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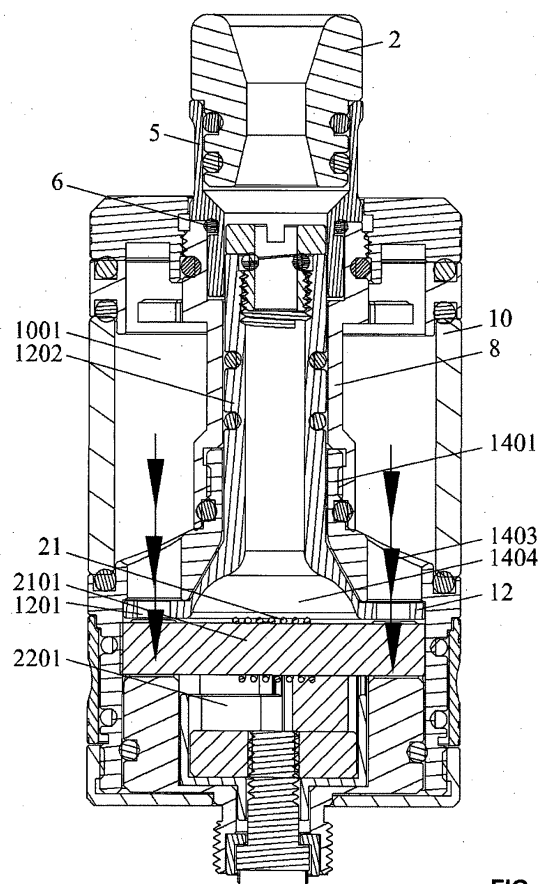
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(54) **ATOMIZER AND ELECTRONIC CIGARETTE COMPRISING THE SAME**

(57) An atomizer includes a main body, a partition (14) disposed in the main body, a heating element (21), and an e-liquid adjuster (12). The main body includes an e-liquid storage chamber (1001) and a heating chamber (1404) which are separated by the partition (14). The heating element (21) is disposed in the heating chamber (1404). The partition (14) includes at least one e-liquid inlet (1403). The at least one e-liquid inlet (1403) communicates with the e-liquid storage chamber (1001) and the heating chamber (1404); and the e-liquid adjuster (12) is movable with respect to the at least one e-liquid inlet (1403) to adjust an opening of the at least one e-liquid inlet (1403).



**FIG. 5**

## Description

**[0001]** The disclosure relates to an atomizer and electronic cigarette comprising the same.

**[0002]** Conventional atomizers include e-liquid inlets of which the openings cannot be adjusted or sealed, causing excess e-liquid to flow to heating elements and leak outside the atomizers. During replacement of the heating elements, the e-liquid may flow out of the atomizers through the e-liquid inlets, which results in e-liquid waste.

**[0003]** The first objective of the disclosure is to provide an atomizer; the atomizer comprises a main body, a partition, an e-liquid adjuster, and a heating element; the main body comprises an e-liquid storage chamber and a heating chamber; the heating element is disposed in the heating chamber; the partition is disposed in the main body to separate the e-liquid storage chamber and the heating chamber; the partition comprises at least one e-liquid inlet communicating with the e-liquid storage chamber and the heating chamber; the e-liquid adjuster is disposed on one end of the at least one e-liquid inlet; the e-liquid adjuster is movable with respect to the at least one e-liquid inlet to adjust an opening of the at least one e-liquid inlet; understandably, the e-liquid adjuster is rotated to regulate the flow of the e-liquid flowing from the e-liquid storage chamber to the heating element and prevent the liquid from leaking outside the e-liquid storage chamber, resulting in no e-liquid waste and allowing convenient replacement of the heating element.

**[0004]** In a class of this embodiment, the atomizer further comprises a driven part linked to the e-liquid adjuster via a transmission part.

**[0005]** In a class of this embodiment, the e-liquid storage chamber is disposed above the partition and the heating chamber; an e-liquid absorber is disposed in the heating chamber; the e-liquid absorber is disposed through the heating element and below the at least one e-liquid inlet; understandably, the e-liquid flows from the e-liquid storage chamber through the at least one e-liquid inlet and is absorbed by the e-liquid absorber; and the e-liquid absorber comprises cotton.

**[0006]** In a class of this embodiment, the e-liquid adjuster comprises at least one e-liquid guide hole.

**[0007]** In a class of this embodiment, one end of the e-liquid adjuster shrinks and extends axially to form a first air guide tube; the first air guide tube functions as the transmission part; a first end of the partition is depressed to form a recess, and the heating chamber is formed in the recess; a second end of the partition shrinks and extends axially to form a connection tube; the e-liquid adjuster abuts against a top of the partition, and the at least one e-liquid guide hole corresponds to the at least one e-liquid inlet; the first air guide tube extends out of the partition through the connection tube; the first air guide tube communicates with the heating chamber; the e-liquid adjuster comprises at least one e-liquid guide hole; preferably, the e-liquid adjuster comprises two e-

liquid guide holes for controlling the maximum and minimum flow of the e-liquid flowing to the heating element.

**[0008]** In a class of this embodiment, the main body further comprises an e-liquid storage tube and a second air guide tube; the e-liquid storage tube is hollow; one end of the e-liquid storage tube abuts against the second end of the partition; the second air guide tube sleeves the first air guide tube and abuts against the connection tube.

**[0009]** In a class of this embodiment, an annular space is defined by an inner wall of the e-liquid storage tube and outer walls of the first air guide tube and the second air guide tube; the annular space functions as the e-liquid storage chamber; understandably, the top of the partition functions as a bottom wall of the e-liquid storage chamber, and the at least one e-liquid inlet is disposed on the bottom wall of the e-liquid storage chamber.

**[0010]** In a class of this embodiment, one end of the second air guide tube extends radially to form an extending part; the extending part comprises at least one e-liquid injection hole; another end of the e-liquid storage tube abuts against the extending part; the at least one e-liquid injection hole communicates with the e-liquid storage chamber; understandably, the e-liquid is injected through the at least one e-liquid injection hole into the e-liquid storage chamber.

**[0011]** In a class of this embodiment, the atomizer further comprises a connection part and a fixing part; the connection part is disposed in the second air guide tube and is connected to the first air guide tube; the fixing part is disposed in the connection part to fix the connection part on the first air guide tube; and the fixing part comprises an air passage communicating with the first air guide tube.

**[0012]** In a class of this embodiment, the main body further comprises a mouthpiece; a first end of the mouthpiece is disposed in the connection part and a second end of the mouthpiece is exposed out of the main body; the second end of the mouthpiece is rotated by force, causing the first air guide tube and the e-liquid adjuster to rotate as well; understandably, the e-liquid adjuster is rotated to adjust the opening of the at least one e-liquid inlet, controlling the flow of the e-liquid flowing to the heating element and thus allowing convenient replacement of the heating element.

