(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 382 656 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
12.06.2024 Bulletin 2024/24

(21) Application number: **22853435.0**

(22) Date of filing: **02.08.2022**

(51) International Patent Classification (IPC):
D06F 29/00 *(2006.01)* ***D06F 31/00*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
D06F 29/00; D06F 31/00

(86) International application number:
PCT/KR2022/011412

(87) International publication number:
WO 2023/014058 (09.02.2023 Gazette 2023/06)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **04.08.2021 KR 20210102312**

(71) Applicant: **LG Electronics Inc.**
Yeongdeungpo-gu
Seoul 07336 (KR)

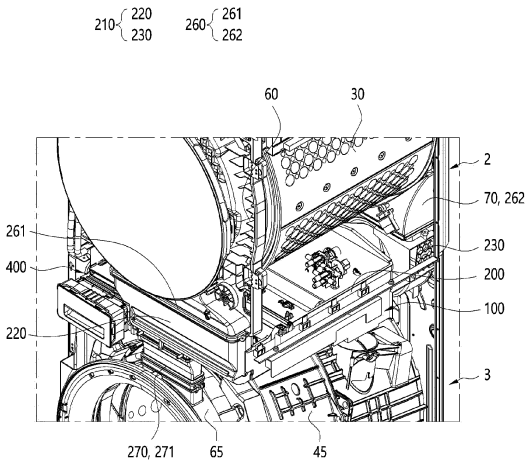
(72) Inventors:
- **LEE, Dongsoo**
  Seoul 08592 (KR)
- **AHN, Seungphyo**
  Seoul 08592 (KR)

(74) Representative: **Vossius & Partner**
Patentanwälte Rechtsanwälte mbB
Siebertstrasse 3
81675 München (DE)

(54) LAUNDRY TREATING APPARATUS

(57) Disclosed is a laundry treating apparatus including a first drum that accommodates laundry therein, a tub that is located below the first drum and accommodates water therein, a second drum that is disposed inside the tub and accommodates the laundry therein, a base disposed between the first drum and the tub, an air supply that is disposed on the base and supplies air to the first drum, a fluid circulation system disposed on the base, wherein a fluid exchanging heat with air of the air supply circulates in the fluid circulation system, wherein the fluid circulation system includes a compressor that compresses the fluid, and a detergent supply that is disposed between the first drum and the tub and supplies detergent into the tub, wherein a lower end of the compressor is positioned to overlap the detergent supply along a direction parallel to the ground.

[Fig. 14]



EP 4 382 656 A1

Description

[Technical Field]

[0001] The present disclosure relates to a laundry treating apparatus, and more particularly, to a laundry treating apparatus including a first drum and a second drum for receiving laundry therein.

[Background]

[0002] A laundry treating apparatus is an apparatus that puts laundry, such as clothes and bedding, into a drum and performs a treatment necessary for the laundry, such as removing contamination from the laundry or drying the laundry.

[0003] When the laundry treating apparatus is designed to remove the contamination from the laundry, the laundry treating apparatus may perform processes such as washing, rinsing, dehydration, and drying, and the laundry treating apparatus may be divided into a top loading scheme and a front loading scheme based on a scheme of putting the laundry into the drum.

[0004] The laundry treating apparatus may include a cabinet that forms an outer appearance thereof, a tub accommodated inside the cabinet, the drum rotatably mounted inside the tub and into which the laundry is put, and a detergent supply device that supplies detergent into the drum.

[0005] When the drum is rotated by a motor while washing water is supplied to the laundry accommodated in the drum, dirt on the laundry may be removed by friction between the drum and the washing water.

[0006] The detergent supply device has a detergent supply function to improve a washing effect. In this regard, the detergent refers to substances that enhance the washing effect, such as fabric detergent, fabric softener, and fabric bleach. Detergent in a powder form or detergent in a liquid form may be used as the detergent.

[0007] In one example, when the laundry treating apparatus is designed to dry the laundry, the laundry treating apparatus may remove moisture from the laundry by providing dry air to the laundry.

[0008] The laundry treating apparatus may include the cabinet, the drum rotatably disposed inside the cabinet, a heating means that heats or dries air provided to the laundry, and the like.

[0009] As dry air is supplied to the laundry accommodated in the drum, the moisture existing in the laundry may be evaporated and removed by the dry air and water in the laundry may be removed.

[0010] Much research has been conducted to satisfy all the various laundry treatment processes required by a user and to shorten an execution time for each treatment process. For example, the laundry treating apparatus may include a plurality of drums separated from each other and perform independent laundry treatment processes in the respective drums, thereby performing the plurality of treatment processes simultaneously.

[0011] Related document EP 2949801 discloses a laundry treating apparatus in which a drawer-type, top loader-type sub-drum is disposed under a front loader-type main drum. The user may perform a first treatment process of the laundry via the main drum and at the same time perform a second treatment process independent of the first treatment process via the sub-drum.

[0012] However, in the laundry treating apparatus, the sub-drum has a smaller size than the main drum and thus is able to treat a small amount of laundry, and there is a space limitation, so that there is a limitation to the treatment processes that may be performed together with the drying process of the laundry.

[0013] To overcome the above problem, research has been conducted such that the laundry treating apparatus has the plurality of drums and all of the drums are designed to be of an equal size and in an equal relationship with each other to perform the independent laundry treatment processes.

[0014] Related document CN 102605586 discloses a laundry treating apparatus in which a first treating apparatus on an upper side and a second treating apparatus on a lower side are designed of the front loader-type. In the laundry treating apparatus, the user may perform the plurality of laundry treatment processes simultaneously using the first treating apparatus and the second treating apparatus independently of each other.

[0015] In the laundry treating apparatus, the first treating apparatus on the upper side is constructed as a dryer that may perform the drying process of the laundry and the second treating apparatus on the lower side is constructed as a washer that may perform the washing process of the laundry.

[0016] In the laundry treating apparatus, the user may use the second treating apparatus when the user wants to perform the washing process, the user may use the first treating apparatus when the user wants to perform the drying process, and the first treating apparatus and the second treating apparatus may operate simultaneously.

[0017] In one example, when the first treating apparatus and the second treating apparatus are vertically stacked as in the laundry treating apparatus, an air supply that supplies hot air into a drum of the first treating apparatus is disposed under the first treating apparatus and a detergent supply that supplies the detergent into a drum of the second treating apparatus, a water supply that supplies water, and the like are disposed on the second treating apparatus, so that there is a problem in that a vertical level from the ground of a laundry inlet defined in a front surface of the first treating apparatus on the upper side or the drum of the first treating apparatus has no choice but to increases.

[0018] In addition, when the air supply of the first treating apparatus is moved to an opposite side of the second treating apparatus, for example, to an upper side of the first treating apparatus, and when it is also to secure the

function of drying the laundry for the second treating apparatus, the air supply supplies hot air into the drum of the second treating apparatus while having an increased separation distance from the drum of the second treating apparatus, which is disadvantageous in implementing the drying function of the second treating apparatus.

[0019] In other words, in the stacked form of the first treating apparatus and the second treating apparatus, the vertical level of the laundry inlet or a drum inlet accessed by the user for inserting the laundry in the first treating apparatus is excessively high, which may reduce user accessibility. Further, an overall vertical dimension of the laundry treating apparatus may be excessively great, which may lead to a limitation in an installation space, and may cause inconvenience in maintenance of the first treating apparatus during use.

[0020] Therefore, in the laundry treating apparatus in which the first treating apparatus and the second treating apparatus are vertically stacked, developing an effective structure that may effectively lower the vertical level of the laundry inlet or the drum inlet defined in the first treating apparatus on the upper side to conveniently improve the user accessibility, and may allow not only the first treating apparatus but also the second treating apparatus to perform the drying function is an important task in this technical field.

[Summary]

[Technical Problem]

[0021] Embodiments of the present disclosure are to provide a laundry treating apparatus that may improve convenience of use via a first treating apparatus and a second treating apparatus in a vertical stacking relationship.

[0022] Additionally, embodiments of the present disclosure are to provide a laundry treating apparatus that may improve accessibility and convenience of a user by effectively lowering a vertical level of a drum of a first treating apparatus on an upper side.

[0023] Additionally, embodiments of the present disclosure are to provide a laundry treating apparatus that has an efficiently reduced overall vertical dimension, thereby reducing restrictions on an installation space and making repair and maintenance work easier.

[0024] Additionally, embodiments of the present disclosure are to provide a laundry treating apparatus that may have various components by efficiently utilizing a space between a first drum and a second drum.

[0025] Additionally, embodiments of the present disclosure are to provide a laundry treating apparatus in which an air supply for supplying air into a first drum of a first treating apparatus on an upper side may be disposed using an inner space of a second treating apparatus on a lower side.

[0026] Additionally, embodiments of the present disclosure are to provide a laundry treating apparatus in which a base including an air supply may be disposed on a second treating apparatus in a structurally stable manner.

[0027] Additionally, embodiments of the present disclosure are to provide a laundry treating apparatus in which a first treating apparatus and a second treating apparatus are supplied with air via one air supply to implement a drying function of laundry.

[Technical Solutions]

[0028] A laundry treating apparatus according to one embodiment of the present disclosure includes a first treating apparatus on an upper side and a second treating apparatus on a lower side. The first treating apparatus may perform a drying process of laundry accommodated in a first drum, and the second treating apparatus may perform a washing process of laundry accommodated in a second drum.

[0029] In one embodiment of the present disclosure, at least a portion of an air supply for supplying hot air to the first drum may be located inside the second treating apparatus. For example, at least a portion of a base for installing the air supply may be positioned parallel to the ground together with a detergent supply disposed on the second treating apparatus.

[0030] Accordingly, in one embodiment of the present disclosure, a lower end of a compressor disposed on the base may be positioned to overlap the detergent supply in a direction parallel to the ground. Additionally, a lower end of a heat exchanger disposed on the base may be positioned to overlap the detergent supply in the direction parallel to the ground.

[0031] To be disposed on the second treating apparatus, a portion of the base facing the detergent supply may be open. That is, the base may be disposed so as not to overlap the detergent supply in a direction perpendicular to the ground.

[0032] A laundry treating apparatus according to one embodiment of the present disclosure as described above includes a first drum that accommodates laundry therein, a tub that is located below the first drum and accommodates water therein, a second drum that is disposed inside the tub and accommodates the laundry therein, a base disposed between the first drum and the tub, an air supply that is disposed on the base and supplies air to the first drum, a fluid circulation system disposed on the base, wherein a fluid exchanging heat with air of the air supply circulates in the fluid circulation system, wherein the fluid circulation system includes a compressor that compresses the fluid, and a detergent supply that is disposed between the first drum and the tub and supplies detergent into the tub.

[0033] A lower end of the compressor may be positioned to overlap the detergent supply along a direction parallel to the ground. In one embodiment of the present disclosure, a location of the base is set such that the lower end of the compressor has the same vertical level

as the detergent supply, so that a vertical level of the first treating apparatus, that is, a vertical level of the first drum, may be effectively reduced.

[0034] The base may include a compressor mounting portion where the compressor is mounted, and the compressor mounting portion may be positioned to overlap the detergent supply along the direction parallel to the ground.

[0035] The compressor may include an extended support extending away from the compressor and coupled to the base, and the extended support may be positioned to overlap the detergent supply along the direction parallel to the ground.

[0036] The fluid circulation system may further include a heat exchanger where the heat exchange between the fluid and air of the air supply occurs, and a lower end of the heat exchanger may be positioned to overlap the detergent supply along the direction parallel to the ground.

[0037] The lower end of the compressor may be located at the rear of the detergent supply.

[0038] The laundry treating apparatus may further include a water supply valve that is connected to an external water supply source and regulates a flow of water provided to the tub or the detergent supply, and the water supply valve may be located above the base.

[0039] The laundry treating apparatus may further include a water supply hose connected to the detergent supply and where water flows, and at least a portion of the water supply hose may be located above the base. At least a portion of the base may be positioned to overlap the detergent supply along the direction parallel to the ground.

[0040] A portion of the base overlapping the detergent supply along a direction perpendicular to the ground may be open. The base may be disposed so as not to overlap the detergent supply along a direction perpendicular to the ground.

[0041] The base may further include a compressor mounting portion where the compressor is mounted, and the compressor mounting portion may be located at the rear of the detergent supply. A heat exchanger where the fluid flows and exchanges the heat with air may be coupled to the base, and the heat exchanger may be located next to the detergent supply.

[0042] The base may further include a compressor mounting portion where the compressor is mounted, and the compressor mounting portion may form a lowermost end of the base.

[0043] The laundry treating apparatus may further include a first driver spaced from the base and connected to the first drum to rotate the first drum. The laundry treating apparatus may further include a rear panel located at the rear of the first drum to shield the first drum from the outside, and the first driver may be coupled to the rear panel.

[0044] A lower end of the heat exchanger may be positioned to overlap the detergent supply along the direction parallel to the ground.

[0045] A laundry treating apparatus according to one embodiment of the present disclosure includes a first treating apparatus including a first cabinet and a first drum that is disposed inside the first cabinet and accommodates laundry therein, a second treating apparatus including a second cabinet disposed beneath the first cabinet and a second drum that is disposed inside the second cabinet and accommodates the laundry therein, and a base located below the first drum and including an air supply for supplying air into the first drum.

[0046] The first cabinet includes a first side panel disposed next to the first drum, and the second cabinet includes a second side panel located beneath the first side panel and disposed next to the second drum, and at least a portion of the base is located downwardly of an upper end of the second side panel.

[0047] The base may be coupled to the second cabinet and at least the portion of the base may be located inside the second cabinet. The first treating apparatus may be installed on the second treating apparatus where the base is installed.

[0048] The first cabinet may further include a rear panel located at the rear of the first drum, and the first treating apparatus may further include a first driver coupled to the rear panel to provide a rotational force to the first drum.

[0049] The second treating apparatus may further include a tub disposed inside the second cabinet, wherein the second drum is installed inside the tub, wherein the tub accommodates water therein, and a detergent supply that is connected to the tub and supplies detergent into the tub.

[0050] The base and the detergent supply may be disposed on the second cabinet, located above the tub, and arranged so as not to overlap each other.

[0051] The second treating apparatus may further include a tub disposed inside the second cabinet, wherein the second drum is installed inside the tub, wherein the tub accommodates water therein, and a water supply valve disposed inside the second cabinet and connected to an external water supply source to regulate a flow of water supplied to the tub, and the water supply valve may be located above the base.

[0052] At least the portion of the base may be located inside the second cabinet, and the base may further include a temperature regulator for adjusting a temperature of air of the air supply.

[0053] The temperature regulator may include a compressor that circulates a fluid exchanging heat with air, and at least a portion of the compressor may protrude upwardly of the upper end of the second side panel.

[0054] A compressor mounting portion where the compressor is installed may be defined in the base to be recessed toward the second drum. The compressor mounting portion may form a lowermost end of the base.

[0055] The first cabinet may include a first front panel located in front of the first drum, and the second cabinet may include a second front panel located below the first

front panel and in front of the second drum.

[0056] A control panel signally connected to the first treating apparatus and the second treating apparatus may be disposed between the first front panel and the second front panel, and a lower end of the control panel may be located downwardly of the upper end of the second side panel.

[0057] An upper end of the control panel may be located upwardly of a lower end of the first side panel. A lower end of the first front panel may be located upwardly of the lower end of the first side panel, and an upper end of the second front panel may be located downwardly of the upper end of the second side panel.

[0058] A laundry treating apparatus according to one embodiment of the present disclosure includes a first treating apparatus including a first cabinet and a first drum that is disposed inside the first cabinet and accommodates laundry therein, a second treating apparatus including a second cabinet disposed beneath the first cabinet and a second drum that is disposed inside the second cabinet and accommodates the laundry therein, and a base disposed on the first treating apparatus and including an air supply for supplying air into the first drum, and the first treating apparatus is installed on the second treating apparatus such that the air supply and the inside of the first drum are in communication with each other.

[0059] The air supply may include a connection portion to be in communication with the inside of the first drum, and the first treating apparatus may include a first coupling portion that slides in a first direction to be coupled to the connection portion.

[0060] The connection portion may include a connection sealer surrounding an open surface opening toward the first coupling portion, and a sliding groove extending along the first direction, wherein a portion of the first coupling portion is inserted into and slides in the sliding groove, and a portion of the connection sealer may be disposed in the sliding groove.

[0061] In the connection sealer, a first portion located in the first direction relative to the open surface may be located upwardly of a second portion located in a direction opposite to the first direction.

[0062] The connection portion may further include a first connection surface located in the first direction relative to the open surface and located upwardly of the open surface to support the first coupling portion in the first direction, and a second connection surface located in the direction opposite to the first direction relative to the open surface and located downwardly of the open surface to support the first coupling portion in the first direction, and the first portion of the connection sealer may be disposed on the first connection surface, and the second portion may be disposed on the second connection surface.

[0063] The air supply may include a connection portion to be in communication with the first drum and the second drum, the first treating apparatus may further include a first coupling portion connected to the connection portion to allow the inside of the first drum and the connection portion to be in communication with each other, and the second treating apparatus may further include a second coupling portion connected to the connection portion to allow the inside of the second drum and the connection portion to be in communication with each other.

[0064] At least one of the connection portion, the first coupling portion, and the second coupling portion may include a selector that alternatively allows an air flow between the connection portion and any one of the first coupling portion and the second coupling portion.

[0065] The selector may be constructed to be rotatable, and allow the air flow between the first coupling portion and the connection portion at a first rotation location and allow the air flow between the second coupling portion and the connection portion at a second rotation location.

[Advantageous Effects]

[0066] The embodiments of the present disclosure are to provide the laundry treating apparatus that may improve the convenience of use via the first treating apparatus and the second treating apparatus in the vertical stacking relationship.

[0067] Additionally, the embodiments of the present disclosure are to provide the laundry treating apparatus that may improve the accessibility and the convenience of the user by effectively lowering the vertical level of the drum of the first treating apparatus on the upper side.

[0068] Additionally, the embodiments of the present disclosure are to provide the laundry treating apparatus that has the efficiently reduced overall vertical dimension, thereby reducing the restrictions on the installation space and making the repair and maintenance work easier.

[0069] Additionally, the embodiments of the present disclosure are to provide the laundry treating apparatus that may have the various components by efficiently utilizing the space between the first drum and the second drum.

[0070] Additionally, the embodiments of the present disclosure are to provide the laundry treating apparatus in which the air supply for supplying air into the first drum of the first treating apparatus on the upper side may be disposed using the inner space of the second treating apparatus on the lower side.

[0071] Additionally, the embodiments of the present disclosure are to provide the laundry treating apparatus in which the base including the air supply may be disposed on the second treating apparatus in the structurally stable manner.

[0072] Additionally, the embodiments of the present disclosure are to provide the laundry treating apparatus in which the first treating apparatus and the second treating apparatus are supplied with air via the one air supply to implement the drying function of the laundry.

[Brief Description of the Drawings]

[0073]

FIG. 1 is a front perspective view showing an outer appearance of a laundry treating apparatus according to an embodiment of the present disclosure.

FIG. 2 is a front view of a laundry treating apparatus according to an embodiment of the present disclosure.

FIG. 3 shows a side view of a laundry treating apparatus according to an embodiment of the present disclosure.

FIG. 4 is a rear perspective view of a laundry treating apparatus according to an embodiment of the present disclosure.

FIG. 5 shows the interior of a laundry treating apparatus according to an embodiment of the present disclosure.

FIG. 6 is a cross-sectional view showing a connection relationship between a first driver and a first drum of a first treating apparatus in a laundry treating apparatus according to an embodiment of the present disclosure.

FIG. 7 shows a first treating apparatus and a second treating apparatus separated from each other in an embodiment of the present disclosure.

FIG. 8 shows a first treating apparatus seated on a second treating apparatus in an embodiment of the present disclosure.

FIG. 9 shows a first treating apparatus slid relative to a second treating apparatus in a laundry treating apparatus in FIG. 8.

FIG. 10 shows a control panel mounted on a laundry treating apparatus in FIG. 9.

FIG. 11 shows vertical levels of a control panel and an upper end of a second side panel in an embodiment of the present disclosure.

FIG. 12 shows a base disposed between a first drum and a second drum in an embodiment of the present disclosure.

FIG. 13 shows an air supply of a base and a first drum 30 connected to each other in an embodiment of the present disclosure.

FIG. 14 shows an air supply of a base connected to both a first drum and a second drum in an embodiment of the present disclosure.

FIG. 15 is a diagram conceptually showing an air circulation process by an air supply in FIG. 14.

FIG. 16 shows a base located on top of a second treating apparatus in an embodiment of the present disclosure.

FIG. 17 shows a first coupling portion disposed in a first treating apparatus and connected to an air supply according to an embodiment of the present disclosure.

FIG. 18 is a top view of a base disposed in parallel with a detergent supply in an embodiment of the present disclosure.

FIG. 19 is a diagram comparing vertical levels of a lower end of a compressor and a detergent supply in an embodiment of the present disclosure.

FIG. 20 is a cross-sectional view of a compressor mounting portion of a base viewed from the rear in an embodiment of the present disclosure.

FIG. 21 is a diagram comparing vertical levels of a lower end of a heat exchanger and a detergent supply in an embodiment of the present disclosure.

FIG. 22 is a diagram showing an inlet of an air supply connected to a first drum and a second drum in an embodiment of the present disclosure.

FIG. 23 is a diagram showing an inlet of an air supply separated from a first coupling portion in an embodiment of the present disclosure.

FIG. 24 is a diagram showing a first inlet coupling portion of a first treating apparatus coupled with an inlet of an air supply in an embodiment of the present disclosure.

FIG. 25 is a diagram showing an open surface formed at an inlet of an air supply in an embodiment of the present disclosure.

FIG. 26 is a diagram showing a connection sealer disposed in a connection portion of an air supply in an embodiment of the present disclosure.

FIG. 27 is a diagram showing a first treating apparatus being seated on a second treating apparatus and a first inlet coupling portion of the first treating apparatus being disposed on a connection portion of an air supply in an embodiment of the present disclosure.

FIG. 28 is a diagram showing an inlet of an air supply and a first inlet coupling portion being coupled to each other as the first inlet coupling portion in FIG. 27 slides.

FIG. 29 is a diagram showing a sliding groove defined in a connection portion of an air supply according to an embodiment of the present disclosure.

FIG. 30 is a cross-sectional view showing the inside of an inlet coupled with a first inlet coupling portion and a second inlet coupling portion according to an embodiment of the present disclosure.

FIG. 31 is a diagram showing a first selector disposed in an inlet of an air supply in an embodiment of the present disclosure.

FIG. 32 is a cross-sectional view showing the inside of an inlet with the inside of a second drum and an air supply being in communication with each other in an embodiment of the present disclosure.

FIG. 33 is a cross-sectional view showing the inside of an inlet with the inside of a first drum and an air supply being in communication with each other in an embodiment of the present disclosure.

FIG. 34 is a diagram showing an outlet of an air supply coupled with a first outlet coupling portion and a second outlet coupling portion in an embodiment of the present disclosure.

FIG. 35 is a diagram showing a first outlet coupling portion disposed in a first treating apparatus and coupled with an outlet of an air supply in an embodiment of the present disclosure.

FIG. 36 is a diagram showing an open surface and a second outlet coupling portion formed at an outlet of an air supply according to an embodiment of the present disclosure.

FIG. 37 is a diagram showing an outlet frame disposed at an outlet of an air supply in an embodiment of the present disclosure.

FIG. 38 is a diagram showing a first treating apparatus being seated on a second treating apparatus and a first outlet coupling portion of the first treating apparatus being disposed on an outlet of an air supply in an embodiment of the present disclosure.

FIG. 39 is a cross-sectional view showing a first outlet coupling portion slid and coupled with an outlet of an air supply in a laundry treating apparatus in FIG. 38.

FIG. 40 is a diagram showing an outlet of an air supply and an air flow path by a first outlet coupling portion and a second outlet coupling portion in an embodiment of the present disclosure.

FIG. 41 is a diagram showing a second selector disposed in a first outlet coupling portion according to an embodiment of the present disclosure.

FIG. 42 is a diagram showing a second selector in a state in which an outlet of an air supply and the inside of a first drum are in communication with each other in an embodiment of the present disclosure.

FIG. 43 is a diagram showing a second selector in a state in which an outlet of an air supply and the inside of a second drum are in communication with each other in an embodiment of the present disclosure.

[Detailed Description]

[0074] Hereinafter, an embodiment of the present disclosure will be described in detail with reference to the accompanying drawings such that a person having ordinary knowledge in the technical field to which the present disclosure belongs may easily implement the embodiment.

[0075] However, the present disclosure is able to be implemented in various different forms and is not limited to the embodiment described herein. In addition, to clearly describe the present disclosure, components irrelevant to the description are omitted in the drawings. Further, similar reference numerals are assigned to similar components throughout the present document.

[0076] Duplicate descriptions of the same components are omitted herein.

[0077] In addition, it will be understood that when a component is referred to as being 'connected to' or 'coupled to' another component herein, it may be directly connected to or coupled to the other component, or one or more intervening components may be present. On the other hand, it will be understood that when a component is referred to as being 'directly connected to' or 'directly coupled to' another component herein, there are no other intervening components.

[0078] Furthermore, the terminology used herein is for the purpose of describing the specific embodiment of the present disclosure only and is not intended to be limiting of the present disclosure.

[0079] As used herein, the singular forms 'a' and 'an' are intended to include the plural forms as well, unless the context clearly indicates otherwise.

[0080] It should be understood that the terms 'comprises', 'comprising', 'includes', and 'including' when used herein, specify the presence of the features, numbers, steps, operations, components, parts, or combinations thereof described herein, but do not preclude the presence or addition of one or more other features, numbers, steps, operations, components, or combinations thereof.

[0081] In addition, herein, the term 'and/or' includes a combination of a plurality of listed items or any of the plurality of listed items. Herein, 'A or B' may include 'A', 'B', or 'both A and B'. FIG. 1 shows an embodiment of a structure of a laundry treating apparatus of the present disclosure.

[0082] FIG. 1 shows a laundry treating apparatus 1 according to an embodiment of the present disclosure. The laundry treating apparatus 1 may include a cabinet, and a drum for accommodating laundry therein may be disposed inside the cabinet.

[0083] The laundry treating apparatus 1 may include a first treating apparatus 2 and a second treating apparatus 3. The first treating apparatus 2 and the second treating apparatus 3 may be distinguished from each other based on the drum. For example, the first treating apparatus 2 may include a first drum 30, and the second treating apparatus 3 may include a second drum 40.

[0084] The first treating apparatus 2 and the second treating apparatus 3 may be constructed to share one cabinet or may have different cabinets as shown in FIG. 1. For example, the first treating apparatus 2 may include a first cabinet 10 and the second treating apparatus 3 may include a second cabinet 20.

[0085] The cabinet may define a space therein for the drum and other components to be disposed, and may shield the inner space from the outside. The cabinet may include a front panel, a rear panel, and side panels that are arranged on the front, rear, and sides, respectively.

[0086] The first treating apparatus 2 may be located on the second treating apparatus 3 and may share at least the side panel with the second treating apparatus 3. That is, in one embodiment of the present disclosure, an upper portion of the side panel may be located on a side of the first drum 30 and a lower portion of the side panel may be located on a side of the second drum 40.

[0087] As shown in FIG. 1, when the first treating apparatus 2 and the second treating apparatus 3 include the first cabinet 10 and the second cabinet 20, respectively, the first cabinet 10 may include a first front panel

11, a first rear panel 13, and a first side panel 12, and the second cabinet 20 may include a second front panel 21, a second rear panel 23, and a second side panel 22.

[0088] In this case, the first front panel 11 may be located on the second front panel 21, the first rear panel 13 may be located on the second rear panel 23, and the first side panel 12 may be located on the second side panel 22.

[0089] One embodiment of the present disclosure may be constructed to be of a front loader type. That is, in the first cabinet 10 and the second cabinet 20, a first laundry inlet and a second laundry inlet that allow the inside and the outside to be in communication with each other may be defined in the first front panel 11 and the second front panel 21, respectively.

[0090] The first laundry inlet may be located above the second laundry inlet, and the first treating apparatus 2 may include a first laundry door 18 for selectively shielding the first laundry inlet. Further, the second treating apparatus 3 may include a second laundry door 28 for selectively shielding the second laundry inlet.

[0091] The first laundry door 18 and the second laundry door 28 may be coupled to the first front panel 11 and the second front panel 21, respectively. The first laundry door 18 and the second laundry door 28 may be pivotably coupled to the first front panel 11 or the second front panel 21 and selectively close the first laundry inlet or the second laundry inlet depending on a pivoting location.

[0092] One embodiment of the present disclosure may include a control panel 50. The control panel 50 may be disposed on each of the first treating apparatus 2 and the second treating apparatus 3, or the single control panel 50 may be disposed as shown in FIG. 1 and be connected to the first treating apparatus 2 and the second treating apparatus 3.

[0093] There may be various locations of the control panel 50. For example, the control panel 50 may include a plurality of control panels, and the control panels may be located at upper portions of the first treating apparatus 2 and the second treating apparatus 3 or may be located at a lower portion of the first front panel 11 and the upper portion of the second front panel 21 to improve user accessibility.

[0094] In one embodiment of the present disclosure, the single control panel 50 may be disposed between the first front panel 11 and the second front panel 21 to improve the user accessibility.

[0095] FIG. 2 is a front view of the laundry treating apparatus 1 according to an embodiment of the present disclosure. The first treating apparatus 2 may include the first front panel 11, and the first laundry inlet and the first laundry door 18 described above may be located on the first front panel 11.

[0096] The second treating apparatus 3 may include the second front panel 21, and the second laundry inlet and the second laundry door 28 described above may be located on the second front panel 21. The first front panel 11 may be located on the second front panel 21. For example, the first front panel 11 and the second front panel 21 may be aligned in a direction perpendicular to the ground.

[0097] The control panel 50 may be disposed between the first front panel 11 and the second front panel 21. The control panel 50 may be located in a lower front portion of the first treating apparatus 2, in an upper front portion of the second treating apparatus 3, or in front portions of the first treating apparatus 2 and the second treating apparatus 3 together.

