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(54) **INDOOR UNIT FOR AIR CONDITIONER**

INNENRAUMEINHEIT EINER KLIMAANLAGE

DISPOSITION INTERNE D'UN CONDITIONNEUR D'AIR

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Description

Technical Field

[0001] This invention relates to an indoor unit of an air conditioner, and more particularly relates to an arrangement of parts in a casing of the indoor unit.

Background Art

[0002] A conventional indoor unit of an air conditioner is generally constructed so that a casing including a suction opening for sucking room air therethrough and a supply opening for discharging conditioned air therethrough is formed internally with an air passage allowing air communication from the suction opening to the supply opening, and a fan for sucking the room air through the suction opening and discharging the sucked air toward the supply opening and a heat exchanger for producing conditioned air from the room air are arranged in the air passage.

[0003] The arrangement of the fan and the heat exchanger in the casing can be made in various ways. For example, Japanese Examined Patent Publication No. 63-15494 discloses a structure in which a centrifugal fan is disposed so as to direct its rotation shaft vertically in a casing of a sidewardly long, vertically flattened rectangular parallelepiped and to supply conditioned air in three directions through supply openings formed at the front and both sides of the casing. Further, in this example, three heat exchangers of substantially U-shape when viewed in a plan are disposed to be located on the front and both lateral sides of the fan in order to generate conditioned air by passing the room air through the fan and the heat exchanger in this order and then supply the conditioned air into a room through the supply openings.

[0004] In such an indoor unit of the type which supplies conditioned air in three directions from the front and both sides of the casing, however, a clearance between the back face of the casing and the fan is likely to be a dead space. This arises a problem of interfering with downsizing of the casing.

[0005] It can also be considered that a plurality of fans are arranged in side by side relation in the casing of the indoor unit. In this case, however, when each space between adjacent fans is narrowed, the flow of supply air is likely to disturb between the fans even if a partition is provided therebetween. Therefore, the space between the fans is required to have a certain distance. This arises a problem that a dead space is produced between the fans thereby interfering with the downsizing of the casing.

[0006] GB 2155616 A discloses an indoor unit for air-conditioners comprising a casing with a suction opening for sucking room air from below therethrough and a front supply opening for supplying conditioned air frontward of the casing therethrough. The casing is provided internally with a fan for sucking and discharging room air and a heat exchanger for producing conditioned air.

Disclosure of the invention

[0007] The present invention has been made in view of the foregoing problems. It is the object of the invention to provide an improved indoor unit of an airconditioner and to reduce dead space produced around a fan thereby downsizing the entire unit.

[0008] This object is achieved with an indoor unit of an air conditioner having the features of either of the alternatives of claim 1.

[0009] The subclaims are directed to preferable embodiments.

[0010] In the present invention, a portion around the fan that was conventionally a dead space is utilized as a space for placing parts so that the inner space of the casing can be used effectively.

[0011] In the arrangement of the inventive solution, the heat exchanger (30) may be of substantially U-shape when viewed in a plan so that the front and lateral heat exchange sections (31, 32) are formed integrally, or may be constructed so that the front and lateral heat exchange sections (31, 32) are separate from each other and disposed separately.

[0012] In the inventive solution, when the fan **(20R, 20L)** is activated, room air is sucked from below the casing **(10)** of the indoor unit **(1)** through the suction opening **(41)** into the casing **(10).** This room air is heated or cooled in the heat exchanger **(30)** to turn into conditioned air. The conditioned air is supplied to the room through the supply openings (43, 44) . At the time, the conditioned air is supplied frontward of the casing (10) through the front supply opening (43) and supplied sideward of the casing (10) through the respective lateral supply openings **(44)**. Accordingly, the conditioned air is supplied frontward and bilaterally, i.e., in three directions.

[0013] Some of room air that has been sucked into the casing (10) is heated or cooled in the front heat exchange section (31) and then supplied into the room through the front supply opening (43), and the other of the room air is heated or cooled in the lateral heat exchange sections **(32)** and then supplied into the room through the lateral supply openings **(44).**

[0014] In an inventive embodiment, in which a plurality of fans (20R, 20L) are disposed in side by side relation in the casing (10), conditioned air is supplied into the room in a manner to be more sufficiently divided into streams directed frontward and bilaterally of the casing (10) as compared with the case of a single fan.

[0015] According to first alternative of the present invention an air-conditioning part **(61)** is disposed in the clearance **(S1)** defined by the back face **(10b)** of the casing **(10),** the fan **(20R, 20L)** and the lateral heat exchange section **(32).** In this manner, the clearance **(S1)** can be effectively used.

[0016] According to the other inventive solutions, since the plurality of fans **(20R, 20L)** can sufficiently divide conditioned air into streams directed frontward and bilaterally of the casing **(10)**, the conditioned air can be supplied more evenly into the room. The air-conditioning part **(61)** is disposed in the clearance (**S2**) surrounded by the adjacent fans **(20R, 20L**) and the front heat exchange section **(31),** or in the clearance (**S3**) surrounded by the back face (**10b**) of the casing (**10**) and the adjacent fans **(20R, 20L)** , or in the clearance (**S4**) between the adjacent fans **(20R, 20L)**. The air-conditioning part may be a switch box (**61**) or a drain pump according to preferred embodiments. Accordingly, the casing **(10)** can be downsized by effectively using the clearances (**S2** through **S4)**.

Brief Description of Drawings

[0017]

Figure 1 is a perspective view of an indoor unit of an air conditioner according to an embodiment of the present invention.

Figure 2 is an exploded perspective view of the indoor unit of the air conditioner of Figure 1.

Figure 3 is a longitudinal sectional view of the indoor unit of the air conditioner of Figure 1.

Figure 4 is a plan view showing equipment arrangement in the indoor unit of the air conditioner of Figure 1.

