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(71) Applicant: **LG Electronics, Inc.**
Seoul 150-721 (KR)

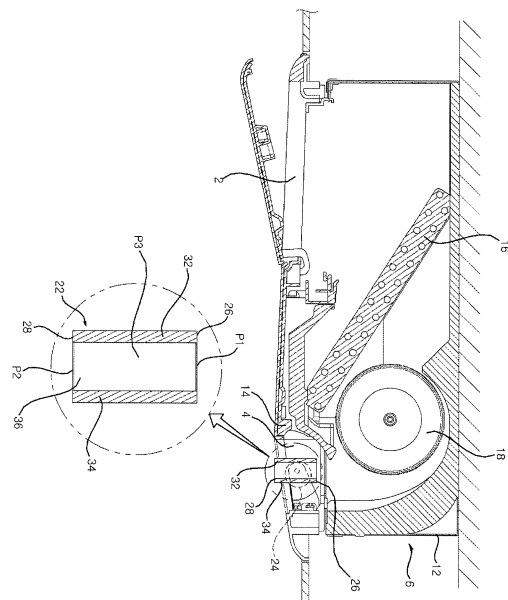
(72) Inventors:
• **Kim, Joosang**
642-711 Gyeongsangnam-do (KR)
• **Lee, Dohan**
642-711 Gyeongsangnam-do (KR)
• **Kim, Hankook**
642-711 Gyeongsangnam-do (KR)
• **Chung, Jihyung**
642-711 Gyeongsangnam-do (KR)

(74) Representative: **Vossius & Partner**
Siebertstrasse 4
81675 München (DE)

(54) **Wind direction controller and air conditioner with the same**

(57) Disclosed is a wind direction controller mounted to a body having an air inlet and an air outlet, including a wind direction control member for guiding air being discharged through the air outlet, and a driving mechanism for driving the wind direction control member in a first wind direction mode in which one end of the wind direction control member faces an inside of the body, and the other end of the wind direction control member faces an inside of a room, or in a second wind direction mode in which the one end having faced the inside of the body in the first wind direction mode faces the inside of the room, and the other end having faced the inside of the room in the first wind direction mode faces the inside of the body, thereby permitting to form a variety of air flows with a simple structure and simple control, selectively.

Fig. 1



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Description

BACKGROUND OF THE INVENTION

Field of the invention

[0001] The present invention relates to a wind direction controller and an air conditioner with the same. More specifically, the present invention relates to a wind direction controller for controlling a direction of air being discharged through an air outlet and an air conditioner with the same.

Description of the Related Art

[0002] In general, the air conditioner is a machine for maintaining room air comfortable.

[0003] The air conditioner may control a space to have a temperature, humidity, and an air flow distribution suitable for human activity, and may remove dust and the like from the air.

[0004] The air conditioner may be mounted to one side of a floor, a wall, or a ceiling of the room for drawing the air through an air inlet, conditioning the air drawn thus, and discharging the air through an air outlet.

[0005] The air conditioner may be mounted to an outside of the room intended to air condition and connected to the room with an inlet duct and an outlet duct for drawing room air through the inlet duct, conditioning the air drawn thus, and discharging the air through the outlet duct.

[0006] The air conditioner may have a wind direction controller mounted thereto for controlling a wind direction of the air being discharged to the room.

[0007] The wind direction controller may include a wind direction controlling member for guiding the air being discharged toward the room and a driving mechanism for operating the wind direction controller.

SUMMARY OF THE INVENTION

[0008] Accordingly, the present invention has been made in an effort to solve the aforementioned problems, and it is an object of the present invention to provide a wind direction controller which can form a variety of air discharge flows by means of a simple structure and control; and an air conditioner with the same.

[0009] To achieve the object of the present invention, a wind direction controller mounted to a body having an air inlet and an air outlet includes a wind direction control member for guiding air being discharged through the air outlet, wherein the wind direction controller further includes a driving mechanism for driving the wind direction control member in a first wind direction mode in which one end of the wind direction control member faces an inside of the body, and the other end of the wind direction control member faces an inside of a room, or in a second wind direction mode in which the one end having faced

the inside of the body in the first wind direction mode faces the inside of the room, and the other end having faced the inside of the room in the first wind direction mode faces the inside of the body.

[0010] The wind direction control member may include a first air in/out side which faces the inside of the body in the first wind direction mode and faces the inside of the room in the second wind direction mode, a second air in/out side which faces the inside of the room in the first wind direction mode and faces the inside of the body in the second wind direction mode, and an air guide passage formed between the first air in/out side and the second air in/out side.

[0011] The first air in/out side may have an area different from an area of the second air in/out side.

[0012] The wind direction control member may include at least one vane having an air guide direction in the first wind direction mode different from the air guide direction in the second wind direction mode.

[0013] The wind direction control member may include a first vane, and a second vane formed at the first vane to have an air guide direction in the first wind direction mode different from the air guide direction in the second wind direction mode.

[0014] The wind direction control member may further include a third vane formed at the first vane having the air guide direction in the first wind direction mode the same with the air guide direction in the second wind direction mode.

[0015] The first vane may include a plurality of vanes arranged in parallel, and the second vane may be formed among the plurality of first vanes.

[0016] The second vane may be curved between one end and the other end thereof.

[0017] The second vane may have a plurality of second vanes spaced from one another.

[0018] The plurality of the second vanes may have one ends thereof having spaced distances to each adjacent vane shorter than spaced distances to each adjacent vane of the other ends thereof.

[0019] The first wind direction mode may be a divergent discharge mode in which one ends of the plurality of the second vanes face the inside of the body respectively, and the second wind direction mode may be a convergent discharge mode in which one ends of the plurality of the second vanes face the inside of the room, respectively.

[0020] The driving mechanism may rotate the wind direction control member within a range of 60°~300° when the wind direction mode is changed from the first wind direction mode to the second wind direction mode or vice versa.

[0021] The wind direction control member may have a plurality of the wind direction control members arranged on a line.

[0022] Each of the plurality of the wind direction control members may have an air guide passage formed between one end and the other end thereof, and a first air

in/out side formed at one end of the wind direction control member may have an area smaller than an area of a second air in/out side formed at the other end of the wind direction control member.

[0023] The wind direction controller may further include a hinge shaft formed at one of the plurality of the wind direction control members, and a hinge shaft supporter formed at the other one of the plurality of the wind direction control members for rotatably supporting the hinge shaft.

[0024] The wind direction controller of may further include a wind direction control member supporter positioned among the plurality of the wind direction control members for rotatably supporting each of the plurality of the wind direction control members.

[0025] The driving mechanism may include a first wind direction control motor for rotating one of the wind direction control members, and a second wind direction control motor for rotating the other one of the wind direction control members.

[0026] The wind direction control member rotated by the first wind direction control motor may include a plurality of vanes having radii of curvature which become the smaller as the plurality of vanes are the closer to the first wind direction control motor, and the wind direction control member rotated by the second wind direction control motor may include a plurality of vanes having radii of curvature which become the smaller as the plurality of vanes are the closer to the second wind direction control motor.

[0027] The driving mechanism may have a divergent discharge mode in which the first air in/out side of each of the plurality of the wind direction control members faces an inside of the body and the second air in/out side of each of the plurality of the wind direction control members faces an inside of the room.

[0028] The driving mechanism may have a convergent discharge mode in which the first air in/out side of each of the plurality of the wind direction control members faces an inside of the room and the second air in/out side of each of the plurality of the wind direction control members faces the inside of the body.

[0029] The driving mechanism may have a deflected discharge mode in which the first air in/out side of one of the plurality of the wind direction control members faces an inside of the body and the second air in/out side of the other one of the plurality of the wind direction control members faces the inside of the body.

[0030] The driving mechanism may perform one of the divergent discharge mode, the convergent discharge mode, and the deflected discharge mode, selectively.

[0031] The deflected discharge mode may include a left direction deflected discharge mode and a right direction deflected discharge mode for guiding air discharge in directions opposite to each other.

[0032] An air conditioner in accordance with the present invention may include the wind direction controller described above.

Advantageous Effects

[0033] The wind direction controller of the present invention has an advantage of changing the divergent discharge mode and the convergent discharge mode readily.

[0034] And, the selection of the divergent discharge mode, the convergent discharge mode, and the deflected discharge mode with the two wind direction control member can provide an advantage of efficient air conditioning of the inside of room.

[0035] And, the selective performance of the four wind direction modes of the divergent discharge mode, the convergent discharge mode, the left direction deflected discharge mode, and the right direction deflected discharge mode can provide an advantage of forming a variety of air flows in the room.

BRIEF DESCRIPTION OF THE DRAWINGS

[0036]

FIG. 1 is a sectional view illustrating a wind direction controller in accordance with a first preferred embodiment of the present invention;

FIG. 2 is a cross section illustrating a wind direction controller in accordance with a first preferred embodiment of the present invention, in a first wind direction mode;

FIG. 3 is a cross section illustrating a wind direction controller in accordance with a first preferred embodiment of the present invention, in a second wind direction mode;

FIG. 4 is an enlarged sectional view illustrating an example in which a driving mechanism in a wind direction controller in accordance with a first preferred embodiment of the present invention converts the wind direction control member to a first wind direction mode or a second wind direction mode;

FIG. 5 is an enlarged sectional view illustrating another example in which a driving mechanism in a wind direction controller in accordance with a first preferred embodiment of the present invention converts the wind direction control member to a first wind direction mode or a second wind direction mode;

FIG. 6 is a sectional view illustrating a wind direction controller in accordance with a second preferred embodiment of the present invention, in a divergent discharge mode;

FIG. 7 is a sectional view illustrating a wind direction controller in accordance with a second preferred embodiment of the present invention, in a convergent discharge mode;

FIG. 8 is a sectional view illustrating a wind direction controller in accordance with a second preferred embodiment of the present invention, in a first deflected discharge mode;

FIG. 9 is a sectional view illustrating a wind direction

controller in accordance with a second preferred embodiment of the present invention, in a second deflected discharge mode; and

FIG. 10 is a sectional view illustrating a wind direction controller in accordance with a third preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0037] Advantages and features of the present invention and methods for achieving the same become apparent from the detailed description taken in conjunction with the accompanying drawings. However, the present invention is not limited thereto, and rather may be realized in other various ways. The instant embodiments of the present invention are given to make the present invention thoroughly disclosed or fully convey the scope of the present invention to one of ordinary skill in the art. The present invention is defined only by the appended claims. The same denotations refer to the same elements throughout the specification.

