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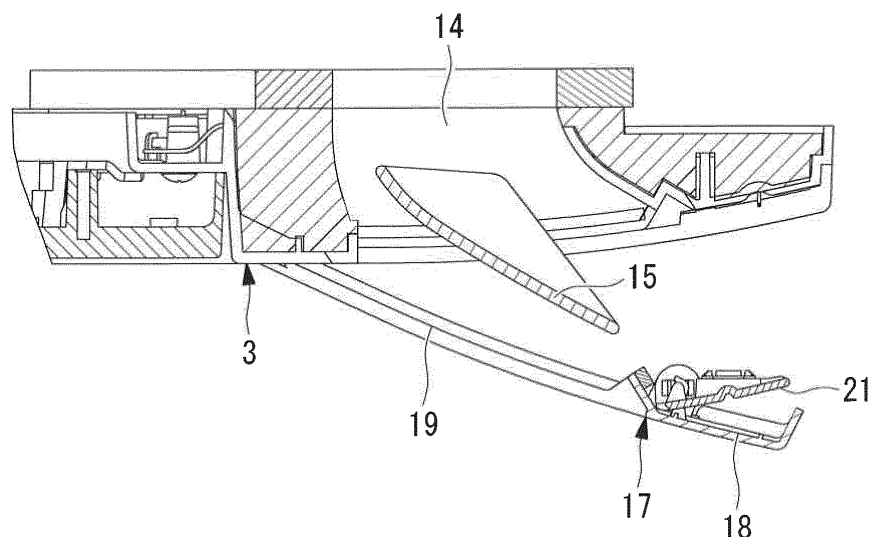
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(54) **CONTROL DEVICE, AIR-CONDITIONING SYSTEM INCLUDING THE SAME, AND CONTROL METHOD THEREFOR**

(57) To achieve both of wind direction control by a louver and adjustment of a feeling of draft, while maintaining a level of comfort. Provided is a control device (50) for an air conditioner, the air conditioner including: an outlet for conditioned air; a louver that is pivotally provided at the outlet; an anti draft function that is pivotable between a withdrawn position flush with the panel body and a louver-direction position facing the conditioned air

blown out from the outlet; and a pivot mechanism that causes the anti draft function to pivot between the two positions, the control device including a control unit (52) that causes the anti draft function to move to a position where the conditioned air blown out from the louver is not blocked, depending on an operation state of the air conditioner, and inactivates the anti draft function.

FIG. 5



Description

{Technical Field}

[0001] The present invention relates to a control device, an air-conditioning system including the same, and a control method therefor.

{Background Art}

[0002] A blow-out direction of conditioned air blown out from an indoor unit can be adjusted by a wind direction louver (hereinafter referred to as a "louver") which is disposed at an outlet. However, depending on the angle or the like of the louver, the conditioned air directly comes into contact with a person under the outlet, which may provide the person with a feeling of draft.

[0003] PTL 1 proposes a method in which a blade member for blocking conditioned air and changing the wind direction of the conditioned air is additionally installed in a panel body as an option component at a position facing an outlet, to thereby avoid a feeling of draft.

{Citation List}

{Patent Literature}

[0004] {PTL 1} Japanese Unexamined Patent Application, Publication No. 2010-32062

{Summary of Invention}

{Technical Problem}

[0005] However, the blade member that is additionally installed as an option component as disclosed in PTL 1 is simply installed in the panel body at a position where the conditioned air from the louver is blocked, and thus the blade member cannot be controlled from an indoor unit, unlike the louver. In addition, the function of adjusting the blow-out direction using the louver is not utilized, which causes a deterioration in level of comfort.

[0006] The present invention has been made in view of the above-mentioned circumstances, and an object of the present invention is to provide a control device, an air-conditioning system including the control device, and a control method therefor which are capable of achieving both of wind direction control by a louver and adjustment of a feeling of draft, while maintaining the level of comfort.

{Solution to Problem}

[0007] A first aspect of the present invention is a control device for an air conditioner, the air conditioner including: an outlet for conditioned air, the outlet being disposed at a panel body and opened downward; a louver that is pivotally provided at the outlet and configured to adjust a blow-out direction of the conditioned air; an anti draft

function that is disposed on the outside of the outlet of the panel body and is pivotable between a withdrawn position flush with the panel body and a louver-direction position facing the conditioned air blown out from the outlet; and a pivot mechanism that is configured to cause the anti draft function to pivot between the two positions, the control device including a control unit that is configured to cause the anti draft function to move to a position where the conditioned air blown out from the louver is not blocked, depending on an operation state of the air conditioner, and to inactivate the anti draft function.

[0008] According to the first aspect of the present invention, the anti draft function that is pivotable between the withdrawn position flush with the panel body and the louver-direction position facing the conditioned air blown out from the outlet is disposed on the outside of the outlet that is disposed at the panel body and opened downward. The pivot mechanism allows the anti draft function to be pivotable between the two positions, that is, the withdrawn position and the louver-direction position, and the anti draft function is closed depending on the operation state of the air conditioner.

[0009] The conditioned air blown out from the outlet directly comes into contact with a person under the outlet may provide the person with a feeling of draft depending on the louver position. The control of the anti draft function position allows the flow of the conditioned air to be blocked. However, depending on the operation state of the air conditioner, the person under the outlet may not perceive a feeling of draft. According to the present invention, the anti draft function is caused to move to a position where the conditioned air blown out from the louver is not blocked, depending on the operation state of the air conditioner, and thus the anti draft function is inactivated and closed. This makes it possible to avoid an unnecessary operation. Note that, since the anti draft function is inactivated by, for example, causing the anti draft function to move to a position where the conditioned air blown out from the louver is not blocked, the anti draft function may be moved to the withdrawn position flush with the panel body (i.e., a closed state), or moved to a position shifted from a position where the conditioned air from the louver is not blocked, instead of bringing the anti draft function into the closed state.

[0010] In the control device described above, when an air flow rate of the conditioned air blown out from the outlet, the air flow rate being specified from a remote controller of the air conditioner, is equal to or less than a predetermined air flow rate, the control unit may be configured to cause the anti draft function to move to a position where the conditioned air blown out from the louver is not blocked, and to inactivate the anti draft function.

[0011] When the air flow rate of the conditioned air is small, the person under the outlet is less likely to perceive a feeling of draft, unlike in the case where the air flow rate of the conditioned air is large. According to the present invention, when the air flow rate of the conditioned air is equal to or less than a predetermined air flow

rate, the anti draft function is caused to move to a position where the conditioned air is not blocked, and the anti draft function is inactivated, thereby making it possible to avoid an unnecessary operation.

[0012] In the control device described above, during a predetermined period after the air conditioner starts operation, the control unit may be configured to move the anti draft function to a position where the conditioned air blown out from the louver is not blocked, and to inactivate the anti draft function.

[0013] During the predetermined period after the air conditioner starts operation, priority is given to indoor air conditioning over avoiding the perception of a feeling of draft by a user, thereby giving priority to controlling the temperature of indoor air to approach a set temperature.

[0014] In the control device described above, when a difference between a target set temperature set in the air conditioner and an inlet temperature is equal to or greater than a predetermined temperature difference, the control unit may be configured to move the anti draft function to a position where the conditioned air blown out from the louver is not blocked, and to inactivate the anti draft function.

[0015] Until the indoor temperature reaches the target set temperature, priority is given to indoor air conditioning over avoiding the perception of a feeling of draft by a user, thereby giving priority to controlling the temperature of indoor air to approach a set temperature.

[0016] In the control device described above, the air conditioner may include a human sensor; when no person is detected by the human sensor, it may be determined that there is no person, and the control unit may be configured to move the anti draft function to a position where the conditioned air blown out from the louver is not blocked, and to inactivate the anti draft function.

[0017] When no person is detected, there is no need to take a feeling of draft into consideration. Accordingly, an unnecessary operation is avoided by causing the anti draft function to move to a position where the conditioned air is not blocked and inactivating the anti draft function. In addition, since the indoor air circulates well, the air conditioner can perform an efficient operation.

[0018] In the control device described above, when the air conditioner is provided with the outlets in plurality, the control unit may be configured to move the anti draft function corresponding to the outlet provided in a direction in which the presence of a person is detected by the human sensor to a position where the conditioned air blown out from the louver is blocked and to activate the anti draft function, and the control unit may be configured to move the anti draft function corresponding to the outlet provided in a direction in which no person is detected to a position where the conditioned air blown out from the louver is not blocked and to inactivate the anti draft function.

[0019] Only the anti draft function corresponding to the outlet under which there is a person is activated by causing the anti draft function to move to a position where the conditioned air is blocked, and the anti draft function cor-

responding to the outlet under which there is no person is inactivated by causing the anti draft function to move to a position where the conditioned air is not blocked, thereby avoiding an unnecessary operation.

[0020] In the control device described above, when an ambient humidity in an air conditioning target region in which the air conditioner is disposed is equal to or higher than a predetermined humidity, the control unit may be configured to move the anti draft function to a position where the conditioned air blown out from the louver is not blocked, and to inactivate the anti draft function.

