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(54) **HEAT-NOT-BURN BAKING APPARATUS AND HEATING DEVICE THEREOF**

(57) The present disclosure discloses a heat-not-burn baking device and a heating component thereof. The heating component is configured for inserting into and heating aerosol producing substrate, and includes a conductive substrate that is longitudinal sheet shaped, a first insulating layer, and at least one conductive trace. The conductive substrate includes a first surface, the first insulating layer is disposed on the first surface, and the at least one conductive trace is disposed on the first insulating layer. The at least one conductive trace includes a first end and a second end, the first end is electrically connected with the conductive substrate, and the second end is electrically insulated from the conductive substrate. The disclosure has the beneficial effects that the electrical connection performance is more stable, the falling off is prevented and the contact resistance is reduced by using the conductive substrate as an electrode.

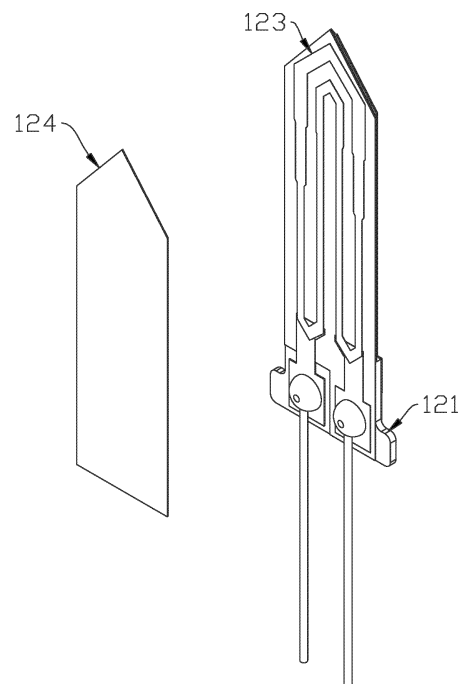


Fig. 5

Description

FIELD

[0001] The present disclosure relates to baking devices, and more specifically, to a heat-not-burn baking device and a heating component thereof.

BACKGROUND

[0002] As a substitute for a cigarette, an e-cigarette has attracted more and more attention and favor because of its advantages of safety, convenience, health and environmental protection. The heat-not-burn e-cigarette works at a relatively low temperature, thus the components of the cigarette are heated and atomized at a lower temperature. The heating method is usually tubular peripheral heating or central embedded heating. The former means that a heating tube surrounds the outside of the cigarette, and the latter means that a heating sheet or a heating rod is inserted into the cigarette. Wherein, the heating sheet is widely used because of its simple manufacture and convenient use. However, the existing heating sheet is easy to cause problems such as poor electrical contact and unstable current when the conductive trace works since the conductive trace is formed on the surface of the insulating ceramic through screen printing or coating.

SUMMARY

[0003] In view of the foregoing defect in the prior art, the present disclosure provides an improved heat-not-burn baking device and a heating component thereof.

[0004] In order to achieve the above object, the present disclosure provides a heating component, which is configured to be inserted into and heating an aerosol producing substrate, and includes a conductive substrate that is longitudinal sheet shaped, a first insulating layer, and at least one conductive trace; wherein, the conductive substrate includes a first surface, the first insulating layer is disposed on the first surface, and the at least one conductive trace is disposed on the first insulating layer; the at least one conductive trace includes a first end and a second end, the first end is electrically connected with the conductive substrate, and the second end is electrically insulated from the conductive substrate.

[0005] In some embodiments, the at least one conductive trace includes a first heating portion, and the first end of the first heating portion is electrically connected with the conductive substrate, and the second end of the first heating portion is electrically isolated from the conductive substrate.

[0006] In some embodiments, the first heating portion is made of one or more of silver, platinum, copper, nickel and palladium.

[0007] In some embodiments, the at least one conductive trace includes a first connecting portion and a second

connecting portion, and the resistance of the first connecting portion and the second connecting portion is less than the resistance of the first heating portion; the first connecting portion is mechanically and electrically combined on the first surface, and is mechanically and electrically connected with the first end of the first heating portion; and the second connecting portion is disposed on the first insulating layer and is mechanically and electrically connected with the second end of the first heating portion.

[0008] In some embodiments, the first connecting portion and the second connecting portion are made of one or more of gold, silver and copper.

[0009] In some embodiments, the at least one conductive trace includes a first lead and a second lead, and the first lead and the second lead are mechanically and electrically connected with the first connecting portion and the second connecting portion, respectively.

[0010] In some embodiments, a notch is provided at a corner of the root of the first insulating layer, and the first connecting portion is mechanically and electrically connected with the conductive substrate through the notch.

[0011] In some embodiments, the heating component includes a first protective layer covered on the outer surface of the first heating portion.

[0012] In some embodiments, the conductive substrate includes a second surface opposite to the first surface, and the heating component includes a second insulating layer disposed on the second surface.

[0013] In some embodiments, the heating component includes a second protective layer formed on a surface of the second insulating layer.

[0014] In some embodiments, the first connecting portion and the second connecting portion are made of the same material as the first heating portion, and are integrally formed with the first heating portion.

[0015] In some embodiments, a through hole is provided near the notch on the first insulating layer, and the first end of the first heating portion is electrically connected with the conductive substrate through the through hole.

[0016] In some embodiments, the at least one conductive trace includes a first connecting portion and a second connecting portion with a smaller resistance formed on the first insulating layer, the first connecting portion is mechanically and electrically connected with the first end, and the second connecting portion is mechanically and electrically connected with the second end of the first heating portion; the at least one conductive trace includes a first lead and a second lead that are respectively mechanically and electrically connected with the first connecting portion and the second connecting portion; the at least one conductive trace further includes a third connecting portion that mechanically and electrically connects the first lead with the conductive substrate.

[0017] In some embodiments, the third connecting portion is mechanically and electrically combined with the lower side edge of the conductive substrate.

[0018] In some embodiments, the at least one conductive trace includes a first connecting portion and a second connecting portion disposed on the first insulating layer, the first connecting portion is mechanically and electrically connected with the first end, and the second connecting portion is mechanically and electrically connected with the second end; two through holes are provided on the first insulating layer, and the first connecting portion is electrically connected with the conductive substrate through one of the two through holes, and the first end of the first heating portion is electrically connected with the conductive substrate through the other one of the two through holes.

[0019] In some embodiments, the at least one conductive trace includes a first connecting portion and a second connecting portion with a resistance smaller than the first heating portion; the first connecting portion is mechanically and electrically connected to the first surface, and is mechanically and electrically connected with the first end; the second connecting portion is formed on the first insulating layer and is mechanically and electrically connected with the second end of the first heating portion; the conductive substrate includes a second surface that is flat and opposite to the first surface; the at least one conductive trace includes a fourth connecting portion mechanically and electrically connected to the second surface; and the at least one conductive trace includes a first lead and a second lead that are respectively mechanically and electrically connected with the fourth connecting portion and the second connecting portion.

[0020] In some embodiments, the at least one conductive trace includes a second heating portion in parallel with the first heating portion.

[0021] In some embodiments, the first heating portion and the second heating portion are U-shaped, the second heating portion is located on the inner side of the first heating portion, and the two ends of the first heating portion are respectively mechanically and electrically connected with the two ends of the second heating portion.

[0022] In some embodiments, the first connecting portion and the conductive substrate are connected in series or parallel between the first lead and the first end of the first heating portion.

[0023] In some embodiments, the first end of the first heating portion is electrically connected with one end of the conductive substrate; and the at least one conductive trace includes a first connecting portion that is electrically connected with the other end of the conductive substrate.

[0024] In some embodiments, the electrical connecting position of the first end of the first heating portion with the conductive substrate and the electrical connecting position of the first connecting portion with the conductive substrate are respectively located at diagonal positions of the length direction of the conductive substrate.

[0025] In some embodiments, the first heating portion includes at least three heating arms that are spaced arranged in parallel and connected in series to be S-shaped and a V-shaped heating part connected to the terminal

end of the heating arms.

[0026] The present disclosure further provides a heat-not-burn baking device, including the heating component of any one of the above.

[0027] In some embodiments, the heat-not-burn baking device further includes a power supply, and the conductive substrate electrically connects the positive electrode of the power supply with the first end.

[0028] The implementation of the present disclosure provides the following beneficial effects: by using the conductive substrate as an electrode, the electrical connection performance is more stable, the falling off is prevented and the contact resistance is reduced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0029]

Fig. 1 is a schematic diagram of a heat-not-burn baking device in a use state in some embodiments of the present disclosure;

Fig. 2 is a schematic diagram of the heat-not-burn baking device shown in Fig. 1 in a separated state from an aerosol producing substrate;

Fig. 3 is a longitudinal cross-sectional structural diagram of the heat-not-burn baking device shown in Fig. 1;

Fig. 4 is a structural schematic diagram of a heating component of the heat-not-burn baking device shown in Fig. 3;

Fig. 5 is a partial exploded structural diagram of the heating component shown in Fig. 4;

Fig. 6 is an exploded structural diagram of the heating component shown in Fig. 4;

Fig. 7 is a structural schematic diagram of a conductive substrate of the heating component shown in Fig. 4 from another perspective;

Fig. 8 is a structural schematic diagram of a first alternative of the heating component shown in Fig. 4;

Fig. 9 is a partial exploded structural diagram of the heating component shown in Fig. 8;

Fig. 10 is an exploded structural diagram of the heating component shown in Fig. 8;

Fig. 11 is a structural schematic diagram of a second alternative of the heating component shown in Fig. 4;

Fig. 12 is a partial exploded structural diagram of the heating component shown in Fig. 11;

Fig. 13 is an exploded structural diagram of the heating component shown in Fig. 11;

Fig. 14 is a structural schematic diagram of a third alternative of the heating component shown in Fig. 4;

Fig. 15 is a partial exploded structural diagram of the heating component shown in Fig. 14;

Fig. 16 is an exploded structural diagram of the heating component shown in Fig. 14;

Fig. 17 is a structural diagram of a fourth alternative of the heating component shown in Fig. 4;

Fig. 18 is a partial exploded structural diagram of the heating component shown in Fig. 17;

Fig. 19 is an exploded structural diagram of the heating component shown in Fig. 17;

Fig. 20 is a structural diagram of a fifth alternative of the heating component shown in Fig. 4;

Fig. 21 is a partial exploded structural diagram of the heating component shown in Fig. 20;

Fig. 22 is an exploded structural diagram of the heating component shown in Fig. 20;

Fig. 23 is a structural diagram of a sixth alternative of the heating component shown in Fig. 4;

Fig. 24 is a partial exploded structural diagram of the heating component shown in Fig. 23; and

Fig. 25 is an exploded structural diagram of the heating component shown in Fig. 23.

DETAILED DESCRIPTION

[0030] In order to more clearly illustrate the present disclosure, the technical solutions in the embodiments of the present disclosure will be described in even greater detail below with reference to the accompanying drawings.

[0031] Fig. 1 and Fig. 2 show a heat-not-burn baking device 1 in some embodiments of the present disclosure. The heat-not-burn baking device 1 is used to heat and bake an aerosol producing substrate 2 detachably inserted therein, so as to release the aerosol extract in the aerosol producing substrate 2 in a non combustion state. As shown in the figures, the aerosol producing substrate 2 may be a cigarette in a cylindrical shape. Accordingly, the top of the heat-not-burn baking device 1 is provided with an insertion hole 10 whose size is adapted to that of the aerosol producing substrate 2. An insertion-hole cover 15 may be provided beside the insertion hole 10

to cover the insertion hole 10 when not in use, so as to prevent foreign matters from entering the insertion hole 10 to hinder the use of the heat-not-burn baking device 1.

[0032] Referring to Fig. 3, in some embodiments, the heat-not-burn baking device 1 may include a shell 11, a heating component 12, a power supply 13, and a circuit board 14 that are disposed in the shell 11. The heating component 12 extends into the insertion hole 10 from the bottom of the insertion hole 10, so that when the aerosol producing substrate 2 is inserted into the insertion hole 10, the heating component 12 may be inserted into the aerosol producing substrate 2 along the longitudinal direction from the bottom of the aerosol producing substrate 2, to be in close contact with the low-temperature baking aerosol producing substrate 2 in the aerosol producing substrate 2. In this way, when the heating component 12 is powered on for heating, the heat can be transferred to the aerosol producing substrate 2, so that the aerosol producing substrate 2 can be heated to generate smoke. The power supply 13 is electrically connected to the heating component 12, and the on/off between the two may be controlled by a switch. The circuit board 14 is configured for arranging the relevant control circuits.

[0033] As shown in Figs. 4 to 6, the heating component 12 in some embodiments may include a conductive substrate 121, and a first insulating layer 122, a conductive trace 123, a first protective layer 124, a second insulating layer 125 and a second protective layer 126 that are combined with the conductive substrate 121. In some embodiments, the conductive trace 123 may include a first end and a second end configured for electrically connecting the positive electrode and the negative electrode of the power supply 13, respectively. Wherein, the first end is electrically connected to the conductive substrate 121, and the second end is electrically insulated from the conductive substrate 121, so that the current can enter the conductive trace 123 from the first end through the conductive substrate 121, and then flow out of the conductive trace 123 from the second end.

[0034] In some embodiments, the conductive substrate 121 may be made of conductive material such as metal such as stainless steel, or conductive ceramics, with a thickness of 0.4 mm to 0.7 mm. As shown in Fig. 7, in some embodiments, the conductive substrate 121 may be in a longitudinal sheet shape, and may include a flat first surface 1211 and a flat second surface 1212 opposite to the first surface 1211. In some embodiments, the conductive substrate 121 may include a fixing portion 1213 for fixing to the shell 11 and an insertion portion 1214 connected to the fixing portion 1213. The insertion portion 1214 is configured for inserting into the aerosol producing substrate 2, and may include a V-shaped tip 1215 to facilitate the insertion into the aerosol producing substrate 2. Two opposite side edges of the insertion portion 1214 and two adjacent edges of the tip 1215 may be sharpened to further facilitate the insertion into the aerosol producing substrate 2.

[0035] In some embodiments, the first insulating layer 122 may be made of one or more materials of glass, ceramics and polyimide, and is disposed on the first surface 1211 of the conductive substrate 121, and may be provided with a notch 1220 at a corner of its root, so that the conductive substrate 121 is exposed outside the first insulating layer 122 at the notch 1220.

[0036] In some embodiments, the conductive trace 123 may include a first heating portion 1231 and a second heating portion 1232 with large resistance temperature characteristics. The first heating portion 1231 and the second heating portion 1232 may be formed on a surface of the first insulating layer 122 by screen printing or electroplating to be electrically insulated from the conductive substrate 121. The first heating portion 1231 and the second heating portion 1232 may be U-shaped in some embodiments, and the second heating portion 1232 is located inside the first heating portion 1231. The first end and the second end of the first heating portion 1231 are respectively connected to the first end and the second end of the second heating portion 1232, so that the first heating portion 1231 and the second heating portion 1232 are connected in parallel. In some embodiments, the first heating portion 1231 and the second heating portion 1232 may be made of one or more materials of silver, platinum, copper, nickel and palladium. In some embodiments, the first heating portion 1231 or the second heating portion 1232 may be used for temperature measurement to better monitor the heating temperature.

