising base 31, the atomising base 31 is provided with the mounting cavity 313, and the atomisation assembly 10 is arranged in the mounting cavity 313. A portion of the cavity wall of the mounting cavity 313 is recessed to form an airflow groove 314, and at least part of the airflow channel is defined between the airflow groove 314 and the liquid guiding member.

[0113] Exemplarily, referring to FIG. 4 to FIG. 5, the lower atomising base 312 is provided with the airflow groove 314.

[0114] Exemplarily, the width of the airflow groove 314 is greater than 1.2 mm, and the height of the airflow

groove 314 is greater than or equal to 1 mm.

[0115] Here, the atomising base 31 is generally made of a non-cotton material. Therefore, a portion of the cavity wall of the mounting cavity 313 is recessed to form the airflow groove 314. This facilitates improving the stability of the airflow channel, and preventing the dimensional changes of the airflow channel caused by assembly errors, production errors, stress or other factors, thereby helping to improve ventilation stability.

[0116] In this embodiment, a portion of the cavity wall of the mounting cavity 313 is recessed to form the airflow groove 314, such that a stable airflow channel is established. This helps to improve ventilation stability, thereby enhancing the stability of liquid supply.

[0117] Exemplarily, the atomisation assembly 10 further includes a mounting member 14, the heating element is arranged inside the mounting member 14, and the liquid guiding member is fitted around the peripheral side of the mounting member 14.

[0118] Exemplarily, the mounting member 14 may be a mounting tube.

[0119] Exemplarily, liquid passing ports are formed in the mounting member 14. Here, the number of the liquid passing ports may be one or multiple.

[0120] Exemplarily, the atomisation assembly 10 further includes a third liquid guiding member, and the third liquid guiding member is provided with a channel. The heating element is arranged inside the channel, and the third liquid guiding member is arranged inside the mounting member 14. The aerosol generating substrate from the first liquid guiding member 11 is guided to the third liquid guiding member through the liquid passing ports, and the heating element atomises the aerosol generating substrate in the third liquid guiding member.

[0121] Exemplarily, an airflow hole 141 is formed in the side wall of the mounting member 14, and the airflow hole 141 is in communication with the airflow groove 314.

[0122] Exemplarily, the aperture of the airflow hole 141 is approximately 0.3 mm.

[0123] In some embodiments, referring to FIG. 2 to FIG. 3, a channel is formed in the liquid guiding member, and the atomisation core 13 is arranged inside the channel. The buffer chamber includes a second buffer chamber 24, the mounting base 30 includes the atomising base 31 and a bottom cover 315, and the bottom cover 315 is connected to the bottom of the atomising base 31 and defines the second buffer chamber 24 together with the atomising base 31. When the atomiser 100 is in the first state, at least part of the aerosol generating substrate flows into the second buffer chamber 24 through the channel.

[0124] Exemplarily, when the atomiser 100 is in the first state (e.g., the external ambient temperature rises), the pressure in the liquid storage cavity 50 increases, and at least part of the aerosol generating substrate flows to the second buffer chamber 24 through the channel.

[0125] In the embodiments where the first liquid storage member 21 is provided, when the first liquid storage

member 21 is unable to store more aerosol generating substrate, the excess aerosol generating substrate may flow out from the heating element and/or the first liquid guiding member 11 and then into the second buffer chamber 24. This helps to prevent the aerosol generating substrate from leaking onto the product surface.

[0126] In some embodiments, referring to FIG. 2 to FIG. 3, the atomiser 100 further includes a second liquid storage member 22, and the second liquid storage member 22 is arranged in the second buffer chamber 24.

[0127] Exemplarily, the second liquid storage member 22 is, for example, liquid-absorbing cotton pads.

[0128] In this embodiment, by providing the second liquid storage member 22, the aerosol generating substrate inside the second buffer chamber 24 can be absorbed by the second liquid storage member 22. This further helps to prevent the aerosol generating substrate from leaking onto the product surface.

[0129] Alternatively, capillary grooves may be provided on the chamber wall of the second buffer chamber 24 for retaining the aerosol generating substrate inside the second buffer chamber 24. This helps to prevent the aerosol generating substrate from leaking onto the product surface.

