



(11)

EP 4 241 594 A1

(12)

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

(43) Date of publication:
13.09.2023 Bulletin 2023/37

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

(21) Application number: **20949444.2**

(52) Cooperative Patent Classification (CPC):
A24F 40/10; A24F 40/40; A24F 40/46; A24F 40/50; A24F 47/00

(22) Date of filing: **16.12.2020**

(86) International application number:
PCT/CN2020/136698

(87) International publication number:
WO 2022/032952 (17.02.2022 Gazette 2022/07)

(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

(71) Applicant: **Shenzhen Wiztech Co., Ltd.**
Shenzhen, Guangdong 518101 (CN)

(72) Inventor: **XU, Bin**
Shenzhen, Guangdong 518101 (CN)

(74) Representative: **Herrero & Asociados, S.L.**
Cedaceros, 1
28014 Madrid (ES)

(30) Priority: **12.08.2020 CN 202021670421 U**

(54) **ELECTRONIC ATOMIZATION DEVICE**

(57) An electronic atomization device (10), comprising an atomizer (11) and a power supply assembly (12). The atomizer (11) comprises an atomization core (100) and a first connecting unit (200). The first connecting unit (200) comprises a first circuit board (210), a power supply connector (220) and a communication connector (230). The power supply connector (220) and the communication connector (230) are both arranged on the first circuit board (210), and the power supply connector (220) is electrically connected to the atomization core (100). The power supply assembly (12) comprises a battery (300) and a second connecting unit (400). The second connecting unit (400) comprises a second circuit board (410) and a plurality of clamping bodies (420). The second circuit board (410) is electrically connected to the battery (300), and the clamping bodies (420) are electrically connected to the second circuit board (410). Each clamping body (420) comprises two first elastic pieces (402) arranged in an opposite manner, the first circuit board (210) is detachably clamped between the two first elastic pieces (402) of each clamping body (420), and the power supply connector (220) and the communication connector (230) respectively abut against the first elastic pieces (402) of each clamping body (420).

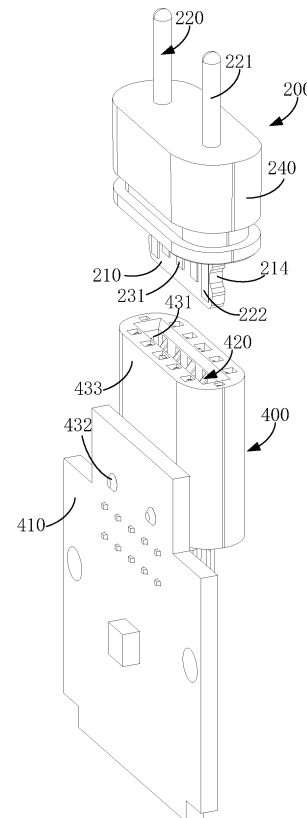


FIG. 4

EP 4 241 594 A1

Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority of Chinese Patent Application No. 2020216704212, filed on August 12, 2020, entitled "ELECTRONIC ATOMIZATION DEVICE", the content of which is hereby incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to the technical field of electronic atomization, in particular to an electronic atomization device.

BACKGROUND

[0003] There are many carcinogens in the aerosol produced by tobacco combustion, including tar which is harmful to human health, and the aerosol diffused in the air will form second-hand smoke, which also causes harm to the surrounding people. Therefore, smoking is prohibited in most public places. Electronic atomization device has similar appearance and taste to ordinary cigarettes, but usually does not contain other harmful components such as tar and suspended particles in cigarettes, so the electronic atomization device is commonly used as an alternative to cigarettes.

[0004] The conventional electronic atomization device includes an atomizer and a power supply assembly which are detachably connected. The power supply assembly supplies power to the atomizer, the atomizer converts electrical energy into heat energy, and e-liquid in the atomizer absorbs heat and is atomized to form smoke that can be inhaled by a user. However, the conventional electronic atomization device generally has the defect of complex structure, and the power supply assembly can only provide a single power supply function for the atomizer.

SUMMARY

[0005] According to some embodiments of the present disclosure, an electronic atomization device is provided.

[0006] An electronic atomizing device includes:

an atomizer including an atomizing core and a first connection unit, wherein the first connection unit includes a first circuit board, a power supply connection member, and a communication connection member, the power supply connection member and the communication connection member are both provided on the first circuit board, and the power supply connection member is electrically connected to the atomizing core; and
a power supply assembly including a battery and a second connection unit, wherein the second connection unit includes a second circuit board and a plu-

rality of clamping members, the second circuit board is electrically connected to the battery, the plurality of clamping members are electrically connected to the second circuit board, each clamping member includes two first elastic sheets opposite to each other, the first circuit board is detachably sandwiched between the two first elastic sheets of each clamping member, and the power supply connection member and the communication connection member abut against the first elastic sheets of each clamping member, respectively.

[0007] In one of the embodiments, the second connection unit further includes a mounting housing provided with a mounting groove, the first elastic sheet includes a first protrusion located in the mounting groove, the first circuit board is inserted in the mounting groove, and the power supply connection member and the communication connection member abut against the first protrusions of different clamping members, respectively.

[0008] In one of the embodiments, the first circuit board has a first surface, a second surface, and an end surface connected between the first surface and the second surface, the first surface and the second surface are spaced apart along a thickness direction of the first circuit board and face opposite directions, the power supply connection member includes a power supply post and a power supply sheet electrically connected to each other, the power supply post is provided on the end surface and is electrically connected to the atomizing core, the power supply sheet is provided on the first surface and the second surface, one of the first protrusions of each clamping member abuts against the power supply sheet on the first surface, and the other first protrusion of each clamping member abuts against the power supply sheet on the second surface.

[0009] In one of the embodiments, the first circuit board has a first surface and a second surface which are spaced apart along a thickness direction thereof and face opposite directions, the communication connection member includes two communication sheets, one of the communication sheets is located on the first surface, and the other communication sheet is located on the second surface, for the two first protrusions on the same clamping member, the communication sheet on the first surface abuts against one of the first protrusions, and the communication sheet on the second surface abuts against the other first protrusion.

[0010] In one of the embodiments, the second connection unit further includes two second elastic sheets spaced apart and connected to the mounting housing, the clamping member is located between the two second elastic sheets, the second elastic sheet has a second protrusion located in the mounting groove, the first circuit board is provided with a recess, and the second protrusion is engaged with the recess.

[0011] In one of the embodiments, the mounting housing has an abutting surface, the mounting housing in-

cludes a protruding column, the protruding column is connected to the abutting surface and protrudes relative to the abutting surface, the protruding column extends through the second circuit board, and the second circuit board abuts against the abutting surface.

[0012] In one of the embodiments, the two first elastic sheets of the same clamping member form a parallel circuit.

[0013] In one of the embodiments, the first elastic sheet is provided with a latching groove wrapped in the mounting housing, and the latching groove cooperates with the mounting housing.

[0014] In one of the embodiments, the first elastic sheet further includes an insertion portion located outside the mounting housing, the insertion portion extends through the second circuit board, and the insertion portions of all the clamping members are arranged in two rows along a direction perpendicular to a thickness direction of the mounting housing.

[0015] In one of the embodiments, the first connection unit further includes a wrapping member and a chip, the chip is provided on the first circuit board, the first circuit board is inserted into the wrapping member, at least part of the power supply connection member and the communication connection member are located outside the wrapping member, and the chip is located inside the wrapping member.

