(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 604 964 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
03.05.2023 Bulletin 2023/18

(21) Application number: **18903574.4**

(22) Date of filing: **27.09.2018**

(51) International Patent Classification (IPC):
F24F 13/14 *(2006.01)* ***F24F 11/79*** *(2018.01)*
F24F 1/00 *(2019.01)* ***F24F 1/0007*** *(2019.01)*
F24F 1/0011 *(2019.01)* ***F24F 1/0057*** *(2019.01)*

(52) Cooperative Patent Classification (CPC):
F24F 1/0007; F24F 1/0011; F24F 1/0057; F24F 13/14

(86) International application number:
PCT/CN2018/108048

(87) International publication number:
WO 2019/148869 (08.08.2019 Gazette 2019/32)

(54) HOUSING ASSEMBLY AND AIR CONDITIONER

GEHÄUSEANORDNUNG UND KLIMAANLAGE

ASSEMBLAGE DE BOÎTIER ET CLIMATISEUR

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **31.01.2018 CN 201810098151**
31.01.2018 CN 201820181566 U

(43) Date of publication of application:
05.02.2020 Bulletin 2020/06

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Description

FIELD

[0001] The present invention relates to a field of air-conditioning technology, and more particularly to a housing assembly for an air conditioner, and an air conditioner.

BACKGROUND

[0002] The users are prone to feeling uncomfortable if being exposed to the direct blowing of the air conditioner. For example, the part of human body to which the cool air is blowing will feel very cold while other parts will feel relatively hot in the cool mode, bringing poor sense of comfort as a whole. Worse still, that will affect the health of the users and make them sick if they are exposed to the cold simulation for long time.

[0003] CN 204 555 022 U discusses an air conditioner indoor unit, which can quickly reduce the wind speed of the air outlet and realize the windless air supply.

SUMMARY

[0004] The invention is defined by the claims.

[0005] The purpose of the present invention is to address at least one of the technical problems existing in the related art. Therefore, the present invention proposes a housing assembly for an air conditioner comprising an air deflector, which can offer a comfortable breezeless experience to the users.

[0006] The present invention also proposes an air conditioner which includes the above housing assembly.

[0007] The housing assembly of the invention is defined in claim 1.

[0008] The air deflector for the air conditioner is provided with the plurality of through holes penetrating its thickness, and the centerline of the through hole above the boundary obliquely extends upwards while the centerline of the through hole below the boundary obliquely extends downwards in the direction from the inside to the outside of the air deflector, so that part of the air flow moves upwards from the horizontal direction, while another part moves downwards from the horizontal direction under the guidance of the through holes in the air deflector when the breezeless mode is activated by the user, thus preventing a large amount of air from being blown directly toward the user, so as to improve the breezeless experience of the user, and make the user feel more comfortable.

[0009] According to some embodiments of the present invention, a distance between an upper edge and a lower edge of the air deflector is L1, and a distance between the boundary and the upper edge of the air deflector is L2, wherein $2/5 \le L2/L1 \le 2/3$.

[0010] According to some embodiments of the present invention, the distance between the upper edge and the lower edge of the air deflector is L1, and the distance between the boundary and the upper edge of the air deflector is L2, wherein $3/5 \le L2/L1 \le 2/3$.

[0011] According to some embodiments of the present invention, an angle between the centerline of the through hole above the boundary and the horizontal plane is α, wherein α satisfies: $0 < \alpha \le 15°$.

[0012] Further, wherein α satisfies: $0 < \alpha \le 10°$.

[0013] Further, wherein α satisfies: $3° \le \alpha \le 5°$.

[0014] According to some embodiments of the present invention, an angle between the centerline of the through hole below the boundary and the horizontal plane is β, wherein β satisfies: $0 < \beta \le 45°$.

[0015] Further, wherein β satisfies: $0 < \beta \le 20°$.

[0016] According to some embodiments of the present invention, a diameter of the through hole is D, wherein D satisfies: $1mm \le D \le 3mm$.

[0017] Further, D satisfies: $1.3mm \le D \le 2.5mm$.

[0018] The air deflector for the air conditioner is provided with the plurality of through holes penetrating its thickness, and the centerline of the through hole above the boundary obliquely extends upwards while the centerline of the through hole below the boundary obliquely extends downwards in the direction from the inside to the outside of the air deflector, so that part of the air flow moves upwards from the horizontal direction, while another part moves downwards from the horizontal direction under the guidance of the through holes in the air deflector when the breezeless mode is activated by the user, thus preventing a large amount of air from being blown directly toward the users, so as to improve the breezeless experience of the user, and make the user feel more comfortable.

[0019] The air conditioner according to the embodiment of the present invention includes the above housing assembly.

[0020] The air conditioner according to the embodiment of the present invention is provided with the plurality of through holes penetrating the thickness of its air deflector, and the centerline of the through hole above the boundary obliquely extends upwards while the centerline of the through hole below the boundary obliquely extends downwards in the direction from the inside to the outside of the air deflector, so that part of the air flow moves upwards from the horizontal direction, while another part moves downwards from the horizontal direction under the guidance of the through holes on the air deflector when the breezeless mode is activated by the user, thus preventing a large amount of air being blown directly toward the users, which improves the breezeless experience of the users, and makes them more comfortable.

