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(54) **UPPER COVER ASSEMBLY, AND ATOMIZER AND AEROSOL GENERATING DEVICE THEREFOR**

(57) Disclosed is an upper cover assembly (20), comprising an upper cover (21), a mouthpiece (26), a sliding cover (22) slidably arranged on the upper cover (21), and a locking member (24), wherein an e-liquid injection hole (214) is provided in the upper cover (21); one end of the locking member (24) abuts against the sliding cover (22) so as to prevent the sliding cover (22) from sliding with respect to the upper cover (21); the mouthpiece (26) can slide with respect to the sliding cover (22) and abuts against the locking member (24); and the mouthpiece (26) is slid to make the locking member (24) slide in such a way that the locking member does not abut against the sliding cover (22), therefore making the sliding cover (22) slide so as to open or close the e-liquid injection hole (214). An atomizer (100) comprising the upper cover assembly (20), and an aerosol generating device can prevent a child from easily opening the atomizer (100) to come into contact with an aerosol-formed substrate.

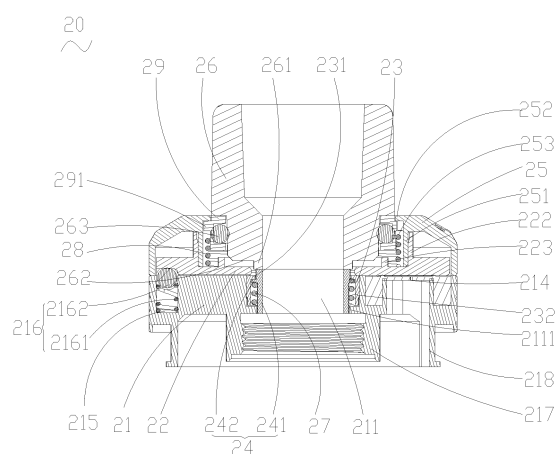


FIG. 3

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Description**TECHNICAL FIELD**

5 **[0001]** The present disclosure relates to the technical field of simulated smoking, in particular to an upper cover assembly, an atomizer and an aerosol generating device.

BACKGROUND

10 **[0002]** The aerosol generating device includes an atomizer and a power supply device electrically connected to the atomizer. The atomizer is provided with a liquid storage chamber and an atomizing head. Under the electric driving of the power supply device, the atomizing head heats the aerosol-forming substrate supplied by the liquid storage chamber to form smoke for the user to inhale. In order to prevent the leakage of the aerosol-forming substrate in the liquid storage chamber, the atomizer further includes an upper cover assembly capable of opening or closing the liquid storage chamber.

15 However, when children come into contact with such an aerosol generating device, they may accidentally open the upper cover assembly and then touch or even eat the aerosol-forming substrate in the atomizer by mistake.

SUMMARY

20 **[0003]** In view of above, the present disclosure provides an upper cover assembly with a child protection function, an atomizer and an aerosol generating device with the upper cover assembly.

[0004] The technical solution adopted by the present disclosure to solve the problem is: an upper cover assembly includes an upper cover, a mouthpiece and a sliding cover slidably provided on the upper cover, wherein the upper cover is provided with a liquid injection hole, and the upper cover is provided with a first cavity, the upper cover assembly

25 further includes a locking member slidably arranged in the first cavity, a first elastic member is sleeved on the locking member, one end of the locking member abuts against the sliding cover to prevent the sliding cover from sliding relative to the upper cover, the mouthpiece is slidable relative to the sliding cover, and the mouthpiece abuts against the locking member; by sliding the mouthpiece to cause the locking member to compress the first elastic member and slide in the first cavity until the sliding cover is released, the sliding cover can slide relative to the upper cover to open or close the

30 liquid injection hole.

[0005] Further, the locking member includes a locking portion and a sliding portion provided on the locking portion, the sliding portion is slidably arranged in the first cavity, the first elastic member is sleeved at the outside of the locking portion; when the locking member slides in the first cavity under an external force, the locking member compresses the first elastic member, and when the locking member is released, the locking member is reset under an elastic force of

35 the first elastic member and abuts against the sliding cover again.

[0006] Further, the upper cover assembly further includes a retaining member, the upper cover is provided with a vent hole along its axial direction, an abutting edge is provided at an inner wall of the vent hole, the retaining member is located in the vent hole, the first cavity is formed by the retaining member and the abutting edge, one end of the first elastic member elastically abuts against the retaining member, the other end of the first elastic member elastically abuts

40 against the abutting edge.

[0007] Further, the upper cover assembly further includes a pushing cover, the pushing cover is sleeved on the sliding cover, the mouthpiece is slidably provided on the pushing cover.

[0008] Further, a sliding member is provided between the pushing cover and the mouthpiece, the pushing cover is provided with a second cavity, the sliding member is slidably arranged in the second cavity, the upper cover assembly

45 further includes a second elastic member, the second elastic member is sleeved at the outside of the sliding member; when the sliding member slides in the second cavity under an external force, the sliding member compresses the second elastic member, and when the external force is removed, the sliding member is reset under an elastic force of the second elastic member.

[0009] Further, a mounting ring is provided on the upper cover, the pushing cover is provided with a fixing ring, the fixing ring is inserted into the mounting ring, a positioning ring extends radially inward from the fixing ring, the second cavity is formed by the positioning ring, the fixing ring and the sliding cover.

[0010] Further, a limiting ring is further provided on the sliding cover, when the sliding member slides in the second cavity under an external force until the sliding member abuts against the limiting ring, the locking member releases the sliding cover.

55 **[0011]** Further, a pushing ring is provided at one end of the mouthpiece, a step surface between the pushing ring and the mouthpiece forms an abutting surface, the pushing ring abuts against one end of the locking member; by sliding the mouthpiece to cause the pushing ring pushes the locking member to slide until the abutting surface abuts against the sliding cover, the locking member is located in the upper cover.

[0012] An atomizer includes the upper cover assembly described above.

[0013] An aerosol generating device includes the atomizer described above.

