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(54) **AIR CONDITIONER**

(57) An air conditioner includes a base (200) and a water receiving structure, an air duct component is provided on the base (200); the water receiving structure is provided on the base (200), the air conditioner further includes a housing (10), a lug (20) and a switch matching structure, in which the housing (10) is provided with a water catcher (11) and a drainage pipe (12), and the drainage pipe (12) is in communication with the water pipe (11) and extends out of the housing (10); the lug (20) is fixedly mounted on the housing (10); a switch matching structure is arranged on a base (200), and a lug (20) matching with the switch matching structure to switch a connecting passage between the water catcher (11) and a water passage (300) of a bottom case of the air duct component. When the air duct component needs to be disassembled, the drainage pipe (12) does not need to be disassembled, and the air duct component can be disassembled separately only by closing the connecting passage through the switch matching structure.

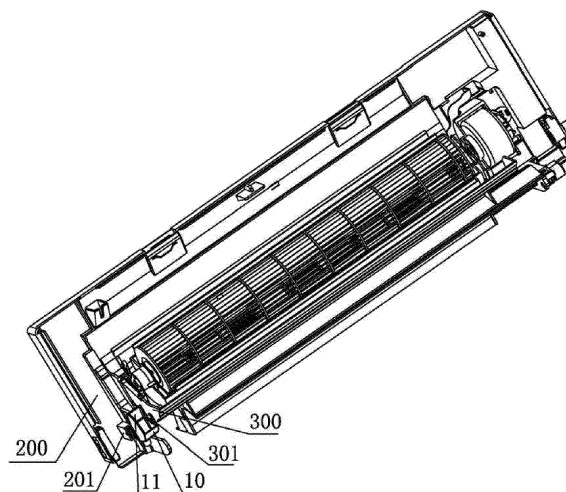


Fig.1

Description

Technical Field

[0001] The present invention relates to the technical field of air conditioning, and in particular, to an air conditioner.

Background

[0002] The air conditioner refers to an apparatus for adjusting and controlling parameters such as temperature, humidity, cleanliness and speed of ambient air in a building or building by means of manual means, and after long use, the air conditioner will distribute dust on its evaporator and air duct components, and the humid environment is easy to happen to many bacteria, which brings great threat to the user's health.

[0003] In order to improve this problem, today's evaporators and air duct components of an air conditioner are often designed in a detachable structure to facilitate cleaning of the evaporator and the air duct components. However, since the drainage pipe in the air conditioner is directly connected to the air duct components and a bottom case water passage, the air duct components is blocked by the drainage pipe during disassembly, it is also necessary to disassemble the drainage pipe while disassembling the cleaning, which not only causes an increase in the disassembly cleaning workload, but also causes the disassembly of the drainage pipe when the drainage pipe is blocked, thereby increasing the difficulty of cleaning. For this reason, how to individually dispose the drainage pipe so that the drainage pipe is not dismantled when the evaporator and the air duct components are dismantled becomes a problem to be solved today.

Summary

[0004] To this end, the technical problem to be solved by the present invention is to overcome the technical drawbacks of the conventional air conditioner indoor unit due to a drainage pipe directly connecting to an air duct component, result in a drainage pipe need be dismantled when disassembling an air duct system.

[0005] In order to achieve the above object, an embodiment of the present invention provides an air conditioner, including a base and a water receiving structure, wherein an air duct component is provided on the base; the water receiving structure is arranged on the base, including a housing, a lug and a switch matching structure, the housing is provided with a water catcher and a drainage pipe, and the drainage pipe is in communication with the water catcher and extends out of the housing; the lugs are fixedly mounted on the housing; the switch matching structure is arranged on the base, and the lugs match with the switch matching structure to switch the connecting passage between the water catcher and a water passage of

a bottom case of the air duct component.

[0006] In an exemplary embodiment, the switch matching structure is provided with an open position and a closed position, and the lug is movable between the open position and the closed position for opening or closing the connecting passage.

[0007] In an exemplary embodiment, the switch matching structure includes a fixing seat, the fixing seat is provided with a fixing groove with an opening at one end of the fixing groove, and a bottom wall of the fixing groove opposite to the opening is provided with a limiting plate protruding outward; the lug is movably mounted in the fixing groove, the limiting plate defines that the lug is moved between the open position and the closed position.

[0008] In an exemplary embodiment, the limiting plate is provided with an abutting portion, the lug is provided with a limiting hole, the abutting portion extends into the limiting hole, and the abutting portion moveable abuts against two sides of the limiting hole opposite with the bottom wall, so that the lug moves between the open position and the closed position.