**[0013]** In a class of this embodiment, the main body further comprises an air guide; the air guide is disposed in the heating chamber; one end of the air guide is depressed to form an atomization chamber; the atomization chamber is sealed in the heating chamber; and the heating element is disposed in the atomization chamber.

**[0014]** In a class of this embodiment, the one end of the air guide comprises a first connection hole for receiving one end of the heating element; the one end of the heating element is disposed in the first connection hole; a first anchor screw is disposed in the first connection hole to fix the one end of the heating element; a first insulator is disposed in the atomization chamber to insu-

late the air guide; the first insulator comprises a groove; a first conductive part is disposed in the groove for electric conduction; a protrusion is integrally formed on the first conductive part; the protrusion comprises a second connection hole for receiving another end of the heating element; the another end of the heating element is disposed in the second connection hole; a second anchor screw is disposed in the second connection hole to fix the another end of the heating element; and the first conductive part comprises a third connection hole for electric connection.

**[0015]** In a class of this embodiment, the main body further comprises a second insulator and a second conductive part; the second insulator is disposed in the air guide to insulate the second conductive part; the second conductive part is disposed in the second insulator and one end of the second conductive part is disposed in the third connection hole.

**[0016]** In a class of this embodiment, the air guide, the first conductive part, and the second conductive part each comprise a conductive metal material.

**[0017]** In a class of this embodiment, the air guide comprises a plurality of first air holes, and each first air hole communicates with the atomization chamber; preferably, the air guide comprises three first air holes, which allows moderate air flow, increasing the amount of the smoke generated and thus improving the taste of the e-liquid smoke.

**[0018]** In a class of this embodiment, an outer wall of the partition comprises a plurality of second air holes; the plurality of second air holes corresponds to the plurality of first air holes, respectively; the outer wall of the partition further comprises an air regulator; the air regulator comprises a plurality of air inlets; when the air regulator is rotating, an air amount entering the atomization chamber is adjustable; preferably, the outer wall of the partition comprises three second air holes and the air regulator comprises three air inlets.

**[0019]** The second objective of the disclosure is to provide an electronic cigarette; the electronic cigarette comprises the atomizer and a battery assembly.

**[0020]** The following advantages are associated with the atomizer of the disclosure: the e-liquid adjuster is rotated to adjust the opening of the at least one e-liquid inlet, controlling the flow of the e-liquid flowing to the heating element and thus allowing convenient replacement of the heating element.

FIG. 1 is an exploded view of an atomizer according to one embodiment of the disclosure;

FIG. 2 is a perspective view of an atomizer according to one embodiment of the disclosure;

FIG. 3 is a front cross-sectional view of an atomizer according to one embodiment of the disclosure;

FIG. 4 is a side cross-sectional view of an atomizer

according to one embodiment of the disclosure;

FIG. 5 is a cross-sectional view including arrows showing the direction of the e-liquid flow in an atomizer according to one embodiment of the disclosure; and

FIG. 6 is a cross-sectional view including arrows showing the direction of the air flow in an atomizer according to one embodiment of the disclosure.

**[0021]** In the drawings, the following reference numbers are used: 1. First cover; 2. Mouthpiece; 3. First seal ring; 4. Fixing part; 5. Connection part; 6. Second seal ring; 7. Third seal ring; 8. Second air guide tube; 9. Fourth seal ring; 10. E-liquid storage tube; 11. Fifth seal ring; 12. E-liquid adjuster; 13. Sixth seal ring; 14. Partition; 15. Seventh seal ring; 16. Air regulator; 17. Second anchor screw; 18. First conductive part; 19. First insulator; 20. First anchor screw; 21. Heating element; 22. Air guide; 23. Second insulator; 24. Second conductive part; 25. Eighth seal ring; 26. Ninth seal ring; 27. Second cover; 401. Air passage; 801. Extending part; 802. E-liquid injection hole; 1001. E-liquid storage chamber; 1201. E-liquid guide hole; 1202. First air guide tube; 1401. Connection tube; 1403. E-liquid inlet; 1404. Heating chamber; 1601. Air inlet; 1801. Protrusion; 1802. Second connection hole; 1803. Third connection hole; 1901. Groove; 2101. E-liquid absorber; 2201. Atomization chamber; 2202. First connection hole; and 2203. First air hole.

**[0022]** To further illustrate the disclosure, embodiments detailing an atomizer and electronic cigarette comprising the same are described below. It should be noted that the following embodiments are intended to describe and not to limit the disclosure.

**[0023]** As shown in FIGS. 1-6, an electronic cigarette comprises an atomizer and a battery assembly. The battery assembly is configured to supply power to the atomizer. The atomizer comprises a main body, a partition 14, an e-liquid adjuster 12, and a heating element 21. The main body comprises an e-liquid storage chamber 1001 and a heating chamber 1404. The heating element 21 is disposed in the heating chamber 1404. The partition 14 is disposed in the main body to separate the e-liquid storage chamber 1001 and the heating chamber 1404. The partition 14 comprises at least one e-liquid inlet 1403 communicating with the e-liquid storage chamber 1001 and the heating chamber 1404. The e-liquid adjuster 12 is disposed on one end of the at least one e-liquid inlet 1403. The e-liquid adjuster 12 is movable with respect to the at least one e-liquid inlet to adjust an opening of the at least one e-liquid inlet 1403.

**[0024]** The partition 14 is not limited to a particular structure and just separates the heating chamber 1404 from the e-liquid storage chamber 1001. The e-liquid adjuster 12 is not limited to a particular structure and just rotates or moves with respect to the at least one e-liquid inlet 1403 to regulate the flow of the e-liquid passing

through the at least one e-liquid inlet 1403. The at least one e-liquid inlet 1403 is closed, open, or partly-open by the e-liquid adjuster 12.

**[0025]** In certain examples, the e-liquid adjuster 12 comprises at least one e-liquid guide hole 1201. The at least one e-liquid guide hole 1201 is aligned to or away from the at least one e-liquid inlet 1403 by rotating the e-liquid adjuster 12. In certain examples, the e-liquid adjuster 12 does not comprise any e-liquid guide hole 1201; the e-liquid adjuster 12 rotates around an axis or slides along a designed route, to close or open the at least one e-liquid inlet 1403, thus regulating the flow of the e-liquid passing through the at least one e-liquid inlet 1403.