[0014] The beneficial effects of the present disclosure are: in the atomizer or the aerosol generating device provided by the present disclosure, by slidably arranging the sliding cover and the locking member on the upper cover, one end of the locking member abuts against the sliding cover to prevent the sliding cover from sliding relative to the upper cover. Further, a mouthpiece that can slide relative to the sliding cover is provided, the mouthpiece abuts against the locking member, sliding the mouthpiece can drive the locking member to move so as to release the abutment to the sliding cover, so that the sliding cover can slide relative to the upper cover to open or close the liquid injection hole, thereby preventing children from easily opening the atomizer to contact the aerosol-forming substrate and thus improving the safety of the atomizer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The following further describes the present disclosure with reference to the accompanying drawings and embodiments.

FIG. 1 is a schematic diagram of the atomizer of the present disclosure;

FIG. 2 is an exploded view of the atomizer shown in FIG. 1;

FIG. 3 is a cross-sectional view of the upper cover assembly of the atomizer shown in FIG. 2 (the liquid injection hole is in a closed state);

FIG. 4 is another cross-sectional view of the upper cover assembly of the atomizer shown in FIG. 2 (the mouthpiece is in a depressed state);

FIG. 5 is another cross-sectional view of the upper cover assembly of the atomizer shown in FIG. 2 (the liquid injection hole is in an open state)

FIG. 6 is a cross-sectional view of the atomizer shown in FIG. 1;

[0016] The part names and reference signs thereof in the figures are as follows:

atomizer 100	liquid storage member 10	upper cover assembly 20
base assembly 30	atomizing head 40	vent tube 11
liquid storage chamber 12	upper cover 21	sliding cover 22
retaining member 23	locking member 24	pushing cover 25
mouthpiece 26	first elastic member 27	second elastic member 28
vent hole 211	sliding block 212	sliding groove 213
liquid injection hole 214	blind hole 215	elastic abutting member 216
connecting ring 217	abutting ring 218	base plate 221
mounting ring 222	limiting ring 223	through hole 2211
flange 231	abutting edge 2111	first cavity 232
locking portion 241	sliding portion 242	fixing ring 251
positioning ring 252	second cavity 253	pushing ring 261
abutting surface 262	sliding member 29	sliding block 291
second sealing member 263	base 31	connecting member 32
adjusting member 33	first electrode 34	mounting ring 311
air adjusting hole 331	connecting pipe 321	isolation member 35
outer sleeve 41	inner sleeve 42	second electrode 43
liquid guiding member 441	liquid inlet portion 411	liquid guiding portion 421
atomizing chamber 422	insulating member 36	spring 2161
rolling ball 2162		

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0017] The present disclosure will now be described in detail with reference to the accompanying drawings. These figures are simplified schematic diagrams, which only illustrate the basic structure of the present disclosure in a schematic manner, so they only show the structures related to the present disclosure.

[0018] As shown in FIG. 1 and FIG. 6, the present disclosure provides an aerosol generating device, the aerosol generating device includes an atomizer 100 and a power supply device electrically connected with the atomizer 100. The atomizer 100 includes a liquid storage member 10, an upper cover assembly 20 disposed at one end of the liquid storage member 10, a base assembly 30 disposed at the other end of the liquid storage member 10 opposite to the upper cover assembly 20, and an atomizing head 40 accommodated in the liquid storage member 10. In use, the aerosol-forming substrate in the liquid storage member 10 enters the atomizing head 40, the power supply device supplies power to the atomizing head 40 to atomize the aerosol-forming substrate to generate smoke for the user to inhale.

[0019] The liquid storage member 10 is substantially in the form of a hollow cylindrical structure with openings at both ends. The liquid storage member 10 is provided with a vent tube 11. The vent tube 11 is substantially in the form of a hollow cylindrical structure with openings at both ends. One end of the vent tube 11 is connected to the upper cover assembly 20, the other end of the vent tube 11 is connected to the base assembly 30. A liquid storage chamber 12 for storing the aerosol-forming substrate is formed by the inner wall of the liquid storage member 10 and the outer wall of the vent tube 11.

[0020] As shown in FIG. 2 and FIG. 3, the upper cover assembly 20 includes an upper cover 21, a retaining member 23 provided on the upper cover 21, a sliding cover 22 and a locking member 24 slidably provided on the upper cover 21, a pushing cover 25 provided on the sliding cover 22, a mouthpiece 26 slidably provided on the pushing cover 25, a first elastic member 27, and a second elastic member 28.

[0021] The upper cover 21 is substantially cylindrical, the opposite sides of the upper cover 21 are respectively provided with a sliding block 212. Each sliding block 212 is substantially L-shaped. A sliding groove 213 is formed between the two sliding blocks 212, the sliding cover 22 is slidably arranged in the sliding groove 213. The upper cover 21 is provided with a vent hole 211 along its axial direction. In this embodiment, the vent hole 211 is provided approximately at the center of the upper cover 21, the vent hole 211 is located between the two sliding blocks 212. The upper cover 21 is provided with a liquid injection hole 214 on one side of the through hole 211. The upper cover 21 is further provided with a blind hole 215, the liquid injection hole 214 and the blind hole 215 are provided on opposite sides of the through hole 211. The upper cover 21 is provided with a sealing groove 219 around the liquid injection hole 214. The upper cover assembly 20 further includes a first sealing member 201 and an elastic abutting member 216. The elastic abutting member 216 includes a spring 2161 and a rolling ball 2162 provided at one end of the spring 2161. The first sealing member 201 is accommodated in the sealing groove 219 and is sealed around the outer periphery of the liquid injection hole 214. The elastic abutting member 216 is accommodated in the blind hole 215.

[0022] On the end surface of the upper cover 21 away from the sliding blocks 212, a connecting ring 217 and an abutting ring 218 are protruded from the inner side and the outer side respectively. The inner cavity of the connecting ring 217 is communicated with the vent hole 211. When the upper cover 21 is connected to the liquid storage member 10, the abutting ring 218 is inserted into the liquid storage member 10, and the connecting ring 217 is connected with one end of the vent tube 11, so that the vent hole 211 is communicated with the inner cavity of the vent tube 11, and the liquid injection hole 214 is communicated with the liquid storage chamber 12, such that the aerosol-forming substrate can be injected into the liquid storage chamber 12 through the liquid injection hole 214. In this embodiment, the connecting ring 217 and the vent tube 11 are connected by a screw thread. An inner thread is provided at the inner wall of the connecting ring 217. The outer wall of the vent tube 11 is provided with an external thread. It can be understood that, in other embodiments not shown, the connecting ring 217 and the vent tube 11 may also be connected in a detachable manner such as snapping connection or plugging connection. An abutting edge 2111 is protruded at the inner wall of the vent hole 211.