[0009] In an exemplary embodiment, at least one guide groove is provided on the lug along a moving direction of the lug; at least one guide rib is protruded from an inner wall of the fixing groove corresponding to the guide groove, and the at least one guide rib slides in the guide groove.

[0010] In an exemplary embodiment, a fixing positioning is protruded from the lug toward the bottom wall of the fixing groove, and an elastic member is sheathed on the fixing positioning, the elastic member is compressively housed in the fixing groove, and a biasing force of the elastic member in a direction away from the bottom wall is applied to the lug.

[0011] In an exemplary embodiment, the housing is in a funnel shape, and when the lug is in the open position, a notch of the water catcher is communicated with a drainage port on a bottom base water passage.

[0012] In an exemplary embodiment, a limiting structure is provided on the housing, and when the lug is in the open position, the limiting structure limits relative movement of the housing and the bottom base water passage.

[0013] In an exemplary embodiment, the limiting structure is a concave structure arranged on one slot wall of the water catcher, and when the lug is in the open position, a water pipe where the drainage port is located in the concave structure, and the concave structure restricts the drainage port from moving along a dismantling direction of a bottom case water passage; When the lug is in the closed position, the water pipe slidingly exits the slot wall along an outer edge of the concave structure.

[0014] The air conditioner provided by the present invention has the following advantages:

1. In the air conditioner provided by the present invention, a water catcher and a drainage pipe are

provided on the housing, and the drainage pipe is in communication with the water catcher and protrudes from the housing, thereby implementing communication between the water catcher and the outside; Meanwhile, the lug is fixedly mounted on the housing, the switch matching structure is provided on the base, and the lug matching with the switch matching structure to switch the connecting passage between the water catcher and a water passage of a bottom case of the air duct component, so that when the air duct component needs to be dismantled, only the connecting passage is closed through the switch matching structure, and the drainage pipe does need be dismantled, so the air duct component can be dismantled separately, and when the drainage pipe is blocked, the dirt falls in the water catcher or is still blocked in the drainage pipe, thereby simplifying the dismantling operation workload and operation difficulty.

2. In the air conditioner provided by the present invention, since the open position and the closed position are provided on the switch matching structure, the lug can be moved between the open position and the closed position for opening or closing the connecting passage, and then the communication and separation between the water receiving structure and the water passage can be realized through the matching between the switch matching structure and the lug.

3. In the air conditioner provided by the present invention, since the fixing seat of the switch matching structure is provided with a fixing groove with an opening a bottom wall of the fixing groove opposite to the opening is provided with a limiting plate; the lug is movably mounted in the fixing groove, and the limiting plate defines that the lug moves between the open position and the closed position, so that after the lug is provided in the fixing groove, the lug can be moved between the open position and the closed position by means of a limiting fit between the limiting plate and the lug.

4. The air conditioner provided by the present invention is provided with at least one guide groove on the lug along a moving direction of the lug; an inner wall of the fixing groove is provided with at least one guide rib corresponding to the guide groove protrusion, and the guide rib slides in the guide groove, so that the guide effect on the lug in the moving direction is realized through the engagement between the guide rib and the guide groove, and the stability of the lug moving in the fixing groove is also improved.

5. In the air conditioner provided by the present invention, since the lug is protruded and fixedly positioned toward a bottom wall of the fixing groove, the fixing positioning is sheathed with an elastic member, the elastic member is compressed and retracted in the fixing groove, and a biasing force of the elastic member in a direction away from the bottom wall is

applied to the lug, and then when the housing is not subjected to an external force, the lug is pressed by the biasing force, so as to the lug is keep at the open position; when the housing is pressed, the elastic member is compressed, the lug is in the closed position, and the connecting passage is closed, that is, the air duct component can be detached separately.

6. In the air conditioner provided by the present invention, when the lug is in the open position, a notch of the water catcher is communicated with the drainage port on the water passage, thereby achieving communication between the water receiving structure and the water passage.

7. With the air conditioner provided by the present invention, a limiting structure is provided on the housing, and when the lug is in the open position, the limiting structure limits the relative movement between the housing and the water passage, thereby ensuring stability in the conductive state.

Brief Description of the Drawings

[0015] To illustrate the technical solutions of the embodiments of the present invention more clearly, the following further describes the present invention in detail with reference to the accompanying drawings.

