



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
31.08.2022 Bulletin 2022/35

(51) International Patent Classification (IPC):
A24F 47/00 ^(2020.01)

(21) Application number: **20878464.5**

(52) Cooperative Patent Classification (CPC):
A24F 47/00

(22) Date of filing: **23.10.2020**

(86) International application number:
PCT/CN2020/123358

(87) International publication number:
WO 2021/078277 (29.04.2021 Gazette 2021/17)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

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(30) Priority: **25.10.2019 CN 201921804393 U**
25.10.2019 CN 201921804534 U

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(54) **ATOMIZATION MEMBER AND ELECTRONIC CIGARETTE**

(57) An atomization assembly and an electronic cigarette. The atomization assembly comprises: an e-liquid storage body (1), an atomizing core (2), a connecting seat (3) and an electrode (4). The e-liquid storage body (1) is internally provided with an e-liquid storage cavity (a) for accommodating e-liquid. The atomizing core (2) comprises an electric heating element (22) having a connecting pin (221), and the electric heating element (22) is used for atomizing at least part of e-liquid supplied to the electric heating element (22) from the e-liquid storage cavity (a). The connecting seat (3) is connected to the e-liquid storage body (1). The electrode (4) is fixed on an end face of the connecting seat (3), and is provided with a connecting hole (41) and a solder accommodating recess (42). A hole opening at one end of the connecting hole (41) is located in the solder accommodating recess (42), and at least part of the connecting pin (221) is inserted into the connecting hole (41) and welded to the electrode (4). The atomization assembly has the advantages of being firm in welding, long in service life and convenient to produce.

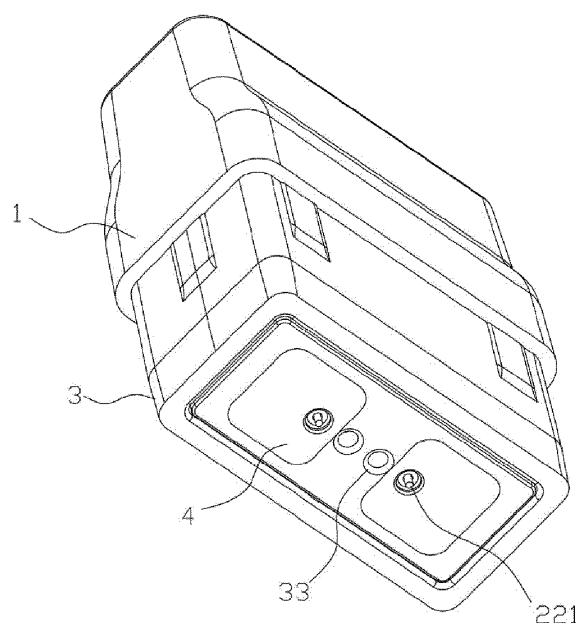


FIG. 1

Description

CROSS REFERENCE TO RELATED APPLICATION(S)

[0001] This application claims priorities to Chinese Patent Applications No. 201921804393.6, entitled "Atomization assembly and electronic cigarette" and submitted to China National Intellectual Property Administration on October 25th, 2019, No. 201921804534.4 entitled "Atomization assembly and electronic cigarette" and submitted to China National Intellectual Property Administration on October 25th, 2019, the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

[0002] The present disclosure relates to the technical field of electronic cigarettes, and in particular to an atomization member and an electronic cigarette having the same.

BACKGROUND

[0003] Electronic cigarette in existing technologies generally includes an atomization assembly and a battery assembly. One end of the atomization assembly is provided with a first electrode for electrical connection with the battery assembly. Inside the first electrode are sleeved an insulating ring and a second electrode in sequence. The atomization assembly is internally provided with an electric heating wire, a first end of which electric heating wire is electrically connected to the second electrode, and a second end of which electric heating wire is connected to the first electrode. The second electrode defines a through hole. The first end of the electric heating wire is welded to the end surface of the second electrode. In such a structure, since the through hole on the second electrode extends along the axial direction, the through hole is easy to be plugged by solder tin when the lead of the electric heating wire is welded.

[0004] In order to solve the above technical problem, those skilled in the art design an electronic cigarette, which includes an atomization assembly, a first electrode and a second electrode that are inserted into an end part of the atomization assembly. The atomization assembly accommodates an electric heating wire for atomizing an e-liquid, a first lead and a second lead in electrical connection with the electric heating wire. The second electrode includes an extension portion stretching into the atomization assembly, the second lead is electrically connected to the extension portion, and the first lead is electrically connected to the first electrode. The extension portion defines on a side surface thereof at least one first through hole for air to flow, so that the likeliness of hole plugging can be reduced when the second lead is electrically connected to the second electrode through welding. However, in order to avoid hole plugging, the used solder is less when welding, which is not convenient for

welding, and the welding is not firm, so the service life is short.

SUMMARY

[0005] In order to solve the problem in the existing technologies, the present disclosure provides an atomization member and an electronic cigarette which are firm in welding and convenient to produce.

[0006] In a first aspect, the present disclosure provides an atomization member, including: an e-liquid storage body, an atomizing core, a connecting seat and an electrode, wherein the e-liquid storage body is internally provided with an e-liquid storage cavity for accommodating an e-liquid, the atomizing core includes an electric heating element having a connecting pin, and the electric heating element is used for atomizing at least part of the e-liquid supplied to the electric heating element from the e-liquid storage cavity, the connecting seat is connected to the e-liquid storage body, the electrode is fixed on the connecting seat, and the electrode defines thereon a connecting hole passing through the electrode and an accommodating recess, a hole opening at one end of the connecting hole is located in the accommodating recess to communicate with the accommodating recess, and at least part of the connecting pin is inserted into the connecting hole and extends into the accommodating recess, thereby forming a connection with the electrode.

[0007] Optional, the electrode presents a sheet shape and is arranged extending along an end face of the connecting seat.

[0008] Optional, the accommodating recess is located on a surface of the electrode away from the connecting seat and extends towards another surface close to the connecting seat.

[0009] Optional, the accommodating recess is configured for filling a solder, at least part of the connecting pin extends into the accommodating recess and forms soldering connection with the electrode.

