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(54) **DEVICE FOR SENSING FLOW PATH SWITCHING UNIT FOR DRYER, AND DRYER COMPRISING SAME**

(71) Applicant: **SAMSUNG ELECTRONICS CO., LTD.**, Suwon-si (KR)

(72) Inventor: **Dongpil SEO**, Suwon-si (KR)

(73) Assignee: **SAMSUNG ELECTRONICS CO., LTD.**, Suwon-si (KR)

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(52) **U.S. Cl.**

CPC ***D06F 58/38*** (2020.02); ***D06F 58/26*** (2013.01); *D06F 2103/56* (2020.02); *D06F 2105/24* (2020.02)

(57) **ABSTRACT**

A flow path switching unit for a dryer that dries material. The flow path switching unit for the dryer includes a body portion, and a flow path guide which partitions an internal space of the body portion so as to selectively form a first flow path of air for drying material and a second flow path of air for dehumidifying outside air based on an arrangement position of the body portion. The flow path switching unit provides the first flow path for guiding the air from a drum of a dryer toward a heat exchanger of the dryer at the first position, and the second flow path for guiding the outside air introduced from the outside of the dryer to the outside at the second position.

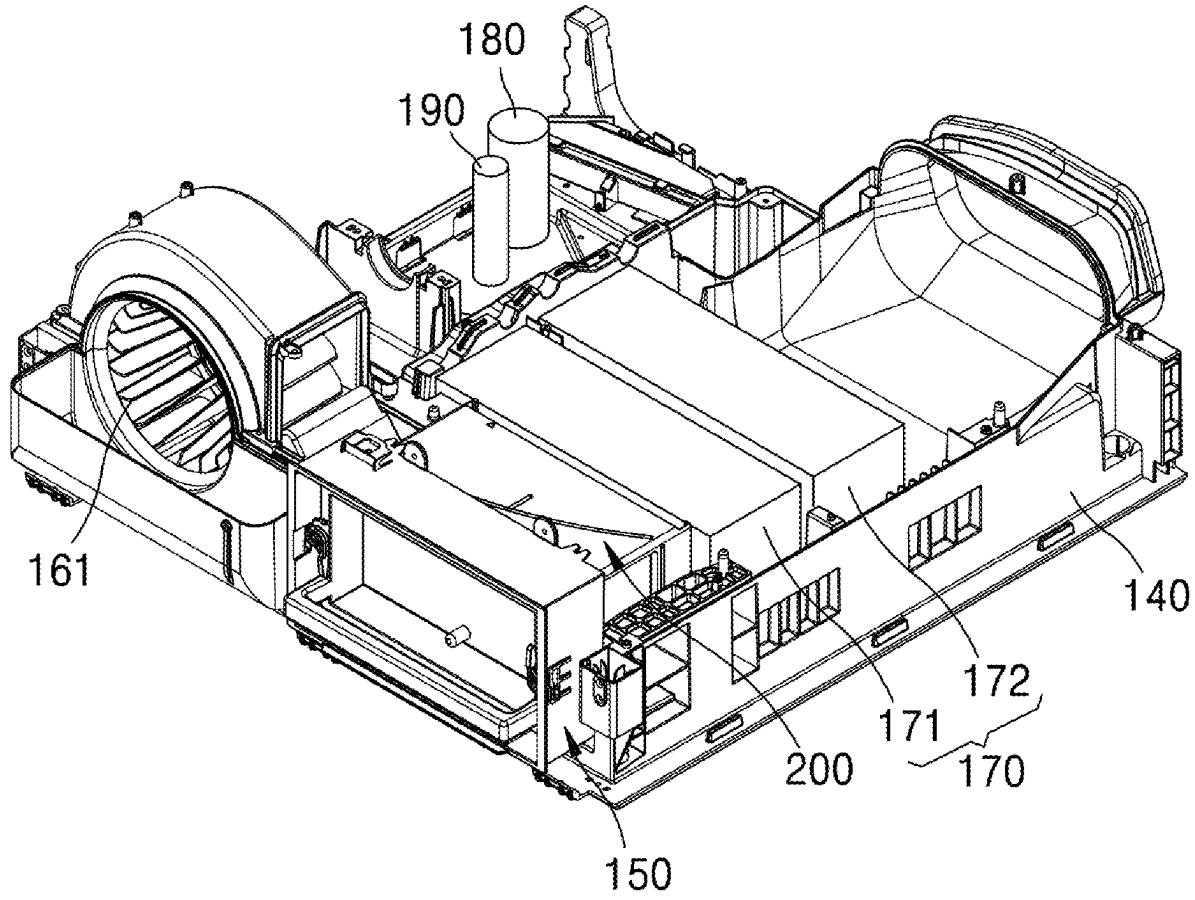

FIG. 1

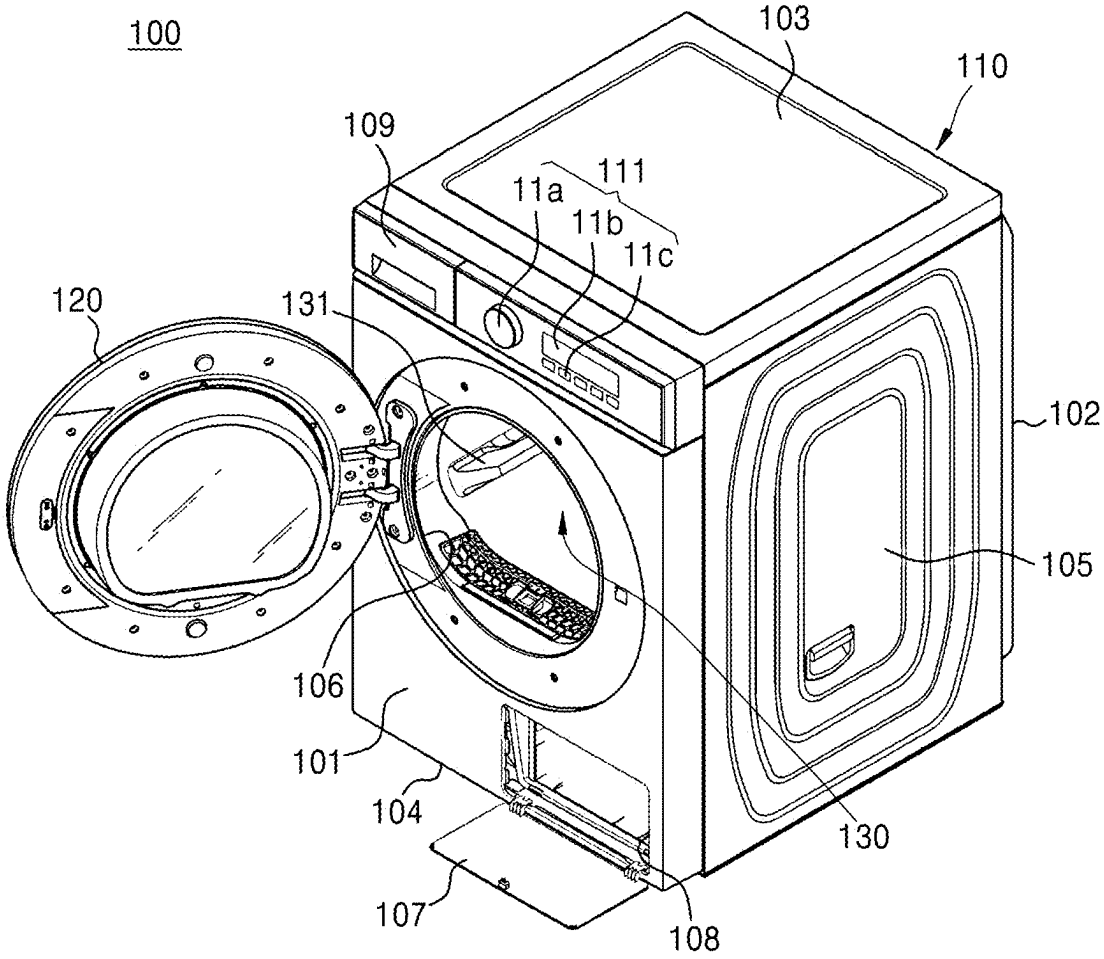
100
103
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FIG. 2

