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(54) **DUST COLLECTION ELECTRODE ASSEMBLY, AIR PURIFICATION DEVICE AND CONTROL METHOD THEREFOR**

(57) The present invention provides a dust collection electrode assembly, an air purification device and a control method thereof. The dust collection electrode assembly includes a dust collection electrode (21) and a dust collection electrode support structure, the dust collection electrode is moveable relative to the dust collection electrode support structure to change a position and/or orientation state of the dust collection electrode relative to a generation electrode assembly (1). By changing the position and/or orientation state of the dust collection electrode relative to the generation electrode assembly, the main dust accumulation area of the dust collection electrode (21) can be changed. When there is more dust accumulated in a certain area, the position or orientation state of the dust collection electrode (21) can be changed, so as to change to another area to accumulate dust, thereby effectively reducing the cleaning frequency, slowing down the attenuation of the particulate matter CADR of the purification device, and optimizing the user experience.

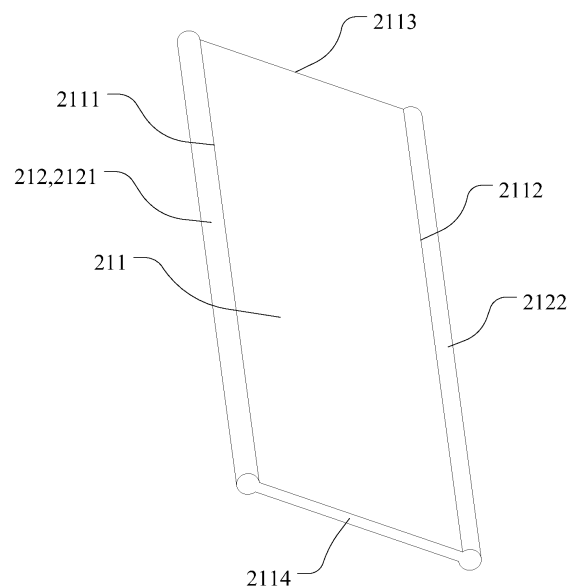


FIG. 2

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Description

CROSS REFERENCES TO RELATED APPLICATION

[0001] The present application is based on and claims priority to Chinese patent application No. 201810578650.2, filed on June 7, 2018, the content of which is hereby incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] The present invention relates to the field of air purification technology, and particularly to a dust collection electrode assembly, an air purification device and a control method thereof.

BACKGROUND

[0003] As the environmental problems become more and more serious, an air purifier has become a must-have household appliance for many families. The air purifier is usually divided into a filter type air purifier and an electrostatic type air purifier. The filter type air purifier uses a filter screen to filter particulate impurities such as PM2.5 and the like in the air. The filter screen in this type of air purifier needs to be regularly replaced, which increases the usage cost. The electrostatic type air purifier purifies the air in an electric purification mode, and there is no need to replace its consumables as long as its internal electrode plates are cleaned regularly, thereby saving the usage cost.

[0004] Due to the high dust collection efficiency of the electrostatic air purifier, the dust collection capability of the electrode plate is easily weakened due to dust accumulation. Therefore, a user needs to frequently clean the electrode plate to ensure the purification effect of the purifier, which affects the user experience.

SUMMARY

[0005] According to an embodiment of the present invention, a dust collection electrode assembly applied to an air purification device is provided, the air purification device further includes a generation electrode assembly, the dust collection electrode assembly includes a dust collection electrode, the dust collection electrode is moveable to change at least one of a position state and an orientation state of the dust collection electrode relative to the generation electrode assembly.

[0006] In an embodiment, the dust collection electrode assembly further includes a dust collection electrode support structure, the dust collection electrode is moveable relative to the dust collection electrode support structure.

[0007] In an embodiment, the dust collection electrode assembly applied to an air purification device is provided, the air purification device further includes a generation electrode assembly, the dust collection electrode assembly includes a dust collection electrode and a dust col-

lection electrode support structure, the dust collection electrode is moveable relative to the dust collection electrode support structure to change at least one of a position state and an orientation state of the dust collection electrode relative to the generation electrode assembly.

[0008] In an embodiment, the dust collection electrode includes an electrode plate body and a plurality of dust collection structures provided on the electrode plate body, when the dust collection electrode is in different position states and/or orientation states relative to the generation electrode assembly, the generation electrode assembly is arranged opposite to different dust collection structures.

[0009] In an embodiment, the plurality of dust collection structures are respectively provided on a first side edge and a second side edge of the electrode plate body, the first side edge is opposite to the second side edge.

