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(54) **ELECTRONIC CIGARETTE**

(57) An electronic cigarette, including an atomization assembly (A) and a battery assembly (B). The atomization assembly is directly connected to the battery assembly. The atomization assembly includes a mouthpiece (1), a glass tube (15), a first seal ring (2) sealing the glass tube, an atomizer including a head (4) and a base (8), a second seal ring (3) sealing the head, a vent tube (5), a third seal ring (6) sealing the base of the atomizer, and an atomization core, the atomization core including a silica seal (9), a silica sleeve (10) including a vent, a ceramic core (11), a pedestal (12), an first insulation ring (13), a heating tube (7), and a joint (14). The battery assembly includes an electrode (16), a second insulation ring (17) coating the electrode, a connector (18), a cartridge (19), a silica insulator (20), a battery core (21), a silica sleeve (22), a pneumatic switch (23), a USB-PCB (27), and a pedestal (24). The first seal ring is disposed in the mouthpiece.

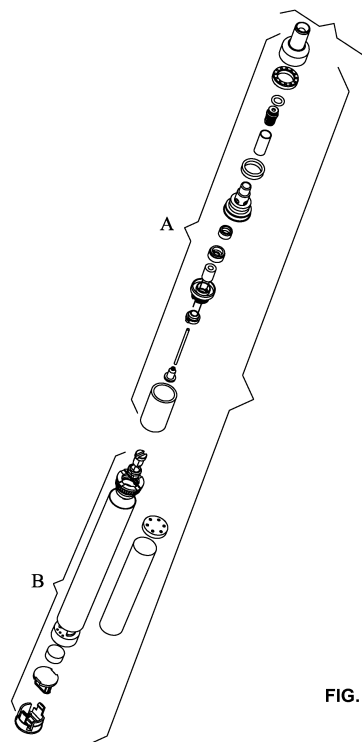


FIG. 1

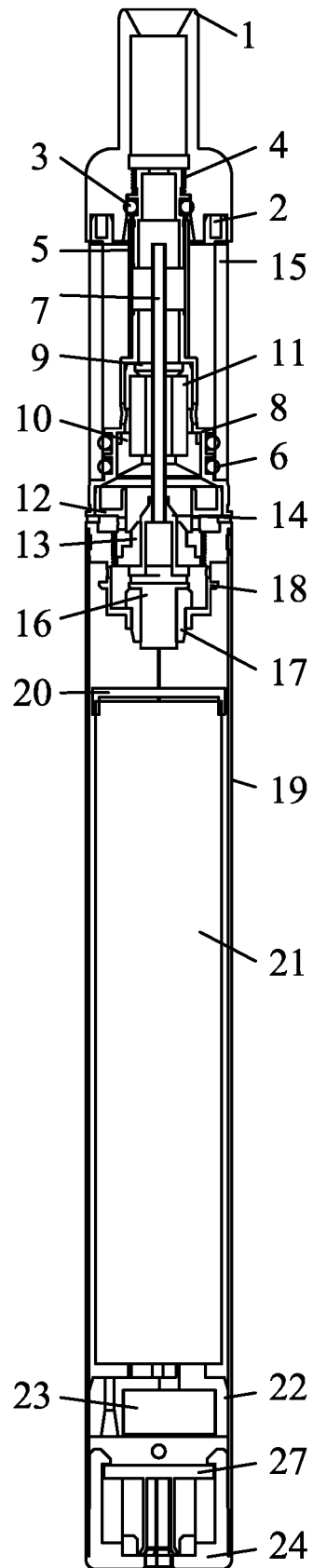


FIG. 5

Description

[0001] The disclosure relates to an electronic cigarette. Electronic cigarettes atomize nicotine-containing e-liquid.

