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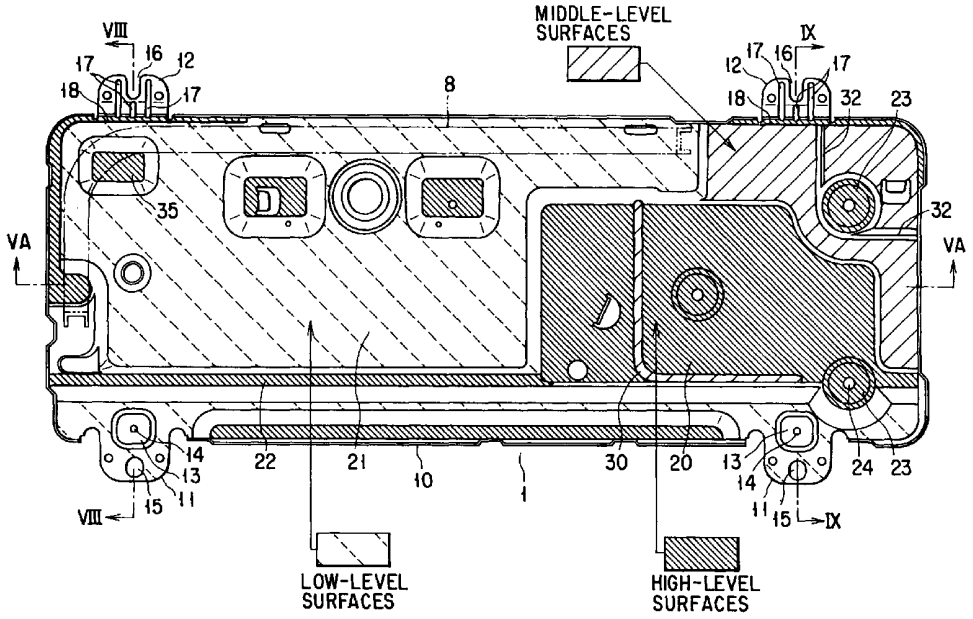
(54) Title: OUTDOOR UNIT OF AIR CONDITIONER



(57) Abstract: An outdoor unit for an air conditioner, comprise a unit main body which is a housing having a base plate, a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit main body, and fixing legs which are provided on the unit main body and to be fixed on a mount part by means of fixing elements, wherein the fixing legs are formed as one body with the base plate of the unit main body.

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D E S C R I P T I O N

OUTDOOR UNIT OF AIR CONDITIONER

Technical Field

The present invention relates to a separate-type air conditioner comprising an indoor unit and an outdoor unit, in particular, an improvement in a base plate structure of a unit main body in the outdoor unit.

Background Art

A separate-type air conditioner comprising an indoor unit and an outdoor unit is widely used. In particular, in the outdoor unit, a compressor, an outdoor heat exchanger and a blower are mounted and fixed on a base plate forming a unit main body, which is a housing.

Further, the base plate has a rectangular shape in plan view, and is provided with fixing legs in its four corners. The fixing legs are mounted on a mount part which is a mounting position, and are fixed by using fixing elements (fixing bolts).

The fixing legs are made as separate pieces from the base plate, and one end of each fixing leg is fixed on the back surface side of the base plate by means of welding, screwing, riveting or caulking, which are selected according to necessity. The other end of each

fixing leg is extended outward from the base plate to be a region fixed by the fixing elements.

However, if welding means such as spot welding is adopted when fixing the fixing legs on the base plate, the welding means burns and removes a coating for preventing corrosion of a metal plate. Therefore, it is necessary to perform painting after welding to prevent generation of rust, which rather requires a long time.

Further, recently, though painted steel plate, which is made by painting a hot-dip zinc-coated steel plate having excellent workability and durability, and hot-dip aluminum-zinc coated steel plate (e.g.: Galvarium Steel Plate (phonetic) :trade name) are now being adopted, these steel plates cannot be welded.

Therefore, on the premise of using the above steel plate, a technique for fixing the fixing legs on the base plate by using means other than welding, such as screwing, riveting or caulking, has come to be adopted (e.g. Jpn. Pat. Appln. KOKAI Pub. No. 11-337117).

However, such means increase-mounting steps and causes a bad influence on the costs. Further, if the fixing legs come in contact with the wall or the like when mounting the outdoor unit, the fixing legs may be twisted when the degree of impact is strong, and, in extreme cases, fallen away from the base plate, which lowers mounting reliability.

In the meantime, when fixing a mounting leg of the compressor, for example, a head portion of each mounting bolt is mounted on the base plate by appropriate means to project a threaded portion of each bolt upward, a hole of each of rubber vibration isolators provided on the compressor mounting leg is fitted on a rod portion of each mounting bolt via the threaded portion of the mounting bolt such that the threaded portion of each mounting bolt is projected from the upper end of each of the rubber vibration isolators. Then, a nut is engaged with each of the projecting threaded portions. (e.g. Jpn. Pat. Appln. KOKAI Pub. No. 11-210729)

In this case, though no painting is required since no welding is performed, it requires work for fixing the head portions of the mounting bolts to the base plate in advance. When actually mounting the compressor, though the compressor whose mounting leg is fitted with the rubber vibration isolators is lowered from upward to fit the hole portions of the rubber vibration isolators on the mounting bolts, the mounting leg obstructs a view of the mounting bolts, and thus it is difficult to positioning them.

If the positions of the mounting holes do not match with the mounting bolts and the mounting leg comes in contact with the mounting bolts, since the compressor itself has a considerable weight, not only

the mounting leg but also the rubber vibration isolators and the mounting bolts may be deformed. Specifically, this point degrades the assembly property, and is required to be improved.

Further, drain water is generated in the outdoor heat exchanger with refrigeration cycle operation, and flows down to accumulate on the base plate. In other cases, dew is condensed on the surface of a suction-side pipe, a suction cup or connecting valves to be connected to the compressor, and flows down as drain water.

The whole cross section of the conventional base plate is flat, and a height of a region to dispose the outdoor heat exchanger is the same as that of a region to dispose the compressor. A partition plate intervenes between these outdoor heat exchanger and compressor to perform control such that no mutual heat exchange is performed between them. However, the drain water having flown down from the outdoor heat exchanger accumulates in the vicinity of the arranging region, and soon infiltrates into the side of the compressor-arranged region through a space between the partition plate and the base plate.

Further, water of dew (drain water) condensed on the surface of the suction-side pipe, suction cup or connecting valves flows down in and around the compressor-arranged region. In a machine chamber

wherein the compressor is arranged, arranged are electric parts for driving the compressor which are electrically connected to the compressor, and electric parts for controlling the compressor and for controlling switching of a four-way valve or the like, and the parts are affected by moisture accumulating in this arranging region.

Disclosure of Invention

The first object of the present invention is to unnecessitate a step for mounting fixing legs on a base plate forming a unit main body, to improve manufacturing property of the base plate, and to supply an outdoor unit of an air conditioner having high reliability at low price.

The present invention provides an outdoor unit for an air conditioner, comprising: a unit main body which is a housing having a base plate; a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit main body; and fixing legs which are provided on the unit main body and to be fixed on a mount part by means of fixing elements, wherein the fixing legs are formed as one body with the base plate of the unit main body.

According to the present invention, a work for mounting the fixing legs on the base plate forming the unit main body is unnecessitated, and various problems which are caused with mounting are overcome.

The second object of the present invention is to provide an outdoor unit of an air conditioner which can prevent generation of failure of not only mounting leg of the compressor but also vibration isolating members and mounting bolts, such as deformation and damage, and can improve mounting workability.

The present invention provides an outdoor unit for an air conditioner, comprising: a unit main body which is a housing having a base plate; and a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit main body, wherein in the base plate a compressor-mounting surface on which the compressor is mounted is formed higher than a heat exchanger mounting surface on which the heat exchanger is mounted, positioning drawn portions, each of which has a screw hole, are projected from the compressor-mounting surface, vibration isolating members, each of which has a bolt-inserting hole, are positioned and supported by the positioning drawn portions, fixing holes provided on a compressor-mounting leg are fitted on the vibration isolating members, and the vibration isolating members and the mounting leg of the compressor are fixed on the base plate by means of mounting bolts which are screwed in the screw holes from above via the bolt-inserting holes of the vibration isolator members.

According to the present invention, the compressor

can be fixed on the base plate to prevent deformation and damage of the mounting leg of the compressor, the vibration isolating members for supporting the mounting leg and the mounting bolts for mounting and fixing the mounting leg and the vibration isolating member.

The third object of the present invention is to provide an outdoor unit of an air conditioner which can certainly prevent drain water generated in the heat exchanger from infiltrating into the compressor-mounting side, and promptly process the drain water condensed on the compressor-mounting side, in order to heighten the efficiency of the drain water processing on the compressor-mounting side, and to prevent a harmful effect on electric parts, etc. due to moisture.

