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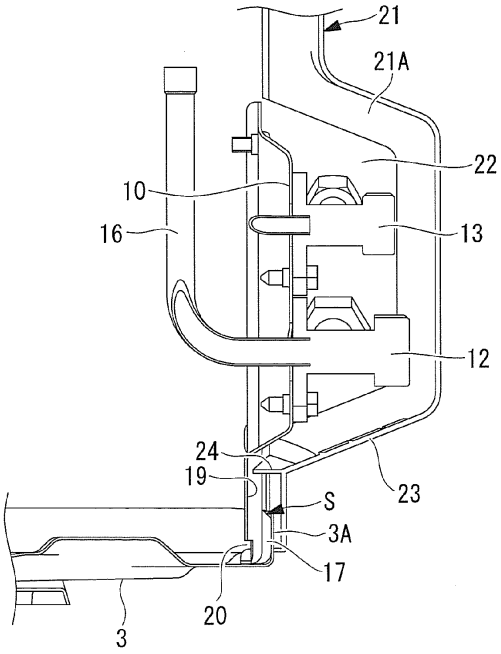
(54) Air conditioner outdoor unit

(57) In this air conditioner outdoor unit, an operating-valve bracket (10) provided with operating valves (12, 13) is installed on a baseplate (3) of the outdoor unit, and a service cover (21) is provided at an outer surface side of the operating-valve bracket (10). A drainage portion (23) for collecting drainage water produced in the service cover (21) and allowing the drainage water to fllow into the baseplate (3) is provided at a position in the service cover (21) which is lower than the operating valves (12, 13), and a concave portion (19) and a notch (20) for allowing the drainage water discharged from the drainage portion (23) to flow into the baseplate (3) are provided at a lower portion and a lower end of the operating-valve bracket (10), opposed to the drainage portion (23).

FIG. 5



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Description

Technical Field

[0001] The present invention relates to an air conditioner outdoor unit in which an operating-valve bracket is installed on a baseplate of the outdoor unit, and a service cover is provided at an outer surface side of the operating-valve bracket.

Background Art

[0002] In an air conditioner outdoor unit, an operating-valve bracket that is provided with operating valves to which refrigerant pipes are connected is installed inside a machine chamber in the outdoor unit so as to be exposed to the outside from a side panel. As disclosed in PTL 1, this operating-valve bracket is fixed to a flange portion that is provided on the periphery of a baseplate of the outdoor unit so as to extend vertically upward. Furthermore, in order to allow access to the operating valves from the outside, the operating-valve bracket is installed such that the operating valves are exposed to the outside from the side panel.

[0003] As the operating valves, two valves, specifically, a gas-side operating valve and a liquid-side operating valve, are vertically arranged in a slanted direction, and a gas-side refrigerant pipe and a liquid-side refrigerant pipe that are connected to an indoor unit can be connected to these operating valves. The operating valves and the outer surface of the operating-valve bracket are covered with a service cover (also referred to as side cover) that is detachably attached to a side panel of the outdoor unit. An opening is provided on a rear surface side of the service cover, and the refrigerant pipes, a power line, and a communication line, which are to be connected to the indoor unit, are piped or wired through the opening.

Citation List

Patent Literature

[0004]

{PTL 1} Japanese Unexamined Patent Application, Publication No. H10-259932

Summary of Invention

Technical Problem

[0005] In the above-described outdoor unit, since the opening through which the pipes and the lines pass is provided on the rear surface side of the service cover, which covers the outer surface side of the operating-valve bracket, rainwater flows into the inside of the service cover, thus producing drainage water. Furthermore, when a low-pressure refrigerant is circulated through the gas-side operating valve and the liquid-side operating valve, the operating valves are cooled, and dew condensation water is produced on the surfaces thereof. Such drainage water is collected in a drainage portion provided at a lower portion of the service cover and is then recovered in the baseplate of the outdoor unit from the drainage portion via a hole formed on a side surface of the operating-valve bracket which is opposed to the drainage portion.

[0006] However, if a hole is formed in the operating-valve bracket, noise produced in the machine chamber is emitted to the outside of the unit through the service cover via the hole. Therefore, it is necessary to take measures to prevent the noise from being emitted to the outside. Furthermore, if the opening area of the hole is reduced or if a noise leakage preventing means is provided in the hole in order to reduce the level of noise emission, the strength of the operating-valve bracket can be increased, but on the other hand, when drainage water produced in the service cover is recovered in the baseplate, it becomes easier for the drainage water to splash or leak out to the outside.

[0007] The present invention has been made in view of such circumstances, and an object thereof is to provide an air conditioner outdoor unit capable of reliably recovering drainage water produced in the service cover and store it in the baseplate through the operating-valve bracket, and capable of reducing the emission level of noise produced in the machine chamber to improve the quality of the outdoor unit. Solution to Problem

[0008] In order to make an improvement in the aforementioned circumstances, an air conditioner outdoor unit according to the present invention employs the following solutions.

Specifically, according to a first aspect, the present invention provides an air conditioner outdoor unit in which an operating-valve bracket provided with an operating valve is fixed to a flange portion that extends vertically upward from a periphery of a baseplate such that the operating-valve bracket is exposed to the outside of the outdoor unit from a side panel, and a service cover for covering an outer surface side of the operating-valve bracket is detachably attached to the side panel, wherein the service cover is provided with a drainage portion located at a position in the service cover which is lower than the operating valve, for collecting drainage water produced in the service cover and discharging the collected drainage water to the baseplate; and the operating-valve bracket is provided with a concave portion configured at a lower portion of the operating-valve bracket so that the concave portion faces the drainage portion, for allowing the drainage water discharged from the drainage portion to flow into a region of the baseplate located inside the flange portion, a lower end of the concave portion being provided with a notch.

