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AIR CONDITIONER

Abstract

An air conditioner is provided. The air conditioner includes a housing including an inlet, an outlet, and a discharge port, a blower configured to circulate air to an inside or an outside of the housing, and a discharge device configured to guide some of the air flowing toward the outlet by the blower to the discharge port, wherein the discharge device includes a discharge cover moveable between a first position to close the discharge port and a second position to open the discharge port, and a discharge fan fixed in the housing to discharge air through the discharge port in the housing where the discharge cover is located at the second position.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION(S) [0001] This application is a continuation application, claiming priority under § 365(c), of an International application No. PCT/KR2025/000490, filed on Jan. 9, 2025, which is based on and claims the benefit of a Korean patent application number 10-2024-0021955, filed on Feb. 15, 2024, in the Korean Intellectual Property Office, and of a Korean patent application number 10-2024-0068870, filed on May 27, 2024, in the Korean Intellectual Property Office, the disclosure of each of which is incorporated by reference herein in its entirety.

TECHNICAL FIELD
[0002] The disclosure relates to an air conditioner having an improved structure.
BACKGROUND ART
[0003] An air purifier is a device used to remove contaminants from the air. Air purifiers may remove foreign substances, bacteria, viruses, molds, fine dusts, and chemicals causing odors contained in intake air.
[0004] An air purifier may include an inlet for an intake of contaminated air, and a blower fan forming a flow of the air.
[0005] An air purifier may include a filter for purifying the contaminated indoor air. The air introduced into the air purifier may be purified by removing contaminants therefrom while passing through the filter and the purified air may be discharged to the outside through an outlet of the air purifier.
[0006] Air purifiers may be used in various spaces. An air conditioner may include a discharge device configured to control at least one of discharge direction, discharge rate, and discharge amount of purified air.
[0007] The above information is presented as background information only to assist with an understanding of the disclosure. No determination has been made, and no assertion is made, as to whether any of the above might be applicable as prior art with regard to the disclosure.
SUMMARY
Technical Problem
[0008] Aspects of the disclosure are to address at least the above-mentioned problems and/or disadvantages and to provide at least the advantages described below. Accordingly, an aspect of the disclosure is to provide an air conditioner capable of discharging purified air by various methods.
[0009] Another aspect of the disclosure is to provide an air conditioner preventing purified air from being mixed with and discharged with contaminated indoor air while air is discharged through a discharge device.
[0010] Additional aspects will be set forth in part in the description which follows and, in part, will be apparent from the description, or may be learned by practice of the presented embodiments.
Technical Solution
[0011] In accordance with an aspect of the disclosure, an air conditioner is provided. The air conditioner includes a housing including an inlet, an outlet, and a discharge port, a blower configured to circulate air to an inside or an outside of the housing, and a discharge device configured to guide some of the air flowing toward the outlet by the blower to the discharge port, wherein the discharge device includes a discharge cover moveable between a first position to close the discharge port and a second position to open the discharge port, and a discharge fan fixed in the

housing to discharge air through the discharge port in the housing where the discharge cover is located at the second position.
[0012] Other aspects, advantages, and salient features of the disclosure will become apparent to those skilled in the art from the following detailed description, which, taken in conjunction with the annexed drawings, discloses various embodiments of the disclosure.

Description

DESCRIPTION OF DRAWINGS
[0013] The above and other aspects, features, and advantages of certain embodiments of the disclosure will be more apparent from the following description taken in conjunction with the accompanying drawings, in which:
[0014] FIG. **1** illustrates an air conditioner according to an embodiment of the disclosure;
[0015] FIG. **2** illustrates a partial exploded view of an air blow panel of an air conditioner according to an embodiment of the disclosure;
[0016] FIG. **3** illustrates a cross-section of an air conditioner according to an embodiment of the disclosure;
[0017] FIG. **4** illustrates a discharge device of an air conditioner disassembled from a housing according to an embodiment of the disclosure;
[0018] FIG. **5** illustrates an exploded view of a discharge device according to an embodiment of the disclosure;
[0019] FIG. **6** illustrates a partial cross-sectional view of a discharge device according to an embodiment of the disclosure;
[0020] FIG. **7** illustrates a state where a discharge device closes a discharge port according to an embodiment of the disclosure;
[0021] FIG. **8** illustrates coupled relationship among components associated with movement of a discharge cover in a state where a discharge device closes a discharge port according to an embodiment of the disclosure;
[0022] FIG. **9** illustrates an air flow in the housing in a state where a discharge device closes a discharge port according to an embodiment of the disclosure;
[0023] FIG. **10** illustrates a state where a discharge device opens a discharge port according to an embodiment of the disclosure;
[0024] FIG. **11** illustrates coupled relationship between components associated with movement of the discharge cover in a state where a discharge device opens a discharge port according to an embodiment of the disclosure;
[0025] FIG. **12** illustrates an air flow in the housing in a state where a discharge device opens a discharge port according to an embodiment of the disclosure;
[0026] FIG. **13** illustrates an exploded view of a discharge cover according to an embodiment of the disclosure;
[0027] FIG. **14** illustrates an exploded view of a discharge cover according to an embodiment of the disclosure;
[0028] FIG. **15** is a cross-sectional view of a cover frame according to an embodiment of the disclosure;
[0029] FIG. **16** is a cross-sectional view of a cover frame according to an embodiment of the disclosure;
[0030] FIG. **17** illustrates a state where a discharge cover of a discharge device is rotated according to an embodiment of the disclosure;
[0031] FIG. **18** illustrates coupled relationship among components associated with rotation of a discharge cover in a state where a discharge device opens a discharge port according to an

embodiment of the disclosure; and
[0032] FIG. **19** illustrates coupled relationship among components associated with rotation of a discharge cover in a state where a discharge cover of a discharge device is rotated according to an embodiment of the disclosure.
[0033] The same reference numerals are used to represent the same elements throughout the drawings.

MODE FOR INVENTION

[0034] The following description with reference to the accompanying drawings is provided to assist in a comprehensive understanding of various embodiments of the disclosure as defined by the claims and their equivalents. It includes various specific details to assist in that understanding but these are to be regarded as merely exemplary. Accordingly, those of ordinary skill in the art will recognize that various changes and modifications of the various embodiments described herein can be made without departing from the scope and spirit of the disclosure. In addition, descriptions of well-known functions and constructions may be omitted for clarity and conciseness.
[0035] The terms and words used in the following description and claims are not limited to the bibliographical meanings, but, are merely used by the inventor to enable a clear and consistent understanding of the disclosure. Accordingly, it should be apparent to those skilled in the art that the following description of various embodiments of the disclosure is provided for illustration purpose only and not for the purpose of limiting the disclosure as defined by the appended claims and their equivalents.
[0036] It is to be understood that the singular forms “a,” “an,” and “the” include plural referents unless the context clearly dictates otherwise. Thus, for example, reference to “a component surface” includes reference to one or more of such surfaces.
[0037] In describing of the drawings, similar reference numerals may be used for similar or related elements.
[0038] In the disclosure, phrases, such as “A or B,” “at least one of A and B,” “at least one of A or B,” “A, B or C,” “at least one of A, B and C,” and “at least one of A, B, or C” may include any one or all possible combinations of the items listed together in the corresponding phrase among the phrases.
[0039] As used herein, the term “and/or” includes any and all combinations of one or more of the associated listed items.
[0040] Terms such as “1st,” “2nd,” “primary,” or “secondary” may be used simply to distinguish an element from other elements, without limiting the element in other aspects (e.g., importance or order).
[0041] When an element (e.g., a first element) is referred to as being “(functionally or communicatively) coupled” or “connected” to another element (e.g., a second element), the first element may be connected to the second element, directly (e.g., wired), wirelessly, or through a third element.
[0042] It will be understood that when the terms “includes,” “comprises,” “including,” and/or “comprising” are used in the disclosure, they specify the presence of the specified features, figures, steps, operations, components, members, or combinations thereof, but do not preclude the presence or addition of one or more other features, figures, steps, operations, components, members, or combinations thereof.
[0043] When a given element is referred to as being “connected to,” “coupled to,” “supported by” or “in contact with” another element, it is to be understood that it may be directly or indirectly connected to, coupled to, supported by, or in contact with the other element. When a given element is indirectly connected to, coupled to, supported by, or in contact with another element, it is to be understood that it may be connected to, coupled to, supported by, or in contact with the other element through a third element.
[0044] It will also be understood that when an element is referred to as being “on” another element,

it may be directly on the other element or intervening elements may also be present.
[0045] An air conditioner according to various embodiments is a device that performs functions such as purification, ventilation, humidity control, cooling, or heating in an air conditioning space (hereinafter referred to as “indoor space”), and in particular a device having at least one of these functions.
[0046] According to an embodiment, an air conditioner may include a heat pump device to perform a cooling function or a heating function. The heat pump device may include a refrigeration cycle in which a refrigerant is circulated through a compressor, a first heat exchanger, and an expansion device and a second heat exchanger. All of the components of the heat pump device may be embedded in a single housing forming an exterior of an air conditioner, which includes a window-type air conditioner or a portable air conditioner. On the other hand, some components of the heat pump device may be divided and embedded in a plurality of housings forming a single air conditioner, which includes a wall-mounted air conditioner, a stand-type air conditioner, and a system air conditioner.
[0047] The air conditioner including the plurality of housings may include at least one outdoor unit installed outdoors and at least one indoor unit installed indoors. For example, the air conditioner may be provided such that a single outdoor unit and a single indoor unit are connected by a refrigerant pipe. Alternatively, the air conditioner may be provided such that a single outdoor unit is connected to two or more indoor units by a refrigerant pipe. Alternatively, the air conditioner may be provided such that two or more outdoor units and two or more indoor units are connected by a plurality of refrigerant pipes.
[0048] The outdoor unit may be electrically connected to the indoor unit. For example, information (or commands) for controlling the air conditioner may be received through an input interface provided in the outdoor unit or the indoor unit. The outdoor unit and the indoor unit may operate simultaneously or sequentially in response to a user input.
[0049] The air conditioner may include an outdoor heat exchanger provided in the outdoor unit, an indoor heat exchanger provided in the indoor unit, and a refrigerant pipe connecting the outdoor heat exchanger and the indoor heat exchanger.
[0050] The outdoor heat exchanger may be configured to exchange heat between a refrigerant and air from outdoor through a phase change of the refrigerant (e.g., evaporation or condensation). For example, while the refrigerant is condensed in the outdoor heat exchanger, the refrigerant may radiate heat to the outdoor air. While the refrigerant flowing in the outdoor heat exchanger evaporates, the refrigerant may absorb heat from the outdoor air.
[0051] The indoor unit is installed indoors. For example, according to the arrangement method of the indoor unit, the air conditioner may be classified into a ceiling-type indoor unit, a stand-type indoor unit, a wall-type indoor unit, and the like. For example, the ceiling-type indoor unit may be classified into a 4-way type indoor unit, a 1-way type indoor unit, a duct type indoor unit and the like according to a method of discharging air.
[0052] Similarly, the indoor heat exchanger may be configured to exchange heat between a refrigerant and outdoor air through a phase change of the refrigerant (e.g., evaporation or condensation). For example, while the refrigerant evaporates in the indoor unit, the refrigerant may absorb heat from the indoor air. The indoor space may be cooled by blowing the indoor air cooled through the cooled indoor heat exchanger. While the refrigerant is condensed in the indoor heat exchanger, the refrigerant may radiate heat to the indoor air. The indoor space may be heated by blowing the indoor air heated through the high-temperature indoor heat exchanger.
[0053] In other words, the air conditioner may perform a cooling or heating function by a phase change process of a refrigerant circulated between the outdoor heat exchanger and the indoor heat exchanger. To circulate the refrigerant, the air conditioner may include a compressor to compress the refrigerant. The compressor may draw refrigerant gas through an inlet and compress the refrigerant gas. The compressor may discharge high-temperature and high-pressure refrigerant gas