[0010] In an embodiment, a dust collection structure includes a protrusion provided on a side edge of the electrode plate body.

[0011] In an embodiment, the protrusion extends in a direction same as an extension direction of the side edge, and a cross section of the protrusion is a portion of a circle.

[0012] In an embodiment, the dust collection electrode support structure includes a frame structure, the dust collection electrode is provided in the frame structure and is turnable around an axis parallel to the first side edge, such that the dust collection electrode turnable between a first position and a second position; in the first position, a dust collection structure on the first side edge is opposite to the generation electrode assembly; and in the second position, a dust collection structure on the second side edge is opposite to the generation electrode assembly.

[0013] In an embodiment, the electrode plate body further includes a third side edge and a fourth side edge connected to the first side edge and the second side edge, a rotating shaft is provided on the third side edge and the fourth side edge, the frame structure is provided with rotating shaft holes matching the rotating shaft; or rotating shaft holes are provided on the third side edge and the fourth side edge, the frame structure is provided with a rotating shaft matching the rotating shaft holes.

[0014] In an embodiment, the dust collection electrode assembly further includes a drive device configured to drive the dust collection electrode to turn between the first position and the second position.

[0015] In an embodiment, a plurality of dust collection electrodes are arranged side by side, the dust collection electrode assembly further includes a transmission mechanism, and the drive device drives the plurality of dust collection electrodes to turn synchronously through the transmission mechanism.

[0016] In an embodiment, the transmission mechanism includes a gear transmission mechanism or a double crank mechanism.

[0017] In an embodiment, the dust collection electrode

has a retractable structure which is retractable in a direction parallel to the third side edge, the retractable structure is configured to retract when turning and stretch to an original shape and size after the turning is completed.

[0018] In an embodiment, the dust collection electrode is retracted electrically; or

the dust collection electrode assembly further includes an offset member, the dust collection electrode includes a fixed portion and a movable portion which is movable relative to the fixed portion, when the dust collection electrode turns and interferes with a fixed portion of an adjacent dust collection electrode, the movable portion moves to a retraction position under an action of a force, and after the dust collection electrode completes turning, the movable portion returns to a normal position under an action of the offset member.

[0019] According to an embodiment, an air purification device is provided, which includes the above-mentioned dust collection electrode assembly.

[0020] In an embodiment, the air purification device further includes a generation electrode assembly, the dust collection electrode assembly is moveable relative to the generation electrode assembly to change at least one of a position state and an orientation state of the dust collection electrode relative to the generation electrode assembly.

[0021] According to an embodiment, a control method for the above-mentioned air purification device is provided, which includes:

calculating a cumulative working duration of the air purification device;

[0022] controlling the drive device to drive the dust collection electrode to perform one turning when the cumulative working duration is greater than or equal to a first predetermined duration; or, sending a prompt message to a user to remind the user to clean the dust collection electrode when the cumulative working duration is greater than or equal to a second predetermined duration.

[0023] In an embodiment, the calculating the cumulative working duration of the air purification device includes:

when the dust collection electrode in the air purification device is used for a first time, calculating the cumulative working duration by taking time when the air purification device is turned on for a first time as a starting point; and

when the dust collection electrode in the air purification device is cleaned, calculating the cumulative working duration by taking time when the air purification device is turned on for the first time after the dust collection electrode is cleaned as the starting point.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] Through the following description of the embodiments of the present invention with reference to the ac-

companying drawings, the above and other purposes, features and advantages of the present invention will become clearer. In the drawings:

FIG. 1 is a schematic structure diagram illustrating a dust collection electrode assembly according to an embodiment of the present invention;

FIG. 2 is a schematic structure diagram illustrating a dust collection electrode in a dust collection electrode assembly according to an embodiment of the present invention; and

FIG. 3 is an exploded view of an air purification device according to an embodiment of the present invention.

DETAILED DESCRIPTION

[0025] The present invention is described below based on the embodiments, but the present invention is not limited to these embodiments. In order to avoid confusing the essence of the present invention, well-known methods, procedures, processes, and elements are not described in detail.

[0026] In addition, those of ordinary skill in the art should understand that the drawings provided herein are for illustrative purpose, and the drawings are not necessarily drawn to scale.

[0027] Unless the context clearly requires otherwise, the words "include", "comprise" and the like in the entire specification and claims should be interpreted as inclusive rather than exclusive or exhaustive, that is, "including but not limited to".

