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(54) **AIR-CONDITIONER AIR SUPPLY APPARATUS AND AIR-CONDITIONER WITH APPARATUS**

(57) An air-conditioner air supply apparatus includes a non-annular cover body (101). A through-duct running through the non-annular cover body (101) is formed in the middle of the non-annular cover body (101). The non-annular cover body (101) has a front opening and a rear opening. The front opening forms a mixed air outlet (1016). The rear opening forms a non-heat-exchanged air inlet (1017). A non-annular main heat-exchanged air duct (1011) communicating an internal air duct (15) of an air-conditioner having the air-conditioner air supply apparatus with the through-duct is formed on a wall of the non-annular cover body (101). An airflow distribution assembly (18) for circumferentially distributing heat-exchanged air that enters the main heat-exchanged air duct (1011) from a heat exchanger of the air-conditioner is disposed in the non-annular main heat-exchanged air duct (1011). Also disclosed is an air-conditioner having the air-conditioner air supply apparatus.

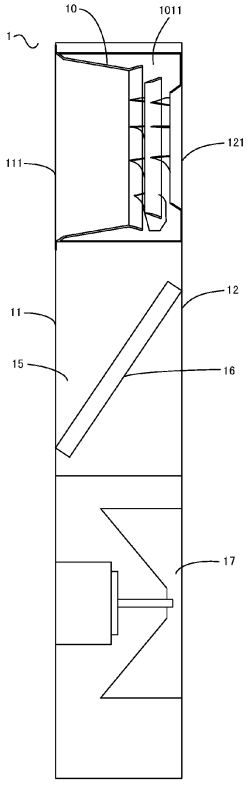

FIG. 1

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Description

BACKGROUND

Technical Field

[0001] The present invention relates to the field of air conditioning technologies, and particularly to an air-conditioner air supply apparatus and an air-conditioner having same.

Related Art

[0002] When a conventional vertical air-conditioner supplies air, air is subjected to heat exchange by a heat exchanger and is directly blown out from an air outlet provided on the air-conditioner under the action of an internal fan, and all of the blown-out air is heat-exchanged air. Generally, no additional air supply apparatus is disposed between the heat exchanger and the air outlet. One disadvantage of such an air supply method of the air-conditioner is that indoor air circulation is slow because the supplied air is all heat-exchanged air and the air flow rate is low; another disadvantage is that the supplied air is not mild enough, and especially in the cooling mode, the blown-out cool air directly blows on a user, making the user feel uncomfortable.

[0003] To solve the foregoing problems, the applicant proposed an air-conditioner air supply apparatus that can be applied to an air-conditioner. The use of the air-conditioner air supply apparatus in an air-conditioner can increase the air intake volume, accelerate indoor air circulation, and enable the air-conditioner to supply milder air, thereby making the user feel more comfortable and improving the user experience. However, because the fan of the air-conditioner supplies air from bottom to top, the heat-exchanged air is not uniformly distributed in the circumferential direction when entering an air outlet duct that is not non-annular, and the air flow rate is high at the lower end of the air outlet duct that is not non-annular but low at the left and right sides of the air outlet duct. As a result, the air supplied by the air-conditioner air supply apparatus is not uniformly distributed in the entire circumferential direction, affecting the comfort of the user.

SUMMARY

[0004] One objective of the present invention is to provide an air-conditioner air supply apparatus, in which an airflow distribution assembly is disposed in the air-conditioner air supply apparatus, so that the airflow distribution assembly can be used to distribute air in the circumferential direction of the air supply apparatus, so as to improve the uniformity of air supply.

[0005] To achieve the foregoing objective of the present invention, the present invention is implemented by means of the following technical solutions:

An air-conditioner air supply apparatus includes a non-annular cover body, where a through-duct running through the non-annular cover body is formed in the middle of the non-annular cover body, the non-annular cover body has a front opening and a rear opening, the front opening forms a mixed air outlet, the rear opening forms a non-heat-exchanged air inlet, a non-annular main heat-exchanged air duct communicating an internal air duct of an air-conditioner having the air-conditioner air supply apparatus with the through-duct is formed on a wall of the non-annular cover body, and an airflow distribution assembly for circumferentially distributing heat-exchanged air that enters the main heat-exchanged air duct from a heat exchanger of the air-conditioner is disposed in the non-annular main heat-exchanged air duct.