Figure 5 is a front view showing equipment arrangement in the indoor unit of the air conditioner of Figure 1.

Figure 6 is a side view showing equipment arrangement in the indoor unit of the air conditioner of Figure 1.

Best Mode for Carrying Out the Invention

[0018] Hereinafter, embodiments of the present invention will be described with reference to the drawings.

[0019] As shown in Figure **1**, an indoor unit **(1)** of an air conditioner of this embodiment is installed at a corner formed by a ceiling (**71**) and a side wall **(72)** of a room. The indoor unit **(1)** is fixedly attached at the casing **(10)** thereof to the ceiling **(71)** or the side wall **(72)** with a fitting described later, though it is not shown in Figure **1**.

[0020] The casing **(10)** is composed of a body **(11)** formed in a sidewardly long, vertically flattened rectangular parallelepiped and an enlarged portion **(13)** enlarged downward from the bottom of the body (**10**). The body (**11**) of the casing **(10)** is positioned along the ceiling **(71)** of the room in its installed condition, and is formed to have a small height so that the amount of protrusion from the ceiling **(71)** is decreased.

[0021] As shown in Figures **1** and **3**, the enlarged portion **(13)** of the casing **(10)** is formed at the bottom of the body **(11)** to gradually protrude downward from front to back of the casing **(10)**. Namely, in the installed condition of the unit, the enlarged portion **(13)** is formed to gradually protrude downward as it approaches the side wall **(72)** of the room.

[0022] More specifically, the front or bottom face of the enlarged portion **(13)** is formed into an inclined surface **(14)** smoothly downwardly inclining from its front edge continuing to the body **(11)** to its back face. The casing **(10)** is formed as a whole so that its front-side portion is thinner than its back-side portion. The back face of the enlarged portion **(13)** is formed into a vertically raised surface (15) along the side wall (72) of the room, and continues to the back face of the body (11). Both side faces of the enlarged portion **(13)** continue to respective side portions of the bottom face of the body **(11).**

[0023] The front edge of the inclined surface **(14)** of the enlarged portion **(13)** is positioned slightly backward from the front end of the body (**11**), while both side edges of the enlarged portion (13) are positioned slightly inward from both side ends of the body **(11).** As a result, an extended end portion **(12)** extending frontward and bilaterally of the enlarged portion **(13)** is formed in the front and both side portions of the casing (**11**). The extended end portion (**12**), i. e., the front end portion and both the lateral end portions of the body **(11)** of the casing **(10),** is formed to have a slightly round shape by combining bowed surfaces as shown in Figures **3, 5** and **6**.

[0024] The casing **(10)** is formed with a suction opening (**41**) for sucking room air from below into the casing (**10**) therethrough and supply openings **(43, 44)** for supplying conditioned air into the room therethrough. The suction opening **(41)** is formed in the inclined surface **(14)** of the enlarged portion **(13)** of the casing (**10**). On the other hand, the supply openings **(43, 44)** are formed to extend from the front face to both the side faces of the body **(11)** of the casing (**10**). Out of the supply openings **(43, 44),** a section opening into the front face of the body **(11)** forms a front supply opening **(43)**, and sections opening into both the side faces of the body **(11)** form right and left lateral supply openings (**44**), respectively. Further, since the body **(11)** of the casing **(10)** is formed with the extended end portion **(12)** as described above, the suction opening **(41)** and each of the supply openings **(43, 44)** are positioned a given distance away from each other.

[0025] As shown in the exploded perspective view of Figure **2**, the casing **(10)** is composed of a top plate (**10a**), a back plate (**10b**), front plates (**10c, 10d)** and right and left side plates (**10e**). The top plate (**10a**), the back plate (**10b**) and the front plates (**10c, 10d)** are members to be integrated so as to be secured to each other. The side plates (**10e**) are formed detachably from the top plate (**10a**), the back plate (**10b**) and the front plates (**10c, 10d).**

[0026] The front supply opening **(43)** is formed between both the front plates (**10c, 10d)**, and is provided with a horizontal flap (**51**). The horizontal flap **(51)** is held

by stays (**51a**) so that the angle of air supply of the front supply opening **(43)** can be adjusted. The stays (**51a**) are provided with a swing unit (**51b**) for changing the angle of the horizontal flap (**51**). In addition, in the side plates (**10e**), the horizontal flap **(51)** and a swing mechanism (not shown) for adjusting the angle of the horizontal flap **(51)** are assembled for manual adjustment of the direction of supply of conditioned air at the lateral supply openings **(44)**.

[0027] Inside the casing **(10)** , an air passage **(45)** is formed for providing air communication from the suction opening (41) to each of the supply openings **(43, 44)**. In the air passage **(45)** , two fans **(20R, 20L)** for sucking room air frombelow anddischarging it sideward and a heat exchanger **(30)** for producing conditioned air from the room air are disposed. Below the centrifugal fans **(20R, 20L)**, an air filter **(65)** is disposed proximate to the suction opening **(41).**

[0028] Each of the fans **(20R, 20L)** is formed of a so-called turbo fan which is a kind of centrifugal fan. The fan (**20R, 20L)** is connected to a drive shaft **(26)** of a fan motor **(25)** extending vertically. And, the fan **(20R, 20L)** is constructed so as to be rotatively driven by the fan motor **(25)** to suck air from below and discharge it sideward.

