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(54) BASE ASSEMBLY FOR CLOTHES DRYER, AND CLOTHES DRYER HAVING SAME

(57) Disclosed are a base assembly (100) for a clothes dryer, and a clothes dryer having same. The base assembly (100) comprises a bottom plate (3); an air duct housing (1), the air duct housing (1) being arranged on the bottom plate (3) and being provided with a chamber (1a) for mounting a heat exchanger; and at least one connecting member (5), the at least one connecting member (5) being detachably connected to the bottom plate (3) and/or the air duct housing (1) so as to fix the air duct housing (1) on the bottom plate (3).

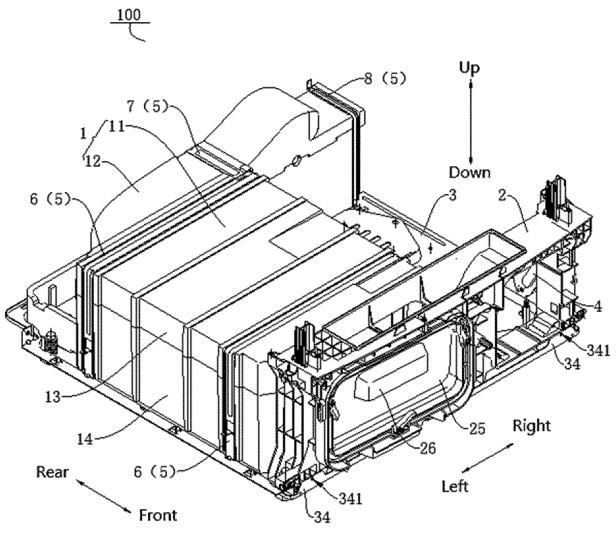


FIG. 1

Processed by Luminess, 75001 PARIS (FR)

Description

[0001] This application claims priority to Chinese Patent Application No. 202010315295.7, filed on April 21, 2020, the entire content of which is incorporated herein by reference.

FIELD

[0002] The present disclosure relates to the field of laundry treatment apparatus, and in particular, to a base assembly for a dryer and a dryer having the same.

BACKGROUND

[0003] Generally, a base assembly of a dryer is an integrally molded piece, and thus an overall weight of the base assembly is relatively large, the technological structure is relatively complicated, and the disassembly, assembly and maintenance are inconvenient.

[0004] For this reason, an air duct shell and a base are designed as separate pieces in the related art. However, a connection structure between the air duct shell and the base in the separate piece design is complicated, the assembly is difficult, and the assembly efficiency is low.

SUMMARY

[0005] The present disclosure aims to solve at least one of the technical problems existing in the related art. To this end, the present disclosure proposes a base assembly for a dryer, which is beneficial to reduce assembly difficulty and improve assembly efficiency. Through a modular design of a bottom plate and an air duct shell, the bottom plate and the air duct shell are respectively independently formed structures, so that the forming process of the base assembly can be simplified, and the bottom plate and the air duct shell can be replaced respectively during maintenance and installation. Further, the bottom plate can be made of a different material from the air duct shell, which is beneficial to reduce an overall weight of the base assembly.

[0006] The present disclosure further proposes a dryer having the base assembly for the dryer as described above.

[0007] A base assembly for a dryer according to an embodiment of the present disclosure includes: a bottom plate; an air duct shell disposed on the bottom plate and having a cavity where a heat exchanger is mounted; and at least one connection member detachably connected to the bottom plate and/or the air duct shell to fix the air duct shell on the bottom plate.

[0008] According to the base assembly for the dryer according to an embodiment of the present disclosure, by detachably connecting the connection member to the bottom plate and/or the air duct shell to fix the air duct shell on the bottom plate, it is beneficial to reduce assembly difficulty, and improve assembly efficiency. Further, through a modular design of the bottom plate and the air duct shell, the bottom plate and the air duct shell are independently formed structures, respectively, so that a forming process of the base assembly can be simplified, and the bottom plate and the air duct shell can be replaced during maintenance and installation, respectively. Furthermore, the bottom plate can be made of different material from the air duct shell, which is beneficial to reduce an overall weight of the base assembly.

[0009] In some embodiments of the present disclosure, the at least one connection member is a threaded fastener, and the air duct shell and the bottom plate are connected to each other by the threaded fastener.

[0010] In some embodiments of the present disclosure, the at least one connection member is detachably connected to the bottom plate, and the at least one connection member is at least partially pressed against the air duct shell to fix the air duct shell on the bottom plate.

[0011] In some embodiments of the present disclosure, the at least one connection member matches with an outer contour of the air duct shell.

[0012] In some embodiments of the present disclosure, the at least one connection member includes a first connection member having two ends detachably connected to the bottom plate, and at least a part of the air duct shell is located between a middle part of the first connection member and the bottom plate.

[0013] In some embodiments of the present disclosure, the first connection member includes: a first abutting segment located above the bottom plate and spaced apart from the bottom plate; a first vertical segment having one end connected to the bottom plate; and a second vertical segment having one end connected to the bottom plate. The first abutting segment has two ends connected to another end of the first vertical segment and another end of the second vertical segment, respectively. The first abutting segment is engaged with a top wall of the air duct shell. The first vertical segment and/or the second vertical segment is engaged with a side wall of the air duct shell.

[0014] In some embodiments of the present disclosure, the first connection member has one end in a snapping connection with the bottom plate, and another end connected to the bottom plate by a threaded fastener.

[0015] In some embodiments of the present disclosure, the at least one connection member includes a plurality of the first connection members arranged at intervals in a length direction of the air duct shell.

[0016] In some embodiments of the present disclosure, the air duct shell includes a first air duct shell, and a second air duct shell in communication with the first air duct shell. The first air duct shell is at least partially fixed on the bottom plate by the first connection member. The at least one connection member also includes a second connection member. The second connection member has one end connected to the first connection member and another end detachably connected to the bottom plate. The second air duct shell is at least partially fixed

on the bottom plate by the second connection member.

[0017] In some embodiments of the present disclosure, the second connection member includes a second abutting segment located above the bottom plate and spaced apart from the bottom plate, and a third vertical segment having one end connected to the bottom plate and another end connected to the second abutting segment. The second abutting segment is engaged with a top wall of the second air duct shell, and the third vertical segments is engaged with a side wall of the second air duct shell.

[0018] In some embodiments of the present disclosure, the one end of the second connection member is in a snapping-connection with the first connection member, and the other end of the second connection member is detachably connected to the bottom plate.

[0019] In some embodiments of the present disclosure, the connection member also includes a third connection member spaced apart from the second connection member in a length direction of the second air duct shell. The third connection member has one end detachably connected to the bottom plate and another end connected to an external structure.

[0020] In some embodiments of the present disclosure, the third connection member includes a third abutting segment located above the bottom plate and spaced apart from the bottom plate, and a fourth vertical segment having one end connected to the bottom plate and another end connected to the third abutting segment. The third abutting segment is engaged with a top wall of the second air duct shell, and the fourth vertical segments is engaged with a side wall of the second air duct shell.

[0021] In some embodiments of the present disclosure, a length direction of the first air duct shell is perpendicular to a length direction of the second air duct shell.

[0022] In some embodiments of the present disclosure, the air duct shell is configured as a thermal insulation member formed separately from the bottom plate.

[0023] In some embodiments of the present disclosure, the base assembly also includes a connection base detachably disposed on the bottom plate and located at a side of the air duct shell. The connection base has a channel in communication with the cavity of the air duct shell.

[0024] In some embodiments of the present disclosure, the bottom plate is a metal piece, and the connection base is configured as a plastic piece formed separately from the bottom plate.

[0025] A dryer according to an embodiment of the present disclosure includes the base assembly for the dryer as described above.

[0026] According to the dryer of the embodiment of the present disclosure, by providing the base assembly for the dryer as described above, it is beneficial to reduce assembly difficulty, and improve assembly efficiency. Further, through a modular design of the bottom plate and the air duct shell, the bottom plate and the air duct shell are independently formed structures, respectively, so that a forming process of the base assembly can be simplified, and the bottom plate and the air duct shell can be replaced during maintenance and installation, respectively. Furthermore, the bottom plate can be made of different material from the air duct shell, which is beneficial to reduce an overall weight of the base assembly.

[0027] Additional aspects and advantages of the present disclosure will be set forth in part, from the following description, and in part will become apparent from the following description, or may be learned by practice of the present disclosure.

BRIEF DESCRIPTION OF DRAWINGS

[0028] The above and/or additional aspects and advantages of the present disclosure will become apparent and readily understood from the following description of embodiments in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective structural view of a base assembly for a dryer according to an embodiment of the present disclosure.
FIG. 2 is a schematic plan view of FIG. 1.
FIG. 3 is a schematic cross-sectional view taken along a line A-Ain FIG. 2.
FIG. 4 is an enlarged view at B in FIG. 3.
FIG. 5 is an enlarged view at C in FIG. 3.
FIG. 6 is an enlarged view at D in FIG. 2.
FIG. 7 is a bottom view of FIG. 2.
FIG. 8 is a top view of FIG. 2.
FIG. 9 is a left side view of FIG. 2.
FIG. 10 is a rear view of FIG. 2.
FIG. 11 is a schematic structural view of a bottom plate and a connection base according to an embodiment of the present disclosure.
FIG. 12 is a schematic cross-sectional view taken along a line E-E in FIG. 11.
FIG. 13 is a schematic structural view of a first connection member according to an embodiment of the present disclosure.
FIG. 14 is a schematic structural view of a second connection member according to an embodiment of the present disclosure.
FIG. 15 is a schematic structural view of a third connection member according to an embodiment of the present disclosure.
FIG. 16 is a partial structural schematic view of a base assembly for a dryer according to another embodiment of the present disclosure.
FIG. 17 is a schematic cross-sectional view taken along a line F-F in FIG. 16.
FIG. 18 is a rear view of FIG. 16.

Reference Signs:

[0029]

base assembly 100;
air duct shell 1; cavity 1a; sealing rib 1b; positioning groove 1c; first air duct shell 11; second air duct shell 112;
upper air duct shell 13; lower air duct shell 114;
connection base 2; channel 2a; sealing groove 2b; first protruding rib 22; second protruding rib 23; first positioning portion 24;
door body 25; handle 26; first snapping hook 27;
bottom plate 3; second positioning portion 31; first snapping hole 32; second snapping hole 33;
fixing flange 34; first fixing hole 341; second fixing hole 35;
support member 4; first snapping hole 41; first through hole 42; second through hole 43;
connection member 5;
first connection member 6; first abutting segment 61; second snapping hole 611; first vertical segment 62; first snapping portion 621; second vertical segment 63; first connection hole 631;
second connection member 7; second abutting segment 71; second snapping hook 711; third vertical segment 72; second snapping portion 721; second connection hole 722;
third connection member 8; third abutting segment 81; third snapping hook 811; fourth vertical segment 82; third connection hole 821;
liquid drainage separator 9; liquid drainage channel 91;
evaporator 200;
condenser 300.

DESCRIPTION OF EMBODIMENTS

[0030] The embodiments of the present disclosure are described in detail below, examples of which are illustrated in the accompanying drawings, where the same or similar reference numerals refer to the same or similar elements or elements having the same or similar functions throughout. The embodiments described below with reference to the accompanying drawings are exemplary and are only used to explain the present disclosure, rather than being as a limitation on the present disclosure.

[0031] The following disclosure provides many different embodiments or examples for implementing different structures of the present disclosure. In order to simplify the present disclosure, components and arrangements of specific examples are described below. Of course, they are merely examples and are not intended to limit the present disclosure. Furthermore, the present disclosure may repeat reference signs and/or letters in different examples. This repetition is for the purpose of simplicity and clarity and does not in itself indicate a relationship between the various embodiments and/or arrangements as discussed. In addition, the present disclosure provides examples of various specific processes and materials. However, those of ordinary skill in the art will recognize applicability of other processes and/or the use of other materials.

[0032] A base assembly 100 for a dryer according to an embodiment of the present disclosure is described below with reference to the accompanying drawings. For example, the dryer may be a heat pump dryer.

[0033] Referring to FIGS. 1 and 2, the base assembly 100 for the dryer according to an embodiment of the present disclosure may include an air duct shell 1, a connection base 2, a bottom plate 3, a support member 4 and a connection member 5.