The present invention provides an outdoor unit for an air conditioner, comprising: a unit main body which is a housing having a base plate, and a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit main body, wherein in the base plate a compressor-mounting surface on which the compressor is mounted is formed higher than a heat exchanger mounting surface on which the heat exchanger is mounted, and the compressor-mounting surface is provided with drainage channels for collecting dew-condensation water dropping from a suction-side piping connected to the compressor or a piping group and connecting valves to guide the water onto the heat

exchanger mounting surface.

According to the present invention, it is possible to certainly prevent drain water generated in the heat exchanger from infiltrating into the compressor-mounting side, and to promptly guide drain water condensed on the compressor-mounting side to the heat exchanger mounting side.

Brief Description of Drawings

FIG. 1 is a perspective view showing a main part of an outdoor unit of an air conditioner relating to an embodiment of the present invention.

FIG. 2 is a perspective view of a base plate forming the outdoor unit, viewed from the front side.

FIG. 3 is a plan view of the base plate.

FIG. 4 is a perspective view of the base plate viewed from the rear side.

FIG. 5A is a cross-sectional view of the base plate cut along the line VA-VA in FIG. 3 and viewed in the direction of arrows.

FIG. 5B is an explanatory drawing illustrating levels of surfaces of parts in FIG. 5A.

FIG. 6 is a perspective view showing a front-side fixing leg and therearound of the base plate.

FIG. 7 is a perspective view showing a rear-side corner portion of the base plate.

FIG. 8 is a cross-sectional view of the base plate cut along the line VIII-VIII in FIG. 3 and viewed in

the direction of arrows.

FIG. 9 is a cross-sectional view of the base plate cut along the line IX-IX in FIG. 3 and viewed in the direction of arrows.

FIG. 10 is a perspective view showing a main part of the base plate, in which a region for disposing a compressor integrated into the outdoor unit is viewed from the inclined rear side.

FIG. 11 is a perspective view of a part of the base plate, in which the region for disposing the compressor is viewed from the inclined front side.

FIG. 12 is a perspective view of a part of the base plate, showing a right-rear corner portion for disposing the compressor.

FIG. 13 is a cross-sectional view showing a structure for fixing the compressor.

Best Mode for Carrying Out of the Invention

The embodiments of the invention will be described with reference to the accompanying drawings.

FIG. 1 is a perspective view of an outdoor unit of an air conditioner, in which a part of the outdoor is omitted. In the drawing, reference numeral 1 denotes a base plate, side wall are provided in a standing state along the peripheral edge of the base plate 1, and a top board blocks upper end portions of the side walls, by which a unit main body S is constituted. In the drawing, only the base plate 1 forming the unit main

body S is shown, and the side walls and the top board are omitted.

On the base plate 1, a partition plate 2 is provided in a standing state at a position of about 1/3 of the whole width from the right end of the base plate, to divide the inside of the unit main body S into the right and left. A space on the right side of the partition plate 2 in the drawing is referred to as machine chamber A1, in which a compressor 3 is mounted, and a suction cup 4 connected with the compressor 3 via a pipe and a piping group 5 connected to a four-way valve and the like are contained.

Further, a lower end portion of a valve fixing plate 6 is attached to one side portion of the base plate 1 in the machine chamber A1 such that the valve fixing plate is provided in a standing state on the base plate 1. The valve fixing plate 6 is provided with a plurality of connecting valves 7, and connected to an end of the piping group 5.

Furthermore, when mounting the outdoor unit of the air conditioner on a predetermined position, an end of a connecting pipe extended from an indoor unit is connected to the connecting valves 7, and thereby a refrigerant which has been sealed in the outdoor unit side is guided to the indoor unit side to form a refrigeration cycle circuit.

A space on the left side of the partition plate 2

in the drawing is referred to as heat exchange chamber A2, in which an outdoor heat exchanger 8 formed in a L shape in plan is mounted, and a blower 9 and a support base 9S for supporting the blower 9 are mounted. Further, the structure for fixing the compressor 3, the outdoor heat exchanger 8 and the support base 9S and the like on the base plate 1 will be described later.

As described above, refrigeration cycle components and the like are mounted and fixed on the base plate 1, and the side wall united with the top board is mounted on the base plate 1 to form the outdoor unit.

Next, the base plate 1 will now be described in detail. FIG. 2 is a perspective view of the base plate 1 viewed from the front side, FIG. 3 is a plan view of the base plate 1, FIG. 4 is a perspective view of the base plate 1 viewed from the rear side, and FIG. 5A is a cross-sectional view of the base plate 1 cut along the line VA-VA in FIG. 3 and viewed in the direction of arrows.

The base plate 1 has a rectangular shape whose width is several times longer than the depth, and is made by pressing a metal plate. A painted steel plate, which is made by painting a hot-dip zinc-coated steel plate, and hot-dip aluminum-zinc coated steel plate (e.g.: Galvarium Steel Plate (phonetic) :trade name) are being adopted as material, which are characterized by having excellent workability and durability.

A flange part 10, which is formed such that it is bent to have a step-like cross section from the bottom surface to the upper end edge, is provided along the peripheral edge of the base plate 1. Flange part 10 is notched in a plurality of positions of the peripheral edge, and fixing legs 11 and 12 extending from the peripheral edge to outward are formed in these notched parts.

The fixing legs 11 and 12 are formed as one body with two side portions in the width direction of the base plate, which are longer sides of the base plate 1, and are not provided to the side portions in the depth direction, which are the shorter sides. A pair of right and left fixing legs provided on a longer side portion in the front side of the drawing are referred to as front-side fixing legs 11, and a pair of right and left fixing legs provided on a longer side portion in the rear side of the drawing are referred to as rear-side fixing legs 12. Each of the fixing legs 11 and 12 is fixed on the mount part via fixing elements (not shown).

Further, the front-side fixing legs 11, which will now be explained, have bent piece portions 11a which is bent downward along the peripheral edge, as shown in FIG. 6 and FIG. 11. A portion connecting the proximal end portion of the bent piece portion 11a with the peripheral edge of the base plate which is the edge of

the flange part 10 is a U-shaped portion 11b formed in a substantially U shape.

Further, in each of the front-side fixing legs 11, a concave portion 13 contacting the mount part is formed as one body by drawing in substantially the center of the front-side fixing leg 11, and a drain hole 14 is provided in the concave portion 13. A hole 15 provided between the concave portion 13 and the distal end portion is a mounting hole, through which the fixing element is inserted to fix the front-side fixing leg 11 on the mounted position.

As shown in FIG, 10, each of the rear-side fixing legs 12 is bent and extended from the peripheral edge of the base plate 1 to have an approximate L-shaped cross section, and comprises a horizontal piece portion 12a contacting the mounted position, and a standing piece portion 12b formed between the horizontal piece portion and the peripheral edge of the base plate 1.

The horizontal piece portion 12a is provided with a forked long groove 16 which is notched from the distal end to substantially the bent edge thereof in substantially the center in the width direction. When mounting the outdoor unit, fixing elements have been temporarily fixed on the mounting site in advance, the assembled outdoor unit is carried to the site, and positioning of the outdoor unit can be easily performed only by positioning the rear-side fixing legs 12 in the

rear side and fitting the forked long grooves 16 on the rod portions of the fixing elements.

The standing piece portion 12b is provided with a plurality of reinforcing ribs 17 to retain the strength of the rear-side fixing legs 12 formed to have a substantially L-shaped cross section. A bank-like projection 18 is provided as one body at the boundary between the standing piece portion 12b which is the proximal end portion of the rear-side fixing leg 12 and the portion extended from the base plate 1. The bank-like projection 18 is provided to continue to the right and left end portions in the middle level of the flange part 10 which comes to an end at the surface facing the rear-side fixing legs 12.

As shown in FIGS. 2-5 again, the bottom surface of the base plate 1 is formed to roughly have three levels of low-level surfaces, middle-level surfaces and high-level surfaces, except for the portions described later. In particular, in FIG. 3, FIG. 4 and FIG. 5B, low-level surface regions are indicated by wide-spaced hatching of broken line, middle-level surface regions are indicated by normal hatching, and high-level surface regions are indicated by dense hatching.

First, most of the bottom surface of the machine chamber A1, which is the right side region of the drawing divided by the boundary of the mounting position of the partition plate 2 explained by FIG. 1,

is formed of high-level surfaces and middle-level surfaces except for some parts, which is called a compressor-mounting surface 20.

Further, most of the bottom surface of the heat exchanger chamber A2, which is the left side region of the drawing divided by the boundary of the mounting position of the partition plate 2, is formed of low-level surfaces except for some parts, which is called a heat exchanger mounting surface 21.