**[0026]** The atomizer further comprises a driven part linked to the e-liquid adjuster 12 via a transmission part. The driven part is a component operated by a user. As the user applies a force to rotate or move the driven part, the e-liquid adjuster 12 rotates or moves as well, thus adjusting the opening of the at least one e-liquid inlet 1403. In certain examples, the driven part and the e-liquid adjuster 12 are secured to the transmission part using detachable connections, such as screws or threads, or one-piece connections, such as welding or integral formation. In certain examples, the driven part, the transmission part, and the e-liquid adjuster 12 each comprise a gear; when the teeth of the adjacent gears interlock, the three gears move at the same time. In certain examples, the driven part and the e-liquid adjuster 12 are secured to the transmission part using lead screws. The e-liquid adjuster 12 may be rotated in any suitable or desired manner without departing from the scope and spirit of the disclosure.

**[0027]** Understandably, the e-liquid adjuster 12 is moveable with respect to the at least one e-liquid inlet 1403 so as to regulate the flow of the e-liquid flowing from the e-liquid storage chamber 1001 into the heating element 21 and prevent the liquid from leaking outside the e-liquid storage chamber 1001, thus resulting in no e-liquid waste and allowing convenient replacement of the heating element 21.

**[0028]** The e-liquid storage chamber 1001 is disposed above the partition 14 and the heating chamber 1404. The e-liquid absorber 2101 is disposed in the heating chamber 1404. The e-liquid absorber 2101 is disposed through the heating element 21 and below the at least one e-liquid inlet 1403. Understandably, the e-liquid flows from the e-liquid storage chamber 1001 through the at least one e-liquid inlet 1403 and is absorbed by the e-liquid absorber 2101; and the e-liquid absorber 2101 is made of cotton.

**[0029]** The e-liquid adjuster 12 is in the shape of a circular plate. One end of the e-liquid adjuster 12 shrinks and extends axially to form a first air guide tube 1202 for circulation of smoke or vapor. The first air guide tube 1202 functions as the transmission part. The e-liquid adjuster 12 comprises at least one e-liquid guide hole 1201. A first end of the partition 14 is depressed to form a recess, and the heating chamber 1404 is formed in the

recess. A second end of the partition 14 shrinks and extends axially to form a connection tube 1401. The e-liquid adjuster 12 abuts against a top of the partition 14, and the at least one e-liquid guide hole 1201 corresponds to the at least one e-liquid inlet 1403. The first air guide tube 1202 extends out of the partition 14 through the connection tube 1401. The first air guide tube 1202 communicates with the heating chamber 1404. Preferably, the e-liquid adjuster 12 comprises two e-liquid guide holes 1201 for controlling the maximum and minimum flow of the e-liquid flowing to the heating element 21.

**[0030]** The main body further comprises an e-liquid storage tube 10 and a second air guide tube 8. The e-liquid storage tube 10 is hollow. One end of the e-liquid storage tube 10 abuts against the second end of the partition 14. The second air guide tube 8 sleeves the first air guide tube 1202 and abuts against the connection tube 1401.

**[0031]** An annular space is defined by an inner wall of the e-liquid storage tube 10 and outer walls of the first air guide tube 1202 and the second air guide tube 8. The annular space functions as the e-liquid storage chamber 1001. Understandably, the top of the partition 14 functions as a bottom wall of the e-liquid storage chamber 1001, and the at least one e-liquid inlet 1403 is disposed on the bottom wall of the e-liquid storage chamber 1001.

**[0032]** One end of the second air guide tube 8 extends radially to form an extending part 801. The extending part 801 comprises at least one e-liquid injection hole 802. Another end of the e-liquid storage tube 10 abuts against the extending part 801. The at least one e-liquid injection hole 802 communicates with the e-liquid storage chamber 1001. Understandably, the e-liquid is injected through the at least one e-liquid injection hole 802 into the e-liquid storage chamber 1001.

**[0033]** The atomizer further comprises a connection part 5 and a fixing part 4. The connection part 5 is disposed in the second air guide tube 8 and is connected to the first air guide tube 1202. The fixing part 4 is disposed in the connection part 5 to fix the connection part 5 on the first air guide tube 1202. The fixing part 4 comprises an air passage 401 communicating with the first air guide tube 1202.

**[0034]** The main body further comprises a mouthpiece 2. A first end of the mouthpiece 2 is disposed in the connection part 5 and the second end of the mouthpiece 2 is exposed out of the main body. The second end of the mouthpiece 2 is rotated by force, causing the first air guide tube 1202 and the e-liquid adjuster 12 to rotate as well. Understandably, the e-liquid adjuster 12 is rotated to adjust the opening of the at least one e-liquid inlet 1403, controlling the flow of the e-liquid flowing to the heating element 21 and thus allowing convenient replacement of the heating element 21.

**[0035]** The main body further comprises an air guide 22. The air guide 22 is disposed in the heating chamber 1404. One end of the air guide 22 is depressed to form an atomization chamber 2201. The atomization chamber

2201 is sealed in the heating chamber. The heating element 21 is disposed in the atomization chamber 2201.

**[0036]** The one end of the air guide 22 comprises a first connection hole 2202 for receiving one end of the heating element 21. The one end of the heating element 21 is disposed in the first connection hole 2202. The atomizer further comprises a first anchor screw 20, a first insulator 19, a first conductive part 18, and a protrusion 1801. The first anchor screw 20 is disposed in the first connection hole 2202 to fix the one end of the heating element 21. The first insulator 19 is disposed in the atomization chamber to insulate the air guide 22. The first insulator 19 comprises a groove 1901. The first conductive part 18 is disposed in the groove 1901 for electric conduction. The protrusion 1801 is integrally formed on the first conductive part 18. The protrusion 1801 comprises a second connection hole 1802 for receiving another end of the heating element 21. The another end of the heating element 21 is disposed in the second connection hole 1802. A second anchor screw 17 is disposed in the second connection hole 1802 to fix the another end of the heating element 21. The first conductive part 18 comprises a third connection hole 1803 for electric connection.

**[0037]** The main body further comprises a second insulator 23 and a second conductive part 24. The second insulator 23 is disposed in the air guide 22 to insulate the second conductive part 24. The second conductive part 24 is disposed in the second insulator 23 and one end of the second conductive part 24 is disposed in the third connection hole 1803.

**[0038]** The air guide 23, the first conductive part 18, and the second conductive part 24 each comprise a conductive metal material.

**[0039]** The air guide 22 comprises a plurality of first air holes 2203, and each first air hole communicates with the atomization chamber 2201. Preferably, the air guide 22 comprises three first air holes 2203, which allows moderate air flow, increasing the amount of the smoke generated and thus improving the taste of the e-liquid smoke.

**[0040]** An outer wall of the partition 14 comprises a plurality of second air holes 1402. The plurality of second air holes 1402 corresponds to the plurality of first air holes 2203, respectively. The outer wall of the partition 14 further comprises an air regulator 16. The air regulator 16 comprises a plurality of air inlets 1601. When the air regulator 16 is rotating, an air amount entering the atomization chamber is adjustable. Preferably, the outer wall of the partition 14 comprises three second air holes 1402 and the air regulator 16 comprises three air inlets 1601.