[0029] Furthermore, each of the fans **(20R, 20L)** is fixed to the casing (**10**) by securing the fan motor **(25)** to the bottom face of the top plate **(10a)** of the body **(11)** of the casing **(10).** Below each of the fans **(20R, 20L) ,** a bell mouth **(27)** is disposed for guiding room air flowing into the air passage **(45)** through the suction opening **(41)** to the corresponding fan **(20R, 20L).**

[0030] Moreover, the fans **(20R, 20L)** are arranged in side by side relation and spaced apart from each other widthwise of the body **(11)** in the body **(11)** of the casing **(10).** The casing **(10)** is provided with a partition **(64)** between both the centrifugal fans **(20R, 20L).** In other words, the casing **(10)** includes the right-hand fan **(20R)** and the left-hand fan **(20L)** respectively located on the right and left when viewed from the front of the casing **(10)** with the partition **(64)** sandwiched between both the fans **(20R, 20L)**. Both the fans **(20R, 20L)** are constructed to rotate clockwise when viewed from above the casing **(10)**.

[0031] The heat exchanger **(30)** is provided inside of the body **(11)** of the casing **(10).** As shown in Figure **4,** the heat exchanger **(30)** is formed of a front heat exchange section **(31)** located in a front-side space of the body **(11)** of the casing **(10)** and lateral heat exchange sections **(32)** located in both lateral-side spaces of the body **(11)** of the casing **(10)** to have a substantially U-shape as a whole when viewed in a plan. The heat exchanger **(30)** is formed into a so-called cross fin heat exchanger composed of a large number of plate-like fins and a heat transfer pipe provided to pass through the fins, though they are not shown in the figure. The fins are arranged in parallel with each other except for corners between the front heat exchange section **(31)** and the respective lateral heat exchange sections (**32**). In the corners, the fins gradually change their angles in accordance with the bowed shape of the heat transfer pipe.

[0032] In this embodiment, the heat exchanger (**30**) is formed in substantially U-shape when viewed in a plan by integrally forming the front heat exchange section (**31**) and both the lateral heat exchange sections **(32)**. However, the front heat exchange section **(31)** and both the lateral heat exchange sections **(32)** may be separate from each other and disposed separately. The fans **(20R, 20L)** are juxtaposed in a space surrounded by the back face (**10b**) of the casing **(10)** and the front and both lateral heat exchange sections **(31, 32)** of the heat exchanger **(30).**

[0033] On the top side of the heat exchanger (**30**), a heat insulator **(35)** is disposed which is formed in substantially U-shape when viewed in a plan like the heat exchanger **(30).** On the bottom side of the heat exchanger **(30),** a drain pan (**36**) of heat insulating material is disposed which is formed in substantially U-shape when viewed in a plan like the heat exchanger **(30)**. For example, blowing styrol is usable as the material for the heat insulator **(35)** and the drain pan **(36)**.

[0034] Figures **4** through **6** are layout diagrams showing the positional relationship between various equipment in the casing **(10),** and schematically show only the outlines of the casing (**10**) and the equipment. The inside of the enlarged portion **(13)** is designed as a space for accommodating options **(60),** for example, so as to accommodate either one of a high-performance air filter and a deodorizer. As the high-performance air filter, an HEPA (high efficiency particulate air) filter, an electrostatic air filter or the like can be used. As the deodorizer, an optical deodorizing unit for deodorizing odorant using photocatalyst may be used.

[0035] In a clearance (**S4**) between the right- and left-hand centrifugal fans **(20R, 20L),** a switch box **(61)** containing switch contacts of internal equipment of the indoor unit **(1)** is disposed. In place of the switch box (**61**), a drain pump may be disposed. In addition, in a clearance between the back plate (**10b**) as a member forming the back face of the casing **(19)** and both the centrifugal fans **(20R, 20L),** a refrigerant pipe **(62a)** and a drain pipe **(62b)** are provided along the back plate (**10b**). The reference numeral (**63**) indicates a pipe cover in which both the pipes **(62a, 62b)** are run.

[0036] The casing **(10)** of the indoor unit **(1)** is constructed so as to be fixable to both of the ceiling **(71)** and the wall **(72)** through a fitting (80) shown in Figure 2. The fitting (80) is composed of a plate **(81)** to be brought into contact with the back plate (**10b**) of the casing **(10)** and two arms **(82)** secured to the plate (**81**). Though not shown in detail in Figure **2**, the arms **(82)** and the top plate **(10a)** of the indoor unit **(1)** are formed with respective through holes corresponding to hanging bolts anchored to the ceiling, and the plate **(81)** of the fitting **(80)** is formed with through holes used for secur-

ing it to the wall **(72)** with bolts. Furthermore, the fitting **(80)** is provided with a temporarily retaining mechanism engaged with the casing **(10)** of the indoor unit **(1)**.

[0037] When the indoor unit **(1)** is fixed to the wall **(72)**, the plate **(81)** of the fitting **(80)** is first secured to the wall **(72)**, the casing **(10)** is then temporarily retained to the fitting **(80)**, and the indoor unit **(1)** is finally secured to the arms (82) through the through holes for the hanging bolts. On the other hand, when the indoor unit **(1)** is fixed to the ceiling, the fitting **(80)** is first secured to the hanging bolts, the casing **(10)** is then temporarily retained to the fitting (**80**), and the casing **(10)** is finally secured to the hanging bolts.

[0038] Next, air conditioning operation of the indoor unit **(1)** will be described. The fans **(20R, 20L)** are driven into rotation by the fan motors **(25)** to suck room air through the suction . opening **(41)** into the casing **(10)**. The room air sucked into the casing **(10)** flows through the air passage (**45**). The room air flows into the bell mouth **(27)** and the fans **(20R, 20L)**, flows out sideward of the fans **(20R, 20L)**, and flows toward the supply openings **(43, 44).**

[0039] The room air passes through the heat exchanger **(30)** partway toward the supply openings **(43, 44).** A refrigerant of a refrigerating circuit is circulated through the inside of the heat exchanger **(30)**, though it is not shown. During cooling operation, the refrigerant is heat-exchanged with room air in the heat exchanger **(30)** and thereby evaporated. The evaporated refrigerant cools the room air to produce conditioned air of low temperature. During heating operation, the refrigerant is heat-exchanged with room air in the heat exchanger **(30)** and thereby condensed. The condensed refrigerant heats the room air to produce conditioned air of high temperature. Thus, the conditioned air produced in the heat exchanger **(30)** is supplied to the room in three directions through the supply openings **(43, 44).**

[0040] Since the suction opening **(41)** and each supply opening **(43, 44)** are separated a given distance away from each other, the phenomenon that conditioned air supplied through each supply opening **(43, 44)** is sucked again through the suction opening (**41**), namely, a so-called air short-circuit, does never occur.