[0098] FIG. 3 shows a side view of the laundry treating apparatus 1 according to an embodiment of the present disclosure. The first treating apparatus 2 may include the first drum 30, and the first drum 30 may include a first drum inlet facing the first laundry inlet. A space for accommodating therein the laundry introduced through the first laundry inlet may be defined inside the first drum 30.

[0099] The second treating apparatus 3 may include the second drum 40, and the second drum 40 may include a second drum inlet facing the second laundry inlet. A space for accommodating therein the laundry introduced through the second laundry inlet may be defined inside the second drum 40.

[0100] The second treating apparatus 3 may further include a tub 45. The second drum 40 may be installed rotatably inside the tub 45. The tub 45 may include a tub inlet facing the second laundry inlet. The laundry introduced through the second laundry inlet may be accommodated inside the second drum 40 after passing through the tub inlet and the second drum inlet.

[0101] The tub 45 may be constructed to accommodate water therein. That is, the second treating apparatus 3 may be constructed such that water is accommodated in the tub 45 and a washing process on the laundry accommodated inside the second drum 40 is able to be performed. That is, the second treating apparatus 3 may be constructed as a washer that may perform the washing process of the laundry.

[0102] In one embodiment of the present disclosure, the first treating apparatus 2 and the second treating apparatus 3 may perform independent laundry treatment processes. When necessary, the user may operate one of the first treating apparatus 2 and the second treating apparatus 3 to perform the laundry treatment process, or operate the first treating apparatus 2 and the second treating apparatus 3 simultaneously to perform the respective laundry treatment processes.

[0103] In addition, in one embodiment of the present disclosure, the first treating apparatus 2 may be constructed as a dryer that may perform a drying process of the laundry, and the second treating apparatus 3 may be constructed as a washer that may perform the washing process of the laundry.

[0104] Accordingly, the user may use the first treating apparatus 2 when the laundry needs to be dried, the user may use the second treating apparatus 3 when the laundry needs to be washed, and the user may simultaneously use the first treating apparatus 2 and the second

treating apparatus 3 when drying laundry of a first group, and at the same time, washing laundry of a second group.

[0105] However, functions of the first treating apparatus 2 and the second treating apparatus 3 are not necessarily limited as above, and the first treating apparatus 2 and the second treating apparatus 3 may correspond to the washer or the dryer, respectively. It is also possible that the first treating apparatus 2 corresponds to the washer and the second treating apparatus 3 corresponds to the dryer.

[0106] The first drum 30 may rotate by being connected to a first driver 15. The first driver 15 may be located at the rear of the first drum 30 and may be coupled to and fixed to the first rear panel 13. The second drum 40 may rotate by being connected to a second driver 25. The second driver 25 may be located at the rear of the second drum 40 and may be fixed to the second rear panel 23 or the tub 45.

[0107] FIG. 4 is a rear perspective view of the laundry treating apparatus 1 according to an embodiment of the present disclosure. In FIG. 4, the first rear panel 13 of the first treating apparatus 2 and the second rear panel 23 of the second treating apparatus 3 are shown separated from each other, but the first rear panel 13 and the second rear panel 23 may be formed as one panel.

[0108] When the first cabinet 10 and the second cabinet 20 are separated from each other as shown in FIG. 4, the first treating apparatus 2 may be installed on and fixed onto the second treating apparatus 3 during a manufacturing process or an installation process before use. The process of installing the first treating apparatus 2 on the second treating apparatus 3 will be described later.

[0109] FIG. 5 shows the interior of the laundry treating apparatus 1 according to an embodiment of the present disclosure. The first drum 30 may be installed on the second drum 40 and the tub 45, and when the second treating apparatus 3 is constructed as the washer, the second drum 40 and the tub 45 may have a central axis inclined such that a front end is located upwardly of a rear end as shown in FIG. 5.

[0110] A base 100 on which various components for driving the first treating apparatus 2 are installed may be located between the first drum 30 and the second drum 40. For example, the first treating apparatus 2 may be constructed as the dryer that performs the laundry drying process, and the base 100 may have an air supply 200 for supplying air into the first drum 30, a temperature regulator 300 for drying and heating air, and the like. A specific structure of the base 100 will be described later.

[0111] FIG. 6 shows the first drum 30 and the first driver 15 connected to each other according to an embodiment of the present disclosure. The first driver 15 may be spaced apart from the base 100 and may be connected to the first drum 30 to rotate the first drum 30.

[0112] In one embodiment of the present disclosure, as the first driver 15 is not located on the base 100 and is spaced apart therefrom, other components may be disposed on the base 100 or a free space may be secured. Furthermore, the first driver 15 may be located at the rear of the first drum 30 and be coupled to the first rear panel 13.

[0113] Specifically, the first rear panel 13 may be located at the rear of the first drum 30 and may shield the first drum 30 from the outside, and the first driver 15 may be coupled to the first rear panel 13.

[0114] The first driver 15 may be coupled to the first rear panel 13 at a location in front of or at the rear of the first rear panel 13. FIG. 6 shows a structure in which the first driver 15 is coupled to the first rear panel 13 from the rear of the first rear panel 13 and a rear cover is disposed at the rear of the first rear panel 13 to shield the first driver 15 from the outside.

[0115] The first driver 15 may be coupled to the first rear panel 13 and may extend through the first rear panel 13 to be coupled to a rear surface of the first drum 30. The first driver 15 may be coupled directly or indirectly to the rear surface of the first drum 30.

[0116] A driving shaft of the first driver 15 may be located on the same line as a rotation axis of the first drum 30. Accordingly, a rotational force of the first driver 15 may be directly involved in rotation of the first drum 30, which may be advantageous in providing the rotational force to the first drum 30 or controlling the rotation of the first drum 30.

[0117] FIG. 7 shows the first treating apparatus 2 and the second treating apparatus 3 separated from each other in an embodiment of the present disclosure. However, the base 100 may be coupled to the second treating apparatus 3 and be separated from the first treating apparatus 2.

[0118] As described above, the first treating apparatus 2 may be installed on the second treating apparatus 3 during the manufacturing process or the installation process before the use. When the first treating apparatus 2 is separated from the second treating apparatus 3, the base 100 of the first treating apparatus 2 may be disposed at a top of the second treating apparatus 3 and connected to the first treating apparatus 2, which is coupled onto the second treating apparatus 3. That is, the first treating apparatus 2 may be installed on the second treating apparatus 3 on which the base 100 is installed.

[0119] For example, the base 100 may include the air supply 200, the temperature regulator 300, and the like as described above, the temperature regulator 300 may correspond to a fluid circulation system in which a fluid circulates, the fluid circulation system may include a compressor 310 for compression and circulation of the fluid, and the air supply 200 may be connected to the inside of the first drum 30 as the first treating apparatus 2 is coupled onto the second treating apparatus 3.

[0120] In FIG. 8, the first treating apparatus 2 in FIG. 7 is shown seated on the second treating apparatus 3. However, after the first treating apparatus 2 is seated on the second treating apparatus 3, a coupling process may be performed via a sliding process.

[0121] For example, as shown in FIG. 8, in the state in

which the first treating apparatus 2 is seated on the second treating apparatus 3, the first treating apparatus 2 may be spaced apart from a correct coupling location along a direction parallel to the ground.

[0122] FIG. 8 shows a state in which the first treating apparatus 2 is spaced rearwardly apart from the correct coupling location. That is, in one embodiment of the present disclosure, the first treating apparatus 2 may be seated on the second treating apparatus 3 and then slid forward to be coupled to the second treating apparatus 3.

[0123] FIG. 9 shows the first treating apparatus 2 in FIG. 8 being slid forward and disposed at the correct coupling location. At the correct coupling location, the first cabinet 10 of the first treating apparatus 2 may be positioned on the second cabinet 20 of the second treating apparatus 3.

[0124] For example, after the first treating apparatus 2 is completed sliding forward toward the correct coupling location, the first front panel 11 may be positioned on the second front panel 21 along the direction perpendicular to the ground, the first side panel 12 may be positioned on the second side panel 22, and the first rear panel 13 may be positioned on the second rear panel 23.

[0125] FIG. 10 shows the control panel 50 coupled to the laundry treating apparatus 1 in FIG. 9. After the first treating apparatus 2 is slid to the correct coupling location on the second treating apparatus 3, the control panel 50 may be coupled to and located between the first front panel 11 and the second front panel 21 to complete installation of the laundry treating apparatus 1.

[0126] The control panel 50 may be connected with wires drawn from the first treating apparatus 2 and the second treating apparatus 3. The wire may be connected to a first controller and a second controller disposed in the first treating apparatus 2 and the second treating apparatus 3, respectively, or may be connected to a power consuming device such as the first driver 15 and the second driver 25.

[0127] In one embodiment of the present disclosure, the control panel 50 may output state information of the first treating apparatus 2 and the second treating apparatus 3 to the user, and the user may manipulate an input unit of the control panel 50 to manipulate the first treating apparatus 2 and the second treating apparatus.

[0128] FIG. 11 shows a vertical level relationship between the control panel 50, the first side panel 12, and the second side panel 22 in the laundry treating apparatus 1 according to an embodiment of the present disclosure. That is, the control panel 50 signally connected to the first treating apparatus 2 and the second treating apparatus 3 may be disposed between the first front panel 11 and the second front panel 21.

[0129] The control panel 50 may be disposed between the first front panel 11 and the second front panel 21 such that the user may easily access the control panel 50 by hand, and a lower end of the control panel 50 may be located at a lower vertical level than a lower end of the first side panel 12. The lower end of the control panel 50 may be located at a lower vertical level than an upper end of the second side panel 22.

[0130] One embodiment of the present disclosure has a form in which the first treating apparatus 2 and the second treating apparatus 3 are stacked along the direction perpendicular to the ground, and accordingly, a vertical level of the first treating apparatus 2 is increased by the second treating apparatus 3.

[0131] However, when the vertical level of the first treating apparatus 2 increases excessively, a vertical level of the control panel 50 or a vertical level of the first drum 30 may increase excessively, and thus convenience of use of the user may be reduced.

[0132] Therefore, in the structure of installing the first treating apparatus 2 on the second treating apparatus 3, appropriately adjusting the vertical level of the first treating apparatus 2, for example, the vertical level of the first drum 30 or the vertical level of the control panel 50, is important in improving the convenience of use and reducing installation space constrains.

[0133] In this regard, in one embodiment of the present disclosure, to appropriately lower the vertical level of the control panel 50 that the user must access to manipulate the first treating apparatus 2 and the second treating apparatus 3, the lower end of the control panel 50 may be located downwardly of the lower end of the second side panel 22.

[0134] That is, an upper end of the control panel 50 may be located on a front surface of the first treating apparatus 2, and the lower end of the control panel 50 may be located on a front surface of the second treating apparatus 3. Because the control panel 50 does not constitute a portion of the front surface of the first treating apparatus 2 or the second treating apparatus 3 as a whole, in one embodiment of the present disclosure, the control panel 50 may be installed after the sliding process of the first treating apparatus 2 is completed.

[0135] The upper end of the control panel 50 may be located upwardly of the lower end of the first side panel 12 and the upper end of the second side panel 22. Furthermore, to secure the installation location of the control panel 50, the first front panel 11 and the second front panel 21 may be spaced apart from each other along the direction perpendicular to the ground.

[0136] That is, as a lower end of the first front panel 11 is located upwardly of the lower end of the first side panel 12 and an upper end of the second front panel 21 is located upwardly of the upper end of the second side panel 22, approximately a central portion of a front surface of the laundry treating apparatus 1 may be opened, and as the control panel 50 is disposed in the central portion, the first front panel 11, the second front panel 21, and the control panel 50 may together form the front surface of the laundry treating apparatus 1.

[0137] FIG. 12 shows a state in which the first treating apparatus 2 located on the base 100 installed on the second treating apparatus 3 is coupled with the base 100 in an embodiment of the present disclosure. However,

the base 100 does not necessarily need to be coupled to the second treating apparatus 3, and in some cases, the base 100 may be coupled to a bottom of the first treating apparatus 2.

[0138] The base 100 may be located between the first drum 30 and the second drum 40. That is, the base 100 may be located above the tub 45 of the second treating apparatus 3 and below the first drum 30. The air supply 200 of the base 100 may be coupled with a first coupling portion 260 of the first treating apparatus 2 and be in communication with the inside of the first drum 30.

[0139] The first cabinet 10 may have an open bottom surface, and the second cabinet 20 may have an open top surface. That is, the first cabinet 10 and the second cabinet 20 may be connected to each other to be in communication with each other along the direction perpendicular to the ground.

[0140] The base 100 may be located on the open bottom surface of the first cabinet 10 and the open top surface of the second cabinet 20. That is, a portion of the base 100 may be located inside the second cabinet 20, and the remainder of the base 100 may be located inside the first cabinet 10. For example, the base 100 may shield at least a portion of the open top surface of the second cabinet 20.

[0141] The air supply 200 of the base 100 may be disposed to be in communication with the inside of the first drum 30 and may supply air for drying the laundry into the first drum 30. However, in one embodiment of the present disclosure, at least a portion of the base 100 may be disposed inside the second cabinet 20, thereby effectively reducing a space for installation of the base 100 inside the first cabinet 10.

[0142] As at least the portion of the base 100 is disposed inside the second cabinet 20, a vertical level of the base 100 may be lowered, and the vertical level of the first drum 30 may also be lowered accordingly. Accordingly, vertical levels of the first drum inlet and the first laundry inlet may be lowered, thereby effectively improving the user accessibility, that is, the accessibility for the user to put the laundry through the first laundry inlet.

[0143] FIG. 13 shows the air supply 200 of the base 100 and the inside of the first drum 30 being in communication with each other. The air supply 200 of the base 100 may have a connection portion 210 for being in communication with the inside of the first drum 30, and the first treating apparatus 2 may include the first coupling portion 260 for connection with the air supply 200 of the base 100.

[0144] As the first treating apparatus 2 is installed on the second treating apparatus 3, the first coupling portion 260 may be coupled to the connection portion 210 of the air supply 200. The connection portion 210 of the air supply 200 may include an inlet 220 and an outlet 230.

[0145] The inlet 220 may be constructed to allow air discharged from the first drum 30 to flow thereinto, and the outlet 230 may be constructed to allow air to be supplied to the first drum 30 to flow out.

[0146] The first treating apparatus 2 may include a first inlet coupling portion 261 through which air discharged from the first drum 30 flows, and a first outlet coupling portion 262 through which air to be supplied to the first drum 30 flows.

[0147] In the first treating apparatus 2, one side of the first drum 30 may be supported by an inner panel 60, and the other side of the first drum 30 may be supported by the first rear panel 13. For example, a front end of the first drum 30 may be supported by the inner panel 60, and a rear end of the first drum 30 may be rotatably supported via a coupling relationship with the first rear panel 13 or the first driver 15.

[0148] The inner panel 60 may be located at the rear of the first front panel 11. The first laundry inlet may be defined in the first front panel 11 and the inner panel 60, and the inner panel 60 may include a support roller or the like to rotatably support the front end of the first drum 30.

[0149] The inner panel 60 may surround the front end of the first drum 30 and may include the first inlet coupling portion 261. That is, air discharged from the first drum 30 may flow into the inlet 220 of the air supply 200 via the first inlet coupling portion 261 disposed on the inner panel 60.

[0150] The first outlet coupling portion 262 of the first treating apparatus 2 may be coupled to the first drum 30 or the first rear panel 13. As will be described later, air flowing out of the outlet 230 of the air supply 200 may flow along the first outlet coupling portion 262 and flow along an air passage 80 defined in the first rear panel 13, and air in the air passage 80 may flow into the first drum 30 via a rear surface of the first drum 30.

[0151] FIG. 14 shows the air supply 200 constructed to be in communication with the inside of the first drum 30 and the second drum 40 according to an embodiment of the present disclosure.

[0152] In one embodiment of the present disclosure, the first treating apparatus 2 as well as the second treating apparatus 3 may also perform the laundry drying process. For example, the first treating apparatus 2 may correspond to the dryer for the drying process of the laundry, and the second treating apparatus 3 may correspond to a washer-dryer that may perform the drying process in addition to the washing process of the laundry.

[0153] To perform the drying process of the second treating apparatus 3, the air supply 200 may be in communication with the inside of the second drum 40 or the tub 45, and a detergent supply 400 for supplying the detergent into the tub 45 may be included. FIG. 14 shows a second coupling portion 270 connected to the connection portion 210 of the air supply 200.

[0154] The air supply 200 of the base 100 may be upwardly connected to the inside of the first drum 30 and may be downwardly connected to the inside of the second drum 40. In other words, the air supply 200 of the base 100 may be in communication with the inside of the tub 45.

[0155] FIG. 15 schematically shows a flow path of air in an embodiment of the present disclosure. With reference to FIG. 15, a process of air flow in the present disclosure will be described as follows.

[0156] First, in one embodiment of the present disclosure, the base 100 may include the air supply 200 in which air is dried and heated and air flows. The air supply 200 may include the inlet 220 through which air is introduced and the outlet 230 through which air is discharged.

[0157] A path through which air flows may be set inside the air supply 200, and a dehumidifier to remove moisture from air and a heater to heat air to be provided to the first drum 30 or the second drum 40 may be disposed in the path.

[0158] In one example, the base 100 may include the temperature regulator 300. The temperature regulator 300 may correspond to a heat pump system in which the fluid circulates. That is, the fluid in the temperature regulator 300 may correspond to a refrigerant compressed and flowing by the compressor 310, and the temperature regulator 300 may include a condenser and an evaporator through which the fluid flows.

[0159] In the temperature regulator 300, that is, in the fluid circulation system, the fluid may sequentially circulate through the compressor 310, the condenser, and the evaporator. The condenser may allow heat from the fluid to be released to the surroundings, and the evaporator may allow the fluid to absorb heat from the surroundings.

[0160] That is, in one embodiment of the present disclosure, the evaporator may correspond to a heat absorber 322 that is located on the path through which air flows in the air supply 200 and absorbs heat from air, and may correspond to a dehumidifier in which water vapor is condensed and removed from air whose temperature has decreased.

[0161] In addition, the condenser may correspond to a heater 324 that is located on the path through which air flows in the air supply 200 and supplies heat into air, and may correspond to a heating device in which air whose temperature has increased is dried at a high temperature.

[0162] In one embodiment of the present disclosure, as the heat absorber 322 and the heater 324 of the fluid circulation system corresponding to the temperature regulator 300 are disposed together in the air supply 200, dehumidification and heating of air may be achieved. That is, air discharged from the first drum 30 or the second drum 40 may be dehumidified as the water vapor is condensed and removed while the air flow through the air supply 200 and is cooled by the heat absorber 322, and then may be heated by the heater 324 to be dried at the high temperatures.

[0163] In one example, air flowing out via the outlet 230 of the air supply 200 may flow along at least one of the first outlet coupling portion 262 of the first treating apparatus 2 and a second outlet coupling portion 272 and flow into at least one of the first drum 30 and the second drum 40.

[0164] Air may flow into the first drum 30 and the second drum 40 via a plurality of holes defined in respective rear surfaces of the first drum 30 and the second drum 40. Air provided into the first drum 30 and the second drum 40 is in the state of being dried at the high temperature via the heat absorber 322 and the heater 324 of the fluid circulation system. Therefore, moisture of the laundry accommodated inside the first drum 30 and the second drum 40 may evaporate and be removed via contact with the air.

[0165] Air with the increased moisture inside the first drum 30 and the second drum 40 may be discharged to the outside of the first drum 30 and the second drum 40 via the first drum inlet or the second drum inlet. Air discharged from the first drum 30 may flow into the inlet 220 of the air supply 200 via the first inlet coupling portion 261, and air discharged from the second drum 40 may flow into the inlet 220 of the air supply 200 via a second inlet coupling portion 271.

[0166] Air that has flowed into the air supply 200 via the inlet 220 may be dried at the high temperature by passing through the heat absorber 322 and the heater 324 of the fluid circulation system again, and such air may go through a circulation process of being introduced into the first drum 30 and the second drum 40 again.

[0167] More specifically, based on the first treating apparatus 2, air discharged via the outlet 230 may be delivered to a duct 70 of the first treating apparatus 2. The duct 70 may correspond to the first outlet coupling portion 262 of the first treating apparatus 2.

[0168] The duct 70 may connect the outlet 230 with the air passage 80 of the first rear panel 13. Air that has passed through the duct 70 may flow along the air passage 80.

[0169] The first rear panel 13 may include the air passage 80 extending along a circumference of the first driver 15. The air passage 80 may face the rear surface of the drum and may be opened forward. Additionally, an opening for inflow of air may be defined at a portion facing the air passage 80 in the rear surface of the first drum 30.

[0170] Accordingly, air introduced via the duct 70 and flowing along the air passage 80 may flow out forward, and air flowing out of the air passage 80 may flow into the first drum 30 via the opening in the rear surface of the first drum 30.

[0171] Air inside the first drum 30 may be discharged to the outside of the first drum 30 via the first drum inlet, and air discharged to the outside of the first drum 30 may flow through the first inlet coupling portion 261 disposed on the inner panel 60 and flow into the inlet 220 of the air supply 200.

[0172] In one example, based on the second treating apparatus 3, air discharged via the outlet 230 may flow to the second outlet coupling portion 272 of the second treating apparatus 3. The second treating apparatus 3 may include a tub passage 75 in communication with the tub 45, and the second outlet coupling portion 272 may correspond to the tub passage 75 or may be manufac-

tured separately and connect the tub passage 75 with the outlet 230.

[0173] For example, the second treating apparatus 3 may include an outlet frame 240 coupled to a fan housing 237 of the outlet 230, and at least a portion of the outlet frame 240 may correspond to the second outlet coupling portion 272. The tub passage 75 may be coupled to the second outlet coupling portion 272.

[0174] Air flowing out from the outlet 230 may flow into the tub 45 by flowing along the second outlet coupling portion 272 and the tub passage 75. Because the inside of the second drum 40 has the communication relationship with the inside of the tub 45, the high-temperature dry air provided from the outlet 230 may be provided into the second drum 40 to perform the laundry drying process.

[0175] Air inside the tub 45 may be discharged to the outside of the tub 45 via the tub inlet, and air may flow along a tub gasket 65 surrounding the tub inlet and the second inlet coupling portion 271 and be delivered to the inlet 220 of the air supply 200. The second inlet coupling portion 271 may correspond to a portion of the tub gasket 65 or may be manufactured separately and coupled to the tub gasket 65.

[0176] FIG. 16 shows the base 100 located on top of the second treating apparatus 3 according to an embodiment of the present disclosure. Referring to FIG. 16, an arrangement relationship of the base 100 will be described in detail as follows.

[0177] First, one embodiment of the present disclosure includes the above-described first treating apparatus 2 and second treating apparatus 3, the first treating apparatus 2 includes the first cabinet 10 and the first drum 30 disposed inside the first cabinet 10 and accommodating the laundry therein, and the second treating apparatus 3 includes the second cabinet 20 disposed beneath the first cabinet 10 and the second drum 40 disposed inside the second cabinet 20 and accommodating the laundry therein.

[0178] The base 100 may be located below the first drum 30 and may include the air supply 200 for supplying air into the first drum 30. The base 100 may be disposed between the first drum 30 and the second drum 40.

[0179] Accordingly, a distance between the first drum 30, the second drum 40, and the base 100 may be effectively minimized, and the path through which air is delivered from the air supply 200 of the base 100 to the first drum 30 and the second drum 40 may be effectively minimized.

[0180] The first cabinet 10 may include the first side panel 12 disposed next to the first drum 30, and the second cabinet 20 may include the second side panel 22 located beneath the first side panel 12 and disposed next to the second drum 40.

[0181] At least a portion of the base 100 may be located downwardly of the upper end of the second side panel 22. That is, the lower end of the base 100 may be located downwardly of the upper end of the second side panel 22.

[0182] That is, the base 100 may be coupled to the second cabinet 20 and at least the portion of the base 100 may be located inside the second cabinet 20. However, a structure in which the base 100 is coupled and fixed to the first cabinet 10 and the lower end of the base 100 is located downwardly of the upper end of the second side panel 22 is also possible.

[0183] Referring to FIG. 16, in one embodiment of the present disclosure, the base 100 may be coupled to and fixed to the second cabinet 20, at least the portion of the base 100 may be located downwardly of the upper end of the second side panel 22 and located inside the second cabinet 20, and the remainder of the base 100 may be located upwardly of the upper end of the second side panel 22 and disposed inside the first cabinet 10. However, when necessary, the base 100 may be located entirely inside the second cabinet 20.

[0184] In one embodiment of the present disclosure, at least the portion of the base 100 including the air supply 200 for supplying air to the first drum 30 may be located inside the second cabinet 20, and accordingly, a distance between the first drum 30 and the ground may be effectively reduced, so that the user accessibility to the first laundry inlet or the first drum inlet may be effectively increased.

[0185] Additionally, when the lower end of the base 100 is located downwardly of the upper end of the second side panel 22, the base 100 may eventually be supported in the direction parallel to the ground by the second side panel 22 or the like at the location on top of the second cabinet 20.

[0186] Accordingly, one embodiment of the present disclosure may not only effectively improve structural stability of the base 100 with respect to the second cabinet 20, but also secure stability of the base 100 during handling processes such as the movement, the installation, and the like of the second treating apparatus 3.

[0187] FIG. 17 shows the first coupling portion 260 coupled to the base 100 in the first treating apparatus 2. The first coupling portion 260 may include the first inlet coupling portion 261 and the first outlet coupling portion 262. The first inlet coupling portion 261 may be in communication with the first drum inlet of the first drum 30 and may be coupled with the inlet 220 of the connection portion 210 of the air supply 200.

[0188] The first outlet coupling portion 262 may be in communication with the rear surface of the first drum 30 and may be coupled to the outlet 230 of the connection portion 210 of the air supply 200. In the first treating apparatus 2, as the first coupling portion 260 and the connection portion 210 of the air supply 200 are coupled to each other, the inside of the first drum 30 and the air supply 200 may be in communication with each other.

[0189] FIG. 18 is a top view of the second cabinet 20. That is, FIG. 18 is a top view of the base 100 and the detergent supply 400.

[0190] In one embodiment of the present disclosure, the second treating apparatus 3 may be constructed as

the washer as described above, and thus the second treating apparatus 3 may include the tub 45 and the detergent supply 400.

[0191] The detergent supply 400 may be disposed above the tub 45 in consideration of the user accessibility, and a detergent storage for storing the detergent therein may be extended forward.

[0192] The detergent supply 400 may be located under the control panel 50. The detergent supply 400 may be disposed below the first laundry door 18 and above the second laundry door 28 based on the front surface of the laundry treating apparatus 1 such that the user is able to handle the detergent supply 400 without having to bend down or raise the hand thereof too high.

[0193] The tub 45 may be disposed inside the second cabinet 20, and the second drum 40 may be installed inside the tub 45 and accommodate water therein. The detergent supply 400 may be connected to the tub 45 and may supply the detergent into the tub 45.

[0194] The detergent supply 400 may deliver the detergent along with water into the tub 45. The detergent supply 400 may be positioned above the tub 45 such that self-weights of water and the detergent may favor the flow into the tub 45.

[0195] In one example, the base 100 and the detergent supply 400 may be disposed on the second cabinet 20 and located above the tub 45, and at least a portion of the base 100 may overlap the detergent supply 400 along the direction parallel to the ground. That is, at least the portion of the base 100 may be located at the same vertical level as the detergent supply 400 relative to the ground.

[0196] In other words, the base 100 may be positioned so as not to overlap the detergent supply 400 based on the direction perpendicular to the ground. That is, a portion of the base 100 that overlaps the detergent supply 400 along the direction perpendicular to the ground may be opened.

[0197] Specifically, in one embodiment of the present disclosure, the vertical level of the base 100 may be lowered to reduce the vertical level of the first drum 30 and the lower end of the base 100 may be located inside the second cabinet 20, and thus, at least the portion of the base 100 may be located at the same vertical level as the detergent supply 400 relative to the ground.

[0198] To this end, the base 100 may be open at a location corresponding to the detergent supply 400. As the detergent supply 400 is disposed in an open area 110 of the base 100, the base 100 and the detergent supply 400 may be located at the same vertical level.

[0199] Furthermore, in one embodiment of the present disclosure, the first driver 15, which provides the rotational force of the first drum 30, is not coupled to the base 100 and is spaced apart from the base 100, so that a spare area to define the open area 110 in the base 100 may be created. As the detergent supply 400 is disposed in the open area 110, the vertical level of the base 100 may be effectively lowered.

[0200] More specifically, one embodiment of the present disclosure may have the air supply 200 that supplies air into the first drum 30 such that the first treating apparatus 2 may perform the drying process, and may have the temperature regulator 300 for heating or dehumidifying air in the air supply 200.

[0201] In one example, in consideration of self-weights of the air supply 200 and the temperature regulator 300, the base 100 for stably fixing the air supply 200 and the temperature regulator 300 inside the first cabinet 10 or the second cabinet 20 may be disposed.

[0202] Some of components of the air supply 200 and the temperature regulator 300 may be coupled to an object other than the base 100, for example, a frame or the like to reinforce strength of the first cabinet 10 or the second cabinet 20.

[0203] However, considering a weight of an outlet fan 235 of the air supply 200 or the compressor 310, a heat exchanger 320, or the like of the temperature regulator 300, it may be advantageous to include a separate support member such as the base 100 for the components of the air supply 200 and the temperature regulator 300 to be stably disposed.

[0204] That is, the base 100 may be dispoesd inside the laundry treating apparatus 1 to provide an area where at least a portion of the air supply 200 or the temperature regulator 300 may be installed and supported. One embodiment of the present disclosure may stably fix the air supply 200 and the temperature regulator 300 via the base 100.

[0205] The smaller the distance to the first drum 30 is, the more advantageous it is for the base 100 where the air supply 200 and the like are installed, so as to be able to perform a laundry drying course in the first treating apparatus 2.

[0206] However, considering that the second treating apparatus 3 may be connected to the air supply 200 to perform the drying process in one embodiment of the present disclosure, the base 100 being installed above the first drum 30 may be disadvantageous as a distance between the air supply 200 and the second drums 40 is excessively increased, and may further be disadvantageous in terms of the structural stability as the base 100, which has a relatively great weight, is located at an upper end of the laundry treating apparatus 1.