[0016] In one of the embodiments, the communication connection member is located between the power supply connection members.

[0017] During the process of clamping the first circuit board by the first elastic sheet, when the first elastic sheets on part of the clamping members abut against the power supply connection member, the battery can supply power to the atomizing core through the first elastic sheet and the power supply connection member, so that the atomizing core can atomize the e-liquid. Moreover, when the first elastic sheets on the other part of the clamping members abut against the communication connection member, the transmission of communication information between the entire atomizer and the power supply assembly can be achieved, so that the power supply assembly can adjust the atomization effect of the e-liquid in the atomizing core. Therefore, through the connection of the first connection unit and the second connection unit, the electrical connection and the communication connection between the atomizer and the power supply assembly can be simultaneously realized, so as to ensure the diversification of the functions of the power supply assembly. At the same time, when the first circuit board is sandwiched between the first elastic sheets, a detachable mechanical connection relationship between the atomizer and the power supply assembly can be achieved, so that other connection components and connection structures can be omitted, and the structure of the entire electronic atomization device is simplified.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The above and other objects and features of the present invention will become apparent and more readily appreciated from the following description of the embodiments with reference to the following figures, wherein like reference numerals refer to like parts throughout the various figures unless otherwise specified.

FIG. 1 is a perspective view of an electronic atomization device according to an embodiment.

FIG. 2 is an exploded view of the electronic atomizer device of FIG. 1.

FIG. 3 is a cross-sectional view of the electronic atomizer device of FIG. 1.

FIG. 4 is an exploded view of a first connection unit and a second connection unit of the electronic atomizer device shown in FIG. 1.

FIG. 5 is a perspective cross-sectional view of the first connection unit and the second connection unit shown in FIG. 4 after being assembled.

FIG. 6 is a cross-sectional view of the first connection unit and the second connection unit of FIG. 4 after being assembled.

FIG. 7 is a partial perspective view of the first connection unit shown in FIG. 4, after removing a wrapping member.

FIG. 8 is similar to FIG. 7, but viewed from another aspect.

FIG. 9 is an exploded view of the second connection unit shown in FIG. 4.

FIG. 10 is a partial perspective view of the second connection unit shown in FIG. 4.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0019] In order to facilitate the understanding of the present disclosure, the present disclosure is described more comprehensively below with reference to the relevant accompanying drawings. Preferred embodiments of the present disclosure are shown in the accompanying drawings. However, the present disclosure may be implemented in many different forms and is not limited to the embodiments described herein. On the contrary, the purpose of providing these embodiments is to make the public content of the present disclosure more thoroughly and comprehensively understood.

[0020] It should be noted that when an element is called "fixed to" another element, it can be directly fixed to another element or there may be intermediate elements. When an element is considered to be "connected to" another element, it can be directly connected to another element or there may be intermediate elements at the same time. The terms "inner", "outer", "left", "right" and similar expressions are used herein for illustrative purposes only and do not represent the only embodiment.

[0021] Referring to FIG. 1, FIG. 2 and FIG. 3, an elec-

tronic atomization device 10 according to an embodiment of the present disclosure can atomize an aerosol generating substrate such as e-liquid, so as to form smoke that can be inhaled by a user. The electronic atomization device 10 includes an atomizer 11 and a power supply assembly 12. The atomizer 11 and the power supply assembly 12 are detachably connected. The power supply assembly 12 supplies power to the atomizer 11, the atomizer 11 converts electrical energy into heat energy, and the e-liquid in the atomizer 11 absorbs the heat and is atomized to form smoke for the user to inhale.

[0022] Referring to FIGS. 4, 5 and 7, in some embodiments, the atomizer 11 includes an atomizing core 100 and a first connection unit 200. The first connection unit 200 includes a first circuit board 210, a power supply connection member 220, a communication connection member 230, a wrapping member 240, and a chip 250. Referring to FIG. 7 and FIG. 8, the first circuit board 210 has a first surface 211, a second surface 212, and an end surface 213. The first surface 211 and the second surface 212 are spaced opposite to each other along a thickness direction of the first circuit board 210. One end of the end surface 213 is connected to the first surface 211, and the other end of the end surface 213 is connected to the second surface 212, i.e., the end surface 213 is connected between the first surface 211 and the second surface 212. The first surface 211 and the second surface 212 may be arranged in parallel, and the end surface 213 may be perpendicular to both the first surface 211 and the second surface 212.

[0023] The power supply connection member 220 is provided on the first circuit board 210, and one end of the power supply connection member 220 is electrically connected to the atomizing core 100. The atomizing core 100 can store the e-liquid, and at the same time, the atomizing core 100 can convert the electrical energy provided by the power supply connection member 220 into heat energy, so as to atomize the e-liquid stored in the atomizing core 100 to form smoke for the user to inhale. The power supply connection member 220 is configured to provide electrical energy for the atomizing core 100. Two power supply connection members 220 are provided, one of the power supply connection members 220 may be configured as a positive electrode, and the other power supply connection member 220 may be configured as a negative electrode.

[0024] The power supply connection member 220 may include a power supply post 221 and a power supply sheet 222 electrically connected to each other. The power supply post 221 is of a columnar structure with a greater long diameter, and the power supply sheet 222 is of a sheet structure with a smaller long diameter. For the same power supply connection member 220, the power supply post 221 and the power supply sheet 222 are spaced apart in an axial direction of the electronic atomizing device 10, and the power supply post 221 is arranged closer to the atomizing core 100 than the power supply sheet 222. One end of the power supply post 221

is electrically connected to the first circuit board 210, and the other end of the power supply post 221 is provided on the end surface 213 and electrically connected to the atomizing core 100. Current enters the atomizing core 100 through the power supply sheet 222 and the power supply column 221 in sequence. For the same power supply connection member 220, one power supply post 221 is provided, and two power supply sheets 222 are provided. One of the power supply sheets 222 is provided on the first surface 211 of the first circuit board 210, and the other power supply sheet 222 is provided on the second surface 212 of the first circuit board 210. The two power supply sheets 222 are spaced apart along the thickness direction of the first circuit board 210. The power supply sheet 222 may be attached to the first surface 211 and the second surface 212. Alternatively, the first surface 211 and the second surface 212 may be provided with a groove, so that the power supply sheet 222 is embedded in the groove. A surface of the power supply sheet 222 may be coplanar with the first surface 211 or the second surface 212. The surface of the power supply sheet 222 may also protrude from the first surface 211 or the second surface 212.

[0025] A plurality of communication connection members 230 may be provided, for example, three or four communication connection members 230 are provided. The communication connection member 230 is located between the two power supply connection members 220. The communication connection member 230 is configured to transmit communication information between the atomizer 11 and the power supply assembly 12. Each communication connection member 230 includes two communication sheets 231, and a shape of the communication sheet 231 may be the same as that of the power supply sheet 222, i.e., the communication sheet 231 may be of a sheet structure. For the same communication connection member 230, one of the communication sheets 231 is located on the first surface 211, and the other communication sheet 231 is located on the second surface 212. The two communication sheets 231 are spaced apart along the thickness direction of the first circuit board 210. The communication sheet 231 may be attached to the first surface 211 and the second surface 212. Alternatively, the first surface 211 and the second surface 212 may be provided with a groove, so that the communication sheet 231 is embedded in the groove. The surface of the communication sheet 231 may be coplanar with the first surface 211 or the second surface 212. Alternatively, the surface of the communication sheet 231 may protrude from the first surface 211 or the second surface 212.