Furthermore, along the front side of the heat exchanger mounting surface 21, a drawn portion 22 for shutting off drain water is formed as one body. The drain water shut-off drawn portion 22 has the same level as that of the compressor-mounting surface. Therefore, the heat exchanger mounting surface 21 formed of the low-level surfaces is surrounded by the drain water shut-off drawn portion 22, the compressor-mounting surface 20 and the flange part 10, which are formed to be higher than the heat exchanger mounting surface.

As described above, since the bottom surface of the base plate 1 except the drain water shut-off drawn portion 22, etc. comprises the compressor-mounting surface 20 and the heat exchanger mounting surface 21, and the compressor-mounting surface 20 is formed to be higher than the heat exchanger mounting surface 21, even if drain water which is generated in the outdoor

heat exchanger 8 with refrigeration cycle operation flows down onto the heat exchanger mounting surface 21, the drain water does not infiltrate into the compressor-mounting surface 20 side as long as a drain structure is provided in the heat exchanger mounting surface.

A plurality of positioning drawn portions 23 is provided on the compressor-mounting surface 20. Each of the positioning drawn portions has a circular shape in plan, a trapezoidal cross section, and a projected upper edge portion. In this embodiment, three positioning drawn portions 23 are formed as one body with the compressor-mounting surface by drawing, and a screw hole 24 is provided in the center of each positioning draw portions.

Further, as shown in FIGS. 9-13, a mounting leg 3A united as one body with the compressor 3 is fixed to the positioning drawn portion 23 by mounting bolts 26 via rubber vibration isolators 25 which are vibration-isolating members. More specifically, fixing holes 27 are provided at the compressor mounting leg 3A, and upper end portions of the rubber vibration isolators 25 are fitted in the fixing holes. Then, the rubber vibration isolators 15 are mounted on the positioning drawn portions 23.

Each of the rubber vibration isolators 25 has a bolt-inserting hole 28, and the bolt-inserting hole 28

communicates with the screw hole 24 provided at each positioning draw portion 23. Further, the mounting bolts 26 are opposed to the upper portions of the rubber vibration isolators 25 in the state where the threaded portions of the mounting bolts 26 are directed downward and the head portions are directed upward, and inserted into the bolt inserting holes 28 from the threaded portions. Lastly, the threaded portions of the mounting bolts 26 are screwed into the screw holes 24 of the positioning draw portions 23, and thereby the compressor 3 can be fixed on the compressor-mounting surface 20.

The valve fixing plate 6 attached to the side of the base plate 1 in the compressor-mounting surface 20 is positioned by being hooked on a hook portion 29 which is formed by a cutting and raising process on the base plate 1, and fixed by fixing screws later.

Further, a first and second drainage channels 30 and 31 are provided as one body with the compressor-mounting surface 20. The first drainage channel 30 is a narrow groove portion provided on the high-level surface, and formed in a L-shape to be parallel with the front portion and the side portion of the base plate 1. The second drainage channel 31 is a strip portion 32 provided between the right side portion and the flange part 10 in the rear via the positioning drawn portion 23 in the rear right portion in the

drawing, and the middle-level surface between the high-level surfaces and the flange part. One end of each of the first and second drainage channels 30 and 31 are open to the heat exchanger mounting surface 21.

In the state of being assembled as shown in FIG. 1, the first drainage channel 30 is disposed immediately below the suction cup 4 connected to the compressor 3. The second drainage channel, in particular, the right side portion of the second drainage channel, is located at substantially the same position as that of the valve fixing plate 6.

In the meantime, a pair of positioning projections 33 are provided at positions on the relatively rear side on the heat exchanger mounting surface 21 such that the projections are spaced from each other and opposed each other. The projecting surfaces of the positioning projections 33 have the same height as that of the high-level surfaces of the compressor-mounting surface 20, have a trapezoidal cross section, and have a rectangular shape in plan.

A drain hole 34 is provided between the positioning projections 33, which can promptly drain not only the drain water generated in the outdoor heat exchanger 8 but also drain water guided from the first and second drainage channels 30 and 31 on the compressor-mounting surface 20 to the heat exchanger mounting surface 21.

Further, as shown in FIG. 1, the support base 9S for supporting the blower 9 is positioned from inclined surfaces on the front side to the upper flat surface of the positioning projections 33, and fixed via fixing elements.

As shown in FIG. 7 and FIG. 8, a positioning projection 35 which has a small area and is provided in a rear left corner portion on the heat exchanger mounting surface 21 is used for positioning a curved portion of the outdoor heat exchanger 8 which is formed in a L shape in plan.

Further, the outdoor heat exchanger 8 mounted at a predetermined position is characterized in that it is positioned inside the bank-like projection 18 formed on the proximal end portion of each of the rear-side fixing legs 12 explained above. In other words, the bank-like projection 18 formed in the proximal end portion of the rear-side fixing leg 12 in the vicinity of the outdoor heat exchanger 8 is provided outside of the outdoor heat exchanger to have a predetermined space W from the position in the vertical direction of the outside surface of the outdoor heat exchanger, as shown in FIG. 8, in particular.

As described above, the fixing legs 11 and 12 are formed as one body with the base plate 1, which can unnecessitate a step for mounting the fixing legs such as welding and caulking, improve the manufacturing

performance of the base plate 1, and supply parts having high reliability at low price.

A metal steel plate which requires no painting and has excellent workability and durability, such as hot-dip aluminum-zinc coated steel plate, can be used as the base plate 1, and a mounting step such as caulking is unnecessiated, which can improve manufacturing property of the base plate 1 and supply parts having high reliability at low price.

Since each of the fixing legs 11 on at least one side (front side) is provided with the concave portion 13, which contacts the mounted surface, in substantially the center of the leg, the strength as fixing legs can be increased. The drain hole is provided in each of the concave portions 13 to prevent accumulation of water, which prevents generation of rust and corrosion. Further, the portion connecting the proximal end portion of each of the front-side fixing leg and the peripheral edge of the base plate 1 is formed in a substantially U shape, which prevents deformation and damage due to shock from the outside.

Each of the rear-side fixing legs 12 on the other side is formed to have a L-shaped cross section and provided with the bank-like projection 18 on its proximal end portion, and thus water generated in the base plate 1 or water infiltrated in the base plate can be prevented from flowing to the rear-side fixing legs,

and generation of rust and corrosion can be prevented. Further, the plurality of reinforcing ribs 17 are provided in the vertical direction to the rear side fixing legs 12, the strength of the legs can be improved, and deformation and damage due to shock from the outside can be prevented.

Since the base plate 1 are provided with one pair of fixing legs 11 on the front side and with the other pair of fixing legs 12 on the rear side as one body with the base plate 1, the legs are always set at predetermined positions without being deformed as fixing legs of the outdoor unit. Further, fixing of the fixing elements on the rear side where a work for fixing the unit is particularly difficult is facilitated.

Since the bank-like projection 18 formed on the proximal end portion of the rear-side fixing leg 12 in the vicinity of the outdoor heat exchanger 8 is located outside the outdoor heat exchanger 8 with a predetermined space W from the position in the vertical direction of the outside surface of the outdoor heat exchanger 8, even if the drain water or the like generated in the outdoor heat exchanger 8 flows down from the outside surface, all the drain water flows onto the low-level surface which is the heat exchanger mounting surface 21, and does not overflow the bank-like projection 18 into the fixing

legs 12 side on the outside of the base plate 1.

Further, the present invention is not limited to embodiments wherein all the front and rear side-fixing legs 11 and 12 are formed as one body with the base plate 1. For example, the present invention is applicable to a structure wherein a part of one pair or both pairs of the fixing legs are fixed on the base plate 1 by using fixing means.

When fixing the compressor 3 on the base plate 1, the present invention is structured such that the compressor 3 is mounted on a predetermined position of the base plate 1 and thereafter the mounting bolts 26 are inserted from above to be screwed into the screw holes 24. Therefore, in comparison with the conventional structure wherein the mounting bolts are fixed on the base plate beforehand to project the screw portions upward, a work for fixing the bolts on the base plate beforehand is unnecessitated. Further, when mounting the compressor 3, there occurs no problem such as deformation of bolts or damage to the compressor mounting leg due to contact of the compressor 3 to the bolts, and mounting workability can be greatly improved.

With the actual refrigeration cycle operation, even when dew-condensation water is generated on the surface of the suction cup 4 connected to the compressor 3 and flows down onto the base plate 1, it

is structured such that the water is guided to the heat exchanger mounting surface 21 via the first drainage channel 30 provided on the compressor-mounting surface 20. Therefore, accumulation of water in the bottom portion of the machine chamber A1 which is the compressor-mounting surface 20 is prevented, which can prevent a harmful influence on electric parts or the like in the machine chamber due to moisture.

Further, even when dew-condensation water is generated on the surface of the connecting valves 7 or piping group 5 connected to the piping from the indoor unit and flows down onto the base plate 1, it is structured such that the water is guided to the heat exchanger mounting surface 21 via the second drainage channel 31 provided on the compressor mounting surface 20. Therefore, accumulation of water in the bottom portion of the machine chamber A1 which is the compressor-mounting surface is prevented, which can prevent a harmful influence on electric parts or the like in the machine chamber due to moisture.

