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(54) **HOUSING AND WALL-MOUNTED AIR CONDITIONER**

(57) The present invention discloses a housing and an indoor unit of a wall-mounted air conditioner. The housing includes: a face frame having an air outlet; a panel mounted to a front side of the face frame, and the air outlet is arranged at a lower edge of the panel; a front decorative strip mounted to the lower edge of the panel; and two side decorative strips mounted to left and right ends of the face frame respectively, and connected to the front decorative strip.

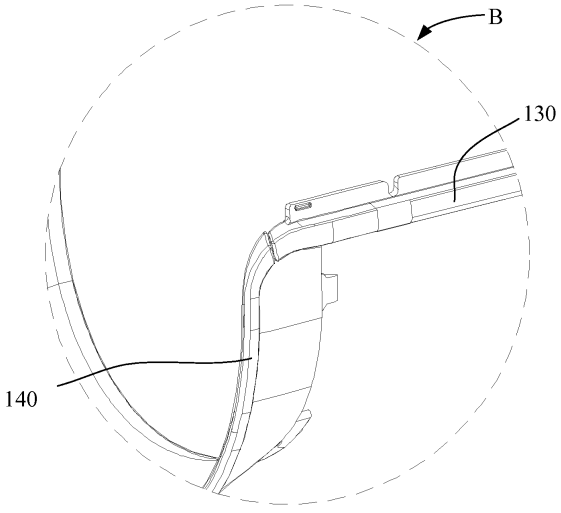

FIG. 6

EP 3 604 966 A1

Description

TECHNICAL FIELD

[0001] The present disclosure generally relates to the technical field of air conditioner, and more particularly relates to a housing, and an indoor unit of a wall-mounted air conditioner.

BACKGROUND

[0002] The demand for appearance of the indoor unit of the wall-mounted air conditioner is increasing with continuous improvement of human daily life. So the housings of most indoor units are now arranged with decorative strips for beautifying appearance. However, the decorative effect is poor as the decorative strip is only arranged on the panel. In consequence, user's demand for good appearance has not been satisfied.

SUMMARY

[0003] It is therefore one main objective of the disclosure to provide a housing, applied to an indoor unit of a wall-mounted air conditioner, which aims to improve the overall appearance of the indoor unit of the wall-mounted air conditioner.

[0004] In order to realize the above objective, the present disclosure provides a
a face frame having an air outlet;
a panel mounted to a front side of the face frame, wherein the air outlet is arranged at a lower edge of the panel;
a front decorative strip mounted to the lower edge of the panel; and
two side decorative strips mounted to left and right ends of the face frame respectively, and both connected to the front decorative strip.

[0005] Optionally, the front decorative strip includes left and right end faces both inclined rearwards. Each of the two side decorative strips includes an end face connected to the left end surface or the right end surface, and inclined forwards.

[0006] Optionally, a thickness of a connecting portion of each of the two side decorative strips is same as that of a connecting portion of the front decorative strip along a front-back direction.

[0007] Optionally, a thickness of other portion of each of the two side decorative strips is gradually decreased along a direction away from the connecting portion.

[0008] Optionally, the front decorative strip is fastened and fixed to the panel.

[0009] Optionally, the front decorative strip includes an upper surface and a positioning element protruded upwards from the upper surface. The panel includes a lower edge and an avoiding hole formed in the lower edge, and the positioning element is locked in the avoiding hole.

[0010] Optionally, the housing further includes two end covers mounted to left and right ends of the face frame respectively, and each of the two side decorative strips is disposed on an outer side of one corresponding end cover.

[0011] Optionally, wherein the outer side of each of the two end cover is provided with a mounting groove, and each of the two side decorative strips is fastened and fixed in one corresponding mounting groove.

[0012] Optionally, each of the two side decorative strips is S shaped and arranged on the outer side of one corresponding end cover.

[0013] The present disclosure further provides an indoor unit of a wall-mounted air conditioner, including a housing. The housing includes:

a face frame having an air outlet;
a panel mounted to a front side of the face frame, wherein the air outlet is arranged at a lower edge of the panel;
a front decorative strip mounted to the lower edge of the panel; and
two side decorative strips mounted to left and right ends of the face frame respectively, and connected to the front decorative strip.