BRIEF DESCRIPTION OF THE DRAWING

[0021] The above and/or additional aspects and advantages of the present invention will become apparent and more readily appreciated from the description of embodiments in combination with the accompanying drawings, in which:

Figure 1 is a structure diagram of air conditioner as specified in the embodiment of the present invention;
Figure 2 is an enlarged drawing of the position A in Figure 1;
Figure 3 is a section view of air conditioner as specified in the embodiment of the present invention;
Figure 4 is a structure diagram of air deflector for air conditioner;
Figure 5 is a section view of air deflector for air conditioner;

Reference numerals:

[0022]

air conditioner 1000,
housing assembly 100,
air deflector 1, through hole 11, boundary 12, hook 13,
air outlet 2, front panel 3, pedestal 4.

DETAILED DESCRIPTION

[0023] The embodiments of the present invention are described in detail below, and examples of the embodiments are shown in the attached drawings, throughout which the identical or similar labels are used to denote the identical or similar elements or elements having identical or similar functions. The embodiments described below by reference to the attached drawings are illustrative and are used only to interpret the present invention but should not be construed as restrictions on the present invention.

[0024] In the description of the present invention, it should be understood that the orientation or position relations indicated with the terms "length", "thickness", "up", "down", "front", "rear", "left", "right" and "bottom" are based on the orientation or position relations shown in the attached drawings, are used only for the convenience of describing the present invention and simplifying the description, rather than indicating or implying that the device or element referred to must have a particular orientation, be constructed and operated in a particular orientation, so they shall not be construed as a restriction on the present invention. In addition, a feature defined as "first" or "second" may, explicitly or implicitly, include one or more such features.

[0025] In the description of the present invention, it should be noted that unless otherwise expressly specified and defined, the terms "installation", "linking" and "connection" shall be understood generally, for example, it may be fixed connection, detachable connection or integral connection; or mechanical or electrical connections; or direct linking, indirect linking through an intermediate medium, or internal connection of two components.

[0026] The following describes the air deflector 1 for the air conditioner 1000 with reference to Figures 1-5.

[0027] As shown in Figure 1 and Figure 3, the air deflector 1 has a plurality of through holes 11 penetrating the air deflector in a thickness direction of the air deflector, and a boundary 12 extending in a length direction thereof (a left-right direction as shown in Figure 1); when the air deflector 1 closes the air outlet 2 of air conditioner 1000, the centerline of the through holes 11 above the boundary 12 (as shown in Figure 3) extends upwards at certain angle, while the centerline of the through holes 11 below the boundary 12 (as shown in Figure 3) extends downwards at certain angle in the direction from the inside (the side of air deflector 1 toward the inside of the air conditioner 1000) to the outside (the side of air deflector 1 toward the indoor space).

[0028] It should be noted that, as shown in Figure 1, Figure 3 and Figure 5, air conditioner 1000 may be set to breeze mode and breezeless mode. When the breezeless mode is activated by the user, the air deflector 1 may be turned to the position on which the air outlet 2 of air conditioner 1000 is closed, so that the air will flow through the through holes 11 on the air deflector 1 for the air conditioner 1000 first before entering the indoor space; when the air flows through the through holes 11 above the boundary 12 of the air deflector 1, it will flow upwards from the horizontal direction under the guidance of the through holes 11; when the air flows through the through holes 11 below the boundary 12 of the air deflector 1, it will flow downwards from the horizontal direction under the guidance of the through holes 11, so that the air from the air outlet 2 of the air conditioner 1000 is dispersed further, therefore preventing a large amount of air being blown directly to the user, and improving the breezeless experience of the users.

[0029] The air deflector 1 for the air conditioner 1000 is provided with the plurality of through holes 11 through the thickness of its air deflector 1, therefore the centerline of the through holes 11 above the boundary 12 extends upwards at certain angle while the centerline of the through holes 11 below the boundary 12 extends downwards at certain angle in the direction from the inside to the outside of the air deflector 1, so that a portion of the air flow moves upwards from the horizontal direction, while another portion moves downwards from the horizontal direction under the guidance of the through holes 11 on the air deflector 1 when the breezeless mode is activated by the user, thus preventing a large amount of air being blown directly toward the users, which improves the breezeless experience of the users, and makes them more comfortable.

[0030] According to some embodiments of the present invention, and as shown in Figure 2 and Figure 3, the distance between the upper edge and the lower edge of the air deflector is L1, and the distance between the boundary and the upper edge of the air deflector is L2, wherein L1 and L2 satisfy: $2/5 \leq L2/L1 \leq 2/3$. Thus, the quantity of through holes 11 above the boundary 12 is different from that of through holes 11 below the boundary 12, for the convenience of controlling and defining the air

flowing upwards from the air deflector 1 and the air flowing downwards from the air deflector 1.

[0031] According to some embodiments of the present invention, and as shown in Figure 2 and Figure 3, the distance between the upper edge and the lower edge of the air deflector 1 is L1, and the distance between the boundary 12 and the upper edge of the air deflector 1 is L2, wherein L1 and L2 satisfy: $3/5 \leq L2/L1 \leq 2/3$. Thus, the quantity of through holes 11 above the boundary 12 is different from that of through holes 11 below the boundary 12, for the convenience of controlling and defining the air flowing upwards from the air deflector 1 and the air flowing downwards from the air deflector 1.

[0032] It should be noted that the L1 between the upper edge and the lower edge of the air deflector 1 is the vertical distance between the upper edge and the lower edge of the air deflector 1, while the distance L2 between the boundary 12 and the upper edge of the air deflector 1 is the vertical distance between the boundary 12 and the upper edge of the air deflector 1 in case the air deflector 1 is of planar construction; the distance L1 between the upper edge and the lower edge of the air deflector 1 is the distance between the upper edge and the lower edge of the air deflector 1 when the air deflector 1 is unfolded fully to horizontal state, while the distance L2 between the boundary 12 and the upper edge of the air deflector 1 is the distance between the boundary 12 and the upper edge of the air deflector 1 when the air deflector 1 is unfolded fully to horizontal state in case the air deflector 1 is of curved surface construction.