through an outlet. The compressor may be disposed inside the outdoor unit.
[0054] Through the refrigerant pipe, the refrigerant may be circulated sequentially through the compressor, the outdoor heat exchanger, the expansion device, and the indoor heat exchanger or sequentially circulated through the compressor, the indoor heat exchanger, the expansion device, and the outdoor heat exchanger.
[0055] For example, in the air conditioner, when a single outdoor unit and a single indoor unit are directly connected through a refrigerant pipe, the refrigerant may be circulated between the single outdoor unit and the single indoor unit through the refrigerant pipe.
[0056] For example, in the air conditioner, when a single outdoor unit is connected to two or more indoor units through a refrigerant pipe, the refrigerant may flow from the single outdoor unit to the plurality of indoor units through branched refrigerant pipes. Refrigerant discharged from the plurality of indoor units may be combined and circulated to the outdoor unit. For example, each of the plurality of indoor units may be directly connected in parallel to the single outdoor unit through a separate refrigerant pipe.
[0057] Each of the plurality of indoor units may be operated independently according to an operation mode set by a user. In other words, some of the plurality of indoor units may be operated in a cooling mode while others of the plurality of indoor units are operated in a heating mode. At that time, the refrigerant may be selectively introduced into each indoor unit in a high-pressure state or a low-pressure state, discharged, and circulated to the outdoor unit along a circulation path that is designated through a flow path switching valve to be described later.
[0058] For example, in the air conditioner, when two or more outdoor units and two or more indoor units are connected by the plurality of refrigerant pipes, refrigerant discharged from the plurality of outdoor units may be combined and flow through one refrigerant pipe, and then diverged again at a certain point and introduced into the plurality of indoor units.
[0059] All of the plurality of outdoor units may be driven or at least some of the plurality of outdoor units may not be driven, in accordance with a driving load corresponding to an operating amount of the plurality of indoor units. At that time, the refrigerant may be provided through a flow path switching valve to be introduced into and circulated to an outdoor unit that is selectively driven. The air conditioner may include the expansion device to reduce the pressure of the refrigerant flowing into the heat exchanger. For example, the expansion device may be disposed inside the indoor unit or inside the outdoor unit, or disposed both inside the indoor unit and the outdoor unit.
[0060] The expansion device may reduce the temperature and pressure of the refrigerant by using a throttling effect. The expansion device may include an orifice configured to reduce a cross-sectional area of a flow path. A temperature and pressure of the refrigerant passing through the orifice may be lowered.
[0061] For example, the expansion device may be implemented as an electronic expansion valve configured to adjust an opening ratio (a ratio of a cross-sectional area of a flow path of a valve in a partially opened state to a cross-sectional area of the flow path of the valve in a fully opened state). According to the opening ratio of the electronic expansion valve, the amount of refrigerant passing through the expansion device may be adjusted.
[0062] The air conditioner may further include a flow path switching valve disposed on the refrigerant circulation path. The flow path switching valve may include a 4-way valve. The flow path switching valve may determine a refrigerant circulation path depending on an operation mode of the indoor unit (e.g., cooling operation or heating operation). The flow path switching valve may be connected to the outlet of the compressor.
[0063] The air conditioner may include an accumulator. The accumulator may be connected to the inlet of the compressor. A low-temperature and low-pressure refrigerant, which is evaporated in the indoor heat exchanger or the outdoor heat exchanger, may flow into the accumulator.
[0064] When a refrigerant mixture of refrigerant liquid and refrigerant gas is introduced, the

accumulator may separate the refrigerant liquid from the refrigerant gas, and supply the refrigerant gas separated from the refrigerant liquid to the compressor.
[0065] An outdoor fan may be installed near the outdoor heat exchanger. The outdoor fan may blow outdoor air to the outdoor heat exchanger to promote heat exchange between the refrigerant and the outdoor air. The outdoor unit of the air conditioner may include at least one sensor. For example, the outdoor unit sensor may be provided as an environmental sensor. The outdoor unit sensor may be disposed at a given position of the inside or the outside of the outdoor unit. For example, the outdoor unit sensor may include a temperature sensor configured to detect an air temperature around the outdoor unit, an air humidity sensor configured to detect air humidity around the outdoor unit, or a refrigerant temperature sensor configured to detect a refrigerant temperature in a refrigerant pipe passing through the outdoor unit, or a refrigerant pressure sensor configured to detect a refrigerant pressure in a refrigerant pipe passing through the outdoor unit.
[0066] The outdoor unit of the air conditioner may include an outdoor unit communication circuitry. The outdoor unit communication circuitry may be configured to receive a control signal from an indoor unit controller of the air conditioner, which will be described later. Based on a control signal received through the outdoor unit communication circuitry, the outdoor unit may control the operation of the compressor, the outdoor heat exchanger, the expansion device, the flow path switching valve, the accumulator, or the outdoor fan. The outdoor unit may transmit a measurement value detected by the outdoor unit sensor to the indoor unit controller through the outdoor unit communication circuitry.
[0067] The indoor unit of the air conditioner may include a housing, a blower configured to circulate air inside or outside the housing, and the indoor heat exchanger configured to exchange heat with air introduced into the housing.
[0068] The housing may include an inlet. Indoor air may flow into the housing through the inlet.
[0069] The indoor unit of the air conditioner may include a filter configured to filter out foreign substance in air that is introduced into the inside of the housing through the inlet.
[0070] The housing may include an outlet. Air flowing inside the housing may be discharged to the outside of the housing through the outlet.
[0071] An airflow guide configured to guide a direction of air discharged through the outlet may be provided in the housing of the indoor unit. For example, the airflow guide may include a blade positioned in the outlet. For example, the airflow guide may include an auxiliary fan for regulating an exhaust airflow, but is not limited thereto. Alternatively, the airflow guide may be omitted.
[0072] The indoor heat exchanger and the blower arranged on a flow path connecting the inlet and the outlet may be disposed inside the housing of the indoor unit.
[0073] The blower may include an indoor fan and a fan motor. For example, the indoor fan may include an axial fan, a mixed-flow fan, a cross-flow fan, and a centrifugal fan.
[0074] The indoor heat exchanger may be arranged between the blower and the outlet or between the inlet and the blower. The indoor heat exchanger may absorb heat from air introduced through the inlet or transfer heat to air introduced through the inlet. The indoor heat exchanger may include a heat exchange tube through which refrigerant flows, and heat exchange fins in contact with the heat exchange tube to increase a heat transfer area.
[0075] The indoor unit of the air conditioner may include a drain tray disposed below the indoor heat exchanger to collect condensed water generated in the indoor heat exchanger. The condensed water contained in the drain tray may be drained to the outside through a drain hose. The drain tray may be arranged to support the indoor heat exchanger.
[0076] The indoor unit of the air conditioner may include an input interface. The input interface may include any type of user input means including a button, a switch, a touch screen and/or a touch pad. A user can directly input setting data (e.g., desired indoor temperature, cooling/heating/dehumidifying/air cleaning operation mode setting, outlet selection setting, and/or air volume setting) through the input interface.

[0077] The input interface may be connected to an external input device. For example, the input interface may be electrically connected to a wired remote controller. The wired remote controller may be installed at a specific location (e.g., a part of a wall) in an indoor space. A user may input setting data related to the operation of the air conditioner by manipulating the wired remote controller. An electrical signal corresponding to the setting data obtained by the wired remote controller may be transmitted to the input interface. In addition, the input interface may include an infrared sensor. A user may remotely input the setting data for operating the air conditioner by using a wireless remote controller. The setting data received by the wireless remote controller may be transmitted to the input interface as an infrared signal.
[0078] In addition, the input interface may include a microphone. A user's voice command may be obtained through the microphone. The microphone may convert a user's voice command into an electrical signal and transmit the converted electrical signal to the indoor unit controller. The indoor unit controller may control components of the air conditioner to perform a function corresponding to the user's voice command. The setting data obtained through the input interface (e.g., desired indoor temperature, cooling/heating/dehumidifying/air cleaning operation mode setting, outlet selection setting, and/or air volume setting) may be transmitted to the indoor unit controller to be described later. For example, the setting data obtained through the input interface may be transmitted to the outside, that is, to the outdoor unit or a server through an indoor unit communication circuitry to be described later.
[0079] The indoor unit of the air conditioner may include a power module. The power module may be connected to an external power source to supply power to components of the indoor unit.
[0080] The indoor unit of the air conditioner may include an indoor unit sensor. The indoor unit sensor may be an environmental sensor disposed inside or outside the housing. For example, the indoor unit sensor may include one or more temperature sensors and/or humidity sensors disposed in a predetermined space inside or outside the housing of the indoor unit. For example, the indoor unit sensor may include a refrigerant temperature sensor configured to detect a refrigerant temperature of a refrigerant pipe passing through the indoor unit. For example, the indoor unit sensor may include a refrigerant temperature sensor each configured to detect a temperature of an entrance, a middle portion and/or an exit of the refrigerant pipe passing through the indoor heat exchanger.
[0081] For example, each environmental information detected by the indoor unit sensor may be transmitted to the indoor unit controller to be described later or transmitted to the outside through the indoor unit communication circuitry to be described later.
[0082] The indoor unit of the air conditioner may include the indoor unit communication circuitry. The indoor unit communication circuitry may include at least one of a short-range wireless communication module and a long-range wireless communication module. The indoor unit communication circuitry may include at least one antenna for wirelessly communicating with other devices. The outdoor unit may include the outdoor unit communication circuitry. The outdoor unit communication circuitry may also include at least one of a short-range wireless communication module and a long-range wireless communication module.
[0083] The short-range wireless communication module may include a Bluetooth communication module, a Bluetooth Low Energy (BLE) communication module, a near field communication module, a WLAN (Wi-Fi) communication module, and a Zigbee communication module, an infrared data association (IrDA) communication module, a Wi-Fi Direct (WFD) communication module, an ultrawideband (UWB) communication module, an Ant+ communication module, a microwave (uWave) communication module, etc., but is not limited thereto.
[0084] The long-range wireless communication module may include a communication module that performs various types of long-range wireless communication, and may include a mobile communication circuitry. The mobile communication circuitry transmits and receives radio signals with at least one of a base station, an external terminal, and a server in a mobile communication

