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(54) **AIR CONDITIONER**

(57) An air conditioner (1) is equipped with a first infrared sensor (43a), a second infrared sensor (43b), a masking member (44), and a control unit (4). The first infrared sensor (43a) can detect the presence or absence of a person in a first detectable region (DR1). The second infrared sensor (43b) can detect the presence or absence of a person in a second detectable region (DR2). The control unit (4) controls operation in accordance with the

presence or absence of a person that has been detected by the first infrared sensor (43a) and the second infrared sensor (43b). The masking member (44) masks the first detectable region (DR1) to thereby limit the first detectable region (DR1) to a first detection region (R1) and masks the second detectable region (DR2) to thereby limit the second detectable region (DR2) to a second detection region (R2).

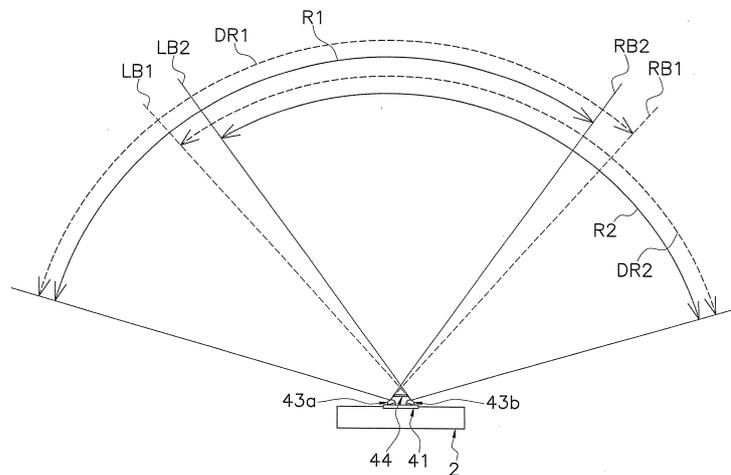


FIG. 11

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Description

TECHNICAL FIELD

[0001] The present invention relates to an air conditioner.

BACKGROUND ART

[0002] Conventionally, air conditioners that provide a more efficient and comfortable air-conditioned environment by controlling blowing direction, temperature and so on in accordance with the location of a person in a room have been used. For example, in the air conditioner disclosed in patent document 1 (JP-A No. 2009-85527), plural sensors that detect the presence or absence of a person are attached to the front of an indoor unit in such a way as to face mutually different directions. In this air conditioner, it is necessary for the boundaries of the detection regions of the sensors to be accurately established in order to realize a comfortable air environment with high precision in accordance with the detection regions of the sensors.

SUMMARY OF INVENTION

<Technical Problem>

[0003] It is an object of the present invention to provide an air conditioner that can accurately establish the boundaries of detection regions of sensors attached to an indoor unit.

<Solution to Problem>

[0004] An air conditioner pertaining to a first aspect of the present invention comprises a first sensor, a second sensor, a masking member, and a control unit. The first sensor and the second sensor are attached to a wall-mounted indoor unit. The first sensor can detect the presence or absence of a person in a first detectable region. The second sensor can detect the presence or absence of a person in a second detectable region. The control unit controls operation in accordance with the presence or absence of a person that has been detected by the first sensor and the second sensor. The masking member masks the first detectable region to thereby limit the first detectable region to a first detection region and masks the second detectable region to thereby limit the second detectable region to a second detection region.

[0005] In the air conditioner pertaining to the first aspect, the wall-mounted indoor unit has two human detection sensors: the first sensor and the second sensor. The first sensor can inherently detect the presence or absence of a person in the first detectable region, and the second sensor can inherently detect the presence or absence of a person in the second detectable region. Additionally, the masking member limits the first detect-

able region to the set first detection region and limits the second detectable region to the set second detection region. That is, the detection region of the first sensor and the detection region of the second sensor are limited to predetermined regions by the masking member. Consequently, the air conditioner pertaining to the first aspect can accurately establish the boundaries of the detection regions of the sensors attached to the indoor unit.

[0006] In the air conditioner pertaining to the first aspect, the first sensor, the second sensor, and the masking member may be unitized and attached to the indoor unit or may be separately attached to the indoor unit without being unitized.

[0007] An air conditioner pertaining to a second aspect of the present invention is the air conditioner pertaining to the first aspect, wherein the first sensor, the second sensor, and the masking member are disposed in such a way that there exists a third detection region that is a region in which part of the first detection region and part of the second detection region overlap one another.

[0008] The air conditioner pertaining to the second aspect can distinguish and detect the presence or absence of a person in the first detection region, the second detection region, and the third detection region.

[0009] An air conditioner pertaining to a third aspect of the present invention is the air conditioner pertaining to the first aspect or the second aspect, wherein the masking member is a single member that masks both the first detectable region and the second detectable region.

[0010] An air conditioner pertaining to a fourth aspect of the present invention is the air conditioner pertaining to the first aspect or the second aspect, wherein the masking member comprises a first masking part that masks the first detectable region and a second masking part that masks the second detectable region.

[0011] An air conditioner pertaining to a fifth aspect of the present invention is the air conditioner pertaining to any one of the first aspect to the fourth aspect, wherein the first sensor detects the presence or absence of a person in a left direction as seen from the indoor unit, and the second sensor detects the presence or absence of a person in a right direction as seen from the indoor unit.

[0012] An air conditioner pertaining to a sixth aspect of the present invention is the air conditioner pertaining to any one of the first aspect to the fifth aspect, further comprising a horizontal flap. The horizontal flap is pushed out frontward of the indoor unit during operation and changes the blow-out direction of conditioned air in an up and down direction. The masking member masks the first detectable region and the second detectable region in such a way that the horizontal flap during operation does not enter the first detection region and the second detection region.

[0013] In the air conditioner pertaining to the sixth aspect, the first detectable region and the second detectable region are masked by the masking member in such a way that the horizontal flap does not enter the detection

regions of the first sensor and the second sensor. Consequently, the air conditioner pertaining to the sixth aspect can prevent the horizontal flap from being erroneously detected.

<Advantageous Effects of Invention>

[0014] The air conditioner pertaining to the first aspect to the fifth aspect of the present invention can accurately establish the boundaries of the detection regions of the sensors attached to the indoor unit.

[0015] The air conditioner pertaining to the sixth aspect of the present invention can prevent the horizontal flap from being erroneously detected.

BRIEF DESCRIPTION OF DRAWINGS

[0016]

FIG. 1 is an external view of an air conditioner in an embodiment of the present invention;

FIG. 2 is a schematic diagram of a refrigerant circuit of the air conditioner in the embodiment of the present invention;

FIG. 3 is an external view showing the internal structure of an indoor unit in the embodiment of the present invention;

FIG. 4 is an external view of a human detection sensor unit in the embodiment of the present invention;

FIG. 5 is a front view of the human detection sensor unit in the embodiment of the present invention;

FIG. 6 is a front view of the human detection sensor unit excluding a masking member in the embodiment of the present invention;

FIG. 7 is a bottom view of the human detection sensor unit excluding the masking member in the embodiment of the present invention;

FIG. 8 is a front view of the masking member in the embodiment of the present invention;

FIG. 9 is a block diagram of a control unit in the embodiment of the present invention;

FIG. 10 is a drawing showing detection regions of infrared sensors in the embodiment of the present invention;

FIG. 11 is a drawing showing detectable regions of the infrared sensors in the embodiment of the present invention;

FIG. 12 is a front view of the human detection sensor unit in example modification B of the present invention; and

FIG. 13 is a cross-sectional view of the indoor unit and a drawing showing the detectable regions of the infrared sensors in example modification C of the present invention.

DESCRIPTION OF EMBODIMENT

[0017] An embodiment of an air conditioner pertaining

to the present invention will be described below with reference to the drawings. The embodiment of the air conditioner pertaining to the present invention is one specific example of the present invention and is not intended to limit the technical scope of the present invention.

(1) Configuration of Air Conditioner

[0018] FIG. 1 is an external view of an air conditioner 1 pertaining to the embodiment of the present invention. The air conditioner 1 is equipped with an indoor unit 2 that is installed in a room and an outdoor unit 3 that is installed outdoors. The air conditioner 1 can perform cooling, heating, and dehumidification of the room.

[0019] FIG. 2 is a schematic view of a refrigerant circuit that the air conditioner 1 has. The refrigerant circuit of the air conditioner 1 is mainly configured from an indoor heat exchanger 12, an accumulator 31, a compressor 32, a four-way selector valve 33, an outdoor heat exchanger 34, and an expansion valve 35.

[0020] The indoor unit 2 houses the indoor heat exchanger 12, an indoor fan 13, and an indoor fan motor 14. The indoor fan motor 14 causes the indoor fan 13 to rotate to thereby generate an air flow that performs heat exchange with the indoor heat exchanger 12.

[0021] The outdoor unit 3 houses the accumulator 31, the compressor 32, the four-way selector valve 33, the outdoor heat exchanger 34, the expansion valve 35, an outdoor fan 38, and an outdoor fan motor 39. The outdoor fan motor 39 causes the outdoor fan 38 to rotate to thereby generate an air flow that performs heat exchange with the outdoor heat exchanger 34.

(2) Configuration of Indoor Unit

[0022] FIG. 3 is an external view showing the internal structure of the indoor unit 2. A control unit 4, the indoor heat exchanger 12, the indoor fan 13, a horizontal flap 17, and a filter 21 are housed in a body 20 of the indoor unit 2. A human detection sensor unit 41 is attached to a front panel 20a of the body 20 of the indoor unit 2. An air outlet 15 is disposed in a bottom surface of the body 20 of the indoor unit 2.