[0002] Provided is an electronic cigarette, comprising an atomization assembly and a battery assembly. The atomization assembly is directly connected to the battery assembly. The atomization assembly comprises a mouthpiece, a glass tube, a first seal ring sealing the glass tube, an atomizer comprising a head and a base, a second seal ring sealing the head, a vent tube, a third seal ring sealing the base of the atomizer, and an atomization core, the atomization core comprising a silica seal, a silica sleeve comprising a vent, a ceramic core, a pedestal, an first insulation ring, a heating tube, and a joint. The first seal ring is disposed in the mouthpiece; the second seal ring is sheathed on the head; the head is disposed on the vent tube; the vent tube is disposed on the base; the third seal ring is sheathed on the base; the ceramic core and the silica sleeve comprising a vent are disposed on the pedestal; the silica seal is disposed on the ceramic core; the first insulation ring is disposed in the pedestal; the heating tube is disposed on the joint; the joint is embedded in the first insulation ring; the atomization core is embedded in the base; the glass tube is sheathed on the base, and the mouthpiece is in threaded connection to the head.

[0003] The battery assembly comprises an electrode, a second insulation ring coating the electrode, a connector, a cartridge, a silica insulator, a battery core, a silica sleeve, a pneumatic switch, a USB-PCB, and a pedestal. The pneumatic switch comprises positive and negative poles connected to positive and negative poles of an output end of the USB-PCB; the pneumatic switch is disposed in the silica sleeve and connected to positive and negative poles of the battery core; the silica insulator is disposed on the battery core; the battery core is disposed in the cartridge; the second insulation ring is disposed in the connector; the electrode is disposed in the second insulation ring; the connector is fixed on the cartridge; the USB-PCB is disposed in the pedestal; and the pedestal is fixed on a terminal end of the cartridge.

[0004] The head of the atomizer can comprise a plurality of gear grooves or knurling grooves.

[0005] The heating tube of the atomization assembly can be directly connected to the joint, and communicates with the mouthpiece and the pneumatic switch of the control plate.

[0006] The pedestal of the atomization assembly can be in threaded connection to the connector of the battery assembly.

[0007] Advantages of the electronic cigarette according to embodiments of the disclosure are summarized as follows:

1. The electronic cigarette is cylindrical, compact and easy to carry.

2. The head of the atomizer comprises a plurality of gear grooves or knurling grooves; the bubbles produced by the e-liquid can release from the gear grooves or knurling grooves thus preventing the blockage of the inlet of the e-liquid.

3. The thermal vapor flow can enter the heating tube to drive the pneumatic switch to work and heat the ceramic core, so that the e-liquid in the atomization assembly is heated to a free state, thus preventing the blockage of the conveying pipe by the condensed e-liquid.

FIG. 1 is a schematic view of an electronic cigarette according to one embodiment of the disclosure;

FIG. 2 is an exploded view of an atomization assembly of an electronic cigarette according to one embodiment of the disclosure;

FIG. 3 is an exploded view of a battery assembly of an electronic cigarette according to one embodiment of the disclosure;

FIG. 4 is a stereogram of an electronic cigarette according to one embodiment of the disclosure; and

FIG. 5 is a sectional view of an electronic cigarette according to one embodiment of the disclosure.

[0008] To further illustrate, embodiments detailing an electronic cigarette are described below. It should be noted that the following embodiments are intended to describe and not to limit the disclosure.

[0009] As shown in FIGS. 1-5, the disclosure provides an electronic cigarette comprising an atomization assembly **A** and a battery assembly **B**. The atomization assembly is directly connected to the battery assembly. The atomization assembly **A** comprises a mouthpiece **1**, a glass tube **15**, a first seal ring **2** sealing the glass tube, an atomizer comprising a head **4** and a base **8**, a second seal ring **3** sealing the head, a vent tube **5**, a third seal ring **6** sealing the base of the atomizer, and an atomization core, the atomization core comprising a silica seal **9**, a silica sleeve comprising a vent **10**, a ceramic core **11**, a pedestal **12**, a first insulation ring **13**, a heating tube **7**, and a joint **14**. The first seal ring **2** is disposed in the mouthpiece **1**; the second seal ring **3** is sheathed on the head **4**; the head **4** is disposed on the vent tube **5**; the vent tube **5** is disposed on the base **8**; the third seal ring **6** is sheathed on the base **8**; the ceramic core **11** and the silica sleeve comprising a vent **10** are disposed on the pedestal **12**; the silica seal **9** is disposed on the ceramic core **11**; the first insulation ring **13** is disposed in the pedestal **12**; the heating tube **7** is disposed on the joint **14**; the joint **14** is embedded in the first insulation ring **13**; the atomization core is embedded in the base **8**; the glass tube **15** is sheathed on the base **8**, and the

mouthpiece **1** is in threaded connection to the head **4**.