[0010] Optional, a recess opening of the accommodating recess is hole shaped and has a bigger diameter than the hole opening of the connecting hole.

[0011] Optional, the connecting seat defines a through hole, the electrode is provided with a locating protrusion at the hole opening of the connecting hole, the locating protrusion is inserted into the through hole, and the connecting pin passes through the through hole to connect to the electrode.

[0012] Optional, the connecting seat defines a first fixing recess, and the electrode is inserted into the first fixing recess.

[0013] Optional, the electrode includes a main body made of a magnetic material and a protection layer located on a surface of the main body, and the electrode is further configured for magnetic connection with the battery assembly.

[0014] Optional, the e-liquid storage body defines therein an air channel and an e-liquid storage cavity sur-

rounding the air channel, the connecting seat defines a first air inlet communicated with the air channel, and the first air inlet is arranged spaced from the electrode.

[0015] Optional, the atomization assembly further includes a first filter screen, wherein the first filter screen is located between the atomizing core and the connecting seat, for filtering the e-liquid leaking towards the first air inlet.

[0016] Optional, a surface of the connecting seat facing the e-liquid storage body defines a second fixing recess, the first filter screen is inserted into the second fixing recess, and an air exit of the first air inlet is located on a bottom wall of the second fixing recess.

[0017] Optional, the atomization assembly further includes a sealing plug, wherein the sealing plug includes a cover body and a column body, the column body is located on one side of the cover body away from the connecting seat and is connected to the cover body, the e-liquid storage body defines an e-liquid filling hole, the e-liquid filling hole is communicated with the e-liquid storage cavity, the sealing plug is located between the e-liquid storage body and the connecting seat, and the column body is inserted into the e-liquid filling hole.

[0018] Optional, the sealing plug defines a connecting groove passing through the cover body and extending into the column body, the connecting seat is provided with a connecting column, and the connecting column is inserted into the connecting groove.

[0019] Optional, the e-liquid storage body includes an e-liquid storage sleeve and a separation sleeve, the separation sleeve includes an air tube and a fixing seat, the air tube includes a first end and a second end which are arranged opposite to each other, the air tube is located inside the e-liquid storage sleeve, the first end of the air tube is connected to the e-liquid storage sleeve, the second end of the air tube is connected to the fixing seat, and the atomizing core is accommodated inside the air tube; the fixing seat is connected to the e-liquid storage sleeve, wherein the air tube and the fixing seat are a one-piece structure shaped by injection in a mold.

[0020] Optional, the air tube is a part made of a metallic material, and the fixing seat is a part made of a non-metallic material.

[0021] Optional, the air tube includes a first vent section, a second vent section and a connecting section; the connecting section is located between the first vent section and the second vent section and is connected to the first vent section and the second vent section, the second vent section has a section area bigger than that of the first vent section, and the atomizing core is accommodated inside the second vent section.

[0022] In a second aspect, the present disclosure further provides an electronic cigarette, including the atomization assembly according to any item described above in the first aspect.

[0023] The present disclosure has the following benefits. As the electrode is fixed on the end face of the connecting seat, the electrode defines a connecting hole and

a solder accommodating recess, a hole opening at one end of the connecting hole is located in the solder accommodating recess, and at least part of the connecting pin is inserted into the connecting hole and welded to the electrode, during welding, the solder accommodating recess is used for containing solder, so that the solder is uneasy to flow out and easy to flow into the connecting hole, more solder can be applied to the surrounding of the connecting pin to reduce the likeliness of rosin joint; therefore, the welding is firm and the service life is long. In addition, since the solder will not arbitrarily flow easily, the production is convenient.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] One or more embodiments are illustrated through the image(s) in corresponding drawing(s). These illustrations do not form restrictions to the embodiments. Elements in the drawings with a same reference number are expressed as similar elements, and the images in the drawings do not form restrictions unless otherwise stated.

FIG. 1 is a perspective view of an atomization assembly provided by another preferred embodiment of the present disclosure.

FIG. 2 is a sectional view of the atomization assembly shown in FIG. 1.

FIG. 3 is an exploded view of the atomization assembly shown in FIG. 1.

FIG. 4 is a perspective view of a separation sleeve of the atomization assembly shown in FIG. 1.

FIG. 5 is a perspective view of a connecting seat of the atomization assembly shown in FIG. 1.

FIG. 6 is a perspective view of an electrode of the atomization assembly shown in FIG. 1.

FIG. 7 is a schematic block diagram of an electronic cigarette provided by another preferred embodiment of the present disclosure.

DETAILED DESCRIPTION

[0025] For a better understanding of the present disclosure, a detailed description is provided to the present disclosure in conjunction with the drawings and specific embodiments. It is to be noted that when an element is described as "fixed on"/ "fixedly connected to" another element, it may be directly on the another element, or there might be one or more intermediate elements between them. When one element is described as "connected to" another element, it may be directly connected to the another element, or there might be one or more intermediate elements between them. Terms "vertical", "horizontal", "left", "right", "inner", "outer" and similar expressions used in this description are merely for illustration.

[0026] Unless otherwise defined, all technical and scientific terms used in the description have the same mean-

ing as those normally understood by the skill in the technical field of the present disclosure. The terms used in the description of the present disclosure are just for describing specific implementations, not to limit the present disclosure. Terms "and/or" used in the description include any and all combinations of one or more listed items.

[0027] In addition, technical features involved in different embodiments of the present disclosure described below can be combined mutually if no conflict is incurred.

[0028] In the description, the installation includes fixing or limiting one element or device to a particular position or place by means of welding, screwing, clamping, bonding and the like, the element or device can remain stationary at a specific position or place or move within a limited range, and the element or device can be or not be detached after fixed or limited to the particular position or place, which are limited in the present disclosure.

[0029] Referring to FIG. 1 to FIG. 6, the present disclosure provides an atomization assembly, which includes an e-liquid storage body 1, an atomizing core 2, a connecting seat 3 and an electrode 4. The e-liquid storage body 1 defines therein an e-liquid storage cavity a and an air channel b. The e-liquid storage body 1 includes an e-liquid storage sleeve 10 and a separation sleeve 11, wherein the e-liquid storage sleeve 10 is provided with a first end and a second end which are arranged opposite to each other, the first end of the e-liquid storage sleeve 10 defines an air outlet 111, and a hole opening of the air outlet 111 facing the separation sleeve 11 is provided with an insertion slot 112. During smoking, an aerosol formed by e-liquid atomization is discharged from the air outlet 111 for the user to inhale.