As described above, in the outdoor unit of air conditioner, the fixing legs 11 and 12 are formed as one body with the base plate 1 forming the unit main body S. Thereby, work for mounting the fixing legs 11 and 12 on the base plate 1 is unnecessitated, and the manufacturing performance of the base plate 1 is improved, and parts having a high reliability can be

obtained at low price.

Further, when the mounting leg of the compressor 3 are fixed on the base plate 1, the present invention has the structure wherein the compressor 3 is mounted at a predetermined position and thereafter the mounting bolts 26 are inserted from upward. Therefore, generation of failure of the rubber vibration isolators 25 and the mounting bolts 26, such as deformation and damage can be prevented as well as the mounting leg of the compressor 3, and thus mounting workability can be improved.

Furthermore, since the compressor-mounting surface 20 is formed to be higher than the heat exchanger mounting surface 20, and the first and second drainage channels 30 and 31 are provided therein, the drain water generated in the heat exchanger 8 is certainly prevented from infiltrating into the compressor-mounting side. Further, the drain water condensed on the compressor-mounting side is promptly guided into the heat exchanger mounting side, and it is possible to heighten the efficiency of the drain water processing on the compressor-mounting side, and to prevent a harmful effect on electric parts, etc. due to moisture.

C L A I M S

1. An outdoor unit for an air conditioner, comprising:

a unit main body which is a housing having a base plate;

a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit main body; and

fixing legs which are provided on the unit main body and to be fixed on a mount part by means of fixing elements,

wherein the fixing legs are formed as one body with the base plate of the unit main body.

2. An outdoor unit for an air conditioner according to claim 1, wherein the base plate is formed by pressing a metal plate, and provided with a flange part which is bent upward along a peripheral edge of the base plate, and a plurality of parts of the peripheral edge of the base plate constitute the fixing legs extended outward.

3. An outdoor unit for an air conditioner according to claim 1 or 2, wherein the base plate has a rectangular shape having a greater dimension in a width direction than in a depth direction, the fixing legs are provided on two side portions in the width direction which are the longer sides of the base plate, a concave portion contacting the mount part is formed

at substantially the center of each of the fixing legs as one body with the associated fixing leg on at least one of said two side portions in the width direction, and a drain hole is provided at the concave portion.

4. An outdoor unit for an air conditioner according to claim 3, wherein each of the fixing legs on said at least one side has a piece portion which is bent downward along with its peripheral edge, and a portion connecting a proximal end portion of each of the fixing legs and the peripheral edge of the base plate is formed to have a substantially U shape.

5. An outdoor unit for an air conditioner according to claims 1 or 2, wherein the base plate has a rectangular shape having a greater dimension in a width direction than in a depth direction, the fixing legs are provided on two side portions in the width direction which are the longer sides of the base plate, each of the fixing legs on at least one side of said two side portions is bent and extended to have a substantially L-shaped cross section, and provided with a forked long groove, in which the fixing elements are to be inserted, from a distal end of a horizontal piece portion of the fixing leg contacting the mount part, and a bank-like projection connected to portions of the flange part on both sides of the fixing leg is provided on the proximal end of each of the fixing legs on said at least one side of said two side portions.

6. An outdoor unit for an air conditioner according to claim 5, wherein a standing piece portion formed between the horizontal piece portion and the proximal end portion of each of the fixing legs on said at least one side portion are provided with a plurality of reinforcing ribs extending in a substantially vertical direction.

7. An outdoor unit for an air conditioner according to claim 1 or 2, wherein the base plate has a rectangular shape having a greater dimension in a width direction than in a depth direction, the fixing legs are provided on two side portions in the width direction which are the longer sides of the base plate, a concave portion contacting the mount part is formed at substantially the center of each of the fixing legs as one body with the associated fixing leg on at least one of said two side portions in the width direction, a drain hole is provided at the concave portion, each of the fixing legs on at least the other side of said two side portions are bent and extended to have a substantially L-shaped cross section, and provided with a forked long groove, in which the fixing elements are to be inserted, from a distal end of a horizontal piece portion of the fixing leg contacting the mount part, and a bank-like projection connected to portions of the flange part on both sides of the fixing leg is provided on the proximal end of each of the fixing legs

on the other side.

8. An outdoor unit for an air conditioner according to claim 7, wherein the bank-like projection formed on the proximal end of the fixing leg on the other side in the vicinity of the heat exchanger is provided outside a position of an outer surface of the heat exchanger.

9. An outdoor unit for an air conditioner according to claim 7, wherein at least a part of each of the fixing legs is formed as one body with the base plate of the unit main body.

10. An outdoor unit for an air conditioner, comprising: a unit main body which is a housing having a base plate; and

a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit main body,

wherein in the base plate a compressor-mounting surface on which the compressor is mounted is formed higher than a heat exchanger mounting surface on which the heat exchanger is mounted, positioning drawn portions, each of which has a screw hole, are projected from the compressor-mounting surface, vibration isolating members, each of which has a bolt-inserting hole, are positioned and supported by the positioning drawn portions, fixing holes provided on a compressor-mounting leg are fitted on the vibration isolating

members, and the vibration isolating members and the mounting leg of the compressor are fixed on the base plate by means of mounting bolts which are screwed in the screw holes from above via the bolt-inserting holes of the vibration isolator members.

11. An outdoor unit for an air conditioner, comprising:

a unit main body which is a housing having a base plate, and

a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit main body,

wherein in the base plate a compressor-mounting surface on which the compressor is mounted is formed higher than a heat exchanger mounting surface on which the heat exchanger is mounted, and the compressor-mounting surface is provided with a first drainage channel for collecting dew-condensation water dropping from a suction-side piping connected to the compressor to guide the water onto the heat exchanger mounting surface.

12. An outdoor unit for an air conditioner, comprising:

a unit main body which is a housing having a base plate; and

a compressor, a heat exchanger and a blower which are mounted and fixed on the base plate of the unit

main body,

wherein in the base plate a compressor-mounting surface on which the compressor is mounted is formed higher than a heat exchanger mounting surface on which the heat exchanger is mounted, and the compressor-mounting surface is provided with a second drainage channel for collecting dew-condensation water dropping from a piping group and connecting valves to guide the water onto the heat exchanger mounting surface.

