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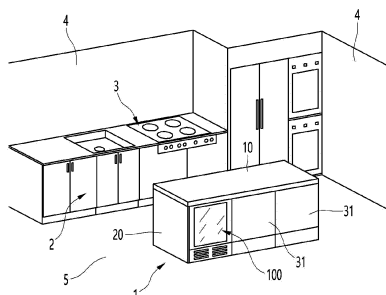
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(54) **SPACE-CUSTOMIZED REFRIGERATOR SYSTEM**

(57) An embodiment of the present disclosure relates to a space placement type refrigerator system and includes a case configured to be positioned in a space away from a wall surface and having an opened front surface and an opened rear surface; a plurality of refrigerators provided in the case and configured to be exposed to the opened front surface or the opened rear

surface of the case; and a receiving member provided in the case and configured to be exposed to the same surface as the plurality of refrigerators, in which at least one of the plurality of refrigerators is disposed to be accessible from a direction opposite to that of the other refrigerator.

Fig. 1



Description

Technical Field

[0001] The present disclosure relates to a space placement type refrigerator system.

Background Art

[0002] In general, a refrigerator is a home appliance that is provided to store various foods for a long time with cold air generated by using a circulation of a refrigerant according to a refrigeration cycle.

[0003] In such a refrigerator, one or a plurality of receiving spaces for freezing and storing storage objects are provided while being partitioned from each other. In this case, the receiving space may be a receiving space that is opened and closed by a rotary door or may be a receiving space that can be withdrawn or introduced in a drawer type.

[0004] The receiving space may include a freezing chamber for freezing storage of a storage object and a refrigerating chamber for refrigeration storage of a storage object and may include two or more freezing chambers or two or more refrigerating chambers.

[0005] Recently, due to changes in kitchen environments and lifestyles, refrigerators that are installed by embedding a refrigerator in furniture or a wall surface, such as a built-in installation, and refrigerators that are composed of a module type and assembled with each other have been developed.

[0006] Representatively, in Korean Patent Laid-Open Publication No. 10-2010-0000512, a built-in type refrigerator installed to be accommodated in a furniture cabinet is disclosed.

[0007] In addition, in Korean Patent Laid-Open Publication No. 10-2012-0000642, a modular refrigerator in which a cooling unit having a cooling device and a plurality of connection units having independent receiving spaces are stacked and connected in various ways is disclosed.

[0008] However, such refrigerators are disposed in a limited position on the wall surface in the indoor space, so there is a limitation in usability and space composition.

Disclosure

Technical Problem

[0009] An object of the present disclosure is to provide a space placement type refrigerator system in which space utilization is increased through various combinations.

[0010] An object of the present disclosure is to provide a space placement type refrigerator system with improved usability in a kitchen space.

[0011] An object of the present disclosure is to provide a space placement type refrigerator system having an

improved outer appearance by being configured to have a sense of unity with furniture in a kitchen space.

[0012] An object of the present disclosure is to provide a space placement type refrigerator system in which different types of refrigerators are combined to increase utilization in kitchens and living spaces.

[0013] An object of the present disclosure is to provide a space placement type refrigerator system in which an additional device is provided on a top plate to further improve utilization in a kitchen space.

[0014] An object of the present disclosure is to provide a space placement type refrigerator system in which the inside thereof is visualized and the article received therein can be easily checked.

Technical Solution

[0015] In the space placement type refrigerator system according to the embodiment of the present disclosure, a plurality of refrigerators are disposed inside a case that is spaced apart from a wall surface of an indoor space and opened to the front side and the rear side, and the plurality of refrigerators are exposed in different directions and thus can be disposed that the user can access to the plurality of refrigerators.

[0016] A receiving member may be further provided in the inner space of the case, and front and rear outer appearances may be formed by the receiving member and the plurality of refrigerators.

[0017] The front surface of the refrigerator and the front surface of the receiving member may be disposed on the same plane, and the door of the refrigerator and the outer appearance of the door of the receiving member may be formed to have the same size and shape.

[0018] The plurality of refrigerators and the receiving member may have the same horizontal width and may be disposed in combination in the case.

[0019] The plurality of refrigerators are of different types, and a refrigerator suitable for a space in which each surface is in contact may be disposed.

[0020] An additional device that can be used for cooking may be disposed on the top plate forming the upper surface of the case, and the additional device may be disposed in a region outside the vertical upper region of the refrigerator disposed below the top plate.

[0021] At least a portion of the door of the refrigerator of the plurality of refrigerators facing the indoor space may be formed of a material capable of seeing through the inside.

[0022] A space placement type refrigerator system according to an embodiment of the present disclosure includes a case configured to be positioned in a space away from a wall surface and having an opened front surface and an opened rear surface; a plurality of refrigerators provided in the case and configured to be exposed to the opened front surface or the opened rear surface of the case; and a receiving member provided in the case and configured to be exposed to the same sur-

face as the plurality of refrigerators, in which at least one of the plurality of refrigerators may be disposed to be accessible from a direction opposite to that of the other refrigerator.

[0023] The case may be formed such that both sides between the front surface and the rear surface are shielded.

[0024] The receiving member may be provided in plurality and may form the front surface or the rear surface together with the refrigerator.

[0025] The plurality of refrigerators and the receiving member may be continuously disposed so that side surfaces thereof are in contact with each other.

[0026] The plurality of refrigerators and the receiving member may have the same size of space occupied in the case.

[0027] The plurality of refrigerators includes two types of refrigerators each having a door configuration different from each other, and different types of refrigerators may be disposed on the front surface and the rear surface.

[0028] The plurality of refrigerators may include: a first refrigerator including a first cabinet forming a first storage space and a first door rotatably mounted on the cabinet to open and close the first storage space; and a second refrigerator including a second cabinet forming a second storage space, and a second door mounted on the second cabinet to be introduced or withdrawn to open and close the second storage space.

[0029] The first refrigerator and the second refrigerator may be disposed so that the first door and the second door are exposed in opposite directions to each other.

[0030] A plurality of the first refrigerators or the second refrigerators may be provided on the same surface.

[0031] A plurality of the first refrigerators or the second refrigerators may be continuously disposed with each other.

[0032] At least a portion of the first door may form a transparent see-through portion so that the inside can be seen through.

[0033] The second door may be disposed at a position facing an indoor wall surface where the cooking device is disposed.

[0034] When being disposed in the indoor space, the indoor space of the space placement type refrigerator system may be partitioned so that a second space to which the second door is exposed is narrower than the indoor of a first space facing by the first door.

[0035] In another aspect, a space placement type refrigerator system according to an embodiment of the present disclosure includes: a top plate disposed on upper side spaced apart from an indoor floor surface; a pair of side plates extending downward from the lower surface of the upper plate and spaced apart from each other in the vertical direction to form an accommodation space opened in the front and rear direction; a first refrigerator disposed on the opened front surface of the accommodation space; a second refrigerator disposed on the opened rear surface of the accommodation space; and

a plurality of receiving members disposed on the front surface and the rear surface and forms the outer appearance at the front surface and the rear surface together with the first refrigerator and the second refrigerators, in which the first refrigerator and the second refrigerator are formed to have the horizontal width of the same unit length, and the horizontal width of the accommodation space may be formed to be an integer multiple of the unit length.

[0036] With respect to the center line extending in the horizontal direction through the accommodation space, the first refrigerator and the second refrigerator may be disposed to be in contact with each other.

[0037] The first refrigerator and the second refrigerator may be disposed to be spaced apart from each other with respect to a center line extending in the horizontal direction of the accommodation space.

[0038] With respect to a center line extending in the horizontal direction of the accommodation space, the inserted end portions of the first refrigerator and the second refrigerator may be disposed to pass through the center line by a set distance, respectively.

[0039] With respect to a center line extending in the horizontal direction of the accommodation space, the first refrigerator and the second refrigerator may be disposed to cross each other so as to pass through the center line.

[0040] The receiving members may be disposed on opposite sides of the first refrigerator and the second refrigerator, respectively.

[0041] A plurality of the receiving members are provided and the receiving member may be formed to have a horizontal width equal to that of the first refrigerator and the second refrigerator by the unit length.

[0042] Outer surfaces of the first refrigerator, the second refrigerator, and the receiving member may be the same as or located inside the outer end of the top plate.

[0043] Outer surfaces of the first refrigerator, the second refrigerator, and the receiving member may be disposed on the same plane.

[0044] An exposed surface of the first refrigerator may be formed by a first door that is opened and closed by rotation, and an exposed surface of the second refrigerator may be formed by a second door that is introduced or withdrawn in a drawer type.

[0045] The receiving member may include a first receiving member including a receiving door formed in the same size as the first door and rotated; and a second receiving member including a drawer formed in the same size as the second door and is introduced or withdrawn.

[0046] The first refrigerator, the second refrigerator, and the receiving member may be formed to have the same vertical width in a direction in which they are inserted into the accommodating space.

[0047] Any one of the pair of side plates may be disposed to be in contact with the wall surface of the indoor space.

[0048] A machine room in which a compressor and a condenser are accommodated may be formed at lower

ends of the first refrigerator and the second refrigerator, and a suction port through which air suctioned into the machine room is introduced and a discharge port through which air inside the machine room is discharged may be formed on the front surface of the machine room exposed to the front surface and the rear surface.

[0049] The machine room may have exactly the same structure and shape in the first refrigerator and the second refrigerator.

[0050] The front surface of the machine room may be provided with a grill cover in which the suction port and the discharge port are formed, a lower decor extending along the lower end of the receiving member may be provided at the lower front end of the storage member, and the lower decor may be formed to have the same height as the grill cover.

[0051] The first refrigerator, the second refrigerator, and the receiving member may be insertedly or detachably mounted through the opened front and rear surfaces.

[0052] In another aspect, a space placement type refrigerator system according to an embodiment of the present disclosure includes: a top plate forming an upper surface; a pair of side plates extending downward from the lower surface of the top plate and forming an accommodation space opened to the front and rear surfaces; a plurality of refrigerators disposed in the accommodation space and exposed to the front and rear surfaces; a receiving member disposed in the accommodation space and exposed to the front and rear surfaces together with the plurality of refrigerators; and an additional device mounted through the top plate and operable from the upper side of the upper plate, in which the additional device may be disposed on one side of the top plate deviated from the vertical upper region of the plurality of refrigerators.

[0053] The additional device may be disposed on one side of the upper plate corresponding to the region above the receiving member.

[0054] A height of the receiving member may be formed to be lower than a height of the refrigerator.

[0055] A boundary line at which the side surfaces of the plurality of refrigerators and the receiving member are in contact with each other may be disposed to coincide with a boundary line between the unit regions.

[0056] The top plate may be formed such that a plurality of unit regions are continuously disposed in one direction, and a width of each of the unit regions may be formed to correspond to a width of the refrigerator.

[0057] The additional device may have a size disposed in one unit region.

[0058] The additional device may be a cooktop portion exposed to the upper surface of the top plate to heat and cook food.

[0059] The additional device may be a water purifying device that protrudes upward of the top plate and ejects purified water.

[0060] The additional device may be a wireless power

supply that is exposed to the upper surface of the top plate and supplies power to the home appliance in an induced electromotive force method.

[0061] The additional device may be a sink bowl that is recessed downward from the upper surface of the top plate to wash food.

Advantageous Effect

[0062] The space placement type refrigerator system according to an embodiment of the present disclosure can expect the following effects.

[0063] According to an embodiment of the present disclosure, in a case where the space placement type refrigerator system is disposed in an indoor space, the space can be partitioned by the space placement type refrigerator system, and there is an advantage that the user can use the space more effectively.

[0064] In particular, there is an advantage that a refrigerator that fits into the partitioned space is provided in the space placement type refrigerator system to enable more effective activities in the partitioned space.

[0065] In other words, the drawer-type refrigerator is disposed on the surface of the space placement type refrigerator system which faces the kitchen space, so that the user can store and take out food necessary for cooking in the kitchen space with a minimum movement line, thereby increasing the utilization of the kitchen space.