[0009] According to the first aspect of the present invention, in the air conditioner outdoor unit, in which the service cover for covering the outer surface side of the

operating-valve bracket installed on the flange portion on the periphery of the baseplate is detachably attached to the side panel, the drainage portion for collecting drainage water produced in the service cover and discharging the drainage water to the baseplate is provided at a position in the service cover lower than the operating valve is provided, and the concave portion and the notch for allowing the drainage water discharged from the drainage portion to flow into the region of the baseplate located inside the flange portion are provided at a lower portion and a lower end of the operating-valve bracket so that the concave portion faces the drainage portion. Thus, drainage water produced in the service cover through intrusion from the outside or drainage water produced through dew condensation on the surface of the operating valve is collected in the drainage portion, which is provided at the lower portion in the service cover, and is discharged to the baseplate of the outdoor unit by the drainage portion. At this time, the drainage water discharged from the drainage portion can be made to flow down along the concave portion, which is provided at the lower portion of the operating-valve bracket opposed to the drainage portion, and the drainage water can be recovered in the region of the baseplate located inside the flange portion via the notch, which is provided at the lower end of the concave portion, and the drainage water can be made to flow to a specified location on the baseplate. Therefore, drainage water produced in the service cover can be reliably recovered in the baseplate, thus making it possible to prevent the drainage water from splashing or leaking out to the outside from unspecified locations on the side panel. Furthermore, by eliminating the need for an opening that has been conventionally provided in the operating-valve bracket in order to recover drainage water, it is possible to prevent the leakage of noise in the unit from the opening and to improve the quality of the outdoor unit.

[0010] Furthermore, according to a second aspect of the present invention, in the above-described air conditioner outdoor unit, the drainage portion has a gutter-like projecting portion as a drainage end for discharging the collected drainage water from the drainage portion.

[0011] According to the second aspect of the present invention, the gutter-like projecting portion is provided as a discharge end of the drainage portion from which the collected drainage water is discharged. Thus, the drainage water collected in the drainage portion can be discharged from the discharge end as a form of the gutter-like projecting portion, toward the opposed concave portion on the operating-valve bracket and the drainage water can be recovered in the baseplate via the concave portion. Therefore, it is possible to reliably guide the drainage water collected in the drainage portion to the baseplate via the gutter-like projecting portion and to prevent the drainage water from splashing or leaking out to the outside from unspecified locations.

[0012] Furthermore, according to a third aspect of the present invention, in one of the above-described air conditioner outdoor units, the concave portion extends to a lower end of the operating-valve bracket, the notch has a slit shape which passes through the operating-valve bracket in a horizontal direction, and the notch is provided at a lower end of the concave portion.

[0013] According to the third aspect of the present invention, the concave portion extends to the lower end of the operating-valve bracket, and the notch, which has a slit shape passing through the operating-valve bracket in the horizontal direction, is provided at the lower end of the concave portion. Thus, the drainage water recovered in the baseplate from the drainage portion in the service cover via the concave portion on the operating-valve bracket can be made to flow to a specified location on the baseplate through the slit-shaped notch, which is formed at the lower end of the concave portion and which passes through the operating-valve bracket in the horizontal direction, and then the drainage water can be discharged. Therefore, it is possible to appropriately deal with drainage water by preventing the drainage water from splashing or leaking out from unspecified locations and to minimize the level of noise in the unit leaking out to the outside from the slit-shaped notch.

[0014] Furthermore, according to a fourth aspect of the present invention, in one of the above-described air conditioner outdoor units, the concave portion is provided between fastening portions which are formed at lower portions and at both sides of the operating-valve bracket and which are fixed to the flange portion.

[0015] According to the fourth aspect of the present invention, the concave portion is provided between the fastening portions which are fixed to the flange portion and which are formed at lower portions at both sides of the operating-valve bracket. Thus, when the operating-valve bracket is fixed to the flange portion of the baseplate via the fastening portions, which are formed at the lower portions at both sides of the operating-valve bracket, a flow channel through which drainage water flows down via the concave portion is formed between the fastening portions, and drainage water flowing from the service cover can be recovered in the baseplate. Therefore, it is possible to prevent drainage water produced in the service cover from splashing or leaking out to the outside from unspecified locations and to reliably recover the drainage water in the baseplate.

Advantageous Effects of Invention

[0016] According to the present invention, drainage water produced in the service cover through intrusion from the outside or drainage water produced through dew condensation on the surfaces of the operating valves is collected in the drainage portion, which is provided at a lower position in the service cover, and is discharged to the baseplate of the outdoor unit via the drainage portion. At this time, the drainage water discharged from the drainage portion can be made to flow down along the concave portion, which is provided at the lower portion

of the operating-valve bracket opposed to the drainage portion, the drainage water can be recovered in the region of the baseplate located inside the flange portion through the notch, which is provided at the lower end of the concave portion, and the drainage water can be made to flow to a specified location on the baseplate. Thus, drainage water produced in the service cover can be reliably recovered in the baseplate, and the drainage water can be prevented from splashing or leaking out to the outside from unspecified locations on the side panel. Furthermore, by eliminating the need for an opening that has been conventionally provided in the operating-valve bracket in order to recover drainage water, it is possible to prevent the leakage of noise in the unit from the opening and to improve the quality of the outdoor unit.

Brief Description of Drawings

[0017]

{Fig. 1} Fig. 1 is a perspective view showing an air conditioner outdoor unit with a service panel removed from the outdoor unit according to an embodiment of the present invention.

{Fig. 2} Fig. 2 is a perspective view showing a state in which an operating-valve bracket has been installed on a baseplate of the outdoor unit shown in Fig. 1.

{Fig. 3} Fig. 3 is a perspective view of the operating-valve bracket shown in Fig. 2.

{Fig. 4} Fig. 4 is a longitudinal sectional view showing a state in which the service cover has been attached to an outer surface side of the operating-valve bracket shown in Fig. 2.

{Fig. 5} Fig. 5 is a sectional view showing, in an enlarged form, a portion A shown in Fig. 4.

