ATOMIZATION CORE AND ATOMIZATION DEVICE USING LIQUID STORAGE COTTON

FIELD

[0001] The present invention relates to the technical field of atomization, and particularly relates to an atomization core and an atomization device using liquid storage cotton.

BACKGROUND

[0002] Existing liquid storage cotton-type atomizers use liquid storage cotton as a carrier of atomized liquid, which effectively solves the problem of liquid leakage. However, atomization cores using liquid storage cotton have low liquid transfer efficiency due to the lack of liquid pressure. In addition, since a good taste of atomized liquid relies on a high atomization temperature, the liquid transfer efficiency should be high during atomization, and liquid in the liquid storage cotton will be consumed when cigarette liquid is consumed by the atomization core, and then the air pressure will be increased, resulting in an air pressure difference between the inside and outside of a liquid chamber of the atomizer. Because the air pressure in the outside is higher than the air pressure in the liquid chamber, air will enter the liquid chamber from the outside through pores of the liquid transfer material to keep the air pressure balance, and due to the fact that part of the pores of the liquid transfer material are occupied by air, the liquid transfer material cannot transfer liquid sufficiently or uniformly, and the liquid transfer rate of the liquid transfer material is decreased.

SUMMARY

[0003] The technical problem to be settled by the invention is to provide an atomization core, and further provide an atomization device using liquid storage cotton.

[0004] The technical solution that the present invention adopts to resolve the technical problem is to develop an atomization core which comprises a tubular mounting bracket. A heating atomization assembly is arranged in the mounting bracket.

[0017] An atomization assembly is arranged in the housing. The atomization assembly comprises the atomization core. The atomization device using liquid storage cotton further comprises a power supply module connected to the atomization core to supply power to the atomization core.

[0018] Preferably, the atomization assembly comprises a hollow shell, a first sealing element received in an opening in an upper end of the shell, and a second sealing element received in an opening in a lower end of the shell. The atomization core is arranged in the shell, and the electrode leads of the atomization core penetrate through the second sealing element to be electrically connected to the power supply module.

[0019] A liquid chamber is defined by an inner circumferential surface of the shell, an outer circumferential surface of the mounting bracket of the atomization core, a lower surface of the first sealing element, and an upper surface of the second sealing element, and the atomization assembly further comprises liquid storage cotton arranged in the liquid chamber.

[0020] Preferably, the first sealing element comprises a first main part, a first through-hole is formed in a centre of the first main part, an air guide tube extends downward from a periphery of the first through-hole, and the air guide tube is connected to an upper end of the mounting bracket.

[0021] A mounting groove is formed in an upper end of the first main part, and the atomization assembly further comprises condensing absorbent cotton arranged in the mounting groove.

[0022] Preferably, the mouthpiece comprises a connection part arranged at an upper end of the housing and a mouthpiece part arranged on the connection part, an air outlet is formed in the mouthpiece part, an air guide part extends downward from a periphery of the air outlet and opposite to the first through-hole, and a bottom end of the air guide part abuts against an upper surface of the condensing absorbent cotton.

[0023] Preferably, the second sealing element comprises a second main part, a second through-hole is formed in a centre of the second main part, a receiving slot is formed in the second main part, and the fixed seat of the atomization core is mounted in the receiving slot.

[0024] Preferably, the power supply module comprises a hollow shell, and a lower end of the second main part is received in an opening in an upper end of the shell.

element 33. The atomization assembly 3 further comprises liquid storage cotton 35 arranged in the liquid chamber.

[0053] Referring also to FIG. 4 and FIG. 7, in this embodiment, the first sealing element 32 comprises a first main part 321, and the first main part 321 may be in interference fit with an upper end of the shell 31; and preferably, a protrusion is arranged on part of an outer circumference of the first main part 321, and the protrusion abuts against an inner circumference of the shell 31 to improve the airtightness. Further, a first through-hole 3211 is formed in the centre of the first main part 321, an air guide tube 322 extends downward from the periphery of the first through-hole 3211, and the air guide tube 322 is connected to an upper end of the mounting bracket 341 , for example, the air guide tube 322 may be in interference fit with the mounting bracket 341 or the bottom of the air guide tube 322 is pressed and received in a cavity in the upper end of the mounting bracket 341.

[0054] Preferably, a mounting groove 3212 is formed in an upper end of the first main part 321, and the atomization assembly 3 further comprises condensing absorbent cotton 36 arranged in the mounting groove 3212. It can be understood that the mounting groove 3212 is concavely formed in an upper surface of the first main part 321 and in communication with the first through-hole 3211. The condensing absorbent cotton 36 is a columnar structure, for example, a cylindrical structure, an air hole is formed in the centre of the condensing absorbent cotton 36, and the air hole is in communication with the first through-hole 3211.