[0006] In the air-conditioner air supply apparatus described above, to stabilize and guide the air flow, one or more non-annular deflectors are provided on the non-annular main heat-exchanged air duct, the non-annular deflector divides the non-annular main heat-exchanged air duct into a plurality of heat-exchanged air duct branches communicating the internal air duct of the air-conditioner with the through-duct, and the airflow distribution assembly is disposed in all of the heat-exchanged air duct branches.

[0007] In the air-conditioner air supply apparatus described above, the airflow distribution assembly includes a plurality of airflow distribution plates, and the plurality of airflow distribution plates is bilaterally symmetrically arranged in a circumferential direction of the non-annular heat-exchanged air duct branches, and along an air supply direction of the heat-exchanged air.

[0008] In the air-conditioner air supply apparatus described above, the plurality of airflow distribution plates is bent distribution plates of the same bending direction, and the bending direction of the plurality of airflow distribution plates is reverse to the air supply direction of the heat-exchanged air.

[0009] In the air-conditioner air supply apparatus described above, the airflow distribution assembly includes at least a pair of primary airflow distribution plates dividing the heat-exchanged air into left, middle and right parts, and the pair of primary airflow distribution plates is disposed at a lower part of the non-annular heat-exchanged air duct branches, and divides the non-annular heat-exchanged air duct branches into two parts whose lengths are at a ratio of 1:2 to 1:4.

[0010] In the air-conditioner air supply apparatus described above, the airflow distribution assembly further includes several pairs of auxiliary airflow distribution plates, and the several pairs of auxiliary airflow distribution plates are disposed above the primary airflow distribution plate at a gradually decreasing spacing from bottom to top.

[0011] In the air-conditioner air supply apparatus de-

scribed above, the areas of the several pairs of auxiliary airflow distribution plates gradually decrease from bottom to top, and the area of the auxiliary airflow distribution plate at the lowest position is smaller than the area of the primary airflow distribution plate.

[0012] In the air-conditioner air supply apparatus described above, among the several pairs of auxiliary airflow distribution plates, the circumferential length of the non-annular heat-exchanged air duct branch between the pair of airflow distribution plates that is located at the top accounts for 1/5 to 1/3 of the total circumferential length of the non-annular heat-exchanged air duct branch.

[0013] Preferably, the surface of the airflow distribution plate is a curved surface.

[0014] Another objective of the present invention is to provide an air-conditioner, so as to improve the air supply performance of the air-conditioner.

[0015] In particular, an air-conditioner includes an air-conditioner body, the air-conditioner body having a front panel, a rear panel, a left panel and a right panel, an internal air duct of the air-conditioner body being defined by the front panel, the rear panel, the left panel and the right panel, where the front panel is provided with a mixed air outlet, the rear panel is provided with a non-heat-exchanged air inlet at least at a position corresponding to the mixed air outlet, the air-conditioner air supply apparatus described above is disposed inside the air-conditioner body, and the mixed air outlet and the non-heat-exchanged air inlet of the non-annular cover body in the air-conditioner air supply apparatus are respectively correspondingly sealed to the mixed air outlet on the front panel and the non-heat-exchanged air inlet on the rear panel.

[0016] Compared with the prior art, the present invention has the following advantages and positive effects: an airflow distribution assembly is disposed in the heat-exchanged air duct of the air-conditioner air supply apparatus, so that the airflow distribution assembly can be used to distribute, in the circumferential direction, the heat-exchanged air that enters the air supply apparatus, so as to the uniformity of air supply from the air supply apparatus.

[0017] Other features and advantages of the present invention will become apparent after reading the detailed description of the present invention with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018]

FIG. 1 is a schematic structural view of an embodiment of an air-conditioner according to the present invention;

FIG. 2 is a schematic three-dimensional structural view of an air-conditioner air supply apparatus in the air-conditioner in FIG. 1; and

FIG. 3 is a schematic structural front view of the air-conditioner air supply apparatus in FIG. 2.