(2-1) Filter

[0023] The filter 21 is disposed between the front panel 20a of the body 20 and the indoor heat exchanger 12. The filter 21 removes dirt and dust included in the air flowing in toward the indoor heat exchanger 12. The indoor unit 2 has a mechanism that automatically cleans the filter 21 to which the dirt and dust have adhered.

(2-2) Horizontal Flap

[0024] The horizontal flap 17 is rotatably held in the area around the air outlet 15 and changes the blow-out direction of conditioned air in an up and down direction.

When the air conditioner 1 is stopped, the horizontal flap 17 closes the air outlet 15. When the air conditioner 1 is operating, the horizontal flap 17 is pushed out forward of the indoor unit 2 to open the air outlet 15.

[0025] The horizontal flap 17 is driven by a horizontal flap push-out mechanism drive motor 18a and a horizontal flap angle adjustment mechanism drive motor 18b. The horizontal flap push-out mechanism drive motor 18a is a stepping motor that drives a horizontal flap push-out mechanism (not shown in the drawings). The horizontal flap push-out mechanism causes the horizontal flap 17 to slide in a front and rear direction in such a way that the horizontal flap 17 is pushed out forward of the indoor unit 2 from the neighborhood of the air outlet 15. The horizontal flap angle adjustment mechanism drive motor 18b is a stepping motor that drives a horizontal flap angle adjustment mechanism (not shown in the drawings). The horizontal flap angle adjustment mechanism changes the angle of inclination of the horizontal flap 17.

[0026] The blow-out direction of the conditioned air is changed in the up and down direction as a result of the front and rear direction position and the angle of inclination of the horizontal flap 17 being changed by the horizontal flap push-out mechanism drive motor 18a and the horizontal flap angle adjustment mechanism drive motor 18b. The detailed configurations and actions of the horizontal flap push-out mechanism drive motor 18a and the horizontal flap angle adjustment mechanism drive motor 18b that drive the horizontal flap 17 are disclosed in JP-A No. 2011-21809.

(2-3) Human Detection Sensor Unit

[0027] The human detection sensor unit 41 is disposed in the central lower portion of the front panel 20a when the indoor unit 2 is seen from the front. The human detection sensor unit 41 mainly comprises a unit board 42, a first infrared sensor 43a, a second infrared sensor 43b, and a masking member 44. FIG. 4 is an external view of the human detection sensor unit 41. FIG. 5 is a front view of the human detection sensor unit 41. FIG. 6 is a front view of the human detection sensor unit 41 excluding the masking member 44. FIG. 7 is a bottom view of the human detection sensor unit 41 excluding the masking member 44. FIG. 8 is a front view of the masking member 44.

[0028] The unit board 42 has a first sensor holder 42a and a second sensor holder 42b. The first sensor holder 42a and the second sensor holder 42b are disposed adjacent to one another in the horizontal direction.

[0029] The first infrared sensor 43a and the second infrared sensor 43b are sensors that can detect the presence or absence of a person in front of the indoor unit 2. The infrared sensors 43a and 43b output electrical signals in accordance with the intensity of infrared radiant energy radiated from an object. The infrared radiant energy is determined by the temperature and the emissivity of the object, so that the lower the temperature is, the smaller the infrared radiant energy, and the higher the

temperature is, the greater the infrared radiant energy. The infrared sensors 43a and 43b detect the presence or absence of a person by applying this principle.

[0030] For example, if infrared radiant energy that is always the same is being output from an object whose temperature is constant, the infrared sensors 43a and 43b monitoring the surface of that object will output constant electrical signals. Additionally, when the object has moved at a relatively fast speed, the infrared sensors 43a and 43b no longer receive the infrared radiant energy that had been emitted from the surface of the object and instead receive the infrared radiant energy being emitted from the surface of the place where the object was. Because of this, the electrical signals output by the infrared sensors 43a and 43b greatly change. That is, when the electrical signals output by the infrared sensors 43a and 43b have greatly fluctuated, it can be judged that the monitoring target of the infrared sensors 43a and 43b has moved at a relatively fast speed.

[0031] In the present embodiment, the first infrared sensor 43a is held in the first sensor holder 42a, and the second infrared sensor 43b is held in the second sensor holder 42b. As shown in FIG. 7 and later-described FIG. 10, the first infrared sensor 43a held in the first sensor holder 42a is disposed in such a way as to face the space on the front left side of the indoor unit 2, and the second infrared sensor 43b held in the second sensor holder 42b is disposed in such a way as to face the space on the front right side of the indoor unit 2.

[0032] The masking member 44 is a member that covers the front of the unit board 42 on which the first infrared sensor 43a and the second infrared sensor 43b are held. As shown in FIG. 5, the masking member 44 covers part of the left side of the first infrared sensor 43a and covers part of the right side of the second infrared sensor 43b as seen from the front. That is, as shown in later-described FIG. 11, in the case of looking forward from the indoor unit 2 side, the masking member 44 covers part of the right side of the first infrared sensor 43a and covers part of the left side of the second infrared sensor 43b.

(2-4) Control Unit

[0033] FIG. 9 is a block diagram of the control unit 4. The control unit 4 has a microcomputer 4a, a memory 4b, and a drive circuit 4c. The microcomputer 4a determines whether or not there is a person in the room from changes in the electrical signals output from the first infrared sensor 43a and the second infrared sensor 43b. The microcomputer 4a outputs a control signal to the drive circuit 4c on the basis of the determination result. On the basis of the control signal output from the microcomputer 4a, the drive circuit 4c outputs drive pulses to the horizontal flap push-out mechanism drive motor 18a to cause the horizontal flap 17 to slide in the front and rear direction and outputs drive pulses to the horizontal flap angle adjustment mechanism drive motor 18b to change the angle of inclination of the horizontal flap 17.

The output condition and the output mode of the control signal are stored in the memory 4b.

[0034] In the present embodiment, the first infrared sensor 43a and the second infrared sensor 43b constantly monitor the room. For example, when a person has entered the person-less room whose temperature is stable, the infrared sensors 43a and 43b receive the infrared radiant energy emitted from the person's body, so the output electrical signals greatly change. The control unit 4 can detect the presence or absence of a person in the room by storing a program that recognizes the change in the electrical signals from the infrared sensors 43a and 43b as indicating that "there is a person."

[0035] The control unit 4 has the function of outputting drive pulses to the indoor fan motor 14 and the motor that drives the mechanism that automatically cleans the filter 21, to thereby control the actions of these.

(3) Actions of Air Conditioner

[0036] During the cooling operation, the four-way selector valve 33 is held in the state indicated by the solid lines in FIG. 2. High-temperature high-pressure gas refrigerant discharged from the compressor 32 flows into the outdoor heat exchanger 34 via the four-way selector valve 33, exchanges heat with outdoor air, condenses, and liquefies. The liquefied refrigerant has its pressure reduced when it passes through the expansion valve 35, and then it exchanges heat with room air and evaporates in the indoor heat exchanger 12. Then, the room air that has been cooled by the evaporation of the refrigerant is blown out into the room by the indoor fan 13 and cools the room. Furthermore, the refrigerant that has evaporated and gasified in the indoor heat exchanger 12 passes through a refrigerant pipe, returns to the outdoor unit 3, and is sucked into the compressor 32 via the four-way selector valve 33 and the accumulator 31.

[0037] During the heating operation, the four-way selector valve 33 is held in the state indicated by the dashed lines in FIG. 2. High-temperature high-pressure gas refrigerant discharged from the compressor 32 flows into the indoor heat exchanger 12 via the four-way selector valve 33, exchanges heat with the room air, condenses, and liquefies. The room air that has been heated by the condensation of the refrigerant is blown out into the room by the indoor fan 13 and heats the room. The refrigerant that has liquefied in the indoor heat exchanger 12 passes through a refrigerant pipe and returns to the outdoor unit 3. The refrigerant that has returned to the outdoor unit 3 has its pressure reduced when it passes through the expansion valve 35, and then it exchanges heat with the outdoor air and evaporates in the outdoor heat exchanger 34. Then, the refrigerant that has evaporated and gasified in the outdoor heat exchanger 34 is sucked into the compressor 32 via the four-way selector valve 33 and the accumulator 31.

(4) Actions of Human Detection Sensor Unit

[0038] FIG. 10 is a top view of the space in which the indoor unit 2 is installed. FIG. 10 shows the range in which the human detection sensor unit 41 can detect the presence or absence of a person. In FIG. 10, a first detection region R1 is a region in which the first infrared sensor 43a can detect the presence or absence of a person, and a second detection region R2 is a region in which the second infrared sensor 43b can detect the presence or absence of a person. In the present embodiment, part of the first detection region R1 and part of the second detection region R2 overlap one another. Hereinafter, the region in which the first detection region R1 and the second detection region R2 overlap one another will be called a third detection region R3. Furthermore, the region obtained by subtracting the third detection region R3 from the first detection region R1 will be called a fourth detection region R4, and the region obtained by subtracting the third detection region R3 from the second detection region R2 will be called a fifth detection region R5.