Fig. 1 is a perspective view of an air conditioner according to an embodiment of the present invention; Fig. 2 is a perspective view of a water receiving structure of the air conditioner shown in Fig. 1;

Fig. 3 is a perspective view of the air conditioner shown in Fig. 1 after disassembling the water receiving structure;

Fig. 4 is an enlarged view of a region A of the air conditioner shown in Fig. 3;

Fig. 5 is a positional relationship diagram between the water receiving structure and the switch mating structure when the lug of the water receiving structure shown in Fig. 1 is in the open position;

Fig. 6 is a positional relationship diagram between the water receiving structure and the switch engaging structure when the lug of the water receiving structure shown in Fig. 1 is in the closed position.

[0016] Reference numerals in the figures are described below.

10, a housing; 11, grounding the seed; 12, a drainage pipe; 13, a slot wall; 20, lugs; 21, limiting hole; 22, a guide groove; 23, fixing; 200: base; 201: fixing seat; 202, a fixing groove; 203: limiting plate; 204: guide rib; 300, water passage; 301, a drainage port

Detailed Description of the Embodiments

[0017] The technical solutions of the present invention will be clearly and completely described below with reference to the accompanying drawings, and obviously, the described embodiments are a part of the embodiments of the present invention rather than all of the embodiments. Based on the embodiments of the present invention, all other embodiments obtained by those skilled in the art without creative efforts are fall within the scope of protection of the present invention.

[0018] In the description of the present invention, it should be noted that the orientations or positional relationships indicated by the terms "inside" and "outside" are based on the orientations or positional relationships shown in the drawings, and are merely for conveniently describing the present invention and simplifying the description. Instead of indicating or implying that the indicated device or element must have a particular orientation, be constructed and operated in a particular orientation, and so is not to be construed as limiting the present invention. Moreover, the terms "first," "second," are used for descriptive purposes only and cannot be understood to indicate or imply relative importance.

[0019] In the description of the present invention, it should be noted that the terms "installation", "connection" and "connection" should be understood broadly, for example, may be a fixed connection or a detachable connection unless expressly specified and defined otherwise; It may be a direct connection or a communication within two elements. For a person of ordinary skill in the art, the specific meaning of the above terms in the present invention can be understood in particular.

[0020] Moreover, the technical features involved in different embodiments of the present invention described below can be combined with each other as long as no conflict is constituted between each other.

[0021] An embodiment of the air conditioner shown in Figs. 1 and 2 includes a water receiving structure and a base 200, wherein the base 200 is a support and mounting base of the whole machine, and an air duct component (not shown in the figures), a heat exchange component (not shown in the figures), and an appearance component (not shown in the figures) are provided on the base 200; the water receiving structure is arranged on the base 200, the water receiving structure includes a housing 10, a lug 20 and a switch matching structure (not shown in the figure), the housing 10 is provided with a water catcher 11 and a drainage pipe 12, and the drainage pipe 12 is in communication with the water catcher 11 and extends out of the housing 10; the lug 20 is fixedly mounted on the housing 10; the switch matching structure is arranged on the base 200, and the lug 20 mates with the switch matching structure to switch the connecting passage between the water channel 11 and a water passage 300 of a bottom case of the air duct component.

[0022] The air conditioner is provided with a water catcher 11 and a drainage pipe 12 on the housing 10,

and the drainage pipe 12 is in communication with the water catcher 11 and protrudes from the housing 10, thereby realizing communication between the water catcher 11 and the outside. Meanwhile, the lug 20 is fixedly mounted on the housing 10, the switch fitting structure is arranged on the base 200, and the lug 20 fits with the switch fitting structure so as to switch the connecting passage between the water catcher 11 and a water passage 300 of a bottom case of the air duct component, and further, when the air duct component is provided, the switch passage is opened. the water catcher 11 of the housing 10 is in communication with the water passage 300, and a water passage 300 receives the condensed water of the air duct component and can flow same into the water catcher 11, so as to discharge the water on the water passage 300; When the air duct component needs to be dismantled, the discharge pipe 12 need not be dismantled, and the connecting passage can be dismantled separately only by the switch matching structure, and when the discharge pipe 12 is blocked, the dirt is dismantled in the water catcher tank 11 or still blocked in the discharge pipe 12, thereby simplifying the dismantling operation workload and operation difficulty.

[0023] The switch matching structure is provided with an open position and a closed position, and the lug 20 can be moved between the open position and the closed position for opening or closing the connecting passage, and then the communication and separation between the water receiving structure and a water passage 300 can be realized through the matching between the switch matching structure and the lug 20. Specifically, as shown in Figs. 3 and 4, the switch matching structure includes a fixing seat 201, a fixing groove 202 with an opening at one end is provided on the fixing seat 201, a limiting plate 203 is provided on a bottom wall of the fixing groove 202 opposite to the opening, an abutting portion is provided on the limiting plate 203, and at least one guide rib 204 is provided on an inner wall of the fixing groove 202. The lug 20 is movably mounted in the fixing groove 202, and the limiting plate 203 defines the movement of the lug 20 between the open position and the closed position, so that after the lug 20 is provided in the fixing groove 202, the lug 20 can be moved between the open position and the closed position through a limiting fit between the limiting plate 203 and the lug 20.