[0066] In addition, the drawer-type refrigerator disposed toward the kitchen space is configured as a drawer type for easy receipt of food when cooking food and is partitioned into a plurality of chambers to receive food suitable for the corresponding chamber, and thus there is an advantage of being capable of further improving the convenience of cooking work in the kitchen space.

[0067] In addition, a refrigerator having a rotary door is disposed on the surface of the space placement type refrigerator system which faces the indoor space, that is, the living space, so that drinks, water, wine, or the like that is frequently required by the user in the living space where the user resides are stored and take out with a minimum movement line and thus there is an advantage of improving the usability in the living space.

[0068] In addition, since the door of the refrigerator having the rotary door is made transparent or selectively transparent, it is possible to intuitively check the inside of the rotary door in the living space, thereby further improving usability.

[0069] In addition, even if the refrigerator having the rotary door is provided in a low-level space placement type refrigerator system, it is possible to automatically open the refrigerator by the door opening device, thereby further improving user convenience.

[0070] In addition, the space placement type refrigerator system may include a plurality of receiving members on the same surface as the refrigerator. Accordingly, the space placement type refrigerator system can store ar-

titles that do not require low-temperature storage, and the space in which the space placement type refrigerator system is disposed can be used more efficiently.

[0071] In addition, the refrigerator provided on one surface of the space placement type refrigerator system has a rotary door, and as the receiving member provided on the corresponding surface, a receiving member having a rotary door having the same size is disposed, so that there are advantages that the outer appearance has a sense of unity and a neat outer appearance.

[0072] In addition, the refrigerator provided on the other surface of the space placement type refrigerator system has a drawer-type door, and as the receiving member provided on the corresponding surface, a receiving member having a drawer having the same size is disposed, and thus there is an advantage of providing a neat outer appearance with a sense of unity. In addition, the drawer and the drawer-type door of the refrigerator may be formed of the same material or have the same texture to further improve the outer appearance.

[0073] Meanwhile, the receiving member and the refrigerators may have the same horizontal width as a unit length. Accordingly, the user can dispose a plurality of refrigerators and a plurality of receiving members in various combinations in configuring the space placement type refrigerator system, and there is an advantage that it is possible to maximize convenience of use and maximize space utilization.

[0074] In particular, the receiving member and the refrigerators have a structure in which the receiving member and the refrigerators can be disposed by being inserted into the opened front and rear surfaces formed by the top plate and the side plate. Accordingly, there is an advantage that it is possible to easily implement a combination suitable for the purpose and usage habit required by the user. In addition, there is an advantage that flexible space can be redesigned by disposing an additional refrigerator and a receiving member or changing a location thereof as needed.

[0075] In addition, the refrigerator disposed in the space placement type refrigerator system is disposed below the cabinet of the machine room to dispose the receiving space upward as far as possible. Accordingly, there is an advantage that the convenience of use in the space placement type refrigerator system having a relatively low installation position can be improved.

[0076] In addition, the machine room is opened to the front, and the suction port for suctioning the air of the machine room and the discharge port for discharging the air of the machine room are disposed on the front surface of the refrigerator and thus there are advantages of preventing a problem due to heat dissipation in the space placement type refrigerator system from occurring and of guaranteeing the operating performance of the refrigerator.

[0077] In addition, a top plate is provided on the upper surface of the space placement type refrigerator system, so that even if the space placement type refrigerator sys-

tem is disposed in an indoor space, the space can be used as a cooking work space without loss of space, further improving space utilization.

[0078] In addition, additional devices such as a cook-top portion, a wireless power supply portion, a water purifier, and a sink bowl can be selectively disposed on the upper surface of the top plate, and thus there is an advantage of maximizing ease of use and space utilization.

10 Description of Drawings

[0079]

FIG. 1 is a perspective view illustrating an indoor state in which a space placement type refrigerator system according to an embodiment of the present disclosure is provided.

FIG. 2 is a plan view illustrating an indoor state in which the space placement type refrigerator system is provided.

FIG. 3 is a plan view illustrating another indoor state in which the space placement type refrigerator system is provided.

FIG. 4 is a perspective view illustrating the space placement type refrigerator system viewed from the front.

FIG. 5 is a perspective view illustrating the space placement type refrigerator system as viewed from the rear.

FIG. 6 is an exploded perspective view illustrating the space placement type refrigerator system.

FIG. 7 is an exploded perspective view illustrating a state where the top plate of the space disposition type refrigerator is separated.

FIG. 8 is a perspective view illustrating a second embodiment of a top plate of the space placement type refrigerator system.

FIG. 9 is a perspective view illustrating a third embodiment of a top plate of the space placement type refrigerator system.

FIG. 10 is a perspective view illustrating a fourth embodiment of a top plate of the space placement type refrigerator system.

FIG. 11 is a perspective view illustrating a fifth embodiment of a top plate of the space placement type refrigerator system.

FIG. 12 is a front view illustrating a first embodiment of the front configuration of the space placement type refrigerator system.

FIG. 13 is a front view illustrating a second embodiment of the front configuration of the space placement type refrigerator system.

FIG. 14 is a front view illustrating a third embodiment of the front configuration of the space placement type refrigerator system.

FIG. 15 is a rear view illustrating a first embodiment of the rear configuration of the space placement type refrigerator system.

FIG. 16 is a rear view illustrating a second embodiment of the rear configuration of the space placement type refrigerator system.

FIG. 17 is a rear view illustrating a third embodiment of the rear configuration of the space placement type refrigerator system.

FIG. 18 is a view illustrating a first embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

FIG. 19 is a view illustrating a second embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

FIG. 20 is a view illustrating a third embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

FIG. 21 is a view illustrating a fourth embodiment of the disposition structure of the unit configurations of the space disposition type refrigerator system.

FIG. 22 is a view illustrating a fifth embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

FIG. 23 is a perspective view illustrating a front refrigerator in the unit configuration of the space placement type refrigerator system.

FIG. 24 is a perspective view illustrating a state where door of the front refrigerator is opened.

FIG. 25 is an exploded perspective view illustrating the front refrigerator.

FIG. 26 is a cross-sectional view illustrating the front refrigerator.

FIG. 27 is an exploded perspective view illustrating a cabinet of the front refrigerator.

FIG. 28 is a perspective view illustrating a machine room of the front refrigerator.

FIG. 29 is a view illustrating the flow of air in the machine room of the front refrigerator.

FIG. 30 is a perspective view illustrating a rear refrigerator in the unit configuration of the space placement type refrigerator system.

FIG. 31 is a perspective view illustrating a state where a drawer of the rear refrigerator is withdrawn.

FIG. 32 is a cross-sectional view illustrating the rear refrigerator.

Best Mode

[0080] Hereinafter, a space placement type refrigerator system according to an embodiment of the present disclosure will be described with reference to the drawings.

[0081] FIG. 1 is a perspective view illustrating an indoor state in which a space placement type refrigerator system according to an embodiment of the present disclosure is provided, and FIG. 2 is a plan view illustrating an indoor state in which the space placement type refrigerator system is provided.

[0082] As illustrated in the drawing, a wall surface 4 is configured in an indoor space such as a kitchen, and a

space placement type refrigerator system according to an embodiment of the present disclosure may be disposed on the floor surface 5 of the space apart from at least one wall surface 4.

[0083] In detail, on the wall surface 4 of the kitchen, furniture such as the sink 2 may be disposed along the wall surface 4. In addition, a gas stove 3, a hood, and the like may be disposed in the sink 2 of the kitchen. In addition, home appliances such as a refrigerator, an oven, and a microwave oven may be disposed on the wall surface 4 or furniture of the kitchen.

[0084] The space placement type refrigerator system 1 may be disposed in a space away from the wall surface 4 of the kitchen. In other words, a space accessible by a user may be formed on a circumferential side of the space placement type refrigerator system 1 with respect to the space placement type refrigerator system 1. In addition, the refrigerators 100 and 300 are disposed on at least one surface and the opposite surface of the space placement type refrigerator system 1, so that a user may access the refrigerators 100 and 300 through at least two spaces.

[0085] In this case, as the refrigerators 100 and 300 disposed in the space placement type refrigerator system 1, different types of refrigerators 100 and 300 may be installed according to characteristics of spaces in contact with each other. In other words, the space placement type refrigerator system 1 may serve as a criterion for partitioning indoor spaces, and refrigerators 100 and 300 suitable for the user's living or working environment can be disposed with respect to the space placement type refrigerator system 1.

[0086] Hereinafter, directions and spaces will be defined with respect to the space placement type refrigerator system 1 for explanation.

[0087] The direction in which the sink 2 and the gas stove 3 are disposed with respect to the space placement type refrigerator system 1 may be referred to as a rear direction and may also be referred to as a kitchen side direction and a wall direction. In addition, one surface of the space placement type refrigerator system 1 facing the sink 2 and the gas stove 3 may be referred to as a rear surface and may also be referred to as a kitchen side surface or a wall side surface.

[0088] In addition, a direction opposite to the direction in which the sink 2 and the gas stove 3 are disposed with respect to the space placement type refrigerator system 1 may be referred to as a front direction and may also be referred to as a living room side direction or an indoor direction. In addition, the opposite surface facing the rear surface of the space placement type refrigerator system 1 may be referred to as a front surface and may also be referred to as a living room side surface or an indoor side surface.

[0089] In addition, a space between the space placement type refrigerator system 1 and the wall surface 4 on which the sink 2 and the gas stove 3 are disposed may be referred to as a rear space S1 or a kitchen space

S1. In addition, the space at the front side of the space placement type refrigerator system 1 may be referred to as a front space S2, a living space S2, or a life space S2. Typically, the front space S2 may be a space outside the kitchen or may be another space in the indoor, such as a living room where a person lives.

[0090] In addition, the left and right sides of the space placement type refrigerator system 1 may be referred to as a left space S3 and a right space S4, respectively. Any one of the left space S3 and the right space S4 may face the other wall surface 4 other than the wall surface 4 on which the sink 2 is installed.

[0091] In this way, a space in which the user can move may be disposed on all of the circumferential surfaces with respect to the space placement type refrigerator system 1. In other words, the space placement type refrigerator system 1 may be disposed at any position in an indoor space including a kitchen, and a user may perform various tasks, including cooking, in a space partitioned with respect to the space placement type refrigerator system 1.

[0092] Meanwhile, in the refrigerators 100 and 300 disposed in the space placement type refrigerator system 1, the refrigerators 100 and 300 having an appropriate shape may be disposed according to the disposition characteristics of the space. In other words, the refrigerators 100 and 300 may be respectively provided to the front and rear surfaces of the space placement type refrigerator system 1 that are exposed to the front space S2 and the rear space S1 partitioned with respect to the space placement type refrigerator system 1. In addition, these refrigerators 100 and 300 may have a structure reflecting the characteristics of the accommodation space. The structure of the refrigerators 100 and 300 will be described in more detail below.

[0093] In addition to the refrigerators 100 and 300, a plurality of receiving members 31 and 32 may be provided in the space placement type refrigerator system 1. The receiving members 31 and 32 function to receive food or objects, and a plurality of the receiving members 31 and 32 may be disposed in combination with the refrigerators 100 and 300 in the space placement type refrigerator system 1. As an example, the refrigerators 100 and 300 exposed to the outside of the space placement type refrigerator system 1 and the receiving members 31 and 32, particularly the outer surfaces of the doors 31b and 32b of the receiving member, may be made of the same material, and even if the refrigerators 100 and 300 and the receiving members 31 and 32 are made of different materials, the refrigerators 100 and 300 and the receiving members 31 and 32 can have a similar color or texture, and can have a harmonious outer appearance as a whole.

[0094] In FIGS. 1 and 2, the space placement type refrigerator system 1 has a structure in which it is disposed at a position separated from the wall surface 4 disposed at the rear and sides. Accordingly, the user may be in a state of being accessible from all spaces on the front,

rear, left, and right sides of the space placement type refrigerator system 1, and the refrigerators 100 and 300 and the receiving members 31 and 32 of the space placement type refrigerator system 1 can be used.