[0030] The separation sleeve 11 includes an air tube 12 and a fixing seat 13, the air tube 12 includes a first end and a second end which are arranged opposite to each other, the air tube 12 is inserted into the e-liquid storage sleeve 10, the first end of the air tube 12 is connected to the e-liquid storage sleeve 10, and the second end of the air tube 12 is connected to the fixing seat 13. The air tube 12 forms therein the air channel b, the air channel b is communicated with the air outlet 111, between the air tube 12 and the e-liquid storage sleeve 10 is formed the e-liquid storage cavity a, that is, the e-liquid storage cavity a is arranged surrounding the air tube 12, and the e-liquid storage cavity a is configured for storing the e-liquid. The air tube 12 defines an e-liquid outlet 120 at a position corresponding to the atomizing core 2, to discharge the e-liquid inside the e-liquid storage cavity a to the atomizing core 2.

[0031] The air tube 12 includes a first vent section 121, a second vent section 122 and a connecting section 123; the connecting section 123 is located between the first vent section 121 and the second vent section 122 and is connected to the first vent section 121 and the second vent section 122, and the second vent section 122 has a section area bigger than that of the first vent section 121. It is understandable that in some embodiments the

air tube 12 is formed by a first vent section 121 and a second vent section 122 that are directly connected, wherein the first vent section 121 and the second vent section 122 have a same section area.

[0032] The fixing seat 13 is arranged covering a cavity opening of the e-liquid storage cavity a and is connected to the e-liquid storage sleeve 10. The air tube 12 and the fixing seat 13 are a one-piece structure shaped by injection in a mold, wherein the air tube 12 is a part made of a metallic material, and the fixing seat 13 is a part made of a non-metallic material. That is to say, during preparation, place the metallic air tube 12 in an injection mold, and shape the fixing seat 13 through injection into the mold, so that the air tube 12 and the fixing seat 13 become a one-piece structure. Preferably, the air tube 12 is a stainless steel part, and the fixing seat 13 is a plastic part; therefore, not only good tightness is achieved, but the air tube 12 is not easy to be impacted by the e-liquid. It is understandable that the air tube 12 may be a part made of other metallic materials, and the fixing seat 13 may be a part made of other non-metallic materials.

[0033] The fixing seat 13 defines an installing recess 131 and an e-liquid filling hole 132, wherein the installing recess 131 is located at a surface of the fixing seat 13 away from the e-liquid storage cavity a, and the installing recess 131 has a side wall defining a buckling groove 133. The e-liquid filling hole 132 is communicated with the e-liquid storage cavity a and the installing recess 131. It is understandable that the position of the e-liquid filling hole 132 is not specifically limited here as long as the e-liquid storage body 1 defines the e-liquid filling hole 132. For example, the e-liquid filling hole 132 may be defined on the outside of the installing recess 131. The installing recess 131 is communicated with the air channel b.

[0034] The e-liquid storage body 1 further includes a sealing ring 14, and the first end of the air tube 12 is connected to the sealing ring 14, so as to connect to the e-liquid storage sleeve 10 via the sealing ring 14. The second end of the air tube 12 is inserted into the fixing seat 13. Specifically, the sealing ring 14 defines an abutting groove 141 on an end face of one end thereof; the sealing ring 14 is inserted at least in part into the insertion slot 112, so that the sealing ring 14 is fixed through the insertion slot 112, which can better avoid e-liquid leakage. In the present embodiment, one end of the sealing ring 14 is inserted into the insertion slot 112, and the other end of the sealing ring 14 is located outside the insertion slot 112.

[0035] It is understandable that in some embodiments the sealing ring 14 may be completely located inside the insertion slot 112. The first end of the air tube 12 is inserted into the abutting groove 141, and the second end of the air tube 12 is inserted into the fixing seat 13, which can better prevent leakage of e-liquid. It is understandable that the sealing ring 14 may be made of elastic materials such as silicone or polyurethane. In some embodiments, the abutting groove 141 may not be required, and the first end of the air tube 12 elastically presses against

the end face of the sealing ring 14. Of course, the sealing ring 14 may not be required too, and the air tube 12 is directly connected to the e-liquid storage sleeve 10. In some embodiments, the e-liquid storage sleeve 10 includes a tubular sleeve body and an annular cover body, wherein the cover body is located at one end of the sleeve body and is detachably connected to the sleeve body, the air tube 12 passes through the cover body, and a user can inhale aerosol directly through the air tube when smoking. Thus, the structure of the e-liquid storage sleeve 10 is not specifically limited here, as long as it can be used for storing the e-liquid.

[0036] The e-liquid storage body 1 further includes a second filter screen 15, the second filter screen 15 is inserted into the insertion slot 112 and is clamped between the sealing ring 14 and the e-liquid storage sleeve 10. The second filter screen 15 is configured to filter the large-particle aerosol discharged from the air tube 12, thereby preventing a user inhaling the large-particle aerosol and enabling a good user experience. The second filter screen 15 may be formed by weaving, or may be formed by stamping from a plate, which is not specifically limited here.

[0037] The atomizing core 2 is inserted into the air tube 12 and is located inside the second vent section 122. Through the blocking of the connecting section 123, the atomizing core 2 can be prevented from being excessively inserted into the air tube 12, which facilitates assembling. The atomizing core 2 includes an e-liquid absorption element 21 and an electric heating element 22, wherein the e-liquid absorption element 21 is inserted into the air channel b, to absorb the e-liquid inside the e-liquid storage cavity a. The electric heating element 22 is in contact with the e-liquid absorption element 21, to atomize the e-liquid on the e-liquid absorption element 21. The electric heating element 22 is provided with a connecting pin 221. It is understandable that the e-liquid absorption element 21 may be a glass fiber string extending into the e-liquid storage cavity a, and the electric heating element 22 may be an electric heating wire wound on the glass fiber string. The e-liquid absorption element 21 may also be a fiber cotton wound into a tubular shape, the electric heating element 22 is an electric heating wire wound into a columnar shape, and the electric heating element 22 is inserted into the e-liquid absorption element 21. Therefore, the atomizing core 2 only needs to include the electric heating element 22 having the connecting pin 221, and the electric heating element 22 is used for atomizing at least part of the e-liquid supplied to the electric heating element 22 from the e-liquid storage cavity a. The structure of the atomizing core 2 is not specifically limited here. It is understandable that the position of the atomizing core 2 may be arranged as needed and the position is not specifically limited here.