[0014] According to the technical solution of the present disclosure, the front decorative strip is mounted to the lower edge of the panel, and the two side decorative strips are mounted to the left and right ends of the face frame, respectively, and the front decorative strip are connected with the side decorative strips. In this way, the front decorative strip can significantly improve the decorative effect of the panel, especially the decorative effect of the front side of the housing; the two side decorative strips can further significantly improve the decorative effects on the left and right sides of the housing. Meanwhile, the front decorative strip is connected to the side decorative strips, thereby achieving a continuous appearance. As the indoor unit of the wall-mounted air conditioner presents a three-dimensional decorative effect, the overall appearance of the indoor unit of the wall-mounted air conditioner is significantly improved, thereby effectively

enhancing the market competitiveness.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] To illustrate the technical solutions according to the embodiments of the present disclosure or in the prior art more clearly, the accompanying drawings for describing the embodiments or the prior art are introduced briefly in the following. Apparently, the accompanying drawings in the following description are only about some embodiments of the present disclosure, and persons of ordinary skill in the art can derive other drawings from the accompanying drawings without creative efforts.

FIG. 1 is a partial structural diagram of an indoor unit of a wall-mounted air conditioner according to an exemplary embodiment of the present disclosure;
FIG. 2 is a partial structural diagram of the indoor unit of the wall-mounted air conditioner shown in Figure 1;
FIG. 3 is an enlarged diagram of portion A shown in Fig. 2;
FIG. 4 is an exploded diagram of the indoor unit of the wall-mounted air conditioner shown in Fig. 2;
FIG. 5 is a schematic diagram showing the assembling structure of the front decorative strip and the side decorative strips of Fig. 2;
FIG. 6 is an enlarged diagram of portion B shown in Fig. 5.

Labels illustration for drawings:

Label	Name	Label	Name
1	indoor unit of wall-mounted air conditioner	121	avoiding hole
10	housing	130	front decorative strip
100	face frame	131	positioning element
110	air outlet	140	side decorative strip
120	panel	150	end cover

[0016] The realization of the aim, functional characteristics, advantages of the present disclosure are further described specifically with reference to the accompanying drawings and embodiments.

DETAILED DESCRIPTION

[0017] The technical solutions of the embodiments of the present disclosure will be clearly and completely described in the following with reference to the accompanying drawings. It is obvious that the embodiments to be described are only a part rather than all of the embodiments of the present disclosure. All other embodiments obtained by persons skilled in the art based on the embodiments of the present invention without creative efforts shall fall within the protection scope of the present invention.

[0018] It is to be understood that, all of the directional instructions in the exemplary embodiments of the present disclosure (such as top, down, left, right, front, back...) can only be used for explaining relative position relations, moving condition of the elements under a special form (referring to figures), and so on, if the special form changes, the directional instructions changes accordingly.

[0019] In addition, the descriptions, such as the "first", the "second" in the exemplary embodiment of present disclosure, can only be used for describing the aim of description, and cannot be understood as indicating or suggesting relative importance or impliedly indicating the number of the indicated technical character. Therefore, the character indicated by the "first", the "second" can express or impliedly include at least one character. In addition, the technical proposal of each exemplary embodiment can be combined with each other, however the technical proposal must base on that the ordinary skill in that art can realize the technical proposal, when the combination of the technical proposals occurs contradiction or cannot realize, it should consider that the combination of the technical proposals does not existed, and is not contained in the protection scope required by the present disclosure.

[0020] The present disclosure proposes a housing, applied to an indoor unit of an air conditioner.

[0021] In an embodiment of the present disclosure, referring to FIGS. 1 to 6, the housing 10 includes:

a face frame 100 having an air outlet 110;

a face frame 100, the face frame 100 is provided with an air outlet 110;
a panel 120 mounted to a front side of the face frame 100, the air outlet 110 is arranged at a lower edge of the panel 120;
a front decorative strip 130 mounted to the lower edge of the panel 120; and
two side decorative strips 140 mounted to left and right ends of the face frame 100 respectively, and connected to the front decorative strip 130.

[0022] The indoor unit 1 includes the face frame 100 and the panel 120. The outer surface of the face frame 100 is provided with the panel 120. The air outlet 110 is formed in a lower portion of the front side of the face frame 100. The air outlet 110 is arranged at the lower edge of the panel 120, and the lower edge of the panel 120 is defined as a side edge of the air outlet 110.

[0023] In the present embodiment, in order to beautifying the housing 10 further includes a front decorative strip 130 and two side decorative strips 140, and the front decorative strip 130 is mounted on the lower edge of the panel 120, two side decorative strips 140 are respectively mounted on the left and right ends of the face frame 100 respectively, and the front decorative strip 130 is connected to the side decorative strips 140. It can be understood that the front decorative strip 140 can significantly improve the decorative effect of the panel 120, especially the decorative effect of the front side of the housing 10; the two side decorative strips 130 can further significantly improve the decorative effects on the left and right sides of the housing 10. Meanwhile, the front decorative strip 130 is connected to the side decorative strips 140, thereby achieving a continuous appearance. As the indoor unit 1 presents a three-dimensional decorative effect, the overall appearance of the indoor unit 1 is significantly improved, thereby effectively enhancing the market competitiveness.