[0026] One chip 250 may be provided, and the chip 250 may be provided on the first surface 211 or the second surface 212. A plurality of chips 250 may be provided, and all the chips 250 may be provided on the first surface 211, or all the chips 250 may be provided on the second surface 212, or a part of the chips 250 may be provided on the first surface 211, and another part of the chips 250

may be provided on the second surface 212. The chip 250 is configured to control the power supply connection member 220 and the communication connection member 230 through a first circuit.

[0027] The wrapping member 240 is made of plastic. When the power supply connection member 220, the communication connection member 230, and the chip 250 are all provided on the first circuit board 210 to form an assembly, the assembly can be placed into an injection mold, and molten plastic liquid is injected into the injection mold by an injection molding machine, and the cooled plastic liquid will be formed into the wrapping member 240. When the wrapping member 240 is formed, the first circuit board 210 will be inserted in the wrapping member 240, and only a part of the power supply connection member 220 and the communication connection member 230 are located outside the wrapping member 240, while the chip 250 can be completely located inside the wrapping member 240. By providing the wrapping member 240, harmful substances can be prevented from entering the first circuit board 210 and the chip 250, thereby forming a good protection effect on the first circuit board 210 and the chip 250, and ensuring the conductive stability of the power supply connection member 220 and the information transmission stability of the communication connection member 230.

[0028] During an injection molding process of the wrapping member 240, the molten plastic liquid can be injected into the injection mold by a screw injection machine with a preset pressure and maintain a certain injection speed and time, so that the molten plastic liquid can fill the entire cavity of the injection mold in a short time, and defects such as cracks or holes can be avoided in the molded wrapping member 240. Then, holding pressure is maintained for a certain period of time, which can effectively eliminate the influence caused by a volume reduction of the wrapping member 240, so that the new molten plastic liquid can quickly fill the reduced space of the wrapping member 240, and ensure the molding quality of the wrapping member 240. Of course, the holding pressure can be performed in multiple stages, and different holding pressures are used in different stages, so that a residual internal stress generated in the wrapping member 240 can be effectively released, and a mechanical strength of the wrapping member 240 can be improved. Finally, the molten plastic liquid may be cooled by water cooling or furnace cooling to form a solid wrapping member 240, and then the injection mold is opened to take out the coating member 240. Of course, before injecting the solution plastic liquid, the cavity of the injection mold and the assembly as a whole may be preheated, so as to reduce the temperature difference between the cavity of the injection mold and the molten plastic liquid, avoid the assembly as a whole from warping to different degrees under the action of thermal expansion and cold contraction, and finally ensure a size accuracy of the coating member 240 after molding.

[0029] Referring to FIGS. 5, 6 and 9, in some embod-

iments, the power supply assembly 12 includes a battery 300 and a second connection unit 400 electrically connected to the battery 300. The battery 300 can supply power to the second connection unit 400. Specifically, the second connection unit 400 includes a second circuit board 410, a plurality of clamping members 420, a mounting housing 430, and a second elastic sheet 440. The second circuit board 410 is electrically connected to the battery 300, and the clamping members 420 are electrically connected to the second circuit board 410. The mounting housing 430 has an abutting surface 433, and the mounting housing 430 includes two or more protruding columns 432. One end of the protruding column 432 is fixedly connected to the abutting surface 433, and the other end of the protruding column 432 protrudes from the abutting surface 433 by a certain height. The second circuit board 410 can be provided with a through hole, and the protruding column 432 can extend through the through hole. Meanwhile, a surface of the second circuit board 410 abuts against the abutting surface 433, for example, the surface of the second circuit board 410 is directly attached to the abutting surface 433, so that the second circuit board 410 and the mounting housing 430 can be fixedly connected.

[0030] Referring to FIG. 9 and FIG. 10, the clamping member 420 is provided on the mounting housing 430. Each clamping member 420 includes two first elastic sheets 402 opposite to each other. The mounting housing 430 is provided a mounting groove 431, and each first elastic sheet 402 includes a first protrusion 421 located in the mounting groove 431. The two first protrusions 421 on the same clamping member 420 are spaced apart along a thickness direction of the mounting housing 430. The first protrusions 421 on all the clamping members 420 are arranged to form two rows, and the two rows of first protrusions 421 are also spaced apart along the thickness direction of the mounting housing 430. During the entire connection process of the atomizer 11 and the power supply assembly 12, the first connection unit 200 can be detachably connected to the second connection unit 400. Specifically, the first circuit board 210 is inserted into the mounting groove 431 of the mounting housing 430, and the first elastic sheets 402 of all the clamping members 420 clamp the first circuit board 210 through the first protruding portions 421, so that the first circuit board 210 is detachably sandwiched between the first elastic sheets 402 of all the clamping members 420. At the same time, two first protrusions 421 of two clamping members 420 abut against the power supply sheets 222 of two power supply connection members 220, respectively, and the first protrusions 421 of other clamping members 420 abut against the communication sheets 231 of different communication connection members 230, respectively. For the two first protrusions 421 on the same clamping member 420, one of the first protrusions 421 abuts against the communication sheet 231 on the first surface 211 of the communication connection member 230, and the other first protrusion 421 abuts against

the communication sheet 231 on the second surface 212 of the communication connection member 230, so that the transmission of communication information between the first elastic sheet 402 and the communication connection member 230 can be achieved.

[0031] When the first protrusion 421 of the first elastic sheet 402 abuts against the power supply sheet 222, the battery 300 can provide electrical energy for the atomizing core 100 through the first elastic sheet 402, the power supply sheet 222, and the power supply post 221 in sequence. When the first protrusion 421 of the first elastic sheet 402 abuts against the communication sheet 231, the communication information can be transmitted between the communication sheet 231 and the first elastic sheet 402 abutting against the communication sheet 231. For example, the transmitted communication information may be parameter information such as viscosity of the e-liquid in the atomizing core 100, resistance value of the heating wire of the atomizing core 100, and material of the heating wire. By transmitting the communication information, the battery 300 may output appropriate power. Therefore, the atomization speed and concentration of the e-liquid in the atomizing core 100 can be reasonably adjusted.

[0032] The two first elastic sheets 402 of the same clamping member 420 form a parallel circuit. With the same first elastic sheet as a reference, when the first circuit board 210 is inserted in the mounting groove 431, the first surface 211 of the first circuit board 210 faces the first elastic sheet 402, and at this time, the first circuit board 210 forms a "forward insertion". When the first circuit board 210 is inserted in the mounting groove 431, the second surface 212 of the first circuit board 210 faces the first elastic sheet 402, and the first circuit board 210 forms a "reversed insertion". Since the two first elastic sheets 402 form a parallel circuit, no matter whether the first circuit board 210 is inserted in a "forward insertion" or a "reversed insertion", the transmission of the electrical energy and the communication information between the first connection unit 200 and the second connection unit 400 will not be affected, thereby ensuring the stability of power supply or communication.

[0033] The first elastic sheet 402 further includes an insertion portion 423 located outside the mounting housing 430. The second circuit board 410 may also be provided with a through hole, the insertion portion 423 extends in the through hole, so as to realize an electrical connection between the first elastic sheet 402 and the second circuit board 410. All the insertion portions 423 of all the clamping members 420 are arranged in two rows, the two rows of the insertion portions 423 are spaced apart in a direction perpendicular to the thickness direction of the mounting housing 430. By providing above configuration, the orderly connection between all the first elastic sheet 402 and the second circuit board 410 can be achieved, and the stability of the first elastic sheet 402 in power supply or communication can be ensured.