**[0041]** In an alternative preferred examples of the disclosure, as shown in FIGS. 1-4, the atomizer comprises a first cover 1, a mouthpiece 2, a first seal ring 3, a fixing part 4, a connection part 5, a second seal ring 6, a third seal ring 7, a second air guide tube 8, a fourth seal ring 9, an e-liquid storage tube 10, a fifth seal ring 11, an e-liquid adjuster 12, a sixth seal ring 13, a partition 14, an seventh seal ring 15, an air regulator 16, a second anchor

screw 17, a first conductive part 18, a first insulator 19, a first anchor screw 20, a heating element 21, an air guide 22, a second insulator 23, a second conductive part 24, an eighth seal ring 25, a ninth seal ring 26, and a second cover 27. One end of the e-liquid adjuster 12 shrinks and extends axially to form a first air guide tube 1202 for circulation of smoke or vapor. The fifth seal ring 11 is disposed on an outer wall of the first air guide tube 1202. The e-liquid adjuster 12 comprises two e-liquid guide holes 1201. A first end of the partition 14 is depressed to form a recess, and the heating chamber 1404 is formed in the recess. The heating element 21 is disposed in the heating chamber 1404 to atomize the e-liquid. A second end of the partition 14 shrinks and extends axially to form a connection tube 1401. A first end of the second air guide tube 8 is connected to the connection tube 1401. The e-liquid adjuster 12 is disposed in the heating chamber 1404 and abuts against a top of the partition 14. The partition 14 comprises two e-liquid inlets 1403 respectively corresponding to the two e-liquid guide holes 1201. The first air guide tube 1202 extends out of the partition 14 through the connection tube 1401. The first air guide tube 1202 communicates with the heating chamber 1404. The e-liquid storage tube 10 is hollow. One end of the e-liquid storage tube 10 abuts against the second end of the partition 14. The sixth seal ring 13 is disposed around the gap between the e-liquid storage tube 10 and the second end of the partition 14. The second air guide tube 8 sleeves the first air guide tube 1202 and abuts against the connection tube 1401. An annular space is defined by an inner wall of the e-liquid storage tube 10 and outer walls of the first air guide tube 1202 and the second air guide tube 8. The annular space functions as the e-liquid storage chamber 1001. The two e-liquid inlets 1403 communicate with the e-liquid storage chamber 1001 and the heating chamber 1404. The top of the partition 14 functions as a bottom wall of the e-liquid storage chamber 1001, and the two e-liquid inlets 1403 are disposed on the bottom wall of the e-liquid storage chamber 1001. The e-liquid absorber 2101 is disposed through both ends of the heating element 21 so as to be disposed in the heating chamber 1404 and below the two e-liquid inlets 1403. The first end of the second air guide tube 8 extends radially to form an extending part 801. Another end of the e-liquid storage tube 10 abuts against the extending part 801. The extending part 801 comprises at least one e-liquid injection hole 802 communicating with the e-liquid storage chamber 1001. The fourth seal ring 9 is disposed around the gap between the extending part 801 and the e-liquid storage tube 10. The connection part 5 is disposed in the second air guide tube 8 and is connected to the first air guide tube 1202. The fixing part 4 is disposed in the connection part 5 to fix the connection part 5 on the first air guide tube 1202. The bottom end of the connection part 5 is inserted into another end of the second air guide tube 8. The second seal ring 6 is disposed between the outer wall of the connection part 5 and the inner wall of the second air guide tube 8 to

prevent the air and smoke from escaping. The fixing part 4 comprises an air passage 401 communicating with the first air guide tube 1202. The first seal ring 3 is disposed on an outer wall of a first end of the mouthpiece 2. The first end of the mouthpiece 2 is disposed in the connection part 5 and a second end of the mouthpiece 2 is exposed out of the main body of the atomizer. The second end of the mouthpiece 2 is rotated by force, causing the first air guide tube 1202 and the e-liquid adjuster 12 to rotate as well. The e-liquid adjuster 12 is rotated to adjust the opening of the two e-liquid inlets 1403, controlling the flow of the e-liquid flowing to the heating element 21 and thus allowing convenient replacement of the heating element 21. The third seal ring 7 is disposed in the first cover 1 to seal the at least one e-liquid injection hole 802. The first cover 1 sleeves the mouthpiece 2 and is screwed into a top part of the extending part 801. An outer wall of the partition 14 comprises three second air holes 1402 for air conduction. The air regulator 16 comprises three air inlets 1601. The air regulator 16 is disposed on the outer wall of the partition 14. When the air regulator 16 is rotating, an air amount entering the atomization chamber is adjustable. The seventh seal ring 15 is disposed between the gap between an inner wall of the air regulator 16 and the outer wall of the partition 14. One end of the air guide 22 is depressed to form an atomization chamber 2201. The first insulator 19 is disposed in the atomization chamber to insulate the air guide 22. The first insulator 19 comprises a groove 1901. The first conductive part 18 is disposed in the groove 1901 for electric conduction. The heating element 21 is disposed in the atomization chamber 2201. The one end of the air guide 22 comprises a first connection hole 2202 for receiving one end of the heating element 21. The one end of the heating element 21 is disposed in the first connection hole 2202. The first anchor screw 20 is disposed in the first connection hole 2202 to fix the one end of the heating element 21. The atomizer further comprises a protrusion 1801 integrally formed on the first conductive part 18 and functioning as an electrode. The protrusion 1801 comprises a second connection hole 1802 for receiving another end of the heating element 21. The another end of the heating element 21 is disposed in the second connection hole 1802. The second anchor screw 17 is disposed in the second connection hole 1802 to fix the another end of the heating element 21. The first conductive part 18 comprises a third connection hole 1803 for electric connection. The second insulator 23 is disposed in the air guide 22 to insulate the second conductive part 24. The second conductive part 24 is disposed in the second insulator 23 and one end of the second conductive part 24 is disposed in the third connection hole 1803. The air guide 22 is disposed in the heating chamber 1404. The air guide 22 comprises three first air holes 2203 respectively corresponding to the three second air holes 1402. Each first air hole 2203 communicates with the atomization chamber 2201. The eighth seal ring 25 is disposed between an inner wall of the heating chamber 1404 and an outer wall of the air

guide 22 to seal the heating chamber 1404. The ninth seal ring 26 is disposed in a bottom wall of the second cover 27 so as to seal the gap between the second cover 27 and the partition 14. The second cover 27 is screwed in a bottom part of the partition 14 to limit changes in position of the air regulator 16.