[0024] It should be noted that the front decorative strip 130 may be fixed on the panel 120 by welding, gluing or the like; or the front decorative strip 130 may be detachably connected to the panel 120 by a fastener connecting mode, a screw connecting mode, or the like. Similarly, the side decorative strips 140 can also be fixed to the left and right ends of the face frame 100 in various ways which do not need to be further described herein.

[0025] According to the technical solution of the present disclosure, the front decorative strip 130 is mounted to the lower edge of the panel 120, and the two side decorative strips 140 are mounted to the left and right ends of the face frame 100, respectively, and the front decorative strip 130 are connected with the side decorative strips 140. In this way, the front decorative strip 140 can significantly improve the decorative effect of the panel 120, especially the decorative effect of the front side of the housing 10; the two side decorative strips 130 can further significantly improve the decorative effects on the left and right sides of the housing 10. Meanwhile, the front decorative strip 130 is connected to the side decorative strips 140, thereby achieving a continuous appearance. As the indoor unit 1 presents a three-dimensional decorative effect, the overall appearance of the indoor unit 1 is significantly improved, thereby effectively enhancing the market competitiveness.

[0026] Further, in the present embodiment, the left and right end faces of the front decorative strip 130 are inclined rearwards, and the end faces of the side decorative strips 140 which are connected to the end faces of the front decorative strip 130 are inclined forwards. It can be understood that the front decorative strip 130 is pre-mounted on the panel 120, and the side decorative strips 140 are also pre-mounted on the face frame 100. When it needs to mount the panel 120 on the face frame 100, in order to connect the front decorative strip 130 with the side decorative strips 140 easily, end surfaces of the front decorative strip 130 and another end surfaces of the side decorative strips 140 connected with the end surfaces of the front decorative strip 130 are all defined as inclined surface, the inclined surfaces of the front decorative strip 130 are all inclined towards side decorative strips 140 along the back-front direction. The panel 120 is mounted to the face frame 100 along the front-back direction. On the one hand, the front decorative strip 130 can be easily connected to the side decorative strips 140, so that a interference between the front decorative strip 130 and the side decorative strip 140 can be avoided when the panel 120 is mounted to the face frame 100, thereby connecting the panel 120 with the face frame 100 easily. On the other hand, from user's point of view, a mounting gap between the from decorative strip 130 and each side decorative strip 140 is much more small as a result of the inclined surfaces, thereby beautifying the appearance of the indoor unit 1.

[0027] In order to ensure the consistency of the decorative effect of the connecting portions of the side decorative strips 140 and the front decorative strip 130, in the exemplary embodiment, a thickness of each side decorative strip 140 is the same as that of the front decorative strip 130, thereby realizing a continuous appearance. In some optional embodiments, a thickness of other portion of each side decorative strips 140 is gradually decreased in a direction away from the connecting portion of the side decorative strip 140.

[0028] Further, in the exemplary embodiment, the front decorative strip 130 is detachably mounted on the panel 120, to facilitate the disassembly and assembly of the front decorative strip 130. Optionally and the front decorative strip 130 is fastened and fixed to the panel 120.

[0029] In the above embodiment, in order to facilitate the assembly of the front decorative strip 130 and the panel 120, the upper surface of the front decorative strip 130 is convexly provided with a positioning element 131, and the lower edge of the panel 120 is provided with an avoiding hole 121 which is matched with the positioning element 131. In this

way, when it needs to mount the front decorative strip 130 to the panel 120, the positioning element 131 is firstly inserted into the avoiding hole 121 for pre-locating the front decorative strip 130 into the avoiding hole 121. Then the front decorative strip 130 is fixed to the panel 120. As such the defect of misplacing the front decorative strip 130 can be effectively avoided, the front decorative strip 130 can be mounted to the panel 120 conveniently.

[0030] In the exemplary embodiment, in order to mount the positioning element 131 into the avoiding hole 121 easily, the positioning element 121 is configured to extend along a length direction of the decorative strip 130, and the length of the positioning element 131 parallel to the length direction of the decorative strip 130 is gradually decreased along the protruding direction of the positioning element 131. It is provided that the positioning element 131 is tapered in its protruding direction. In this way, the positioning element 131 has a trapezoidal shape, and a protruding end of the positioning element 131 is small, so that the positioning element 131 can be easily fastened into the avoiding hole 121.

