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(54) **SIDE PANEL MOUNTING STRUCTURE AND INDOOR UNIT PROVIDED WITH SAME**

(57) A side plate mounting structure, including: a side plate body (10); a locking portion (20) connected to the side plate body (10), the locking portion (20) being provided with a locking position connected to a mounting base, and an unlocking position separated from the mounting base. An indoor unit having the side plate mounting structure is also provided. The side plate mounting structure effectively reduces the problem of hard to dismantle the side plate mounting structure, improves the practicability of the side plate mounting structure, and facilitates the detection and maintenance operation of the internal part of the indoor unit.

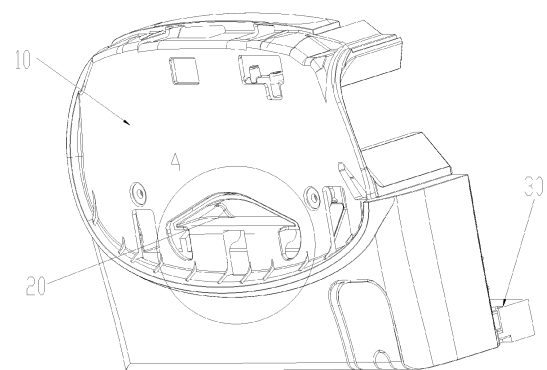


Fig.1

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Description

Technical Field

[0001] The present disclosure relates to a technical field of air conditioner apparatuses, and in particular, to a side plate mounting structure and an indoor unit with the side plate mounting structure.

Background

[0002] In the prior art, the design of the modular air conditioner is a hot tendency developed in the air conditioner industry at present, and the design requirements of the modular air conditioner are to facilitate the production and assembly of the air conditioner and easy to clean after sale and improve the operation reliability of a whole machine.

[0003] The side panel of an indoor unit in the prior art can be designed as a separate part, but it is difficult to disassemble the side panel when the side panel is disassembled after the side panel cooperates with the surrounding part, which causes a problem of difficulty in disassembling the side panel, and at the same time influences the detection and maintenance operation of the internal part of the air conditioner.

Summary

[0004] The main object of the present disclosure is to provide a side plate mounting structure and an indoor unit with the side plate mounting structure to solve the problem of hard to dismantle the side plate in the prior art.

[0005] In order to achieve the above object, some embodiment of the present disclosure provide a side plate mounting structure, comprising: a side plate body; a locking portion connected to the side plate body, the locking portion being provided with a locking position connected to a mounting base, and an unlocking position separated from the mounting base.

[0006] In an exemplary embodiment, the side plate body is provided with a through hole, a part of the locking portion is connected to a hole wall of the through hole, the other part of the locking portion is stretched to the unlocking position along the first direction, or the other part of the locking portion is reset from the unlocking position to the locking position along the second direction opposite to the first direction.

[0007] In an exemplary embodiment, the locking portion includes: a connecting plate, a first end of the connecting plate being connected to the hole wall of the through hole, and a second end of the connecting plate extending toward a hole center of the through hole; and a locking beam, the locking beam being connecting to the second end of the connecting plate, the locking beam being movable to the unlocking position along the first direction, or the locking beam being reset to the locking position along a second direction.

[0008] In an exemplary embodiment, when the locking beam is at the locking position, a lower surface of the locking beam is snap-fitted with the mounting base.

[0009] In an exemplary embodiment, a longitudinal direction of the locking beam extends along a width direction of the side plate body.

[0010] In an exemplary embodiment, a lower surface of the locking beam is provided with a clamping bulge.

[0011] In an exemplary embodiment, there is a plurality of engagement bulges, and the plurality of engagement bulges are arranged at intervals along a longitudinal direction of the locking beam.

[0012] In an exemplary embodiment, the locking portion includes: a handle connected to the locking beam, wherein the handle is located on a side, away from the connecting plate along a hole center direction of the through hole, of the locking beam, and an outer surface of the handle is disposed at a distance from the hole wall of the through hole.

[0013] In an exemplary embodiment, the handle is of an arc structure, and a first end of the handle is connected with a first end of the locking beam, a second end of the handle is connected with a second end of the locking beam, and a gripping space is enclosed between the handle and the locking beam.

[0014] In an exemplary embodiment, the outer surface of the handle is provided with a groove.

[0015] In an exemplary embodiment, there is a plurality of connecting plates, and the plurality of connecting plates are arranged at intervals along a circumferential direction of the through hole.

[0016] Some embodiments of the present disclosure provide an indoor unit, including a side plate mounting structure, wherein the side plate mounting structure is the side plate mounting structure.

[0017] In an exemplary embodiment, the installation base includes: a supporting plate, wherein the side plate body is arranged on the support plate and located an outer side of the support plate, and a clamping part cooperating with the locking portion is arranged on the support plate.

[0018] In an exemplary embodiment, the mounting base further includes a base, and the base includes: a base body; the support plate being connected to the base body.

[0019] In an exemplary embodiment, an outer surface of the support plate is provided with a mounting platform, and the clamping part includes: a clamping rib protrusively arranged on the mounting platform, wherein a surface of the clamping rib on a side close to the support plate in a vertical direction is arranged at a distance from an outer surface of the support plate, when the locking portion is in the locking position, the locking portion is clamped with an inner surface of the clamping rib, and when the locking portion is in the unlocking position, the locking portion is separated from the inner surface of the clamping rib.

[0020] In an exemplary embodiment, the base further

includes: a reinforcing rib, the reinforcing rib being arranged between the clamping rib and an outer surface of the support plate, a first end of the reinforcing rib being connected with the clamping rib, and a second end of the reinforcing rib being connected with the support plate.

[0021] In an exemplary embodiment, one of the base and the side plate body is provided with a connecting bulge, and the other of the base and the side plate body is provided with a connecting groove cooperating with the connecting bulge.

[0022] In an exemplary embodiment, the connecting groove is provided on the base, there is a plurality of connecting grooves, and the plurality of connecting grooves are provided at intervals along an outer circumferential surface of the base.

[0023] In an exemplary embodiment, there is a plurality of connecting bulges, and the plurality of connecting bulges are arranged at intervals along an inner circumferential surface of a bottom of the side plate body.

[0024] In an exemplary embodiment, one of the base and the side plate body is provided with a guide flange, and the other of the base and the side plate body is provided with a guide groove cooperating with the guide flange.

[0025] In an exemplary embodiment, the guide flange is arranged on an outer circumferential surface of the base, and the guide groove is arranged on an inner circumferential surface of the bottom of the side plate body.

[0026] By applying the technical solution of an embodiment of the present disclosure, a locking portion is provided on the side plate body, and the side plate body is locked on the mounting base by the locking portion, so that when the side plate mounting structure needs to be dismantled, the dismantling work of the side plate body can be realized by pulling the locking portion, namely, the technical solution of the present application is adopted. The problem of hard to dismantle f the side plate mounting structure can be effectively reduced, and the utility of the side plate mounting structure can be improved. The mounting base may be a base of an indoor unit of an air conditioner, and the embodiment can facilitate the detection and maintenance operation of internal components of the indoor unit.

Brief Description of the Drawings

[0027] The accompanying drawings, which form a part of the present application, provide a further understanding of the present disclosure, and the schematic embodiments of the present disclosure and the description thereof are used to explain the present disclosure, and do not limit the present disclosure.

Fig. 1 shows a schematic structural view of a first viewing angle of an embodiment of a side plate mounting structure according to the present disclosure;

Fig. 2 shows an enlarged structural schematic dia-

gram of A in Fig. 1;

Fig. 3 shows a schematic structural view of a second viewing angle according to an embodiment of the side plate mounting structure of the present disclosure;

Fig. 4 is a schematic structural view of a third viewing angle according to an embodiment of the side plate mounting structure of the present disclosure;

Fig. 5 shows an enlarged structural schematic diagram at B in Fig. 4;

Fig. 6 shows a schematic diagram of an explosion structure of an embodiment of a side plate mounting structure and a base according to the present disclosure;

Fig. 7 shows a schematic diagram of an assembly structure of an embodiment of a side plate mounting structure and a base according to the present disclosure;

Fig. 8 is a schematic cross-sectional view of a first viewing angle of an embodiment of a side plate mounting structure according to the present disclosure;

Fig. 9 shows an enlarged structural schematic diagram at C in Fig. 8;

Fig. 10 is a schematic cross-sectional view of a second viewing angle of an embodiment of a side plate mounting structure according to the present disclosure;

Fig. 11 shows a schematic structural view of an embodiment of a base according to the present disclosure;

Fig. 12 is a schematic structural view of a fourth viewing angle according to an embodiment of the side plate mounting structure of the present disclosure.

[0028] Wherein, the drawings include the following reference numerals:

10, a side plate body; 11, a through hole;
20, a locking portion; 21, a connecting plate; 22, locking the beam; 221: clamping bulge; 23, Pull hands; 231: groove;
30, base; 31, a base body; 311, snap-fit ribs; 32, a support plate; 321, mounting platform; 33, a reinforcing rib;
40, connecting bulges; 50, connecting the card slot; 60, a guide flange; 70, a guide groove.

Detailed Description of the Embodiments

[0029] It should be noted that the embodiments and the features in the embodiments of the present application can be combined with each other without conflict. Hereinafter, the present disclosure will be described in detail with reference to the accompanying drawings and embodiments.