[0034] Referring to FIG. 3, the air duct shell 1 is disposed on the bottom plate 3 and has a cavity 1a where a heat exchanger is mounted. For example, the heat exchanger may be an evaporator 200 and a condenser 300. At least one connection member 5 is detachable connected to the bottom plate 3 and/or the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3.

[0035] Here, "at least one connection member 5 being detachably connected to the bottom plate 3 and/or the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3" may be understood as the at least one connection member 5 being detachably connected to both the bottom plate 3 and the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3. For example, as shown in FIG. 17, the connection member 5 may be a threaded fastener, and the bottom plate 3 and the air duct shell 1 are connected to each other by the threaded fastener to fix the air duct shell 1 on the bottom plate 3. In some embodiments, the at least one connection member 5 may be detachably connected to the bottom plate 3 or the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3. For example, as shown in FIG. 1, the connection member 5 is detachably connected to the bottom plate 3, and the connection member 5 is partially pressed against the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3.

[0036] It should be noted that "at least one" should be understood as one or more than one. For example, the at least one connection member 5 may include one, two, three, four, five, six, seven or eight connection members, etc.

[0037] Therefore, by detachably connecting the connection member 5 to the bottom plate 3 and/or the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3, it is beneficial to reduce assembly difficulty and improve assembly efficiency. Further, through a modular design of the bottom plate 3 and the air duct shell 1, the bottom plate 3 and the air duct shell 1 are of independently formed structures, respectively, so that a forming process of the base assembly 100 can be simplified, and the bottom plate 3 and the air duct shell 1 can be replaced respectively during maintenance and installation. Furthermore, the bottom plate 3 can be made of a different material from the air duct shell 1, which is beneficial to reduce an overall weight of the base assembly 100.

[0038] According to the base assembly 100 for the dryer according to the embodiment of the present disclosure, by detachably connecting the connection member 5 to

the bottom plate 3 and/or the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3, it is beneficial to reduce the assembly difficulty and improve the assembly efficiency. Further, through the modular design of the bottom plate 3 and the air duct shell 1, the bottom plate 3 and the air duct shell 1 are of independently formed structures, respectively, so that the forming process of the base assembly 100 can be simplified, and the bottom plate 3 and the air duct shell 1 can be replaced respectively during maintenance and installation. Furthermore, the bottom plate 3 can be made of the different material from the air duct shell 1, which is beneficial to reduce the overall weight of the base assembly 100.

[0039] In some embodiments of the present disclosure, as shown in FIG. 1, the at least one connection member 5 is detachably connected to the bottom plate 3, and is partially pressed against the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3. It should be understood that, by detachably connecting the connection member 5 to the bottom plate, the connection member is partially pressed against the air duct shell 1 to fix the air duct shell 1 on the bottom plate 3, which is beneficial to reduce the assembly difficulty and improve the assembly efficiency. Further, during the assembly process, the connection member 5 would not damage a structure of the air duct shell 1, which is beneficial to ensure an airtightness of the air duct shell 1, thereby improving a drying efficiency of the dryer.

[0040] In some embodiments of the present disclosure, as shown in FIG. 1, the connection member 5 matches with an outer contour of the air duct shell 1. Therefore, it is beneficial to increase an engagement area between the connection member 5 and the air duct shell 1, which further realizes a reliable fixing of the air duct shell 1.

[0041] In some embodiments of the present disclosure, as shown in FIG. 1, the connection member 5 includes a first connection member 6 having two ends detachably connected to the bottom plate 3, respectively. The air duct shell 1 is partially located between a middle part of the first connection member 6 and the bottom plate 3. Therefore, it is beneficial to realize the reliable fixing of the air duct shell 1 and reduce damage to the air duct shell 1 while reducing the assembly difficulty.

[0042] Further, as shown in FIG. 13, the first connection member 6 includes a first abutting segment 61, a first vertical segment 62, and a second vertical segment 63. The first abutting segment 61 is located above the bottom plate 3 and is space apart from the bottom plate 3. The bottom plate 3 is connected to one end of the first vertical segment 62 and one end of the second vertical segment 63, respectively, and two ends of the first abutting segment 61 are connected to the other end of the first vertical segment 62 and the other end of the second vertical segment 63, respectively.

[0043] Here, the first abutting segment 61 is engaged with a top wall of the air duct shell 1, and the first vertical segment 62 and/or the second vertical segment 63 is engaged with a side wall of the air duct shell 1. In other words, one of the first vertical segment 62 and the second vertical segment 63 may be engaged with a side wall of the air duct shell 1, or the first vertical segment 62 and the second vertical segment 63 may be engaged with opposite side walls of the air duct shell 1, respectively. Therefore, it is beneficial to increase the engagement area between the connection member 5 and the air duct shell 1, thereby further realizing the reliable fixing of the air duct shell 1. In this way, the first connection member 6 has a simple structure and low cost.

[0044] In some embodiments of the present disclosure, as shown in FIGS. 1 and 13, the first connection member 6 is engaged with the bottom plate 3 at one end thereof and is connected to the bottom plate 3 by the threaded fastener at the other end thereof. For example, a first snapping portion 621 is disposed on the free end of the first vertical segment 62. A first snapping hole 32 (refer to FIG. 10) adapted to be engaged with the first snapping portion 621 is disposed on the bottom plate 3. A first connection hole 631 adapted for the threaded fastener to pass therethrough is defined on one end of the second vertical segment 63. It should be understood that, when the air duct shell 1 is fixed on the bottom plate 3 by the connection member 5, one end of the connection member 5 can be fixed on the bottom plate 3 first, and then the other end of the connection member 5 can be connected to the bottom plate 3 by the threaded fastener. Thus, the connection is convenient, and the assembly effect is high, thereby improving reliability of fixing the air duct shell 1.

[0045] In some embodiments of the present disclosure, as shown in FIG. 1, a plurality of first connection members 6 is provided and arranged at intervals in a length direction of the air duct shell 1. Therefore, it is beneficial to further realize the reliable fixing of the air duct shell 1. For example, a plurality of first connection members 6 is provided and arranged at intervals in a length direction of the first air duct shell 11 described below.

[0046] In some optional embodiments of the present disclosure, as shown in FIG. 1, the air duct shell 1 includes a first air duct shell 11 and a second air duct shell 12 in communication with the first air duct shell 11. The first air duct shell 11 is at least partially fixed on the bottom plate 3 by the first connection member 6. The connection member 5 also includes a second connection member 7. The second connection member 7 is connected to the first connection member 6 at one end thereof. The second connection member 7 is detachably connected to the bottom plate 3 at the other end thereof. The second air duct shell 12 is at least partially fixed on the bottom plate 3 by the second connection member 7.

[0047] Therefore, the first air duct shell 11 can be fixed by the first connection member 6, and the second air duct shell 12 can be fixed by the second connection member 7, which is beneficial to further improve the fixing effect of the air duct shell 1. Meanwhile, the second connector

7 is connected to the first connector 6 at one end thereof, the connection member 5 is detachably connected to the bottom plate 3 at the other end thereof, and the second air duct shell 12 is at least partially fixed on the bottom plate 3 by the second connection member 7, which is beneficial to simplify a structure of the second connection member 7 and facilitate the fixing of the second connection member 7.

[0048] Further, as shown in FIG. 1 and FIG. 14, the second connection member 7 includes a second abutting segment 71 and a third vertical segment 72. The second abutting segment 71 is located above the bottom plate 3 and is spaced apart from the bottom plate 3. The third vertical segment 72 is connected to the bottom plate 3 at one end thereof and is connected to the second abutting segment 71 at the other end thereof. The second abutting segment 71 is engaged with a top wall of the second air duct shell 12, and the third vertical segment 72 is engaged with a side wall of the second air duct shell 12.

[0049] Therefore, it is beneficial to increase an engagement area between the second connection member 7 and the second air duct shell 12, thereby further realizing a reliable fixing of the air duct shell 1. In this way, the second connection member 7 has a simple structure and low cost.

[0050] In some optional embodiments of the present disclosure, as shown in FIG. 1 and FIG. 6, the second connection member 7 is a snapping connection to the first connection member 6 at one end thereof and is detachably connected to the bottom plate 3 at the other end thereof. For example, as shown in FIG. 6, a second sapping hook 711 is dispose on one end of the second connection member 7, and a second snapping hole adapted to be engaged with the second snapping hook 711 is disposed on the first connection member 6. The second connection member 7 is connected to the bottom plate 3 at the other end thereof by means of snapping connection or screws. Therefore, the structure is simple, and an installation and disassembly of the second connection member 7 are facilitated. Further, the fixing of the second connection member 7 to the second air duct shell 12 is reliable.

[0051] In some embodiments, as shown in FIG. 14, a second snapping portion 721 is disposed on a free end of the third vertical segment 72, and a second snapping hole 33 (as shown in FIG. 9) adapted to be engaged with the second snapping portion 721 is disposed on the bottom plate 3. A second connection hole 722 is further defined on the third vertical segment 72 of the second connection member 7. A threaded fastener passes through the second connection hole 722 to be connected to a housing of the dryer to fix the third vertical segment 72 to the housing of the dryer. Thus, it is beneficial to further improve the fixing effect of the second connection member 7 on the second air duct shell 12.

[0052] In some embodiments of the present disclosure, as shown in FIG. 1 and FIG. 15, the connection member 5 also includes a third connection member 8 spaced apart from the second connection member 7 in a length direction of the second air duct shell 12. The third connection member 8 is detachably connected to the bottom plate 3 at one end thereof and is connected to an external structure at the other end thereof. For example, the external structure may be the housing of the dryer. A third connection hole 821 is defined on one end of the third connection member 8, and a threaded fastener passes through the third connection hole 821 to fix one end of the third connection member 8 to the bottom plate 3. The third connection member 8 is detachably connected to the housing of the dryer at the other end thereof.

[0053] Therefore, by providing the second connection member 7 and the third connection member 8, the second air duct shell 12 has good fixing effect, which is beneficial to ensure a reliable operation of the air duct shell 1.

[0054] In some embodiments of the present disclosure, as shown in FIG. 15, the third connection member 8 includes a third abutting segment 81 and a fourth vertical segment 82. The third abutting segment 81 is located above the bottom plate 3 and is spaced apart from the bottom plate 3. The fourth vertical segment 82 is connected to the bottom plate 3 at one end thereof and is connected to the third abutting segment 81 at the other end thereof. The third abutting segment 81 is engaged with the top wall of the second air duct shell 12, and the fourth vertical segment 82 is engaged with the side wall of the second air duct shell 12. For example, a third snapping hook 811 is disposed on a free end of the third abutting segment 81, and the housing of the dryer is engaged with the third snapping hook 811. Therefore, it is beneficial to increase an engagement area between the third connection member 8 and the second air duct shell 12, thereby further realizing the reliable fixing of the air duct shell 1. In this way, the third connection member 8 is has a simple structure and low cost, and the connection is reliable.

[0055] In some embodiments of the present disclosure, as shown in FIG. 1, a length direction of the first air duct shell 11 is perpendicular to a length direction of the second air duct shell 12. For example, the first air duct shell 11 and the second air duct shell 12 are arranged in a front-rear direction, and the first air duct shell 11 is perpendicular to the second air duct shell 12. Therefore, it is beneficial to reduce an overall space occupation of the first air duct shell 11 and the second air duct shell 12, thereby facilitating reduction of the space occupation of the air duct shell 1.

[0056] In some examples, as shown in FIG. 3, a liquid drainage separator 9 is disposed in the first air duct shell 11. The liquid drainage separator 9 has a liquid guide groove with an inlet and an outlet located at two ends in a length direction (the front-rear direction as shown in FIG. 1) thereof. The liquid drainage separator 9 also has a liquid distribution groove located on at least one side in a width direction (a left-right direction as shown in FIG.

1) thereof. The liquid distribution groove is in communication with the liquid guide groove through a liquid passage opening. A liquid drainage channel 91 for a condensate is defined by the liquid guide groove, the liquid distribution groove, and an inner bottom wall of the cavity 1a. Therefore, when a negative pressure is generated in an air duct, the condensate flowing back at the outlet of the liquid guide groove can flow to the liquid guide groove and the liquid distribution groove respectively. In this way, on the one hand, a liquid distribution can be provided to reduce hydraulic pressure, and on the other hand, it is possible to increase a backflow path of the condensate, which is beneficial to prevent the condensate from flowing back into the air duct, thereby improving drying efficiency.