[0031] It should be emphasized that, when it needs to mount the decorative strip 130 to the panel 12, the middle part of the decorative strip 130 is mounted to the panel 12 first. As the decorate strip 130 is very long, it is prone to occur a misalignment. In the exemplary embodiment, in order to overcome the misalignment, the end of the decorative strip 130 is provided with the positioning element 131. When it need to mount decorative strip 130 to the panel 12, the positioning element 131 is mounted to the panel 12 first, which is much more in conformity with workers' assembly habit and conducive to the assembly of the decorative strip 130. Meanwhile, the positioning element 131 is defined at the end of the decorative strip 130, thereby achieving a good mistake proofing effect and reducing a misalignment probability.

[0032] Further, the housing 10 further includes two end covers 150 mounted to left and right ends of the face frame 100, and each side decorative strip 140 are disposed on an outer side of corresponding end cover 150. In detail, there are two end covers 150, and two end covers 150 are mounted to left and right ends of the face frame 100 respectively. The injection model is generally used as the end cover 150. The side decorative strips 140 are integrally formed with the the end covers 150 through an injection process; or the side decorative strips 140 are detachably mounted to the outer side of the end covers 150 respectively.

[0033] Preferably, an outer side surface of each end cover 150 is provided with a mounting groove, the side decorative strips 140 are embedded into one corresponding mounting groove. The side decorative strips 140 are fastened and fixed in the mounting groove, the manufacturing difficulty of the end covers 150 is reduced, and the decorative strips 140 can be easily mounted to or detached from the end covers 150.

[0034] Further, in the embodiment, each of the two side decorative strips 140 is S shaped and arranged on the outer side of one corresponding end cover150, thereby improving the decorative effect of the side decorative strips 140. As such the indoor unit of the wall-mounted air conditioner 1 has a good appearance.

[0035] Referring to FIGS. 1 and 2, the present disclosure also provides an indoor unit of a wall-mounted air conditioner 1, which includes a housing 10. The specific structure of the housing 10 can be referred to the above embodiments. As the indoor unit 1 adopts all the technical solutions of the above exemplary embodiments, the indoor unit 1 at least has all of the beneficial effects of the technical solutions of the above exemplary embodiments, no need to repeat again.

[0036] The foregoing description merely depicts some embodiments of the present disclosure and therefore is not intended to limit the scope of the present disclosure. An equivalent structural or flow changes made by using the content of the specification and drawings of the present disclosure, or any direct or indirect present disclosures of the disclosure on any other related fields shall all fall in the scope of the present disclosure.

Claims

1. A housing, applied to an indoor unit of a wall-mounted air conditioner, **characterized in that** the housing comprises:

a face frame having an air outlet;
a panel mounted to a front side of the face frame, wherein the air outlet is arranged at a lower edge of the panel;
a front decorative strip mounted at the lower edge of the panel; and
two side decorative strips mounted at left and right ends of the face frame respectively, and both connected and fitted to the front decorative strip.

2. The housing according to claim 1,
wherein the front decorative strip comprises:

left and right end surfaces both inclined rearwards,
wherein each of the two side decorative strips comprises:
at least one end face connected and fitted to the left end surface or to the right end surface of the front decorative strip (130), and inclined forwards.

3. The housing according to claim 1,
wherein a thickness of a connecting portion of each of the two side decorative strips is the same as that of a connecting portion of the front decorative strip (130) along a front-back direction.

4. The housing according to claim 3,
wherein a thickness of each of the two side decorative strips is gradually decreased along a direction away from the connecting portion.

5. The housing according to claim 1
wherein the front decorative strip is fitted and fixed to the panel.

6. The housing according to claim 5,
wherein the front decorative strip comprises:

an upper surface; and
a positioning element protruded upwards from the upper surface,
wherein
an avoiding hole for the positioning element to be fitted into the avoiding hole, is arranged in the lower edge of the panel.

7. The housing according to claim 1, comprising:

two end covers mounted at the left and right ends of the face frame respectively,
wherein each of the two side decorative strips is disposed on an outer side of each of the corresponding end cover (150).

8. The housing according to claim 7,
wherein the outer side of each of the two end cover is provided with a mounting groove,
wherein each of the two side decorative strips is fitted and fixed into each of the corresponding mounting groove.

9. The housing according to claim 7,
wherein each of the two side decorative strips is S shaped and arranged on the outer side of each of the corresponding end cover.

10. The housing according to claim 5, comprising:

two end covers mounted at the left and right ends of the face frame respectively,
wherein each of the two side decorative strips is disposed on an outer side of each of the corresponding end cover (150).

11. An indoor unit of a wall-mounted air conditioner, comprising:
a housing -, **characterized in that** the housing comprises:

a frame having an air outlet;
a panel mounted to a front side of the frame, wherein the air outlet is arranged at a lower edge of the panel;
a front decorative strip mounted to the lower edge of the panel; and
two side decorative strips mounted to left and right ends of the frame respectively, and both connected to the front decorative strip.