[0038] In the present embodiment, the e-liquid absorption element 21 includes a porous ceramic tube 211 and a cotton cloth 212 wound on outside of the porous ceramic tube 211. Through the cotton cloth 212, the e-liquid

inside the e-liquid storage cavity a is absorbed to the porous ceramic tube 211. The electric heating element 22 includes an electric heating wire 220 and the connecting pin 221, wherein the electric heating wire 220 is inserted into the porous ceramic tube 211 and contacts an inner wall of the porous ceramic tube 211, thereby contacting the e-liquid absorption element 21. One end of the connecting pin 221 is connected to the electric heating wire 220, while the other end of the connecting pin 221 is laser welded to the electrode 4.

[0039] The connecting seat 3 is provided with a buckling protrusion 31 on a peripheral surface thereof, the connecting seat 3 is inserted into the installing recess 131, and the buckling protrusion 31 is in buckled connection with the buckling groove 133, so that the connecting seat 3 is connected to the e-liquid storage body 1. The connecting seat 3 further defines a through hole 32, a first air inlet 33, a first fixing recess 34, a second fixing recess 35 and a connecting column 36, wherein the connecting pin 221 passes through the through hole 32 to be welded to the electrode 4, the first air inlet 33 is communicated with the air channel b, thus, during smoking, air outside the atomization assembly can flow into the air channel b from the first air inlet 33 to bring the aerosol inside the air channel b out from the air outlet 111. The first air inlet 33 is arranged spaced from the electrode 4, which can better avoid the solder blocking the first air inlet 33. The second fixing recess 35 is located on a surface of the connecting seat 3 facing the e-liquid storage body, and a bottom wall of the second fixing recess 35 is provided with a supporting protrusion 351, wherein the supporting protrusion 351 may present a bar shape, a ring shape or a square shape, etc.

[0040] The electrode 4 is fixed on an end face of the connecting seat 3, and through the electrode 4 the atomization assembly is connected to the battery assembly. During smoking, the battery assembly supplies power to the electric heating element 22 through the electrode 4. The electrode 4 defines a connecting hole 41 and a solder accommodating recess 42. A hole opening at one end of the connecting hole 41 is located in the solder accommodating recess 42, and at least part of the connecting pin 221 is inserted into the connecting hole 41 and welded to the electrode 4.

[0041] As the electrode 4 is fixed on the end face of the connecting seat 3, the electrode 4 defines a connecting hole 41 and a solder accommodating recess 42, a hole opening at one end of the connecting hole 41 is located in the solder accommodating recess 42, and at least part of the connecting pin 221 is inserted into the connecting hole 41 and welded to the electrode 4, during welding, the solder accommodating recess 42 is used for containing solder, so that the solder is uneasy to flow out and easy to flow into the connecting hole 41, more solder can be applied to the surrounding of the connecting pin 221 to reduce the likeliness of rosin joint; therefore, the welding is firm and the service life is long. In addition, since the solder will not arbitrarily flow easily,

the production is convenient.

[0042] In the present embodiment, the electrode 4 presents a sheet shape and is arranged extending along and in an end face of the connecting seat 3, that is, the sheet shaped electrode 4 is arranged extending along a horizontal direction of the atomization assembly, which not only can increase the contact area when electrically connected to the battery assembly and avoid problems of unreliable electrical connection, but also can reduce the difficulty of manufacture. It is understandable that the electrode 4 may be plate shaped or bar shaped and the like. To well fix the electrode 4, the electrode 4 is inserted into the first fixing recess 34.

[0043] The solder accommodating recess 42 is located on a surface of the electrode 4 away from the connecting seat 3 and extends towards another surface close to the connecting seat 3, and the connecting pin 221 passes through the connecting hole 41 and extends into the solder accommodating recess 42; therefore, during welding, the connecting pin 221 may be welded after the electrode 4 is assembled, thus the connection is reliable, and this avoids problems of unreliable connection due to the installation of the electrode 4 after the welding of the connecting pin 221. It is understandable that in some embodiments the solder accommodating recess 42 may be defined on the surface of the electrode 4 facing the connecting seat 3.

[0044] A recess opening of the solder accommodating recess 42 is hole shaped and is bigger than the hole opening of the connecting hole 41. The solder accommodating recess 42 is arranged coaxial to the connecting hole 41; thus, during welding, the solder can be applied to the surrounding of the connecting pin 221, thereby enabling a secure connection. The electrode 4 is provided with a locating protrusion 43 at the hole opening of the connecting hole 41, and the locating protrusion 43 is inserted into the through hole 32, which facilitates locating during welding. In the present embodiment, the electrode 4 includes a main body made of a magnetic material and a protection layer located on a surface of the main body, and the electrode 4 is further configured for magnetic connection with the battery assembly. That is to say, besides power transmission, the electrode 4 is further configured for connection with the battery assembly, which can avoid problems in the prior art that the battery assembly is in reliable connection with the atomization assembly while the power transmission is not necessarily reliable. The magnetic material may be iron, cobalt, nickel and other materials. The protection layer may be a metallic layer, a metallic oxide layer and the like. In the present embodiment, the protection layer employs the material of gold, which can improve the conductivity. It is understandable that the material of the electrode 4 is not specifically limited here.