[0057] In some embodiments of the present disclosure, as shown in FIG. 1, the air duct shell 1 is configured as a thermal insulation member formed separately from the bottom plate 3. For example, the air duct shell 1 may be made of plastic. For example, the air duct shell 1 may be a foamed piece such as foamed plastic or a foamed rubber. Therefore, it is beneficial to improve a thermal insulation effect of the air duct shell 1 while reducing a weight of the air duct shell 1.

[0058] In some examples, as shown in FIG. 3, the connection base 2 is disposed at one side (the front side as shown in FIG. 1) of the air duct shell 1, and has a channel 2a in communication with the cavity 1a. Here, one of the connection base 2 and the air duct shell 1 has a sealing groove 2b, and the other has a sealing rib 1b. Here, the connection base 2 may have the sealing rib 1b, and the air duct shell 1 may have the sealing groove 2b in a sealing-fit with the sealing rib 1b. Alternatively, the connection base 2 has the sealing groove 2b, and the air duct shell 1 has the sealing rib 1b in a sealing-fit with the sealing groove 2b. The sealing groove 2b is engaged with the sealing rib 1b to seal a connection between the air duct shell 1 and the connection base 2.

[0059] Therefore, by forming the sealing groove 2b on one of the connection base 2 and the air duct shell 1 and forming the sealing rib 1b on the other of the connection base 2 and the air duct shell 1, the sealing groove 2b can be engaged with the sealing rib 1b to seal the connection between the air duct shell 1 and the connection base 2. Thus, the connection between the air duct shell 1 and the connection base 2 has a good sealing performance, which is beneficial to ensure drying efficiency of the dryer. In addition, when assembling the air duct shell 1 and the connection base 2, the sealing groove 2b is engaged with the sealing rib 1b to realize a pre-positioning between the air duct shell 1 and the connection base 2, which facilitates a fixing between the air duct shell 1 and the connection base 2, thereby improving an assembling efficiency of the base assembly 100.

[0060] In some embodiments of the present disclosure, as shown in FIGS. 4 and 5, the air duct shell 1 has an air duct opening defined on a side thereof opposite to the connection base 2, and the connection base 2 has a channel opening 2a defined on a side thereof opposite to the air duct shell 1. Here, the air duct opening is in communication with the cavity 1a, and the channel opening 2a is in communication with the channel 2a. One of the sealing groove 2b and the sealing rib 1b extends in a circumferential direction of the air duct opening, and the other of the sealing groove 2b and the sealing rib 1b extends in a circumferential direction of the channel opening 2a.

[0061] For example, the air duct shell 1 has a sealing groove 2b extending into a ring shape in the circumferential direction of the air duct opening. The connection base 2 has a sealing rib 1b extending into a ring shape in the circumferential direction of the channel opening 2a. In some embodiments, the air duct shell 1 has a sealing rib 1b extending into a ring shape in the circumferential direction of the air duct opening. The connection base 2 has a sealing groove 2b extending into a ring shape in the circumferential direction of the channel opening 2a.

[0062] Therefore, since one of the sealing groove 2b and the sealing rib 1b extends in the circumferential direction of the air duct opening, and the other of the sealing groove 2b and the sealing rib 1b extends in the circumferential direction of the channel opening 2a, it is beneficial to further improve a sealing effect between the groove 2b and the sealing rib 1b, thereby preventing air from leaking at the connection between the air duct shell 1 and the connection base 2 and improving the drying efficiency of the dryer.

[0063] In some embodiments of the present disclosure, as shown in FIGS. 4 and 5, one of the connection base 2 and the air duct shell 1 has a first protruding rib 22 and a second protruding rib 23. The first protruding rib 22 and the second protruding rib ribs 23 are spaced apart from each other in an arrangement direction of the air duct shell 1 and the connection base 2. The sealing groove 2 b is located between the first protruding rib 22 and the second protruding rib 23. It should be understood that the sealing rib 1b is partially engaged with the first protruding rib 22 or the second protruding rib 23 to further improve reliability of the pre-positioning-fit between the air duct shell 1 and the connection base 2 through the engagement between the sealing rib 1b and the first protruding rib 22 or the second protruding rib 23, which is beneficial to further reduce the assembly difficulty between the connection base 2 and the air duct shell 1.

[0064] For example, as shown in FIG. 3, the connection base 2 has an annular first protruding rib 22 and an annular second protruding rib 23 on an outer peripheral wall thereof. The first protruding rib 22 and the second protruding rib 23 are spaced apart from each other in the front-rear direction. The sealing groove 2b is disposed on the outer peripheral wall of the connection base 2, and is located between the first protruding rib 22 and the second protruding rib 23. The air duct shell 1 has an annular sealing rib 1b on an inner peripheral wall thereof. Front and rear side walls of the sealing rib 1b are adapted to abut with the first protruding rib 22 and the second

protruding rib 23, respectively.

[0065] In some embodiments of the present disclosure, as shown in FIGS. 4 and 5, the other of the connection base 2 and the air duct shell 1 has a positioning groove 1c close to the sealing rib 1b, and one of the first protruding rib 22 and the second protruding rib 23 is inserted into the positioning groove 1c. For example, as shown in FIG. 4, the air duct shell 1a has a positioning groove 1c defined on the inner peripheral wall thereof and close to the sealing rib 1b, and the first protruding rib 22 is inserted into the positioning groove 1c.

[0066] It should be understood that, by forming the positioning groove 1c adapted for an insertion of one of the first protruding rib 22 and the second protruding rib 23, on the one hand, it is beneficial to increase a sealing area between the connection base 2 and the air duct shell 1, and improve the sealing effect between the connection base 2 and the air duct shell 1. On the other hand, it is beneficial to further improve the reliability of the pre-positioning-fit between the air duct shell 1 and the connection base 2, thereby further reducing the assembly difficulty between the connection base 2 and the air duct shell 1.

[0067] In some embodiments of the present disclosure, as shown in FIGS. 3 to 5, the sealing groove 2b is located on an outer wall surface of the connection base 2, and the sealing rib 1b is located on an inner wall surface of the air duct shell 1. It should be understood that, since the sealing groove 2b is located on the outer wall surface of the connection base 2, and the sealing rib 1b is located on the inner wall surface of the air duct shell 1, when the sealing rib 1b is engaged with the sealing groove 2b, the connection base 2 and the air duct shell 1 can be positioned in the circumferential direction, and can be also positioned in the arrangement direction of the air duct shell 1 and the connection base 2. Such a positioning is more reliable with simple structure, and thus processing difficulty and cost are low.

[0068] In some embodiments of the present disclosure, as shown in FIG. 10, the connection base 2 has a first positioning portion 24 provided on a bottom thereof, and the bottom plate 3 has a second positioning portion 31 provided thereon. The first positioning portion 24 is snapped with the second positioning portion 31 to position the connection base 2. For example, as shown in FIGS. 11 and 12, the first positioning portion 24 is formed as a positioning post, and the second positioning portion 31 is formed as a positioning hole. Therefore, a snapping-connection between the connection base 2 and the bottom plate 3 can be realized, in which the structure is simple, and the connection is convenient.

[0069] In some embodiments, as shown in FIG. 12, the connection base 2 has a plurality of first positioning portions 24 provided on the bottom thereof, and the bottom plate 3 has a plurality of second positioning portions 31 provided thereon. The plurality of first positioning portions 24 is snapped with the plurality of first positioning portions 24 in a one-to-one correspondence to position the connection base 2.

[0070] In some embodiments of the present disclosure, as shown in FIG. 1, the bottom plate 3 has a fixing flange 34 provided on an edge thereof and bent upwardly. A side of the connection base 2 is connected to the fixing flange 34 by a fastener. For example, as shown in FIG. 1, two fixing flanges 34 are provided and located at left and right ends of the bottom plate 3, respectively. Each of the two fixing flanges 34 has a first fixing hole 341 defined thereon. The connection base 2 has sides connected to the two fixing flanges 34 by fasteners, respectively, and abutting with the two fixing flanges 34. Therefore, the structure is simple, which is beneficial to enhance the reliability of the connection between the bottom plate 3 and the connection base 2.

[0071] In some embodiments, as shown in FIG. 10, the bottom plate 3 also has a second fixing hole 35 defined thereon, and the fastener passes through the second fixing hole 35 to be connected to the bottom of the connection base 2. Therefore, it is beneficial to further improve the reliability of the connection between the bottom plate 3 and the connection base 2.

[0072] In some embodiments of the present disclosure, as shown in FIG. 8, the base assembly 100 also includes a support member 4 having one end connected to the connection base 2 and another end connected to the bottom plate 3. For example, the support member 4 may be formed into an elongated strip, and the base has a first snapping hook 27 dispose thereon. The support member 4 has a first snapping hole 41 defined at one end thereof and engaged with the first snapping hook 27. Further, the support member 4 has a first through hole 42 defined on one end thereof. A threaded fastener passes through the first through hole 42 to fix the one end of the support member 4 to a base. The support member 4 has a second through hole 43 defined at the other end thereof. A threaded fastener passes through the second through hole 43 to fix the other end of the support member 4 on the bottom plate 3.

[0073] In this way, it is beneficial to prevent the connection base 2 from being inclined relative to the bottom plate 3 in a subsequent installation, which is beneficial to further improve the reliability of the connection between the connection base 2 and the bottom plate 3. In some embodiments, two support members 4 may be provided and located on the left and right sides of the connection base 2, respectively.

[0074] In some examples, as shown in FIG. 1, the connection base 2 has an access opening, and a door body 25 that can be opened and closed is disposed at the access opening, The door body 25 has a handle 26 to facilitate opening and closing the door body 25 by a user.

[0075] In some embodiments of the present disclosure, as shown in FIGS. 1 and 7, the bottom plate 3 is a metal piece, and the connection base 2 is configured as a plastic piece formed separately from the bottom plate 3. For example, the bottom plate 3 may be an iron plate or a stainless-steel plate. Therefore, on the one hand,

since the bottom plate 3 is the metal piece, it is beneficial to ensure a structural strength of the base assembly 100. On the other hand, since the connection base 2 is configured as the plastic piece formed separately from the bottom plate 3, it is beneficial to reduce the overall weight of the base assembly 100.

[0076] In some embodiments of the present disclosure, as shown in FIG. 1, the air duct shell 1 includes an upper air duct shell 13 and a lower air duct shell 14 that are connected to each other. The cavity 1a of the air duct shell 1 is defined by the upper air duct shell 13 and the lower air duct shell 14. A part of the sealing rib 1b is formed on an inner peripheral wall of the upper air duct shell 13, and the remaining part of the sealing rib 1b is formed on the lower air duct shell 14. The sealing rib 1b is defined by the upper air duct shell 13 and the lower air duct shell 14 together. When assembling the base assembly 100, the connection base 2 may be mounted on the bottom plate 3 first, then the lower air duct shell 14 is brought into the sealing-fit with the connection base 2, and then the upper air duct shell 13 is brought into the sealing-fit with the connection base 2, to achieve the prepositioning of the air duct shell 1. Then, the two ends of the support member 4 are fixed to the connection base 2 and the air duct shell 1, respectively, to realize the fixing connection between the connection base 2 and the air duct shell 1, and prevent the connection base 2 from being inclined relative to the air duct shell 1 before supporting other components in the subsequent installation. Finally, the first connection member 6, the second connection member 7 and the third connection member 8 are mounted, respectively, to fix the air duct shell 1 on the bottom plate 3. Thus, the assembly of the base assembly 100 is completed. As a result, the base assembly 100 is simply assembled, and has good sealing performance and light weight.

[0077] In other embodiments of the present disclosure, as shown in FIG. 16, at least one connection member 5 is a threaded fastener, by which the air duct shell 1 and the bottom plate 3 are connected to each other. For example, the at least one connection member 5 includes a plurality of connection members 5, each of which is a threaded fastener. The air duct shell 1 and the bottom plate 3 are connected to each other by the plurality of threaded fasteners. Therefore, the connection between the air duct shell 1 and the bottom plate 3 can be made reliable, and the cost is low.