DETAILED DESCRIPTION

[0019] The technical solutions of the present invention are further described in detail below with reference to the accompanying drawings and the detailed description.

[0020] First, technical terms involved in the detailed description are briefly described. The front end or rear end of each structural component as mentioned below is defined in terms of the position of the structural component in the normal use state relative to the user; front or rear, when used to describe the positions at which multiple structural components are arranged, is also defined in terms of the position of an apparatus formed by the multiple structural components in the normal use state relative to the user. In the following description, heat-exchanged air refers to air that is from the inside of an air-conditioner and has been subjected to heat exchange by a heat exchanger; non-heat-exchanged air refers to air from the environmental space in which the air-conditioner is located, is relative to the heat-exchanged air, and is part of air that is not directly from the heat exchanger; and mixed air refers to air formed by mixing the heat-exchanged air with the non-heat-exchanged air. In the following description, the shape being not non-annular refers a non-enclosed structure that does not form a non-annular enclosure.

[0021] Then, the design concept of the present invention is briefly described. With an air-conditioner air supply apparatus that can produce and supply mixed air by mixing heat-exchanged air of a heat exchanger of an air-conditioner with external non-heat-exchanged air, the amount of air supplied can be increased and the temperature of air supplied can be ensured. However, because the fan inside the air-conditioner is located at the lower end, the heat-exchanged air is supplied from bottom to top after being subjected to heat exchange by the heat exchanger; in this case, once such an air-conditioner air supply apparatus is arranged in the air-conditioner, most of the heat-exchanged air enters the air-conditioner air supply apparatus from the bottom of the air-conditioner air supply apparatus under the action of the fan, and only a small amount of air enters the air-conditioner air supply apparatus from left and right sides and the top of the air-conditioner air supply apparatus, resulting in a non-uniform air supply in the circumferential direction of the air-conditioner air supply apparatus. To solve this problem, in a heat-exchanged air duct that is not non-annular in the air-conditioner air supply apparatus, an airflow distribution assembly for distributing, particularly uniformly distributing heat-exchanged air that enters the heat-exchanged air duct from the heat exchanger of the air-conditioner may be disposed, so as to make the heat-exchanged air enter the heat-exchanged air duct uniformly

in the circumferential direction, thereby improving the uniformity of air supply from the air-conditioner air supply apparatus.

[0022] FIG. 1 is a schematic structural view of an embodiment of an air-conditioner having an air-conditioner air supply apparatus of the present invention.

[0023] As shown in FIG. 1, the air-conditioner of this embodiment includes an air-conditioner body 1. The air-conditioner body 1 includes a front panel 11, a rear panel 12, a left panel, a right panel, a top plate and a bottom plate (not marked in the figure) that constitute a housing of the air-conditioner body 1. The housing defines an internal air duct 15 of the air-conditioner body 1. A mixed air outlet 111 is formed on an upper part of the front panel 11 of the air-conditioner, and a non-heat-exchanged air inlet 121 is formed on an upper part of the rear panel 12 of the air-conditioner and at a position corresponding to the mixed air outlet 111 on the front panel 11. A centrifugal blower 17, an evaporator 16 and an air-conditioner air supply apparatus 10 are disposed from bottom to top in the internal air duct 15, and the blower 17 is arranged in such a manner that air from the internal air duct 4 of the air-conditioner is blown out from the mixed air outlet 21 on the front panel 2. The structure of the air-conditioner air supply apparatus 10 is shown in FIG. 2 and FIG. 3.

[0024] FIG. 2 is a three-dimensional view and FIG. 3 is a structural front view. Referring to FIG. 2 and FIG. 3 together with FIG. 1, the air-conditioner air supply apparatus 10 in this embodiment includes a non-annular cover body 101, and a through-duct (not marked in the figure) running through the entire non-annular cover body 101 is formed in the middle of the non-annular cover body 101. A front opening of the non-annular cover body 101 forms a mixed air outlet 1016, and a rear opening of the non-annular cover body 101 forms a non-heat-exchanged air inlet 1017. A continuous non-annular main heat-exchanged air duct 1011 is formed on a wall of the non-annular cover body 101, and is specifically formed on the rear end of the wall of the non-annular cover body 101, and the internal air duct 15 of the air-conditioner body 1 is in communication with the through-duct through the non-annular main heat-exchanged air duct 1011.