[0033] As shown in Figure 1, Figure 3 and Figure 5, the angle between the centerline of the through holes 11 above the boundary 12 and the horizontal plane is α, wherein α satisfy: $0<\alpha\leq 15°$. Thus, after passing through the through holes 11 above the boundary 12, the air can flow upwards from the horizontal direction, thus preventing the air being blown directly toward the user, and offering the users breezeless comfort. In addition, it can prevent the air forming the circular flow close to the wall after flowing upwards from the air deflector 1, affecting the breezeless experience.

[0034] It should be noted that the angle α between the centerline of the through holes 11 above the boundary 12 and the horizontal plane is the angle when the air deflector 1 closes the air outlet 2 of the air conditioner 1000.

[0035] According to some embodiments of the present invention, α satisfies: $0<\alpha\leq 10°$. Thus, it can prevent further the air being blown directly toward the user, so that the users can feel breezeless comfort. In addition, it can prevent the air forming the circular flow close to the wall after flowing upwards from the air deflector 1, affecting the breezeless experience.

[0036] According to some embodiments of the present invention, α satisfies: $3°\leq\alpha\leq 5°$. Thus, it can prevent further the air being blown directly toward the user, so that the users can feel breezeless comfort. In addition, it can prevent the air forming the circular flow close to the wall after flowing upwards from the air deflector 1, affecting the breezeless experience.

[0037] According to some embodiments of the present invention, and as shown in Figure 1, Figure 3 and Figure 5, the angle between the centerline of the through holes 11 below the boundary 12 and the horizontal plane is β, wherein β satisfies: $0<\beta\leq 45°$. Thus, after passing through the through holes 11 below the boundary, the air can flow downwards from the horizontal direction, which prevents the air being blown directly toward the user, and thereby increases the breezeless experience of the user.

[0038] It should be noted that the angle β between the centerline of the through holes 11 below the boundary 12 and the horizontal plane is the angle when the air deflector 1 closes the air outlet 2 of the air conditioner 1000.

[0039] According to some embodiments of the present invention, β satisfies: $0<\beta\leq 20°$. Thus, after passing through the through holes 11 below the boundary 12, the air can flow further downwards from the horizontal direction, which prevents the air being blown directly toward the user, and thereby increases the breezeless experience of the users further.

[0040] According to some embodiments of the present invention, and as shown in Figure 1 and Figure 4, the diameter of the through holes 11 is D, wherein D satisfies: $1mm\leq D\leq 3mm$. Thus, the through holes 11 can realize deflection and guidance of the air flow, which reduces the energy loss of the air flow in the guide process, lowers the energy consumption of the air conditioner 1000 in breezeless mode and improves the breezeless effect of the air conditioner 1000.

[0041] According to some embodiments of the present invention, D satisfies: $1.3mm\leq D\leq 2.5mm$. Thus, the through holes 11 can realize deflection and guidance of the air flow, which reduces the energy loss of the air flow in the guide process, lowers the energy consumption of the air conditioner 1000 in breezeless mode and improves the breezeless effect of the air conditioner 1000.

[0042] According to an alternative example, which does not fall under the scope of the claims, the diameters of the plurality of through holes 11 are the same, which thereby simplifies the manufacturing procedure of the through holes 11, shortens the production cycle of the air deflector 1, lowers the production costs of the air conditioner 1000 and enhances the aesthetics of the air conditioner 1000.

[0043] According to some embodiments of the present invention, and as shown in Figure 1, Figure 3 and Figure 4, the diameters of the through holes 11 above the boundary 12 increases gradually, while the diameters of the through holes 11 below the boundary 12 decreases gradually in the direction from top to bottom (as shown in Figure 3). Therefore, in the direction from top to bottom, the air flow through the through holes 11 will increase gradually when it passes through the through holes 11 above the boundary 12, and will decrease gradually when it passes through the through holes 11 below the bound-

ary 12, which thereby reduces the energy loss of air flow when passing through the through holes 11, lowers the energy consumption of the air conditioner 1000 and enhances the aesthetics of the air conditioner 1000. Meanwhile, it can prevent the air forming circular flow close to the wall after flowing upwards from the air deflector 1, affecting the breezeless experience of the user.

[0044] The following describes the housing assembly 100 as specified in the embodiment of the present invention with reference to the Figures 1-5.

[0045] As shown in Figure 1 and Figure 3, the housing assembly 100 as specified in the embodiment of the present invention comprises the air deflector 1.

[0046] The housing assembly 100 for the air conditioner 1000 according to the embodiment of the present invention is provided with the plurality of through holes 11 through the thickness of its air deflector 1, therefore the centerline of the through holes 11 above the boundary 12 extends upwards at certain angle while the centerline of the through holes 11 below the boundary 12 extends downwards at certain angle in the direction from the inside to the outside of the air deflector 1, so that a portion of the air flow moves upwards from the horizontal direction, while another portion moves downwards from the horizontal direction under the guidance of the through holes 11 on the air deflector 1 when the breezeless mode is activated by the user, thus preventing a large amount of air being blown directly toward the users, which improves the breezeless experience of the users, and makes them more comfortable.

[0047] The following describes the air conditioner 1000 as specified in the embodiment of the present invention with reference to the Figures 1-5.