[0038] FIG. 1 is a sectional view illustrating a wind direction controller in accordance with a first preferred embodiment of the present invention, FIG. 2 is a cross section illustrating a wind direction controller in accordance with a first preferred embodiment of the present invention, in a first wind direction mode, and FIG. 3 is a cross section illustrating a wind direction controller in accordance with a first preferred embodiment of the present invention, in a second wind direction mode.

[0039] Referring to FIGS. 1 to 3, the wind direction controller may be mounted to a body 6 having an air inlet and 2 an air outlet 4 formed therein for controlling a wind direction of air being discharged from the body 6 through the air outlet 4. The body 6 may be mounted such that the air outlet 4 is exposed to an inside of a room R, and the wind direction controller may guide discharge of the air passing through the air outlet 4.

[0040] The body 6 may be an air conditioner having a heat exchanger and a fan mounted thereto. The wind direction controller of the embodiment may be mounted to the air conditioner for controlling the wind direction of the air being discharged from the air conditioner to the inside of the room.

[0041] The body 6 may be an outlet duct connected to the air conditioner having the heat exchanger and the fan mounted thereto. The body 6 may be configured to guide discharge of the air from the air conditioner to the inside of the room R. In this case, the wind direction controller may be mounted, not to the air conditioner, but to the outlet duct. If mounted to the outlet duct, the wind direction controller of the embodiment may control the wind direction of the air being discharged to the inside of the room through the outlet duct after air is conditioned in the air conditioner.

[0042] The embodiment will be described taking a case in which the body 6 is the air conditioner, particularly, a ceiling type air conditioner, as an example.

[0043] The ceiling type air conditioner may include a case 12 fixedly mounted to the ceiling, buried in, or projected from, the ceiling. The case 12 may have an opened underside. The ceiling type air conditioner may have a discharge panel 14 having the air outlet 4 formed therein mounted to the underside of the case 12. The ceiling type air conditioner may have an air inlet 2 formed therein for drawing the room air.

[0044] It is possible that the ceiling type air conditioner has a suction panel (Not shown) having the air inlet 2 formed therein mounted separate from the discharge panel 14. The suction panel may be mounted to the underside of the case 12 together with the discharge panel 14.

[0045] It is possible that the ceiling type air conditioner may have the air inlet 2 formed in the discharge panel 14, and the discharge panel 14 may be configured in a suction and discharge panel which can draw in the air and can discharge the air.

[0046] The ceiling type air conditioner may include a heat exchanger 16 mounted in the case 12, and a fan unit 18 for drawing the room air through the air inlet 2, passing the air through the heat exchanger 16, and discharging the air through the air outlet 4. The fan unit 18 may include a fan for making the air to flow and a fan motor for rotating the fan.

[0047] The wind direction controller may include a wind direction control member 22 for guiding the air being discharged through the air outlet 4, and a driving mechanism 24 for driving the wind direction control member 22.

[0048] The driving mechanism 24 may have a plurality of wind direction modes. The driving mechanism 24 may drive the wind direction control member 22 in a first wind direction mode of the wind direction control member in which the wind direction control member 22 has one end 26 facing an inside I of the body 6, and the other end 28 facing an inside of the room R.

[0049] In this case, the one end 26 of the wind direction control member 22 may be one end of the wind direction control member 22 in an air guide direction thereof. And, the other end 28 of the wind direction control member 22 may be the other end of the wind direction control member 22 in the air guide direction thereof.

[0050] The driving mechanism 24 may drive the wind direction control member 22 in the second wind direction mode of the wind direction control member in which the one end 26 having faced the inside of the body 6 in the first wind direction mode faces the inside of the room R and the other end 28 having faced the inside of the room R in the first wind direction mode faces the inside I of the body 6.

[0051] The wind direction control member 22 may have air in/out sides P1 and P2 at the one end 26 and the other end 28 thereof, respectively. The wind direction control member 22 may have an air guide passage P3 formed between the one end 26 and the other end 28. The wind direction control member 22 may have a first air in/out side P1 formed at the one end 26, and a second air in/out

side P2 formed at the other end 28, and the air guide passage P3 may be formed between the first air in/out side P1 and the second air in/out side P2.

[0052] The first air in/out side P1 may face the inside of the body 6 in the first wind direction mode, and may face the inside of the room R in the second wind direction mode. Opposite to this, the second air in/out side P2 may face the inside of the room R in the first wind direction mode, and may face the inside of the body 6 in the second wind direction mode.

[0053] The first air in/out side P1 and the second air in/out side P2 may be opened sides opened in the wind direction control member 22 for introduction of the air to the wind direction control member 22. Also, the first air in/out side P1 and the second air in/out side P2 may be opened sides opened in the wind direction control member 22 for flowing out of the air introduced to the wind direction control member 22 to an outside of the wind direction control member 22.

[0054] When one of the first air in/out side P1 and the second air in/out side P2 faces the inside I of the body, the other one may face the inside of the room R. In a wind direction mode in which the first air in/out side P1 faces the inside I of the body 6, the second air in/out side P2 may face the inside of the room R, and, as shown in FIGS. 1 and 2, the air may be discharged to the inside of the room passed through in an order of the first air in/out side P1, the air guide passage P3, and the second air in/out side P2, and discharge thereof may be guided in a direction the wind direction control member 22 guides the air.

[0055] In the wind direction mode in which the first air in/out side P1 faces the inside of the room R, the second air in/out side P2 may face the inside I of the body 6, and, as shown in FIG. 3, the air may be discharged to the inside of the room passed through in an order of the second air in/out side P2, the air guide passage P3, and the first air in/out side P1, and discharge thereof may be guided in a direction the wind direction control member 22 guides the air.

[0056] When the first air in/out side P1 faces the inside of the body 6, the first air in/out side P1 may be an air inlet for introducing the air from the body 6 to the wind direction control member 22, and, when the first air in/out side P1 faces the inside of the room R, the first air in/out side P1 may be an air outlet for flowing out of the air to the inside of the room passed through the inside of the wind direction control member 22. That is, the first air in/out side P1 may be an opening for flowing in/out of the air.

[0057] When the second air in/out side P2 faces the inside of the body 6, the second air in/out side P2 may be an air inlet for introducing the air from the body 6 to the wind direction control member 22, and, when the second air in/out side P2 faces the inside of the room R, the second air in/out side P2 may be an air outlet for flowing out of the air to the inside of the room passed through the inside of the wind direction control member 22. That

is, the second air in/out side P2 may be an opening for flowing in/out of the air.

[0058] The wind direction control member 22 may have an area A1 of the first air in/out side P1 and an area A2 of the second air in/out side P2 different from each other. One of opening areas of the first air in/out side P1 and the second air in/out side P2 may be smaller than the other one. Hereinafter, a case will be described in which the area A1 of the first air in/out side P1 is smaller than the area A2 of the second air in/out side P2.

[0059] Referring to FIG. 2, in the first wind direction mode, the wind direction control member 22 may guide the air to diverge widely. The first wind direction mode may be a divergent discharge mode. In the first wind direction mode, when the first air in/out side P1 faces the inside I of the body and the second air in/out side P2 faces the inside of the room R, the air can diverge widely as the air passes through the air guide passage P3 between the first air in/out side P1 and the second air in/out side P2. The air passed through the air guide passage P3 thus may be discharged to the inside of the room R passed through the second air in/out side P2, to flow, not only in a direction X the other end 28 of the wind direction control member 22 faces, but also in a lateral direction of the direction X the other end 28 of the wind direction control member 22 faces, making the air to diverge, widely. The first wind direction mode can form a divergent air flow in which the air flow diverges wider than the second wind direction mode.

[0060] In the meantime, referring to FIG. 3, in the second wind direction mode, the wind direction control member 22 may guide the air to converge. The second wind direction mode may be a convergent discharge mode. In the second wind direction mode, the first air in/out side P1 faces the inside of the room R, and the second air in/out side P2 faces the inside I of the body 6, such that the air is brought together to a small area as the air passes the air guide passage P3 between the second air in/out side P2 and the first air in/out side P1. The air passed through the air guide passage P3 may be discharged to the inside of the room R passed through the first air in/out side P1 so as to converge in a direction Y the one end 26 of the wind direction control member 22 faces. That is, the second wind direction mode can form an air flow converged more than the first wind direction mode, and the converged air flow can be formed in the direction Y the one end 26 of the wind direction control member 22 faces, quickly.

[0061] The wind direction control member 22 may include at least one vane 36, 38, 40, 42, 44 and 46 having an air guide direction in a case of the first wind direction mode and an air guide direction in a case of the second wind direction mode different from one another. The at least one vane 36, 38, 40, 42, 44 and 46 may have the air guide direction when the first air in/out side P1 faces the inside of the room and the air guide direction when the second air in/out side P2 faces the inside of the room different from each other.

[0062] The wind direction control member 22 may include a first vane 32 and 34, and a second vane 36, 38, 40, 42, 44 and 46 formed at the first vane 32 and 34 to have an air guide direction in the first wind direction mode different from the air guide direction in the second wind direction mode.

[0063] The body 6 may have the air outlet 4 formed in a rectangular shape, the first vane 32 and 34 formed extended in a long side direction of the air outlet 4, and the second vane 36, 38, 40, 42, 44 and 46 formed extended in a short side direction of the air outlet 4.