[0037] In some embodiments, the first heating portion 1231 may include two lengthwise heating arms that are arranged in parallel and spaced apart along the length direction of the conductive substrate 121 and a V-shaped heating part connecting the two heating arms in series at the top. The roots of the two lengthwise heating arms form the first end and the second end of the first heating portion 1231, respectively. Each heating arm may include a first heating section, a second heating section and a third heating section that are sequentially connected in series in the longitudinal direction (from the fixing portion 1213 to the insertion portion 1214). The widths of the first heating section, the second heating section and the third heating section increases in sequence, so that the resistances of the first heating section, the second heating section and the third heating section decreases in sequence, so as to heat and bake the aerosol producing substrate 2 more evenly. It may be understood that the heating arm is not limited to the three-section resistance decreasing structure, and may alternatively be two or more sections. Since the first heating portion 1231 adopts a gradient resistance layout, the heating component 12 has a better energy utilization, a better temperature field, and has advantages of a large smoke volume and a better suction taste and the like.

[0038] The cold air enters the cigarette from the bottom to the top, and the lower portions of the heating component 12 and the aerosol producing substrate 2 generally contacts the cold air first, thus having large temperature

difference and high heat exchange efficiency. The upper portions of the heating component 12 and the aerosol producing substrate 2 generally contacts with the high-temperature air heated by the lower portions, thus having small temperature difference and low heat transfer efficiency. If the heating powers of the upper portion and the lower portion of the heating component 12 are equal, the temperatures of the upper portions of the heating component 12 and the aerosol producing substrate 2 will always be higher than the temperatures of the lower portions of the heating component 12 and the aerosol producing substrate 2, which is likely to lead to excessive baking of some cut tobacco and insufficient baking of another some cut tobacco. By implementing the heating component 12 in some embodiments of the present disclosure, the above problem can be better solved, so that the temperatures in the aerosol producing substrate 2 may be more balanced during use.

[0039] In some embodiments, the conductive trace 123 may include a first connecting portion 1233 and a second connecting portion 1234 with a lower resistance than the first heating portion 1231 and the second heating portion 1232. The first connecting portion 1233 and the second connecting portion 1234 may be made of one or more of gold, silver and copper in some embodiments. In some embodiments, the first connecting portion 1233 may be formed on the conductive substrate 121 and exposed at the notch 1220, and connected with the first ends of the first heating portion 1231 and the second heating portion 1232, so as to electrically connect the first ends of the first heating portion 1231 and the second heating portion 1232 with the conductive substrate 121. The second connecting portion 1234 is formed on the first insulating layer 122 and connected with the second ends of the first heating portion 1231 and the second heating portion 1232. In this way, the current may be transmitted to the first ends of the first heating portion 1231 and the second heating portion 1232 through two parallel paths of the conductive substrate 121 and the first connecting portion 1233.

[0040] In some embodiments, the conductive trace 123 may include a first lead 1235 and a second lead 1236, which may be welded to the first connecting portion 1233 and the second connecting portion 1234, respectively. The first connecting portion 1233 is preferably electrically connected to the positive electrode of the power supply 13 via the first lead 1235, thereby electrically connecting the conductive substrate 121 to the positive electrode of the power supply.

[0041] In some embodiments, by utilizing the conductive substrate 121 electrically connected to one electrode of the power supply (preferably to the positive electrode of the power supply) provides the following beneficial effects: (1) the conductive substrate 121 has a high thermal conductivity and a more uniform temperature, and the overall atomization effect may be guaranteed when the temperature of the first heating portion 1231 is relatively low; (2) the electrical connection performance is more

stable, to prevent falling off and reduce the contact resistance.

[0042] The first protective layer 124 covers the outer surfaces of the first heating portion 1231 and the second heating portion 1232 to prevent the first heating portion 1231 and the second heating portion 1232 from directly contacting the aerosol producing substrate 2 during use, thereby preventing the first heating portion 1231 and the second heating portion 1232 from being corroded by the aerosol producing substrate 2. The first protective layer 124 may be made of glass or ceramic material in some embodiments.

[0043] In some embodiments, the second insulating layer 125 may be formed on the second surface 1212 of the conductive substrate 121 to improve the insulation performance of the side of the conductive substrate 121 where the second surface 1212 is located. The second protective layer 126 is formed on a surface of the second insulating layer 125 to prevent the corrosion of the second insulating layer 125 by the aerosol producing substrate 2 during use, or to prevent harmful substances in the second insulating layer 125 from entering the aerosol producing substrate 2. It can be understood that in some embodiments, if the conductive substrate 121 is made of a food grade harmless and corrosion-resistant material, the second insulating layer 125 and/or the second protective layer 126 may be omitted.

[0044] It may be understood that in some embodiments, the heating component 12 may include two conductive traces 123, which are respectively disposed on the first surface 1211 and the second surface 1212 of the conductive substrate 121, so that the two sides of the conductive substrate 121 may be heated at the same time, thereby further improving the heating efficiency.

[0045] Figs. 8 to 10 show a heating component 12a in some embodiments of the present disclosure, and the heating component 12a may be used as an alternative to the above-mentioned heating component 12. In some embodiments, the heating component 12a may include a conductive substrate 121a, and a first insulating layer 122a, a conductive trace 123a, a first protective layer 124a, a second insulating layer 125a and a second protective layer 126a that are combined with the conductive substrate 121a. In some embodiments, the conductive trace 123a may include a first end and a second end configured for electrically connecting the positive and negative electrodes of the power supply 13, respectively. Wherein, the first end is electrically connected to the conductive substrate 121a, and the second end is electrically insulated from the conductive substrate 121a, so that the current may flow to the conductive trace 123a from the first end via the conductive substrate 121a, and then flow out of the conductive trace 123a from the second end.

[0046] In some embodiments, the conductive substrate 121a may be in an elongated sheet shape, which may include a flat first surface 1211a and a flat second surface 1212a opposite to the first surface 1211a. The first insulating layer 122a is formed on the first surface

1211a of the conductive substrate 121a, and may be provided with a notch 1220a at a corner of its root, so that the conductive substrate 121a is exposed out of the first insulating layer 122a there.

[0047] In some embodiments, the conductive trace 123a may include a first heating portion 1231a and a second heating portion 1232a with high resistance. The first heating portion 1231a and the second heating portion 1232a may be formed on a surface of the first insulating layer 122a by screen printing or electroplating to be electrically insulated from the conductive substrate 121a. The first heating portion 1231a and the second heating portion 1232a may be U-shaped in some embodiments, and the second heating portion 1232a is located on the inner side of the first heating portion 1231a. The first end and the second end of the first heating portion 1231a are respectively connected with the first end and the second end of the second heating portion 1232a, so that the first heating portion 1231a and the second heating portion 1232a are connected in parallel. In some embodiments, the first heating portion 1231a and the second heating portion 1232a may be made of one or more materials of silver, platinum, copper, nickel and palladium.

[0048] In some embodiments, the conductive trace 123a may include a first connecting portion 1233a and a second connecting portion 1234a having a smaller resistance than the first heating portion 1231a and the second heating portion 1232a. In some embodiments, the first connecting portion 1233a and the second connecting portion 1234a may be made of the same material as the first heating portion 1231a and the second heating portion 1232a, and may be integrally formed with the first heating portion 1231a and the second heating portion 1232a. In some embodiments, the first connecting portion 1233a may be formed on the conductive substrate 121a and exposed at the notch 1220a, and connected with the first ends of the first heating portion 1231a and the second heating portion 1232a, so as to electrically connect the first ends of the first heating portion 1231a and the second heating portion 1232a with the conductive substrate 121a. The second connecting portion 1234a is formed on the first insulating layer 122a and connected with the second ends of the first heating portion 1231a and the second heating portion 1232a. Thereby, the current can be transmitted to the first ends of the first heating portion 1231a and the second heating portion 1232a through two parallel paths of the conductive substrate 121a and the first connecting portion 1233a.

[0049] In some embodiments, the conductive trace 123a may include a first lead 1235a and a second lead 1236a, which may be welded to the first connecting portion 1233a and the second connecting portion 1234a, respectively. Preferably, the first lead 1235a is electrically connected to the positive electrode of the power supply.

[0050] The first protective layer 124a covers the outer surfaces of the first heating portion 1231a and the second heating portion 1232a to prevent the first heating portion

1231a and the second heating portion 1232a from directly contacting the aerosol producing substrate 2 during use, thereby preventing the first heating portion 1231a and the second heating portion 1232a from being corroded by the aerosol producing substrate 2. The first protective layer 124a may be made of glass or ceramic material in some embodiments.

[0051] In some embodiments, the second insulating layer 125a may be formed on the second surface 1212a of the conductive substrate 121a to improve the insulation performance of the side of the conductive substrate 121a where the second surface 1212a is located. The second protective layer 126a is formed on the surface of the second insulating layer 125a to prevent the corrosion of the second insulating layer 125a by the aerosol producing substrate 2 during use, or to prevent harmful substances in the second insulating layer 125a from entering the aerosol producing substrate 2.

[0052] Figs. 11 to 13 show a heating component 12b in some embodiments of the present disclosure, and the heating component 12b may be used as an alternative to the above-mentioned heating component 12. In some embodiments, the heating component 12b may include a conductive substrate 121b, and a first insulating layer 122b, a conductive trace 123b, a first protective layer 124b, a second insulating layer 125b, and a second protective layer 126b that are combined with the conductive substrate 121b. In some embodiments, the conductive trace 123b may include a first end and a second end configured for electrically connecting the positive and negative electrodes of the power supply 13, respectively. Wherein, the first end is electrically connected to the conductive substrate 121b, and the second end is electrically insulated from the conductive substrate 121b, so that the current may flow to the conductive trace 123b from the first end through the conductive substrate 121b, and then flow out of the conductive trace 123b from the second end.

[0053] In some embodiments, the conductive substrate 121b may be in an elongated sheet shape, which may include a flat first surface 1211b and a flat second surface 1212b opposite to the first surface 1211b. The first insulating layer 122b is formed on the first surface 1211b of the conductive substrate 121b, and may be provided with a notch 1220b at a corner of its root, so that the conductive substrate 121b is exposed outside the first insulating layer 122b there. A through hole 1221b is further provided on the first insulating layer 122b adjacent to the notch 1220b, where the conductive substrate 121b is also exposed outside the first insulating layer 122b.

[0054] The conductive trace 123b may include a first heating portion 1231b and a second heating portion 1232b with large resistance in some embodiments. The first heating portion 1231b and the second heating portion 1232b may be formed on the surface of the first insulating layer 122b by silk screen printing or electroplating to be electrically insulated from the conductive substrate 121b. In some embodiments, the first heating por-

tion 1231b and the second heating portion 1232b may be U-shaped, and the second heating portion 1232b is located on the inner side of the first heating portion 1231b. The first end and the second end of the first heating portion 1231b are respectively connected with the first end and the second end of the second heating portion 1232b, so that the first heating portion 1231b and the second heating portion 1232b are connected in parallel. The first heating portion 1231b and the second heating portion 1232b may be made of one or more of silver, platinum, copper, nickel and palladium in some embodiments. The connection between the first end of the first heating portion 1231b and the first end of the second heating portion 1232b further corresponds to the through hole 1221b of the first insulating layer 122b, so that the connection between the first end of the first heating portion 1231b and the first end of the second heating portion 1232b is combined with the conductive substrate 121b. In this way, the current can be transmitted to the first ends of the first heating portion 1231b and the second heating portion 1232b through two parallel paths of the conductive substrate 121b and the first connecting portion 1233b.

[0055] In some embodiments, the conductive trace 123b may include a first connecting portion 1233b and a second connecting portion 1234b with a smaller resistance than the first heating portion 1231b and the second heating portion 1232b. In some embodiments, the first connecting portion 1233b and the second connecting portion 1234b may be made of one or more of gold, silver and copper. In some embodiments, the first connecting portion 1233b may be formed on the conductive substrate 121b and exposed at the notch 1220b, so as to be electrically connected with the conductive substrate 121b, and then electrically connected with the first ends of the first heating portion 1231b and the second heating portion 1232b via the conductive substrate 121b. The second connecting portion 1234b is formed on the first insulating layer 122b and connected with the second ends of the first heating portion 1231b and the second heating portion 1232b.

[0056] The conductive trace 123b may include a first lead 1235b and a second lead 1236b in some embodiments. The first lead 1235b and the second lead 1236b may be welded to the first connecting portion 1233b and the second connecting portion 1234b, respectively.

[0057] The first protective layer 124b is covered on the outer surfaces of the first heating portion 1231b and the second heating portion 1232b to prevent the first heating portion 1231b and the second heating portion 1232b from directly contacting the aerosol producing substrate 2 during use, so as to prevent the first heating portion 1231b and the second heating portion 1232b from being corroded by the aerosol producing substrate 2. The first protective layer 124b may be made of glass or ceramic material in some embodiments.

[0058] The second insulating layer 125b may be formed on the second surface 1212b of the conductive substrate 121b in some embodiments to improve the in-

sulation performance of the side of the conductive substrate 121b where the second surface 1212b is located. The second protective layer 126b is formed on the surface of the second insulating layer 125b to prevent the corrosion of the second insulating layer 125b by the aerosol producing substrate 2 during use, or to prevent harmful substances in the second insulating layer 125b from entering the aerosol producing substrate 2.

[0059] Figs. 14 to 16 show a heating component 12c in some embodiments of the disclosure, and the heating component 12c may be used as a substitute for the above heating component 12. The heating component 12c in some embodiments may include a conductive substrate 121c, a first insulating layer 122c, a conductive trace 123c, a first protective layer 124c, a second insulating layer 125c and a second protective layer 126c that are combined with the conductive substrate 121c. In some embodiments, the conductive trace 123c may include a first end and a second end configured for electrically connecting with the positive and negative electrodes of the power supply 13, respectively. The first end is electrically connected with the conductive substrate 121c, and the second end is electrically isolated from the conductive substrate 121c, so that the current can flow to the conductive trace 123c from the first end via the conductive substrate 121c, and then flow out of the conductive trace 123c from the second end.

[0060] The conductive substrate 121c may be in a longitudinal sheet shape in some embodiments, and may include a flat first surface 1211c and a flat second surface 1212c opposite to the first surface 1211c. The first insulating layer 122c is formed on the first surface 1211c of the conductive substrate 121c.

[0061] The conductive trace 123c may include a first heating portion 1231c and a second heating portion 1232c with high resistance in some embodiments. The first heating portion 1231c and the second heating portion 1232c may be formed on the surface of the first insulating layer 122c by silk screen printing or electroplating to be electrically insulated from the conductive substrate 121c. In some embodiments, the first heating portion 1231c and the second heating portion 1232c may be U-shaped, and the second heating portion 1232c is located on the inner side of the first heating portion 1231c. The first end and the second end of the first heating portion 1231c are respectively connected with the first end and the second end of the second heating portion 1232c, so that the first heating portion 1231c and the second heating portion 1232c are connected in parallel. The first heating portion 1231c and the second heating portion 1232c may be made of one or more of silver, platinum, copper, nickel and palladium in some embodiments.

[0062] In some embodiments, the conductive trace 123c may include a first connecting portion 1233c and a second connecting portion 1234c with a smaller resistance than the first heating portion 1231c and the second heating portion 1232c. In some embodiments, the first connecting portion 1233c and the second connecting

portion 1234c may be made of one or more of gold, silver and copper. The first connecting portion 1233c and the second connecting portion 1234c are formed on the first insulating layer 122c, and the first connecting portion 1233 is connected with the first ends of the first heating portion 1231c and the second heating portion 1232c, and the second connecting portion 1234c is connected with the second ends of the first heating portion 1231c and the second heating portion 1232c. In this way, the current can be transmitted to the first ends of the first heating portion 1231c and the second heating portion 1232c through two parallel paths of the conductive substrate 121c and the first connecting portion 1233c.