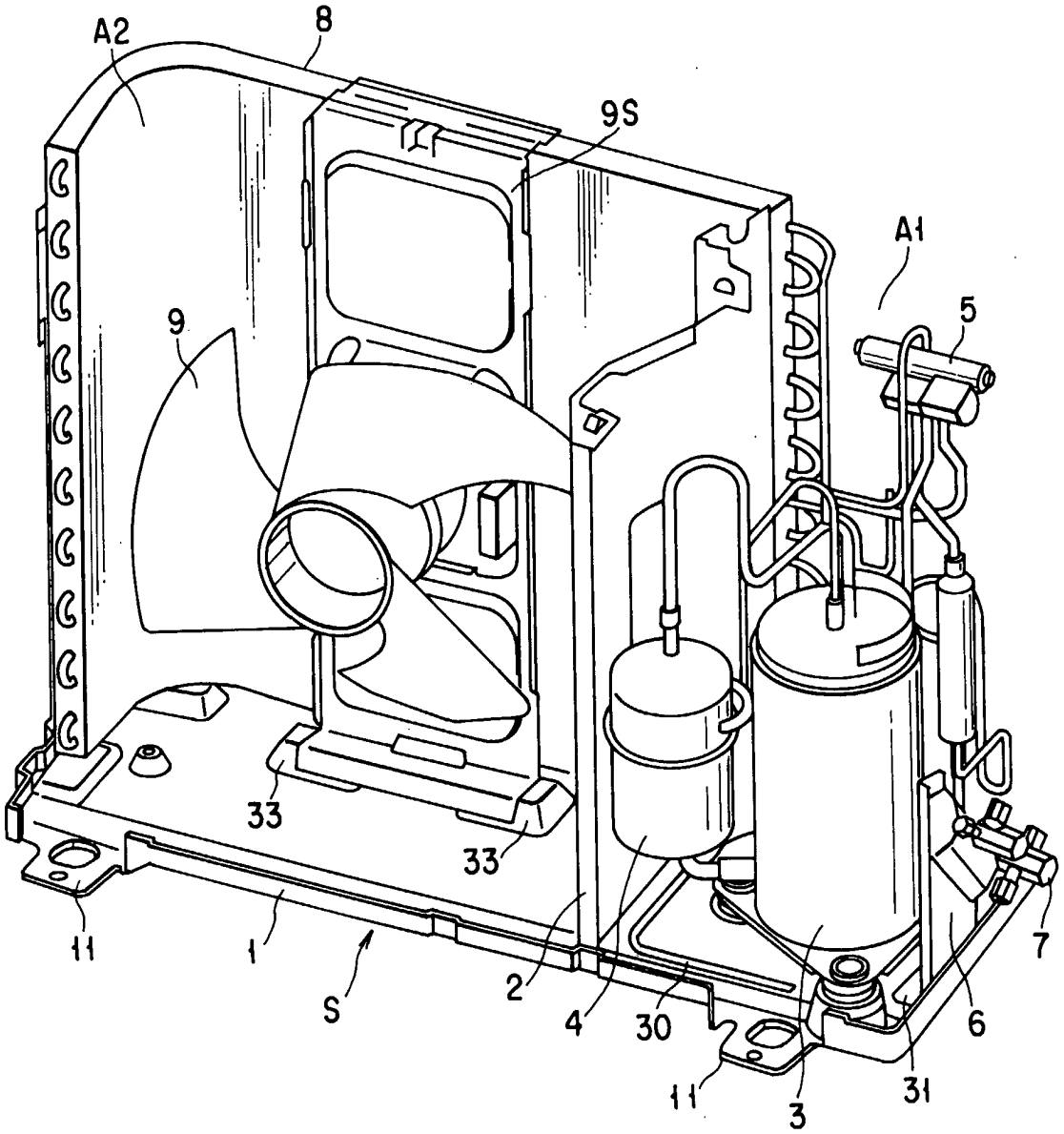

FIG. 1

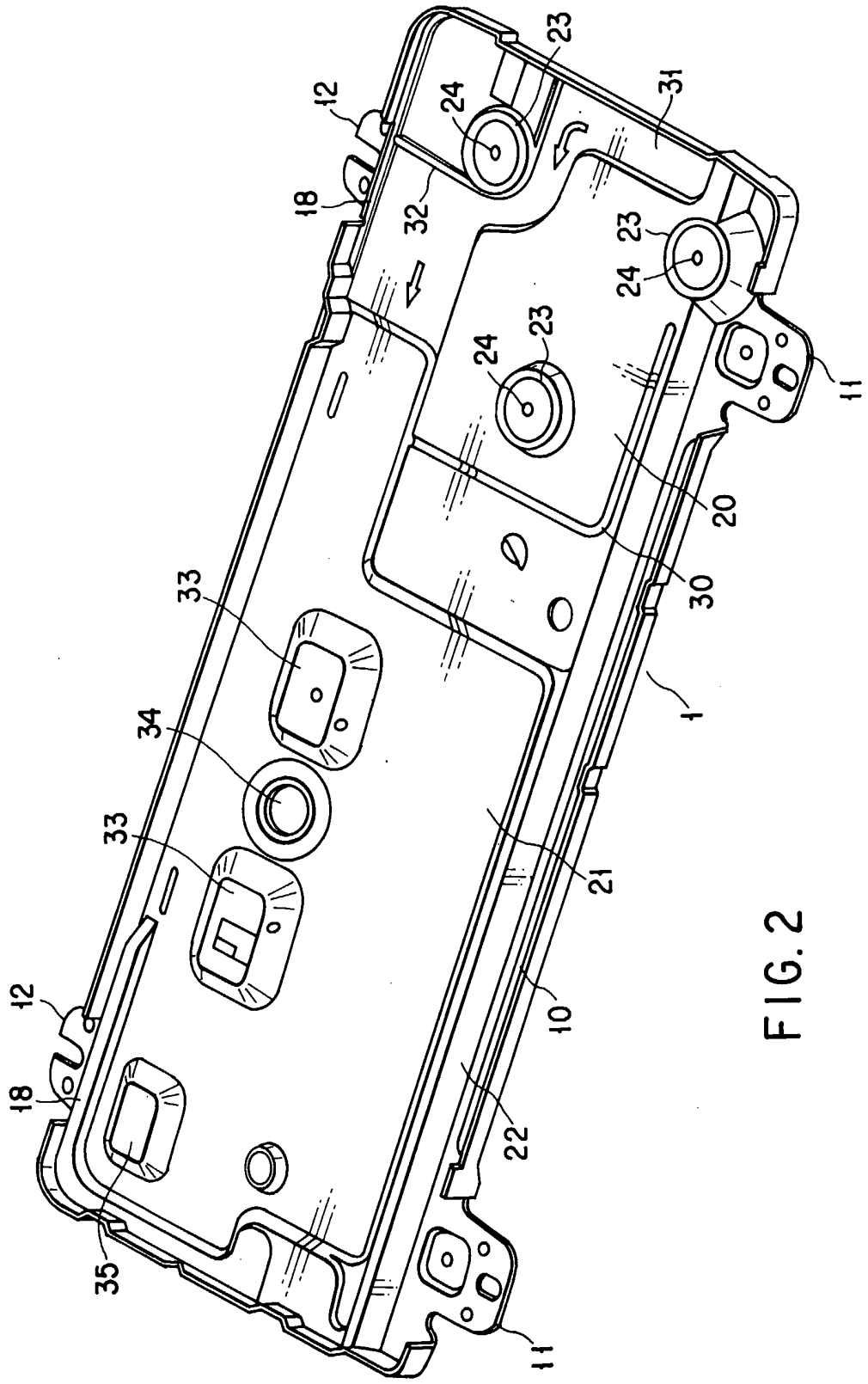

FIG. 2

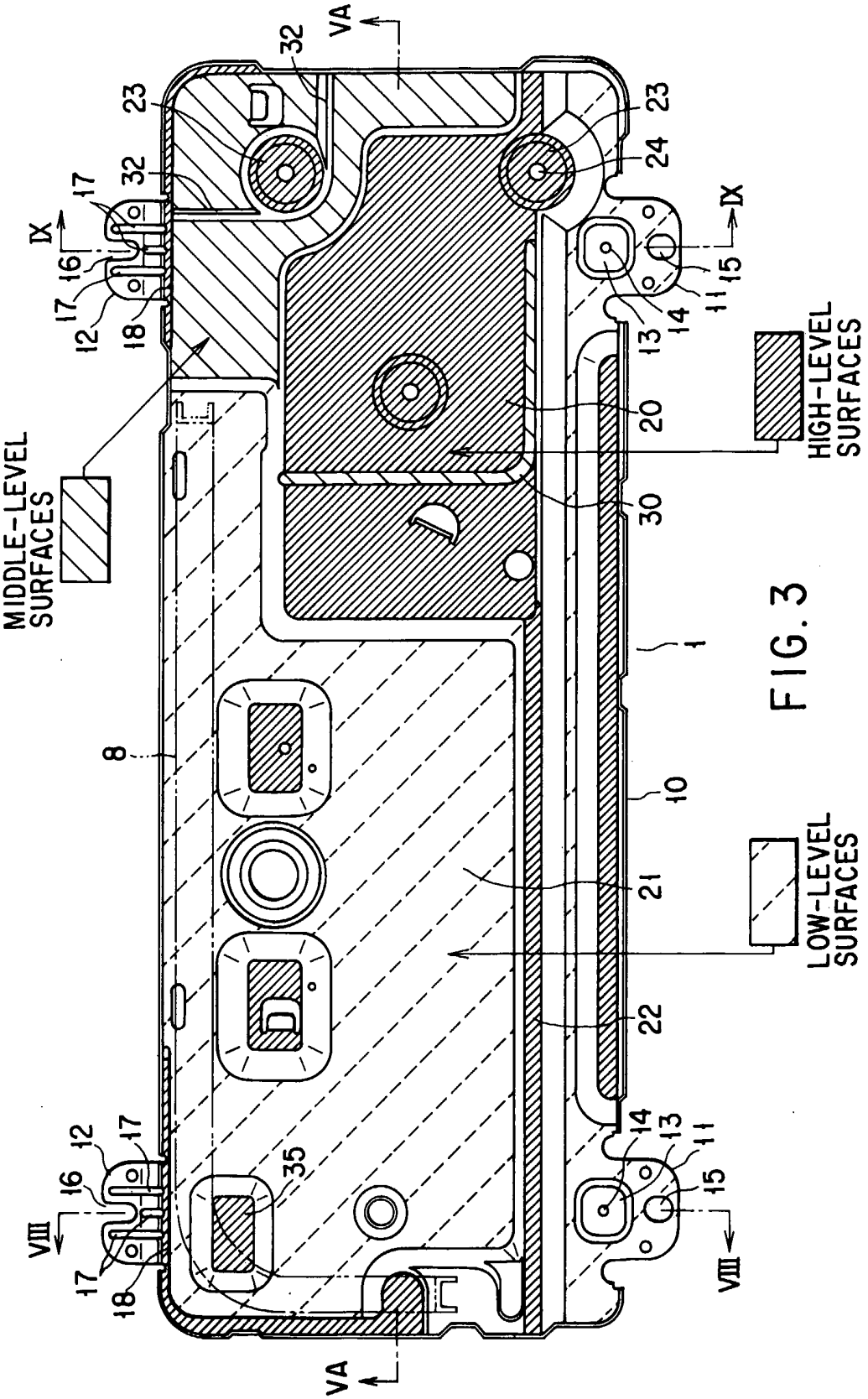
VA
32
23
24
IX
17
16
12
18
15
11
13
14
MIDDLE-LEVEL SURFACES
HIGH-LEVEL SURFACES
20
30
1
8
10
21
LOW-LEVEL SURFACES
22
35
VIII