[0028] In the description of the present invention, it should be appreciated that, terms "first", "second" and so on are used for descriptive purpose only, and cannot be understood as indicating or implying a relative importance. In addition, in the description of the present invention, unless otherwise stated, "a plurality of" means two or more.

[0029] A purpose of the present invention is to provide a dust collection electrode assembly capable of effectively reducing the cleaning frequency, an air purification device having the dust collection electrode assembly, and a control method thereof.

[0030] The dust collection electrode in the dust collection electrode assembly provided by the present invention is moveable relative to a dust collection electrode support structure, so that at least one of a position state and an orientation state of the dust collection electrode relative to the generation electrode assembly can be changed. By changing at least one of the position and orientation states of the dust collection electrode relative to the generation electrode assembly, a main dust accumulation area of the dust collection electrode can be changed. When there is more dust accumulated in a certain area, the position or orientation state of the dust collection electrode can be changed, so as to change to another area to accumulate the dust, thereby effectively

reducing the cleaning frequency, slowing down the attenuation of the particulate matter CADR of the purification device, and optimizing the user experience.

[0031] The present invention provides a dust collection electrode assembly and an air purification device having the dust collection electrode assembly, such as an electrostatic type air purifier. As shown in FIG. 3, the air purification device provided by the present invention includes a generation electrode assembly 1 and a dust collection electrode assembly 2 opposite to each other. The generation electrode assembly 1 includes a generation electrode 11; the dust collection electrode assembly 2 includes a dust collection electrode 21 and a dust collection electrode support structure. The dust collection electrode support structure is configured to support the dust collection electrode 21. After the generation electrode 11 is powered on, a high potential difference is formed between the generation electrode 11 and the dust collection electrode 21, accordingly a corona discharge can be produced, so that the particulate matter passing between the generation electrode 11 and the dust collection electrode 21 is charged, and the charged particulate matter moves to the dust collection electrode 21 and is accumulated on the dust collection electrode 21, thereby achieving the effect of air purification.

[0032] A main dust accumulation area of the dust collection electrode 21 is a portion thereof opposite to the generation electrode 11. To solve the problem existing in the related art that the dust collection electrode 21 needs to be cleaned frequently to ensure the purification effect of the purification device, as shown in FIG. 1 and FIG. 2, the dust collection electrode 21 in the dust collection electrode assembly 2 provided by the present invention is moveable relative to the dust collection electrode support structure, so that at least one of the position and/or orientation state of the dust collection electrode 21 relative to the generation electrode assembly 1 can be changed. By changing at least one of the position and/or orientation state of the dust collection electrode 21 relative to the generation electrode assembly 1, the main dust accumulation area of the dust collection electrode 21 can be changed. When there is more dust accumulated in a certain area, the position or orientation state of the dust collection electrode 21 can be changed, so as to change to another area to accumulate the dust, thereby effectively reducing the cleaning frequency, slowing down the attenuation of the particulate matter CADR of the purification device, and optimizing the user experience. The CADR is short for Clean Air Delivery Rate.

[0033] The mode of motion of the dust collection electrode 21 relative to the dust collection electrode support structure may be, for example, translating and/or turning relative to the dust collection electrode support structure, such as turning relative to the dust collection electrode support structure. In such a way, the compactness of the overall structure of the air purification device is not affected, and the main dust accumulation area of the dust

collection electrode 21 can be easily changed.

[0034] Further, as shown in FIG. 2, the dust collection electrode 21 includes an electrode plate body 211 and a plurality of dust collection structures 212 provided on the electrode plate body 211. The dust collection structures 212 can increase the dust collection area of the dust collection electrode 21, which allows the dust collection electrode 21 to receive more accumulated dust. When the dust collection electrode 21 is in different position and/or orientation states relative to the generation electrode assembly 1, the generation electrode assembly 1 is arranged opposite to different dust collection structures 212. That is, each time the position and/or orientation state of one dust collection electrode 21 is changed, one dust collection structure 212 opposite to the generation electrode assembly 1 is replaced. Thus, each time the position or orientation state of the dust collection electrode 21 is changed, one new dust collection structure 212 is arranged opposite to the generation electrode assembly 1 to accumulate dust, thereby further increasing a duration of a single use of the dust collection electrode assembly 2.