[0064] The wind direction control member 22 may include single first vane 32 and at least one second vane 36, 38, 40, 42, 44 and 46, or may include a plurality of the first vanes 32 and 34, and at least one vane 36, 38, 40, 42, 44 and 46.

[0065] If the wind direction control member 22 includes single first vane 32, the at least one second vane 36, 38, 40, 42, 44 and 46 may be formed projected from one of two sides of the first vane 32 or projected from the two sides of the first vane 32, respectively.

[0066] If the wind direction control member 22 includes the plurality of first vanes 32 and 34, the at least one second vane 36, 38, 40, 42, 44 and 46 may be positioned among the plurality of the first vanes 32 and 34, for guiding the air passing among the plurality of first vanes 32 and 34.

[0067] If the wind direction control member 22 includes the plurality of first vanes 32 and 34, the plurality of first vanes 32 and 34 may be arranged in parallel to one another, to form the air guide passage P3 among the plurality of first vanes 32 and 34. And, the wind direction control member 22 may have the first air in/out side P1 formed between one end of one 32 of the plurality of first vanes 32 and 34 and one end of the other one 34 of the plurality of first vanes 32 and 34, and the second air in/out side P2 formed between the other end of one 32 of the plurality of first vanes 32 and 34 and the other end of the other one 34 of the plurality of first vanes 32 and 34. The wind direction control member 22 may include one pair of first vanes 32 and 34, to form the air guide passage P3 between the one pair of the first vanes 32 and 34.

[0068] The wind direction control member 22 may have more than three first vanes arranged in parallel to form a plurality of the air guide passages. In this case, the plurality of the air guide passages may form parallel flow passages in an air discharge direction.

[0069] It is possible that the plurality of first vanes 32 and 34 are connected with the at least one second vane 36, 38, 40, 42, 44 and 46. It is possible that the plurality of first vanes 32 and 34 are connected with at least one side wall 50 and 52 which connects the plurality of first vanes 32 and 34.

[0070] The wind direction control member 22 may include at least one side wall 50 and 52 which connects the plurality of first vanes 32 and 34, and the plurality of first vanes 32 and 34 and the side wall 50 and 52 may form a frame of the wind direction control member 22.

[0071] The second vane 36, 38, 40, 42, 44 and 46 may guide discharge of the air in a state positioned in a space the plurality of first vanes 32 and 34 and the side wall 50 and 52 form.

[0072] The second vane 36, 38, 40, 42, 44 and 46 may be formed between the plurality of first vanes 32 and 34, fixedly secured to at least one of the first vanes 32 and 34. The plurality of second vanes 36, 38, 40, 42, 44 and 46 may be formed perpendicular to the plurality of first vanes 32 and 34, respectively. As the second vane 36, 38, 40, 42, 44 and 46 is connected to each of the plurality of first vanes 32 and 34, the second vane 36, 38, 40, 42, 44 and 46 can make stable air discharge guide without shaking. It is preferable that the second vane 36, 38, 40, 42, 44 and 46 is formed in plural, and the plurality of the second vanes 36, 38, 40, 42, 44 and 46 may be formed among the plurality of first vanes 32 and 34 spaced from one another.

[0073] The second vane 36, 38, 40, 42, 44 and 46 may have one end 54 for guiding the air in a direction parallel to a center line C of the first vane 32 and 32, and the other end 56 for guiding the air in a direction not parallel to the center line C of the first vane 32 and 32.

[0074] The one end 54 of the second vane 36, 38, 40, 42, 44 and 46 may be positioned at the first air in/out side P1, or closer to the first air in/out side P1 than the second air in/out side P2.

[0075] The other end 56 of the second vane 36, 38, 40, 42, 44 and 46 may guide the air in a center line C direction of the first vane 32 and 34 or in a direction D having an acute tilting angle from an imaginary line C' parallel to the center line C. The other end 56 of the second vane 36, 38, 40, 42, 44 and 46 may be positioned at the second air in/out side P2, or closer to the second air in/out side P2 than the first air in/out side P1.

[0076] The second vane 36, 38, 40, 42, 44 and 46 between the one end 54 and the other end 56 may be formed curved or bent.

[0077] The second vane 36, 38, 40, 42, 44 and 46 may guide discharge of the air in a straight ahead direction in one of the first wind direction mode and the second wind direction mode, and may guide discharge of the air in a direction tilted in the other one of the first wind direction mode and the second wind direction mode.

[0078] Referring to FIG. 2, the second vane 36, 38, 40, 42, 44 and 46 may have the other end 56 facing the inside of the room R when the one end 54 faces the inside I of the body 6. In this case, the second vane 36, 38, 40, 42, 44 and 46 may guide discharge of the air in the direction of the center line C of the first vane 32 and 34 or in the tilted direction D having the acute tilting angle from the imaginary parallel line C' to the center line C.

[0079] Referring to FIG. 3, the second vane 36, 38, 40, 42, 44 and 46 may have the other end 56 facing the inside I of the body 6 when the one end 54 faces the inside of the room R. In this case, the second vane 36, 38, 40, 42, 44 and 46 may guide discharge of the air in a direction parallel to the center line C of the first vane 32 and 34.

[0080] The plurality of second vanes 36, 38, 40, 42, 44 and 46 may be spaced in a length direction E of the first vane 32 and 34. The plurality of second vanes 36, 38, 40, 42, 44 and 46 may have the one ends 54 with spaced distances to each adjacent vane shorter than spaced distances to each adjacent vane of the other ends 56. The plurality of second vanes 36, 38, 40, 42, 44 and 46 may have the spaced distances F to each adjacent vane which become the shorter as the second vanes 36, 38, 40, 42, 44 and 46 go to the one ends 54 the more, and become the longer as the second vanes 36, 38, 40, 42, 44 and 46 go to the other ends 56 the more. The wind direction control member 22 may have the one ends 54 of the plurality of second vanes 36, 38, 40, 42, 44 and 46 facing the inside of the body 6 respectively in the divergent discharge mode, and facing the inside of the room R in the convergent discharge mode, respectively.

[0081] The wind direction control member 22 may further include a third vane 60 formed at the first vane 32 and 34 having the air guide direction the same both in the first wind direction mode and the second wind direction mode. The third vane 60 may have one end and the other end arranged the same with the center line C of the first vanes 32 and 34 or parallel thereto. The wind direction control member 22 may be formed such that the third vane 60 is positioned among the plurality of second vanes 36, 38, 40, 42, 44 and 46. The third vane 60 may be positioned on the center line C of the first vanes 32 and 34 or close thereto, and the second vane 36, 38, 40, 42, 44 and 46 may be formed between the third vane 60 and the first side wall 50 in plural, and between the third vane 60 and the second side wall 52 in plural. The second vane 36, 38, 40, 42, 44 and 46 at least two thereof may be formed between the third vane 60 and the first side wall 50, and the second vane 36, 38, 40, 42, 44 and 46 at least two thereof may also be formed between the third vane 60 and the second side wall 52. The second vanes 36, 38, 40, 42, 44 and 46 may have radii of curvature which become the larger as the vane is the closer to the third vane 60 and the smaller as the vane is closer to the side wall 50 and 52.

[0082] The wind direction control member 22 may have a rotation shaft 62 and 64 the same with the length direction E of the first vane 32 and 34 or parallel thereto. The rotation shaft 62 and 64 may be provided to the side wall 50 and 52, and may include a first rotation shaft 62 formed at the first side wall 50 and a second rotation shaft 64 formed at the second side wall 52. If the wind direction control member 22 does not have a side wall separately, it may also be possible that the rotation shaft 62 and 64 includes a first rotation shaft 62 formed at one of the plurality of second vanes and a second rotation shaft 64 formed at the other one of the plurality of second vanes. It is possible that one of the first rotation shaft 62 and the second rotation shaft 64 is connected to the driving mechanism 24 and the other one may be rotatably supported on a shaft supporter formed at the body 6, specifically, at the discharge panel 14.

[0083] It is possible that the driving mechanism 24 is a wind direction control motor having a rotation shaft connected to one of the first rotation shaft 62 and the second rotation shaft 64. The driving mechanism 24 may also include the wind direction control motor and at least one power transmission member connecting the rotation shaft of the wind direction control motor to one of the first rotation shaft 62 and the second rotation shaft 64, and the power transmission member may be a gear or the like. The driving mechanism 24 may be mounted to the body 6, more specifically, to the discharge panel 14 of the body 6.

[0084] FIG. 4 is an enlarged sectional view illustrating an example in which a driving mechanism in a wind direction controller in accordance with a first preferred embodiment of the present invention converts the wind direction control member to a first wind direction mode or a second wind direction mode, and FIG. 5 is an enlarged sectional view illustrating another example in which a driving mechanism in a wind direction controller in accordance with a first preferred embodiment of the present invention converts the wind direction control member to a first wind direction mode or a second wind direction mode.

[0085] FIG. 4 illustrates a case in which the driving mechanism 24 rotates the wind direction control member 22 to a largest extent for converting the first wind direction mode and the second wind direction mode, and FIG. 5 illustrates a case in which the driving mechanism 24 rotates the wind direction control member 22 to a smallest extent for converting the first wind direction mode and the second wind direction mode.

[0086] The driving mechanism 24 may rotate the wind direction control member 22 within a preset range when the first wind direction mode is changed to the second wind direction mode or changed opposite to this. In this case, it is preferable that the preset range in which the driving mechanism 24 rotates the wind direction control member 22 for converting the first wind direction mode and the second wind direction mode is set to be a range in which the wind direction control member 22 can guide discharge of the air from the inside I of the body 6 to the inside of the room R, smoothly. The range may be set to be 60°~300°.

[0087] When the wind direction control member 22 is rotated by 180°, the driving mechanism 24 may invert positions of the one end and the other end of the wind direction control member 22. And, as shown in FIG. 4, the driving mechanism 24 may convert the first wind direction mode and the second wind direction mode by rotating the wind direction control member 22 by 300° at a largest extent, and, as shown in FIG. 5, the driving mechanism 24 may convert the first wind direction mode and the second wind direction mode by rotating the wind direction control member 22 by 60° at a smallest extent.