FIG. 3

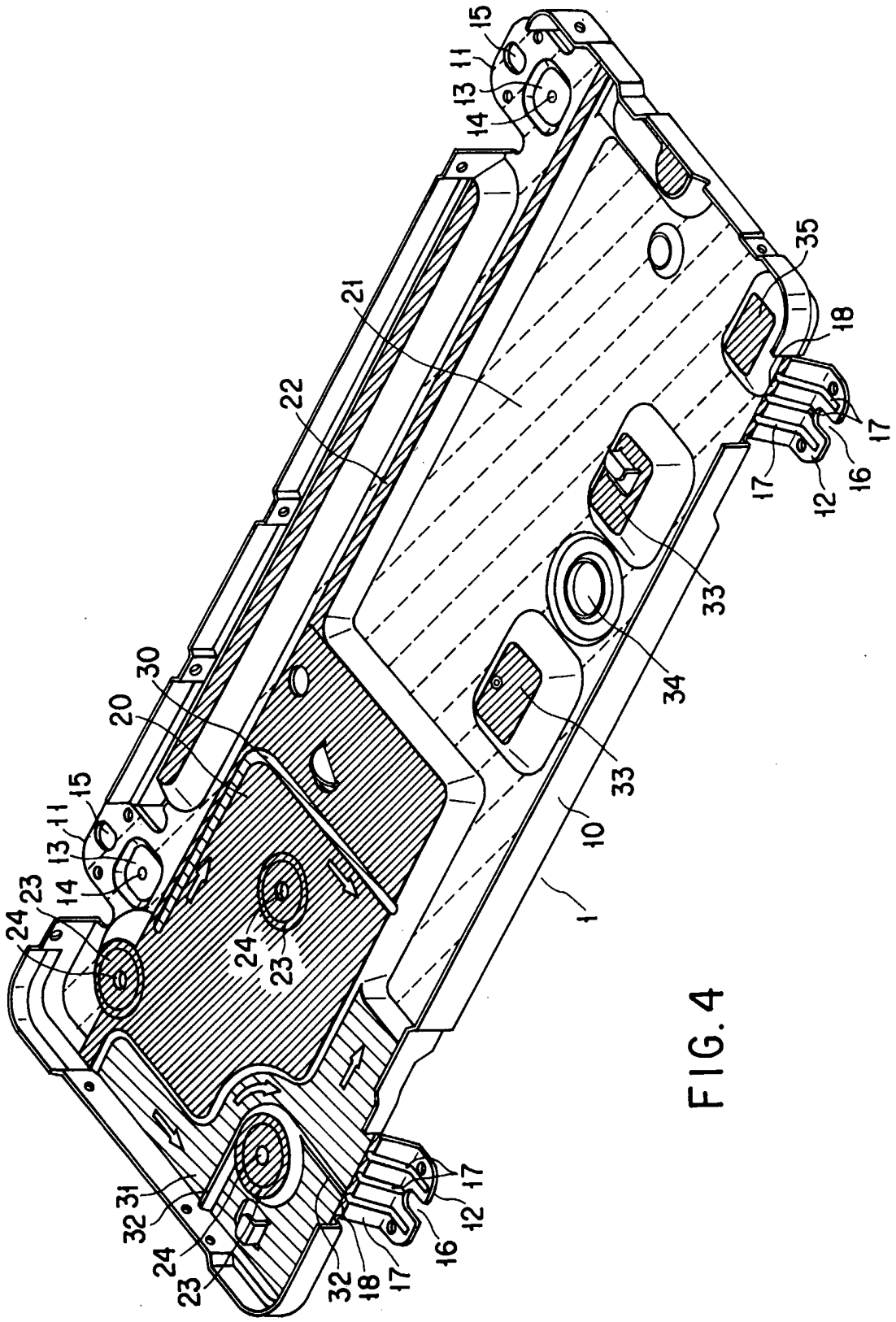

FIG. 4

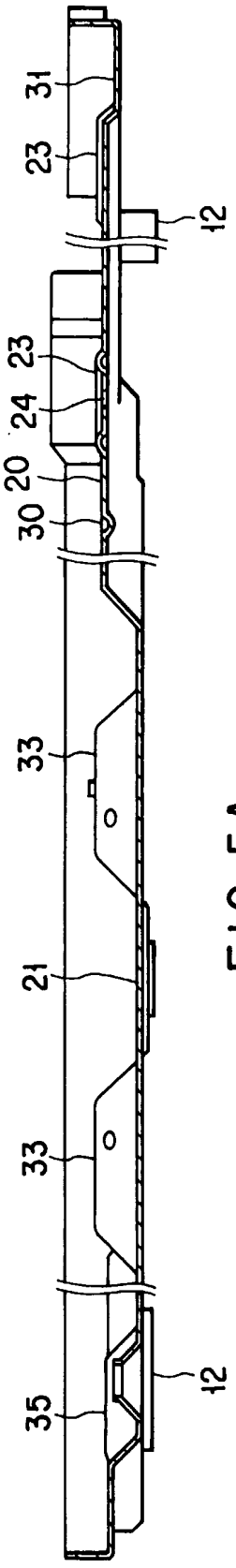
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FIG. 5A