[0041] According to this embodiment, the two centrifugal fans **(20R, 20L)** are disposed in the casing (**10**), and a switch box (**61**) and a drain pump are disposed in the space (**S4**) between both the fans. Therefore, the space between the centrifugal fans **(20R, 20L)** are prevented from being in vain and the space inside the casing **(10)** can be effectively used. Accordingly, the casing (**10**) can be downsized.

[0042] Further, since the refrigerant pipe **(62a)** and the drain pipe (**62b**) are passed in a space between the back plate (**10b**) of the casing **(10)** and both the centrifugal fans **(20R, 20L),** the space on the back face side of the centrifugal fans **(20R, 20L)** can be effectively used, thereby downsizing the casing (**10**). This effect is also attained in the case of a single fan being provided the casing (**10**). Furthermore, if the refrigerant pipe **(62a)** and the drain pipe **(62b)** are disposed in the above position, external pipes can be connected thereto across the side face of the casing (**10**). This increases flexibility in installing the indoor unit **(1).**

[0043] The foregoing embodiment shown in Figure 4 is an example in which the switch box **(61)** as an air-conditioning part is disposed in the clearance (**S4**) between the fans **(20R, 20L).** However, an air-conditioning part such as a switch box **(61)** may be disposed in a clearance **(S1)** defined by the back face **(10b)** of the casing **(10),** the fans **(20R, 20L)** and the lateral heat exchange sections **(32)** (this case includes a single fan **(20R, 20L)** provided in the casing), or disposed in a clearance (**S2**) surrounded by the fans (**20R, 20L)** and the front heat exchange section (**31**), or disposed in a clearance (**S3**) surrounded by the back face (**10b**) of the casing **(10)** and the fans (**20R, 20L)**

[0044] The present invention may have the following arrangement with respect to the foregoing embodiment. In the foregoing embodiment, the number of fans (**20R, 20L)** provided in the casing is two. However, the number of fans provided therein may be one or more than two in accordance with air conditioning capacitance of the indoor unit (**1**). In the foregoing embodiment, the fan **(20R, 20L)** is formed of a turbo fan. However, the fan may be formed of a radial fan or any fan other than the centrifugal fan.

[0045] The casing (**10**) is not limited to that formed of the body **(11)** and the enlarged portion (**13**). For example, the casing may be formed as a whole in a rectangular parallelepiped. Further, the heat exchanger **(30)** may not necessarily be provided with the front heat exchange section **(31)** and the lateral heat exchanger sections **(32)**, and may be disposed below the fans **(20R, 20L)**.

[0046] Furthermore, air-conditioning parts arrangeable between the fans **(20R, 20L)** and the back face of the casing **(10)** or between the two fans **(20R, 20L)** are not limited to a switch box **(61),** a drain pump, a refrigerant pipe (**62a**) or a drain pipe (**62b**), and any optional air-conditioning part can be selectively disposed as needed.

[0047] Moreover, when the fan (**20R, 20L)** is disposed in the casing **(10)** of the indoor unit **(1)** provided with the front supply opening **(43)** and the lateral supply openings **(44)** like the foregoing embodiment, the corner of the casing **(10)** is likely to be a dead space regardless of the number of fans **(20R, 20L)** in use. Therefore, if an air-conditioning part is disposed in the corner, the space inside the casing can be further effectively used, thereby further downsizing the casing **(10).**

Claims

1. Indoor unit of an air conditioner comprising

- a casing **(10)** with a suction opening (**41**) for sucking room air from below therethrough, a front supply opening **(43)** for supplying conditioned air frontward of the casing **(10)** therethrough, and lateral supply openings **(44)** for supplying conditioned air bilaterally of the casing **(10)** therethrough,

- the casing **(10)** being provided internally with at least one fan (**20R, 20L)** for sucking and discharging room air and a heat exchanger **(30)** for producing conditioned air,

- the heat exchanger **(30)** comprising a front heat exchange section **(31)** disposed along the front supply opening **(43)** and lateral heat exchange sections **(32)** disposed along the respective lateral supply openings **(44),**

- the at least one fan **(20R, 20L)** being disposed in a space defined by the back face **(10b)** of the casing **(10)** and the front and lateral heat exchange sections **(31, 32)** of the heat exchanger **(30)** with an air-conditioning part **(61)** being disposed in a clearance **(S1)** defined by the back face **(10b)** of the casing **(10),** one fan **(20R, 20L)** and one of the lateral heat exchange section **(32),** or

- a plurality of the fans **(20R, 20L)** being disposed in side by side relation in a space defined by the back face **(10b)** of the casing **(10)** and the front and lateral heat exchange sections **(31, 32)** of the heat exchanger **(30)** with an air-conditioning part (**61**) being disposed in a clearance **(S2)** surrounded by the front heat exchange section **(31)** and the adjacent fans **(20R, 20L),** in a clearance **(S3)** surrounded by the back face **(10b)** of the casing **(10)** and the adjacent fans **(20R, 20L),** or in a clearance (**S4**) between the adjacent fans (**20R, 20L).**