[0088] FIG. 6 is a sectional view illustrating a wind direction controller in accordance with a second preferred embodiment of the present invention, in a divergent dis-

charge mode, FIG. 7 is a sectional view illustrating a wind direction controller in accordance with a second preferred embodiment of the present invention, in a convergent discharge mode, FIG. 8 is a sectional view illustrating a wind direction controller in accordance with a second preferred embodiment of the present invention, in a first deflected discharge mode, and FIG. 9 is a sectional view illustrating a wind direction controller in accordance with a second preferred embodiment of the present invention, in a second deflected discharge mode.

[0089] The wind direction controller of the embodiment may have a plurality of wind direction control members 22' and 22" arranged at the body 6 on a line for guiding the air being discharged through the air outlet 4. The body 6 may have one air outlet 4 formed therein, and the plurality of wind direction control members 22' and 22" may control a wind direction of the air being discharged through the one air outlet 4, together. It is apparent that the body 6 may have a plurality of air outlets formed spaced from one another on a line, at least one of the plurality of wind direction control members 22' and 22" may be arranged to one of the plurality of air outlets on a line on the whole, and the air being discharged distributed to the plurality of air outlets may be guided by the plurality of wind direction control members 22' and 22". Hereinafter, for convenience of description, an example will be described in which a wind direction of the air being discharged through one air outlet 4 is controlled by the plurality of wind direction control members 22' and 22".

[0090] The air outlet 4 may be formed in a long rectangular shape in the body 6, and the plurality of wind direction control members 22' and 22" may be arranged extended in a length direction of the air outlet 4 in succession. The wind direction controller of the embodiment includes a driving mechanism 24' and 24" for driving the plurality of wind direction control members 22' and 22".

[0091] Alike the wind direction controller 22 in the first embodiment, each of the plurality of wind direction control members 22' and 22" may have an air guide passage P3 formed between a first air in/out side P1 and a second air in/out side P2 for passing of the air. Alike the wind direction controller 22 in the first embodiment, each of the plurality of wind direction control members 22' and 22" may have the other one of the first air in/out side P1 and the second air in/out side P2 facing the inside of the room R when one of the first air in/out side P1 and the second air in/out side P2 faces the inside I of the body 6. Alike the wind direction controller 22 in the first embodiment, each of the plurality of wind direction control members 22' and 22" may have an area A1 of the first air in/out side P1 smaller than an area A2 of the second air in/out side P2. The wind direction controller of the embodiment may have configurations and operation of the plurality of wind direction control members 22' and 22" identical or similar to the wind direction control member 22 of the first embodiment except that the plurality of wind direction control members 22' and 22" are arranged

at the body 6 on a line. The same reference symbols will be used for identical configurations, and detailed description thereof will be omitted.

[0092] The plurality of wind direction control members 22' and 22" may include a first wind direction control member 22' and a second wind direction control member 22", and the same reference symbols will be used for identical configurations of the first wind direction control member 22' and the second wind direction control member 22".

[0093] The first wind direction control member 22' may include a plurality of first vanes 32' and 34' and a plurality of second vanes 36, 38, and 40. The first wind direction control member 22' may include a side wall 50' and 52'. Alike the wind direction control member 22 in the first embodiment, the first wind direction control member 22' may have a frame thereof constructed of the plurality of first vanes 32' and 34' and the side wall 50' and 52', and may be constructed to position the plurality of second vanes 36, 38, and 40 among the plurality of first vanes 32' and 34'. The plurality of second vanes 36, 38, and 40 may be spaced in a length direction of the first vane 32' and 34'. The plurality of second vanes 36, 38, and 40 may have spaced distances F to each adjacent vane which become the shorter as the plurality of second vanes 36, 38, and 40 go to one ends thereof the more, and become the longer as the plurality of second vanes 36, 38, and 40 go to the other ends thereof the more, respectively. The first wind direction control member 22' may have a first rotation shaft 62' formed at the side wall 50' and 52'.

[0094] The second wind direction control member 22" may include a plurality of first vanes 32" and 34" and a plurality of second vanes 42, 44, and 46. The second wind direction control member 22" may include a side wall 50" and 52". Alike the wind direction control member 22 in the first embodiment, the second wind direction control member 22" may have a frame thereof constructed of the plurality of first vanes 32" and 34" and the side wall 50" and 52", and may be constructed to position the plurality of second vanes 42, 44, and 46 among the plurality of first vanes 32" and 34". The plurality of second vanes 42, 44, and 46 may be spaced in a length direction of the second vane 32" and 34". The plurality of second vanes 42, 44, and 46 may have spaced distances F to each adjacent vane which become the shorter as the plurality of second vanes 42, 44, and 46 go to one ends thereof the more, and become the longer as the plurality of second vanes 42, 44, and 46 go to the other ends thereof the more, respectively. The second wind direction control member 22" may have a second rotation shaft 62" formed at the side wall 50" and 52".

[0095] The plurality of wind direction control members 22' and 22" may be rotatably supported by each other. The wind direction controller of the embodiment may include a hinge shaft supporter 64' for rotatably supporting a hinge shaft 64' formed at one of the plurality of wind direction control members 22' and 22" and a hinge shaft

64' formed at the other one of the plurality of wind direction control members 22' and 22".

[0096] The driving mechanism 24' and 24" may include a first wind direction control motor 24' for rotating one 22' of the plurality of wind direction control members 22' and 22", and a second wind direction control motor 24" for rotating the other one of the plurality of wind direction control members 22' and 22". The first wind direction control motor 24' and the second wind direction control motor 24" may be arranged spaced from each other with the first wind direction control member 22' and the second wind direction control member 22" arranged therebetween. The wind direction controller may have the first wind direction control motor 24', the first wind direction control member 22', the second wind direction control member 22", and the second wind direction control motor 24" arranged in above order in a direction perpendicular to a direction of opening of the air outlet 4.

[0097] The first wind direction control motor 24' can rotate the first wind direction control member 22' directly, or through a power transmission member, such as a gear. The first wind direction control motor 24' can rotate the first rotation shaft 62' of the first wind direction control member 22'.

[0098] The second wind direction control motor 24" can rotate the second wind direction control member 22" directly, or through a power transmission member, such as a gear. The second wind direction control motor 24" can rotate the second rotation shaft 62" of the second wind direction control member 22".

[0099] In the meantime, each of the plurality of wind direction control members 22' and 22" may have the second vanes with radii of curvature different from one another, and each of the vanes may have the radii of curvature which become the smaller as the second vanes are the closer to the driving mechanism 24' and 24" the more. The plurality of second vanes of the first wind direction control member 22' may have the radii of curvature which become the smaller as the second vanes are the closer to the first wind direction control motor 24' the more. And, the plurality of second vanes of the second wind direction control member 22" may have the radii of curvature which become the smaller as the second vanes are the closer to the second wind direction control motor 24" the more.

[0100] The wind direction controller of the embodiment may have a divergent discharge mode in which the air diverges widely as shown in FIG. 6, a convergent discharge mode in which the air converges as shown in FIG. 7, or a deflected discharge mode in which the air is deflected to a left direction or a right direction as shown in FIG. 8 or 9.

[0101] In the divergent discharge mode and the convergent discharge mode, the wind direction controller of the embodiment may have the second vane 36, 38, and 40 of the first wind direction control member 22', and the second vane 42, 44, and 46 of the second wind direction control member 22" arranged symmetrically with respect

to a boundary of the first wind direction control member 22' and the second wind direction control member 22" in a left/right direction.

[0102] In the deflected discharge mode, the wind direction controller of the embodiment may have the second vane 36, 38, and 40 of the first wind direction control member 22', and the second vane 42, 44, and 46 of the second wind direction control member 22" arranged asymmetrically with respect to a boundary of the first wind direction control member 22' and the second wind direction control member 22" in the left/right direction.

[0103] Hereinafter, for convenience of description, a left side of FIGS. 6 to 8 will be called as a left direction, a right side of the FIGS. 6 to 8 will be called as a right direction, and a low side of FIGS. 6 to 8 will be called as a lower direction.

[0104] In the divergent discharge mode, the wind direction controller of the embodiment may have the first air in/out sides P1 of the plurality of wind direction control members 22' and 22" facing the inside I of the body 6, and the second air in/out sides P2 of the plurality of wind direction control members 22' and 22" facing the inside of the room R.

[0105] Referring to FIG. 6, each of the first wind direction control member 22' and the second wind direction control member 22" may be in the first wind direction mode, wherein the air being guided by the first wind direction control member 22' may diverge widely in a direction the other end 28 of the first wind direction control member 22' faces and in a lateral direction of a direction the other end 28 of the first wind direction control member 22' faces, and the air being guided by the second wind direction control member 22" may diverge widely in a direction the other end 28 of the second wind direction control member 22" faces and in a lateral direction of a direction the other end 28 of the second wind direction control member 22" faces. The air discharge guided by the first wind direction control member 22' may diverge widely in a lower direction and a left direction, the air discharge guided by the second wind direction control member 22" may diverge widely in the lower direction and a right direction, and the air discharge guided by the first wind direction control member 22' and the second wind direction control member 22" may diverge widely in the lower direction, the left direction and the right direction.

[0106] In the convergent discharge mode, the wind direction controller of the embodiment may have the first air in/out sides P1 of the plurality of the wind direction control members 22' and 22" facing the inside of the room, and the second air in/out sides P2 of the plurality of wind direction control members 22' and 22" facing the inside I of the body 6.