[0207] Accordingly, in one embodiment of the present disclosure, the base 100 is disposed between the first drum 30 and the second drum 40, so that the distance between the first drum 30 and the second drum 40 may be efficiently set, and structural stability of an entirety of the laundry treating apparatus 1 may also be improved.

[0208] In one example, as described above, the detergent supply 400 may also be disposed between the first drum 30 and the second drum 40 for convenience of the user and for utilizing a falling effect of the water/detergent. That is, in one embodiment of the present disclosure, the detergent supply 400 and the base 100 may be installed together in the space between the first drum 30 and the

second drum 40.

[0209] In this regard, when the detergent supply 400 and the base 100 are arranged vertically, a vertical dimension occupied by the space between the first drum 30 and the second drum 40 increases, which is disadvantageous in reducing the vertical level of the first drum 30. Therefore, one embodiment of the present disclosure may define the open area 110 in the base 100.

[0210] In other words, one embodiment of the present disclosure may remove a portion of the base 100 that faces the detergent supply 400 perpendicularly to the ground, thereby preventing structural interference between the base 100 and the detergent supply 400 from occurring even when at least a portion of the base 100 and the detergent supply 400 are located at the same vertical level.

[0211] The open area 110 may face at least a portion of the detergent supply 400 in a vertical direction, and the open area 110 may be formed with a larger area size than the detergent supply 400, so that the detergent supply 400 may be located in the open area 110.

[0212] In addition, in one embodiment of the present disclosure, as described above, the first driver for rotating the first drum 30 may be removed from the base 100 and coupled and fixed to the first rear panel 13 or the like, so that the spare area for defining the open area 110 in the base 100 may be effectively secured.

[0213] In one embodiment of the present disclosure, the base 100 provides the installation area for the air supply 200, the temperature regulator 300, and the like, but as described above, all of the components such as the air supply 200 and the temperature regulator 300 do not need to be installed on the base 100.

[0214] For example, the compressor 310, the heat exchanger 320, or the like may be removed from the base 100 and the corresponding portion may additionally define the open area 110. In this case, the components that are spaced apart and separated from the base 100, such as the compressor 310 or the heat exchanger 320, may achieve a coupling relationship with various components such as the first cabinet 10, the second cabinet 20, and the tub.

[0215] Hereinafter, a structure from which the base 100 is omitted in one embodiment of the present disclosure will be described as follows.

[0216] First, even when the base 100 is removed, the air supply 200 and the temperature regulator 300 may be located between the first drum 30 and the second drum 40 in consideration of efficiency of connection with the first drum 30 and the second drum 40. Additionally, at least some of the components of the air supply 200 and the temperature regulator 300 may be installed inside the second cabinet 20 so as to lower a vertical level of the second drum 40.

[0217] For example, the air supply 200 may be coupled and fixed to the tub 45 of the second treating apparatus 3. A passage defining the flow path of air in the air supply 200 may be coupled and fixed to the tub 45 of the second treating apparatus 3. The first coupling portion 260 of the first drum 30 may be coupled to the air supply 200 disposed inside the second cabinet 20, so that the inside of the first drum 30 and the air supply 200 may be in communication with each other.

[0218] In one example, at least a portion of the temperature regulator 300 may be located within the passage. For example, the temperature regulator 300 may include the heat exchanger 320, and the heat exchanger 320 may be disposed in the passage to dehumidify or heat air.

[0219] The detergent supply 400 may be located on one side in a lateral direction above the tub 45, and the passage may be located on the other side in the lateral direction above the tub 45, so that structural interference with the detergent supply 400 may be avoided.

[0220] The compressor 310 of the temperature regulator 300 may be disposed such that a longitudinal direction thereof is perpendicular to or parallel to the ground, and may be fixed by being coupled to the tub 45 or fixed by being coupled to the second cabinet 20. When the compressor 310 is disposed parallel to the ground, the air supply 200 and the temperature regulator 300 may be entirely located inside the second cabinet 20.

[0221] When the compressor 310 is coupled to the second cabinet 20, the compressor 310 may be coupled and fixed to a frame for reinforcing rigidity of the second cabinet 20, or a separate support member for mounting the compressor 310 may be disposed on the frame and the compressor 310 may be seated on and coupled to the support member. The compressor 310 may be disposed at the rear of the detergent supply 400 or at the rear of the passage.

[0222] In one example, in one embodiment of the present disclosure, the second treating apparatus 3 may include a water supply that supplies water from the outside to perform the laundry washing process. The water supply may be connected to an external water supply source and may include a water supply valve 450 that regulates a flow of water provided to the tub 45 or the detergent supply 400.

[0223] Additionally, the water supply valve 450 may be located above the base 100. That is, in one embodiment of the present disclosure, the base 100 may be lowered in the vertical level such that the water valve 450 may be positioned above the base 100.

[0224] In one example, the water supply may further include a water supply hose 460 connected to the detergent supply 400 and through which water flows, and at least a portion of the water supply hose 460 may also be located above the base 100.

[0225] Referring to FIG. 18, the water supply valve 450 and the water supply hose 460 may be disposed on the base 100 including the air supply 200 for supplying air to the first drum 30. The water supply hose 460 may connect the water supply valve 450 with the detergent supply 400 and may deliver water supplied from the external water supply source to the detergent supply 400.

[0226] In one embodiment of the present disclosure, as the water supply valve 450 and the water supply hose 460 of the second treating apparatus 3 are disposed on the base 100, components disposed between the base 100 and the second drum 40 may be minimized, and accordingly, the vertical level of the base 100 may be effectively lowered.

[0227] FIG. 18 shows locations of the compressor 310, the heat absorber 322, and the heater 324 that constitute the temperature regulator 300 described above. In one embodiment of the present disclosure, the base 100 may include the temperature regulator 300 for adjusting the temperature of air of the air supply 200, and the temperature regulator 300 may correspond to the fluid circulation system in which the fluid flows while circulating through the compressor 310, the heater 324, and the heat absorber 322.

[0228] The fluid circulation system may include the heat exchanger 320 including the heater 324 and the heat absorber 322, and the heat exchanger 320 may be disposed inside the air supply 200 to dehumidify or heat air.

[0229] In addition, at least a portion of the compressor 310, which circulates the fluid that exchanges heat with air in the temperature regulator 300, may protrude upwardly of the upper end of the second side panel 22.

[0230] That is, an upper end of the compressor 310 may protrude upward from the inside of the second cabinet 20 and may be located inside the first cabinet 10. However, when necessary, an entirety of the compressor 310 may be located inside the second cabinet 20.

[0231] FIG. 19 shows the compressor 310 and the detergent supply 400 mounted on the base 100 in an embodiment of the present disclosure. One embodiment of the present disclosure may include the above-described temperature regulator 300, the temperature regulator 300 may be disposed on the base 100, the fluid that exchanges the heat with air of the air supply 200 may be circulated inside the temperature regulator 300, and the temperature regulator 300 may correspond to the fluid circulation system including the compressor 310 that compresses the fluid.

[0232] In one embodiment of the present disclosure, a lower end 312 of the compressor 310 may be positioned to overlap the detergent supply 400 along the direction parallel to the ground. That is, the lower end 312 of the compressor 310 may be located at a vertical level lower than an upper end of the detergent supply 400.

[0233] Among the various components mounted on the base 100, the compressor 310 may have a pillar shape disposed perpendicular to the ground in consideration of compression efficiency or the like. That is, on the base 100, the compressor 310 may have the greatest length in the vertical direction.

[0234] Accordingly, lowering the vertical level of the upper end of the compressor 310 on the base 100 may be important in lowering the vertical level of the first drum 30. Therefore, one embodiment of the present disclosure may lower a vertical level of the compressor 310 such that the lower end 312 of the compressor 310 is positioned parallel to the ground together with the detergent supply 400, thereby effectively lowering the vertical level of the first drum 30.

[0235] However, in one embodiment of the present disclosure, the lower end 312 of the compressor 310 may be located downwardly of a lower end of the detergent supply 400. In one embodiment of the present disclosure, the compressor 310 may be located at the rear of the detergent supply 400.

[0236] That is, in one embodiment of the present disclosure, the lower end 312 of the compressor 310 may be located at the rear of the detergent supply 400. In addition, the base 100 may further include a compressor mounting portion 120 on which the compressor 310 is mounted, and the compressor mounting portion 120 may be located at the rear of the detergent supply 400.

[0237] Specifically, one embodiment of the present disclosure may lower a vertical level of the compressor mounting portion 120 of the base 100 on which the compressor 310 is mounted to lower the vertical level of the upper end of the compressor 310. For example, in one embodiment of the present disclosure, the compressor mounting portion 120 may be recessed from the base 100 toward the second drum 40.

[0238] The compressor mounting portion 120 may be positioned to overlap the detergent supply 400 along the direction parallel to the ground. A lower end of the compressor mounting portion 120 may be disposed parallel to the ground together with the detergent supply 400 or may be located downwardly of the detergent supply 400.

[0239] In one example, in one embodiment of the present disclosure, the compressor mounting portion 120 may be disposed at the rear of the detergent supply 400, and the tub 45 may be disposed such that a rear end thereof is located at a lower vertical level than a front end thereof to prevent water leakage.

[0240] That is, the locations of the compressor 310 and the compressor mounting portion 120 may correspond to locations above the rear end of the tub 45. As the rear end of the tub 45 is located at the lower vertical level than the front end, it is easy to increase a recession depth of the compressor mounting portion 120, and it is advantageous in lowering the vertical location of the lower end of the compressor 120.

[0241] FIG. 20 shows a cross-section of the compressor mounting portion 120 of the base 100 viewed from the rear according to an embodiment of the present disclosure. FIG. 20 shows the outlet 230 of the air supply 200 and the outlet fan 235 disposed inside the outlet 230 to create the flow of air.

[0242] The outlet 230 may be coupled to the first outlet coupling portion 262 that is in communication with the first drum 30 of the first treating apparatus 2, and may be coupled to the second outlet coupling portion 272 that is in communication with the tub 45 of the second treating apparatus 3.

[0243] In one example, the compressor mounting portion 120 may be defined to be recessed downward so as to be positioned downwardly of the remainder of the base 100, and thus the vertical level of the upper end of the compressor 310 may be lowered. In one example, referring to FIG. 20, the compressor mounting portion 120 may form the lowermost end of the base 100. In FIG. 20, the vertical levels of the lower end 312 of the compressor 310 and the compressor mounting portion 120 are indicated by dotted lines.

[0244] That is, in one embodiment of the present disclosure, the base 100 may include the compressor mounting portion 120 that is recessed to lower the vertical level of the compressor 310, and the lower end of the compressor mounting portion 120 may correspond to the lowermost end of the base 100.

[0245] In one example, the compressor 310 may include an extended support 315. The extended support 315 may extend away from the compressor 310 and be coupled to the compressor mounting portion 120. The extended support 315 may improve structural stability of the compressor 310 by increasing an area size of the compressor 310 supported by the compressor mounting portion 120.

[0246] In one embodiment of the present disclosure, the extended support 315 may be positioned parallel to the ground together with the detergent supply 400. The extended support 315 may be located at least downwardly of the upper end of the detergent supply 400.

[0247] The extended support 315 may be located at the lower end 312 of the compressor 310. That is, in one embodiment of the present disclosure, the extended support 315 may define the lower end 312 of the compressor 310, and thus the extended support 315 may be positioned parallel to the ground together with the detergent supply 400.

[0248] FIG. 21 shows the heat exchanger 320 and the detergent supply 400 of the fluid circulation system. In FIG. 21, a vertical level of a lower end of the heat exchanger 320 of the fluid circulation system corresponding to the temperature regulator 300 is indicated by a dotted line.

[0249] As described above, the heat exchanger 320 of the temperature regulator 300 may include the heat absorber 322 and the heater 324, and the heat exchanger 320 may be located on the side of the detergent supply 400. For example, the detergent supply 400 may be disposed at one side in the lateral direction of the top of the second treating apparatus 3, the air supply 200 may be disposed at the other side in the lateral direction of the second treating apparatus 3, and the heat exchanger 320 may be disposed in the air supply 200.

[0250] In the heat exchanger 320, the heat exchange between the fluid and air of the air supply 200 may occur. The lower end of the heat exchanger 320 may be positioned to overlap the detergent supply 400 along the direction parallel to the ground.

[0251] Here, the lower end of the heat exchanger 320 may mean a lower end of any one of the heat absorber 322 and the heater 324. Accordingly, in one embodiment of the present disclosure, the lower end of the heat absorber 322 or the heater 324 may be positioned in parallel with the detergent supply 400. The lower end of the heat exchanger 320 may be located at least downwardly of the upper end of the detergent supply 400.

[0252] In one embodiment of the present disclosure, the vertical level of the base 100 is lowered such that the lower end of the heat exchanger 320 overlaps the detergent supply 400 along the direction parallel to the ground, thereby not only lowering the vertical level of the first drum 30, but also effectively reducing a vertical dimension of an entirety of the laundry treating apparatus 1.

[0253] In one example, as described above, as the open area 110 is defined in the base 100, that is, as the base 100 is disposed so as not to overlap the detergent supply 400 in the direction perpendicular to the ground, at least the portion of the base 100 may be disposed to overlap the detergent supply 400 in the direction parallel to the ground.

[0254] Furthermore, in one embodiment of the present disclosure, the lower end of the base 100 may be located at a lower vertical level than the upper end of detergent supply 400. The base 100 may be positioned such that the portion thereof overlaps the detergent supply 400 in the direction parallel to the ground, the portion of the base 100 may be located downwardly of the detergent supply 400, or an entirety of the base 100 may be located at the vertical level lower than the detergent supply 400.

[0255] Hereinafter, the coupling relationship between the air supply 200 and the first treating apparatus 2 according to one embodiment of the present disclosure will be described in detail.

[0256] FIG. 22 shows the inlet 220 corresponding to the connection portion 210 of the air supply 200, the first inlet coupling portion 261 corresponding to the first coupling portion 260 of the first treating apparatus 2, and the second inlet coupling portion 271 corresponding to the second coupling portion 270 of the second treating apparatus 3 coupled to each other according to an embodiment of the present disclosure.

[0257] As described above, in one embodiment of the present disclosure, the base 100 may be disposed on the second treating apparatus 3, and the first treating apparatus 2 may be seated on and coupled to the second treating apparatus 3, so that the inside of the first drum 30 and the air supply 200 may be in communication with each other.

[0258] That is, in one embodiment of the present disclosure, the first treating apparatus 2 may be installed on the second treating apparatus 3, so that the air supply 200 and the inside of the first drum 30 may be in communication with each other.

[0259] In one example, the second inlet coupling portion 271 may connect the tub 45 with the inlet 220 in the first treating apparatus 2. The second inlet coupling portion 271 may be coupled with the inlet 220 and be con-

nected to the inside of the tub 45. The second inlet coupling portion 271 may be located on a side of a front end of the tub 45.

[0260] The first treating apparatus 2 may include the tub gasket 65 for sealing a space between the front end of the tub 45 and the second front panel 21, the tub gasket 65 may surround the tub inlet, and the second inlet coupling portion 271 may be coupled to the tub gasket 65 or may be formed integrally with the tub gasket 65.

[0261] FIG. 23 is a top view of the inlet 220 of the air supply 200 according to an embodiment of the present disclosure. An upper end of the inlet 220 may protrude to be positioned upwardly of the upper end of the second side panel 22.

[0262] The inlet 220 may be disposed at a front end of the base 100, and an air flow path of the air supply 200 may be defined rearward from the inlet 220. The heat absorber 322 and the heater 324 of the temperature regulator 300 may be located at the rear of the inlet 220.

[0263] FIG. 24 shows the first coupling portion 260 of the first treating apparatus 2. FIG. 24 shows the first inlet coupling portion 261 in communication with the first drum inlet of the first coupling portions 260. The first inlet coupling portion 261 may have the inner panel 60. The first inlet coupling portion 261 may be coupled to the inner panel 60 or may be molded as a portion of the inner panel 60.

[0264] The connection portion 210 of the air supply 200 may be in communication with the inside of the first drum 30. The first treating apparatus 2 may include the first coupling portion 260 that slides in a first direction and is coupled to the connection portion 210.

[0265] As described above, the first treating apparatus 2 may slide along the first direction on the second treating apparatus 3. In this process, the first coupling portion 260 of the first treating apparatus 2 may slide along the first direction and be coupled to the connection portion 210.

[0266] FIG. 25 shows an open surface 211 that opens from the connection portion 210 toward the first coupling portion 260 according to an embodiment of the present disclosure. The connection portion 210 in FIG. 25 may correspond to the inlet 220, and thus, the open surface 211 that opens toward the first inlet coupling portion 261 may be defined in the inlet 220.

[0267] A peripheral portion of the open surface 211 in the connection portion 210 may achieve a contact relationship with the first coupling portion 260, and accordingly, a connection sealer 250 to prevent the air leakage may be disposed on the peripheral portion of the open surface 211.

[0268] FIG. 26 shows the connection sealer 250 according to an embodiment of the present disclosure. The connection sealer 250 may be disposed not only in the inlet 220 but also in the outlet 230 of the connection portion 210, and shape characteristics thereof may also be the same.

[0269] The connection sealer 250 may include a first portion 251 located in the first direction with respect to the open surface 211, a second portion 252 located in a direction opposite to the first direction with respect to the open surface 211, and a remainder except for the first portion 251 and the second portion 252 disposed in sliding grooves 212 of the inlet 220. Characteristics related to the arrangement of the connection sealer 250 will be described in detail below.

[0270] FIG. 27 shows the first inlet coupling portion 261 disposed on the inlet 220 in an embodiment of the present disclosure. The first inlet coupling portion 261 in FIG. 27 is located away from the correct coupling location for the inlet 220 in the direction opposite to the first direction.

[0271] That is, the first inlet coupling portion 261 in FIG. 27 may be located at a location before the first treating apparatus 2 slides, and the first inlet coupling portion 261 may move to the correct coupling location at the same time when the first treating apparatus 2 slides in the first direction, for example, forward.

[0272] FIG. 28 shows a state in which the first inlet coupling portion 261 in FIG. 27 has moved in the first direction and is disposed at the correct coupling location and coupled to the inlet 220. The coupling relationship based on the sliding may have the same characteristics for the outlet 230 and the first outlet coupling portion 262.

[0273] In one embodiment of the present disclosure, the air supply 200 for supplying air into the first drum 30 may be separable from the first treating apparatus 2, and the connection portion 210 of the air supply 200 and the first coupling portion 260 of the first treating apparatus 2 may be coupled to each other via the coupling process between the first treating apparatus 2 and the second treating apparatus 3, so that the inside of the first drum 30 and the air supply 200 may be effectively in communication with each other.

[0274] In one example, in one embodiment of the present disclosure, the peripheral portion of the open surface 211 may be designed such that the connection portion 210 is efficiently coupled with the first coupling portion 260 that slides in the first direction.

[0275] Specifically, the connection portion 210 may include a first connection surface 213 and a second connection surface 214. The first connection surface 213 may be located in the first direction with respect to the open surface 211 and may be located upwardly of the open surface 211 to support the first coupling portion 260 in the first direction.

[0276] In addition, the second connection surface 214 may be located in the opposite direction of the first direction with respect to the open surface 211 and may be located downwardly of the open surface 211 to support the first coupling portion 260 in the first direction.

[0277] The first connection surface 213 and the second connection surface 214 may form a portion of the peripheral portion of the open surface 211 described above. That is, one side located in the first direction with respect to the open surface 211 of the peripheral portion may include the first connection surface 213, the other side located on an opposite side of the one side may include

the second connection surface 214, and the sliding grooves 212 may be defined in remaining sides.

[0278] The open surface 211 may be a surface approximately parallel to the ground. That is, the open surface 211 may be opened approximately upward, and the first coupling portion 260 may be located on the connection portion 210 and cover the open surface 211.

[0279] The first connection surface 213 may be located in the first direction with respect to the open surface 211. For example, the first connection surface 213 may be located forwardly of the open surface 211. The first connection surface 213 may protrude upwardly of the open surface 211, and the first coupling portion 260 may come into contact with the first connection surface 213 from the rear.

[0280] The second connection surface 214 may be located in the direction opposite to the first direction with respect to the open surface 211. For example, the second connection surface 214 may be located rearwardly of the open surface 211. The second connection surface 214 may be disposed downwardly of the open surface 211, and the first coupling portion 260 may come into contact with the second connection surface 214 from the rear.

[0281] In correspondence with the connection portion 210, the first coupling portion 260 may also include a first coupling surface 268 and a second coupling surface 269. The first coupling surface 268 may be disposed at a front side of the first coupling portion 260 and positioned upwardly of the open surface 211, and the second coupling surface 269 may be disposed at a rear side of the first coupling portion 260 and protrude downwardly of the open surface 211.

[0282] The first coupling surface 268 of the first coupling portion 260 may come into contact with the first connection surface 213 forward, and the second coupling surface 269 may come into contact with the second connection surface 214 forward.

[0283] In one embodiment of the present disclosure, as the first connection surface 213 and the second connection surface 214 are included in the connection portion 210, a contact portion between the connection portion 210 and the first coupling portion 260 may achieve stable surface contact rather than line contact. Accordingly, a situation in which air leaks between the connection portion 210 and the first coupling portion 260 may be effectively suppressed.

[0284] The description of the first connection surface 213 and the second connection surface 214 has made based on the inlet 220 and the first inlet coupling portion 261 in FIG. 28, but the same may also be applied to the outlet 230 and the second inlet coupling portion 271 as will be described later.

[0285] In one example, the first portion 251 of the connection sealer 250 located in the first direction with respect to the open surface 211 may be positioned upwardly of the second portion 252 located in the opposite direction to the first direction.

[0286] That is, the first portion 251 of the connection sealer 250 may be disposed on the first connection surface 213, and the second portion 252 may be disposed on the second connection surface 214. The connection sealer 250 may be disposed at the contact portion between the connection portion 210 and the first coupling portion 260 to prevent the air leakage.

[0287] FIG. 29 shows the sliding groove 212 defined in the connection portion 210 and the connection sealer 250 inserted into the sliding groove 212.

[0288] In one embodiment of the present disclosure, the sliding grooves 212 may be defined in the remainder except for the first connection surface and the second connection surface 214, that is, both sides of the peripheral portion surrounding the open surface 211. A portion of the first coupling portion 260, for example, a sliding protrusion protruding from the first coupling portion 260 toward the sliding groove 212 may be inserted into and slide in the sliding groove 212.

[0289] In one embodiment of the present disclosure, the connection sealer 250 may surround the open surface 211 that is open toward the first coupling portion 260, the connection portion 210 may include the sliding groove 212 extending along the first direction and into which the portion of the first coupling portion 260 is inserted and slid, and a portion of the connection sealer 250 may be disposed in the sliding groove 212. For example, both sides of the connection sealer 250 may be inserted into the sliding grooves 212 to seal the space between the connection portion 210 and the first coupling portion 260.

[0290] The sliding groove 212 may extend along the first direction. For example, the sliding groove 212 may extend in a front and rear direction. The first coupling portion 260 may slide forward with the sliding protrusion inserted into the sliding groove 212.

[0291] Additionally, the sliding protrusions of the first coupling portion 260 inserted into the sliding groove 212 may have a shape of a rib extending in the first direction, and may be connected to the second coupling surface 269 and have a square shape with one side open.

[0292] FIG. 30 shows the inside of the inlet 220 coupled with the first coupling portion 260 and the second coupling portion 270 according to an embodiment of the present disclosure.

[0293] A passage in communication with the inside of the first drum 30 may be defined on the inlet 220 by the first coupling portion 260, and the passage may be defined inside the inner panel 60. An internal filter 62 for removing foreign substances from air discharged from the first drum 30 may be disposed inside the inner panel 60.

[0294] A passage in communication with the inside of the tub 45 or the second drum 40 may be defined under the inlet 220 by the second coupling portion 270, and the passage may extend through the tub gasket 65 and be connected to the inside of the tub 45.

[0295] Specifically, in one embodiment of the present disclosure, the air supply 200 may include the connection

portion 210 to be in communication with the first drum 30 and the second drum 40, the first treating apparatus 2 may further include the first coupling portion 260 that is connected to the connection portion 210 and allow the inside of the first drum 30 and the connection portion 210 to be in communication with each other, and the second treating apparatus 3 may further include the second coupling portion 270 that is connected to the connection portion 210 and allow the inside of the second drum 40 and the connection portion 210 to be in communication with each other.

[0296] At least one of the connection portion 210, the first coupling portion 260, and the second coupling portion 270 may include a selector 280 that alternatively allows an air flow between the connection portion 210 and any one of the first coupling portion 260 and the second coupling portion 270.

[0297] The selector 280 may include a first selector 281 and a second selector 282. The first selector 281 may be constructed to adjust the air flow of the inlet 220, and the second selector 282 may be constructed to adjust the air flow of the outlet 230.

[0298] FIG. 30 shows the first selector 281 disposed inside the inlet 220. The first selector 281 may be constructed to allow one of the first inlet coupling portion 261 and the second inlet coupling portion 271 to be in communication with the inside of the inlet 220 and close the other one.

[0299] FIG. 31 shows the first selector 281 according to an embodiment of the present disclosure. The first selector 281 may be disposed to extend along one direction and rotate about a rotation shaft parallel to the one direction. The air supply 200 may include a first motor for rotating the first selector 281.

[0300] That is, in one embodiment of the present disclosure, the selector 280 may be constructed to be rotatable, may allow the air flow between the first coupling portion 260 and the connection portion 210 at a first rotation location R1, and may allow the air flow between the second coupling portion 270 and the connection portion 210 at a second rotation location R2.

[0301] A space in which the first selector 281 rotates may be defined inside the inlet 220. In one embodiment of the present disclosure, the inlet 220 and the open surface 211 may have a shape that extends approximately in the lateral direction, and the first selector 281 may also have the shape that extends in the lateral direction.

[0302] The first selector 281 may include a blocking sealer 283. The blocking sealer 283 may be disposed on the first selector 281 to be in contact with an inner surface of the connection portion 210. A portion where the blocking sealer 283 and the inner surface of the connection portion 210 are in contact with each other may block the air flow.

[0303] FIG. 32 shows the first selector 281 rotated such that the first inlet coupling portion 261 is in communication with the inside of the air supply 200. That is, in FIG. 32, the inlet 220 may be in communication with the first drum 30, and the communication relationship with the inside of the tub 45 may be blocked.

[0304] In FIG. 32, the flow of air is indicated by arrows. The first selector 281 may include a pair of blocking sealers 283, and the first selector 281 may be rotated to the first rotation location R1 to shield the second inlet coupling portion 271.

[0305] In the first selector 281, the blocking sealers 283 may be disposed at both sides of the second inlet coupling portion 271 based on a rotation direction of the first selector 281. That is, at the first rotation location R1 of the first selector 281, the blocking sealers 283 may be disposed both sides of the second inlet coupling portion 271 outside the space between the first inlet coupling portion 261 and the inside of the inlet 220 to block the communication relationship between the inlet 220 and the second inlet coupling portion 271.

[0306] FIG. 33 shows the first selector 281 rotated such that the second inlet coupling portion 271 is in communication with the inside of the air supply 200. That is, in FIG. 33, the inlet 220 may be in communication with the tub 45, and the communication relationship with the first drum 30 may be blocked.

[0307] In FIG. 33, the flow of air is indicated by arrows. The first selector 281 may be rotated to the second rotation location R2 to shield the first inlet coupling portion 261. That is, at the second rotation location R2 of the first selector 281, the blocking sealers 283 may be disposed at both sides of the first inlet coupling portion 261 outside the space between the second inlet coupling portion 271 and the inside of the inlet 220 to block the communication relationship between the inlet 220 and the first inlet coupling portion 261.

[0308] The first motor may be located outside the connection portion 210, pass through the connection portion 210, and be coupled with the first selector 281. One embodiment of the present disclosure may effectively control the communication relationships between the inlet 220 and the first inlet coupling portion 261 and the second inlet coupling portion 271 by adjusting the rotation location of the first selector 281, and thus may efficiently perform the drying process of the first treating apparatus 2 and the second treating apparatus 3.

[0309] FIG. 34 shows the second inlet coupling portion 271 and the outlet 230 of the air supply 200 in communication with the second inlet coupling portion 271 according to an embodiment of the present disclosure. The outlet 230 may include the outlet fan 235 therein, and may include the fan housing 237 that shields at least a portion of the outlet fan 235 from the outside.

[0310] The outlet 230 may be upwardly coupled to the first outlet coupling portion 262 of the first treating apparatus 2 and may be connected to the second outlet coupling portion 272 in communication with the tub 45. The outlet 230 may be located on an opposite side of the inlet 220 in the air supply 200.

[0311] In the air supply 200, the air flow path extending from the inlet 220 to the outlet 230 may be defined. Air

flowing out of the outlet 230 may be provided into the first drum 30 or the tub 45.

[0312] FIG. 35 shows the first outlet coupling portion 262 of the first treating apparatus 2 according to an embodiment of the present disclosure. The first treating apparatus 2 may include the duct 70 coupled to the first rear panel 13, and the duct 70 may correspond to the first outlet coupling portion 262 described above, or the first outlet coupling portion 262 may be separately disposed and coupled to the duct 70 or the first rear panel 13.

[0313] When the duct 70 corresponds to the first outlet coupling portion 262, air provided to the duct 70 may flow along the air passage 80 defined in the first rear panel 13 via the duct 70 and flow into the first drum 30 via the rear surface of the first drum 30.

[0314] FIG. 36 shows the outlet 230 with the first outlet coupling portion 262 separated. The outlet 230 may include the fan housing 237, the outlet frame 240 may be coupled to the fan housing 237, and the open surface 211 of the connection portion 210 and the peripheral portion of the open surface 211 may be located in the outlet frame 240.

[0315] In one example, the outlet frame 240 may include the second outlet coupling portion 272. That is, an inflow surface 242 of the second outlet coupling portion 272 through which air flows into the second outlet coupling portion 272 may be formed in the outlet frame 240.