network.
[0085] The indoor unit communication circuitry may communicate with an external device such as a server, a mobile device and other home appliances through an access point (AP). The AP may connect a local area network (LAN), to which an air conditioner or a user device is connected, to a wide area network (WAN) to which a server is connected. The air conditioner or the user device may be connected to the server through the WAN. The indoor unit of the air conditioner may include the indoor unit controller configured to control components of the indoor unit including the blower. The outdoor unit of the air conditioner may include an outdoor unit controller configured to control components of the outdoor unit including the compressor. The indoor unit controller may communicate with the outdoor unit controller through the indoor unit communication circuitry and the outdoor unit communication circuitry. The outdoor unit communication circuitry may transmit a control signal generated by the outdoor unit controller to the indoor unit communication circuitry, or transmit a control signal, which is transmitted from the indoor unit communication circuitry, to the outdoor unit controller. In other words, the outdoor unit and the indoor unit may perform bi-directional communication. The outdoor unit and the indoor unit may transmit and receive various signals generated during the operation of the air conditioner.
[0086] The outdoor unit controller may be electrically connected to components of the outdoor unit and may control the operation of each component. For example, the outdoor unit controller may adjust a frequency of the compressor and control the flow path switching valve to change a circulation direction of the refrigerant. The outdoor unit controller may adjust a rotational speed of the outdoor fan. In addition, the outdoor unit controller may generate a control signal to adjust the opening degree of the expansion valve. Under the control of the outdoor unit controller, the refrigerant may be circulated along the refrigerant circulation circuit including the compressor, the flow path switching valve, the outdoor heat exchanger, the expansion valve, and the indoor heat exchanger.
[0087] Various temperature sensors included in the outdoor unit and the indoor unit may transmit electrical signals corresponding to detected temperatures to the outdoor unit controller and/or the indoor unit controller. For example, the humidity sensors included in the outdoor unit and the indoor unit may respectively transmit electrical signals corresponding to the detected humidity to the outdoor unit controller and/or the indoor unit controller.
[0088] The indoor unit controller may obtain a user input from a user device including a mobile device through the indoor unit communication circuitry, or directly obtain a user input through the input interface or the remote controller. The indoor unit controller may control components of the indoor unit including the blower in response to the received user input. The indoor unit controller may transmit information related to the received user input to the outdoor unit controller of the outdoor unit.
[0089] The outdoor unit controller may control components of the outdoor unit including the compressor based on the information related to the user input received from the indoor unit. For example, when a control signal corresponding to a user input for selecting an operation mode such as a cooling operation, a heating operation, a fan operation, a defrosting operation, or a dehumidifying operation is received from the indoor unit, the outdoor unit controller may control components of the outdoor unit to perform an operation of the air conditioner corresponding to the selected operation mode.
[0090] The outdoor unit controller and the indoor unit controller may include a processor and a memory, respectively. The indoor unit controller may include at least one a first processor and at least one a first memory, and the outdoor unit controller may include at least one a second processor and at least one a second memory.
[0091] The memory may record/store various types of information necessary for the operation of the air conditioner. The memory may store instructions, applications, data and/or programs necessary for the operation of the air conditioner. For example, the memory may store various

programs for the cooling operation, the heating operation, the dehumidifying operation, and/or the defrosting operation of the air conditioner. The memory may include volatile memory, such as a static random access memory (S-RAM) and a dynamic random access memory (D-RAM) for temporarily storing data. In addition, the memory may include a non-volatile memory, such as a read only memory (ROM), an erasable programmable read only memory (EPROM), and an electrically erasable programmable read only memory (EEPROM) for long-term storage of data.

[0092] The processor may generate a control signal for controlling an operation of the air conditioner based on instructions, applications, data, and/or programs stored in the memory. The processor may be hardware and may include a logic circuit and an arithmetic circuit. The processor may process data according to a program and/or instructions provided from the memory, and may generate a control signal according to a processing result. The memory and the processor may be implemented as one control circuit or as a plurality of circuits.

[0093] The indoor unit of the air conditioner may include an output interface. The output interface may be electrically connected to the indoor unit controller, and output information related to the operation of the air conditioner under the control of the indoor unit controller. For example, the output interface may output information, such as an operation mode selected by a user input, a wind direction, a wind volume, and a temperature. In addition, the output interface may output sensing information obtained from the indoor unit sensor or the outdoor unit sensor, and output warning/error messages.

[0094] The output interface may include a display and a speaker. The speaker may be a sound device and configured to output various sounds. The display may display information, which is input by a user or provided to a user, as various graphic elements. For example, operational information of the air conditioner may be displayed as at least one of an image and text. In addition, the display may include an indicator that provides specific information. The display may include a liquid crystal display (LCD) panel, a light emitting diode (LED) panel, an organic light emitting diode (OLED) panel, a micro-LED panel, and/or a plurality of LEDs.

[0095] It should be appreciated that the blocks in each flowchart and combinations of the flowcharts may be performed by one or more computer programs which include instructions. The entirety of the one or more computer programs may be stored in a single memory device or the one or more computer programs may be divided with different portions stored in different multiple memory devices.

[0096] Any of the functions or operations described herein can be processed by one processor or a combination of processors. The one processor or the combination of processors is circuitry performing processing and includes circuitry like an application processor (AP, e.g. a central processing unit (CPU)), a communication processor (CP, e.g., a modem), a graphics processing unit (GPU), a neural processing unit (NPU) (e.g., an artificial intelligence (AI) chip), a Wi-Fi chip, a Bluetooth® chip, a global positioning system (GPS) chip, a near field communication (NFC) chip, connectivity chips, a sensor controller, a touch controller, a finger-print sensor controller, a display driver integrated circuit (IC), an audio CODEC chip, a universal serial bus (USB) controller, a camera controller, an image processing IC, a microprocessor unit (MPU), a system on chip (SoC), an IC, or the like.

[0097] Hereinafter, an air conditioner according to various embodiments will be described with reference to the accompanying drawings in detail. Although an air purifier is described as an example of an air conditioner for the convenience of description, the disclosure is not limited to the air purifier and may be applied to various home appliances including an indoor unit of an air conditioner including a heat exchanger.

[0098] FIG. **1** illustrates an air conditioner according to an embodiment of the disclosure. FIG. **2** illustrates a partial exploded view of an air blow panel of an air conditioner according to an embodiment of the disclosure. FIG. **3** illustrates a cross-section of an air conditioner according to an embodiment of the disclosure.

[0099] A housing **10** may include a frame body **11** and air blow panel **12** provided outside the frame body **11**. The frame body **11** may support various components of the air conditioner **1**. The frame body **11** may be provided to accommodate various components of the air conditioner **1**. At least a part of the frame body **11** may be covered with the air blow panel **12**.
[0100] The air blow panel **12** may be detachably mounted on the frame body **11**. For example, the air blow panel **12** may include a first air blow panel forming a front side of the air conditioner **1**, a second air blow panel forming a rear side of the air conditioner **1**, a third air blow panel forming a right side of the air conditioner **1**, and a fourth air blow panel forming a left side of the air conditioner **1**. The first air blow panel may be referred to as a front panel. The second air blow panel may be referred to as a rear panel. The third air blow panel may be referred to as a right panel. The fourth air blow panel may be referred to as a left panel.
[0101] The first air blow panel, the second air blow panel, the third air blow panel, and the fourth air blow panel may be provided as separate components. However, at least some of the first air blow panel, the second air blow panel, the third air blow panel, and the fourth air blow panel may be formed integrally. At least some of the first air blow panel, the second air blow panel, the third air blow panel, and the fourth air blow panel may be detached from the frame body **11**.
[0102] The air blow panel **12** may include a panel unit **12***a*. The panel unit **12***a* may include a plurality of ribs. The plurality of ribs may extend in one direction. For example, the plurality of ribs may extend in the vertical direction. However, the disclosure is not limited thereto.
[0103] The panel unit **12***a* may be formed over the entire area of the air blow panel **12**. For example, the panel unit **12***a* may be provided in a uniform pattern formed over the entire area of the air blow panel **12**. Thus, the exterior appearance of the air blow panel **12** may be improved by increasing the freedom of design.
[0104] The housing **10** may have an air blow vent **13**. For example, the air blow vent **13** may be formed at the air blow panel **12**. The air blow vent **13** may extend along the vertical direction. The air blow vent **13** may be provided in plural. For example, the plurality of air blow vents **13** may be arranged in a direction perpendicular to the vertical direction (Z direction). For example, the plurality of air blow vents **13** may be arranged along a left-right direction (Y direction) or along a front-rear direction (X direction).
[0105] The air blow vent **13** may be formed to correspond to the panel unit **12***a*. For example, the air blow vents **13** may be openings formed between the plurality of ribs of the panel unit **12***a*. Air outside the housing **10** may flow into or discharged out of the housing **10** through the air blow vent **13**. The air blow vent **13** may include a plurality of openings.
[0106] The housing **10** may include an inlet **13***a* and an outlet **13***b*. The inlet **13***a* may be provided for the intake of air outside the housing **10** into the housing **10**. The outlet **13***b* may be provided for the discharge of air inside the housing **10** out of the housing **10**. The inlet **13***a* and the outlet **13***b* may be formed at the air blow panel **12**. The air blow vent **13** may include the inlet **13***a* and the outlet **13***b*. The inlet **13***a* may be provided as a part of the air blow vent **13**, and the outlet **13***b* may be provided as another part of the air blow vent **13**. A part of the air blow vent **13** may serve as the inlet **13***a*, and another part of the air blow vent **13** may serve as the outlet **13***b*.
[0107] The housing **10** may include an inlet opening **14** and an outlet opening **15**. The inlet opening **14** and the outlet opening **15** may be formed at the frame body **11**. The inlet opening **14** may be provided to correspond to the inlet **13***a* of the air blow vent **13**. The outlet opening **15** may be provided to correspond to the outlet **13***b* of the air blow vent **13**.
[0108] The air conditioner **1** according to an embodiment of the disclosure may be provided to introduce air into the housing **10** through the inlet **13***a* and the inlet opening **14** and to discharge purified air out of the housing **10** through the outlet opening **15** and the outlet **13***b*.
[0109] For example, the inlet **13***a* may include a first inlet and a second inlet spaced apart from the first inlet, and the inlet opening **14** may have a first inlet opening corresponding to the first inlet and a second inlet opening corresponding to the second inlet. The first inlet and the second inlet