[0023] The sliding cover 22 includes a base plate 221 and a mounting ring 222 and a limiting ring 223 arranged on the base plate 221. The base plate 221 is approximately waist-shaped. The base plate 221 is provided with a through hole 2211. The limiting ring 223 and the mounting ring 222 are protruded on the base plate 221 from the inner side and the outer side respectively. The parts of the base plate 221 located at opposite sides of the mounting ring 222 are slidably arranged in the sliding groove 213. The liquid injection hole 214 can be opened or closed during the sliding process of the base plate 221 along the sliding groove 213. One end of the spring 2161 accommodated in the blind hole 215 elastically abuts against the bottom wall of the blind hole 215. The rolling ball 2162 connected to the other end of the spring 2161 elastically abuts against the end surface of the base plate 221, so as to enhance the damping feeling when the sliding cover 22 slides relative to the upper cover 21 and prevent the sliding cover 22 from being pushed open too easily, thereby preventing a child from accidentally pushing the sliding cover 22 and easily opening the sliding cover 22 to cause the aerosol-forming substrate to leak.

[0024] The retaining member 23 is roughly cylindrical with openings at both ends, one end of the retaining member

23 is provided with a flange 231, the retaining member 23 is inserted into the vent hole 211. One end of the retaining member 23 away from the flange 231 abuts against the abutting edge 2111. One end of the retaining member 23 with the flange 231 abuts against the sliding cover 22. A first cavity 232 is formed between the retaining member 23 and the abutting edge 2111. The first cavity 232 is arranged along the axial direction of the upper cover 21.

5 **[0025]** The locking member 24 includes a locking portion 241 and a sliding portion 242 provided on the locking portion 241. The locking portion 241 is roughly in the shape of a hollow cylinder with openings at both ends. The sliding portion 242 is a protruding ring protruding from the outer wall of the locking portion 241. The locking portion 241 is slidably inserted in the vent hole 211. The sliding portion 242 is slidably received in the first cavity 232. One end of the locking portion 241 extends beyond the retaining member 23 to protrude to the outside the upper cover 21, and abuts against
10 the inner wall of the through hole 2211, so as to prevent the sliding of the sliding cover 22 relative to the upper cover 21. The other end of the locking portion 241 abuts against the abutting edge 2111.

[0026] The first elastic member 27 is sleeved at the outside of the sliding portion 242. The upper end of the first elastic member 27 elastically abuts against the locking portion 241, and the lower end of the first elastic member 27 elastically abuts against the abutting edge 2111.

15 **[0027]** The pushing cover 25 is roughly in the form of a hollow cylindrical structure with an opening at one end. The pushing cover 25 is provided with a fixing ring 251, the fixing ring 251 is roughly in the shape of a hollow cylinder with two ends being open. The upper end of the fixing ring 251 extends through the top of the pushing cover 25. A positioning ring 252 extends radially inward from the fixing ring 251. The pushing cover 25 is sleeved on the sliding cover 22, the lower end of the pushing cover 25 abuts against the upper cover 21, the fixing ring 251 is inserted into the mounting
20 ring 222. A second cavity 253 is formed between the positioning ring 252, the fixing ring 251 and the sliding cover 22.

[0028] The mouthpiece 26 is roughly in the shape of a hollow cylinder with two ends running through. One end of the mouthpiece 26 is provided with a pushing ring 261. The step surface between the pushing ring 261 and the mouthpiece 26 forms an abutting surface 262. One end of the mouthpiece 26 provided with the pushing ring 261 is slidably inserted into the pushing cover 25, and the pushing ring 261 abuts against one end of the locking portion 241.

25 **[0029]** In one embodiment, a sliding member 29 is sandwiched between the pushing cover 25 and the mouthpiece 26, and a sliding block 291 is protruded on the sliding member 29. The sliding member 29 is sleeved on the mouthpiece 26, and the sliding block 291 is slidably arranged in the second cavity 253. The second elastic member 28 is sleeved at the outside of the sliding member 29. One end of the second elastic member 28 elastically abuts against the sliding cover 22, and the other end of the second elastic member 28 elastically abuts against the sliding block 291.

30 **[0030]** In one embodiment, in order to enhance the sealing between the sliding member 29 and the mouthpiece 26, a second sealing member 263 is sandwiched between the sliding member 29 and the mouthpiece 26. It can be understood that the second sealing member 263 is made of a sealing material such as rubber or silicone.

[0031] As shown in FIG. 1, FIG. 2 and FIG. 6, the base assembly 30 includes a base 31 connected to the liquid storage member 10, a connecting member 32 provided on the base 31, an adjusting member 33 rotatably provided on the
35 connecting member 32, and a first electrode 34 mounted on the connecting member 32.

[0032] The base 31 is roughly in the shape of a hollow cylinder with openings at both ends. One end of the base 31 is protruded with a mounting ring 311. The base 31 is sleeved on one end of the vent tube 11 away from the upper cover assembly 20. The connecting member 32 is roughly in the shape of a hollow cylinder with an opening at one end. The connecting member 32 is provided with an air inlet hole. The connecting member 32 is sleeved on the mounting ring
40 311. Corresponds to the air inlet hole, the adjusting member 33 is provided with an air adjusting hole 331 communicating with the outside environment. Rotating the adjusting member 33 can control the communication area between the air adjusting hole 331 and the air inlet hole, so as to facilitate the user to adjust the amount of air intake to meet the needs of different users. One end of the connecting member 32 away from the open end extends downward along its axial direction to form a hollow connecting pipe 321. The first electrode 34 is accommodated in the connecting pipe 321. An
45 isolation member 35 is provided between the first electrode 34 and the connecting pipe 321. The first electrode 34 and the connecting pipe 321 are electrically isolated from each other by the isolation member 35. The connecting pipe 321 is detachably connected to the power supply device, when the two are connected, the first electrode 34 is electrically connected to one of the positive and negative electrodes of the power supply device, and the connecting pipe 321 is electrically connected to the other electrode of the positive and negative electrodes of the power supply device.

50 **[0033]** The atomizing head 40 includes an outer sleeve 41, an inner sleeve 42 accommodated in the outer sleeve 41, a second electrode 43 mounted on the inner sleeve 42, and a heating structure accommodated in the inner sleeve 42.