5 [0095] Meanwhile, the space placement type refrigerator system 1 may have various disposition structures in addition to the disposition structure described above. This will be described in more detail with reference to the drawings.

10 [0096] FIG. 3 is a plan view illustrating another indoor state in which the space placement type refrigerator system is provided.

[0097] As illustrated in FIG. 3, the space placement type refrigerator system 1 may be disposed between the kitchen space S1 and the living space S2, and one side surface of both side surfaces in the left and right direction may be disposed to be in contact with the indoor wall surface 4. In this case, the structure of the space placement type refrigerator system 1 itself may be the same as that of FIGS. 1 and 2 described above.

[0098] In addition, the wall surface 4 in contact with the side surface of the space placement type refrigerator system 1 may be connected in a state of intersecting the wall surface on which the sink 2 is disposed. Of course, the wall surface 4 in contact with the side surface of the space placement type refrigerator system 1 may be configured separately from the wall surface 4 on which the sink 2 is disposed.

[0099] Therefore, when viewed with respect to the space placement type refrigerator system 1, the rear space S1 may be formed between the wall surface 4 on which the sink 2 is disposed and the space placement type refrigerator system 1. In addition, the front space S2 may be formed opposite to, that is, on the front side of, the rear space S1 with respect to the space placement type refrigerator system 1.

[0100] In addition, the right side surface of both side surfaces in the left and right direction with respect to the space placement type refrigerator system 1 may have a structure that is covered by contact with the wall surface 4, and the left side surface may be exposed to the indoor space. Accordingly, a left space S3 may be formed on the left side of the space placement type refrigerator system 1. Of course, if necessary, the wall surface 4 may be configured to be in contact with the left side surface of the space placement type refrigerator system 1.

[0101] Even in the space placement type refrigerator system 1 as illustrated in FIG. 3, the refrigerators 100 and 300 may be exposed to the front space S2 and the rear space S1, and the user can cook in the kitchen space S1 or access to the space placement type refrigerator system 1 is possible while living in the living space S2.

[0102] As such, the space placement type refrigerator system 1 is disposed so that at least a front space S2 and a rear space S1 are formed and can serve to partition the indoor space into a kitchen space S1 and a living space S2.

[0103] Hereinafter, the structure of the space place-

ment type refrigerator system 1 will be described in more detail with reference to the drawings.

[0104] FIG. 4 is a perspective view illustrating the space placement type refrigerator system viewed from the front, FIG. 5 is a perspective view illustrating the space placement type refrigerator system as viewed from the rear, and FIG. 6 is an exploded perspective view illustrating the space placement type refrigerator system.

[0105] As illustrated, the space placement type refrigerator system 1 may include, as a whole, a top plate 10 forming an upper surface, and side plates 20 forming both side surfaces in left and right direction. In addition, an accommodation space may be formed between the top plate 10 and the side plate 20. The accommodation space may be filled with a plurality of refrigerators 100 and 300 and receiving members 31 and 32. Of course, the side plate 20 may be omitted if necessary, and only one side plate 20 may be provided. A configuration that provides the accommodation space in which the refrigerators 100 and 300 and the receiving members 31 and 32 are disposed including the top plate 10 and the side plate 20 may be referred to as a case.

[0106] In detail, the top plate 10 is formed in a rectangular plate shape and may be formed so that a user can use the top plate as a space for cooking or put articles on the top plate. The top plate 10 may be formed of various materials, such as stone, wood, or synthetic resin, according to the shape of the outer appearance.

[0107] The top plate 10 may form the entire upper surface of the space placement type refrigerator system 1 and may be formed to shield the plurality of refrigerators 100 and 300 and the receiving members 31 and 32 from above. In other words, the top plate 10 may be positioned upwardly away from the floor surface (5 in FIG. 1) on which the space placement type refrigerator system 1 is installed. In addition, a space in which the refrigerators 100 and 300 and the receiving members 31 and 32 can be disposed is provided below the top plate 10.

[0108] In addition, the top plate 10 is formed to be equal to or larger than the sum of the upper surface areas of at least the plurality of refrigerators 100 and 300 and the receiving members 31 and 32, so that all the plurality of refrigerators 100 and 300 and the receiving members 31 and 32 may be disposed in the lower space of the top plate 10.

[0109] In addition, an additional configuration for assisting the operation of the top plate 10 may be further disposed on the top plate 10 as necessary. Accordingly, the top plate 10 may have a predetermined thickness, and if necessary, the top plate is spaced apart from the plurality of refrigerators 100 and 300 and the upper surfaces of the receiving members 31 and 32 so that a space in which additional components are mounted may be secured on the top plate 10. Various configurations of the top plate 10 will be described in more detail below.

[0110] Side plates 20 extending downward may be provided at both ends of the top plate 10 in left and right direction. The side plate 20 forms the side surfaces of

the space placement type refrigerator system 1 in the left and right direction. In addition, it may be formed so as to cover the plurality of refrigerators 100 and 300 and the receiving members 31 and 32 provided in the space placement type refrigerator system 1 from the sides.

[0111] The height H3 of the side plate 20 may correspond to the height H3 of the refrigerator and the receiving members 31 and 32. In addition, the vertical width D of the side plate 20 may have a size corresponding to the vertical width D of the top plate 10. In addition, the vertical width D of the side plate 20 may be formed to correspond to the vertical width (depth D1) of the refrigerators 100 and 300 or the receiving members 31 and 32 disposed to face each other on the front and rear surfaces of the space placement type refrigerator system 1.

[0112] Accordingly, in a state where the space placement type refrigerator system 1 is disposed in an indoor space, the plurality of refrigerators 100 and 300 and the receiving members 31 and 32 may be disposed in the space in which the top plate 10 and the pair of side plates 20 are formed. In other words, in a state where the top plate 10 and the pair of side plates 20 are coupled, the front and rear surfaces facing each other may be opened, and the refrigerators 100 and 300 and the receiving member 31 and 32 may be mounted through the openings of the front and rear surfaces. In addition, in a state where the refrigerators 100 and 300 and the receiving members 31 and 32 are mounted, the front and rear surfaces of the space placement type refrigerator system 1 can be formed by the refrigerators 100 and 300 and the receiving members 31 and 32, respectively.

[0113] The refrigerators 100 and 300 and the receiving members 31 and 32 do not protrude from the outer end of the top plate 10 and the outer side of the side plate 20, and an outer appearance can be formed by filling the front and rear surfaces of the space placement type refrigerator system 1 without gaps.

[0114] A front refrigerator 100 may be provided on the front surface of the space placement type refrigerator system 1.

[0115] The front refrigerator 100 is a refrigerator used in the living space S2 separated from the kitchen space S1 and may be configured so that a user can check the inside while the door 130 is closed. To this end, the door 130 of the front refrigerator 100 may have a structure that is opened and closed by rotation.

[0116] In the front refrigerator 100, food mainly accessed and used by the user of the living space, such as alcoholic beverages including wine and champagne, beverages, or water may be stored. To this end, the front refrigerator 100 may be configured to maintain the storage temperature of the image. For example, the front refrigerator 100 may maintain a receiving space temperature of approximately 4°C to 18°C.

[0117] In addition, a rear refrigerator 300 may be provided on the rear surface of the space placement type refrigerator system 1.

[0118] The rear refrigerator 300 may be provided on

the rear surface of the space placement type refrigerator system 1 facing the sink 2 and may be disposed to be accessible from the kitchen space S1. In addition, since the rear refrigerator 300 can be mainly used for cooking food in the kitchen space S1, the rear refrigerator 300 may have a drawer door 330 structure which can be introduced or withdrawn as a drawer type, and a plurality of drawer doors 330 may be configured to be capable of being disposed in the vertical direction, to separate a plurality of foods, and to store them.

[0119] In the rear refrigerator 300, a user of the kitchen takes out or stores food used for cooking, and food directly used for cooking, such as meat, seafood, vegetables, fruits, or the like may be stored. To this end, the rear refrigerator 300 may be configured to maintain a temperature above zero and below zero. For example, the rear refrigerator 300 may be partitioned into a plurality of upper and lower spaces, and each partitioned space may be configured to be adjustable at a temperature above zero or below zero, so that various foods can be stored at a suitable temperature. Accordingly, various ingredients used for cooking in the kitchen can be stored in an optimal state by using the rear refrigerator 300.

[0120] Meanwhile, the front refrigerator 100 and the rear refrigerator 300 may be formed to have the same size, and thus may have the same mounting structure in the space placement type refrigerator system 1, and may also be mounted by changing the mounting positions of each other.

[0121] The front refrigerator 100 and the rear refrigerator 300 may have the same external structure of the cabinets 101 and 103 and the structure of the machine room 201 except for the structure of the front door 130 and 330 and the internal configuration. In particular, the machine room 201 and the machine room frame 200 have a single structure, and the front refrigerator 100 and the rear refrigerator 300 can be configured by changing the cabinet (101 and 103) and the internal structure of the cabinet 101 and 103 in the machine room 201 of the same structure.

[0122] The front refrigerator 100 may be referred to as a first refrigerator 100, 300 to distinguish front refrigerator 100 from the rear refrigerator 300, and the rear refrigerator 300 may be referred to as a second refrigerator 100, 300. In addition, the cabinet of the front refrigerator 100 may be referred to as first cabinet 101, the door may be referred to as a first door 130, the cabinet of the rear refrigerator 300 may be referred to as a second cabinet 301, and the door may be referred to as a second door 330.

[0123] In addition, the machine room frame 200 forming the machine room 201 of the refrigerators 100 and 300 may be provided below the cabinets 101 and 301, that is, at the lower end of the refrigerators 100 and 300. The machine room 201 is a space in which components such as a compressor 261 and a condenser 262 constituting a refrigeration cycle for cooling the refrigerators 100 and 300 are disposed, and is disposed below the

cabinets 101 and 301 and can be opened in the front direction.

[0124] The front surface of the machine room 201 is formed on the grill cover 220, and the grill cover 220 has a suction port 225a and a discharge port 225b and thus the grill cover may be configured so that air can be suctioned into and discharged from the machine room 201. In other words, the refrigerators 100 and 300 are disposed in the space placement type refrigerator system 1 and come into contact with other refrigerators 100 and 300 or the receiving members 31 and 32 and the side plate 20, so that even in a state where the remaining surfaces except for the front surface is blocked state, the suction and discharge of air into and out of the machine room 201 can be made smoothly, and cooling of the compressor 261 and heat exchange of the condenser 262 can be facilitated.

[0125] Due to this structure, even if a separate air flow space is not formed in the space placement type refrigerator system 1, the refrigerators 100 and 300 mounted in the space placement type refrigerator system 1 can be normally operated.

[0126] Meanwhile, the height H3 of the side plate 20 may be equal to the value obtained by adding the height H1 of the door 130 to the height H2 of the front surface of the machine room 201 exposed to the front. At this time, the height H1 of the door 130 may correspond to the vertical height H1 of the rotary door 130 of the front refrigerator 100 and the height H1 of up to the upper end of the drawer 32b from the lower end of the drawer 32b of the rear refrigerator 300.

[0127] In addition, the space placement type refrigerator system 1 may further include a plurality of receiving members 31 and 32 that provide independent receiving spaces in addition to the front refrigerator 100 and the rear refrigerator 300. The receiving members 31 and 32 may be disposed side by side on the sides of the front refrigerator 100 and the rear refrigerator 300 and may form the front and rear outer appearances of the space placement type refrigerator system 1 together with the front refrigerator 100 and the rear refrigerator 300.

[0128] In this case, the receiving members 31 and 32 have the same size as the front refrigerator 100 or the rear refrigerator 300, and have a similar outer appearance structure to forms an outer appearance in harmony with the front refrigerator 100 and the rear refrigerator 300 installed in the space placement type refrigerator system 1.

[0129] For example, the receiving member 31 may include a receiving main body 31a forming a receiving space, and a receiving door 31b for shielding the opened front surface of the receiving main body 31a. The receiving member 31 including the receiving main body 31a and the receiving door 31b may be referred to as a first receiving member 31.