[0130] In a specific embodiment, referring to FIG. 3, for the problem of liquid leakage during puffing, ventilation is first performed through the airflow channel during puffing; and subsequently, the aerosol generating substrate in the liquid storage cavity 50 is guided from the liquid inlet channel 60 to the second liquid guiding member 12 through the liquid guiding member, then to the first liquid guiding member 11, and finally to the heating element for atomisation. When the aerosol generating substrate in the liquid storage cavity 50 is at a high liquid level (the second state), the airflow resistance for the air to penetrate the aerosol generating substrate is relatively high. By virtue of its liquid locking, liquid guiding and liquid storage capacities, the first liquid guiding member 11 maintains a certain liquid storage volume and may automatically supplement an appropriate amount of the aerosol generating substrate to the heating element according to the puffing duration and puffing power, so that the volume of the aerosol generating substrate consumed per puff is enabled to match the puffing duration and/or puffing power, and a consistent and stable flavour is further achieved. When the aerosol generating substrate in the liquid storage cavity 50 is at a low liquid level (the first state), the airflow resistance for the air to penetrate the aerosol generating substrate decreases. Under the same puffing conditions, the supply volume of the aerosol generating substrate increases. In this case, the excess aerosol generating substrate may be guided to the first liquid storage member 21 having lower density but stronger liquid storage capacity through the first liquid guiding member 11, so that the volume of the aerosol generating substrate flowing to the heating element is enabled to match the volume of the aerosol generating substrate required for consumption, thereby preventing the occur-

rence of liquid leakage during puffing. When the aerosol generating substrate in the liquid storage cavity 50 is exhausted, the aerosol generating substrate stored in the first liquid storage member 21 may be reused by the first liquid guiding member 11 under capillary action and gravity to keep the liquid supply volume stable, which ensures the consistency of flavour throughout the puffing process, and solves the problem of liquid leakage during puffing and poor flavour consistency caused by unstable liquid supply. Furthermore, the utilisation rate of the aerosol generating substrate is also improved, and the waste caused by the aerosol generating substrate being squeezed out is avoided. In this case, a plurality of intercommunicated airflow grooves 314 are provided on the atomising base 31 for auxiliary ventilation. This helps to prevent the phenomenon that the first liquid guiding member 11 and the second liquid guiding member 12 swell in volume after being soaked in the aerosol generating substrate for a long time, which causes blockage of the airflow channel. This blockage would otherwise prevent the timely replenishment of the aerosol generating substrate from the liquid storage cavity 50 to the heating element, leading to insufficient liquid supply and causing a burnt taste during puffing.

[0131] With respect to liquid leakage during storage, this issue mainly occurs when the aerosol generating substrate in the liquid storage cavity 50 is at the low liquid level (the first state). Under such circumstances, the empty space inside the liquid storage cavity 50 increases, and the air inside expands upon heating, which may easily squeeze the aerosol generating substrate in the liquid storage cavity 50 out of the heating element and cause liquid leakage. When the aerosol generating substrate in the liquid storage cavity 50 is at the low liquid level, the first liquid storage member 21 is maintained in a low saturation state, which enables the first liquid storage member to absorb and accommodate the aerosol generating substrate. When the external ambient temperature rises, the aerosol generating substrate squeezed out from the liquid storage cavity 50 due to the thermal expansion of air is first guided to the first liquid guiding member 11 through the second liquid guiding member 12, and finally to the first liquid storage member 21 for absorption. On the one hand, the staged liquid guiding of the multiple liquid guiding members increases the flow resistance of the aerosol generating substrate. On the other hand, the squeezed-out aerosol generating substrate is absorbed by virtue of the strong liquid storage capacity of the first liquid storage member 21, thereby maintaining the pressure inside the liquid storage cavity 50 in a balanced state. When the external ambient temperature drops, the air contracts upon cooling, and the pressure inside the liquid storage cavity 50 decreases. In this case, the aerosol generating substrate retained on the first liquid storage member 21 may be reversely drawn back into the liquid storage cavity 50 through the liquid guiding member, thereby maintaining the pressure balance of the liquid storage cavity 50. Meanwhile,

the first liquid guiding member 11 and the second liquid guiding member 12 are maintained in a relatively saturated state. If exposed to a continuous high-temperature environment, the first liquid storage member 21 cannot store more aerosol generating substrate, and the excess aerosol generating substrate may flow out through a central hole of the heating element and be absorbed by the second liquid storage member 22, thereby preventing the aerosol generating substrate from leaking onto the product surface. In addition, the aerosol generating device can still maintain stable operation when the external air pressure changes, especially in environments where the external air pressure is lower than the atmospheric pressure, such as high altitudes. In such cases, the external air pressure is lower than the negative pressure of the liquid storage cavity 50, and under the action of the pressure difference, the aerosol generating substrate in the liquid storage cavity 50 may be pulled out. The pulled-out aerosol generating substrate is first guided to the first liquid guiding member 11 through the second liquid guiding member 12, and finally to the first liquid storage member 21 for absorption, thereby maintaining the pressure of the liquid storage cavity 50 in a balanced state.