[0048] As shown in Figure 1 and Figure 3, the air conditioner 1000 as specified in the embodiment of the present invention comprises the housing assembly 100.

[0049] The air conditioner 1000 according to the embodiment of the present invention is provided with the plurality of through holes 11 through the thickness of its air deflector 1, therefore the centerline of the through holes 11 above the boundary 12 extends upwards at certain angle while the centerline of the through holes 11 below the boundary 12 extends downwards at certain angle in the direction from the inside to the outside of the air deflector 1, so that a portion of the air flow moves upwards from the horizontal direction, while another portion moves downwards from the horizontal direction under the guidance of the through holes 11 on the air deflector 1 when the breezeless mode is activated by the user, thus preventing a large amount of air being blown directly toward the users, which improves the breezeless experience of the users, and makes them more comfortable.

[0050] The following describes the air conditioner 1000 as specified in the specific embodiment of the present invention with reference to the Figures 1-5. It should be understood that the following description is only illustrative and is used to interpret the present invention but should not be construed as restrictions on the present invention.

[0051] As shown in Figure 1, Figure 3 and Figure 4, the air conditioner 1000 of the present invention comprises the housing assembly 100, the pedestal 4, the front panel 3 and the rear panel, where the housing assembly 100 also comprises the air deflector 1 which is connected to the housing assembly 100 through the hook 13.

[0052] As shown in Figure 1 and Figure 3, the housing assembly 100 is provided with the air outlet 2 which is located at the bottom (the bottom as shown in Figure 3) of the front side (the front side as shown in Figure 3) of the air conditioner 1000, and extends in the length direction (the left-right direction as shown in Figure 1) of the air conditioner 1000.

[0053] As shown in Figures 1-3, the air deflector 1 extends in the length direction (the left-right direction as shown in Figure 1) of the air conditioner 1000, and is used to close the air outlet 2 of the air conditioner 1000.

[0054] As shown in Figures 1-3, the air deflector 1 has the plurality of through holes 11 penetrating the air deflector in the thickness direction, and the boundary 12 extending in its length direction, where the centerline of the through holes 11 above the boundary 12 (as shown in Figure 3) extends upwards at certain angle while the centerline of the through holes 11 below the boundary 12 (as shown in Figure 3) extends downwards at certain angle in the direction from the inside (the side of air deflector 1 toward the air conditioner 1000) to the outside (the side of air deflector 1 toward the indoor space) of the air deflector 1.

[0055] As shown in Figures 1-3, the cross section of the air deflector 1 is arc-shaped, the distance of arc section between the upper edge and the lower edge of the air deflector 1 is L1, the distance of arc section between the boundary 12 and the upper edge of the air deflector 1 is L2, wherein L1 and L2 satisfy: $3/5 \leq L2/L1 \leq 2/3$. Thus, the quantity of through holes 11 above the boundary 12 is different from that of through holes 11 below the boundary 12, for the convenience of controlling and defining the air flowing upwards from the horizontal direction and the air flowing downwards from the horizontal direction.

[0056] As shown in Figure 1, Figure 3 and Figure 4, in the direction from top to bottom, the air flow through the through holes 11 will increase gradually when it passes through the through holes 11 above the boundary 12, and will decrease gradually when it passes through the through holes 11 below the boundary 12, which thereby reduces the energy loss of air flow when passing through the through holes 11, lowers the energy consumption of the air conditioner 1000 and enhances the aesthetics of the air conditioner 1000. Specifically, the diameter of the through holes 11 is D, wherein D satisfies: $1.3mm \leq D \leq 2.5mm$.

[0057] As shown in Figure 1, Figure 3 and Figure 5, the angle between the centerline of the through holes 11 above the boundary 12 and the horizontal plane is α, wherein α satisfies: $0 < \alpha \leq 10°$, and the angle between the

centerline of the through holes 11 below the boundary 12 is β, wherein β satisfies: 0<β≤20°. Thus, after the air flows through the through holes 11 above and below the boundary 12, it can flow upwards and downwards from the air deflector respectively, which thus prevents the air being blown directly toward the user, and thereby offers the users a breezeless comfortable environment.

[0058] In the description of the present invention, the terms "an embodiment", "some embodiments" and "schematic embodiment", "example", "specific example", or "some examples" etc. means that the specific feature, structure, material or characteristic of that embodiment or example described are included in at least one embodiment or example of the present invention. In this description, the schematic presentation of such terms may not refer to the same embodiment or example.

[0059] Although the embodiments of the present invention have been presented and described, the ordinary technical personnel in the field can understand that various changes, modifications, substitutions and variations of such embodiments can be made without deviating from the present invention, and that the scope of the present invention is defined by the claims.

Claims

1. A housing assembly (100) for an air conditioner (1000) comprising an air deflector (1) for an air conditioner, wherein the air deflector has a plurality of through holes (11) penetrating the air deflector in a thickness direction of the air deflector, and has a boundary (12) extending in a length direction thereof; when the air deflector closes an air outlet (2) of the air conditioner, a centerline of a through hole above the boundary obliquely extends upwards with respect to a horizontal plane, while a centerline of a through hole below the boundary obliquely extends downwards with respect to the horizontal plane, in a direction from the inside to the outside of the air deflector, **characterised in that** the diameters of the through holes above the boundary increase gradually, while the diameters of the through holes below the boundary decrease gradually, in a direction from top to bottom.

2. The housing assembly (100) according to claim 1, wherein a distance between an upper edge and a lower edge of the air deflector is L1, a distance between the boundary (12) and the upper edge of the air deflector is L2, and L1 and L2 satisfy: 2/5≤L2/L1≤2/3.