[0024] As shown in Fig. 2, a limiting hole 21 is arranged on the lug 20 corresponding to the limiting plate 203, and the limiting hole 21 extends into the limiting hole 21 against the top to move against the opposite sides of the limiting hole 21 opposite with the bottom wall, so as to move the lug 20 between the open position and the closed position; Meanwhile, at least one guide groove 22 is arranged on the lug 20 corresponding to the guide rib 204, the guide rib 204 is arranged along the moving direction, the guide rib 204 slides in the guide groove 22, and then passes through the engagement between the guide rib 204 and the guide groove 22. The guiding effect of the lug 20 along a moving direction of the lug is

achieved, and the stability of the lug 20 in the fixing groove 202 is also improved.

[0025] In order to realize the movement of the lug 20 between the open position and the closed position, a fixing positioning 23 is protruded from the lug 20 toward a bottom wall of the fixing groove 202, an elastic member (not shown) is sleeved on the fixing positioning 23, and the elastic member is compressed and retracted in the fixing groove 202. a biasing force of the elastic member in the direction away from a bottom wall is applied to the lug 20, that is, the lug 20 is subjected to the biasing force to exit the fixing groove 202, and when the housing 10 is not subjected to the external force, the lug 20 is kept in the open position by applying the biasing force to the lug 20, as shown in Fig. 5. In this case, the water receiving structure is in a communication state with the water passage 300. When the housing 10 is pressed, the elastic member is compressed, and the lug 20 is in the closed position, as shown in Fig. 6, at this time, the connecting passage is closed, that is, the air duct component can be detached separately. In the present embodiment, the elastic member is a spring.

[0026] In the present embodiment, in addition to the need to control the switch of the connecting passage between the water receiving structure and the water passage 300, it is often required to ensure that the connecting passage is opened and stable, that is, the stability of the communication state between the water receiving structure and the water passage 300 is required, and the housing 10 is funnel-shaped. When the lug 20 is in the open position, a notch of the water catcher 11 is communicated with the drainage port 301 on the water passage 300, thereby achieving communication between the water receiving structure and a water passage 300; Meanwhile, a limiting structure (not shown) is provided on the housing 10, and when the lug 20 is in the open position, the limiting structure limits the relative movement of the housing 10 and the water passage 300, thereby ensuring stability in the conductive state.

[0027] As an optional implementation, the limiting structure is a concave structure arranged on a slot wall 13 of the water catcher 11, and when the lug 20 is in the open position, the drainage pipe 12 where the drainage port 301 is located in the concave structure, and the concave structure restricts the drainage port 301 from moving in the dismounting direction of the water passage 300; When the lug 20 is in the closed position, the drainage pipe 12 slides out of the slot wall 13 along an outer edge of the concave structure, thereby limiting the relative movement between the housing 10 and a water passage 300 through the limiting structure.

[0028] Obviously, the above-described embodiments are merely examples made for clarity, and are not limited to the embodiments. Other variations or variations in different forms can also be made by those skilled in the art on the basis of the above description. All embodiments need not be exhaustive here. Apparently obvious variations or variations that are thus introduced are still within

the scope of protection created by the present invention.

Claims

1. An air conditioner, wherein comprising:

a base (200), an air duct component is provided on the base (200) ; and
a water receiving structure, the water receiving structure is provided on the base (200), the water receiving structure comprising:

a housing (10), the housing (10) is provided with a water catcher (11) and a drainage pipe (12), and the drainage pipe (12) is in communication with the water catcher (11) and extends out of the housing (10);
a lug (20), the lug (20) is fixedly mounted on the housing (10); and
a switch matching structure, the switch matching structure is provided on the base (200), the lug (20) matching with the switch matching structure to switch a connecting passage between the water catcher (11) and a water passage (300) of a bottom case of the air duct component.

2. The air conditioner as claimed in claim 1, wherein the switch matching structure is provided with an open position and a closed position, and the lug (20) is movable between the open position and the closed position for opening or closing the connecting passage.

3. The air conditioner as claimed in claim 2, wherein the switch matching structure comprises a fixing seat (201), the fixing seat (201) is provided with a fixing groove (202) with an opening at one end of the fixing groove (202), and a bottom wall of the fixing groove (202) opposite to the opening is provided with a limiting plate (203) protruding outward; the lug (20) is movably mounted in the fixing groove (202), and the limiting plate (203) defines that the lug (20) is moved between the open position and the closed position.