[0316] The inflow surface 242 may be located parallel to the open surface 211 of the outlet 230, and the inflow surface 242 and the open surface 211 may be selectively partitioned by the second selector 282, which will be described later. The second outlet coupling portion 272 may extend from the inlet surface 242 toward the tub 45.

[0317] FIG. 37 shows the outlet frame 240 according to an embodiment of the present disclosure. The outlet frame 240 may be coupled to the outlet 230 to constitute a portion of the outlet 230, and may include the second outlet coupling portion 272.

[0318] The outlet frame 240 may include the open surface 211 described above and the peripheral portion surrounding the open surface 211, and the description of the open surface 211 and the peripheral portion is substantially the same as the content of the inlet 220 described above.

[0319] However, in the outlet frame 240, the peripheral portion may be constructed to surround not only the open surface 211 but also the inflow surface 242 of the second outlet coupling portion 272. That is, the peripheral portion and the connection sealer 250 disposed in the outlet 230 may be constructed to surround the open surface 211 and the inflow surface 242 together to prevent the air leakage.

[0320] The peripheral portion of the outlet 230 may also include the first connection surface 213, the second connection surface 214, and the sliding grooves 212. The first connection surface 213 may be located in the first direction with respect to the open surface 211 of the outlet 230 and the inflow surface 242 of the second outlet coupling portion 272, and the second connection surface 214 may be located in the opposite direction to the first direction with respect to the open surface 211 and the inflow surface 242.

[0321] The sliding grooves 212 may be defined at both sides of the peripheral portion located laterally with respect to the open surface 211 and the inflow surface 242.

[0322] FIG. 38 shows the duct 70 corresponding to the first outlet coupling portion 262 disposed on the outlet 230, and FIG. 39 shows the first outlet coupling portion 262 in FIG. 38 slid along the first direction and coupled to the outlet 230.

[0323] Like the first inlet coupling portion 261, the first outlet coupling portion 262 may be coupled to the connection portion 210 by sliding on the connection portion 210 during the sliding process of the first treating apparatus 2. That is, the first outlet coupling portion 262 may slide forward and be coupled with the outlet 230 to cover the open surface 211 of the outlet 230.

[0324] The first connection surface 213 of the outlet 230 may be located upwardly of the open surface 211 of the outlet 230, and the second connection surface 214 of the outlet 230 may be located downwardly of the open surface 211 of the outlet 230. Additionally, in one embodiment of the present disclosure, both sides of the peripheral portion of the outlet 230 may be inclined such that a vertical level thereof increases in the first direction.

[0325] Accordingly, the movement of the first outlet coupling portion 262 sliding on the outlet 230 may be naturally induced, and a degree of close contact between the first outlet coupling portion 262 and the outlet 230 may be effectively increased.

[0326] In the connection sealer 250 of the outlet 230, the first portion 251 may be located on the first connection surface 213 and may be located upwardly of the open surface 211 and the inflow surface 242, and the second portion 252 may be located on the second connection surface 214 and may be located downwardly of the open surface 211 and the inflow surface 242. Characteristics regarding the open surface 211, the peripheral portion, and the connection sealer 250 of the outlet 230 may be applied in the same manner as the description of the inlet 220 above, unless otherwise specified.

[0327] FIG. 40 shows the outlet 230, the first outlet coupling portion 262, the second outlet coupling portion 272, and the second selector 282. The outlet 230 may include the outlet fan 235 and the fan housing 237, and air flowing by the outlet fan 235 may be discharged to the outside of the fan housing 237 via the open surface 211.

[0328] Air discharged via the open surface 211 may be provided into the first outlet coupling portion 262. However, a portion of the inside of the first outlet coupling portion 262 may be shared with the second outlet coupling portion 272. Accordingly, air discharged via the open surface 211 may be supplied into the first outlet coupling portion 262 and then may be delivered to the air passage 80 of the first rear panel 13 via an outflow

surface 241 of the first outlet coupling portion 262 or provided to the tub 45 by flowing into the second outlet coupling portion 272 via the inflow surface 242 of the second outlet coupling portion 272, depending on the rotation location of the second selector 282.

[0329] The tub passage 75 may be of a bellows type extending from the tub 45, and the second outlet coupling portion 272 and the tub passage 75 may be coupled to each other.

[0330] The second selector 282 may be disposed in any one of the outlet 230, the first outlet coupling portion 262, and the second outlet coupling portion 272. FIG. 40 shows the second selector 282 disposed in the first outlet coupling portion 262 according to an embodiment of the present disclosure.

[0331] FIG. 41 shows the second selector 282 according to an embodiment of the present disclosure. The second selector 282 may be rotatable inside the first outlet coupling portion 262, that is, the duct 70 of the first treating apparatus 2.

[0332] The second selector 282 may include a rotation shaft and may include a plate-shaped body rotating around the rotation shaft. The blocking sealer 283 to block the flow of air within the first outlet coupling portion 262 may be disposed on an edge of the body.

[0333] A stopper may be disposed at one side of the body of the second selector 282 to restrict a rotation range of the body. The stopper may be disposed at one end of the body in a protruding form along a rotation direction of the second selector 282, and may be constructed to restrict the rotation range of the second selector 282 via contact with an inner surface of the first outlet coupling portion 262.

[0334] FIG. 42 shows a state in which the second selector 282 is rotated to be located at the first rotation location R1, and air flowing out of the outlet 230 is discharged via the outflow surface 241 of the first outlet coupling portion 262. In FIG. 42, the flow of air flowing out of the outlet 230 is shown by an arrow.

[0335] The second selector 282 may be positioned to partition the open surface 211 of the outlet 230 from the inflow surface 242 of the second outlet coupling portion 272 at the first rotation location R1. Accordingly, air flowing out via the open surface 211 of the outlet 230 and existing inside the first outlet coupling portion 262 may not be able to flow to the inflow surface 242 of the second outlet coupling portion 272, but may flow out via the outflow surface 241 of the first outlet coupling portion 262 and be delivered to the air passage 80 of the first rear panel 13.

[0336] In this case, the blocking sealer 283 disposed on the second selector 282 comes into contact with the inner surface of the first outlet coupling portion 262 and an area between the open surface 211 and the inflow surface 242 of the outlet frame 240, thereby partitioning the open surface 211 and the inflow surface 242 from each other.

[0337] The rotation shaft of the second selector 282 may be disposed at the end of the body of the second selector 282, and the rotation shaft may be rotatably coupled to the inner surface of the first outlet coupling portion 262. A second motor for rotating the second selector 282 may be disposed outside the first outlet coupling portion 262 and coupled to the rotation shaft.

[0338] FIG. 43 shows a state in which the second selector 282 is rotated to be located at the second rotation location R2 and air flowing out of the outlet 230 flows into the second outlet coupling portion 272 via the inflow surface 242 of the second outlet coupling portion 272 according to an embodiment of the present disclosure.

[0339] The second selector 282 may be positioned to partition the open surface 211 of the outlet 230 from the outflow surface 241 of the first outlet coupling portion 262 at the second rotation location R2. Accordingly, air flowing out via the open surface 211 of the outlet 230 and existing inside the first outlet coupling portion 262 may not be able to flow to the outflow surface 241 of the first outlet coupling portion 262, but may flow into the second outlet coupling portion 272 via the inflow surface 242 of the second outlet coupling portion 272.

[0340] The first selector 281 and the second selector 282 may be rotated together to be located at the first rotation location R1 and the second rotation location R2. For example, when the first selector 281 is rotated to the first rotation location R1, the second selector 282 may also be rotated to the first rotation location R1, and when the first selector 281 is rotated to the second rotation location R2, the second selector 282 may also be rotated to the second rotation location R2.

[0341] The rotation locations of the first selector 281 and the second selector 282 may be achieved by control of the first motor and the second motor. One embodiment of the present disclosure may further include a controller that controls the first motor and the second motor.

[0342] In one embodiment of the present disclosure, the drying processes of the first drum 30 and the second drum 40 may all be performed via the one air supply 200. For example, when the base 100 is disposed above the first drum 30, the vertical level of the first drum 30 may be lowered, but a distance between the second drum 40 and the base 100 may increase, which may be disadvantageous in performing the drying process of the second drum 40.

[0343] Furthermore, one embodiment of the present disclosure may effectively select the flow path of air circulating through the air supply 200 using the selector 280, thereby implementing an efficient structure for the drying.

[0344] Although the present disclosure has been illustrated and described in connection with the specific embodiment, it would be obvious to a person skilled in the art that the present disclosure may be variously modified and changed without departing from the technical spirit of the present disclosure provided by the claims below.

Claims

1. A laundry treating apparatus comprising:

   a first drum configured to accommodate laundry therein;
   a tub located below the first drum and configured to accommodate water therein;
   a second drum disposed inside the tub and configured to accommodate the laundry therein;
   a base disposed between the first drum and the tub;
   an air supply disposed on the base and configured to supply air to the first drum;
   a fluid circulation system disposed on the base, wherein a fluid exchanging heat with air of the air supply circulates in the fluid circulation system, wherein the fluid circulation system includes a compressor configured to compress the fluid; and
   a detergent supply disposed between the first drum and the tub and configured to supply detergent into the tub,
   wherein a lower end of the compressor is positioned to overlap the detergent supply along a direction parallel to the ground.

2. The laundry treating apparatus of claim 1, wherein the base includes a compressor mounting portion where the compressor is mounted,
   wherein the compressor mounting portion is positioned to overlap the detergent supply along the direction parallel to the ground.

3. The laundry treating apparatus of claim 1, wherein the compressor includes an extended support extending away from the compressor and coupled to the base,
   wherein the extended support is positioned to overlap the detergent supply along the direction parallel to the ground.

4. The laundry treating apparatus of claim 1, wherein the fluid circulation system further includes a heat exchanger where the heat exchange between the fluid and air of the air supply occurs,
   wherein a lower end of the heat exchanger is positioned to overlap the detergent supply along the direction parallel to the ground.

5. The laundry treating apparatus of claim 1, wherein the lower end of the compressor is located at the rear of the detergent supply.

6. The laundry treating apparatus of claim 1, further comprising a water supply valve connected to an external water supply source and configured to regulate a flow of water provided to the tub or the detergent supply,
   wherein the water supply valve is located above the base.

7. The laundry treating apparatus of claim 1, further comprising a water supply hose connected to the detergent supply and where water flows,
   wherein at least a portion of the water supply hose is located above the base.

8. The laundry treating apparatus of claim 1, wherein at least a portion of the base is positioned to overlap the detergent supply along the direction parallel to the ground.

9. The laundry treating apparatus of claim 8, wherein a portion of the base overlapping the detergent supply along a direction perpendicular to the ground is open.

10. The laundry treating apparatus of claim 8, wherein the base is disposed so as not to overlap the detergent supply along a direction perpendicular to the ground.

11. The laundry treating apparatus of claim 9, wherein the base further includes a compressor mounting portion where the compressor is mounted,
    wherein the compressor mounting portion is located at the rear of the detergent supply.

12. The laundry treating apparatus of claim 11, wherein a heat exchanger where the fluid flows and exchanges the heat with air is coupled to the base,
    wherein the heat exchanger is located next to the detergent supply.

13. The laundry treating apparatus of claim 1, wherein the base further includes a compressor mounting portion where the compressor is mounted,
    wherein the compressor mounting portion forms a lowermost end of the base.

14. The laundry treating apparatus of claim 1, further comprising a first driver spaced from the base and connected to the first drum to rotate the first drum.

15. The laundry treating apparatus of claim 14, further comprising a rear panel located at the rear of the first drum to shield the first drum from the outside,
    wherein the first driver is coupled to the rear panel.

16. A laundry treating apparatus comprising:

    a first drum configured to accommodate laundry therein;
    a tub located below the first drum and configured to accommodate water therein;

a second drum disposed inside the tub and configured to accommodate the laundry therein;
a base disposed between the first drum and the tub and including an air supply configured to supply air to the first drum; and
a detergent supply disposed between the first drum and the tub and configured to supply detergent into the tub,
wherein the base is disposed so as not to overlap the detergent supply along a direction perpendicular to the ground, and a lower end of the base is located downwardly of an upper end of the detergent supply.

17. A laundry treating apparatus comprising:

a first treating apparatus including a first cabinet and a first drum disposed inside the first cabinet and configured to accommodate laundry therein;
a second treating apparatus including a second cabinet disposed beneath the first cabinet and a second drum disposed inside the second cabinet and configured to accommodate the laundry therein; and
a base located below the first drum and including an air supply for supplying air into the first drum,
wherein the first cabinet includes a first side panel disposed next to the first drum, and the second cabinet includes a second side panel located beneath the first side panel and disposed next to the second drum,
wherein at least a portion of the base is located downwardly of an upper end of the second side panel.

18. The laundry treating apparatus of claim 17, wherein the base is coupled to the second cabinet and at least the portion of the base is located inside the second cabinet.

19. The laundry treating apparatus of claim 17, wherein the first treating apparatus is installed on the second treating apparatus where the base is installed.

20. The laundry treating apparatus of claim 19, wherein the first cabinet further includes a rear panel located at the rear of the first drum,
wherein the first treating apparatus further includes a first driver coupled to the rear panel to provide a rotational force to the first drum.

21. The laundry treating apparatus of claim 17, wherein the second treating apparatus further includes:

a tub disposed inside the second cabinet, wherein the second drum is installed inside the tub, wherein the tub is configured to accommodate water therein; and
a detergent supply connected to the tub and configured to supply detergent into the tub.

22. The laundry treating apparatus of claim 21, wherein the base and the detergent supply are disposed on the second cabinet, located above the tub, and arranged so as not to overlap each other.

23. The laundry treating apparatus of claim 17, wherein the second treating apparatus further includes:

a tub disposed inside the second cabinet, wherein the second drum is installed inside the tub, wherein the tub is configured to accommodate water therein; and
a water supply valve disposed inside the second cabinet and connected to an external water supply source to regulate a flow of water supplied to the tub,
wherein the water supply valve is located above the base.

24. The laundry treating apparatus of claim 17, wherein at least the portion of the base is located inside the second cabinet,
wherein the base further includes a temperature regulator for adjusting a temperature of air of the air supply.

25. The laundry treating apparatus of claim 24, wherein the temperature regulator includes a compressor configured to circulate a fluid exchanging heat with air,
wherein at least a portion of the compressor protrudes upwardly of the upper end of the second side panel.

26. The laundry treating apparatus of claim 25, wherein a compressor mounting portion where the compressor is installed is defined in the base to be recessed toward the second drum.

27. The laundry treating apparatus of claim 26, wherein the compressor mounting portion forms a lowermost end of the base.

28. The laundry treating apparatus of claim 17, wherein the first cabinet includes a first front panel located in front of the first drum, and the second cabinet includes a second front panel located below the first front panel and in front of the second drum,

wherein a control panel signally connected to the first treating apparatus and the second treating apparatus is disposed between the first front panel and the second front panel,
wherein a lower end of the control panel is lo-

cated downwardly of the upper end of the second side panel.

29. The laundry treating apparatus of claim 28, wherein an upper end of the control panel is located upwardly of a lower end of the first side panel.

30. The laundry treating apparatus of claim 29, wherein a lower end of the first front panel is located upwardly of the lower end of the first side panel,
wherein an upper end of the second front panel is located downwardly of the upper end of the second side panel.

31. A laundry treating apparatus comprising:

a first treating apparatus including a first cabinet and a first drum disposed inside the first cabinet and configured to accommodate laundry therein;
a second treating apparatus including a second cabinet disposed beneath the first cabinet and a second drum disposed inside the second cabinet and configured to accommodate the laundry therein; and
a base disposed on the first treating apparatus and including an air supply for supplying air into the first drum,
wherein the first treating apparatus is installed on the second treating apparatus such that the air supply and the inside of the first drum are in communication with each other.

32. The laundry treating apparatus of claim 31, wherein the air supply includes a connection portion to be in communication with the inside of the first drum,
wherein the first treating apparatus includes a first coupling portion configured to slide in a first direction to be coupled to the connection portion.

33. The laundry treating apparatus of claim 32, wherein the connection portion includes:

a connection sealer surrounding an open surface opening toward the first coupling portion; and
a sliding groove extending along the first direction, wherein a portion of the first coupling portion is inserted into and slides in the sliding groove,
wherein a portion of the connection sealer is disposed in the sliding groove.

34. The laundry treating apparatus of claim 33, wherein in the connection sealer, a first portion located in the first direction relative to the open surface is located upwardly of a second portion located in a direction opposite to the first direction.

35. The laundry treating apparatus of claim 34, wherein the connection portion further includes:

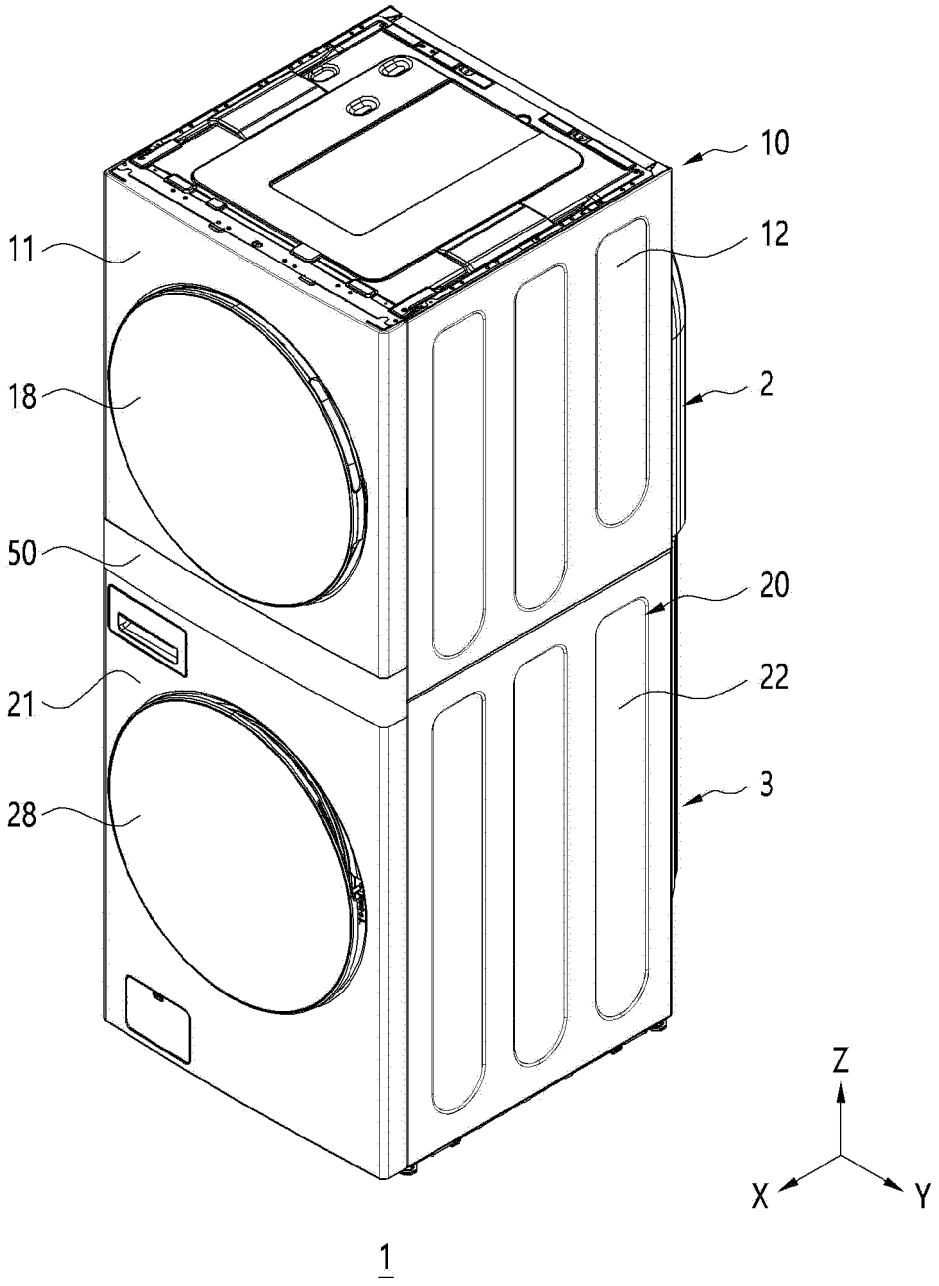
a first connection surface located in the first direction relative to the open surface and located upwardly of the open surface to support the first coupling portion in the first direction; and
a second connection surface located in the direction opposite to the first direction relative to the open surface and located downwardly of the open surface to support the first coupling portion in the first direction,
wherein the first portion of the connection sealer is disposed on the first connection surface, and the second portion is disposed on the second connection surface.

36. The laundry treating apparatus of claim 31, wherein the air supply includes a connection portion to be in communication with the first drum and the second drum,

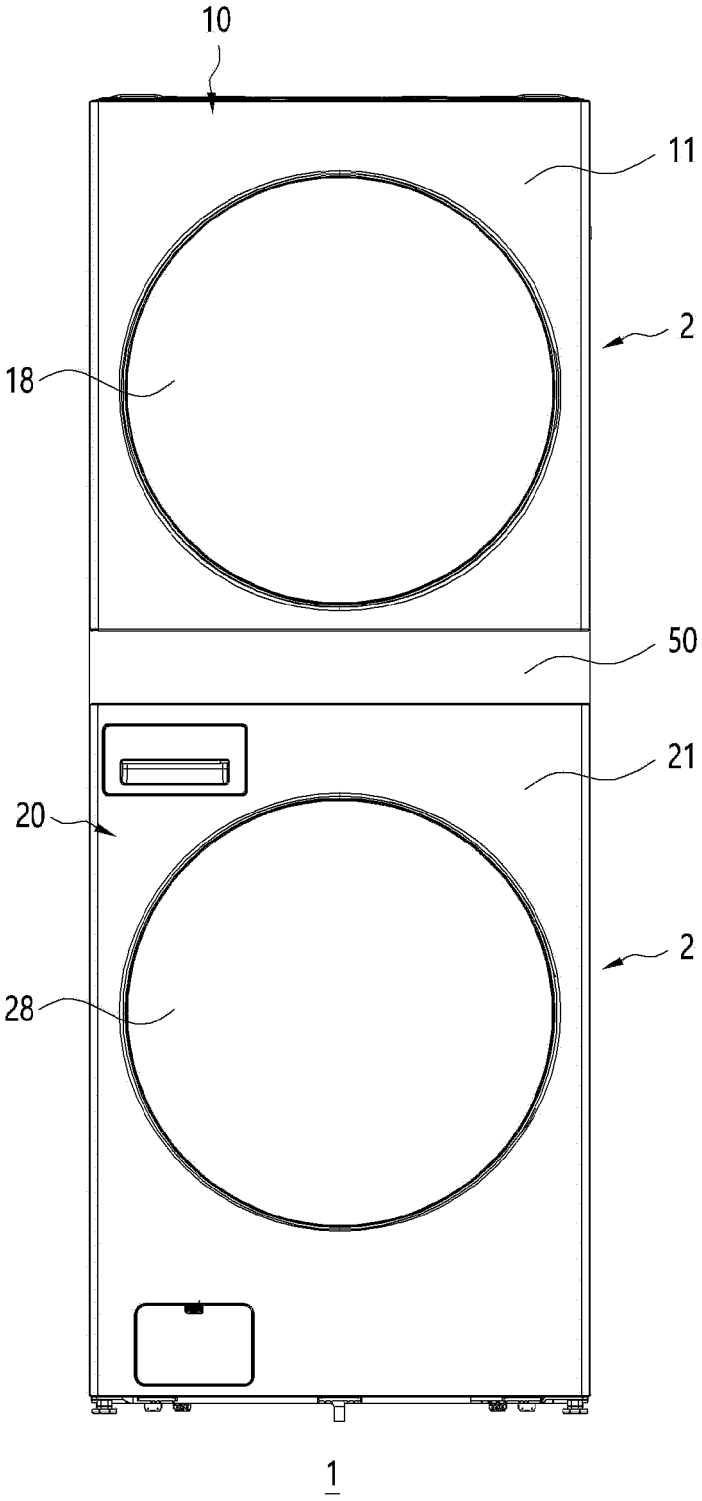
wherein the first treating apparatus further includes a first coupling portion connected to the connection portion to allow the inside of the first drum and the connection portion to be in communication with each other,
wherein the second treating apparatus further includes a second coupling portion connected to the connection portion to allow the inside of the second drum and the connection portion to be in communication with each other,
wherein at least one of the connection portion, the first coupling portion, and the second coupling portion includes a selector configured to alternatively allow an air flow between the connection portion and any one of the first coupling portion and the second coupling portion.

37. The laundry treating apparatus of claim 36, wherein the selector is constructed to be rotatable, wherein the selector allows the air flow between the first coupling portion and the connection portion at a first rotation location, and allows the air flow between the second coupling portion and the connection portion at a second rotation location.

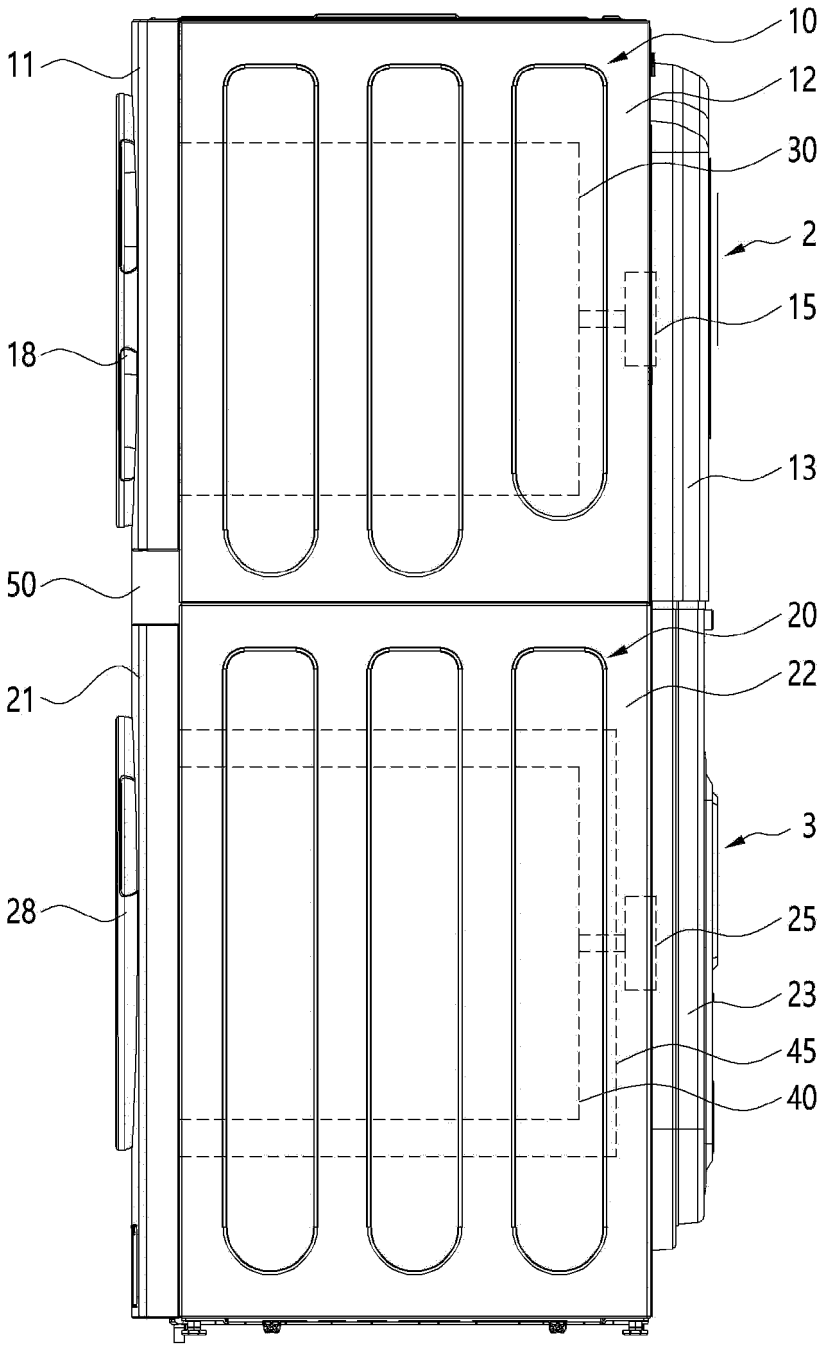
[Fig. 1]



[Fig. 2]