[0034] The first elastic sheet 402 is further provided with a latching groove 422, and the latching groove 422 is wrapped in the mounting housing 430. When the first elastic sheet 402 is connected to the mounting housing 430, the latching groove 422 can form a cooperation relationship with a structure in the mounting housing 430, and an interference effect formed by the cooperation relationship can effectively prevent the first elastic sheet 402 from being pulled out from the mounting housing 430, thereby improving the mounting stability of the first elastic sheet 402 and further ensuring the stability of the first elastic sheet 402 in power supply or communication.

[0035] Two second elastic sheets 440 are provided, and the two second elastic sheets 440 are both connected to the mounting housing 430. The two second elastic sheets 440 are spaced apart along a width direction of the mounting housing 430, so that all the clamping members 420 are located between the two second elastic sheets 440. The second elastic sheet 440 has a second protrusion 441 located in the mounting groove 431 of the mounting housing 430, and two second protrusions 441 are provided opposite to each other. The first circuit board 210 is provided with recesses 214, two recesses 214 are provided, which are corresponding to the second protrusions 441. When the first circuit board 210 is inserted in the mounting groove, the second protrusion 441 is engaged with the recess 214. Due to the interference effect formed by the cooperation relationship, the stability of the first circuit board 210 can be further improved.

[0036] Therefore, by detachably sandwiching the first circuit board 210 between the two first elastic sheets 402 of each clamping member 420, a detachable connection between the entire atomizer 11 and the power supply assembly 12 can be achieved, and additional magnets for magnetic connection and additional related structures for snap connection are omitted, so that the structure of the entire electronic atomization device 10 can be simplified. At the same time, when the first elastic sheets 402 on part of the clamping members 420 abut against the power supply connection member 220, the battery 300 can supply power to the atomizing core 100 through the first elastic sheet 402 and the power supply connection member 220, so that the atomizing core 100 can atomize the e-liquid. Moreover, when the first elastic sheets 402 on the other part of the clamping members 420 abuts against the communication connection member 230, the transmission of communication information between the entire atomizer 11 and the power supply assembly 12 can be achieved, so that the power supply assembly 12 can adjust the atomization effect of the e-liquid in the atomizing core 100. Therefore, through the connection of the first connection unit 200 and the second connection unit 400, the electrical connection and the communication connection between the atomizer 11 and the power supply assembly 12 can be simultaneously realized on the basis of simple structure, so as to ensure the diversification of the functions of the power supply assembly 12. Furthermore, the second elastic sheet 440

cooperates with the recess 214 to further improve the stability of the mechanical connection between the atomizer 11 and the power assembly 12, thereby improving the stability of the electrical connection and the communication connection.

[0037] The above-mentioned embodiments do not constitute a limitation on the protection scope of the technical solution. Any modifications, equivalent replacements and improvements made within the spirit and principles of the above-mentioned embodiments shall be included within the protection scope of this technical solution.

[0038] The foregoing descriptions are merely specific embodiments of the present invention, but are not intended to limit the protection scope of the present invention. Any variation or replacement readily figured out by a person skilled in the art within the technical scope disclosed in the present invention shall all fall within the protection scope of the present invention.

Claims

1. An electronic atomizing device, comprising:

an atomizer comprising an atomizing core and a first connection unit, wherein the first connection unit comprises a first circuit board, a power supply connection member, and a communication connection member, the power supply connection member and the communication connection member are both provided on the first circuit board, and the power supply connection member is electrically connected to the atomizing core; and

a power supply assembly comprising a battery and a second connection unit, wherein the second connection unit comprises a second circuit board and a plurality of clamping members, the second circuit board is electrically connected to the battery, the plurality of clamping members are electrically connected to the second circuit board, each clamping member comprises two first elastic sheets opposite to each other, the first circuit board is detachably sandwiched between the two first elastic sheets of each clamping member, and the power supply connection member and the communication connection member abut against the first elastic sheets of each clamping member, respectively.

2. The electronic atomization device according to claim 1, wherein the second connection unit further comprises a mounting housing provided with a mounting groove, the first elastic sheet comprises a first protrusion located in the mounting groove, the first circuit board is inserted in the mounting groove, and the power supply connection member and the com-

munication connection member abut against the first protrusions of different clamping members, respectively.

3. The electronic atomization device according to claim 2, wherein the first circuit board has a first surface, a second surface, and an end surface connected between the first surface and the second surface, the first surface and the second surface are spaced apart along a thickness direction of the first circuit board and face opposite directions, the power supply connection member comprises a power supply post and a power supply sheet electrically connected to each other, the power supply post is provided on the end surface and is electrically connected to the atomizing core, the power supply sheet is provided on the first surface and the second surface, one of the first protrusions of each clamping member abuts against the power supply sheet on the first surface, and the other first protrusion of each clamping member abuts against the power supply sheet on the second surface.

4. The electronic atomizer according to claim 2, wherein the first circuit board has a first surface and a second surface which are spaced apart along a thickness direction thereof and face opposite directions, the communication connection member comprises two communication sheets, one of the communication sheets is located on the first surface, and the other communication sheet is located on the second surface, for the two first protrusions on the same clamping member, the communication sheet on the first surface abuts against one of the first protrusions, and the communication sheet on the second surface abuts against the other first protrusion.

5. The electronic atomization device according to claim 2, wherein the second connection unit further comprises two second elastic sheets spaced apart and connected to the mounting housing, the clamping member is located between the two second elastic sheets, the second elastic sheet has a second protrusion located in the mounting groove, the first circuit board is provided with a recess, and the second protrusion is engaged with the recess.

6. The electronic atomization device according to claim 2, wherein the mounting housing has an abutting surface, the mounting housing comprises a protruding column, the protruding column is connected to the abutting surface and protrudes relative to the abutting surface, the protruding column extends through the second circuit board, and the second circuit board abuts against the abutting surface.

7. The electronic atomization device according to claim 1, wherein the two first elastic sheets of the same

clamping member form a parallel circuit.

8. The electronic atomization device according to claim 2, wherein the first elastic sheet is provided with a latching groove wrapped in the mounting housing, and the latching groove cooperates with the mounting housing. 5
9. The electronic atomization device according to claim 2, wherein the first elastic sheet further comprises an insertion portion located outside the mounting housing, the insertion portion extends through the second circuit board, and the insertion portions of all the clamping members are arranged in two rows along a direction perpendicular to a thickness direction of the mounting housing. 10 15
10. The electronic atomization device according to claim 1, wherein the first connection unit further comprises a wrapping member and a chip, the chip is provided on the first circuit board, the first circuit board is inserted into the wrapping member, at least part of the power supply connection member and the communication connection member are located outside the wrapping member, and the chip is located inside the wrapping member. 20 25
11. The electronic atomization device according to claim 1, wherein the communication connection member is located between the power supply connection members. 30