4. The air conditioner as claimed in claim 3, wherein the limiting plate (203) is provided with an abutting portion, the lug (20) is provided with a limiting hole (21), and the abutting portion extends into the limiting hole (21), the abutting portion moveable abuts against two sides of the limiting hole (21) opposite with the bottom wall, so that the lug (20) moves between the open position and the closed position.

5. The air conditioner as claimed in claim 3, wherein at least one guide groove (22) is arranged on the lug (20) along a moving direction of the lug (20); at least

one guide rib (204) is protruded from an inner wall of the fixing groove (202) corresponding to the guide groove (22), and the at least one guide rib (204) slides in the guide groove (22).

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6. The air conditioner as claimed in any one of claims 3-5, wherein a fixing positioning (23) is protruded from the lug (20) toward the bottom wall of the fixing groove (202), and an elastic member is sheathed on the fixing positioning (23), the elastic member is compressively housed in the fixing groove (202), and a biasing force of the elastic member in a direction away from the bottom wall is applied to the lug (20). 10
7. The air conditioner as claimed in any one of claims 2-5, wherein the housing (10) is in a funnel shape, and when the lug (20) is in the open position, a notch of the water catcher (11) is communicated with a drainage port (301) on a bottom case water passage (300). 15 20
8. The air conditioner as claimed in claim 7, wherein the housing (10) is provided with a limiting structure, and the limiting structure limits relative movement of the housing (10) and the bottom case water passage (300) when the lug (20) is in the open position. 25
9. The air conditioner as claimed in claim 8, wherein the limiting structure is a concave structure arranged on a slot wall (13) of the water catcher (11), and when the lug (20) is in the open position, a water pipe where the drainage port (301) is located in the concave structure, and the concave structure restricts the drainage port (301) from moving along a dismantling direction of the bottom case water passage (300); 30 35 when the lug (20) is in the closed position, the water pipe slidingly exits the slot wall (13) along an outer edge of the concave structure.

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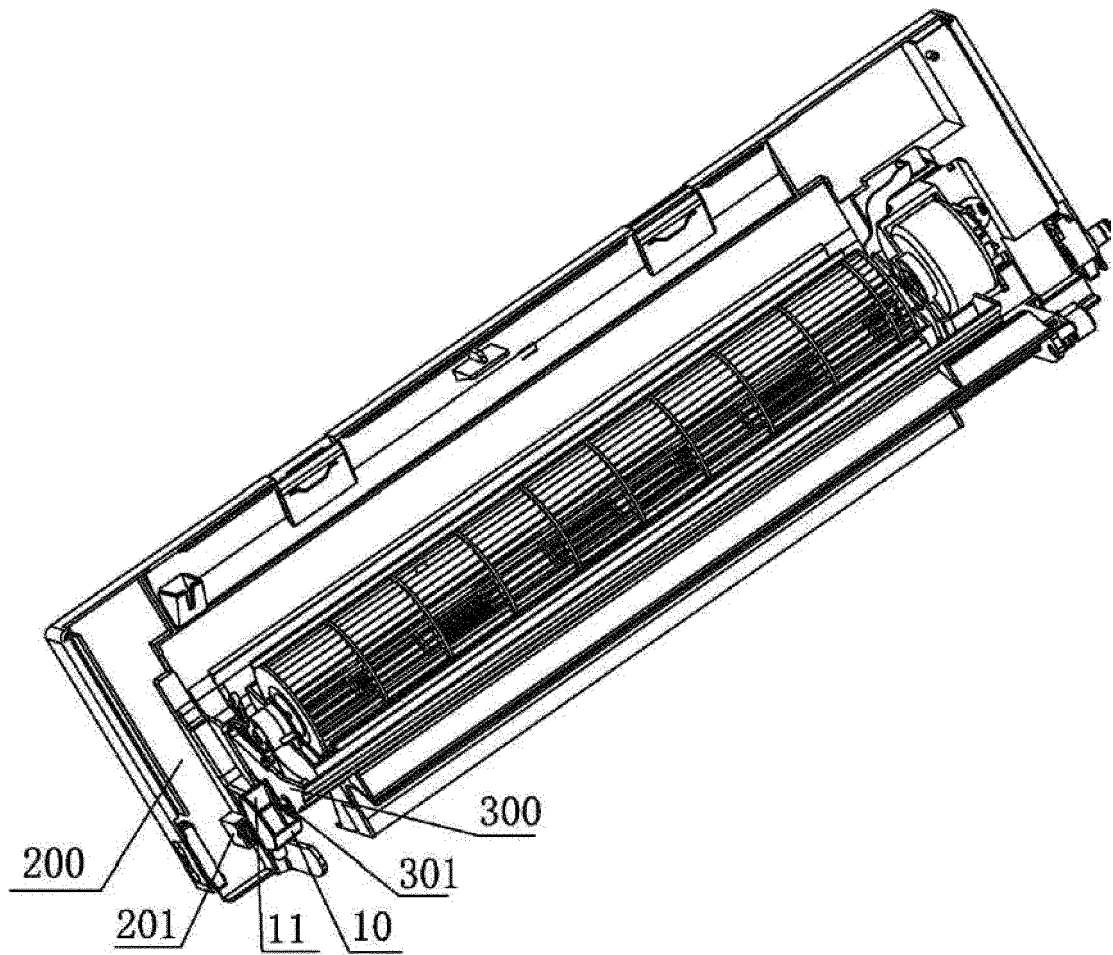