[0107] Referring to FIG. 7, each of the first wind direction control member 22' and the second wind direction control member 22" may be in the second wind direction mode, wherein the air being guided by the first wind direction control member 22' may converge in a direction

one end 26 of the first wind direction control member 22' faces, and the air being guided by the second wind direction control member 22" may converge in a direction one end 26 of the second wind direction control member 22" faces. The air discharge guided by the first wind direction control member 22' may diverge not in the left direction, but may converge in the lower direction, the air discharge guided by the second wind direction control member 22" may diverge not in the right direction, but may converge in the lower direction, and the air discharge guided by the first wind direction control member 22' and the second wind direction control member 22" may diverge not in the left direction and the right direction, but may converge in the lower direction.

[0108] In the deflected discharge mode, the wind direction controller of the embodiment may have the first air in/out side P1 of one of the plurality of wind direction control members 22' and 22" facing the inside I of the body 6, and the second air in/out side P2 of the other one of the plurality of wind direction control members 22' and 22" facing the inside of the room R. And, in the deflected discharge mode, the wind direction controller of the embodiment may have the second air in/out side P2 of the other one of the plurality of wind direction control members 22' and 22" facing the inside I of the body 6, and the first air in/out side P1 of the other one of the plurality of wind direction control members 22' and 22" facing the inside of the room R.

[0109] Referring to FIG. 8, in the deflected discharge mode, the second wind direction control member 22" may be in the second wind direction mode when the first wind direction control member 22' is in the first wind direction mode. As shown in FIG. 9, the second wind direction control member 22" is in the first wind direction mode when the first wind direction control member 22' is in the second wind direction mode.

[0110] The deflected discharge mode may include a left direction deflected discharge mode and a right direction deflected discharge mode in which the air discharge is guided to opposite directions.

[0111] If the second wind direction control member 22" is in the second wind direction mode when the first wind direction control member 22' is in the first wind direction mode, the air guided by the first wind direction control member 22' may diverge widely in a direction the other end 28 of the first wind direction control member 22' faces and a lateral direction of the direction the other end 28 of the first wind direction control member 22' faces, and the air discharge guided by the first wind direction control member 22' and the second wind direction control member 22" may diverge in the left side direction and the lower side direction, widely. In the meantime, the air guided by the second wind direction control member 22" may converge in a direction the one end 26 of the second wind direction control member 22" faces, and the air discharge guided by the second wind direction control member 22" may be discharged diverged in the lower side direction. The air discharged guided by the first wind di-

rection control member 22' and the second wind direction control member 22" does not diverge in the right side direction widely, but may be discharged in the left side direction and the lower side direction, such that the wind direction controller may be in a left direction deflected discharge mode in which an air flow deflected in the left direction is formed on the whole, to air condition a left side space of the inside of the room, mostly.

[0112] If the second wind direction control member 22" is in the first wind direction mode when the first wind direction control member 22' is in the second wind direction mode, the air guided by the first wind direction control member 22' may converge in a direction the one end 26 of the first wind direction control member 22' faces, and the air discharge guided by the first wind direction control member 22' may be discharged converged in the lower direction. In the meantime, the air guided by the second wind direction control member 22" may diverge widely in a direction the other end 28 of the second wind direction control member 22" faces and in a later direction of the direction the other end 28 of the first wind direction control member 22' faces, and the air discharged guided by the second wind direction control member 22" may diverge widely in the right side direction and the lower side direction. The air discharged guided by the first wind direction control member 22' and the second wind direction control member 22" may not diverge in the left side direction widely, but may be discharged in the right side direction and the lower side direction, such that the wind direction controller may be in a right side deflected discharge mode in which an air flow deflected to the right side is formed on the whole to air condition a right side space of the inside of the room R, mostly.

[0113] The driving mechanism 24' and 24" may rotate at least one of the plurality of the wind direction control members 22' and 22" within a range of 60°~300° when the wind direction mode is changed. When the convergent discharge mode is converted to the deflected discharge mode, the driving mechanism 24' and 24" may rotate only one of the plurality of the wind direction control members 22' and 22" within the range of 60°~300°. When the divergent discharge mode is converted to the convergent discharge mode, the driving mechanism 24' and 24" may rotate each of the plurality of the wind direction control members 22' and 22" within the range of 60°~300°. When the convergent discharge mode is converted to the divergent discharge mode, the driving mechanism 24' and 24" may rotate each of the plurality of the wind direction control members 22' and 22" within the range of 60°~300°. When the convergent discharge mode is converted to the deflected discharge mode, the driving mechanism 24' and 24" may rotate only one of the plurality of the wind direction control members 22' and 22" within the range of 60°~300°.

[0114] The wind direction controller of the embodiment may drive the first wind direction control member 22' and the second wind direction control member 22" to have angles different from each other in one-way of the air

outlet 4. The first wind direction control member 22' and the second wind direction control member 22" may be arranged to face in directions different from each other in front/rear directions. As an example, when the first wind direction control member 22' guides discharge of the air to a lower side front region of the air outlet 4, the second wind direction control member 22" may guide discharge of the air to a lower side rear region of the air outlet 4. In each of the divergent discharge mode, the convergent discharge mode, and the deflected discharge mode, the wind direction controller of the embodiment can rotate the first wind direction control member 22' and the second wind direction control member 22" to angles different from each other in the front/rear directions, enabling the wind direction controller to form a variety of air flows.

[0115] FIG. 10 is a sectional view illustrating a wind direction controller in accordance with a third preferred embodiment of the present invention.

[0116] The wind direction controller of the embodiment may include a wind direction control member supporting portion 80 positioned among the plurality of the wind direction control members 22' and 22" for rotatably supporting each of the plurality of the wind direction control members 22' and 22". Since configurations and operation of the wind direction controller of the embodiment is identical or similar to the second embodiment of the present invention except the wind direction control member supporting portion 80, the same reference symbols will be used, and detailed description of the identical or similar configurations and operation of the third embodiment of the present invention will be omitted.

[0117] The wind direction control member supporter 80 may be formed at the body 6, particularly, the discharge panel 14, to be positioned among the plurality of the wind direction control members 22' and 22". The wind direction control member supporting portion 80 may be formed to face each of the plurality of the wind direction control members 22' and 22".

[0118] There may be a first hinge shaft 82 formed at one of the first wind direction control member 22' and the wind direction control member supporter 80, and a first hinge shaft supporter 84 may be formed at the other one of the first wind direction control member 22' and the wind direction control member supporter 80 for rotatably supporting the first hinge shaft 82.

[0119] There may be a second hinge shaft 86 formed at one of the second wind direction control member 22" and the wind direction control member supporter 80, and a second hinge shaft supporter 88 may be formed at the other one of the second wind direction control member 22" and the wind direction control member supporter 80 for rotatably supporting the second hinge shaft 86.

[0120] In the meantime, the present invention is not limited to the foregoing embodiments, but it is apparent that the body 6 may be a wall mounting type air conditioner to be mounted to a wall in the room, or a stand type air conditioner to be installed on a floor of the room,

so that the wind direction controller of the present invention is mounted to the wall mounting type air conditioner or the stand type air conditioner for controlling the wind direction of the air being discharged from the wall mounting type air conditioner or the stand type air conditioner. If the body 6 is the wall mounting type air conditioner or the stand type air conditioner, the air outlet 4 in the body 6 may extend in a lateral direction or a vertical direction of the body 6.

[0121] It is apparent that the wind direction control member 22 in accordance with the first preferred embodiment of the present invention mounted to the air outlet 4 formed extended in the lateral direction of the body 6 enables to make lateral direction divergent air discharge guide to forward of the air outlet 4 or convergent air discharge guide to forward of the air outlet 4. And, it is apparent that the plurality of wind direction control members 22' and 22" in accordance with the second preferred embodiment of the present invention mounted to the air outlet 4 formed extended in the lateral direction of the body 6 enables to make lateral direction divergent air discharge guide to forward of the air outlet 4, convergent air discharge guide to forward of the air outlet 4, deflected air discharge guide to forward of the left side of the air outlet 4, or deflected air discharge guide to forward of the right side of the air outlet 4. And, the plurality of wind direction control members 22' and 22" in accordance with the second preferred embodiment of the present invention can be arranged to face directions different from one another in a vertical direction, enabling to form a variety of combinations of air flows.

[0122] And, it is apparent that the wind direction control member 22 in accordance with the first preferred embodiment of the present invention mounted to the air outlet 4 formed extended in the vertical direction of the body 6 enables to make vertical direction divergent air discharge guide to forward of the air outlet 4 or convergent air discharge guide to forward of the air outlet 4. And, it is apparent that the plurality of wind direction control members 22' and 22" in accordance with the second preferred embodiment of the present invention mounted to the air outlet 4 formed extended in the vertical direction of the body 6 enables to make vertical direction divergent air discharge guide to forward of the air outlet 4, convergent air discharge guide to forward of the air outlet 4, deflected air discharge guide to forward of the upper side of the air outlet 4, or deflected air discharge guide to forward of the lower side of the air outlet 4. And, the plurality of wind direction control members 22' and 22" in accordance with the second preferred embodiment of the present invention can be arranged to face directions different from one another in a left/right direction, enabling to form a variety of combinations of air flows.

[0123] It will be apparent to those skilled in the art that the present invention is not intended to be limited to the above-described embodiment and drawings, and various changes or modifications may be made therein without departing from the scope and the technical spirit of the

present invention.