3. The housing assembly (100) according to claim 2, wherein the distance between the upper edge and the lower edge of the air deflector is L1, the distance between the boundary (12) and the upper edge of the air deflector is L2, and L1 and L2 satisfy: 3/5≤L2/L1≤2/3.

4. The housing assembly (100) according to any of claims 1-3, wherein an angle between the centerline of the through hole above the boundary (12) and the horizontal plane is α, and α satisfies: 0<α≤15°.

5. The housing assembly (100) according to claim 4, wherein α satisfies: 0<α≤10°.

6. The housing assembly (100) according to claim 5, wherein α satisfies: 3°≤α≤5°.

7. The housing assembly (100) according to any of claims 1-6, wherein an angle between the centerline of the through hole below the boundary (12) and the horizontal plane is β, and β satisfies: 0<β≤45°.

8. The housing assembly (100) according to claim 7, wherein β satisfies: 0<β≤20°.

9. The housing assembly (100) according to any of claims 1-8, wherein a diameter of the through hole is D, and D satisfies: 1mm≤D≤3mm.

10. The housing assembly (100) according to claim 9, wherein D satisfies: 1.3mm≤D≤2.5mm.

11. An air conditioner (1000), comprising a housing assembly (100) according to claims 1-10.

Patentansprüche

1. Gehäuseanordnung (100) für eine Klimaanlage (1000), umfassend ein Luftumlenkelement (1) für eine Klimaanlage,
wobei das Luftumlenkelement eine Vielzahl von Durchgangslöchern (11) aufweist, die das Luftumlenkelement in einer Dickenrichtung des Luftumlenkelements durchdringen, und eine Grenze (12) aufweist, die sich in einer Längenrichtung davon erstreckt; wobei, wenn das Luftumlenkelement einen Luftauslass (2) der Klimaanlage schließt, in einer Richtung von der Innenseite zu der Außenseite des Luftumlenkelements sich eine Mittellinie eines Durchgangslochs oberhalb der Grenze in Bezug auf eine horizontale Ebene schräg nach oben erstreckt, während sich eine Mittellinie eines Durchgangslochs unterhalb der Grenze in Bezug auf die horizontale Ebene schräg nach unten erstreckt, **dadurch gekennzeichnet, dass** in einer Richtung von oben nach unten die Durchmesser der Durchgangslöcher oberhalb der Grenze allmählich zunehmen, während die Durchmesser der Durchgangslöcher unterhalb der Grenze allmählich abnehmen.

2. Gehäuseanordnung (100) nach Anspruch 1, wobei

ein Abstand zwischen einer Oberkante und einer Unterkante des Luftumlenkelements L1 ist, ein Abstand zwischen der Grenze (12) und der Oberkante des Luftumlenkelements L2 ist und für L1 und L2 $2/5 \leq L2/L1 \leq 2/3$ gilt.

3. Gehäuseanordnung (100) nach Anspruch 2, wobei der Abstand zwischen der Oberkante und der Unterkante des Luftumlenkelements L1 ist, der Abstand zwischen der Grenze (12) und der Oberkante des Luftumlenkelements L2 ist und für L1 und L2 $3/5 \leq L2/L1 \leq 2/3$ gilt.

4. Gehäuseanordnung (100) nach einem der Ansprüche 1-3, wobei ein Winkel zwischen der Mittellinie des Durchgangslochs oberhalb der Grenze (12) und der horizontalen Ebene α ist und für α $0 < \alpha \leq 15°$ gilt.

5. Gehäuseanordnung (100) nach Anspruch 4, wobei für α $0 < \alpha \leq 10°$ gilt.

6. Gehäuseanordnung (100) nach Anspruch 5, wobei für α $3° \leq \alpha \leq 5°$ gilt.

7. Gehäuseanordnung (100) nach einem der Ansprüche 1-6, wobei ein Winkel zwischen der Mittellinie des Durchgangslochs unterhalb der Grenze (12) und der horizontalen Ebene β ist und für β $0 < \beta \leq 45°$ gilt.

8. Gehäuseanordnung (100) nach Anspruch 7, wobei für β $0 < \beta \leq 20°$ gilt.

9. Gehäuseanordnung (100) nach einem der Ansprüche 1-8, wobei ein Durchmesser des Durchgangslochs D ist und für D $1\ mm \leq D \leq 3\ mm$ gilt.

10. Gehäuseanordnung (100) nach Anspruch 9, wobei für D $1{,}3\ mm \leq D \leq 2{,}5\ mm$ gilt.

11. Klimaanlage (1000), umfassend eine Gehäuseanordnung (100) nach Ansprüchen 1-10.

Revendications

1. Ensemble formant boîtier (100) pour un climatiseur (1000) comportant un déflecteur d'air (1) pour un climatiseur, dans lequel le déflecteur d'air a une pluralité de trous traversants (11) pénétrant dans le déflecteur d'air dans une direction allant dans le sens de l'épaisseur du déflecteur d'air, et a une limite (12) s'étendant dans une direction allant dans le sens de la longueur de celui-ci ; quand le déflecteur d'air ferme une sortie d'air (2) du climatiseur, une ligne centrale d'un trou traversant au-dessus de la limite s'étend de manière oblique vers le haut par rapport à un plan horizontal, alors qu'une ligne centrale d'un trou traversant au-dessous de la limite s'étend de manière oblique vers le bas par rapport au plan horizontal, dans une direction allant de l'intérieur vers l'extérieur du déflecteur d'air, **caractérisé en ce que** les diamètres des trous traversants au-dessus de la limite vont en augmentant progressivement, alors que les diamètres des trous traversants au-dessous de la limite vont en diminuant progressivement, dans une direction allant de haut en bas.