{Fig. 6} Fig. 6 is a perspective view of the service cover shown in Fig. 4 viewed from an inner surface side. Description of Embodiments

[0018] An embodiment of the present invention will be described below with reference to Figs. 1 to 6.
Fig. 1 is a perspective view showing an air conditinoer outdoor unit with a service panel removed from the outdoor unit according to the embodiment of the present invention. Fig. 2 is a perspective view showing a state in which an operating-valve bracket has been installed on a baseplate of the outdoor unit. Fig. 3 is a perspective view of the operating-valve bracket. Fig. 4 is a longitudinal sectional view showing a state in which the service cover has been attached to an outer surface side of the operating-valve bracket.
An air conditioner outdoor unit 1 has a chassis 2 comprising a baseplate 3 that is provided with a plurality of mounting legs 4 on a bottom surface thereof, a front panel 5 that is provided with an outlet grille 6 and that is installed on the baseplate 3, right and left side panels 7, 8, and a top panel 9.

[0019] The rear surface side of the chassis 2 is almost wholly open, and a plate-fin-tube outdoor heat exchanger is installed in alignment with the opening. As is known, the inside of the chassis 2 is separated into a heat exchanger chamber and a machine chamber by a partition plate. The heat exchanger chamber includes the above-described outdoor heat exchanger and an air-blowing fan that makes outside air circulate through the outdoor heat exchanger and that blows it out to the front outside from the outlet grille 6. The machine chamber includes a compressor, a four-way switching valve, a control box, an operating-valve bracket 10, and a terminal block 11 to which a power line and a communication line are connected.

[0020] As shown in Fig. 1, the operating-valve bracket 10 and the terminal block 11 are installed so as to be exposed to the outside from the side panel 7, and the outer surface side thereof is covered with a service cover (also referred to as side cover) 21, to be described later, that is detachably attached to the side panel 7 of the outdoor unit 1.

[0021] As shown in Fig. 2, the baseplate 3 of the chassis 2 is a horizontally elongated rectangular steel plate, portions for installing the outdoor heat exchanger, the air-blowing fan, and the compressor are formed thereon, and a flange portion 3A that extends vertically upward and has a predetermined height is formed on the periphery thereof. The operating-valve bracket 10 is fixed to a portion of the flange portion 3A located at the right side of the baseplate 3, via fastening means, such as screws.

[0022] The operating-valve bracket 10 is a vertically elongated rectangular steel part. Two operating valves 12 and 13, specifically, a gas-side operating valve (operating valve) 12 and a liquid-side operating valve (operating valve) 13, to which a gas-side refrigerant pipe and a liquid-side refrigerant pipe that are connected to an indoor unit can be respectively connected. The valves are fixed to the operating-valve bracket 10 by means of screws 14 so that the operating valves 12 and 13 are vertically arranged in a slanted direction. The gas-side operating valve 12 and the liquid-side operating valve 13 are provided with refrigerant connection pipes 16 and 15 to be connected to components of the outdoor unit 1.

[0023] Furthermore, as shown in Fig. 3, in order to fasten the operating-valve bracket 10 to the flange portion 3A of the baseplate 3 by means of screws, a pair of dish-shaped fastening portions 17 that is provided with a predetermined distance therebetween and that project toward the flange portion 3A by a certain dimension are formed integrally with the operating-valve bracket 10, and the projection portions are provided at fastening sites to be fixed to the flange portion 3A, which are located at lower portions on the outer surface of the operating-valve bracket 10. The pair of fastening portions 17 have fastening holes 18 for fastening screws.

[0024] In this way, by providing the pair of dish-shaped fastening portions 17, which project toward the flange portion 3A by the certain dimension, at the fastening sites

on the operating-valve bracket 10 which are to be fixed to the flange portion 3A, and by fixing the operating-valve bracket 10 to an inner surface of the flange portion 3A, as shown in Fig. 2, a space S having the certain dimension can be formed between an outer surface of the operating-valve bracket 10 and the inner surface of the flange portion 3A. Thus, dew condensation water that is produced through dew condensation occurring on the surfaces of the operating-valve bracket 10, the gas-side operating valve 12, and the liquid-side operating valve 13 and that flows downward along the surface of the operating-valve bracket 10 can be recovered in the baseplate 3 via the space S.

[0025] Furthermore, the service cover 21 is detachably attached to the outer surface of the side panel 7 so as to cover the outer surface side of the operating-valve bracket 10 and the terminal block 11. As shown in Fig. 6, the service cover 21 is a vertically elongated rectangular cover provided with a covering portion 21A for covering the outer side of the operating-valve bracket 10 and the operating valves 12 and 13, a covering portion 21B for covering the outer side of the terminal block 11, and a line covering portion 21C connecting the covering portion 21A and the covering portion 21B. An opening 22 through which the refrigerant pipes, the power line, and the communication line pass is provided on a rear surface of the covering portion 21A, which covers the outer side of the operating valves 12 and 13.

[0026] A lower portion of the service cover 21 is provided with a drainage portion 23 that collects drainage water produced when rainwater flows into the service cover 21 from the outside via the opening 22 or drainage water produced through dew condensation on the surfaces of the operating valves 12, 13, and that discharges the drainage water to the baseplate 3. In order to receive the drainage water dripping from the operating valves 12 and 13, the drainage portion 23 is formed into a concave shape on an inner surface of the service cover 21 at a portion lower than the positions where the operating valves 12 and 13 are provided, such that the center portion of the concave shape protrudes downward.

[0027] Furthermore, a gutter-like projecting portion 24 for guiding the collected drainage water to a concave portion 19, which is described below, provided on a side surface of the operating-valve bracket 10 is provided at a discharge end of the drainage portion 23, which is closer to the operating-valve bracket 10 than the other end. Note that a partition wall is provided in the service cover 21 so as to prevent rainwater that has entered via the opening 22 from flowing upward therein and entering the control box in the machine chamber via the portion where the terminal block 11 is installed, thereby forming a structure that prevents the rainwater from entering, and only part of outside air is circulated therethrough.