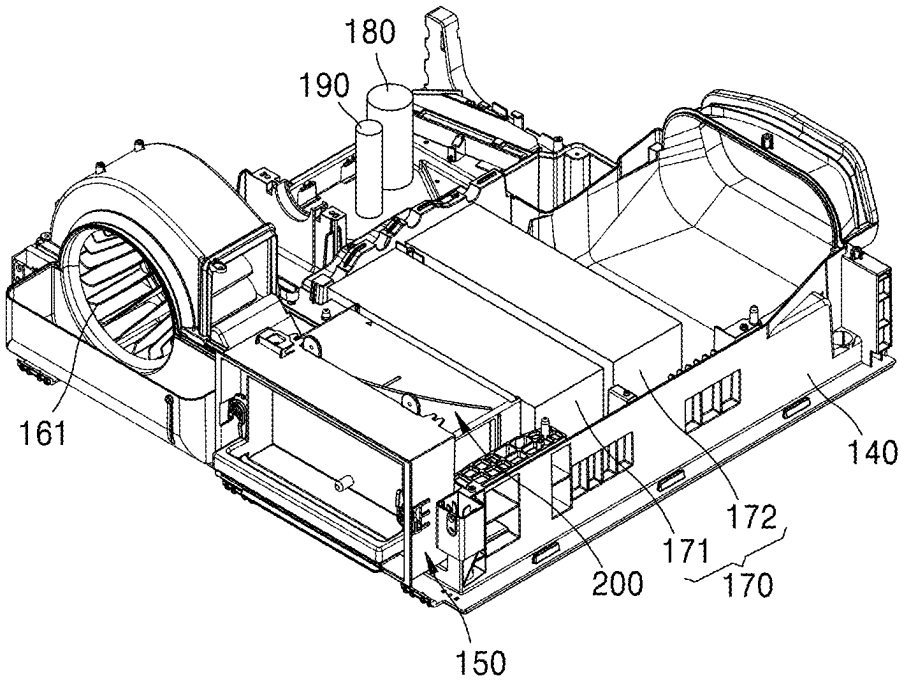


FIG. 3

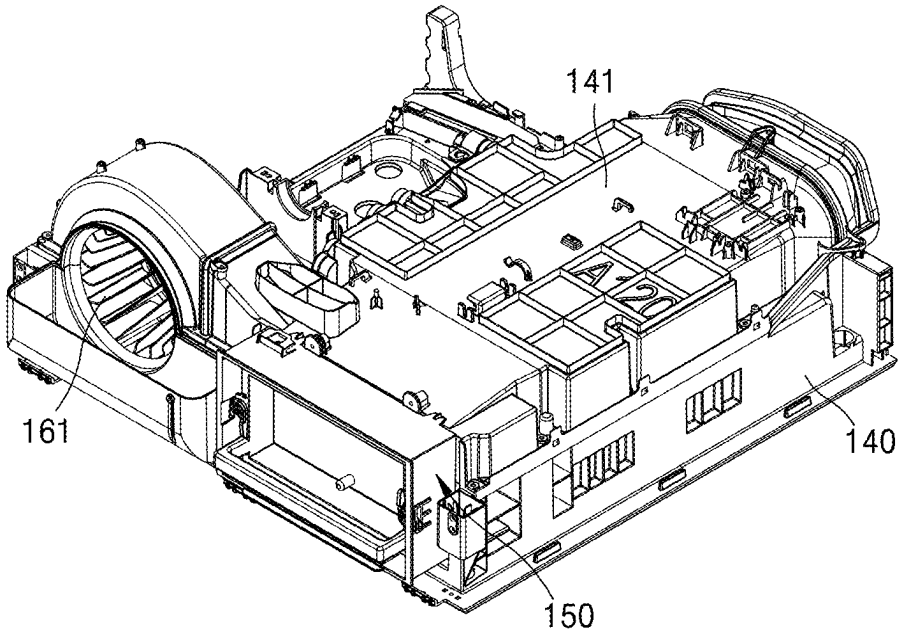


FIG. 4

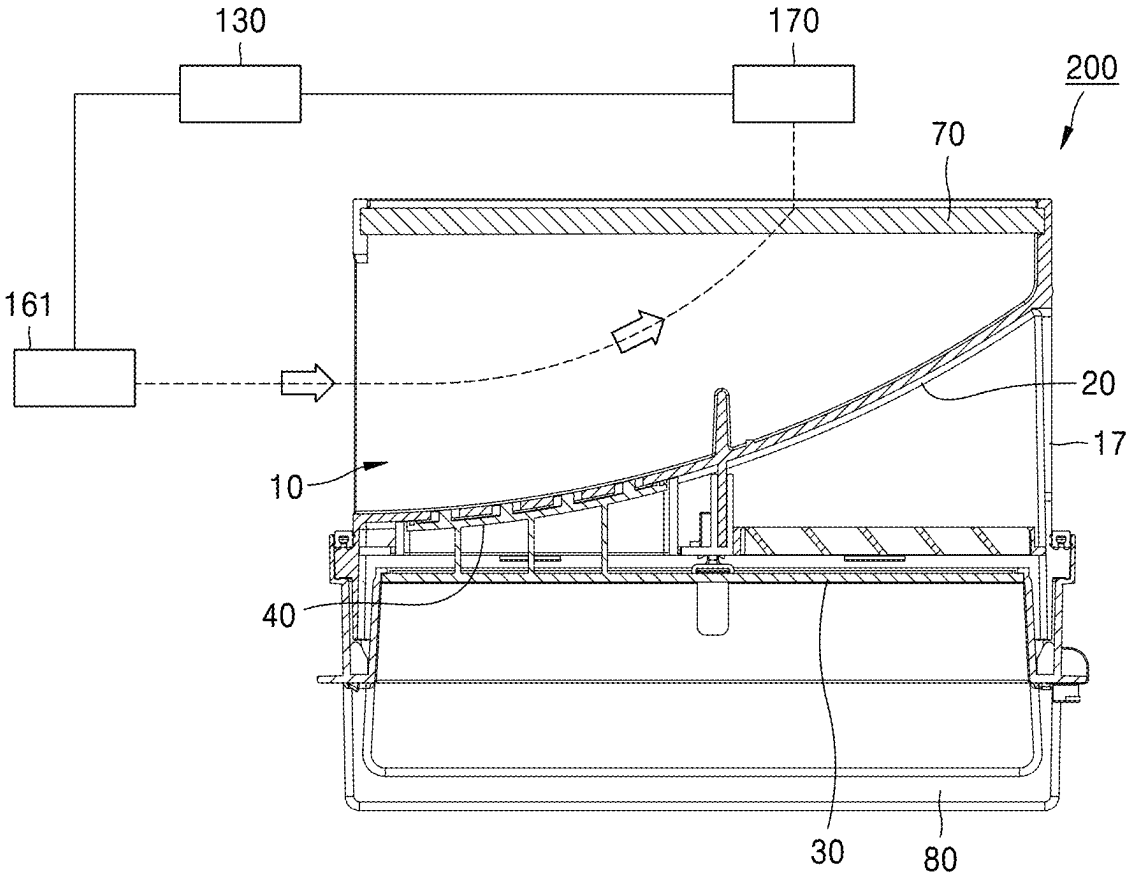


FIG. 5

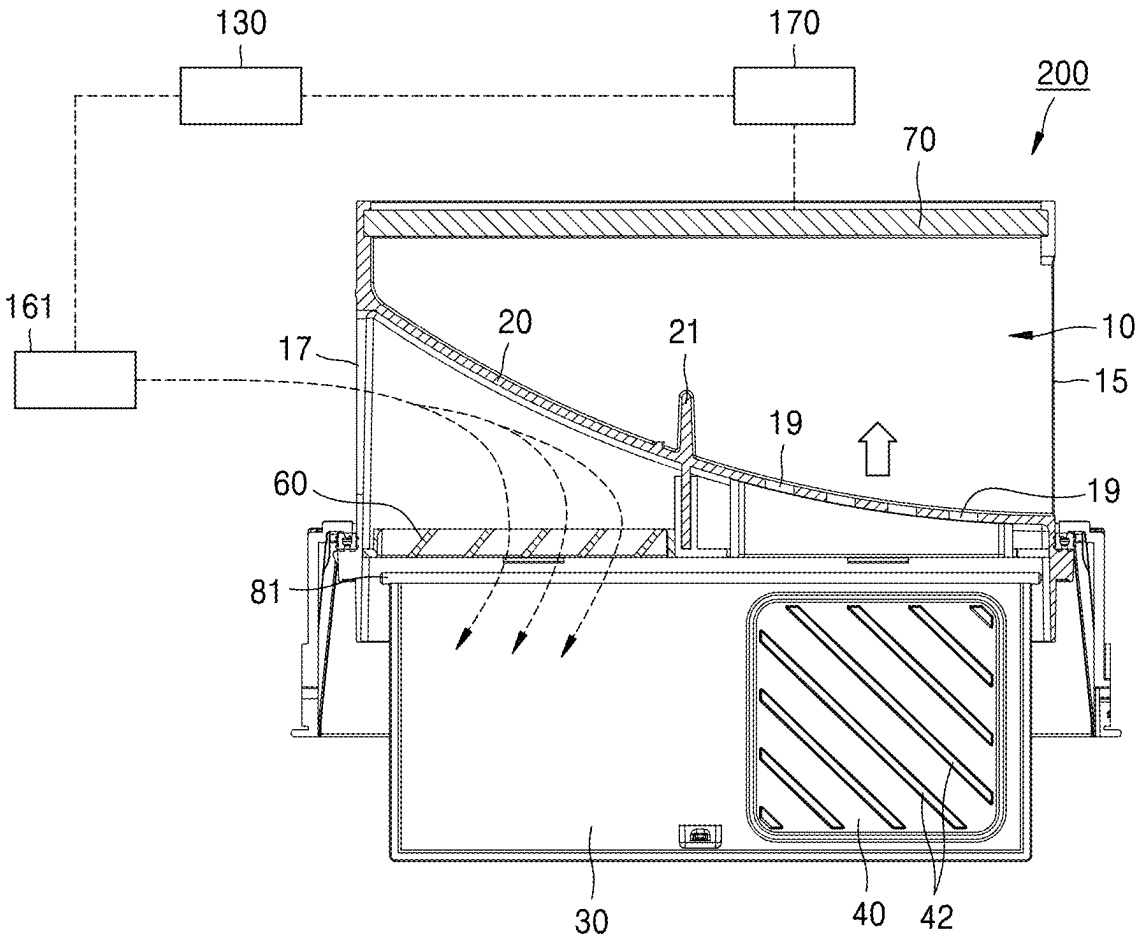


FIG. 6

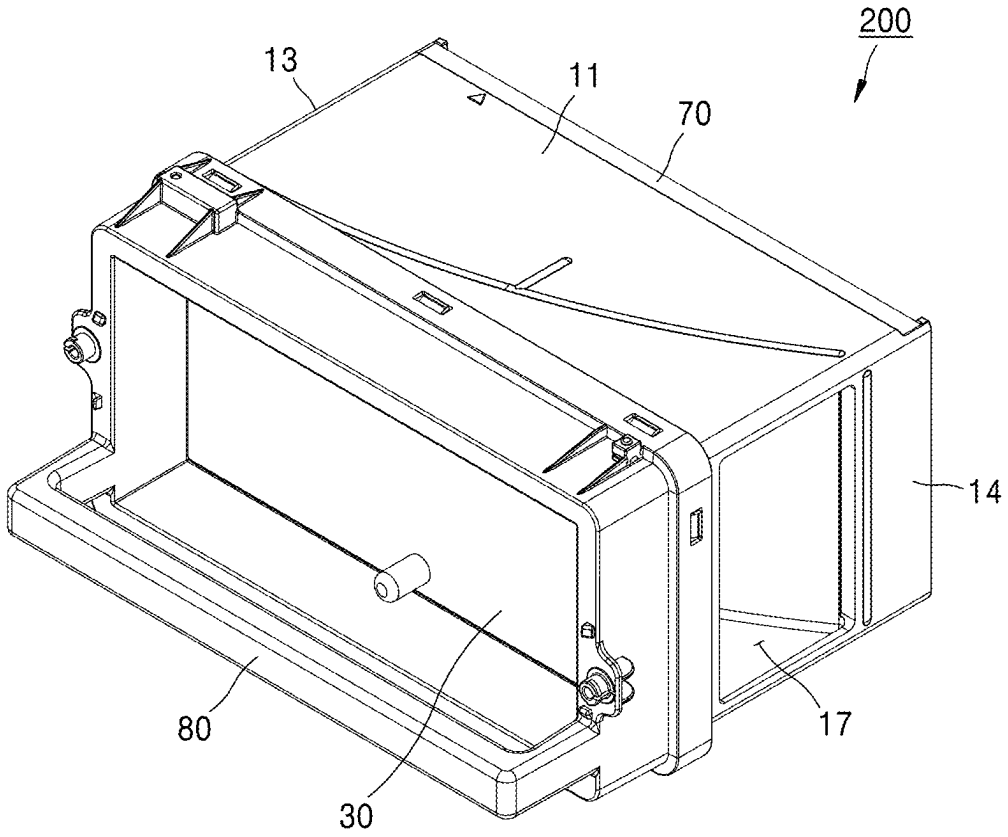


FIG. 7

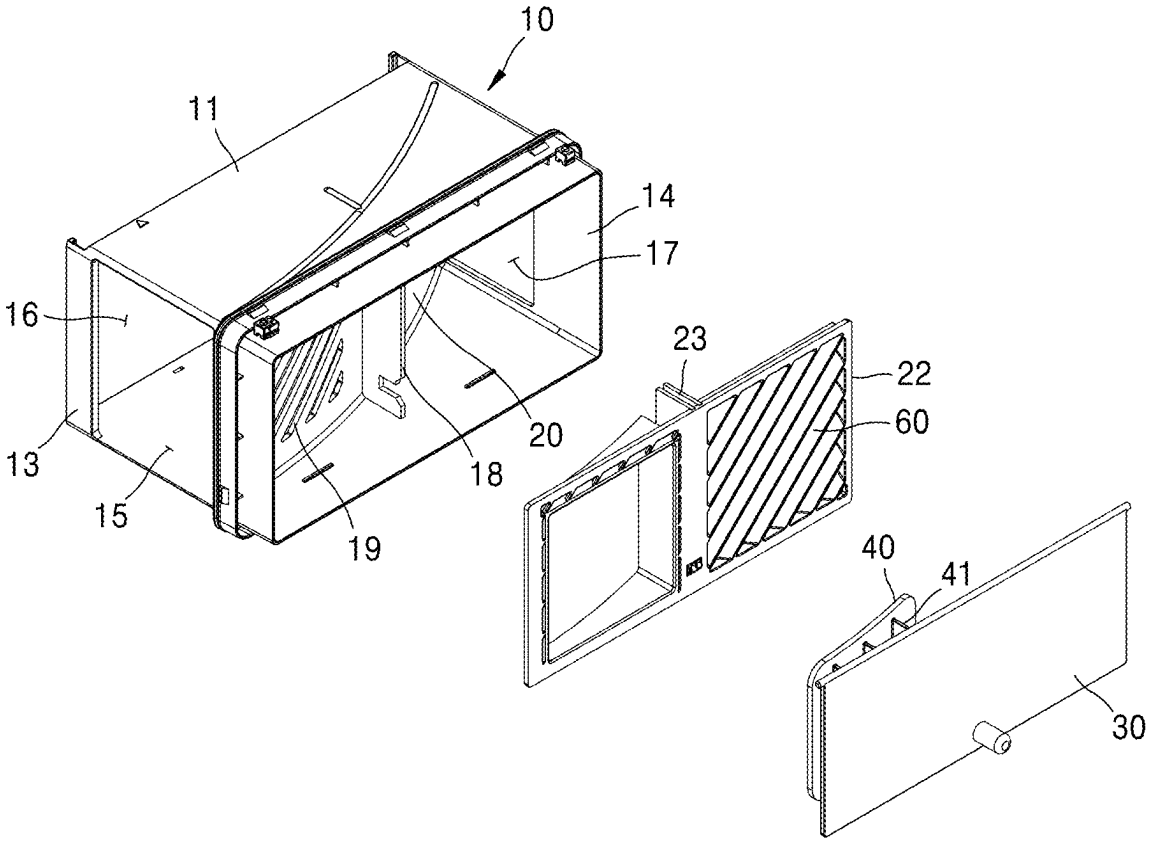


FIG. 8

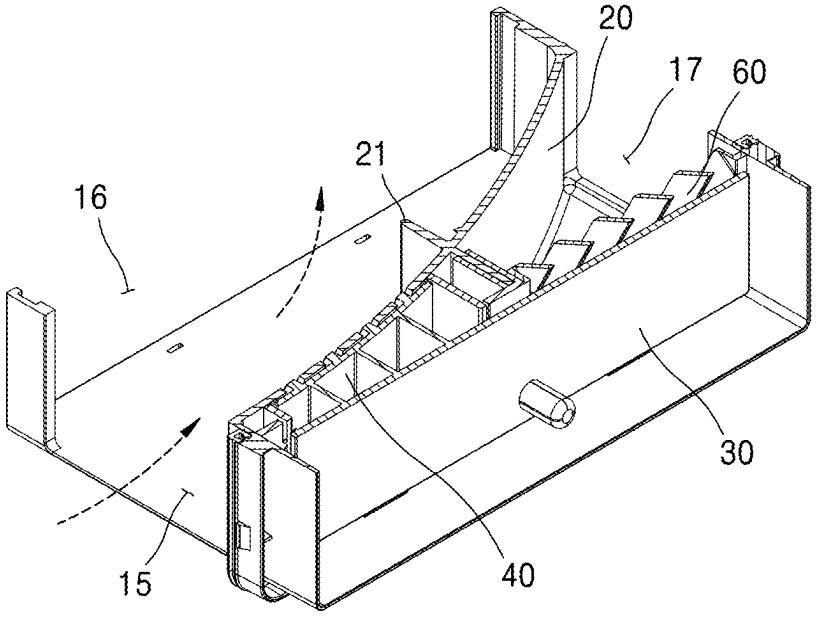


FIG. 9

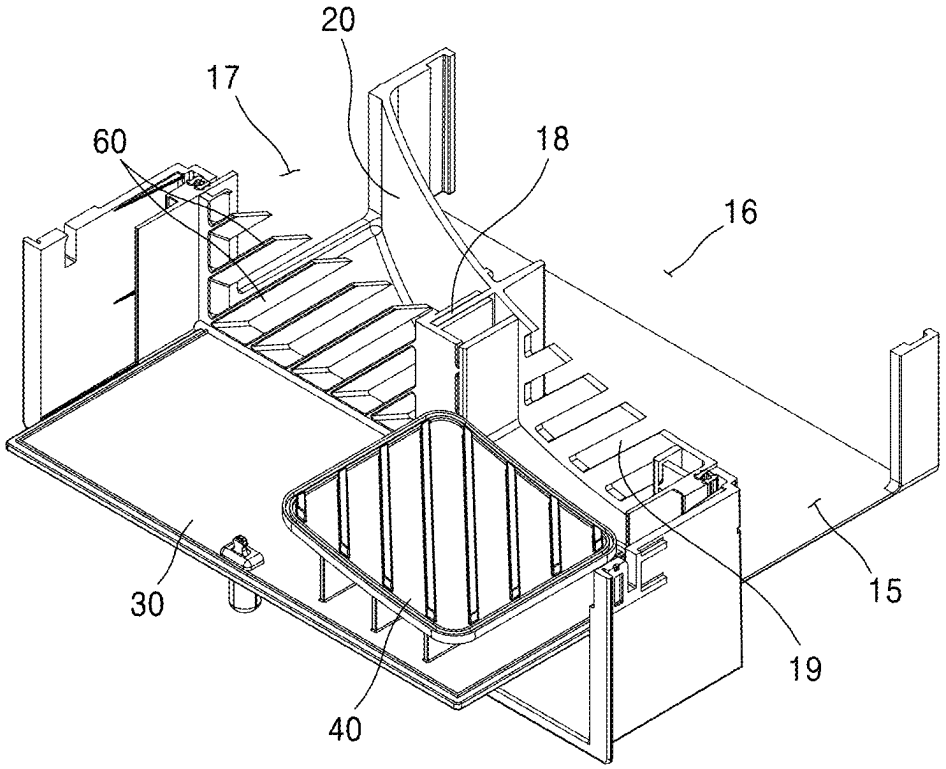


FIG. 10

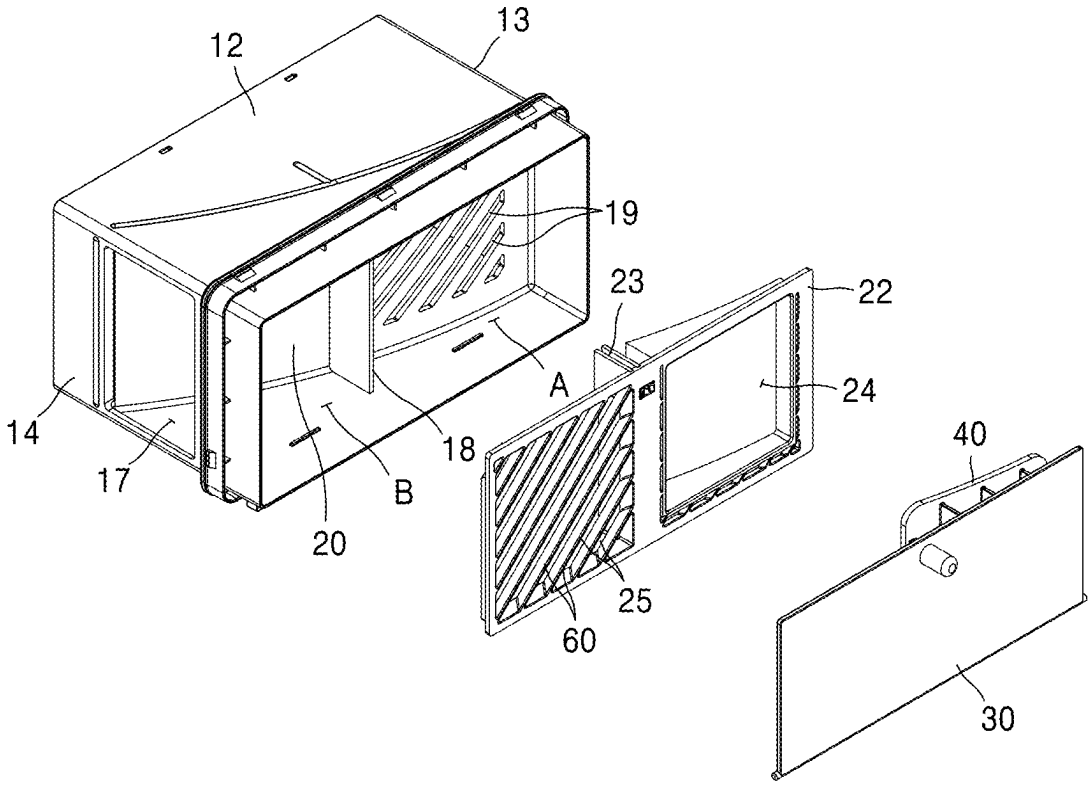