[0010] Open the mouthpiece **1**, the e-liquid can be injected in the atomizer through the opening of the glass tube **15**. Thereafter, the e-liquid penetrates from the inlet of the base **8** of the atomizer into the ceramic core **11**. During the penetration, the e-liquid will produce bubbles. The bubbles can release from the gear grooves or knurling grooves thus preventing the blockage of the inlet of the e-liquid.

[0011] The heating tube **7** of the atomization assembly is directly connected to the joint **14**, which means the heating tube is indirectly connected to the positive pole of the ceramic core **11**, and communicates with the mouthpiece **1** and the pneumatic switch **23** of the battery assembly. During smoking, the thermal vapor flow can enter the heating tube to drive the pneumatic switch to work and heat the ceramic core, so that the e-liquid in the atomization assembly is heated to a free state, thus preventing the blockage of the conveying pipe by the condensed e-liquid.

[0012] The battery assembly comprises an electrode **16**, a second insulation ring **17** coating the electrode, a connector **18**, a cartridge **19**, a silica insulator **20**, a battery core **21**, a silica sleeve **22**, a pneumatic switch **23**, a USB-PCB **27**, and a pedestal **24**. The pneumatic switch **23** comprises positive and negative poles connected to positive and negative poles of an output end of the USB-PCB **27**; the pneumatic switch **23** is disposed in the silica sleeve **22** and connected to positive and negative poles of the battery core **21**; the silica insulator **20** is disposed on the battery core **21**; the battery core **21** is disposed in the cartridge **19**; the second insulation ring **17** is disposed in the connector **18**; the electrode **16** is disposed in the second insulation ring **17**; the connector **18** is fixed on the cartridge **19**; the USB-PCB **27** is disposed in the pedestal **24**; and the pedestal **24** is fixed on a terminal end of the cartridge **19**. The pedestal **12** of the atomization assembly is in threaded connection to the connector **18** of the battery assembly. The electronic cigarette is a three-dimensional cylindrical structure, and is compact and easy to carry.

[0013] It will be obvious to those skilled in the art that changes and modifications may be made, and therefore, the aim in the appended claims is to cover all such changes and modifications.

Claims

1. An electronic cigarette, comprising:

an atomization assembly (A), the atomization assembly comprising a mouthpiece (1), a glass tube (15), a first seal ring (2) sealing the glass tube, an atomizer comprising a head (4) and a base (8), a second seal ring (3) sealing the head, a vent tube (5), a third seal ring (6) sealing the base of the atomizer, and an atomization core,

the atomization core comprising a silica seal (9), a silica sleeve comprising a vent (10), a ceramic core (11), a pedestal (12), an first insulation ring (13), a heating tube (7), and a joint (14); and a battery assembly (B), the battery assembly comprising an electrode (16), a second insulation ring (17) coating the electrode, a connector (18), a cartridge (19), a silica insulator (20), a battery core (21), a silica sleeve (22), a pneumatic switch (23), a USB-PCB (27), and a pedestal (24);

wherein:

the atomization assembly is directly connected to the battery assembly;
the first seal ring (2) is disposed in the mouthpiece (1); the second seal ring (3) is sheathed on the head (4); the head (4) is disposed on the vent tube (5); the vent tube (5) is disposed on the base (8); the third seal ring (6) is sheathed on the base (8); the ceramic core (11) and the silica sleeve comprising a vent (10) are disposed on the pedestal (12); the silica seal (9) is disposed on the ceramic core (11); the first insulation ring (13) is disposed in the pedestal (12); the heating tube (7) is disposed on the joint (14); the joint (14) is embedded in the first insulation ring (13); the atomization core is embedded in the base (8); the glass tube (15) is sheathed on the base (8), and the mouthpiece (1) is in threaded connection to the head (4); and

the pneumatic switch (23) comprises positive and negative poles connected to positive and negative poles of an output end of the USB-PCB (27); the pneumatic switch (23) is disposed in the silica sleeve (22) and connected to positive and negative poles of the battery core (21); the silica insulator (20) is disposed on the battery core (21); the battery core (21) is disposed in the cartridge (19); the second insulation ring (17) is disposed in the connector (18); the electrode (16) is disposed in the second insulation ring (17); the connector (18) is fixed on the cartridge (19); the USB-PCB (27) is disposed in the pedestal (24); and the pedestal (24) is fixed on a terminal end of the cartridge (19).