**[0042]** FIG. 5 is a cross-sectional view including arrows showing the direction of the e-liquid flow in the atomizer. As a user applies a force to rotate the mouthpiece 2, the connection part 5, the first air guide tube 1202, and the e-liquid adjuster 12 rotate as well, thus adjusting the openings of the two e-liquid inlets 1403. The e-liquid flows through the two e-liquid guide holes 1201, two e-liquid inlets 1403, and the heating chamber 1404 successively, and is absorbed by the e-liquid absorber 2101 so as to be atomized by the heating element 21 to produce smoke or vapor.

**[0043]** FIG. 6 is a cross-sectional view including arrows showing the direction of the air flow in the atomizer. External air flows through the three air inlets 1601, the three first air holes 2203, and the atomization chamber 2201 successively, forces the smoke from the heating chamber 1404 to the first air guide tube 1202, the second air guide tube 8, the air passage 401, and the mouthpiece 2 successively, and is inhaled by the user.

## Claims

1. An atomizer, comprising a main body, a partition disposed in the main body, a heating element, and an e-liquid adjuster; wherein the main body comprises an e-liquid storage chamber and a heating chamber which are separated by the partition; the heating element is disposed in the heating chamber; the partition comprises at least one e-liquid inlet; the at least one e-liquid inlet communicates with the e-liquid storage chamber and the heating chamber; and the e-liquid adjuster is movable with respect to the at least one e-liquid inlet to adjust an opening of the at least one e-liquid inlet.
2. The atomizer of claim 1, wherein the atomizer further comprises a driven part linked to the e-liquid adjuster via a transmission part.
3. The atomizer of claim 1, wherein the e-liquid storage chamber is disposed above the partition and the heating chamber; an e-liquid absorber is disposed in the heating chamber; the e-liquid absorber is disposed through the heating element and below the at least one e-liquid inlet.
4. The atomizer of claim 2, wherein the e-liquid adjuster comprises at least one e-liquid guide hole.
5. The atomizer of claim 4, wherein one end of the e-liquid adjuster shrinks and extends axially to form a

first air guide tube for circulation of smoke or vapor; the first air guide tube functions as the transmission part; a first end of the partition is depressed to form a recess, and the heating chamber is formed in the recess; a second end of the partition shrinks and extends axially to form a connection tube; the e-liquid adjuster abuts against a top of the partition, and the at least one e-liquid guide hole corresponds to the at least one e-liquid inlet; the first air guide tube extends out of the partition through the connection tube; and the first air guide tube communicates with the heating chamber.

6. The atomizer of claim 5, wherein

the main body further comprises an e-liquid storage tube and a second air guide tube; the e-liquid storage tube is hollow; one end of the e-liquid storage tube abuts against the second end of the partition; the second air guide tube sleeves the first air guide tube and abuts against the connection tube; and an inner wall of the e-liquid storage tube and outer walls of the first air guide tube and the second air guide tube form an annular space, and the annular space functions as the e-liquid storage chamber.

7. The atomizer of claim 6, wherein one end of the second air guide tube extends radially to form an extending part; the extending part comprises at least one e-liquid injection hole; another end of the e-liquid storage tube abuts against the extending part; and the at least one e-liquid injection hole communicates with the e-liquid storage chamber.

8. The atomizer of claim 7, wherein a connection part is disposed in the second air guide tube and is connected to the first air guide tube; a fixing part is disposed in the connection part to fix the connection part on the first air guide tube; the fixing part comprises an air passage communicating with the first air guide tube.

9. The atomizer of claim 8, wherein the main body further comprises a mouthpiece; one end of the mouthpiece is disposed in the connection part and another end is exposed out of the main body; and the mouthpiece functions as the driven part and is rotatable by force to drive the first air guide tube and the e-liquid adjuster to rotate.

10. The atomizer of claim 6, wherein the main body further comprises an air guide; the air guide is disposed in the heating chamber; one end of the air guide is depressed to form an atomization chamber; the atomization chamber is sealed in the heating chamber; and the heating element is disposed in the atomiza-

tion chamber.

11. The atomizer of claim 10, wherein the one end of the air guide comprises a first connection hole for receiving one end of the heating element; the one end of the heating element is disposed in the first connection hole; a first anchor screw is disposed in the first connection hole to fix the one end of the heating element; a first insulator is disposed in the atomization chamber to insulate the air guide; the first insulator comprises a groove; a first conductive part is disposed in the groove for electric conduction; a protrusion is integrally formed on the first conductive part; the protrusion comprises a second connection hole for receiving another end of the heating element; the another end of the heating element is disposed in the second connection hole; a second anchor screw is disposed in the second connection hole to fix the another end of the heating element; and the first conductive part comprises a third connection hole for electric connection.

12. The atomizer of claim 11, wherein

the main body further comprises a second insulator and a second conductive part; the second insulator is disposed in the air guide to insulate the second conductive part; the second conductive part is disposed in the second insulator and one end of the second conductive part is disposed in the third connection hole; and the air guide, the first conductive part, and the second conductive part each comprise a conductive metal material.

13. The atomizer of claim 12, wherein the air guide comprises a plurality of first air holes; and each first air hole communicates with the atomization chamber.

14. The atomizer of claim 10 or 13, wherein an outer wall of the partition comprises a plurality of second air holes; the plurality of second air holes corresponds to the plurality of first air holes, respectively; the outer wall of the partition further comprises an air regulator; the air regulator comprises a plurality of air inlets; and when the air regulator is rotating, an air amount entering the atomization chamber is adjustable.