[0132] In a specific embodiment, referring to FIG. 2, for the problem of liquid leakage during puffing, ventilation is first performed through the airflow grooves 314 along the airflow channel during puffing; and subsequently, the aerosol generating substrate in the liquid storage cavity 50 is first guided from the liquid inlet channel 60 to the first liquid guiding member 11 through the liquid guiding member, and then to the heating element for atomisation. When the aerosol generating substrate in the liquid storage cavity 50 is at the high liquid level, the airflow resistance for the air to penetrate the aerosol generating substrate is relatively high. By virtue of its liquid locking, liquid guiding and liquid storage capacities, the first liquid guiding member 11 maintains a certain liquid storage volume and may automatically supplement an appropriate amount of the aerosol generating substrate to the heating element according to the puffing duration and puffing power, so that the volume of the aerosol generating substrate consumed per puff is enabled to match the puffing duration and/or puffing power, and a consistent and stable flavour is further achieved. When the aerosol generating substrate in the liquid storage cavity 50 is at the low liquid level, the airflow resistance for the air to penetrate the aerosol generating substrate decreases. Under the same puffing conditions, the supply volume of the aerosol generating substrate increases. In this case, some of the excess aerosol generating substrate may flow towards the first buffer chamber, the rest of the excess aerosol generating substrate may be guided to the first liquid storage member 21 having lower density but stronger liquid storage capacity through the first liquid guiding member 11, so that the volume of the aerosol generating substrate flowing to the heating element is enabled to match the volume of the aerosol generating

substrate required for consumption, thereby preventing the occurrence of liquid leakage during puffing. When the aerosol generating substrate in the liquid storage cavity 50 is exhausted, the aerosol generating substrate in the first buffer chamber may flow reversely into the first liquid guiding member 11 through capillary micro-grooves under the negative pressure generated by puffing, and the aerosol generating substrate stored in the first liquid storage member 21 may be reused by the first liquid guiding member 11 under capillary action and gravity to keep the liquid supply volume stable all the time, which ensures the consistent and stable smoke output throughout the puffing process, and solves the problem of liquid leakage during puffing and poor flavour consistency caused by unstable liquid supply. Furthermore, the utilisation rate of the aerosol generating substrate is also improved, and the waste caused by the aerosol generating substrate being squeezed out is avoided. In addition, the atomising base 31 is provided with the intercommunicated airflow grooves 314, which are in communication with the airflow hole 141 on the mounting member 14 for auxiliary ventilation. This helps to prevent the phenomenon that the first liquid guiding member 11 swells in volume after being soaked in the aerosol generating substrate for a long time, which causes blockage of the airflow grooves 314 on the airflow channel. This blockage would otherwise prevent the timely replenishment of the aerosol generating substrate from the liquid storage cavity 50 to the heating element, leading to insufficient liquid supply and causing a burnt taste during puffing.

[0133] With respect to liquid leakage during storage, when the aerosol generating substrate in the liquid storage cavity 50 is at the low liquid level, the first liquid storage member 21 is maintained in a low saturation state, which enables the first liquid storage member to absorb and accommodate the aerosol generating substrate. When the external ambient temperature rises, the aerosol generating substrate is squeezed out from the liquid storage cavity 50 due to the thermal expansion of air, some of the squeezed-out substrate is stored in the first buffer chamber, while the rest of the squeezed-out substrate is guided through the first liquid guiding member 11 to the first liquid storage member 21 for absorption, thereby maintaining the pressure inside the liquid storage cavity 50 in a balanced state. When the external ambient temperature drops, the air contracts upon cooling, and the pressure inside the liquid storage cavity 50 decreases. In this case, some of the aerosol generating substrate in the first buffer chamber is reversely drawn back into the liquid storage cavity 50 through the first liquid guiding member 11, while the rest of the aerosol generating substrate retained on the first liquid storage member 21 is also reversely drawn back into the liquid storage cavity 50, thereby maintaining the pressure balance of the liquid storage cavity 50. Meanwhile, the first liquid guiding member 11 is maintained in a relatively saturated state. If exposed to a continuous high-temperature environment, the first buffer chamber and the first