FIG. 11

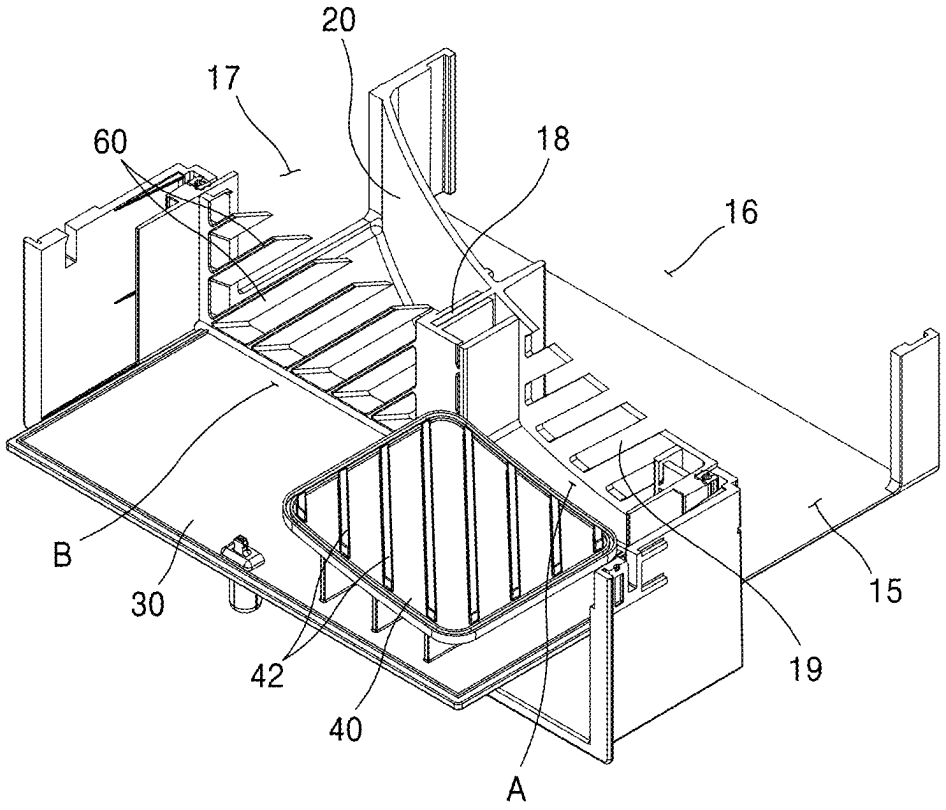


FIG. 12

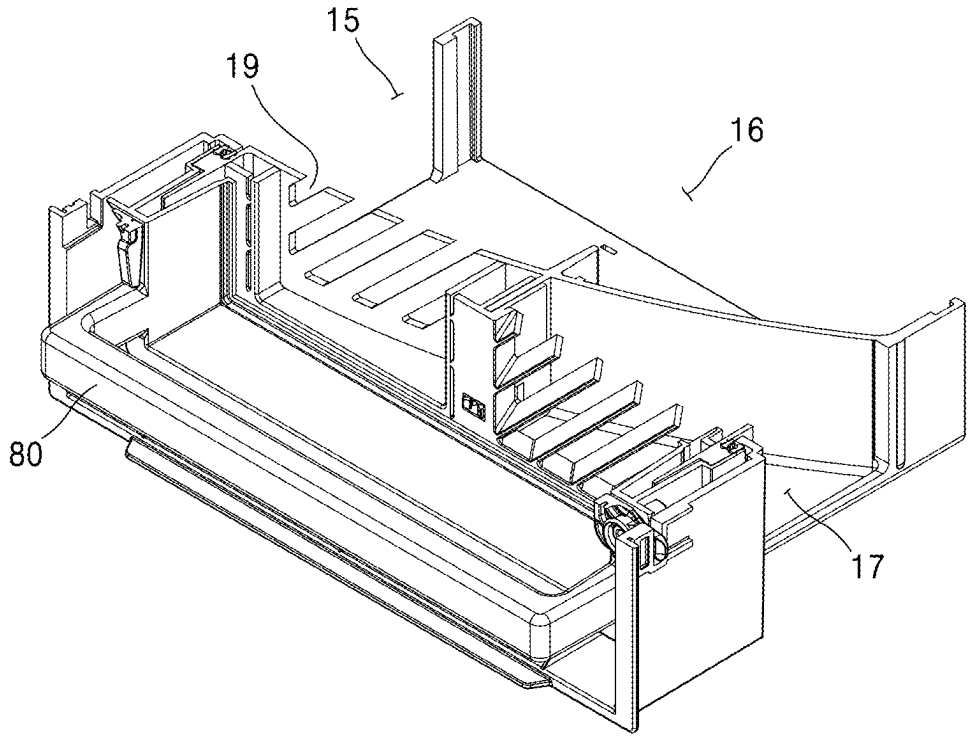


FIG. 13

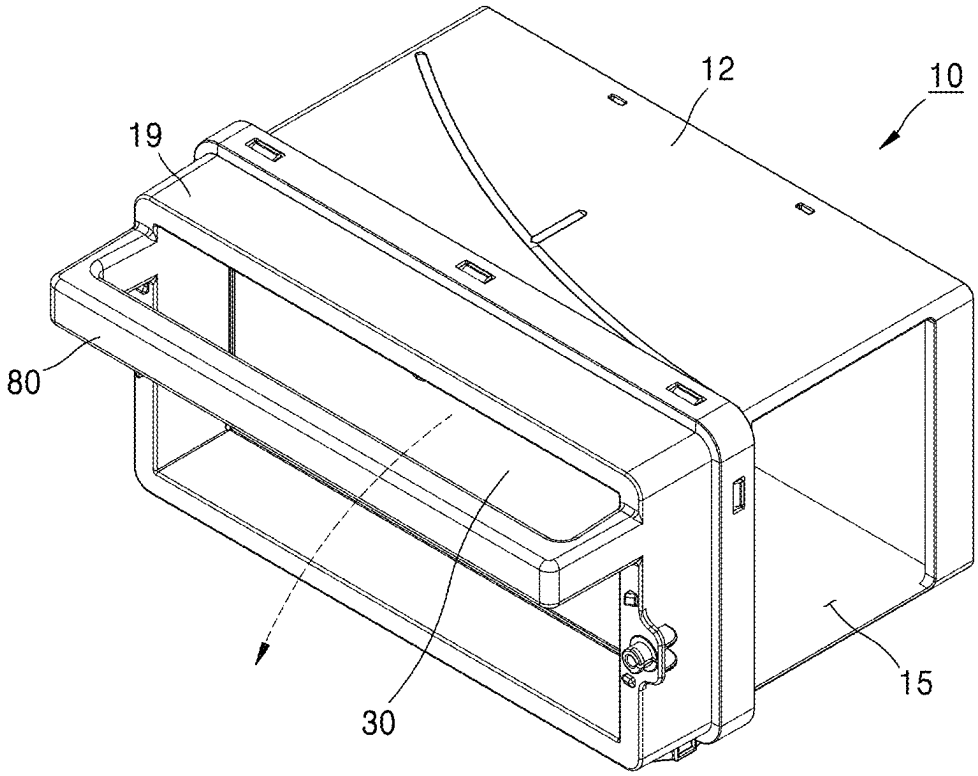


FIG. 14

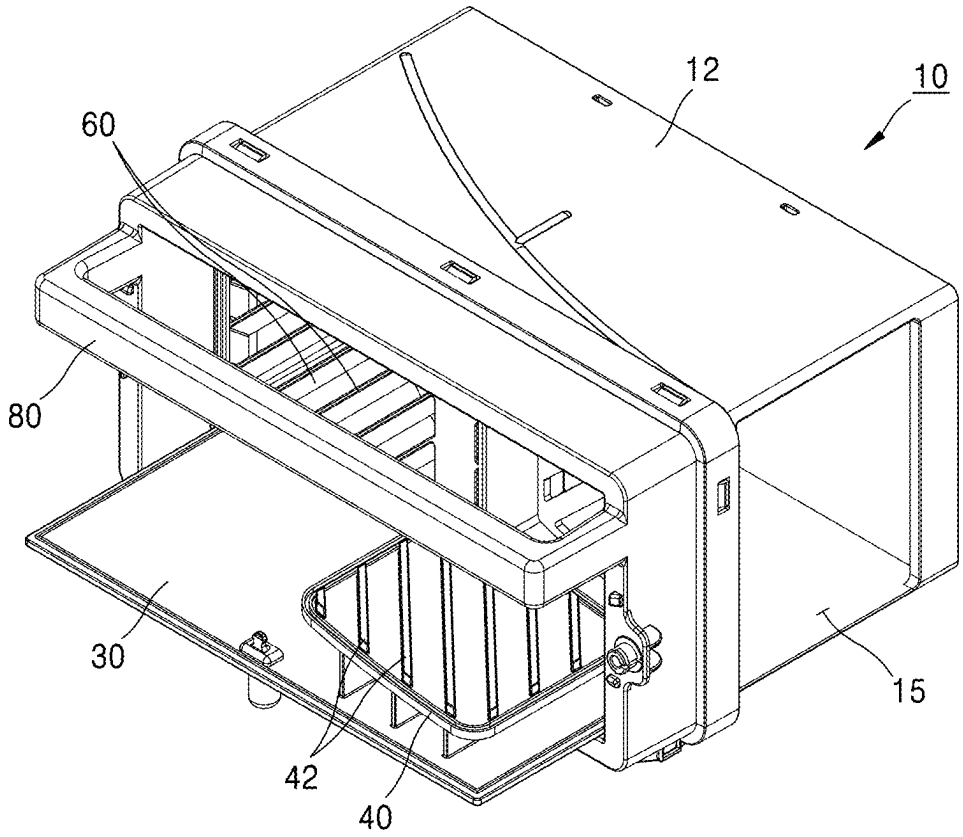


FIG. 15

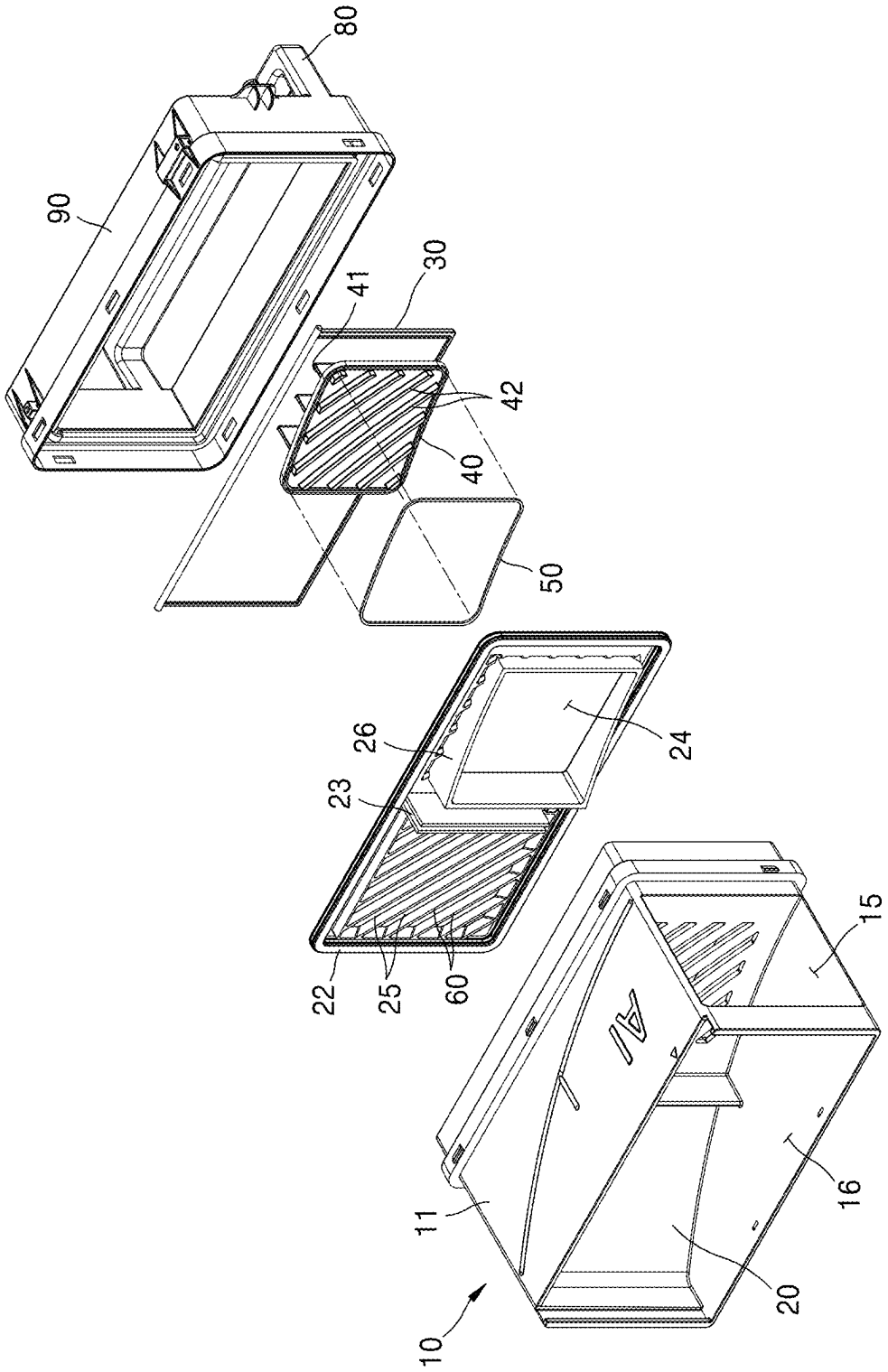


FIG. 16

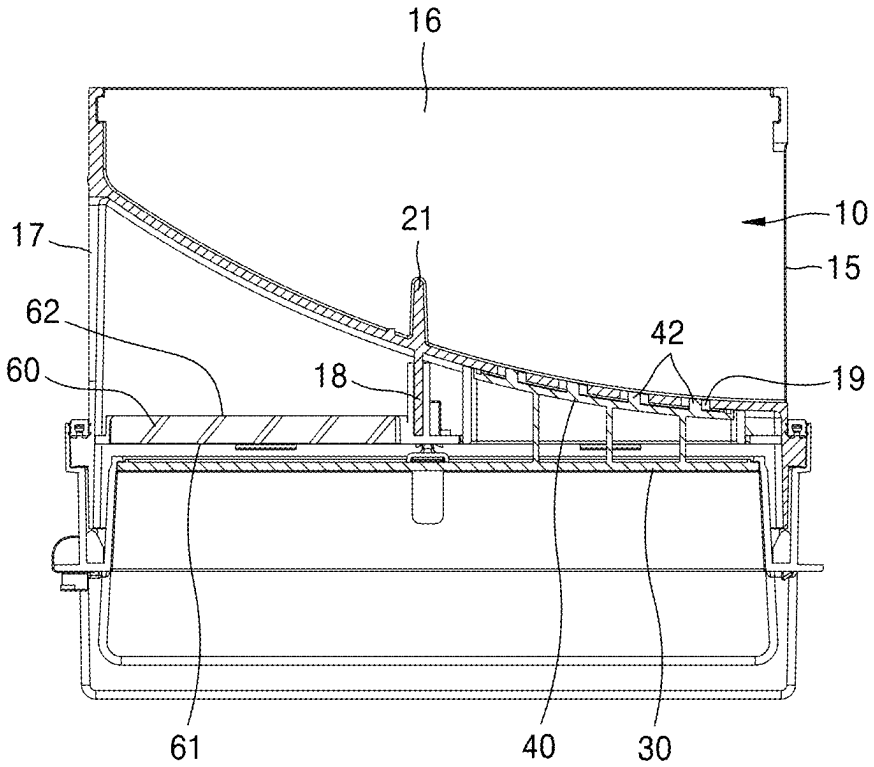


FIG. 17

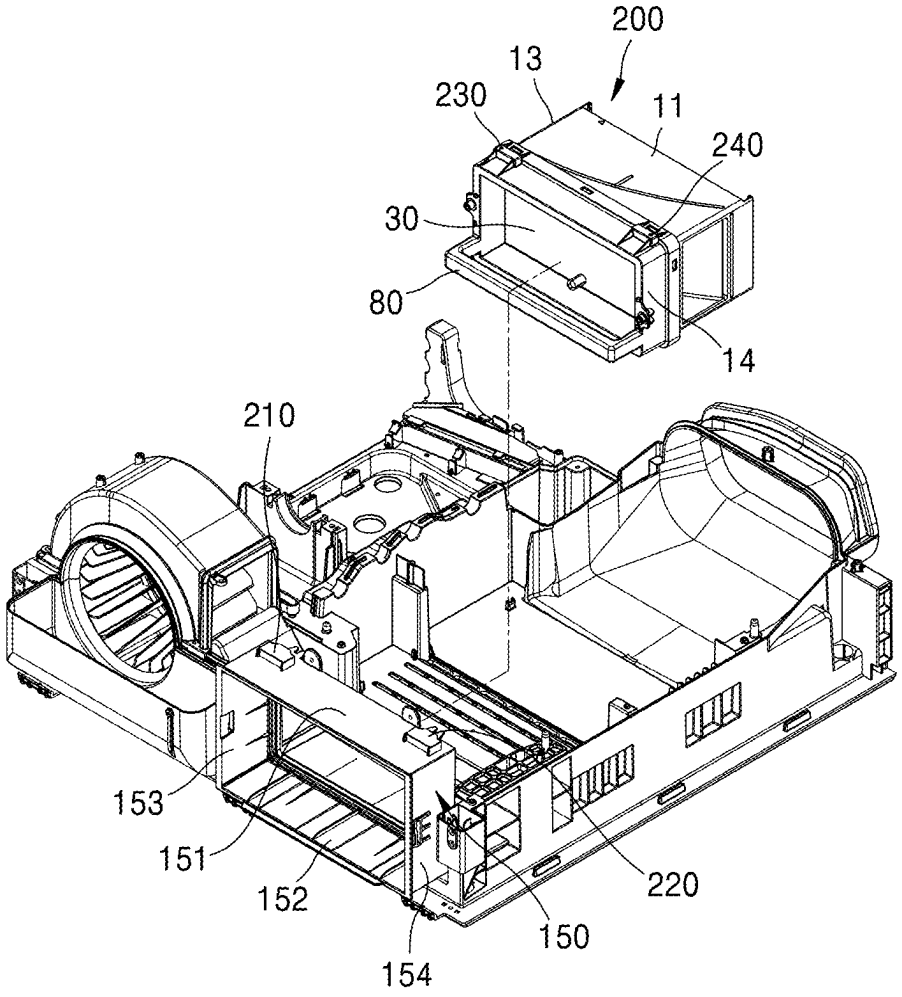


FIG. 18

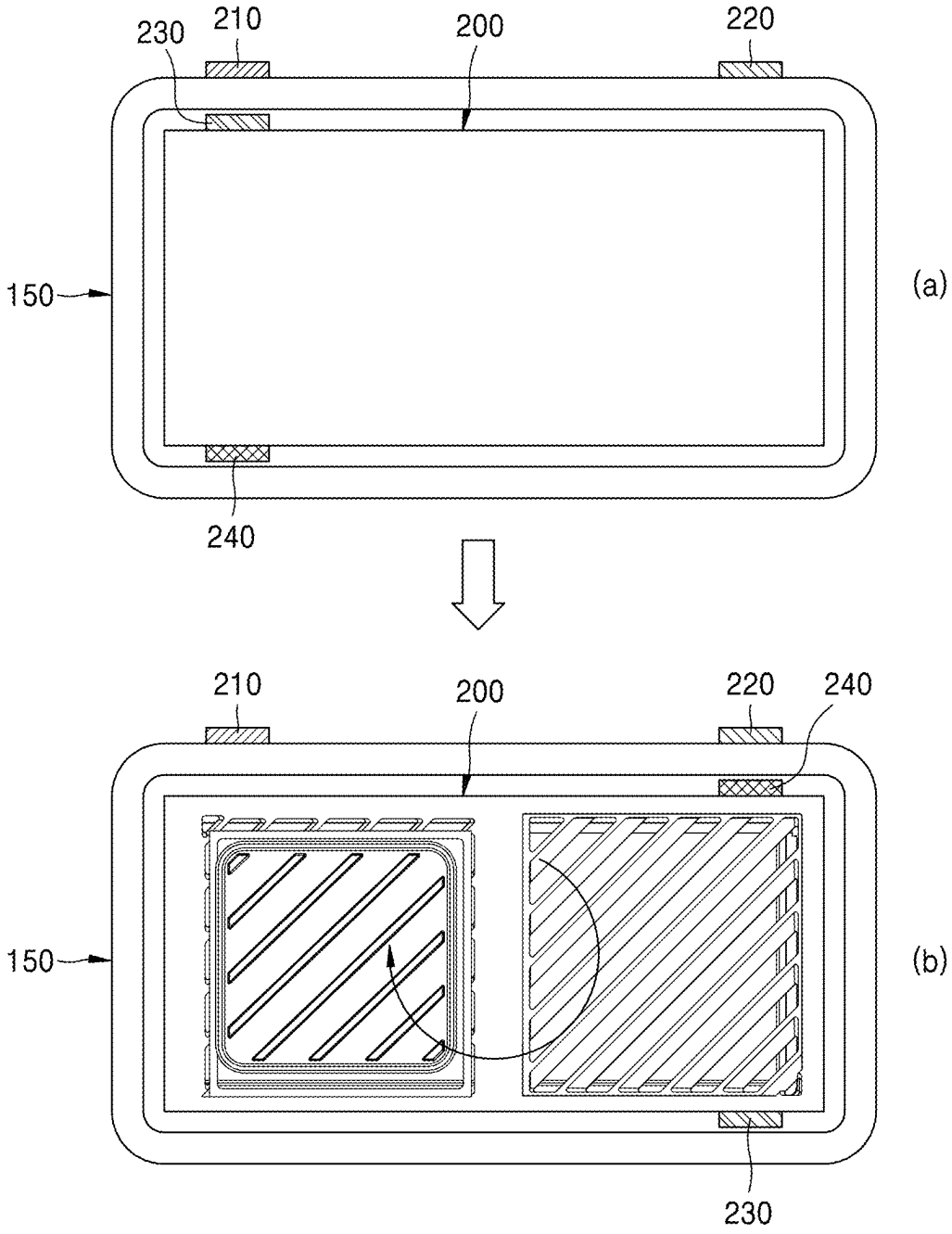


FIG. 19