2. The indoor unit of the air conditioner according to claim 1, wherein the air-conditioning part is a switch box (61).

3. The indoor unit of the air conditioner according to claim 1, wherein the air-conditioning part is a drain pump.

Patentansprüche

1. Inneneinheit einer Klimaanlage, die folgendes umfasst:

- ein Gehäuse (10) mit einer Saugöffnung (41), um Raumluft von unten hindurchzusaugen, einer vorderen Zuführöffnung (43), um vor dem Gehäuse (10) befindliche klimatisierte Luft hindurchzuleiten, und seitlichen Zuführöffnungen (44), um zu beiden Seiten des Gehäuses (10) befindliche klimatisierte Luft hindurchzuleiten,

- wobei das Gehäuse (10) innen mit mindestens einem Gebläse (20R, 20L) zum Ansaugen und Ausleiten von Raumluft und mit einem Wärmetauscher (30) zum Erzeugen von klimatisierter Luft versehen ist,

- wobei der Wärmetauscher (30) einen längs der vorderen Zuführöffnung (43) angeordneten vorderen Wärmeaustauschabschnitt (31) und längs der jeweiligen seitlichen Zuführöffnungen (44) angeordnete seitliche Wärmeaustauschabschnitte (32) umfasst,

- wobei das mindestens eine Gebläse (20R, 20L) in einem Raum angeordnet ist, der durch die Rückseite (10b) des Gehäuses (10) und die vorderen und seitlichen Wärmeaustauschabschnitte (31, 32) des Wärmetauschers (30) begrenzt wird, wobei ein Klimatisierungsteil (61) in einem durch die Rückseite (10b) des Gehäuses (10), ein Gebläse (20R, 20L) und einen der seitlichen Wärmeaustauschabschnitte (32) begrenzten Zwischenraum (S1) angeordnet ist, oder

- wobei mehrere Gebläse (20R, 20L) nebeneinander in einem durch die Rückseite (10b) des Gehäuses (10) und die vorderen und seitlichen Wärmeaustauschabschnitte (31, 32) des Wärmetauschers begrenzten Raum angeordnet sind, wobei ein Klimatisierungsteil (61) in einem von dem vorderen Wärmeaustauschabschnitt (31) und den angrenzenden Gebläsen (20R, 20L) umgebenen Zwischenraum (S2), in einem von der Rückseite (10b) des Gehäuses (10) und den angrenzenden Gebläsen (20R, 20L) umgebenen Zwischenraum (S3) oder in einem Zwischenraum (S4) zwischen den angrenzenden Gebläsen (20R, 20L) angeordnet ist.

2. Inneneinheit der Klimaanlage nach Anspruch 1, wobei das Klimatisierungsteil ein Schaltkasten (61) ist.

3. Inneneinheit der Klimaanlage nach Anspruch 1, wobei das Klimatisierungsteil eine Saugpumpe ist.

Revendications

1. Disposition interne d'un conditionneur d'air, comprenant:

- un carter (10) avec une ouverture d'aspiration (41) pour aspirer de l'air de pièce par le dessous de celle-ci et au travers de celle-ci, une ouverture d'alimentation frontale (43) pour délivrer l'air conditionné par l'avant du carter (10) au travers de celle-ci, et des ouvertures d'alimentation latérales (44) pour délivrer l'air conditionné par les deux côtés du carter (10) au travers de celle-ci;
- le carter (10) étant pourvu, dans sa partie intérieure d'au moins un ventilateur (20R, 20L) pour aspirer et rejeter l'air de pièce, et un échangeur de chaleur (30) pour produire de l'air conditionné;
- l'échangeur de chaleur (30) comprenant une section d'échange de chaleur frontale (31) disposée le long de l'ouverture d'alimentation frontale (43) et des sections d'échange de chaleur latérales (32) disposée le long des ouvertures d'alimentation latérales (44) respectives;
- le au moins un ventilateur (20R, 20L) étant disposé dans un espace délimité par la face arrière (10b) du carter (10) et par les sections d'échange de chaleur frontale et latérales (31, 32) de l'échangeur de chaleur (30), une partie de conditionnement d'air (61) étant disposée dans un dégagement (S1) délimité par la face arrière (10b) du carter (10), par un ventilateur (20R, 20L) et par une des sections d'échange de chaleur latérales (32); ou
- une pluralité de ventilateurs (20R, 20L) étant disposée selon une relation côte à côte dans un espace délimité par la face arrière (10b) du carter (10) et par les sections d'échange de chaleur frontale et latérales (31, 32) de l'échangeur de chaleur (30), une partie de conditionnement d'air (61) étant disposée dans un dégagement (S2) entouré par la section d'échange de chaleur frontale (31) et par les ventilateurs adjacents (20R, 20L), dans un dégagement (S3) entourée par la face arrière (10b) du carter (10) et par les ventilateurs adjacents (20R, 20L), ou dans un dégagement (S4) délimité entre les ventilateurs adjacents (20R, 20L).

2. Disposition interne du conditionneur d'air selon la revendication 1, dans laquelle la partie de conditionnement d'air est une boîte de commutation (61).

3. Disposition interne du conditionneur d'air selon la revendication 1, dans laquelle la partie de conditionnement d'air est une pompe de vidange.