2. The electronic cigarette of claim 1, wherein the head of the atomizer comprises a plurality of gear grooves or knurling grooves.

3. The electronic cigarette of claim 1, wherein the heating tube of the atomization assembly is directly connected to the joint, and communicates with the

mouthpiece and the pneumatic switch of the control plate.

4. The electronic cigarette of claim 1, wherein the pedestal (12) of the atomization assembly is in threaded connection to the connector (18) of the battery assembly.

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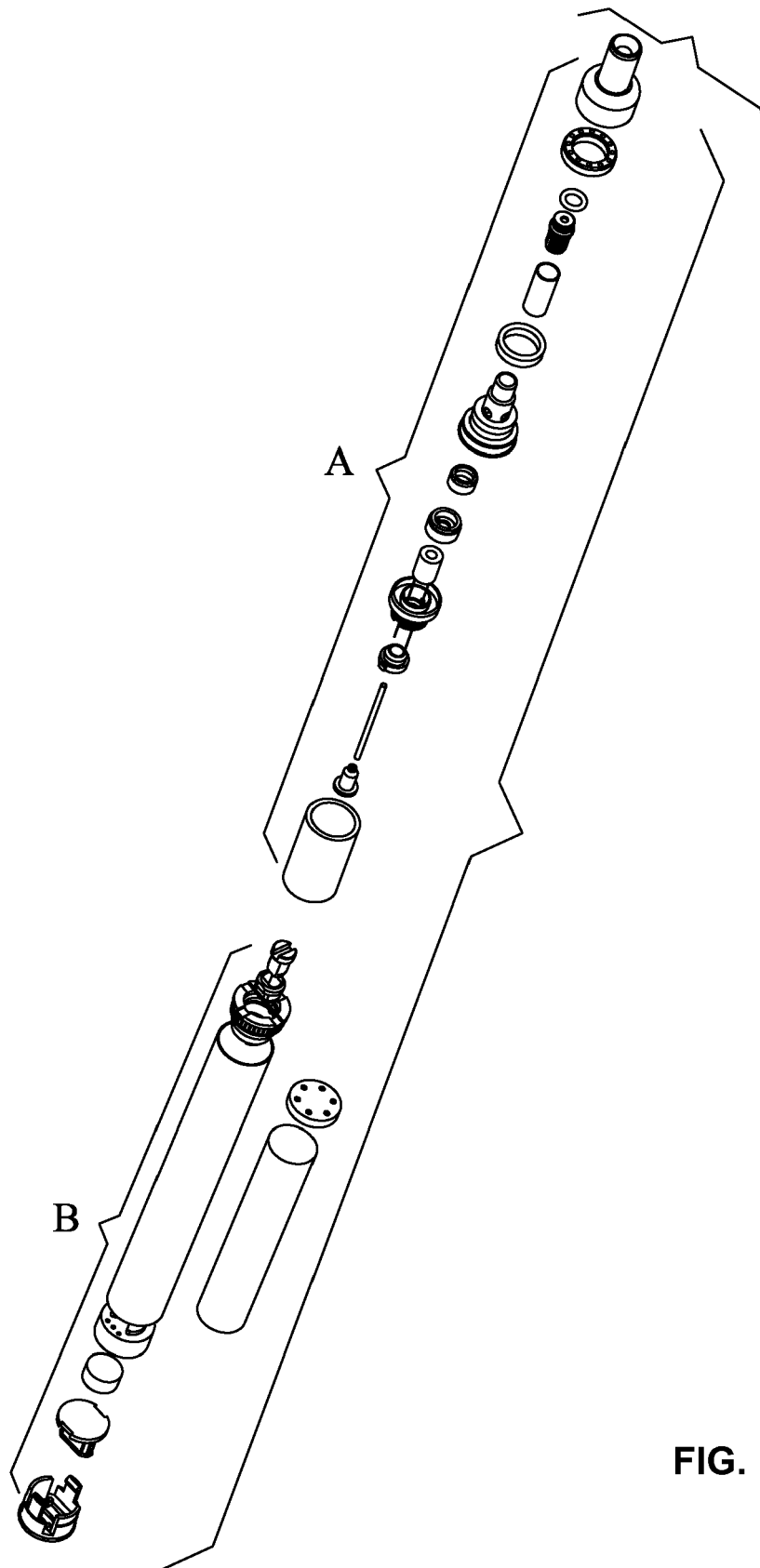