[0035] The dust collection structure 212 may be any structure capable of increasing the dust collection area of the dust collection electrode 21. In some embodiments, the dust collection structure 212 includes a protrusion disposed on a side edge of the electrode plate body 211. Preferably, the protrusion extends in a direction same as the extension direction of the side edge. Further, a cross section of the protrusion can be a part of a circle, which can further increase the dust collection area of the dust collection electrode 21. The part of the circle is obtained by cutting of a portion of the full circle, such as cutting a small portion of the full circle.

[0036] The electrode plate body 211 includes a first side edge 2111 and a second side edge 2112 opposite to each other, and further includes a third side edge 2113 and a fourth side edge 2114 respectively connected to both ends of the first side edge 2111 and the both ends of the second side edge 2112. In some embodiments, a plurality of dust collection structures 212 are respectively disposed on the first side edge 2111 and the second side edge 2112. For example, in the embodiment shown in FIG. 2, a first protrusion 2121 is provided on the first side edge 2111 of the electrode plate body 211, and a second protrusion 2122 is provided on the second side edge 2112 of the electrode plate body 211. In such a way, through the turning of the dust collection electrode 21, the dust collection structure 212 on the first side edge 2111 or the dust collection structure 212 on the second side edge 2112 can be arranged opposite to the generation electrode assembly 1.

[0037] Specifically, as shown in FIG. 1, the dust collection electrode support structure includes a frame structure 22, and the dust collection electrode 21 can be provided in the frame structure 22 and be turnable around an axis parallel to the first side edge 2111, so that the dust collection electrode 21 can turn between a first po-

sition and a second position. In the first position, the first protrusion 2121 on the first side edge 2111 is opposite to the generation electrode assembly 1, and in this case, the first protrusion 2121 serves as the main dust collection structure 212 to collect the dust. In the second position, the second protrusion 2122 on the second side edge 2112 is opposite to the generation electrode assembly 1, and in this case, the second protrusion 2122 serves as the main dust collection structure 212 to collect the dust.

[0038] A rotating shaft is respectively provided on the third side edge 2113 and the fourth side 2114 of the dust collection electrode 21, and accordingly, the frame structure 22 is provided with rotating shaft holes (not shown in the figure) matching the rotating shaft. The rotating shaft is arranged rotatably in the rotating shaft holes to implement the turning of the dust collection electrode 21. Alternatively, rotating shaft holes are provided on the third side edge 2113 and the fourth side 2114 of the dust collection electrode 21, and accordingly, the frame structure 22 is provided with a rotating shaft (not shown in the figure) matching the rotating shaft holes. The rotating shaft is arranged rotatably in the rotating shaft holes to implement the turning of the dust collection electrode 21.

[0039] In some embodiments, there are a plurality of dust collection electrodes 21 arranged side by side. In order to implement that all dust collection electrodes 21 can turn at the same time, the dust collection electrodes 21 need to be spaced apart to avoid interference between the dust collection electrodes 21 during the turning. In order to minimize a space between the dust collection electrodes 21, the compactness of the structure is improved, for example, the rotating shaft or the rotating shaft holes is/are arranged at a midpoint of the third side edge 2113 and a midpoint of the fourth side edge 2114.

[0040] In some other embodiments, the dust collection electrode 21 has a structure retractable in a direction parallel to the third side edge 2113. The dust collection electrode 21 is retracted when turning to avoid interference between the dust collection electrodes 21; after the turning is finished, the dust collection electrode 21 is stretched into an original shape and size. The dust collection electrode 21 can be retracted electrically; alternatively, the dust collection electrode 21 may include a fixed portion and a movable portion which is movable relative to the fixed portion, and the movable portion is in a normal position under an action of an offset member such as a spring, to maintain the original shape and size of the dust collection electrode 21; when the dust collection electrode 21 turns and interferes with a fixed portion of an adjacent dust collection electrode 21, the movable portion moves to a retraction position under an action of a force, and after the dust collection electrode 21 completes the turning, the movable portion returns to the normal position under the action of the offset member. By providing the dust collection electrodes 21 having a retractable structure, the space between the dust collection electrodes 21 can also be reduced.

[0041] In order to implement an automatic change of the position of the dust collection electrode 21, in some embodiments, the dust collection electrode assembly 2 further includes a drive device (not shown) configured to drive the dust collection electrode 21 to turn between the first position and the second position. The drive device may be, for example, a device capable of driving the dust collection electrode 21 to turn, such as a motor or a rotating cylinder, etc. For example, the drive device may be provided at one end of the dust collection electrode 21 and mounted on the frame structure 22.