Fig.1

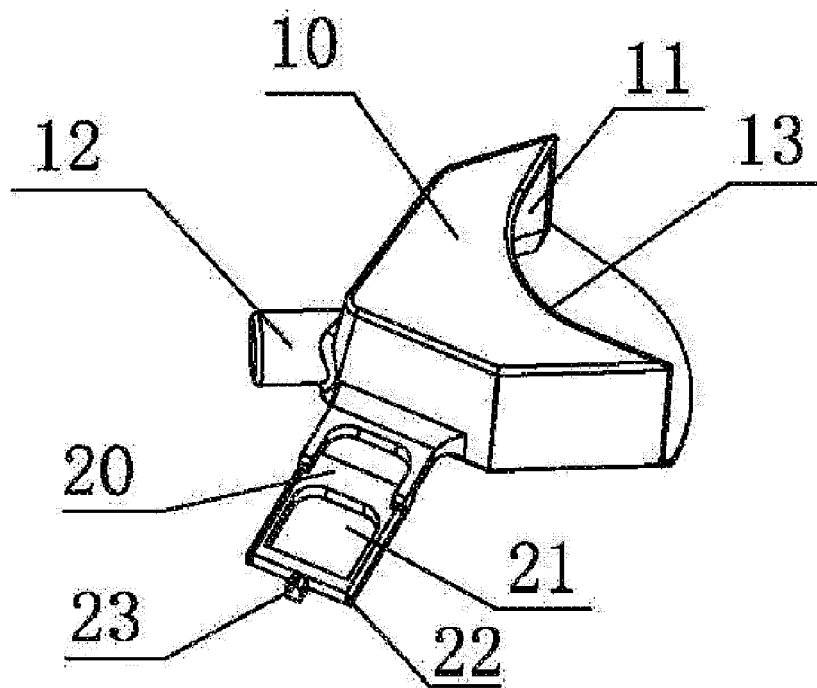


Fig.2

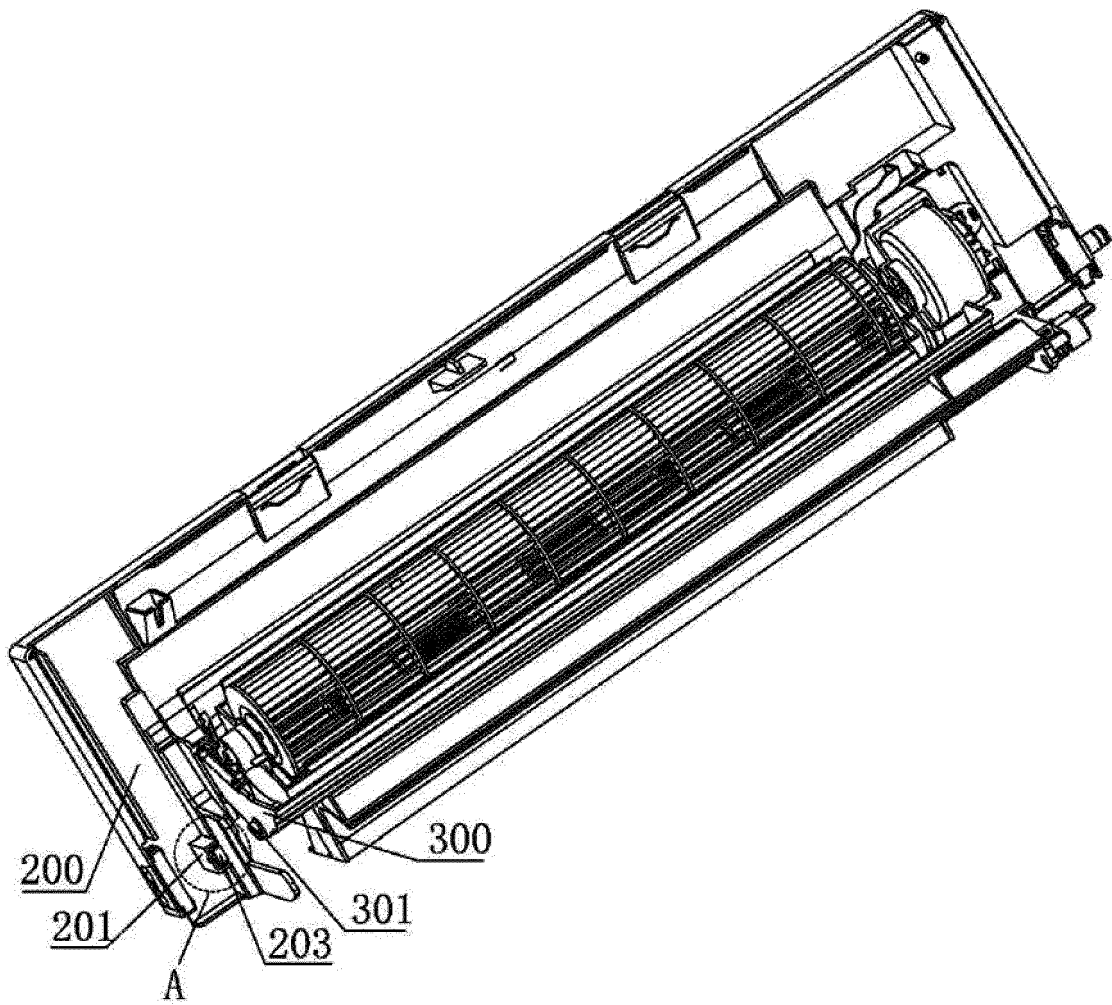


Fig.3

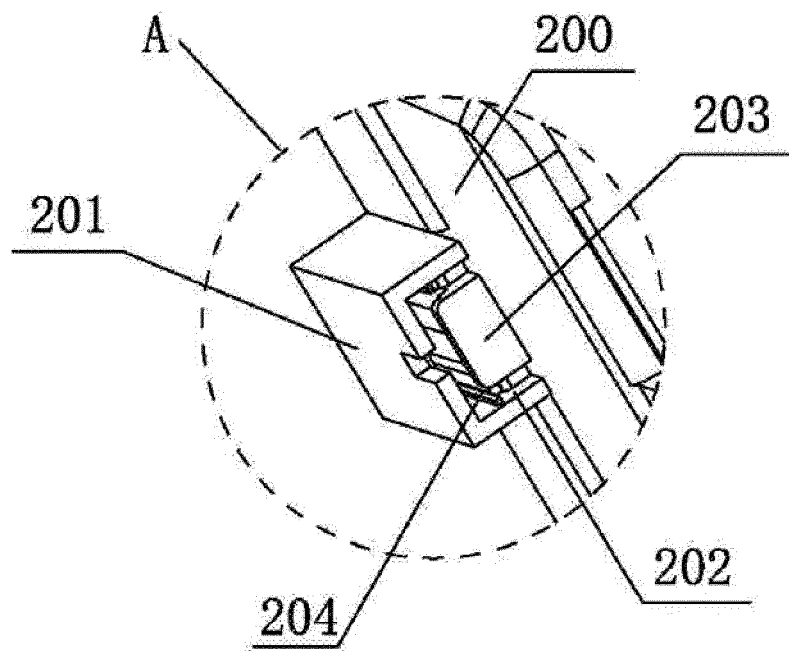


Fig.4

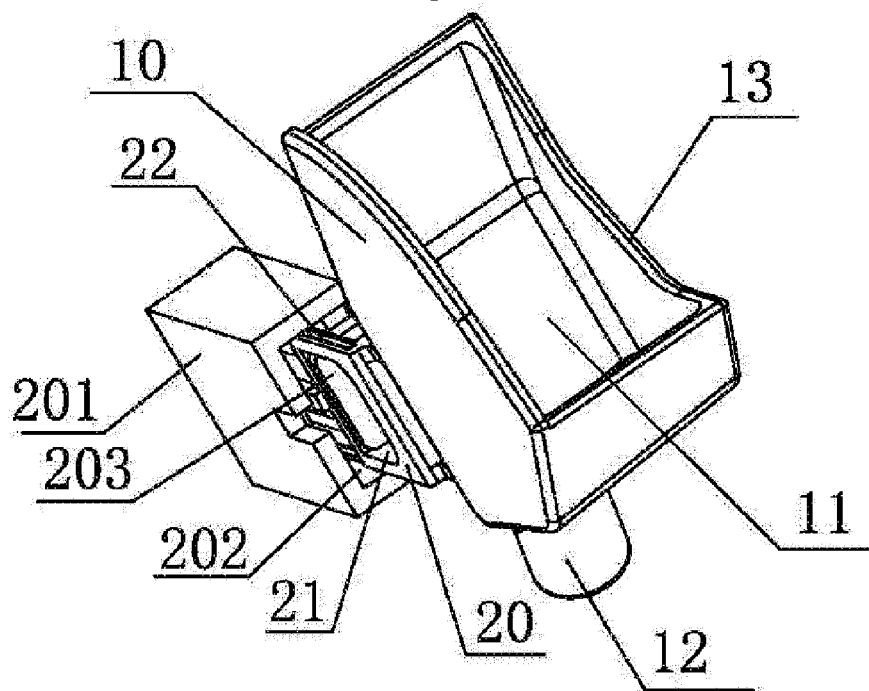


Fig.5

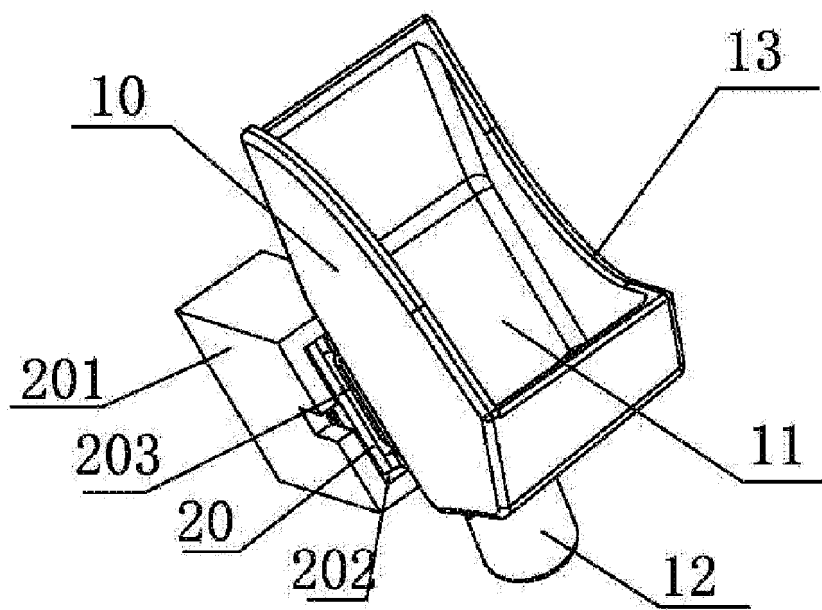


Fig.6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/084394

A. CLASSIFICATION OF SUBJECT MATTER

F24F 1/00 (2011.01) i; F24F 13/22 (2006.01) 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)

F24F 1; F24F 13

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; DWPI; SIPOABS; CNKI: 风道, 基座, 底盘, 底壳, 接水, 排水, 开关, 移动, 滑动, 拆, 装, base, air channel, water
receiv+, drain+, open, mov+, slid+, remov+, mount, install, dismount, disassemble, detach