[0021] Condensation is likely to occur at a location where cold air directly comes into contact. Accordingly, when the air conditioning conditions which may cause condensation on the anti draft function are set, the anti draft function is caused to move to a position where the conditioned air is not blocked and the anti draft function is inactivated. Note that the range of condensation is preliminarily set in an indoor unit of the air conditioner.

[0022] A second aspect of the present invention is an air-conditioning system including: an air conditioner including: a louver that is pivotally provided at an outlet for conditioned air and configured to adjust a blow-out direction of the conditioned air, the outlet being disposed at a panel body and opened downward; an anti draft function that is disposed on the outside of the outlet of the panel body and is pivotable between a withdrawn position flush with the panel body and a louver-direction position facing the conditioned air blown out from the outlet; and a pivot mechanism that is configured to cause the anti draft function to pivot between the two positions; and the control device that is configured to control the above-described air conditioner according to any one of the above aspects.

[0023] A third aspect of the present invention is a control method for an air conditioner, the air conditioner including: an outlet for conditioned air, the outlet being disposed at a panel body and opened downward; a louver that is pivotally provided at the outlet and adjusts a blow-out direction of the conditioned air; an anti draft function that is disposed on the outside of the outlet of the panel body and is pivotable between a withdrawn position flush with the panel body and a louver-direction position facing the conditioned air blown out from the outlet; and a pivot mechanism that causes the anti draft function to pivot between the two positions, the control method including: causing the anti draft function to move to a position where the conditioned air blown out from the louver is not blocked, and inactivating the anti draft function. {Advantageous Effects of Invention}

[0024] The present invention provides an advantageous effect that both of wind direction control by a louver and adjustment of a feeling of draft can be achieved and the level of comfort can be maintained.

{Brief Description of Drawings}

[0025]

{Fig. 1}

Fig. 1 is a partially cutaway perspective view of an air conditioner according to the present invention as seen from below.

{Fig. 2}

Fig. 2 is a perspective view showing a state in which an anti draft function provided on a panel body of the air conditioner is placed at a withdrawn position.

{Fig. 3}

Fig. 3 is a perspective view showing a state in which the anti draft function provided on the panel body of the air conditioner is placed at a louver-direction position.

{Fig. 4}

Fig. 4 is a sectional view showing a positional relationship between the anti draft function and a louver when the anti draft function is placed at the withdrawn position and the louver is placed at a closed position.

{Fig. 5}

Fig. 5 is a sectional view showing a positional relationship between the anti draft function and the louver when the louver is placed at a horizontal blow-out position and the anti draft function is placed at the louver-direction position.

{Fig. 6}

Fig. 6 is a sectional view showing a positional relationship between the anti draft function and the louver when the louver is placed at the horizontal blow-out position and the anti draft function is placed at the closed position.

{Fig. 7}

Fig. 7 is a sectional view showing a positional relationship between the anti draft function and the louver when the louver is placed at a downward blow-out position and the anti draft function is placed at the louver-direction position.

{Fig. 8}

Fig. 8 is a functional block diagram showing a control device of the air conditioner according to the present invention.

{Description of Embodiments}

[0026] A control device according to an embodiment of the present invention, an air-conditioning system including the control device, and a control method therefor will be described below with reference to the drawings.

{First Embodiment}

[0027] A first embodiment of the present invention will be described below with reference to Figs. 1 to 8.

[0028] Fig. 1 shows an air-conditioning system 100. The air-conditioning system 100 includes a control device 50 and an air conditioner 1.

[0029] Fig. 1 is a partially cutaway perspective view of the air conditioner 1 according to this embodiment as seen from obliquely below. Fig. 2 is a perspective view

showing a state in which an anti draft function provided on a panel body of the air conditioner is placed at a withdrawn position. Fig. 3 is a perspective view showing a state in which the anti draft function is placed at a louver-direction position. The air conditioner 1 in this embodiment is a type of air conditioner that is installed on an indoor ceiling surface as shown in Fig. 1. The air conditioner 1 having a structure in which outlets 14 are provided in four directions of a panel body 3 which is provided at the bottom of a unit body 2 is illustrated.

[0030] The unit body 2 is a rectangular-parallelepiped box which is installed in a ceiling and whose bottom is opened. The unit body 2 includes: a turbofan 4 which is installed in a central region of the interior thereof; a heat exchanger 5 which is bent into a rectangular shape so as to surround the turbofan 4; a drain pan 6 which is disposed below the heat exchanger 5; an air outlet path 7 which is formed between the peripheral wall of the drain pan 6 and the inner circumferential surface of the unit body 2; and a bell mouth 8 which is disposed on the inlet side of the turbofan 4. The air conditioner 1 is connected to an outdoor unit via two refrigerant pipes 9, namely, a liquid pipe and a gas pipe, as well as an electrical wire 10.

[0031] The panel body 3 which is installed so as to cover the lower surface of the unit body 2, which is also referred to as a ceiling panel or a decorative panel, is a substantially square panel and has an opening (inlet port) 11 for sucking indoor air in a central region thereof. An inlet grille 12 is installed at the inlet port 11. The inlet grille 12 is provided with an air filter (not shown) on the inner surface of the grille. In order to allow changing or cleaning of the air filter, the inlet grille 12 is installed such that the inlet grille 12 is ascendable and descendable relative to the panel body 3 so that the inlet grille 12 can move down to the proximity of a floor in a room via a wire 13, a lifting motor (not shown), or the like. Alternatively, an air-filter automatic cleaning mechanism may be incorporated to automatically clean the air filter.

[0032] Further, the panel body 3 is provided with the outlets 14 respectively in four directions corresponding to the four sides of the panel body 3 so as to surround the inlet port 11 for taking in indoor air. Air that has been cooled or heated by the heat exchanger 5 is blown out indoors from the outlets 14 as air-conditioning air. The outlets 14 provided in the four directions are respectively provided with pivotable louvers 15 for adjusting the blow-out direction (wind direction) of the conditioned air. The louvers 15 are pivotable individually and independently via actuators (motors) (not shown).

[0033] Furthermore, as shown in Figs. 2 and 3, the panel body 3 is provided with anti draft functions 17 which are each disposed on the outside of the corresponding outlet 14 and are pivotable between the withdrawn position (the position shown in Fig. 2) flush with the panel body 3 and the louver-direction position (the position shown in Fig. 3) facing the conditioned air blown out from the outlets 14. Each anti draft function 17 is a plate-shaped member which is projected to the louver-direction

position facing the corresponding outlet 14 to block the conditioned air and change the wind direction. This structure is provided to reduce or eliminate a feeling of draft when the conditioned air blown out from each outlet 14 directly comes into contact with a person under the outlet.

[0034] Furthermore, as shown in Figs. 2 and 3, the panel body 3 is provided with a human sensor 30. The human sensor 30 detects the presence of a person in a target region, or the position of the person, and outputs a detection signal to the control device 50.

[0035] The anti draft function 17 has a gate-like shape including a wing portion 18 which is projected to a position facing the conditioned air blown out from each outlet 14 in the louver direction and blocks the conditioned air, and arm portions 19 which are formed integrally at both ends of the wing portion 18. A proximal end of each arm portion 19 of the anti draft function 17 is supported pivotally with respect to the panel body 3 via a support shaft (not shown), and the anti draft function 17 is pivotable between two positions, i.e., the withdrawn position (the position shown in Fig. 2) flush with the panel body 3 and the louver-direction position (the position shown in Fig. 3) facing the conditioned air blown out from the outlet 14. A specific configuration of the anti draft function 17 will be described in detail below with reference to Figs. 4 to 7.

[0036] The wing portion 18 and the arm portions 19 of each anti draft function 17 constitute a part of the panel body 3. When the anti draft function 17 is caused to pivot to the withdrawn position shown in Fig. 2, the surfaces (lower surfaces) of the wing portion 18 and the arm portions 19 are flush with the surface (lower surface) of the panel body 3. The wing portion 18 is a plate-shaped member, which has the same length as that of the outlet 14, is disposed along the outside thereof, constitutes a part of each side of the panel body 3, has a constant width dimension, and is made of resin. The arm portions 19 are formed integrally on both ends of the wing portion 18 and have a narrower width than the wing portion 18. The wing portion 18 and the arm portions 19 thus form a gate-like shape. Ribs are formed integrally on the rear faces of the wing portion 18 and both the arm portions 19 to ensure the strength and rigidity of the individual portions.

[0037] A proximal end of each of both the arm portions 19 is formed integrally with a support shaft that pivotally supports the anti draft function 17 with respect to the panel body 3. Further, the wing portion 18 is provided with a subwing 21. The proximal end of the subwing 21 is supported pivotally at the inner edge of the wing portion 18. When the anti draft function 17 is caused to pivot to the withdrawn position, the outer edge of the anti draft function 17 is set to the withdrawn position (refer to Fig. 4) along the rear surface of the wing portion 18. When the anti draft function 17 is caused to pivot to the louver-direction position, the subwing 21 is caused to pivot to the position where the outer edge thereof stands upward and blocks the conditioned air (refer to Figs. 5 and 7).