2. Ensemble formant boîtier (100) selon la revendication 1, dans lequel une distance entre un bord supérieur et un bord inférieur du déflecteur d'air est L1, une distance entre la limite (12) et le bord supérieur du déflecteur d'air est L2, et L1 et L2 satisfont à : $2/5 \leq L2/L1 \leq 2/3$.

3. Ensemble formant boîtier (100) selon la revendication 2, dans lequel la distance entre le bord supérieur et le bord inférieur du déflecteur d'air est L1, la distance entre la limite (12) et le bord supérieur du déflecteur d'air est L2, et L1 et L2 satisfont à : $3/5 \leq L2/L1 \leq 2/3$.

4. Ensemble formant boîtier (100) selon l'une quelconque des revendications 1 à 3, dans lequel un angle entre la ligne centrale du trou traversant au-dessus de la limite (12) et le plan horizontal est α, et α satisfait à : $0 < \alpha \leq 15°$.

5. Ensemble formant boîtier (100) selon la revendication 4, dans lequel α satisfait à : $0 < \alpha \leq 10°$.

6. Ensemble formant boîtier (100) selon la revendication 5, dans lequel α satisfait à : $3° \leq \alpha \leq 5°$.

7. Ensemble formant boîtier (100) selon l'une quelconque des revendications 1 à 6, dans lequel un angle entre la ligne centrale du trou traversant au-dessous de la limite (12) et le plan horizontal est β, et β satisfait à : $0 < \beta \leq 45°$.

8. Ensemble formant boîtier (100) selon la revendication 7, dans lequel β satisfait à : $0 < \beta \leq 20°$.

9. Ensemble formant boîtier (100) selon l'une quelconque des revendications 1 à 8, dans lequel un diamètre du trou traversant est D, et D satisfait à : $1\ mm \leq D \leq 3\ mm$.

10. Ensemble formant boîtier (100) selon la revendication 9, dans lequel D satisfait à : $1{,}3\ mm \leq D \leq 2{,}5\ mm$.