[0045] The atomization assembly further includes a first filter screen 5 and a sealing plug 6. The first filter screen 5 is located between the atomizing core 2 and the connecting seat 3 and is inserted into the second

fixing recess 35, for filtering the e-liquid leaking towards the first air inlet 33 and thus avoiding the e-liquid leaking to the battery assembly to cause a problem of short circuit of the battery assembly. An air exit of the first air inlet 33 is located on a bottom wall of the second fixing recess 35. The supporting protrusion 351 abuts against the first filter screen 5, which reduces the contact area between the first filter screen 5 and the connecting seat 3 and enables better filtering. Preferably, the supporting protrusion 351 is arranged surrounding the first air inlet 33, thus it can better support the filter screen and the contact area is less.

[0046] The sealing plug 6 is located between the e-liquid storage body 1 and the connecting seat 3, and includes a cover body 61 and a column body 62; the cover body 61 is located in the installing recess 131 and defines a second air inlet 611; the second air inlet 611 corresponds to the positions of the first air inlet 33 and the air channel b, to import the air flowing from the first air inlet 33 to the air channel b. Herein, the fixing seat 13 defines a third air inlet (not shown) communicated with the second air inlet 611 and the air channel b respectively, so that the air can pass through in sequence the first air inlet 33, the second air inlet 611, the third air inlet and the air channel to be discharged from the air outlet 111 for a user to inhale. The column body 62 is located on one side of the cover body 61 away from the connecting seat 3 and is connected to the cover body 61. The column body 62 is inserted into the e-liquid filling hole 132, to better seal the e-liquid. During production, after the e-liquid storage body 1 is assembled, an e-liquid is filled into the e-liquid storage cavity a through the e-liquid filling hole 132. The production is convenient. The sealing plug 6 defines a connecting groove 63 passing through the cover body 61 and extending into the column body 62, and the connecting column 36 is inserted into the connecting groove 63, so that the sealing plug 6 achieves a better tightness and improves the sealing performance.

[0047] Referring to FIG. 7, the present disclosure further provides an electronic cigarette, which includes an atomization assembly 100 and a battery assembly 200. The atomization assembly 100 is the one as described above, and the battery assembly 20 is electrically connected to the atomization assembly 100, to supply power to the atomization assembly 100. Since the atomization assembly 100 of the electronic cigarette is of the same structure as the above atomization assembly 100, it has the same technical effects.

[0048] To summarize, since the air tube 12 and the fixing seat 13 are a one-piece structure shaped by injection in a mold, there is no need to arrange a sealing ring between the air tube 12 and the fixing seat 13 to seal the e-liquid. The structure is simple, not only cost is saved but e-liquid leakage is better avoided, it is convenient for automated production and the production efficiency is increased. Since the air tube 12 is a part made of a metallic material, it can better avoid generating thermal deformation to cause leakage of e-liquid when the atomizing

core 2 atomizes the e-liquid and thus better guarantees the tightness.

[0049] It is to be noted that the description of the present disclosure and the drawings just list preferred embodiments of the present disclosure. The present disclosure may, however, be exemplified in many different forms and should not be construed as being limited to the specific embodiments set forth herein. These embodiments are not intended to form extra limits to the content of the present disclosure, rather, they are provided so that this disclosure will be thorough and complete. Moreover, the above technical features may continue to combine with each other to form various embodiments not listed above, and these embodiments are all intended to be covered by the description of the present disclosure. Further, for the ordinary staff in this field, multiple improvements or variations may be made according to the above description, and these improvements or variations are intended to be included within the scope of protection of the claims appended hereinafter.

Claims

1. An atomization assembly, configured to combine with a battery assembly to form an electronic cigarette, comprising: an e-liquid storage body, an atomizing core, a connecting seat and an electrode, wherein the e-liquid storage body is internally provided with an e-liquid storage cavity for accommodating an e-liquid, the atomizing core comprises an electric heating element having a connecting pin, and the electric heating element is used for atomizing at least part of the e-liquid supplied to the electric heating element from the e-liquid storage cavity, the connecting seat is connected to the e-liquid storage body, the electrode is fixed on the connecting seat, and the electrode defines thereon a connecting hole passing through the electrode and an accommodating recess, a hole opening at one end of the connecting hole is located in the accommodating recess to communicate with the accommodating recess, and at least part of the connecting pin is inserted into the connecting hole and extends into the accommodating recess, thereby forming a connection with the electrode.
2. The atomization assembly according to claim 1, wherein the electrode presents a sheet shape and is arranged extending along an end face of the connecting seat.
3. The atomization assembly according to claim 1 or 2, wherein the accommodating recess is located on a surface of the electrode away from the connecting seat and extends towards another surface close to the connecting seat.
4. The atomization assembly according to claim 3, wherein the accommodating recess is configured for filling a solder, at least part of the connecting pin extends into the accommodating recess and forms soldering connection with the electrode.
5. The atomization assembly according to claim 3, wherein a recess opening of the accommodating recess is hole shaped and has a bigger diameter than the hole opening of the connecting hole.
6. The atomization assembly according to claim 1 or 2, wherein the connecting seat defines a through hole, the electrode is provided with a locating protrusion at the hole opening of the connecting hole, the locating protrusion is inserted into the through hole, and the connecting pin passes through the through hole to connect to the electrode.
7. The atomization assembly according to claim 1 or 2, wherein the connecting seat defines a first fixing recess, and the electrode is inserted into the first fixing recess.
8. The atomization assembly according to claim 1 or 2, wherein the electrode comprises a main body made of a magnetic material and a protection layer located on a surface of the main body, and the electrode is further configured for magnetic connection with the battery assembly.
9. The atomization assembly according to claim 1 or 2, wherein the e-liquid storage body defines therein an air channel and an e-liquid storage cavity surrounding the air channel, the connecting seat defines a first air inlet communicated with the air channel, and the first air inlet is arranged spaced from the electrode.
10. The atomization assembly according to claim 9, further comprising a first filter screen, wherein the first filter screen is located between the atomizing core and the connecting seat, for filtering the e-liquid leaking towards the first air inlet.
11. The atomization assembly according to claim 10, wherein a surface of the connecting seat facing the e-liquid storage body defines a second fixing recess, the first filter screen is inserted into the second fixing recess, and an air exit of the first air inlet is located on a bottom wall of the second fixing recess.
12. The atomization assembly according to claim 1 or 2, further comprising a sealing plug, wherein the sealing plug comprises a cover body and a column body, the column body is located on one side of the cover body away from the connecting seat and is connected to the cover body, the e-liquid storage body de-

defines an e-liquid filling hole, the e-liquid filling hole is communicated with the e-liquid storage cavity, the sealing plug is located between the e-liquid storage body and the connecting seat, and the column body is inserted into the e-liquid filling hole.