Claims

1. A wind direction controller mounted to a body (6) having an air inlet (2) and an air outlet (4), comprising:
 - a wind direction control member (22, 22', 22'') for guiding air to be discharged through the air outlet (4),
 - a driving mechanism (24, 24', 24'') for driving the wind direction control member (22, 22', 22'') in a first wind direction mode in which one end (26) of the wind direction control member (22, 22', 22'') faces an inside (I) of the body (6), and the other end (28) of the wind direction control member (22, 22', 22'') faces an inside of a room (R), or in a second wind direction mode in which the one end (26) having faced the inside (I) of the body (6) in the first wind direction mode faces the inside of the room (R), and the other end (28) having faced the inside of the room (R) in the first wind direction mode faces the inside (I) of the body (6).
2. The wind direction controller of claim 1, wherein the wind direction control member (22) includes;
 - a first air in/out side (P1) which faces the inside (I) of the body (6) in the first wind direction mode and faces the inside of the room (R) in the second wind direction mode,
 - a second air in/out side (P2) which faces the inside of the room (r) in the first wind direction mode and faces the inside (I) of the body (6) in the second wind direction mode, and
 - an air guide passage (P3) formed between the first air in/out side (P1) and the second air in/out side (P2), wherein the first air in/out side (P1) has a cross-sectional area, A1, different from the cross-sectional area, A2, of the second air in/out side (P2).
3. The wind direction controller of claim 1 or 2, wherein the wind direction control member (22) includes at least one vane (36, 38, 40, 42, 44, 46) having an air guide direction in the first wind direction mode different from the air guide direction in the second wind direction mode.
4. The wind direction controller of claim 1 or 2, wherein the wind direction control member (22) includes;
 - a first vane (32, 34), and
 - a second vane (36, 38, 40, 42, 44, 46) formed at the first vane (32, 34) to have an air guide direction in the first wind direction mode different from the air guide direction in the second wind direction mode.
5. The wind direction controller of claim 4, wherein the first vane (32, 34) includes a plurality of vanes arranged in parallel, and the second vane (36, 38, 40, 42, 44, 46) is formed among the plurality of first vanes (32, 34).
6. The wind direction controller of claim 4 or 5, wherein the second vane (36, 38, 40, 42, 44, 46) is curved between one end (54) and the other end (56) thereof.
7. The wind direction controller of claim 6, wherein the second vane (36, 38, 40, 42, 44, 46) has a plurality of second vanes spaced from one another, wherein the plurality of the second vanes (36, 38, 40, 42, 44, 46) have one ends thereof having spaced distances to each adjacent vane shorter than spaced distances to each adjacent vane of the other ends thereof.
8. The wind direction controller of any one of claims 1 to 7, wherein the wind direction control member (22) has a plurality of the wind direction control members (22', 22'') arranged on a line, wherein each of the plurality of the wind direction control members (22', 22'') has an air guide passage (P3) formed between one end and the other end thereof, and a first air in/out side (P1) formed at one end of the wind direction control member (22', 22'') has a cross-sectional area, A1, smaller than the cross-sectional area, A2, of a second air in/out side (P2) formed at the other end of the wind direction control member (22', 22'').
9. The wind direction controller of claim 8, further comprising:
 - a hinge shaft (64') formed at one of the plurality of the wind direction control members (22', 22''), and
 - a hinge shaft supporter (64'') formed at the other one of the plurality of the wind direction control members (22', 22'') for rotatably supporting the hinge shaft (64').
10. The wind direction controller of claim 8, further comprising a wind direction control member supporter (80) positioned among the plurality of the wind direction control members (22', 22'') for rotatably supporting each of the plurality of the wind direction control members (22', 22'').
11. The wind direction controller of any one of claims 8 to 10, wherein the driving mechanism (24', 24'') includes;
 - a first wind direction control motor for rotating one of the wind direction control members (22', 22''), and
 - a second wind direction control motor for rotating the

other one of the wind direction control members (22', 22").

12. The wind direction controller of claim 11, wherein the wind direction control member (22', 22") rotated by the first wind direction control motor includes a plurality of vanes having radii of curvature which become the smaller as the plurality of vanes are the closer to the first wind direction control motor, and the wind direction control member (22', 22") rotated by the second wind direction control motor includes a plurality of vanes having radii of curvature which become the smaller as the plurality of vanes are the closer to the second wind direction control motor.
13. The wind direction controller of claim 12, wherein the driving mechanism (24', 24") has a divergent discharge mode in which the first air in/out side (P1) of each of the plurality of the wind direction control members (22', 22") faces an inside (I) of the body (6) and the second air in/out side (P2) of each of the plurality of the wind direction control members (22', 22") faces an inside of the room (R), a convergent discharge mode in which the first air in/out side (P1) of each of the plurality of the wind direction control members (22', 22") faces an inside of the room (R) and the second air in/out side (P2) of each of the plurality of the wind direction control members (22', 22") faces the inside (I) of the body (6), and a deflected discharge mode in which the first air in/out side (P1) of one of the plurality of the wind direction control members (22', 22") faces an inside (I) of the body (6) and the second air in/out side (P2) of the other one of the plurality of the wind direction control members (22', 22") faces the inside (I) of the body (6), wherein the driving mechanism (24', 24") performs one of the divergent discharge mode, the convergent discharge mode, and the deflected discharge mode, selectively.
14. The wind direction controller of claim 13, wherein the deflected discharge mode includes a left direction deflected discharge mode and a right direction deflected discharge mode for guiding air discharge in directions opposite to each other.
15. An air conditioner comprising the wind direction controller as claimed in one of claims 1 to 14.