[0130] The receiving door 31b may be formed to have the same size as the door 130 of the front refrigerator 100. In addition, the receiving door 31b may be formed

of the same material as well as the same size and shape as the door 130, and the front surfaces of the front refrigerator 100 and the receiving member 31 can make look same or similar when viewed from the front.

[0131] In addition, a lower decor 33 forming a front outer appearance of the receiving main body 31a may be further formed on a lower surface of the receiving door 31b. The lower decor 33 may have the same height H2 as the front height H2 of the machine room 201, that is, the grill cover 220.

[0132] Accordingly, as illustrated in FIG. 4, the front refrigerator 100 and the first receiving member 31 disposed on the front surface of the space placement type refrigerator system 1 have the same sizes of the door 130 and the receiving door 31b, and the height H2 of the machine room 201 and the height H2 of the lower decor 33 are configured to be the same, so that the overall sense of unity can be obtained.

[0133] In addition, the receiving member 32 may include a receiving main body 32a for forming a receiving space and a drawer 32b for shielding the opened front surface of the receiving main body. The receiving member 32 including the receiving main body 32a and the drawer 32b may be referred to as a second receiving member 32.

[0134] The size of the front portion of the drawer 32b may be formed to have a size corresponding to that of the drawer door 330 of the rear refrigerator 300. In addition, the distance from the upper end to the lower end of the drawer door 330 disposed vertically may be formed to correspond to the distance from the upper end to the lower end of the drawer 32b. In addition, the size of each of the drawers 32b disposed in the vertical direction may be also the same as the size of the drawer door 330 disposed in the vertical direction. In addition, the outer surface of the drawer 32b and the outer surface of the drawer door 330 may be formed to have the same color or texture. In addition, the outer surface of the drawer 32b and the outer surface of the drawer door 300 may be formed of the same material so that the outer appearance of the space placement type refrigerator system 1 has a more unity.

[0135] In addition, the lower decor 33 is formed at the lower front end of the second receiving member 32 and is formed to have the same height H2 as the front surface of the machine room 201, so that the lower outer appearance may be harmonized.

[0136] Accordingly, as illustrated in FIG. 5, the rear refrigerator 300 and the second receiving member 32 disposed at the rear surface of the space placement type refrigerator system 1 are configured so that the sizes of the front portions of the drawer door 330 and the drawer 32b are the same and the height H2 of the machine room 201 and the height H2 of the lower decor 33 are the same and thus rear refrigerator 300 and the second receiving member 32 can have a sense of unity as a whole.

[0137] In this way, the front refrigerator 100 and the rear refrigerator 300 and the plurality of receiving mem-

bers 31 and 32 disposed inside the space placement type refrigerator system 1 may be configured to have the same height, the same horizontal width, and the same vertical width. Accordingly, the front refrigerator 100 and the rear refrigerator 300 and the plurality of receiving members 31 and 32 may be disposed in combination with each other in a module type.

[0138] In other words, the position of the front refrigerator 100 is not limited to the left end as illustrated in FIG. 4, but may be positioned in the middle or right end. In addition, a plurality of the front refrigerator 100 may be provided.

[0139] In addition, the position of the rear refrigerator 300 is not also limited to the center as illustrated in FIG. 5, but may be positioned at both ends in left and right direction. In addition, a plurality of the rear refrigerator 300 may be disposed.

[0140] As such, the space placement type refrigerator system 1 can be configured by disposing the front refrigerator 100, the rear refrigerator 300, and the receiving members 31, 32, 34, 35 in various combinations according to the user's preference. In addition, the structure of the top plate 10 may also have various forms.

[0141] FIG. 7 is an exploded perspective view illustrating a state where the top plate of the space disposition type refrigerator is separated.

[0142] As illustrated in the drawing, all the front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32 may be formed to have the horizontal width W1 of the same unit length. The front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32, which form the interior of the space placement type refrigerator system 1 and provide variously combined structures, may be referred to as unit configurations, and all the horizontal widths W1 of these unit configurations may be formed to have the same unit length.

[0143] Therefore, the number of unit lengths varies according to the number of the front refrigerator 100 or the rear refrigerator 300 continuously disposed in the horizontal direction and the number of the receiving members 31 and 32 to be combined, and the overall transverse width W of the space placement type refrigerator system 1 may be determined.

[0144] In addition, the top plate 10 may be configured in a flat plate shape. The first embodiment of the top plate 10 provides a flat working space in a plate shape without adding additional components to the top plate as illustrated, and the user can simply cook or put food on the top plate 10. Accordingly, the top plate 10 may be referred to as a working table in consideration of the fact that work such as cooking is performed.

[0145] The vertical width of the top plate 10 may be equal to or slightly larger than the vertical width D of the side plate 20. In addition, the horizontal width Wt of the top plate 10 may be equal to or larger than the horizontal width W between the pair of side plates 20. In addition, the top plate 10 may be partitioned into a plurality of unit regions A1, A2, and A3 having the same horizontal width

Wt in the horizontal direction.

[0146] The number of the plurality of unit regions A1, A2, and A3 may be determined according to the number of the front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32 disposed in the horizontal direction. The horizontal width Wt of one unit region A1, A2, and A3 of the top plate 10 may be formed equal to or somewhat larger than the horizontal width W1, that is, the unit length of the front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32. At least, the boundary of each unit region A1, A2, and A3 of the top plate 10 can coincide with the boundary at which the front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32 are in contact with each other. Accordingly, the front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32 may each be positioned at the inside area of the unit regions A1, A2, and A3 and may be positioned vertically below the unit region A1, A2, and A3.

[0147] Meanwhile, the top plate 10 may further include an additional device 15 for performing a cooking operation on the top plate or improving the utilization of the top plate. A specific example of the additional device 15 will be described in more detail below.

[0148] The additional device 15 may be mounted in the top plate 10. In addition, the additional device 15 may further protrude downward through the top plate 10. Accordingly, when the additional device 15 is mounted on the top plate 10, the additional device 15, the front refrigerator 100, and the rear refrigerator 300 may be mounted so as not to interfere with each other.

[0149] In other words, the additional device 15 may be disposed in unit regions A1 and A2 other than the vertical upper region of the front refrigerator 100 and the rear refrigerator 300. In other words, the front refrigerator 100 and the rear refrigerator 300 may not be disposed vertically below the unit region A3 in which the additional device 15 is mounted.

[0150] The additional device 15 may be disposed to be positioned in one unit region, but if there are a plurality of unit regions A1, A2, and A3 that are not positioned vertically above the front refrigerator 100 and the rear refrigerator 300, the additional devices 15 may be disposed over a plurality of unit regions A1 and A2. Of course, if there are a plurality of unit regions A1, A2, and A3 that are not positioned vertically above the front refrigerator 100 and the rear refrigerator 300, a plurality of additional devices 15 can be disposed at a plurality of unit regions A1, A2, and A3.

[0151] Meanwhile, since the internal storage capacity and volume of the front refrigerator 100 and the rear refrigerator 300 are fixed, a predetermined height H3 can be maintained. In addition, in a state where the front refrigerator 100 and the rear refrigerator 300 are disposed, the additional device 15 may not be mounted on the front refrigerator 100 and the rear refrigerator 300.

[0152] In addition, the height H4 of the receiving member may be lower than the height H3 of the front refrigerator 100 and the rear refrigerator 300. In this case, even if the additional device 15 is disposed vertically above the receiving members 31 and 32, the receiving members 31 and 32 and the additional device 15 do not interfere with each other. In other words, a predetermined space may be provided between the receiving main body of the receiving member and the additional device. Of course, only the receiving members 31 and 32 positioned at positions facing the additional device 15 among the plurality of receiving members 31 and 32 may be formed to have a corresponding height H4.

[0153] In addition, although not illustrated, in the receiving members 31 and 32, the structure of the receiving main body 31 and 32 is omitted in whole or in part, and the receiving door 31b or the drawer 32b may be configured to be mounted in the corresponding space. In other words, a receiving space may be provided in the receiving door 31b and the drawer 32b, but the upper surface is open not to interfere with the additional device 15 even when the additional device 15 is mounted.

[0154] Hereinafter, various combinations and configurations of the space placement type refrigerator system 1 will be described. First, a structure in which various additional devices 15 are disposed on the top plate 10 will be described with reference to the drawings.

[0155] FIG. 8 is a perspective view illustrating a second embodiment of a top plate of the space placement type refrigerator system.

[0156] As illustrated in the drawing, in the second embodiment of the top plate 10, a cooktop portion 11 may be provided on one side of the top plate 10 as an example of the additional device 15. The cooktop portion 11 is for heating and cooking food and may be mounted to be exposed to the upper surface through the top plate 10. For example, the cooktop portion 11 may be configured by induction, and a highlight and a gas stove may be disposed. A plurality of induction ports 11a may be disposed on the cooktop portion 11 to enable a plurality of cooking.

[0157] The top plate 10 may be partitioned into three unit regions A1, A2, and A3 in the horizontal direction, and in this case, the cooktop portion 11 may be disposed in the third unit region A3. The front refrigerator 100 and the rear refrigerator 300 are not disposed vertically below the third unit region A3 in which the cooktop portion 11 is disposed. In other words, the cooktop portion 11 may be disposed on a vertical extension line different from that of the front refrigerator 100 and the rear refrigerator 300. In the disposition of the cooktop portion 11 as illustrated in FIG. 8, the front refrigerator 100 and the rear refrigerator 300 may be positioned vertically below the first unit region A1 and the second unit region A2.

[0158] Meanwhile, the cooktop portion 11 may have a size that can be disposed in the unit regions A1, A2, and A3. Accordingly, the cooktop portion 11 may be disposed on one side of the spaces of the top plate 10 partitioned into a plurality of unit regions A1, A2, and A3 in consideration of the positions of the front refrigerator 100 and

the rear refrigerator 300.

[0159] As such, by disposing the cooktop portion 11 on the top plate 10, the space placement type refrigerator system 1 can be combined with the cooktop portion 11, and there is an advantage that it is possible to cook using the cooktop portion 11 together with the front refrigerator 100, the rear refrigerator 300, or the receiving members 31 and 32 within the space in which the space placement type refrigerator system 1 is disposed.

[0160] FIG. 9 is a perspective view illustrating a third embodiment of a top plate of the space placement type refrigerator system.

[0161] As illustrated in the drawing, in the third embodiment of the top plate 10, a water purifying device 13 may be provided on one side of the top plate 10, as an example of the additional device 15. The water purifying device 13 can include a filter 13b for purifying supplied water, and an ejection portion 13a for ejecting the water purified by the filter 13b from above the top plate 10.

[0162] In addition, the filter 13b and pipes for water supply may be disposed in a space below the top plate 10, and only the ejection portion 13a from which water is ejected may be mounted to protrude from the upper surface of the top plate 10.

[0163] Accordingly, when the user needs water for cooking on the top plate 10 or the user needs water for drinking, the user manipulates the ejection portion 13a to receive purified water through the space placement type refrigerator system.

[0164] The ejection portion 13a may be disposed in various positions, but a predetermined space may be required below the top plate 10 for disposing the filter 13b and water supply pipes connected to the ejection portion 13a. In this case, the water purifying device 13 is disposed on different vertical lines that do not overlap the front refrigerator 100 or the rear refrigerator 300 so that it is possible to prevent the water purifying device 13 from interfering with the front refrigerator 100 or the rear refrigerator 300.

[0165] In detail, the top plate 10 may be partitioned into three unit regions A1, A2, and A3 in the horizontal direction, and in this case, the ejection portion 13a may be disposed in the first unit region A1. The front refrigerator 100 and the rear refrigerator 300 are not disposed vertically below the first unit region A1 in which the ejection portion 13a is disposed. In other words, the ejection portion 13a may be disposed on a vertical extension line different from that of the front refrigerator 100 and the rear refrigerator 300. In the disposition of the ejection portion 13a as illustrated in FIG. 9, the front refrigerator 100 and the rear refrigerator 300 may be positioned vertically below the second unit region A2 and the third unit region A3.