[0028] Furthermore, as shown in Figs. 3 and 5, at a lower portion of the operating-valve bracket 10 opposed to the gutter-like projecting portion 24, which is provided at the drainage-water discharge end of the drainage portion 23, the concave portion 19 is integrally formed with predetermined depth, width, and height dimensions by which the side surface of the operating-valve bracket 10 is recessed toward the inner surface side of the operating-valve bracket 10. The concave portion 19 has dimensions with which drainage water discharged from the gutter-like projecting portion 24 can be reliably received. Furthermore, the concave portion 19 extends to the lower end of the operating-valve bracket 10, and a notch 20 that forms a slit-shaped space passing through the operating-valve bracket 10 in the horizontal direction above the upper surface of the baseplate 3 is formed at the lower end of the concave portion 19.

[0029] With the above-described structure, the following advantageous effects are achieved according to this embodiment.

When the air conditioner is operated, and thus a low-pressure refrigerant circulates through the gas-side operating valve 12 and the liquid-side operating valve 13, the operating valves 12, 13 and the operating-valve bracket 10 on which the operating valves 12, 13 are provided are cooled, and water contained in the air may be changed to dew condensation water on the surfaces thereof. Although the dew condensation water drips from the operating valves 12, 13 or flows downward along the surface of the operating-valve bracket 10 in the form of drainage water, it is necessary to recover the drainage water completely in the baseplate 3.

[0030] Furthermore, since the service cover 21 is provided with the opening 22 on the rear surface side thereof, rainwater enters the inside via the opening 22, and it is also necessary to deal with the rainwater as drainage water.

Because the outdoor unit 1 is usually located outside, even if drainage water produced in the outdoor unit 1 is directly discharged to the outside, this causes little problem. However, depending on how or where the outdoor unit 1 is located, for example, in a case in which the outdoor unit 1 is suspended from a balcony, in some cases it is necessary to avoid a situation in which drainage water splashes or leaks out to the outside from unspecified locations. In such cases, a discharge hole is generally provided at a specified location on the baseplate 3, and the drainage water is discharged therefrom.

[0031] However, in this embodiment, the space S corresponding to the projection dimension of the dish-shaped projection portions 17, which are provided so as to project outward from the outer surface of the operating-valve bracket 10, is formed between the side surface of the flange portion 3A on the periphery of the baseplate 3 and the side surface of the operating-valve bracket 10 to be fixed to the flange portion 3A, and the operating-valve bracket 10 is fixed to the flange portion 3A on the periphery of the baseplate 3. Thus, drainage water that is produced through dew condensation occurring on the surface of the operating-valve bracket 10 when the operating-valve bracket 10 is cooled by the gas-side operating valve 12 and the liquid-side operating valve 13 and

that flows down can be recovered in the baseplate 3 via the space S. Therefore, drainage water produced through dew condensation on the surface of the operating-valve bracket 10 can be reliably recovered in the baseplate 3, thus making it possible to prevent a situation in which the drainage water splashes or leaks out to the outside from the side surface on which the operating valves 12, 13 are provided.

[0032] Furthermore, drainage water produced in the service cover 21 when rainwater enters the service cover 21 from the outside or when dew condensation water that is produced through dew condensation on the surfaces of the gas-side operating valve 12 and the liquid-side operating valve 13 and that drips is collected in the drainage portion 23. The drainage water is discharged from the gutter-like projecting portion 24, which is located at the discharge end of the drainage portion 23, and toward the concave portion 19, which is provided at the lower portion of the operating-valve bracket 10 opposed to the projecting portion 24, and flows downward along a flow channel formed by the concave portion 19. Then, the drainage water is recovered in the baseplate 3 located inside the flange portion 3A through the notch 20, which is provided at the lower end of the concave portion 19, and flows to a specified location (drainage hole location) on the baseplate 3.

[0033] Thus, the drainage water produced in the service cover 21 is reliably recovered in the baseplate 3, thus making it possible to prevent the drainage water from splashing or leaking out to the outside from unspecified locations on the side panel 7. Furthermore, by eliminating the need for an opening that has been conventionally provided in the operating-valve bracket 10 in order to recover drainage water, it is possible to prevent the leakage of machine chamber noise from the opening and to improve the quality of the outdoor unit 1.

[0034] Furthermore, the drainage portion 23 is provided with the gutter-like projecting portion 24, which is located at the discharge end from which the collected drainage water is discharged, thus making it possible to discharge the drainage water collected in the drainage portion 23 from the discharge end, which is configured as the gutter-like projecting portion 24, toward the opposed concave portion 19 of the operating-valve bracket 10, and to recover the drainage water in the baseplate 3 via the concave portion 19. Thus, it is possible to reliably guide the drainage water collected in the drainage portion 23 to the baseplate 3 via the gutter-like projecting portion 24 and to prevent the drainage water from splashing or leaking out to the outside from unspecified locations.

[0035] Furthermore, the concave portion 19 extends to the lower end of the operating-valve bracket 10, and the slit-shaped notch 20, which passes through the operating-valve bracket 10 in the horizontal direction, is formed at the lower end of the concave portion 19. Thus, drainage water recovered in the baseplate 3 from the drainage portion 23 in the service cover 21 via the concave portion 19 on the operating-valve bracket 10 can be made to flow through the slit-shaped notch 20, which is formed at the lower end of the concave portion 19 and which passes through the operating-valve bracket 10 in the horizontal direction, to the specified location on the baseplate 3 and can be discharged. Therefore, it is possible to appropriately deal with drainage water by preventing the drainage water from splashing or leaking out from unspecified locations and to minimize the level of machine chamber noise leaking out to the outside from the slit-shaped notch 20.