Fig. 1

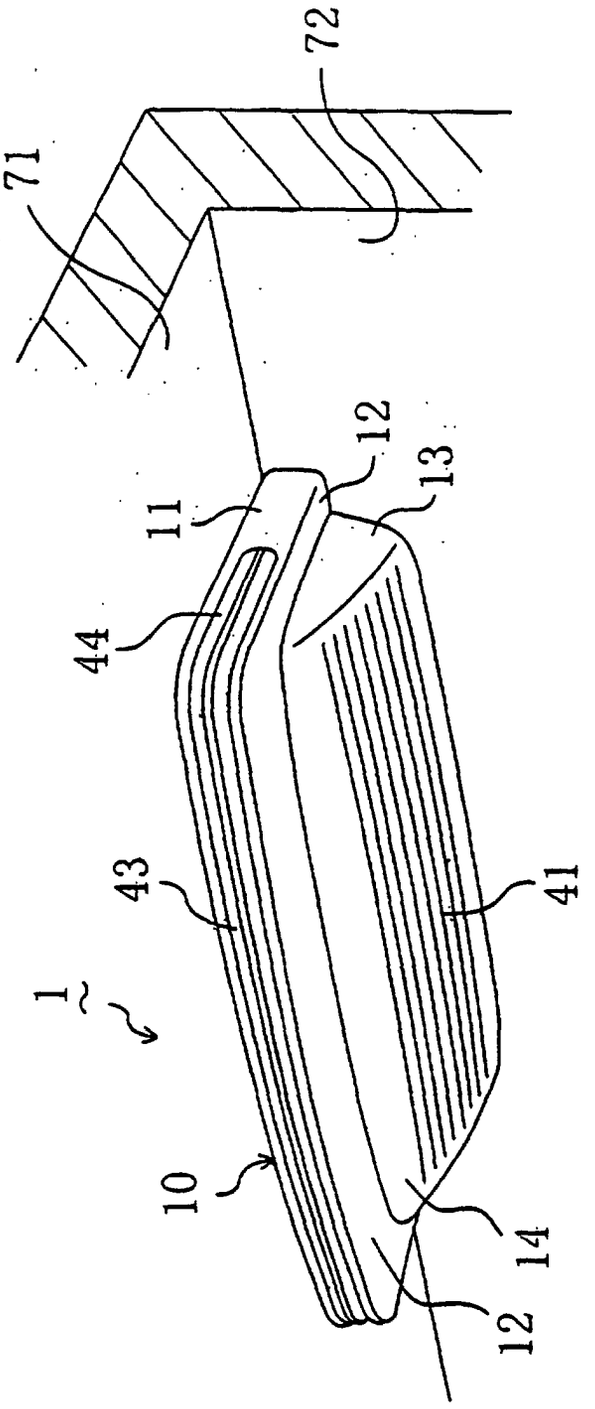

Fig. 2

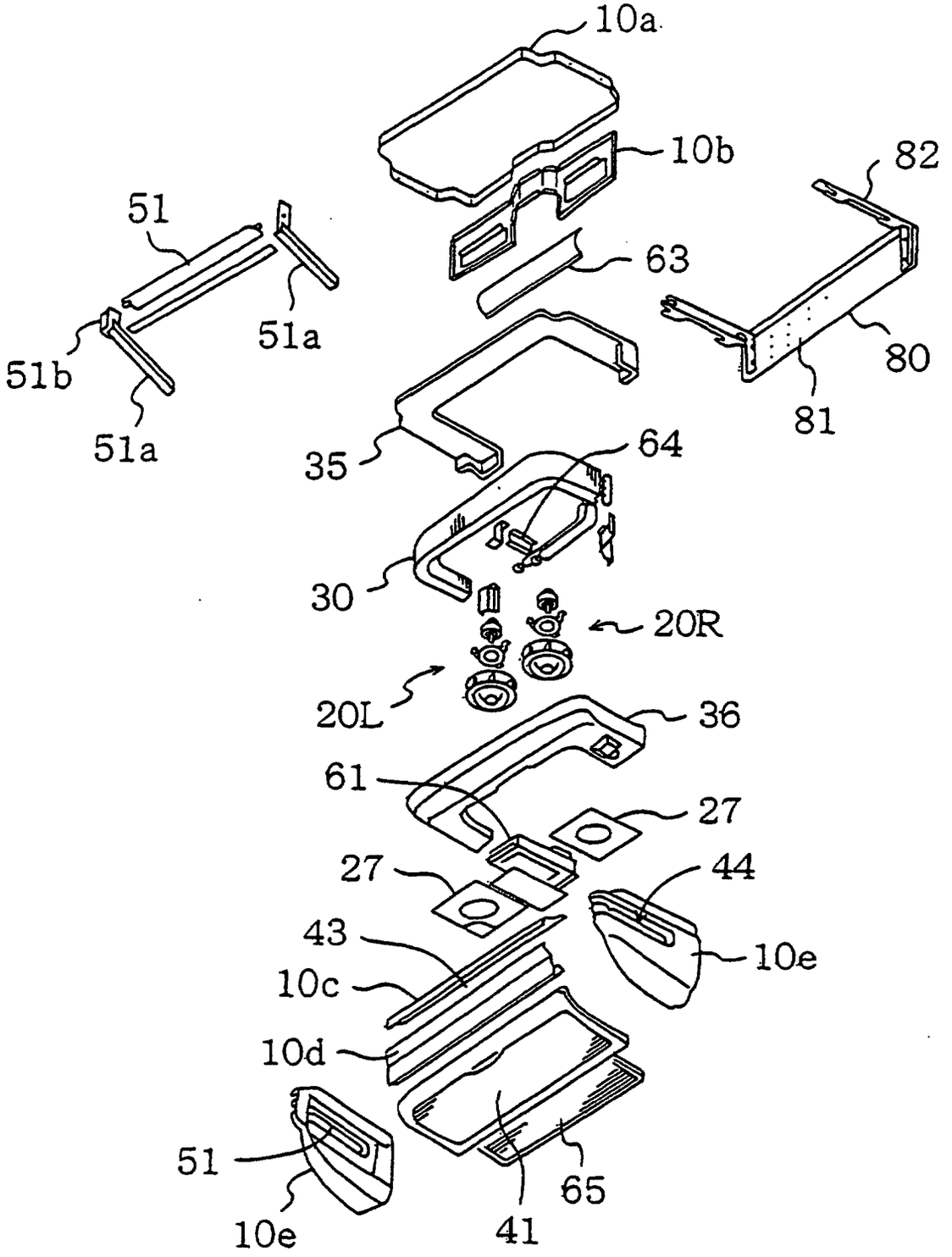
10a
10b
82
51
63
51a
51b
80
81
51a
35
64
30
20R
20L
36
61
27
27
44
43
10e
10c
10d
51
65
10e
41