[0038] When a remote controller is manipulated to be turned on, a position where the actuator causes the lou-

ver 15 to pivot is detected, and the anti draft function 17 is caused to pivot to the louver-direction position corresponding to the position.

[0039] For example, as shown in Fig. 5, when the louver 15 is placed at a horizontal direction blow-out position, the anti draft function 17 is caused to pivot to the louver-direction position corresponding to the position, and the subwing 21 stands to block and change the flow of the conditioned air in the louver direction, thereby reducing a feeling of draft. Further, as shown in Fig. 7, when the louver 15 is placed at the downward blow-out position, the anti draft function 17 is caused to pivot to the louver-direction position corresponding to the position, and the subwing 21 stands to block and change the flow of the conditioned air in the louver direction, thereby reducing or eliminating a feeling of draft.

[0040] In particular, when a feeling of draft due to the conditioned air is not obtained, or when a feeling of draft is to be actively obtained, the anti draft function 17 may be moved to the position where the conditioned air blown out from the louver 15 is not blocked. As shown in Fig. 6, the anti draft function 17 may be closed and set to the withdrawn position flush with the panel body 3, and only the louver 15 may be used.

[0041] The control device 50 has, for example, a microcomputer incorporated therein, and controls a refrigeration cycle based on data from the controller and the like provided in various sensors and an outdoor unit. A series of processing processes for implementing various functions described later are recorded in a recording medium or the like in the format of program. A CPU loads this program into a RAM or the like and executes information processing and operation processing, thereby implementing various functions described later.

[0042] Specifically, as shown in Fig. 8, the control device 50 includes a storage unit 51 and a control unit 52.

[0043] The storage unit 51 stores correspondence information for linking positional information on the louver 15 to positional information on the anti draft function 17 that blocks the conditioned air blown out from the position of the louver 15. The correspondence information sets the link of the positional information between the louver 15 and the anti draft function 17 depending on various conditions such as the operation mode, the blow-out temperature, the temperature difference between the inlet temperature and the blow-out temperature, and the air flow rate (as described in detail later).

[0044] The control device 50 includes, for example, an I/O connector for connecting to an external device, receives the correspondence information from the outside via the I/O connector, and preliminarily stores the correspondence information in the storage unit 51. The configuration of the control device is not limited to this. A user may manipulate a remote controller to newly create correspondence information via the remote controller. Alternatively, the correspondence information stored in the storage unit 51 may be read out and the correspondence information read out by the user manipulating the remote

controller may be changed, for example, as appropriate.

[0045] The control unit 52 determines the position of the anti draft function 17 corresponding to the position of the current louver 15, based on the correspondence information, and causes the anti draft function 17 to move to the determined position. Specifically, the control unit 52 may control the anti draft function 17 to be moved and activated at the position where the conditioned air blown out from the louver 15 is blocked (e.g., refer to Figs. 5 and 7), and may control the anti draft function 17 to be moved and inactivated at the position where the conditioned air blown out from the louver 15 is not blocked (e.g., refer to Fig. 6) depending on the operation state of the air conditioner 1. Fig. 6 illustrates an example of the inactivation state in which the anti draft function 17 is set to the withdrawn position (i.e., anti draft function fully-closed state) flush with the panel body 3, but the inactivation state of the anti draft function 17 is not limited to this as long as the anti draft function 17 is moved to a position where the conditioned air blown out from the louver 15 is not blocked.

[0046] Further, the control unit 52 determines whether or not a person is present, based on the detection signal obtained from the human sensor 30. When it is determined that a person is present, the anti draft function 17 may be maintained at the current setting, and when it is determined that no person is present, the anti draft function 17 may be moved and inactivated at the position where the conditioned air blown out from the louver 15 is not blocked. Alternatively, when the control unit 52 detects the direction in which a person is present, the anti draft function 17 in the outlets 14 among the plurality of outlets 14 may be inactivated in a direction other than the direction in which the person is present.

[0047] Thus, when no person is detected, there is no need to consider a feeling of draft. Accordingly, an unnecessary operation can be avoided by inactivating the anti draft function by moving the anti draft function to the position where the conditioned air is not blocked. In addition, the indoor air is well circulated, so that the operation can be performed efficiently.

[0048] In this embodiment, the acquisition of a command at a user's desired timing through a remote controller is described as a trigger for the control unit 52 to control the anti draft function 17.

[0049] Examples of the correspondence information stored in the storage unit 51 will be described below.

[0050] For example, the correspondence information links, for each outlet 14, the positional information on the louver 15 to the positional information on the anti draft function 17. The link between the positional information on the louver 15 and the positional information on the anti draft function 17 is set for each outlet 14, so that activation/inactivation of the anti draft function 17 is switched for each outlet 14. Accordingly, when a plurality of outlets 14 are provided for one air conditioner 1, the operations better meeting the preference of users present under each outlet 14 can be performed, unlike

in the case where the positional information on the anti draft function 17 is uniformly set to the plurality of outlets 14.

[0051] Another example of the correspondence information may link the positional information on the louver 15 and the positional information on the anti draft function 17 according to the operation mode of the air conditioner 1. Examples of the operation mode include heating, cooling, dehumidification, and blast. According to the operation mode, the activation/inactivation of the anti draft function 17 is switched. For example, the anti draft function 17 is inactivated in the heating operation, and the anti draft function 17 is activated in the cooling operation.

[0052] The operation of the air-conditioning system 100 according to this embodiment will be described below.

[0053] During the operation of the air conditioner 1 described above, the turbofan 4 is caused to pivot to thereby allow the indoor air to be taken into the unit body 2 through the inlet grille 12 and the bell mouth 8 from the inlet port 11 of the panel body 3. The air blown out in the centrifugal direction from the turbofan 4 in the unit body 2 is heat-exchanged with refrigerant in the process of passing through the heat exchanger 5 disposed around the turbofan 4, and the temperature of the air is controlled by cooling or heating the air. After that, the air blown out into the room from the outlets 14 provided in four directions in the air outlet path 7 and the panel body 3 is provided for indoor air conditioning.

[0054] The blow-out direction of the conditioned air blown out into the room from the outlets 14 of the panel body 3 is adjusted by changing the angle of the louver 15 provided at each outlet 14. The angle of the louver 15 can be changed individually and independently via the actuator by the remote controller for each outlet 14. Accordingly, the user can arbitrarily set the angle to adjust the blow-out direction.

[0055] When the set conditioned air through the adjustment of the louver 15 provides the user present under the outlet with a feeling of discomfort, the user inputs a command for activating the anti draft function 17 through the remote controller.

[0056] The correspondence information is read out and referred to based on the received command for activating the anti draft function 17. Based on the correspondence information, the positional information on the anti draft function 17 corresponding to the current position of the louver 15 set according to the operation mode and the outlets 14 is read out. The anti draft function 17 is controlled so as to match the read positional information on the anti draft function 17.

[0057] By controlling the anti draft function 17, the anti draft function 17 is projected to the louver-direction position facing the conditioned air blown out from the outlet 14 to change the flow of the conditioned air in the louver direction, thereby reducing a feeling of draft.

[0058] When the person under the outlet 14 prefers to actively obtain a feeling of draft, the user may input a

command for inactivating the anti draft function 17 via the remote controller to move the anti draft function 17 to the position where the conditioned air blown out from the louver 15 is not blocked.

[0059] As described above, in the control device 50 according to this embodiment, the air-conditioning system 100 including the same, and the control method, the anti draft function 17 that is pivotable between the withdrawn position, which is flush with the panel body 3, and the louver-direction position facing the conditioned air blown out from the outlet 14, is disposed on the outside of the outlet 14 opened downward in the panel body 3, and the anti draft function 17 is pivotable between the two positions, i.e., the withdrawn position and the louver-direction position. Based on the correspondence information for linking the positional information on the louver 15 and the positional information on the anti draft function 17, the position of the anti draft function 17 corresponding to the position of the current louver 15 is determined and the anti draft function 17 is caused to pivot and move to the determined position of the anti draft function 17.

[0060] Depending on the louver position, the conditioned air blown out from the outlet 14 may directly come into contact with the person under the outlet and provide the person with a feeling of draft. However, according to this embodiment, the anti draft function 17 is controlled to move to the position determined depending on the position of the louver 15, thereby making it possible to block the flow of the conditioned air and reduce a feeling of draft.

[0061] When the positional information on the louver 15 and the positional information on the anti draft function 17 are linked for each outlet 14, the activation/inactivation of the anti draft function 17 is switched for each outlet 14, thereby making it possible to perform the operation to better meet the user's preference.

[0062] When the positional information on the louver 15 and the positional information on the anti draft function 17 are linked depending on the operation mode (e.g., heating, cooling, dehumidification, or blast), the activation/inactivation of the anti draft function 17 can be set for each operation mode, thereby making it possible to perform the operation to better meet the user's preference.