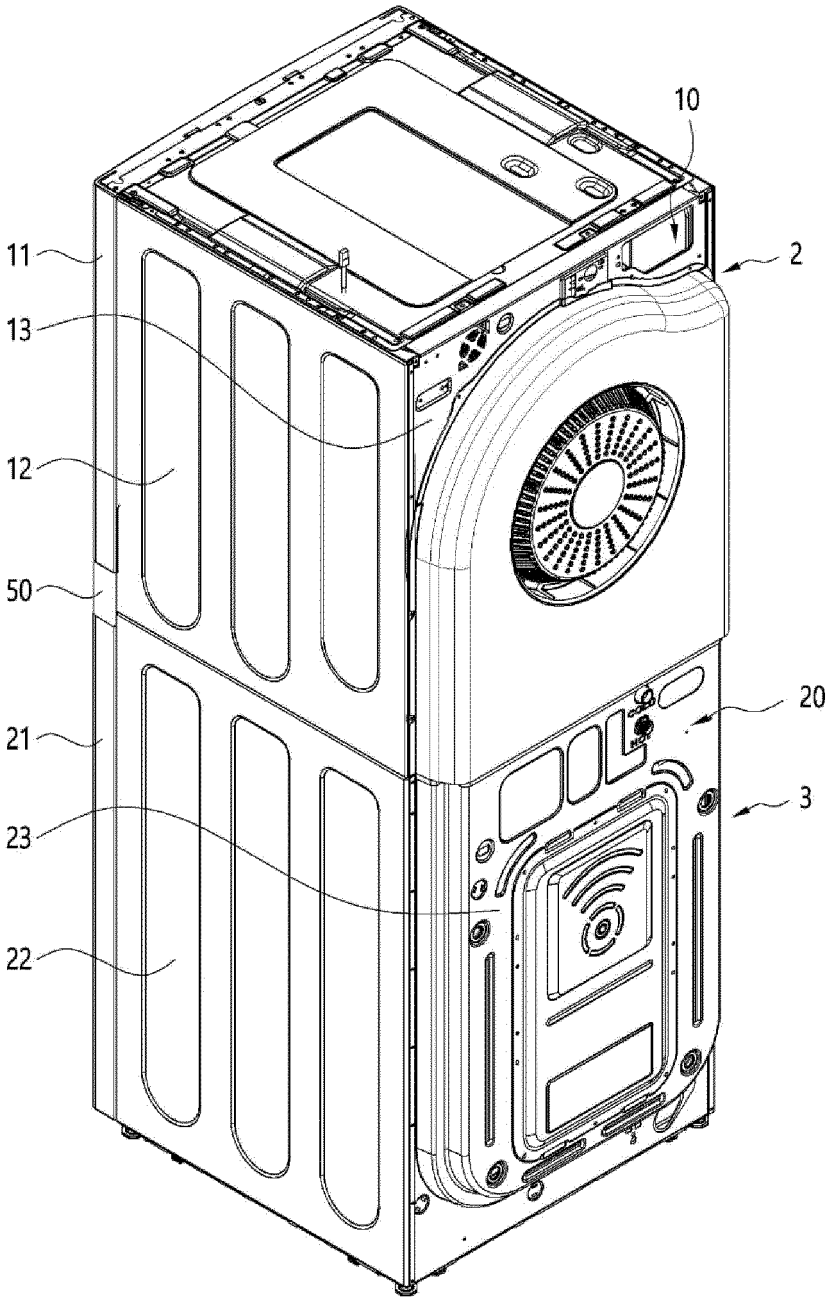


[Fig. 3]

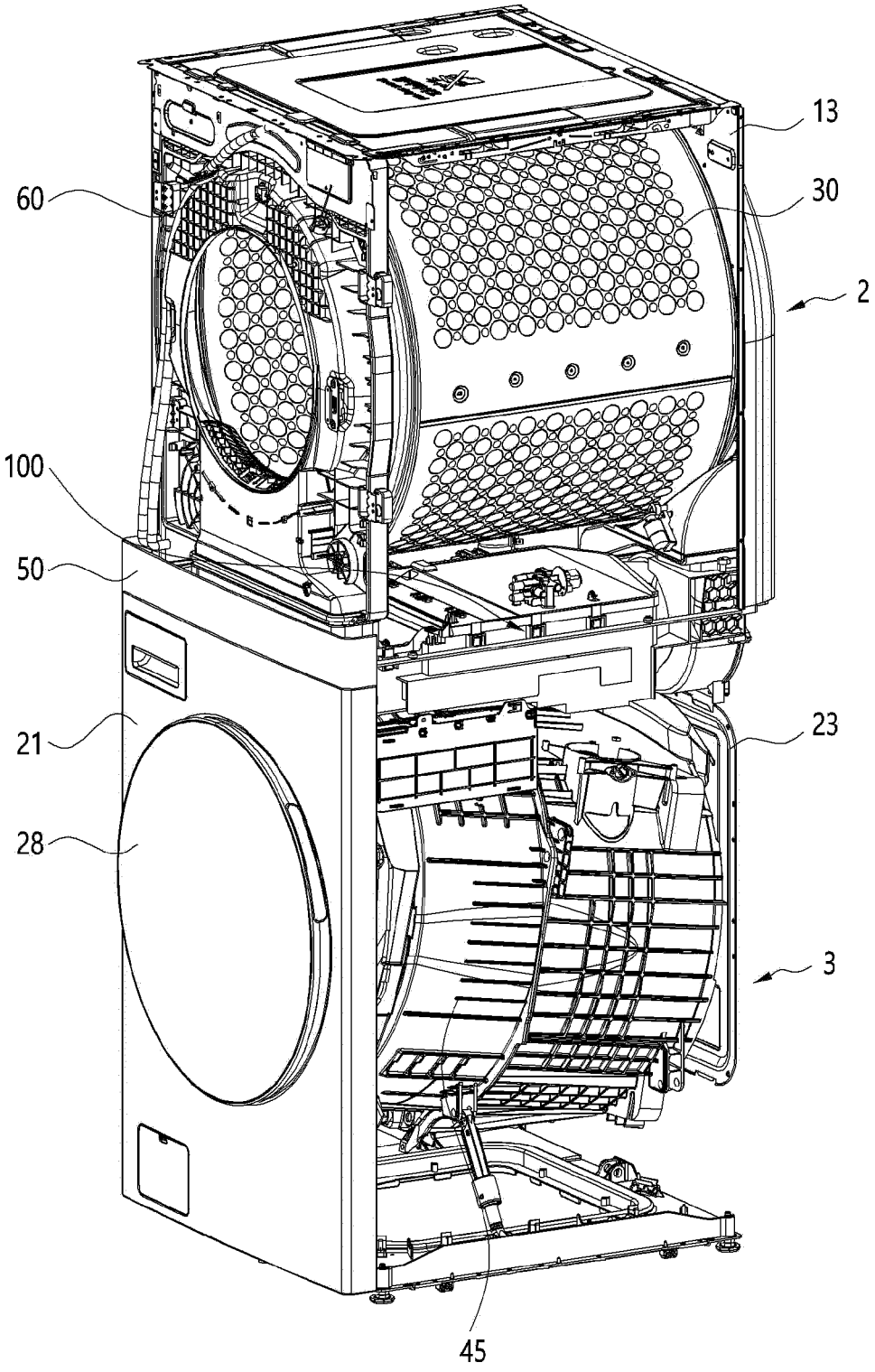


1

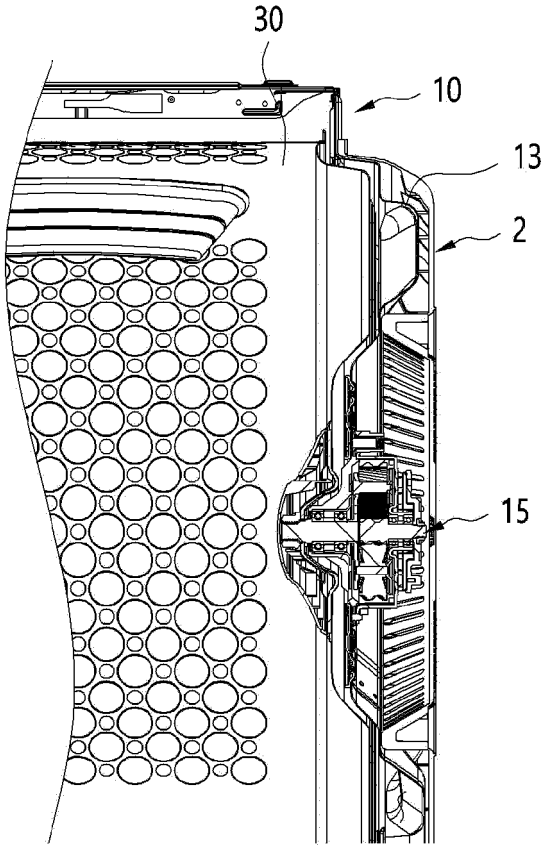
[Fig. 4]



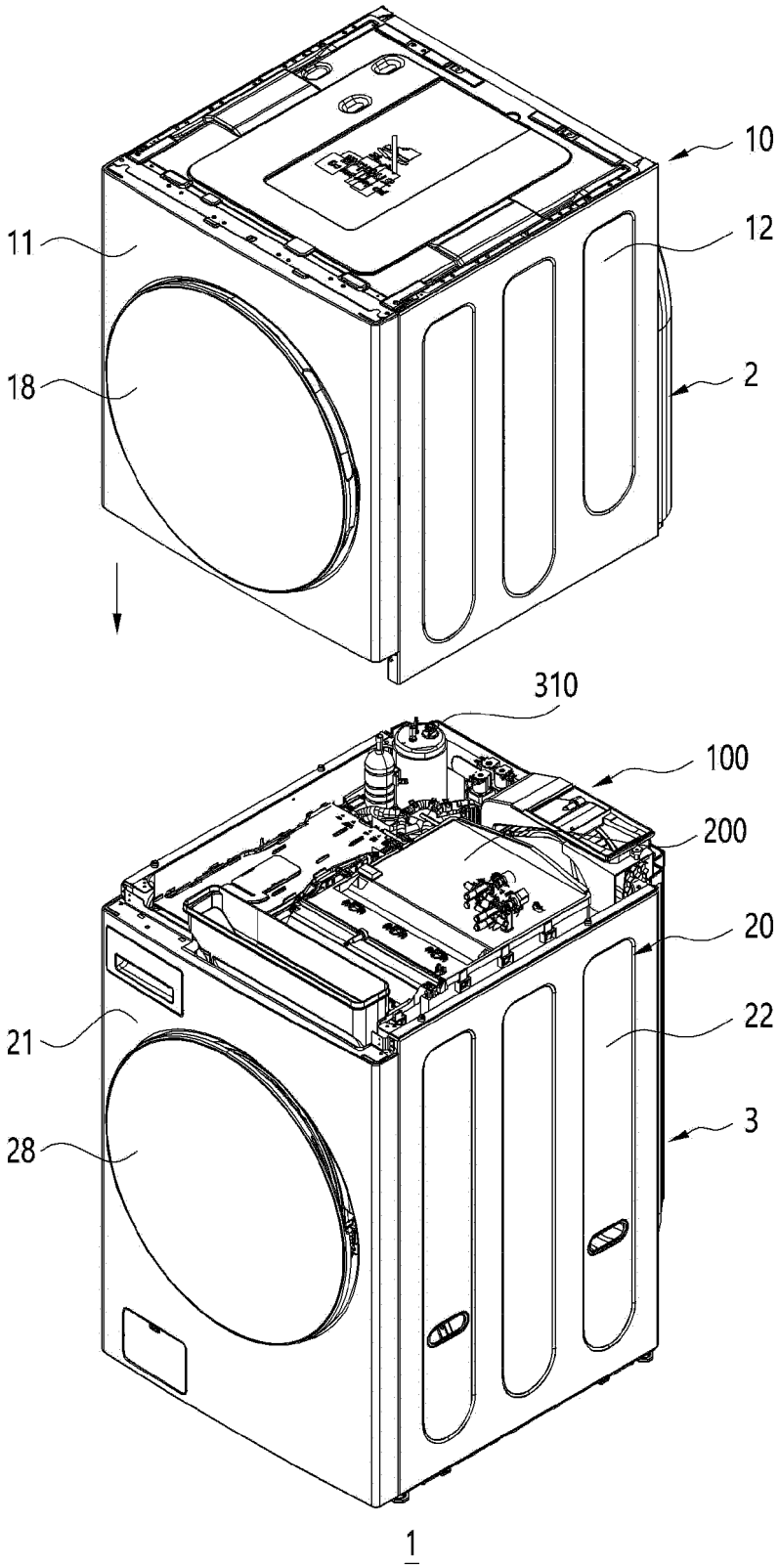
[Fig. 5]



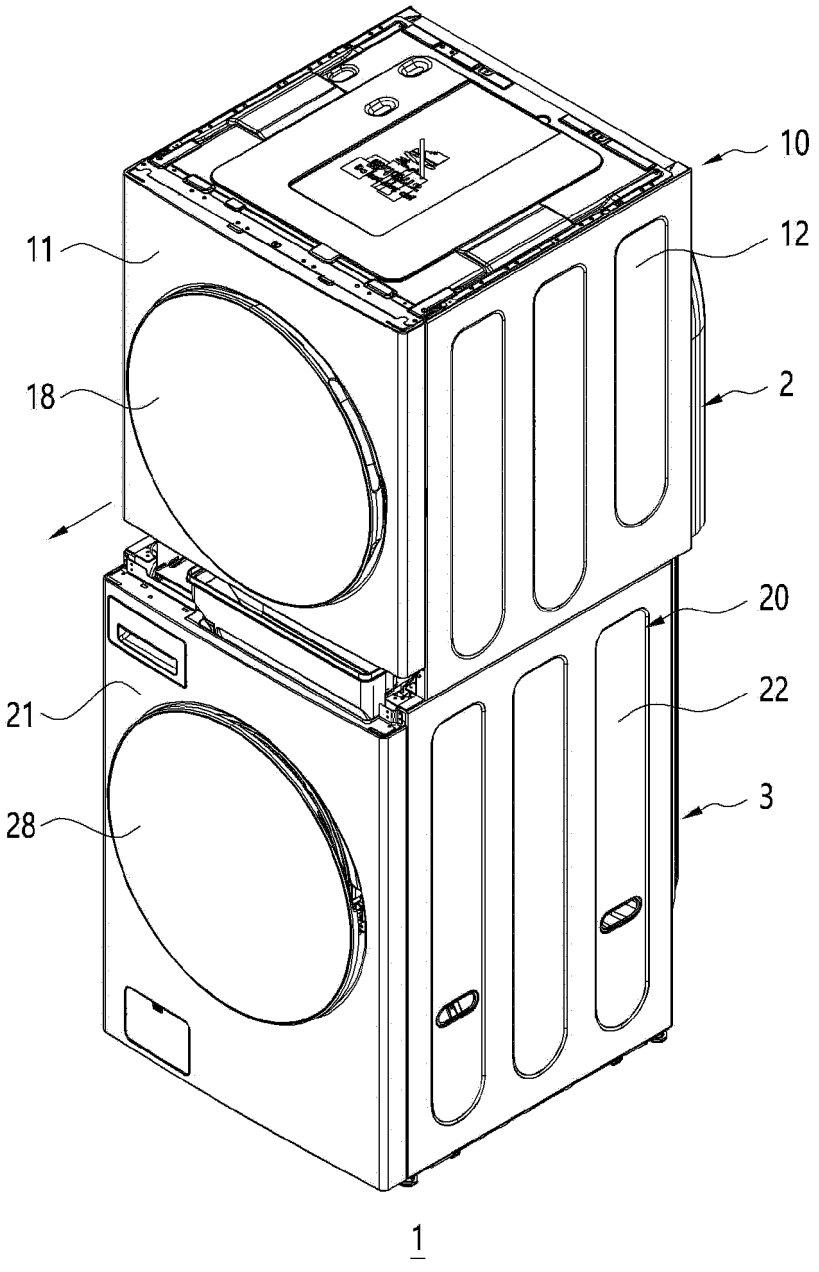
[Fig. 6]



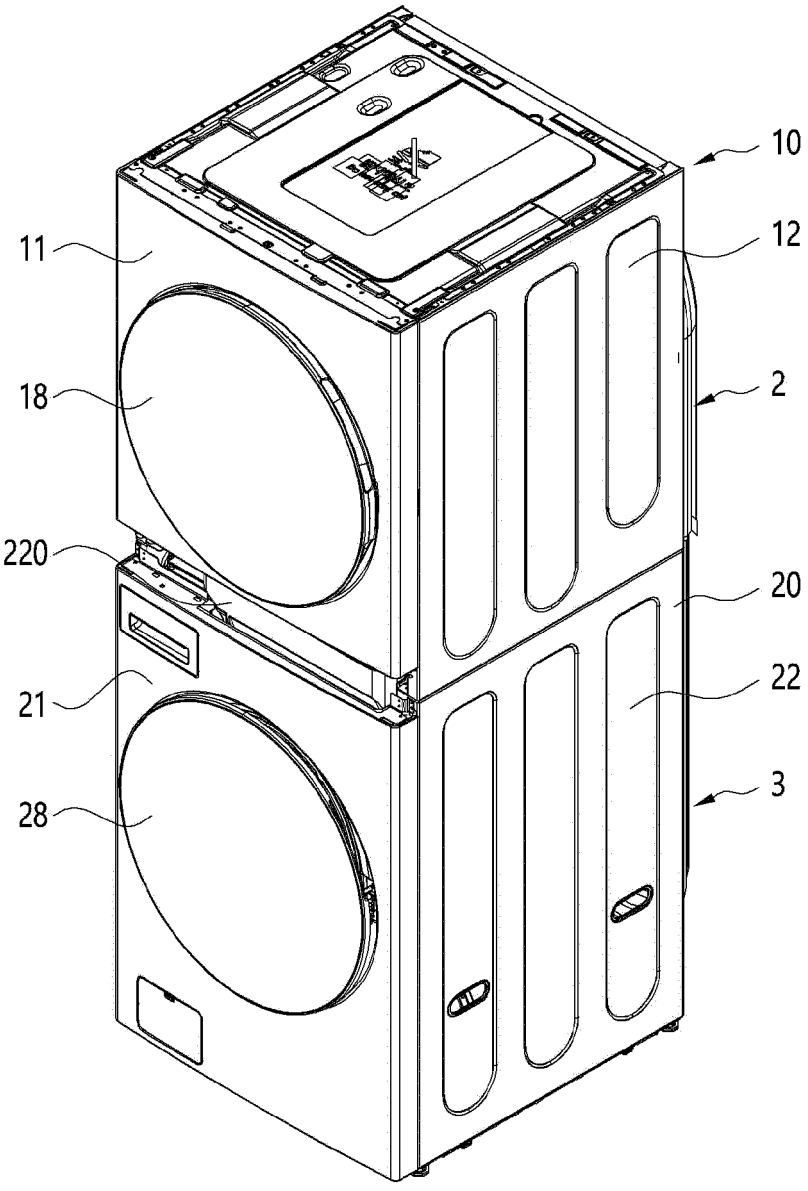
[Fig. 7]



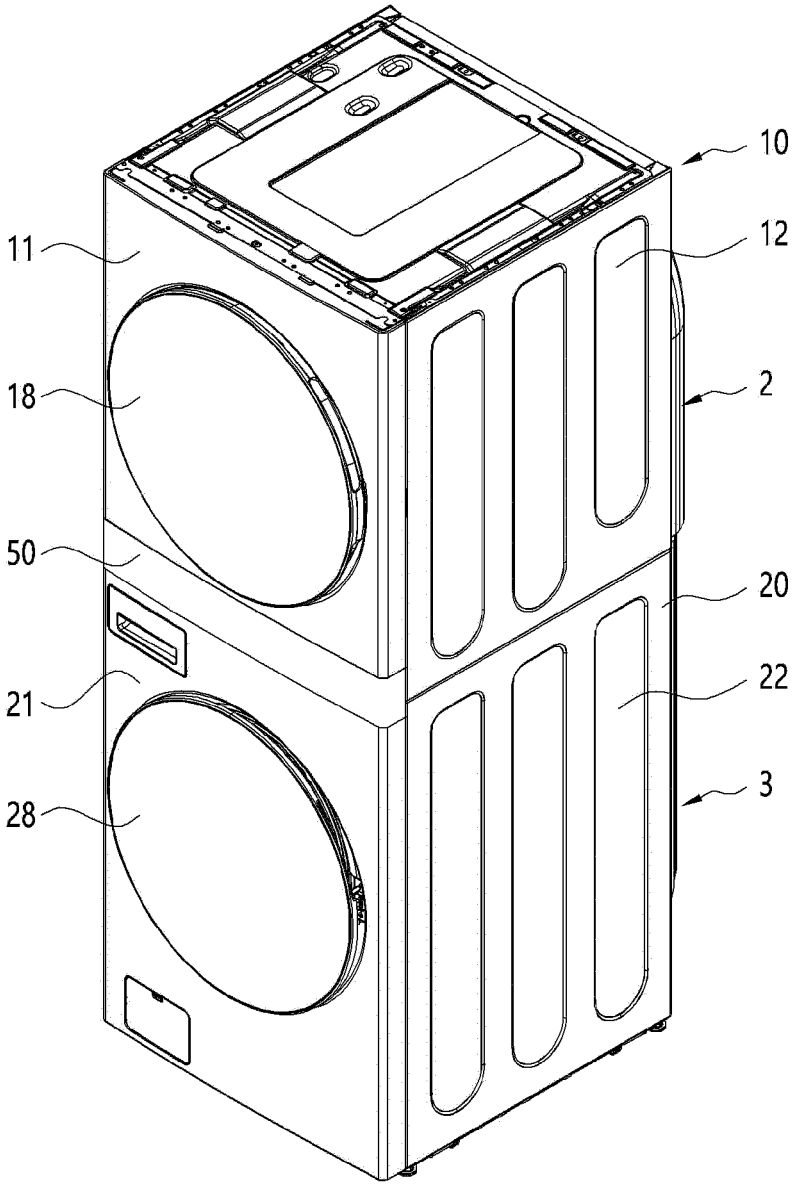
[Fig. 8]



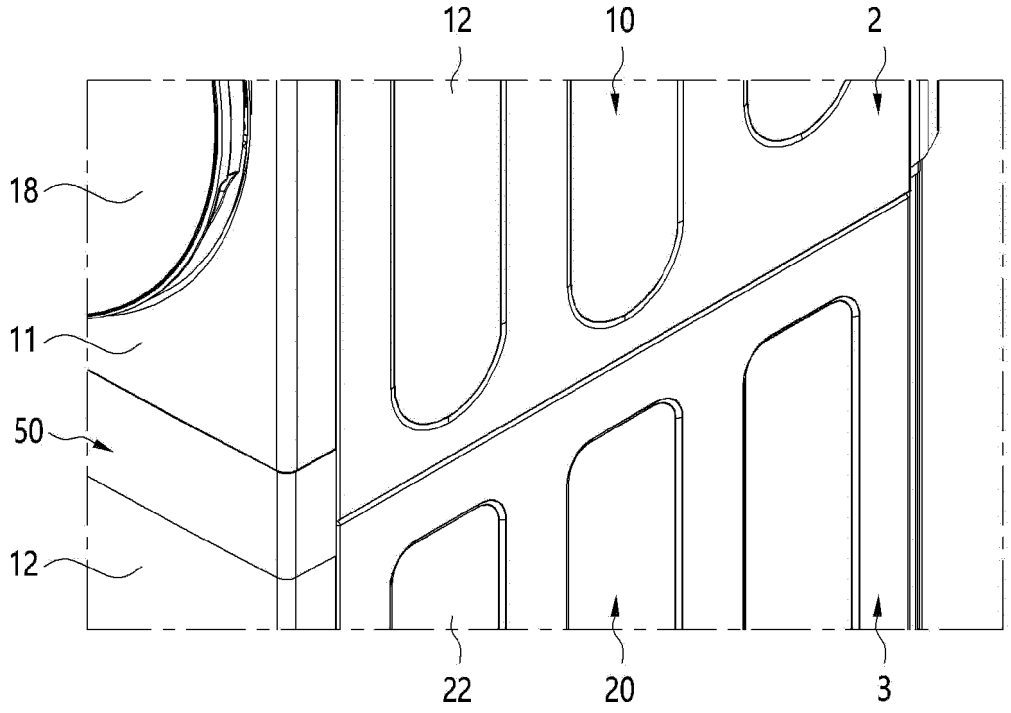
[Fig. 9]



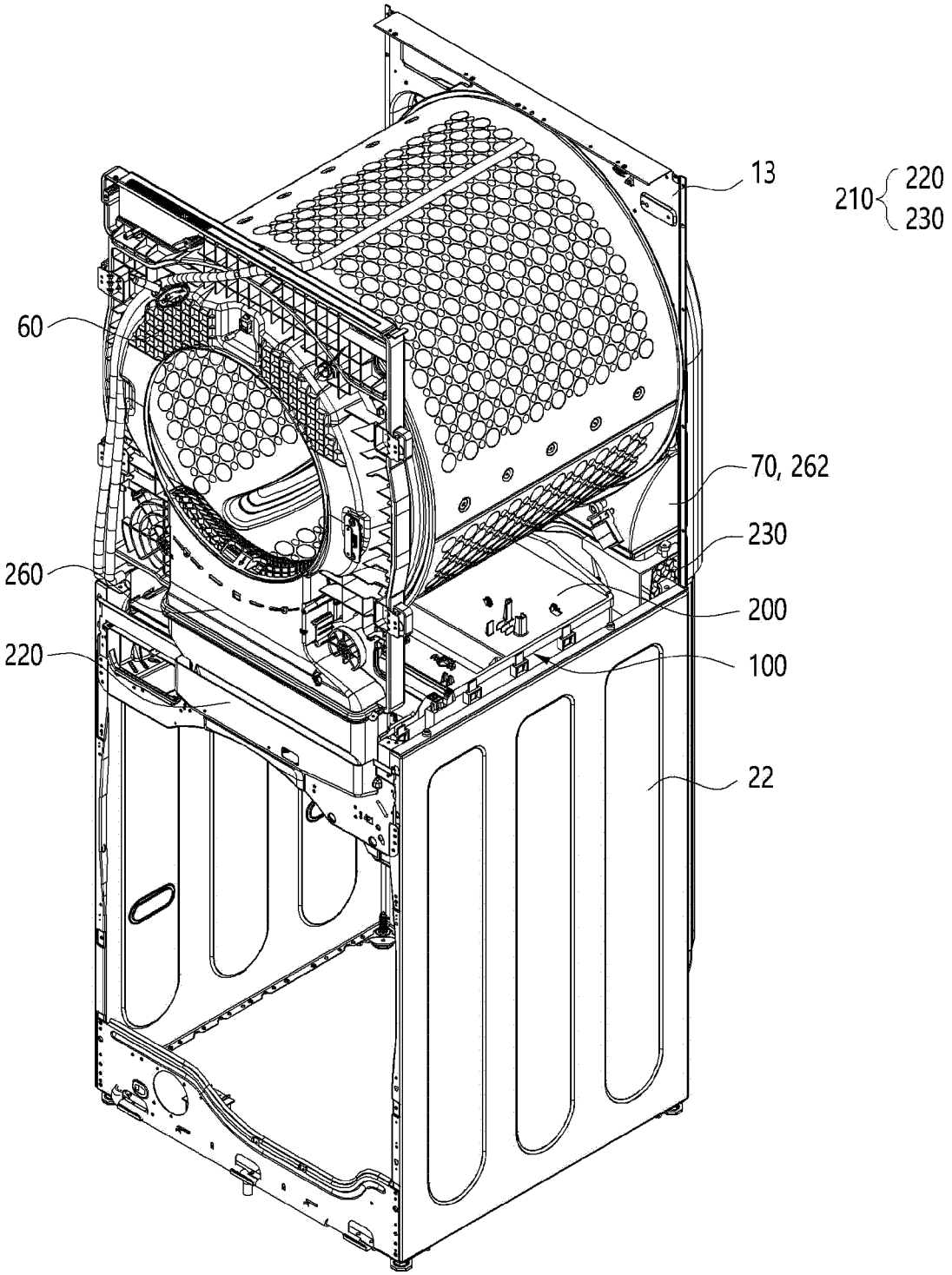
[Fig. 10]