11. Climatiseur (1000), comportant un ensemble formant boîtier (100) selon l'une quelconque des revendications 1 à 10.

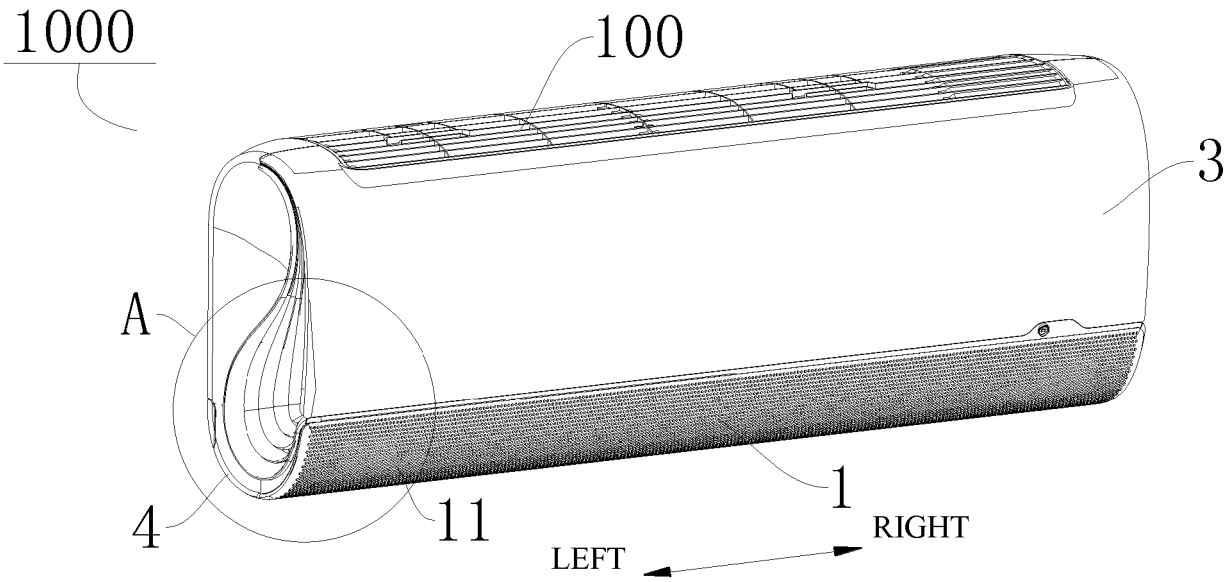

Figure 1

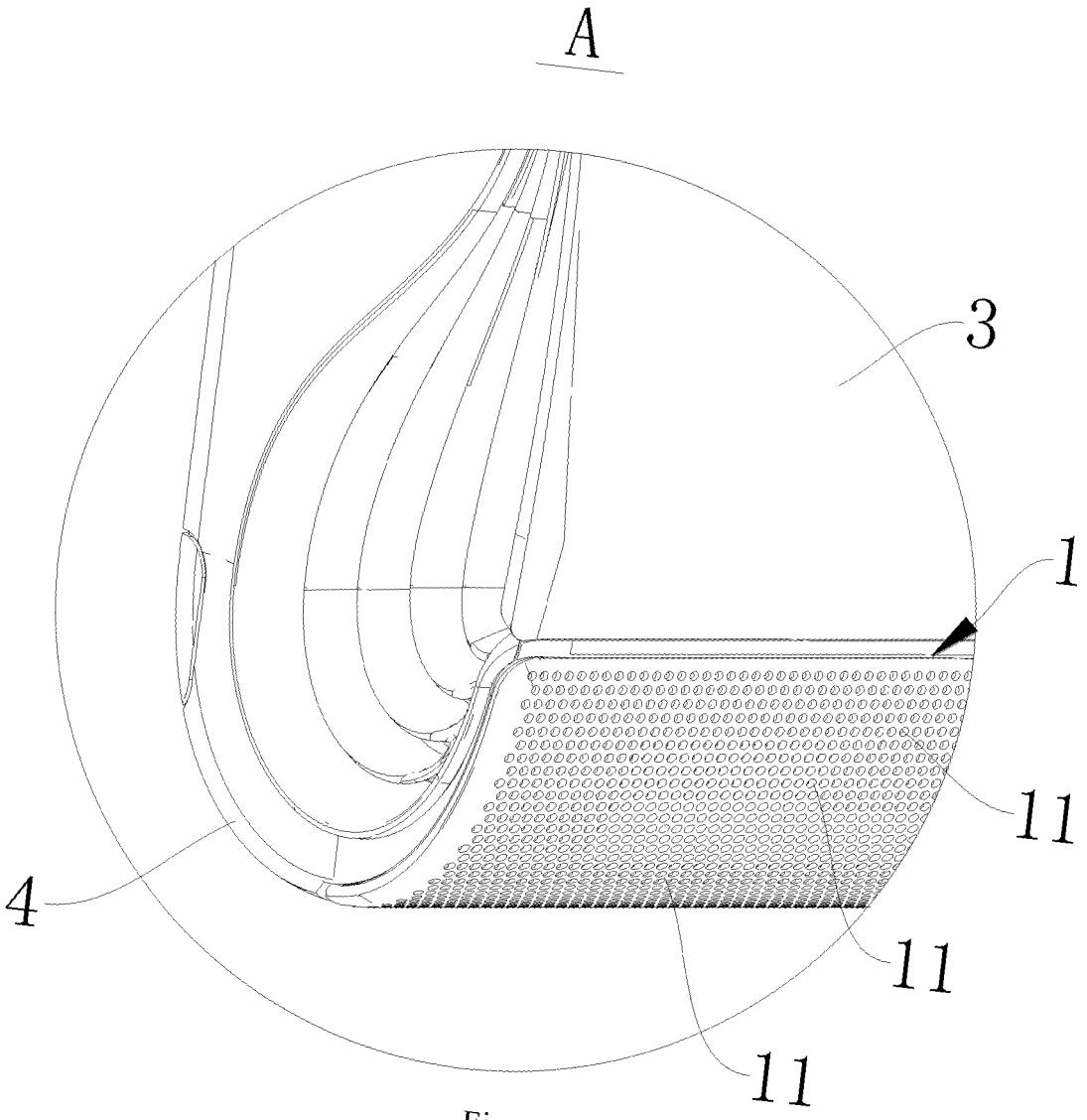

Figure 2