Fig. 3

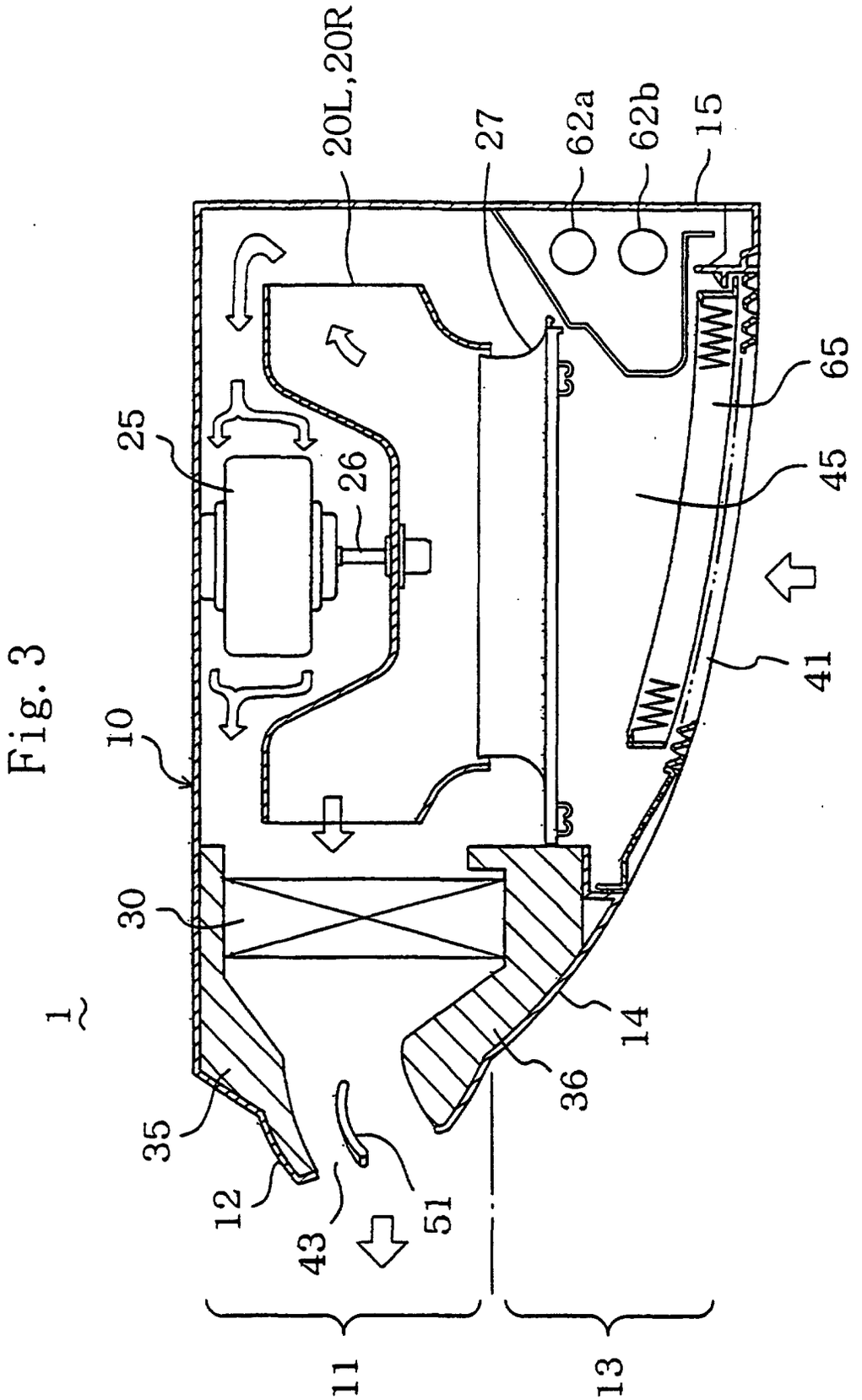
1
10
11
12
13
14
15
20L, 20R
25
26
27
30
35
36
41
43
45
51
62a
62b
65
WW
WW