[0036] Furthermore, the concave portion 19 is provided between the fastening portions 17 which are connected to the flange portion 3A, which are formed at the lower portions and at both sides of the operating-valve bracket 10. Thus, when the operating-valve bracket 10 is fixed to the flange portion 3A of the baseplate 3 via the fastening portions 17, which are formed at the lower portions and at both sides of the operating-valve bracket 10, a flow channel through which drainage water flows via the concave portion 19 is formed between the fastening portions 17, and drainage water flowing from the service cover 21 can be recovered in the baseplate 3. Therefore, it is possible to prevent drainage water produced in the service cover 21 from splashing or leaking out to the outside from unspecified locations and to reliably recover the drainage water in the baseplate 3.

[0037] Note that the present invention is not limited to the invention according to the above-described embodiment, and appropriate modifications can be made without departing from the scope thereof. For example, in the above-described embodiment, although a description has been given of an example case in which the operating-valve bracket 10 is fixed to the flange portion 3A with screws, screws are not necessarily used for fixing the bracket, and, another means, for example, welding, can be used. Furthermore, the shape of the operating-valve bracket 10 and the specific structure of the gas-side operating valve 12 and the liquid-side operating valve 13 are not limited to those of the above-described embodiment, and various modifications can be adopted.

[0038] Furthermore, in the above-described embodiment, although the pair of fastening portions 17, having a predetermined distance therebetween, are provided at the lower portions on the outer surface of the operating-valve bracket 10, similar fastening portions that project toward the operating-valve bracket 10 may be provided on the flange portion 3A of the baseplate 3. With this structure, by fixing the operating-valve bracket 10 to the fastening portions, the space S corresponding to the projection dimension of the fastening portions can be formed between the side surface of the flange portion 3A and the side surface of the operating-valve bracket 10, and dew condensation water produced through dew condensation on the surface of the operating-valve bracket 10 can be recovered in the baseplate 3 via the space S.

[0039] Furthermore, in addition to the fastening portions 17 provided on the operating-valve bracket 10 or on the flange portion 3A, a bulging portion that bulges

outward by a certain dimension may be provided at a place between the pair of fastening sites on the flange portion 3A witch are fixed to the operating-valve bracket 10, to increase the space S. With this structure, the space S formed between the side surfaces of the flange portion 3A and the operating-valve bracket 10 can be increased by the outward-bulging dimension of the flange portion 3A. Thus, the space S for guiding dew condensation water produced through dew condensation on the surface of the operating-valve bracket 10 to the inside of the baseplate 3 can be made larger, thus facilitating the recovery of the dew condensation water in the baseplate 3.

Reference Signs List

[0040]

1	outdoor unit
3	baseplate
3A	flange portion
7	side panel
10	operating-valve bracket
12	gas-side operating valve (operating valve)
13	liquid-side operating valve (operating valve)
17	fastening portions
19	concave portion
20	notch
21	service cover
23	drainage portion
24	gutter-like projecting portion

Claims

1. An air conditioner outdoor unit in which an operating-valve bracket (10) provided with an operating valve (12,13) is fixed to a flange portion (3A) that extends vertically upward from a periphery of a baseplate (3) such that the operating-valve bracket (10) is exposed to the outside of the outdoor unit from a side panel (7), and a service cover (21) for covering an outer surface side of the operating-valve bracket (10) is detachably attached to the side panel (7),
wherein the service cover (21) is provided with a drainage portion (23) located at a position in the service cover which is lower than the operating valve (12,13) , for collecting drainage water produced in the service cover and discharging the collected drainage water to the baseplate (3); and
the operating-valve bracket (10) is provided with a concave portion (19) configured at a lower portion of the operating-valve bracket so that the concave portion faces the drainage portion (23), for allowing the drainage water discharged from the drainage portion to flow into a region of the baseplate (3) located inside the flange portion (3A), a lower end of the concave portion (19) being provided with a notch (20).

2. The air conditioner outdoor unit according to claim 1, wherein the drainage portion (23) has a gutter-like projecting portion (24) as a drainage end for discharging the collected drainage water from the drainage portion.

3. The air conditioner outdoor unit according to claim 1 or 2, wherein the concave portion (19) extends to a lower end of the operating-valve bracket (10), the notch (20) has a slit shape which passes through the operating-valve bracket in a horizontal direction, and the notch is provided at a lower end of the concave portion (19).

4. The air conditioner outdoor unit according to one of claims 1 to 3, wherein the concave portion (19) is provided between fastening portions (17) which are formed at lower portions and at both sides of the operating-valve bracket (10) and which are fixed to the flange portion (3A).