liquid storage member 21 cannot store more aerosol generating substrate, and the excess aerosol generating substrate may flow out through the central hole of the heating element and be absorbed by the second liquid storage member 22, thereby preventing the aerosol generating substrate from leaking onto the product surface. In addition, the aerosol generating device provided by the embodiments of this application can still maintain stable operation when the external air pressure changes, especially in environments where the external air pressure is lower than the atmospheric pressure, such as high altitudes. In such cases, the external air pressure is lower than the negative pressure of the liquid storage cavity 50, and under the action of the pressure difference, the aerosol generating substrate in the liquid storage cavity 50 may be pulled out. Some of the pulled-out aerosol generating substrate may flow through the first liquid guiding member 11 into the first buffer chamber for storage, while the rest of the substrate may be guided to the first liquid storage member 21 through the first liquid guiding member 11 for absorption, thereby maintaining the pressure of the liquid storage cavity 50 in a balanced state. In this way, it not only achieves stable and consistent liquid supply under different liquid level conditions during puffing, solving the problem of liquid leakage during puffing and poor flavour consistency, but also solves the problem of liquid leakage during storage by leveraging the reversible draw-back capacity of the buffer part 20.

[0134] In the descriptions of this application, descriptions using reference terms "in an embodiment", "in some embodiments", "in some other embodiments", "in yet other embodiments", or "exemplarily" mean that specific features, structures, materials, or characteristics described with reference to the embodiments or examples are included in at least one embodiment or example of the embodiments of this application. In this application, the illustrative expressions of the above terms do not necessarily refer to the same embodiment or example. Besides, the specific features, the structures, the materials or the characteristics that are described may be combined in proper manners in any one or more embodiments or examples. In addition, without mutual contradiction, those skilled in the art may combine different embodiments or examples described in this application, as well as features of the different embodiments or examples.

[0135] The above contents are merely preferred embodiments of this application and are not used for limiting this application, and this application may be variously modified and changed for those skilled in the art.

Claims

1. An atomiser (100), **characterized in that** the atomiser (100) comprises:

a liquid storage cavity (50), configured to store aerosol generating substrate;
 an atomisation assembly (10), configured to atomise the aerosol generating substrate, the atomisation assembly (10) comprising an atomisation core (13) and a liquid guiding member configured to conduct the aerosol generating substrate, and the liquid guiding member being in fluid communication with the liquid storage cavity (50);
 an airflow channel, one end of the airflow channel being in communication with the liquid storage cavity (50), and an other end thereof being in communication with an outside of the atomiser (100); and
 a buffer part (20), wherein the atomiser (100) has a first state and a second state, an airflow pressure of the airflow channel in the first state is lower than that of the airflow channel in the second state, and when the atomiser (100) is in the first state, at least part of the aerosol generating substrate flows to the buffer part (20) through the atomisation assembly (10) and/or the liquid storage cavity (50).

2. The atomiser (100) of claim 1, **characterized in that** in the first state, the airflow pressure of the airflow channel ranges from -500 Pa to -200 Pa; and/or in the second state, the airflow pressure of the airflow channel ranges from -1000 Pa to -600 Pa.
3. The atomiser (100) of claim 1, **characterized in that** in the first state, a ratio of a total volume of the aerosol generating substrate in the liquid storage cavity (50) to a volume of the liquid storage cavity (50) is less than 0.5; and in the second state, a ratio of a total volume of the aerosol generating substrate in the liquid storage cavity (50) to a volume of the liquid storage cavity (50) ranges from 0.5 to 1.
4. The atomiser (100) of claim 1, **characterized in that** the liquid guiding member comprises a first liquid guiding member (11), and the first liquid guiding member (11) is in fluid communication with the liquid storage cavity (50); the buffer part (20) comprises a first liquid storage member (21), and the first liquid storage member (21) is at least partially in contact with the first liquid guiding member (11); and when the atomiser (100) is in the first state, at least part of the aerosol generating substrate flows to the first liquid storage member (21) through the first liquid guiding member (11).
5. The atomiser (100) of claim 4, **characterized in that** a liquid guiding capacity of the first liquid guiding member (11) is greater than that of the first liquid storage member (21).