[0030] It should be noted that the terminology used herein is for the purpose of describing particular embod-

iments only and is not intended to limit the exemplary embodiments according to the present application. As used herein, the singular forms are also intended to include the plural forms unless the context clearly dictates otherwise, and it should also be understood that when the terms "comprising" and/or "comprising" are used in this specification, it indicates the presence of features, steps, operations, devices, components, and/or combinations thereof.

[0031] It should be noted that the terms "first" and "second" and the like in the description and claims of the present application and the drawings are used to distinguish similar objects, and do not need to be used to describe a specific order or precedence order. It is to be understood that the terms so used may be interchanged, where appropriate, such that the embodiments of the present application described herein may be embodied, for example, in an order other than those illustrated or described herein. Moreover, the terms "comprising" and "having" and any variation thereof, are intended to cover not exclusively including, for example, processes, methods, systems, products or apparatuses comprising a series of steps or units are not necessarily limited to those steps or units that are clearly listed. Instead, other steps or units not expressly listed or inherent to these processes, methods, products or devices may be included.

[0032] For convenience of description, spatial relative terms such as "above", "above", "above", "on", "above", etc. may be used herein to describe spatial positional relationships of one device or feature to other devices or features as shown in the figures. It should be understood that spatial relative terms are intended to encompass different orientations in use or operation other than the orientation of the device depicted in the figures. For example, if the devices in the figures are inverted, the devices described as 'above' or 'above' other devices or configurations will be positioned as 'below' or 'below' other devices or configurations. Accordingly, the exemplary term "above" may include both orientations "above" and "below". The device can also be positioned in other different ways (rotated 90 degrees or in other orientations) and the relative spatial description used herein is explained accordingly.

[0033] Now, exemplary embodiments according to the present application will be described in more detail with reference to the accompanying drawings. However, the exemplary embodiments may be embodied in a variety of different forms and should not be construed as limited to the embodiments set forth herein. It is to be understood that these embodiments are provided so that the disclosure of the present application is thorough and complete, and that the concepts of these exemplary embodiments are fully conveyed to those skilled in the art, in which, for clarity, it is possible to expand the thickness of the layers and regions, and use the same reference numerals to represent the same devices, and thus description thereof will be omitted.

[0034] With reference to Fig. 1 to Fig. 12, a side plate

mounting structure is provided according to an embodiment of the present disclosure.

[0035] In an exemplary embodiment, as shown in Fig. 1, the side plate mounting structure includes a side plate body 10 and a locking portion 20. The locking portion 20 is connected with the side plate body 10, the locking portion 20 has a locking position connected to the mounting base, and the locking portion 20 has an unlocking position which can be separated from the mounting base.

[0036] In the present embodiment, a locking portion is provided on the side plate body, and the side plate body is locked on the mounting base by the locking portion, so that when the side plate mounting structure needs to be dismounted, the dismounting work of the side plate body can be realized by pulling the locking portion, namely, by adopting the technical solution of the present application, the difficulty problem of disassembly of the side plate mounting structure can be effectively reduced, and the utility of the side plate mounting structure can be improved. The mounting base may be a base of an indoor unit of an air conditioner, and the technical solution can facilitate the detection and maintenance operation of internal components of the indoor unit.

[0037] The side plate body 10 may be fixedly arranged on the mounting base, and when the side plate body 10 is fixedly arranged on the mounting base, the side plate body may expand and protrude in a certain direction. The locking portion 20 provided on the side plate body 10 can be pulled back in a direction opposite to the protruding direction and snap-fitted on the mounting base, thereby effectively avoiding the deformation of the side plate body 10 during a mounting process.

[0038] In an exemplary embodiment, as shown in Fig. 2, the side plate body 10 is provided with a through hole 11, a part of the locking portion 20 is connected to a hole wall of the through hole 11, and the other part of the locking portion 20 can be stretched in a first direction to an unlocking position (as shown in Fig. 1, F is a pulling direction), or the other part of the locking portion 20 may be reset from the unlocking position to the locking position in a second direction opposite to the first direction. In this way, the locking portion can be switched between the locking position and the unlocking position by deformation of the locking portion, thereby improving the utility and reliability of the locking portion.

[0039] The locking portion 20 includes a connecting plate 21 and a locking beam 22. A first end of the connecting plate 21 is connected to the hole wall of the through hole 11, and a second end of the connecting plate 21 extends toward a hole center of the through hole 11. The locking beam 22 is connected to the second end of the connecting plate 21, the locking beam 22 can be moved to the unlocking position along the first direction, or the locking beam 22 can be reset to the locking position along the second direction. In this way, the deformation amount of the locking portion can be increased, the flexibility of the locking portion can be effectively increased, and the service life of the locking portion can be extended.

When the locking beam 22 is in the locking position, a lower surface of the locking beam 22 is snap-fitted with the mounting base. This arrangement can further improve the stability and reliability of the locking portion.

[0040] In order to further improve the stability and reliability of the locking portion, a longitudinal direction of the locking beam 22 can be extended along a width direction of the side plate body 10, wherein the width direction of the side plate body 10 coincides with the width direction of the base body 31. Meanwhile, a clamping bulge 221 is provided on the lower surface of the locking beam 22. There is a plurality of clamping bulges 221, and the plurality of clamping bulges 221 are provided at intervals along the longitudinal direction of the locking beam 22.

[0041] As shown in Fig. 3 to Fig. 5, the lock portion 20 includes a handle 23. The handle 23 is connected to the locking beam 22, and the handle 23 is located on a side, away from the connecting plate 21 in a hole center direction of the through hole 11, of the locking beam 22, and an outer surface of the handle 23 is disposed at a distance from the hole wall of the through hole 11. In this way, the arrangement can effectively enable the hand to drive the locking beam 22 and the connecting plate 21 to deform when the hand acts on the handle, thereby causing the handle to displace in the through-hole, because the handle 23 has a sufficient distance from the hole wall of the through-hole. In other words, the distance between the handle 23 and the hole wall of the through hole forms an assignment space of the handle, thereby increasing the amount of stretching of the whole locking portion, i.e., the amount of deformation, and effectively improving the reliability of switching the locking portion between the locking position and the unlocking position. Meanwhile, when the side panel mounting structure is dismantled, the locking beam 22 and the connecting plate 21 are deformed by pulling the handle, so that the locking portion can be switched back and forth between the locking position and the unlocking position.

[0042] As shown in Fig. 3, the handle 23 is of an arc structure, a first end of the handle 23 is connected to a first end of the locking beam 22, a second end of the handle 23 is connected to a second end of the locking beam 22, and a gripping space is defined between the handle 23 and the locking beam 22. In this way, it is convenient for the operator's hand to hold the handle, and it is convenient to apply a force to the side plate mounting structure. Meanwhile, in order to improve the flexibility of the handle, a groove 231 is provided on an outer surface of the handle 23.

[0043] In order to further improve the deformation amount of the locking portion and the reliability during use, a plurality of connecting plates 21 are provided at intervals along a circumferential direction of the through hole 11. In order to increase the connection strength between the connecting plate 21 and the side plate body 10, a reinforcing rib is provided between the connecting plate 21 and the side plate body 10.

[0044] The side plate mounting structure in the above embodiments can also be used in the technical field of air conditioner devices, namely, according to an embodiment of the present disclosure, an indoor unit is provided.

5 The indoor unit includes a side plate mounting structure, and the side plate mounting structure is the side plate mounting structure in the above embodiment. The side plate mounting structure includes a side plate body 10 and a locking portion 20. The locking portion 20 is connected to the side plate body 10, the locking portion 20 has a locking position connected to the mounting base, and the locking portion 20 has an unlocking position where the locking portion can be separated from the mounting base.

10 **[0045]** In the present embodiment, a locking portion is provided on the side plate body, and the side plate body is locked on the mounting base by the locking portion, so that when the side plate mounting structure needs to be dismantled, the dismantling work of the side plate body can be realized by pulling the locking portion, namely, the technical solution of the present application is adopted. The problem of hard to dismantle the side plate mounting structure can be effectively reduced, and the utility of the side plate mounting structure can be improved. The mounting base may be a base of an indoor unit of an air conditioner, and the technical solution can facilitate the detection and maintenance operation of internal components of the indoor unit.

20 **[0046]** In an exemplary embodiment, the mounting base referred to in the present application may include a base 30. As shown in Figs. 6 to 12, the side plate body 10 is mounted on the base 30, and the base 30 is provided with a clamping part cooperating with the locking portion 20. In the present embodiment, the side plate body 10 may be detachable arranged, which facilitates the maintenance and cleaning operations of the components of the indoor unit.

25 **[0047]** In an exemplary embodiment, the base 30 includes a base body 31 and a support plate 32. The supporting plate 32 is connected to the base body 31, the clamping part is arranged on the supporting plate 32, and the side plate body 10 is arranged on the supporting plate 32 and located outside the supporting plate 32.