[0034] Both the outer sleeve 41 and the inner sleeve 42 are in the shape of a hollow cylinder with openings at both ends. The outer sleeve 41 is provided with a liquid inlet portion 411. One end of the outer sleeve 41 is connected to the vent tube 11. The other end of the outer sleeve 41 is inserted into the base 31. The inner sleeve 42 is provided with a
55 liquid guiding portion 421. One end of the inner sleeve 42 is connected to the vent tube 11. The other end of the inner sleeve 42 is connected to the outer sleeve 41. A gap is provided between the inner sleeve 42 and the outer sleeve 41. The space inside the inner sleeve 42 forms an atomizing chamber 422. The aerosol-forming substrate in the liquid storage chamber 12 flows into the atomizing chamber 422 through the liquid inlet portion 411 and the liquid guiding

portion 421 in sequence. It can be understood that the liquid inlet portion 411 and the liquid guiding portion 421 include but are not limited to holes or grooves, so long as it is satisfied that the aerosol-forming substrate in the liquid storage chamber 12 can enter the atomizing chamber 422 through the liquid inlet portion 411 and the liquid guiding portion 421. The gap between the inner sleeve 42 and the outer sleeve 41 is used to store the aerosol-forming substrate entering from the liquid storage chamber 12 into the outer sleeve 41, to avoid that the amount of the aerosol-forming substrate entering from the liquid storage chamber 12 into the atomizing chamber 422 is too large.

[0035] The second electrode 43 is a hollow structure, the upper end of the second electrode 43 is an open end so as to communicate with the atomizing chamber 422. The sidewall at the lower end of the second electrode 43 is provided with openings so as to communicate with the inner cavity of the base 31, so that the external air enters the atomizing chamber 422 and mixes with the smoke. The second electrode 43 is installed at one end of the inner sleeve 42 away from the vent tube 11. An insulating member 36 is provided between the second electrode 43 and the inner sleeve 42. The second electrode 43 and the inner sleeve 42 are electrically isolated from each other by the insulating member 36. The second electrode 43 is in contact with and electrically connected to the first electrode 34.

[0036] The heating structure includes a liquid guiding member 441 and a heating member in contact with each other. The liquid guiding member 441 is used for absorbing the aerosol-forming substrate that flows from the liquid storage chamber 12 to the atomizing chamber 422 via the liquid inlet portion 411 and the liquid guiding portion 421. The heating member is used to heat the aerosol-forming substrate in the liquid guiding member 441. One end of the heating member is electrically connected to one of the positive and negative electrodes of the power supply device through the second electrode 43 and the first electrode 34. The other end of the heating member is electrically connected to the other electrode of the positive and negative electrodes of the power supply device through the inner sleeve 42, the base 31 and the connecting member 32. Thus, the heating member heats the aerosol-forming substrate in the liquid guiding member 441 under the electric driving of the power supply device to generate smoke, the external air enters the atomizing chamber 422 through the air adjusting hole 331 and the air inlet hole to mix with the smoke, the mixed gas enters the user's mouth through the inner cavity of the vent tube 11, the inner cavity of the locking member 24 and the inner cavity of the mouthpiece 26 in sequence for the user to inhale. In this embodiment, the liquid guiding member 441 is cotton, the heating member is a heating mesh. It can be understood that, in other embodiments not shown, the liquid guiding member 441 can also be porous ceramics, fiber ropes, foamed metal or foamed graphite. The heating member can also be a heating wire or a heating orifice plate.

[0037] As shown in FIGs. 4 to 6, when the aerosol-forming substrate in the liquid storage chamber 12 is insufficient and needs to perform liquid injection, the mouthpiece 26 is depressed downwards along the axial direction of the mouthpiece 26, the sliding block 291 slides down along the second cavity 253 to overcome the elastic force of the second elastic member 28 so that the second elastic member 28 is compressed, the pushing ring 261 slides downward and pushes the locking portion 241 of the locking member 24 to slide downward, so that the sliding portion 242 slides in the first cavity 232 and the first elastic member 27 is compressed. When the abutting surface 262 of the mouthpiece 26 abuts against the sliding cover 22 and/or the sliding member 29 abuts against the limiting ring 223, the locking member 24 slides into the upper cover 21, and the pushing ring 261 abuts against the retaining member 23. At this time, the pushing cover 25 is pushed along the radial direction of the pushing cover 25, the pushing cover 25 drives the sliding cover 22 to slide relative to the upper cover 21 along the sliding groove 213, thereby opening the liquid injection hole 214 for performing liquid injection. At this time, when the sliding cover 22 is released, under the elastic force of the second elastic member 28, the sliding member 29 drives the mouthpiece 26 to slide and reset along the second cavity 253. Due to the elastic force of the second elastic member 28, the sliding member 29 tightly abuts against the pushing cover 25 to enhance the sealing between the sliding member 29 and the pushing cover 25, so as to prevent the smoke from being emitted through the gap between the sliding member 29 and the pushing cover 25 when the user sucks the aerosol generating device.

[0038] After the liquid injection is completed, the pushing cover 25 is pushed in the opposite direction, the pushing cover 25 drives the sliding cover 22 to slide relative to the upper cover 21 until the sliding cover 22 moves above the liquid injection hole 214 and the liquid injection hole 214 is closed. At the same time, the locking member 24 slides and resets along the first cavity 232 under the elastic force of the first elastic member 27, so that the locking member 24 abuts against the sliding cover 22, thereby limiting the sliding of the pushing cover 25 and preventing the pushing cover 25 from being pushed forcefully to cause the pushing cover 25 to be misaligned with the upper cover 21.

[0039] It is understood that in other embodiments not shown, the sliding member 29 may be omitted. One end of the second elastic member 28 elastically abuts against the sliding cover 22, the other end of the second elastic member 28 elastically abuts against the mouthpiece 26, so long as it is satisfied that the elastic force of the second elastic member 28 is overcome when sliding the mouthpiece 26 to prevent children from sliding easily, and further after releasing the mouthpiece 26, the mouthpiece 26 can be reset under the elastic restoring force of the second elastic member 28. It can be understood that in other unshown embodiments, both the sliding member 29 and the second elastic member 28 can be omitted, in this case, after the mouthpiece 26 is pressed down, the mouthpiece 26 can reset under the pushing of the locking member 24.