{Modified Example 1}

[0063] A swing setting for the louver 15 to swing at predetermined intervals in a section of a movable range (e.g., from a fully-closed state to a fully-opened state) may be selected. When the anti draft function 17 is used, the louver 15 causes the anti draft function 17 to swing at a movement rate lower than that when the anti draft function 17 is not used. The anti draft function 17 swings along with the swing of the louver 15.

[0064] Thus, when the anti draft function 17 is used and the louver 15 is set to swing, the swing rate of the louver 15 is set to be lower than that when the anti draft

function 17 is not used and only the louver 15 is caused to swing. This avoids the state in which the motion of the anti draft function 17 cannot overtake the operation of the louver 15 and fails to block the conditioned air from the louver 15 and the conditioned air leaks. Thus, a feeling of draft can be reliably avoided.

{Modified Example 2}

[0065] When the anti draft function 17 is activated, a setting for inhibiting the selection of the swing setting for the louver 15 may be made. Thus, the downward conditioned air can be reliably avoided.

{Modified Example 3}

[0066] A movable range (e.g., from the fully-closed state shown in Fig. 4 to the fully-opened state shown in Fig. 7) is set for the louver 15, the movable range of the louver 15 when the anti draft function 17 is inactivated is set as a full movable range, and the movable range of the louver 15 when the anti draft function 17 is activated is set as a limited range narrower than the movable range when the anti draft function 17 is inactivated. Specifically, the movable range of the louver 15 is limited in such a manner that the louver 15 cannot be moved to an angle in a predetermined range from the fully-opened state in which the conditioned air is blown out downward from the louver 15 (i.e., the louver movable range is limited to an upward movable range relative to the range when the anti draft function is inactivated).

[0067] Thus, a feeling of draft can be avoided and a short circuit in which the conditioned air blown out from the outlet 14 is sucked from the inlet port 11 as an ambient air can be avoided.

{Second Embodiment}

[0068] A second embodiment of the present invention will be described below. This embodiment differs from the first embodiment in that the anti draft function is controlled depending on the operation state of the air-conditioning system. The description of features of the air-conditioning system of this embodiment that are common to those of the first embodiment will be omitted, and the difference between the second embodiment and the first embodiment will be mainly described with reference to Figs. 1 to 8.

[0069] The correspondence information stored in the storage unit 51 links the positional information on the louver 15 and the positional information on the anti draft function 17 depending on the operation mode (cooling, heating, dehumidification, blast, or the like). Specifically, the correspondence information holds, as reference information, the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 when a specific operation mode (e.g., blast) is selected among the plurality of operation modes

of the air conditioner 1, and a correction value from the reference information is set in the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 in the operation mode (e.g., cooling, heating, or dehumidification) other than the specific operation mode.

[0070] For example, in the cooling/dehumidification operation, the correction value indicates a setting for "causing the anti draft function to move to a downward direction at a predetermined angle (e.g., 3°) relative to the position during the blast operation". In the heating operation, the correction value indicates a setting for "causing the anti draft function to move to an upward position at a predetermined angle (e.g., 3°) relative to the position during the blast operation".

[0071] This is because, in the cooling/dehumidification operation, the blow-out temperature from the air conditioner 1 is lower than the ambient temperature, so that the blown-out conditioned air moves downward relative to the position in the blast operation. Accordingly, the anti draft function 17 is also moved downward. On the other hand, in the heating operation, the blow-out temperature is higher than the ambient temperature, so that the blown-out conditioned air moves upward relative to the position in the blast operation. Accordingly, the anti draft function 17 is also moved upward.

[0072] In the blast operation, since the temperature of the blown-out conditioned air is equal to the ambient temperature, the blown-out conditioned air does not move upward or downward, unlike the conditioned air whose temperature is different from the ambient temperature. Therefore, the positional information on the anti draft function 17 corresponding to the positional information on the louver in the blast operation is used as a reference.

[0073] The control unit 52 reads out the positional information on the anti draft function 17 corresponding to the current position of the louver 15 determined based on the reference information on the correspondence information, and controls the anti draft function 17 based on the read correction value and positional information on the anti draft function 17.

[0074] The acquisition of a command for activation/inactivation by the user, starting of the operation of the air conditioner 1, or switching of the operation mode may be used as a trigger for the control unit 52 to control the anti draft function 17. Further, the blow-out temperature, the louver position, the set temperature, the detection of a person by the human sensor 30, and the like may be used as a trigger for the control unit 52 to control the anti draft function 17.

[0075] The operation of the air-conditioning system 100 according to this embodiment will be described. An example in which the heating operation is started and then the operation mode is switched to the blast operation will now be described, but the order of switching of operations is not limited to this.

[0076] When the heating operation of the air conditioner 1 is started, the correspondence information is referred

to and the positional information on the anti draft function 17 corresponding to the current position of the louver in the heating operation is read out. In the positional information on the anti draft function 17 in the heating operation, the correction value indicating that "causing the anti draft function to move upward at an angle of 3 degrees relative to the position indicated by the reference information in the blast operation" is set. Accordingly, the positional information on the anti draft function 17 set as the reference information is read out and the anti draft function 17 is controlled to be in a position moved upward at the angle of 3 degrees relative to the position indicated by the positional information.

[0077] After that, when the operation of the air conditioner 1 is switched to the blast operation, the correspondence information is referred to and the positional information on the anti draft function 17 corresponding to the current position of the louver in the blast operation, that is, the reference information is read out. The anti draft function 17 is controlled to be in a position indicated by the reference information.

[0078] As described above, in the control device 50 according to this embodiment, the air-conditioning system 100 including the control device 50, and the control method, the temperature of the blown-out conditioned air is equal to the ambient temperature in the blast operation, so that the blown-out conditioned air does not move upward or downward, unlike the conditioned air whose temperature is different from the ambient temperature (e.g., cold conditioned air obtained by the cooling operation or dehumidification operation, or warm conditioned air obtained by the heating operation). Therefore, the conditioned air in the blast operation is used as a reference.

[0079] In the cooling or dehumidification operation, the blow-out temperature is lower than the ambient temperature and the blown-out conditioned air moves downward relative to the position in the blast operation. Accordingly, a feeling of draft can be reliably avoided by moving the anti draft function downward relative to the reference position.

[0080] In the case of the heating operation, the blow-out temperature is higher than the ambient temperature and the blown-out conditioned air flows upward relative to the position to be a reference in the blast operation. Accordingly, a feeling of draft can be reliably avoided by moving the anti draft function upward relative to the reference position.

{Third Embodiment}

[0081] A third embodiment of the present invention will be described. This embodiment differs from the first and second embodiments in that the anti draft function is controlled depending on the temperature conditions for the conditioned air blown out from the outlet of the air conditioner 1. The description of features of the air-conditioning system of this embodiment that are common to those of the first and second embodiments will be omit-

ted, and the difference between this embodiment and the first and second embodiments will be mainly described with reference to Figs. 1 to 8.

[0082] The air conditioner is provided with a temperature sensor, which is not shown, and outputs the detection result obtained by the temperature sensor to the control device 50. For example, the temperature sensor detects the blow-out temperature of air blown out from the outlet 14.

[0083] In the correspondence information stored in the storage unit 51, the positional information on the louver 15 and the positional information on the anti draft function 17 are set, and the correction value for the anti draft function 17 is linked to the positional information depending on the blow-out temperature of the conditioned air blown out from the outlet 14.

[0084] For example, the correspondence information used for the heating operation sets for each of the case where the blow-out temperature is equal to or higher than a first predetermined temperature (e.g., 35°C) and the case where the blow-out temperature is lower than the first predetermined temperature. When the blow-out temperature is equal to or higher than the first predetermined temperature in the heating operation, the correction value of the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 indicates that "causing the anti draft function 17 to move upward at a predetermined angle". When the blow-out temperature is lower than the first predetermined temperature, the correction value of the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 indicates "none" (i.e., no correction is made).

[0085] This is because, when the blow-out temperature of the conditioned air is higher than the ambient temperature, the blown-out conditioned air moves upward relative to the position in the blast operation. Accordingly, a feeling of draft can be avoided by moving the anti draft function upward.

[0086] The correspondence information used for the cooling operation is set for each of the case where the blow-out temperature is equal to or lower than a second predetermined temperature (e.g., 15°C) and the case where the blow-out temperature is higher than the second predetermined temperature. In the cooling operation, when the blow-out temperature is equal to or higher than the second predetermined temperature, the correction value of the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 indicates that "the anti draft function 17 is caused to move downward at a predetermined angle". When the blow-out temperature is higher than the second predetermined temperature, the correction value of the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 indicates "none" (i.e., no correction is made).

[0087] This is because, when the blow-out temperature of the conditioned air is lower than the ambient tem-

perature, the blown-out conditioned air flows downward relative to the position in the blast operation. Thus, the feeling draft can be avoided by moving the anti draft function downward.

[0088] The control unit 52 reads out the correction value of and the positional information on the anti draft function 17 corresponding to the current position of the louver 15 determined based on the correspondence information, and controls the anti draft function 17 to a position in consideration of the read correction value of and positional information on the anti draft function 17.