[0078] In some embodiments, as shown in FIGS. 17 and 18, the air duct shell 1 includes an upper air duct shell 13 and a lower air duct shell 14 that are connected to each other. The cavity 1a of the air duct shell 1 is defined by the upper air duct shell 13 and the lower air duct shell 14 together. Each of the plurality of connection members 5 is a screw. When the air duct shell 1 is mounted on the bottom plate 3, the lower air duct shell 14 may be placed on the bottom plate 3 first, and then the plurality of screws passes through the lower air duct shell 14 and the bottom plate 3 from top to bottom, respectively, to fix the lower air duct shell 14 on the bottom plate 3. Finally, the upper air duct shell 13 is mounted on the lower air duct shell 14.

[0079] A dryer according to an embodiment of the present disclosure includes the base assembly 100 for the dryer according to the above embodiments of the present disclosure.

[0080] In the dryer according to the embodiments of the present disclosure, by providing the base assembly 100 for the dryer according to the embodiments of the present disclosure as described above, it is beneficial to reduce the assembly difficulty and improve the assembly efficiency. Further, through the modular design of the bottom plate 3 and the air duct shell 1, the bottom plate 3 and the air duct shell 1 are independently formed structures, respectively, so that the forming process of the base assembly 100 can be simplified, and the bottom plate 3 and the air duct shell 1 can be replaced during maintenance and installation, respectively. Furthermore, the bottom plate 3 can be made of the different material from the air duct shell 1, which is beneficial to reduce an overall weight of the base assembly 100.

[0081] Other structures and operations of the dryer according to the embodiments of the present disclosure are known to those of ordinary skill in the art, and will not be described in detail herein.

[0082] In the specification, it is to be understood that terms such as "central," "length," "width," "thickness," "upper," "lower," "front," "rear," "left," "right," "vertical," "horizontal," "top," "bottom," "inner," "outer," "axial," "radial," "circumferential," and the like should be construed to refer to the orientation or direction as shown in the drawings, which are merely for the convenience of description and simplifying the description, rather than indicating or implying that the associated apparatuses or elements must have a specific orientation, and be constructed and operate in a specific orientation, and therefore should not be construed as a limitation on the present disclosure..

[0083] In addition, terms such as "first" and "second" are used herein for purposes of description and are not intended to indicate or imply relative importance or significance or to imply the number of indicated technical features. Thus, the feature associated with "first" and "second" may indicate or imply that one or more of these features are included. In the description of the present disclosure, "a plurality of' means two or more than two, unless specified otherwise.

[0084] In the present disclosure, unless specified or limited otherwise, the terms "mounted," "connected," "coupled," "fixed" and the like should be understood broadly, and may be, for example, fixed connections, detachable connections, or integral connections; it may also be a mechanical connection or an electrical connection or a communication with each other; it may also be a direct connection or an indirect connection through an intermediating structure; it may also be an inner communication of two elements or an interaction relationship

between the two elements. For those of ordinary skill in the art, the specific meanings of the above terms in the present disclosure can be understood according to specific situations.

[0085] Reference throughout this specification to "an embodiment," "some embodiments," "an example," "specific examples" or "some examples" means that a particular feature, structure, material, or characteristic described in connection with the embodiment or example is included in at least one embodiment or example of the present disclosure. Thus, the appearances of the above phrases throughout this specification are not necessarily referring to the same embodiment or example of the present disclosure. Furthermore, the particular features, structures, materials, or characteristics as described may be combined in one or more embodiments or examples in any suitable manner. Furthermore, those skilled in the art may combine the different embodiments or examples described in this specification, as well as the features of the different embodiments or examples with each other without conflicting each other.

[0086] Although the embodiments of the present disclosure have been shown and described, it will be understood by those of ordinary skill in the art that various changes, modifications, substitutions and alterations can be made to these embodiments without departing from the principles and spirit of the present disclosure. The scope of the disclosure is defined by the claims and their equivalents.

Claims

1. A base assembly for a dryer, the base assembly comprising: a bottom plate; an air duct shell disposed on the bottom plate and having a cavity, wherein a heat exchanger is mounted within the cavity; and at least one connection member detachably connected to the bottom plate and/or the air duct shell to fix the air duct shell on the bottom plate.

2. The base assembly for the dryer according to claim 1, wherein: the at least one connection member is a threaded fastener; and the air duct shell and the bottom plate are connected to each other by the threaded fastener.

3. The base assembly for the dryer according to claim 1, wherein: the at least one connection member is detachably connected to the bottom plate; and the at least one connection member is at least partially pressed against the air duct shell to fix the air duct shell on the bottom plate.

4. The base assembly for the dryer according to claim 3, wherein the at least one connection member matches with an outer contour of the air duct shell.

5. The base assembly for the dryer according to claim 3, wherein: the at least one connection member comprises a first connection member having two ends detachably connected to the bottom plate; and at least a part of the air duct shell is located between a middle part of the first connection member and the bottom plate.

6. The base assembly for the dryer of claim 5, wherein the first connection member comprises: a first abutting segment located above the bottom plate and spaced apart from the bottom plate; a first vertical segment having an end connected to the bottom plate; and a second vertical segment having an end connected to the bottom plate, wherein: the first abutting segment has two ends connected to another end of the first vertical segment and another end of the second vertical segment, respectively; the first abutting segment is engaged with a top wall of the air duct shell; and the first vertical segment and/or the second vertical segment is engaged with a side wall of the air duct shell.

7. The base assembly for the dryer according to claim 5, wherein the first connection member has one end in a snapping connection with the bottom plate, and another end connected to the bottom plate by a threaded fastener.

8. The base assembly for the dryer according to claim 5, wherein the at least one connection member comprises a plurality of the first connection members arranged at intervals in a length direction of the air duct shell.

9. The base assembly for the dryer according to any one of claims 5 to 8, wherein: the air duct shell comprises a first air duct shell, and a second air duct shell in communication with the first air duct shell; the first air duct shell is at least partially fixed on the bottom plate by the first connection member; the at least one connection member further comprises a second connection member, the second connection member having one end connected to the first connection member and another end detachably connected to the bottom plate; and the second air duct shell is at least partially fixed on the bottom plate by the second connection member.

10. The base assembly for the dryer according to claim 9, wherein the second connection member comprises: a second abutting segment located above the bottom plate and spaced apart from the bottom plate, the second abutting segment being engaged with a top wall of the second air duct shell; and a third vertical segment having one end connected to the bottom plate and another end connected to the second abutting segment, the third vertical segment being

engaged with a side wall of the second air duct shell.

11. The base assembly for the dryer according to claim 9, wherein: the one end of the second connection member is in a snapping-connection with the first connection member; and the other end of the second connection is detachably connected to the bottom plate.

12. The base assembly for the dryer according to claim 9, wherein the at least one connection member further comprises a third connection member spaced apart from the second connection member in a length direction of the second air duct shell, the third connection member having one end detachably connected to the bottom plate and another end connected to an external structure.

13. The base assembly for the dryer according to claim 12, wherein the third connection member comprises: a third abutting segment located above the bottom plate and spaced apart from the bottom plate, the third abutting segment being engaged with a top wall of the second air duct shell; and a fourth vertical segment having one end connected to the bottom plate and another end connected to the third abutting segment, the fourth vertical segment being engaged with a side wall of the second air duct shell.

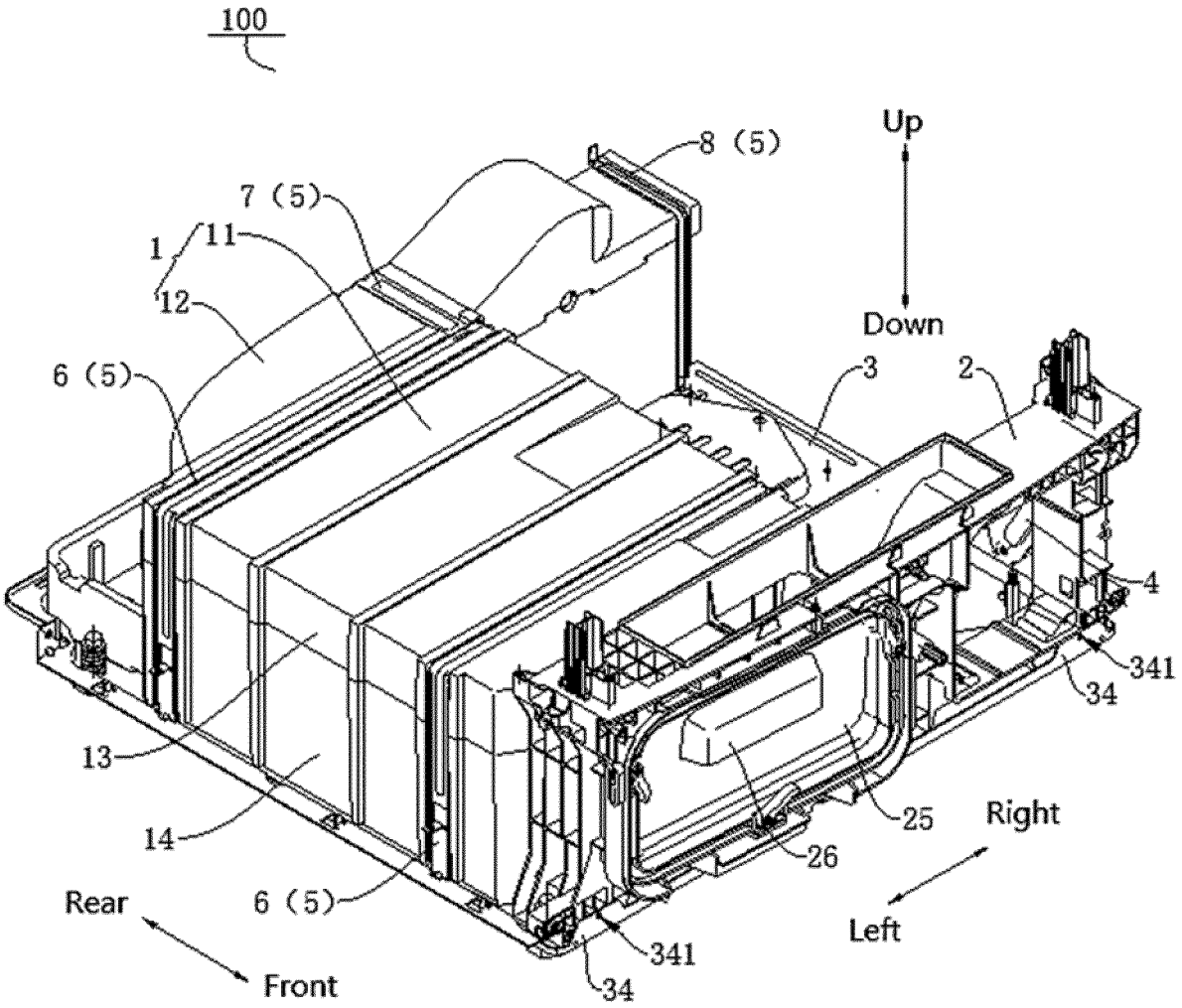
14. The base assembly for the dryer according to any one of claims 9 to 13, wherein a length direction of the first air duct shell is perpendicular to a length direction of the second air duct shell.

15. The base assembly for the dryer according to any one of claims 1 to 14, wherein the air duct shell is configured as a thermal insulation member formed separately from the bottom plate.

16. The base assembly for the dryer according to any one of claims 1 to 15, further comprising a connection base detachably disposed on the bottom plate and located at a side of the air duct shell, the connection base having a channel in communication with the cavity of the air duct shell.

17. The base assembly for the dryer according to claim 16, wherein: the bottom plate is a metal piece; and the connection base is configured as a plastic piece formed separately from the bottom plate.