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Fig. 1

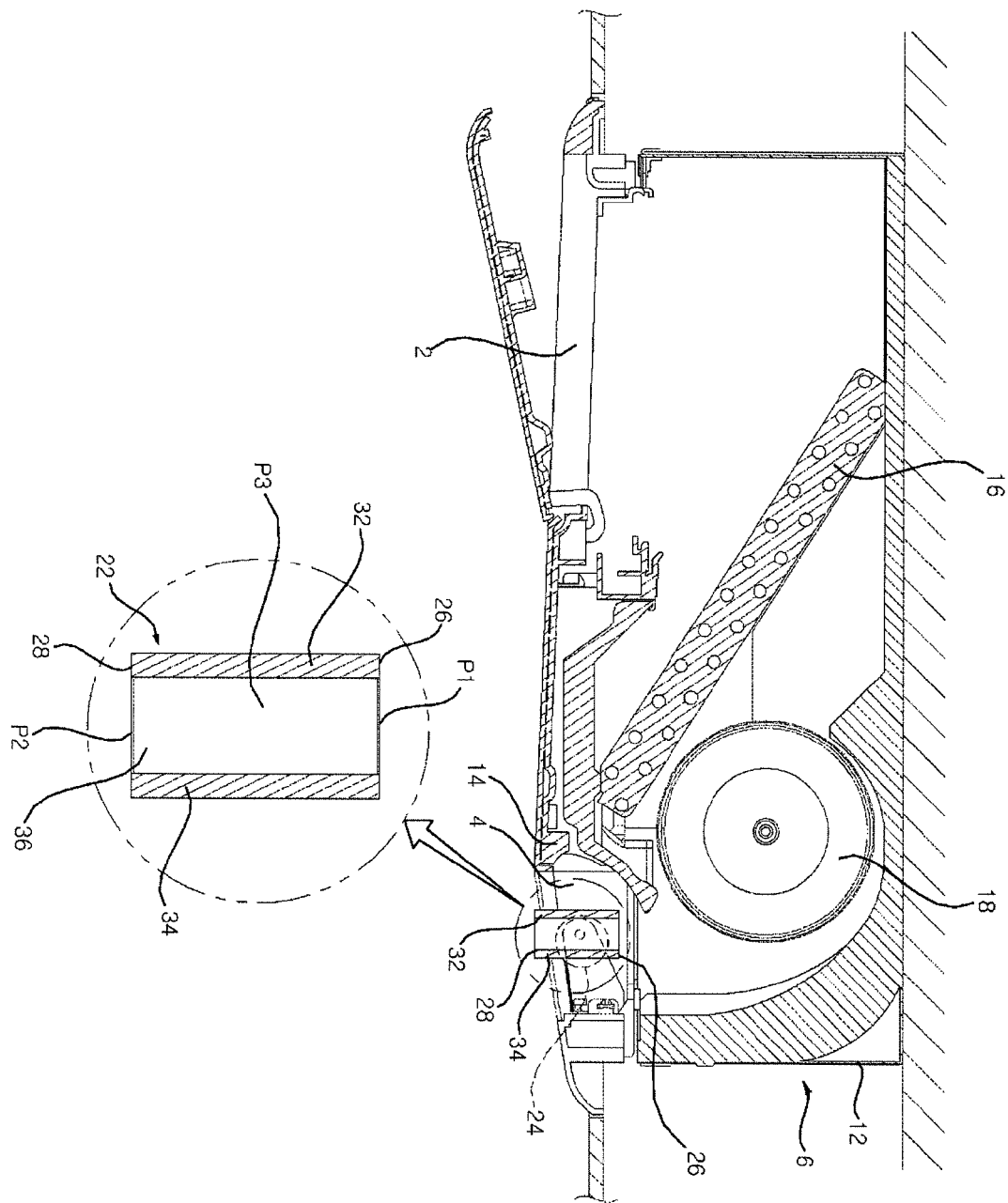


Fig. 2

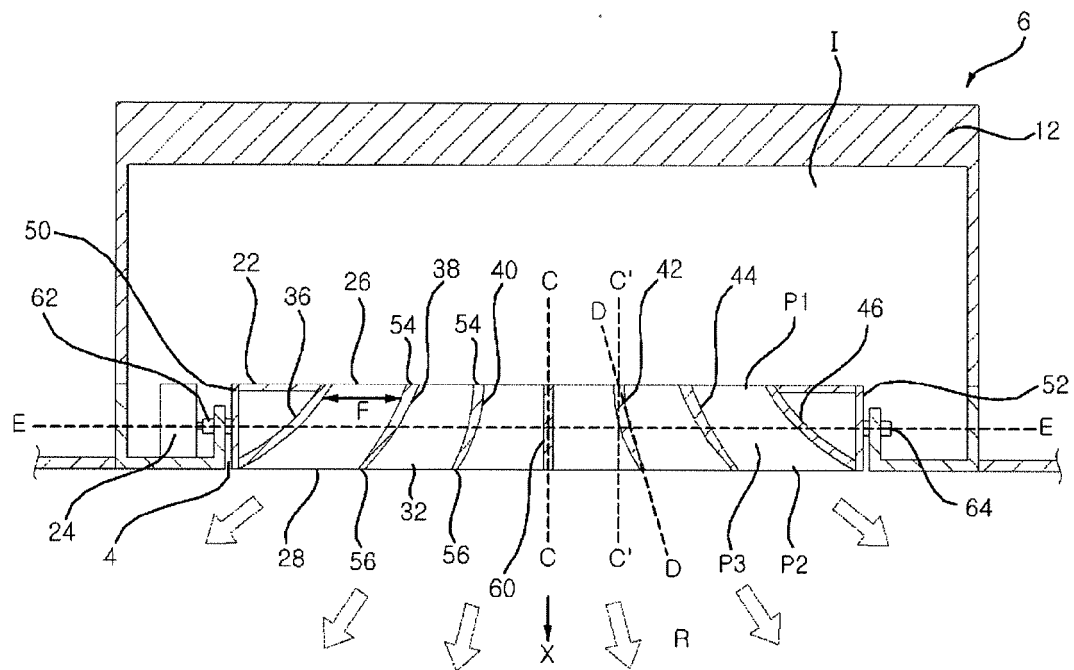


Fig. 3

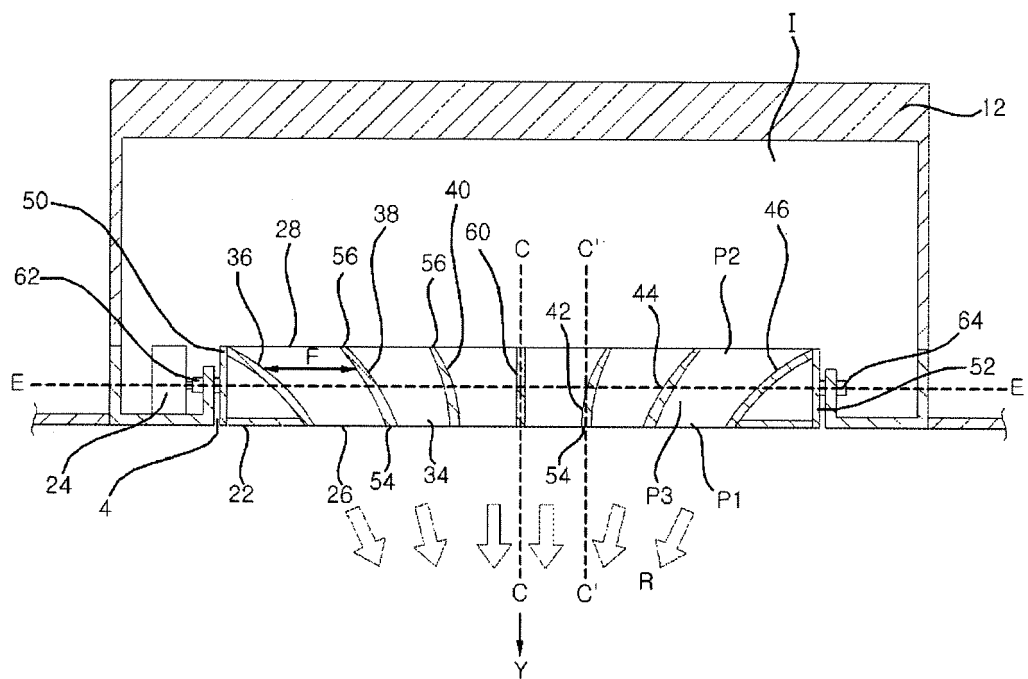


Fig. 4

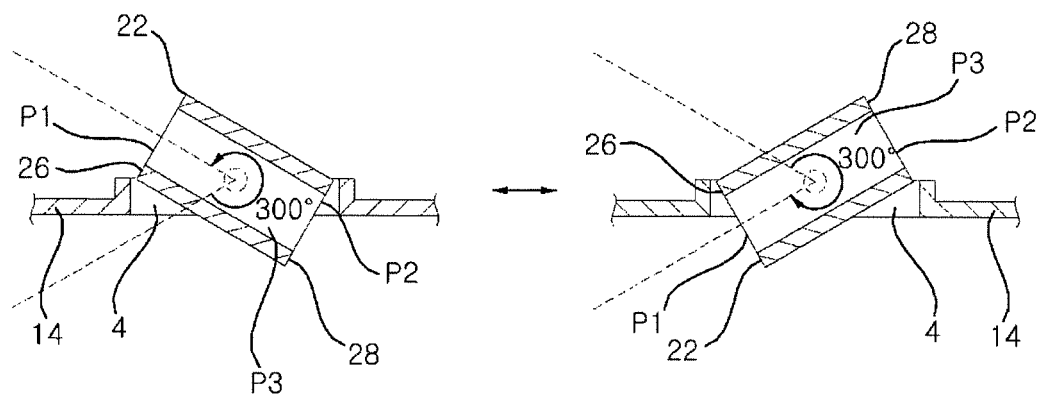


Fig. 5

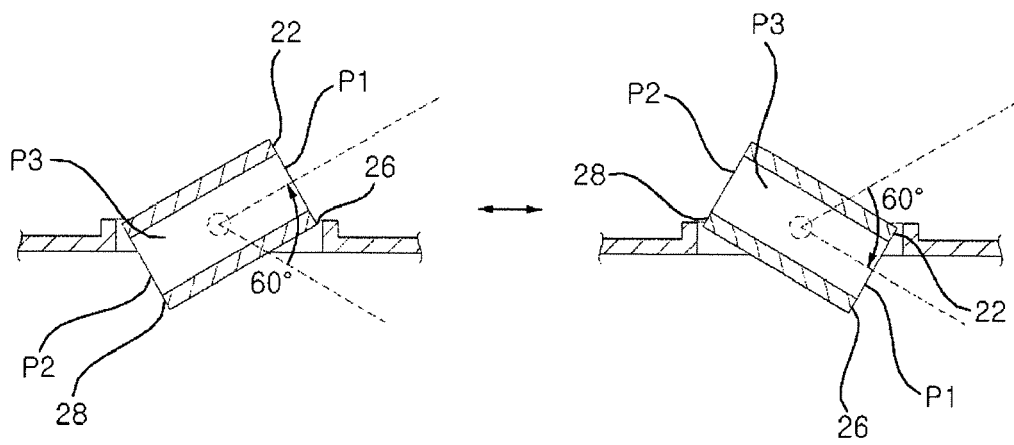


Fig. 6

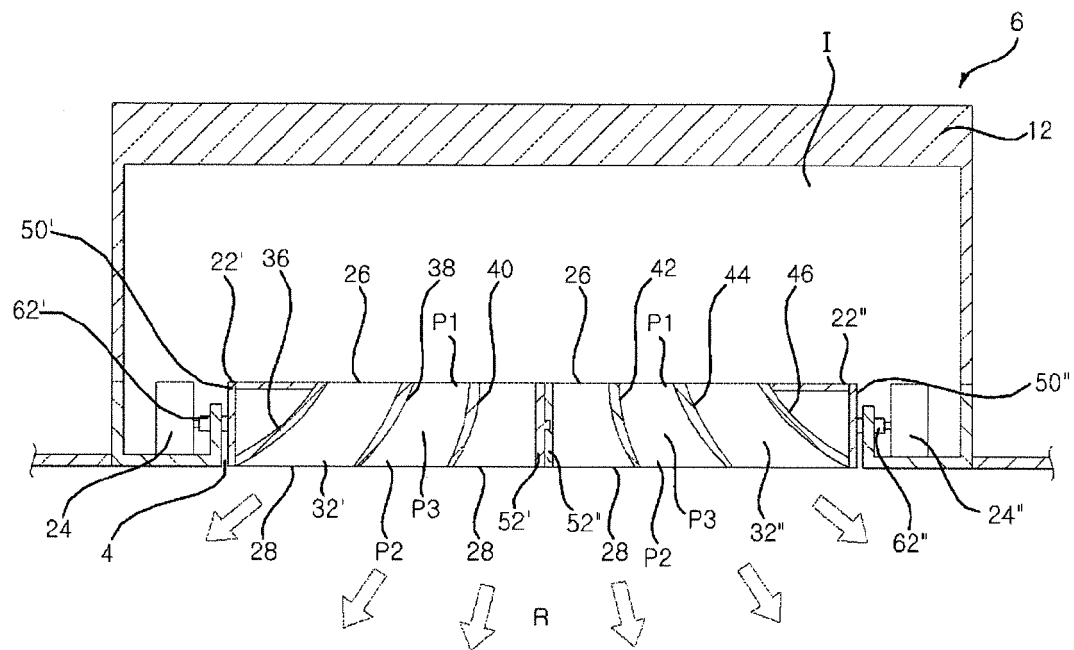


Fig. 7

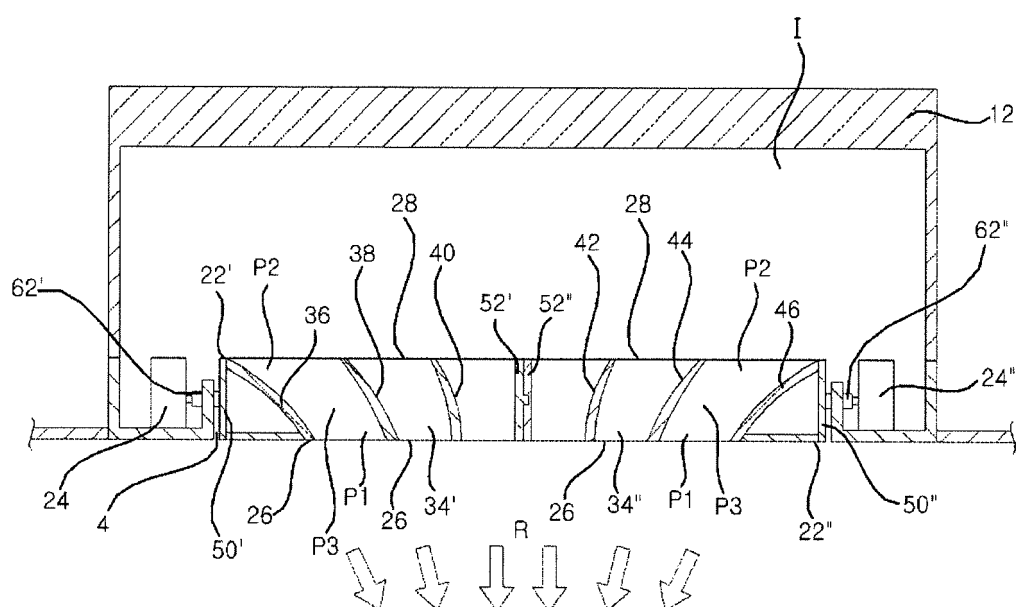