[0166] Meanwhile, the ejection portion 13a may be formed to have a size that can be disposed in the unit regions A1, A2, and A3. Accordingly, the ejection portion 13a may be disposed on one side of the spaces of the top plate 10 partitioned into a plurality of unit regions A1,

A2, and A3 in consideration of the positions of the front refrigerator 100 and the rear refrigerator 300.

[0167] FIG. 10 is a perspective view illustrating a fourth embodiment of a top plate of the space placement type refrigerator system.

[0168] As illustrated in the drawing, in the fourth embodiment of the top plate 10, a wireless power supply portion 12 may be provided on one side of the top plate 10 as an example of the additional device 15. The wireless power supply portion 12 is capable of supplying or charging power to the electronic devices 12a and 12b by induced electromotive force, and a configuration which can generate an induced electromotive force may be disposed therein.

[0169] The wireless power supply portion 12 may be mounted to be exposed to the upper surface through the top plate 10. Therefore, when a small home appliance such as a coffee pot 12a or a blender is placed on the wireless power supply portion 12, power is supplied to the small home appliance and the small home appliance can be operated. In addition, if an electronic device capable of wireless charging, such as a mobile phone 12b, is placed on the wireless power supply portion 12, charging thereof may be performed.

[0170] The top plate 10 may be partitioned into three unit regions A1, A2, and A3 in the horizontal direction, and in this case, the wireless power supply portion 12 may be disposed in the first unit region A1. The front refrigerator 100 and the rear refrigerator 300 are not disposed vertically below the first unit region A1 in which the wireless power supply portion 12 is disposed. In other words, the cooktop portion 11 may be disposed on a vertical extension line different from that of the front refrigerator 100 and the rear refrigerator 300. In the disposition of the cooktop portion 11 as illustrated in FIG. 10, the front refrigerator 100 and the rear refrigerator 300 may be positioned vertically below the second unit region A2 and the third unit region A3.

[0171] Meanwhile, the wireless power supply portion 12 may be formed in a size that can be disposed in the unit regions A1, A2, and A3. Accordingly, the wireless power supply portion 12 may be disposed on either side of a space of the top plate 10 partitioned into a plurality of unit regions A1, A2, and A3 in consideration of the positions of the front refrigerator 100 and the rear refrigerator 300.

[0172] FIG. 11 is a perspective view illustrating a fifth embodiment of a top plate of the space placement type refrigerator system.

[0173] As illustrated in the drawing, in the fifth embodiment of the top plate 10, a sink bowl 14 may be provided on one side of the top plate 10 as an example of the additional device 15. The sink bowl 14 may have a structure in which a space recessed downward from the upper surface of the top plate 10 is provided, and a water supply part 14a is provided on one side thereof and a drain part 14b is provided on the other side thereof.

[0174] Accordingly, cleaning of food and organization

for cooking may be possible through the sink bowl 14. The sink bowl 14 may be formed to have a predetermined depth, and a predetermined space may be required below the top plate 10 for pipe connection between the water supply portion 14a and the drain portion 14b. In this case, the sink bowl 14 is disposed at a position that does not overlap the front refrigerator 100 or the rear refrigerator 300 so that it is possible to prevent the sink bowl 14 from interfering with the front refrigerator 100 or the rear refrigerator 300.

[0175] In detail, the top plate 10 may be partitioned into three unit regions A1, A2, and A3 in the horizontal direction, and in this case, the sink bowl 14 may be disposed in the second unit region A2. The front refrigerator 100 and the rear refrigerator 300 are not disposed vertically below the second unit region A2 in which the sink bowl 14 is disposed. In other words, the sink bowl 14 may be disposed on a vertical extension line different from that of the front refrigerator 100 and the rear refrigerator 300. In the disposition of the sink bowl 14 as illustrated in FIG. 11, the front refrigerator 100 and the rear refrigerator 300 may be positioned vertically below the first unit region A1 and the third unit region A3.

[0176] Meanwhile, the sink bowl 14 may have a size that can be disposed in the unit regions A1, A2, and A3. Accordingly, the sink bowl 14 may be disposed on one side of the spaces of the top plate 10 partitioned into a plurality of unit regions A1, A2, and A3 in consideration of the positions of the front refrigerator 100 and the rear refrigerator 300.

[0177] As such, by disposing the sink bowl 14 on the top plate 10, the space placement type refrigerator system 1 can be combined with the cooktop portion 11, and there is an advantage that it is possible to cook using the sink bowl 14 together with the front refrigerator 100, the rear refrigerator 300, or the receiving members 31 and 32 in the space in which the space placement type refrigerator system 1 is disposed.

[0178] Meanwhile, in the space placement type refrigerator system 1, the front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32 may be disposed in various combinations in the space below the top plate 10.

[0179] Hereinafter, various combinations of the space placement type refrigerator system 1 will be described in more detail with reference to the drawings.

[0180] FIG. 12 is a front view illustrating a first embodiment of the front configuration of the space placement type refrigerator system.

[0181] As illustrated in the drawing, the front surface of the space placement type refrigerator system 1 may have a structure in which side plates 20 are disposed on both sides thereof, and the front refrigerator 100 and two first receiving members 31 having three unit lengths may be provided between the side plates 20.

[0182] Only one of the front refrigerator 100 may be disposed in the space placement type refrigerator system 1 and may be disposed at one end of both ends in the

left and right direction. As illustrated as an example, the front refrigerator 100 may be disposed on the leftmost side so as to be in contact with the side plate 20 disposed on the left side.

[0183] In this case, the door 130 of the front refrigerator 100 may be opened by rotating the rotation shaft, which is positioned at the left end, around the left end. Accordingly, even in a state where the door 130 of the front refrigerator 100 is opened, the door can be prevented from being interfaced with the opening and closing of the adjacent receiving members 31 and 32.

[0184] Two of the first receiving members 31 may be continuously disposed on the side of the front refrigerator 100. Accordingly, the entire horizontal width W between the side plates 20 can be filled by the front refrigerator 100 and the first receiving members 31.

[0185] In this case, the first receiving member 31 may have a horizontal width W1 equal to the same unit length and may have the same height H3 as that of the front refrigerator 100. In addition, the receiving door 31b of the first receiving member 31 and the door 130 of the front refrigerator 100 may have the same size. Accordingly, when viewed from the front, the front surface of the space placement type refrigerator system 1 may have a uniform shape as a whole, and the outer appearance thereof may be seen neatly.

[0186] Meanwhile, the entire front surface of the door 130 of the front refrigerator 100 may be formed of a transparent material such as glass so that the inside can be seen through. In addition, a coating or a film may be attached to the door 130 so that the inside of the front refrigerator 100 may be adjusted selectively to be viewed or not to be viewed.

[0187] The front surface of the space placement type refrigerator system 1 faces the space in which the user lives or stays, such as the front space S2, that is, the living space S2, and thus the front refrigerator 100 can be always recognized by the user. In such a state, when beverages, alcoholic beverages, water, or the like frequently used by the user are stored, the user can easily check through the door 130 of the front refrigerator 100, and in the front space S2 where the user stays, the user can immediately access to the food from the inside of the front refrigerator 100 and take out the food.

[0188] In addition, in order to maximize user convenience, the front refrigerator 100 may automatically open the door 130 by the door opening device 180. In this case, the door opening device 180 may be operated by a user's proximity detection by a detection device provided in the front refrigerator 100 or may be operated by a touch manipulation of the door 130.

[0189] In addition, a machine room 201 may be provided at the lower end of the front refrigerator 100, and a suction port and a discharge port 225b are formed respectively in the grill cover 220 forming the front surface of the machine room 201, so that air may flow into the machine room 201, and the air in the machine room 201 may be discharged to the front. In other words, even in

a state where the front refrigerator 100 and the first receiving members 31 are mounted in the space placement type refrigerator system 1 in a state of being in close contact with each other in the horizontal direction, the air flow structure in the machine room 201 for normal operation of the front refrigerator 100 can be ensured.

[0190] Meanwhile, the receiving door 31b forming the front surface of the first receiving member 31 may also have a structure that is opened and closed by rotation like the front refrigerator 100. In this case, by the rotation direction of the receiving door 31b, one side far from the front refrigerator 100 may be rotated around a rotation shaft. Accordingly, even when the door 130 and the receiving door 31b of the front refrigerator 100 are opened together, the inside of the front refrigerator 100 may not be covered.

[0191] In addition, the receiving door 31b may be formed to have the same size as the door 130 of the front refrigerator 100 so that the outer appearance thereof has a sense of unity. Further, the receiving door 31b and the door 130 may be formed of a material having the same texture or the same material, so that the outer appearance of the space placement type refrigerator system 1 has a more unity.

[0192] FIG. 13 is a front view illustrating a second embodiment of the front configuration of the space placement type refrigerator system.

[0193] As illustrated in the drawing, the front surface of the space placement type refrigerator system 1 may have a structure in which side plates 20 are disposed on both sides thereof and two front refrigerator 100 and one first receiving member 31 having three unit lengths between the side plates 20 are provided.

[0194] Two front refrigerators 100 may be continuously disposed in the space placement type refrigerator system 1 and may be continuously disposed at one end of both ends in the left and right direction. As illustrated as an example, the front refrigerator 100 is provided with one front refrigerator 100 so as to be in contact with the side plate 20 disposed on the left side, and another front refrigerator 100 may be disposed in succession to the front refrigerator.

[0195] The front refrigerator 100 that is continuously disposed may have the same structure as each other. However, the door 130 of the front refrigerator 100 disposed on the left has a rotation shaft disposed at the left end, and the door 130 of the front refrigerator 100 disposed on the right side has a rotation shaft disposed at the right end and thus the doors can be opened while rotating in opposite directions to each other.

[0196] Therefore, even when the door 130 of one of the front refrigerators 100 is opened, the other front refrigerator 100 is not covered, so that it is possible to prevent inconvenience to use. In addition, even in a state where the doors 130 of the front refrigerator 100 on both sides in the left and right direction are all opened, the front refrigerator 100 on both sides in the left and right direction is not covered, so that it can be used more eas-

ily.

[0197] One first receiving member 31 may be disposed on the side of the front refrigerator 100, that is, at a position in contact with the side plate 20 on the right side. Accordingly, the entire horizontal width W between the side plates 20 can be filled by the two front refrigerators 100 and one first receiving member 31.

[0198] In this case, the first receiving member 31 may have a horizontal width W1 equal to the same unit length and may have the same height H3 as that of the front refrigerator 100. In addition, the receiving door 31b of the first receiving member 31 and the door 130 of the front refrigerator 100 may have the same size. Accordingly, when viewed from the front, the front surface of the space placement type refrigerator system 1 may have a uniform shape as a whole, and the outer appearance thereof may be seen neatly.

[0199] FIG. 14 is a front view illustrating a third embodiment of the front configuration of the space placement type refrigerator system.

[0200] As illustrated in the drawing, the front surface of the space placement type refrigerator system 1 may have a structure in which side plates 20 are disposed on both sides thereof and two front refrigerator 100 and one first receiving member 31 having three unit lengths between the side plates 20 are provided.

[0201] Two front refrigerators 100 may be disposed in the space placement type refrigerator system 1 and may be disposed on both sides in the left and right direction so as to be in contact with the side plates 20 on both sides in the left and right direction. In addition, the outer surfaces of the front refrigerator 100 disposed on both sides in the left and right direction may be in contact with the side plate 20 positioned on the left side and the side plate 20 positioned on the right side, respectively.

[0202] The front refrigerator 100 disposed on both sides may have the same structure as each other. However, the door 130 of the front refrigerator 100 disposed on the left has a rotation shaft disposed at the left end, and the door 130 of the front refrigerator 100 disposed on the right side has a rotation shaft disposed at the right end and can be opened while rotating in opposite directions to each other.

[0203] In addition, the first receiving member 31 may be provided between the front refrigerators 100 disposed on both sides in the left and right direction. The side surfaces of the front refrigerator 100 may be disposed on both side surfaces of the first receiving member 31 so as to be in contact with each other. Accordingly, the entire horizontal width W between the side plates 20 can be filled by the two front refrigerators 100 and one first receiving member 31.