may be aligned in the vertical direction, and the first inlet opening and the second inlet opening may be aligned in the vertical direction to correspond thereto.

[0110] For example, the outlet **13***b* may include a first outlet and a second outlet spaced apart from the first outlet, and the outlet opening **15** may include a first outlet opening corresponding to the first outlet and a second outlet opening corresponding to the second outlet. The first outlet and the second outlet may be aligned in the vertical direction, and the first outlet opening and the second outlet opening may be aligned in the vertical direction to correspond thereto.

[0111] The inlet **13***a* and the outlet **13***b* may be formed at the first air blow panel, the second air blow panel, the third air blow panel, and the fourth air blow panel, respectively. To correspond thereto, the first inlet opening **14** and the second outlet opening **15** may be formed at the front side, the rear side, the right side, and the left side of the frame body **11**.

[0112] For example, air outside the housing **10** may flow into the housing **10** from all sides of the housing **10** through the inlet **13***a* and the inlet opening **14**. For example, air outside the housing **10** may flow into the housing **10** in all directions through the inlet **13***a* and the inlet opening **14**.

[0113] Also, for example, air inside the housing **10** may flow out of the housing **10** to all sides of the housing **10** through the outlet **13***b* and the outlet opening **15**. For example, air inside the housing **10** may flow out of the housing **10** in all directions through the outlet **13***b* and the outlet opening **15**.

[0114] Because air is introduced and/or discharged in all directions, air smoothly circulates inside the housing **10**. The air conditioner **1** may achieve high dust collection efficiency.

[0115] The housing **10** may include an upper frame **16**. The upper frame **16** may be provided at the top of the housing **10**. The upper frame **16** may be disposed on the frame body **11**.

[0116] The upper frame **16** may be provided with a user interface. For example, the user interface may include a controller. The user interface may receive an input from a user or output operation information of the air conditioner **1** to the user.

[0117] The housing **10** may include a support **19**. The support **19** may be disposed at the bottom of the housing **10** to support the housing **10** and components constituting the air conditioner **1**.

[0118] The air conditioner **1** may include a blower **30**. The blower **30** may generate an air-blowing force. The blower **30** may move air. The blower **30** may force air to flow. The blower **30** may create an air flow that flows in the housing **10** by rotating. The blower **30** may circulate air into or out of the housing **10**. The blower **30** may force air to be introduced through the inlet **13***a* and the inlet opening **14** and to be discharged through the outlet **13***b* and the outlet opening **15**. For example, the blower **30** may move air upward. However, the disclosure is not limited thereto, and the blower **30** may move air downward in the case where the inlet **13***a* is located above the outlet **13***b*.

[0119] The blower **30** may be disposed in the housing **10**. The blower **30** may be located at a downstream area of the inlet **13***a*. The blower **30** may be located at an upstream area of the outlet **13***b*. The blower **30** may be located between the inlet **13***a* and the outlet **13***b*.

[0120] The air conditioner **1** may include a plurality of blowers **30**. The plurality of blowers **30** may be aligned along an approximately vertical direction (Z direction). The plurality of blowers **30** may be arranged to be spaced apart from each other along the approximately vertical direction (Z direction). For example, the air conditioner **1** may include a first blower and a second blower. However, the number of the blowers **30** is not limited.

[0121] The air conditioner **1** may include an air guide **17**. Air flowing into the housing **10** through the inlet **13***a* and the inlet opening **14** may be guided toward the blower **30** through the air guide **17**. Air passing through the air guide **17** may flow inside a blower case **18** and the blower **30**.

[0122] The air conditioner **1** may include the blower case **18**. The blower **30** may be disposed in the blower case **18**. The blower case **18** may guide the flow of air flowing in the housing **10**. The blower case **18** may communicate with the air guide **17**.

[0123] The air conditioner **1** may include a dust collector **50**. The dust collector **50** may be provided to filter air. The dust collector **50** may collect aerosols in the air. For example, the dust

collector **50** may include a first assembly **51** configured to charge aerosols in the air, and a second assembly **52** configured to collect the charged aerosols.

[0124] The dust collector **50** may be disposed in the housing **10**. The dust collector **50** may be located to allow air introduced through the inlet **13***a* and inlet opening **14** to pass through. The dust collector **50** may be located such that air passes therethrough before being discharged through the outlet opening **15** and the outlet **13***b*. The dust collector **50** may be disposed between the inlet **13***a* and the outlet **13***b*. The dust collector **50** may be disposed between the inlet opening **14** and the outlet opening **15**. The dust collector **50** may filter air introduced into the housing **10** through the inlet **13***a* by the blower **30**. The filtered air may be discharged out of the housing **10** through the outlet **13***b*.

[0125] For example, the dust collector **50** may be disposed below the blower **30**. For example, the blower **30** may be disposed above the dust collector **50**. For example, the dust collector **50** and the blower **30** may be disposed with the deodorizer **40** disposed therebetween. However, the positions of the deodorizer **40**, the dust collector **50**, and the blower **30** are not limited to these examples described above.

[0126] The air conditioner **1** may include a plurality of dust collectors **50**. The plurality of dust collectors **50** may be arranged along an approximately vertical direction (Z direction). The plurality of dust collectors **50** may be arranged to be spaced apart from each other along the approximately vertical direction (Z direction). For example, the air conditioner **1** may include a first dust collector and a second dust collector. However, the number of the dust collectors **50** is not limited.

[0127] The air conditioner **1** may include a deodorizer **40**. The deodorizer **40** may be configured to remove odors from the air. The deodorizer **40** may be configured to remove odorous substances contained in the air. The deodorizer **40** may be configured to sterilize the air. For example, the deodorizer **40** may sterilize the air by decomposing organic substances contained in the air. Odors may be removed from air flowing in the housing **10** while passing through the deodorizer **40**.

[0128] The deodorizer **40** may include a light source **41** and a photocatalyst filter **42**. The photocatalyst filter **42** reacts with light emitted by the light source **41** to produce a reactant product, and the reaction product may decompose odorous substances to deodorize the air.

[0129] The deodorizer **40** may be disposed in the housing **10**. The deodorizer **40** may be located to allow air introduced through the inlet **13***a* and the inlet opening **14** to pass through. The deodorizer **40** may be located such that air passes therethrough before being discharged through the outlet opening **15** and the outlet **13***b*. The deodorizer **40** may be disposed between the inlet **13***a* and the outlet **13***b*. The deodorizer **40** may be disposed between the inlet opening **14** and the outlet opening **15**.

[0130] The deodorizer **40** may be configured to deodorize the air that passed through the dust collector **50**. The deodorizer **40** may be located at a downstream area of the dust collector **50** in the air flow direction. The deodorizer **40** may be located between the dust collector **50** and the outlet **13***b*. The deodorizer **40** may be located between the dust collector **50** and the outlet opening **15**. However, the disclosure is not limited thereto, and the deodorizer **40** may also be located at an upstream area of the dust collector **50** in the air flow direction. In this regard, the dust collector **50** may be configured to collect aerosols contained in the air that passed through the deodorizer **40**.

[0131] For example, the deodorizer **40** may be disposed above the dust collector **50**. For example, the dust collector **50** may be disposed below the deodorizer **40**. For example, the deodorizer **40** may be disposed between the dust collector **50** and the blower **30**. However, the positions of the deodorizer **40**, the dust collector **50**, and the blower **30** are not limited to those described above.

[0132] The air conditioner **1** may include a plurality of deodorizers **40**. The plurality of deodorizers **40** may be aligned along an approximately vertical direction (Z direction). The plurality of deodorizers **40** may be arranged to be spaced apart from each other along the approximately vertical direction (Z direction). For example, the air conditioner **1** may include a first deodorizer and a second deodorizer. However, the number of the deodorizers **40** is not limited.