[0089] As described above, in the control device 50 according to this embodiment, the air-conditioning system 100 including the same, and the control method, when the blow-out temperature of the conditioned air is higher than the ambient temperature, the blown-out conditioned air moves upward relative to the position in the blast operation. Accordingly, a feeling of draft can be avoided by moving the anti draft function upward. When the blow-out temperature of the conditioned air is lower than the ambient temperature, the blown-out conditioned air moves downward relative to the position in the blast operation. Accordingly, a feeling draft can be avoided by moving the anti draft function downward.

[0090] This embodiment illustrates a case where the blow-out temperature is detected by the temperature sensor. However, the method for detecting the blow-out temperature is not limited to this. For example, it may be determined that the blow-out temperature is equal to or higher/lower than a predetermined temperature by an indoor heat exchanger temperature sensor, condensation/evaporation pressure of the indoor unit, the rotational speed of a compressor, or the like.

{Fourth Embodiment}

[0091] A fourth embodiment of the present invention will be described below. This embodiment differs from the first, second, and third embodiments in that the anti draft function is controlled depending on the temperature conditions for the conditioned air blown out from the outlet of the air conditioner 1. The description of features of the air-conditioning system of this embodiment that are common to those of the first, second, and third embodiments will be omitted, and the difference between this embodiment and the first, second, and third embodiments will be mainly described with reference to Figs. 1 to 8.

[0092] The air conditioner 1 is provided with a blow-out temperature sensor and an inlet temperature sensor which are not shown. Results of the detection performed by the blow-out temperature sensor and the inlet temperature sensor are output to the control device 50. For example, the blow-out temperature sensor detects the blow-out temperature of the conditioned air blown out in the vicinity of the outlet 14, and the inlet temperature sensor detects the ambient temperature of the indoor unit of the air conditioner 1 in the vicinity of the inlet port 11.

[0093] In the correspondence information stored in the storage unit 51, the positional information on the louver 15 and the positional information on the anti draft function 17 are set, and the correction value for the anti draft function 17 is linked to the positional information depending on the temperature difference between the ambient temperature and the blow-out temperature of the conditioned air blown out from the outlet 14. In this embodiment, the specific operation mode of the air conditioner 1 is set to a blast operation, and the correspondence information holds, as reference information, the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 in the blast operation.

[0094] For example, when the temperature difference between the ambient temperature and the blow-out temperature is equal to or higher than a first predetermined temperature difference (e.g., 10°C) (that is, the ambient temperature is higher than the blow-out temperature), the correspondence information during the cooling operation sets a correction value indicating that "the anti draft function 17 is moved downward at a predetermined angle". When the temperature difference is less than the first predetermined temperature difference, the correction value of the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 indicates "none", and thus the position indicated by the reference information is set. This is because the blow-out temperature is lower than the ambient temperature, and the anti draft function 17 is also set to be moved downward by taking into consideration that the blown-out conditioned air moves downward relative to the position in the blast operation.

[0095] When the temperature difference between the ambient temperature and the blow-out temperature is equal to or greater than a first predetermined temperature difference (i.e., the ambient temperature is lower than the blow-out temperature), the correspondence information during the heating operation sets the correction value indicating that "the anti draft function 17 is moved upward at a predetermined angle". When the temperature difference is less than the first predetermined temperature difference, the correction value of the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 indicates "none", and thus the position indicated by the reference information is set. This is because the blow-out temperature is higher than the ambient temperature, and the anti draft function 17 is also set to be moved upward by taking into consideration that the blown-out conditioned air moves upward relative to the position in the blast operation.

[0096] The control unit 52 reads out the correction value of and the positional information on the anti draft function 17 corresponding to the current position of the louver 15 determined based on the correspondence information, and controls the anti draft function 17 to a position in consideration of the read correction value of and the positional information on the anti draft function 17.

[0097] As described above, in the control device 50 according to this embodiment, the air-conditioning system 100 including the control device 50, and the control method, since the blow-out temperature is lower than the ambient temperature in the cooling operation, when the temperature difference between the ambient temperature and the blow-out temperature is equal to or greater than the first predetermined temperature difference, the anti draft function is moved downward by taking into consideration that the blown-out conditioned air moves downward relative to the position in the blast operation, thereby making it possible to avoid a feeling of draft.

[0098] In the case of the heating operation, since the blow-out temperature is higher than the ambient temperature, when the temperature difference between the ambient temperature and the blow-out temperature is equal to or greater than the first predetermined temperature difference, the anti draft function is moved upward by taking into consideration that the blown-out conditioned air moves upward relative to the position in the blast operation, thereby making it possible to avoid a feeling of draft. In the cooling operation and the heating operation, when the temperature difference is less than the first predetermined temperature difference, the temperature difference between the ambient temperature and the blow-out temperature is small. Therefore, the reference position set in the blast operation is maintained without correcting the position of the anti draft function 17.

{Modified Example}

[0099] An inlet temperature in the thermostat on state and an inlet temperature in the thermostat off state may be compared. When the difference between the inlet temperatures is equal to or greater than a predetermined thermostat on/off inlet temperature difference, it may be determined that a short circuit occurs, and the louver 15 or the anti draft function 17 may be configured to be moved until the difference between the inlet temperature in the thermostat on state and the inlet temperature in the thermostat off state becomes less than the predetermined thermostat on/off inlet temperature difference.

[0100] The comparison between the inlet temperature in the thermostat on state and the inlet temperature in the thermostat off state may be, for example, a comparison between the inlet temperature when a compressor operation is performed and the inlet temperature when the operation is stopped, and refers to a comparison between the inlet temperature when an air conditioning operation is performed and the inlet temperature when the air conditioning operation is not performed.

{Fifth Embodiment}

[0101] A fifth embodiment of the present invention will be described below. This embodiment differs from the first to fourth embodiments in that the anti draft function is controlled according to the air flow rate of the condi-

tioned air blown out from the outlet of the air conditioner. The description of features of the air-conditioning system of this embodiment that are common to those of the first to fourth embodiments will be omitted, and the difference between this embodiment and the first to fourth embodiments will be mainly described with reference to Figs. 1 to 8.

[0102] In the correspondence information stored in the storage unit 51, the positional information on the louver 15 and the positional information on the anti draft function 17 are set and the correction value of the anti draft function 17 is linked depending on the air flow rate of the conditioned air. Further, in this embodiment, the correspondence information indicates that the specific operation mode of the air conditioner 1 is the blast operation, and holds, as reference information, the positional information on the anti draft function 17 corresponding to the positional information on the louver 15 in the blast operation.

[0103] For example, when the air flow rate is equal to or less than a first predetermined air flow rate in the cooling operation, the correction value is set to cause the anti draft function 17 to "move to a downward position at a predetermined angle (e.g., 2°) relative to the position in the blast operation". When the air flow rate is equal to or less than the first predetermined air flow rate in the heating operation, the correction value is set to cause the anti draft function 17 to "move to an upward position at a predetermined angle (e.g., 2°) relative to the position in the blast operation".

[0104] For example, when five levels (e.g., strongest, strong, medium, weak, weakest) are set for the air flow rate, the first predetermined air flow rate is set as, for example, "weak level or less".

[0105] When the air flow rate is small, the blow-out wind speed is small. When the blow-out wind speed is low, the conditioned air blown out as cooled air moves downward, whereas the conditioned air blown out as heated air moves upward. Further, when the air flow rate is small, the effect of buoyance due to the temperature difference between the ambient temperature and the blow-out temperature becomes large, so that the wind direction is liable to change. In view of the above, the correction value is set when the air flow rate is equal to or less than the first predetermined air flow rate.

[0106] In the cooling operation, as well as in the heating operation, when the air flow rate is larger than the first predetermined air flow rate, the anti draft function 17 is set to the position indicated by the reference information. When the wind speed is high, the effect of an ascending force is small, and thus the position of the anti draft function 17 is not corrected.

[0107] The control unit 52 reads out the correction value of and the positional information on the anti draft function 17 corresponding to the current position of the louver 15 determined based on the reference information on the correspondence information, and controls the anti draft function 17 based on the read correction value of and

positional information on the anti draft function 17.

[0108] As described above, in the control device 50 according to this embodiment, the air-conditioning system 100 including the control device 50, and the control method, the position of the anti draft function 17 is determined and controlled according to the air flow rate of the conditioned air. Thus, even when the air flow rate is changed during the operation of the air conditioner 1, the position of the anti draft function 17 is corrected in accordance with the change of the air flow rate. Therefore, a feeling of draft can be more reliably avoided.

{Modified Example}

[0109] As other examples, when the air flow rate is controlled to be equal to or less than a second predetermined air flow rate by the control of the air conditioner 1, or when it is assumed that the air flow rate set by the remote controller is set as a fixed value equal to or less than the second predetermined air flow rate, such as "weakest", and the air flow rate is not changed during the operation of the air conditioner 1 and a feeling of draft is not provided, the anti draft function 17 may be moved to a position where the conditioned air is not blocked and is inactivated, to thereby prevent the anti draft function 17 from performing unnecessary operations.