[0063] In some embodiments, the conductive trace 123c may include a first lead 1235c and a second lead 1236c, and the first lead 1235c and the second lead 1236c may be respectively welded to the first connecting portion 1233c and the second connecting portion 1234c. In some embodiments, the conductive trace 123c may include a third connecting portion 1237c, which mechanically and electrically connects the first lead 1235c with the conductive substrate 121c. In some embodiments, the third connecting portion 1237c is combined with the lower side edge of the conductive substrate 121c.

[0064] The first protective layer 124c is covered on the outer surfaces of the first heating portion 1231c and the second heating portion 1232c to prevent the first heating portion 1231c and the second heating portion 1232c from directly contacting the aerosol producing substrate 2 during use, so as to avoid the first heating portion 1231c and the second heating portion 1232c from being corroded by the aerosol producing substrate 2. In some embodiments, the first protective layer 124c may be made of glass or ceramic material.

[0065] The second insulating layer 125c may be formed on the second surface 1212c of the conductive substrate 121c in some embodiments to improve the insulation performance of the side of the conductive substrate 121c where the second surface 1212c is located. The second protective layer 126c is formed on the surface of the second insulating layer 125c to prevent the corrosion of the second insulating layer 125c by the aerosol producing substrate 2 during use, or to prevent harmful substances in the second insulating layer 125c from entering the aerosol producing substrate 2.

[0066] Figs. 17 to 19 show a heating component 12d in some embodiments of the disclosure, and the heating component 12d can be used as a substitute for the above heating component 12. In some embodiments, the heating component 12d may include a conductive substrate 121d, a first insulating layer 122d, a conductive trace 123d, a first protective layer 124d, a second insulating layer 125d and a second protective layer 126d that are combined with the conductive substrate 121d. In some embodiments, the conductive trace 123d may include a first end and a second end configured for electrically connecting with the positive and negative electrodes of the power supply 13, respectively. The first end is electrically

connected with the conductive substrate 121d, and the second end is electrically isolated from the conductive substrate 121d, so that the current can flow into the conductive trace 123 from the first end via the conductive substrate 121d, and then flow out of the conductive trace 123d from the second end.

[0067] In some embodiments, the conductive substrate 121d may be in a longitudinal sheet shape, and may include a flat first surface 1211d and a flat second surface 1212d opposite to the first surface 1211d. The first insulating layer 122d is formed on the first surface 1211d of the conductive substrate 121d, and is provided with two through holes 1221d thereon. The conductive substrate 121d is exposed outside the first insulating layer 122d at the corresponding positions of the two through holes 1221d.

[0068] The conductive trace 123d in some embodiments may include a first heating portion 1231d and a second heating portion 1232d with large resistance. The first heating portion 1231d and the second heating portion 1232d may be formed on the surface of the first insulating layer 122d by silk screen printing or electroplating to be electrically insulated from the conductive substrate 121d. The first heating portion 1231d and the second heating portion 1232d may be U-shaped in some embodiments, and the second heating portion 1232d is located on the inner side of the first heating portion 1231d. The first end and the second end of the first heating portion 1231d are respectively connected with the first end and the second end of the second heating portion 1232d, so that the first heating portion 1231d and the second heating portion 1232d are connected in parallel. The connecting position connecting the first end of the first heating portion 1231d and the first end of the second heating portion 1232d corresponds to one of the two through holes 1221d, and is electrically connected with the conductive substrate 121d. The first heating portion 1231d and the second heating portion 1232d may be made of one or more of silver, platinum, copper, nickel and palladium in some embodiments.

[0069] In some embodiments, the conductive trace 123d may include a first connecting portion 1233d and a second connecting portion 1234d with a smaller resistance than the first heating portion 1231d and the second heating portion 1232d. The first connecting portion 1233d and the second connecting portion 1234d may be made of one or more of gold, silver and copper in some embodiments. The first connecting portion 1233d and the second connecting portion 1234d are both formed on the first insulating layer 122d, and the first connecting portion 1233 is connected with the first ends of the first heating portion 1231d and the second heating portion 1232d, and the second connecting portion 1234d is connected with the second ends of the first heating portion 1231d and the second heating portion 1232d. In addition, the first connecting portion 1233 further corresponds to the other one of the two through holes 1221d, thereby to be electrically connected with the conductive substrate 121d, so

that the current can be directly transmitted to the first ends of the first heating portion 1231d and the second heating portion 1232d through the first connecting portion 1233, and can also be transmitted to the first ends of the first heating portion 1231d and the second heating portion 1232d through the conductive substrate 121d, so that the stability of the electrical connection is improved. In this way, the current can be transmitted to the first ends of the first heating portion 1231d and the second heating portion 1232d through two parallel paths of the conductive substrate 121d and the first connecting portion 1233d.

[0070] The conductive trace 123d may include a first lead 1235d and a second lead 1236d in some embodiments, and the first lead 1235d and the second lead 1236d may be welded to the first connecting portion 1233d and the second connecting portion 1234d, respectively.

[0071] The first protective layer 124d is covered on the outer surfaces of the first heating portion 1231d and the second heating portion 1232d to prevent the first heating portion 1231d and the second heating portion 1232d from directly contacting the aerosol producing substrate 2 during use, so as to avoid the first heating portion 1231d and the second heating portion 1232d from being corroded by the aerosol producing substrate 2. The first protective layer 124d may be made of glass or ceramic material in some embodiments.

[0072] The second insulating layer 125d may be formed on the second surface 1212d of the conductive substrate 121d in some embodiments to improve the insulation performance of the side of the conductive substrate 121d where the second surface 1212d is located. The second protective layer 126d is formed on the surface of the second insulating layer 125d to prevent the corrosion of the second insulating layer 125d by the aerosol producing substrate 2 during use, or to prevent harmful substances in the second insulating layer 125d from entering the aerosol producing substrate 2.

[0073] Fig. 20 to 22 show a heating component 12e in some embodiments of the disclosure, and the heating component 12e can be used as a substitute for the above heating component 12. In some embodiments, the heating component 12e may include a conductive substrate 121e, a first insulating layer 122e, a conductive trace 123e, a first protective layer 124e, a second insulating layer 125e and a second protective layer 126e that are combined with the conductive substrate 121e. In some embodiments, the conductive trace 123e may include a first end and a second end configured for electrically connecting the positive and negative electrodes of the power supply 13, respectively. The first end is electrically connected to the conductive substrate 121e, and the second end is electrically insulated from the conductive substrate 121e, so that the current can enter the conductive trace 123e from the first end via the conductive substrate 121e, and then flow out of the conductive trace 123e from the second end.

[0074] In some embodiments, the conductive substrate 121e may be in a longitudinal sheet shape, and may include a flat first surface 1211e and a flat second surface 1212e opposite to the first surface 1211e. The first insulating layer 122e is formed on the first surface 1211e of the conductive substrate 121e, and a notch 1220e may be provided at a corner of its root, so that the conductive substrate 121e is exposed outside the first insulating layer 122e there.

[0075] The conductive trace 123e may include a first heating portion 1231e and a second heating portion 1232e with high resistance in some embodiments. The first heating portion 1231e and the second heating portion 1232e may be formed on the surface of the first insulating layer 122e by silk screen printing or electroplating to be electrically insulated from the conductive substrate 121e. The first heating portion 1231e and the second heating portion 1232e may be U-shaped in some embodiments, and the second heating portion 1232e is located on the inner side of the first heating portion 1231e. The first end and the second end of the first heating portion 1231e are respectively connected with the first end and the second end of the second heating portion 1232e, so that the first heating portion 1231e and the second heating portion 1232e are connected in parallel. The first heating portion 1231e and the second heating portion 1232e may be made of one or more of silver, platinum, copper, nickel and palladium in some embodiments.

[0076] In some embodiments, the conductive trace 123e may include a first connecting portion 1233e and a second connecting portion 1234e with a resistance smaller than the first heating portion 1231e and the second heating portion 1232e. The first connecting portion 1233d and the second connecting portion 1234d may be made of one or more of gold, silver and copper in some embodiments. The first connecting portion 1233e may be formed on the conductive substrate 121e and exposed at the notch 1220e in some embodiments, and connected with the first ends of the first heating portion 1231e and the second heating portion 1232e, so as to electrically connect the first ends of the first heating portion 1231e and the second heating portion 1232e with the conductive substrate 121e. The second connecting portion 1234e is formed on the first insulating layer 122e and connected with the second ends of the first heating portion 1231e and the second heating portion 1232e. In some embodiments, the conductive trace 123e may include a fourth connecting portion 1238e, which is combined with the second surface 1212e of the conductive substrate 121e to be electrically connected with the first connecting portion 1233e via the conductive substrate 121e. Thereby, the current can be transmitted to the first ends of the first heating portion 1231 and the second heating portion 1232 via the fourth connecting portion 1238e, the conductive substrate 121e, and the first connecting portion 1233e that are sequentially connected together.

[0077] The conductive trace 123e may include a first

lead 1235e and a second lead 1236e in some embodiments, and the first lead 1235e and the second lead 1236e may be respectively welded to the fourth connecting portion 1238e and the second connecting portion 1233e.

[0078] The first protective layer 124e covers the outer surfaces of the first heating portion 1231e and the second heating portion 1232e to prevent the first heating portion 1231e and the second heating portion 1232e from directly contacting the aerosol producing substrate 2 during use, so as to avoid the corrosion of the first heating portion 1231e and the second heating portion 1232e by the aerosol producing substrate 2. The first protective layer 124e may be made of glass or ceramic material in some embodiments.

[0079] The second insulating layer 125e may be formed on the second surface 1212e of the conductive substrate 121e in some embodiments to improve the insulation performance of the side of the conductive substrate 121e where the second surface 1212e is located. The second insulating layer 125e has a notch 1250e for the fourth connecting portion 1238e to be combined with the second surface 1212e of the conductive substrate 121e therein. The second protective layer 126e is formed on the surfaces of the second insulating layer 125e and the fourth connecting portion 1238e to prevent the corrosion of the second insulating layer 125e and the fourth connecting portion 1238e by the aerosol producing substrate 2 during use, or to prevent harmful substances in the second insulating layer 125e from entering the aerosol producing substrate 2.

[0080] Figs. 23 to 25 show a heating component 12f in some embodiments of the disclosure, and the heating component 12f can be used as a substitute for the above heating component 12. In some embodiments, the heating component 12f may include a conductive substrate 121f, a first insulating layer 122f, a conductive trace 123f, a first protective layer 124f, a second insulating layer 125f and a second protective layer 126f that are combined with the conductive substrate 121f. In some embodiments, the conductive trace 123f may include a first end and a second end configured for electrically connecting the positive and negative electrodes of the power supply 13, respectively. The first end is electrically connected to the conductive substrate 121f, and the second end is electrically insulated from the conductive substrate 121f, so that the current can enter the conductive trace 123f from the first end via the conductive substrate 121f, and then flow out of the conductive trace 123f from the second end.

[0081] In some embodiments, the conductive substrate 121f may be in a longitudinal sheet shape, and may include a flat first surface 1211f and a flat second surface 1212f opposite to the first surface 1211f. The first insulating layer 122f is formed on the first surface 1211f of the conductive substrate 121f, and a notch 1220f may be provided at the right corner of its root, so that the conductive substrate 121f is exposed outside the first

insulating layer 122f there. A through hole 1221f is further provided on the tip of the first insulating layer 122f far from the notch 1220f. The through hole 1221f is diagonally distributed with the notch 1220f, and the conductive substrate 121f is also exposed outside the first insulating layer 122f via the through hole 1221f.

[0082] In some embodiments, the conductive trace 123f may include a first heating portion 1231f with high resistance, which may be formed on the surface of the first insulating layer 122f by silk screen printing or electroplating. In some embodiments, the first heating portion 1231f may be S-shaped, and may include three heating arms A, B, C that are spaced arranged in parallel and connected in series to be S-shaped, and a V-shaped heating part D connected to the terminal end of the heating arm C, so that the first heating portion 1231f is evenly distributed on the surface of the conductive substrate 121f as much as possible. The first heating portion 1231f may be made of one or more of silver, platinum, copper, nickel and palladium in some embodiments. The first end of the first heating portion 1231f (that is, the terminal end of the heating part D) corresponds to the through hole 1221f of the first insulating layer 122f, and is combined with the conductive substrate 121f via the through hole 1221f.

[0083] In some embodiments, the conductive trace 123f may include a first connecting portion 1233f and a second connecting portion 1234f with a resistance smaller than the first heating portion 1231f. The first connecting portion 1233f and the second connecting portion 1234f may be made of one or more of gold, silver and copper in some embodiments. The first connecting portion 1233f may be formed on the conductive substrate 121f and exposed via the notch 1220f in some embodiments, so as to be electrically connected with the conductive substrate 121f, and then electrically connected with the first end of the first heating portion 1231f via the conductive substrate 121f. Thereby, the current can be transmitted to the first end of the first heating portion 1231f via the first connecting portion 1233e and the conductive substrate 121e which are sequentially connected in series. Since the first connecting portion 1233e is distributed at the diagonal positions of the two ends of the conductive substrate 121e, the current will almost penetrate the diagonal lines of the entire length direction of the conductive substrate 121e in the transmission process.

[0084] The conductive trace 123f may include a first lead 1235f and a second lead 1236f in some embodiments. The first lead 1235f and the second lead 1236f may be welded to the first connecting portion 1233f and the second connecting portion 1234f, respectively.

[0085] The first protective layer 124f is covered on the outer surface of the first heating portion 1231f to prevent the first heating portion 1231f from directly contacting the aerosol producing substrate 2 during use, so as to prevent the aerosol producing substrate 2 from corroding the first heating portion 1231f. The first protective layer 124f may be made of glass or ceramic material in some

embodiments.

[0086] The second insulating layer 125f may be formed on the second surface 1212f of the conductive substrate 121f in some embodiments to improve the insulation performance of the side of the conductive substrate 121f where the second surface 1212f is located. The second protective layer 126f is formed on the surface of the second insulating layer 125f to prevent the corrosion of the second insulating layer 125f by aerosol producing substrate 2 during use, or to prevent harmful substances in the second insulating layer 125f from entering the aerosol producing substrate 2.

[0087] While the disclosure has been illustrated and described in detail in the drawings and foregoing description, such illustration and description are to be considered illustrative or exemplary and not restrictive. It will be understood that changes and modifications may be made by those of ordinary skill within the scope of the following claims. In particular, the present disclosure covers further embodiments with any combination of features from different embodiments described above and below. Additionally, statements made herein characterizing the disclosure refer to an embodiment of the disclosure and not necessarily all embodiments.

Claims

1. A heating component, configured for inserting into and heating aerosol producing substrate, **characterized by** comprising:
 - a conductive substrate that is longitudinal sheet shaped;
 - a first insulating layer; and
 - at least one conductive trace;
 - wherein the conductive substrate comprises a first surface, the first insulating layer is disposed on the first surface, and the at least one conductive trace is disposed on the first insulating layer; and
 - wherein the at least one conductive trace comprises a first end and a second end, the first end is electrically connected with the conductive substrate, and the second end is electrically insulated from the conductive substrate.
2. The heating component of claim 1, wherein the at least one conductive trace comprises a first heating portion, and
 - wherein the first end of the first heating portion is electrically connected with the conductive substrate, and the second end of the first heating portion is electrically isolated from the conductive substrate.
3. The heating component of claim 2, wherein the first heating portion is made of one or more of silver, platinum, copper, nickel and palladium.