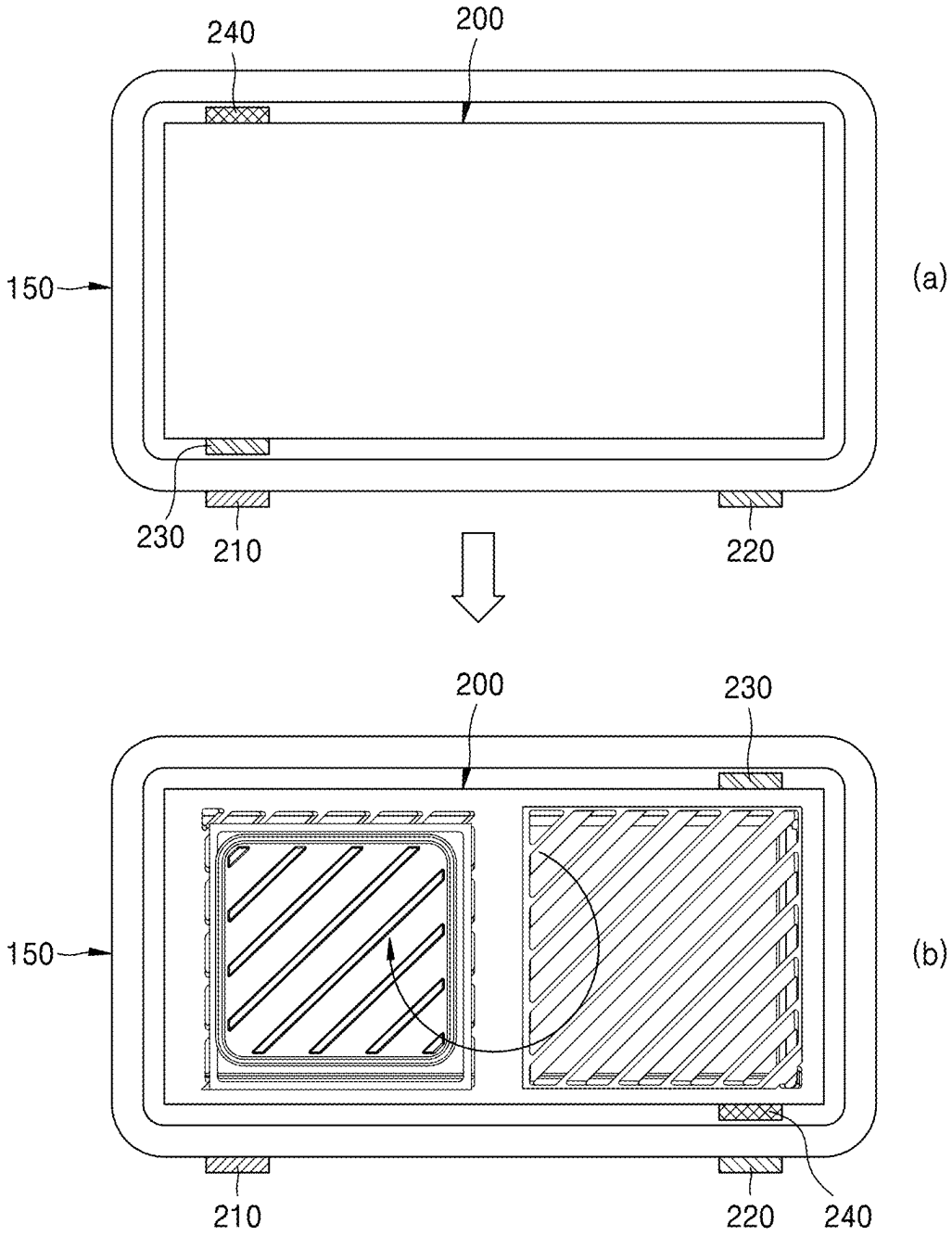


FIG. 20

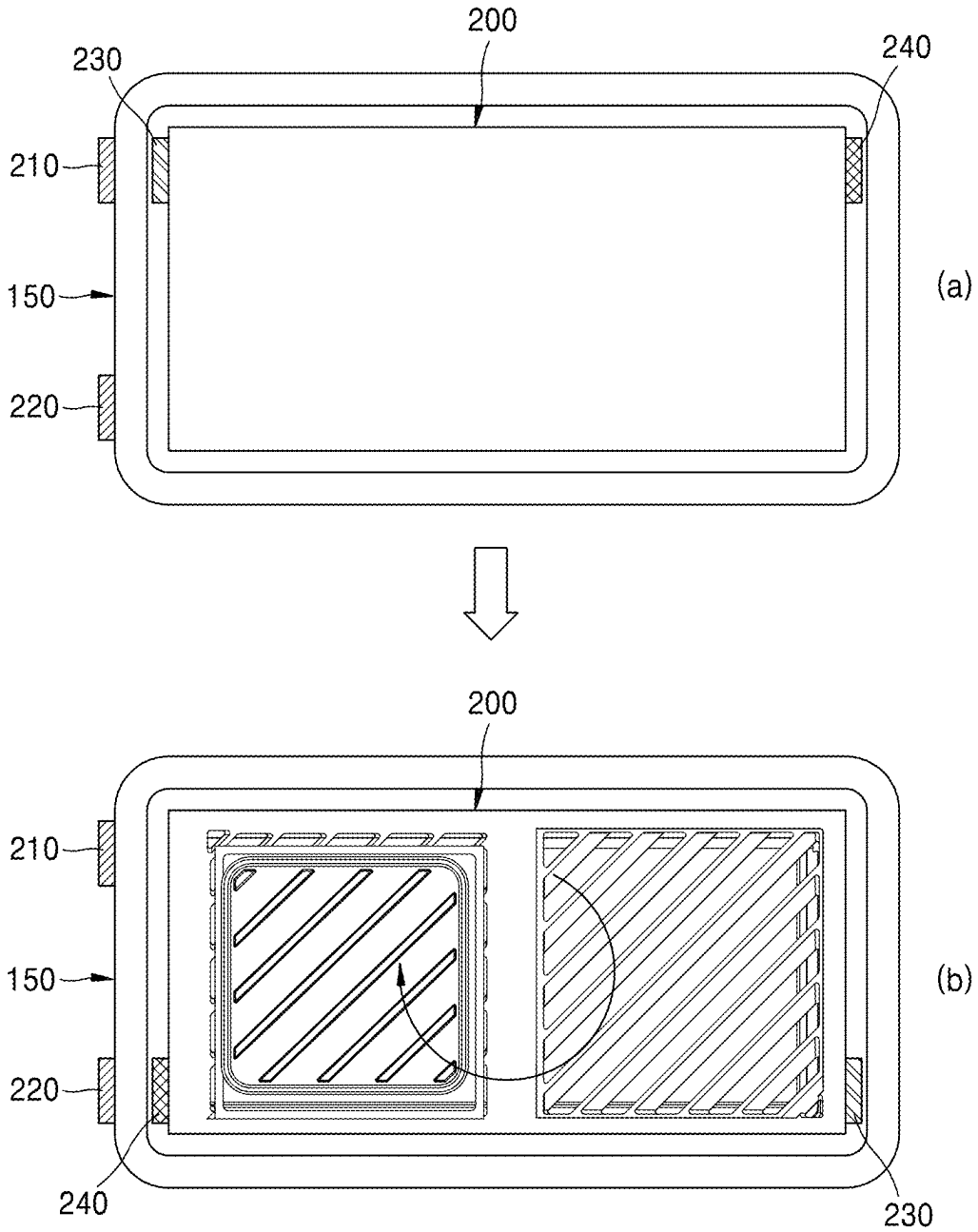


FIG. 21

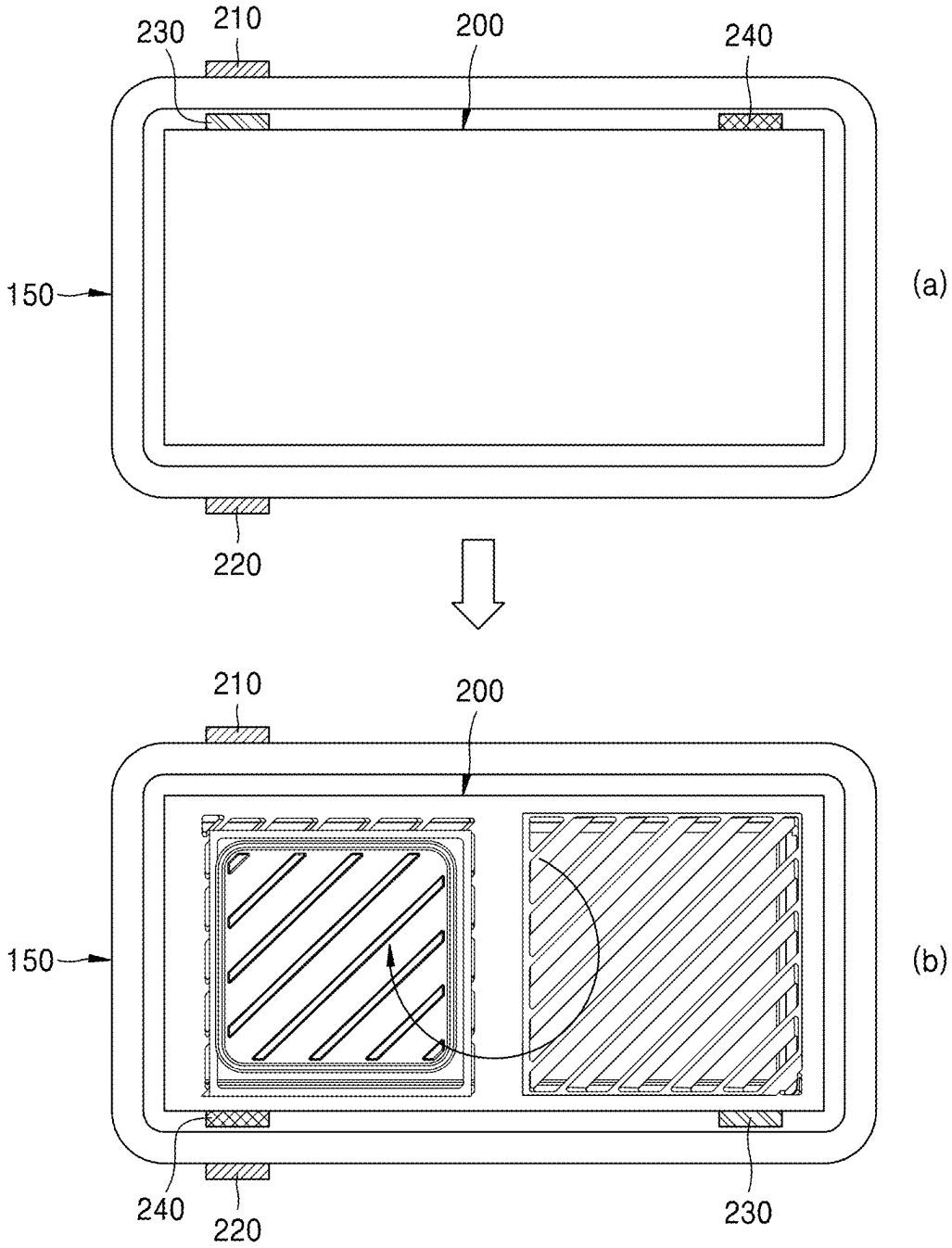


FIG. 22

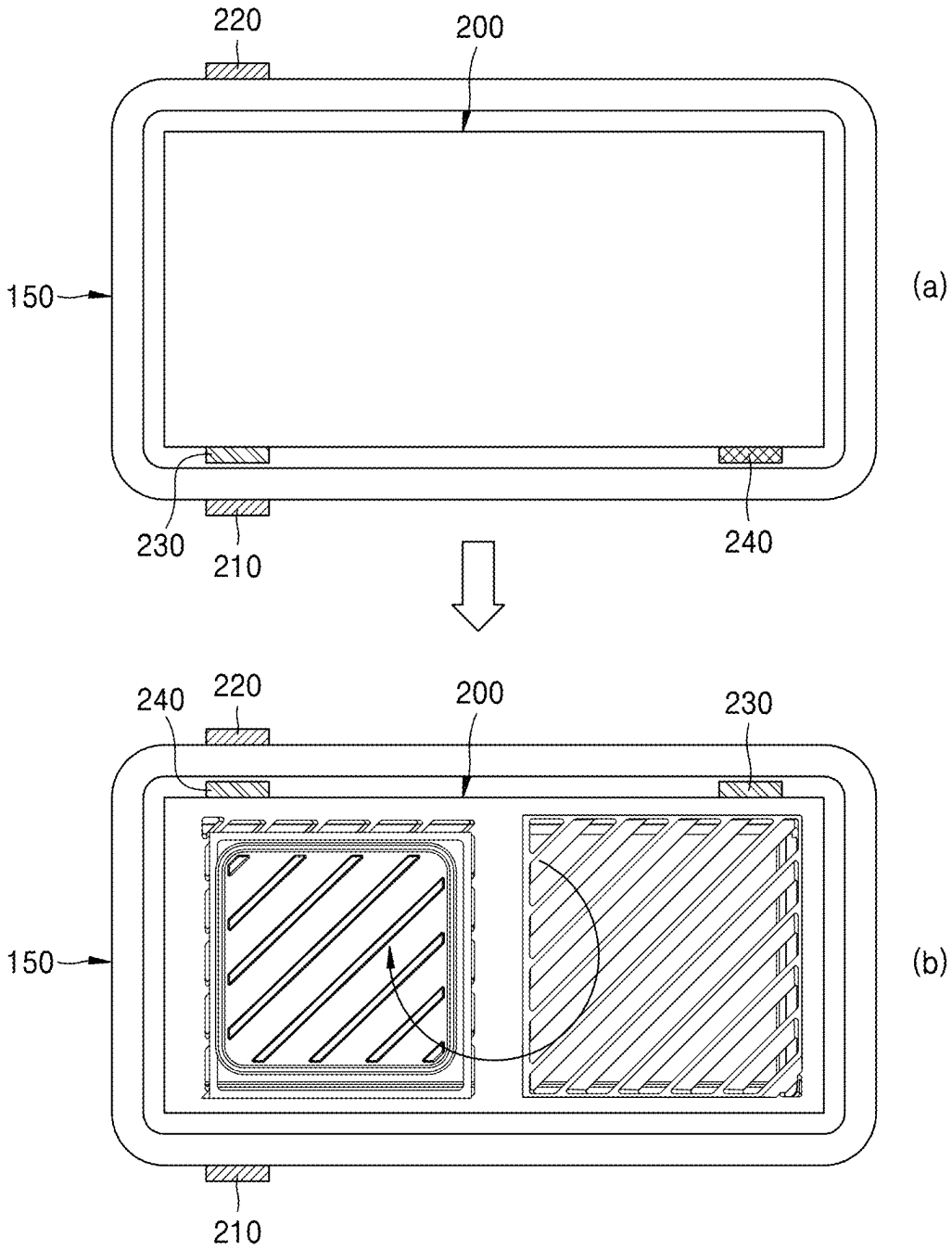


FIG. 23

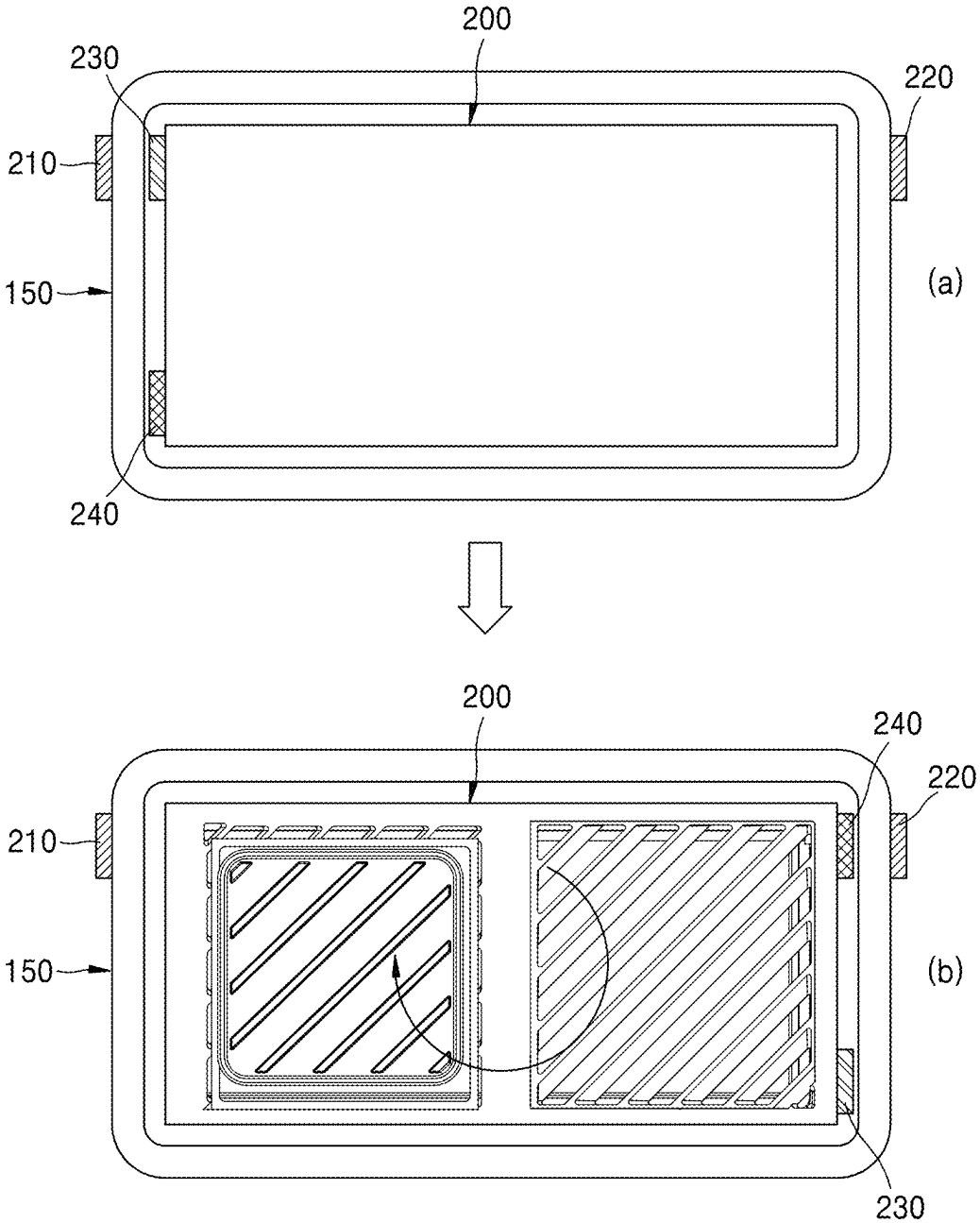


FIG. 24

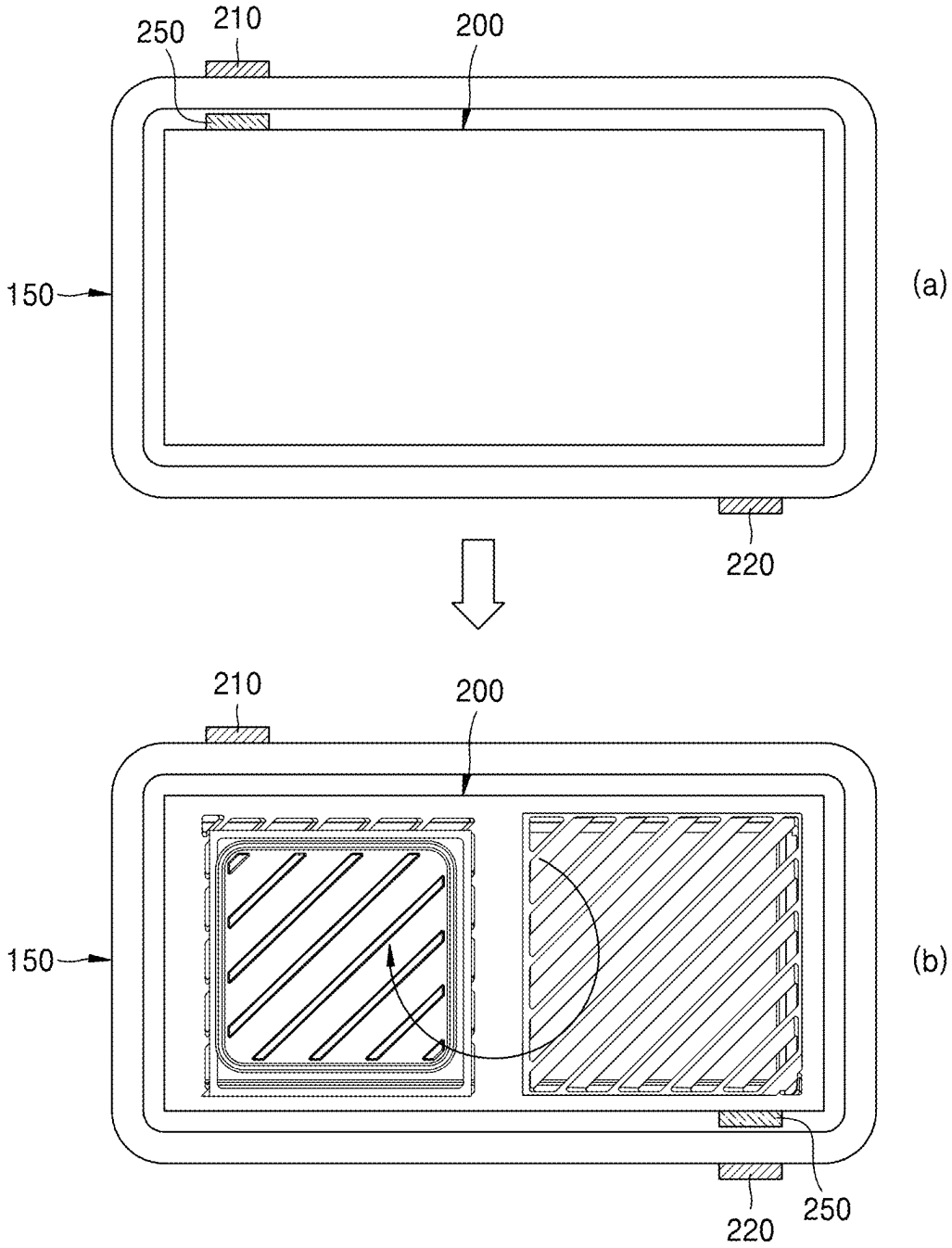


FIG. 25

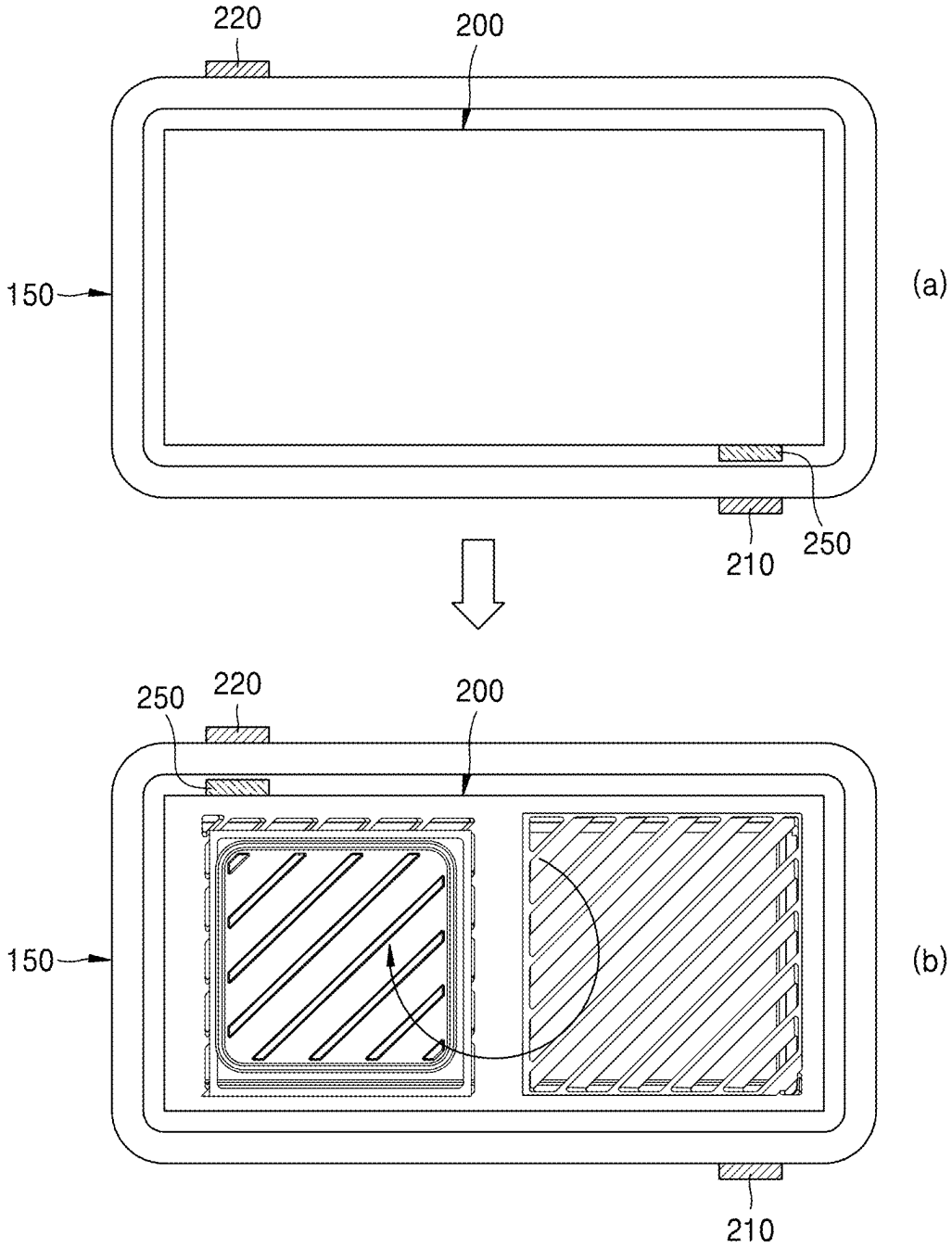


FIG. 26

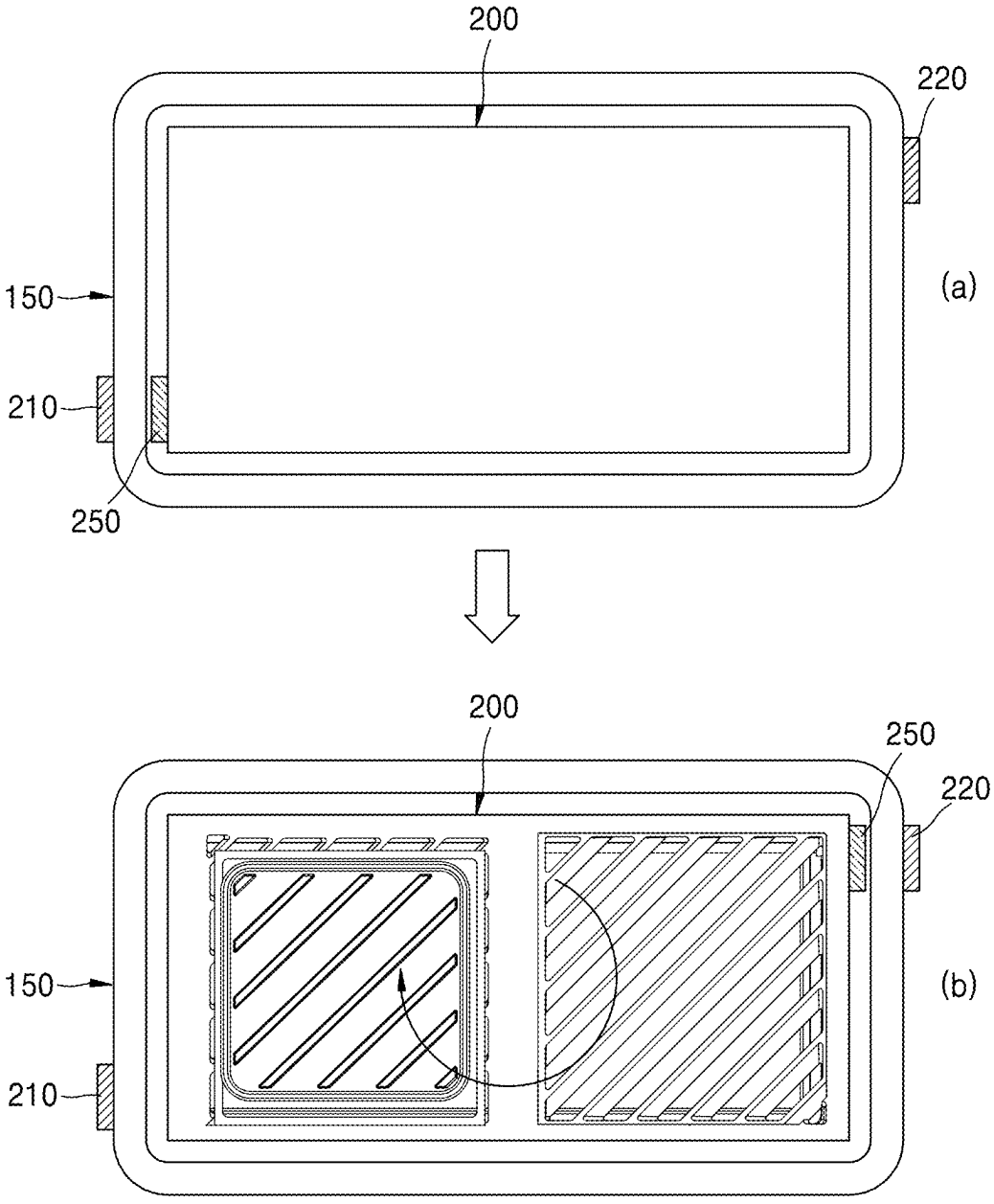
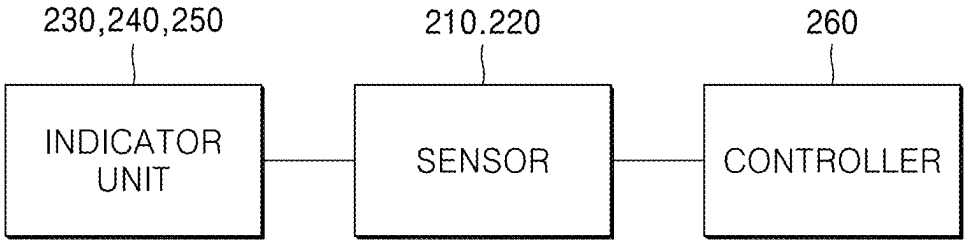