{Sixth Embodiment}

[0110] A sixth embodiment of the present invention will be described below. This embodiment differs from the first to fifth embodiments in that the anti draft function is controlled according to an ambient humidity. The description of features of the air-conditioning system of this embodiment that are common to those of the first to fifth embodiments will be omitted, and the difference between this embodiment and the first to fifth embodiments will be mainly described.

[0111] The air conditioner includes a humidity sensor (not shown) that detects the humidity of the blown out air in the indoor unit, and a temperature sensor (not shown) that detects the temperature of the sucked air.

[0112] When the ambient humidity in the air conditioning target region in which the air conditioner is disposed is equal to or higher than a predetermined humidity, the anti draft function may be moved to the position where the conditioned air blown out from the louver is not blocked and is inactivated.

[0113] Condensation is likely to occur at a location where cold blast directly comes into contact. Accordingly, when the air conditioning conditions which may cause condensation on the anti draft function are set, the anti draft function is moved to the position where the conditioned air is not blocked and is inactivated. This avoids condensation on the anti draft function.

[0114] Assume that a condensation range is preliminarily set in the indoor unit of the air conditioner.

{Seventh Embodiment}

[0115] A seventh embodiment of the present invention will be described below. This embodiment differs from the first to sixth embodiments in that the anti draft function is controlled according to the load of air conditioning. The description of features of the air-conditioning system of this embodiment that are common to those of the first to sixth embodiments will be omitted, and the difference between this embodiment and the first to sixth embodiments will be mainly described.

[0116] In a predetermined period after the operation of the air conditioner is started, a setting for moving the anti draft function to the position where the conditioned air blown out from the louver is not blocked and is inactivated may be made. Accordingly, in the predetermined period after the operation of the air conditioner is started, priority is given to the indoor air conditioning over the operation for avoiding the perception of feeling of draft by the user. Thus, the temperature of the indoor air can be set to be close to the set temperature.

[0117] Alternatively, when the difference between the inlet temperature and a target set temperature set in the air conditioner is equal to or greater than the second predetermined temperature difference, and when rapid cooling or rapid warming is required, the anti draft function may be set to be moved to the position where the conditioned air blown out from the louver is not blocked and be inactivated. Thus, priority is given to indoor air conditioning over avoiding the perception of a feeling of draft by the user, until the temperature of the indoor being the air conditioning target region becomes the target set temperature, thereby making it possible to set the temperature of the indoor air to be close to the set temperature.

[0118] Thus, when the load of the air conditioning set in the air conditioner is large, priority is given to indoor temperature control over inactivation of the anti draft function.

[0119] The embodiments of the present invention have been described above with reference to the drawings. However, the specific configurations are not limited to the embodiments, and modifications in design and the like within the scope of the present invention are included. For example, the first embodiment and the second embodiment may be combined, or all the embodiments may be used in combination.

{Reference Signs List}

[0120]

1	Air conditioner
3	Panel body
14	Outlet
15	Louver
17	Anti draft function
30	Human sensor
50	Control device

51	Storage unit
52	Control unit
100	Air-conditioning system

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Claims

1. A control device (50) for an air conditioner (1), the air conditioner (1) including: an outlet (14) for conditioned air, the outlet (14) being disposed at a panel body (3) and opened downward; a louver (15) that is pivotally provided at the outlet (14) and configured to adjust a blow-out direction of the conditioned air; an anti draft function (17) that is disposed on the outside of the outlet (14) of the panel body (3) and is pivotable between a withdrawn position flush with the panel body (3) and a louver-direction position facing the conditioned air blown out from the outlet (14); and a pivot mechanism that is configured to cause the anti draft function (17) to pivot between the two positions,
the control device (50) comprising:

a control unit (52) that is configured to cause the anti draft function (17) to move to a position where the conditioned air blown out from the louver (15) is not blocked, depending on an operation state of the air conditioner (1), and to inactivate the anti draft function.

2. The control device (50) according to claim 1, wherein when an air flow rate of the conditioned air blown out from the outlet (14), the air flow rate being specified from a remote controller of the air conditioner (1), is equal to or less than a predetermined air flow rate, the control unit (52) is configured to cause the anti draft function (17) to move to a position where the conditioned air blown out from the louver (15) is not blocked, and to inactivate the anti draft function (17).
3. The control device (50) according to claim 1 or 2, wherein during a predetermined period after the air conditioner (1) starts operation, the control unit (52) is configured to move the anti draft function (17) to a position where the conditioned air blown out from the louver (15) is not blocked, and to inactivate the anti draft function (17).
4. The control device (50) according to any one of claims 1 to 3, wherein when a difference between a target set temperature set in the air conditioner (1) and an inlet temperature is equal to or greater than a predetermined temperature difference, the control unit (52) is configured to move the anti draft function (17) to a position where the conditioned air blown out from the louver (15) is not blocked, and to inactivate the anti draft function (17).

5. The control device (50) according to any one of claims 1 to 4, wherein the air conditioner (1) includes a human sensor (30), and
when no person is detected by the human sensor (30), it is determined that there is no person, and the control unit (52) is configured to move the anti draft function (17) to a position where the conditioned air blown out from the louver (15) is not blocked, and to inactivate the anti draft function (17). 5 10
6. The control device (50) according to claim 5, wherein when the air conditioner (1) is provided with the outlets (14) in plurality, the control unit (52) is configured to move the anti draft function (17) corresponding to the outlet (14) provided in a direction in which the presence of a person is detected by the human sensor (30) to a position where the conditioned air blown out from the louver (15) is blocked and to activate the anti draft function (17), and the control unit (52) is configured to move the anti draft function (17) corresponding to the outlet (14) provided in a direction in which no person is detected to a position where the conditioned air blown out from the louver (15) is not blocked and to inactivate the anti draft function (17). 15 20 25
7. The control device (50) according to any one of claims 1 to 6, wherein when an ambient humidity in an air conditioning target region in which the air conditioner (1) is disposed is equal to or higher than a predetermined humidity, the control unit (52) is configured to move the anti draft function (17) to a position where the conditioned air blown out from the louver (15) is not blocked, and to inactivate the anti draft function (17). 30 35
8. An air-conditioning system comprising:

an air conditioner (1) including: a louver (15) that is pivotally provided at an outlet (14) for conditioned air and configured to adjust a blow-out direction of the conditioned air, the outlet (14) being disposed at a panel body (3) and opened downward; an anti draft function (17) that is disposed on the outside of the outlet (14) of the panel body (3) and is pivotable between a withdrawn position flush with the panel body (3) and a louver-direction position facing the conditioned air blown out from the outlet (14); and a pivot mechanism that is configured to cause the anti draft function (17) to pivot between the two positions; and
a control device (50) that is configured to control the air conditioner (1) according to any one of claims 1 to 7. 40 45 50 55
9. A control method for an air conditioner (1), the air

conditioner (1) including: an outlet (14) for conditioned air, the outlet (14) being disposed at a panel body (3) and opened downward; a louver (15) that is pivotally provided at the outlet (14) and adjusts a blow-out direction of the conditioned air; an anti draft function (17) that is disposed on the outside of the outlet (14) of the panel body (3) and is pivotable between a withdrawn position flush with the panel body (3) and a louver-direction position facing the conditioned air blown out from the outlet (14); and a pivot mechanism that causes the anti draft function (17) to pivot between the two positions, the control method comprising:

causing the anti draft function (17) to move to a position where the conditioned air blown out from the louver (15) is not blocked, and inactivating the anti draft function (17).