30 **[0048]** As shown in Fig. 11, the outer surface of the support plate 32 is provided with a mounting platform 321, and the clamping part includes a clamping rib 311. The clamping rib 311 is protrusively arranged on the mounting platform 321, and a surface of the clamping rib 311 on a side close to the supporting plate 32 in a vertical direction is arranged at a distance from an outer surface of the supporting plate 32, wherein there are two supporting plates 32 arranged on the base body. The two supporting plates 32 are respectively arranged on two ends of the base body and are arranged opposite to each other, and an installation limiting space is formed between the two supporting plates, and the opposite surfaces of the two supporting plates is defined as inner surfaces, and the surfaces of the supporting plates lo-

cated outside the limiting space is defined as outer surfaces. When the locking portion 20 is in the locking position, the locking portion 20 is snap-fitted with the inner surface of the clamping rib 311, and when the locking portion 20 is in the unlocking position, the locking portion 20 is disengaged from the inner surface of the clamping rib 311. Specifically, in the present embodiment, a clamping bulge 221, disposed on the locking beam 22, of the locking portion 20 is disposed between the inner surface of the clamping rib 311 and the outer surface of the support plate 32. This arrangement can effectively improve the applicability and reliability of the locking portion and the clamping portion.

[0049] In order to improve the mounting strength of the base and the clamping strength of the clamping rib 311, the base 30 is further provided with a reinforcing rib 33. The reinforcing rib 33 is arranged between the clamping rib 311 and the outer surface of the support plate 32, a first end of the reinforcing rib 33 is connected with the clamping rib 311, and a second end of the reinforcing rib 33 is connected with the support plate 32.

[0050] As shown in Figs. 3 and 11, one of the base 30 and the side plate body 10 is provided with a connecting bulge 40, and the other of the base 30 and the side plate body 10 is provided with a connecting groove 50 cooperating with the connecting bulge 40. This arrangement can further improve the stability and reliability of the side plate mounting structure mounted on the base.

[0051] In an exemplary embodiment, the connecting groove 50 is provided on the base 30, and there is a plurality of connecting grooves 50 provided at intervals along an outer circumferential surface of the base 30. There is also a plurality of connecting bulges 40, and the plurality of connecting bulges 40 are provided at intervals along an inner circumferential surface of a bottom of the side plate body 10. The plurality of connecting bulges 40 are arranged in one-to-one correspondence with the connecting groove 50, so that the stability and reliability of the side plate mounting structure mounted on the base can be improved.

[0052] As shown in Figs. 11 and 12, in order to smoothly mount the dismantled side plate mounting structure on the base at a time, a guide flange 60 is provided on one of the base 30 and the side plate body 10, and a guide groove 70 cooperating with the guide flange 60 is provided on the other of the base 30 and the side plate body 10.

[0053] In an exemplary embodiment, the guide flange 60 is provided on the outer circumferential surface of the base 30, and the guide groove 70 is provided on the inner circumferential surface of the bottom of the side plate body 10.

[0054] Specifically, the technical solution of the present application solves the problem of disassembling the side plate difficultly. Namely, with the technical solution of the present application, it is simple and easy to operate the side plate when dismantled. The locking portion provided in the present application is equivalent to

a buckle position when the side plate mounting structure is dismantled, and a buckle position structure is designed on the side plate mounting structure, and the buckle position structure cooperates with the substrate, so that the side plate is easily operated when dismantled. Namely, with the technical solution of the present application, the problem of disassembling the side plate mounting structure difficultly can be effectively reduced, and the utility of the side plate mounting structure is improved. The mounting base can be a base of an indoor unit of an air conditioner, and the technical solution can facilitate the detection and maintenance operation of internal components of the indoor unit.

[0055] The design of the modular air conditioner is a hot spot developed in the industry, and in order to adapt to the design of the modular air conditioner, the structure of the air conditioner is optimized. The side panels can be designed as separate parts, which provide a convenient condition advantage for the appearance diversity of the side panels. The side plate is designed to be detachable, which greatly facilitates the detection and maintenance work of the internal structure of the air conditioner.

[0056] The design of the side plate mounting structure in the prior art has the following defects: When the fastening screw is dismantled, the buckle position structure is not designed on the side plate part, that is, when the side plate is dismantled, the hands of the rear-sale personnel cannot grasp the side plate forcefully, and this design makes the side plate dismantled very inconvenient.

[0057] With regard to the defect problem existing in said structure, in an embodiment of the present application, it can be seen that a screw column structure is designed on a base, and a connecting groove structure is designed on both sides of the base. A guide flange is disposed on one side of the base, and two connecting groove structures are also disposed on an end side of the base. The fitting structure of the side plate is shown in Fig. 4, and it can be seen from Fig. 4 that a screw hole structure is disposed on the side plate part and fitted with a screw column on the base. As shown in Fig. 3, connecting bulges are provided on both sides below the inner circumferential surface of the side plate mounting structure, and cooperate with the connecting groove on the base. In order to cooperate with the guide flange on the base, a guide groove structure is provided on the side plate. The connecting bulges provided on the inner circumferential surface of the side plate mounting structure may be identical or different. Arranging the connecting bulges and the connecting grooves can prevent a large gap from occurring at the lower edges of the side plates and the base platform, and affect the overall appearance of the machine.

[0058] In order that a worker can fasten the side plate mounting structure with a force, so that the side plate can be conveniently dismantled from the base, and the structure of the buckle position is deliberately designed on the side plate. It can be seen from figure 3 that a handle

structure locking portion is provided at a middle part of the side plate, and a plurality of clamping bulges are provided on the locking portion, correspondingly a clamping rib is provided on the base, and the clamping bulges is snap-fitted with the clamping rib on the base, so that the side plate can be pre-fixed on the base. Meanwhile, the locking portion includes a connecting plate, and the locking portion is connected with the side plate body by means of the connecting plate, and the connecting plate structure with elasticity is designed, so that the locking portion is more easily pulled out and deformed.

[0059] When the side plates are dismantled, the two screws of the fixed side plates need to be dismantled first, and at this time, the handle is manually pulled and moved outward in an obliquely upward direction, and the connecting plate of the locking portion is also subjected to upward and outward pulling force, and the connecting plate is deformed. Then, the clamping bulges on the locking beam are pulled upward and outward against the deformation of the connecting plate until the clamping bulges of the locking portion are separated from the clamping ribs on the base, so that the dismantling work of the side plate can be completed. After the side plates are dismantled, maintenance and detection of internal parts of the air conditioner can be facilitated.

[0060] A decorative panel is designed on the outside of the side panel, and the decorative panel can serve as an appearance piece, and the appearance color can be changed according to a customer's requirement by changing second processing technology to achieve an aesthetic effect. The matching structure of the side panel and the decorative panel is detachable snap-fitted. A limiting rib structure and a plug-in plate structure are provided on a side plate, and a limiting hole structure and a plug-in hole structure are provided on the side plate. The limiting rib cooperates with the limiting hole and plays a limiting effect. The plug-in plate cooperates with the plug-in hole and plays a role of pre-fixing the side plate. Meanwhile, a snap fastening structure is provided on a top of the side plate and the decorative plate, and a plurality of snaps are provided on the top of the side plate and the decorative plate, and these snaps reliably fix the decorative plate on the side plate, and the decorative plate can be quickly removed from the side plate. A side plate mounting structure is mounted on the outer side of the side plate to achieve an aesthetic appearance effect.

[0061] In addition to the foregoing, it should be noted that "one embodiment", "another embodiment", "an embodiment", and the like referred to in this specification refer to that a specific feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment described in the general description of the present application. The same kind of expression appears in a plurality of places in the description is not necessarily the same embodiment. Further, when a particular feature, structure, or characteristic is described in connection with any embodiment, it is intended that it is within the scope of the present disclosure

to implement such feature, structure, or characteristic in connection with other embodiments.

[0062] In the foregoing embodiments, the description of each embodiment is heavily described, and some of the embodiments are not described in detail, and reference may be made to relevant description of other embodiments.

[0063] The foregoing description is merely a preferred embodiment of the present disclosure, and is not intended to limit the present disclosure, and various changes and modifications may be made by those skilled in the art. Any modifications, equivalent replacements and improvements made within the spirit and principle of the present disclosure shall fall within the scope of protection of the present disclosure.

Claims

1. A side plate mounting structure, comprising:

a side plate body (10);
a locking portion (20) connected to the side plate body (10), the locking portion (20) being provided with a locking position connected to a mounting base, and an unlocking position separated from the mounting base.

2. The side plate mounting structure according to claim 1, wherein the side plate body (10) is provided with a through hole (11), and a part of the locking portion (20) is connected to a hole wall of the through hole (11), the other part of the locking portion (20) is stretched to the unlocking position along a first direction, or the other part of the locking portion (20) is reset from the unlocking position to the locking position along a second direction opposite to the first direction.

3. The side plate mounting structure according to claim 2, wherein the locking portion (20) comprises:

a connecting plate (21), a first end of the connecting plate (21) being connected to the hole wall of the through hole (11), and a second end of the connecting plate (21) extending toward a hole center of the through hole (11); and
a locking beam (22), the locking beam (22) being connected to the second end of the connecting plate (21), the locking beam (22) being movable to the unlocking position along the first direction, or the locking beam (22) being reset to the locking position along the second direction.

4. The side plate mounting structure according to claim 3, wherein when the locking beam (22) is at the locking position, a lower surface of the locking beam (22) is snap-fitted with the mounting base.