[0042] Further, in order to simplify the structure, the dust collection electrode assembly 2 further includes a transmission mechanism (not shown in the figures). The drive device drives a plurality of dust collection electrodes 21 to synchronously turn through the transmission mechanism. The transmission mechanism may be any transmission mechanism capable of rotating, such as a gear transmission mechanism, a double crank mechanism, and the like.

[0043] The turning of the dust collection electrode 21 can be automatically controlled by the air purification device. For example, a cumulative working duration of the air purification device is calculated. The calculation method is that, if the dust collection electrode 21 in the air purification device is used for the first time, the cumulative working duration is calculated by taking time when the air purification device is turned on for the first time as a starting point; and if the dust collection electrode 21 in the air purification device is cleaned, the cumulative working duration is calculated by taking time when the air purification device is turned on for the first time after the dust collection electrode is cleaned as a starting point. When the cumulative working duration is greater than or equal to a first predetermined duration, the drive device is controlled to drive the dust collection electrode 21 to perform one turning. When the cumulative working duration is greater than or equal to a second predetermined duration, a prompt message is sent to the user to remind the user to clean the dust collection electrode 21. When the user cleans the dust collection electrode 21 and puts it back into the air purification device, the cumulative working duration is reset to zero. Here, the zero reset may be automatic, that is, when the air purification device detects that the dust collection electrode 21 is taken out and then reinstalled, it is determined that the dust collection electrode 21 has been cleaned, and the cumulative working duration is automatically reset to zero, or, the user can manually reset to zero. The first predetermined duration and the second predetermined duration can be set according to specific conditions. The first predetermined duration is, for example, a cleaning cycle of a conventional air purification device, and the second predetermined duration is less than or equal to twice the first predetermined time.

[0044] In other embodiments, a button portion (not shown in the figures) is provided on the air purification device, and the user can press the button portion to con-

trol the turning of the dust collection electrode 21 autonomously, for example, when the button portion is triggered, the drive device drives the dust collection electrode 21 to perform one turning. The button portion may be a mechanical button or a virtual button provided on a touch screen.

[0045] In an alternative embodiment, the dust collection electrode assembly as a whole is configured to be able to move relative to the generation electrode assembly, thereby changing at least one of the position and orientation states of the dust collection electrode of the dust collection electrode assembly relative to the generation electrode assembly. For example, the dust collection electrode assembly is configured to be able to turn integrally or be able to move integrally relative to the generation electrode assembly, and the configuration mode is similar to that of the foregoing dust collection electrode, which will not be repeated here again.

[0046] Further, as shown in FIG. 3, the air purification device provided by the present invention further includes a primary effect filter screen 3 and an ozone reduction net 4. In a flow direction of the airflow, the primary effect filter screen 3, the generation electrode assembly 1, and the dust collection electrode assembly 2 and the ozone reduction net 4 are arranged in sequence. The air is preliminarily filtered through the primary effect filter screen 3 to extend the duration of a single use of the dust collection electrode assembly 2. The ozone produced by the air purification device during the air purification is decomposed by the ozone reduction net 4.

[0047] It is easy for those skilled in the art that to understand that the above preferred solutions can be freely combined or superimposed as long as they do not conflict with each other.

[0048] It should be understood that the above embodiments are merely exemplary rather than restrictive. Those skilled in the art can make various apparent or equivalent modifications or substitutions to the above details without departing from the basic principles of the present invention, and these will all included in the scope of the claims of the present invention.

Claims

1. A dust collection electrode assembly, applied in an air purification device, the air purification device comprising a generation electrode assembly, wherein the dust collection electrode assembly comprises a dust collection electrode, the dust collection electrode is moveable to change at least one of a position state and an orientation state of the dust collection electrode relative to the generation electrode assembly.
2. The dust collection electrode assembly according to claim 1, further comprising a dust collection electrode support structure, wherein the dust collection

electrode is moveable relative to the dust collection electrode support structure.