[0133] For example, the first deodorizer may be provided above the first dust collector. For example, the second deodorizer may be provided above the second dust collector. For example, the first blower may be disposed between the first dust collector and the second dust collector. For example, the second dust collector may be upwardly spaced apart from the first dust collector with the first blower located therebetween. For example, the first blower may be provided between the first deodorizer and the second dust collector. For example, the second blower may be provided above the second dust collector. For example, the second blower may be disposed above the second dust collector to move air that passed through the second dust collector toward the outlet **13***b*. For example, the second blower may be provided above the second deodorizer. For example, the second blower may be disposed above the second deodorizer to move air that passed through the second deodorizer toward the outlet **13***b*. However, the disclosure is not limited to the examples described above, and the positions of the dust collector **50**, the deodorizer **40**, and the blower **30** are not limited to the examples described above.
[0134] For example, the blower **30**, the deodorizer **40**, the dust collector **50**, and components related thereto located at lower areas may be omitted in the air conditioner **1**.
[0135] FIG. **4** illustrates a discharge device of an air conditioner disassembled from a housing according to an embodiment of the disclosure. FIG. **5** illustrates an exploded view of a discharge device according to an embodiment of the disclosure. FIG. **6** illustrates a partial cross-sectional view of a discharge device according to an embodiment of the disclosure.
[0136] Referring to FIGS. **4** to **6**, the air conditioner **1** according to an embodiment of the disclosure may include a discharge device **100**. The discharge device **100** may be installed at the housing **10**. The discharge device **100** may be installed at the frame body **11** of the housing **10**. The discharge device **100** may be installed at an upper part **11***a* of the frame body **11**. The discharge device **100** may be located between the upper part **11***a* of the frame body **11** and the upper frame **16**.
[0137] The air conditioner **1** according to an embodiment of the disclosure may include a discharge port **16***a* formed at the upper frame **16**. The discharge port **16***a* may be provided to face a direction different from that of the outlet **13***b*. For example, the discharge port **16***a* may be provided to face upward. The discharge port **16***a* may be provided at the end of a flow path branched from a flow path formed between the blower **30** and the outlet **13***b*. Air blown from the blower **30** may be discharged out of the housing **10** through the outlet **13***b* or the discharge port **16***a*.
[0138] The discharge device **100** may be provided to open and close the discharge port **16***a*. The discharge device **100** may be provided to guide some of the air, which has been blown by the air blower **30** toward the outlet **13***b*, to the discharge port **16***a*.
[0139] The discharge device **100** may include a base part **101**. The base part **101** may be fixed to the housing **10**. The base part **101** may be mounted on the frame body **11** to be fixed thereto. The base part **101** may support various components of the discharge device **100**. For example, the base part **101** may include a drive source case **104** to mount a movement drive source **102** and a rotation drive source **103**.
[0140] The discharge device **100** may include a movement drive source **102** mounted on the base part **101**. The movement drive source **102** may be provided to provide power for moving a discharge cover **110**. For example, the movement drive source **102** may be located at a right rear corner area of the base part **101**. The movement drive source **102** may include a motor.
[0141] For example, the discharge device **100** may include a movement gear **102***a* to transmit power of the movement drive source **102** to a rotating member **120**. The movement drive source **102** may include a movement gear **102***a*. The movement drive source **102** may be connected to the rotating member **120** via the movement gear **102***a*. For example, the movement gear **102***a* may include a plurality of gears.
[0142] The discharge device **100** may include a rotation drive source **103** mounted on the base part **101**. The rotation drive source **103** may be configured to provide power for rotating the discharge

cover **110**. For example, the rotation drive source **103** may be disposed at a left rear corner area of the base part **101**. The rotation drive source **103** may include a motor.

[0143] For example, the discharge device **100** may include a rotation gear **103***a* to transmit the power of the rotation drive source **103** to a rotation transmission part **140**. The rotation drive source **103** may include the rotation gear **103***a*. The rotation drive source **103** may be connected to the rotation transmission part **140** via the rotation gear **103***a*. For example, the rotation gear **103***a* may include a plurality of gears.

[0144] The discharge device **100** may include a discharge cover **110**. The discharge cover **110** may be provided to open and close the discharge port **16***a*. The discharge cover **110** may be provided to move and rotate. Specifically, the discharge cover **110** may be provided to move and rotate with respect to the housing **10**. Specifically, the discharge cover **110** may be provided to move and rotate with respect to the base part **101**. For example, the discharge cover **110** may have a cylindrical shape with an open bottom. For example, a movable distance of the discharge cover **110** with respect to the base part **101** may be 40 mm or less. However, the movable distance of the discharge cover **110** with respect to the base part **101** is not limited thereto.

[0145] The discharge cover **110** may be provided to be rotatable about a virtual shaft (L) extending in same direction as the moving direction of the discharge cover **110**. For example, the discharge cover **110** may be provided to be movable in the vertical direction (Z direction) with respect to the base part **101**, and the virtual shaft (L) may extend in the Z-axial direction.

[0146] The discharge cover **110** may have a cover opening **117** formed at an area of the outer peripheral surface of the discharge cover **110**. The cover opening **117** may be located inside the housing **10** in the case where the discharge cover **110** closes the discharge port **16***a*. At least a part of the cover opening **117** may be located outside the housing **10** in the case where the discharge cover **110** opens the discharge port **16***a*.

[0147] The discharge cover **110** may be coupled to a switching member **130**. The discharge cover **110** may be rotatably coupled to the switching member **130**. The discharge cover **110** may be coupled to the switching member **130** to be movable in the vertical direction together with the switching member **130**. The discharge cover **110** may be coupled to the switching member **130** to be rotatable about the switching member **130** and movable in the vertical direction together with the switching member **130**.

[0148] Specifically, the discharge cover **110** may include a rotation support **111** provided along the periphery of the discharge cover **110**. The rotation support **111** may be coupled to a rotation coupler **131** of the switching member **130**. For example, the rotation support **111** of the discharge cover **110** may have a groove shape, and the rotation coupler **131** of the switching member **130** may have a shape protruding inward from an inner peripheral surface of the switching member **130**.

[0149] The discharge cover **110** may be coupled to the rotation transmission part **140** to be rotatable together with the rotation transmission part **140**. The discharge cover **110** may be coupled to the rotation transmission part **140** to be movable with respect to the rotation transmission part **140**. For example, the discharge cover **110** may be coupled to the rotation transmission part **140** to be movable in the vertical direction with respect to the rotation transmission part **140** although rotation with respect to the rotation transmission part **140** is limited.

[0150] The discharge cover **110** may include a cover frame **112**, a top cover **113**, and a side cover **114** (See FIGS. **13** to **16**), which will be described below in detail.

[0151] The discharge device **100** may include movement transmitting parts **120**, **130**, and **106** configured to move the discharge cover **110** upon receiving power from the movement drive source **102**. For example, the movement transmitting parts **120**, **130**, and **106** may include the rotating member **120**, the switching member **130**, and a movement supporter **106**.

[0152] The discharge device **100** may include the rotating member **120**. The rotating member **120** may be provided to be rotatable with respect to the base part **101**. The rotating member **120** may be rotatably accommodated in the base part **101**. The rotating member **120** may be rotatably mounted

on the base part **101**. The rotating member **120** may be connected to the movement drive source **102**. The rotating member **120** may be connected to the movement gear **102***a* of the movement drive source **102**.

[0153] The rotating member **120** may include a movement gear connector **121** for connection with the movement drive source **102**. The movement gear connector **121** may be provided at one or more areas along an outer peripheral surface of rotating member **120**. The movement gear connector **121** may have a gear shape. For example, as the movement gear **102***a* of the movement drive source **102** is connected to the movement gear connector **121** of the rotating member **120**, the rotating member **120** may rotate upon receiving a rotational force from the movement drive source **102**.

[0154] The rotating member **120** may include a movement guide **123** to guide the movement of the switching member **130**. The movement guide **123** may extend in the moving direction of the discharge cover **110**. For example, the movement guide **123** may extend in the vertical direction. The movement guide **123** may be provided to be coupled to the movement coupler **133** of the switching member **130**. For example, the movement coupler **133** of the switching member **130** may have a protruding shape, and the movement guide **123** may have a slit shape into which the movement coupler **133** is slidably inserted. For example, the movement guides **123** may be provided in singular or plural numbers to correspond to the number of the movement coupler **133**.

[0155] The discharge device **100** may include the switching member **130**. The switching member **130** may be coupled to the rotating member **120** to be rotatable together with the rotating member **120**. The switching member **130** may be coupled to the rotating member **120** to be movable with respect to the rotating member **120**. For example, the switching member **130** may have a ring shape.

[0156] Specifically, the switching member **130** may include a movement coupler **133** movably coupled to the movement guide **123** of the rotating member **120**. For example, the movement coupler **133** may have a shape protruding outwardly from the outer peripheral surface of the switching member **130**, and the movement guide **123** may have a slit shape into which the movement coupler **133** is slidably inserted. For example, the movement coupler **133** may be provided in singular or plural numbers to correspond to the number of the movement guide **123**. As the movement coupler **133** moves in the vertical direction along the movement guide **123**, the switching member **130** may move in the vertical direction with respect to the rotating member **120**.

[0157] The switching member **130** may include a rotation coupler **131** rotatably coupled to the rotation support **111** of the discharge cover **110**. In response to coupling of the rotation support **111** to the rotation coupler **131**, movement of the switching member **130** may be limited with respect to the discharge cover **110**. For example, the rotation coupler **131** may have a shape protruding inward from the inner peripheral surface the switching member **130**, and the rotation support **111** of the discharge cover **110** may have a groove shape formed at the outer peripheral surface of the discharge cover **110**.

[0158] The switching member **130** may be coupled to the discharge cover **110** to be movable together with the discharge cover **110**. The switching member **130** may be coupled to the discharge cover **110** to be rotatable with respect to the discharge cover **110**.

[0159] The discharge device **100** may include the movement supporter **106**. While the rotating member **120** rotates, the movement supporter **106** may guide movement of the switching member **130**. The movement supporter **106** may guide movement of the switching member **130** in the vertical direction. For example, the movement supporter **106** may be integrated with the base part **101**.

[0160] The movement supporter **106** may have an inclined shape to move the movement coupler **133** of the switching member **130** in the vertical direction while the switching member **130** rotates. The movement supporter **106** may extend along the outer periphery of the switching member **130**. For example, the movement supporter **106** may be provided such that upward slopes and

downward slopes are repeated along the outer periphery of the switching member **130**. The movement supporter **106** may support the movement coupler **133** of the switching member **130**. The movement coupler **133** of the switching member **130** may slidably move along the movement supporter **106**.

[0161] The discharge device **100** may include a movement cover **150** for forming a movement rail **107** (See FIG. **8**) for the movement coupler **133** of the switching member **130** together with the movement supporter **106**. The movement cover **150** may be mounted on the base part **101**. The movement cover **150** may be supported by at least a part of the movement supporter **106** of the base part **101**. The movement cover **150** may include a cover slope **151** corresponding to a slope of the movement supporter **106**. The movement coupler **133** of the switching member **130** may move along the movement rail **107** formed by the movement supporter **106** and the movement cover **150**. For example, the movement rail **107** may be formed in **3** or more parts along the periphery of the switching member **130**.

[0162] The discharge device **100** may include a rotation transmission part **140**. The rotation transmission part **140** may be configured to rotate the discharge cover **110** upon receiving power from the rotation drive source **103**.