[0025] To stabilize the air flow and guide the air to flow in a specified direction, the non-annular main heat-exchanged air duct 1011 is provided with a continuous non-annular deflector 1012, and the non-annular deflector 1012 divides the non-annular main heat-exchanged air duct 1011 into two continuous non-annular heat-exchanged air duct branches 1013 that communicate the internal air duct 15 with the through-duct. An airflow distribution assembly 18 that extends into an inner and outer non-annular heat-exchanged air duct branches 1013 defined by the non-annular deflector is disposed on the non-annular deflector 1012. In addition, for the convenience of machining, the airflow distribution assembly 18 is preferably integrally formed with the non-annular deflector 1012 where it is located.

[0026] When the air-conditioner air supply apparatus 10 is installed in the air-conditioner, the mixed air outlet 1016 and the non-heat-exchanged air inlet 1017 of the non-annular cover body 101 are respectively correspondingly sealed to the mixed air outlet 111 on the front panel 11 and the non-heat-exchanged air inlet 121 on the rear panel 12.

[0027] In the air-conditioner that uses the air-conditioner air supply apparatus 10 of the above structure, when the air-conditioner operates, indoor air enters the housing of the air-conditioner, is accelerated by the centrifugal blower 17, and enters the evaporator 16 for heat exchange, and heat-exchanged air after heat exchange is blown from the internal air duct 15 to the air-conditioner air supply apparatus 10. The heat-exchanged air is distributed by the airflow distribution assembly 18 to enter the non-annular heat-exchanged air duct branches 1013 uniformly in the circumferential direction, then enter the through-duct through the non-annular heat-exchanged air duct branches 1013, and is blown out from the mixed air outlet 111 on the front panel 11 through the through-duct. The flow rate of the heat-exchanged air blown out from the non-annular heat-exchanged air duct is increased, so that the surface pressure of the corresponding non-annular deflector decreases to form a negative pressure in the through-duct. Under the negative pressure, indoor air outside the air-conditioner enters the through-duct from the non-heat-exchanged air inlet 121 on the rear panel 12, and is mixed with the heat-exchanged air blown out from the non-annular heat-exchanged air duct branches 1013 to form mixed air, and then sent to the indoors. The mixed air is mild, which makes the user feel more comfortable, thereby improving the comfort of the user. In addition, part of external air that is not subjected to heat exchange is sucked under the negative pressure generated by the air supply apparatus 10 and becomes part of the air finally supplied from the air-conditioner, which increases the overall air intake volume of the air-conditioner, accelerates indoor air circulation, and further improves the overall uniformity of indoor air.

[0028] Further, referring to FIG. 3, the airflow distribution assembly 18 in the non-annular heat-exchanged air duct branches 1013 of this embodiment is implemented by using a plurality of airflow distribution plates, and the quantity, structure, distributed positions and distribution rules of the airflow distribution plates are the same in each air duct branch. As shown in FIG. 3, the airflow distribution assembly 18 of this embodiment includes eight airflow distribution plates in pairs, namely, primary airflow distribution plates 181 and 182, first auxiliary airflow distribution plates 183 and 184, second auxiliary airflow distribution plates 185 and 186, and third auxiliary airflow distribution plates 187 and 188. All the airflow distribution plates are bent distribution plates of the same bending direction, and the surface of each of the airflow distribution plates is an arc-shaped curved surface, which can effectively guide the air, reduce pressure loss and noise during splitting of the air flow, and achieve a high-