35

40

45

50

55

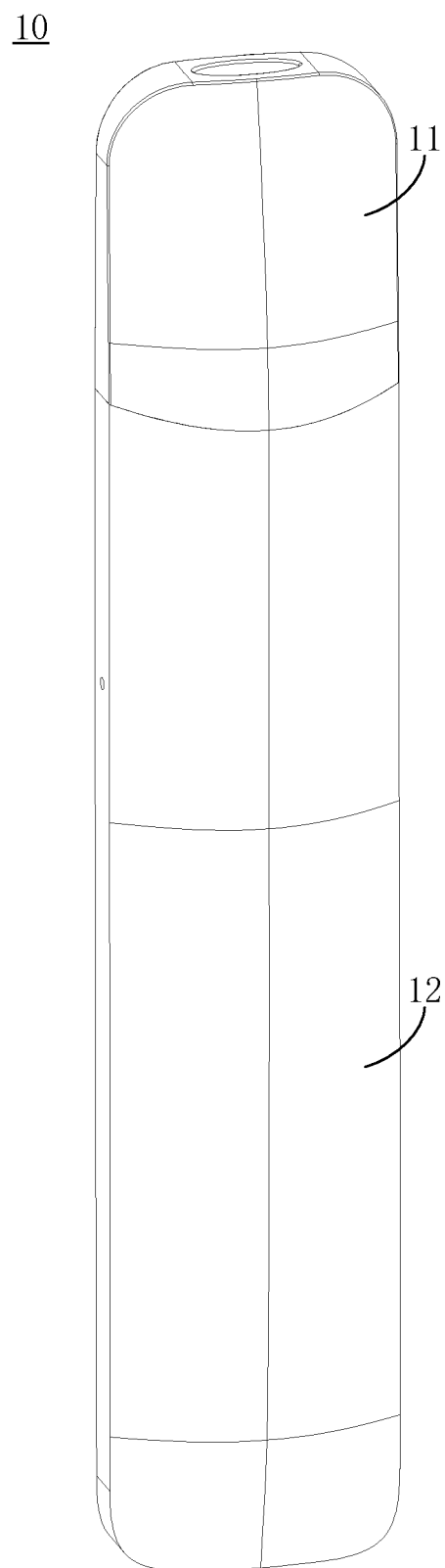


FIG. 1

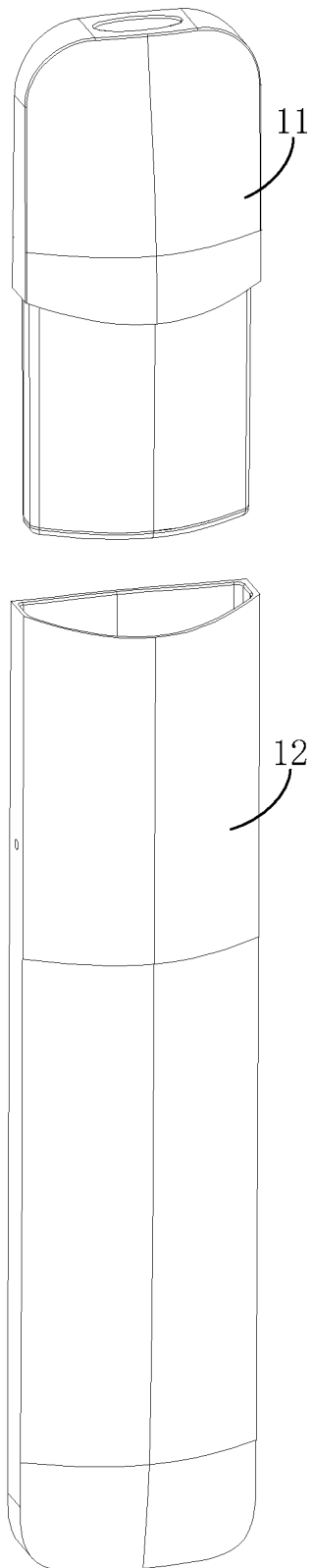


FIG. 2

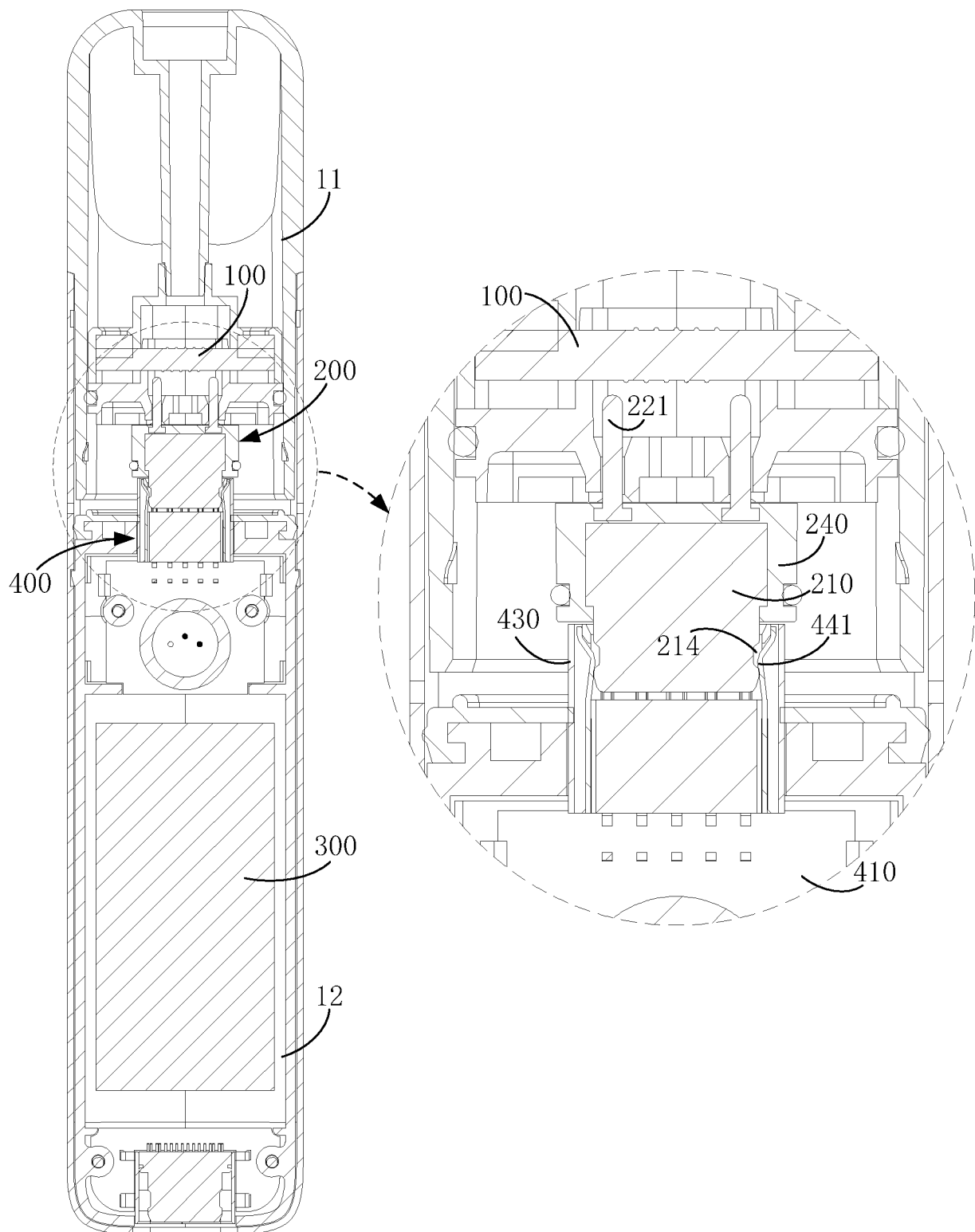


FIG. 3

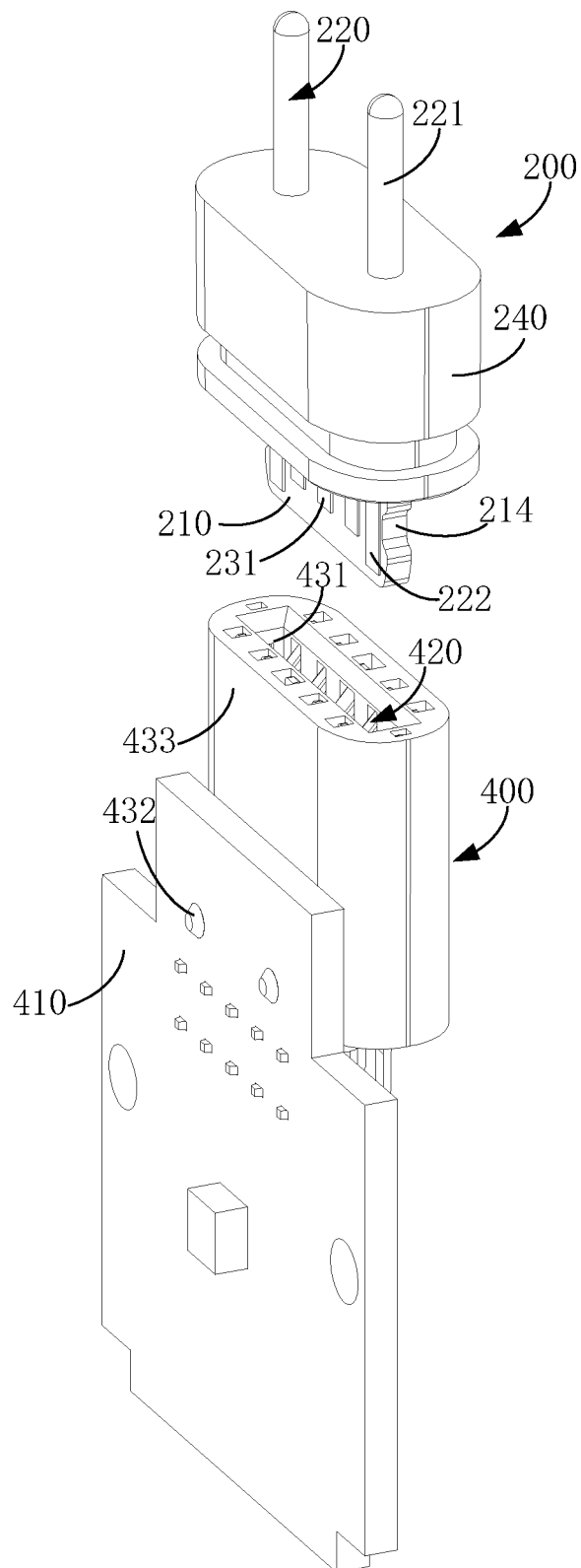


FIG. 4

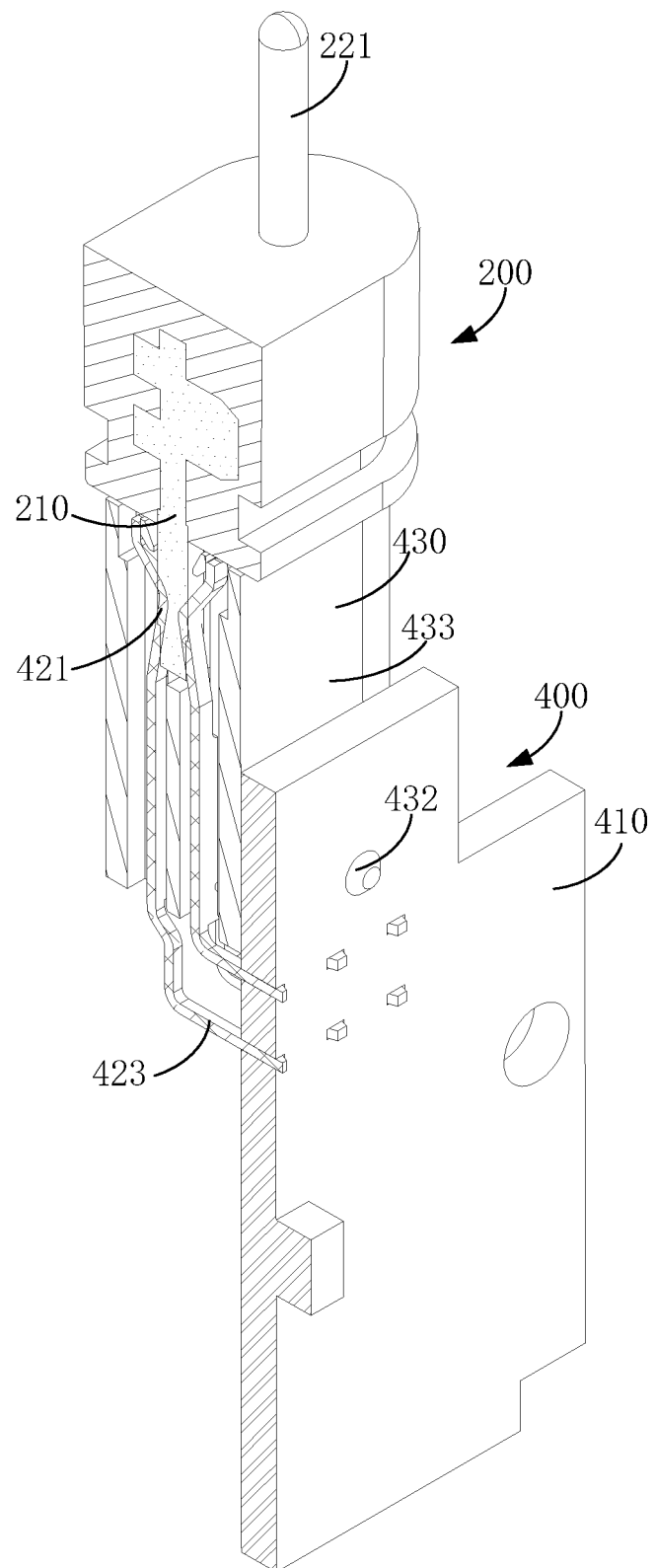


FIG. 5

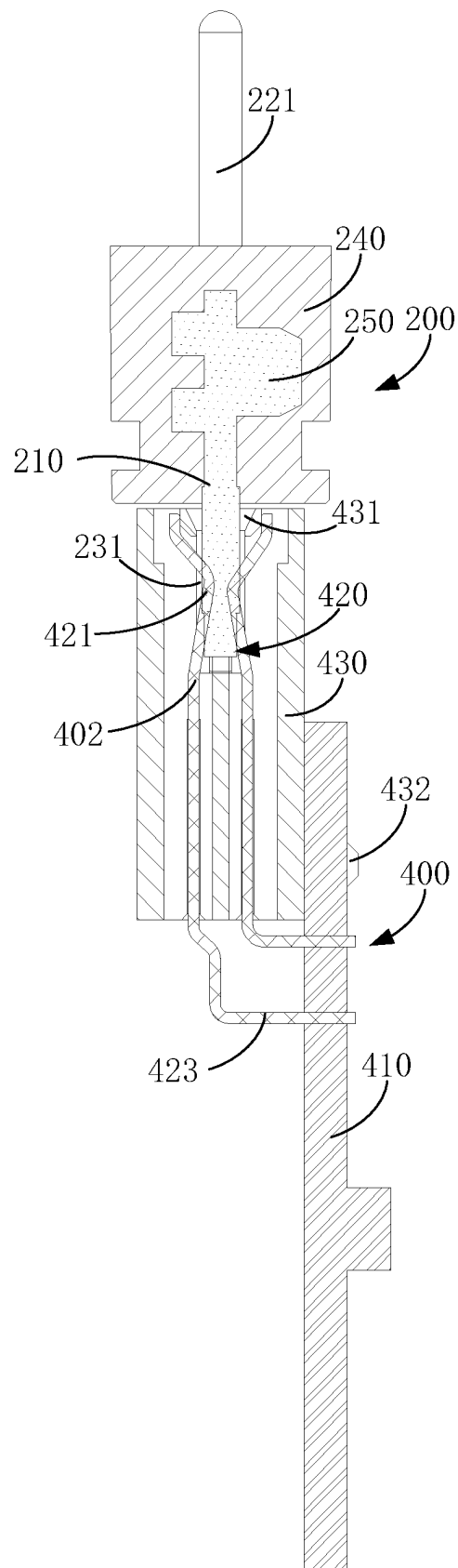


FIG. 6

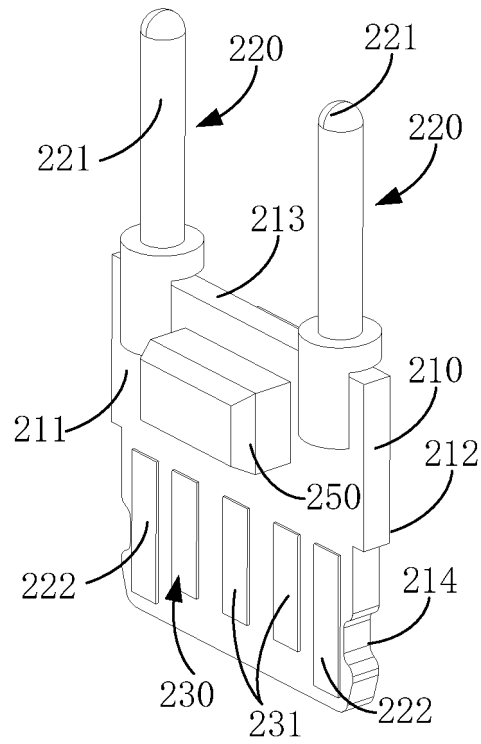


FIG. 7

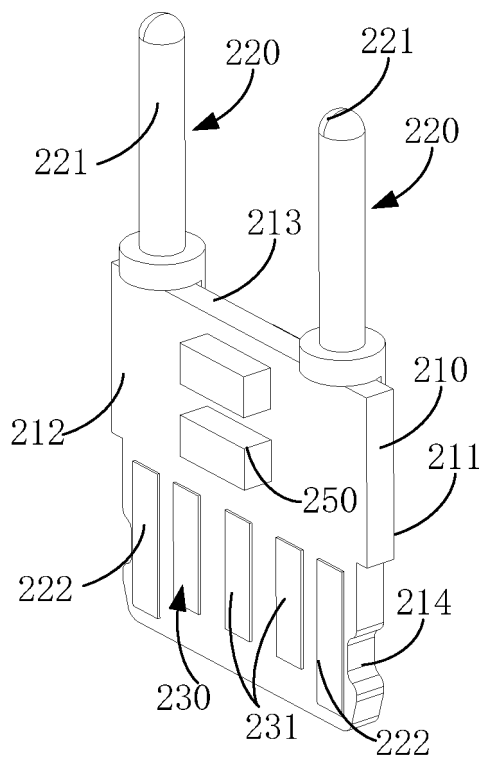


FIG. 8

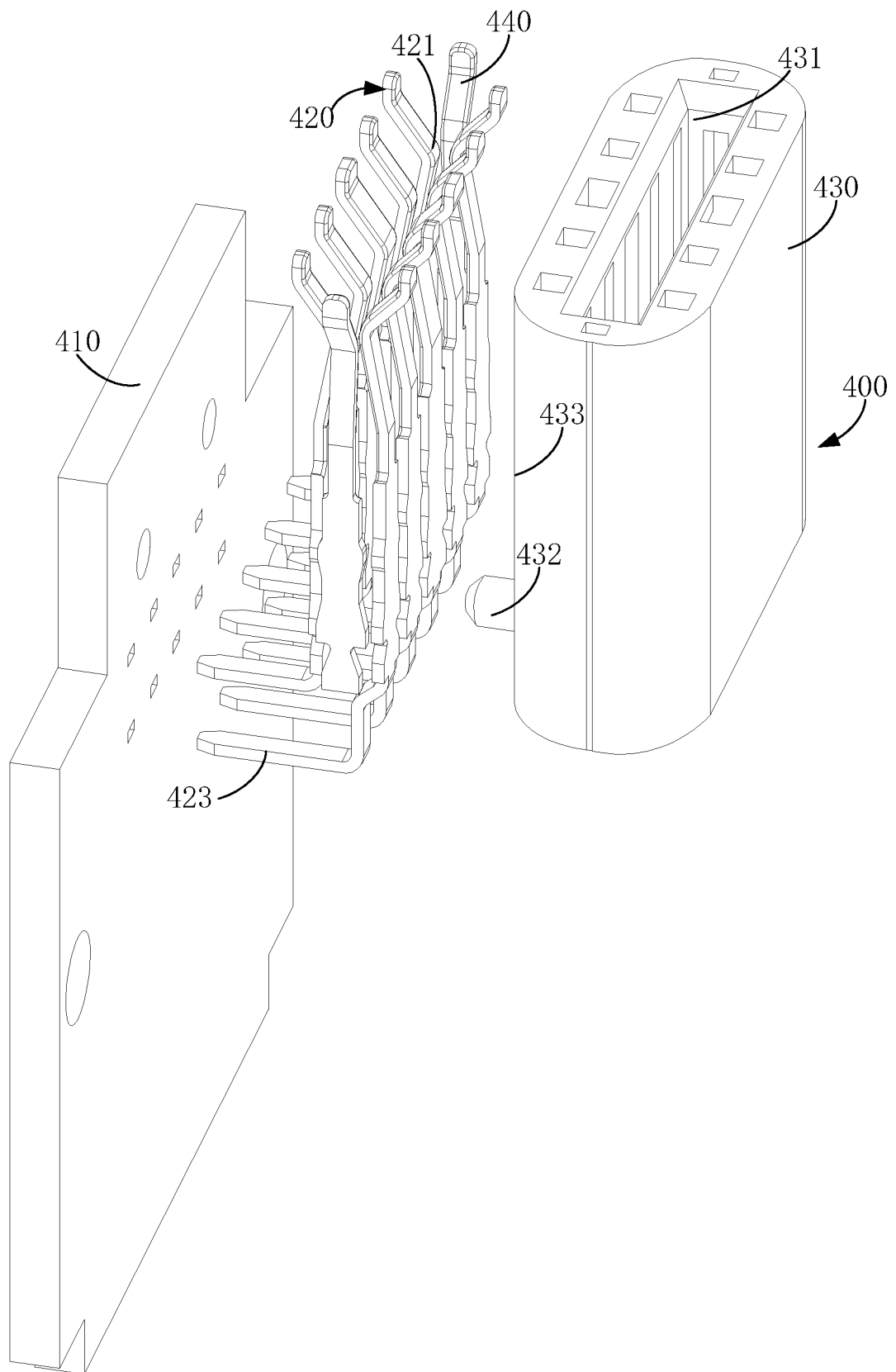


FIG. 9

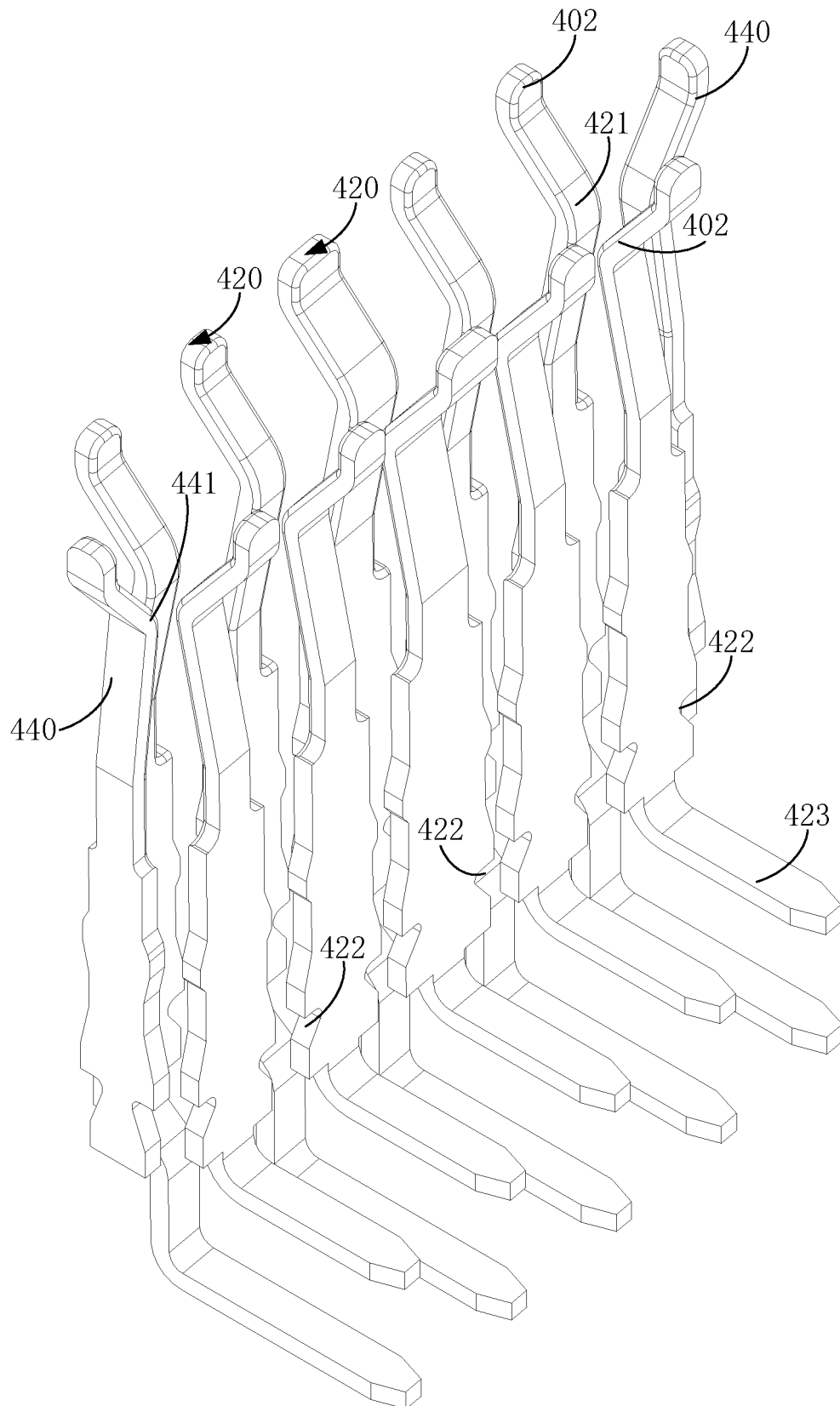


FIG. 10

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/136698

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, A61M, H01R		
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) VEN; CNABS; CNTXT; CNKI; Web of Science: 电子烟, 雾化, 加热, 电连接, 电性连接, 通讯连接, 夹持, 保持, 弹片, cigarette, Vapor, heat, electrical connect, elastic, shrapnel		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 111065286 A (HAUNI MASCHINENBAU GMBH) 24 April 2020 (2020-04-24) see description, paragraphs 25-50	1-11