3. The dust collection electrode assembly according to claim 1 or 2, wherein the dust collection electrode comprises an electrode plate body and a plurality of dust collection structures provided on the electrode plate body, when the dust collection electrode is in different position states and/or orientation states relative to the generation electrode assembly, the generation electrode assembly is arranged opposite to different dust collection structures.
4. The dust collection electrode assembly according to claim 3, wherein the plurality of dust collection structures are respectively provided on a first side edge and a second side edge of the electrode plate body, the first side edge is opposite to the second side edge.
5. The dust collection electrode assembly according to claim 3, wherein a dust collection structure comprises a protrusion provided on a side edge of the electrode plate body.
6. The dust collection electrode assembly according to claim 5, wherein the protrusion extends in a direction same as an extension direction of the side edge, and a cross section of the protrusion is a portion of a circle.
7. The dust collection electrode assembly according to claim 4, further comprising a dust collection electrode support structure, wherein the dust collection electrode is capable of moving relative to the dust collection electrode support structure, the dust collection electrode support structure comprises a frame structure, the dust collection electrode is provided in the frame structure and is turnable around an axis parallel to the first side edge, such that the dust collection electrode is turnable between a first position and a second position; in the first position, a dust collection structure on the first side edge is opposite to the generation electrode assembly; and in the second position, a dust collection structure on the second side edge is opposite to the generation electrode assembly.
8. The dust collection electrode assembly according to claim 7, wherein the electrode plate body further comprises a third side edge and a fourth side edge connected to the first side edge and the second side edge, a rotating shaft is provided on the third side edge and the fourth side edge, the frame structure is provided with rotating shaft holes matching the rotating shaft; or rotating shaft holes are provided on the third side edge and the fourth side edge, the frame structure is provided with a rotating shaft

matching the rotating shaft holes.

9. The dust collection electrode assembly according to claim 7, further comprising a drive device configured to drive the dust collection electrode to turn between the first position and the second position. 5
10. The dust collection electrode assembly according to claim 9, further comprising a plurality of dust collection electrodes arranged side by side, wherein the dust collection electrode assembly further comprises a transmission mechanism, and the drive device drives the plurality of dust collection electrodes to turn synchronously through the transmission mechanism. 10
11. The dust collection electrode assembly according to claim 10, wherein the transmission mechanism comprises a gear transmission mechanism or a double crank mechanism. 15
12. The dust collection electrode assembly according to claim 8, wherein the dust collection electrode has a retractable structure which is retractable in a direction parallel to the third side edge, the retractable structure is configured to retract when turning and stretch to an original shape and size after the turning is completed. 20
13. The dust collection electrode assembly according to claim 12, wherein, 25
 - the dust collection electrode is retracted electrically; or
 - the dust collection electrode assembly further comprises an offset member, the dust collection electrode comprises a fixed portion and a movable portion which is movable relative to the fixed portion, when the dust collection electrode turns and interferes with a fixed portion of an adjacent dust collection electrode, the movable portion moves to a retraction position under an action of a force, and after the dust collection electrode completes turning, the movable portion returns to a normal position under an action of the offset member. 30
14. An air purification device, comprising the dust collection electrode assembly according to any one of claims 1 to 13. 35
15. A control method for an air purification device according to claim 14, wherein the dust collection electrode assembly further comprises a drive device configured to drive the dust collection electrode to turn between a first position and a second position, the control method comprises: 40

calculating a cumulative working duration of the air purification device;

controlling the drive device to drive the dust collection electrode to perform one turning when the cumulative working duration is greater than or equal to a first predetermined duration; or, sending a prompt message to a user to remind the user to clean the dust collection electrode when the cumulative working duration is greater than or equal to a second predetermined duration. 45

16. The control method for the air purification device according to claim 15, wherein the calculating the cumulative working duration of the air purification device comprises: 50

when the dust collection electrode in the air purification device is used for a first time, calculating the cumulative working duration by taking time when the air purification device is turned on for a first time as a starting point; and when the dust collection electrode in the air purification device is cleaned, calculating the cumulative working duration by taking time when the air purification device is turned on for the first time after the dust collection electrode is cleaned as the starting point. 55