[0204] In this case, the first receiving member 31 may have a horizontal width W1 equal to the same unit length and may have the same height H3 as that of the front refrigerator 100. In addition, the receiving door 31b of the first receiving member 31 and the door 130 of the front refrigerator 100 may have the same size. Accordingly,

when viewed from the front, the front surface of the space placement type refrigerator system 1 may have a uniform shape as a whole, and the outer appearance thereof may be seen neatly.

[0205] Meanwhile, in the space placement type refrigerator system 1, the horizontal width W may be increased by an integer multiple of the unit length according to the number of the front refrigerator 100 and the first receiving member 31 disposed in the horizontal direction. In other words, the number of the front refrigerator 100 and the number of the first receiving members 31 may be determined according to the needs of the user, and the overall size of the space placement type refrigerator system 1 may be determined.

[0206] FIG. 15 is a rear view illustrating a first embodiment of the rear configuration of the space placement type refrigerator system.

[0207] As illustrated in the drawing, the rear surface of the space placement type refrigerator system 1 may have a structure in which side plates 20 are disposed on both sides thereof, and two rear refrigerator 300 and one second receiving members 32 having three unit lengths may be provided between the side plates 20.

[0208] Two rear refrigerators 300 may be continuously disposed in the space placement type refrigerator system 1 and may be continuously disposed at one end of both ends in the left and right direction. As illustrated as an example, in the rear refrigerator 300, one rear refrigerator 300 is provided so as to be in contact with the side plate 20 disposed on the left side, and another rear refrigerator 300 may be continuously disposed.

[0209] The rear refrigerators 300 that are continuously disposed may have the same structure as each other. In addition, due to the characteristics of the structure of the drawer door 330 that is introduced or withdrawn in the front, the rear refrigerator may have a structure of being capable of being introduced or withdrawn without any interference with the neighboring rear refrigerator 300 and the second receiving member 32.

[0210] In addition, a machine room 201 may be provided at the lower end of the rear refrigerator 300, and the machine room 201 has a suction port 225a and a discharge port 225b formed in the grill cover 220 forming the front surface, respectively and air may flow into the machine room 201, and the air in the machine room 201 may be discharged to the front surface. In other words, even when the rear refrigerator 300 and the second receiving member 32 are mounted in the space placement type refrigerator system 1 in a state where they are in close contact with each other in the horizontal direction, it is possible to ensure an air flow structure in the machine room 201 for the normal operation of the rear refrigerator 300.

[0211] Meanwhile, one second receiving member 32 may be disposed on the side of the rear refrigerator 300, that is, at a position in contact with the side plate 20 on the right side. Accordingly, the entire horizontal width W between the side plates 20 can be filled by the two rear

refrigerators 300 and one second receiving member 32.

[0212] In this case, the second receiving member 32 may have a horizontal width W1 equal to the same unit length and may have the same height H3 as that of the rear refrigerator 300. In addition, the front surface of the drawer of the second receiving member 32 may have the same size and is disposed on the side at the same height as the drawer door 330 of the rear refrigerator 300. Accordingly, when viewed from the front, the rear surface of the space placement type refrigerator system 1 may have a uniform shape as a whole, and the outer appearance thereof may be seen neatly.

[0213] Meanwhile, in the space placement type refrigerator system 1, the horizontal width W may be increased by an integer multiple of the unit length according to the number of the rear refrigerator 300 and the second receiving member 32 disposed in the horizontal direction. In other words, the number of the rear refrigerator 300 and the number of the second receiving members 32 may be determined according to the user's needs, and the overall size of the space placement type refrigerator system 1 may be determined.

[0214] FIG. 16 is a rear view illustrating a second embodiment of the rear configuration of the space placement type refrigerator system.

[0215] As illustrated in the drawing, the rear surface of the space placement type refrigerator system 1 may have a structure in which side plates 20 are disposed on both sides thereof and the rear refrigerator 300 and two second receiving members 31 having three unit lengths are provided between the side plates 20.

[0216] Only one of the rear refrigerator 300 may be disposed in the space placement type refrigerator system 1 and may be disposed at one end of both ends in the left and right direction. As illustrated as an example, the rear refrigerator 300 may be disposed on the leftmost side so as to be in contact with the side plate 20 disposed on the left side.

[0217] In addition, two second receiving members 32 may be continuously disposed on the side of the rear refrigerator 300. Accordingly, the entire width W between the side plates 20 can be filled by the front refrigerator 100 and the second receiving members 32.

[0218] In this case, the second receiving member 32 may have a horizontal width W1 equal to the same unit length and may have the same height H3 as that of the front refrigerator 100. In addition, the front surface of the drawer 32b of the second receiving member 32 and the drawer door 330 of the rear refrigerator 300 may have the same size. Accordingly, when viewed from the front, the rear surface of the space placement type refrigerator system 1 may have a uniform shape as a whole, and the outer appearance thereof may be seen neatly.

[0219] FIG. 17 is a rear view illustrating a third embodiment of the rear configuration of the space placement type refrigerator system.

[0220] As illustrated in the drawing, the rear surface of the space placement type refrigerator system 1 may have

a structure in which side plates 20 are disposed on both sides thereof and the rear refrigerator 300 and two second receiving members 32 having three unit lengths are provided between the side plates 20.

[0221] The rear refrigerator 300 may be disposed in the center of the rear surface of the space placement type refrigerator system 1. In addition, the second receiving members 32 may be respectively disposed on both sides of the rear refrigerator 300 in the left and right direction and may be disposed on both sides in the left and right direction so as to be in contact with both side plates 20 in the left and right direction, respectively. In addition, the outer surfaces of the second receiving member 32 disposed on both sides in the left and right direction may be in contact with the side plate 20 positioned on the left side and the side plate 20 positioned on the right side, respectively.

[0222] The second receiving members 32 disposed on both sides may have the same structure as each other. In addition, the second receiving member 32 may have a horizontal width W1 equal to the same unit length and may have the same height H3 as that of the rear refrigerator 300.

[0223] In addition, the front surface of the drawer of the second receiving member 32 may have the same size and is disposed on the side at the same height as the drawer door 330 of the rear refrigerator 300. Accordingly, when viewed from the front, the rear surface of the space placement type refrigerator system 1 may have a uniform shape as a whole, and the outer appearance thereof may be seen neatly.

[0224] Meanwhile, the space placement type refrigerator system 1 may have the above-described front and rear disposition structures and may have various disposition structures by a combination of the unit configurations disposed on the front and rear surfaces.

[0225] In addition, according to the disposition of the front refrigerator 100 and the disposition of the rear refrigerator 300, a disposable position of the additional device 15 of the top plate 10 may be determined. Accordingly, the disposition of the additional device 15, the front refrigerator 100, and the rear refrigerator 300 are correlated with each other, and the overall configuration of the space placement type refrigerator system 1 can be made in consideration of their disposition.

[0226] Hereinafter, the disposition structure of the unit configurations of the space placement type refrigerator system will be described with reference to the drawings.

[0227] FIG. 18 is a view illustrating a first embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

[0228] As illustrated in the drawing, in the space placement type refrigerator system 1, unit configurations that constitute the front surface of the space placement type refrigerator system 1, respectively, may be disposed and a unit configurations that constitute the rear surface of the space placement type refrigerator system 1 may be disposed at the rear with respect to the center line C

crossing the center in the front and rear direction.

[0229] The unit configurations, that is, the front refrigerator 100 and the first receiving members 31 provided on the front surface of the space placement type refrigerator system 1 may be formed to have the same horizontal width W1, that is, a unit length.

[0230] In this case, the front refrigerator 100 and the first receiving members 31 disposed on the front surface can be formed to have a vertical width D1 from the center line C to the front end of the space placement type refrigerator system 1. In this case, the vertical width D1 may be formed to be half the size of the vertical width D of the entire space placement type refrigerator system 1.

[0231] Meanwhile, the unit configurations, that is, the rear refrigerator 300 and the second receiving members 32 provided at the rear surface of the space placement type refrigerator system 1 may be formed to have the same horizontal width W1, that is, a unit length.

[0232] At this time, the rear refrigerator 300 and the second receiving members 32 disposed at the rear surface can be formed to have a vertical width D1 from the center line C to the rear end of the space placement type refrigerator system 1. In this case, the vertical width D1 may be formed to be half the size of the vertical width D of the entire space placement type refrigerator system 1 and may be formed to be the same as the vertical width D1 of the front refrigerator 100 and the first receiving member 31 disposed on the front surface.

[0233] In such a structure, the inner end portions of the unit configurations provided on the front surface and the unit configurations provided on the rear surface may be configured to be in contact with each other. In addition, the interior of the space placement type refrigerator system 1 may be completely filled with the front refrigerator 100, the rear refrigerator 300, and the receiving members 31 and 32.

[0234] As an example, the front surface of the space placement type refrigerator system 1 may have a structure as illustrated in FIG. 12, and the rear surface thereof may have a structure as illustrated in FIG. 17. Of course, the space placement type refrigerator system 1 may be a combination of all the dispositions illustrated in FIGS. 12 to 17.

[0235] FIG. 19 is a view illustrating a second embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

[0236] As illustrated, the space 21 may be formed in the center of the space placement type refrigerator system 1 according to the embodiment of the present disclosure. The space 21 may be formed along a center line C crossing the center of the space placement type refrigerator system 1 in the front and rear direction.

[0237] In addition, unit configurations that constitute the front surface of the space placement type refrigerator system 1 are respectively disposed in the front side with respect to the center line C, and unit configurations that constitute the rear surface of the space placement type refrigerator system 1 are disposed in the rear side.

[0238] In this case, the front refrigerator 100 and the rear refrigerator 300 may be positioned to face each other. Even if the front refrigerator 100 and the rear refrigerator 300 are disposed to face each other, the space 21 is formed between the front refrigerator 100 and the rear refrigerator 300 and thus some of the internal heat of the machine room 201 can be discharged.

[0239] Meanwhile, the unit configurations, that is, the front refrigerator 100, the rear refrigerator 300, the first receiving member 31 and the second receiving member 32 provided on the front and rear surfaces of the space placement type refrigerator system 1 may be formed with the same horizontal width, that is, a unit length W1.

[0240] In addition, the front refrigerator 100 and the first receiving members 31 disposed in the front surface of the space placement type refrigerator system 1 may be formed to have a constant vertical width D1 up to the front end of the space placement type refrigerator system 1 from the space 21. In addition, the rear refrigerator 300 and the second receiving members 32 disposed on the rear surface can be formed to have a vertical width D1 from the space 21 to the rear end of the space placement type refrigerator system 1.

[0241] In this case, the space placement type refrigerator system 1 may be configured to have a vertical width D' corresponding to the length obtained by adding all the unit configurations of the front surface and the rear surface having the same vertical width D1 and the vertical width D2 of the space 21 disposed therebetween. Accordingly, the vertical width D' of the space placement type refrigerator system may be formed to be larger by the vertical width D2 of the space 21 than the vertical width D in the above-described embodiment.

[0242] FIG. 20 is a view illustrating a third embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

[0243] As illustrated in the drawing, in the space placement type refrigerator system 1, unit configurations that constitutes the front surface of the space placement type refrigerator system 1 may be disposed respectively on the front side and unit configurations that constitutes the rear surface of the space placement type refrigerator system 1 may be disposed with respect to the center line C crossing the center in the front and rear direction.

[0244] The unit configurations, that is, the front refrigerator 100, the rear refrigerator 300, the first receiving member 31, the second receiving member 32, and the third receiving member 34 which are provided in the front surface and the rear surface of the space placement type refrigerator system 1 may be formed to have the same horizontal width W1, that is, a unit length.

[0245] In this case, the front refrigerator 100 disposed at the front and the rear refrigerator 300 disposed at the rear may be formed to have the same vertical width D1. In addition, the vertical width D1 of the front refrigerator 100 and the rear refrigerator 300 may be formed to be longer than the distance from the front and rear surfaces of the space placement type refrigerator system 1 to the

center line C.