[0039] The control unit 4 can detect whether there is a person in any of the third detection region R3, the fourth detection region R4, and the fifth detection region 5 in accordance with a change in the electrical signals output from the first infrared sensor 43a and the second infrared sensor 43b. That is, the control unit 4 detects that there is a person in the fourth detection region R4 in a case where only the electrical signals from the first infrared sensor 43a have changed, detects that there is a person in the fifth detection region R5 in a case where only the electrical signals from the second infrared sensor 43b have changed, and detects that there is a person in the third detection region R3 in a case where the electrical signals from the first infrared sensor 43a and the second infrared sensor 43b have changed.

(5) Characteristics of Air Conditioner

[0040] FIG. 11 is a top view of the space in which the indoor unit 2 is installed. FIG. 11 shows the first detection region R1, the second detection region R2, a first detectable region DR1, and a second detectable region DR2. The first detectable region DR1 is a region in which the first infrared sensor 43a can detect the presence or absence of a person in a case where the masking member 44 is not attached. The second detectable region DR2 is a region in which the second infrared sensor 43b can detect the presence or absence of a person in a case where the masking member 44 is not attached.

[0041] As shown in FIG. 11, the first detectable region DR1 has a wider range than the first detection region R1, and the second detectable region DR2 has a wider range than the second detection region R2. The masking member 44 covers part of the left side of the first infrared sensor 43a in a case where the human detection sensor unit 41 is seen from the front. Because of this, a right-side boundary RB1 of the first detectable region DR1 in a case

where the indoor unit 2 is seen from above is changed to a right-side boundary RB2 of the first detection region R1 by the masking member 44. Furthermore, the masking member 44 covers part of the right side of the second infrared sensor 43b in a case where the human detection sensor unit 41 is seen from the front. Because of this, a left-side boundary LB1 of the second detectable region DR2 in a case where the indoor unit 2 is seen from above is changed to a left-side boundary LB2 of the second detection region R2 by the masking member 44.

[0042] That is, in the present embodiment, the masking member 44 covers parts of the fronts of the first infrared sensor 43a and the second infrared sensor 43b, whereby the first detectable region DR1 is limited to the first detection region R1 and the second detectable region DR2 is limited to the second detection region R2. Additionally, by using the masking member 44, the boundaries of the first detection region R1 and the second detection region R2 can be accurately established. Because of this, the indoor unit 2 of the present embodiment can realize a comfortable air environment with high precision in accordance with the first detection region R1 of the first infrared sensor 43a and the second detection region R2 of the second infrared sensor 43b.

[0043] Furthermore, in the present embodiment, by changing the shape of the masking member 44, the ranges of the first detection region R1 and the second detection region R2 can be appropriately set. Because of this, the indoor unit 2 of the present embodiment can realize a comfortable air environment with high precision by changing the first detection region R1 and the second detection region R2 in accordance with the shape of the room in which the indoor unit 2 is installed and the place where the indoor unit 2 is installed.

(6) Example Modifications

[0044] An embodiment of the present invention has been described above with reference to the drawings, but the specific configurations of the present invention can be changed without departing from the gist of the present invention. Example modifications that can be applied to the embodiment of the present invention are described below.

(6-1) Example Modification A

[0045] In the present embodiment, the human detection sensor unit 41 has two infrared sensors—the first infrared sensor 43a and the second infrared sensor 43b—but it may also have three or more infrared sensors. For example, the human detection sensor unit 41 may also be configured in such a way that three infrared sensors are disposed adjacent to one another in the horizontal direction and parts of the detection regions of the infrared sensors overlap one another. Generally, the greater the number of infrared sensors there are, the greater the number of regions there are in which the pres-

ence or absence of a person can be detected.

(6-2) Example Modification B

[0046] In the present embodiment, the masking member 44 is a single member that covers parts of the fronts of the first infrared sensor 43a and the second infrared sensor 43b, but the masking member 44 may also be configured from plural parts. For example, as shown in FIG. 12, the masking member 44 may also be configured from a first masking part 144a and a second masking part 144b. In this case, the first masking part 144a is a member that covers part of the front of the first infrared sensor 43a, and the second masking part 144b is a member that covers part of the front of the second infrared sensor 43b.

(6-3) Example Modification C

[0047] It is preferred that the masking member 44 mask the first detectable region DR1 and the second detectable region DR2 in such a way that the horizontal flap 17 does not enter the detection regions of the first infrared sensor 43a and the second infrared sensor 43b during the operation of the indoor unit 2.

[0048] FIG. 13 is a cross-sectional view of the entire indoor unit 2 including the human detection sensor unit 41 in a case where the human detection sensor unit 41 is cut at the position of the dashed line of FIG. 5. In the present example modification, the first detectable region DR1 of the first infrared sensor 43a is limited to the first detection region R1 by the masking member 44, and the second detectable region DR2 of the second infrared sensor 43b is limited to the second detection region D2 by the masking member 44. The masking member 44 has a projecting portion 44a that projects frontward of the indoor unit 2 under the first infrared sensor 43a and the second infrared sensor 43b. As shown in FIG. 13, a lower boundary DB1 of the first detectable region DR1 and the second detectable region DR2 is changed to a lower boundary DB2 of the first detection region R1 and the second detection region R2 by the projecting portion 44a of the masking member 44.

[0049] In the present example modification, as shown in FIG. 13, when the horizontal flap 17 has been maximally pushed out frontward of the indoor unit 2, the distal end of the horizontal flap 17 is positioned above the lower boundary DB1 of the first detectable region DR1 and the second detectable region DR2 but is positioned under the lower boundary DB2 of the first detection region R1 and the second detection region R2. That is, the masking member 44 prevents the horizontal flap 17 from entering the detection regions of the first infrared sensor 43a and the second infrared sensor 43b. Consequently, in the present example modification, the control unit 4 can be prevented from erroneously detecting the horizontal flap 17.

(6-4) Example Modification D

[0050] In the present embodiment, the human detection sensor unit 41 is disposed in the central lower portion of the front panel 20a of the indoor unit 2. The human detection sensor unit 41 has the first infrared sensor 43a, the second infrared sensor 43b, and the masking member 44. That is, the first infrared sensor 43a, the second infrared sensor 43b, and the masking member 44 are unitized by the unit board 42 and attached to the indoor unit 2. However, the first infrared sensor 43a, the second infrared sensor 43b, and the masking member 44 may also be separately attached to the indoor unit 2 without being unitized. For example, the first infrared sensor 43a, the second infrared sensor 43b, and the masking member 44 may also be directly attached to the front panel 20a of the indoor unit 2 without using the unit board 42.

INDUSTRIAL APPLICABILITY

[0051] The air conditioner pertaining to the present invention can accurately establish the boundaries of detection regions of sensors attached to an indoor unit.

REFERENCE SIGNS LIST

[0052]

- 1 Air Conditioner
- 2 Indoor Unit
- 4 Control Unit
- 17 Horizontal Flap
- 43a First Infrared Sensor (First Sensor)
- 43b Second Infrared Sensor (Second Sensor)
- 44 Masking Member
- 144a First Masking Part
- 144b Second Masking Part
- DR1 First Detectable Region
- DR2 Second Detectable Region
- R1 First Detection Region
- R2 Second Detection Region
- R3 Third Detection Region

CITATION LIST

<Patent Literature>

- 5 **[0053]** Patent Document 1: JP-A No. 2009-85527

Claims

- 10 **1.** An air conditioner (1) comprising:
 - 15 a first sensor (43 a) that is attached to a wall-mounted indoor unit (2) and can detect the presence or absence of a person in a first detectable region (DR1);
 - 20 a second sensor (43b) that is attached to the indoor unit and can detect the presence or absence of a person in a second detectable region (DR2);
 - 25 a masking member (44); and
 - 30 a control unit (4) that controls operation in accordance with the presence or absence of a person that has been detected by the first sensor and the second sensor,
 - 35 wherein the masking member masks the first detectable region to thereby limit the first detectable region to a first detection region (R1) and masks the second detectable region to thereby limit the second detectable region to a second detection region (R2).
- 40 **2.** The air conditioner according to claim 1, wherein the first sensor, the second sensor, and the masking member are disposed in such a way that there exists a third detection region (R3) that is a region in which part of the first detection region and part of the second detection region overlap one another.
- 45 **3.** The air conditioner according to claim 1 or 2, wherein the masking member is a single member that masks both the first detectable region and the second detectable region.
- 50 **4.** The air conditioner according to claim 1 or 2, wherein the masking member comprises a first masking part (144a) that masks the first detectable region and a second masking part (144b) that masks the second detectable region.
- 55 **5.** The air conditioner according to any one of claims 1 to 4, wherein the first sensor detects the presence or absence of a person in a left direction as seen from the indoor unit, and the second sensor detects the presence or absence of a person in a right direction as seen from the indoor unit.

6. The air conditioner according to any one of claims 1 to 5, further comprising a horizontal flap (17) that is pushed out frontward of the indoor unit during operation and changes the blow-out direction of conditioned air in an up and down direction, wherein the masking member masks the first detectable region and the second detectable region in such a way that the horizontal flap during operation does not enter the first detection region and the second detection region.