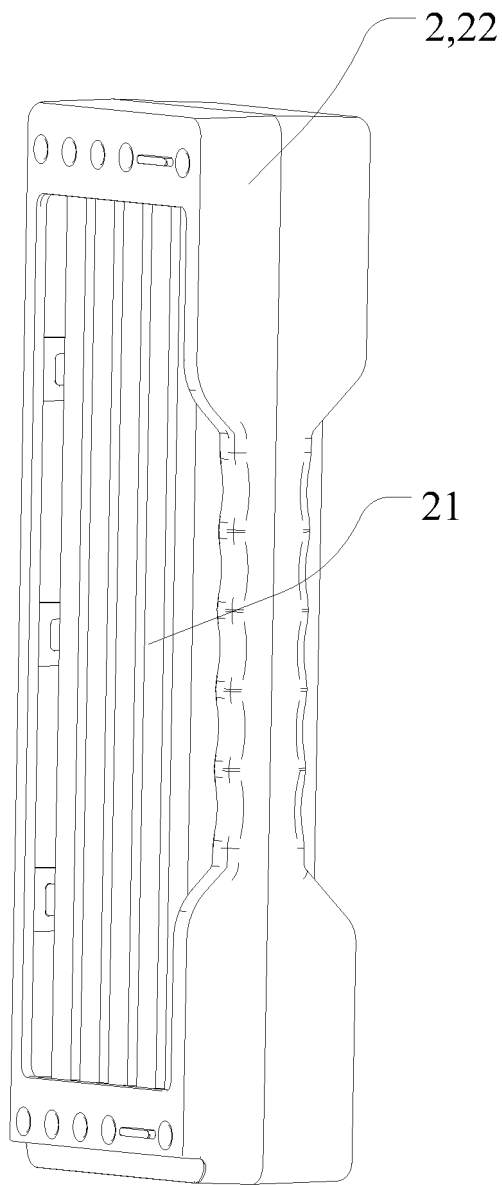


FIG. 1

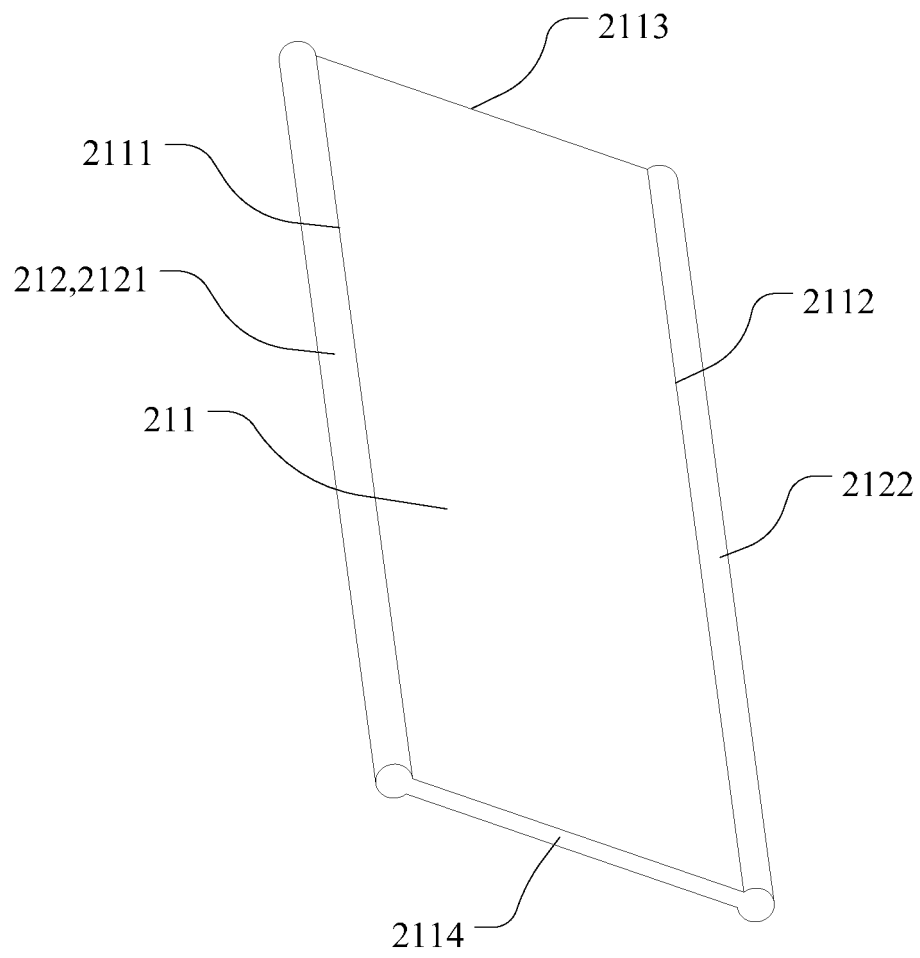


FIG. 2

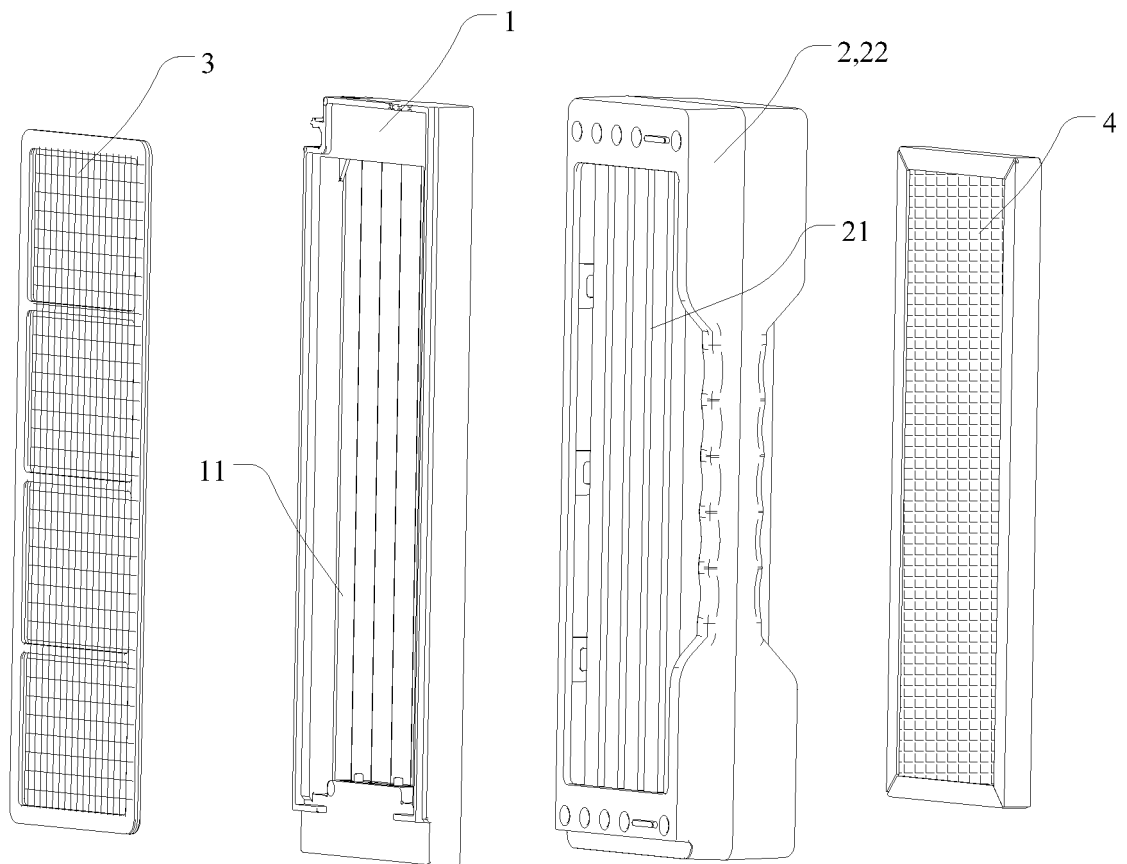


FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/121972

5	A. CLASSIFICATION OF SUBJECT MATTER B03C 3/47(2006.01)i		
	According to International Patent Classification (IPC) or to both national classification and IPC		
	B. FIELDS SEARCHED		
10	Minimum documentation searched (classification system followed by classification symbols) B03C 3/-		
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNPAT, CNKI, WPI, EPODOC: 格力电器, 王贤波 OR 吴志勇 OR 封宗瑜 OR 肖德玲 OR 程晨 OR 肖利容 OR 马友河 OR 王堃; 集尘 OR 吸尘, 净化, 电极, 运动 OR 移动 OR 转动 OR 旋转 OR 翻转, 伸缩 OR 收缩 OR 折叠; air 2d clean+, dust 2d collect+, electrode?, moving OR movable OR rotat+ OR rotary OR overturn+, flex+ OR shrink+ OR fold+		
	C. DOCUMENTS CONSIDERED TO BE RELEVANT		
20	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	PX	CN 108722674 A (GREE ELECTRIC APPLIANCES INC. OF ZHUHAI) 02 November 2018 (2018-11-02) description, paragraphs [0032]-[0046], and figures 1-3	1-16
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45			
	Date of the actual completion of the international search 26 February 2019		Date of mailing of the international search report 19 March 2019
50	Name and mailing address of the ISA/CN National Intellectual Property Administration, PRC (ISA/CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China		Authorized officer
55	Facsimile No. (86-10)62019451		Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/121972

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 207271438 U (GREE ELECTRIC APPLIANCES INC. OF ZHUHAI) 27 April 2018 (2018-04-27) description, paragraphs [0040]-[0050], and figures 1-4	1-11, 14-16
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Information on patent family members

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REFERENCES CITED IN THE DESCRIPTION

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