FIG. 1

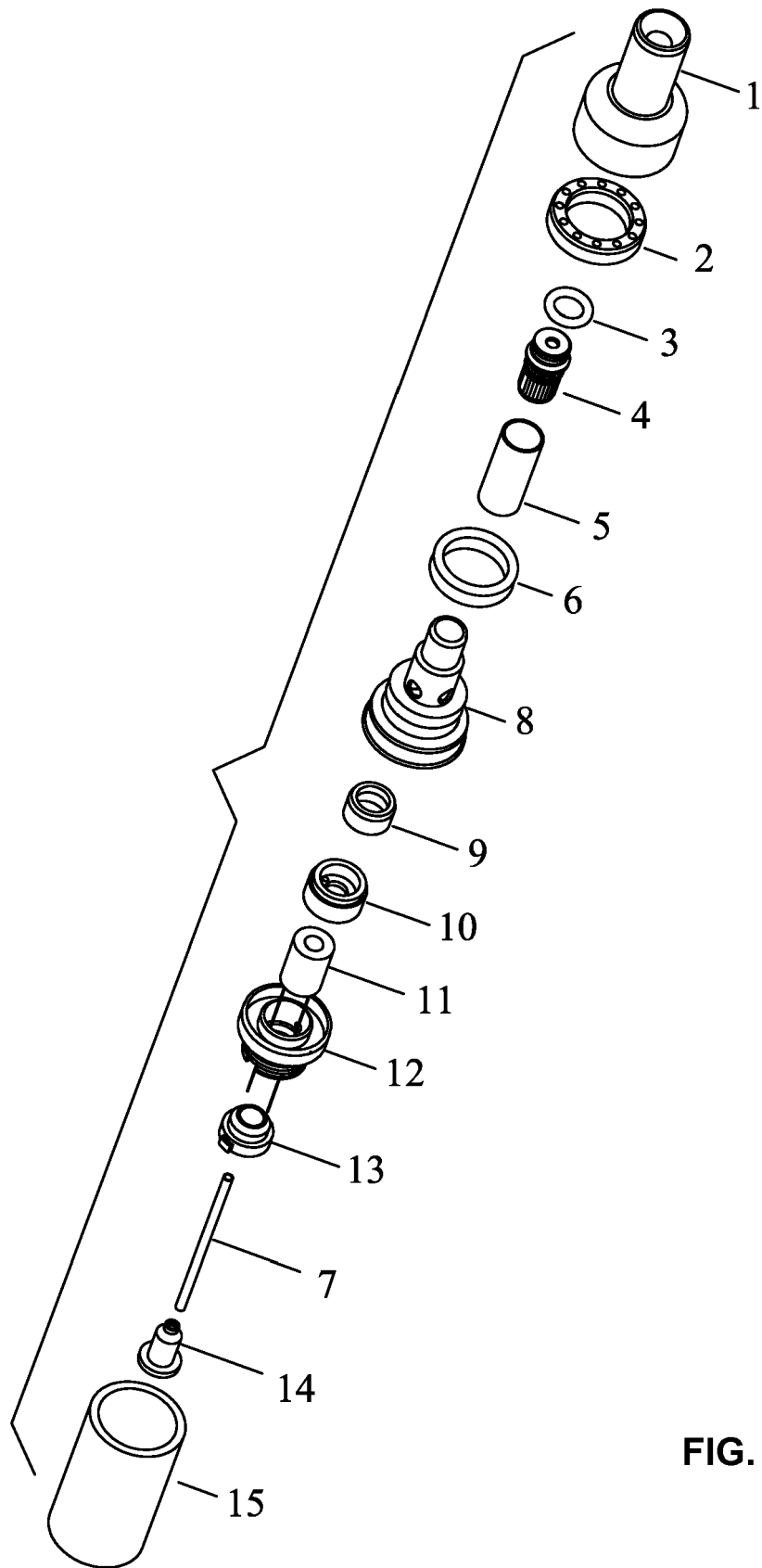


FIG. 2

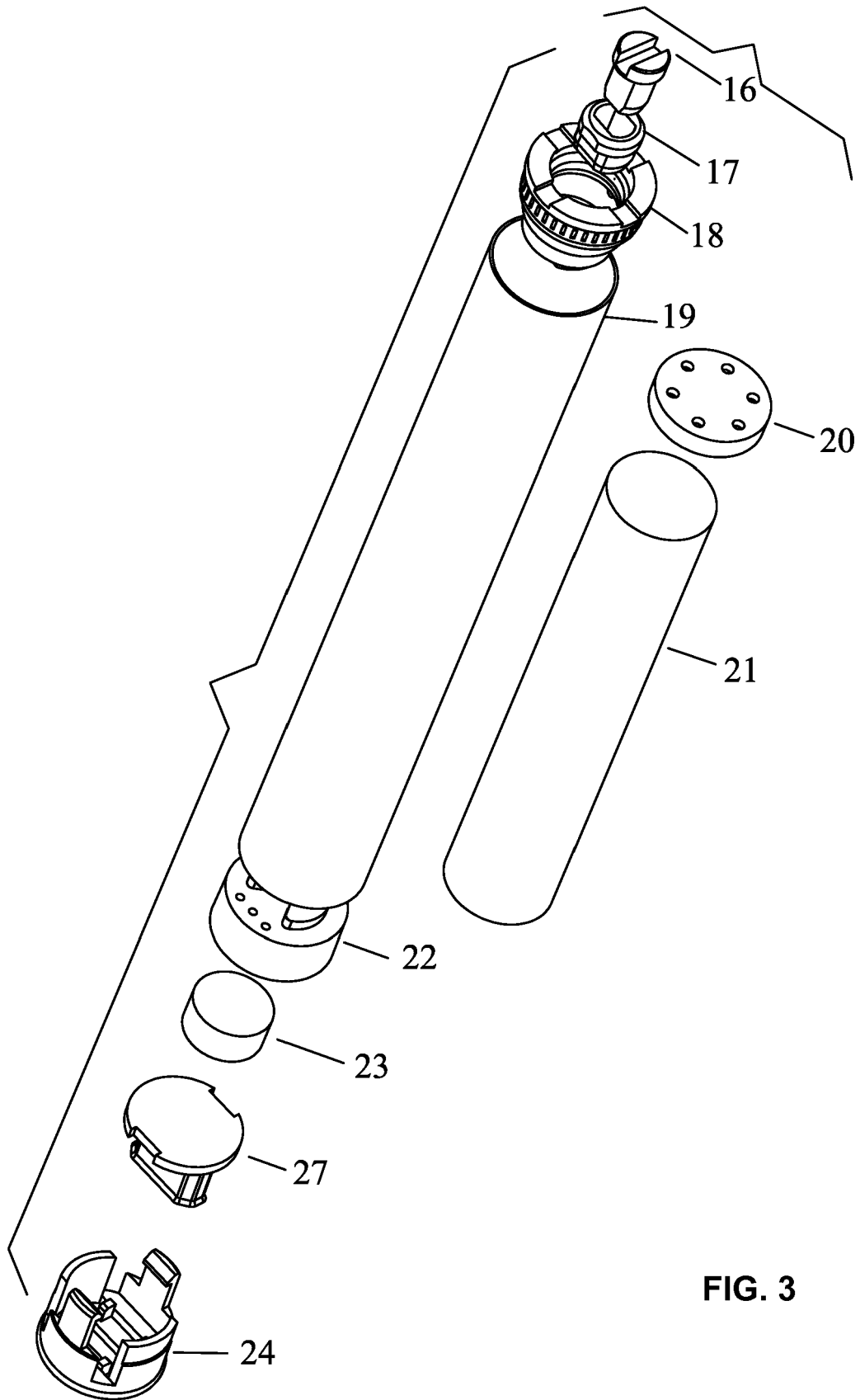


FIG. 3

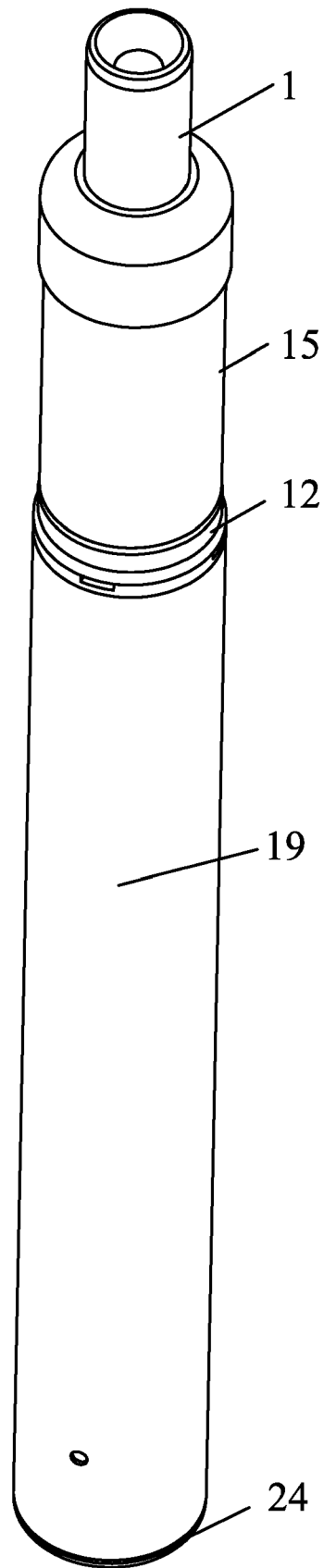