FIG. 27



DEVICE FOR SENSING FLOW PATH SWITCHING UNIT FOR DRYER, AND DRYER COMPRISING SAME

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This application is a continuation application, claiming priority under § 111(a), of International Application No. PCT/KR 2023/017647, filed on Nov. 6, 2023, which is based on and claims the benefit of Korean Patent Application No.: 10-2022-0150975, filed Nov. 11, 2022, in the Korean Intellectual Property Office, the disclosures of which are incorporated by reference herein in their entireties.

TECHNICAL FIELD

[0002] The present disclosure relates to a device for sensing a flow path switching unit for a dryer to selectively provide two flow paths for a drying mode and a dehumidifying mode, and a dryer including the device.

BACKGROUND ART

[0003] A dryer is a device for drying wet clothes (hereinafter, referred to a drying material). The drying material is accommodated in a drum in the dryer and hot air is supplied inside the drum through a heat exchanger while the drum is rotating to dry the drying material.

[0004] An existing dryer is installed and used in a laundry room or utility room provided separately in a house, but the laundry room or utility room has no window or is narrow, resulting in poor ventilation. Humidity in the laundry room or utility room may increase due to the drying of the drying material, and high humidity may cause the dryer to corrode or cause discomfort to users.

[0005] A dehumidifier may be separately installed in a space where the dryer is installed, which may be inefficient in terms of cost and space. Thus, the dryer may operate in a drying mode or a dehumidifying mode, and a dehumidifying unit for changing a flow path of air may be considered for operation in the drying mode and the dehumidifying mode. Also, there is a demand for a method of sensing whether the flow path switching unit is at a location for providing a drying mode or a dehumidifying mode.

DISCLOSURE OF INVENTION

Solution to Problem

[0006] According to an embodiment, a device for sensing a flow path switching unit for a dryer may include an attachment portion provided on a main body accommodating a drum in order to attach the flow path switching unit for a dryer.

[0007] The device for sensing the flow path switching unit for the dryer according to an embodiment may include the flow path switching unit that is coupleable to and decoupleable from the mounting portion and that provides a drying mode to dry material while coupled to the mounting portion and at a first position and to provide a dehumidifying mode to dehumidify outside air while coupled to the mounting portion and at a second position,, the flow path switching unit being rotatable by 180° from the first position so that positions of top and bottom surfaces of the flow path switching unit are inverted.

[0008] The device for the flow path switching unit for the dryer according to an embodiment may include a first indicator unit provided on the flow path switching unit for indicating the first position.

[0009] The device for the flow path switching unit for the dryer according to an embodiment may include a second indicator unit provided on the flow path switching unit for indicating the second position.

[0010] The device for the flow path switching unit for the dryer according to an embodiment may include a first sensor provided on the mounting portion and configured to sense the first indicator unit.

[0011] The device for the flow path switching unit for the dryer according to an embodiment may include a second sensor provided on the mounting portion and configured to sense the second indicator unit.

[0012] A dryer according to an embodiment may include the device for sensing the flow path switching unit for the dryer.

BRIEF DESCRIPTION OF DRAWINGS

[0013] FIG. **1** is a perspective view of a dryer according to an embodiment.

[0014] FIG. **2** is a perspective view of a lower portion of FIG. **1** according to an embodiment.

[0015] FIG. **3** is a diagram showing a state where a hood is coupled in FIG. **2** according to an embodiment.

[0016] FIG. **4** is a diagram conceptually showing a flow path in a drying mode according to an embodiment.

[0017] FIG. **5** is a diagram conceptually showing a flow path in a dehumidifying mode according to an embodiment.

[0018] FIG. **6** is a perspective view of a flow path switching unit according to an embodiment.

[0019] FIG. **7** is a perspective view of a body portion at a first position according to an embodiment.

[0020] FIG. **8** is a cross-sectional view of the flow path switching unit FIG. **7** according to an embodiment.

[0021] FIG. **9** is a cross-sectional view at a first position when a flow path switching unit is installed in a left lower portion of a main body of a dryer according to an embodiment.

[0022] FIG. **10** is a perspective view of a body portion at a second position according to an embodiment.

[0023] FIG. **11** is a cross-sectional view of the flow path switching unit FIG. **10** according to an embodiment.

[0024] FIG. **12** is a cross-sectional view at a first position when a flow path switching unit is installed in a left lower portion of a main body of a dryer according to an embodiment.

[0025] FIG. **13** is a perspective view of a flow path switching unit at a second position according to an embodiment.

[0026] FIG. **14** is a perspective view of a state where an opening and closing portion is open in FIG. **13** according to an embodiment.

[0027] FIG. **15** is a cross-sectional view of the flow path switching unit FIG. **13** according to an embodiment.

[0028] FIG. **16** is an enlarged view of a front surface of FIG. **14** according to an embodiment.

[0029] FIG. **17** is an exploded perspective view of a flow path switching unit and a mounting portion according to an embodiment.

[0030] FIG. **18** is a diagram showing an example, in which first and second sensors are arranged on an upper wall of a

mounting portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0031] FIG. **19** is a diagram showing an example, in which first and second sensors are arranged on a lower wall of a mounting portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0032] FIG. **20** is a diagram showing an example, in which first and second sensors are arranged on a side wall of a mounting portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0033] FIG. **21** is a diagram showing an example, in which first and second indicator units are arranged on a top surface a body portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0034] FIG. **22** is a diagram showing an example, in which first and second indicator units are arranged on a bottom surface a body portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0035] FIG. **23** is a diagram showing an example, in which first and second display portions are arranged on a side surface a body portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0036] FIG. **24** is a diagram showing an example in which a single indicator unit is provided on a top surface of a body portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0037] FIG. **25** is a diagram showing an example in which a single indicator unit is provided on a bottom surface of a body portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0038] FIG. **26** is a diagram showing an example in which a single indicator unit is provided on a side surface of a body portion, in a device for sensing a flow path switching unit for a dryer according to an embodiment.

[0039] FIG. **27** is a schematic block diagram of a dryer according to an embodiment.

MODE FOR THE INVENTION

[0040] Hereinafter, an example embodiment of the present disclosure will be described in detail with reference to matters described in the accompanying drawings. The same reference numeral or symbol presented in each drawing represents a part or component that performs substantially the same function.

[0041] The terms including "first", "second", etc., may be used to explain various components, but the components are not limited by the terms. These terms may be used to distinguish one element from another element. For example, a first component may be referred to as a second component without departing from the scope of the present disclosure, and similarly, the second component may be referred to as the first component. The term "and/or" may include a combination of a plurality of related items or any one of the plurality of related items.

[0042] The term used herein is used to describe an embodiment of the present disclosure, and is not intended to limit and/or restrict the present disclosure. Singular forms include plural forms unless apparently indicated otherwise contextually. Moreover, it should be understood that the term "include", "have", or the like used herein is to indicate the presence of features, numbers, steps, operations, elements, parts, or a combination thereof described in the specifications, and does not preclude the presence or addition of one or more other features, numbers, steps, operations, elements, parts, or a combination thereof. The same reference numeral presented in each drawing represents a member that substantially performs the same function.

[0043] FIG. **1** is a perspective view of a dryer according to an embodiment. FIG. **2** is a perspective view of a lower portion of FIG. **1**, and FIG. **3** is a diagram showing a state where a hood is coupled in FIG. **2**.

[0044] Referring to FIG. **1**, a direction along an X axis may be defined as a front-back direction, a direction along a Y-axis may be defined as a left-right direction, and a direction along a Z-axis may be defined as an up-down direction. Meanwhile, among the terms used in the following description, the "front-back direction", the "left-right direction", the "up-down direction", etc., are defined based on the drawings, and the shape and position of each component are not limited by these terms.

[0045] Referring to FIG. **1**, a dryer **100** is a device used for drying a drying material. The dryer **100** according to an embodiment may include a main body **110**. The main body **110** may be formed in an approximately rectangular parallelepiped shape including a front surface **101**, a back surface **102**, a top surface **103**, a bottom surface **104**, and a side surface **105**.

[0046] The dryer **100** may include a drum **130** accommodating a drying material. The drum **130** may have an open side into which the drying material is put and a lifter **131** inside the drum **130**. In the main body **110**, an entrance **106** communicating with the drum **130** may be formed and a door **120** for opening and closing the entrance **106** may be provided.

[0047] The drum **130** may be accommodated and mounted in the main body **110** that forms an exterior of the dryer. A manipulation unit **111** may be provided in an upper portion of the front surface **101** of the main body **110** to allow a user to perform a function of the dryer **100**. In the manipulation unit **111**, a rotation-type input unit **11***a* for selecting the function of the dryer **100**, a display unit **11***b* for displaying a selection function and a mode state of the dryer **100** according to input of the rotation-type input unit **11***a*, a touch input unit **11***c* for allowing the user to select a mode by being pressed, etc., may be arranged. However, a configuration of the manipulation unit **111** is not limited thereto and may be implemented in various manners.

[0048] Referring to FIG. **2**, the dryer **100** may include a heat exchanger **170** that provides hot air to the drum **130**. The heat exchanger **170** may be arranged under the drum **130**, and may be installed on a base **140** provided in the bottom surface **104** of the main body **110**. As shown in FIG. **3**, a fan **161** installed on the base **140** may move the air of the drum **130** to a flow path switching unit **200**, and the heat exchanger **170** may be arranged at a back end of the flow path switching unit **200**. A hood **141** may be coupled to an upper portion of the base **140** to form a duct structure that allows air to pass through the flow path switching unit **200** and the heat exchanger **170**.

[0049] The heat exchanger **170** may be provided to supply hot air toward the drum **130** and may be a component constituting a refrigerant cycle. The refrigerant cycle may include the heat exchanger **170**, a compressor **180**, and an expansion device **190**. The heat exchanger **170** may be provided to exchange heat with the air and may include an evaporator **171** and a condenser **172**. The refrigerant may circulate through a series of processes including compression-condensation-expansion-evaporation.

[0050] The compressor **180** may compress a refrigerant into a high-temperature and high-pressure state and discharge the refrigerant, such that the discharged refrigerant is introduced to the condenser **172**. The condenser **172** may condense the compressed refrigerant and discharge heat to surroundings during the condensation. In addition, the expansion device **190** may expand the refrigerant in the high-temperature and high-pressure state, condensed by the condenser **172**, into a low-pressure state. The evaporator **171** may evaporate the expanded refrigerant and take away heat from the surroundings during the evaporation. The refrigerant having passed through the evaporator **171** may move back to the compressor **180** and circulate.

[0051] FIG. **4** is diagram conceptually showing a flow path in a drying mode, and FIG. **5** is a diagram conceptually showing a flow path in a dehumidifying mode.

[0052] Referring to FIG. **4**, when the dryer **100** operates in a drying mode for drying a drying material, the air may circulate inside the main body **110** to dry the drying material. More specifically, high-temperature and high-humidity air leaking from the drum **130** may be changed into low-temperature dry air after being cooled while passing through the evaporator **171**. When the high-temperature and high-humidity air is cooled in the evaporator **171**, condensed water may be generated. The condensed water may move to a recovery container **109** provided in the dryer **100** or may be drained to the outside of the main body **110**.

[0053] The low-temperature dry air may pass through the condenser **172** while passing through the evaporator **171**. The low-temperature dry air discharged from the evaporator **171** may be heated up and changed into high-temperature dry air while passing through the condenser **172**. The high-temperature dry air may be introduced to the back side of the drum **130** to dry the drying material. As the drying material is dried, the high-temperature and high-humidity air containing a lot of moisture may leak from the drum **130** and pass through the evaporator **171** again. Through the above processes, the air circulating inside the main body **110** may dry the drying material accommodated in the drum **130**.

[0054] Referring to FIG. **5**, when the dryer **100** operates in the dehumidifying mode for dehumidifying outside air, air outside the dryer **100** may be introduced into the dryer **100** and dehumidified and then discharged to the outside of the dryer **100**. More specifically, the air outside the dryer **100** may be introduced into the dryer **100** and may be dehumidified while being discharged to the outside of the dryer **100** after passing through the heat exchanger **170** and the drum **130**.

[0055] The high-humidity air needing to be dehumidified may be changed into high-temperature dry air while passing through the heat exchanger **170**. The high-temperature dry air may pass through the drum **130** and then may be discharged again to the outside of the dryer **100**, such that the high-humidity air outside the dryer **100** may be dehumidified. The dehumidifying mode may operate in a state where any drying material is not accommodated inside the drum **130**.

[0056] As such, the air circulates inside the main body **110** in the drying mode, and the outside air is introduced and discharged to outside after passing through the heat exchanger **170** and the drum **130** in the dehumidifying mode. The flow path switching unit **200** for the dryer according to an embodiment of the present disclosure may be attachably and detachably coupled to the dryer **100** to selectively form a first flow path for the drying mode and a second flow path for the dehumidifying mode. The flow path switching unit **200** for the dryer may be engaged by being inserted into a mounting hole **108** formed in the main body **110**. The mounting hole **108** may be opened and closed by a cover **107**. Hereinafter, the flow path switching unit **200** for the dryer will be described in detail.

[0057] FIG. **6** is a perspective view of the flow path switching unit **200** according to an embodiment at a first position. FIG. **7** is an exploded perspective view of the flow path switching unit at the first position, and FIG. **8** is a cross-sectional view of FIG. **7**. FIG. **10** is an exploded perspective view of the flow path switching unit at a second position, and FIG. **11** is a cross-sectional view where an opening and closing unit is open in FIG. **10**.

[0058] The first position may denote a position in a state where the flow path switching unit **200** for the dryer is coupled to the dryer **100** to perform a drying operation, and the second position may denote a position in a state where the flow path switching unit **200** for the dryer is coupled to the dryer **100** to perform a dehumidifying operation.

[0059] The flow path switching unit **200** for the dryer according to an embodiment may include a body portion **10** and a flow path guide **20**.

[0060] Referring to FIG. **6**, the body portion **10** may include a top surface **11**, a bottom surface **12**, and opposite side surfaces **13** and **14**. According to an embodiment, the body portion **10** may have a rectangular parallelepiped shape with open front surface and back surface. When viewed from the front surface, the body portion **10** may have a width in a horizontal direction greater than a height in a vertical direction. As the body portion **10** is formed to have the width in the horizontal direction greater than the height in the vertical direction, the space utilization of a lower portion of the dryer **100** may be improved. As shown in FIG. **1**, as the drum **130** is arranged in a central portion of the main body **110** of the dryer **100** and the flow path switching unit **200** is arranged in the space of the lower portion of the main body **110**, the height of the body portion **10** may be reduced to minimize interference with other structures.

[0061] Also, the body portion **10** may be formed such that a distance between the opposite side surfaces **13** and **14** is greater than a distance between a front and a back thereof. By reducing the distance in the front-back direction in the body portion **10**, an arrangement space of a structure arranged in the back side of the body portion **10**, e.g., the heat exchanger **170**, may be effectively secured. A relatively long distance between the opposite side surfaces **13** and **14** of the body portion **10** may be secured, thereby sufficiently securing a size of each region when dividing the body portion **10** into a first region A and a second region B at the second position. The shape of the body portion **10** is not limited to the above-described rectangular parallelepiped shape and may be changed variously provided that a flow path in which the air flows may be formed therein.

[0062] The flow path guide **20** may guide the air by partitioning an internal space of the body portion **10**. The flow path guide **20** may be coupled to an inside of the body portion **10** to divide the internal space of the body portion **10**, in which the divided space may be used as a flow path for the drying mode or the dehumidifying mode.

[0063] More specifically, the flow path guide **20** may form a first flow path for drying the drying material or a second flow path for dehumidifying the outside air. That is, the flow

path guide **20** may form the first flow path in the drying mode and the second flow path in the dehumidifying mode.

[0064] Referring to FIGS. **7** and **8**, the flow path guide **20** may provide the first flow path for guiding the air from the drum **130** toward the heat exchanger **170** in a state where the body portion **10** is at the first position. Referring to FIGS. **10** and **11**, the flow path guide **20** may provide the second flow path in which, in a state where the body portion **10** is at the second position, outside air is introduced and dehumidified via the heat exchanger **170** and the drum **130**, and the outside air is introduced back to the body portion **10** from the drum **130** and is discharged to outside.

[0065] In this case, the second position of the body portion **10** may be a position of the body portion **10** such that the body portion **10** is rotated by 180° from the first position and thus positions of the top surface and the bottom surface are reversed. When the body portion **10** is viewed from the front surface thereof, the second position may be a position of the body portion **10** such that the body portion **10** is rotated in a clockwise direction or a counter-clockwise direction with respect to a center of the front surface of the body portion **10** and thus the top surface becomes the bottom surface and the bottom surface becomes the top surface.

[0066] Referring to FIGS. **7** and **10**, a front cover **22** having formed thereon an inlet port **24** through which the outside air is introduced and an outlet port **25** through which the outside air is discharged may be coupled to the front of the body portion **10**. The inlet port **24** and the outlet port **25** may be formed to have substantially the same size to facilitate flow of the air in introduction and discharge of the outside air. A guide rib **26** supported in contact with the flow path guide **20** while guiding the outside air to an opening portion **19** may protrude from the inlet port **24**. The guide rib **26** may be formed to have a curvature corresponding to a curvature of the flow path guide **20**.

[0067] According to an embodiment, the flow path guide **20** may extend from the front of any one of the opposite side surfaces **13** and **14** to the back of the other of the opposite side surfaces **13** and **14**.

[0068] As shown in FIG. **7**, the flow path guide **20** may extend from the front of the left side surface **13** to the back of the right side surface **14**. An end of the flow path guide **20** may be coupled to the front of the left side surface **13** and the other end may be coupled to the back of the right side surface **14**. The flow path guide **20** may be formed round to facilitate flow of the air. While the other end of the flow path guide **20** is coupled to the back of the right side surface **14** in FIG. **7**, the other end of the flow path guide **20** may be coupled to a corner where the back surface of the body portion **10** meets the right side surface **14** or to the back surface adjacent the corner.