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13. The atomization assembly according to claim 12, wherein the sealing plug defines a connecting groove passing through the cover body and extending into the column body, the connecting seat is provided with a connecting column, and the connecting column is inserted into the connecting groove. 10
14. The atomization assembly according to claim 1, wherein the e-liquid storage body comprises an e-liquid storage sleeve and a separation sleeve, the separation sleeve comprises an air tube and a fixing seat, the air tube comprises a first end and a second end which are arranged opposite to each other, the air tube is located inside the e-liquid storage sleeve, the first end of the air tube is connected to the e-liquid storage sleeve, the second end of the air tube is connected to the fixing seat, and the atomizing core is accommodated inside the air tube; the fixing seat is connected to the e-liquid storage sleeve, wherein the air tube and the fixing seat are a one-piece structure shaped by injection in a mold. 15
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15. The atomization assembly according to claim 14, wherein the air tube is a part made of a metallic material, and the fixing seat is a part made of a non-metallic material. 30
16. The atomization assembly according to claim 14, wherein the air tube comprises a first vent section, a second vent section and a connecting section; the connecting section is located between the first vent section and the second vent section and is connected to the first vent section and the second vent section, the second vent section has a section area bigger than that of the first vent section, and the atomizing core is accommodated inside the second vent section. 35
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17. An electronic cigarette, comprising the atomization assembly according to any one of claims 1 to 16. 45

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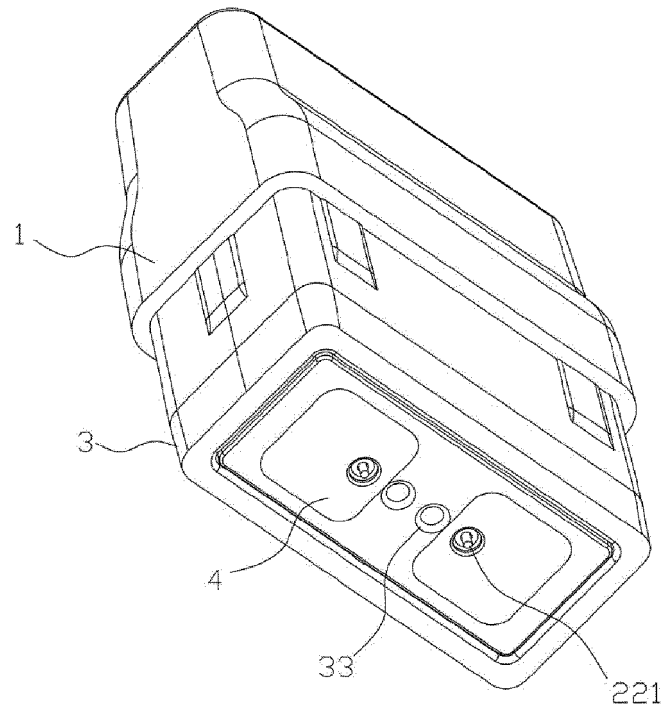