FIG. 1

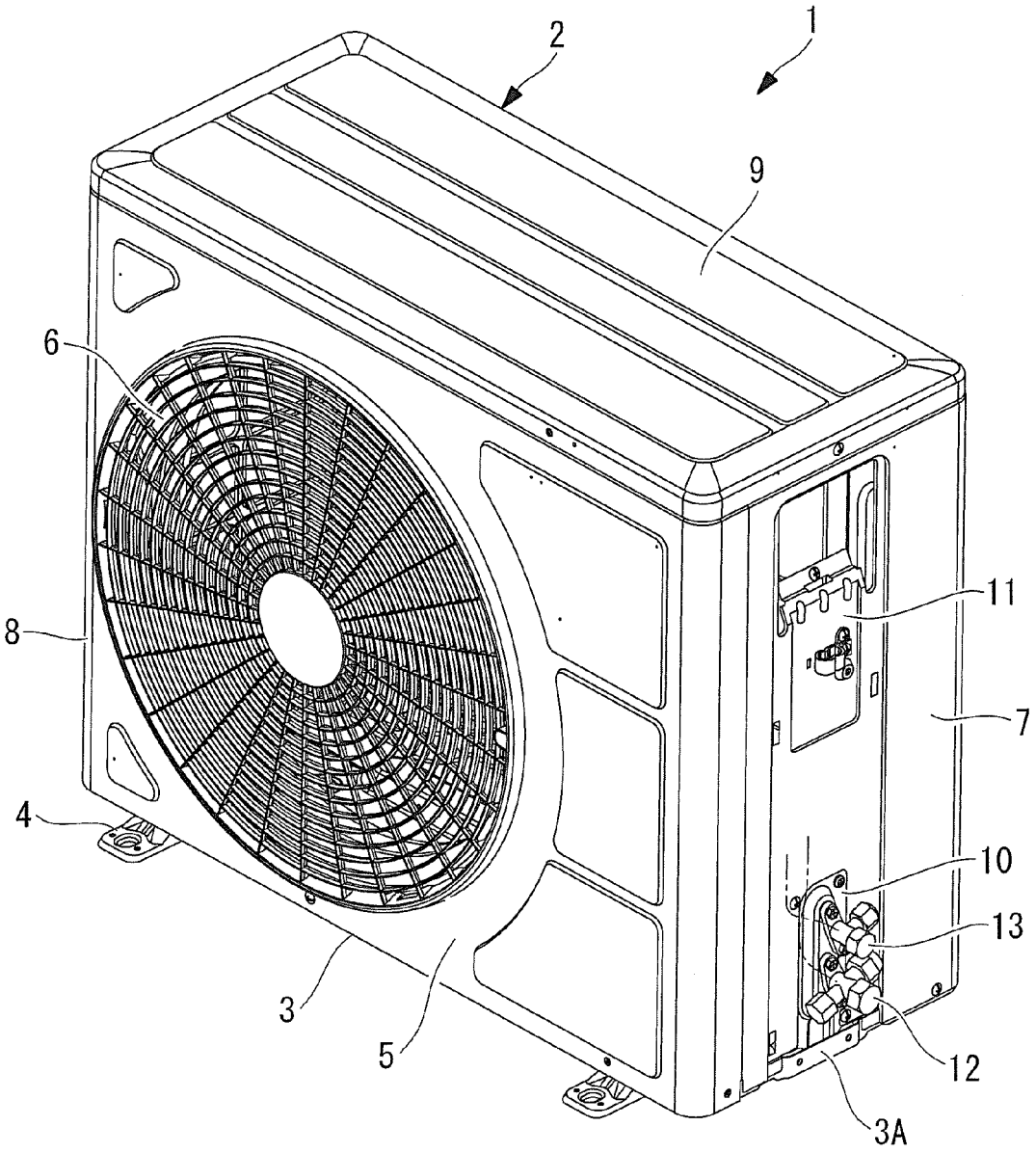


FIG. 2

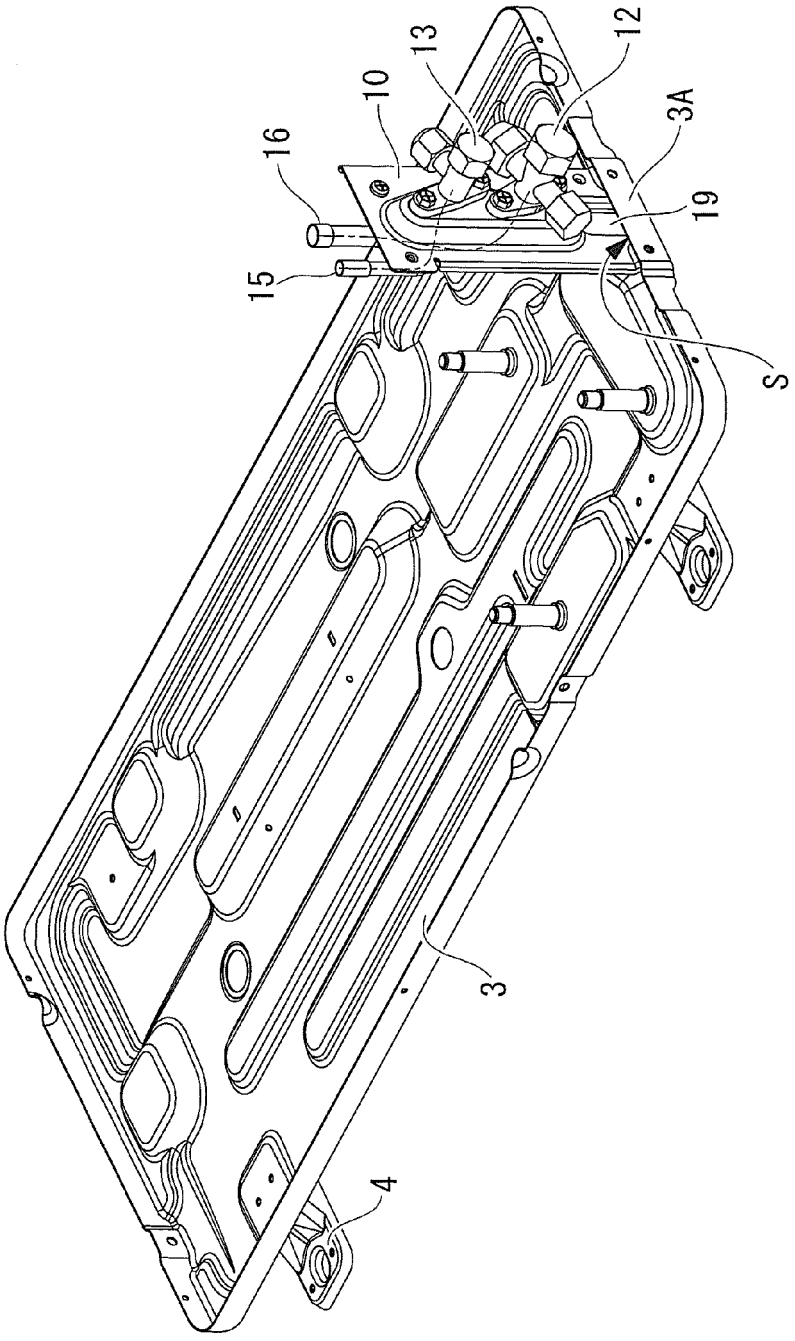


FIG. 3

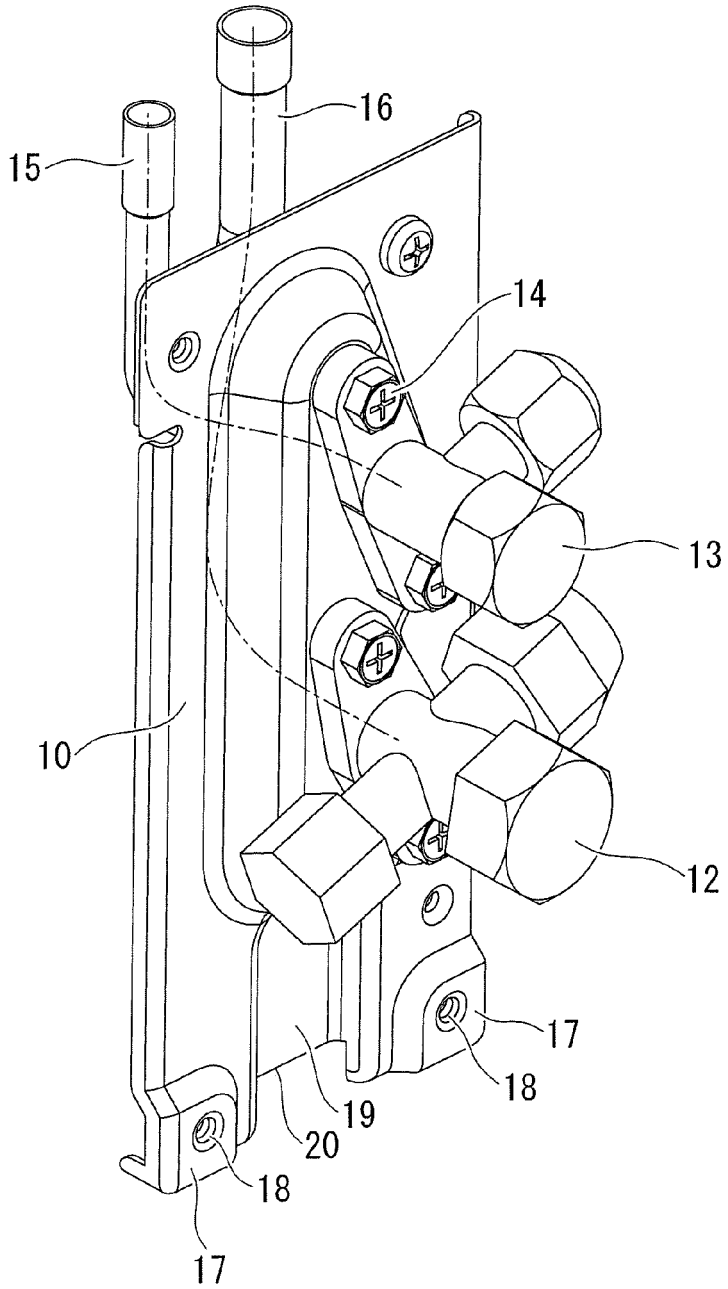