5. The side plate mounting structure according to claim 3, wherein a longitudinal direction of the locking beam (22) extends along a width direction of the side plate body (10).
6. The side plate mounting structure according to claim 3, wherein a lower surface of the locking beam (22) is provided with a clamping bulge (221).
7. The side plate mounting structure according to claim 6, wherein there is a plurality of clamping bulges (221), and a plurality of clamping bulges (221) are arranged at intervals along a longitudinal direction of the locking beam (22).
8. The side plate mounting structure according to claim 3, wherein the locking portion (20) comprises: a handle (23) connected to the locking beam (22), wherein the handle (23) is located on a side, away from the connecting plate (21) along a hole center direction of the through hole (11), of the locking beam (22), and an outer surface of the handle (23) is disposed at a distance from the hole wall of the through hole (11).
9. The side panel mounting structure according to claim 8, wherein the handle (23) is of an arc structure, and a first end of the handle (23) is connected with a first end of the locking beam (22); a second end of the handle (23) is connected with a second end of the locking beam (22), and a gripping space is enclosed between the handle (23) and the locking beam (22).
10. The side plate mounting structure according to claim 8, wherein the outer surface of the handle (23) is provided with a groove (231).
11. The side plate mounting structure according to claim 3, wherein there is a plurality of connecting plates (21), and the plurality of connecting plates (21) are arranged at intervals along a circumferential direction of the through hole (11).
12. An indoor unit, comprising a side plate mounting structure, wherein the side plate mounting structure is the side plate mounting structure according to any one of claims 1 to 11.
13. The indoor unit according to claim 12, wherein the mounting base comprises: a support plate (32), wherein the side plate body (10) is arranged on the support plate (32) and located an outer side of the support plate (32), and a clamping part cooperating with the locking portion (20) is arranged on the support plate (32).
14. The indoor unit according to claim 13, wherein the mounting base further comprises a base (30), and the base (30) comprises: a base body (31); the support plate (32) being connected to the base body (31).
15. The indoor unit according to claim 14, wherein an outer surface of the support plate (32) is provided with a mounting platform (321), and the clamping part comprises: a clamping rib (311) protrusively arranged on the mounting platform (321), wherein a surface of the clamping rib (311) on a side close to the supporting plate (32) in a vertical direction is arranged at a distance from an outer surface of the supporting plate (32), when the locking portion (20) is in the locking position, the locking portion (20) is clamped with an inner surface of the clamping rib (311), and when the locking portion (20) is in the unlocking position, the locking portion (20) is separated from the inner surface of the clamping rib (311).
16. The indoor unit according to claim 15, wherein the base (30) further comprises: a reinforcing rib (33), the reinforcing rib (33) being arranged between the clamping rib (311) and an outer surface of the support plate (32), a first end of the reinforcing rib (33) being connected with the clamping rib (311), and a second end of the reinforcing rib (33) being connected with the support plate (32).
17. The indoor unit according to claim 14, wherein one of the base (30) and the side plate body (10) is provided with a connecting bulge (40), and the other of the base (30) and the side plate body (10) is provided with a connecting groove (50) cooperating with the connecting bulge (40).
18. The indoor unit according to claim 17, wherein the connecting groove (50) is provided on the base (30), there is a plurality of connecting grooves (50), and the plurality of connecting grooves (50) are provided at intervals along an outer circumferential surface of the base (30).
19. The indoor unit according to claim 18, wherein there is a plurality of connecting bulges (40), and the plurality of connecting bulges (40) are arranged at intervals along an inner circumferential surface of a bottom of the side plate body (10).
20. The indoor unit according to claim 14, wherein one of the base (30) and the side plate body (10) is provided with a guide flange (60), and the other of the base (30) and the side plate body (10) is provided with a guide groove (70) cooperating with the guide flange (60).
21. The indoor unit according to claim 20, wherein the guide flange (60) is arranged on an outer circumferential surface of the base (30), and the guide groove

(70) is arranged on an inner circumferential surface of a bottom of the side plate body (10).

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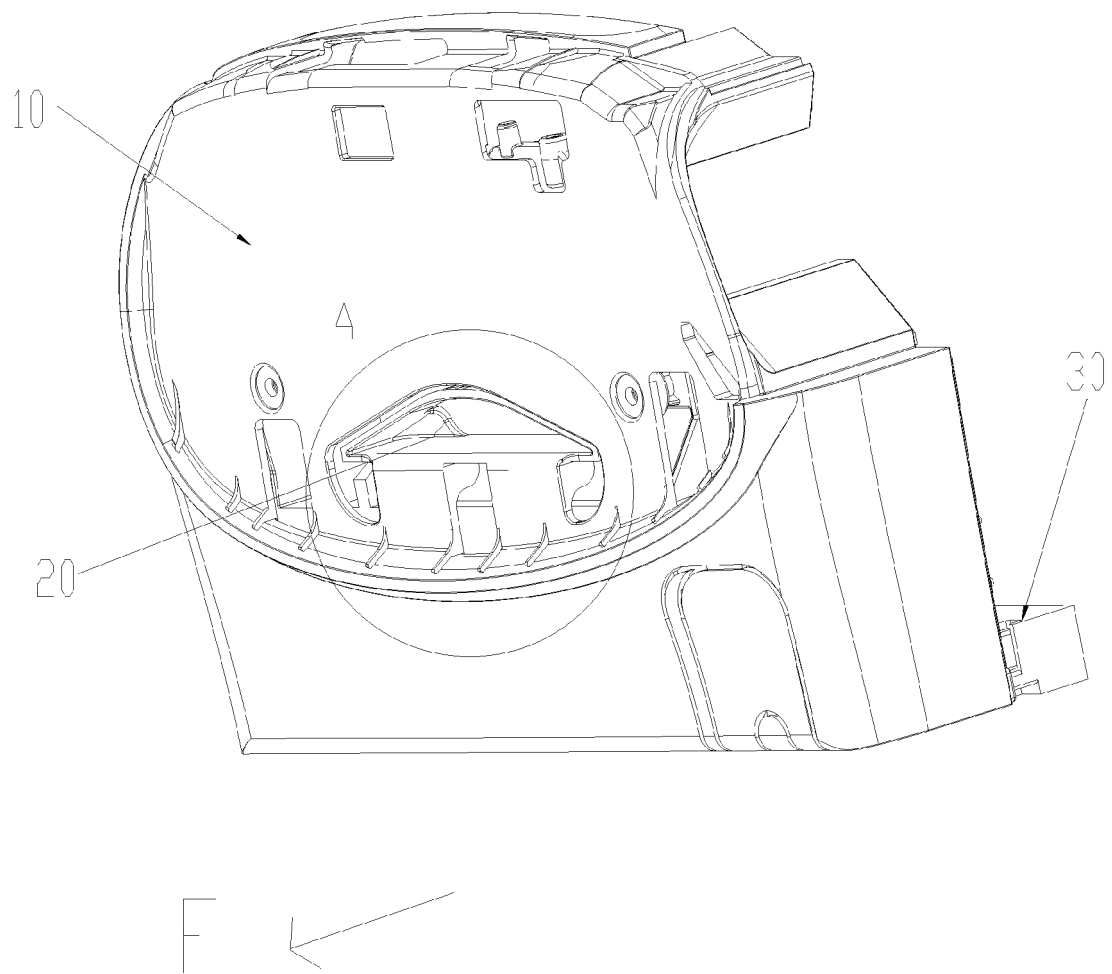