4. The heating component of claim 2, wherein the at least one conductive trace comprises a first connecting portion and a second connecting portion, and the resistance of the first connecting portion and the second connecting portion is less than the resistance of the first heating portion;
- wherein the first connecting portion is mechanically and electrically combined on the first surface, and is mechanically and electrically connected with the first end of the first heating portion; and
- wherein the second connecting portion is disposed on the first insulating layer and is mechanically and electrically connected with the second end of the first heating portion.
5. The heating component of claim 4, wherein the first connecting portion and the second connecting portion are made of one or more of gold, silver and copper.
6. The heating component of claim 4, wherein the at least one conductive trace comprises a first lead and a second lead, and
- wherein the first lead and the second lead are mechanically and electrically connected with the first connecting portion and the second connecting portion, respectively.
7. The heating component of claim 4, wherein a notch is provided at a corner of the root of the first insulating layer, and
- wherein the first connecting portion is mechanically and electrically connected with the conductive substrate through the notch.
8. The heating component of claim 2, further comprising:
- a first protective layer covered on the outer surface of the first heating portion.
9. The heating component of claim 2, wherein the conductive substrate comprises a second surface opposite to the first surface, and
- wherein the heating component comprises a second insulating layer disposed on the second surface.
10. The heating component of claim 9, further comprising:
- a second protective layer disposed on a surface of the second insulating layer.
11. The heating component of claim 5, wherein the first connecting portion and the second connecting portion are made of the same material as the first heating portion, and are integrally formed with the first heating portion.
12. The heating component of claim 7, wherein a through hole is provided near the notch on the first insulating layer, and
- wherein the first end of the first heating portion is electrically connected with the conductive substrate through the through hole.
13. The heating component of claim 2, wherein the at least one conductive trace comprises a first connecting portion and a second connecting portion with a smaller resistance formed on the first insulating layer,
- wherein the first connecting portion is mechanically and electrically connected with the first end, and the second connecting portion is mechanically and electrically connected with the second end of the first heating portion;
- wherein the at least one conductive trace comprises a first lead and a second lead that are respectively mechanically and electrically connected with the first connecting portion and the second connecting portion;
- wherein the at least one conductive trace further comprises a third connecting portion that mechanically and electrically connects the first lead with the conductive substrate.
14. The heating component of claim 13, wherein the third connecting portion is mechanically and electrically connected with the lower side edge of the conductive substrate.
15. The heating component of claim 2, wherein the at least one conductive trace comprises a first connecting portion and a second connecting portion disposed on the first insulating layer,
- wherein the first connecting portion is mechanically and electrically connected with the first end, and the second connecting portion is mechanically and electrically connected with the second end;
- wherein two through holes are provided on the first insulating layer, and
- wherein the first connecting portion is electrically connected with the conductive substrate through one of the two through holes, and the first end of the first heating portion is electrically connected with the conductive substrate through the other one of the two through holes.
16. The heating component of claim 2, wherein the at least one conductive trace comprises a first connecting portion and a second connecting portion with a resistance smaller than the first heating portion;
- wherein the first connecting portion is mechan-

- ically and electrically connected to the first surface, and is mechanically and electrically connected with the first end;
 wherein the second connecting portion is formed on the first insulating layer and is mechanically and electrically connected with the second end of the first heating portion;
 wherein the conductive substrate comprises a second surface that is flat and opposite to the first surface;
 wherein the at least one conductive trace comprises a fourth connecting portion mechanically and electrically connected to the second surface; and
 wherein the at least one conductive trace comprises a first lead and a second lead that are respectively mechanically and electrically connected with the fourth connecting portion and the second connecting portion.
17. The heating component of any one of claims 2 to 16, wherein the at least one conductive trace comprises a second heating portion in parallel with the first heating portion.
18. The heating component of claim 17, wherein the first heating portion and the second heating portion are U-shaped, and the second heating portion is located on the inner side of the first heating portion, and wherein the two ends of the first heating portion are respectively mechanically and electrically connected with the two ends of the second heating portion.
19. The heating component of claim 6, wherein the first connecting portion and the conductive substrate are connected in series or parallel between the first lead and the first end of the first heating portion.
20. The heating component of claim 2, wherein the first end of the first heating portion is electrically connected with one end of the conductive substrate; and wherein the at least one conductive trace comprises a first connecting portion that is electrically connected with the other end of the conductive substrate.
21. The heating component of claim 20, wherein the electrical connecting position of the first end of the first heating portion with the conductive substrate and the electrical connecting position of the first connecting portion with the conductive substrate are diagonally arranged in the length direction of the conductive substrate.
22. The heating component of claim 20, wherein the first heating portion comprises at least three heating arms that are spaced arranged in parallel and connected in series to be S-shaped and a V-shaped heating part connected to the terminal end of the

heating arms.

23. A heat-not-burn baking device, **characterized by** comprising:
 the heating component of any one of claims 1 to 22.
24. The heat-not-burn baking device of claim 23, further comprising:
 a power supply;
 wherein the conductive substrate electrically connects the positive electrode of the power supply with the first end.