FIG. 1

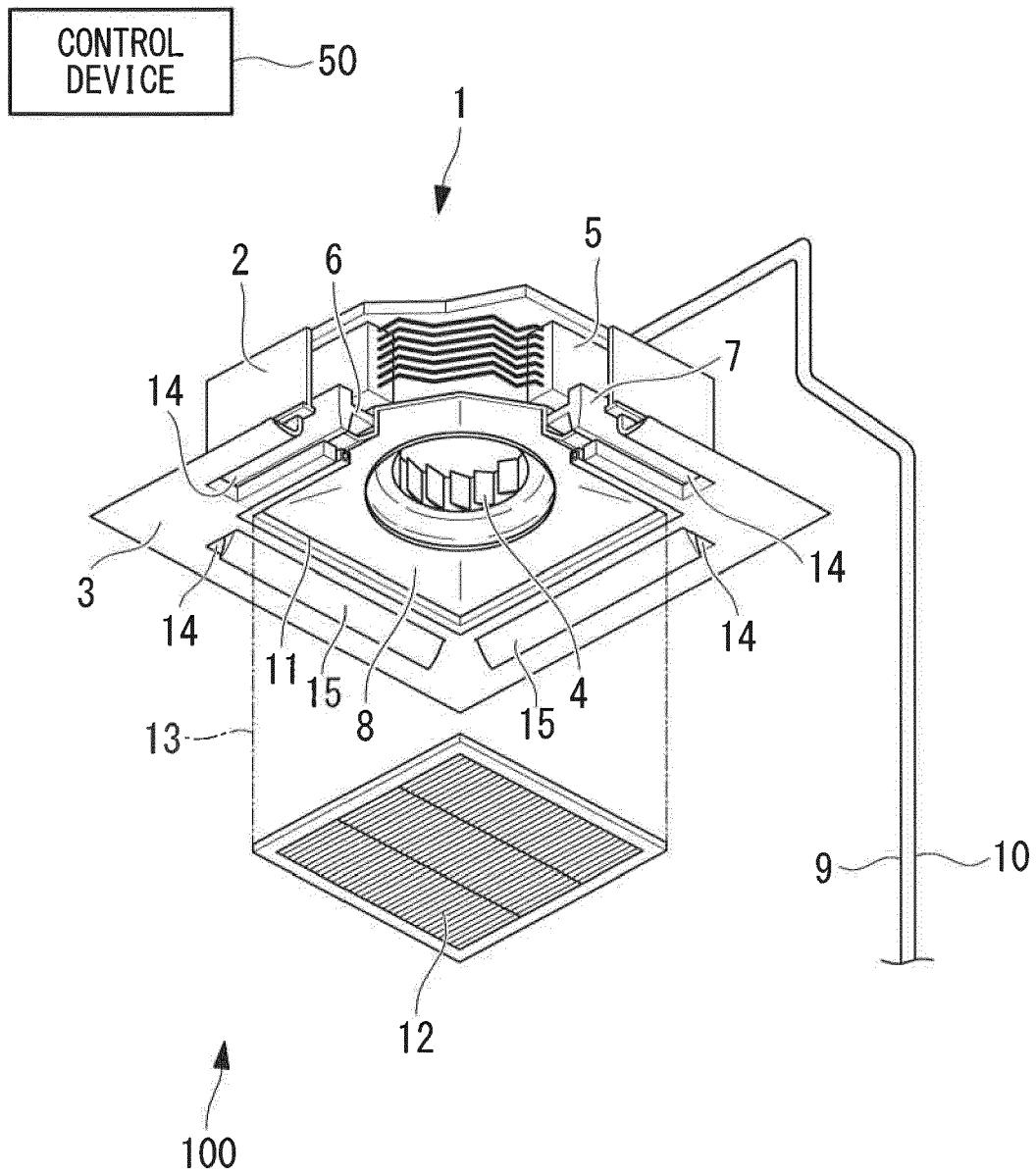


FIG. 2

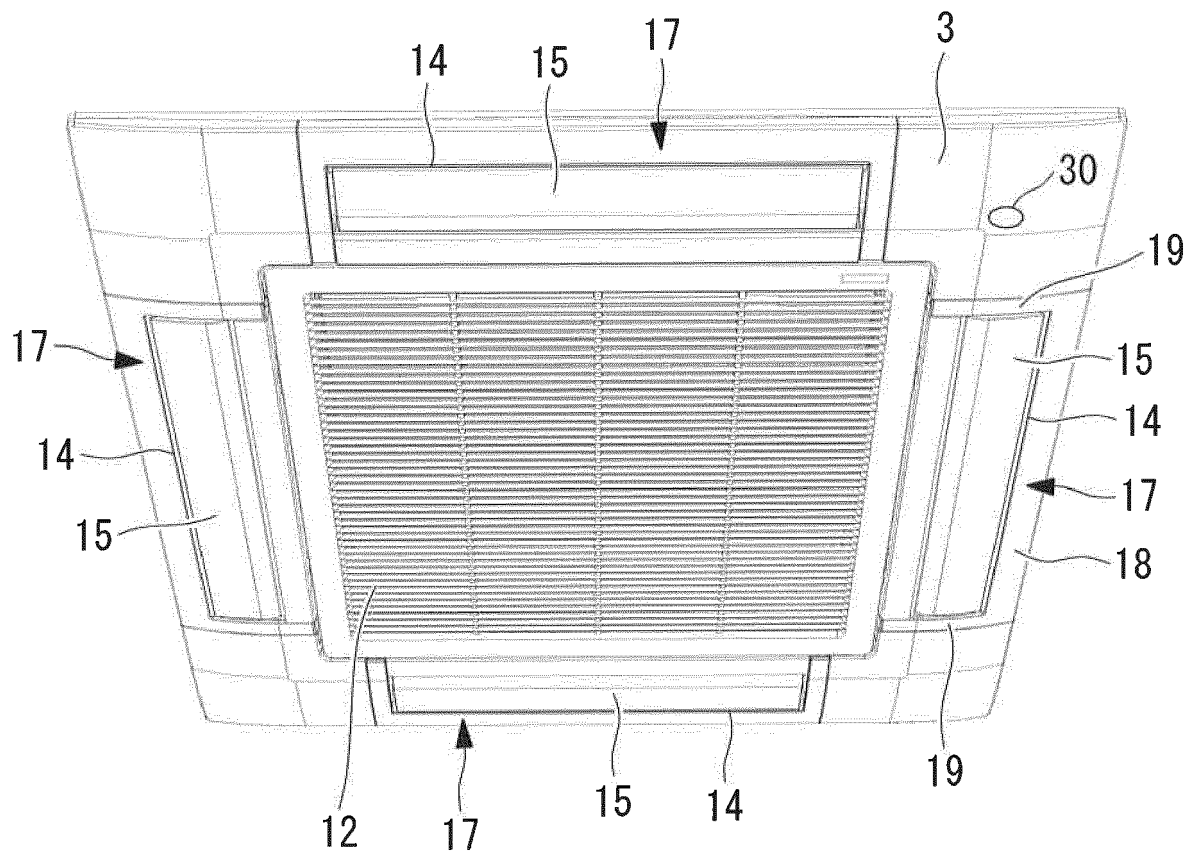


FIG. 3

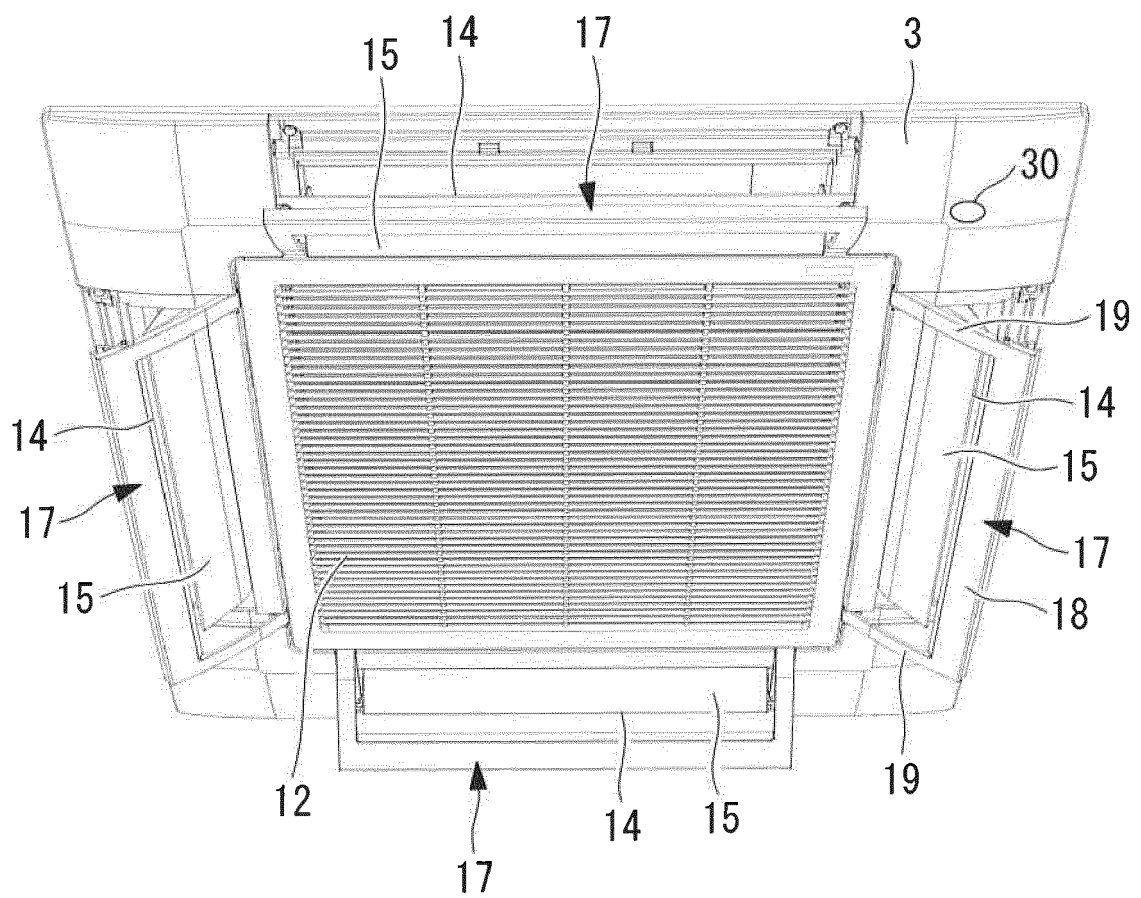


FIG. 4

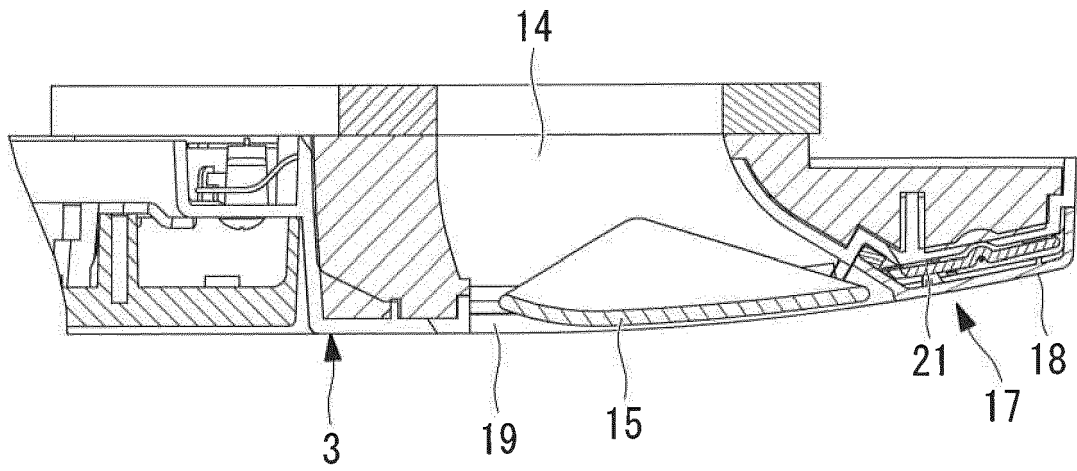


FIG. 5

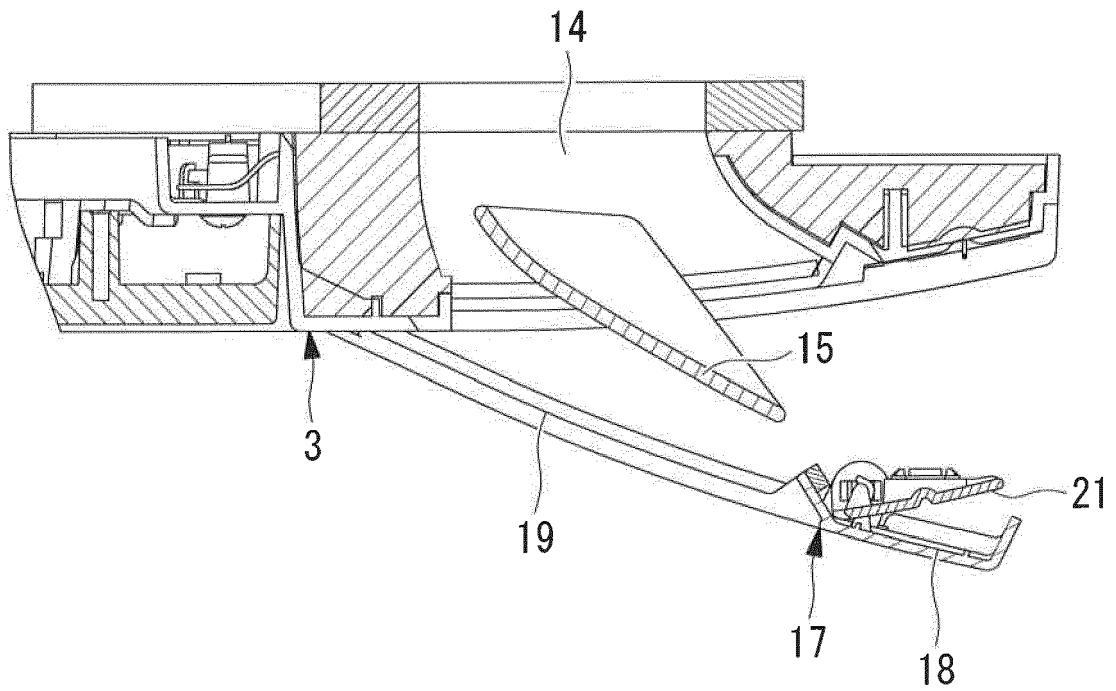


FIG. 6

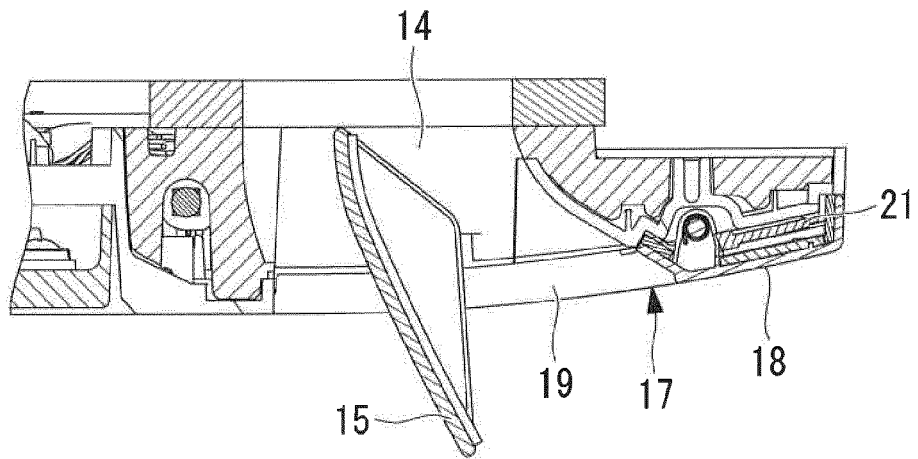


FIG. 7

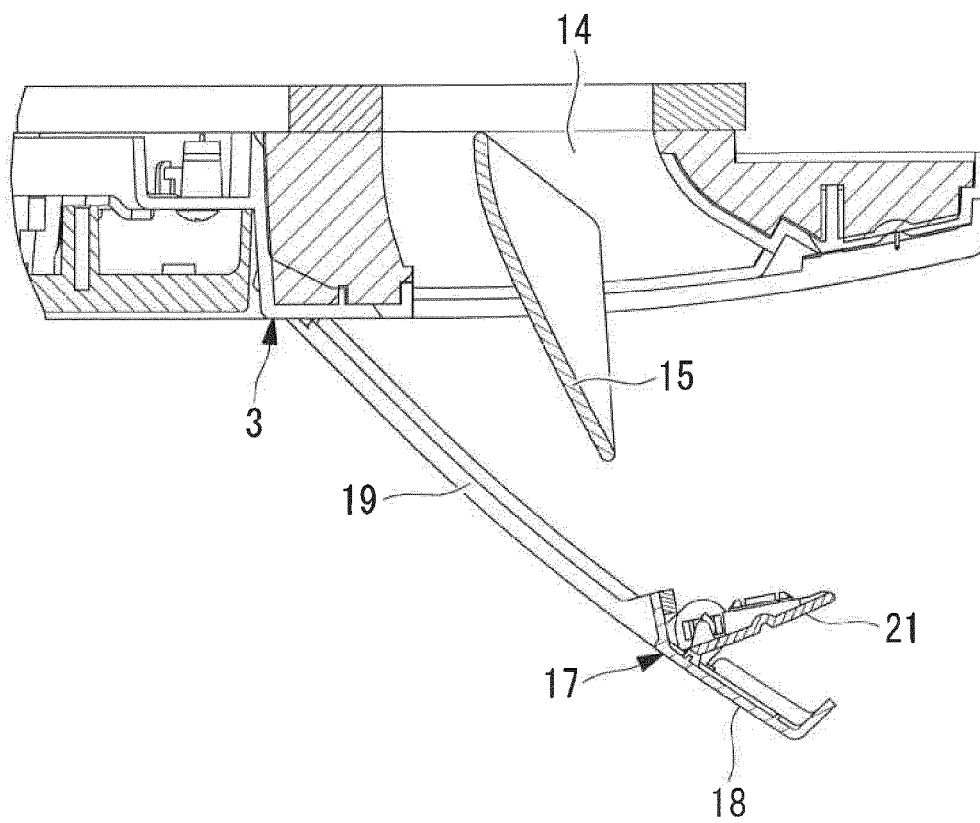
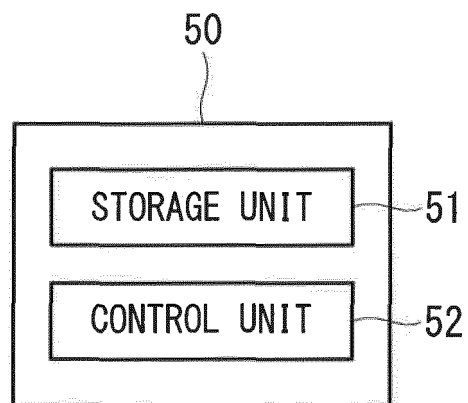


FIG. 8





EUROPEAN SEARCH REPORT

 Application Number
 EP 16 20 4565

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Place of search Munich		Date of completion of the search 27 April 2017	Examiner Decking, Oliver
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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