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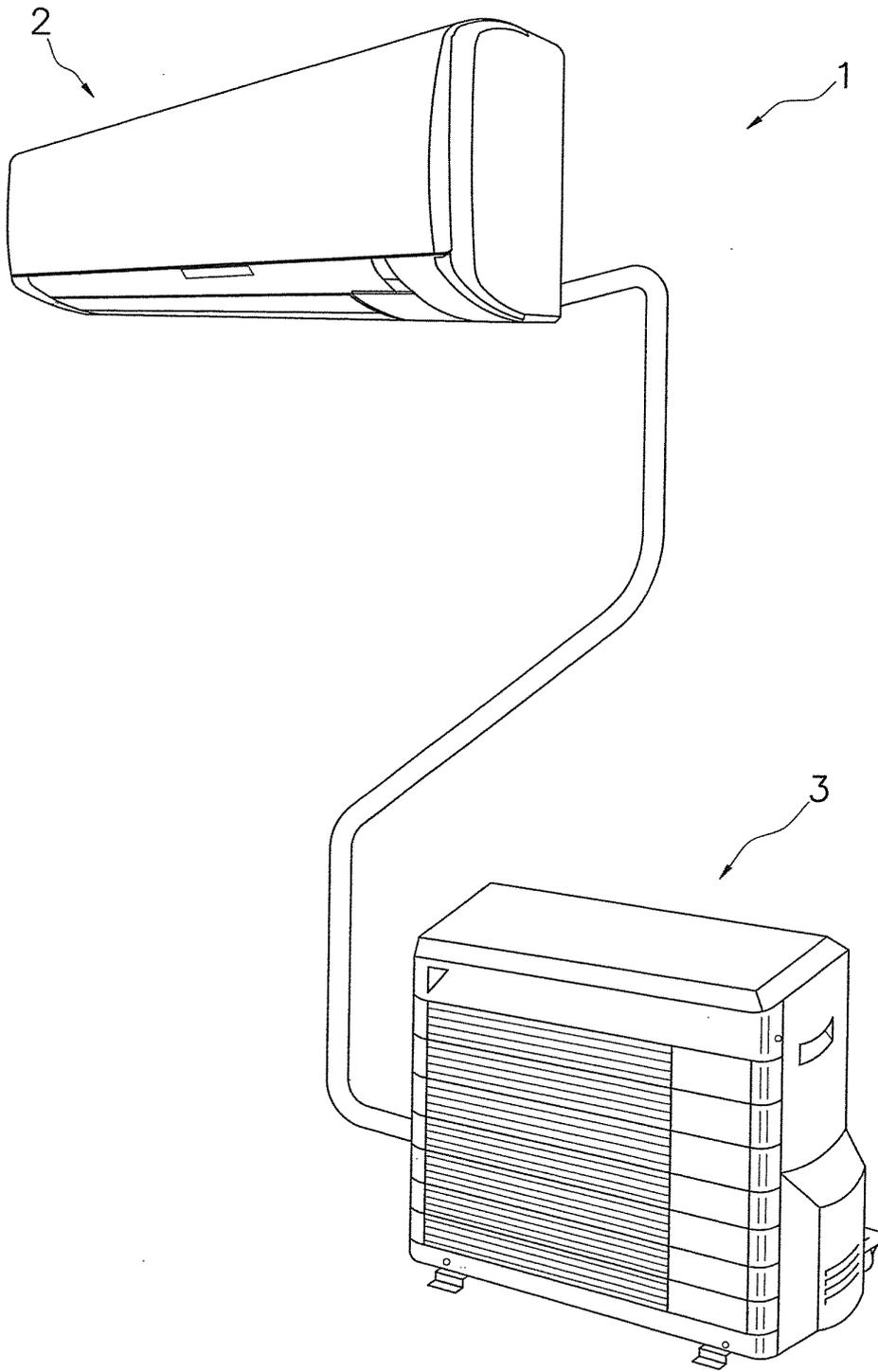