FIG. 4

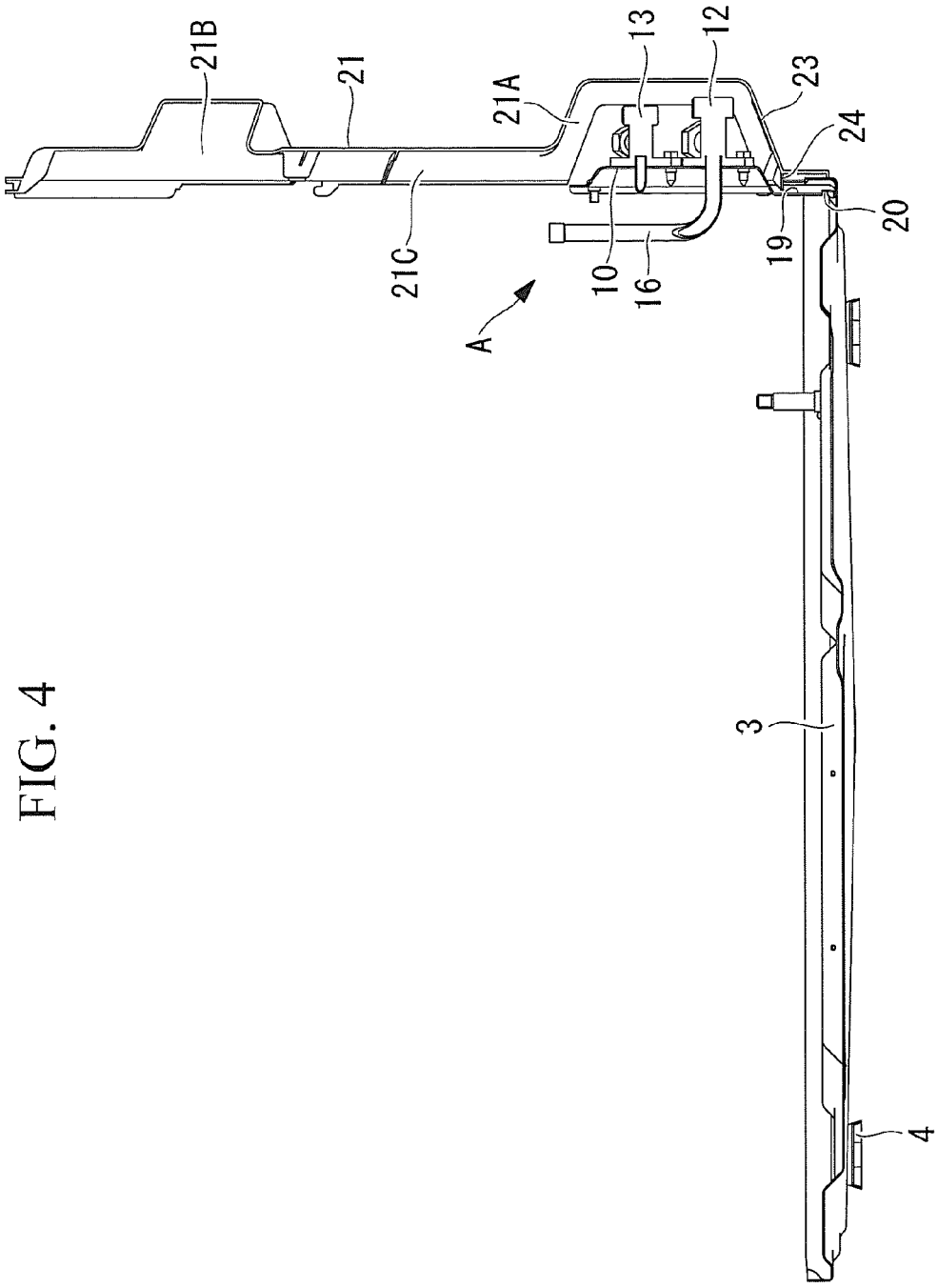


FIG. 5

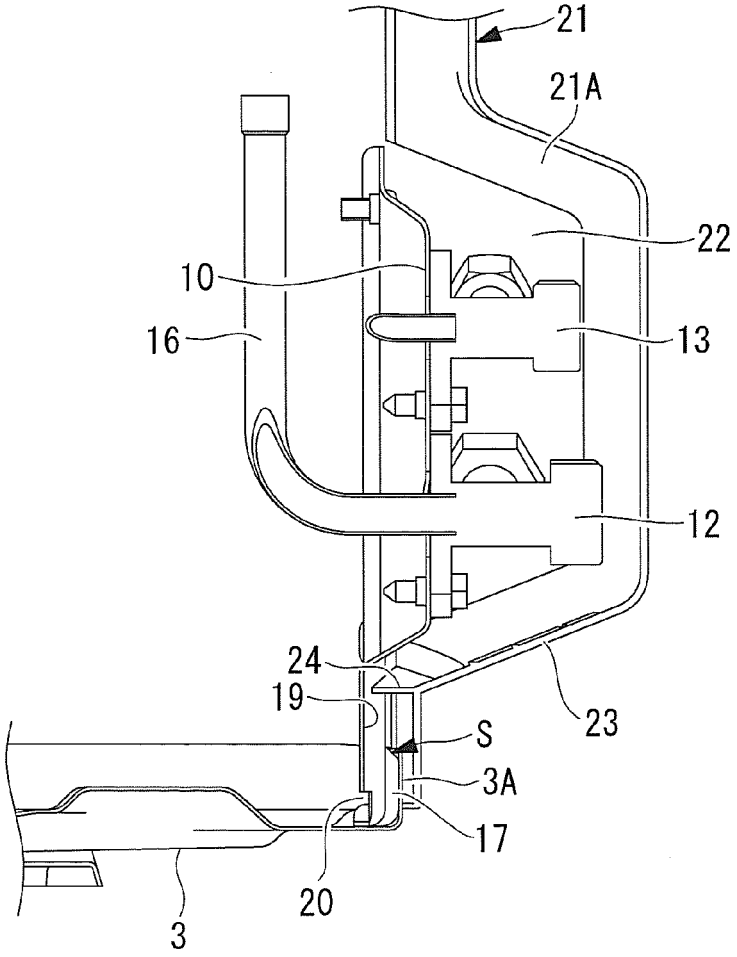
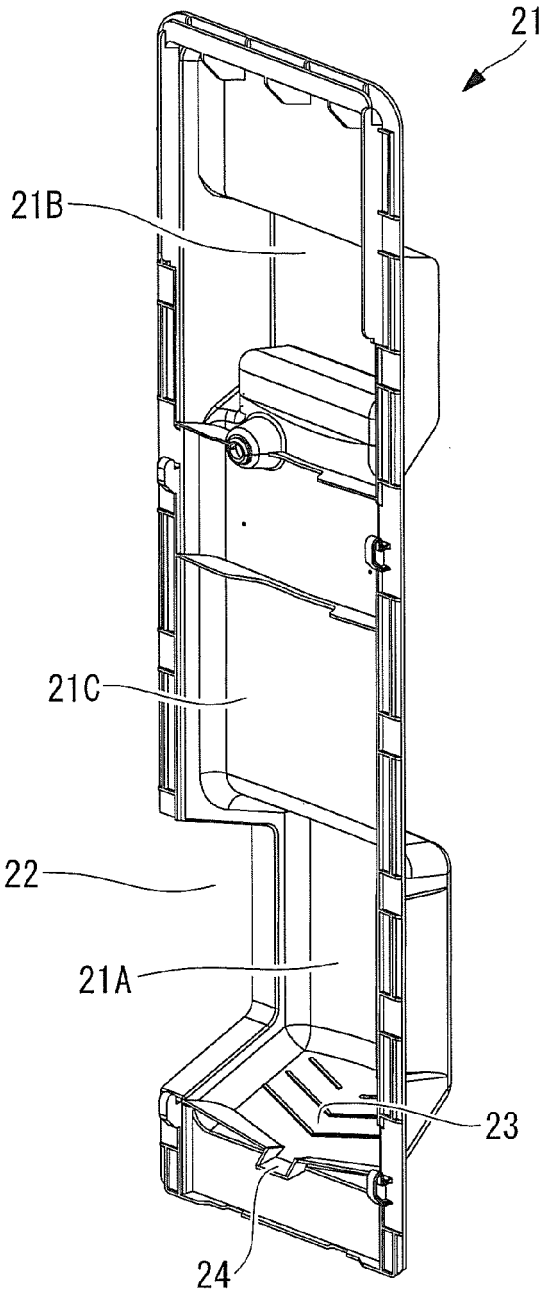


FIG. 6



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Patent documents cited in the description

- JP H10259932 B **[0004]**