speed air supply at low noise. The four pairs of airflow distribution plates are arranged bilaterally symmetrically in the circumferential direction of the non-annular heat-exchanged air duct branches 1013 in such a manner that the primary airflow distribution plates 181 and 182, the first auxiliary airflow distribution plates 183 and 184, the second auxiliary airflow distribution plates 185 and 186, and the third auxiliary airflow distribution plates 187 and 188 are sequentially arranged from bottom to top. That is, in the air supply direction of the heat-exchanged air that is from bottom to top, the primary airflow distribution plate 181, the first auxiliary airflow distribution plate 183, the second auxiliary airflow distribution plate 185 and the third auxiliary airflow distribution plate 187 are disposed from bottom to top on the left side of the air-conditioner air supply apparatus 10 (in terms of the left and right sides in the front view of FIG. 3), and the primary airflow distribution plate 182, the first auxiliary airflow distribution plate 184, the second auxiliary airflow distribution plate 186 and the third auxiliary airflow distribution plate 188 are arranged bilaterally symmetrically on the right side of the air-conditioner air supply apparatus 10. In addition, the bending direction of each of the airflow distribution plates is reverse to the air supply direction of the heat-exchanged air. The air supply direction of the heat-exchanged air is from bottom to top, and accordingly, the bending direction of each of the airflow distribution plates will be reverse to the air supply direction, that is, each of the airflow distribution plates is bent in the anticlockwise direction shown in FIG. 3.

[0029] The airflow distribution assembly 18 formed by a plurality of bent airflow distribution plates radially symmetrically arranged is disposed in the heat-exchanged air duct, so that the primary airflow distribution plates 181 and 182 can be used to divide the heat-exchanged air from the evaporator 16 into left, middle and right parts, and the heat-exchanged air on the left and right sides is further divided by the auxiliary airflow distribution plates, uniform air intake and outtake in the circumferential direction of the heat-exchanged air duct branches of the air-conditioner air supply apparatus 10 are finally achieved, thereby improving the uniformity of air supply from the air-conditioner air supply apparatus 10.

[0030] Definitely, the airflow distribution assembly 18 may not necessarily be implemented by a plurality of bent airflow distribution plates, and may also use other structures, as long as the heat-exchanged air from the evaporator 16 can be uniformly distributed in the circumferential direction.

[0031] The shape, area and position of each of the airflow distribution plates in the heat-exchanged air duct branch 1013 are key factors affecting the uniformity of air supply. In this embodiment, the pairs of airflow distribution plates are of the same shape and area. However, for the plurality of airflow distribution plates on one side, from bottom to top, the area of the primary airflow distribution plate 181 or 182 is greater than that of the first auxiliary airflow distribution plate 183 or 184, the area of the first auxiliary airflow distribution plate 183 or 184 is greater than that of the second auxiliary airflow distribution plate 185 or 186, and the area of the fourth auxiliary airflow distribution plate 185 or 186 is greater than that of the third auxiliary airflow distribution plate 187 or 188.

[0032] Furthermore, because the density of air flow is not identical in the circumferential direction, the airflow distribution plates on the same side are distributed at unequal spacings. In particular, the length of an arc L2 between the primary airflow distribution plate 181 or 182 and the first auxiliary airflow distribution plate 183 or 184 (indicating the spacing between the two) is greater than the length of an arc L3 between the first auxiliary airflow distribution plate 183 or 184 and the second auxiliary airflow distribution plate 185 or 186, and the length of the arc L3 between the first auxiliary airflow distribution plate 183 or 184 and the second auxiliary airflow distribution plate 185 or 186 is greater than the length of an arc L4 between the second auxiliary airflow distribution plate 185 or 186 and the third auxiliary airflow distribution plate 187 or 188. Preferably, the ratio of the lengths of the arc L2, the arc L3 and the arc L4 is 6:5:3.

[0033] Moreover, for the primary airflow distribution plates 181 and 182 disposed in the non-annular heat-exchanged air duct branches 1013, the two non-annular heat-exchanged air duct branches 1013 where they are located are divided into an upper part and a lower part, the lower part being corresponding to the arc L1, and all other arcs being the upper part. To ensure the uniformity of air supply in the circumferential direction, the ratio of the length of the arc L1 corresponding to the lower part to the length of the arcs of the upper part (not marked in the figure, which are arcs in the entire circumferential direction other than L1) is 1:2 to 1:4. The third auxiliary airflow distribution plates 187 and 188 at the top of the two non-annular heat-exchanged air duct branches 1013 define an arc L5 at the top, and the length of the arc L5 accounts for 1/5 to 1/3 of the total circumferential length of the non-annular heat-exchanged air duct branches 1013.