[0055] As shown in FIG. 3, further, the mouthpiece 2 comprises a connection part 21 arranged at the upper end of the housing 1 and a mouthpiece part 22 arranged on the connection part 21, an air outlet 221 is formed in the mouthpiece part 22, an air guide part 222 opposite to the first through-hole 3211 extends downward from the periphery of the air outlet 221, and a bottom end of the air guide part 222 abuts against an upper surface of the condensing absorbent cotton 36. In this embodiment, the connection part 21 may be fixed to the upper end of the housing 1 by interference fit, snap connection or threaded connection with the upper end of the housing 1. The mouthpiece part 22 is approximately a columnar structure, and the bottom end of the air guide part 222 abuts against the upper surface of the condensing absorbent cotton 36 to prevent the condensing absorbent cotton 36 from moving.

[0061] In this embodiment, the mounting bracket 341 is a hollow tubular structure, for example, a cylindrical structure. Preferably, the mounting bracket 341 may be made from a hard insulating material such as phenolic plastic, polyurethane plastic, epoxy plastic, unsaturated polyester plastic, furan plastic, organic silicon resin, allyl resin, or modified resin of the organic silicon resin or the allyl resin. Of course, the mounting bracket 341 may also be made from a tubular metal such as by electroplating the surface of stainless steel, copper, iron, aluminium or aluminium alloy. It can be understood that the material of the mounting bracket 341 may be selected according to actual demands, and the invention has no specific limitation in this aspect.

[0062] Preferably, the wall thickness of the mounting bracket 341 is less than or equal to 0.4 mm. In this way, the situation where a void area is formed at the liquid inlet 3411 due to an excessive thickness of the mounting bracket 341 and compromises the liquid transfer effect is avoided. Preferably, the wall thickness of the mounting bracket 341 may be 0.2 mm.

[0063] In this embodiment, multiple liquid inlets 3411, such as three, four or five, may be arranged at intervals in a circumferential direction, the size and number of the liquid inlets 3411 may be set as needed, and the invention has no limitation in this aspect. Preferably, the height of the liquid transfer cotton 3421 is greater than that of the liquid inlet 3411, such that the liquid transfer cotton 3421 covers or blocks the whole liquid inlet 3411.

[0064] In this embodiment, multiple air guide holes 3412 are arranged at intervals. For example, multiple air guide holes 3412 may be arranged on the same horizontal plane at intervals or multiple air guide holes 3412 may be arranged at intervals in the height direction. The air guide holes 3412 may be arranged regularly or in a staggered manner.

[0065] As shown in FIG. 11, preferably, the air guide hole 3412 may be connected to the liquid inlet 3411. When assembled, the liquid transfer cotton 3421 is assembled on the mounting bracket 341 to block the liquid inlet 3411 completely, and part of the air guide hole 3412 is unblocked for ventilation.

[0066] Preferably, the air guide hole 3412 is one or more of an elongated hole, a circular hole and a square hole. For example, the air guide hole 3412 may be an elongated hole; or, as shown in FIG. 10, the air guide hole 3412 may be a circular hole, such that air can be guided out of the

What is claimed is:

1. An atomization core, comprising a tubular mounting bracket (341), a heating atomization assembly (342) being arranged in the mounting bracket (341);

wherein a longitudinal liquid inlet (3411) is formed in the mounting bracket (341), the liquid inlet (3411) penetrates through inner and outer surfaces of the mounting bracket (341) and extends in a height direction of the mounting bracket (341), and an air guide hole (3412) is formed above the liquid inlet (3411);

wherein the heating atomization assembly (342) comprises columnar liquid transfer cotton (3421) and a heating element (3422), an axial through-hole of the liquid transfer cotton (3421) forms an air guide passage, an outer circumferential surface of the liquid transfer cotton (3421) forms a liquid absorption surface, an inner circumferential surface of the liquid transfer cotton (3421) forms an atomization surface, and the heating element (3422) is inlaid in or attached to the atomization surface; and

wherein the liquid transfer cotton (3421) blocks the liquid inlet (3411), and the air guide hole (3412) is unblocked entirely or partially.