15. An electronic cigarette, comprising the atomizer of claim 1 and a battery assembly.

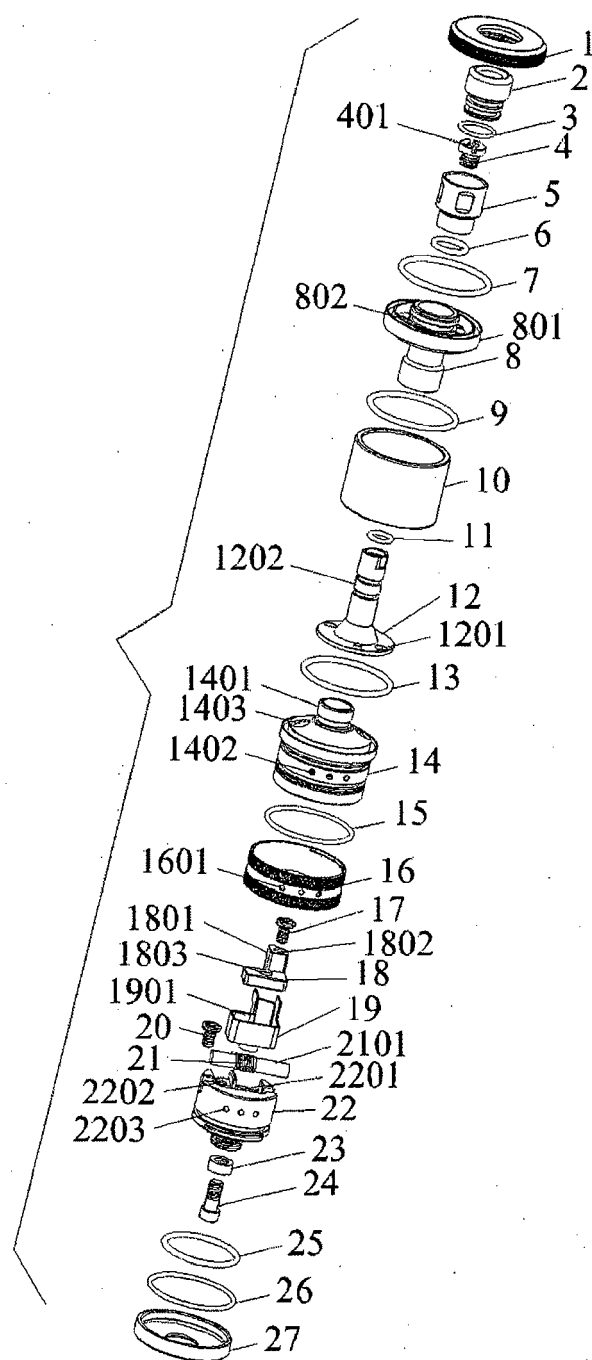


FIG. 1