Fig.1

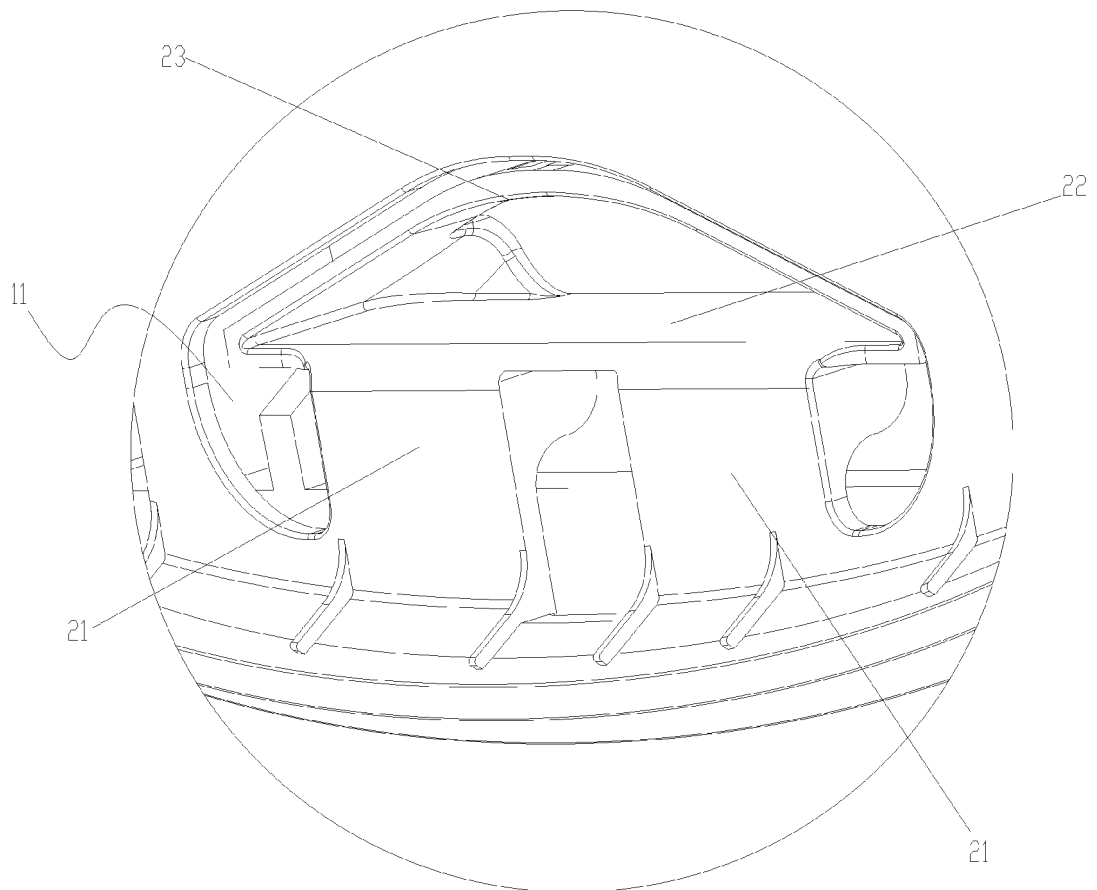


Fig.2

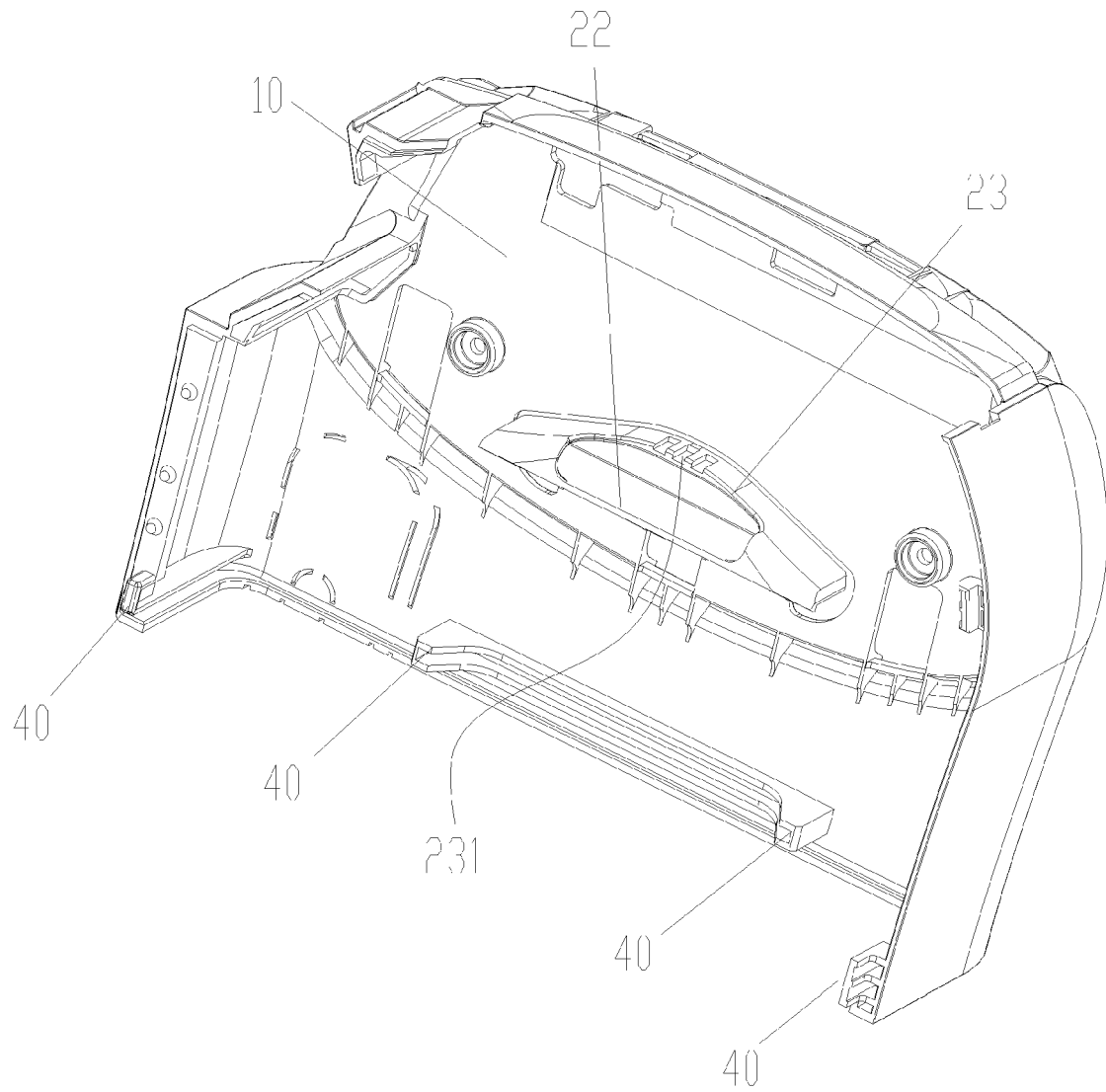


Fig.3

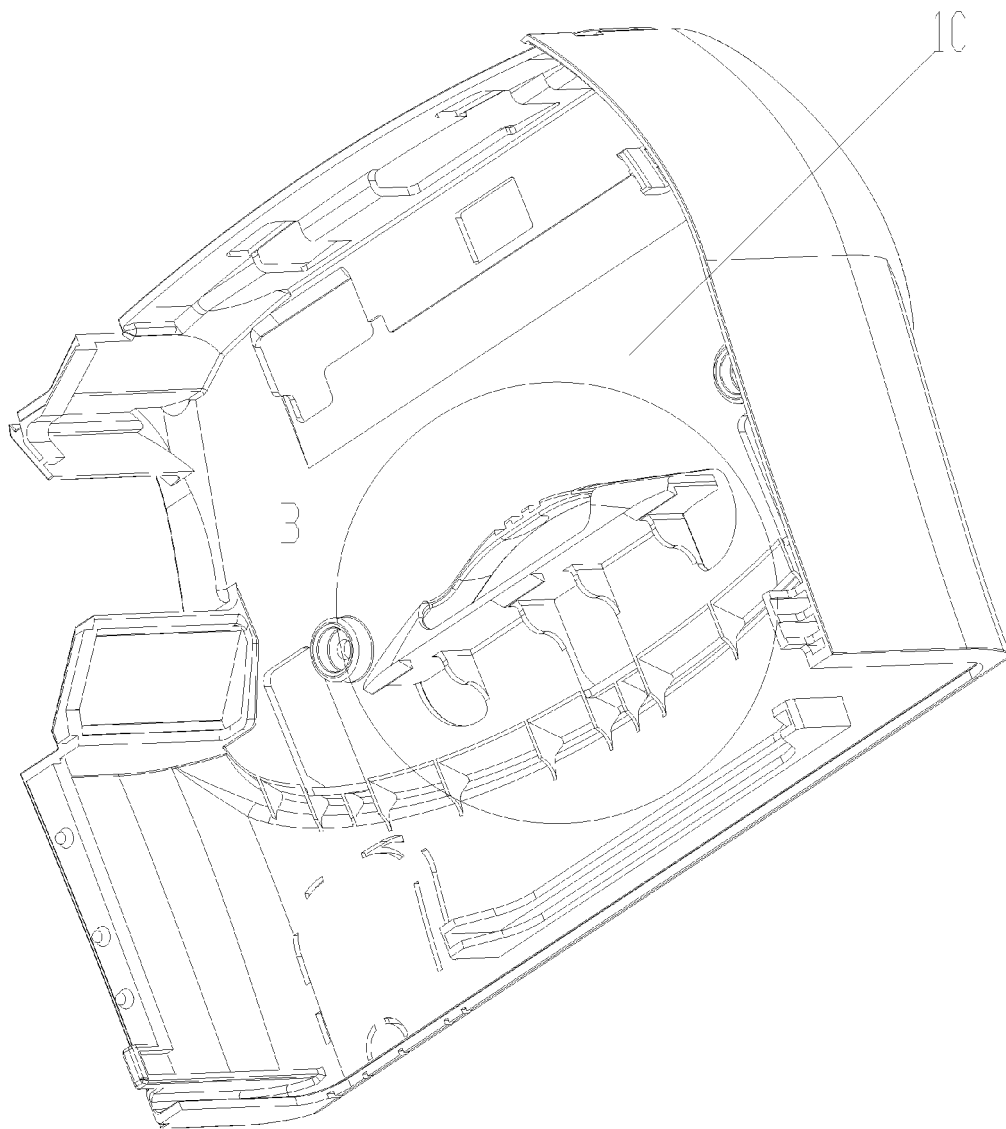


Fig.4

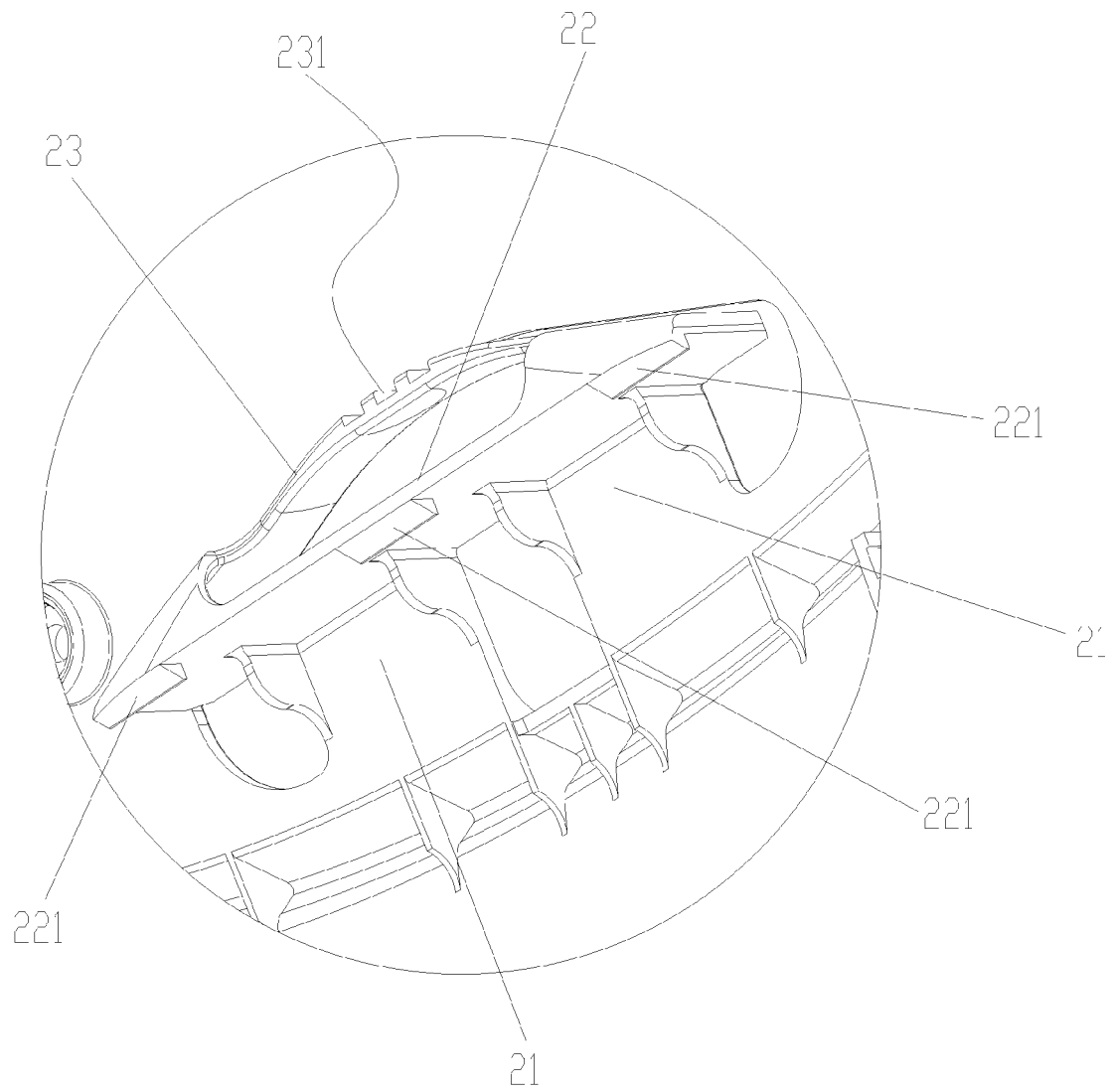


Fig.5

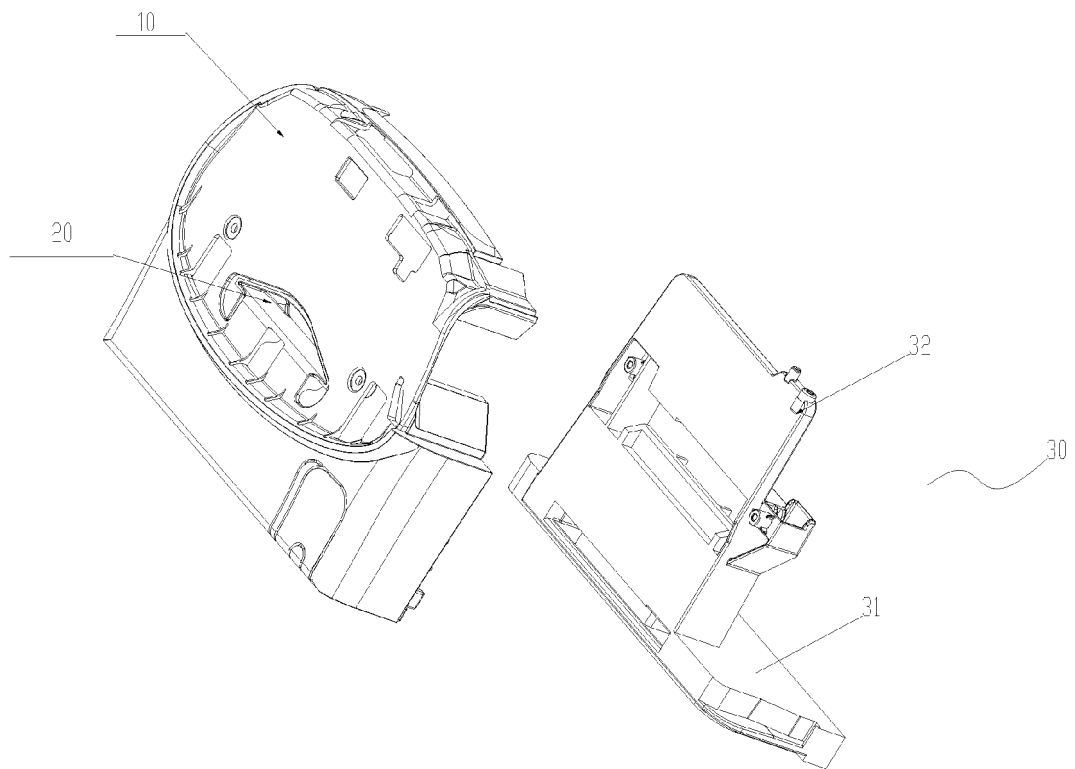


Fig.6

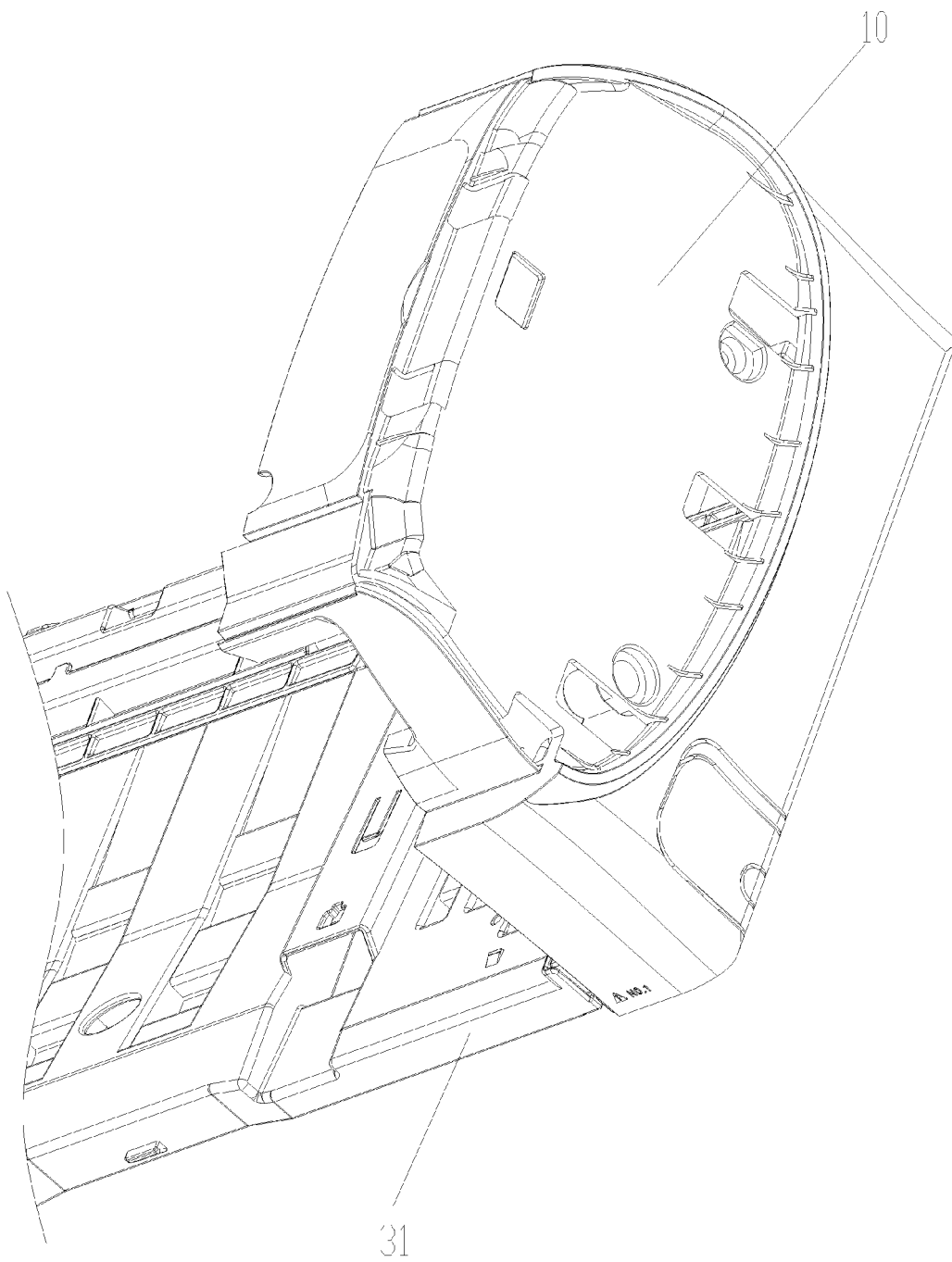


Fig.7

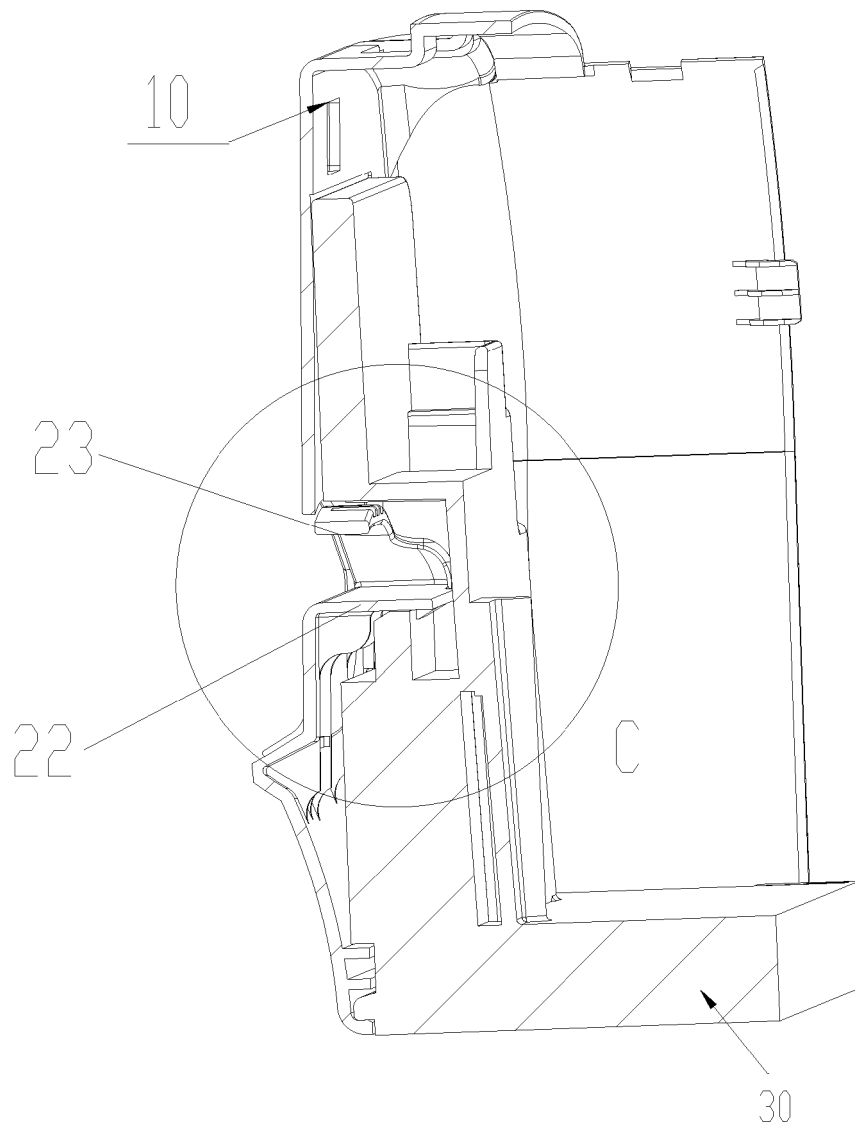


Fig.8

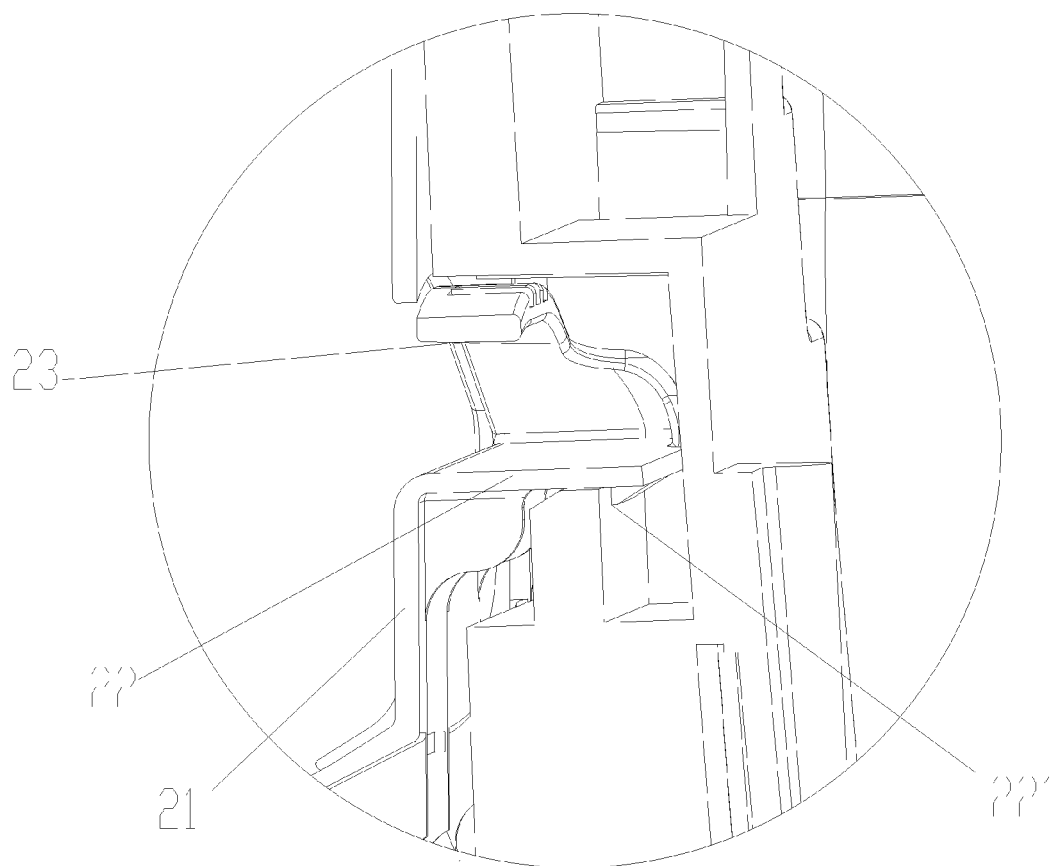


Fig.9

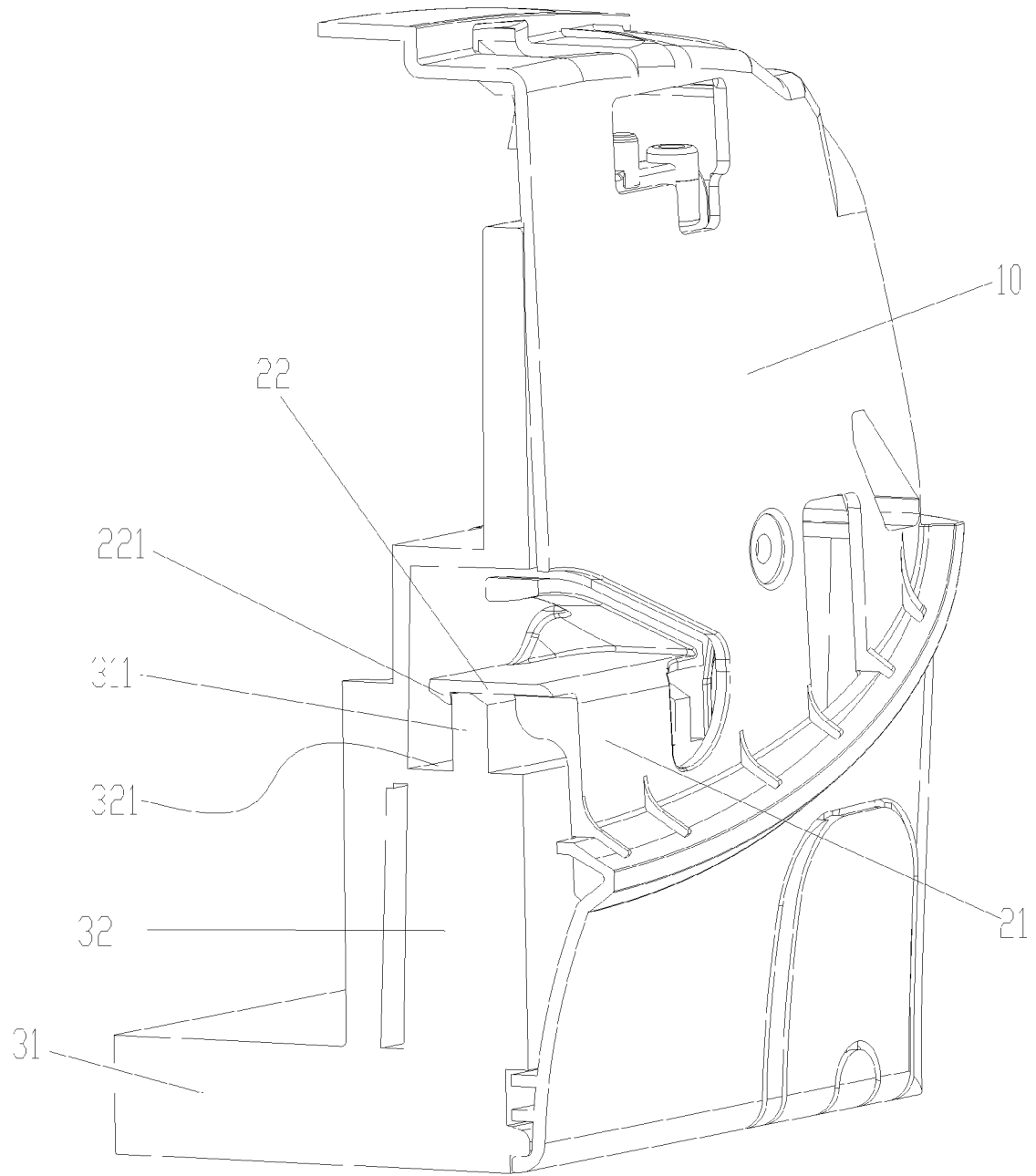


Fig.10

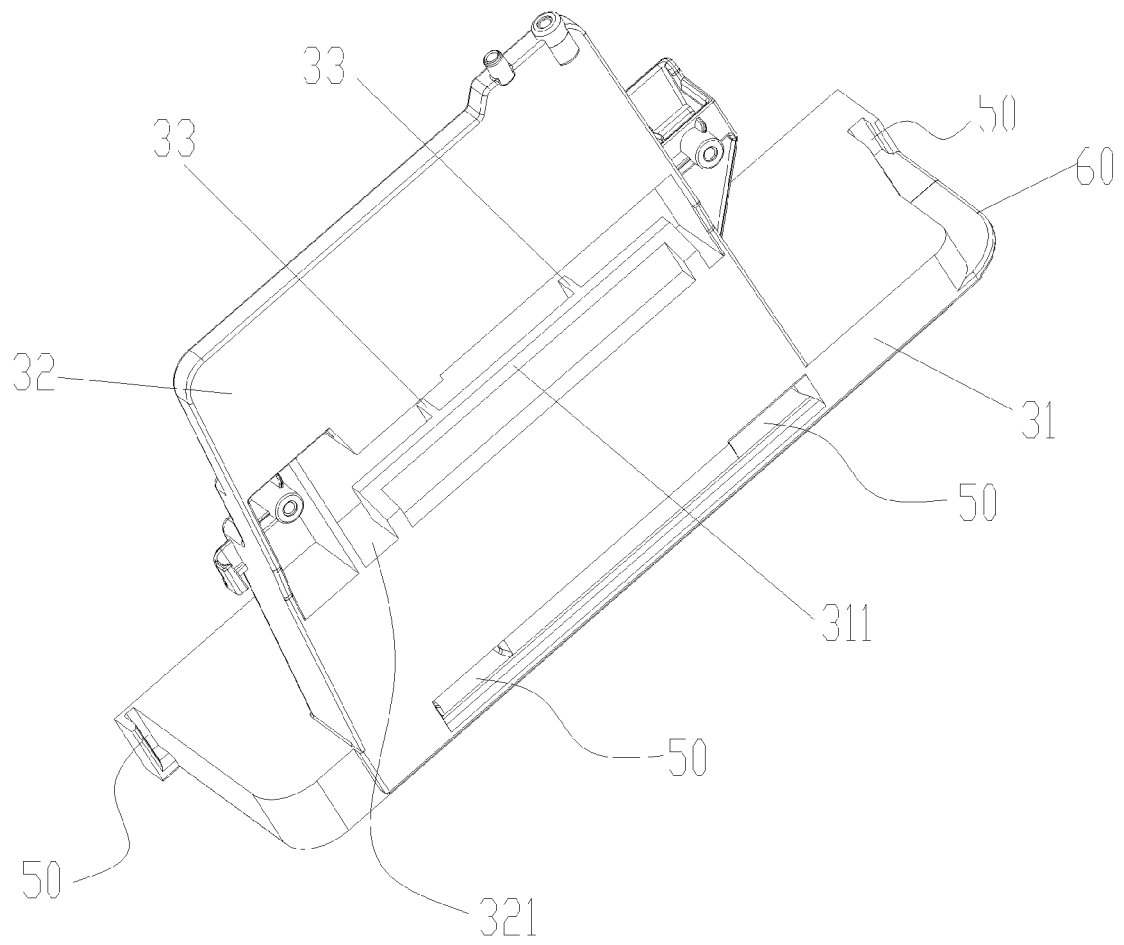


Fig.11

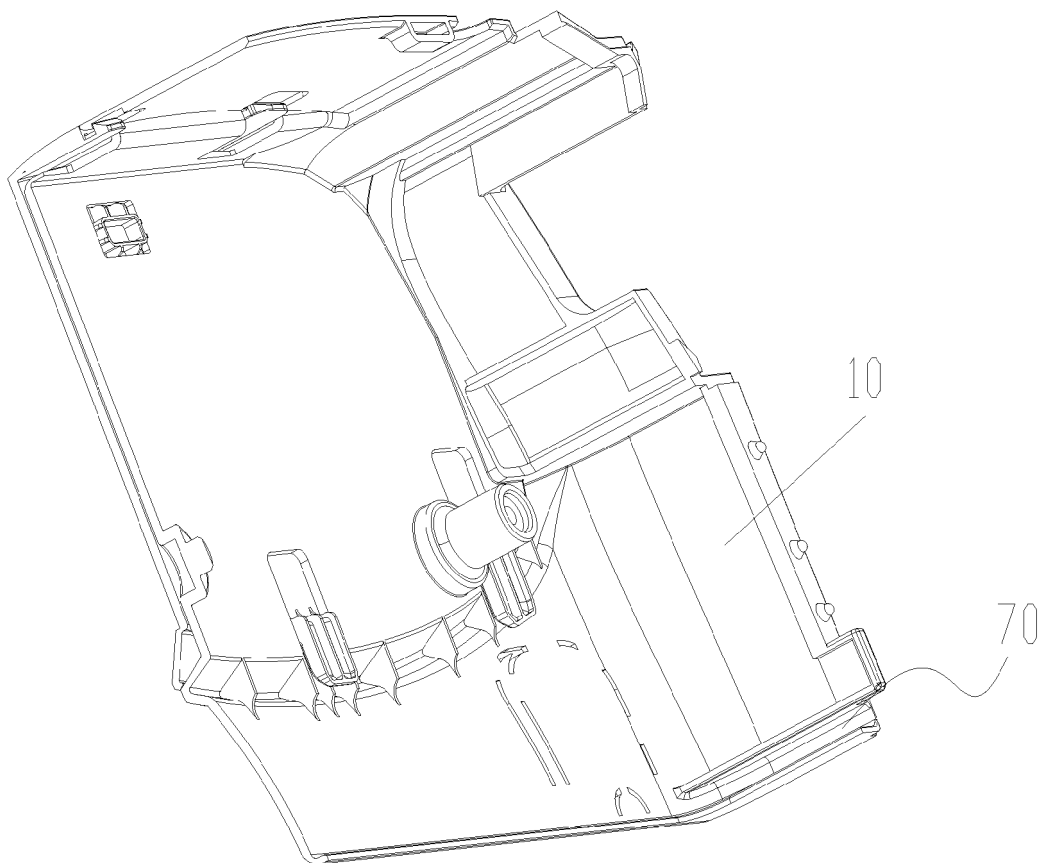


Fig.13

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/103556

A. CLASSIFICATION OF SUBJECT MATTER F24F 13/20(2006.01)i; F24F 1/00(2011.01)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		
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, CNKI, DWPI, SIPOABS, EPODOC: 空调, 侧板, 安装, 卡接, 卡扣, 凸起, 突起, air w conditioner, side w plate, side