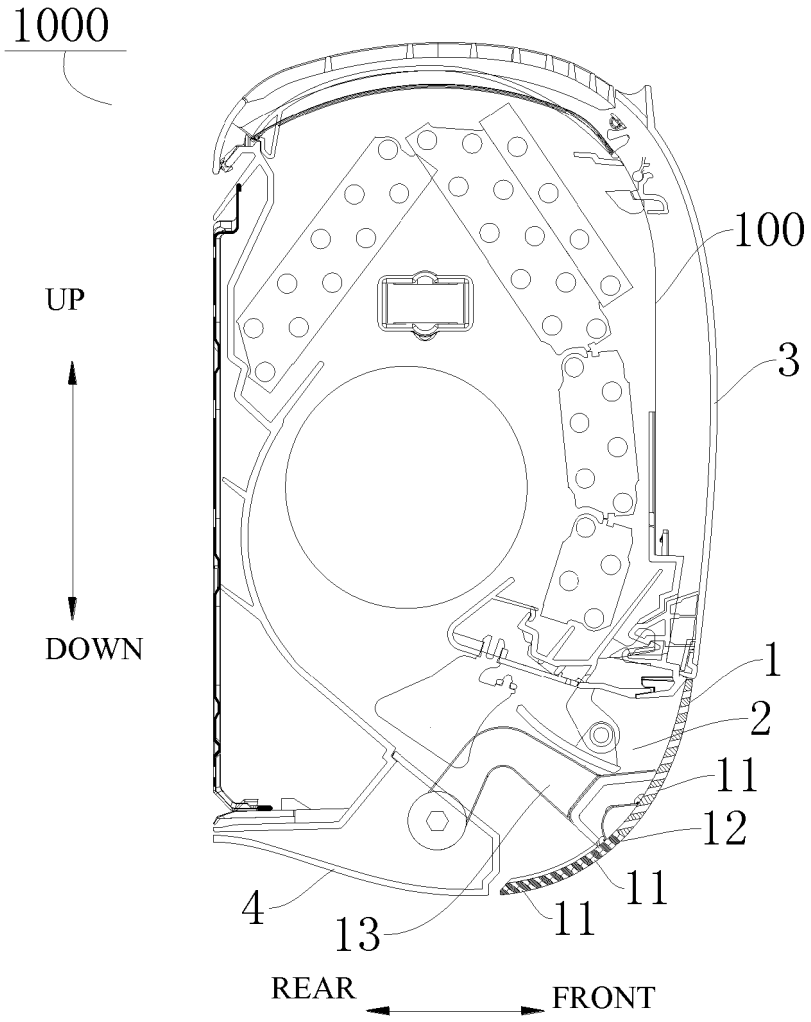

Figure 3

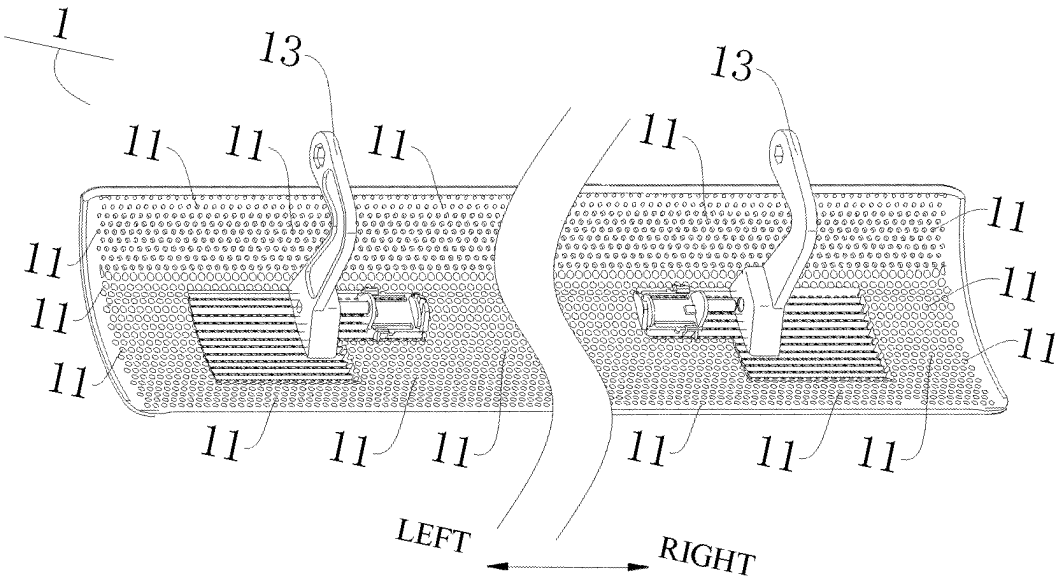

Figure 4

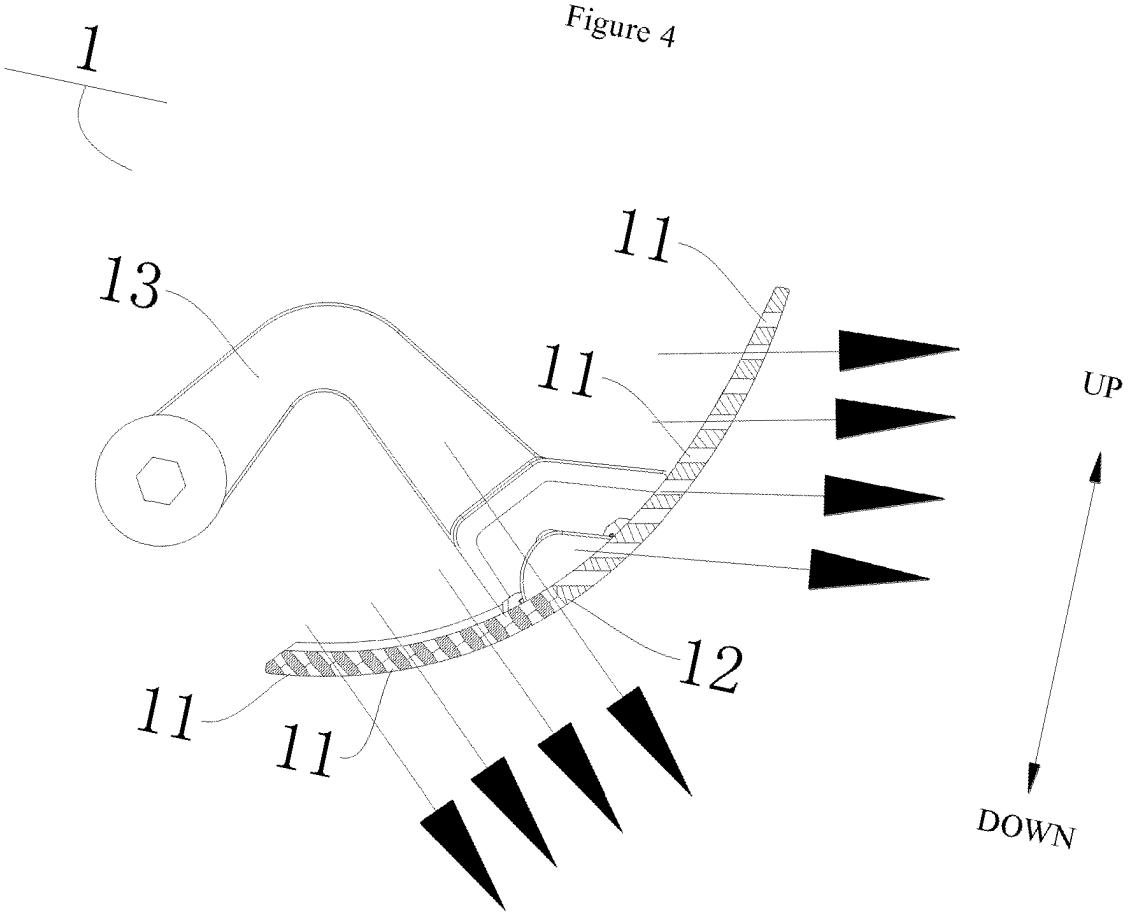

Figure 5

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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