Fig. 8

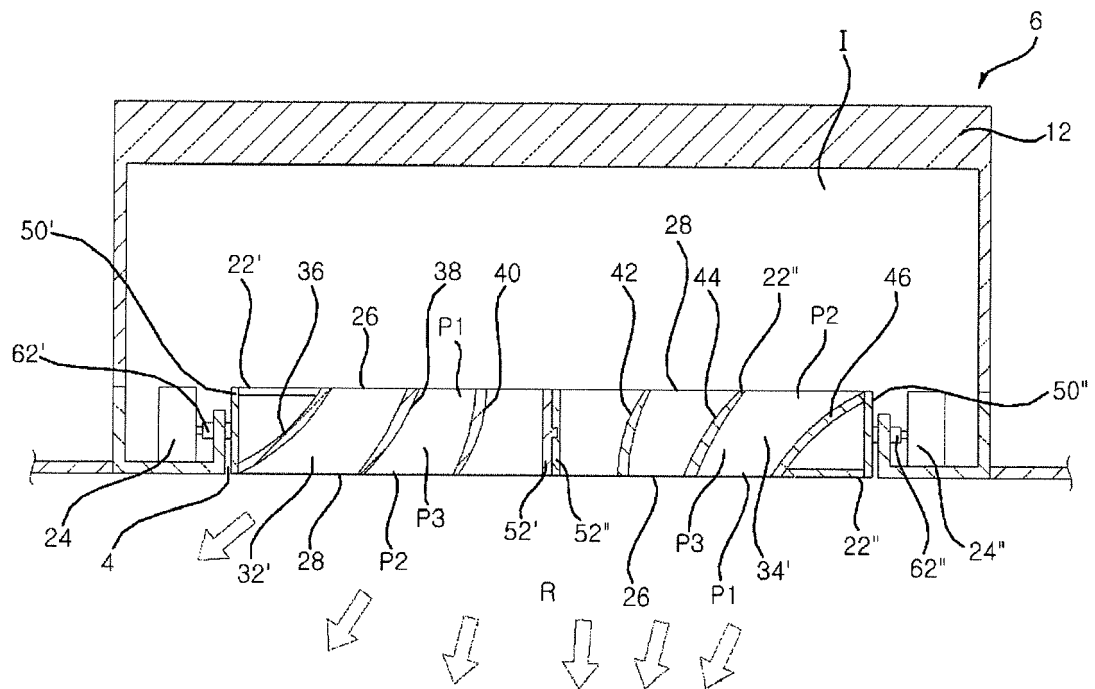


Fig. 9

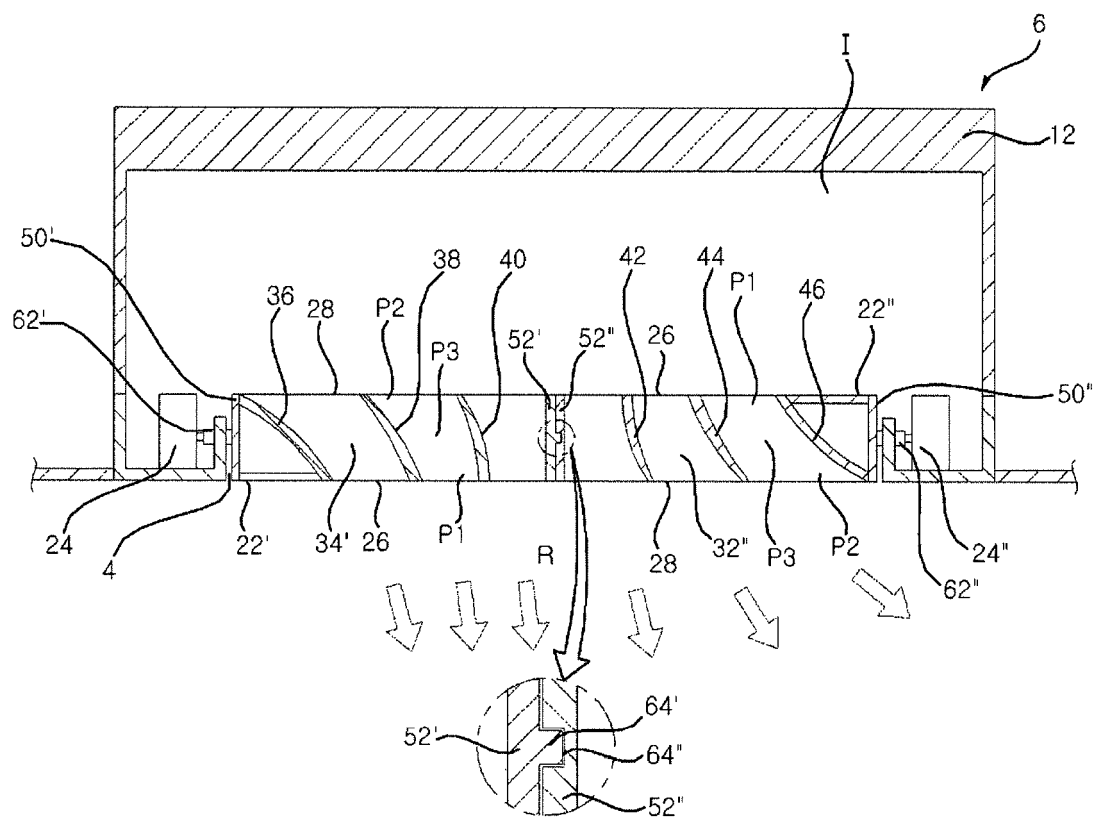
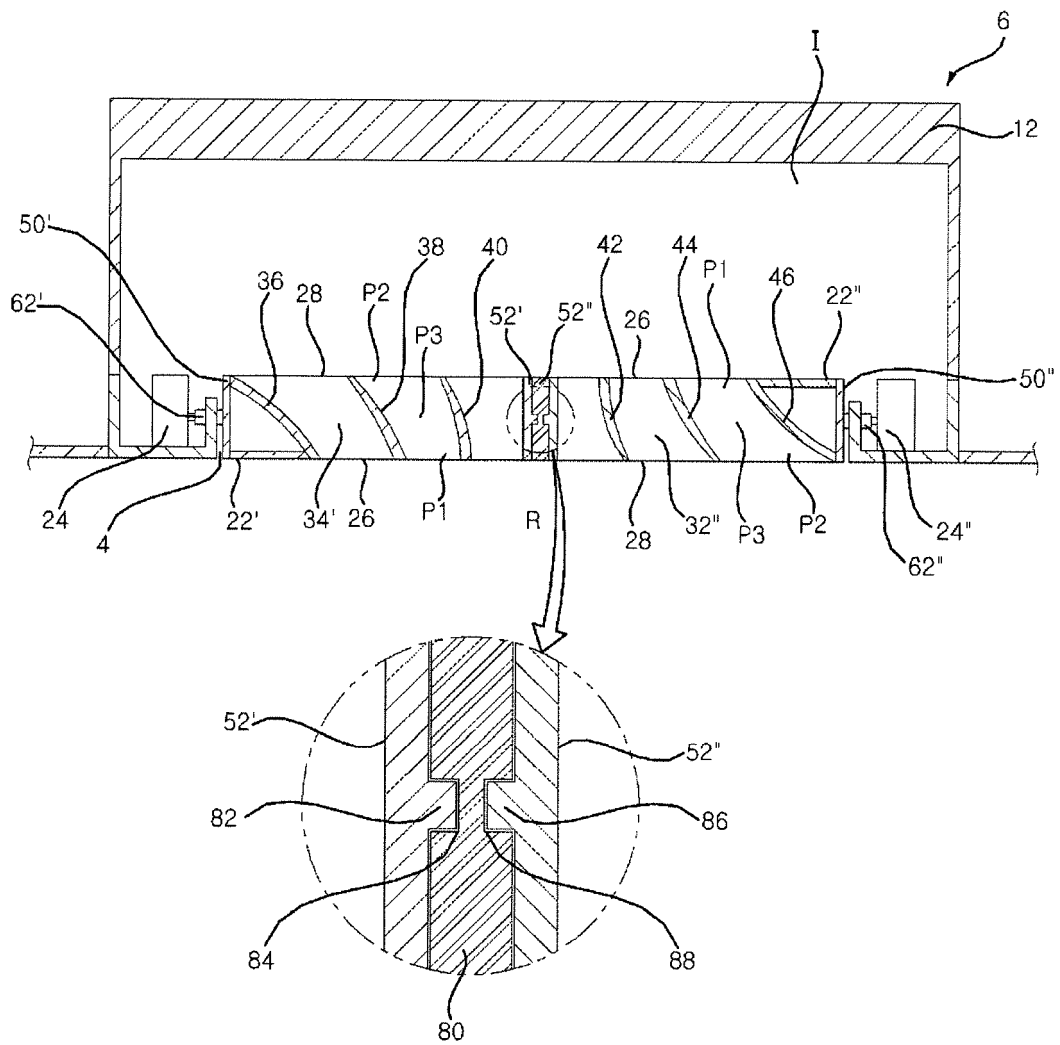


Fig. 10





EUROPEAN SEARCH REPORT

Application Number
EP 14 17 5528

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CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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