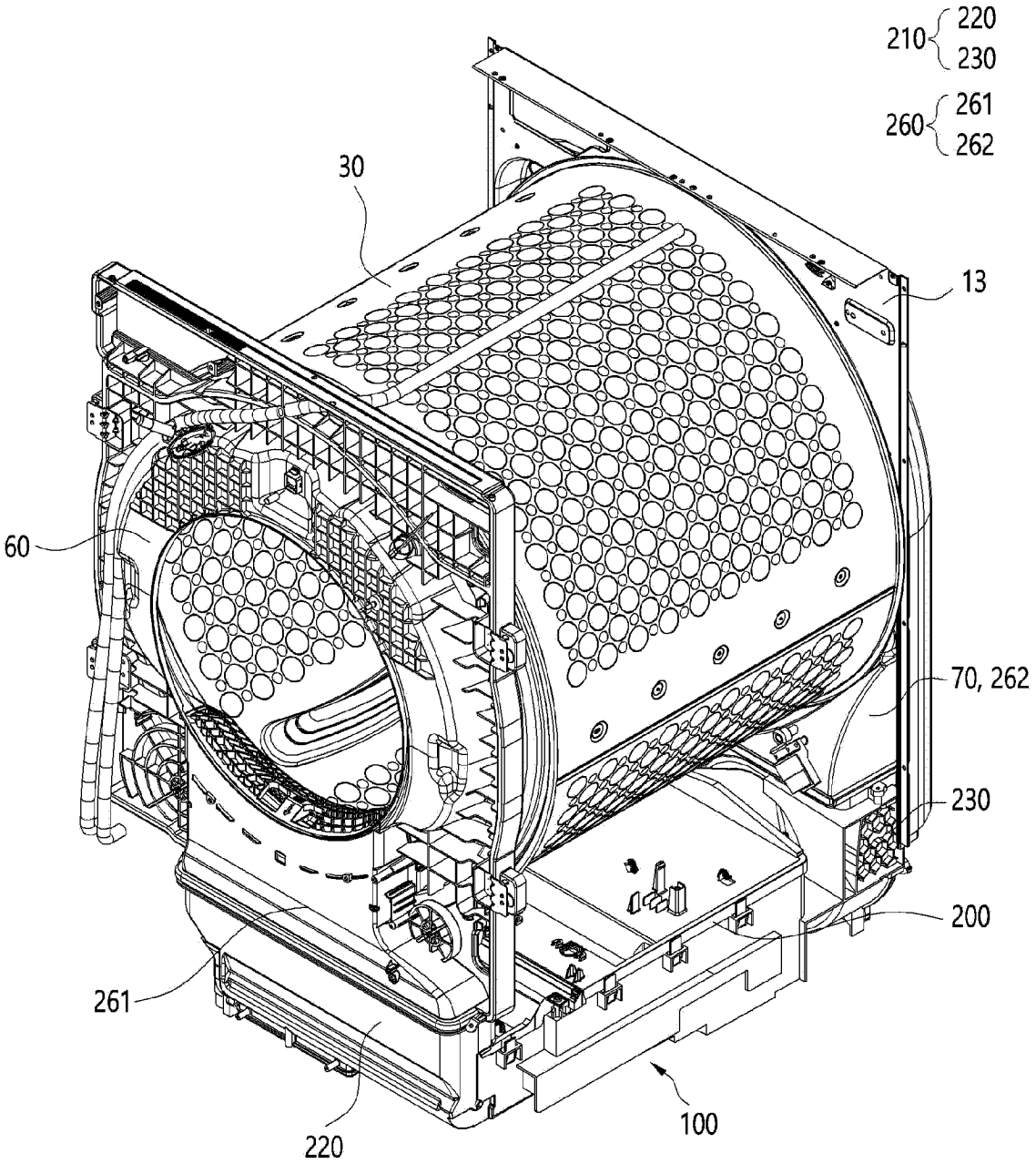
[Fig. 11】



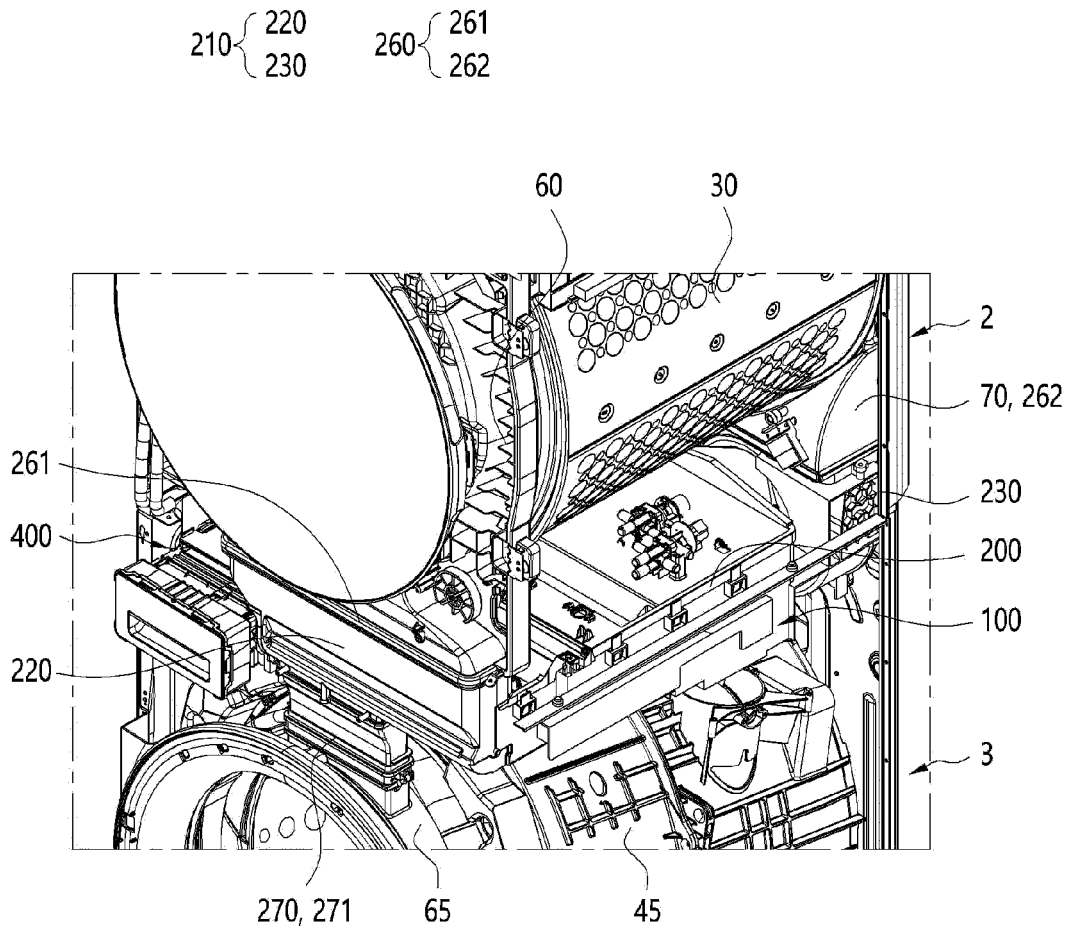
[Fig. 12]



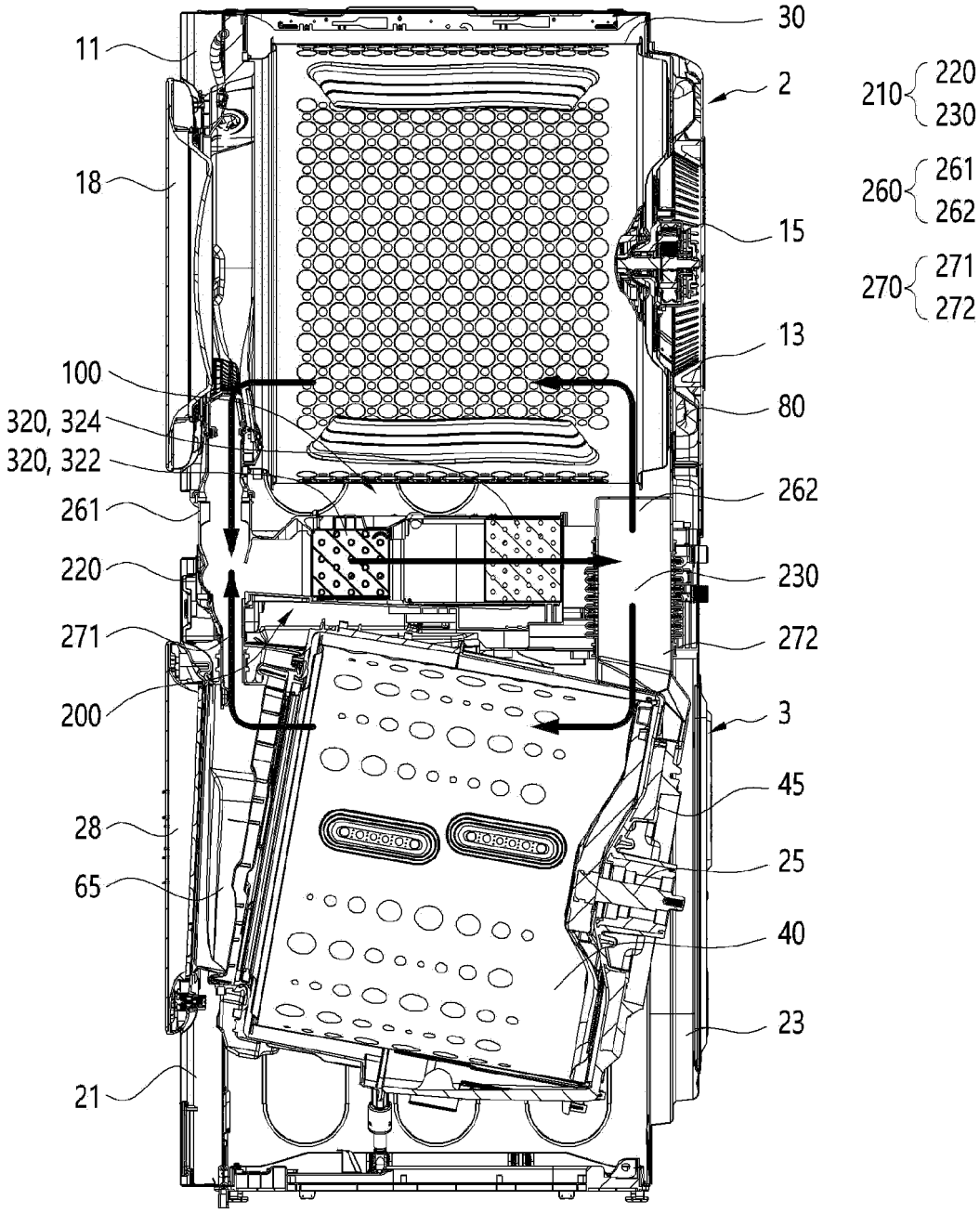
[Fig. 13]



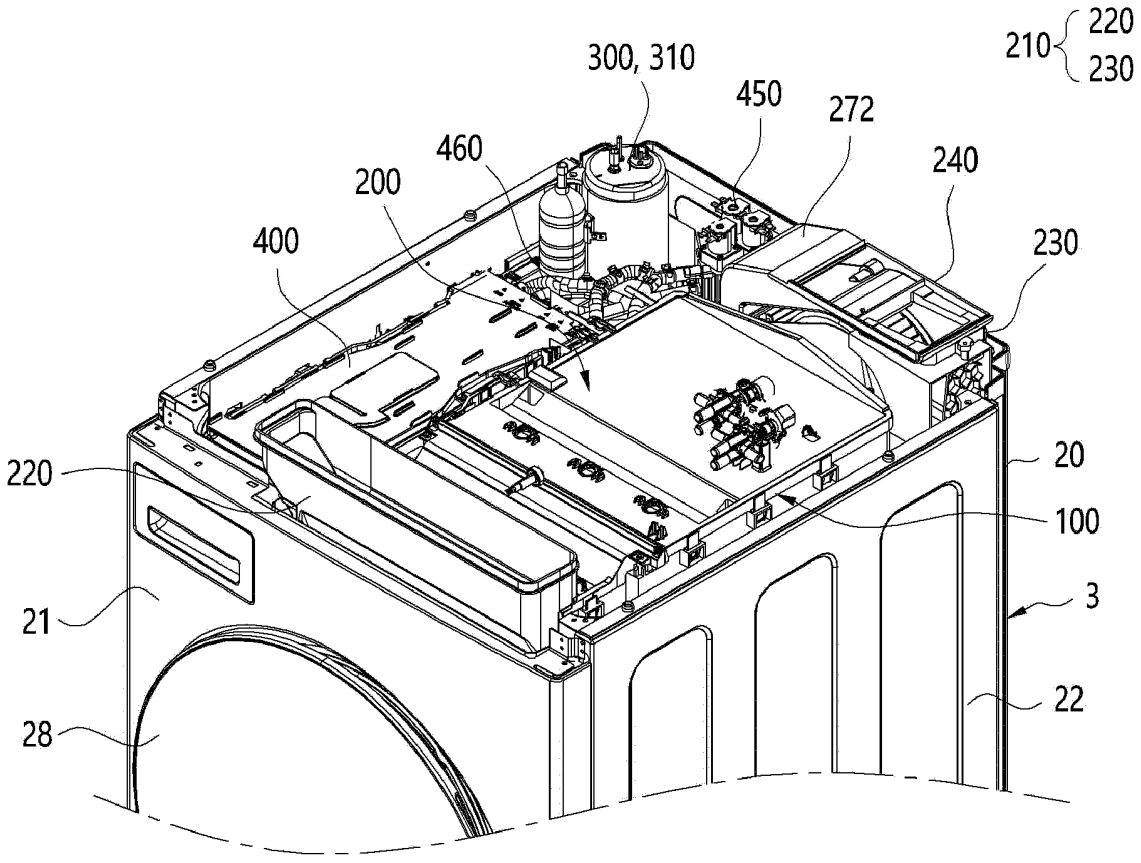
[Fig. 14]


210
220
230
260
261
262
60
30
2
70, 262
261
230
400
200
100
220
3
270, 271
65
45

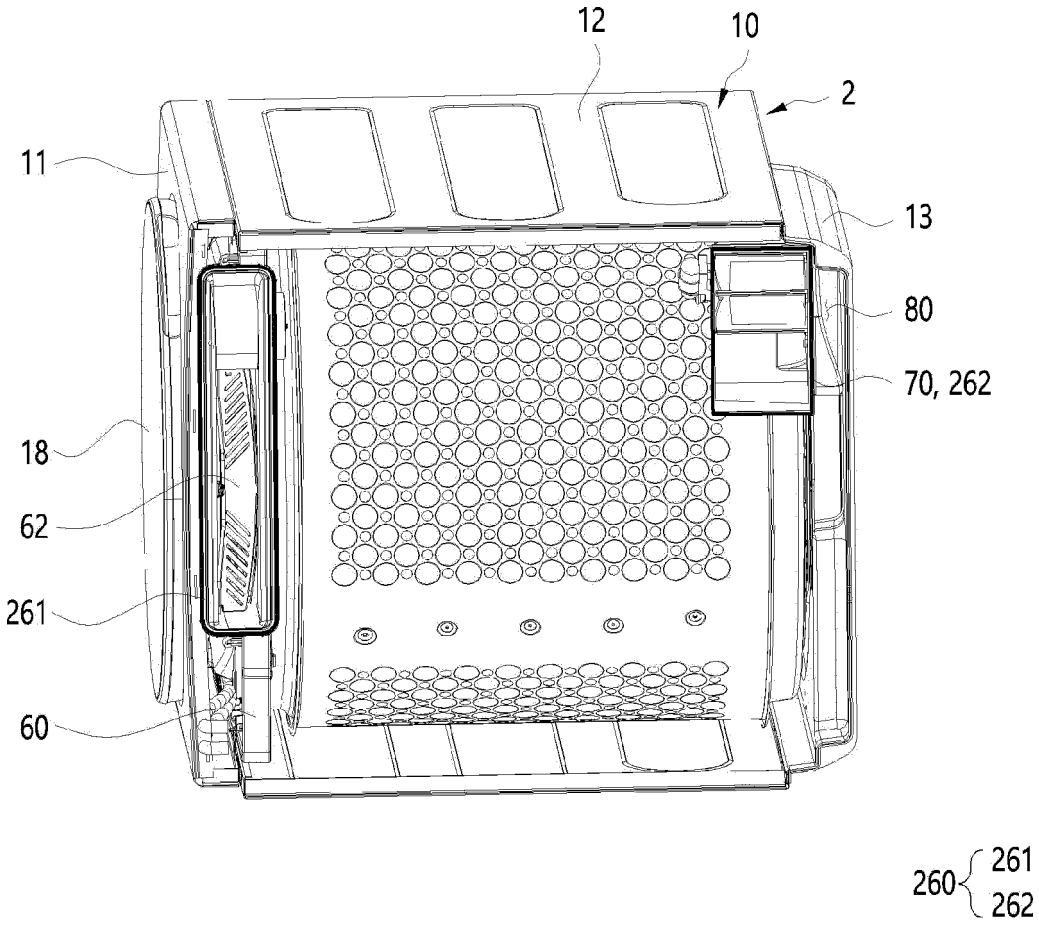
[Fig. 15]


11
18
100
320, 324
320, 322
261
220
271
200
28
65
21
30
2
15
13
80
262
230
272
3
45
25
40
23
210
220
230
260
261
262
270
271
272

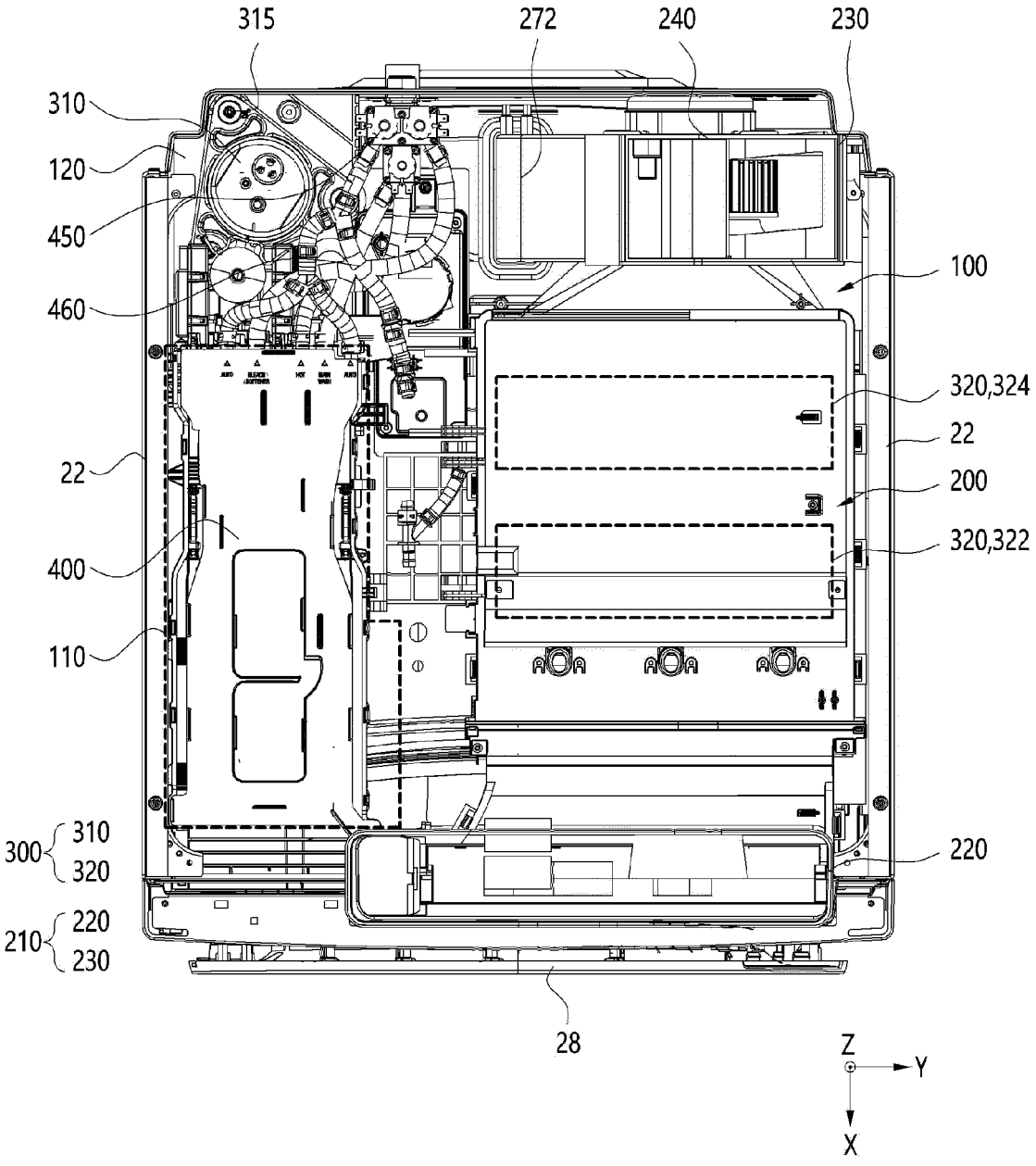
[Fig. 16]


210
220
230
300, 310
450
272
460
200
240
400
230
220
20
100
3
21
22
28

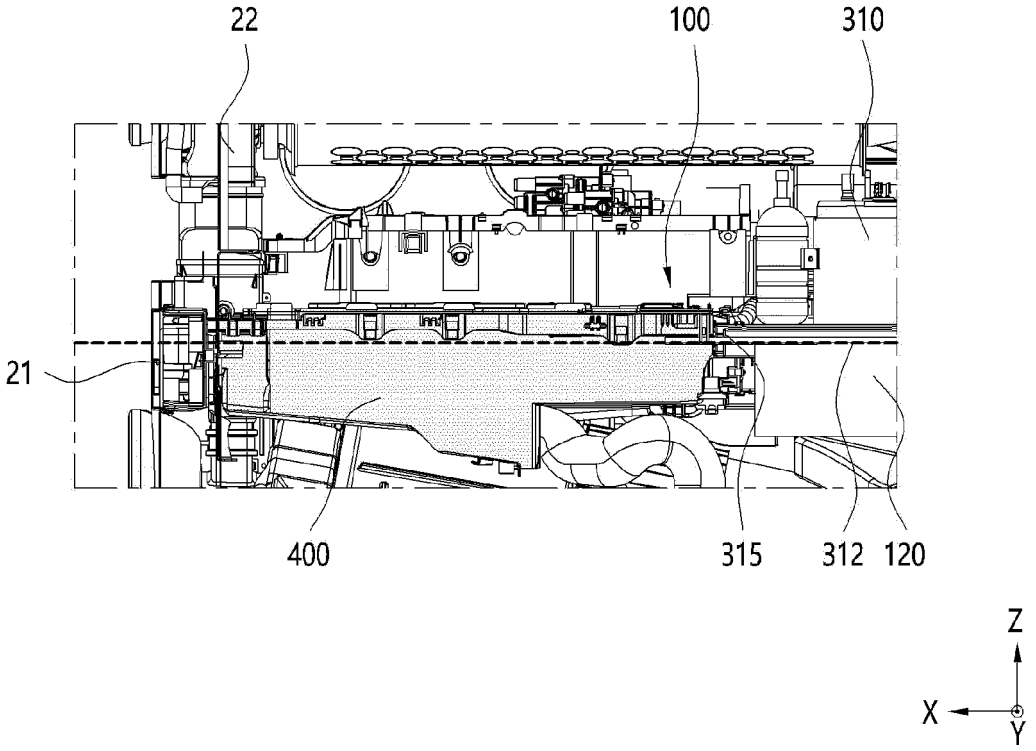
[Fig. 17】



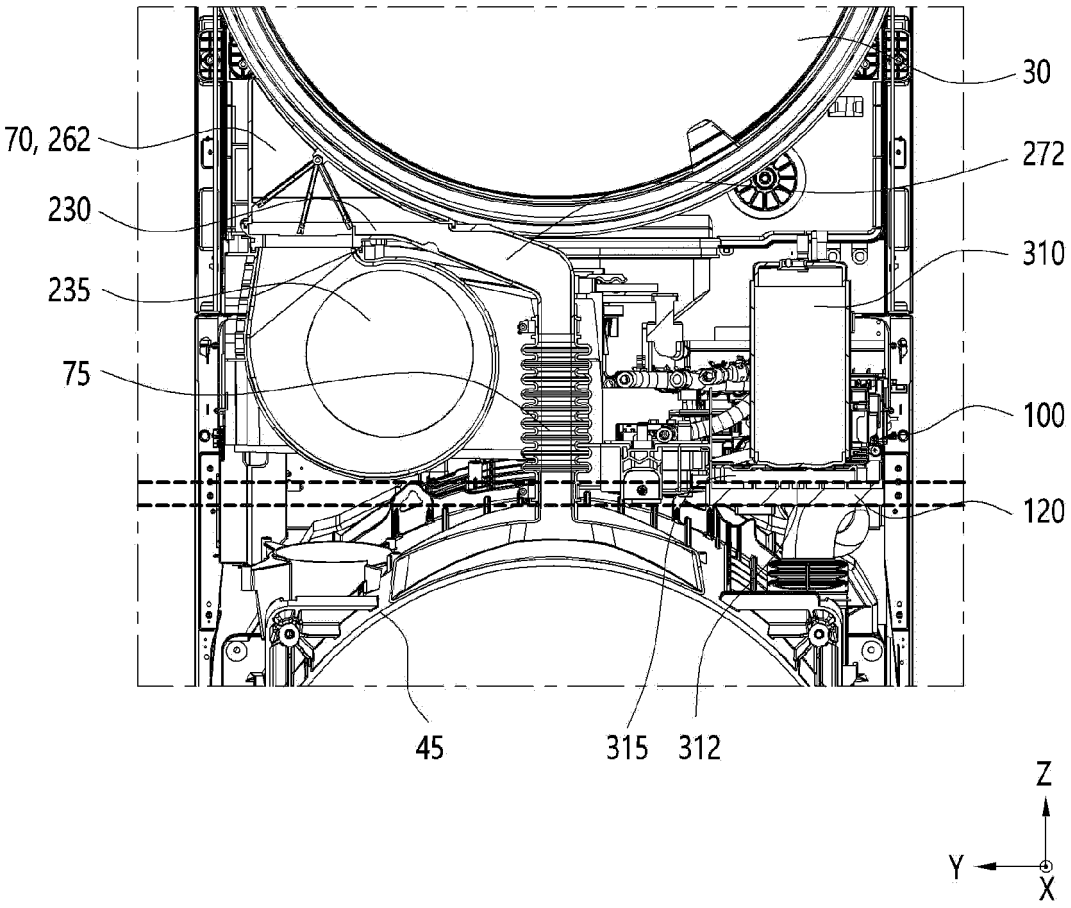
[Fig. 18]


315
272
240
230
310
120
450
460
100
320,324
22
22
200
400
320,322
110
300
310
320
220
210
220
230
28
Z
Y
X

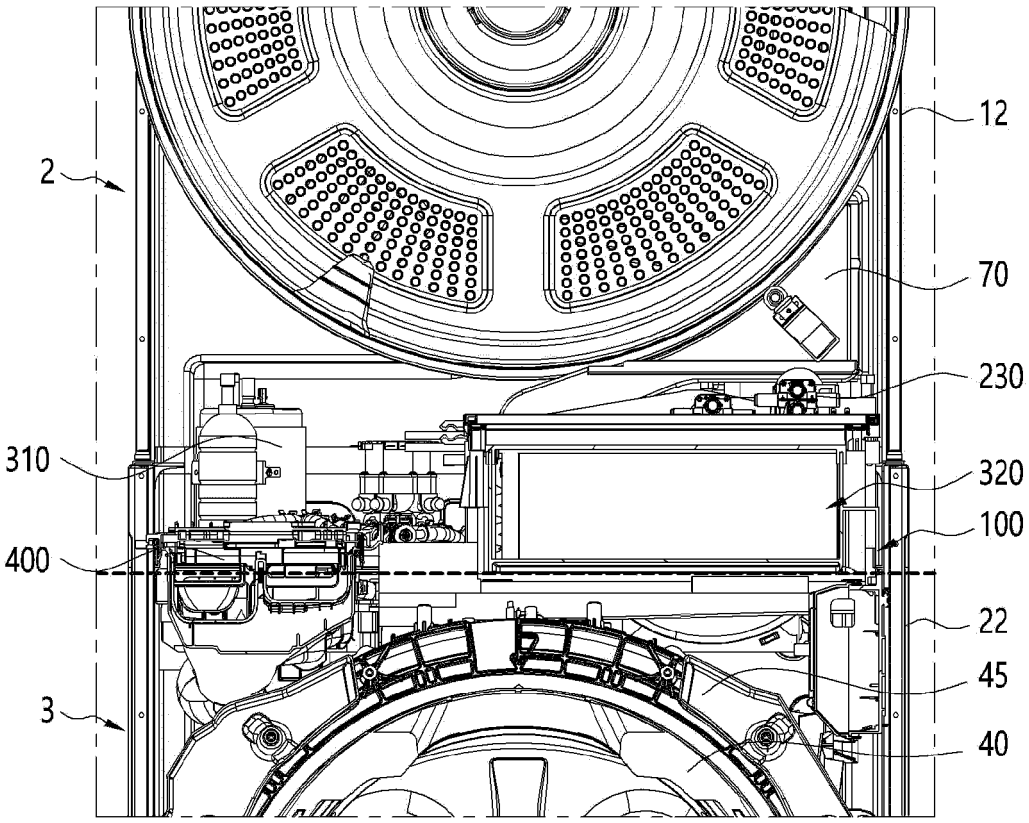
[Fig. 19]



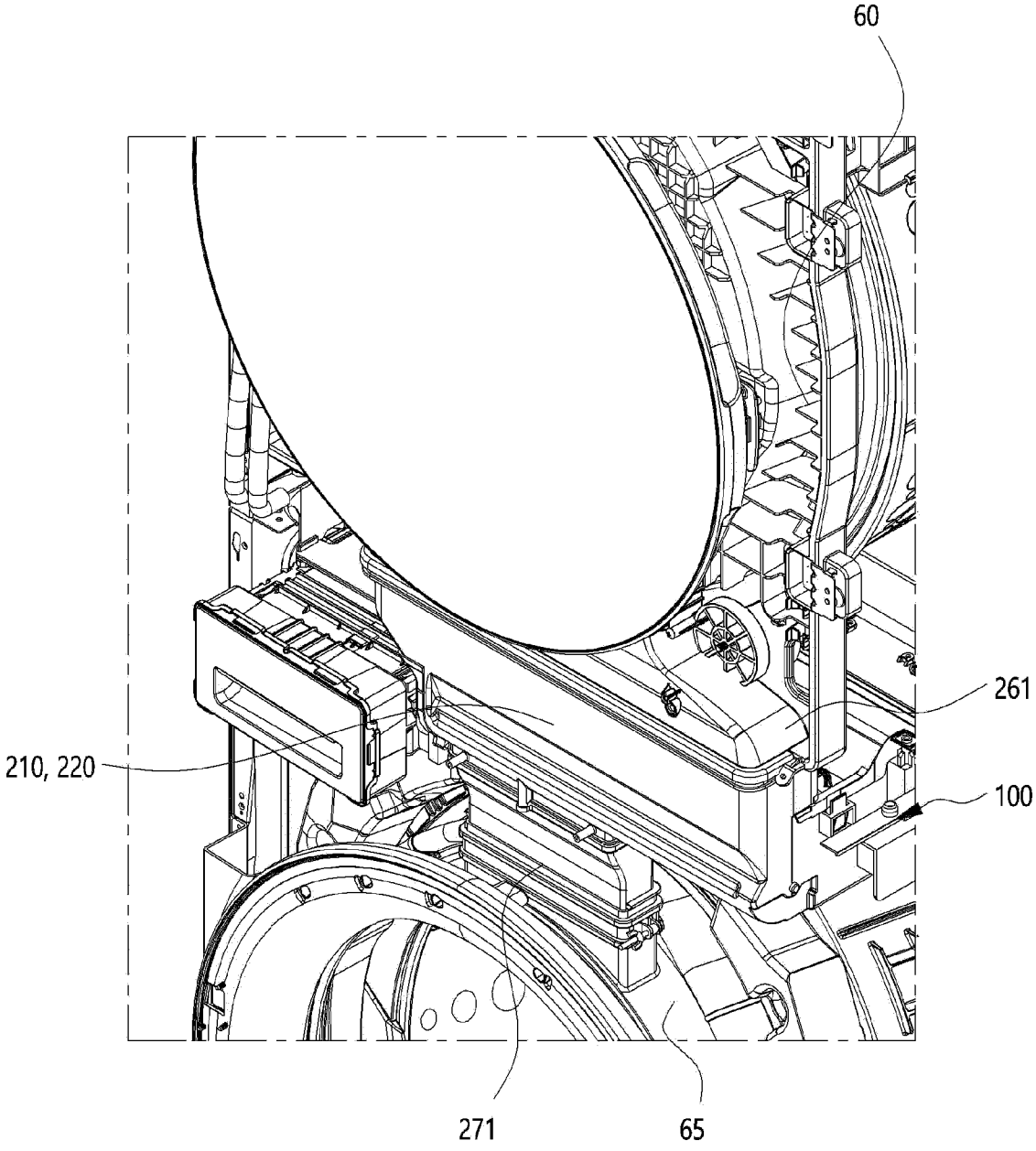
[Fig. 20]