FIG. 4

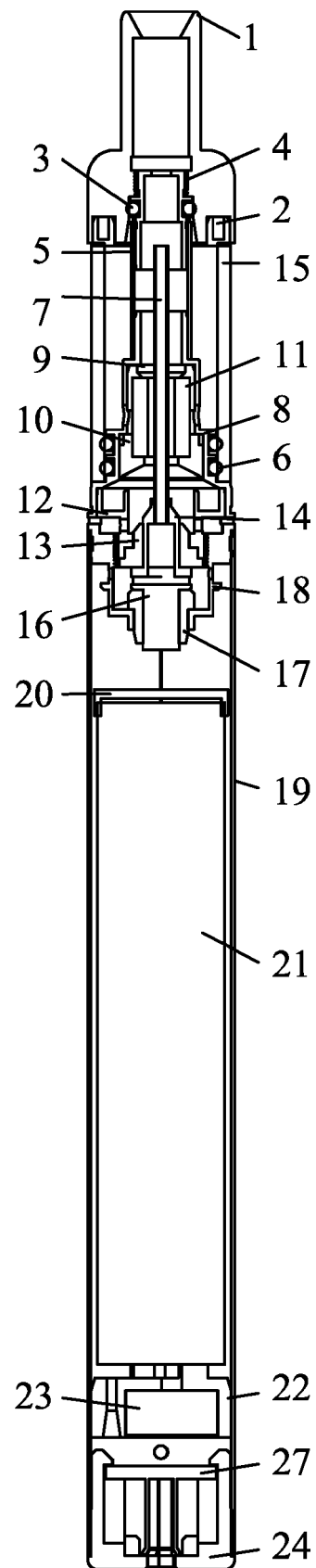


FIG. 5



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Place of search Munich		Date of completion of the search 27 January 2020	Examiner Aguado, Miguel
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