[0163] The rotation transmission part **140** may include a rotation gear connector **141** for connection with the rotation drive source **103**. The rotation gear connector **141** may be provided at one or more areas along the outer peripheral surface of the rotation transmission part **140**. The rotation gear connector **141** may have a gear shape. For example, as the rotation gear **103***a* of the rotation drive source **103** is connected to the rotation gear connector **141** of the rotation transmission part **140**, the rotation transmission part **140** may rotate upon receiving the rotational force of the rotation drive source **103**.

[0164] The discharge device **100** may be configured such that the rotation transmission part **140** rotates by the operation of the rotation drive source **103**, and the discharge cover **110** rotates without moving by the rotation of the rotation transmission part **140**. Although the rotation of the discharge cover **110** with respect to the rotation transmission part **140** is limited, the movement with respect to the rotation transmission part **140** may be possible. In addition, the rotation transmission part **140** may be configured to be movable with respect to the rotation transmission part **140** while movement of the rotation transmission part **140** in the moving direction of the discharge cover **110** is limited.

[0165] The rotation transmission part **140** may include a grill **142**. The grill **142** may have a plurality of openings provided to allow air to pass through. While the discharge cover **110** opens the discharge port **16***a*, the grill **142** may allow air flowing toward the discharge port **16***a* to pass through. In other words, in the case where the discharge cover **110** is located at a second position P**2** (See FIG. **10**) to be described below, the grill **142** may be provided to allow air flowing toward the discharge port **16***a* to pass through.

[0166] The discharge device **100** may include a fan device **160**. The fan device **160** may include a discharge fan **161** operable to discharge some of the air blown by the blower **30** through the discharge port **16***a* while the discharge cover **110** opens the discharge port **16***a*. The fan device **160** may include a fan case **162** in which the discharge fan **161** is mounted.

[0167] Referring to FIG. **6**, in the discharge device **100** of the air conditioner **1** according to an embodiment of the disclosure, the discharge cover **110** and the switching member **130** may be disposed outside the rotation transmission part **140** around a rotary shaft of the discharge fan **161**, the movement supporter **106** and the movement cover **150** may be disposed outside the discharge cover **110** and the switching member **130**, and the rotating member **120** may be disposed outside the movement supporter **106** and the movement cover **150**.

[0168] FIG. **7** illustrates a state where a discharge device closes a discharge port according to an embodiment of the disclosure. FIG. **8** illustrates coupled relationship among components associated with movement of the discharge cover in a state where a discharge device closes a discharge port

according to an embodiment of the disclosure. FIG. **9** illustrates an air flow in the housing in a state where a discharge device closes a discharge port according to an embodiment of the disclosure.
[0169] Referring to FIGS. **7** and **8**, a state where the discharge device **100** according to an embodiment of the disclosure closes the discharge port **16***a* will be described.
[0170] Referring to FIGS. **7** and **8**, the discharge device **100** may be provided to close the discharge port **16***a*. In this regard, the discharge cover **110** may be located at a first position P**1** to close the discharge port **16***a*. That is, in the case where the discharge cover **110** is located at the first position P**1**, the discharge cover **110** may close the discharge port **16***a*. In the case where the discharge cover **110** is located at the first position P**1**, the cover opening **117** may be located inside the housing **10**.
[0171] In the case where the discharge cover **110** is located at the first position P**1**, the movement coupler **133** of the switching member **130** may be located under the movement guide **123** of the rotating member **120**. The movement coupler **133** of the switching member **130** may be located below the movement supporter **106**.
[0172] Referring to FIG. **9**, the air flow inside the housing **10** in a state where the discharge device **100** according to an embodiment of the disclosure closes the discharge port **16***a* (i.e., the discharge cover **110** is located at the first position P**1**) will be described.
[0173] In the case where the discharge cover **110** is located at the first position P**1**, the blower **30** may operate but the discharge fan **161** may not operate. Accordingly, the air flow in the housing **10** may be formed only by the blower **30**.
[0174] In the housing **10**, a first flow path F**1** may be formed by the blower **30**. Air blown by the blower **30** may flow in the first flow path F**1**. The first flow path F**1** may extend to the outlet **13***b* from the inlet **13***a*. Specifically, the first flow path F**1** may be a flow path through which the air introduced into the housing **10** via the inlet **13***a* and the inlet opening **14** passes sequentially through the dust collector **50**, the deodorizer **40**, and the blower **30** and is discharged through the outlet **13***b* and the outlet opening **15**. The air flowing in the first flow path F**1** may be filtered by the dust collector **50** and deodorized by the deodorizer **40**. That is, contaminated air introduced into the housing **10** through the inlet **13***a* may be discharged through the outlet **13***b* in a purified state by the dust collector **50** and the deodorizer **40**.
[0175] Air flowing in the first flow path F**1** may flow along a first direction D**1** in the housing **10**. For example, the first direction D**1** in the housing **10** may include the vertical direction (Z direction).
[0176] The first direction D**1** may be a direction in which air introduced into the housing **10** through the inlet **13***a* and the inlet opening **14** flows toward the outlet opening **15** and outlet **13***b*. For example, the first direction D**1** may be a direction in which air, after being introduced into the housing **10** through the inlet **13***a* and the inlet opening **14**, passes through the dust collector **50**, the deodorizer **40**, and the blower **30**. For example, the first direction D**1** may be upward direction. For example, the air introduced from the front side, the rear side, the left side, and the right side through the inlet **13***a* of the housing **10** by the blower **30** may flow along the first direction D**1** in the housing **10** and then be discharged out of the front side, the rear side, the left side, and the right side through the outlet **13***b* of the housing **10**.
[0177] FIG. **10** illustrates a state where a discharge device opens a discharge port according to an embodiment of the disclosure. FIG. **11** illustrates coupled relationship between components associated with movement of the discharge cover in a state where a discharge device opens a discharge port according to an embodiment of the disclosure. FIG. **12** illustrates an air flow in the housing in a state where a discharge device opens a discharge port according to an embodiment of the disclosure.
[0178] Referring to FIGS. **10** to **12**, a state where the discharge device **100** according to an embodiment of the disclosure opens the discharge port **16***a* will be described.
[0179] Referring to FIGS. **10** to **12**, the discharge device **100** may be provided to open the discharge port **16***a*. In this regard, the discharge cover **110** may be located at a second position P**2**

to open the discharge port **16***a*. That is, in the case where the discharge cover **110** is located at the second position P**2**, the discharge cover **110** may open the discharge port **16***a*. In the case where the discharge cover **110** is located at the second position P**2**, at least a part of the cover opening **117** may be located outside the housing **10**.

[0180] In the case where the discharge cover **110** is located at the second position P**2**, the movement coupler **133** of the switching member **130** may be located above the movement guide **123** of the rotating member **120**. The movement coupler **133** of the switching member **130** may be located above the movement supporter **106**.

[0181] Specifically, the discharge device **100** according to an embodiment of the disclosure may be provided such that the rotating member **120** rotates in response to the operation of the movement drive source **102**, the switching member **130** moves upward while rotating in response to the rotation of the rotating member **120**, and the discharge cover **110** moves upward without rotating in response to the rotating upward movement of the switching member **130** so as to open the discharge port **16***a*.

[0182] In response to the rotation of the rotating member **120**, the movement coupler **133** inserted into the movement guide **123** of the rotating member **120** moves in a direction rotating the switching member **130**. While the movement coupler **133** moves in the direction rotating the switching member **130**, the movement coupler **133** moves on the movement supporter **106**. Because the movement supporter **106** has an upwardly inclined shape, the movement coupler **133** moves upward. As the movement coupler **133** moves upward, the discharge cover **110** coupled to move in the vertical direction together with the switching member **130** moves upward. In this case, the discharge cover **110** moves upward without rotating.

[0183] The discharge cover **110** according to an embodiment of the disclosure may move to the first position P**1** and the second position P**2**.

[0184] For example, the discharge cover **110** may move in the vertical direction (Z direction) with respect to the base part **101** to be located at the first position P**1** or the second position P**2**. For example, in the case where the discharge cover **110** is located at the first position P**1**, the discharge cover **110** may be provided to be movable upward to the second position P**2**. For example, in the case where the discharge cover **110** is located at the second position P**2**, the discharge cover **110** may be provided to be movable downward to the first position P**1**.

[0185] For example, the discharge cover **110** may be located at the first position P**1** or the second position P**2** by moving in the first direction D**1** or in a direction opposite to the first direction D**1** with respect to the base part **101**. For example, in the case where the discharge cover **110** is located at the first position P**1**, the discharge cover **110** may be provided to be movable along the first direction D**1** toward the second position P**2**. For example, in the case where the discharge cover **110** is located at the second position P**2**, the discharge cover **110** may be provided to be movable along the direction opposite to the first direction D**1** toward the first position P**1**.

[0186] In the case where the discharge cover **110** according to an embodiment of the disclosure moves from the second position P**2** to the first position P**1**, the above-described processes may be performed in the reverse order. Specifically, as the movement drive source **102** generates a rotational force in a direction opposite to the direction moving the discharge cover **110** upward, the rotating member **120** rotates. In response to the rotation of the rotating member **120**, the switching member **130** moves downward while rotating, and in response to the downward movement of the switching member **130** while rotating, the discharge cover **110** moves downward without rotating so as to close the discharge port **16***a*

[0187] Referring to FIG. **12**, the air flow in the housing **10** in the case where the discharge device **100** according to an embodiment of the disclosure is in the state of opening the discharge port **16***a* (i.e., the discharge cover **110** is at the second position P**2**).