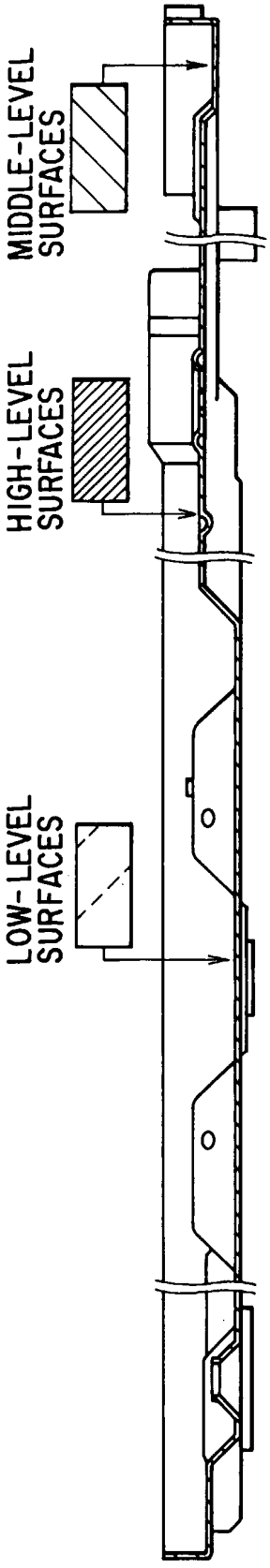

MIDDLE-LEVEL SURFACES
HIGH-LEVEL SURFACES
LOW-LEVEL SURFACES

FIG. 5B

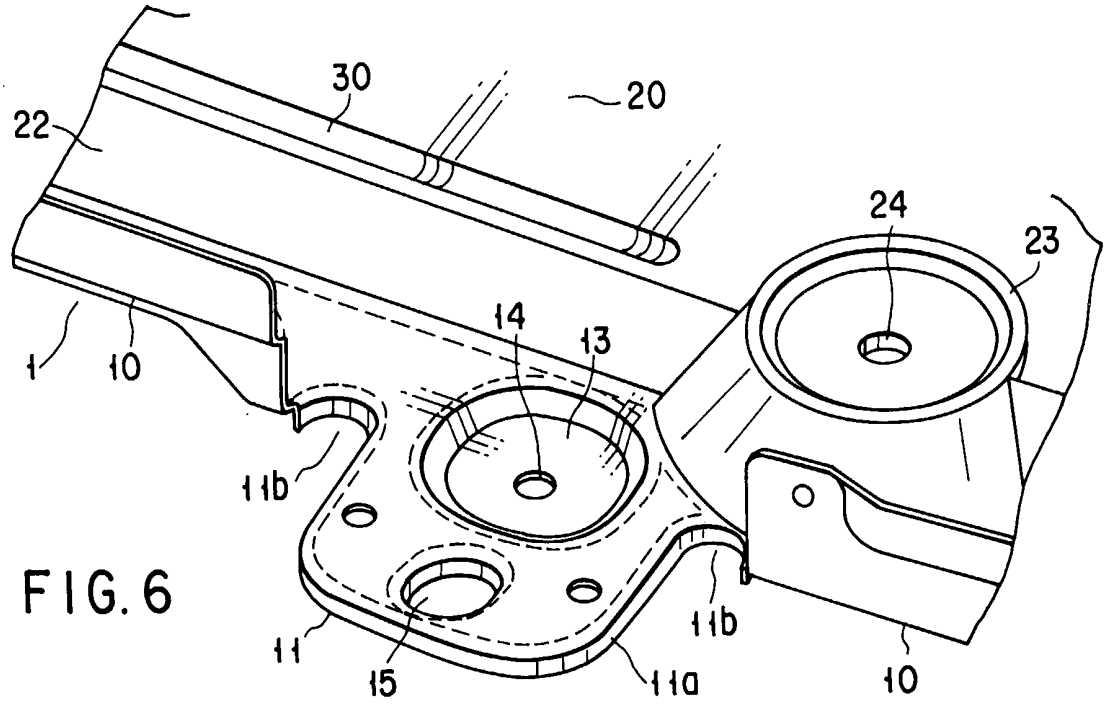


FIG. 6

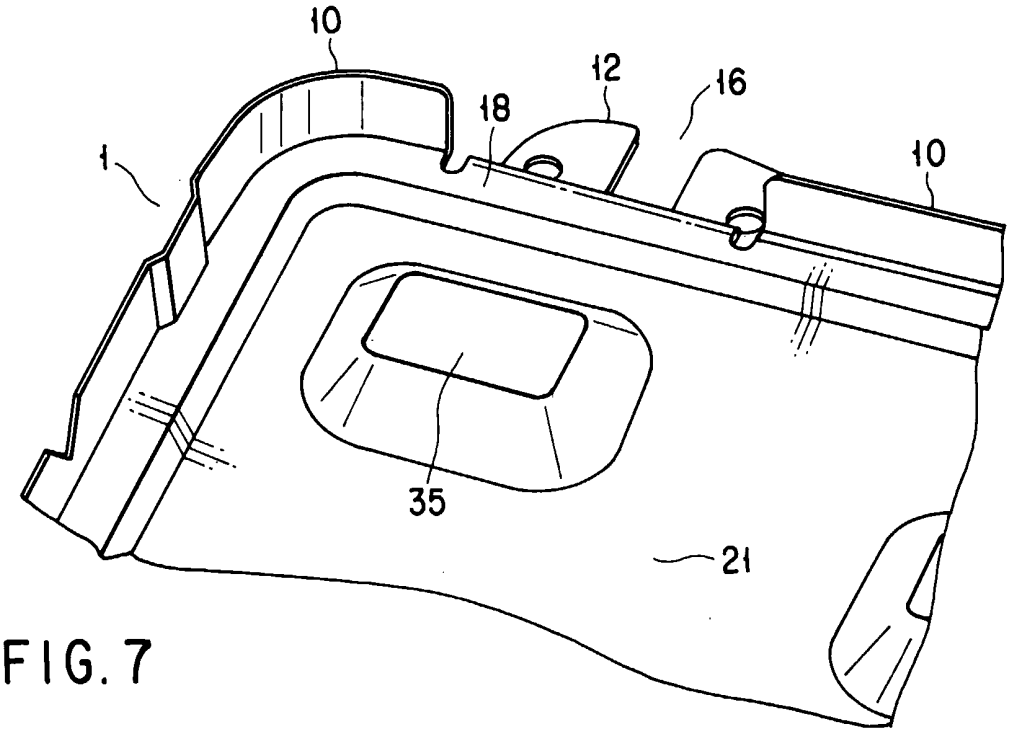


FIG. 7

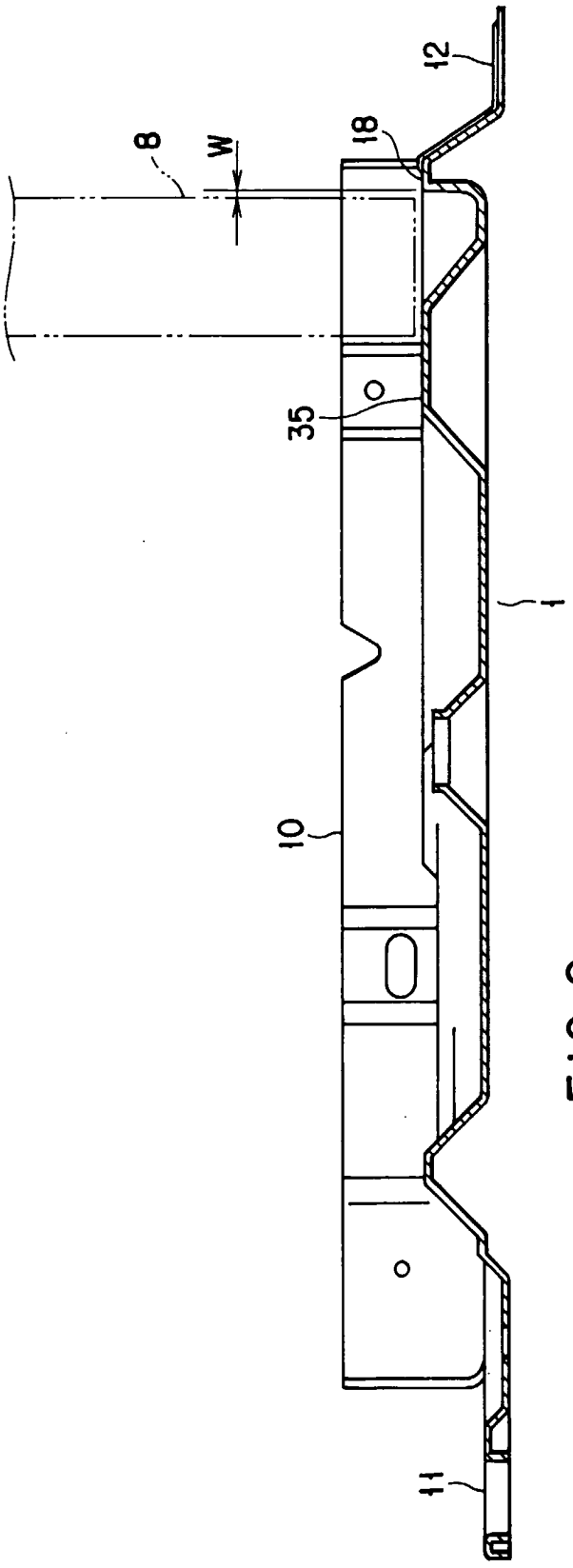


FIG. 8

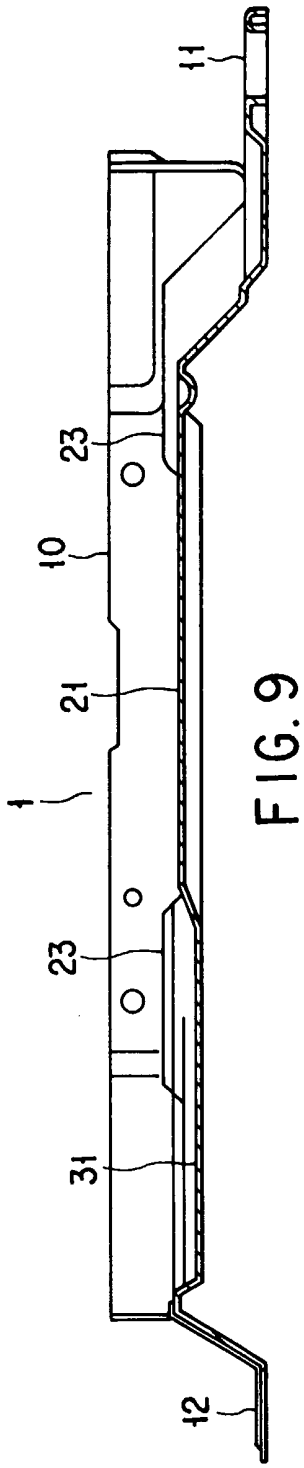
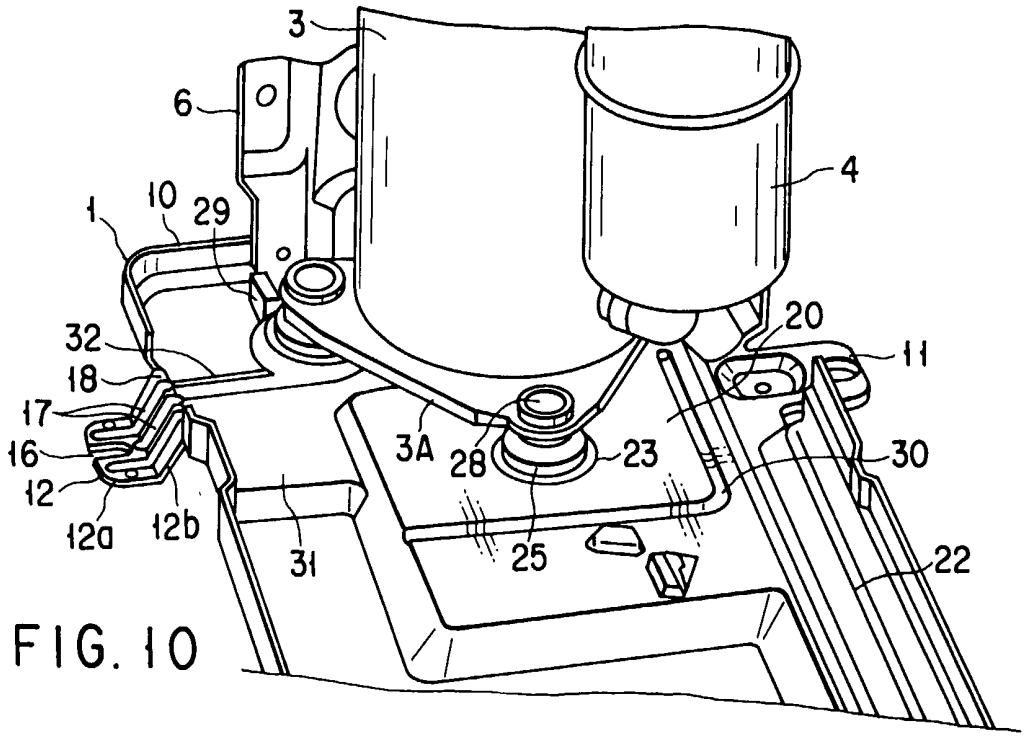