2. The atomization core according to Claim 1, wherein multiple said air guide holes (3412) are arranged at intervals.

3. The atomization core according to Claim 1, wherein the air guide hole (3412) is connected to the liquid inlet (3411).

4. The atomization core according to Claim 1, wherein the air guide hole (3412) is one or more of an elongated hole, a circular hole and a square hole.

5. The atomization core according to Claim 1, wherein a height of the liquid transfer cotton (3421) is greater than that of the liquid inlet (3411).

6. The atomization core according to Claim 1, wherein the heating element (3422) comprises a heating body and electrode leads (34223) conductively connected to the heating body;

the heating body is a columnar structure, and comprises conductive parts (34221) arranged at two ends and a heating part (34222) connected to the conductive parts (34221), and each of the

electrode leads (34223) has an end connected to a corresponding one of the conductive parts (34221) and an end extending downward.

7. The atomization core according to Claim 6, wherein the atomization core further comprises a fixed seat (343) received in an opening in a lower side of the mounting bracket (341); and

the fixed seat (343) is a columnar structure and is provided with an air inlet (3431) penetrating through opposite surfaces of the fixed seat (343) in an axial direction, and locating slots (3432) for allowing the electrode leads (34223) to penetrate through are formed in a circumferential surface of the fixed seat (343).

8. An atomization device using liquid storage cotton, characterized by comprising a housing (1) and a mouthpiece (2) connected to an upper end of the housing (1);

wherein an atomization assembly (3) is arranged in the housing (1), the atomization assembly (3) comprises the atomization core according to any one of Claims 1-7, and the atomization device using liquid storage cotton further comprises a power supply module (4) connected to the atomization core to supply power to the atomization core.

9. The atomization device using liquid storage cotton according to Claim 8, wherein the atomization assembly (3) comprises a hollow shell (31), a first sealing element (32) received in an opening in an upper end of the shell (31), and a second sealing element (33) received in an opening in a lower end of the shell (31); the atomization core is arranged in the shell (31), and the electrode leads (34223) of the atomization core penetrate through the second sealing element (33) to be electrically connected to the power supply module (4);

a liquid chamber is defined by an inner circumferential surface of the shell (31), an outer circumferential surface of the mounting bracket (341) of the atomization core, a lower surface of the first sealing element (32), and an upper surface of the second sealing element (33), and the atomization assembly (3) further comprises liquid storage cotton (35) arranged in the liquid chamber.

10. The atomization device using liquid storage cotton according to Claim 9, wherein the first sealing element (32) comprises a first main part (321), a first through-hole (3211) is formed in a centre of the first main part (321), an air guide tube (322) extends downward from a periphery of

the first through-hole (3211), and the air guide tube (322) is connected to an upper end of the mounting bracket (341);

a mounting groove (3212) is formed in an upper end of the first main part (321), and the atomization assembly (3) further comprises condensing absorbent cotton (36) arranged in the mounting groove (3212).

11. The atomization device using liquid storage cotton according to Claim 10, wherein the mouthpiece (2) comprises a connection part (21) arranged at an upper end of the housing (1) and a mouthpiece part (22) arranged on the connection part (21), an air outlet (221) is formed in the mouthpiece part (22), an air guide part (222) opposite to the first through-hole (3211) extends downward from a periphery of the air outlet (221), and a bottom end of the air guide part (222) abuts against an upper surface of the condensing absorbent cotton (36).

12. The atomization device using liquid storage cotton according to Claim 9, wherein the second sealing element (33) comprises a second main part (331), a second through-hole (3311) is formed in a centre of the second main part (331), a receiving slot (3312) is formed in the second main part (331), and the fixed seat (343) of the atomization core is mounted in the receiving slot (3312).

13. The atomization device using liquid storage cotton according to Claim 12, wherein the power supply module (4) comprises a hollow shell (41), and a lower end of the second main part (331) is received in an opening in an upper end of the shell (41);

the power supply module (4) further comprises a base (42) received in an opening in a lower end of the shell (41), a mounting space is defined by an inner circumference of the shell (41), a lower surface of the second main part (331) and an upper surface of the base (42), the power supply module (4) further comprises a battery (43) arranged in the mounting space, and a preset gap is reserved between an outer circumference of the battery (43) and an inner circumference of the shell (41) to form an air passage.

14. The atomization device using liquid storage cotton according to Claim 13, wherein an air inlet passage (424) is formed in the base (42), and an airflow sensor switch (44) connected to the battery (43) is arranged in the air inlet passage (424).

15. The atomization device using liquid storage cotton according to Claim 14, wherein an air inlet through-hole (122) is formed in a bottom wall of the housing (1) and is connected to the air inlet passage (424).