[0040] It can be understood that in other embodiments not shown, the pushing cover 25 and the sliding cover 22 are integrally formed, and in this case, the mouthpiece 26 is slidably arranged on the sliding cover 22.

[0041] It can be understood that in other embodiments not shown, the retaining member 23 may be omitted, and it is only required that the locking member 24 is slidably arranged at the upper cover 21.

[0042] In the atomizer 100 provided by the present disclosure, by slidably arranging the sliding cover 22 and the locking member 24 on the upper cover 21, one end of the locking member 24 abuts against the sliding cover 22 to prevent the sliding cover 22 from sliding relative to the upper cover 21. Further, a mouthpiece 26 that can slide relative to the sliding cover 22 is provided, the mouthpiece 26 abuts against the locking member 24, sliding the mouthpiece 26 can drive the locking member 24 to move so as to release the abutment to the sliding cover 22, so that the sliding cover 22 can slide relative to the upper cover 21 to open or close the liquid injection hole 214, thereby preventing children from easily opening the atomizer 100 to contact the aerosol-forming substrate and thus improving the safety of the atomizer 100.

[0043] The aerosol generating device provided by the present invention has the same technical effects as the above-mentioned atomizer 100 because it has all the technical features of the above-mentioned atomizer 100.

[0044] Taking the above-mentioned ideal embodiments according to the present disclosure as enlightenment, through the above description, the relevant persons can make various changes and modifications without departing from the concept of the present disclosure. The technical scope of the present disclosure is not limited to the content of the specification, and its technical scope should be determined according to the scope of the claims.

Claims

1. An upper cover assembly comprising an upper cover, a mouthpiece and a sliding cover slidably provided on the upper cover, wherein the upper cover is provided with a liquid injection hole, and the upper cover is provided with a first cavity, the upper cover assembly further comprises a locking member slidably arranged in the first cavity, a first elastic member is sleeved on the locking member, one end of the locking member abuts against the sliding cover to prevent the sliding cover from sliding relative to the upper cover, the mouthpiece is slidable relative to the sliding cover, and the mouthpiece abuts against the locking member; by sliding the mouthpiece to cause the locking member to compress the first elastic member and slide in the first cavity until the sliding cover is released, the sliding cover can slide relative to the upper cover to open or close the liquid injection hole.
2. The upper cover assembly of claim 1, wherein the locking member comprises a locking portion and a sliding portion provided on the locking portion, the sliding portion is slidably arranged in the first cavity, the first elastic member is sleeved at the outside of the locking portion; when the locking member slides in the first cavity under an external force, the locking member compresses the first elastic member and when the locking member is released, the locking member is reset under an elastic force of the first elastic member and abuts against the sliding cover again.
3. The upper cover assembly of claim 1, wherein the upper cover assembly further comprises a retaining member, the upper cover is provided with a vent hole along its axial direction, an abutting edge is provided at an inner wall of the vent hole, the retaining member is located in the vent hole, the first cavity is formed by the retaining member and the abutting edge, one end of the first elastic member elastically abuts against the retaining member, the other end of the first elastic member elastically abuts against the abutting edge.
4. The upper cover assembly of claim 1, wherein the upper cover assembly further comprises a pushing cover, the pushing cover is sleeved on the sliding cover, the mouthpiece is slidably provided on the pushing cover.
5. The upper cover assembly of claim 4, wherein a sliding member is provided between the pushing cover and the mouthpiece, the pushing cover is provided with a second cavity, the sliding member is slidably arranged in the second cavity, the upper cover assembly further comprises a second elastic member, the second elastic member is sleeved at the outside of the sliding member; when the sliding member slides in the second cavity under an external force, the sliding member compresses the second elastic member, and when the external force is removed, the sliding member is reset under an elastic force of the second elastic member.
6. The upper cover assembly of claim 5, wherein a mounting ring is provided on the upper cover, the pushing cover is provided with a fixing ring, the fixing ring is inserted into the mounting ring, a positioning ring extends radially inward from the fixing ring, the second cavity is formed by the positioning ring, the fixing ring and the sliding cover.
7. The upper cover assembly of claim 5, wherein a limiting ring is further provided on the sliding cover, when the sliding member slides in the second cavity under an external force until the sliding member abuts against the limiting ring,

the locking member releases the sliding cover.

5 8. The upper cover assembly of claim 1, wherein a pushing ring is provided at one end of the mouthpiece, a step surface between the pushing ring and the mouthpiece forms an abutting surface, the pushing ring abuts against one end of the locking member; by sliding the mouthpiece to cause the pushing ring pushes the locking member to slide until the abutting surface abuts against the sliding cover, the locking member is located in the upper cover.

9. An atomizer comprising the upper cover assembly according to any one of claims 1 to 8.

10 10. An aerosol generating device comprising the atomizer of claim 9.

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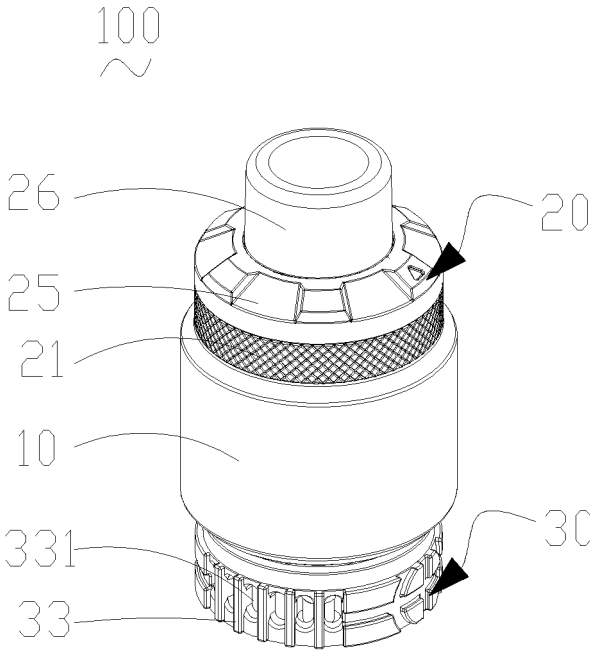