FIG. 9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6
4
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12a
12b
3A
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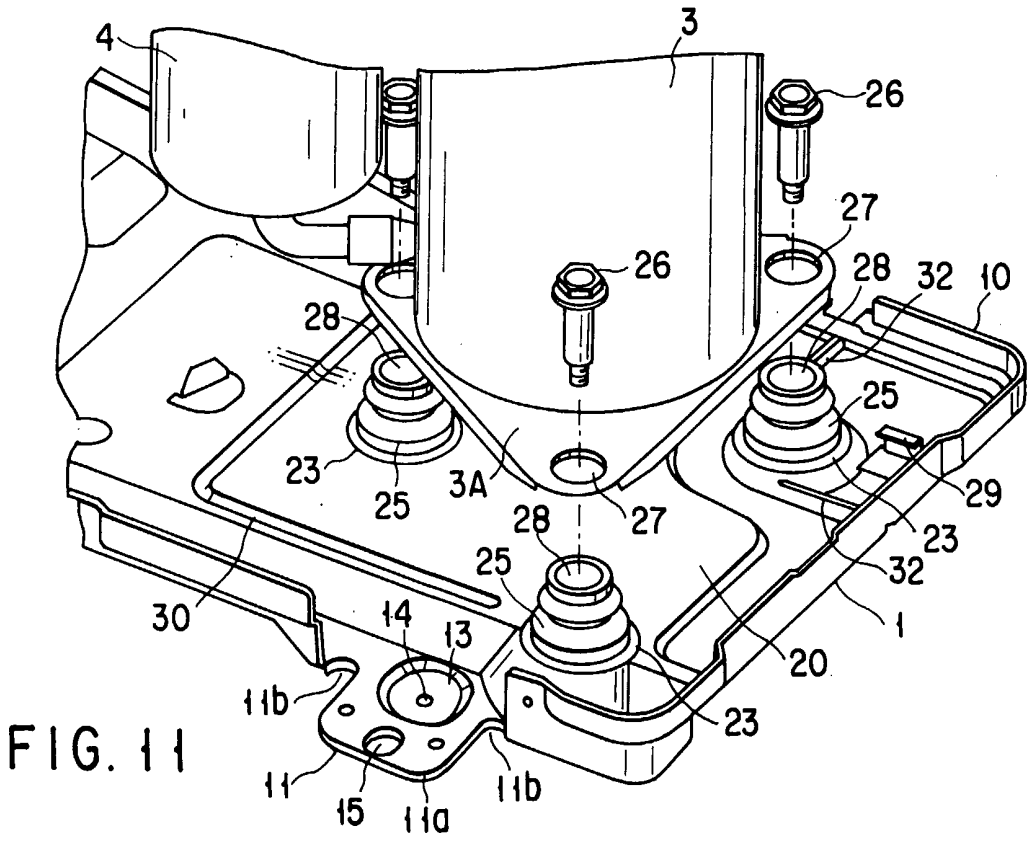
FIG. 10


4
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3A
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11b
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11
15
11a
11b

FIG. 11

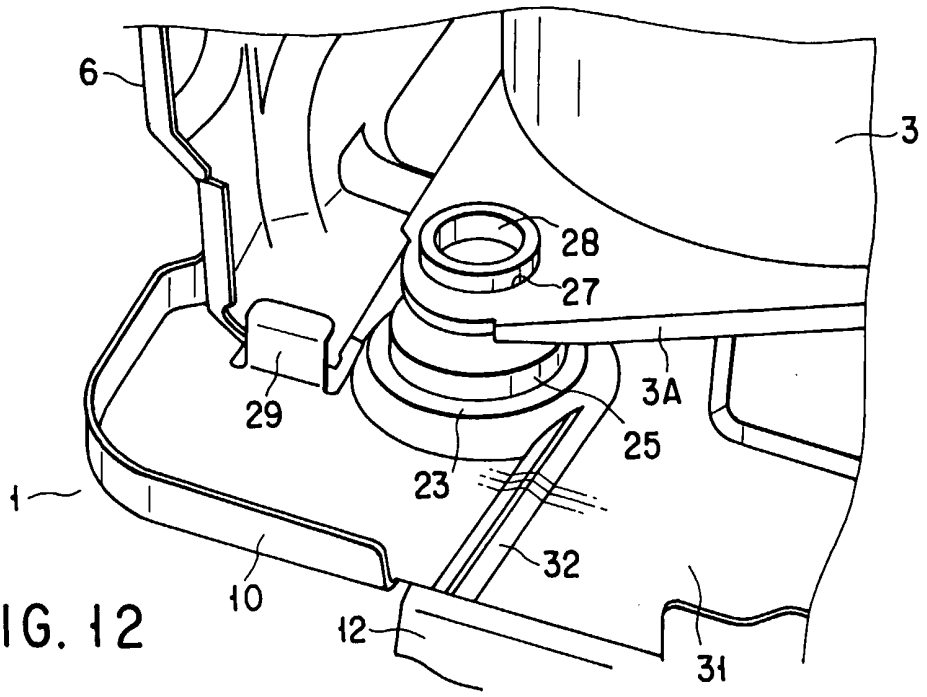

FIG. 12

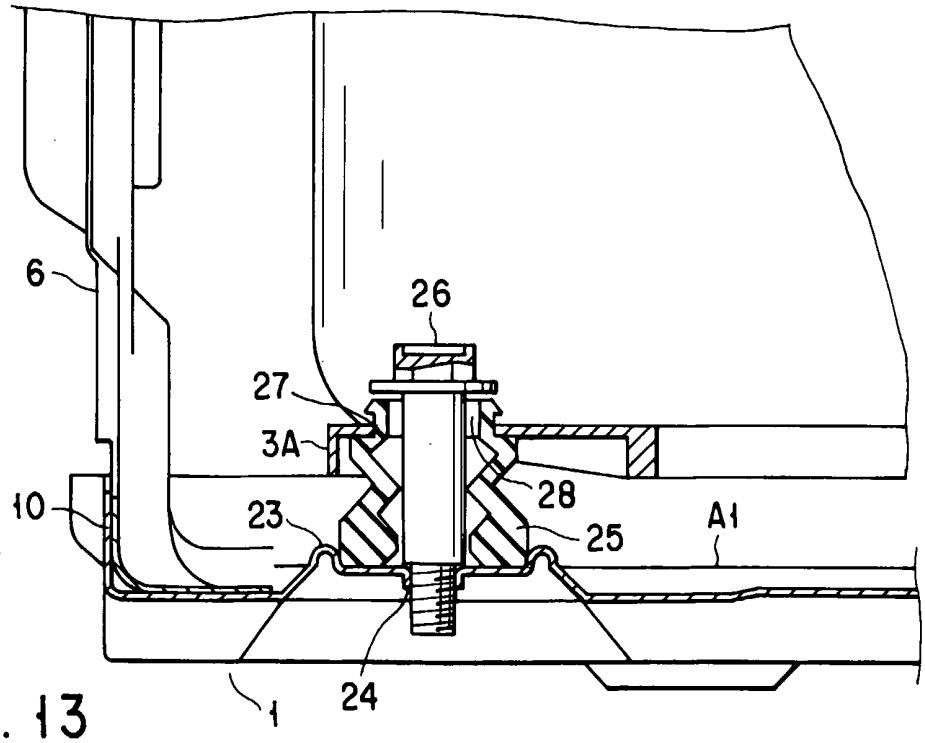

FIG. 13