FIG. 1

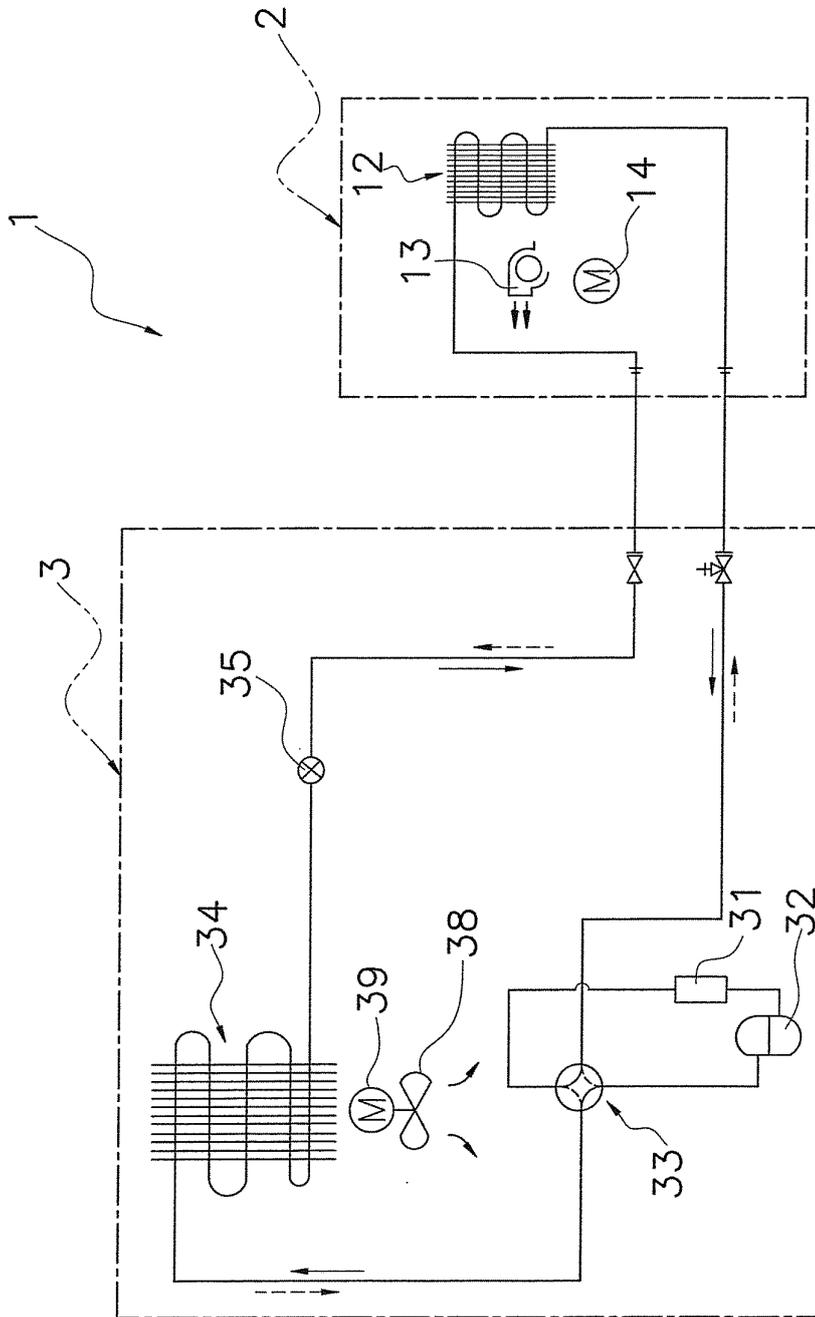


FIG. 2

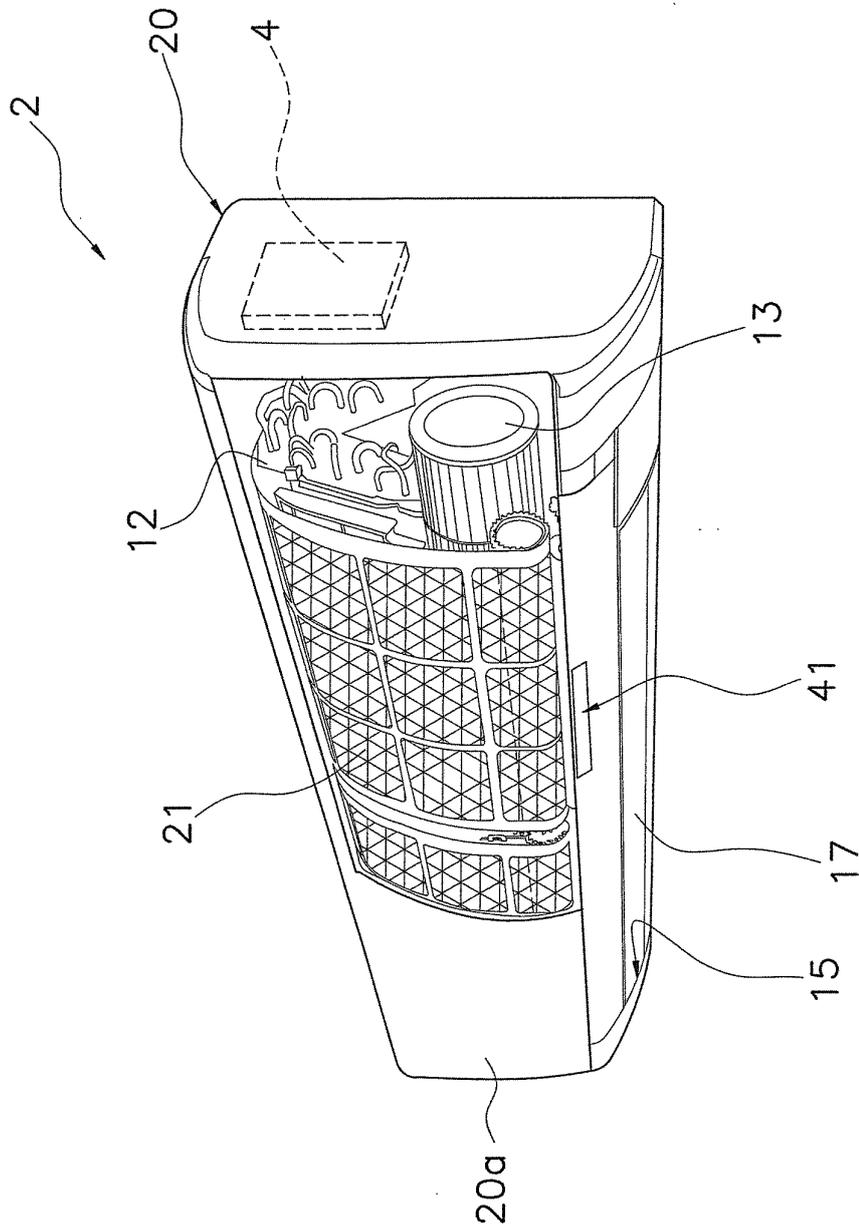


FIG. 3

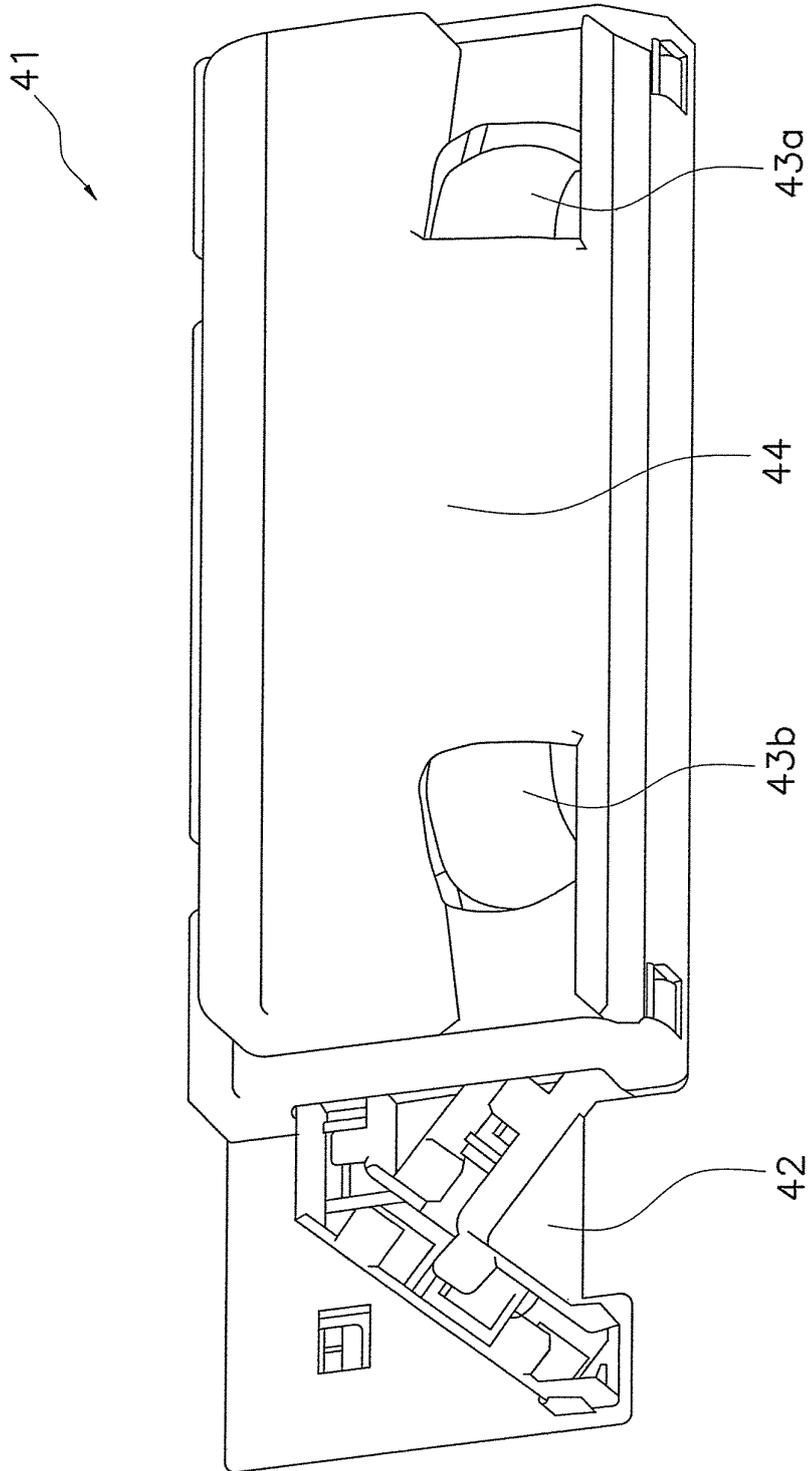


FIG. 4

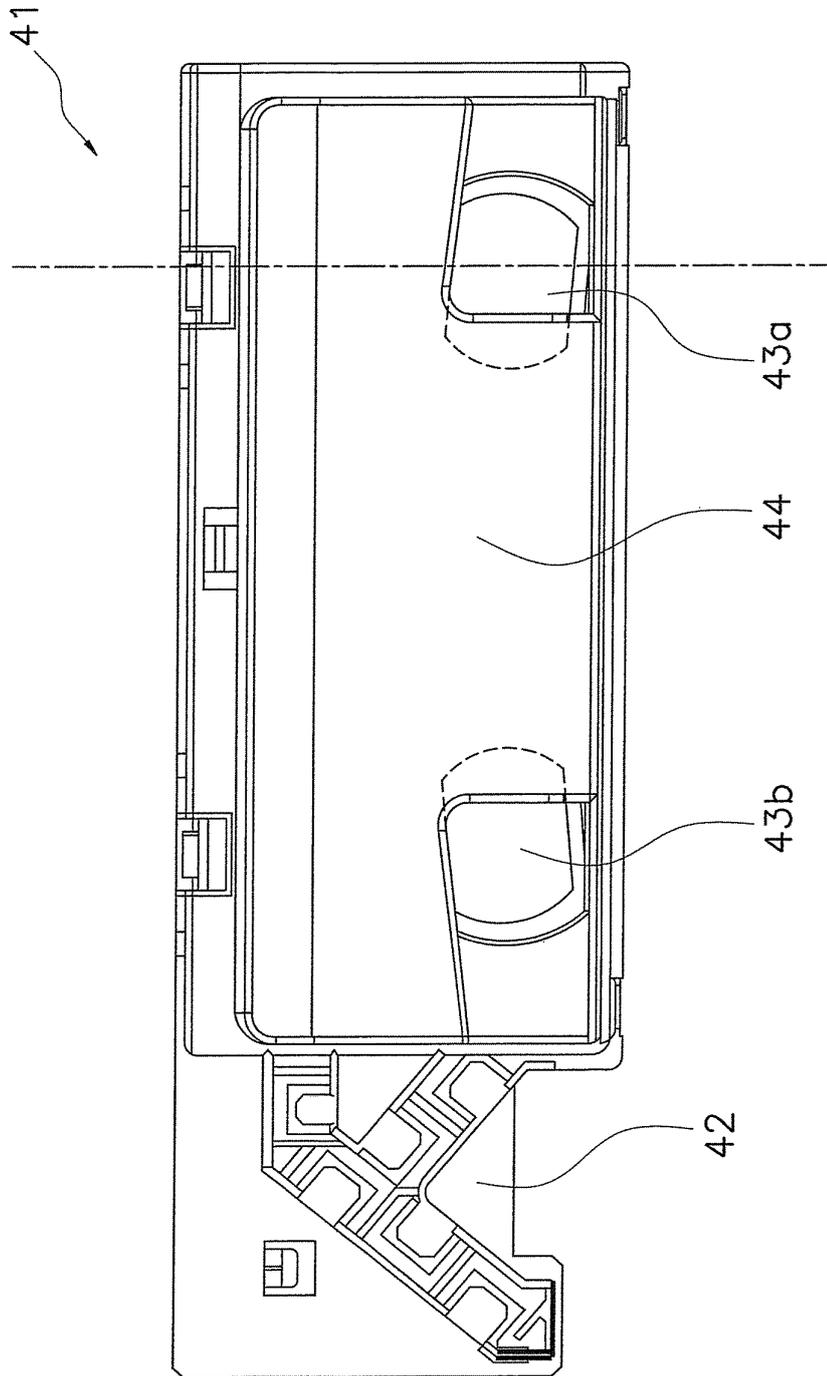


FIG. 5

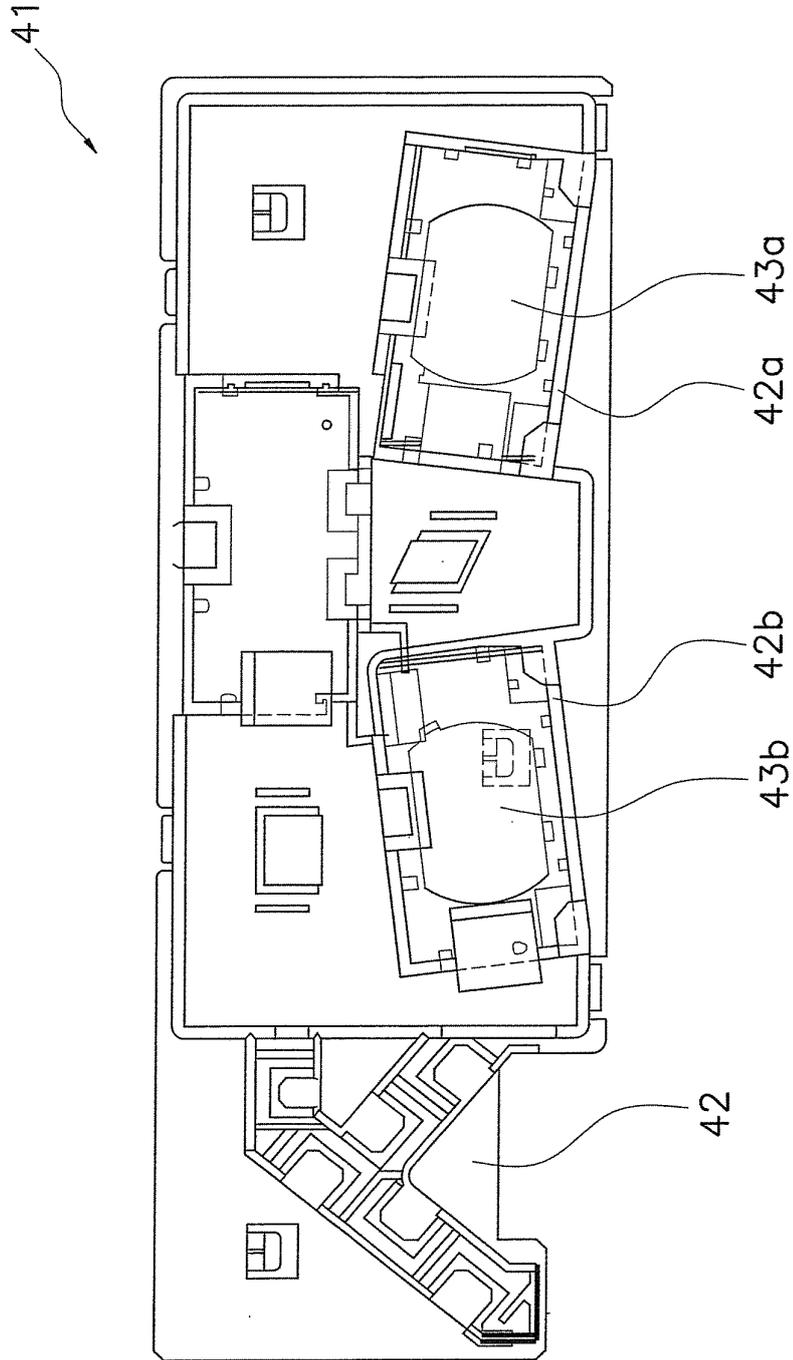


FIG. 6

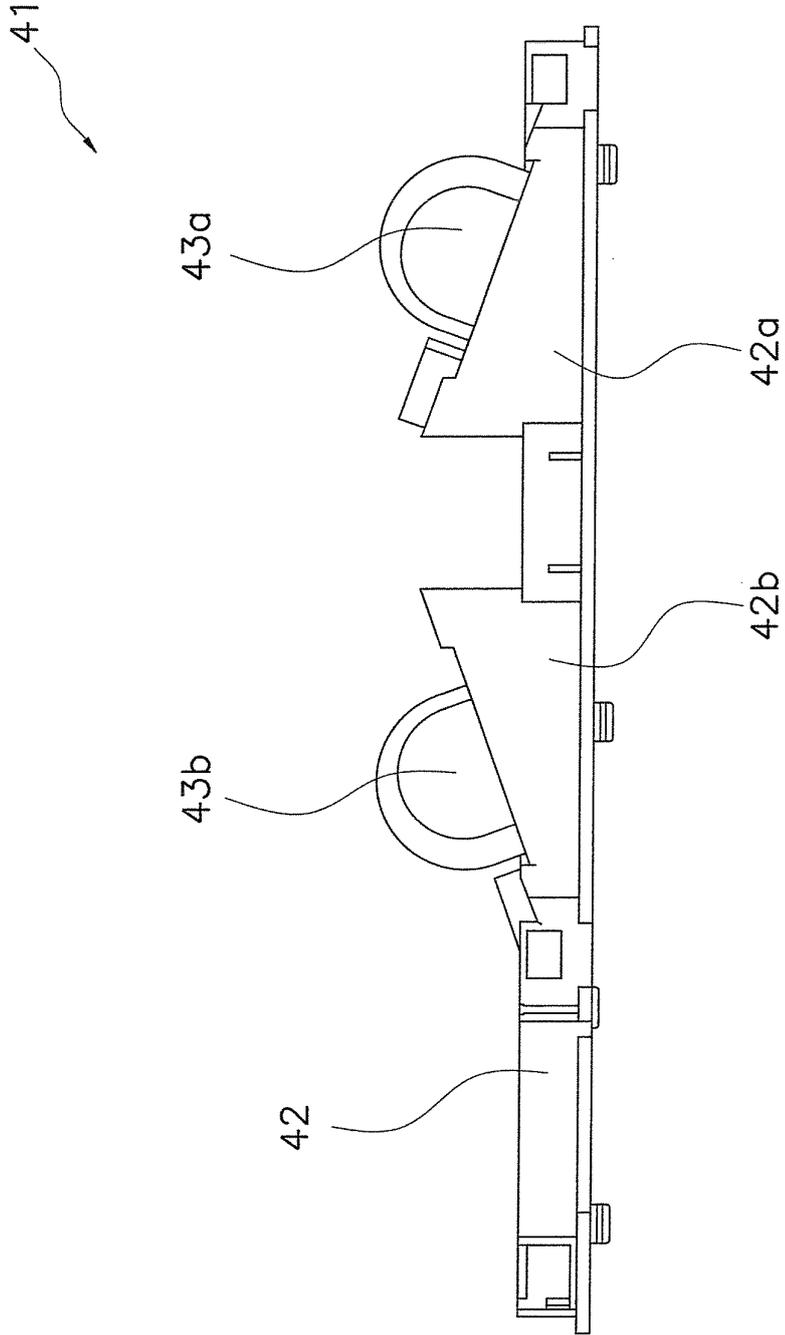


FIG. 7

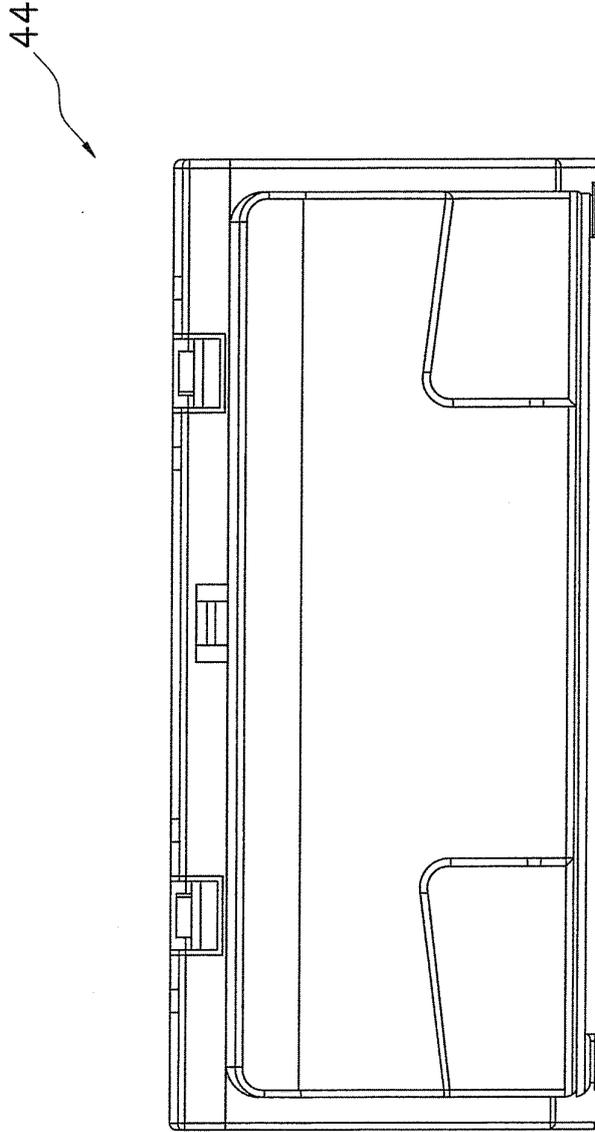


FIG. 8

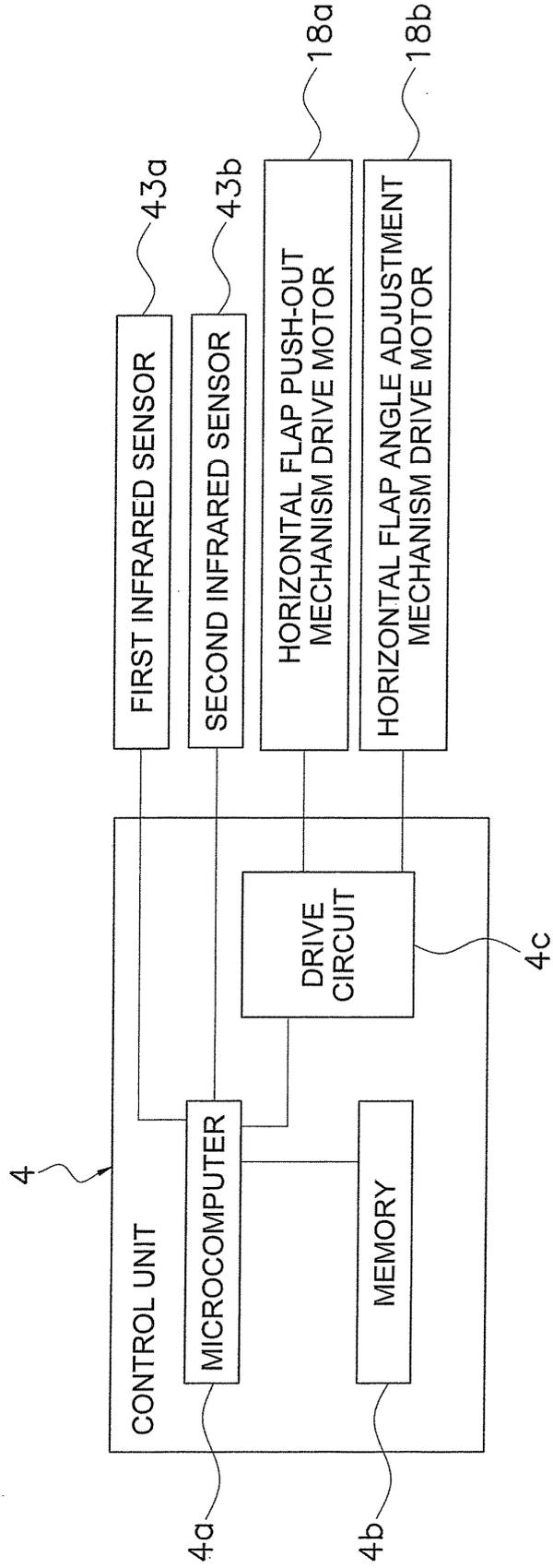


FIG. 9

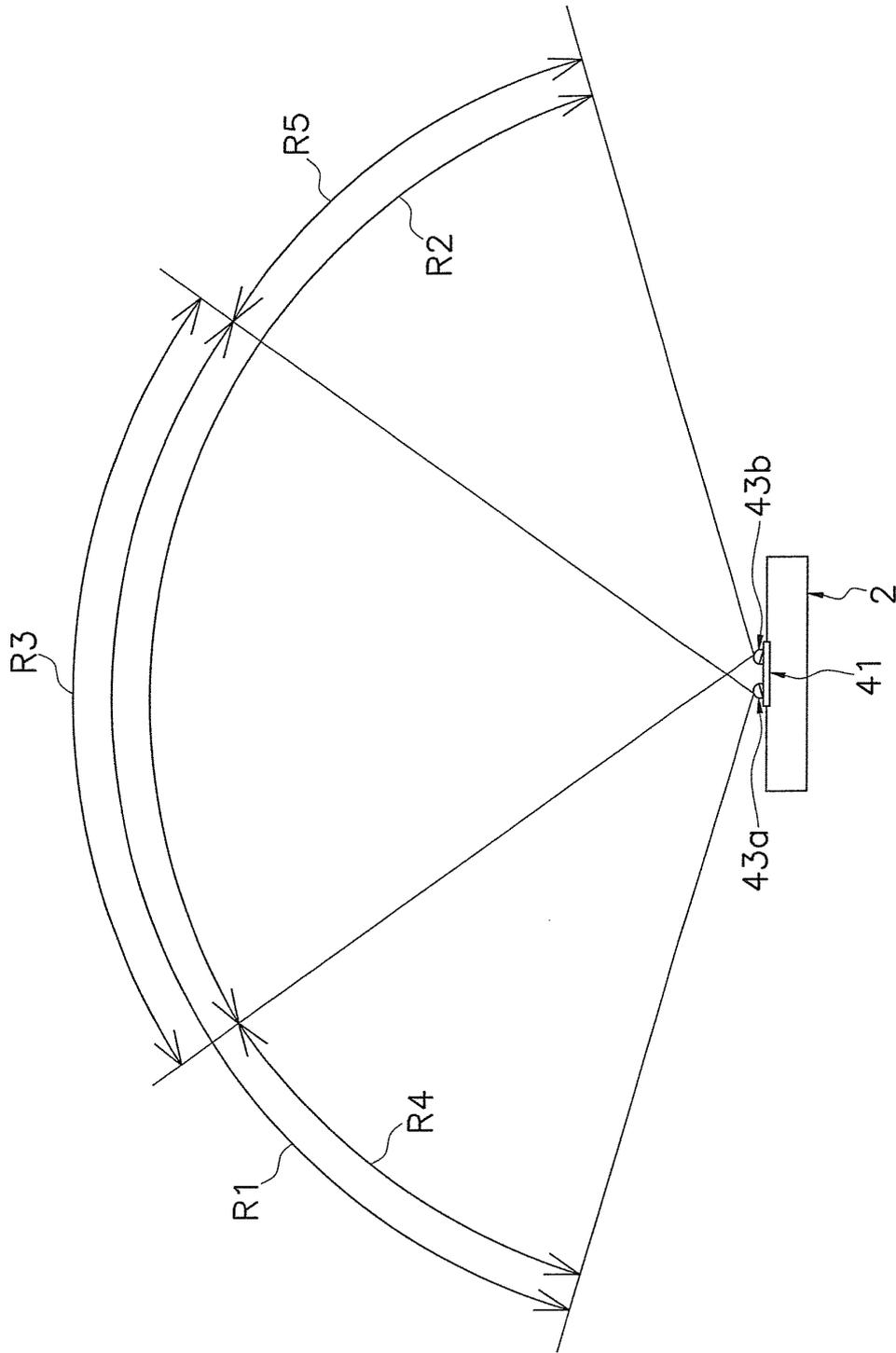


FIG. 10

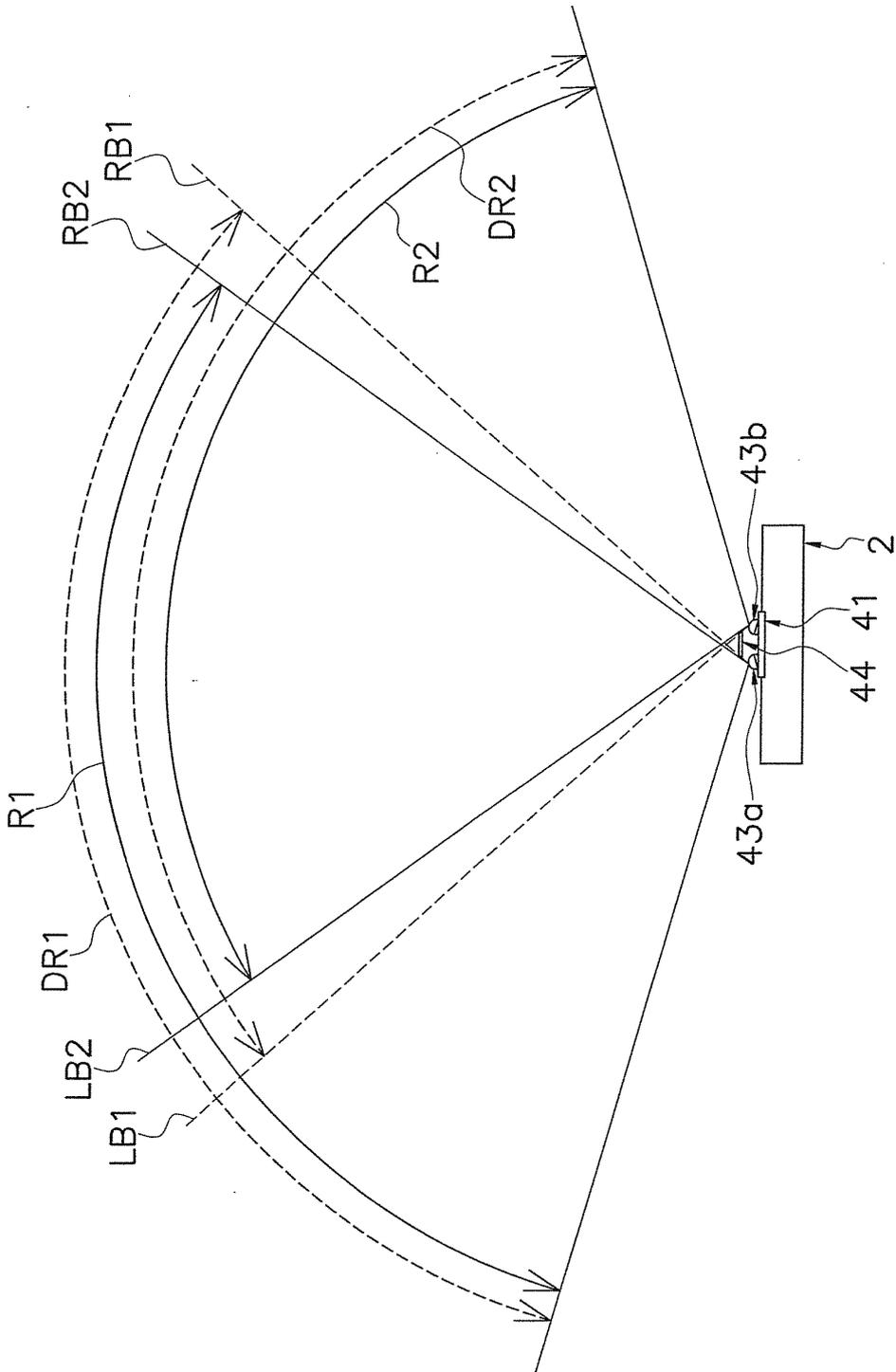


FIG. 11

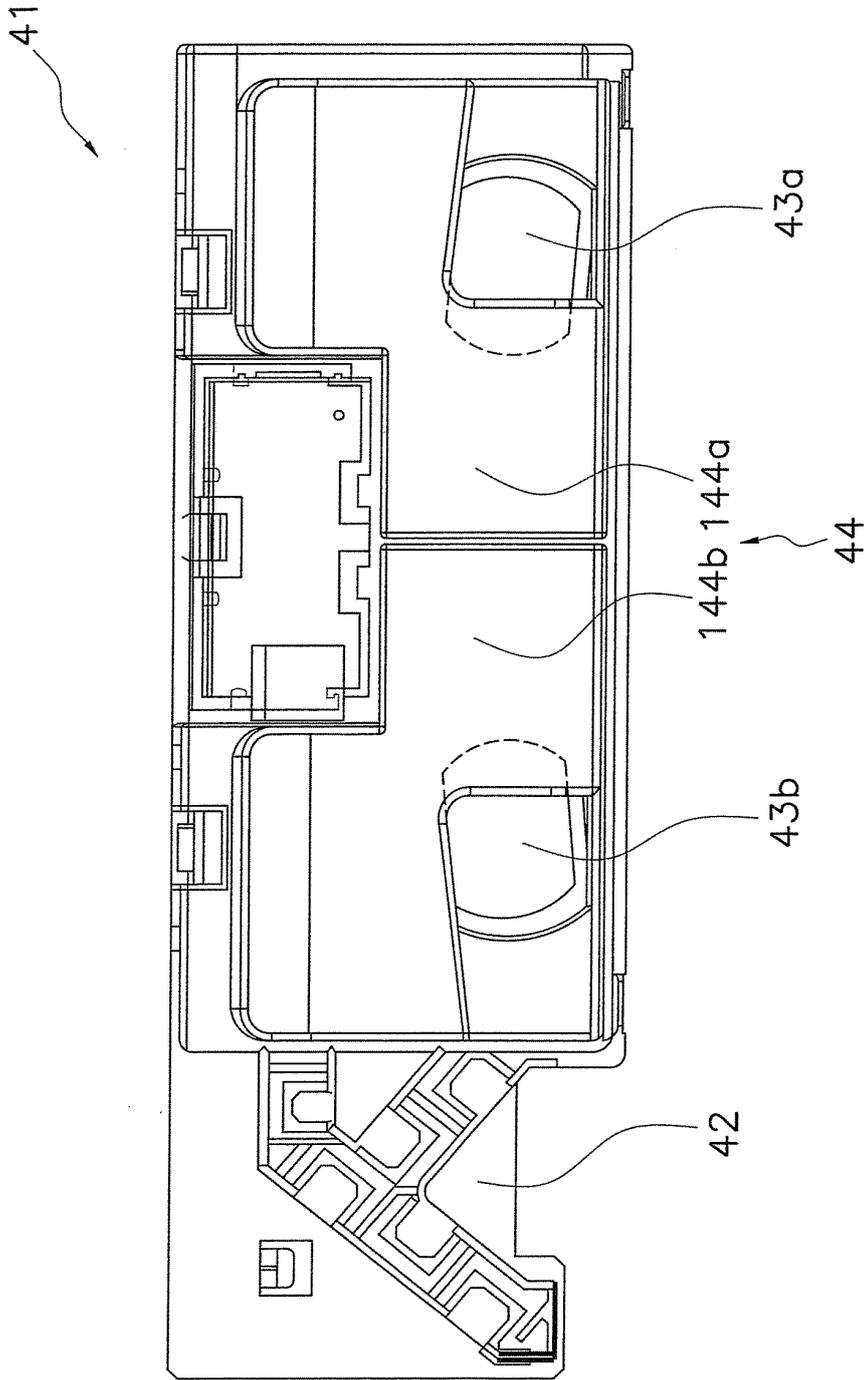