[0069] A first inlet **15** and an outlet **16** may be formed in the body portion **10**. More specifically, with respect to the state where the body portion **10** is at the first position, the first inlet **15** may be formed on the side surface to allow the air to be introduced from the drum **130**. The outlet **16** may be formed at the back of the body portion **10**.

[0070] The air introduced from the first inlet **15** may form the first flow path while flowing to the outlet **16**. According to an embodiment, an area of the outlet **16** may be greater than that of the first inlet **15**. As the area of the outlet **16** is greater than that of the first inlet **15**, the air introduced through the first inlet **15** may be smoothly discharged through the outlet **16**.

[0071] Referring to FIG. **8**, the first inlet **15** may be formed on the left side surface **13** of the body portion **10** coupled to the end of the flow path guide **20**. The outlet **16** may be formed on the back surface of the body portion **10**, such that the air from the drum **130** may be introduced to the left side surface **13** in which the first inlet **15** is formed and is discharged to the back where the outlet **16** is provided.

[0072] According to an embodiment, as shown in FIGS. **1** and **2**, the flow path switching unit **200** may be coupled to a mounting portion **150** provided on a right lower portion of the main body **110** when viewed from the front of the main body **110**. The drum **130** may be positioned in the central portion of the main body **110**, and the flow path switching unit **200** may be formed to the right of the drum **130**, such that the first inlet **15** may be formed on the left side surface **13** of the body portion **10**, thus simplifying the flow path of the air discharged from the drum **130**.

[0073] In addition, when the flow path switching unit **200** is coupled to the left lower portion of the main body **110**, as shown in FIG. **9**, the flow path guide **20** formed in the body portion **10** may be formed round to the back of the left side surface **13** from the front of the right side surface **14**. That is, an end of the flow path guide **20** may be coupled to the front of the right side surface **14** and the other end may be coupled to the back of the left side surface **13**. Here, the other end of the flow path guide **20** may be coupled to a corner where the left side surface **13** meets the back surface or to the back surface adjacent to the corner.

[0074] In this case, the first inlet **15** may be formed in the right side surface **14** and the outlet **16** may be formed in the back surface of the body portion **10**. That is, in an embodiment, the flow path guide **20**, the first inlet **15**, and the outlet **16** may be changed symmetrically to a structure of FIG. **7**. When the main body **110** is viewed from the front surface, for this structure being a structure in which the flow path switching unit **200** is engaged with the left lower portion of the front surface **101** of the main body **110**, a flow path introduced from the drum **130** may be simplified and applied.

[0075] In addition, an air dispersion rib **21** may be formed in the flow path guide **20**. The air dispersion rib **21** may protrude from a surface of the flow path guide **20** to the outlet **16** with respect to the state where the body portion **10** is at the first position. As the air introduced through the first inlet **15** is injected in collision with the air dispersion rib **21**, the air may flow to the outlet **16**. The air may be dispersed by the air dispersion rib **21** and smoothly escape to the heat exchanger **170** through the outlet **16**.

[0076] According to an embodiment, the body portion **10** may include a second inlet **17**, a separating wall **18**, and the opening portion **19**.

[0077] The flow path guide **20** may extend from the front of any one of the opposite side surfaces **13** and **14** to the back of the other of the opposite side surfaces **13** and **14**, and the second inlet **17** may be formed on the other side surface to introduce the air from the drum **130** with respect to the state where the body portion **10** is at the second position. When the body portion **10** is reversed upside down from the first position of FIG. **7**, the body portion **10** may be changed to the second position of FIG. **10**. As shown in FIG. **10**, when the body portion **10** is reversed to the second position, the second inlet **17** may be arranged to the left like the first inlet **15** at the first position.

[0078] In an embodiment, when the main body **110** is viewed from the front, the flow path switching unit **200** may be coupled to the right lower portion of the front surface of the main body **110**, such that the second inlet **17** may allow the air to be easily introduced therethrough from the drum **130** arranged in the central portion of the main body **110**. This result may be because the top surface and the bottom surface of the flow path switching unit **200** are 180° reversed such that the second inlet **17** moves to the position of the first inlet **15** at the first position.

[0079] More specifically, referring to FIG. **8**, with respect to the first position, the flow path guide **20** may extend from the front of the left side surface **13** to the back of the right side surface **14**, in which the second inlet **17** may be formed in the right side surface **14** and the first inlet **15** may be formed in the left side surface **13**. With this structure, the second inlet **17** may be formed on the opposite side of the first inlet **15**. When the first inlet **15** is formed in the right side surface **14**, the second inlet **17** may be formed in the left side surface **13**.

[0080] In the first flow path in which the air introduced through the first inlet **15** flows through the outlet **16**, a surface of the flow path guide **20** may be used. On the other hand, the air introduced through the second inlet **17** may flow along the other surface of the flow path guide **20**.

[0081] The separating wall **18** may be provided to protrude from the back to the front from the flow path guide **20**. The separating wall **18** may divide the front surface of the body portion **10** into the first region A through which the outside air is introduced and the second region B through which the outside air is discharged.

[0082] In an embodiment, the separating wall **18** may be formed at the center between the opposite side surfaces **13** and **14** of the body portion **10**. The separating wall **18** may be formed at the center between the opposite side surfaces **13** and **14** such that the first region A and the second region B may have substantially the same sizes and a flow rate of the outside air introduced and a flow rate of the outside air discharged may be made similar to each other, facilitating a flow of the air.

[0083] As shown in FIG. **10**, when the body portion **10** is at the second position, the right side of the separating wall **18** may form the first region A into which the outside air is introduced and the left side of the separating wall **18** may form the second region B from which the outside air is discharged.

[0084] According to an embodiment, an area of the second region B may be greater than that of the second inlet **17**. As the area of the second region B is greater than that of the second inlet **17**, the air introduced from the drum **130** through the second inlet **17** may be smoothly discharged to outside through the second region B.

[0085] The opening portion **19** may be provided to be open and closed in the flow path guide **20** corresponding to the first region A. As shown in FIGS. **7** and **10**, according to an embodiment, the opening portion **19** may be formed as holes cut in an approximately comb teeth shape. The opening portion **19** formed obliquely in the comb teeth shape in this way may provide the effect of primarily filtering out a foreign substance included in the outside air. However, the shape of the opening portion **19** is not limited thereto, and the opening portion **19** may have a size and a shape that are sufficient for the introduction of the air into the body portion **10**. For example, the opening portion **19** may have a shape in which a plurality of circular through-holes are formed in the flow path guide **20** or bars arranged in the horizontal and vertical directions are arranged in a grid.

[0086] The second flow path may be formed such that the outside air is introduced to the body portion **10** through the opening portion **19**, is introduced back to the body portion **10** through the second inlet **17** via the heat exchanger **170** and the drum **130**, and then is discharged through the second region B.

[0087] According to an embodiment, an area of the opening portion **19** may be less than that of the outlet **16**. As the area of the outlet **16** is greater than that of the opening portion **19**, the outside air introduced through the opening portion **19** may be smoothly discharged to the heat exchanger **170** through the outlet **16**.

[0088] Meanwhile, as shown in FIG. **9**, when the flow path guide **20** extends roundly from the front of the right side surface **14** to the back of the left side surface **13** at the first position, the first inlet **15** may be formed in the right side surface **14** of the body portion **10**, the outlet **16** may be formed in the back surface of the body portion **10**, and the second inlet **17** may be formed in the left side surface **13** of the body portion **10**. In an example where the first position is in the state shown in FIG. **9**, the flow path switching unit **200** may enter a state shown in FIG. **12** upon switching to the second position. Referring to FIG. **12**, when the body portion **10** is at the second position, the first region A may be a left region on the front surface of the body portion **10** divided by the separating wall **18** and the second region B may be a right region on the front surface of the body portion **10**. According to FIG. **9**, the end of the flow path guide **20** may be coupled to the front of the right side surface **14** of the body portion **10** and the other end may be coupled to the back of the left side surface **13** of the body portion **10**, but the other end of the flow path guide **20** may be coupled to the corner where the left side surface **13** of the body portion **10** meets the back surface or to the back surface of the body portion **10** adjacent to the corner.

[0089] FIG. **13** is a perspective view of a flow path switching unit at the second position, and FIG. **14** is a perspective view of a state where an opening and closing unit is open at the second position in FIG. **13**. FIG. **15** is an exploded perspective view seen from a back of a flow path switching unit toward a front thereof, and FIG. **16** is a plan view of FIG. **11**.

[0090] As shown in FIG. **13**, an opening and closing unit **30** for opening and closing the front of the body portion **10** may be coupled to the flow path switching unit **200** for the dryer according to an embodiment. The opening and closing unit **30** may open or close the first region A and the second region B divided by the separating wall **18**. When the body portion **10** is provided in the drying mode in a state of being at the first position, the opening and closing unit **30** may maintain a state of closing the front of the body portion **10**. When the body portion **10** is provided in the dehumidifying mode while being located at the second position, the opening and closing unit **30** may maintain a state of opening the front of the body portion **10**.

[0091] According to an embodiment, as shown in FIG. **5** and FIG. **14**, the opening and closing unit **30** may be opened by pivoting with respect to a hinge **81** provided in opposite lower ends in a state where the body portion **10** is at the second position. That is, the opening and closing unit **30** may be configured to open the first region A and the second

region B as a lower end pivots by pulling an upper side of the opening and closing unit **30** forward in the state of being at the second position. In the front cover **22** may be formed a receiving portion **23** into which the separating wall **18** is received by being inserted. When the front cover **22** is coupled to the body portion **10**, the separating wall **18** may be stably positioned by being inserted into the receiving portion **23**.

[0092] According to an embodiment, an airtight member **40** for sealing the opening portion **19** may be coupled to the opening and closing unit **30**. The airtight member **40** may be connected to the opening and closing unit **30** to open the opening portion **19** when the opening and closing unit **30** opens the front of the body portion **10**. The opening and closing unit **30** and the airtight member **40** may be fixed by a connection bar **41** formed integrally. In the airtight member **40**, protrusions **42** inserted into the opening portion **19** when the opening and closing unit **30** closes the opening portion **19** may be formed.

[0093] The airtight member **40** may be formed to have a size corresponding to the opening portion **19**. According to an embodiment, because the opening portion **19** is formed in a substantially rectangular shape, the airtight member **40** may be formed in a rectangular shape to block the opening portion **19**. When the shape of the opening portion **19** is changed, the shape of the airtight member **40** may also be changed.

[0094] The airtight member **40** may have a curved surface corresponding to a curved surface of the flow path guide **20**. When the airtight member **40** closes the opening portion **19**, the airtight member **40** may form a first flow path along with the flow path guide **20**. Thus, an outer surface of the airtight member **40** may be formed to form one curved surface by extending a curved surface of the flow path guide **20**.

[0095] Referring to FIG. **15**, a sealing member **50** may be coupled to a boundary direction of the airtight member **40**. As the sealing member **50** is coupled in the boundary direction of the airtight member **40**, the sealing member **50** may effectively preventing leakage of air by integrally sealing a boundary surface of the opening portion **19**. That is, when the body portion **10** is provided in the drying mode at the first position, the airtight member **40** may maintain a state of sealing the opening portion **19**. When the air flows to the heat exchanger **170** from the drum **130** along the flow path guide **20**, surface sealing may be performed in the boundary direction of the airtight member **40** to effectively prevent leakage of the air through the opening portion **19**. The sealing member **50** may include a rubber or silicone material, etc. A material of the sealing member **50** may not be limited thereto, and various materials may be selected.

[0096] Referring to FIGS. **10** and **15**, the flow path switching unit **200** for the dryer according to an embodiment may include guide grills **60**.

[0097] The guide grills **60** may be provided in the second region B to guide air discharged to outside through the second region B. The guide grills **60** may guide the air discharged through the second region B in a direction away from the separating wall **18**. According to an embodiment, the guide grills **60** may be arranged in an oblique shape in the outlet port **25** of the front cover **22**.

[0098] As shown in FIG. **16**, the guide grill **60** may be provided in a way that band-shaped members with a certain width are arranged to be separated from each other, and the air may flow between the band-shaped members. A front end of the guide grill **60** may be formed to be inclined in a direction away from the separating wall **18** toward the front of the body portion **10**. That is, a front end **61** may be spaced apart from the separating wall **18** more than a back end **62** with respect to a width of the guide grill **60**. As the air discharged along the guide grill **60** is discharged in a direction away from the separating wall **18**, it is possible to prevent the air discharged through the second region B from being re-introduced to the first region A and minimize interference with the outside air introduced through the first region A.

[0099] According to an embodiment, the guide grill **60** may be arranged inclinedly in a direction away from the separating wall **18** toward a lower end of the guide grill **60** from an upper end thereof in a vertical longitudinal direction. As the guide grill **60** is formed inclinedly such that the lower end thereof is away from the separating wall **18**, the air passing through the guide grill **60** may be discharged effectively away from the separating wall **18**.

[0100] The flow path switching unit **200** for the dryer according to an embodiment may include a filter member **70**.

[0101] The filter member **70** may be coupled to the back of the body portion **10** to filter out a foreign substance included in the flowing air. According to an embodiment, the filter member **70** may be attachably and detachably coupled to the outlet **16**. The filter member **70** may be formed to have a shape and a size corresponding to the outlet **16**.

[0102] The filter member **70** may filter out a foreign substance included in the air circulating inside the main body **110** when the dryer **100** operates in the drying mode as the body portion **10** is at the first position. In the drying mode, as the air introduced through the first inlet **15** exits through the outlet **16**, the foreign substance included in the air circulating inside the main body **110** may be filtered out by the filter member **70**. In the dehumidifying mode, as the outside air introduced through the opening portion **19** exits through the outlet **16**, the foreign substance included in the outside air may be filtered out by the filter member **70**.

[0103] The flow path switching unit **200** for the dryer according to an embodiment may include a handle **80**.

[0104] The handle **80** may be provided to separate the body portion **10** from the main body **110** and rotate the body portion **10** from the first position to the second position. The handle **80** may be formed in a front lower side of the body portion **10** in the state where the body portion **10** is at the first position. According to an embodiment, the front of the body portion **10** may include a fixing unit **90** for engaging the flow path switching unit **200** to the mounting portion **150**, and the handle **80** may be provided in the fixing unit **90**.

[0105] As such, when the body portion **10** is at the first position, a user may separate the body portion **10** from the main body **110** by using the handle **80**. Then, the body portion **10** may be rotated by 180° such that a top surface and a bottom surface thereof are reversed. In a state where the position of the body portion **10** is changed to the second position, the body portion **10** may be engaged to the main body **110**.

[0106] To execute the dehumidifying mode at the second position, the opening portion **19** may be open to guide introduction of the outside air. When lower ends of opposite sides of the opening and closing unit **30** pivot by the hinge **81** at the second position and the upper side of the opening and closing unit **30** is pulled down to open the opening portion **19**, the handle **80** is position-changed in a state of

being in an upper side, such that the opening and closing unit **30**, when open, may not interfere with the handle **80**.

[0107] According to an embodiment, opposite ends of the handle **80** are formed to protrude from opposite side surfaces of the body portion **10**. The shape of the handle **80** is not limited thereto, and the position and shape of the handle **80** may be changed variously so as not to interfere with the opening and closing unit **30** when the opening and closing unit **30** is open.

[0108] As such, the flow path switching unit **200** for the dryer according to an embodiment may provide the drying mode and the dehumidifying mode by using one unit, thereby improving user convenience. When a separating unit is used for each mode, a unit not in use has to be kept separately and is likely to be lost. Moreover, according to an embodiment, as functions in the drying mode and in the dehumidifying mode are achieved by one unit, costs may be reduced when compared to manufacturing of a separate unit for each mode.

[0109] Meanwhile, according to an embodiment, the dryer **100** including the flow path switching unit **200** therefor may be provided.

[0110] The dryer **100** is a device for drying a drying material and may provide the drying mode and the dehumidifying mode. The drying mode may be a mode for drying a drying material, and the dehumidifying mode may be a mode for dehumidifying the air outside the dryer.

[0111] The dryer **100** according to an embodiment may include the main body **110**. The main body **110** may be formed in an approximately rectangular parallelepiped shape including a front surface **101**, a back surface **102**, a top surface **103**, a bottom surface **104**, and a side surface **105**.

[0112] The dryer **100** may include a drum **130** accommodating a drying material. The drum **130** may have an open side into which the drying material is put. In the main body **110**, an entrance **106** communicating with the drum **130** may be formed and a door **120** for opening and closing the entrance **106** may be provided.

[0113] The drum **130** may be accommodated and mounted in the main body **110** that forms an exterior of the dryer **100**. The manipulation unit **111** may be provided in an upper portion of the front surface **101** of the main body **110** to allow a user to perform a function of the dryer **100**. In the manipulation unit **111**, a rotation-type input unit **11***a* for selecting the function of the dryer **100**, a display unit **11***b* for displaying a selection function and a mode state of the dryer **100** according to input of the rotation-type input unit **11***a*, a touch input unit **11***c* for allowing the user to select a mode by being pressed, etc., may be arranged. However, a configuration of the manipulation unit **111** is not limited thereto and may be implemented in various manners.

[0114] Referring to FIG. **2**, the dryer **100** may include the heat exchanger **170** that provides hot air to the drum **130**. The heat exchanger **170** may be arranged under the drum **130**, and may be installed on a base **140** provided on the bottom surface **104** of the main body **110**. As shown in FIG. **3**, the fan **161** installed on the base **140** may move the air of the drum **130** to a flow path switching unit **200**, and the heat exchanger **170** may be arranged at a back end of the flow path switching unit **200**. A hood **141** may be coupled to an upper portion of the base **140** to form a duct structure that allows air to pass through the flow path switching unit **200** and the heat exchanger **170**.

[0115] The heat exchanger **170** may be arranged under the drum **130**, and may be installed on a base **140** provided on the bottom surface **104** of the main body **110**. The heat exchanger **170** may be provided to supply hot air toward the drum **130** and may be a component constituting a refrigerant cycle.

[0116] The refrigerant cycle may include the heat exchanger **170**, the compressor **180**, and the expansion device **190**. The heat exchanger **170** may be provided to exchange air with heat and may include an evaporator **171** and a condenser **172**. The refrigerant may circulate through a series of processes including compression-condensation-expansion-evaporation. A detailed description of the heat exchanger **170**, the compressor **180**, and the expansion device **190** has been provided in the description of the flow path switching unit **200** for the dryer and thus will be omitted at this time.

[0117] In the dryer **100** according to an embodiment, the flow path switching unit **200** may be attachably and detachably coupled to the main body to provide the first flow path for the drying mode at the first position and the second flow path for the dehumidifying mode at the second position. Referring to FIG. **1**, the flow path switching unit **200** according to an embodiment may be attachably and detachably mounted in a right lower portion of the front surface when the main body **110** is viewed from the front surface. The installation position of the flow path switching unit **200** for the dryer may not be limited thereto and may be changed to the left side of the front surface as described above.

[0118] The first flow path may be a flow path for providing air from the drum **130** to the heat exchanger **170** when the air inside the main body **110** circulates by sequentially flowing to the drum **130**, the flow path switching unit **200**, and the heat exchanger **170**. The second flow path may be a flow path for introducing the outside air to the heat exchanger **170** and discharging the air from the drum **130** outside when the outside air is introduced through the flow path switching unit **200**, passes through the heat exchanger **170** and the drum **130**, and then is introduced back to the flow path switching unit **200** and discharged to outside. The flow path switching unit **200** may provide the first flow path at the first position and provide the second flow path at the second position where the top surface and the bottom surface are reversed from the first position.

[0119] The dryer **100** according to an embodiment may include the flow path switching unit **200** for the dryer described above, thereby providing a structure, operations, and effects of the flow path switching unit **200** for the dryer such that a redundant description of the flow path switching unit **200** for the dryer will be omitted.

[0120] In addition, according to an embodiment, a device for sensing the flow path switching unit for the dryer may be provided.

[0121] The device for sensing the flow path switching unit for the dryer according to an embodiment may identify whether the flow path switching unit **200** mounted in the mounting portion **150** is mounted in a drying mode or a dehumidifying mode. Referring to FIG. **17**, the device for sensing the flow path switching unit for the dryer according to an embodiment may include the flow path switching unit **200**, the mounting portion **150**, a first indicator unit **230**, a second indicator unit **240**, a first sensor **210**, and a second sensor **220**.