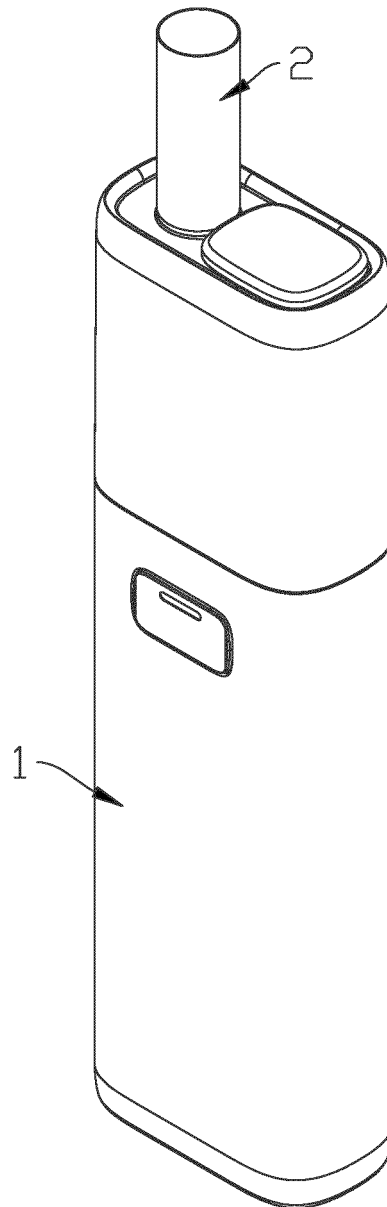


Fig. 1

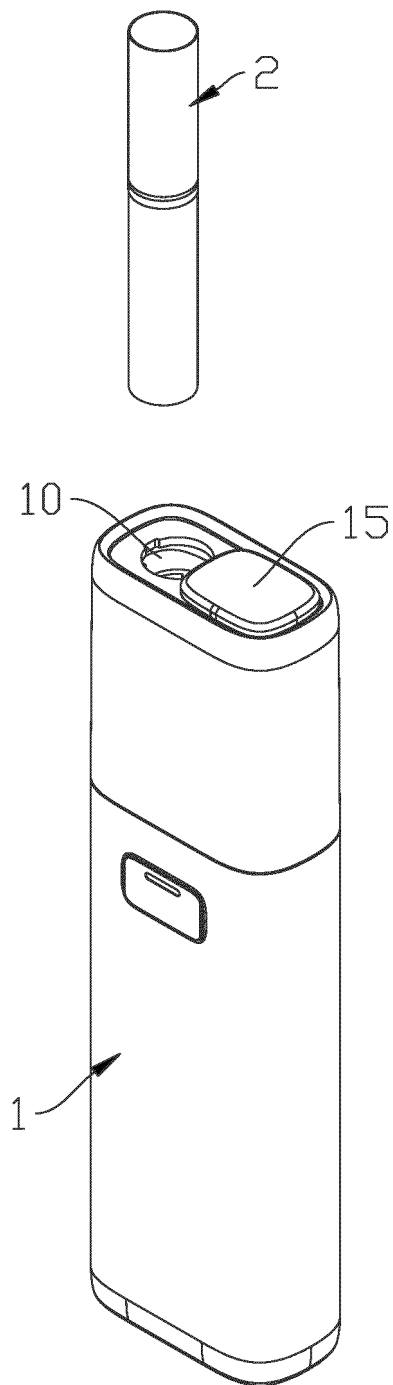


Fig. 2

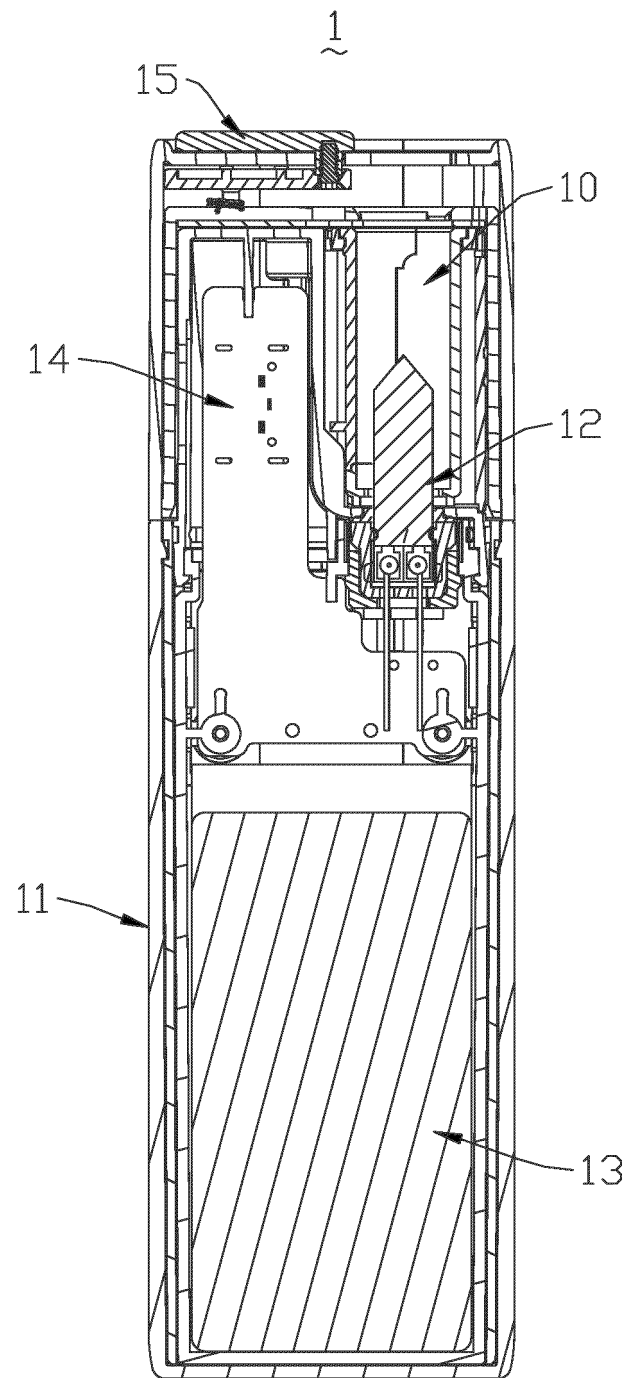


Fig. 3

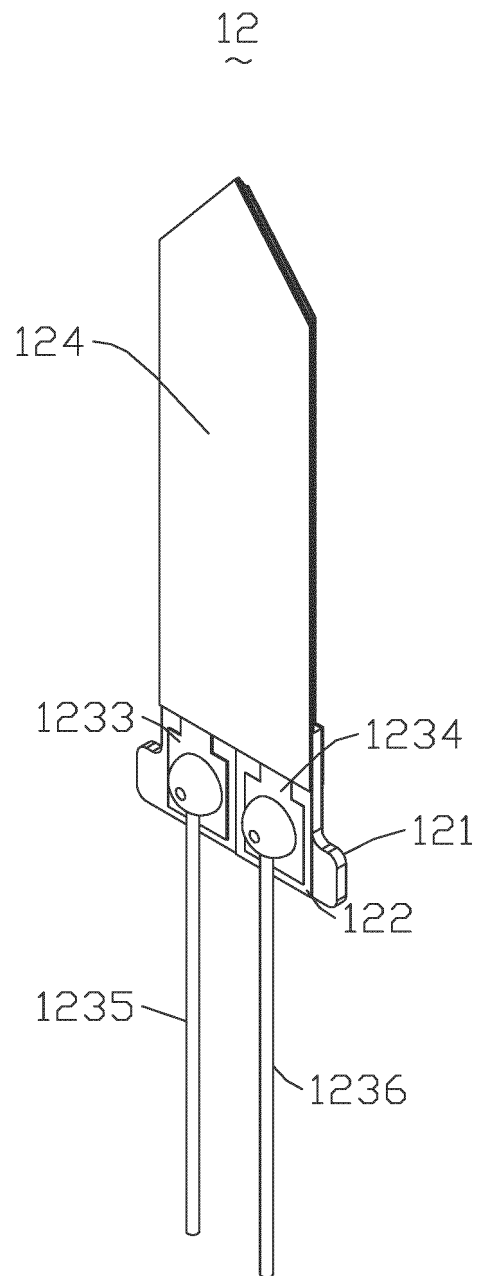


Fig. 4

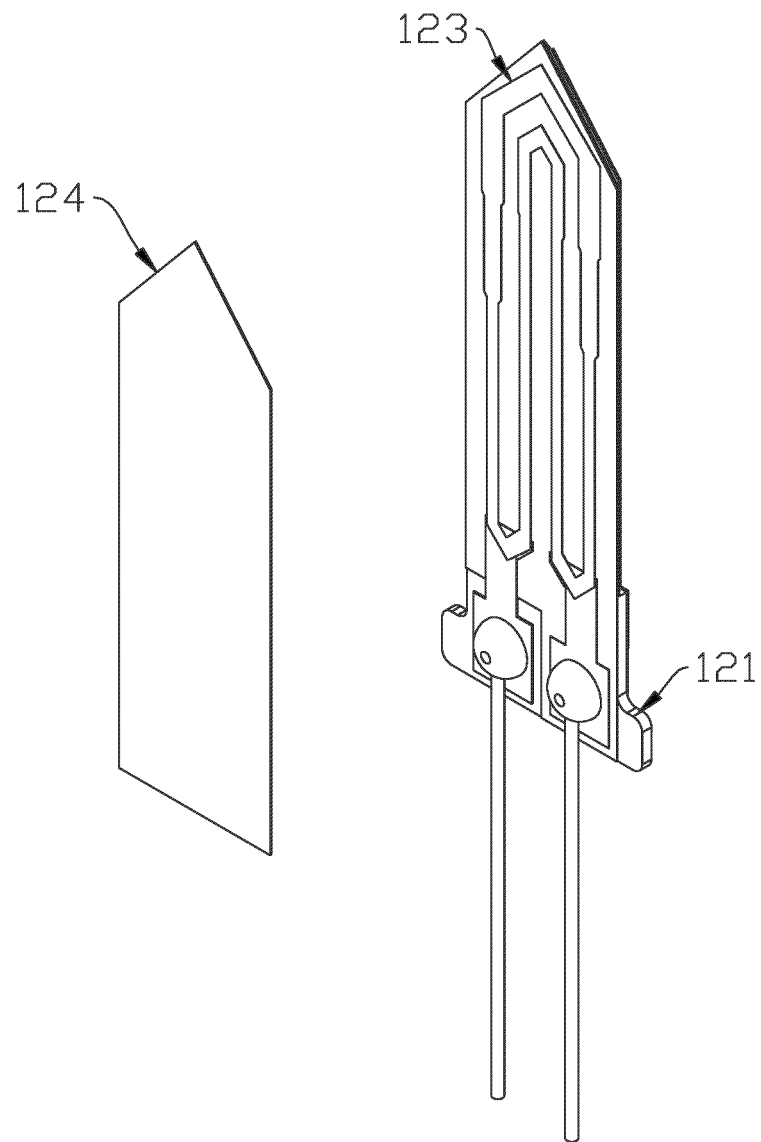


Fig. 5

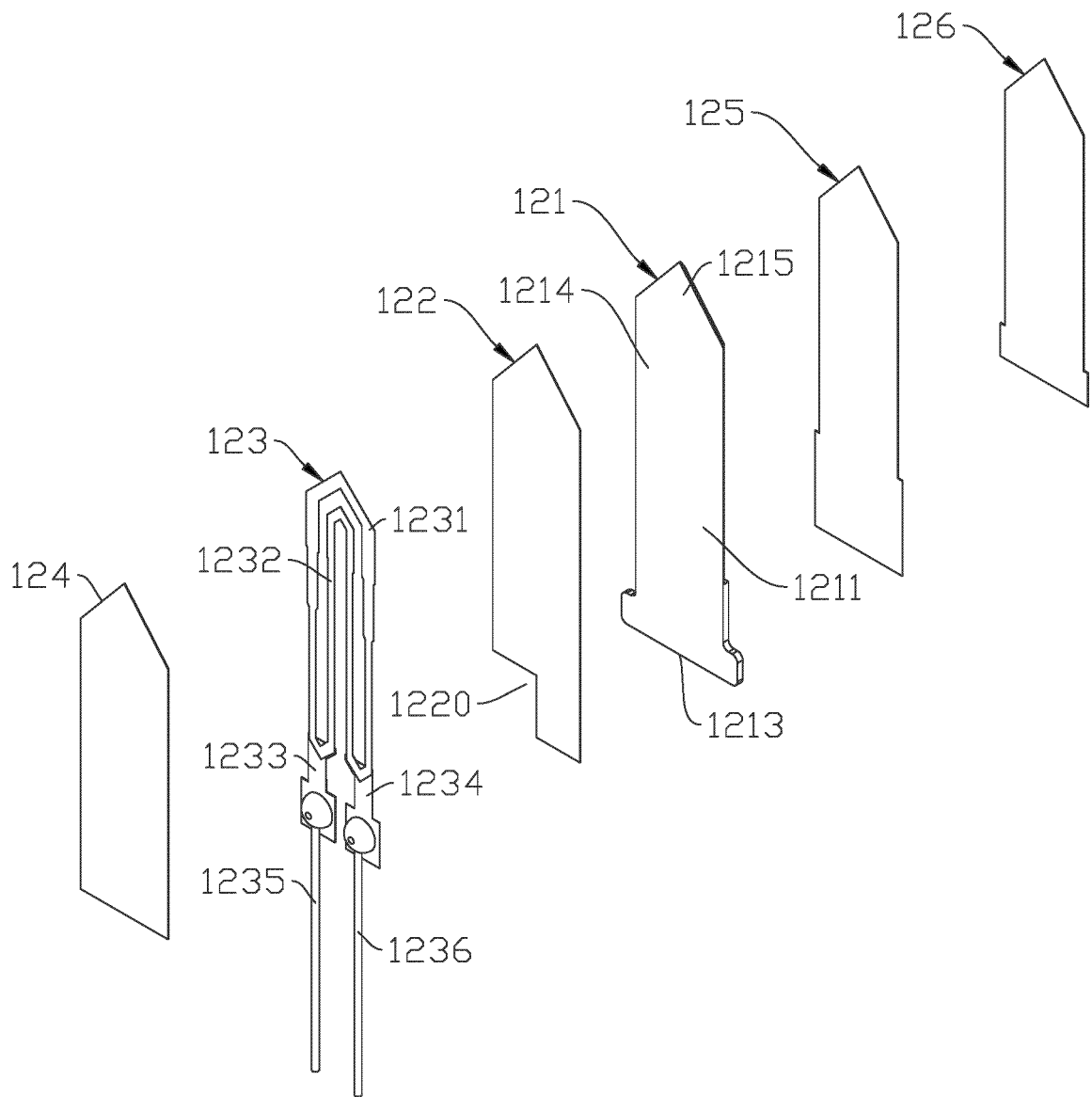


Fig. 6

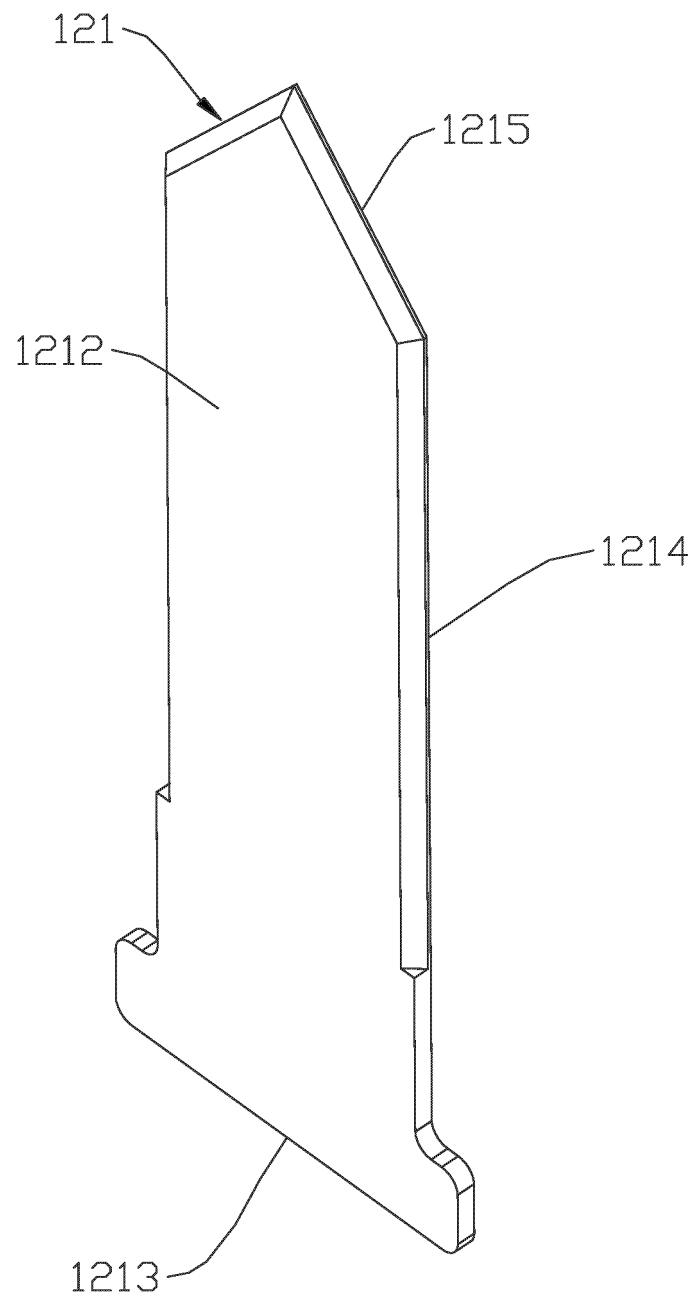


Fig. 7

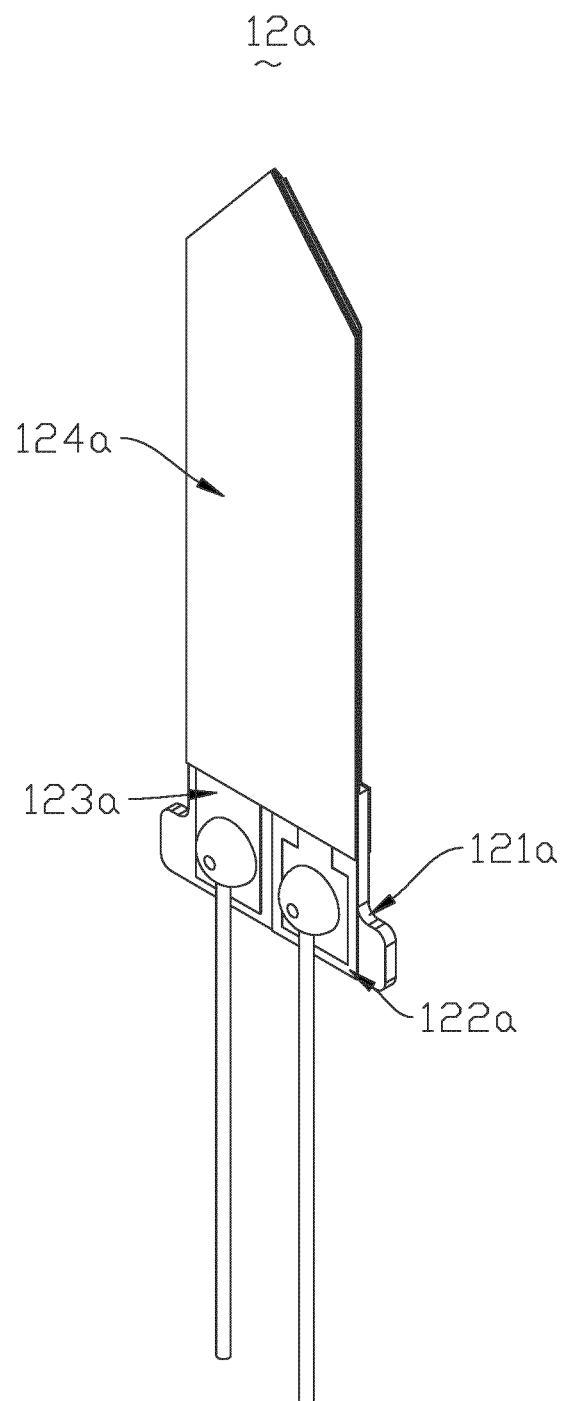


Fig. 8

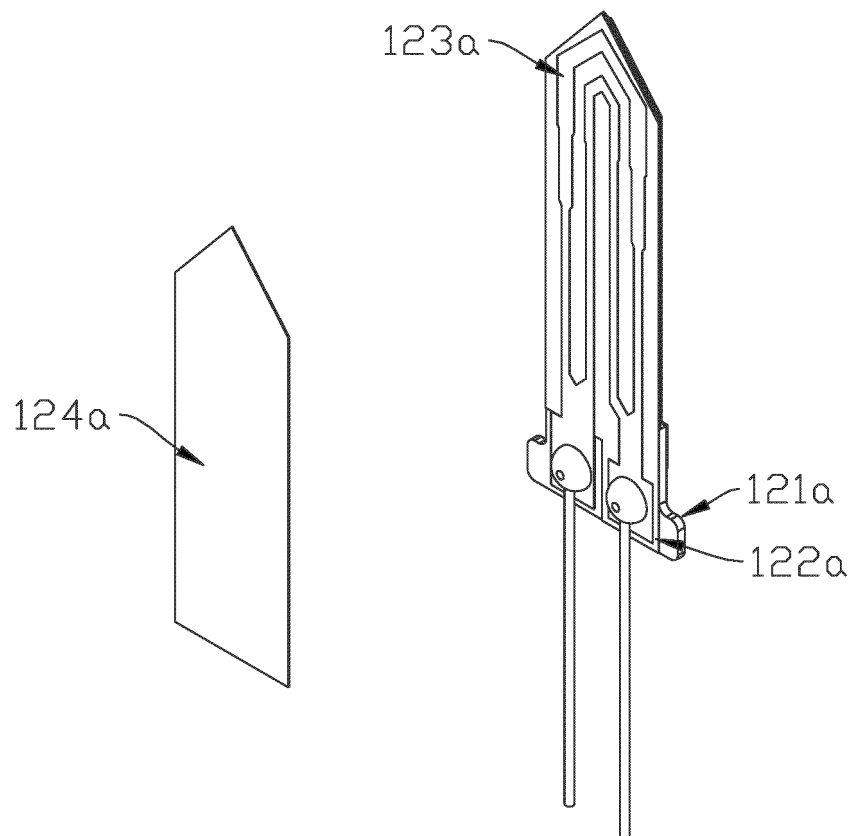


Fig. 9

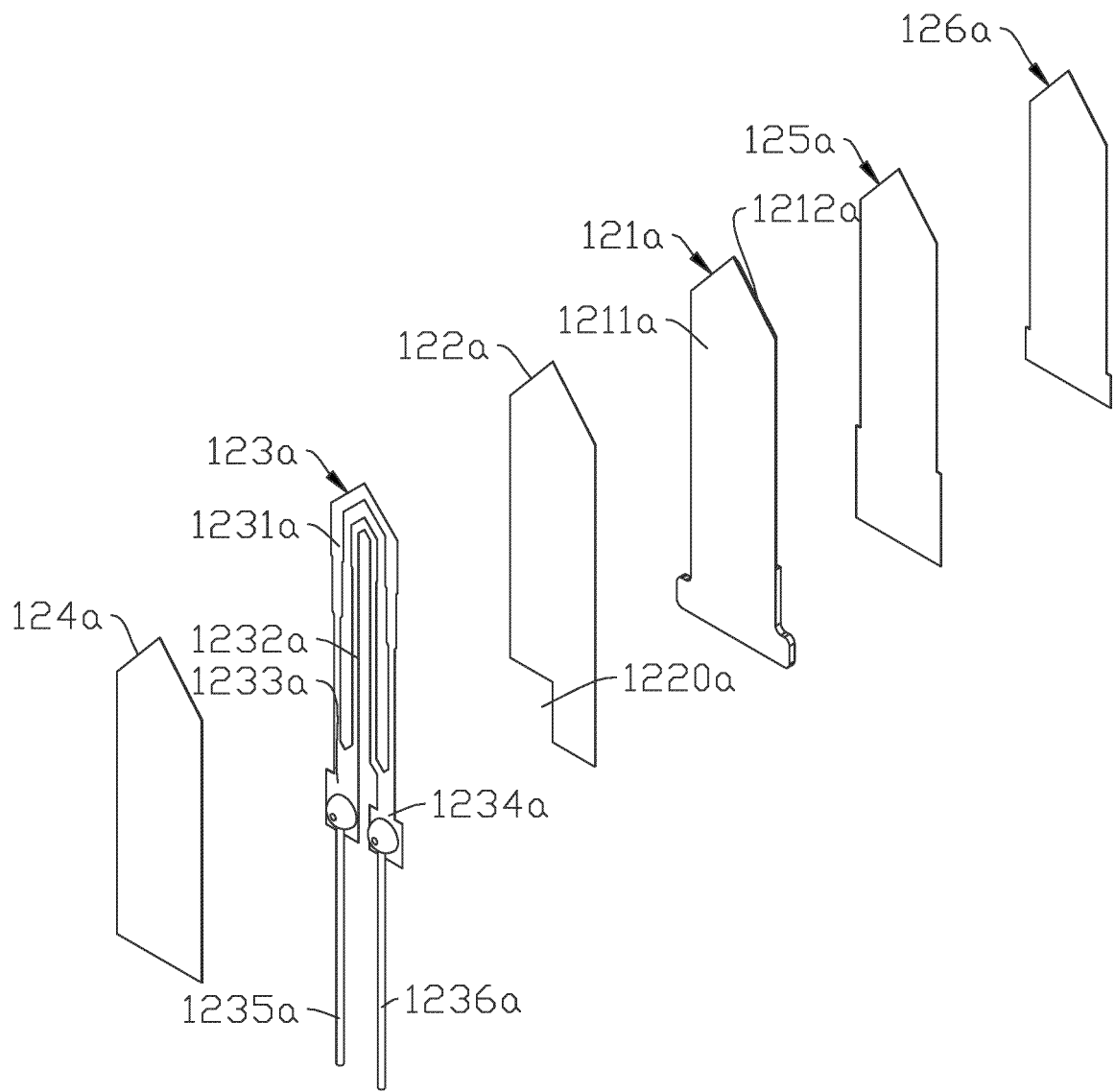


Fig. 10

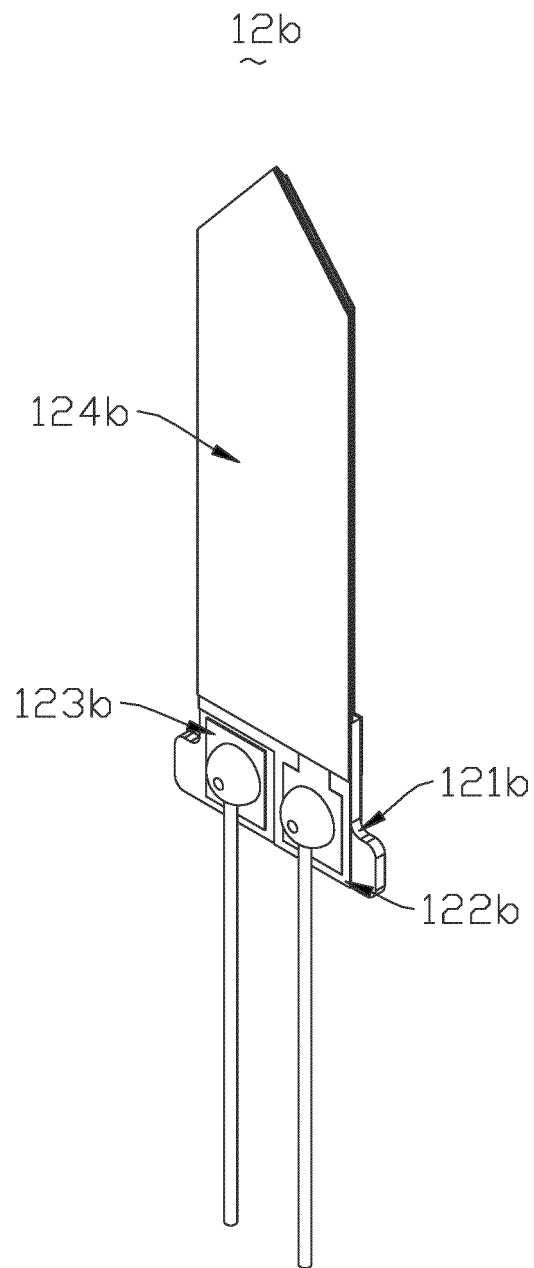


Fig. 11

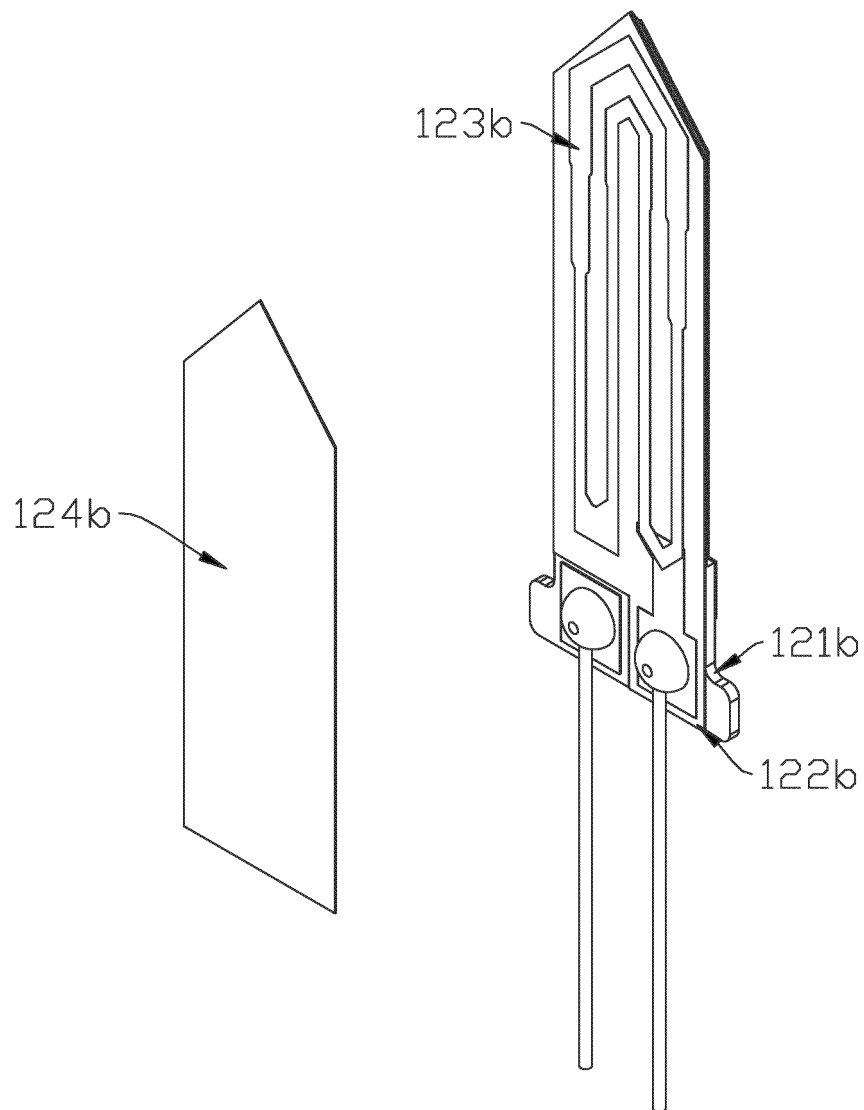


Fig. 12

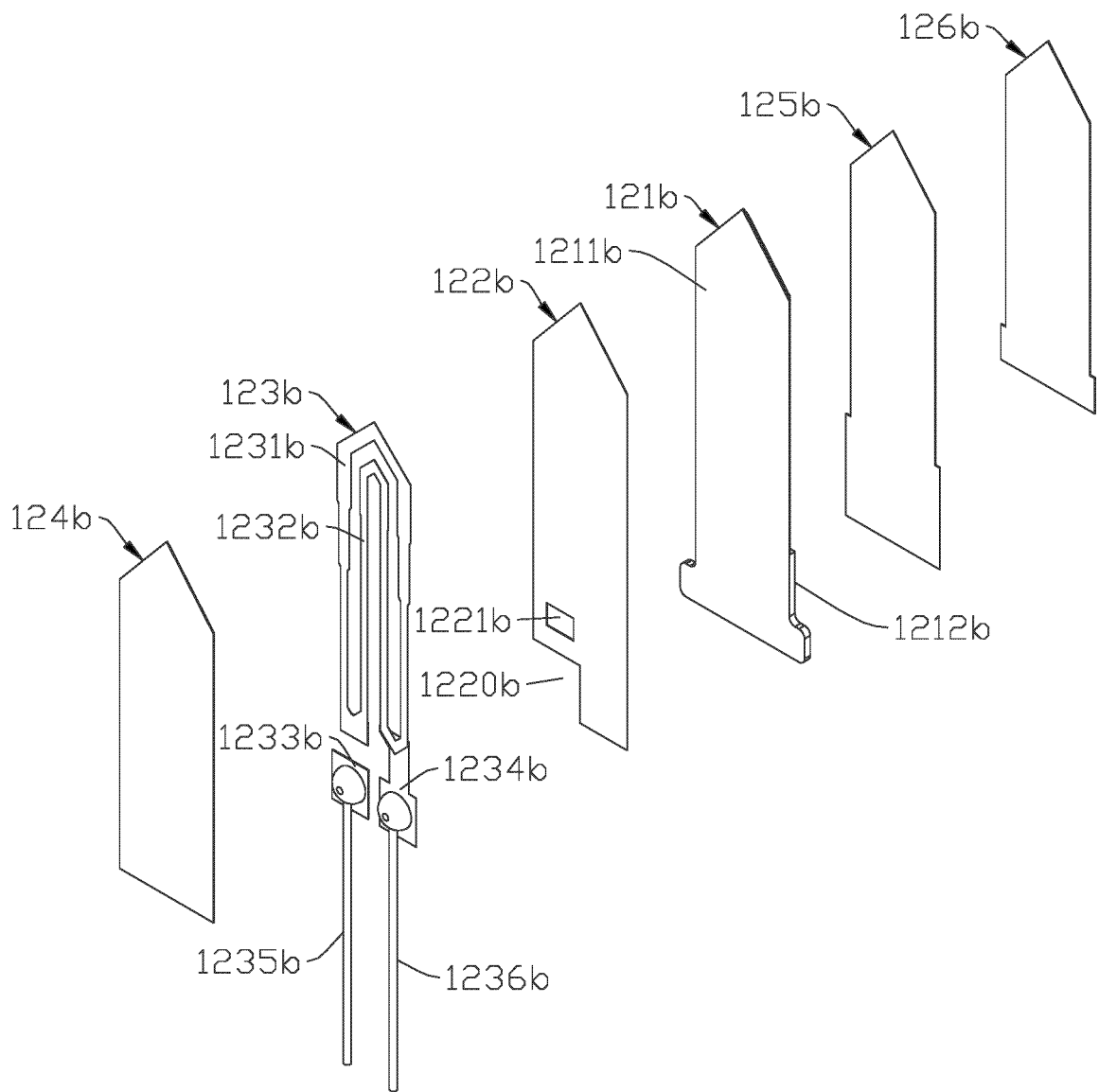


Fig. 13

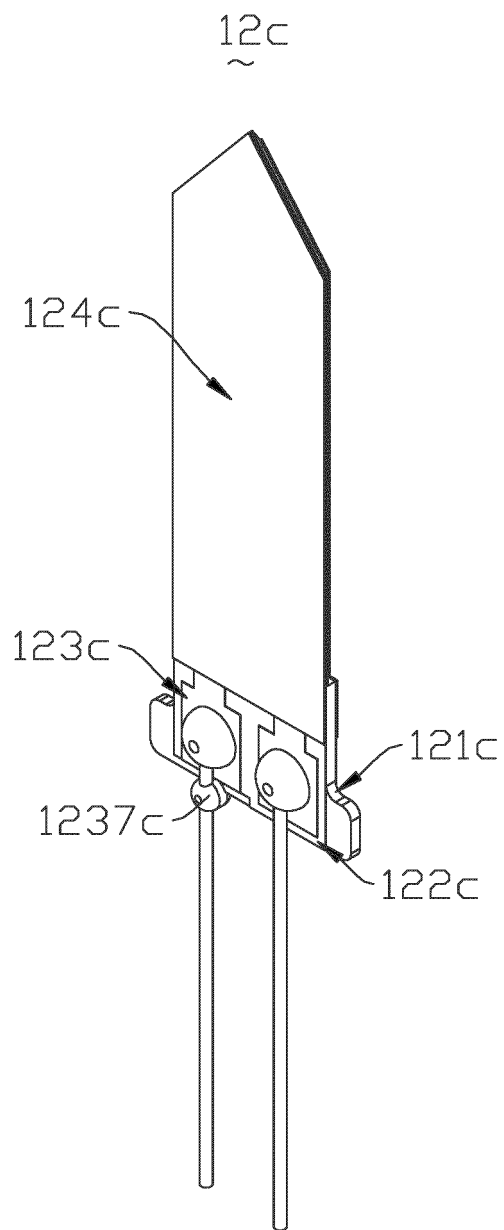


Fig. 14

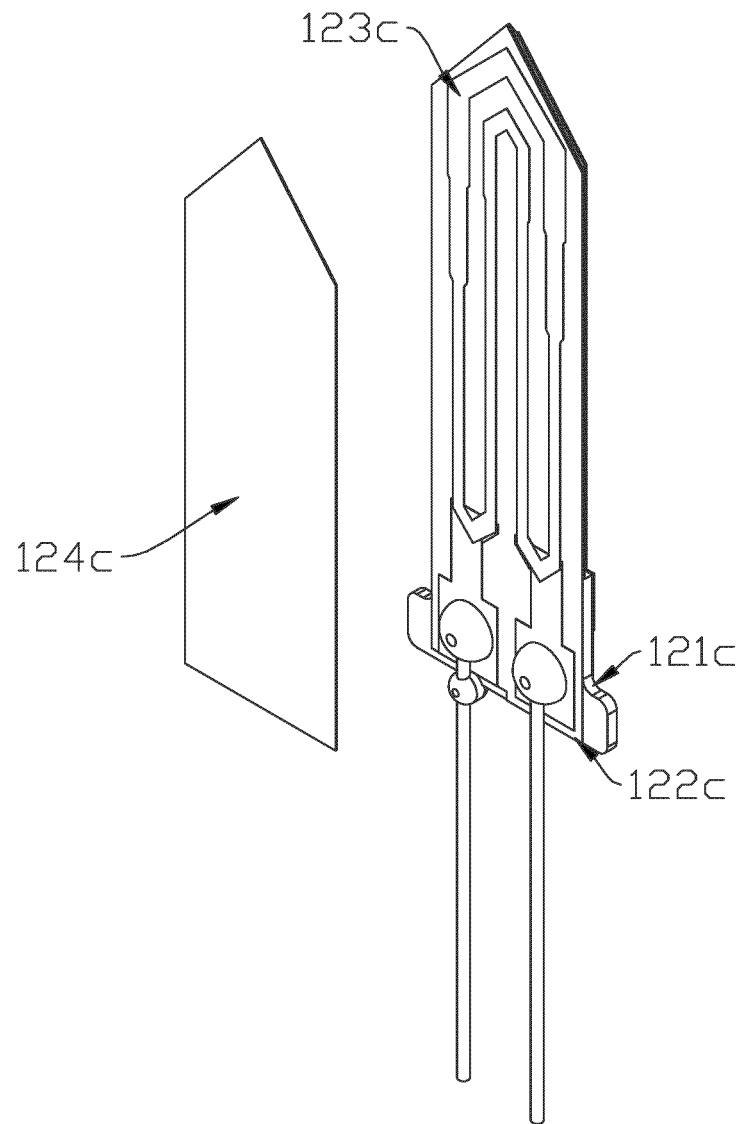


Fig. 15

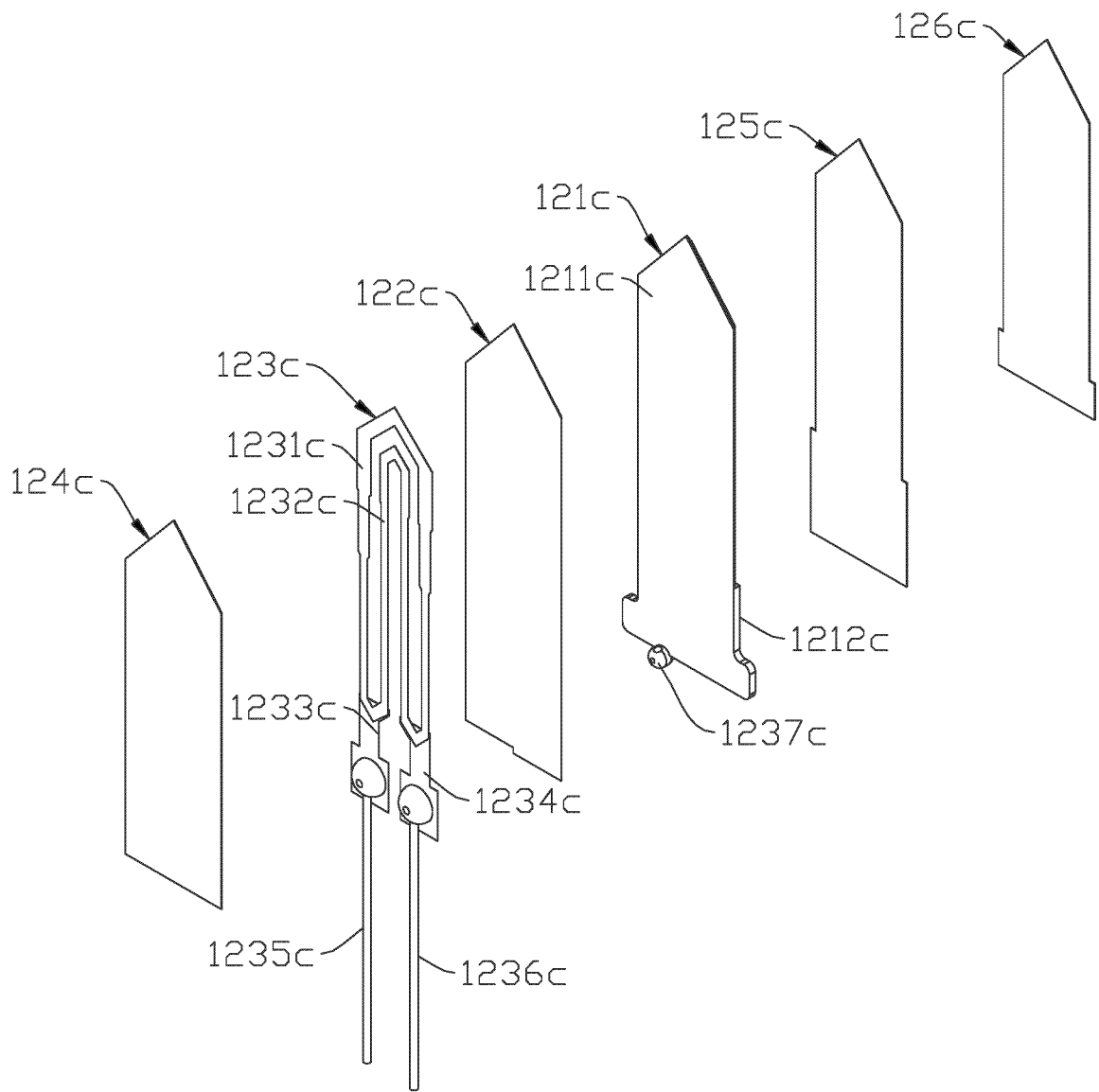


Fig. 16

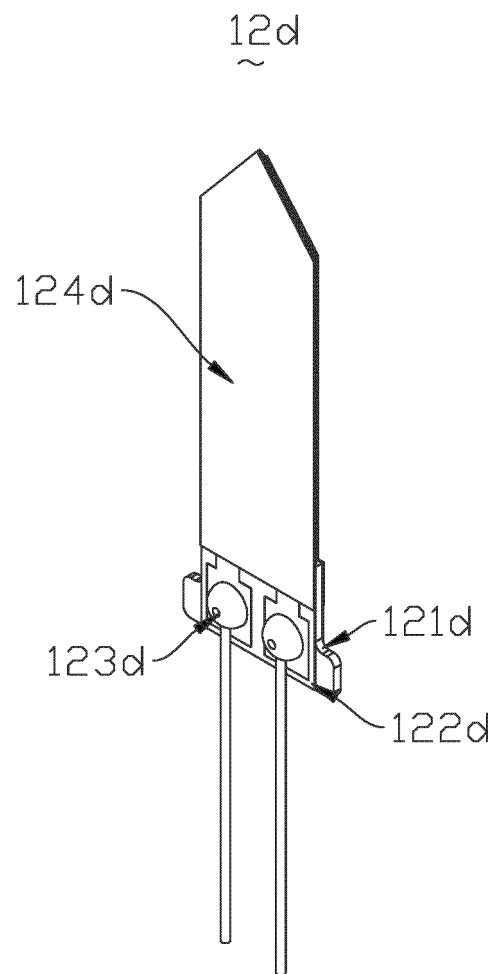


Fig. 17

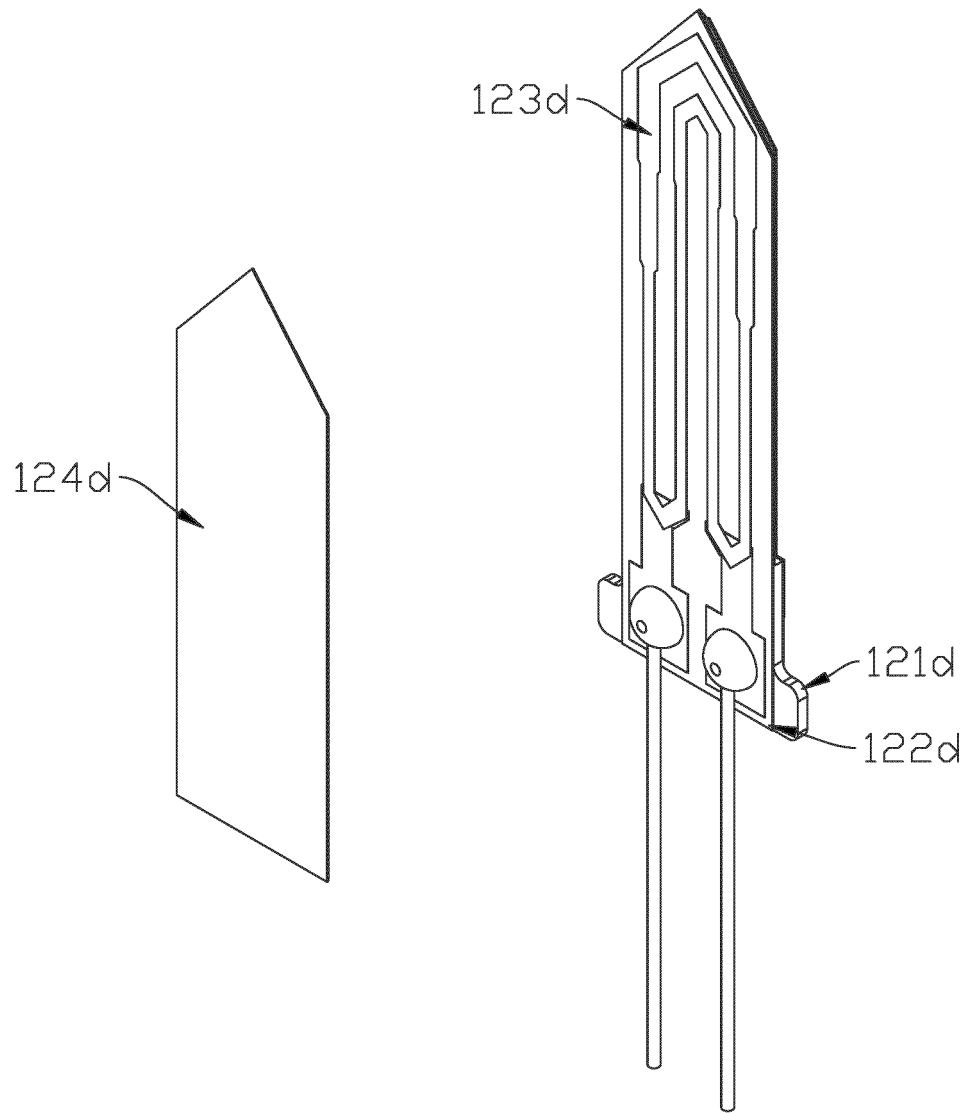