[0034] In this embodiment, the mixed air outlet 111 on the front panel 11 and the non-heat-exchanged air inlet 121 on the rear panel 12 are preferably in the shape of the majority of a circle; and correspondingly, the cover body 101 that is not non-annular in the air-conditioner air supply apparatus 10 is preferably in the shape of the majority of a circle and non-annular (that is, a notch is formed at the lower part of a circular non-annular shape). In addition to the non-annular shape, the technical objectives of the present invention can also be achieved by using other combinations of shapes, for example, the majority of an ellipse and the majority of an elliptical ring, or a non-enclosed polygon and a non-enclosed polygonal ring.

[0035] The foregoing embodiments are merely used to describe rather than limit the technical solutions of the present invention. Although the present invention is described in detail with reference to the foregoing embod-

iments, a person of ordinary skill in the art can still make modifications to the technical solutions described in the foregoing embodiments, or make equivalent replacements to some technical features thereof. Such modifications or replacements should not make the essence of corresponding technical solutions depart from the spirit and scope of the technical solutions of the present invention.

Claims

1. An air-conditioner air supply apparatus, comprising a non-annular cover body, wherein a through-duct running through the non-annular cover body is formed in the middle of the non-annular cover body, the non-annular cover body has a front opening and a rear opening, the front opening forms a mixed air outlet, the rear opening forms a non-heat-exchanged air inlet, a non-annular main heat-exchanged air duct communicating an internal air duct of an air-conditioner having the air-conditioner air supply apparatus with the through-duct is formed on a wall of the non-annular cover body, and an airflow distribution assembly for circumferentially distributing heat-exchanged air that enters the main heat-exchanged air duct from a heat exchanger of the air-conditioner is disposed in the non-annular main heat-exchanged air duct.

2. The air-conditioner air supply apparatus according to claim 1, wherein one or more non-annular deflectors are provided on the non-annular main heat-exchanged air duct, the non-annular deflector divides the non-annular main heat-exchanged air duct into a plurality of heat-exchanged air duct branches communicating the internal air duct of the air-conditioner with the through-duct, and the airflow distribution assembly is disposed in all of the heat-exchanged air duct branches.

3. The air-conditioner air supply apparatus according to claim 2, wherein the airflow distribution assembly comprises a plurality of airflow distribution plates, and the plurality of airflow distribution plates is bilaterally symmetrically arranged in a circumferential direction of the non-annular heat-exchanged air duct branches, and along an air supply direction of the heat-exchanged air.

4. The air-conditioner air supply apparatus according to claim 3, wherein the plurality of airflow distribution plates is bent distribution plates of the same bending direction, and the bending direction of the plurality of airflow distribution plates is reverse to the air supply direction of the heat-exchanged air.

5. The air-conditioner air supply apparatus according to claim 4, wherein the airflow distribution assembly comprises at least a pair of primary airflow distribution plates dividing the heat-exchanged air into left, middle and right parts, and the pair of primary airflow distribution plates is disposed at a lower part of the non-annular heat-exchanged air duct branches, and divides the non-annular heat-exchanged air duct branches into two parts whose lengths are at a ratio of 1:2 to 1:4.

6. The air-conditioner air supply apparatus according to claim 5, wherein the airflow distribution assembly further comprises several pairs of auxiliary airflow distribution plates, and the several pairs of auxiliary airflow distribution plates are disposed above the primary airflow distribution plate at a gradually decreasing spacing from bottom to top.

7. The air-conditioner air supply apparatus according to claim 6, wherein the areas of the several pairs of auxiliary airflow distribution plates gradually decrease from bottom to top, and the area of the auxiliary airflow distribution plate at the lowest position is smaller than the area of the primary airflow distribution plate.