FIG. 1

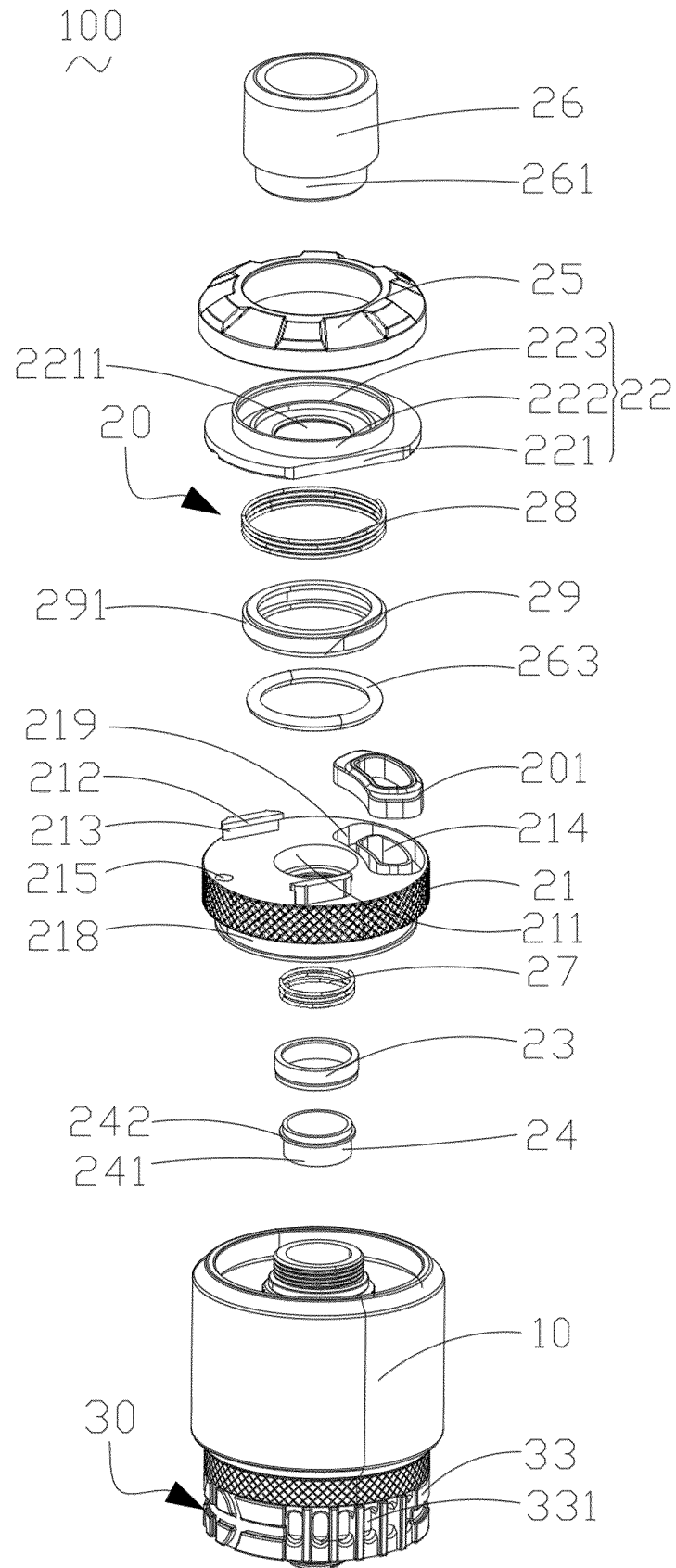


FIG. 2

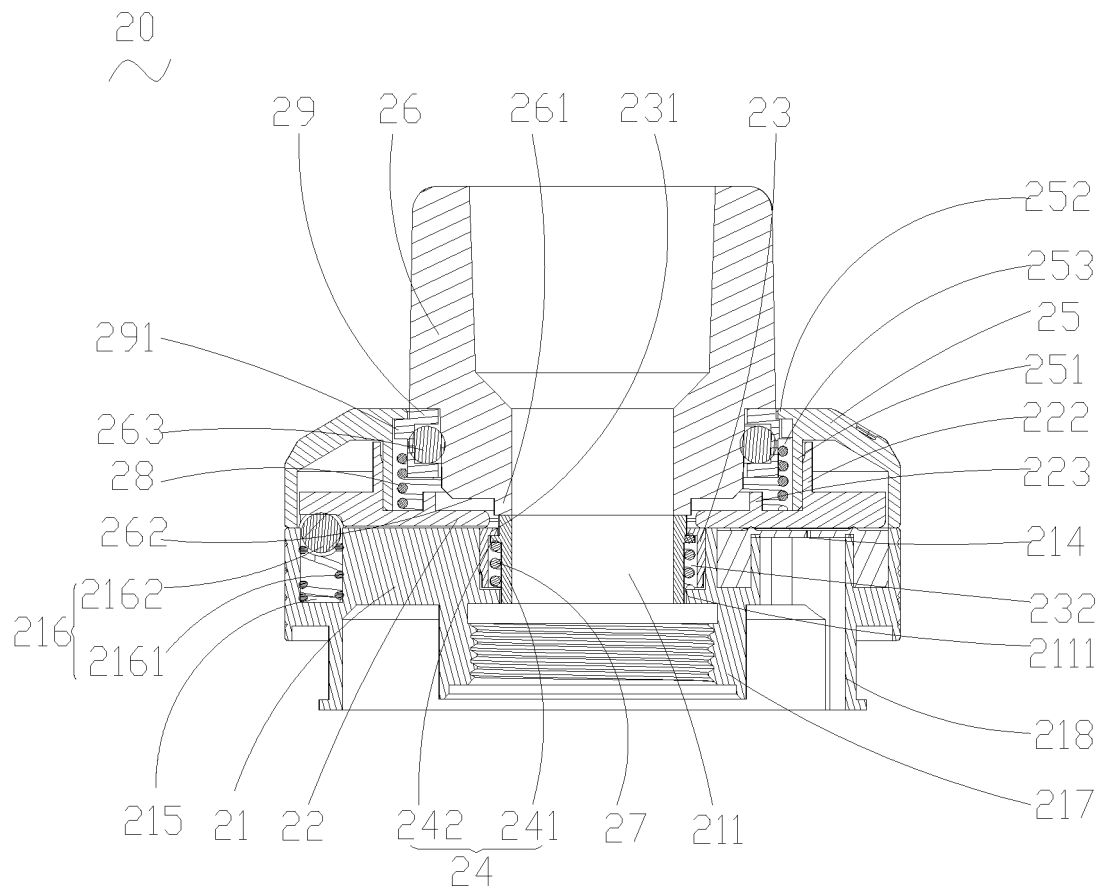


FIG. 3

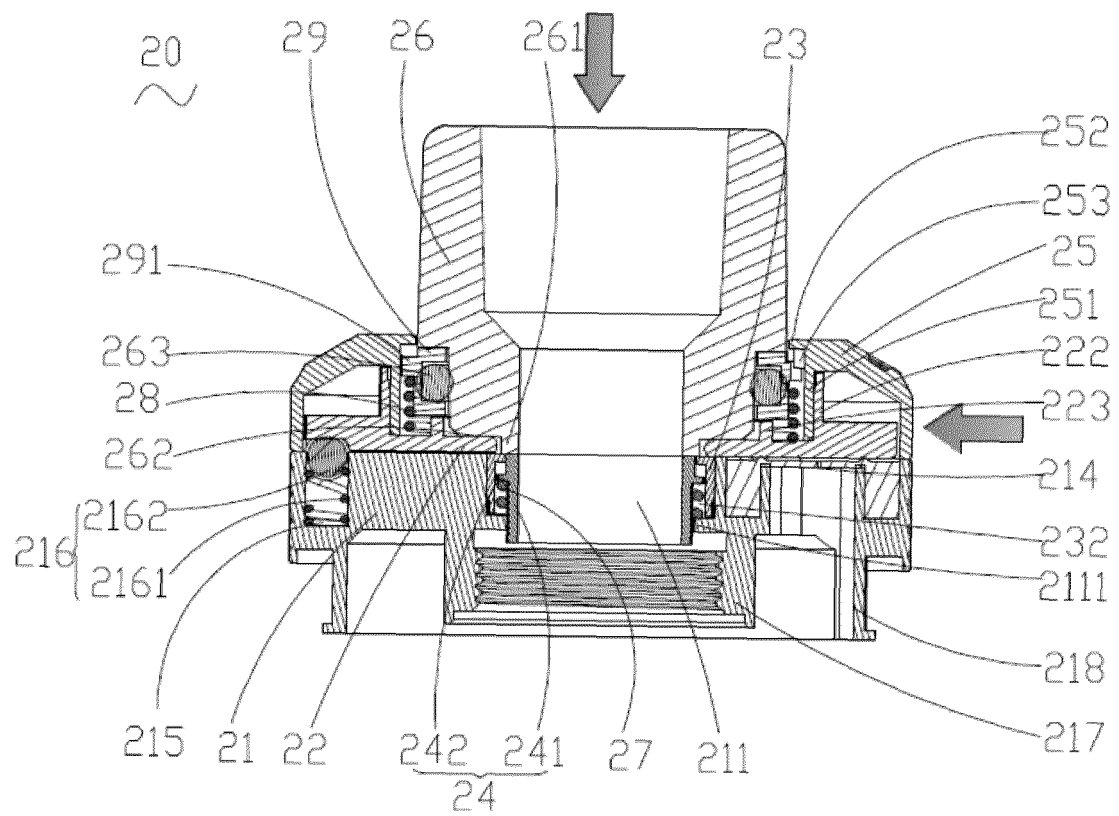


FIG. 4

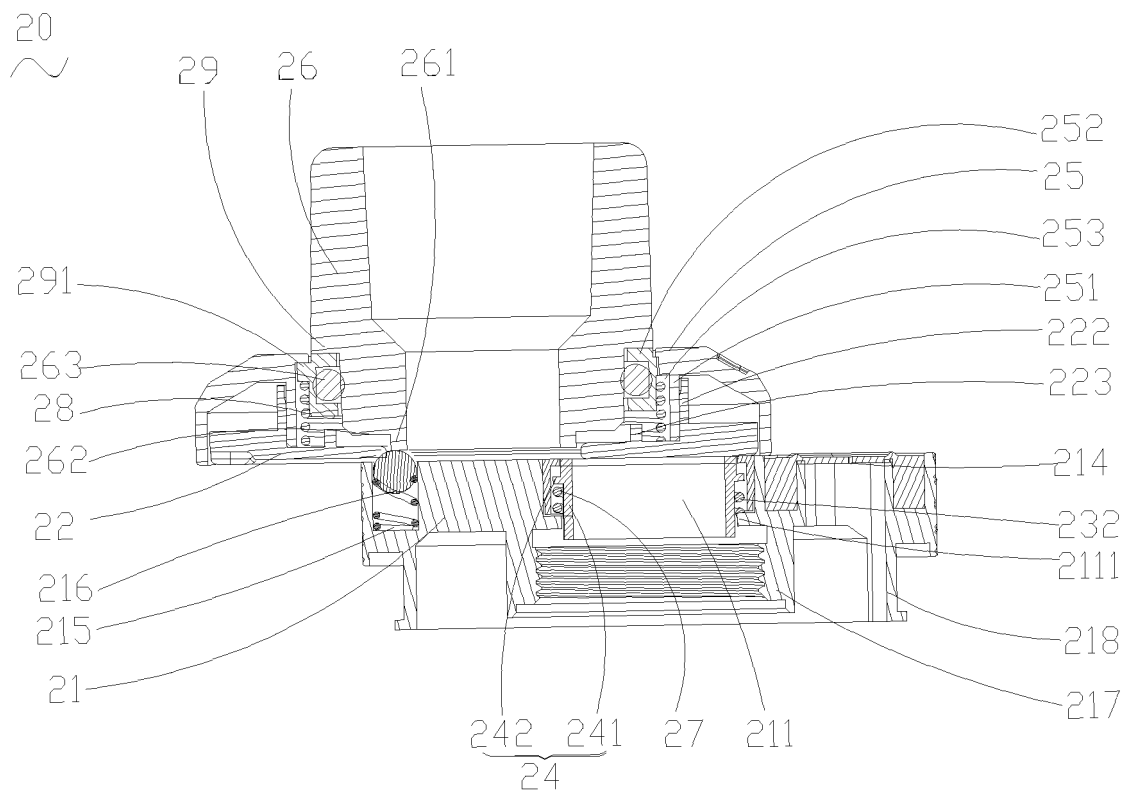


FIG. 5

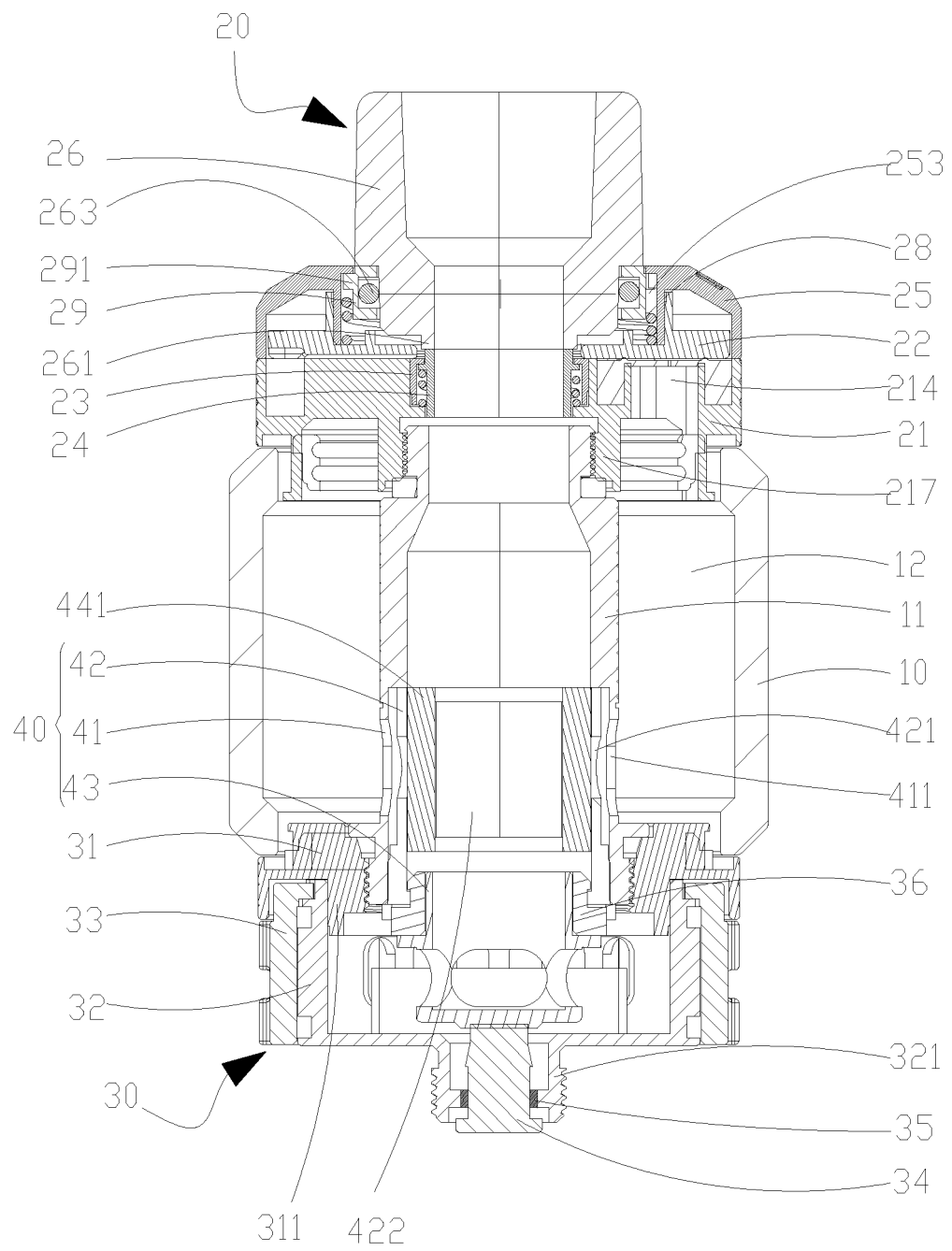


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2021/071990

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) A24F47															
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) CNABS, VEN, CNKI 上盖, 雾化器, 气溶胶, 滑动, 弹性, 移动 Upper cover, atomizer, aerosol, sliding, elastic															
C. DOCUMENTS CONSIDERED TO BE RELEVANT															
<table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 211746942 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 27 October 2020 (2020-10-27) claims 1-10</td> <td>1-10</td> </tr> <tr> <td>Y</td> <td>CN 209883061 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 03 January 2020 (2020-01-03) description, paragraphs 0050-0067 and figures 