12. The indoor unit according to claim 11,
wherein the front decorative strip comprises:

left and right end faces both inclined rearwards,
wherein each of the two side decorative strips comprises:
an end face connected to the left end surface or the right end surface, and inclined forwards.

13. The indoor unit according to claim 11,
wherein a thickness of a connecting portion of each of the two side decorative strips is same as that of a connecting

portion of the front decorative strip along a front-back direction.

14. The indoor unit according to claim 13,
wherein a thickness of other portion of each of the two side decorative strips is gradually decreased along a direction away from the connecting portion.

15. The indoor unit according to claim 11,
wherein the front decorative strip is fastened and fixed to the panel.

16. The indoor unit according to claim 11, comprising:

two end covers mounted to left and right ends of the frame respectively,
wherein each of the two side decorative strips is disposed on an outer side of one corresponding end cover.

17. The indoor unit according to claim 16,
wherein the outer side of each of the two end cover is provided with a mounting groove,
wherein each of the two side decorative strips is fastened and fixed in one corresponding mounting groove.

18. The indoor unit according to claim 16,
wherein each of the two side decorative strips is S shaped and arranged on the outer side of one corresponding end cover.

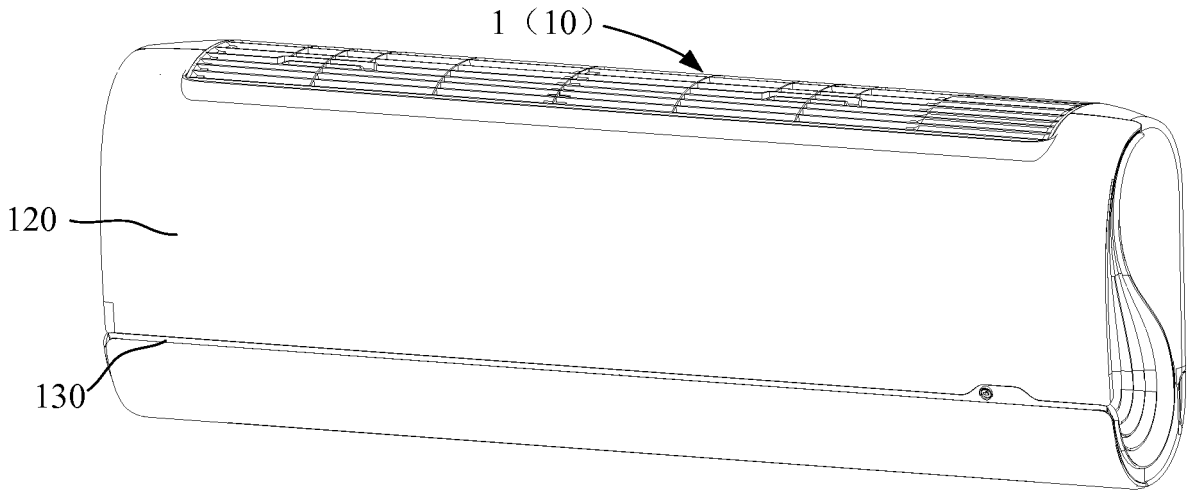

FIG. 1

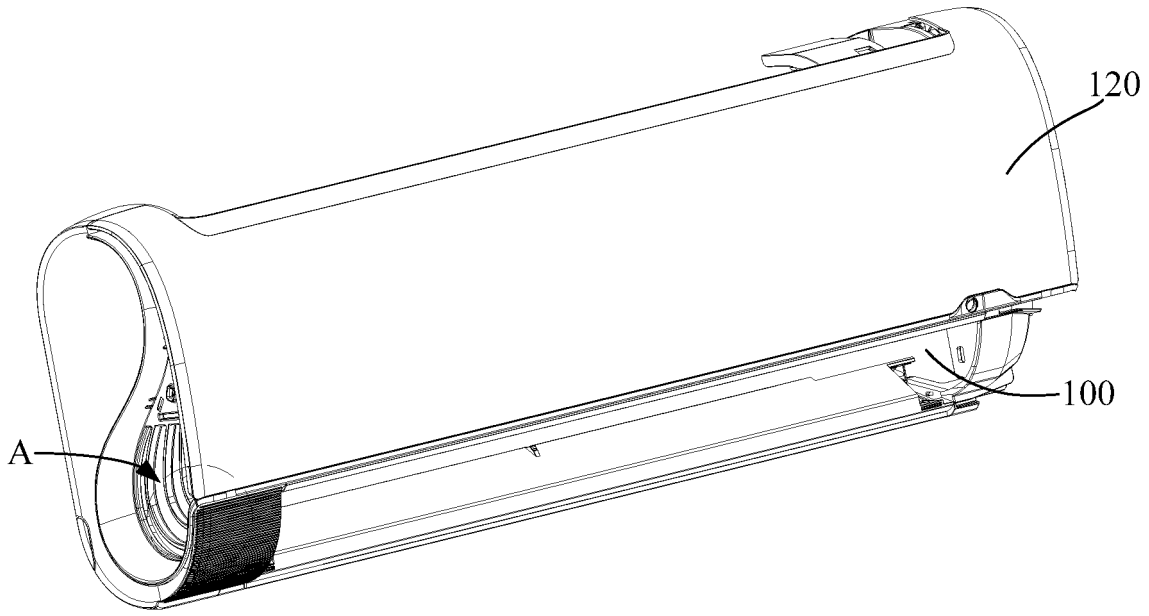

FIG. 2

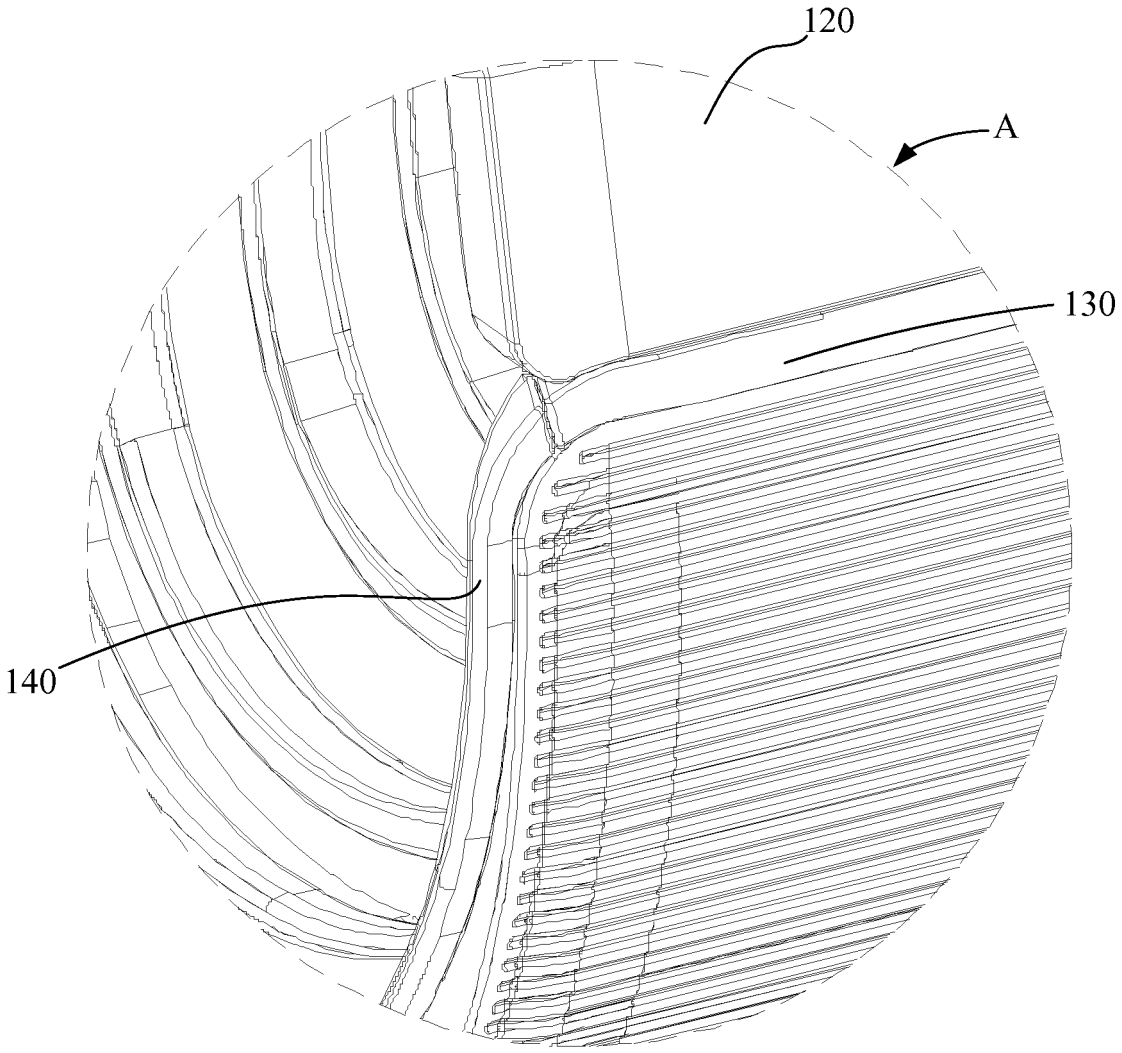

FIG. 3

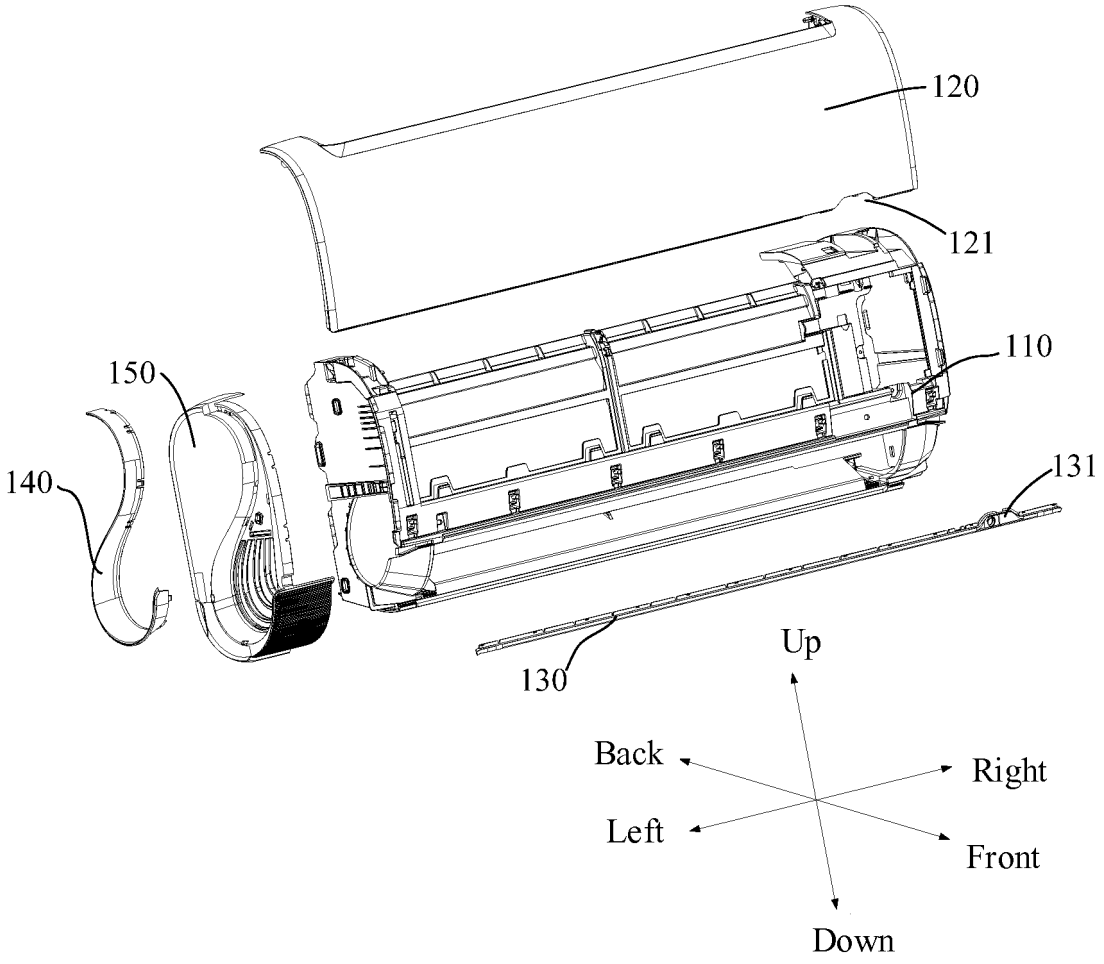

FIG. 4

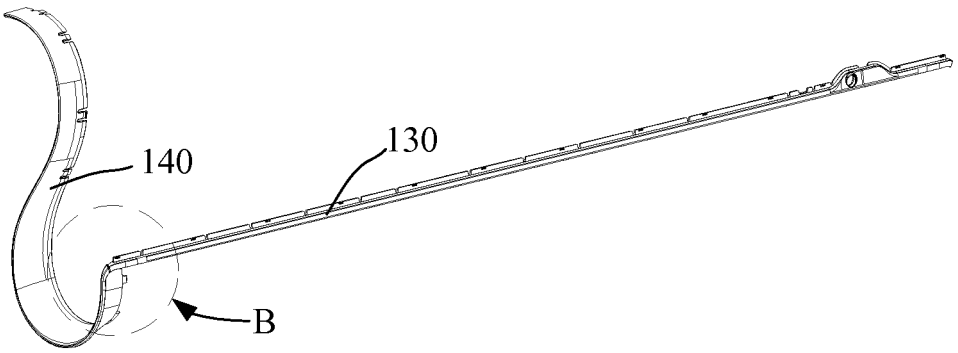

FIG. 5

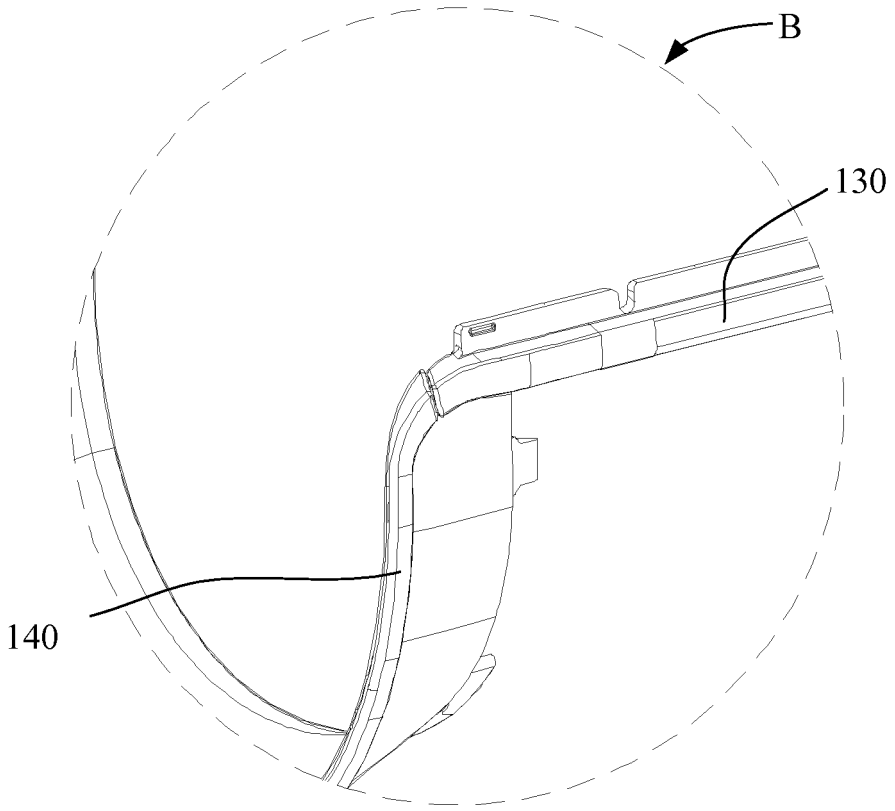

FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/109125

A. CLASSIFICATION OF SUBJECT MATTER

F24F 13/20(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