18. A dryer, comprising the base assembly for the dryer according to any one of claims 1 to 17.


100
8 (5)
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7 (5)
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11
12
Down
6 (5)
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34
13
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25
Right
26
Rear
6 (5)
341
Left
Front
34

FIG. 1

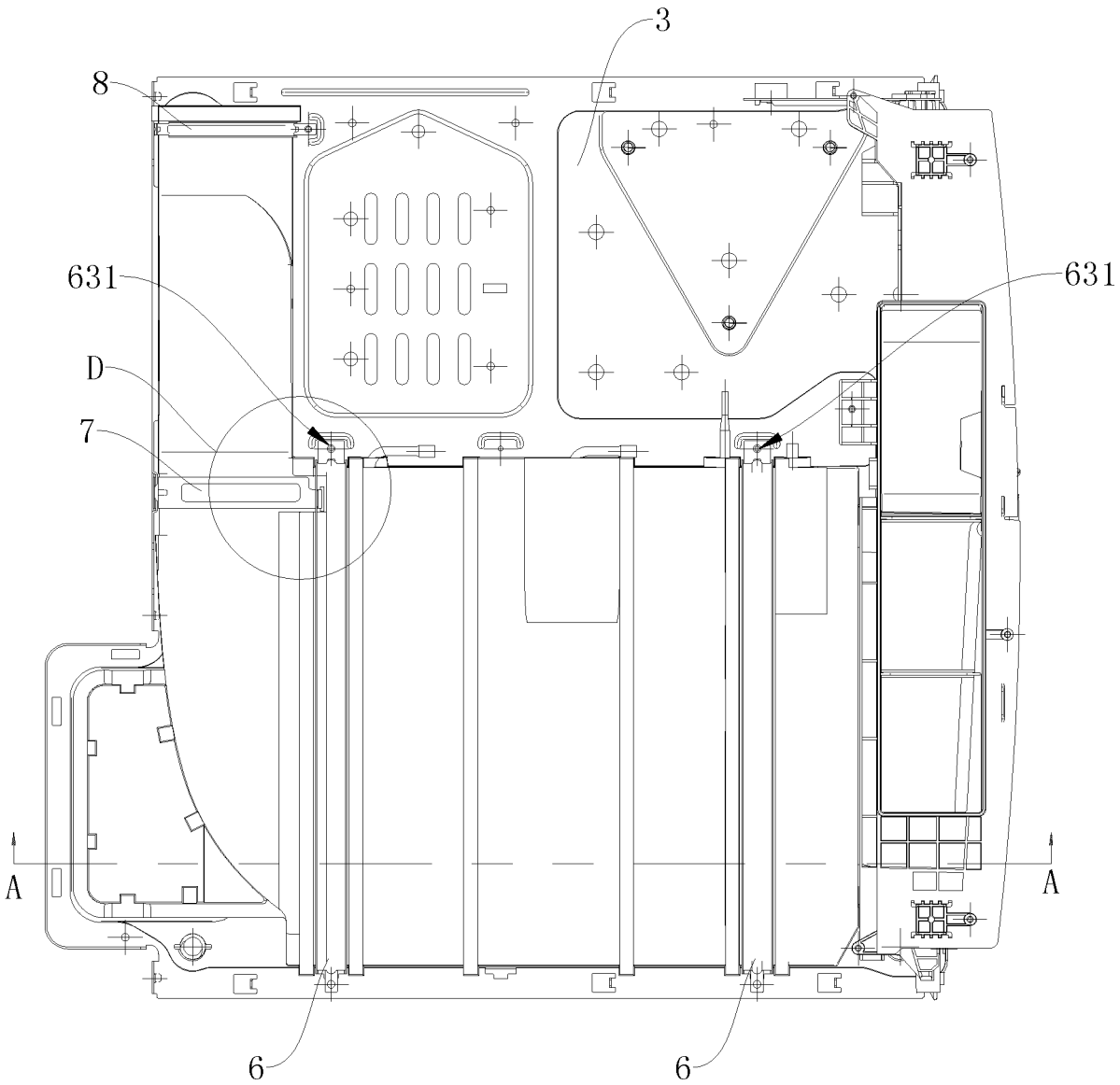

FIG. 2

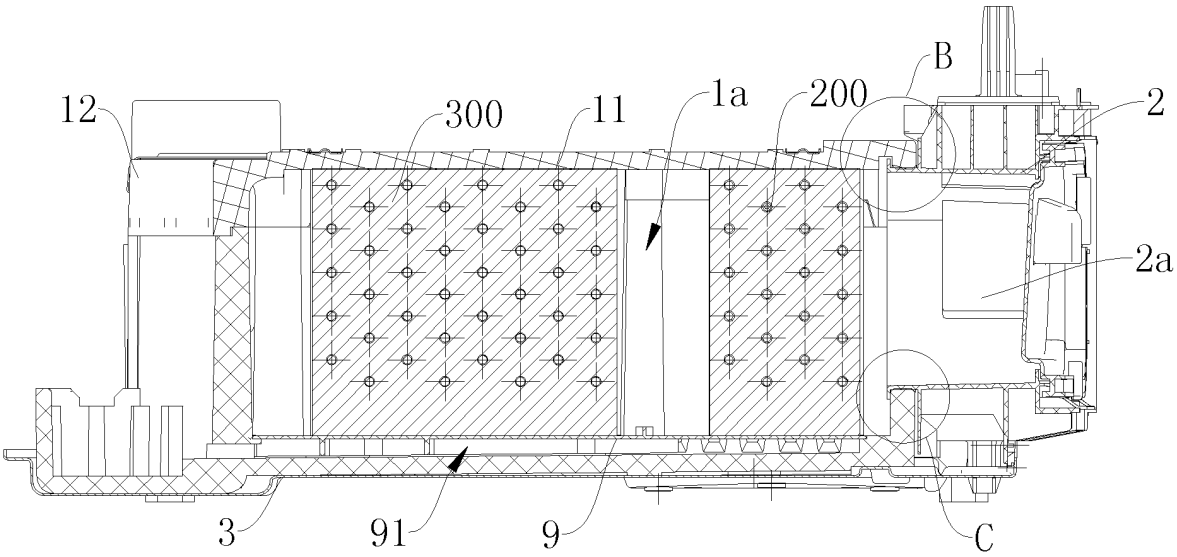

FIG. 3

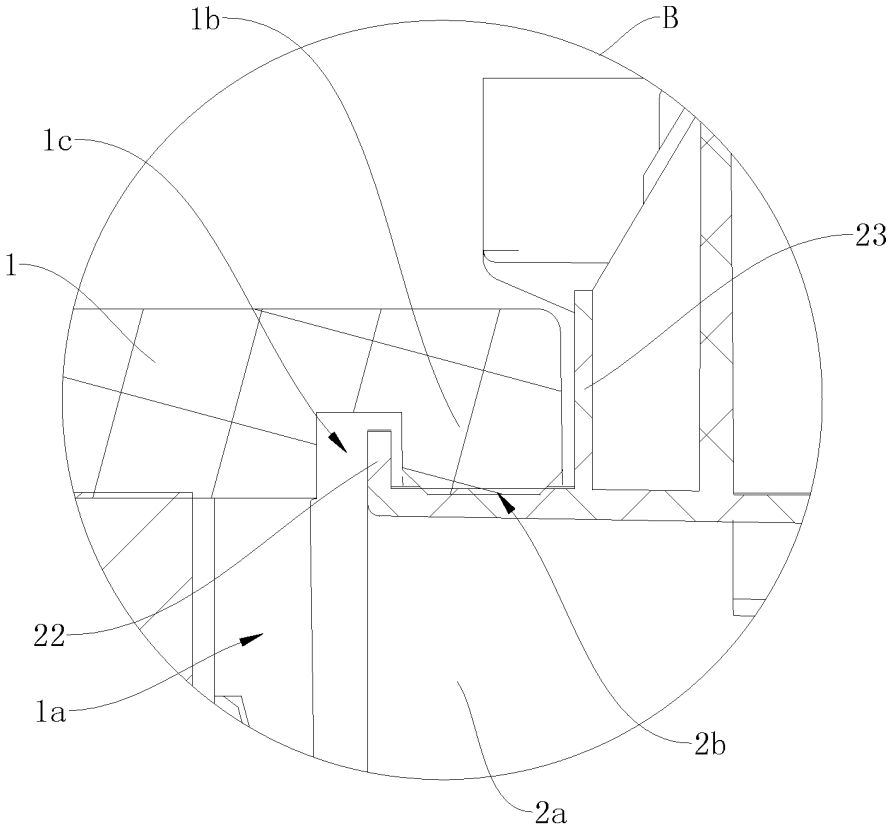

FIG. 4

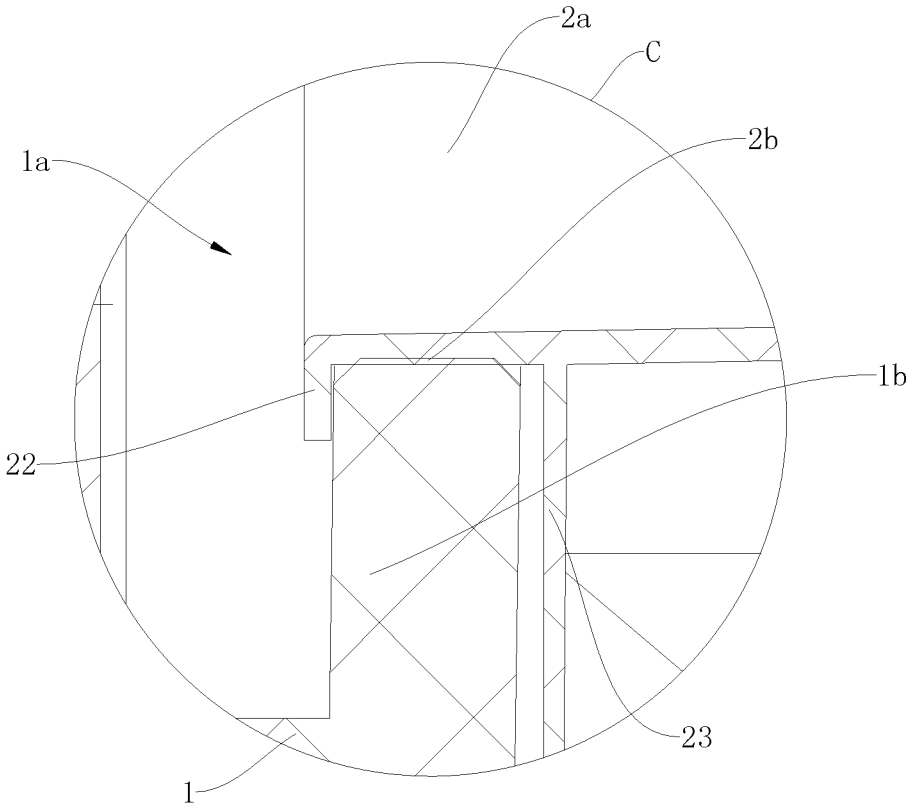

FIG. 5

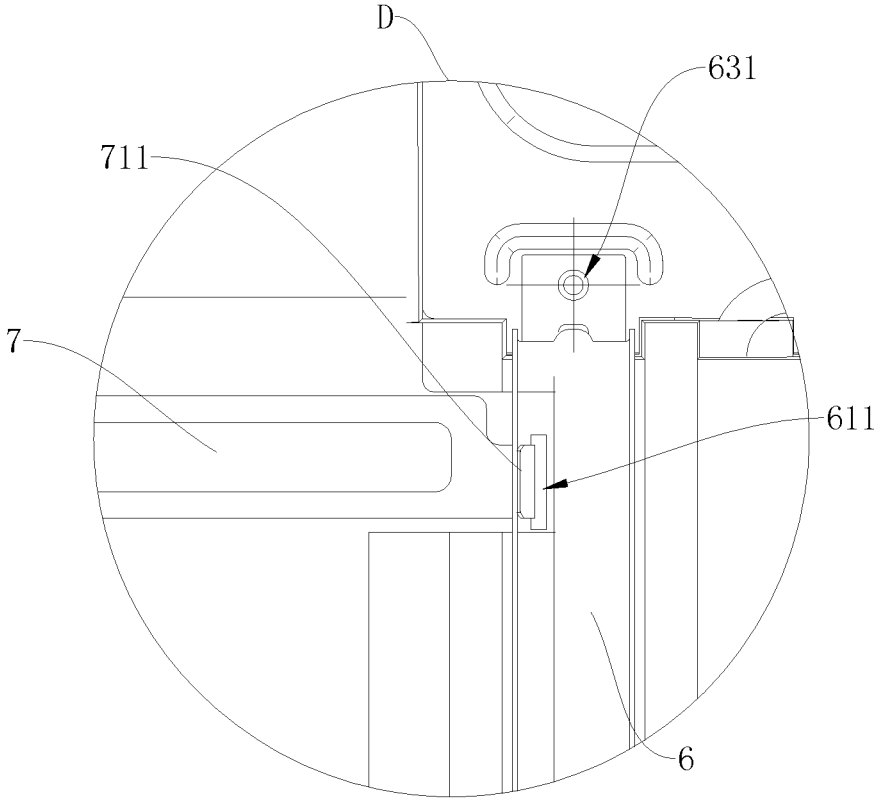

FIG. 6

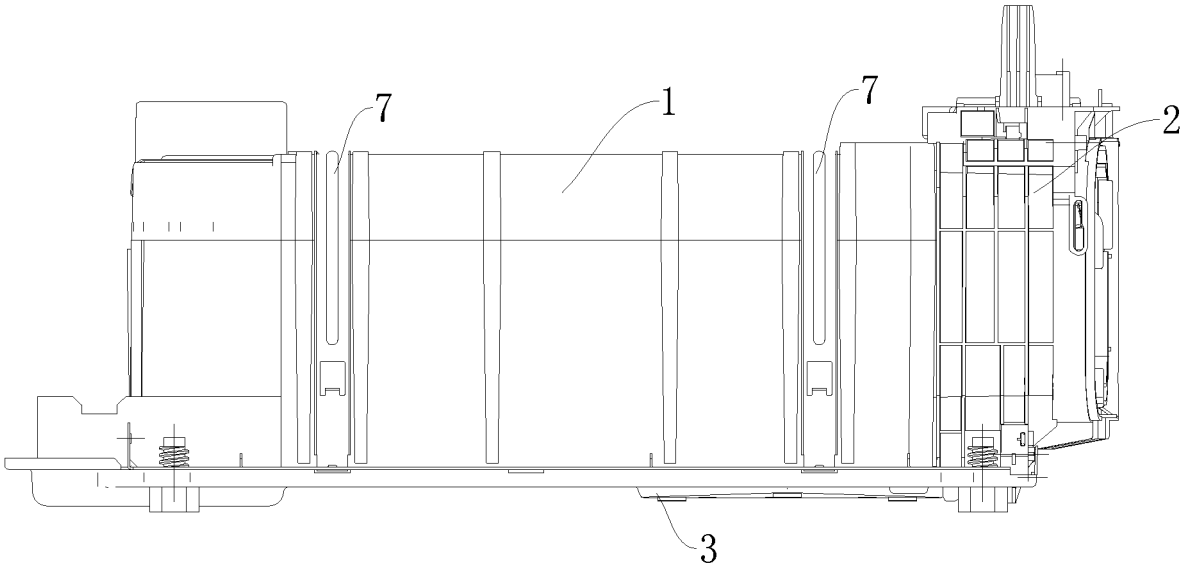