3-6**9-10</td> <td>1-10</td> </tr> <tr> <td>Y</td> <td>CN 204796749 U (JOYETECH (CHANGZHOU) ELECTRONIC TECHNOLOGY CO., LTD.) 25 November 2015 (2015-11-25) description, paragraph 0042, and figures 3-4</td> <td>1-10</td> </tr> <tr> <td>A</td> <td>CN 109077362 A (GD SIGELEI ELECTRONIC TECH CO., LTD.) 25 December 2018 (2018-12-25) entire document</td> <td>1-10</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 211746942 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 27 October 2020 (2020-10-27) claims 1-10	1-10	Y	CN 209883061 U (CHANGZHOU PAITENG ELECTRONIC TECHNOLOGY SERVICE CO., LTD.) 03 January 2020 (2020-01-03) description, paragraphs 0050-0067 and figures 3-6**9-10	1-10	Y	CN 204796749 U (JOYETECH (CHANGZHOU) ELECTRONIC TECHNOLOGY CO., LTD.) 25 November 2015 (2015-11-25) description, paragraph 0042, and figures 3-4	1-10	A	CN 109077362 A (GD SIGELEI ELECTRONIC TECH CO., LTD.) 25 December 2018 (2018-12-25) entire document	1-10
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☐ Further documents are listed in the continuation of Box C.															
☒ See patent family annex.															
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Date of the actual completion of the international search 22 March 2021	Date of mailing of the international search report 30 March 2021														
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088 China Facsimile No. (86-10)62019451	Authorized officer Telephone No.														

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2021/071990

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	211746942	U	27 October 2020	None			
CN	209883061	U	03 January 2020	None			
CN	204796749	U	25 November 2015	US	10477899	B2	19 November 2019
				US	2018000156	A1	04 January 2018
				US	2020068955	A1	05 March 2020
				WO	2016202303	A1	22 December 2016
CN	109077362	A	25 December 2018	None			

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