Fig. 4

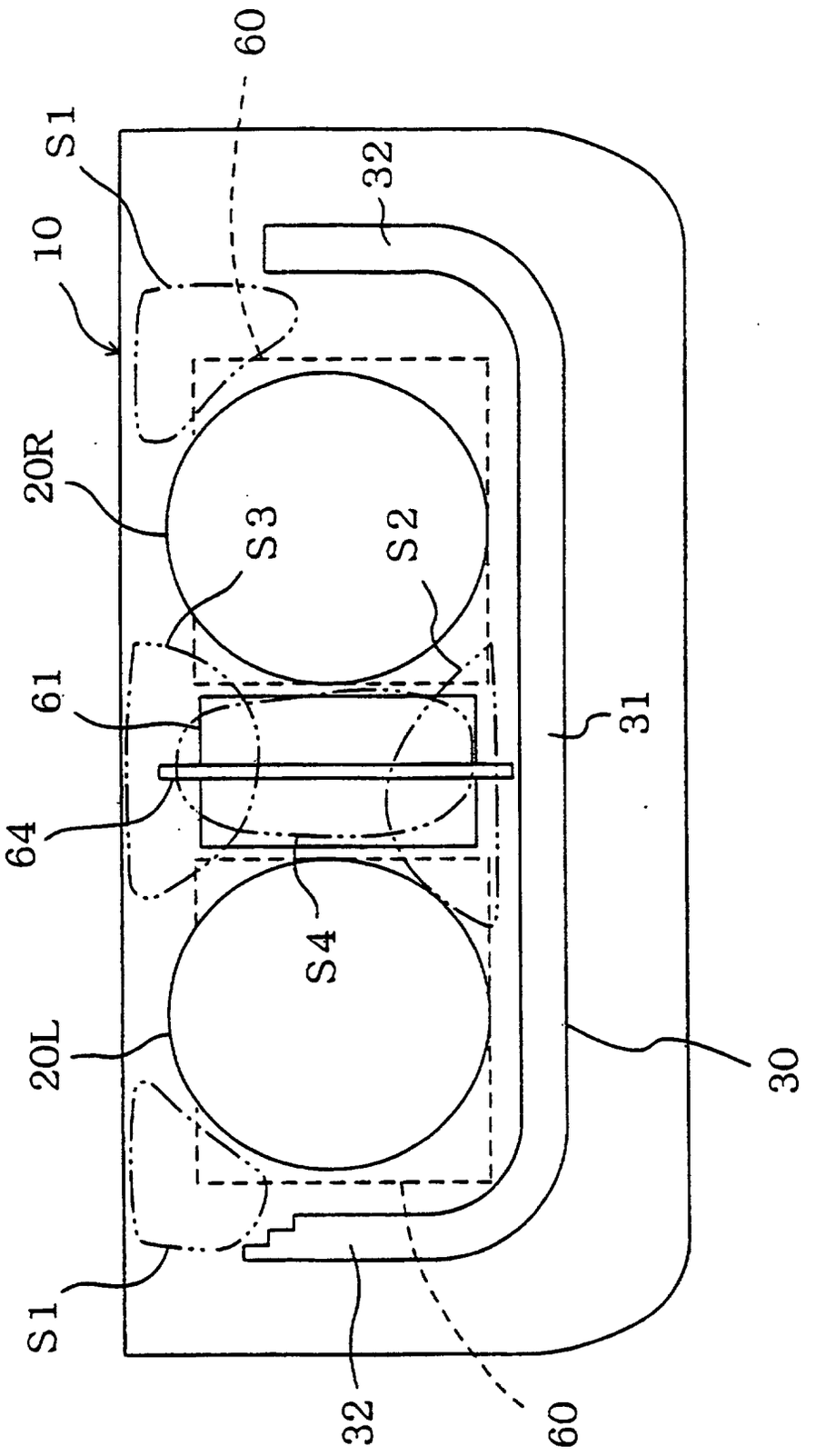

Fig. 5

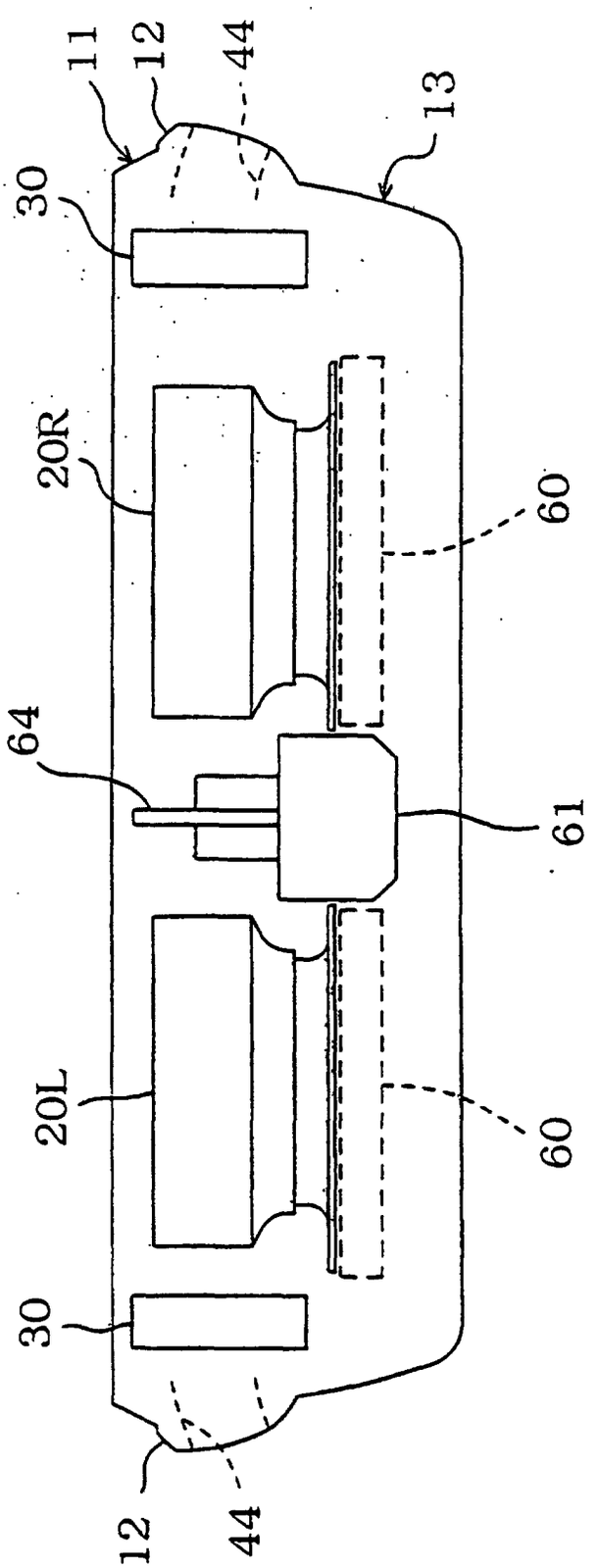

Fig. 6