6. The atomiser (100) of claim 4, **characterized in that** the liquid guiding member further comprises a second liquid guiding member (12), and the second liquid guiding member (12) is fitted around a peripheral side of the first liquid guiding member (11); the aerosol generating substrate in the liquid storage cavity (50) is in communication with the first liquid guiding member (11) through the second liquid guiding member (12); and a liquid guiding capacity of the first liquid guiding member (11) is greater than that of the second liquid guiding member (12).
7. The atomiser (100) of any one of claims 1 to 6, **characterized in that** the atomiser (100) further comprises a mounting base (30), the atomisation assembly (10) is arranged in the mounting base (30), and the buffer part (20) comprises a buffer chamber formed in the mounting base (30).
8. The atomiser (100) of claim 7, **characterized in that** the buffer chamber comprises a first buffer chamber (23); the mounting base (30) comprises an atomising base (31) and a partition wall (32), wherein the atomising base (31) is provided with a mounting space, the partition wall (32) is arranged inside the mounting space and divides the mounting space into a mounting cavity (313) and the first buffer chamber (23), and the atomisation assembly (10) is arranged in the mounting cavity (313); and when the atomiser (100) is in the first state, at least part of the aerosol generating substrate is buffered into the first buffer chamber (23) through the liquid storage cavity (50).
9. The atomiser (100) of claim 8, **characterized in that** third capillary channels (25) are formed in a chamber wall of the first buffer chamber (23), and a subset of the third capillary channels (25) have one end extending towards a bottom wall of the first buffer chamber (23), and an other end in fluid communication with the liquid storage cavity (50) and/or the liquid guiding member.
10. The atomiser (100) of claim 7, **characterized in that** the mounting base (30) includes an atomising base (31), the atomising base (31) is provided with a mounting cavity (313), the atomisation assembly (10) is arranged in the mounting cavity (313), a portion of the cavity wall of the mounting cavity (313) is recessed to form an airflow groove (314), and at least part of the airflow channel is defined between the airflow groove (314) and the liquid guiding member.
11. The atomiser (100) of claim 7, **characterized in that** a channel is formed in the liquid guiding member, the atomisation core (13) is arranged inside the channel, the buffer chamber includes a second buffer chamber (24), the mounting base (30) includes the atomising base (31) and a bottom cover (315), and the bottom cover (315) is connected to the bottom of the atomising base (31) and defines the second buffer chamber (24) together with the atomising base (31), wherein when the atomiser (100) is in the first state, at least part of the aerosol generating substrate is configured to flow into the second buffer chamber (24) through the channel.
12. The atomiser (100) of claim 11, **characterized in that** the atomizer (10) further includes a second liquid storage member (22), and the second liquid storage member (22) is arranged in the second buffer chamber (24).
13. The atomiser (100) of claim 5, wherein a density of the first liquid guiding member (11) is greater than that of the first liquid storage member (21).
14. The atomiser (100) of claim 6, **characterized in that** the first liquid guiding member (11) is provided with a first capillary channel, and the second liquid guiding member (12) is provided with a second capillary channel, wherein the first capillary channel extends along a height direction of the atomiser (100), while an extension direction of the second capillary channel is perpendicular to the height direction of the atomiser (100).
15. An aerosol generating device, **characterized by** comprising: a power supply component and the atomiser (100) of any one of claims 1 to 14, wherein the power supply component is electrically connected to the atomisation core (13).