[0188] In the case where the discharge cover **110** is located at the second position P**2**, both the blower **30** and the discharge fan **161** may operate. Accordingly, the air flow in the housing **10** may

be formed by the blower **30** and the discharge fan **161**.
[0189] In the case where the discharge cover **110** is located at the second position P**2**, some of the air flowing toward the outlet **13***b* by the blower **30** may be discharged through the discharge port **16***a* by the discharge fan **161**. In addition, some of the rest of the air flowing toward the outlet **13***b* by the blower **30** may be discharged though the outlet **13***b*.
[0190] Specifically, a separation space **60** may be formed between the blower **30** and the discharge fan **161**. The blower **30** may be configured to blow air toward the separation space **60**. The discharge fan **161** may be located above the separation space **60**. The outlet **13***b* may be provided at one side of the separation space **60**. Based on this configuration, some of the air blown toward the separation space **60** by the blower **30** may be introduced into the discharge device **100** by the discharge fan **161** to be discharged through the discharge port **16***a*, and some of the rest of the air blown toward the separation space **60** by the blower **30** may be discharged through the outlet **13***b*.
[0191] In the housing **10**, the first flow path F**1** may be formed by the blower **30**, and the second flow path F**2** may be formed by the discharge fan **161**. Air blown by the discharge fan **161** may flow in the second flow path F**2**. The second flow path F**2** may extend from the separation space **60** to the cover opening **117**. Specifically, the second flow path F**2** may be a flow path through which the air introduced into the discharge device **100** from the separation space **60** through the discharge fan **161** passes through the grill **142** of the rotation transmission part **140** and the discharge port **16***a* and is discharged through the cover opening **117** of the discharge cover **110**.
[0192] The second flow path F**2** may be branched from the first flow path F**1**. The second flow path F**2** may be branched from the first flow path F**1** in the separation space **60**. That is, air introduced into the housing **10** through the inlet **13***a* and flowing in the first flow path F**1** may be branched into the second flow path F**2** in the separation space **60**. Because the air flowing in the first flow path F**1** may be purified by the dust collector **50** and the deodorizer **40**, the air branched into the second flow path F**2** and introduced into the discharge device **100** may be purified air.
[0193] The discharge fan **161** according to an embodiment of the disclosure may be fixed in the housing **10**. Specifically, the discharge fan **161** may be fixed between the blower **30** and the discharge port **16***a*. Based on this configuration, in the case where the discharge cover **110** is located at the second position P**2**, the discharge fan **161** may be provided to discharge air through the discharge port **16***a*. In addition, while the discharge cover **110** moves from the first position P**1** to the second position P**2**, the discharge fan **161** is fixed in the housing **10**, and thus introduction of contaminated air outside the housing **10** into the discharge device **100** by the discharge fan **161** may be limited or prevented. That is, during discharging air through the discharge device **100**, contaminated indoor air may be limited or prevented from being mixed with air purified by the dust collector **50** and the deodorizer **40** and discharged.
[0194] A flow rate of the discharge fan **161** according to an embodiment of the disclosure may be 50% or less than a flow rate of the blower **30**. For example, a diameter of the discharge fan **161** may be 0.8 to 0.9 times as a diameter of the blower **30**. Based on this configuration, in the case of operating the discharge fan **161**, introduction of contaminated indoor air into the discharge device **100** after passing through the outlet **13***b* by the air-blowing force of the discharge fan **161** may be limited or prevented.
[0195] Air flowing in the second flow path F**2** may flow in the first direction D**1** or the second direction D**2** in the discharge device **100**. The second direction D**2** may be a direction intersecting the first direction D**1**. For example, in the discharge device **100**, the first direction D**1** may include the vertical direction (Z direction, and the second direction D**2** may include the horizontal direction (direction on the XY plane).
[0196] The first direction D**1** may be a direction in which air introduced into the discharge device **100** through the discharge fan **161** flows toward the discharge cover **110**. For example, the first direction D**1** may be a direction in which air passes through the grill **142** of the rotation transmission part **140** and the discharge port **16***a* after the air is introduced into the discharge

device **100** through the discharge fan **161**. For example, the first direction D**1** may be an upward direction. Air flowing in the first direction D**1** in the discharge device **100** may enter the discharge cover **110**.

[0197] The second direction D**2** may be a direction in which air introduced into the discharge cover **110** flows toward the cover opening **117**. A flow direction of air flowing along the first direction D**1** may be converted in the discharge cover **110**. After the flow direction is converted in the discharge cover **110**, the air may be discharged through the cover opening **117**. In this case, air discharged through the cover opening **117** may flow along the second direction D**2**.

[0198] The cover opening **117** according to an embodiment of the disclosure may be provided to be open in one direction intersecting a moving direction of the discharge cover **110**.

[0199] For example, the discharge cover **110** may move in the vertical direction (Z direction), and the cover opening **117** may be open toward the horizontal direction (direction on the XY plane). Accordingly, air discharged through the cover opening **117** may flow toward the horizontal direction.

[0200] For example, the discharge cover **110** may flow in the first direction D**1** or a direction opposite to the first direction D**1**, and the cover opening **117** may open toward the second direction D**2**. Accordingly, air discharged through the cover opening **117** may flow toward the second direction D**2**.

[0201] FIG. **13** illustrates an exploded view of a discharge cover according to an embodiment of the disclosure. FIG. **14** illustrates an exploded view of a discharge cover according to an embodiment of the disclosure. FIG. **15** is a cross-sectional view of a cover frame according to an embodiment of the disclosure. FIG. **16** is a cross-sectional view of a cover frame according to an embodiment of the disclosure.

[0202] Referring to FIGS. **12** to **16**, the configuration of the discharge cover **110** according to an embodiment of the disclosure will be described in more detail.

[0203] Referring to FIGS. **12** to **16**, the discharge fan **161** may blow air in the first direction D**1** toward to the discharge port **16***a*. The flow direction of air introduced into the discharge cover **110** may be converted, and the air is blown in the second direction D**2**. Specifically, air inside the discharge cover **110** may be discharged through the cover opening **117** and flow in the second direction D**2**.

[0204] The discharge cover **110** may include an airflow diverting part **115**. The airflow diverting part **115** may be provided to convert the direction of air blown by the discharge fan **161**. For example, the flow direction of the air flowing in the first direction D**1** may be converted by the discharge fan **161**.

[0205] The airflow diverting part **115** may include an extension **115***a* extending in the first direction D**1**. That is, the extension **115***a* may extend in the same direction as the moving direction of the discharge cover **110**. The extension **115***a* may be located at the center of the airflow diverting part **115**. The extension **115***a* may guide the air flowing in the first direction D**1** by the discharge fan **161**.

[0206] The airflow diverting part **115** may include a top surface **115***b* extending in the radial direction from the top of the extension **115***a*. The top surface **115***b* may be formed by bending from the top of the extension **115***a*. The flow direction of the air guided by the extension **115***a* may be converted upon arriving at the top surface **115***b*.

[0207] The discharge cover **110** may include a side wall part **116**. The side wall part **116** may extend from the edge of the airflow diverting part **115** along the first direction D**1**. That is, the side wall part **116** may extend in the same direction as the moving direction of the discharge cover **110** from the edge of the airflow diverting part **115**.

[0208] The cover opening **117** may be formed at one area of the side wall part **116**. For example, a size of the cover opening **117** may be 30% or less of the total size of the side wall part **116**. However, the size of the cover opening **117** is not limited thereto.

[0209] The side wall part **116** may guide air in the discharge cover **110** toward the cover opening **117**. That is, after air arrives at the top surface **115***b* of the airflow diverting part **115**, the flow direction of the air is converted, and the air is guided by the side wall part **116** to flow toward the cover opening **117**. Air flowing toward the cover opening **117** may be discharged through the cover opening **117**.

[0210] The airflow diverting part **115** may include a first guide part **115***c* extending in the second direction D**2** to guide air discharged through the cover opening **117**. That is, the first guide part **115***c* may extend in a direction intersecting the moving direction of the discharge cover **110**. The first guide part **115***c* may be formed at an area of the outer peripheral surface of the top surface **115***b*. Specifically, the first guide part **115***c* may be formed at an upper area of the cover opening **117**.

[0211] The side wall part **116** may include a second guide part **116***a* extending in the second direction D**2** to guide air discharged through the cover opening **117**. That is, the second guide part **116***a* may extend in a direction intersecting the moving direction of the discharge cover **110**. The second guide part **116***a* may be formed at an area of the side wall part **116**. Specifically, the second guide part **116***a* may be formed at both sides of the cover opening **117**.

[0212] The first guide part **115***c* and the second guide part **116***a* according to an embodiment of the disclosure may be formed along the edges of the cover opening **117**. Because each of the first guide part **115***c* and the second guide part **116***a* extends along the second direction D**2**, air discharged through the cover opening **117** may flow in the second direction D**2**. That is, since air discharged through the cover opening **117** flows in the same direction, the air is blown accurately to a desired position and a distance of the air flow may also increase.

[0213] The airflow diverting part **115** and the side wall part **116** according to an embodiment of the disclosure may be integrated with each other. For example, the discharge cover **110** may include the cover frame **112** including the airflow diverting part **115** and the side wall part **116**.

[0214] The discharge cover **110** may include the top cover **113**. The top cover **113** may be coupled to the top surface of the cover frame **112** to cover the top surface of the cover frame **112**. Specifically, the top cover **113** may be coupled to the top surface of the cover frame **112** by coupling a top cover coupler **113***a* provided on the bottom surface of the top cover **113** with a first cover frame coupler **112***a* provided on the top surface of the cover frame **112**.

[0215] The discharge cover **110** may include a side cover **114**. The side cover **114** may be coupled to a side surface of the cover frame **112** to cover the side surface of the cover frame **112**. Specifically, the side cover **114** may be coupled to the side surface of the cover frame **112** by coupling a side cover coupler **114***a* provided on the bottom surface of the side cover **114** with a second cover frame coupler **112***b* provided on the bottom surface of the cover frame **112**.

[0216] FIG. **17** illustrates a state where a discharge cover of a discharge device is rotated according to an embodiment of the disclosure. FIG. **18** illustrates coupled relationship among components associated with rotation of a discharge cover in a state where a discharge device opens a discharge port according to an embodiment of the disclosure. FIG. **19** illustrates coupled relationship among components associated with rotation of a discharge cover in a state where a discharge cover of a discharge device is rotated according to an embodiment of the disclosure.

[0217] Referring to FIGS. **14** and **17** to **19**, an operation of rotating the discharge cover **110** of the discharge device **100** according to an embodiment of the disclosure will be described.

[0218] The discharge cover **110** of the discharge device **100** according to an embodiment of the disclosure may rotate to states illustrated in FIGS. **17** and **19** from states illustrated in FIGS. **14** and **18**.