Fig. 18

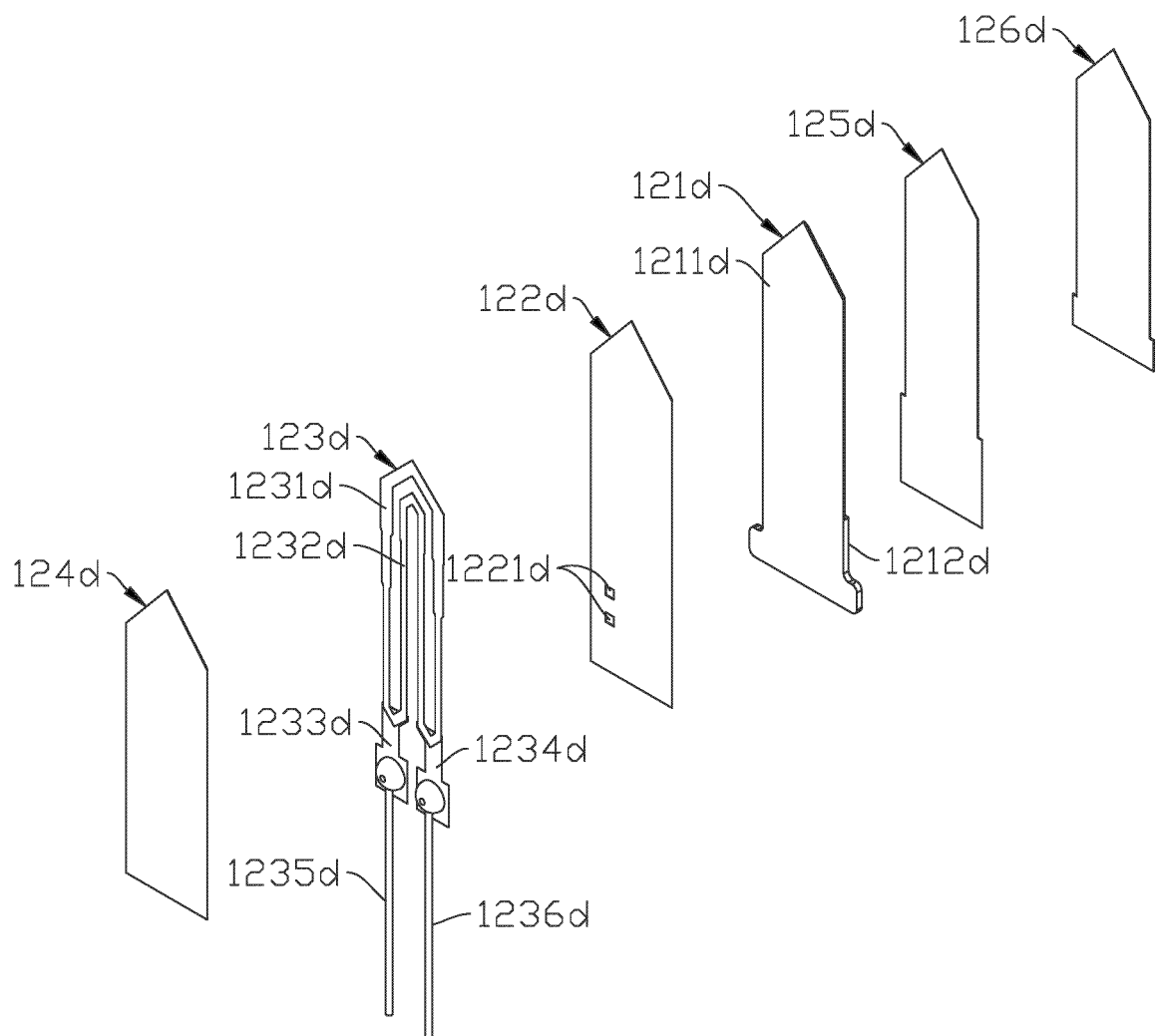


Fig. 19

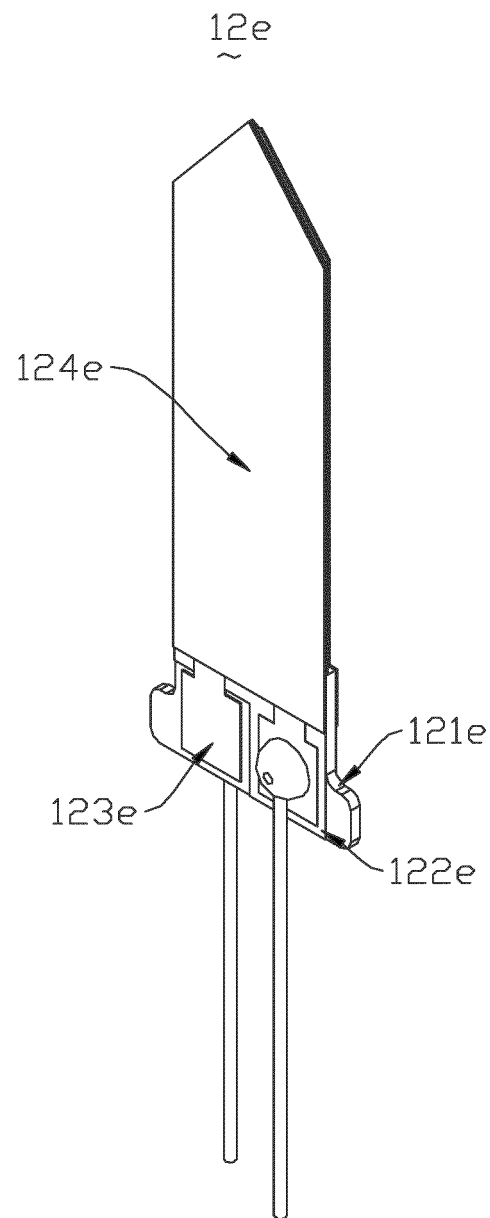


Fig. 20

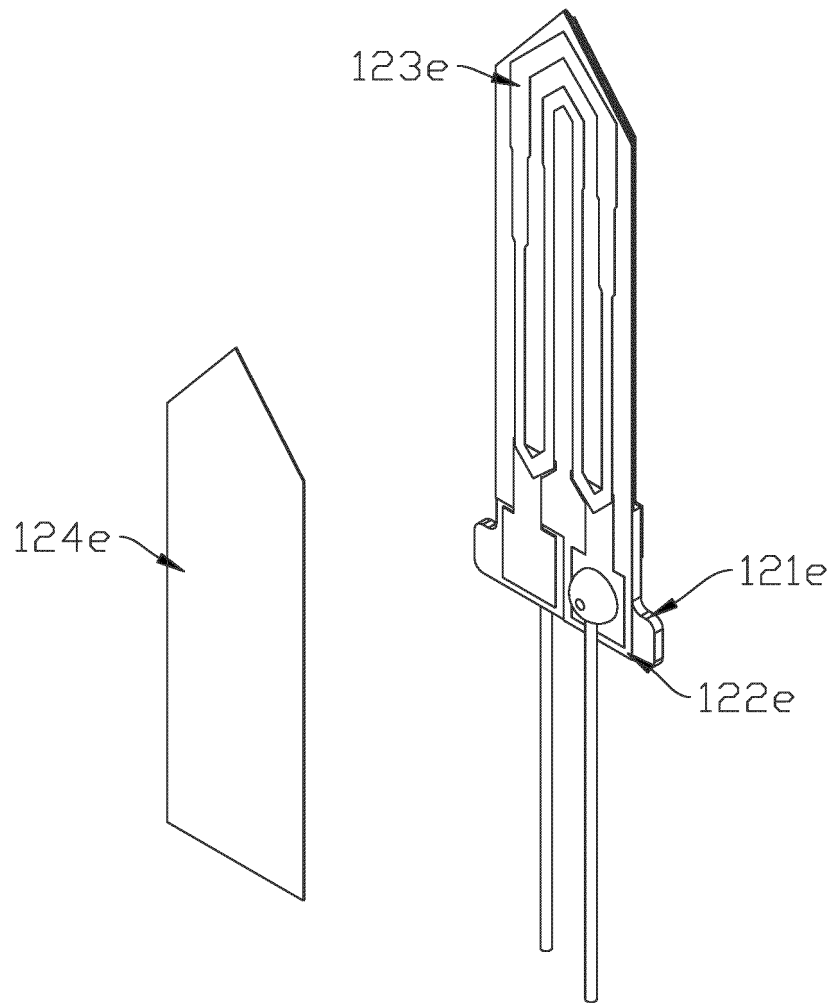


Fig. 21

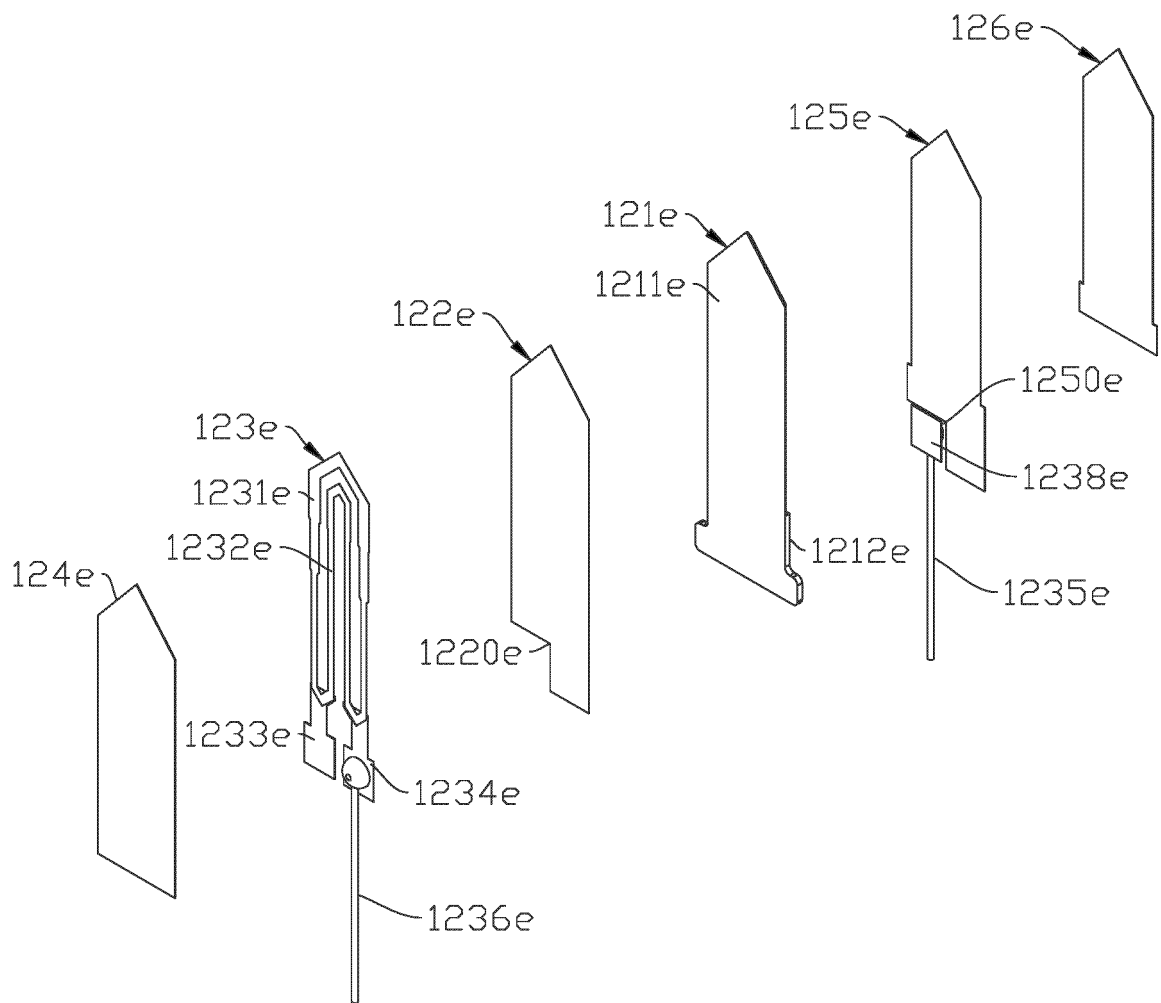


Fig. 22

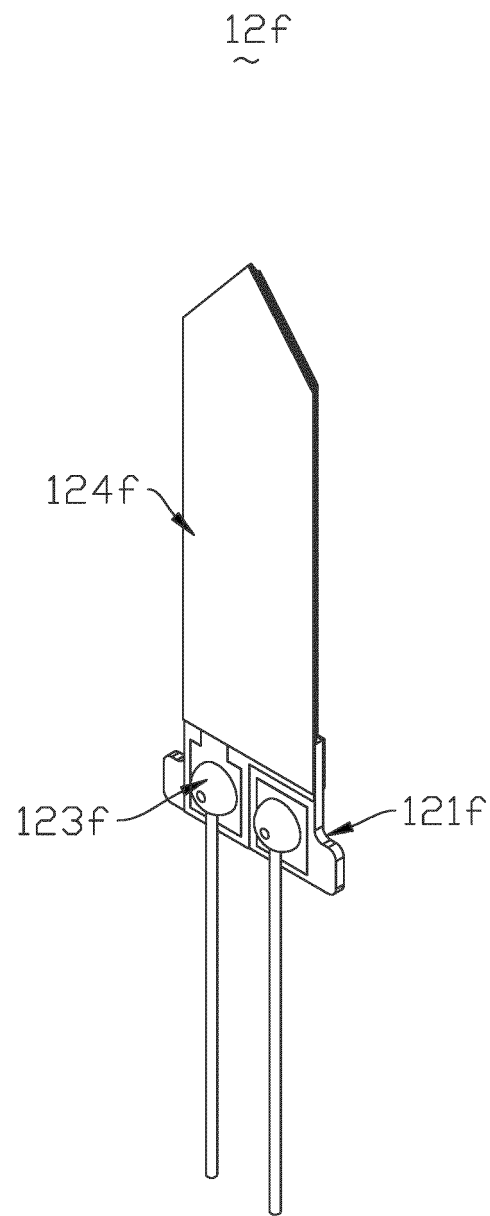


Fig. 23

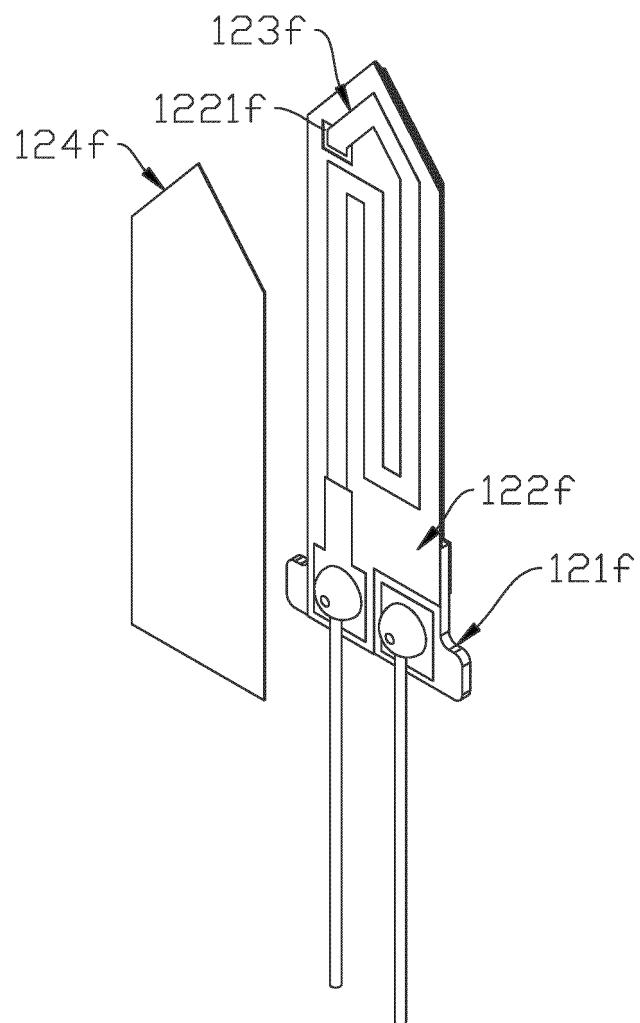


Fig. 24

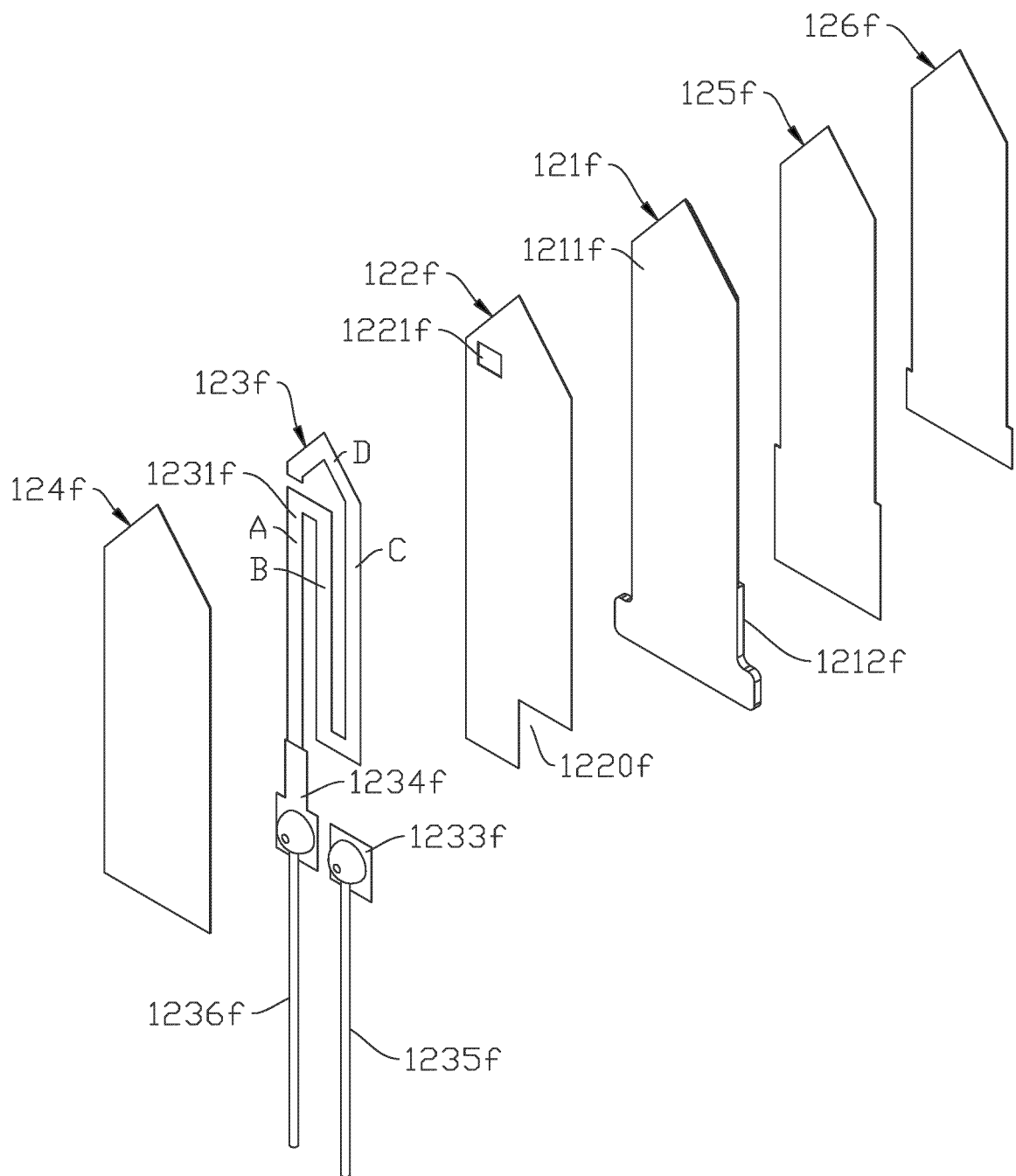


Fig. 25

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/088456

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/20(2020.01)i; A24F 40/40(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)

WPI; EPODOC; CNPAT; CNKI: 低温, 不燃烧, 导电, 绝缘, 电阻, 片, 引线, 缺口, 通孔, 保护; low temperature, incombustible, noncombustible, conductive, insulation, resistance, plate, sheet, lead, gap, notch, hole, opening, protective.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 109068417 A (VAPETALK ELECTRONIC TECHNOLOGY (SHENZHEN) COMPANY LIMITED.) 21 December 2018 (2018-12-21) description, paragraphs [0066]-[0067], [0076]-[0092], figures 1-7	1-12, 15, 17-21, 23-24