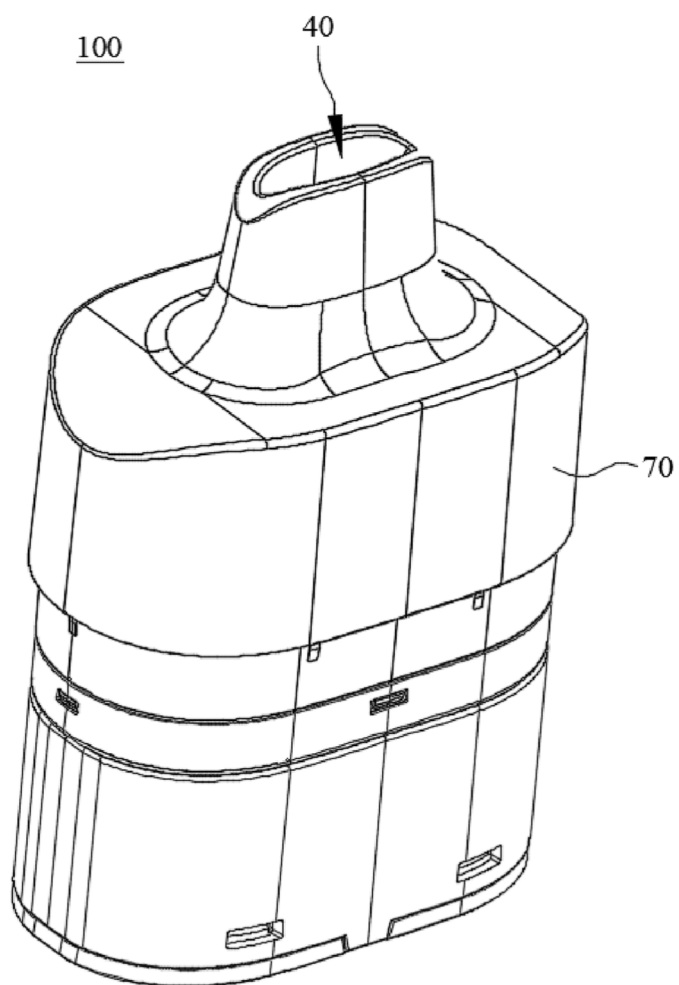


FIG. 1

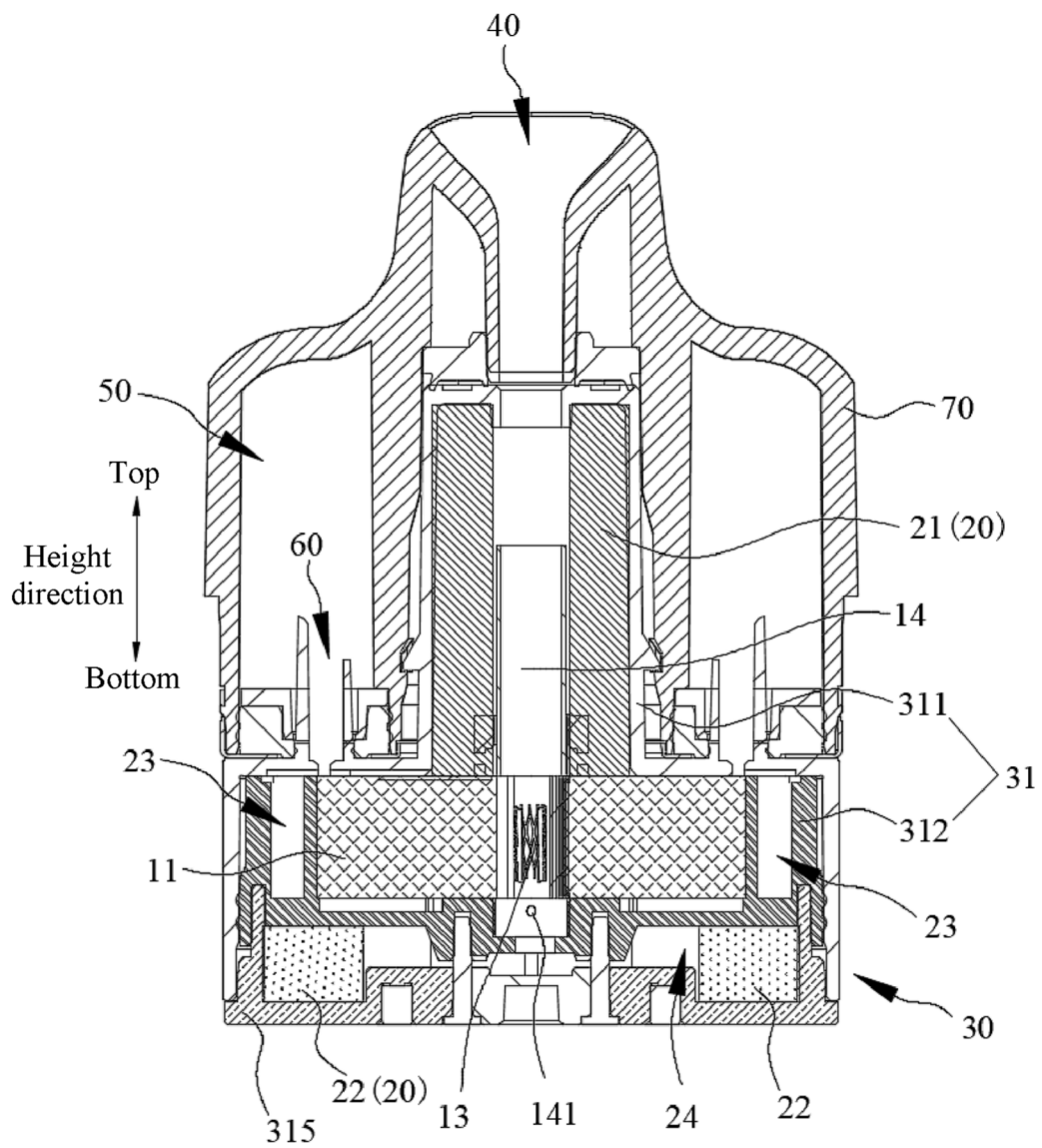


FIG. 2

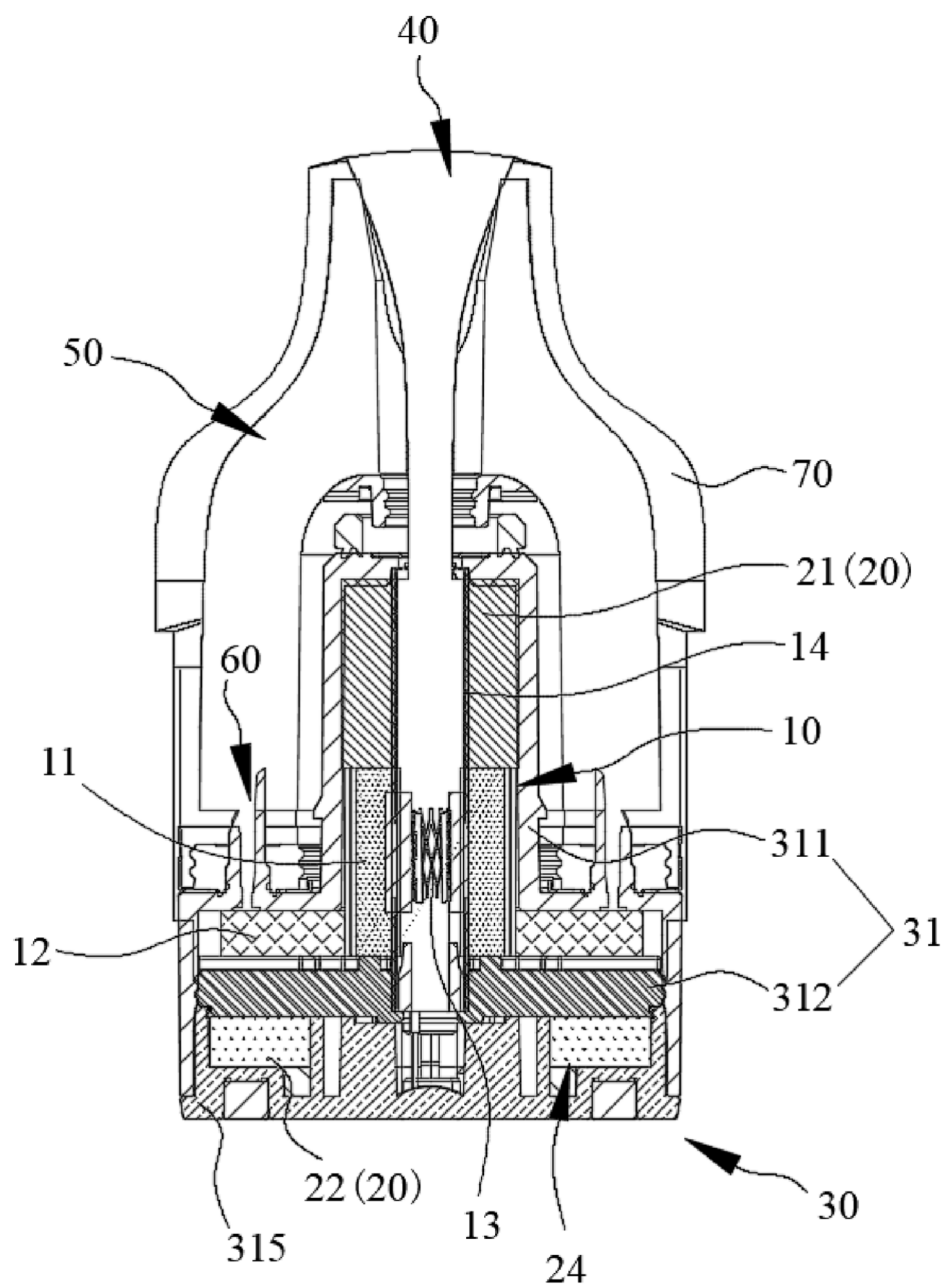


FIG. 3