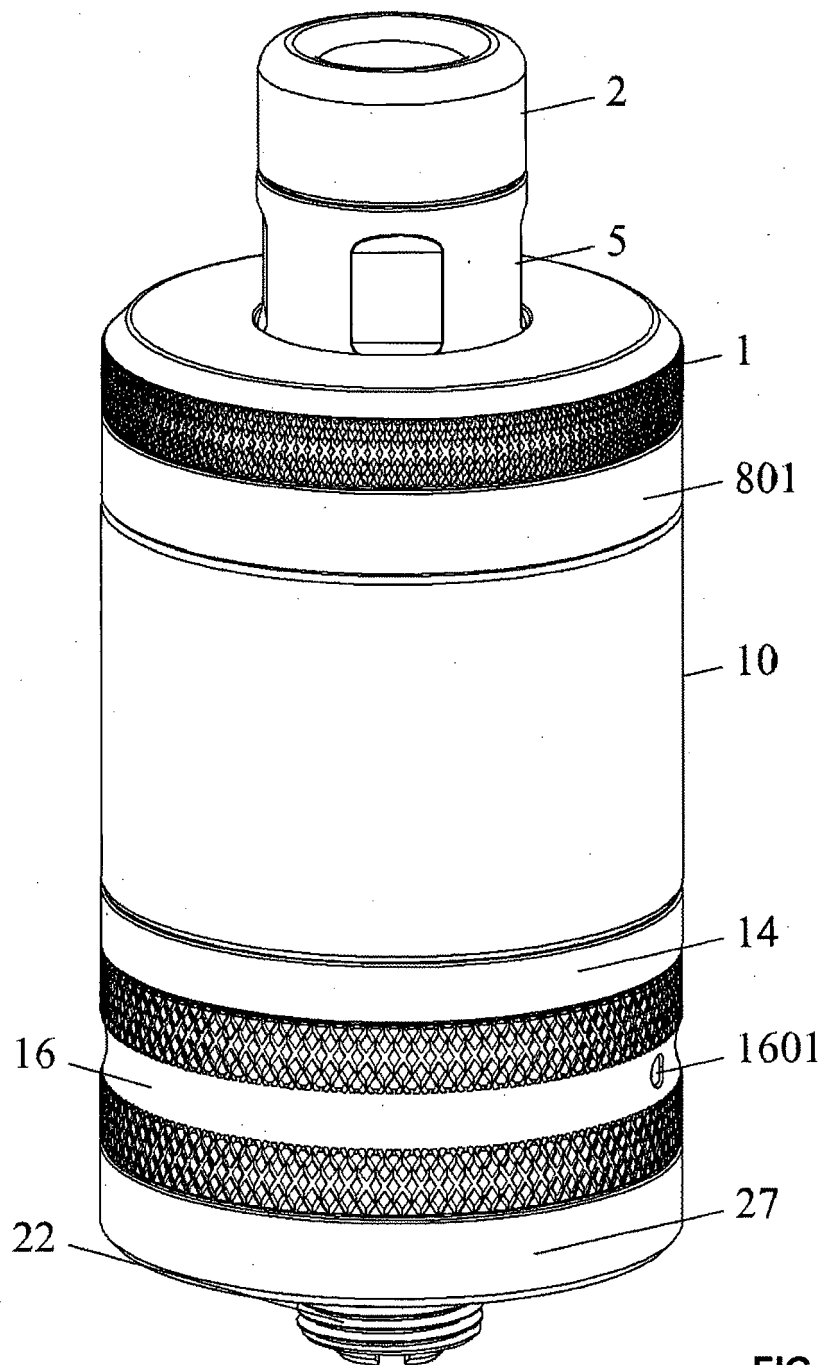


FIG. 2

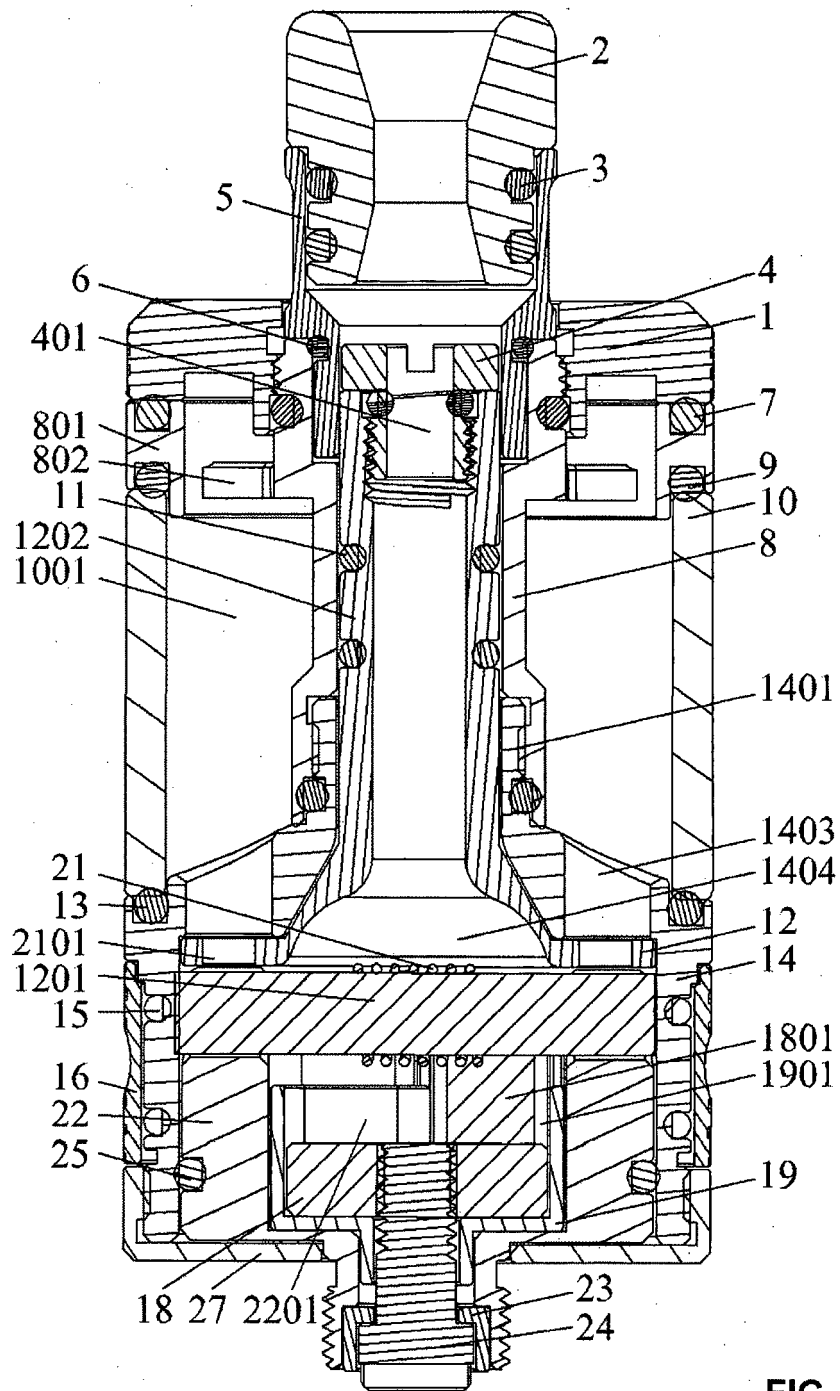
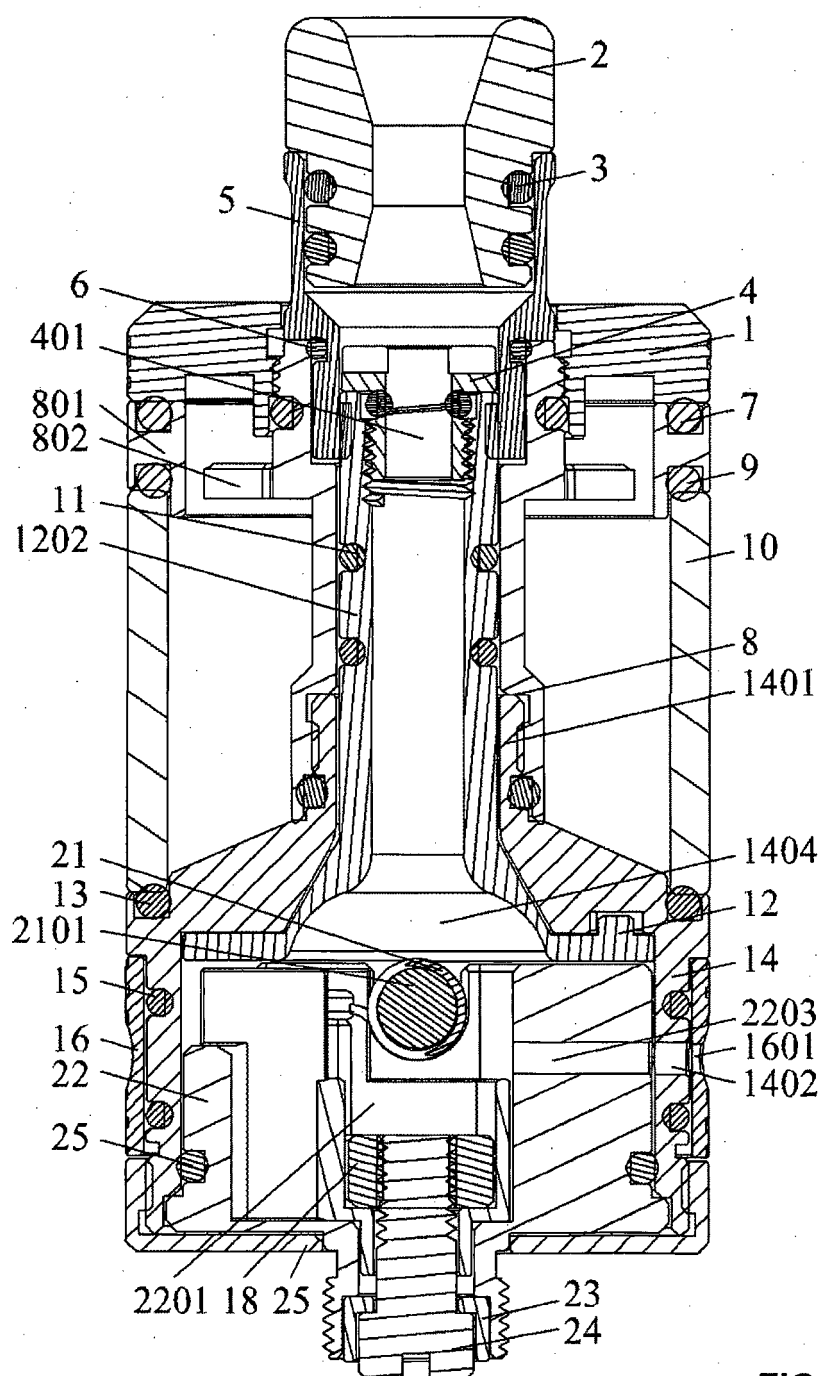