[0246] Accordingly, the front refrigerator 100 and the rear refrigerator 300 may not be positioned to face each other, but may be displaced from each other on the front and rear surfaces. Accordingly, the front refrigerator 100 and the rear refrigerator 300 may be disposed so that an inner part passes through the center line C in a mounted state. In other words, the center line C may have a structure that overlaps at least a portion of the front refrigerator 100 and the rear refrigerator 300.

[0247] In addition, the first receiving member 31 and the second receiving member 32 may be disposed on the sides of the front refrigerator 100 and the rear refrigerator 300. The first receiving member 31 and the second receiving member 32 may be disposed on the front and rear surfaces, respectively, and may have a vertical width D4 equal to the distance from the front and rear surfaces to the central axis C. In addition, if the vertical width D4 of the two first and second receiving members 31 and 32 disposed in the front and rear direction is added, it can correspond to the overall vertical width D" of the space placement type refrigerator system.

[0248] In addition, a third receiving member 34 may be provided at the rear of the front refrigerator 100 and at the front of the rear refrigerator 300, respectively. The third receiving member 34 may be formed to correspond to the size of the space remaining after the front refrigerator 100 and the rear refrigerator 300 are disposed. Accordingly, the vertical width D2 of the third receiving member 34 may be smaller than the vertical width D4 of the first receiving member 31 and the second receiving member 32. In addition, when the vertical width D1 of the front refrigerator 100 or the rear refrigerator 300 and the vertical width D3 of the third receiving member 34 are added, it can correspond to the entire vertical width D" of the space placement type refrigerator system 1.

[0249] In such a structure, the inner end portion of the unit configurations provided on the front surface and the unit configurations provided on the rear surface may be configured to contact each other. In addition, the interior of the space placement type refrigerator system 1 may be completely filled with the front refrigerator 100, the rear refrigerator 300, and the receiving members 31, 32, and 34.

[0250] In addition, the front refrigerator 100 and the rear refrigerator 300 have a vertical width D1 greater than that of the receiving members 31, 32 and 34, so that the front refrigerator 100 and the rear refrigerator 300 have the advantage of sufficiently securing a storage capacity. In addition, the receiving members 31, 32, and 34 are configured to have different vertical widths D3 and D4, so that foods of various sizes can be partitioned and stored in the space placement type refrigerator system 1, and it may be possible to classify and select receipt according to use.

[0251] FIG. 21 is a view illustrating a fourth embodiment of the disposition structure of the unit configurations of the space disposition type refrigerator system.

[0252] As illustrated in the drawing, in the space placement type refrigerator system 1, first unit configurations that constitute a portion of the front surface of the space placement type refrigerator system 1, respectively, may be disposed on the front side and first unit configurations that constitute a portion on the rear surface of the space placement type refrigerator system 1 may be disposed on the rear side with respect to a center line C crossing the center in the front and rear direction. In addition, in the space placement type refrigerator system 1, a second unit configuration constituting a remaining portion of the space placement type refrigerator system 1 may be disposed.

[0253] The first unit configurations, that is, the front refrigerator 100 and the first receiving member 31 provided on the front surface of the space placement type refrigerator system 1, and the rear refrigerator 300 and the second receiving members 32 provided on the rear surface of the space placement type refrigerator system 1 may be formed to have the same horizontal width, that is, a unit length W1.

[0254] In addition, the second unit configurations, that is, the fourth receiving member 35 disposed on the front and rear surfaces of the space placement type refrigerator system 1 may have a width different from that of the first unit configuration. For example, the fourth receiving member 35 may have a horizontal width W2 smaller than the horizontal width W1 of the first unit configuration.

[0255] In detail, the front refrigerator 100, the first receiving member 31, and the fourth receiving member 35 disposed in the front surface may be formed to have the same vertical width D1 as the distance from the center line to the front end of the space placement type refrigerator system 1. In this case, the vertical width D1 may be formed to be half the size of the vertical width D of the entire space placement type refrigerator system 1.

[0256] In addition, the front refrigerator 100 and the first receiving member 31 have the same horizontal width, and the fourth receiving member 35 may have a horizontal width which is smaller than the front refrigerator 100 and the first receiving member 31. However, if all the horizontal widths W2 of the front refrigerator 100, the first receiving member 31, and the fourth receiving member 35 are added up, it corresponds to the horizontal width W' between the side plates 20 and thus the front surface of the space placement type refrigerator system 1 can be filled without gaps. Of course, the positions of the front refrigerator 100, the first receiving member 31, and the fourth receiving member 35 may be interchangeable.

[0257] The rear refrigerator 300, the second receiving member 32, and the fourth receiving member 35 disposed at the rear surface may be formed to have a vertical width D1 which is the same as the distance from the center line C to the rear end of the space placement type refrigerator system 1. In this case, the vertical width D1 may be formed to be half the size of the vertical width D of the entire space placement type refrigerator system 1 and

may be formed to be the same as the vertical widths D1 of the front refrigerator 100, the first receiving member 31, and the fourth receiving member 35 disposed on the front surface.

[0258] In addition, the rear refrigerator 300 and the second receiving member 32 have the same horizontal width W1, and the fourth receiving member 35 is larger than the rear refrigerator 300 and the second receiving member 32. It may have a small horizontal width W2. However, if the widths of the rear refrigerator 300, the second receiving member 32, and the fourth receiving member 35 are all added up, it corresponds to the horizontal width W' between the side plates 20. The rear surface of the space placement type refrigerator system 1 can be filled without gaps. Of course, the positions of the rear refrigerator 300, the second receiving member 32, and the fourth receiving member 35 may be interchangeable.

[0259] Meanwhile, the fourth receiving member 35 may be disposed on the front and rear surfaces of the space placement type refrigerator system 1 to have the same size. In addition, the horizontal width of the fourth receiving member 35 may be set to various sizes according to the horizontal width W between the entire side plates 20. The size of the entire space placement type refrigerator system 1 may be determined by using the fourth receiving member 35 according to various sizes of indoor spaces, user preferences, and uses.

[0260] FIG. 22 is a view illustrating a fifth embodiment of a disposition structure of unit configurations of the space placement type refrigerator system.

[0261] As illustrated in the drawing, in the space placement type refrigerator system 1, unit configurations that constitute the front surface of the space placement type refrigerator system 1, respectively may be disposed on the front side and unit configurations that constitute the rear surface of the space placement type refrigerator system 1 may be disposed on the rear side with respect to the center line C crossing the center in the front and rear direction.

[0262] The unit configurations, that is, the front refrigerator 100, the rear refrigerator 300, the first receiving member 31, and the second receiving member 32 may be formed with the same horizontal width W1, that is, a unit length.

[0263] In this case, the front refrigerator 100 disposed at the front surface and the rear refrigerator 300 disposed at the rear surface may be formed to have the same vertical width D1. In addition, the vertical widths D1 of the front refrigerator 100 and the rear refrigerator 300 may be formed to be longer than the distance from the front and rear surfaces to the center line C of the space placement type refrigerator system 1.

[0264] Accordingly, the front refrigerator 100 and the rear refrigerator 300 may not be positioned to face each other but may be displaced from each other at the front and rear surfaces. Accordingly, the front refrigerator 100 and the rear refrigerator 300 may be disposed so that an inner portion passes through the center line C in a mount-

ed state. In other words, the center line C may have a structure that overlaps at least a portion of the front refrigerator 100 and the rear refrigerator 300.

[0265] In addition, a third receiving member 34 may be provided at the rear side of the front refrigerator 100 and at the front side of the rear refrigerator 300, respectively. The third receiving member 34 may be formed to correspond to the size of the space remaining after the front refrigerator 100 and the rear refrigerator 300 are disposed. Accordingly, the vertical width D4 of the third receiving member 34 may be formed to be smaller than the vertical width D1 of the front refrigerator 300 and the rear refrigerator 300. In addition, when the vertical widths D4 of the front refrigerator 100 or the rear refrigerator 300 and the third receiving member 34 are added, it may correspond to the total vertical width D of the space placement type refrigerator system 1.

[0266] In such a structure, the inner end portions of the unit configurations provided on the front surface and the unit configurations provided on the rear surface may be configured to be in contact with each other. In addition, the interior of the space placement type refrigerator system 1 may be completely filled with the front refrigerator 100, the rear refrigerator 300, and the receiving members 34.

[0267] In addition, the horizontal width W" between the side plates 20 may be the same as the addition of the horizontal widths W1 of the front refrigerator 100 and the rear refrigerator 300. In addition, the horizontal width W" between the side plates 20 can be equal to a size obtained by adding the horizontal width W1 of the front refrigerator 100 or the horizontal width W1 of the rear refrigerator and the horizontal width W1 of the third receiving member 34.

[0268] Through such a structure, the space placement type refrigerator system 1 has a compact structure, so that a space which can be disposed can be secured even in a narrow room. In addition, there is an advantage that the front refrigerator 100 and the rear refrigerator 300 have a vertical width D1 greater than that of the third receiving member 34, so that the storage capacity of the front refrigerator 100 and the rear refrigerator 300 can be sufficiently secured.

[0269] Hereinafter, a detailed structure of the aforementioned front refrigerator 100 will be described with reference to the drawings.

[0270] FIG. 23 is a perspective view illustrating a front refrigerator in the unit configuration of the space placement type refrigerator system, FIG. 24 is a perspective view illustrating a state where door of the front refrigerator is opened, FIG. 25 is an exploded perspective view illustrating the front refrigerator, FIG. 26 is a cross-sectional view illustrating the front refrigerator, and FIG. 27 is an exploded perspective view illustrating a cabinet of the front refrigerator.

[0271] As illustrated, the front refrigerator according to an embodiment of the present disclosure largely may include a cabinet 101, a machine room frame 200, a barrier

150, a bed 140, and grill pan assemblies 160a and 160b. Among them, the bed 140, the barrier 150, and the grill pan assemblies 160a and 160b are installed in the cabinet 101, and the door 130 is assembled on the front surface of the cabinet 101. In addition, the machine room 201 is assembled under the cabinet 101.

[0272] Looking at this in more detail, the cabinet 101 forms the outer appearance of the refrigerator and may be formed to have a height lower than that of a general refrigerator so that it can be mounted in the space placement type refrigerator system having a low height. Therefore, not only the internal capacity but also the space where each part can be installed is small. Therefore, it is necessary to effectively dispose the parts in order to utilize a small and low installation space. For this, the control module 264 in this embodiment is installed in the machine room. This structure will be described below.

[0273] The cabinet 101 is formed of a cylindrical body that is opened to the front, and the cabinet 101 is composed of a plurality of parts, and largely includes an outer case 110 forming an outer wall surface and an inner case 120 forming an inner wall surface. The front surface of the cabinet 101 is selectively shielded by the door 130 in an opened state, and when the door 130 is opened, the storage space 121 is opened forward.

[0274] The outer case 110 has a substantially hexahedral shape open front and rear and downward, and the inner case 120 is installed in the outer case 110 to be spaced apart from the outer case 110. In addition, the back plate 115 is assembled on the rear surface of the outer case 110, the front frame 118 is assembled on the front surface, and the cover plate 250 is assembled on the bottom surface.

[0275] When the back plate 115, the front frame 118, and the cover plate 250 are each assembled to the outer case 110 in a state where the inner case 120 is positioned in the outer case 110, a foam adiabatic material (not illustrated) is filled into the space between the inner case 120 and the outer case 110.

[0276] There is a storage space 121 in the inner cabinet 101. The storage space 121 is a space in which food is stored, and the storage space 121 may be partitioned into a plurality of chambers by the bed 140. A guide rail 122 is provided on the inner wall surface of the storage space 121 and is coupled to the plurality of beds 140 so that the beds 140 can be mounted to be capable of being introduced or withdrawn in the front and rear direction.

[0277] A door 130 is provided on the front surface of the cabinet 101. The door 130 is for opening and closing the storage space 121 of the cabinet 101, and in this embodiment, the door 130 has a structure that opens and closes through rotation. More precisely, the door 130 is in close contact with the front frame 118 of the cabinet 101 to shield the storage space 121 or is moved away from the front frame 118 through rotation to open the storage space 121.