8. The air-conditioner air supply apparatus according to claim 6, wherein among the several pairs of auxiliary airflow distribution plates, the circumferential length of the non-annular heat-exchanged air duct branch between the pair of airflow distribution plates that is located at the top accounts for 1/5 to 1/3 of the total circumferential length of the non-annular heat-exchanged air duct branch.

9. The air-conditioner air supply apparatus according to claim 3, wherein the surface of the airflow distribution plate is a curved surface.

10. An air-conditioner, comprising an air-conditioner body, the air-conditioner body having a front panel, a rear panel, a left panel and a right panel, an internal air duct of the air-conditioner body being defined by the front panel, the rear panel, the left panel and the right panel, wherein the front panel is provided with a mixed air outlet, the rear panel is provided with a non-heat-exchanged air inlet at least at a position corresponding to the mixed air outlet, the air-conditioner air supply apparatus according to any one of claims 1 to 9 is disposed inside the air-conditioner body, and the mixed air outlet and the non-heat-exchanged air inlet of the non-annular cover body in the air-conditioner air supply apparatus are respectively correspondingly sealed to the mixed air outlet on the front panel and the non-heat-exchanged air inlet on the rear panel.

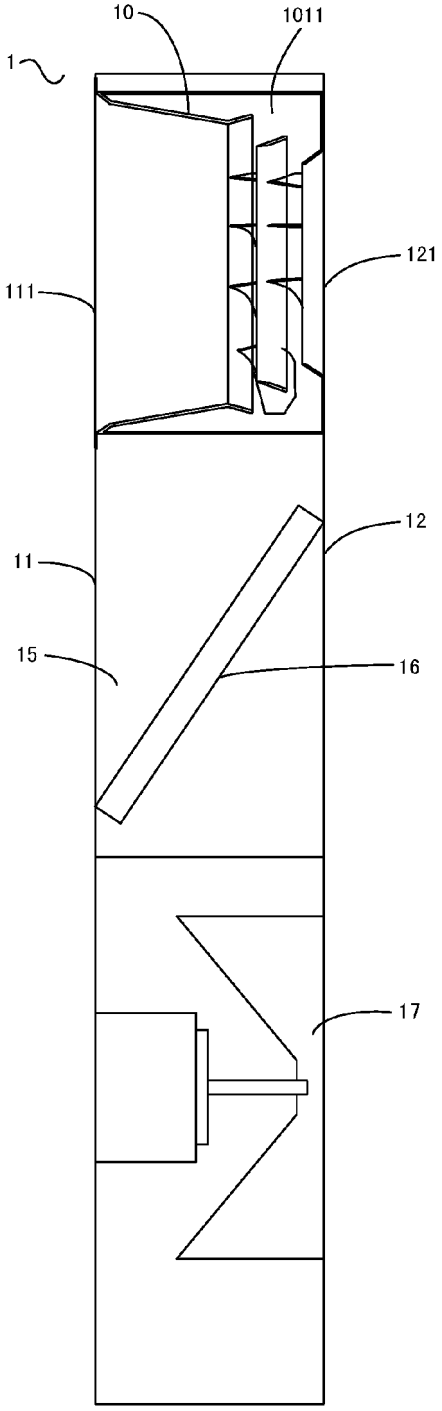


FIG. 1

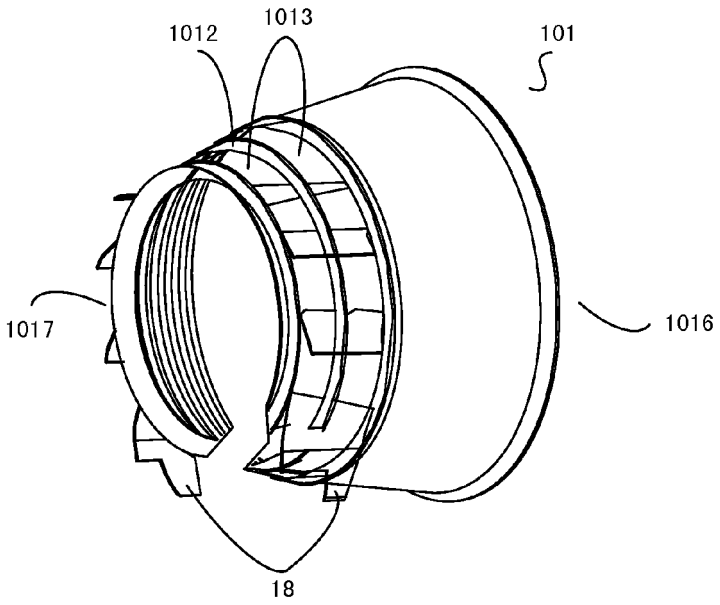
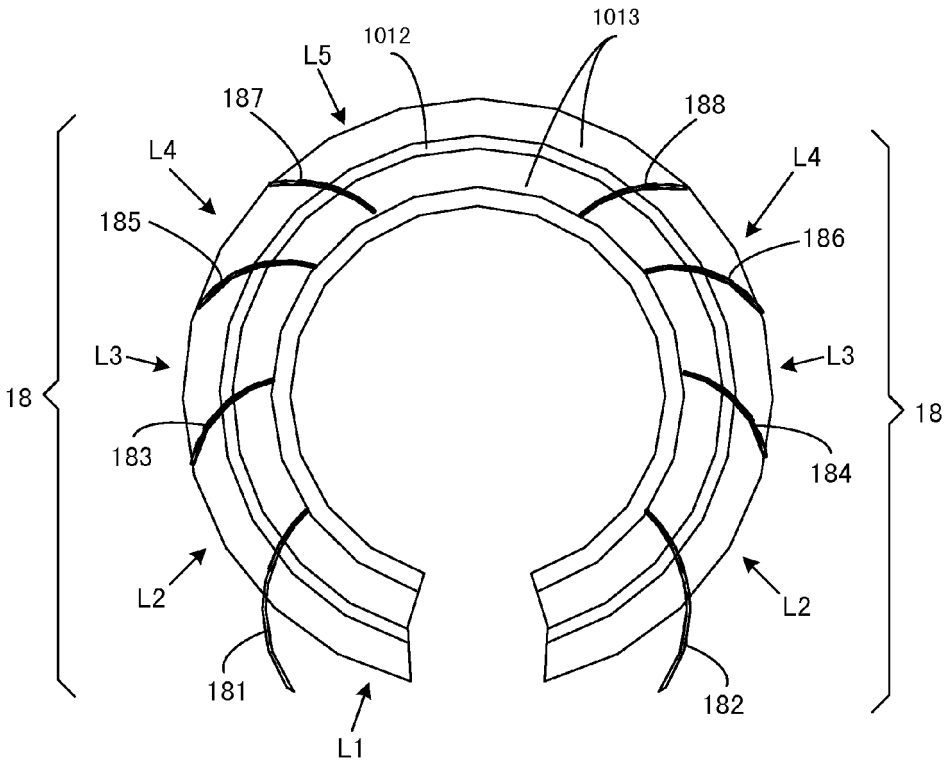

1012
1013
101
1017
1016
18

FIG. 2


1013
1012
L5
187
188
L4
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183
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L2
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182
L1

FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2014/078217

A. CLASSIFICATION OF SUBJECT MATTER

F24F 13/06 (2006.01) i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F24F 1; F24F 3; F24F 13

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CPRS, CNKI, WPI, EPODOC: (air vent, air outlet, inlet, discharge, wind mixing, air mixing, air-conditioned air, air condition+, outlet, exit, export, port, air supply, mix, blend, indoor air, room air)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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

* Special categories of cited documents:

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Date of the actual completion of the international search	Date of mailing of the international search report
22 July 2014 (22.07.2014)	**15 August 2014 (15.08.2014)**
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 **ZHONG, Dehui** Telephone No.: (86-10) **62084834**

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2014/078217

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	CN 201652622 U (JIANGSU GTAIR EQUIPMENT CO., LTD.), 24 November 2010 (24.11.2010), the whole document	1-10
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Information on patent family members

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