[0219] Specifically, in response to operation of the rotation drive source **103**, the rotation transmission part **140** rotates, and in response to rotation of the rotation transmission part **140**, the discharge cover **110** rotates without moving. Because the switching member **130** is provided to rotate with respect to the discharge cover **110**, the switching member **130** may not rotate although

the discharge cover **110** rotates.
[0220] The above-described processes may be performed in the reverse order to rotate the discharge cover **110** of the discharge device **100** according to an embodiment of the disclosure from the states illustrated in FIGS. **17** and **19** to the states illustrated in FIGS. **14** and **18**. Specifically, the rotation drive source **103** may generate a rotational force in a direction opposite to the above-descried direction, and accordingly the rotation transmission part **140** and the discharge cover **110** may rotate in the opposite direction.
[0221] As the discharge cover **110** according to an embodiment of the disclosure rotates, the flow direction of air discharged through the cover opening **117** of the discharge cover **110** may be changed. That is, in order to blow purified air in a desired direction, the user of the air conditioner **1** may rotate the discharge cover **110**.
[0222] Based on this configuration, the air conditioner **1** according to an embodiment of the disclosure may discharge air by various methods by guiding some of the air blown by the blower **30** toward the outlet **13***b* to the discharge port **16***a*.
[0223] The air conditioner **1** according to an embodiment may include a housing including an inlet **13***a*, an outlet **13***b*, and a discharge port **16***a*, a blower **30** configured to circulate air between the inside and the outside of the housing **10**, and a discharge device **100** configured to guide some of the air flowing toward the outlet **13***b* by the blower **30** to the discharge port **16***a*. The discharge device **100** may further include a discharge cover **110** configured to move between the first position P**1** for closing the discharge port **16***a* and the second position P**2** for opening the discharge port **16***a* and a discharge fan **161** fixed in the housing **10** to discharge air through the discharge port **16***a* in the case where the discharge cover **110** is located at the second position P**2**.
[0224] In the case where the discharge cover **110** is located at the second position P**2**, some of the air flowing toward the outlet **13***b* by the blower **30** may be discharged through the discharge port **16***a* by the discharge fan **161**, and some of the rest of the air flowing toward the outlet **13***b* by the blower **30** may be discharged though the outlet **13***b*.
[0225] A separation space **60** may be formed between the blower **30** and the discharge fan **161**. The blower **30** may be configured to blow air toward the separation space **60**. The outlet **13***b* may be formed at one side of the separation space **60**.
[0226] The discharge cover **110** may include a cover opening **117** that is open in a direction intersecting the moving direction of the discharge cover **110** in the case where the discharge cover **110** is located at the second position P**2**.
[0227] The cover opening **117** may be located in the housing **10** in the case where the discharge cover **110** is located at the first position P**1**. In the case where the discharge cover **110** is located at the second position P**2**, at least a part thereof may be located outside the housing **10**.
[0228] The discharge cover **110** may further include an airflow diverting part **115** provided to convert the direction of air blown by the discharge fan **161** and a side wall part **116** extending from the edge of the airflow diverting part **115** in the same direction as the moving direction of the discharge cover **110**. The cover opening **117** may be formed at one area of the side wall part **116**.
[0229] The airflow diverting part **115** may include a first guide part **115***c* extending in one direction to guide air discharged through the cover opening **117**. The side wall part **116** may include a second guide part **116***a* extending in the direction to guide air discharged through the cover opening **117**. The first guide part **115***c* and the second guide part **116***a* may be formed along the edges of the cover opening **117**.
[0230] The discharge cover **110** may be provided to be rotatable.
[0231] The discharge cover **110** may be provided to be rotatable about a virtual shaft (L) extending in the same direction as the moving direction of the discharge cover **110**.
[0232] The discharge device **100** may include a base part **101** fixed to the housing **10**. The discharge cover **110** may be movable and rotatable with respect to the base part **101**.
[0233] The discharge device **100** may further include a rotation transmission part **140** rotatable

with respect to the base part **101**. The discharge cover **110** may be coupled to the rotation transmission part **140** to be rotatable together with the rotation transmission part **140**.
[0234] The movement of the rotation transmission part **140** in the moving direction of the discharge cover **110** may be limited. The discharge cover **110** may be movably coupled to the rotation transmission part **140**.
[0235] The rotation transmission part **140** may further include a grill **142** provided to allow air flowing toward the discharge port **16***a* to pass through in the case where the discharge cover **110** is located at the second position P**2**.
[0236] The discharge cover **110** may be movable in the vertical direction.
[0237] The discharge cover **110** may move upward to the second position P**2** in the case of being located at the first position P**1** and may move downward to the first position P**1** in the case of being located at the second position P**2**.
[0238] The air conditioner **1** according to an embodiment may include a housing including an inlet **13***a*, an outlet **13***b*, and a discharge port **16***a*, a blower **30** configured to circulate air between the inside and the outside of the housing **10**, and a discharge device **100** configured to guide some of the air flowing toward the outlet **13***b* by the blower **30** to the discharge port **16***a*. The discharge device **100** includes a discharge fan **161** operable to blow air toward the discharge port **16***a* in the first direction D**1** and a discharge cover **110** movable with respect to the housing **10** to open and close the discharge port **16***a*, wherein the discharge cover **110** has a cover opening **117** that is open toward the second direction D**2** to discharge air toward the second direction D**2** intersecting the first direction D**1** while the discharge cover **110** opens the discharge port **16***a*.
[0239] The cover opening **117** may be located in the housing **10** while the discharge cover **110** closes the discharge port **16***a*.
[0240] The discharge device **100** may further include a base part **101** fixed in the housing **10**, and the discharge cover **110** may be movable in the first direction D**1** or a direction opposite to the first direction D**1** with respect to the base part **101**.
[0241] The discharge cover **110** may be rotatable with respect to the base part **101**.
[0242] The cover opening **117** may be formed at one area of the outer peripheral surface of the discharge cover **110**.
[0243] According to the disclosure, the air conditioner including the discharge device may discharge purified air be various methods.
[0244] According to the disclosure, the discharge fan of the discharge device is fixedly disposed inside the housing. That is, the discharge fan of the discharge device is fixedly disposed inside the housing regardless of movement of the discharge cover. Based on this configuration, intake of contaminated indoor air by the discharge fan of the discharge device may be prevented. Therefore, while air is discharged through the discharge device, mixing of contaminated indoor air with air purified by the dust collector and discharge thereof may be limited or prevented.
[0245] The effects of the disclosure are not limited to the aforementioned effects, and other effects, which are not mentioned above, will be clearly understood by those skilled in the art from the claims.
[0246] While the disclosure has been shown and described with reference to various embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the disclosure as defined by the appended claims and their equivalents.

Claims

1. An air conditioner comprising: a housing including an inlet, an outlet, and a discharge port; a blower configured to circulate air to an inside or an outside of the housing; and a discharge device configured to guide some of the air flowing toward the outlet by the blower to the discharge port,

wherein the discharge device comprises: a discharge cover moveable between a first position to close the discharge port and a second position to open the discharge port, and a discharge fan fixed in the housing to discharge air through the discharge port in the housing where the discharge cover is located at the second position.

2. The air conditioner according to claim 1, wherein, in the housing where the discharge cover is located at the second position, some of the air flowing toward the outlet by the blower is discharged through the discharge port by the discharge fan, and some of the rest of the air flowing toward the outlet by the blower is discharged through the outlet.

3. The air conditioner according to claim 2, wherein a separation space is formed between the blower and the discharge fan, and the blower blows air toward the separation space, and wherein the outlet is provided at one side of the separation space.

4. The air conditioner according to claim 1, wherein the discharge cover has a cover opening open toward one direction intersecting a moving direction of the discharge cover in the housing where the discharge cover is located at the second position.

5. The air conditioner according to claim 4, wherein the cover opening is located inside the housing in the housing where the discharge cover is located at the first position, and wherein at least a part of the cover opening is located outside the housing in the housing where the discharge cover is located at the second position.

6. The air conditioner according to claim 4, wherein the discharge cover further comprises an airflow diverting part configured to convert a direction of air blown by the discharge fan, and a side wall part extending from an edge of the airflow diverting part in the same direction as the moving direction of the discharge cover, and wherein the cover opening is formed at one area of the side wall part.

7. The air conditioner according to claim 6, wherein the airflow diverting part comprises a first guide part extending in the one direction to guide air discharged through the cover opening, wherein the side wall part comprises a second guide part extending in the direction to guide air discharged through the cover opening, and wherein the first guide part and the second guide part are formed along edges of the cover opening.

8. The air conditioner according to claim 1, wherein the discharge cover is rotatable.

9. The air conditioner according to claim 8, wherein the discharge cover is rotatable about a virtual rotary shaft extending in the same direction as the moving direction of the discharge cover.

10. The air conditioner according to claim 8, wherein the discharge device further comprises a base part fixed to the housing, and wherein the discharge cover is rotatable and movable with respect to the base part.

11. The air conditioner according to claim 10, wherein the discharge device further comprises a rotation transmission part rotatable with respect to the base part, and wherein the discharge cover is coupled to the rotation transmission part to be rotated together with the rotation transmission part.

12. The air conditioner according to claim 11, wherein movement of the rotation transmission part in the moving direction of the discharge cover is limited, and wherein the discharge cover is movably coupled to the rotation transmission part.

13. The air conditioner according to claim 12, wherein the rotation transmission part further comprises a grill provided to allow air flowing toward the discharge port to pass through in the housing where the discharge cover is located at the second position.

14. The air conditioner according to claim 1, wherein the discharge cover is movable in a vertical direction.

15. The air conditioner according to claim 14, wherein the discharge cover is movable upward to the second position in the housing of being at the first position, and wherein movable downward to the first position in the housing of being at the second position.

16. The air conditioner according to claim 11, wherein the discharge device further comprises: a switching member disposed outside the rotation transmission part, a movement supporter of the

base part configured to guide a movement of the switching member in a vertical direction a movement cover forming a movement rail with the movement supporter, and a rotating member disposed outside the movement supporter and the movement cover and configured to rotate in response to a movement drive source or a rotation guide source.

17. The air conditioner according to claim 16, wherein the switching member comprises a movement coupler, wherein the rotating member defines a movement guide extending in a movement direction of the discharge cover, and wherein the movement coupler of the switching member is moveably coupled to movement guide of the rotating member.

18. The air conditioner according to claim 17, wherein the movement coupler protrudes outward from an outer peripheral surface of the switching member, wherein the movement rail formed by the movement cover and the movement supporter is inclined, and wherein the movement coupler is guided along the movement rail by the movement guide when the rotating member rotates.