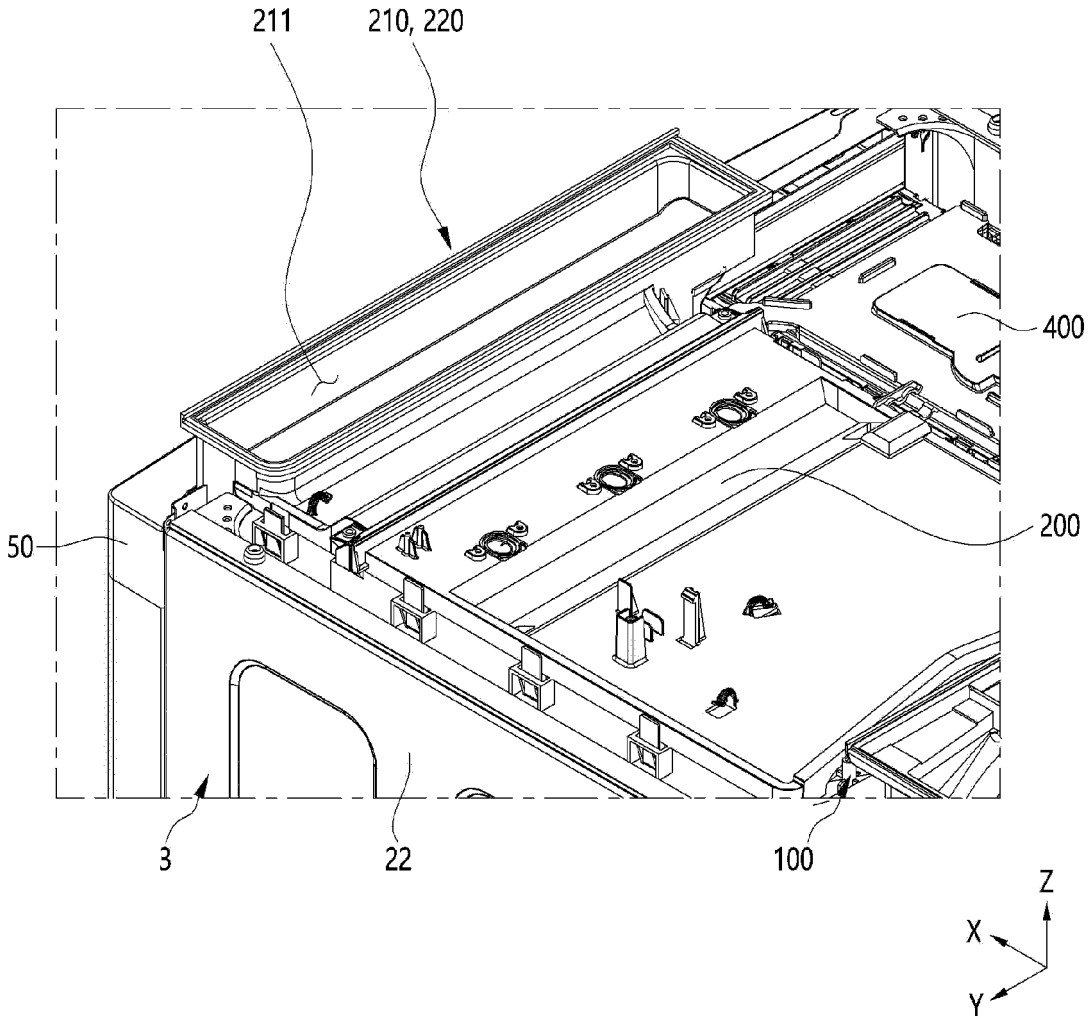
[Fig. 21]



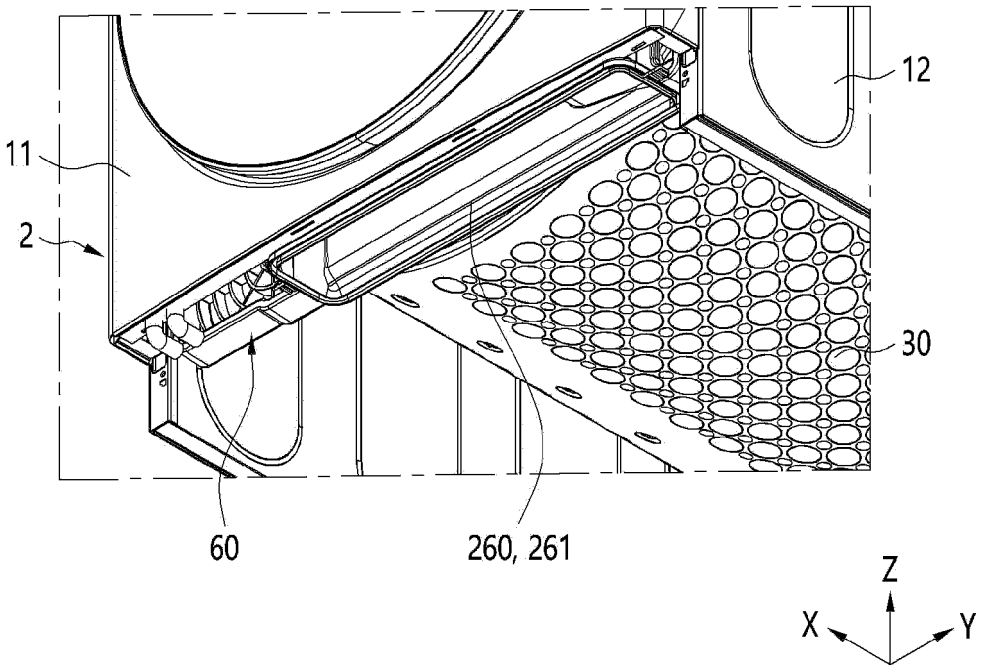
[Fig. 22】



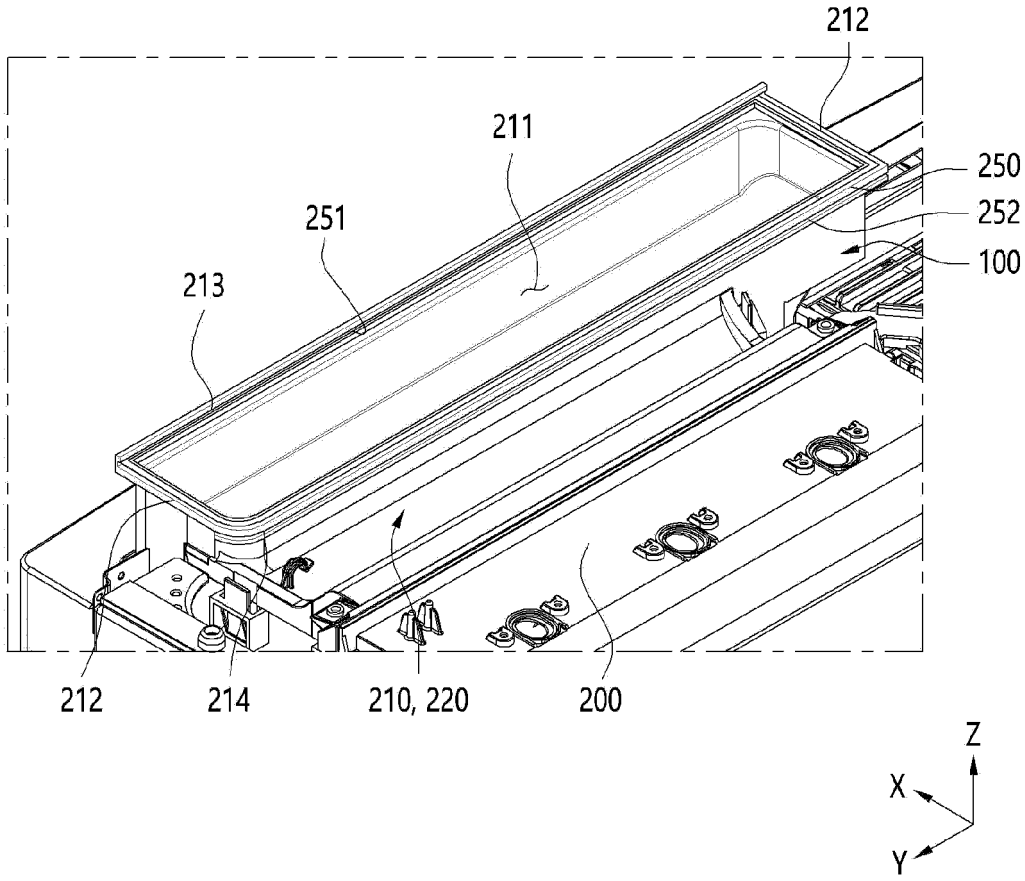
[Fig. 23】



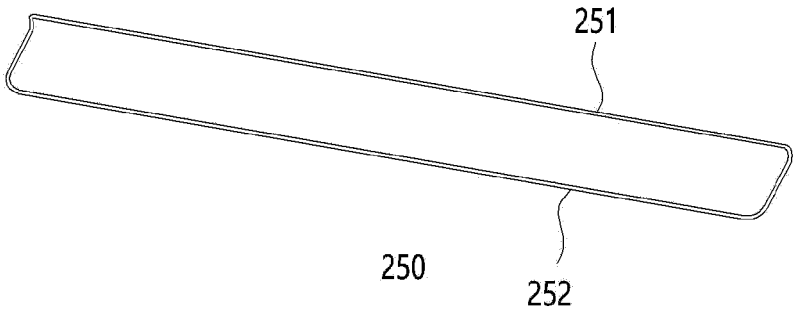
[Fig. 24】



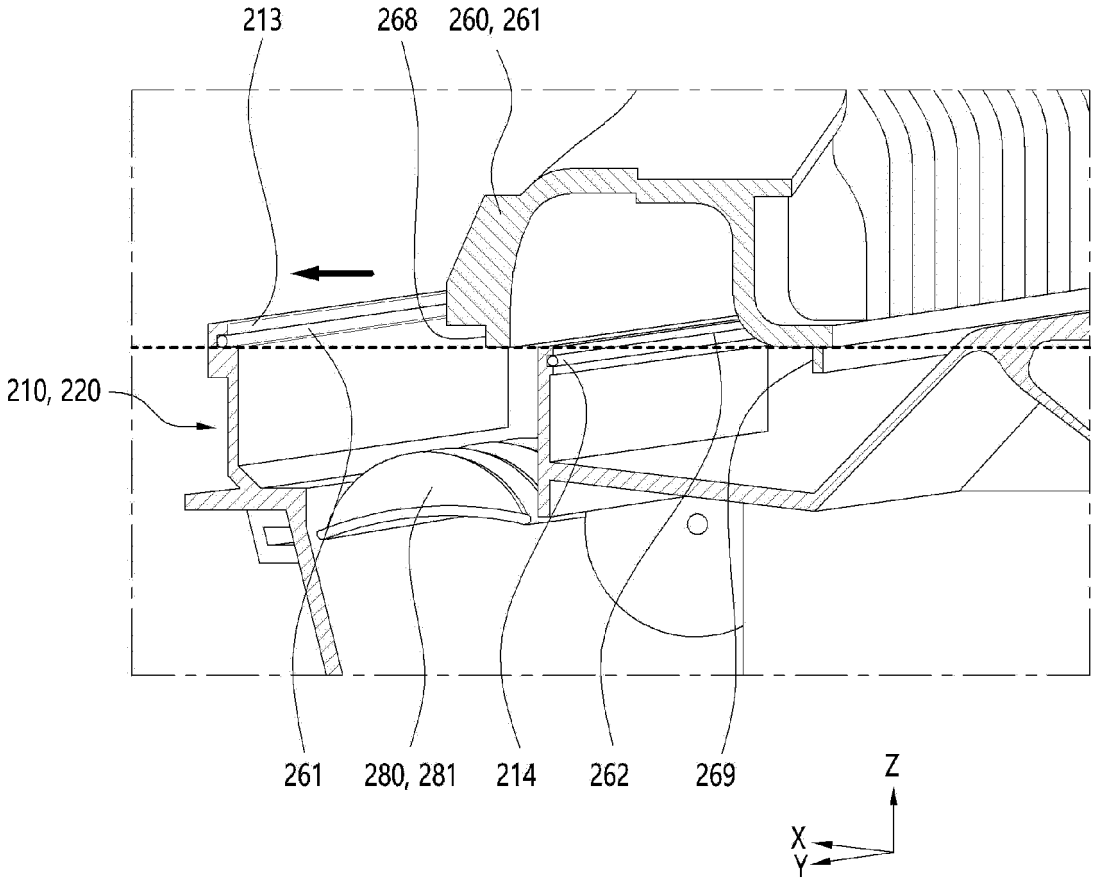
[Fig. 25]



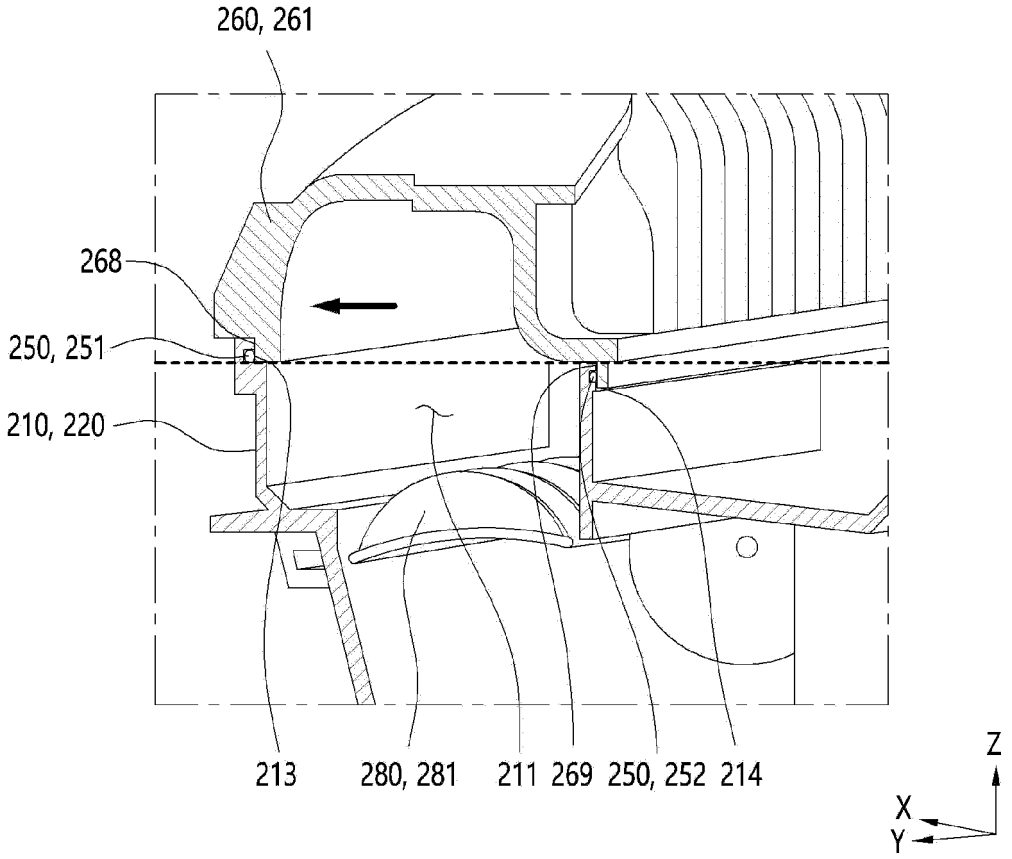
[Fig. 26]



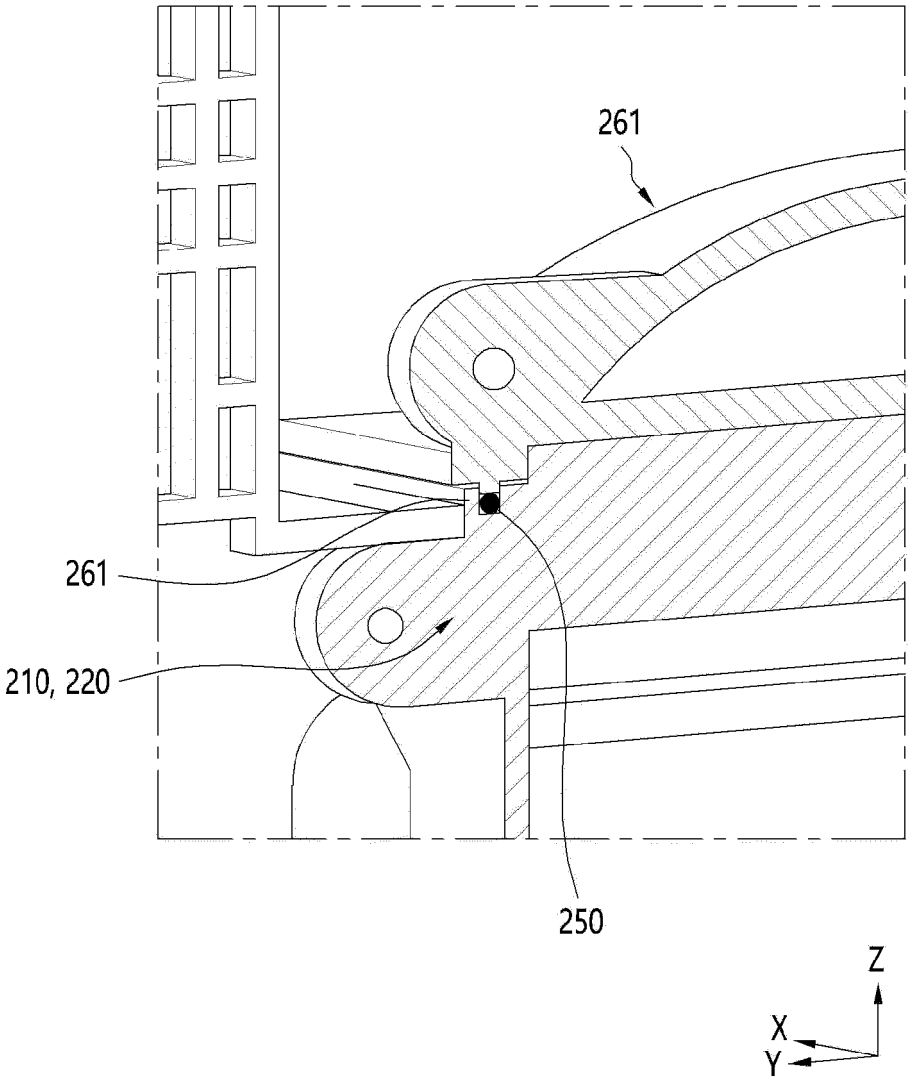
[Fig. 27]



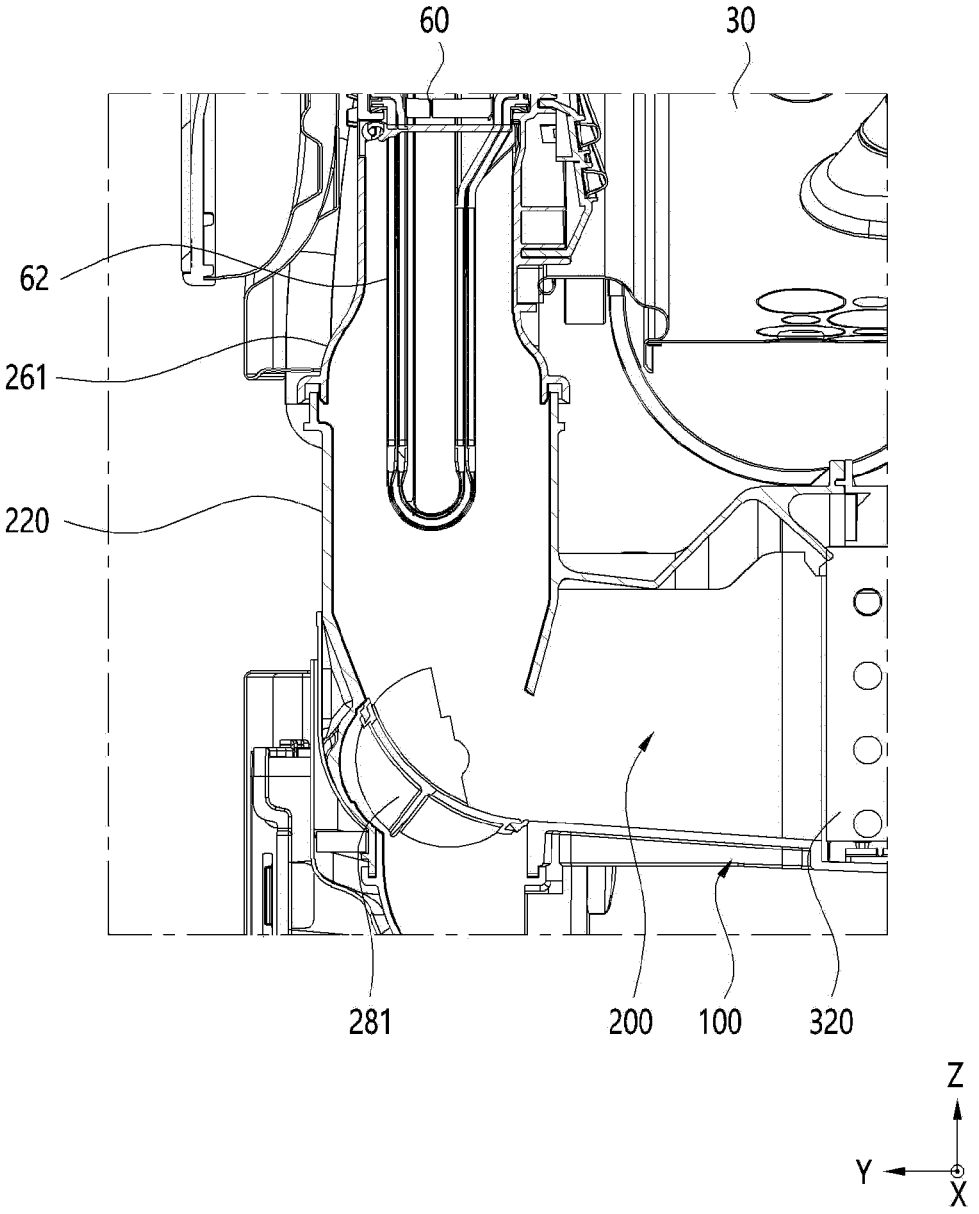
[Fig. 28]



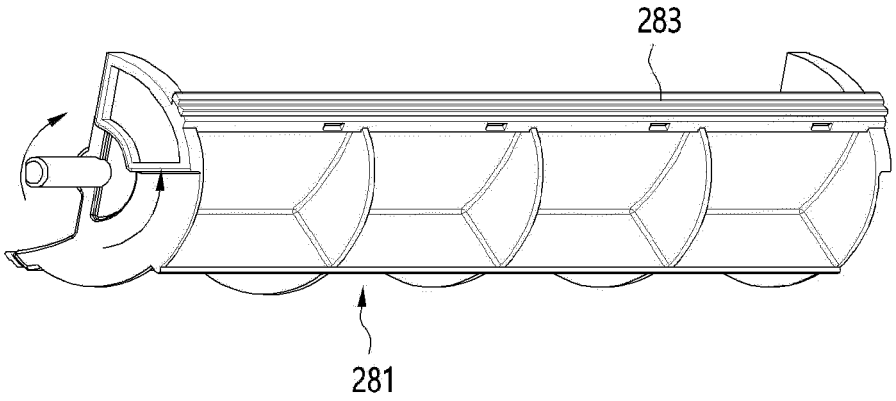
[Fig. 29]



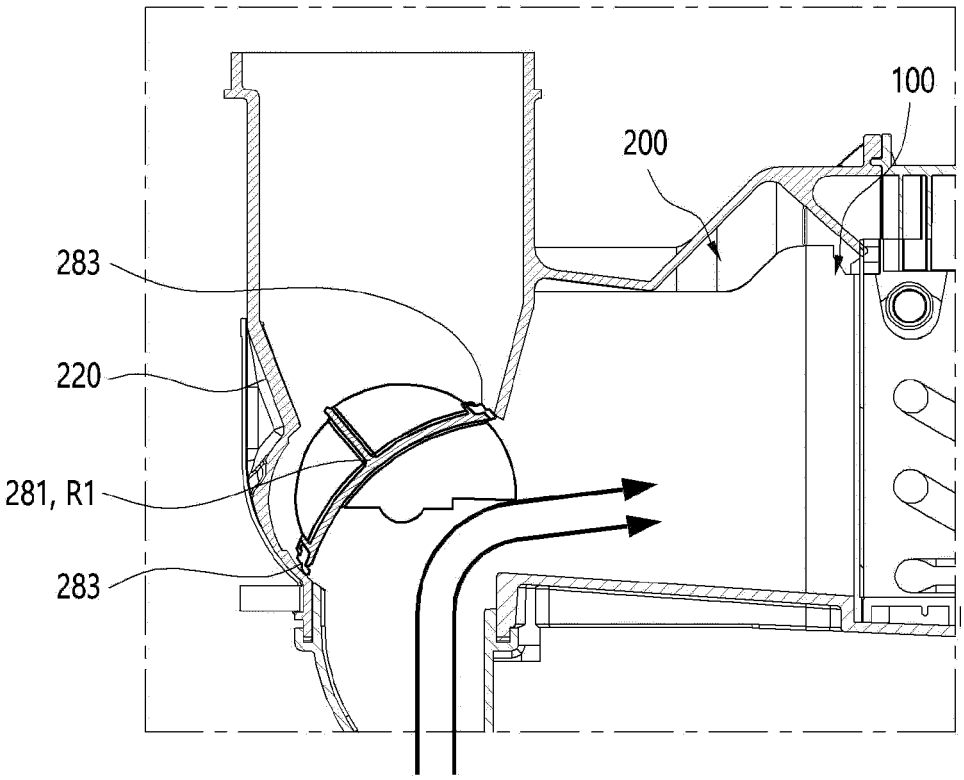
[Fig. 30]