FIG. 3



**FIG. 4**

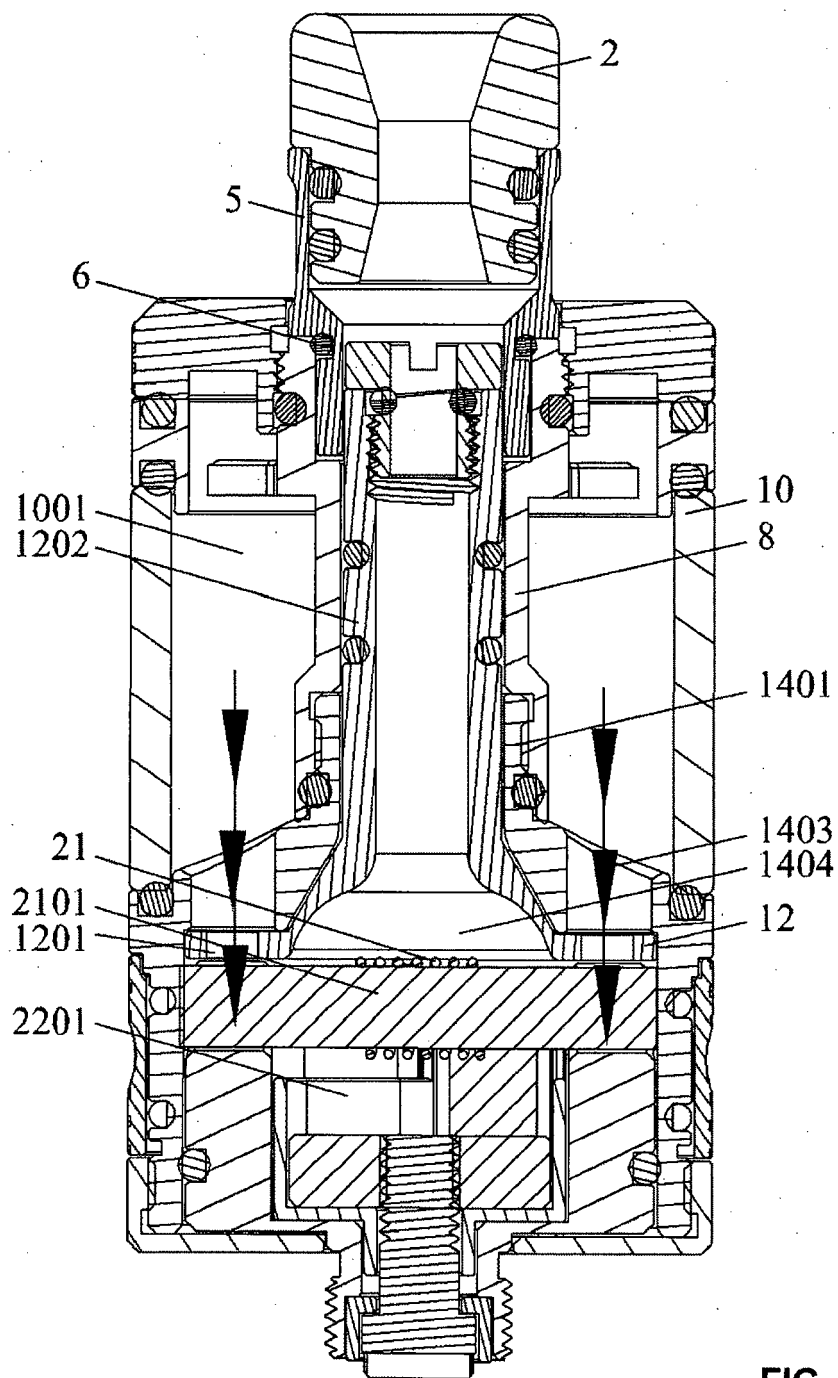


FIG. 5

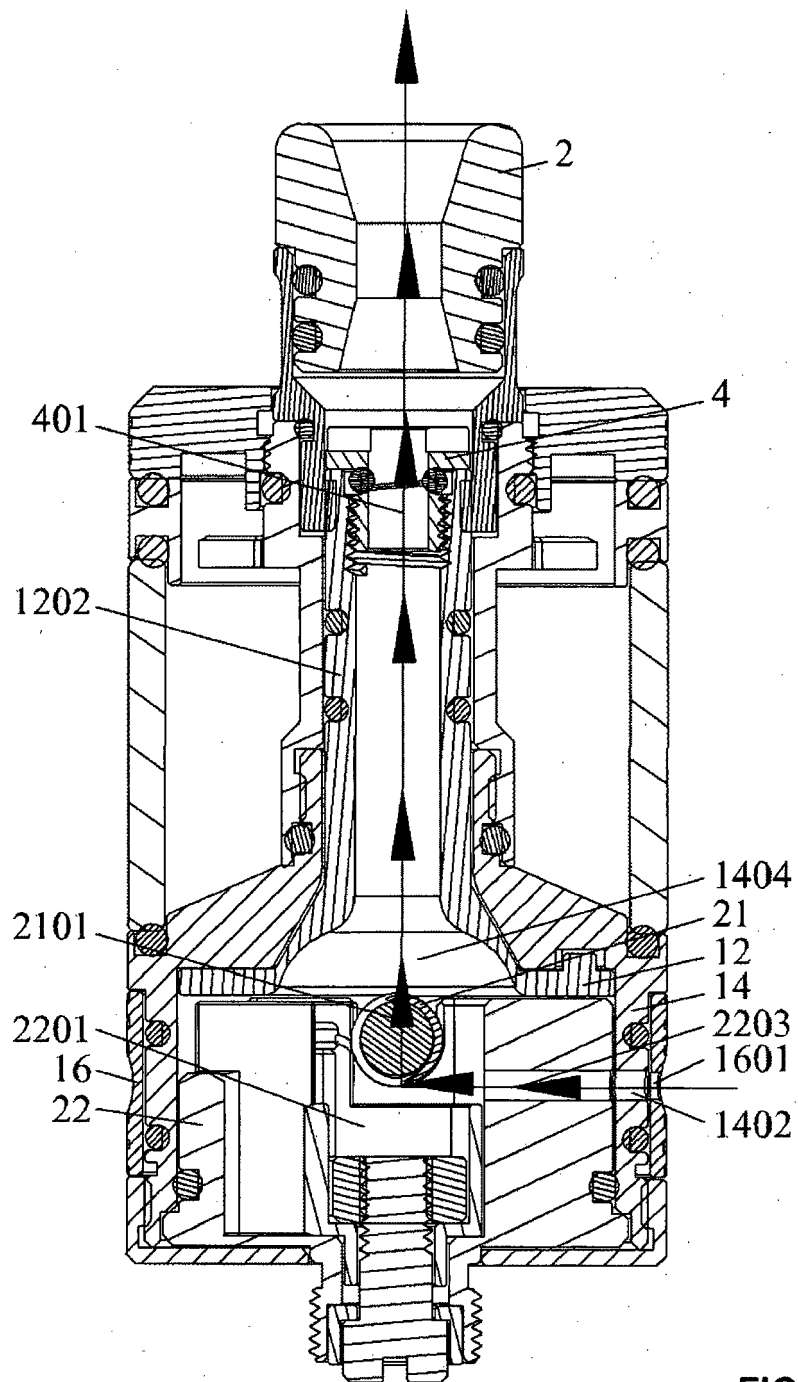


FIG. 6



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