[0122] The flow path switching unit **200** may provide a drying mode in which the drying material is dried at the first position, and a dehumidifying mode in which outside air is dehumidified at the second position that is rotated by 180° such that the top surface and the bottom surface are inverted from the first position.

[0123] The flow path switching unit **200** may have the above configuration according to the above-described embodiment. That is, the flow path switching unit **200** may include the body portion **10** including the top surface **11**, the bottom surface **12**, and the side surfaces **13** and **14**. The body portion **10** may include the flow path guide **20** which partitions the inner space to guide the air, and provides a first flow path at the first position for drying the drying material and a second flow path at the second position for dehumidifying the external air.

[0124] The flow path guide **20** extends from the front of one of the side surfaces **13** and **14** to the back of the other of the opposite surfaces, and based on a state where the body portion **10** is at the first position, may include the first inlet **15** formed in one of the opposite surfaces so that the air may flow therein from the drum, and the outlet **16** formed in the back of the body portion **10**. Also, the flow path switching unit **200** may include, in a state where the body portion **10** is at the second position, the second inlet **17** formed on the other side surface through which the air is introduced from the drum, the separating wall **18** protruding forward from the flow path guide **20** for division into a first region A through which the outside air is introduced and a second region B through which the outside air is discharged, and the opening portion **19** provided to be open and closed in the flow path guide **20** corresponding to the first region A.

[0125] The first flow path may be formed so that the air may flow from the first inlet **15** to the outlet **16**, and the second flow path may be formed so that the air introduced through the opening portion **19** is introduced through the second inlet **17** and discharged through the second region B after passing through the drum **130**.

[0126] Also, in a state where the body portion **10** is at the first position, the opening and closing unit **30** for opening/closing the body portion **10** may be provided, and the opening and closing unit **30** may form the second flow path by closing the front surface of the body portion **10** at the first position and opening the front surface of the body portion **10** at the second position.

[0127] The flow path switching unit **200** applied to the device for sensing the flow path switching unit for dryer, according to an embodiment, may include the above configuration described with reference to FIGS. **1** to **16** and may provide operations and effects described above, and thus, redundant descriptions about the flow path switching unit **200** are omitted.

[0128] The mounting portion **150** is provided in the main body **110** accommodating the drum **130** so as to attachably/detachably support the flow path switching unit **200**. The mounting portion **150** may include an upper wall **151**, a lower wall **152**, and side walls **153** and **154** respectively corresponding to the top surface **11**, the bottom surface **12**, and the side surfaces **13** and **14** of the body portion **10**. The flow path switching unit **200** may be attachably/detachably coupled to the inside of the mounting portion **150**. According to an embodiment, the mounting portion **150** may be provided in a lower right side when the main body **110** is seen from the front. The mounting portion **150** may be also provided in a lower left side when the main body **110** is seen from the front. The mounting portion **150** is a bracket structure having a certain width and open front and back surfaces, and may be formed to surround at least a part of the flow path switching unit **200**.

[0129] The first indicator unit **230** may be provided may be provided on the flow path switching unit **200** to indicate the first position. The second indicator unit **240** may be provided may be provided on the flow path switching unit **200** to indicate the second position. The first and second indicator units **230** and **240** may be accommodated and arranged in an accommodation portion provided on the outer surface of the body portion **10**.

[0130] The first sensor **210** may be provided on the mounting portion **150** to sense the first indicator unit **230**. In addition, the second sensor **220** may be provided on the mounting portion **150** to sense the second indicator unit **240**. The first and second sensors **210** and **220** may be provided on the outer boundary surface of the mounting portion **150**.

[0131] According to an embodiment, the first and second indicator units **230** and **240** may include magnetic substances providing magnetic force, and the first and second sensors **210** and **220** may be sensors operating due to the magnetic force of the magnetic substances. For example, the first and second sensors **210** and **220** may each adopt a magnetic lead switch, a hole sensor, etc. However, the first and second indicator units **230** and **240** and the first and second sensors **210** and **220** are not limited to the sensors using the magnetic force, provided that the flow path switching unit **200** may be identified. For example, the position of the flow path switching unit **200** may be identified by using an optical sensor of a non-contact type.

[0132] According to an embodiment, the first sensor **210** and the second sensor **220** may be arranged at different positions of any one surface of the mounting portion **150**. In this case, the first indicator unit **230** is arranged on one surface of the body portion **10**, facing the first sensor **210**, and the second indicator unit **240** is arranged on one opposite surface of the body portion **10**, which faces the surface of the body portion **10** where the first indicator unit **230** is arranged. Thus, at the first position, the first indicator unit **230** may face the first sensor **210**, and at the second position, the second indicator unit **240** may face the second sensor **220**.

[0133] In detail, the first and second sensors **210** and **220** may be arranged at spaced positions on one surface from among the upper wall **151**, the lower wall **152**, and the side walls **153** and **154** of the mounting portion **150**, and the first and second indicator units **230** and **240** arranged as above are described below with reference to FIGS. **18** to **20**.

[0134] FIG. **18** shows an example in which the first and second sensors **210** and **220** are arranged on the upper wall **151** of the mounting portion **150** in the device for sensing the flow path switching unit for the dryer, according to an embodiment.

[0135] Referring to FIG. **18**, the first and second sensors **210** and **220** may be arranged at different positions on the upper wall **151** of the mounting portion **150**. According to an embodiment, a virtual line connecting the first sensor **210** to the second sensor **220** may be arranged parallel to a left-right width direction of the body portion **10**. The arrangement direction of the first and second sensors **210** and **220** is not limited thereto. The first and second sensors **210** and **220** may be arranged at left and right edges of the upper wall **151**

with a sufficient distance therebetween in the left-right direction, and thus, the first sensor **210** may be prevented from reacting to the second indicator unit **240** or the second sensor **220** may be prevented from reacting to the first indicator unit **230**.

[0136] Referring to FIG. **18***a*, when the first and second sensors **210** and **220** are arranged at different positions on the upper wall **151** of the mounting portion **150**, the first indicator unit **230** may be arranged on the top surface **11** of the body portion **10** facing the first sensor **210** and the second indicator unit **240** may be arranged on the bottom surface **12** of the body portion **10**, which is symmetrical with the top surface **11** where the first indicator unit **230** is arranged. In this case, the first sensor **210** senses the first indicator unit **230**, and it may be identified that the flow path switching unit **200** is placed at the first position providing the drying mode.

[0137] FIG. **18***b* shows a state in which the flow path switching unit **200** is inverted by 180° from the first position of FIG. **18***a* so that the top surface **11** becomes the bottom surface **12**. As shown in FIG. **18***b*, a state in which the first and second sensors **210** and **220** are arranged at different positions of the upper wall **151** of the mounting portion **150** is maintained, the second indicator unit **240** faces the second sensor **220**, and the first indicator unit **230** is arranged facing the second indicator unit **240**. In the above state, the second sensor **220** senses the second indicator unit **240** and then may identify that the flow path switching unit **200** is placed at the second position where the dehumidifying mode is provided.

[0138] FIG. **19** shows an example in which the first and second sensors **210** and **220** are arranged on the lower wall **152** of the mounting portion **150** in the device for sensing the flow path switching unit for the dryer, according to an embodiment.

[0139] Referring to FIG. **19**, the first and second sensors **210** and **220** may be arranged at different positions on the lower wall **152** of the mounting portion **150**. According to an embodiment, a virtual line connecting the first sensor **210** to the second sensor **220** may be arranged parallel to a left-right width direction of the body portion **10**. However, the arrangement direction of the first and second sensors **210** and **220** is not limited thereto. The first and second sensors **210** and **220** are arranged at left and right edges of the upper wall **151** with a sufficient distance therebetween in the left-right direction, and thus, malfunctions of the first sensor **210** reacting to the second indicator unit **240** or the second sensor **220** reacting to the first indicator unit **230** may be prevented.

[0140] Referring to FIG. **19***a*, when the first and second sensors **210** and **220** are arranged at different positions on the lower wall **152** of the mounting portion **150**, the first indicator unit **230** may be arranged on the bottom surface **12** of the body portion **10**, facing the first sensor **210**, and the second indicator unit **240** may be arranged on the top surface **11** of the body portion **10**, which is symmetrical with the bottom surface **12** where the first indicator unit **230** is arranged. In this case, the first sensor **210** senses the first indicator unit **230**, and it may be determined that the flow path switching unit **200** is placed at the first position providing the drying mode.

[0141] FIG. **19***b* shows a state in which the flow path switching unit **200** is inverted by 180° from the first position of FIG. **19***a* so that the top surface **11** becomes the bottom surface **12**. As shown in FIG. **19***b*, a state in which the first and second sensors **210** and **220** are arranged at different positions on the lower wall **152** of the mounting portion **150** is maintained, the second indicator unit **240** faces the second sensor **220**, and the first indicator unit **230** is arranged facing the second indicator unit **240**. In the above state, the second sensor **220** senses the second indicator unit **240** and then may identify that the flow path switching unit **200** is placed at the second position where the dehumidifying mode is provided.

[0142] FIG. **20** shows an example in which the first and second sensors **210** and **220** are arranged on the left side wall **153** of the mounting portion **150** in the device for sensing the flow path switching unit for the dryer, according to an embodiment.

[0143] Referring to FIG. **20**, the first and second sensors **210** and **220** may be arranged at different positions on the side wall **153** or **154** of the mounting portion **150**. FIG. **20** shows that the first and second sensors **210** and **220** are arranged on the left side wall **153** in the vertical direction, but may be arranged on the right side wall **154** in the vertical direction. A virtual line connecting the first sensor **210** to the second sensor **220** may be arranged parallel to a height direction of the body portion **10**. However, the arrangement direction of the first and second sensors **210** and **220** is not limited thereto. The first and second sensors **210** and **220** are arranged on upper and lower end sides of the side wall **153** or **154** with a sufficient distance in the vertical direction, and thus, malfunctions of the first sensor **210** reacting to the second indicator unit **240** or the second sensor **220** reacting to the first indicator unit **230** may be prevented.

[0144] Referring to FIG. **20***a*, when the first and second sensors **210** and **220** are arranged at different positions of the side wall **153** or **154** of the mounting portion **150**, the first indicator unit **230** may be arranged on the side surface **13** (left side surface **13** based on FIG. **20**) of the body portion **10**, which faces the first sensor **210**, and the second indicator unit **240** may be arranged on the side surface **14** (right side surface **14** based on FIG. **20**) of the body portion **10**, which is symmetrical with the side surface **13** where the first indicator **230** is arranged. In this case, the first sensor **210** senses the first indicator unit **230**, and it may be determined that the flow path switching unit **200** is placed at the first position providing the drying mode.

[0145] FIG. **20***b* shows a state in which the flow path switching unit **200** is inverted by 180° from the first position of FIG. **20***a* so that the top surface **11** becomes the bottom surface **12**. As shown in FIG. **20***b*, a state in which the first and second sensors **210** and **220** are arranged at different positions of the side wall **153** of the mounting portion **150** is maintained, the second indicator unit **240** faces the second sensor **220**, and the first indicator unit **230** is arranged facing the second indicator unit **240**. In the above state, the second sensor **220** senses the second indicator unit **240** and then may identify that the flow path switching unit **200** is placed at the second position for providing the dehumidifying mode.

[0146] According to an embodiment, the first indicator unit **230** and the second indicator unit **240** may be arranged at different positions on one surface of the body portion **10**. In this case, the first sensor **210** is arranged on one surface of the mounting portion **150**, which faces the first indicator unit **230**, and the second sensor **220** is arranged on one opposite surface of the mounting portion **150**, which faces

the one surface of the mounting portion **150** where the first sensor **210** is arranged, so that, at the first position, the first indicator unit **230** may face the first sensor **210** and, at the second position, the second indicator unit **240** may face the second sensor **220**.

[0147] In more detail, the first and second indicator units **230** and **240** are arranged at different positions spaced apart from each other on one surface from among the top surface **11**, the bottom surface **12**, and the side surfaces **13** and **14** of the body portion **10**, and the first and second indicator units **230** and **240** arranged as above are described below with reference to FIGS. **21** to **23**.

[0148] FIG. **21** is a diagram showing an example in which the first and second indicator units **230** and **240** are arranged on the top surface **11** of the body portion **10**, in the device for sensing the flow path switching unit for the dryer according to an embodiment.

[0149] Referring to FIG. **21**, the first and second indicator units **230** and **240** may be arranged at different positions on the top surface **11** of the body portion **10**. According to an embodiment, a virtual line connecting the first indicator unit **230** to the second indicator unit **240** may be arranged parallel to the left-right width direction of the body portion **10**. However, the arrangement direction of the first and second indicator units **230** and **240** is not limited thereto. The first and second indicator units **230** and **240** are arranged at left and right edges of the top surface **11** with a sufficient distance therebetween in the left-and-right direction, and thus, the first sensor **210** may be prevented from reacting to the second indicator unit **240** or the second sensor **220** may be prevented from reacting to the first indicator unit **230**.

[0150] Referring to FIG. **21***a*, when the first and second indicator units **230** and **240** are arranged at different positions on the top surface **11** of the body portion **10**, the first sensor **210** is arranged on the upper wall **151** of the mounting portion **150**, which faces the first indicator unit **230**, and the second sensor **220** may be arranged on the lower wall **152** of the mounting portion **150**, which is symmetrical with the upper wall **151** where the first sensor **210** is arranged. In this case, the first sensor **210** senses the first indicator unit **230**, and it may be identified that the flow path switching unit **200** is placed at the first position providing the drying mode.

[0151] FIG. **21***b* shows a state in which the flow path switching unit **200** is inverted by 180° from the first position of FIG. **21***a* so that the top surface **11** becomes the bottom surface **12**. As shown in FIG. **21***b*, the first and second sensors **210** and **220** are maintained at the upper wall **151** and the lower wall **152** of the mounting portion **150**, the second indicator unit **240** faces the second sensor **220**, and the first indicator unit **230** is moved downward along with the second indicator unit **240**. In the above state, the second sensor **220** senses the second indicator unit **240** and then may identify that the flow path switching unit **200** is placed at the second position providing the dehumidifying mode.

[0152] FIG. **22** shows an example in which the first and second indicator units **230** and **240** are arranged on the bottom surface **12** of the body portion **10**, in the device for sensing the flow path switching unit for the dryer according to an embodiment.

[0153] Referring to FIG. **22**, the first and second indicator units **230** and **240** may be arranged at different positions on the bottom surface **12** of the body portion **10**. According to an embodiment, a virtual line connecting the first indicator unit **230** to the second indicator unit **240** may be arranged parallel to the left-right width direction of the body portion **10**. However, the arrangement directions of the first and second indicator units **230** and **240** are not limited thereto. The first and second indicator units **230** and **240** are arranged at left and right edges of the bottom surface **12** with a sufficient distance therebetween in the left-and-right direction, and thus, the first sensor **210** may be prevented from reacting to the second indicator unit **240** or the second sensor **220** may be prevented from reacting to the first indicator unit **230**.

[0154] Referring to FIG. **22***a*, when the first and second indicator units **230** and **240** are arranged at different positions on the bottom surface **12** of the body portion **10**, the first sensor **210** is arranged on the lower wall **152** of the mounting portion **150**, which faces the first indicator unit **230**, and the second sensor **220** may be arranged on the upper wall **151** of the mounting portion **150**, which is symmetrical with the lower wall **152** where the first sensor **210** is arranged. In this case, the first sensor **210** senses the first indicator unit **230**, and it may be identified that the flow path switching unit **200** is placed at the first position providing the drying mode.

[0155] FIG. **22***b* shows a state in which the flow path switching unit **200** is inverted by 180° from the first position of FIG. **22***a* so that the top surface **11** becomes the bottom surface **12**. As shown in FIG. **22***b*, the first sensor **210** and the second sensor **220** are maintained respectively at the lower wall **152** and the upper wall **151** of the mounting portion **150**, and the second indicator unit **240** faces the second sensor **220** and the first indicator unit **230** is moved upward along with the second indicator unit **240**. In the above state, the second sensor **220** senses the second indicator unit **240** and then may identify that the flow path switching unit **200** is placed at the second position providing the dehumidifying mode.

[0156] FIG. **23** shows an example in which the first and second indicator units **230** and **240** are arranged on the left side surface **13** of the body portion **10**, in the device for sensing the flow path switching unit for the dryer according to an embodiment.

[0157] Referring to FIG. **23**, the first and second indicator units **230** and **240** may be arranged at different positions on the side surface **13** or **14** of the body portion **10**. FIG. **23** shows the first and second indicator units **230** and **240** on the left side surface **13**, but the first and second indicator units may be formed on the right side surface **14**. Hereinafter, an example in which the first and second indicator units **230** and **240** are installed on the left side surface **13** of the body portion **10** is described below. According to an embodiment, a virtual line connecting the first indicator unit **230** to the second indicator unit **240** may be arranged parallel to the height direction of the body portion **10**. However, the arrangement direction of the first and second indicator units **230** and **240** is not limited thereto. The first and second indicator units **230** and **240** are arranged at left and right edges of the side surface **13** with a sufficient distance therebetween in the left-right direction, and thus, the first sensor **210** may be prevented from reacting to the second indicator unit **240** or the second sensor **220** may be prevented from reacting to the first indicator unit **230**.

[0158] Referring to FIG. **23***a*, when the first and second indicator units **230** and **240** are arranged at different positions on the left side surface **13** of the body portion **10**, the

first sensor **210** is arranged on the side wall **153** of the mounting portion **150**, which faces the first indicator unit **230**, and the second sensor **220** may be arranged on the side wall **154** of the mounting portion **150**, which is symmetrical with the side wall **153** where the first sensor **210** is arranged. In this case, the first sensor **210** senses the first indicator unit **230**, and it may be identified that the flow path switching unit **200** is placed at the first position providing the drying mode.

[0159] FIG. **23***b* shows a state in which the flow path switching unit **200** is inverted by 180° from the first position of FIG. **23***a* so that the top surface **11** becomes the bottom surface **12**. As shown in FIG. **23***b*, the first sensor **210** and the second sensor **220** are maintained respectively at the side wall **153** or **154** of the mounting portion **150**, and the second indicator unit **240** faces the second sensor **220** and the first indicator unit **230** is moved downward direction of the second indicator unit **240**. In the above state, the second sensor **220** senses the second indicator unit **240** and then may identify that the flow path switching unit **200** is placed at the second position providing the dehumidifying mode.

[0160] The device for sensing the flow path switching unit for dryer according to an embodiment may be configured to identify the first and second positions by using one indicator unit **250**. In detail, according to the embodiment, the mounting portion **150** is provided in the main body **110** accommodating the drum **130**, and the flow path switching unit **200** is detachably coupled to the mounting portion **150** to provide a drying mode in which the drying material is dried at the first position and a dehumidifying mode for dehumidifying the external air at the second position that is rotated by 180° from the first position so that the top surface **11** and the bottom surface **12** are inverted. Here, an indicator unit **250** provided on the flow path switching unit **200** for identifying the first position or the second position, the first sensor **210** provided on the mounting portion **150** for sensing the indicator unit **250** when the flow path switching unit **200** is at the first position, and the second sensor **220** provided on the mounting portion **150** for sensing the indicator unit **250** when the flow path switching unit **200** is at the second position may be provided.

[0161] According to an embodiment, the indicator unit **250** may include a magnetic substance providing magnetic force, and the first and second sensors **210** and **220** may be sensors operating due to the magnetic force of the magnetic substance. For example, the first and second sensors **210** and **220** may each adopt a magnetic lead switch, a hole sensor, etc. However, the indicator unit **250** and the first and second sensors **210** and **220** are not limited to the sensors using the magnetic force, provided that the flow path switching unit **200** may be identified. For example, the position of the flow path switching unit **200** may be identified by using an optical sensor of a non-contact type.

[0162] Referring to FIGS. **24** to **26**, arrangement relation between the first and second sensors **210** and **220** when the single indicator unit **250** is arranged at various portions of the body portion **10** is described in detail below.

[0163] FIG. **24** shows an example in which the single indicator unit **250** is provided on the top surface **11** of the body portion **10**, in a device for sensing a flow path switching unit for a dryer according to an embodiment. When the indicator unit **250** is arranged on the top surface **11** of the body portion **10**, the first sensor **210** is arranged on the upper wall **151** of the mounting portion **150**, which faces the indicator unit **250**, and the second sensor **220** may be arranged on the lower wall **152** of the mounting portion **150**, which faces the upper wall **151** of the mounting portion **150** where the first sensor **210** is arranged. Here, at the first position, the indicator unit **250** may face the first sensor **210**, and at the second position, the indicator unit **250** may face the second sensor **220**. That is, one indicator unit **250** faces the first sensor **210** at the first position and faces the second sensor **220** at the second position after rotation.