FIG. 1

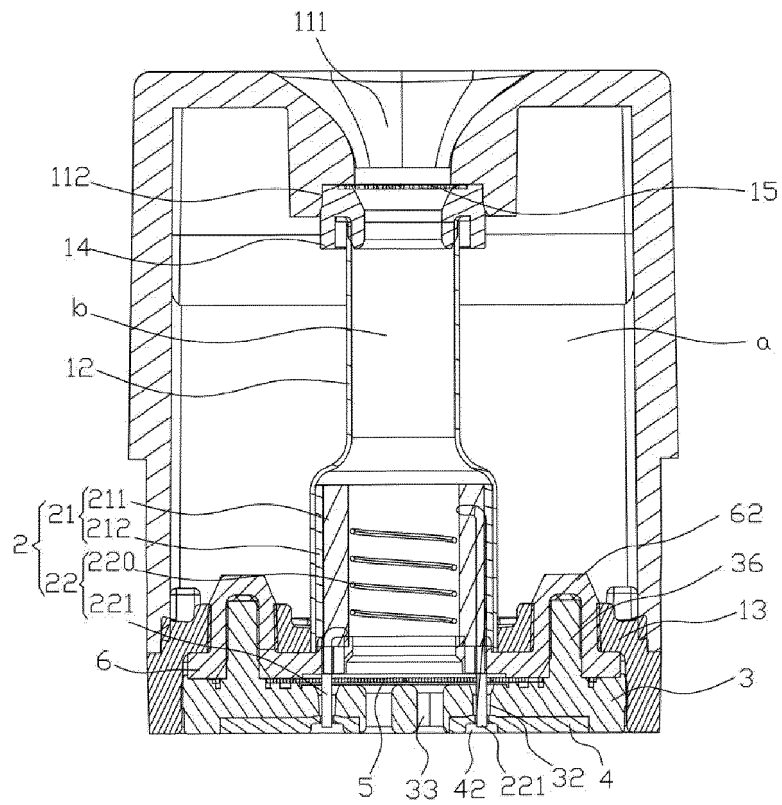


FIG. 2

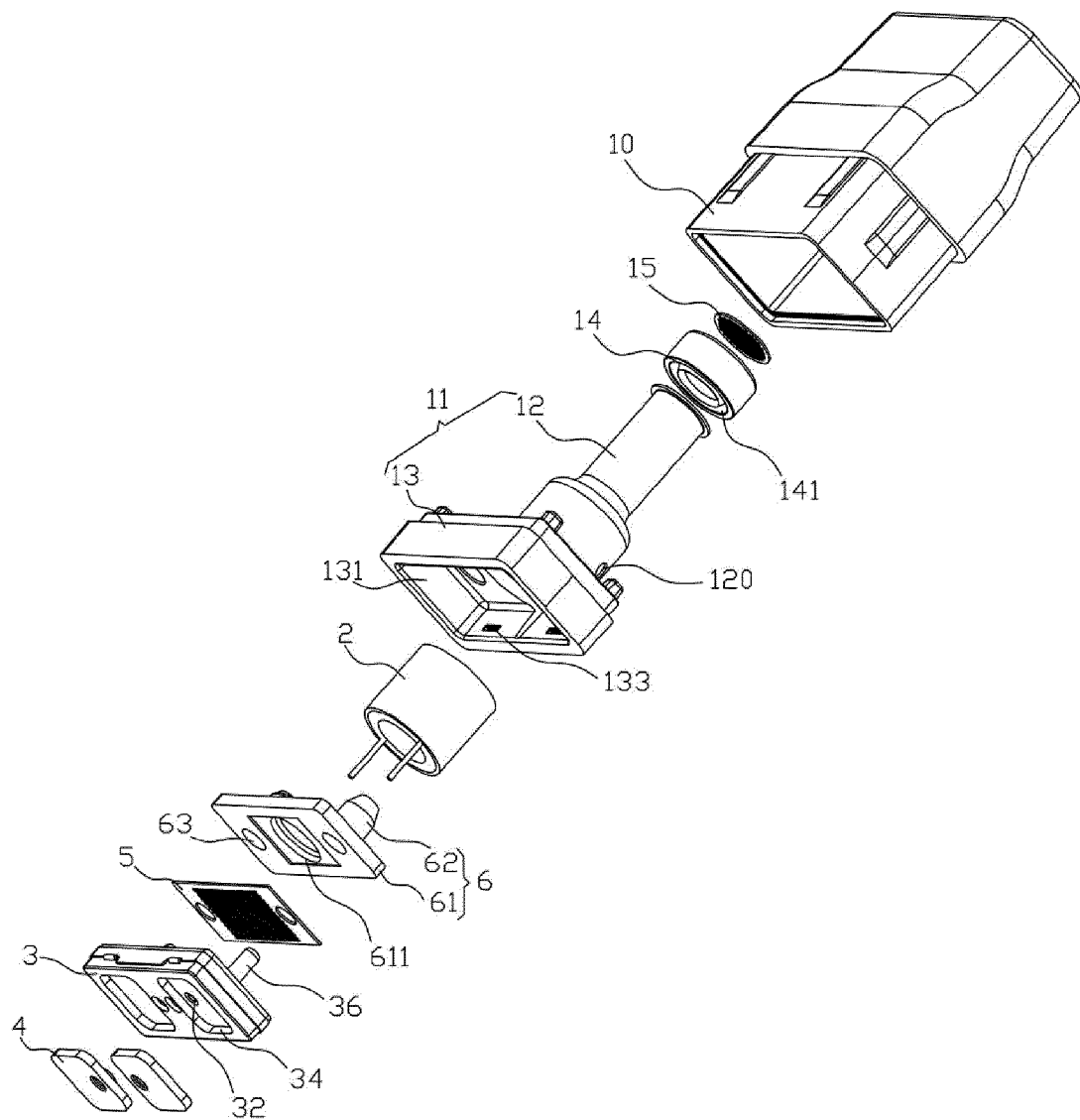


FIG. 3

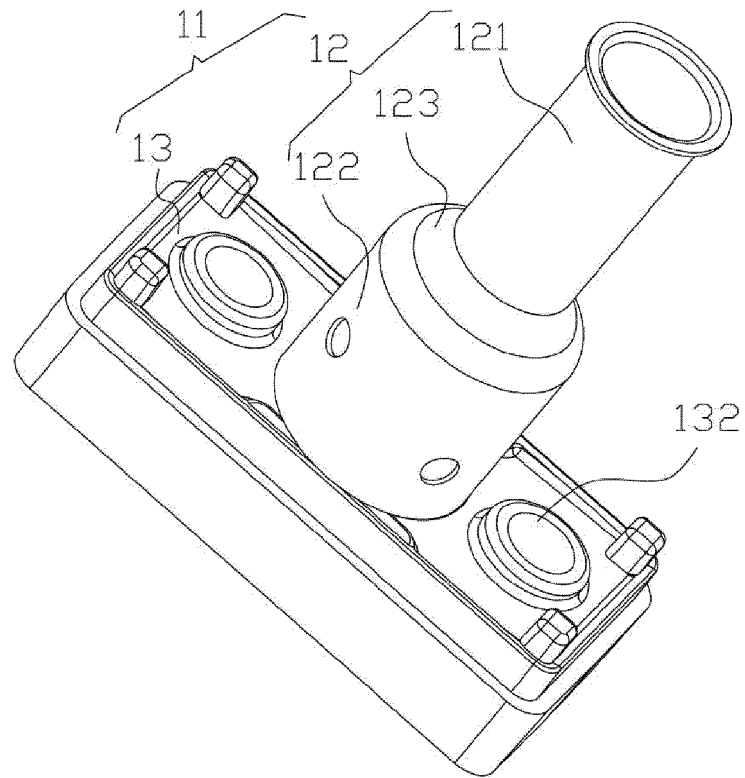


FIG. 4

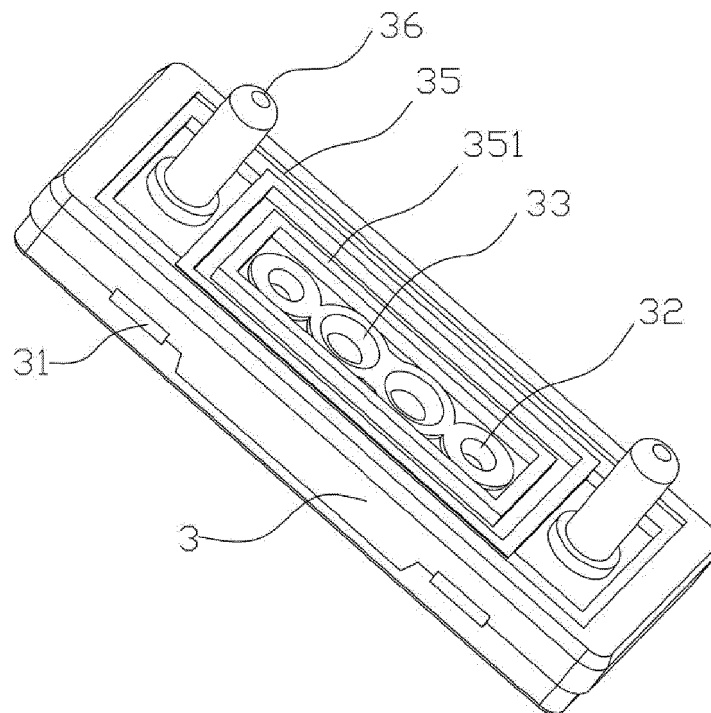


FIG. 5

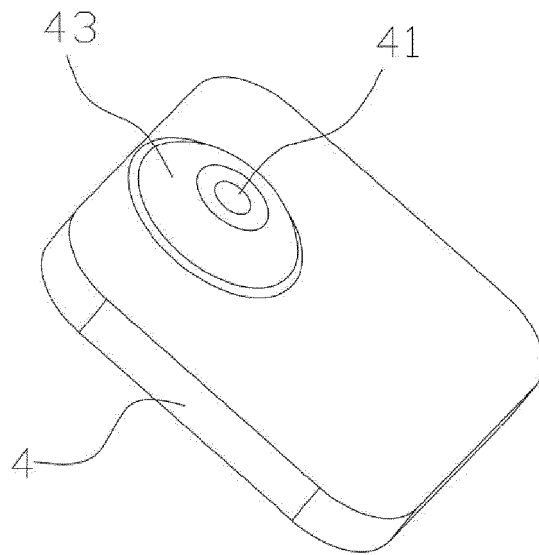


FIG. 6

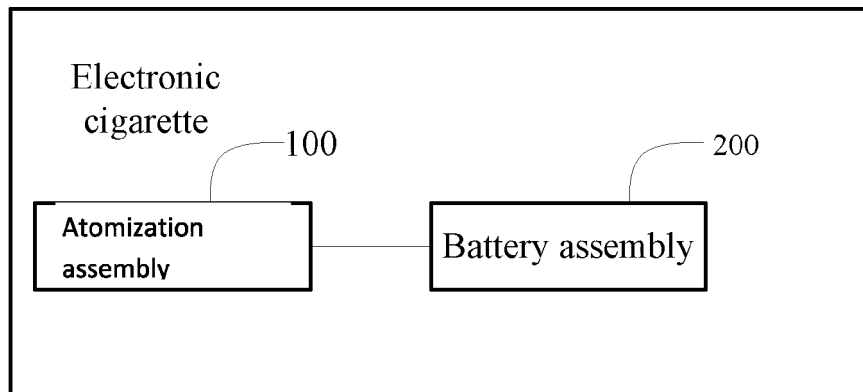


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/123358

A. CLASSIFICATION OF SUBJECT MATTER A24F 47/00(2020.01)i According to International Patent Classification (IPC) or to both national classification and IPC																							
B. FIELDS SEARCHED																							
Minimum documentation searched (classification system followed by classification symbols) A24F																							
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched																							
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNPAT, CNKI, WPI, EPODOC: 电子烟, 雾化, 电极, 孔, 焊锡, 焊料, 焊膏, 槽, 容纳, 容置, 收容, 孔, atomiz+, electric+, cigarette, sloder+, weld+, flux, electrode, hole, contain+, groove																							
C. DOCUMENTS CONSIDERED TO BE RELEVANT																							
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 211482961 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 15 September 2020 (2020-09-15) description, paragraphs [0035]-[0049], and figures 1-7</td> <td>1-17</td> </tr> <tr> <td>PX</td> <td>CN 211211430 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 11 August 2020 (2020-08-11) description, paragraphs [0025]-[0044], and figures 1-7</td> <td>1-17</td> </tr> <tr> <td>A</td> <td>CN 109717519 A (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 07 May 2019 (2019-05-07) description, paragraphs [0186]-[0187], and figures 9-13</td> <td>1-17</td> </tr> <tr> <td>A</td> <td>CN 203676143 U (LIU, Qiuming) 02 July 2014 (2014-07-02) entire document</td> <td>1-17</td> </tr> <tr> <td>A</td> <td>CN 205196988 U (KIMREE HI-TECH INC.) 04 May 2016 (2016-05-04) entire document</td> <td>1-17</td> </tr> <tr> <td>A</td> <td>CN 209106324 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 