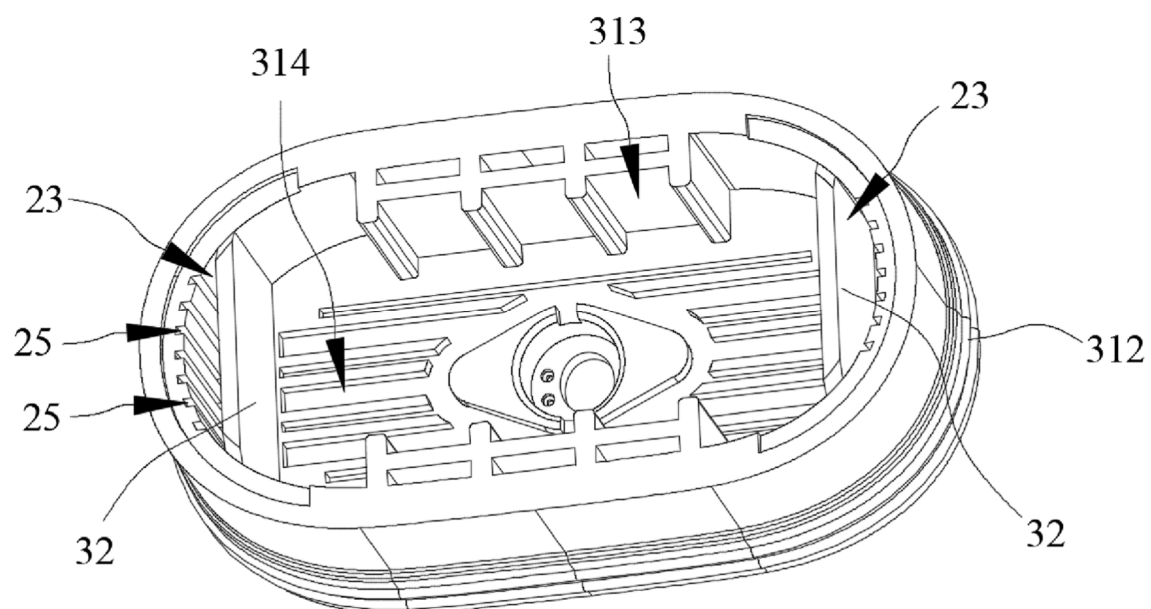


FIG. 4

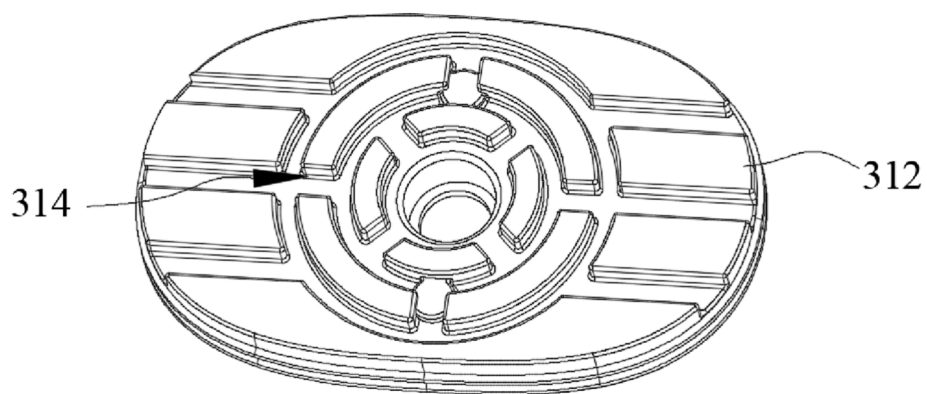


FIG. 5



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Place of search		Date of completion of the search	Examiner
Munich		24 August 2026	Acerbis, Giorgio
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