FIG. 7

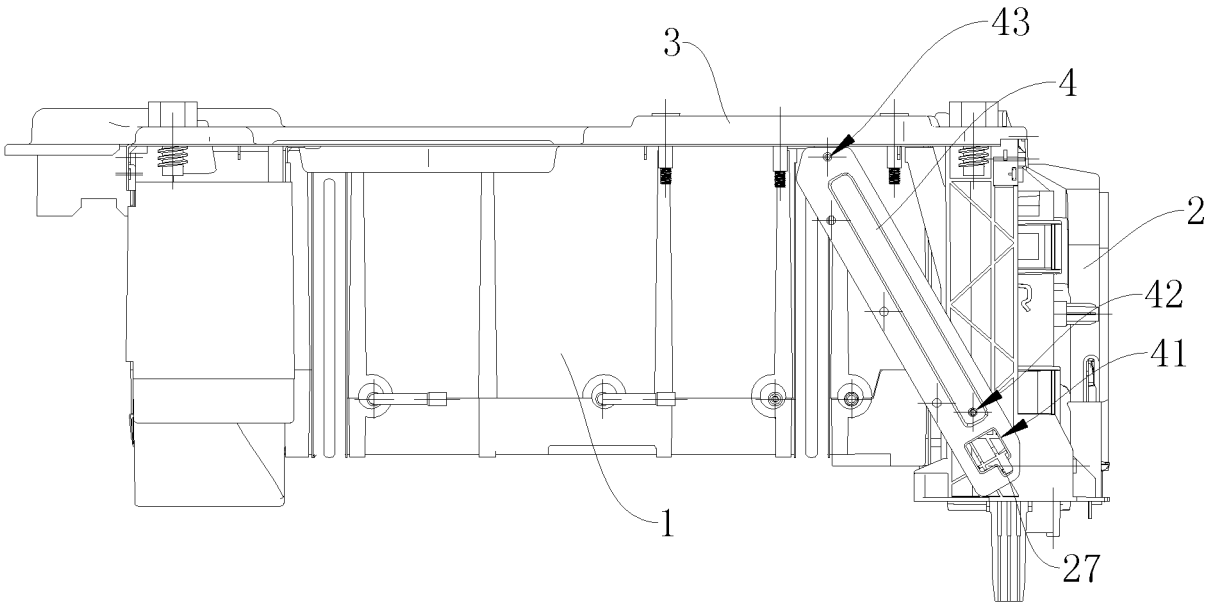

FIG. 8

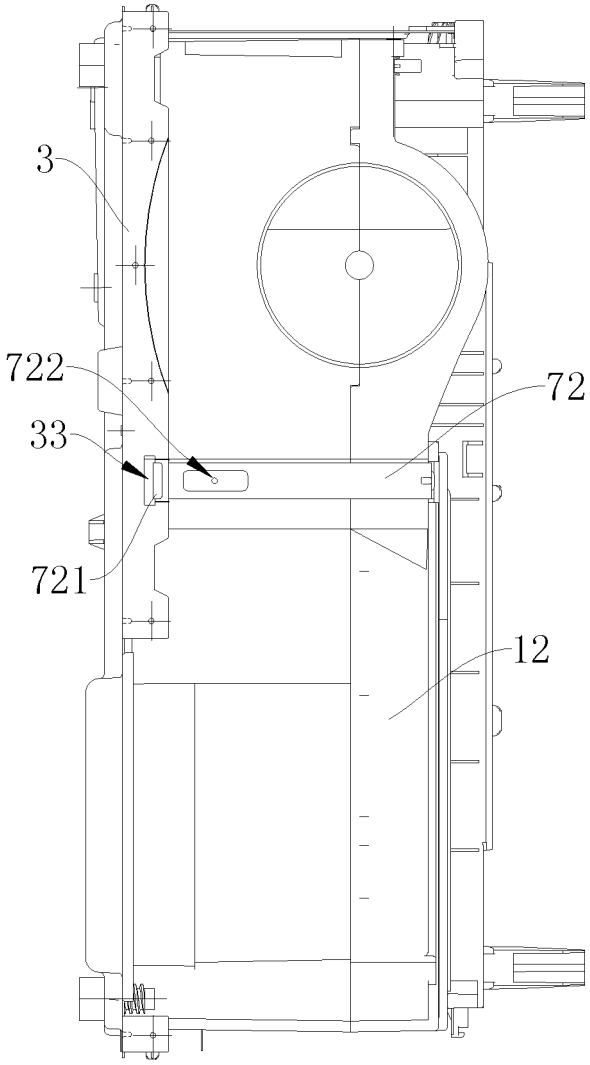

FIG. 9

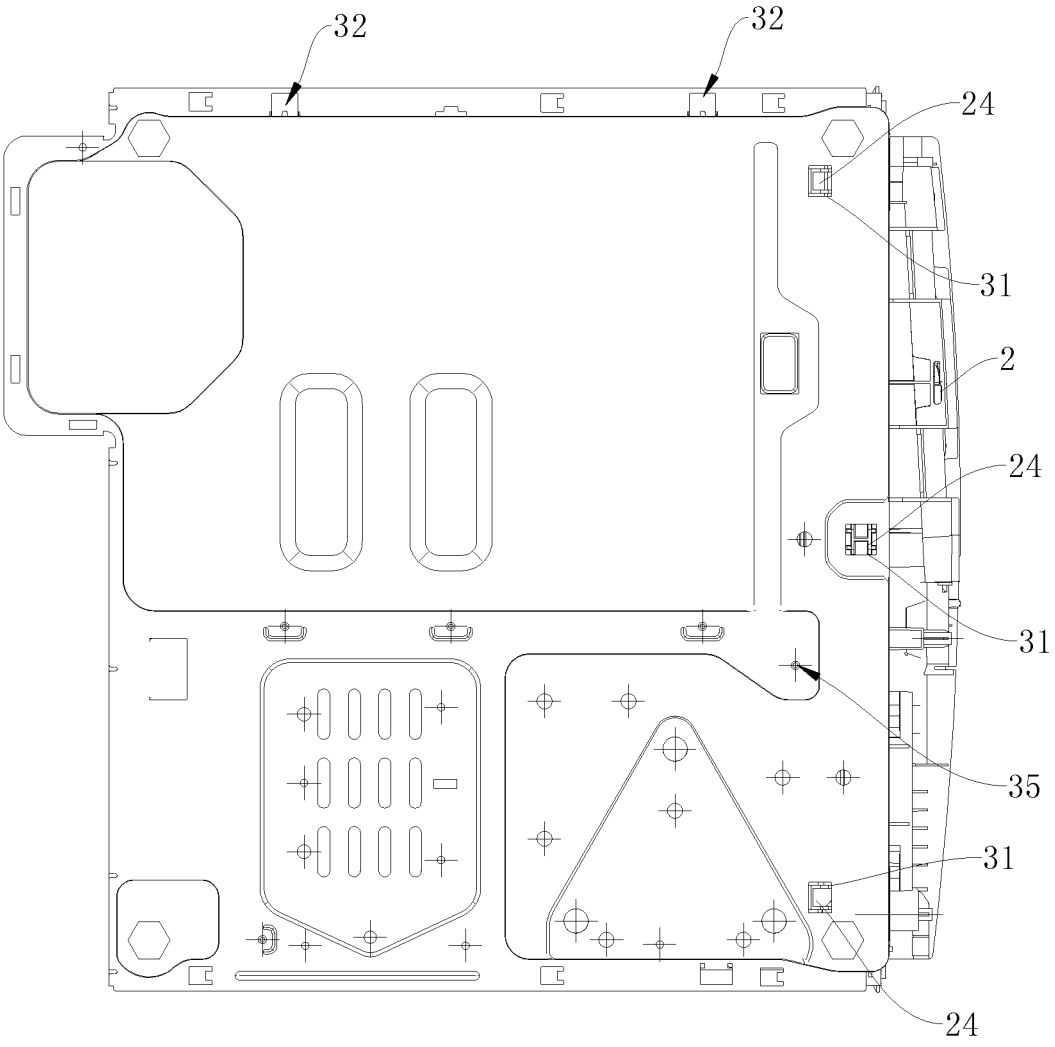

FIG. 10

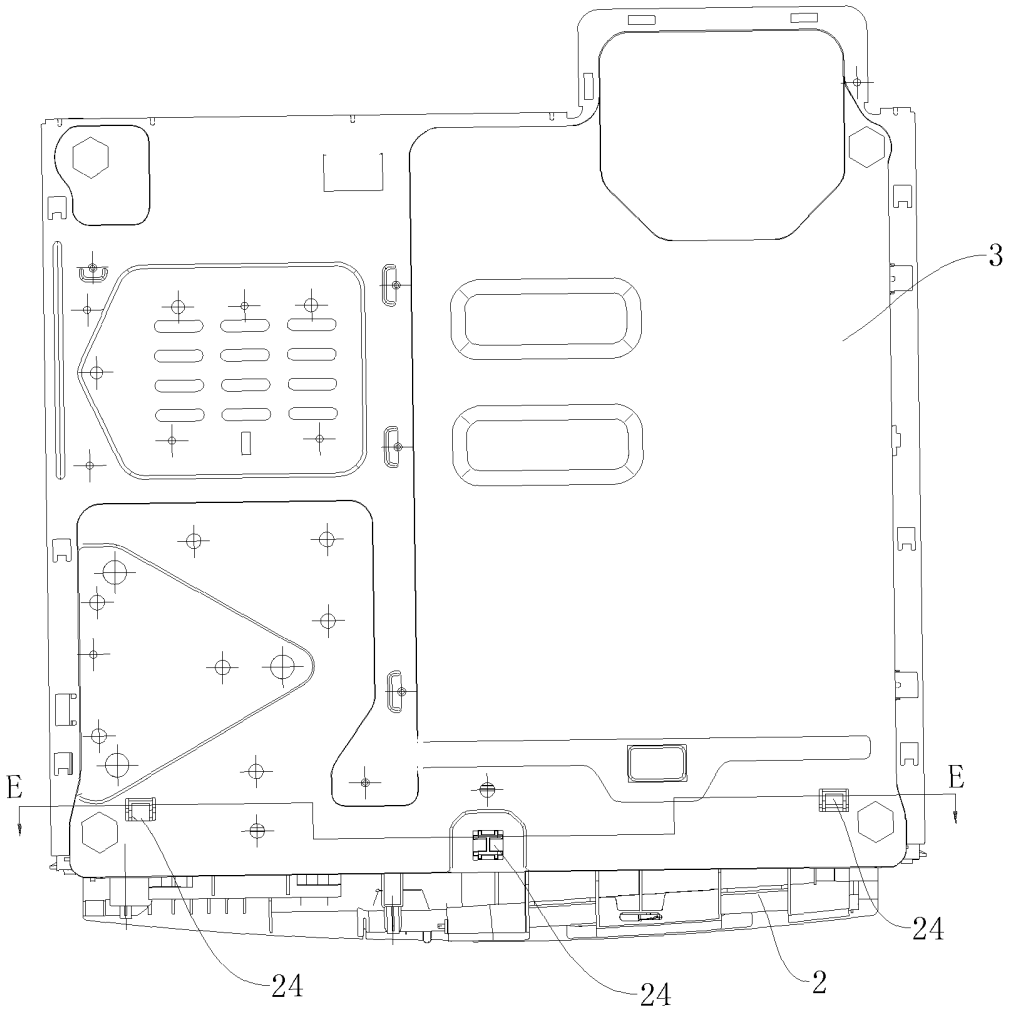

FIG. 11

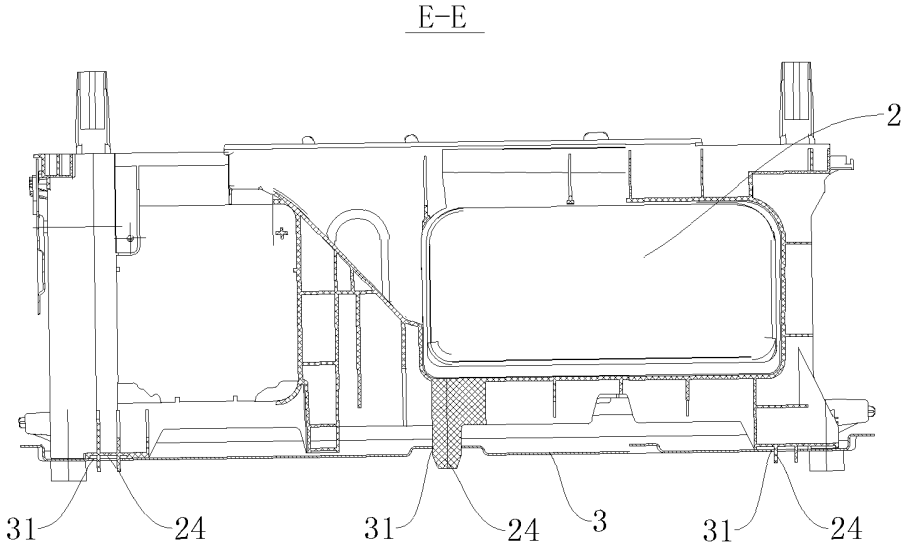

FIG. 12

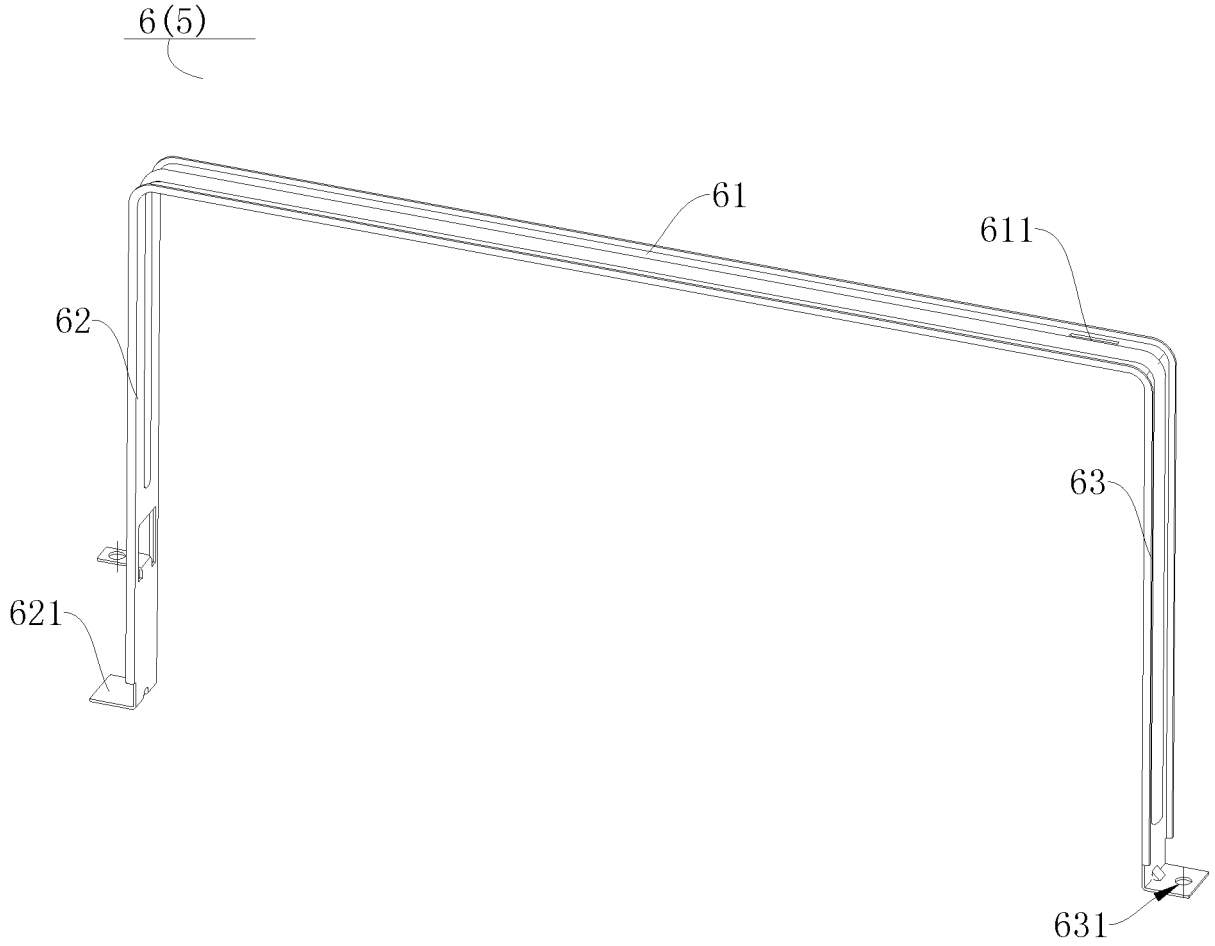

FIG. 13

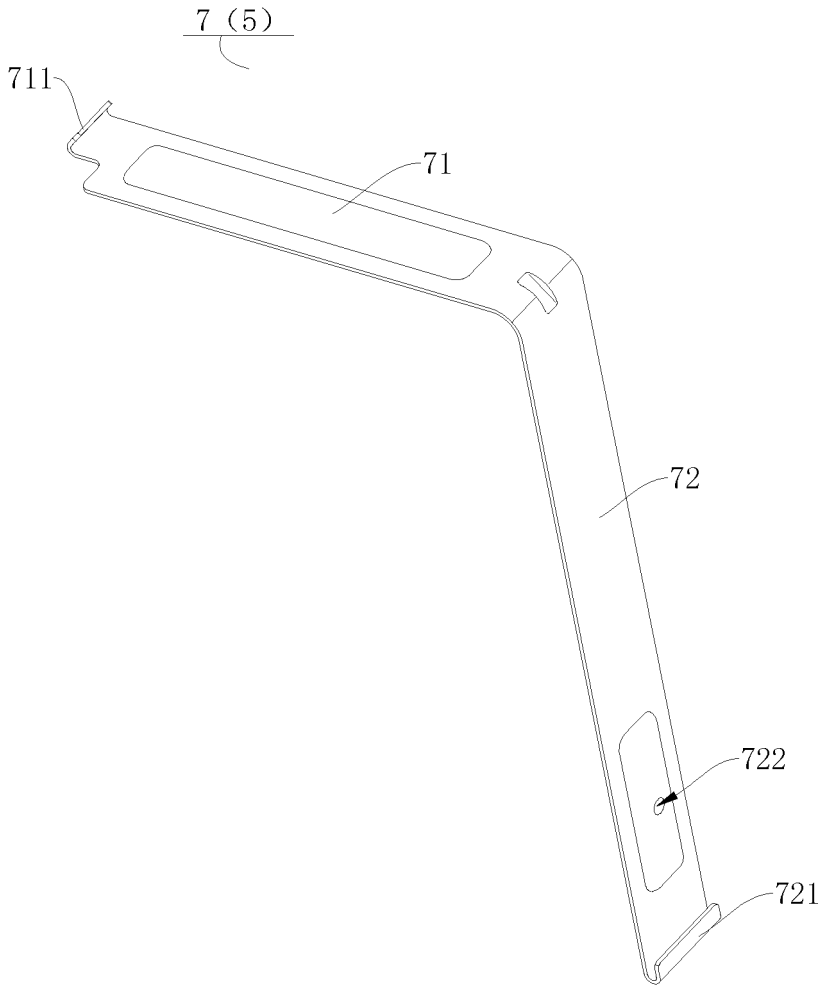

FIG. 14

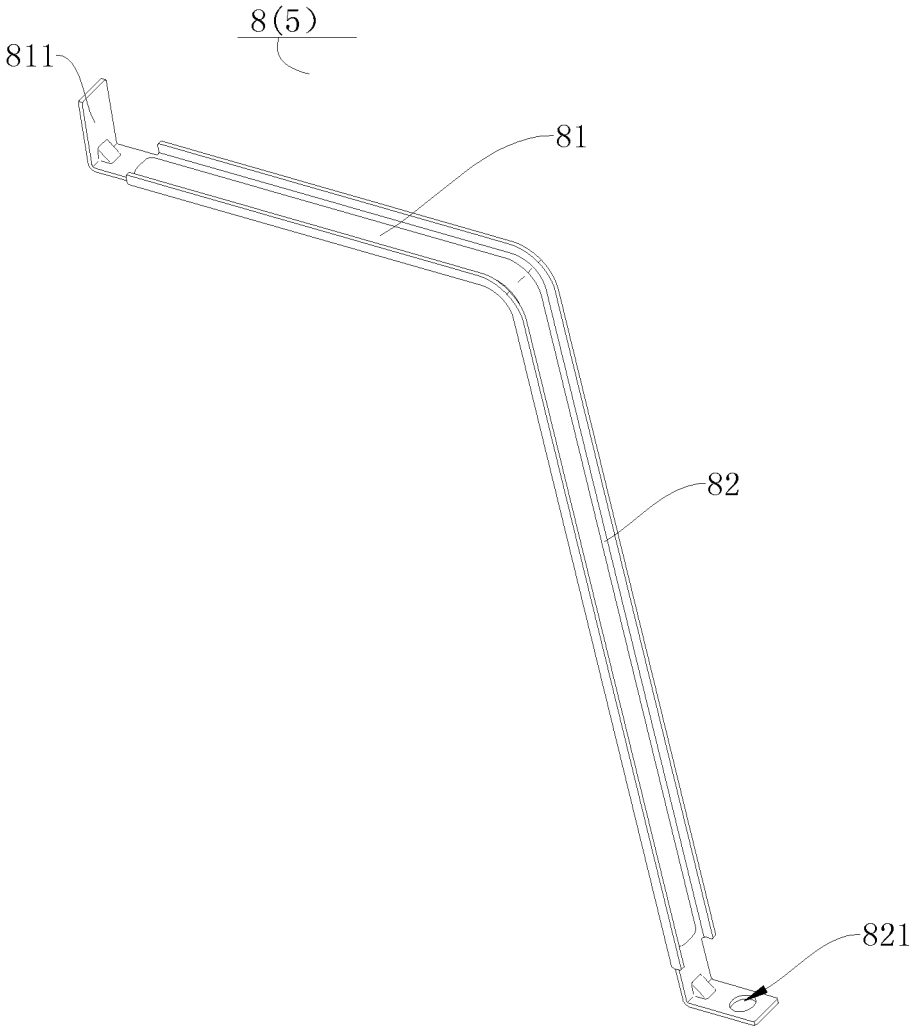

FIG. 15

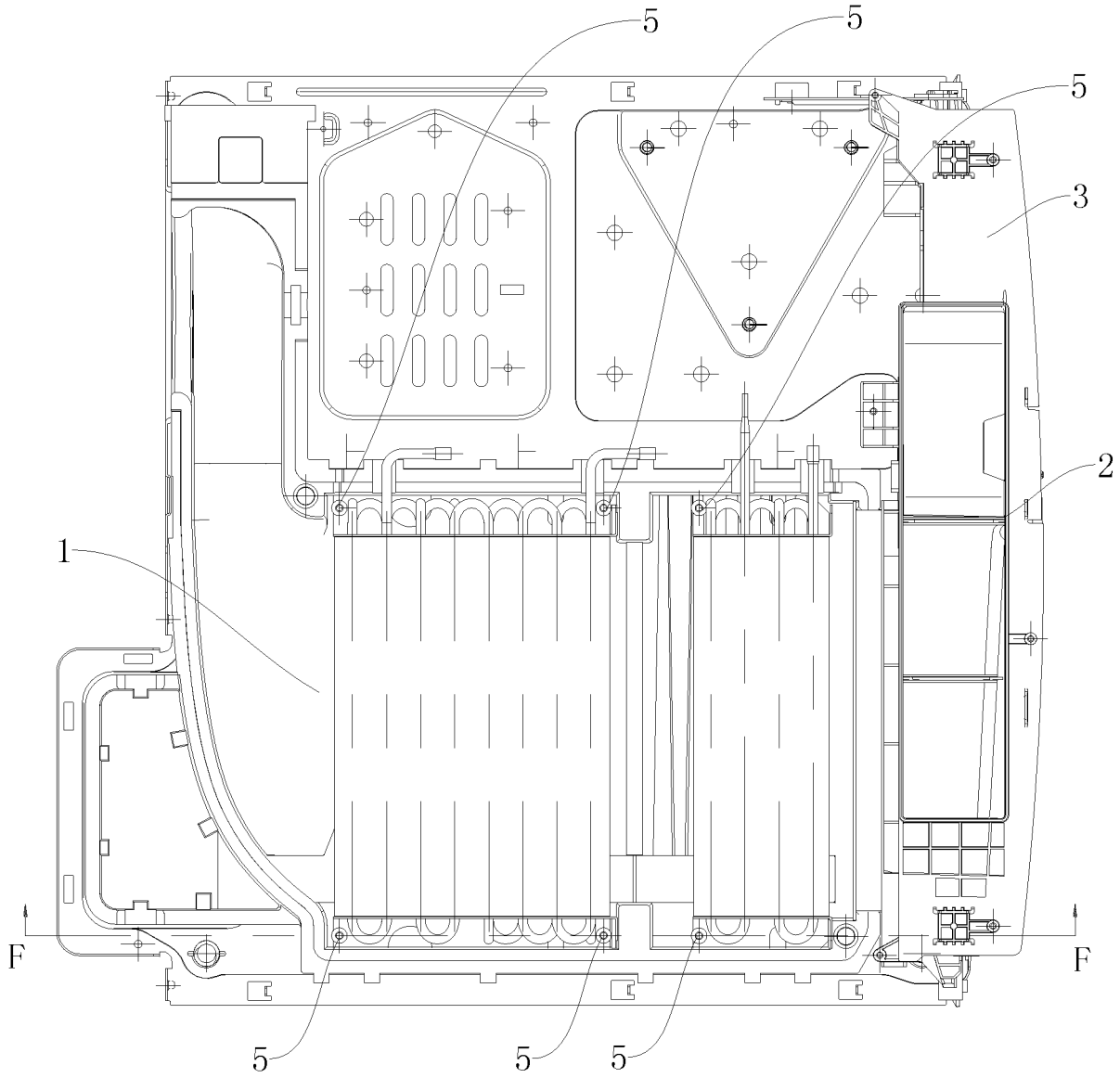

FIG. 16

F–F

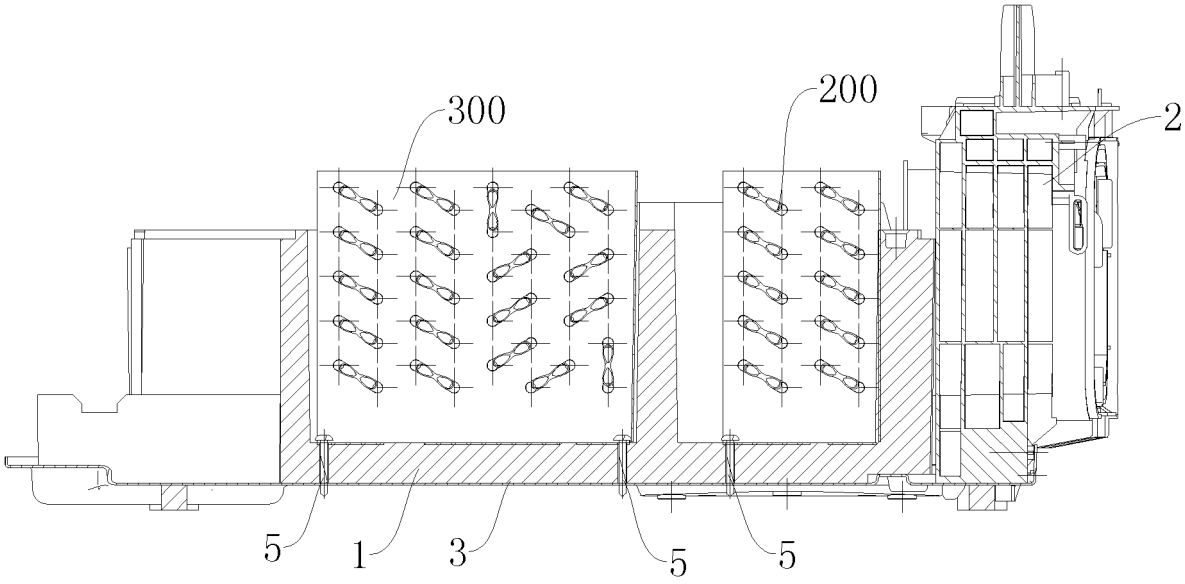

FIG. 17

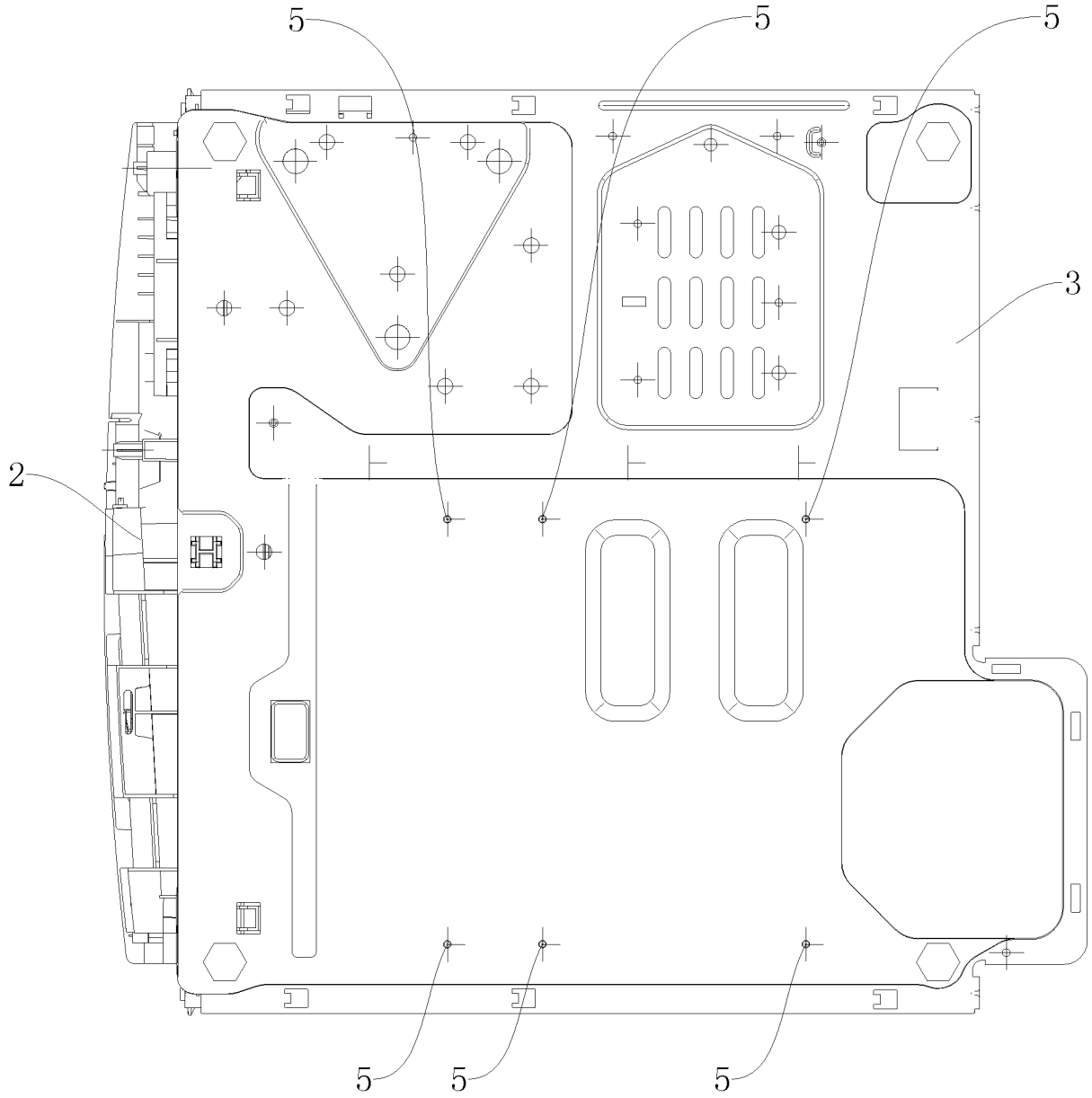

FIG. 18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2020/097458

A. CLASSIFICATION OF SUBJECT MATTER