w piece, side w board, side panel, adjust+, assembl+, fit+, mount+, sprocket, lobe, rige, convex, bulg+		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 107621008 A (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 23 January 2018 (2018-01-23) claims 1-21	1-21
PX	CN 207196884 U (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 06 April 2018 (2018-04-06) claims 1-21	1-21
PX	CN 107560139 A (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 09 January 2018 (2018-01-09) description, paragraphs [0047]-[0070], and figures 1-8	1-9, 12-14, 17-21
PX	CN 207196883 U (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 06 April 2018 (2018-04-06) description, paragraphs [0047]-[0070], and figures 1-8	1-9, 12-14, 17-21
X	CN 203010792 U (PANASONIC APPLIANCES AIR-CONDITIONING (GUANGZHOU) CO., LTD.) 19 June 2013 (2013-06-19) description, paragraphs [0022]-[0029], and figures 1-9	1, 12-14
☒ Further documents are listed in the continuation of Box C.	☒ See patent family annex.	
* Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “E” earlier application or patent but published on or after the international filing date “L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) “O” document referring to an oral disclosure, use, exhibition or other means “P” document published prior to the international filing date but later than the priority date claimed	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention “X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone “Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art “&” document member of the same patent family	
Date of the actual completion of the international search 01 November 2018	Date of mailing of the international search report 16 November 2018	
Name and mailing address of the ISA/CN 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 Telephone No.	

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/103556

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	CN 104197492 A (MIDEA GROUP WUHAN REFRIGERATION EQUIPMENT CO., LTD.) 10 December 2014 (2014-12-10) description, paragraphs [0023]-[0031], and figures 1-5	1, 12-14
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A	KR 20070105546 A (LG ELECTRONICS INC.) 31 October 2007 (2007-10-31) entire document	1-21

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Information on patent family members

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CN 207196884 U	06 April 2018	None	
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CN 207196883 U	06 April 2018	None	
CN 203010792 U	19 June 2013	None	
CN 104197492 A	10 December 2014	CN 104197492 B	30 June 2017
CN 203671801 U	25 June 2014	None	
KR 20070105546 A	31 October 2007	None	