[0164] FIG. **25** shows an example in which a single indicator unit **250** is provided on the bottom surface **12** of the body portion **10**, in a device for sensing a flow path switching unit for a dryer according to an embodiment. When the indicator unit **250** is arranged on the bottom surface **12** of the body portion **10**, the first sensor **210** is arranged on the lower wall **152** of the mounting portion **150**, which faces the indicator unit **250**, and the second sensor **220** may be arranged on the opposite upper wall **151** of the mounting portion **150**, which faces the lower wall **152** of the mounting portion **150** where the first sensor **210** is arranged. Here, at the first position, the indicator unit **250** may face the first sensor **210**, and at the second position that is vertically inverted from the first position, the indicator unit **250** may face the second sensor **220**.

[0165] FIG. **26** shows an example in which the single indicator unit **250** is provided on the side surface of the body portion **10**, in a device for sensing a flow path switching unit for a dryer according to an embodiment. FIG. **26** shows that the indicator unit **250** is installed on the left side surface **13**, but the indicator unit may be installed on the right side surface **14**. When the indicator unit **250** is arranged on the left side surface **13** of the body portion **10**, the first sensor **210** is arranged on the left side wall **153** of the mounting portion **150**, which faces the indicator unit **250**, and the second sensor **220** may be arranged on the right side wall **154** of the mounting portion **150**, which faces the left side wall **153** of the mounting portion **150** where the first sensor **210** is arranged. Here, at the first position, the indicator unit **250** may face the first sensor **210**, and at the second position that is vertically inverted from the first position, the indicator unit **250** may face the second sensor **220**.

[0166] As described above, according to the present disclosure, the flow path switching unit **200** may provide flow paths for the drying mode and the dehumidifying mode as one unit, and may determine precisely and reliably whether the drying mode or the dehumidifying mode may be applied by using the indicator unit and the sensors in each mode. When the drying mode and the dehumidifying mode are provided via separate units, sensors capable of identifying the mode has to be installed in each unit, and thus, according to the present disclosure, the number of sensors may be reduced and costs such as material costs may be reduced.

[0167] In addition, the present disclosure may provide the dryer **100** including the device for sensing the flow path switching unit for dryer described above. The dryer **100** may adopt the above-described configurations, and the device for sensing the flow path switching unit for the dryer is described above, and thus, redundant descriptions are omitted. Also, as shown in FIG. **27**, the dryer **100** may include a controller executing the drying mode or the dehumidifying mode by identifying whether the flow path switching unit **200** is coupled to the mounting portion **150** at the first position or the second position.

[0168] To understand the disclosure, reference numerals have been given in embodiments of the disclosure shown in the drawings, and specific terms are used to describe the embodiments of the disclosure, but the disclosure is not limited by the specific terms, and the disclosure may include all the components that are normally thought by those of ordinary skill in the art.

[0169] Certain executions described here are embodiments of the disclosure, not limiting the scope of the disclosure in any way. For the brevity of the specification, the description of conventional electronic configurations, control systems, software, and other functional aspects of the systems may be omitted. Connections of lines or connection members between components shown in the drawings are illustrative of functional connections and/or physical or circuit connections, and in practice, may be represented as alternative or additional various functional connections, physical connections, or circuit connections. In addition, when there is no specific mentioning, such as "essential" or "important", it may not be a necessary component for the application of the disclosure. An expression such as "comprising", "including", etc., used herein has been used to be understood as terms of an open end of the description.

[0170] In the specification (especially, claims) of the disclosure, the use of the term "the" and similar indicators thereof may correspond to both the singular and the plural. In addition, when the range is described in the disclosure, the range includes the disclosure to which an individual value falling within the range is applied (unless stated otherwise), and is the same as the description of an individual value constituting the range in the detailed description of the disclosure. Finally, when there is no apparent description of the order of operations constituting the method according to the present disclosure or a contrary description thereof, the operations may be performed in an appropriate order. However, the present disclosure is not necessarily limited according to the describing order of the operations. The use of all examples or exemplary terms (for example, etc.) in the present disclosure are to simply describe the present disclosure in detail, and unless the range of the present disclosure is not limited by the examples or the exemplary terms unless limited by the claims. In addition, it would be apparent to those of ordinary skill in the art that various modifications and changes may be easily made without departing from the scope and spirit of the disclosure.

[0171] A device for sensing a flow path switching unit for a dryer according to an embodiment may use a flow path switching unit that provides a bidirectional flow path for a drying mode and a dehumidifying mode to allow a user to use the drying mode or the dehumidifying mode depending on a purpose with a single flow path switching unit, thereby improving user convenience, eliminating concerns about storage and loss, and reducing a cost such as a material cost, etc. Also, the position of the flow path switching unit is sensed by using the indicator unit and the sensors so as to easily identify whether the flow path switching unit is fastened for the drying mode or the dehumidifying mode, and the number of sensors may be reduced to save the costs.

[0172] The device for sensing the flow path switching unit for the dryer according to an embodiment may include a mounting portion for mounting the flow path switching unit in a main body accommodating a drum.

[0173] The device for sensing the flow path switching unit for the dryer according to the embodiment may include the flow path switching unit which is detachably coupled to the mounting portion to provide the drying mode in which the drying material is dried at the first position and the dehumidifying mode in which the external air is dehumidified at the second position that is rotated by 180° from the first position so that the upper and lower surfaces are inverted.

[0174] The device for sensing the flow path switching unit for the dryer according to the embodiment may include a first indicator unit provided on the flow path switching unit to indicate the first position.

[0175] The device for sensing the flow path switching unit for the dryer according to the embodiment may include a second indicator unit provided on the flow path switching unit to indicate the second position.

[0176] The device for sensing the flow path switching unit for the dryer according to the embodiment may include a first sensor provided on the mounting portion for sensing the first indicator unit.

[0177] The device for sensing the flow path switching unit for the dryer according to the embodiment may include a second sensor provided on the mounting portion for sensing the second indicator unit.

[0178] According to the device for sensing the flow path switching unit for the dryer of the embodiment, the flow path switching unit may include a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface, and the mounting portion includes an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, and the first side surface, and the second side surface opposite to the first side surface so that the flow path switching unit may be attachably/detachably coupled therein.

[0179] In the device for sensing the flow path switching unit for the dryer according to the embodiment, when the first sensor and the second sensor are arranged at different positions on one surface of the mounting portion, the first indicator unit is arranged on one surface of the body portion, which faces the first sensor, and the second indicator unit is arranged on one opposite surface of the body portion, which faces the one surface of the body portion where the first indicator unit is arranged, and thus, at the first position, the first indicator unit faces the first sensor and at the second position, the second indicator unit may face the second sensor.

[0180] The first sensor and the second sensor are arranged at different positions on the upper wall of the mounting portion, and at the first position, the first indicator unit may face the first sensor and at the second position, the second indicator unit may face the second sensor.

[0181] The first sensor and the second sensor are arranged at different positions on the lower wall of the mounting portion, and at the first position, the first indicator unit may face the first sensor and at the second position, the second indicator unit may face the second sensor.

[0182] The first sensor and the second sensor are arranged at different positions on the side wall of the mounting portion, and at the first position, the first indicator unit may face the first sensor and at the second position, the second indicator unit may face the second sensor.

[0183] When the first sensor and the second sensor are arranged at different positions on the upper wall of the

mounting portion, a virtual line connecting the first sensor to the second sensor may be arranged parallel to a left-right width direction of the body portion.

[0184] When the first sensor and the second sensor are arranged at different positions on the lower wall of the mounting portion, a virtual line connecting the first sensor to the second sensor may be arranged parallel to a left-right width direction of the body portion.

[0185] When the first sensor and the second sensor are arranged at different positions on the side wall of the mounting portion, a virtual line connecting the first sensor to the second sensor may be arranged parallel to a height direction of the body portion.

[0186] In the flow path switching unit for the dryer according to the embodiment, the first indicator unit and the second indicator unit may be arranged at different positions on one surface of the body portion.

[0187] When the first indicator unit and the second indicator unit are arranged at different positions on one surface of the body portion, the first sensor is arranged on one surface of the mounting portion, which faces the first indicator unit, and the second sensor is arranged on one opposite surface of the mounting portion, which faces the one surface of the mounting portion where the first sensor is arranged. Thus, at the first position, the first indicator unit may face the first sensor, and at the second position, the second indicator unit may face the second sensor.

[0188] The first indicator unit and the second indicator unit are arranged at different positions on the top surface of the body portion, and at the first position, the first indicator unit may face the first sensor and at the second position, the second indicator unit may face the second sensor.

[0189] The first indicator unit and the second indicator unit are arranged at different positions on the bottom surface of the body portion, and at the first position, the first indicator unit may face the first sensor and at the second position, the second indicator unit may face the second sensor.

[0190] The first indicator unit and the second indicator unit are arranged at different positions on the side surface of the body portion, and at the first position, the first indicator unit may face the first sensor and at the second position, the second indicator unit may face the second sensor.

[0191] When the first indicator unit and the second indicator unit are arranged at different positions on the top surface of the body portion, a virtual line connecting the first indicator unit to the second indicator unit may be arranged parallel to the left-right width direction of the body portion.

[0192] When the first indicator unit and the second indicator unit are arranged at different positions on the bottom surface of the body portion, a virtual line connecting the first indicator unit to the second indicator unit may be arranged parallel to the left-right width direction of the body portion.

[0193] When the first indicator unit and the second indicator unit are arranged at different positions on the side surface of the body portion, a virtual line connecting the first indicator unit to the second indicator unit may be arranged parallel to the height direction of the body portion.

[0194] According to the device for sensing the flow path switching unit for the dryer of the embodiment, the first indicator unit and the second indicator unit may include magnetic substances, and the first sensor and the second sensor may be sensors operated by the magnetic force due to the magnetic substances.

[0195] A device for sensing a flow path switching unit for a dryer according to an embodiment may include a mounting portion provided in a main body accommodating a drum, a flow path switching unit is attachably/detachably coupled to the mounting portion to provide a drying mode in which a drying material is dried at a first position and a dehumidifying mode in which the external air is dehumidified at a second position rotated by 180° from the first position so that positions of top and bottom surfaces are inverted, and an indicator unit provided on the flow path switching unit to identify the first position or the second position.

[0196] The indicator unit may be sensed by the first sensor provided on the mounting portion when the flow path switching unit is at the first position.

[0197] The indicator unit may be sensed by the second sensor provided on the mounting portion when the flow path switching unit is at the second position.

[0198] The indicator unit is arranged on the top surface of the body portion, the first sensor is arranged on one surface of the mounting portion, which faces the indicator unit, and the second sensor is arranged on one opposite surface of the mounting portion, which faces the one surface of the mounting portion where the first sensor is arranged. Thus, at the first position, the indicator unit may face the first sensor, and at the second position, the indicator unit may face the second sensor.

[0199] The indicator unit is arranged on the bottom surface of the body portion, the first sensor is arranged on one surface of the mounting portion, which faces the indicator unit, and the second sensor is arranged on one opposite surface of the mounting portion, which faces the one surface of the mounting portion where the first sensor is arranged. Thus, at the first position, the indicator unit may face the first sensor, and at the second position, the indicator unit may face the second sensor.

[0200] The indicator unit is arranged on the side surface of the body portion, the first sensor is arranged on one surface of the mounting portion, which faces the indicator unit, and the second sensor is arranged on one opposite surface of the mounting portion, which faces the one surface of the mounting portion where the first sensor is arranged. Thus, at the first position, the indicator unit may face the first sensor, and at the second position, the indicator unit may face the second sensor.

[0201] The indicator unit may include a magnetic substance, and the first sensor and the second sensor may be sensors operated by the magnetic force of the magnetic substance.

[0202] In the device for sensing the flow path switching unit for the dryer according to the embodiment, the flow path switching unit includes a body portion including a top surface, a bottom surface, and a first side surface, and a second side surface opposite to the first side surface so as to form the exterior, and the body portion includes a flow path guide which guides the air by partitioning the internal space, and provides a first flow path at the first position for drying the drying material and a second flow path at the second position for dehumidifying the external air. The flow path guide may extend from the front of one of the first side surface and the second side surface opposite to the first side surface to the back of the other of the opposite side surfaces.

[0203] Here, based on a state in which the body portion is at the first position, the body portion may include a first inlet formed in one side surface for introducing the air from the

drum, and an outlet formed in the back of the body portion, and the first flow path may be formed so that the air may flow from the first inlet to the outlet.

[0204] Also, based on a state in which the body portion is at the second position, the body portion may include a second inlet formed in the other side surface for introducing the air from the drum, a partition wall protruding forward from the flow path guide to divide into a first region in which the external air is introduced and a second region to which the external air is discharged, and an opening portion provided to be open/closed in the flow path guide corresponding to the first region, wherein the second flow path may be formed so that the outside air introduced through the opening portion is introduced through the second inlet after passing through the drum and is discharged through the second region.

[0205] In addition, based on the state in which the body portion is at the first position, an opening and closing unit for opening/closing the front of the body portion is provided, and the opening and closing unit closes the front of the body portion at the first position and opens the front of the body portion at the second position to form the second flow path.

[0206] A dryer according to an embodiment may include the device for sensing the flow path switching unit for the dryer.

[0207] The dryer may include a controller executing the drying mode or dehumidifying mode by identifying the first position or the second position of the flow path switching unit for the dryer.

[0208] While the embodiments of the present disclosure have been shown and described, the scope of the disclosure is not limited to the description and also includes various modifications and improvements made by those of ordinary skill in the art using the concept of the present disclosure defined in the appended claims.

1. A device for sensing a flow path switching for a dryer, the device comprising:

a mounting portion to be provided in a main body that accommodates a drum;

a flow path switching unit, coupleable to and decoupleable from the mounting portion, to provide a drying mode to dry material while coupled to the mounting portion and at a first position and to provide a dehumidifying mode to dehumidify outside air while coupled to the mounting portion and at a second position, the flow path switching unit being rotatable by 180° from the first position so that positions of top and bottom surfaces of the flow path switching unit are inverted;

a first indicator unit to be provided on the flow path switching unit, and while the first indicator unit is provided on the flow path switching unit, to indicate the first position;

a second indicator unit to be provided on the flow path switching unit, and while the second indicator unit is provided on the flow path switching unit, to indicate the second position;

a first sensor, to be provided on the mounting portion, and while the first sensor is provided on the mounting portion, the first sensor is configured to sense the first indicator unit; and

a second sensor to be provided on the mounting portion and while the second sensor is provided on the mounting portion, the second sensor is configured to sense the second indicator unit.

2. The device of claim **1**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface that forms an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side surface so that the flow path switching unit is coupleable to and decoupleable from the mounting portion,

when the first sensor and the second sensor are arranged at different positions on one surface of the mounting portion,

the first indicator unit is arranged on one surface of the body portion, which faces the first sensor, and the second indicator unit is arranged on one opposite surface of the body portion, which faces the one surface of the body portion where the first indicator unit is arranged, and

at the first position, the first indicator unit faces the first sensor, and at the second position, the second indicator unit faces the second sensor.

3. The device of claim **1**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface to form an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side surface so that the flow path switching unit is coupleable to and decoupleable from the mounting portion,

the first sensor and the second sensor are arranged

at different positions on the upper wall of the mounting portion,

at different positions on the lower wall of the mounting portion, or

at different positions on the side walls of the mounting portion, and

at the first position, the first indicator unit faces the first sensor, and at the second position, the second indicator unit faces the second sensor.

4. The device of claim **1**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface to form an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side surface so that the flow path switching unit is coupleable to and decoupleable from the mounting portion,

when the first sensor and the second sensor are arranged at different positions on the upper wall of the mounting portion, a virtual line connecting the first sensor to the second sensor is arranged parallel to a left-right width direction of the body portion,

at different positions on the lower wall of the mounting portion, a virtual line connecting the first sensor to the second sensor is arranged parallel to a left-right width direction of the body portion, or

at different positions on the side walls of the mounting portion, a virtual line connecting the first sensor to the second sensor is arranged parallel to a height direction of the body portion.

5. The device of claim **1**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface to form an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side surface to accommodate the flow path switching unit,

when the first indicator unit and the second indicator unit are arranged at different positions on one surface of the body portion,

the first sensor is arranged on one surface of the mounting portion, which faces the first indicator unit, and the second sensor is arranged on one opposite surface of the mounting portion, which faces the one surface of the mounting portion where the first sensor is arranged, and

at the first position, the first indicator unit faces the first sensor, and at the second position, the second indicator unit faces the second sensor.

6. The device of claim **1**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface to form an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side surface so that the flow path switching unit is coupleable to and decoupleable from the mounting portion, and

the first indicator unit and the second indicator unit are arranged

at different position on the top surface of the body portion,

at different positions on the bottom surface of the body portion, or

at different positions on one of the first side surface and the second side surface of the body portion, and

at the first position, the first indicator unit faces the first sensor, and at the second position, the second indicator unit faces the second sensor.

7. The device of claim **1**, wherein

the first indicator unit and the second indicator unit include magnetic substances, and

the first sensor and the second sensor are sensors operated by magnetic forces of the magnetic substances.

8. A device for sensing a flow path switching for a dryer, the device comprising:

a mounting portion provided in a main body accommodating a drum;

a flow path switching unit detachably coupled to the mounting portion and providing a drying mode to dry material at a first position and a dehumidifying mode for dehumidifying outside air at a second position that is rotated by 180° from the first position so that positions of top and bottom surfaces are inverted;

an indicator unit provided on the flow path switching unit for identifying the first position or the second position;

a first sensor provided on the mounting portion and configured to sense the indicator unit when the flow path switching unit is at the first position; and

a second sensor provided on the mounting portion and configured to sense the indicator unit when the flow path switching unit is at the second position.

9. The device of claim **8**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface to form an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side surface so that the flow path switching unit is coupleable to and decoupleable from the mounting portion, and

the indicator unit is arranged

on the top surface of the body portion,

on the bottom surface of the body portion, or

on one of the first side surface and the second side surface of the body portion,

the first sensor is arranged on one surface of the mounting portion, which faces the indicator unit, and the second sensor is arranged on one opposite surface of the mounting portion, which faces the one surface of the mounting portion where the first sensor is arranged, and

at the first position, the indicator unit faces the first sensor, and at the second position, the indicator unit faces the second sensor.

10. The device of claim **8**, wherein

the indicator unit includes a magnetic substance, and

the first sensor and the second sensor are sensors operated by magnetic force of the magnetic substance.

11. A dryer comprising:

the device for sensing the flow path switching for the dryer of claim **1**;

a drum to accommodate the material; and

a heat exchanger providing the drum with heat so as to dry the material.

12. The dryer of claim **11**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface to form an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side

surface so that the flow path switching unit is coupleable to and decoupleable from the mounting portion, and

when the first sensor and the second sensor are arranged at different positions on one surface of the mounting portion,

the first indicator unit is arranged on one surface of the body portion, which faces the first sensor, and the second indicator unit is arranged on one opposite surface of the body portion, which faces the one surface of the body portion where the first indicator unit is arranged, and

at the first position, the first indicator unit faces the first sensor, and at the second position, the second indicator unit faces the second sensor.

13. The dryer of claim **11**, wherein

the flow path switching unit comprises a body portion including a top surface, a bottom surface, a first side surface, and a second side surface opposite to the first side surface to form an exterior of the flow path switching unit,

the mounting portion comprises an upper wall, a lower wall, and side walls respectively corresponding to the top surface, the bottom surface, the first side surface, and the second side surface opposite to the first side surface to accommodate the flow path switching unit,

when the first indicator unit and the second indicator unit are arranged at different positions on one surface of the body portion,

the first sensor is arranged on one surface of the mounting portion, which faces the first indicator unit, and the second sensor is arranged on one opposite surface of the mounting portion, which faces the one surface of the mounting portion where the first sensor is arranged, and

at the first position, the first indicator unit faces the first sensor, and at the second position, the second indicator unit faces the second sensor.

14. The dryer of claim **11**, wherein

the first indicator unit and the second indicator unit include magnetic substances, and

the first sensor and the second sensor are sensors operated by magnetic force of the magnetic substances.

15. The dryer of claim **11**, comprising

a controller configured to execute the drying mode or the dehumidifying mode by identifying the first position or the second position of the flow path switching unit.

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