D06F 58/20(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)

D06F

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)

DWPI; SIPOABS; CNABS; CNTXT; CNKI; WOTXT; USTXT; EPTXT: 小天鹅, 底座, 基座, 安装座, 固定座, 底板, 基板, 干衣, 烘干, 干燥, 洗干, 拆卸, 装卸, 分体, 风道, 风路, 冷凝, 热泵, 蒸发, 抱箍, 卡箍, seat, base, support, dry, drier, separate, assemble, detach, clip, fasten

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 101581025 A (KABUSHIKI KAISHA TOSHIBA et al.) 18 November 2009 (2009-11-18) description page 4 last paragraph to page 14 paragraph 1, figures 2-12	1-18
X	CN 110857521 A (WUXI LITTLE SWAN ELECTRICAL APPLIANCE CO., LTD.) 03 March 2020 (2020-03-03) description, paragraphs [0037]-[0054], and figures 1-4	1-18
A	CN 106367932 A (WUXI LITTLE SWAN COMPANY LIMITED) 01 February 2017 (2017-02-01) entire document	1-18
A	US 2014150218 A1 (ILLINOIS TOOL WORKS INC.) 05 June 2014 (2014-06-05) entire document	1-18
A	EP 3124684 A1 (ELECTROLUX APPLIANCES AKTIEBOLAG) 01 February 2017 (2017-02-01) entire document	1-18

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

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
07 December 2020	**11 January 2021**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088** **China**	Authorized officer
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/CN2020/097458

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
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