Y	CN 209498595 U (CHINA TOBACCO HUNAN INDUSTRIAL CO., LTD.) 18 October 2019 (2019-10-18) description paragraph [0032], figures 4-6	1-12, 15, 17-21, 23-24
A	CN 107373776 A (SHENZHEN YUNMENG TECHNOLOGY CO., LTD.) 24 November 2017 (2017-11-24) entire document	1-24
A	CN 107205491 A (PHILIP MORRIS PRODUCTS S. A.) 26 September 2017 (2017-09-26) entire document	1-24
A	CN 110959918 A (SHENZHEN MAISHI TECHNOLOGY CO., LTD.) 07 April 2020 (2020-04-07) entire document	1-24
A	KR 20190094034 A (CICO KOREA CO., LTD.) 12 August 2019 (2019-08-12) entire document	1-24

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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“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

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“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

07 January 2021

Date of mailing of the international search report

01 February 2021

Name and mailing address of the ISA/CN

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Facsimile No. (86-10)62019451

Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2020/088456

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	109068417	A	21 December 2018	None			
CN	209498595	U	18 October 2019	None			
CN	107373776	A	24 November 2017	None			
CN	107205491	A	26 September 2017	US	2018049471	A1	22 February 2018
				EP	3253236	A1	13 December 2017
				WO	2016124552	A1	11 August 2016
				US	10779571	B2	22 September 2020
				KR	20170110590	A	11 October 2017
				EP	3253236	B1	03 April 2019
				JP	2018504130	A	15 February 2018
CN	110959918	A	07 April 2020	None			
KR	20190094034	A	12 August 2019	KR	102025856	B1	25 September 2019

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