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 1521467 A (GREE ELECTRIC APPLIANCES INC. ZHUHAI) 18 August 2004 (18.08.2004), description, page 3, the last line to page 7, line 1, and figures 1-8	1-9
A	CN 204555072 U (TCL AIR CONDITIONER (ZHONGSHAN) CO., LTD.) 12 August 2015 (12.08.2015), entire document	1-9
A	JP 2003161462 A (SANYO ELECTRIC CO.) 06 June 2003 (06.06.2003), entire document	1-9
A	JP 2017003155 A (NAKANO REFRIGERATORS CO., LTD.) 05 January 2017 (05.01.2017), entire document	1-9
A	US 4793147 A (SAMSUNG ELECTRONIC CO., LTD.) 27 December 1988 (27.12.1988), entire document	1-9

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

Date of the actual completion of the international search 20 June 2018	Date of mailing of the international search report 27 June 2018
Name and mailing address of the ISA State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No. (86-10) 62019451	Authorized officer YANG, Xiangjun Telephone No. (86-10) 62084766

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/084394

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 206890675 U (GREE ELECTRIC APPLIANCES INC. ZHUHAI) 16 January 2018 (16.01.2018), claims 1-9	1-9

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
 Information on patent family members

 International application No.
 PCT/CN2018/084394

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		GB 2199402 A	06 July 1988
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