16 July 2019 (2019-07-16) entire document</td> <td>1-17</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 211482961 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 15 September 2020 (2020-09-15) description, paragraphs [0035]-[0049], and figures 1-7	1-17	PX	CN 211211430 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 11 August 2020 (2020-08-11) description, paragraphs [0025]-[0044], and figures 1-7	1-17	A	CN 109717519 A (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 07 May 2019 (2019-05-07) description, paragraphs [0186]-[0187], and figures 9-13	1-17	A	CN 203676143 U (LIU, Qiuming) 02 July 2014 (2014-07-02) entire document	1-17	A	CN 205196988 U (KIMREE HI-TECH INC.) 04 May 2016 (2016-05-04) entire document	1-17	A	CN 209106324 U (SHENZHEN FIRST UNION TECHNOLOGY CO., LTD.) 16 July 2019 (2019-07-16) entire document	1-17		
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Date of the actual completion of the international search 30 December 2020	Date of mailing of the international search report 20 January 2021																						
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088 China Facsimile No. (86-10)62019451	Authorized officer Telephone No.																						

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/123358

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2013068239 A1 (JANTY ASIA CO., LTD.) 21 March 2013 (2013-03-21) entire document	1-17

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2020/123358

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 211482961 U	15 September 2020	None	
CN 211211430 U	11 August 2020	None	
CN 109717519 A	07 May 2019	None	
CN 203676143 U	02 July 2014	None	
CN 205196988 U	04 May 2016	WO 2014201612 A1	24 December 2014
		US 2016135503 A1	19 May 2016
CN 209106324 U	16 July 2019	None	
US 2013068239 A1	21 March 2013	KR 200456814 Y1	21 November 2011

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Patent documents cited in the description

- CN 201921804393 [0001]
- CN 201921804534 [0001]