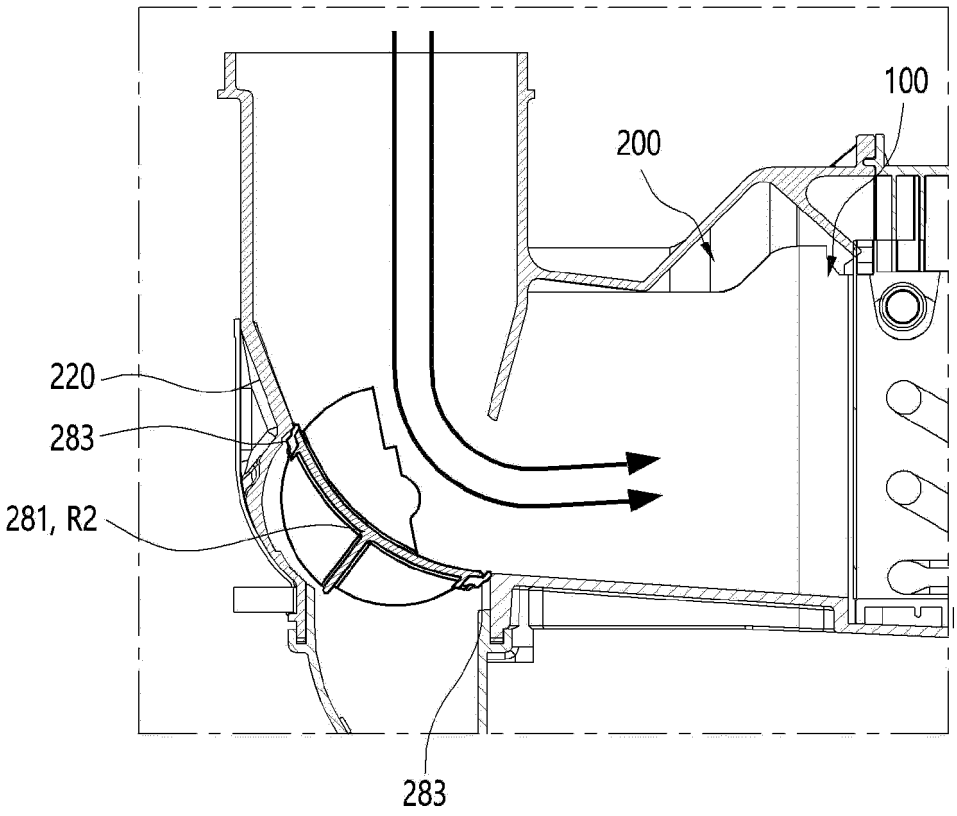
[Fig. 31】



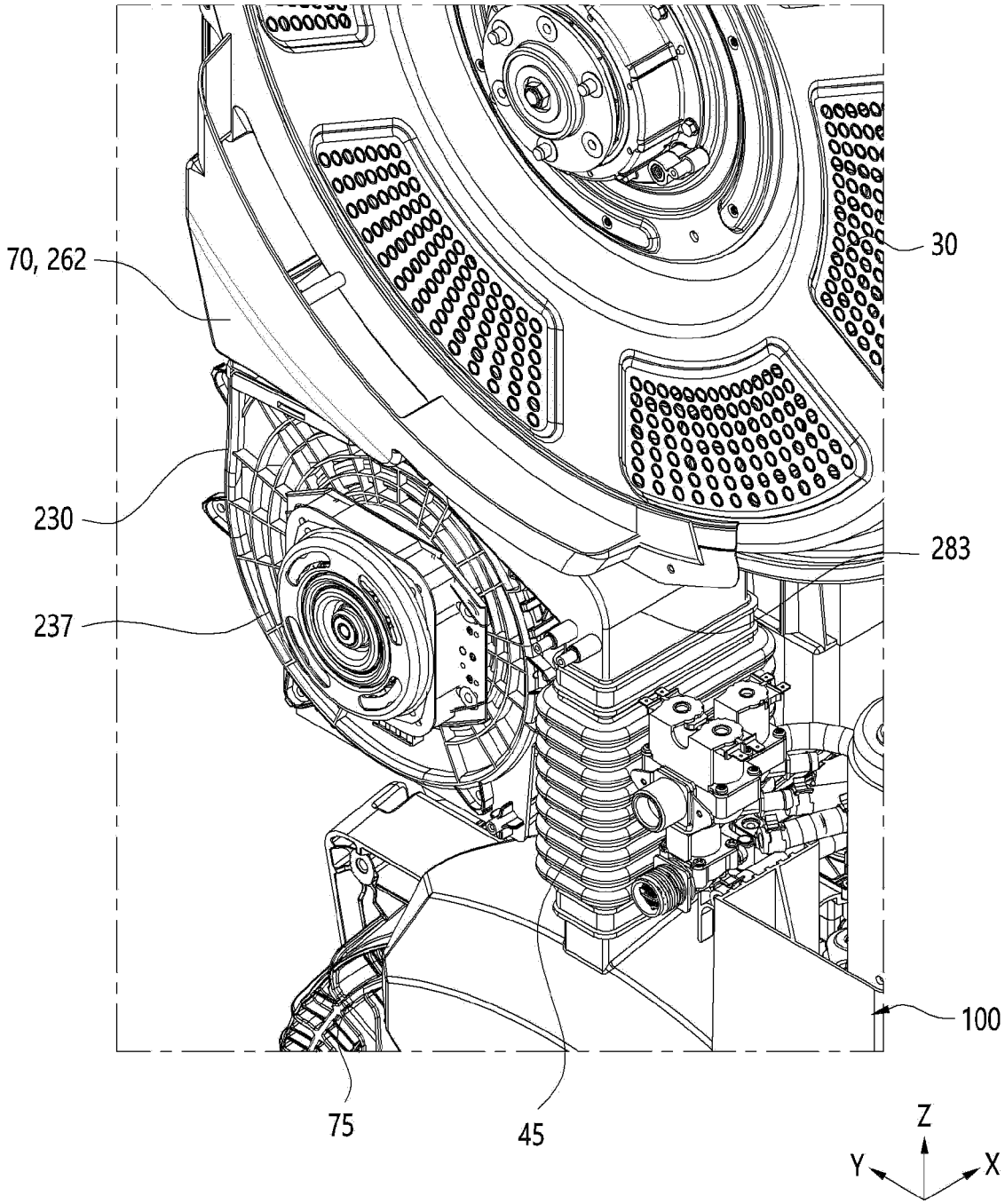
[Fig. 32】



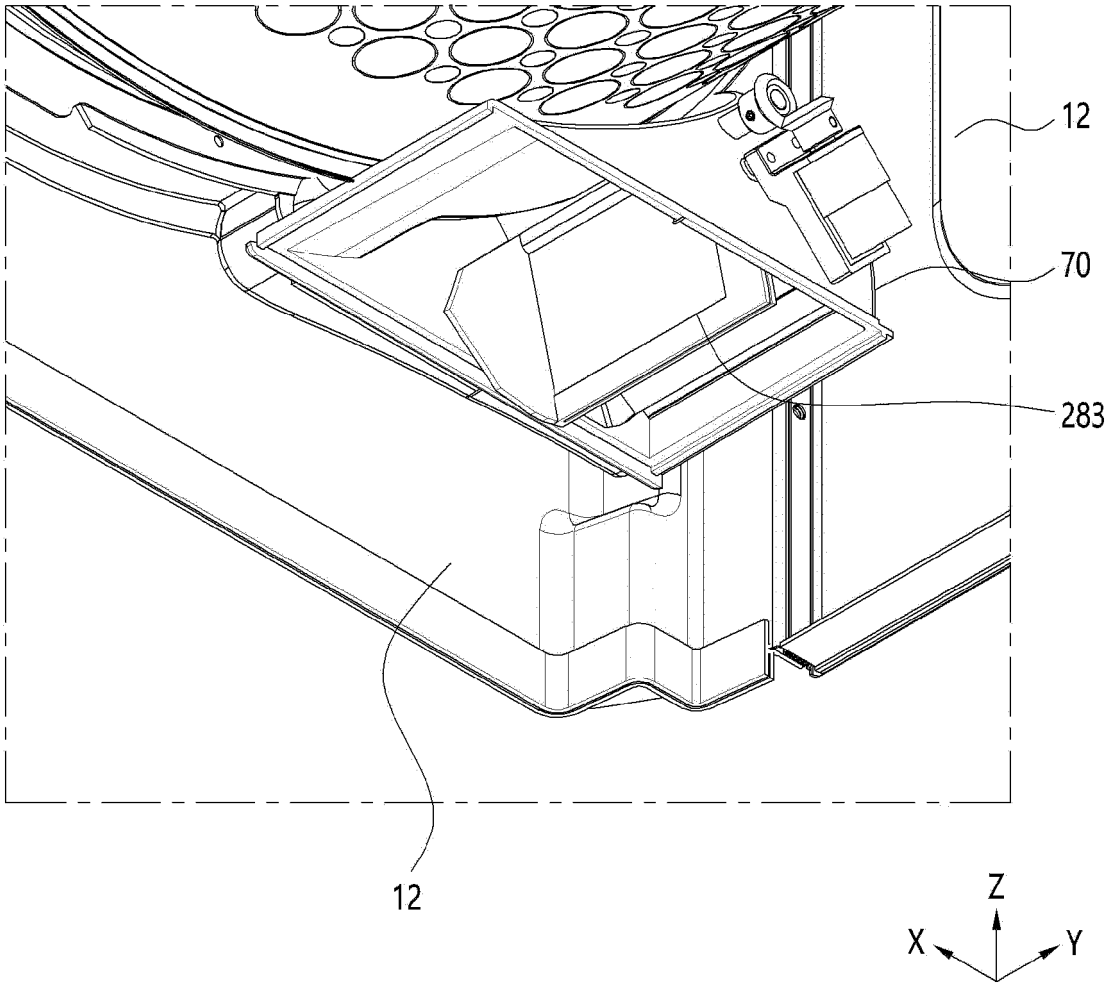
[Fig. 33]



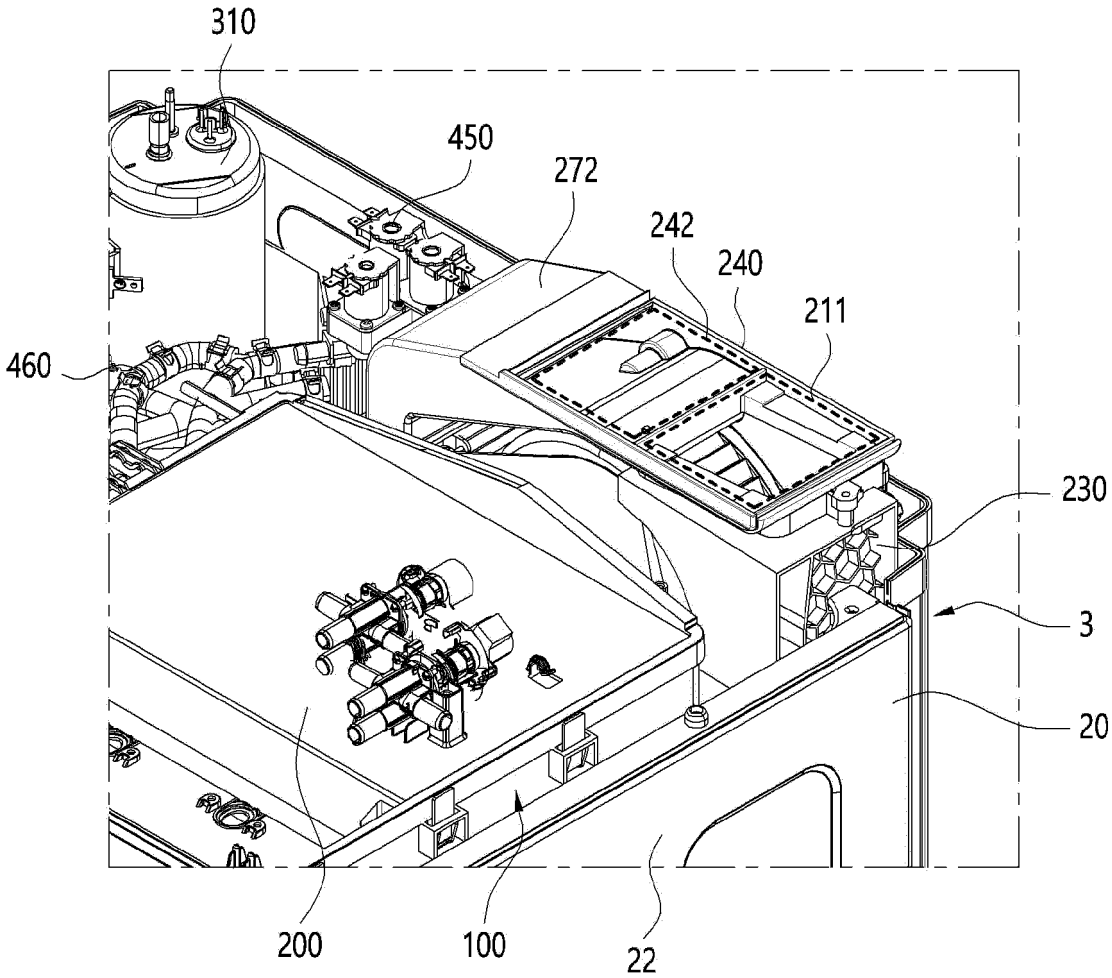
[Fig. 34]



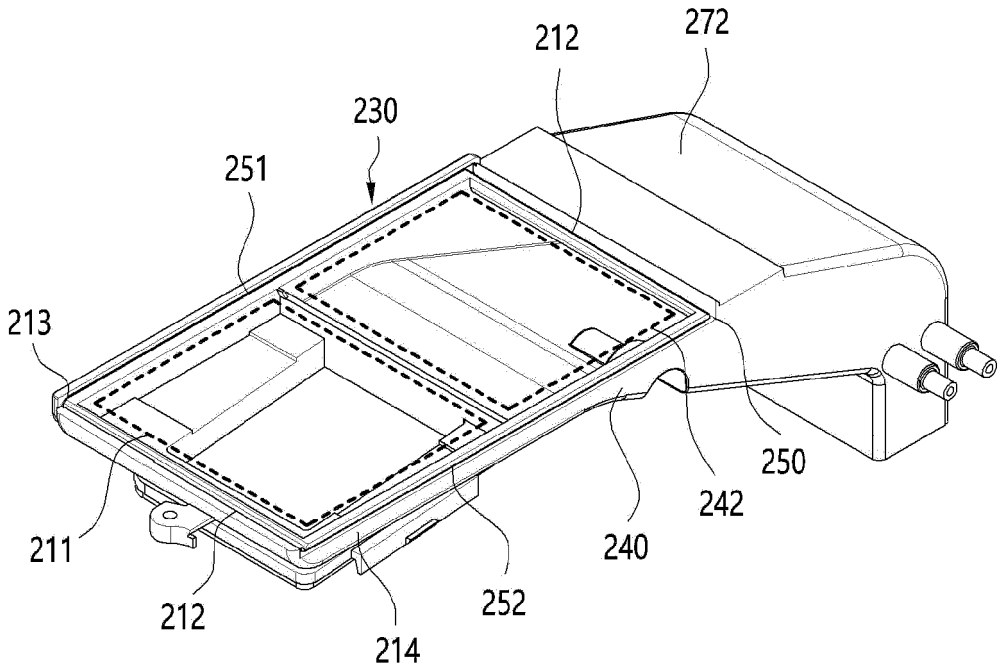
[Fig. 35】



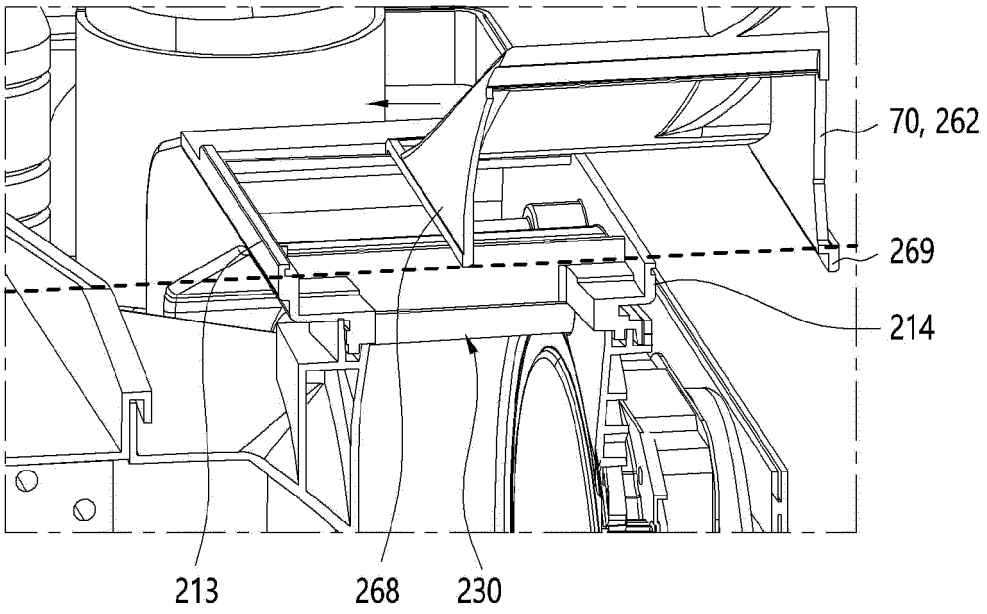
[Fig. 36】



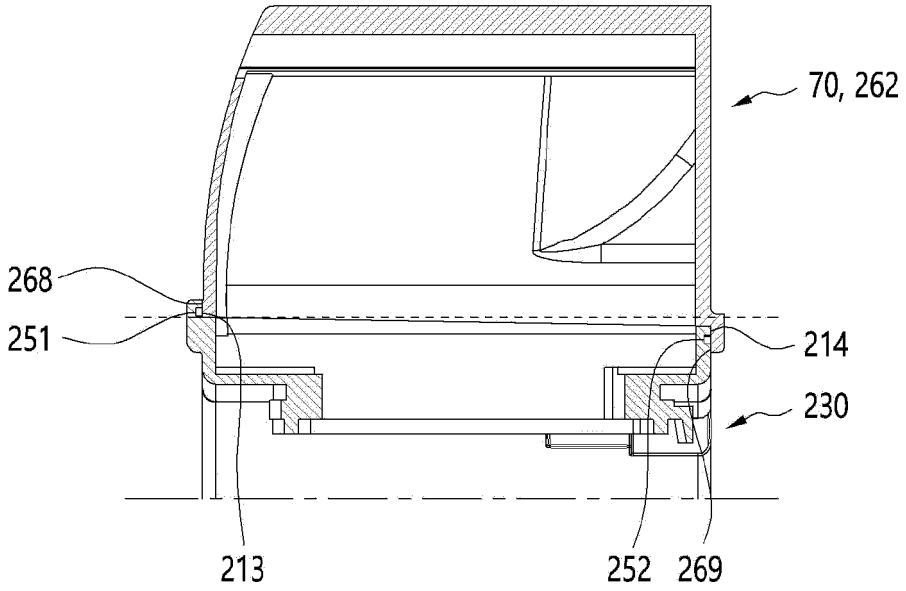
[Fig. 37】


212
272
230
251
213
250
242
211
240
212
252
214

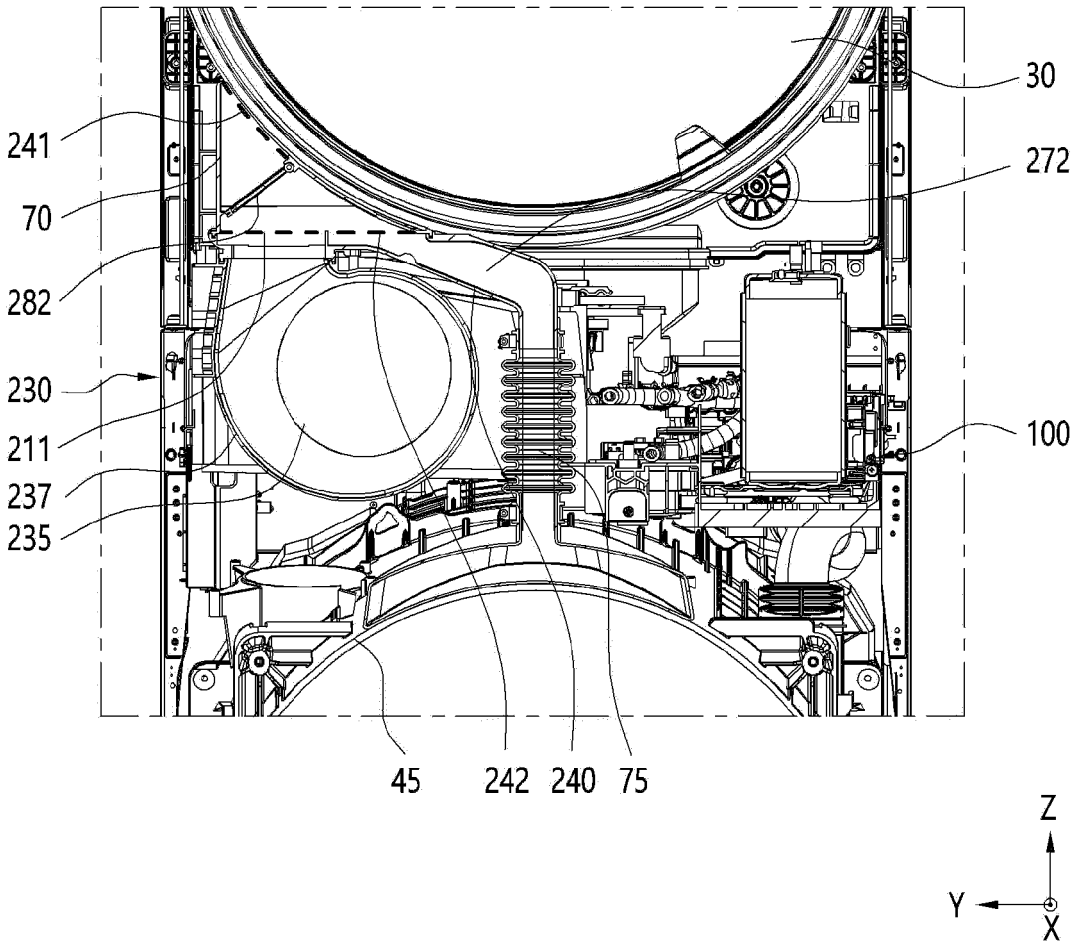
[Fig. 38】


70, 262
269
214
213
268
230

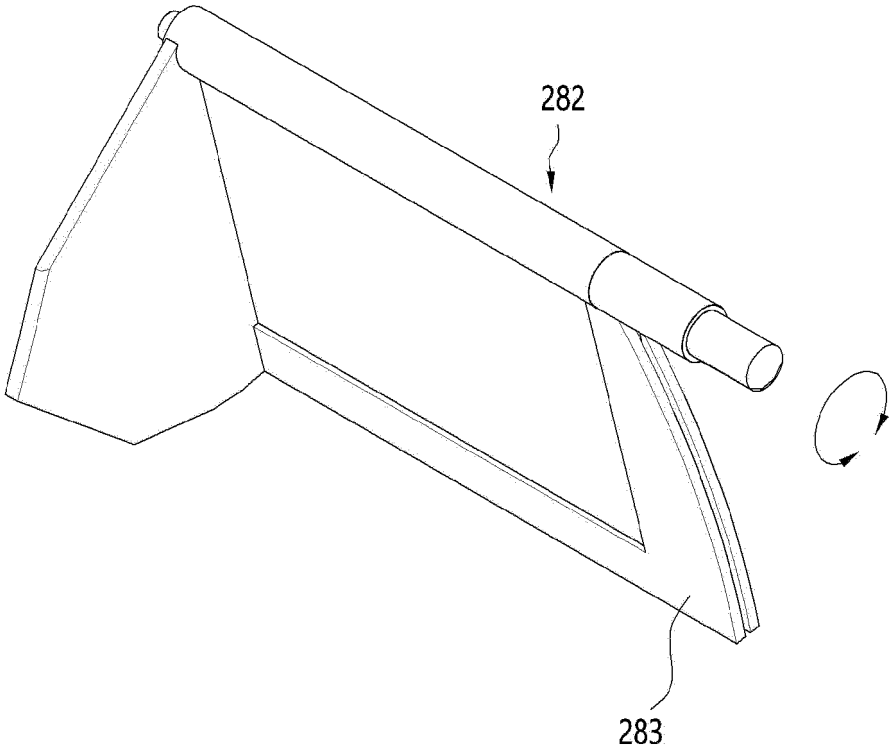
[Fig. 39]



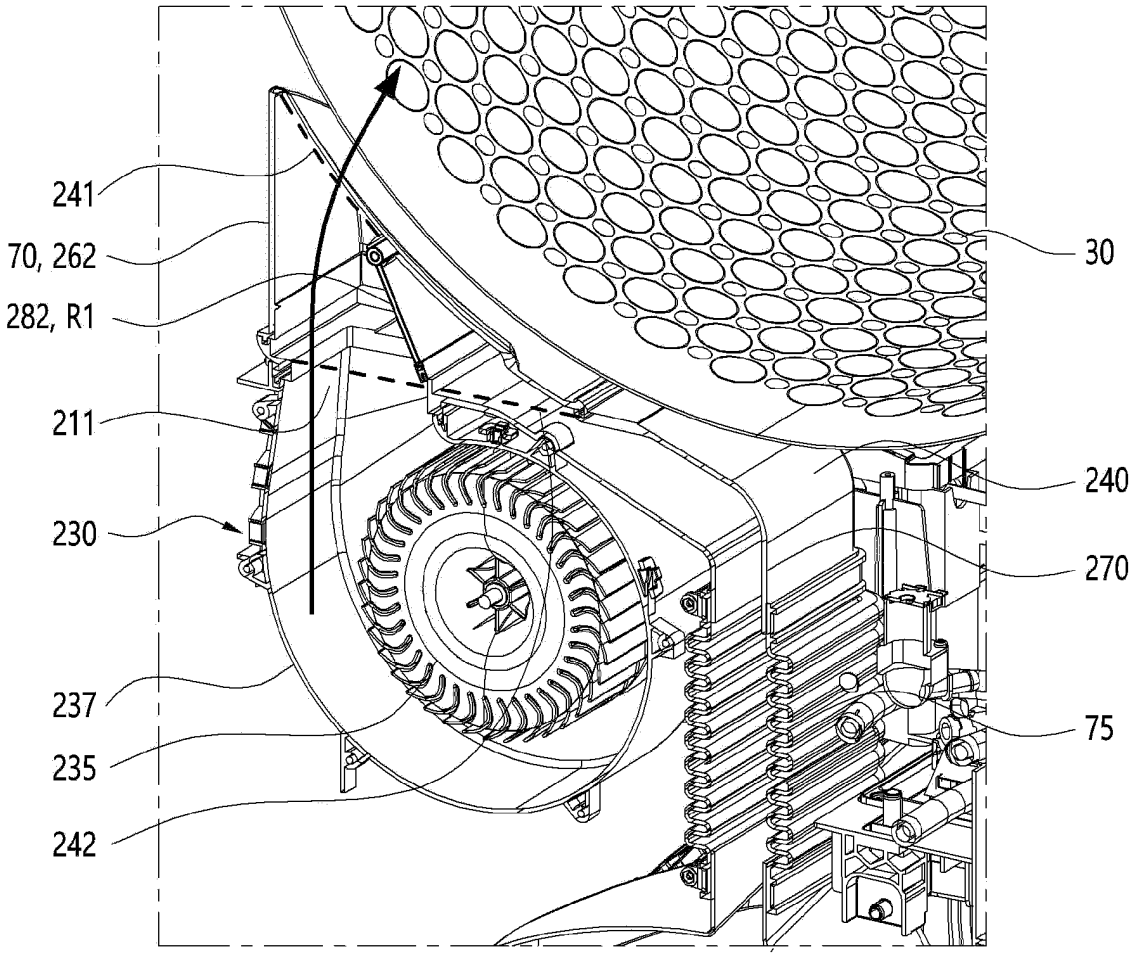
[Fig. 40]



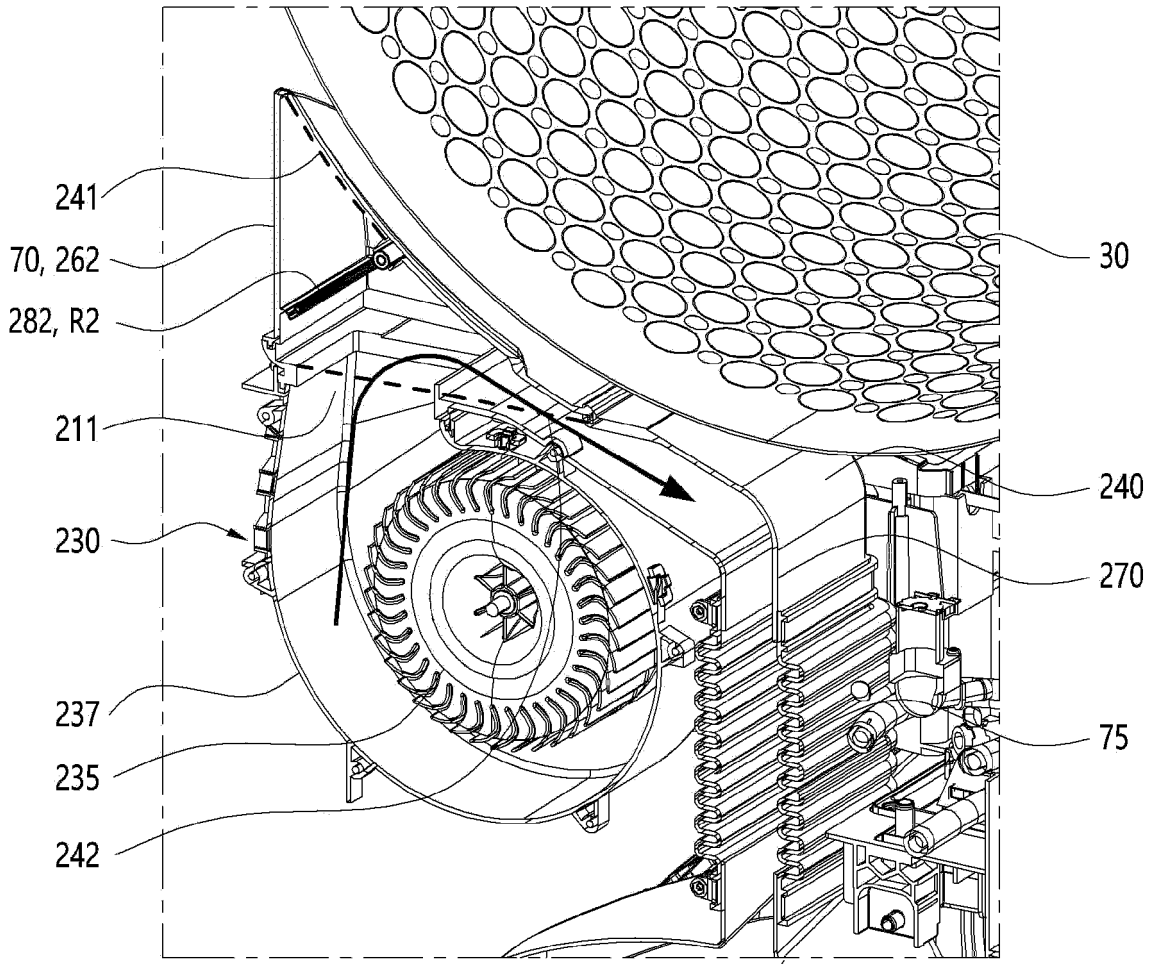
[Fig. 41】



[Fig. 42】



[Fig. 43】



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2022/011412

A. CLASSIFICATION OF SUBJECT MATTER

D06F 29/00(2006.01)i; **D06F 31/00**(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

D06F 29/00(2006.01); B25B 27/00(2006.01); D06F 37/26(2006.01); D06F 39/12(2006.01); D06F 58/02(2006.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models: IPC as above
Japanese utility models and applications for utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & keywords: 스택(stack), 드럼(drum), 세탁기(washing machine), 건조기(dryer), 압축기(compressor), 세제(cleanser), 패널(panel), 공기(air)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2021-508568 A (GREE ELECTRIC APPLIANCES INC ZHUHAI) 11 March 2021 (2021-03-11) See paragraphs [0031]-[0047]; claim 3; and figures 1-2 and 6-7.	31,36-37
Y		1-30,32-35
Y	US 5956790 A (BRAUNSCHWEIG, James R. et al.) 28 September 1999 (1999-09-28) See column 3, lines 1-26; claim 1; and figure 2.	1-30
Y	KR 10-2010-0020628 A (DAEWOO ELECTRONICS CORPORATION) 23 February 2010 (2010-02-23) See claim 3.	32-35
A	CN 109208272 A (QINGDAO HAIER WASHING MACHINE CO., LTD.) 15 January 2019 (2019-01-15) See claims 1-10; and figures 1-2.	1-37
A	CN 109385847 A (SHANGHAI GILARDINO INTERNET TECHNOLOGY CO., LTD.) 26 February 2019 (2019-02-26) See claims 1-3; and figure 1.	1-37

☐ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 November 2022	**17 November 2022**
Name and mailing address of the ISA/KR **Korean Intellectual Property Office** **Government Complex-Daejeon Building 4, 189 Cheongsa-ro, Seo-gu, Daejeon 35208** Facsimile No. **+82-42-481-8578**	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR2022/011412

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
JP 2021-508568 A	11 March 2021	CN 108085941 A	29 May 2018
		EP 3733955 A1	04 November 2020
		EP 3733955 A4	13 January 2021
		WO 2019-134478 A1	11 July 2019
US 5956790 A	28 September 1999	US 5371253 A	06 December 1994
		US 5926886 A	27 July 1999
KR 10-2010-0020628 A	23 February 2010	None	
CN 109208272 A	15 January 2019	CN 109208272 B	26 October 2021
CN 109385847 A	26 February 2019	None	

Form PCT/ISA/210 (patent family annex) (July 2022)

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 2949801 A **[0011]**
- CN 102605586 **[0014]**