Y	US 9999258 B2 (NEWCOMB RYAN et al.) 19 June 2018 (2018-06-19) see paragraphs 4-23	1-11
Y	CN 109938411 A (SHENZHEN CHANGNENG HUIKE TECHNOLOGY CO., LTD.) 28 June 2019 (2019-06-28) see description, paragraphs 5-14	1-11
Y	CN 109965359 A (SHENZHEN CHANGNENG HUIKE TECHNOLOGY CO., LTD.) 05 July 2019 (2019-07-05) see description, paragraphs 5-15	1-11
A	WO 2018202727 A1 (PHILIP MORRIS PRODUCTS SA) 08 November 2018 (2018-11-08) entire document	1-11
A	WO 2019048211 A1 (PHILIP MORRIS PRODUCTS SA) 14 March 2019 (2019-03-14) entire document	1-11
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “E” earlier application or patent but published on or after the international filing date “L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) “O” document referring to an oral disclosure, use, exhibition or other means “P” document published prior to the international filing date but later than the priority date claimed “T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention “X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone “Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art “&” document member of the same patent family		
Date of the actual completion of the international search 11 May 2021		Date of mailing of the international search report 18 May 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.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2020/136698

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	111065286	A	24 April 2020	JP	2020534029	A	26 November 2020
				US	2020229499	A1	23 July 2020
				EP	3684204	A1	29 July 2020
				DE	102017121664	A1	21 March 2019
				KR	20200055007	A	20 May 2020
				WO	2019057694	A1	28 March 2019
US	9999258	B2	19 June 2018	US	10314343	B2	11 June 2019
				US	2017360098	A1	21 December 2017
				US	2018295888	A1	18 October 2018
CN	109938411	A	28 June 2019	None			
CN	109965359	A	05 July 2019	None			
WO	2018202727	A1	08 November 2018	TW	201843553	A	16 December 2018
				KR	20190138856	A	16 December 2019
				JP	2020520233	A	09 July 2020
				BR	112019020107	A2	05 May 2020
				AR	112051	A1	18 September 2019
				US	2020084838	A1	12 March 2020
				CN	110545683	A	06 December 2019
				EP	3618649	A1	11 March 2020
				PH	12019502017	A1	01 June 2020
WO	2019048211	A1	14 March 2019	KR	20200052271	A	14 May 2020
				JP	2020532973	A	19 November 2020
				PH	12020500082	A1	09 November 2020
				CN	111031823	A	17 April 2020
				EP	3678501	A1	15 July 2020
				TW	201912044	A	01 April 2019
				IL	272285	D0	31 March 2020
				US	2019110520	A1	18 April 2019
				BR	112020002895	A2	04 August 2020

Form PCT/ISA/210 (patent family annex) (January 2015)

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 2020216704212 [0001]