FIG. 12

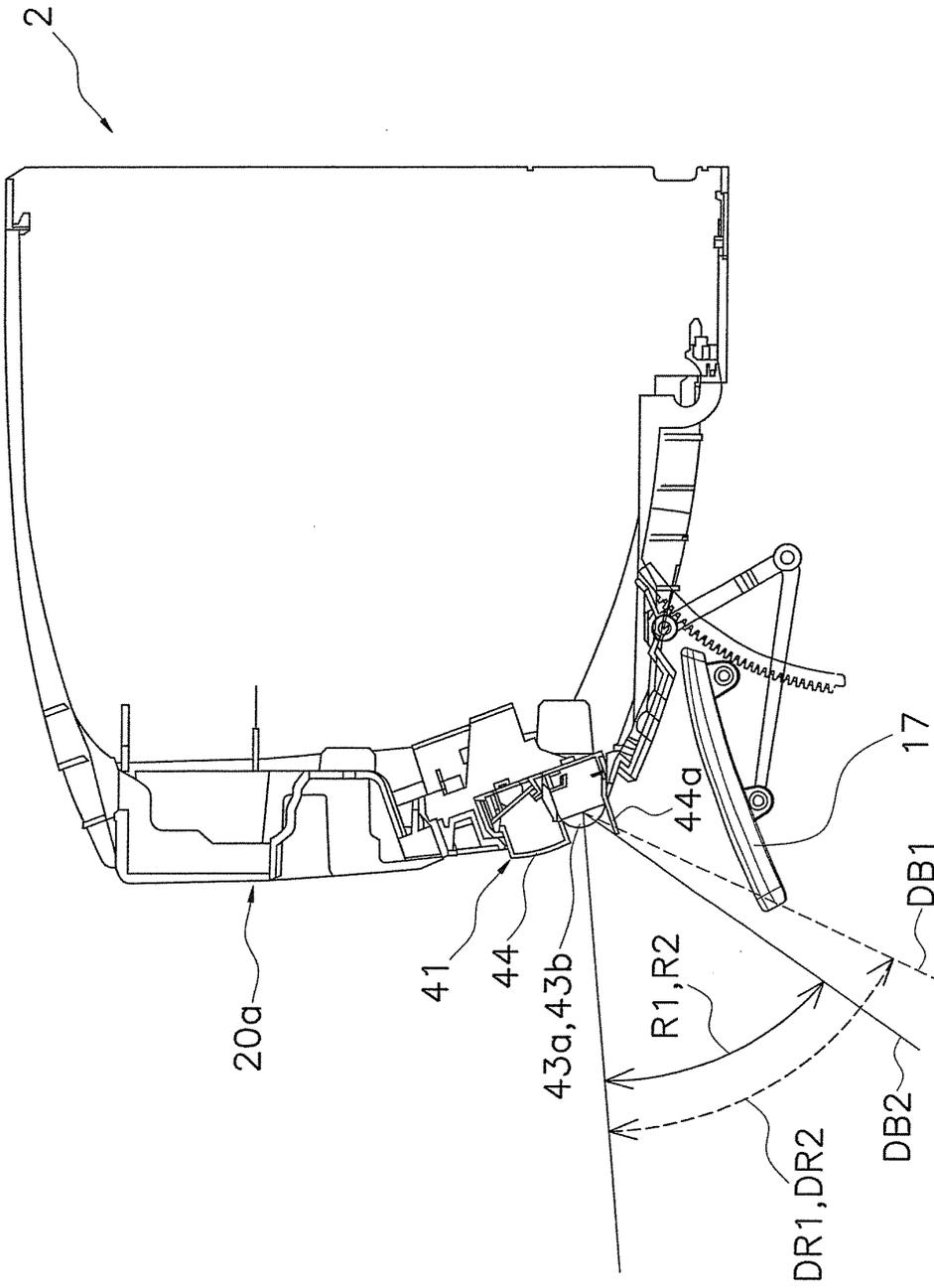


FIG. 13

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2012/064904

A. CLASSIFICATION OF SUBJECT MATTER F24F11/02 (2006.01) i		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) F24F11/02		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2012 Kokai Jitsuyo Shinan Koho 1971-2012 Toroku Jitsuyo Shinan Koho 1994-2012		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 05-187682 A (Mitsubishi Electric Corp.), 27 July 1993 (27.07.1993), paragraphs [0054] to [0058]; fig. 21 to 27 (Family: none)	1-6
Y	JP 2008-281213 A (Hitachi Appliances, Inc.), 20 November 2008 (20.11.2008), paragraphs [0005] to [0022]; fig. 1 to 4 (Family: none)	1-6
Y	JP 2010-255948 A (Hitachi Appliances, Inc.), 11 November 2010 (11.11.2010), paragraphs [0030] to [0031]; fig. 1 to 6 & WO 2010/125615 A1 & KR 10-2012-0016071 A & CN 102414519 A	4, 6
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.		<input type="checkbox"/> See patent family annex.
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Date of the actual completion of the international search 10 August, 2012 (10.08.12)	Date of mailing of the international search report 21 August, 2012 (21.08.12)	
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer	
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INTERNATIONAL SEARCH REPORT

International application No.
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2010-190528 A (Hitachi Appliances, Inc.), 02 September 2010 (02.09.2010), paragraph [0078]; fig. 1 to 17 & CN 101813339 A	6

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

REFERENCES CITED IN THE DESCRIPTION

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