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)

CNPAT, CNKI, WPI, EPODOC: 壳体, 空调, 挂机, 面框, 出风口, 面板, 前侧, 装饰条, 下边沿, 两侧, 拼合, shell, body, air, conditioner, face, frame, outlet, panel, front ,side, decorat+, strip+, lower, edge, two, split+, match+, piece, together

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 103868218 A (GREE ELECTRIC APPLIANCES INC. OF ZHUHAI) 18 June 2014 (2014-06-18) description, paragraphs [0030]-[0038], and figures 1-12	1-18
X	CN 203024372 U (GREE ELECTRIC APPLIANCES INC. OF ZHUHAI) 26 June 2013 (2013-06-26) description, paragraphs [0032]-[0038], and figures 1-12	1-18
PX	CN 207881163 U (GUANGDONG MIDEA AIR-CONDITIONING EQUIPMENT CO., LTD. ET AL.) 18 September 2018 (2018-09-18) description, paragraphs [0036]-[0055], and figures 1-12	1-18
A	CN 202303813 U (PANASONIC APPLIANCES AIR-CONDITIONING (GUANGZHOU) CO., LTD.) 04 July 2012 (2012-07-04) entire document	1-18
A	CN 105115122 A (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 02 December 2015 (2015-12-02) entire document	1-18
A	JP 2017161178 A (FUJITSU GENERAL LTD) 14 September 2017 (2017-09-14) entire document	1-18

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

* Special categories of cited documents:

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
01 November 2018	**09 November 2018**

Name and mailing address of the ISA/CN	Authorized officer
State Intellectual Property Office of the P. R. China (ISA/CN) **No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088** **China**	
Facsimile No. **(86-10)62019451**	Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2018/109125

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 103868218 A	18 June 2014	CN 103868218 B	28 July 2017
CN 203024372 U	26 June 2013	None	
CN 207881163 U	18 September 2018	None	
CN 202303813 U	04 July 2012	None	
CN 105115122 A	02 December 2015	None	
JP 2017161178 A	14 September 2017	None	

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