[0278] In other words, the refrigerator according to the embodiment of the present disclosure forms the sealed

storage space 121 by the door 130. In particular, the sealed storage space 121 can store food while maintaining a constant temperature without loss of cool air by the grill pan assemblies 160a and 160b and the air conditioning module. In this embodiment, at least a portion of the door 130 is made of a transparent see-through window 142 structure, so that the storage space 121 can be checked from the outside.

[0279] Next, referring to the machine room frame 200 constituting the machine room 201, the machine room frame 200 is provided to form the lower structure of the refrigerator according to the embodiment of the present disclosure. The machine room frame 200 may be provided with a space in which some configurations constituting the refrigeration cycle, including a compressor and a condenser, are installed. In addition, the opened upper surface of the machine room frame 200 may be coupled to the lower surface of the cabinet 101 to be shielded.

[0280] The machine room frame 200 is installed under the outer case 110 and may be formed in a substantially rectangular frame shape. In addition, the front surface of the machine room frame 200 is opened and may be shielded by the grill cover 220 in which the suction port 225a and the discharge port 225b are formed. The inside of the machine room frame 200 and the machine room 201 will be described in more detail below.

[0281] Meanwhile, the rear portion of the cover plate 250 that shields the upper surface of the machine room frame 200 protrudes upward from other portions, and the rear portion in the machine room 201 is formed higher than other portions. In other words, in consideration of the protruding heights of the radiating fan 263 and the compressor 261 installed in the machine room 201, the rear portion is formed higher than other portions. In particular, in the present embodiment, since the compressor 261 has the highest height, a protrusion 255 is formed on the cover plate 250 to correspond to the height of the compressor 261.

[0282] The cover plate 250 has an opening device installation portion 253 in which the door opening device 180 is installed. The opening device installation portion 253 is provided in the front side of the cover plate 250, that is, in the front side toward the door 130, and protrudes upward to secure a space below, but is opened downward. The opening device installation portion 253 protrudes upward similarly to the upwardly protruding portion of the rear side of the cover plate 250, but in this embodiment, the extent to which the opening device installation portion 253 protrudes is lower than the extent to which the rear portion of the cover plate 250 protrudes upward.

[0283] For reference, FIG. 24 illustrates the open bar 181 constituting the door opening device 180 in a protruding state, wherein the open bar 181 protrudes from the door opening device 180 to push the contact portion B which is provided on the inner surface of the door 130.

[0284] A connector housing 257 is provided on the cover plate 250. The connector housing 257 is a portion in which the wire harness extending from the control mod-

ule 264 to be described below is embedded and serves to guide the extension direction of the wire harness. Specifically, the connector housing 257 guides the wire harness extending upward from the lower control module 264 toward the rear side, that is, in the direction of the rear plate 213.

[0285] Next, referring to the bed 140, the bed 140 is installed in the storage space 121 to partition the storage space 121 into several layers. However, the bed 140 does not partition the storage space 121 of several layers into completely independent spaces, but allows each layer to communicate with each other. To this end, in the present embodiment, the bed 140 has a gap opened in the vertical direction.

[0286] The bed 140 is formed in a flat plate or tray structure having a peripheral wall, and allows food, or the like to be seated on the upper surface thereof. In particular, cylindrical or bottle-shaped foods such as wine and beverages may have a stackable structure.

[0287] A plurality of the beds 140 are provided, wherein the barrier 150 may be positioned in the middle thereof. The barrier 150 is installed in parallel with the bed 140 across the storage space 121, and partitions the storage space 121. Unlike the bed 140, the barrier 150 partitions the storage space 121 into spaces independent of each other, and accordingly, the upper portion and the lower portion with respect to the barrier 150 become spaces different from each other. Accordingly, the upper space and the lower space of the barrier 150 may be independently controlled to have different temperatures.

[0288] A display module 151 is installed on the front surface of the barrier 150. The display module 151 is configured to display each state of the refrigerator and perform various controls. Each state displayed through the display module 151 may be a temperature in the storage space 121, an operation mode display, and the like.

[0289] Next, looking at the grill pan assemblies 160a and 160b, the grill pan assemblies 160a and 160b are configured to circulate air in the storage space 121. These grill pan assemblies 160a and 160b are provided in the front side of the rear wall forming the inner case 120, and after suctioning air from the lower side in the storage space 121, the air is configured to discharge upward in the storage space 121. In this case, the upper and lower sides of the storage space 121 are determined with respect to the height of the middle side of the storage space 121.

[0290] Meanwhile, the grill pan assemblies 160a and 160b may be provided one for each storage space 121, and one grill pan assembly 160a, 160b is used and thus may be configured to control air circulation for all the storage spaces 121. As illustrated in FIG. 5, in the embodiment of the present disclosure, it is assumed that one of the grill pan assemblies 160a and 160b is provided for each storage space 121. In other words, the grill pan assemblies 160a and 160b are respectively installed in the lower storage space 121a and the upper storage space 121b partitioned with respect to the barrier 150.

[0291] Although not illustrated, the grill fan assemblies 160a and 160b may include a blowing fan, a shroud, a grill plate, and the like, wherein, among them, the blowing fan is a fan driven to blow air, and consists of a centrifugal fan which suctions air in the axial direction and then blows air in a radial direction. In FIG. 26, arrows indicate the flow of air circulating in the upper storage space 121 and the lower storage space 121 by each of the grill pan assemblies 160a and 160b.

[0292] The air conditioning module is configured for temperature adjustment in the storage space 121 of the inner case 120. Such an air conditioning module may include an air conditioner including a compressor 261, a condenser 262, and evaporators 190a and 190b. In other words, the temperature of the air circulating in the storage space 121 can be adjusted by the above-described air conditioner.

[0293] The compressor 261 and the condenser 262 are provided in the machine room 201 in the machine room frame 200. Here, the condenser 262 is positioned on the side to which air flows thereinto among both sides partitioned by the separation barrier 230 in the machine room frame 200, and the compressor 261 is positioned in the area through which the air that has passed through the condenser 262 is passed. In particular, the compressor 261 is positioned on the side where the air is discharged.

[0294] This structure allows the air flowing into the machine room 201 of the machine room frame 200 to pass through the condenser 262 preferentially. In other words, considering that the compressor 261 is configured to generate a large amount of heat, when the air is configured to exchange heat with the condenser 262 after passing through the compressor 261, the heat exchange efficiency may be reduced. Accordingly, it is preferable to configure the air to pass through the condenser 262 before the compressor 261.

[0295] At the same time, the condenser 262 is positioned on the front side (side adjacent to the open front side) in the machine room 201, and the compressor 261 is positioned on the rear side (side adjacent to the rear plate 213) in the machine room 201. This structure is to reduce the influence of the high-temperature heat of the compressor 261 on the condenser 262 by making the positions of the compressor 261 and the condenser 262 to be partitioned and spaced apart as much as possible.

[0296] In addition, a radiating fan 263 is provided on the air inlet side of the compressor 261 to suction and discharge air into and out of the machine room 201 and radiate heat from the compressor 261. This radiating fan 263 performs a function of effectively blocking the portion where the compressor 261 is positioned from the air inlet side where the condenser 262 is positioned, so that it is possible to reduce the influence of the high-temperature heat of the compressor 261 on the condenser 262.

[0297] Hereinafter, the structure of the machine room will be described in more detail with reference to the drawings.

[0298] FIG. 28 is a perspective view illustrating a machine room of the front refrigerator, and FIG. 29 is a view illustrating the flow of air in the machine room of the front refrigerator.

[0299] The machine room frame 200 is configured to include a lower plate 211 forming a floor, side plates 212 forming both side wall surfaces, and a rear plate 213 forming a rear surface. In addition, a cover plate 250 is coupled to the upper portion of the machine room frame 200 to shield the machine room 201 therein. In this embodiment, the cover plate 250 is assembled to the lower portion of the cabinet 101 and may be viewed as a portion of the cabinet 101, but since it also constitutes the upper portion of the machine room frame 200, it may be viewed as a portion of the machine room frame 200.

[0300] A radiating hole 214 is formed through the rear plate 213 of the machine room frame 200. The radiating hole 214 is a hole formed for discharging (or suctioning) the air that radiates heat from the compressor 261 to be described later. In other words, through the additional formation of the radiating hole 214, the air can be discharged more smoothly. Although not illustrated, a discharge hole for discharging the air that radiates heat from the compressor 261 may be further formed even in the bottom plate 211 of the machine room frame 200.

[0301] At this time, the machine room frame 200 and the inner case 120 are disposed to be spaced apart from each other, and the side plates 212 and the rear plate 213 of the machine room frame 200 may be configured to be connected to both side surfaces and rear surfaces of the outer case 110.

[0302] There is a machine room 201 in the machine room frame 200. The machine room 201 is an empty space that is a kind of installation space, and a portion of devices constituting the air conditioning module is installed therein. The machine room 201 is a separate space independent from the storage space 121 described above and provides a space in which the air conditioning module can be installed and operated.

[0303] Although not illustrated, the inner case 120 and the machine room frame 200 may be composed of one part. In this case, a separate wall for partitioning is provided between the storage space 121 and the machine room 201, and thus the storage space 121 and the machine room 201 can be separated from each other.

[0304] A grill cover 220 is provided on the opened front surface of the machine room frame 200 that is the front side of the machine room 201. The grill cover 220 guides the flow of air suctioned into the machine room 201 from the outside of the machine room 201 or air discharged from the inside of the machine room 201 to the outside of the machine room 201 while playing a role in blocking the opened front surface of the machine room 201.

[0305] At the same time, the above-described grill cover 220 is formed with a suction port 225a and a discharge port 225b. At this time, the suction port 225a and the discharge port 225b are provided separately at positions partitioned from each other by a separation barrier 230

to be described later, and in the embodiment of the present disclosure, when viewing from the front surface, it is partitioned by the suction port 225a on the left side and the discharge port 225b on the right side, but vice versa.

[0306] A separation barrier 230 partitioning the machine room 201 into two spaces is further provided in the machine room frame 200. In other words, a flow path through which air is suctioned into the machine room 201 and a flow path through which air is discharged can be partitioned by the separation barrier 230. The suction port 225a of the grill cover 220 is positioned as a flow path through which air is suctioned into the machine room 201, and the discharge port 225b of the grill cover 220 is positioned as a flow path through which air is discharged from the inside of the machine room 201.

[0307] At the same time, the left and right spaces in the machine room 201 separated by the separation barrier 230 are connected to each other at the rear side of the machine room 201, that is, at the position close to the rear plate 213. In addition, the separation barrier 230 may be formed in a straight line, but may also be formed in an inclined or bent structure. In the embodiment of the present disclosure, the separation barrier 230 has a bent structure. In other words, by bending a portion of the separation barrier 230, it is possible to secure as much space as possible in which the condenser 262 to be described later is installed.

[0308] The height of the separation barrier 230 may be greater than or equal to the height of the condenser 262. Accordingly, the separation barrier 230 may prevent the flowing air from flowing directly in the direction of the compressor 261 without passing through the radiating fan 263.

[0309] A defrost water tray 240 is provided in the machine room 201 of the machine room frame 200. At this time, the defrost water tray 240 is positioned on the floor of the machine room 201 on the side where air flows through the suction port 225a and receives the defrost water flowing down from the evaporators 190a and 190b to be described later and in addition, serves to fix the condenser 262 in the machine room 201.

[0310] With reference to FIG. 29, the flow of air in the machine room will be described.

[0311] The temperature of the machine room 201 is increased by the driving of the air conditioning module. In particular, the temperature of the compressor 261 and the condenser 262 increases significantly, and in this embodiment, the temperature increase can be suppressed through the air flow in the machine room 201.

[0312] Specifically, when the radiating fan 263 operates first, the radiating fan 263 suctioned in external air. Here, when air from the outside (the place where the refrigerator is installed) flows into the suction space I through the grill cover 220 (arrow ㉑ direction), the air directly meets the condenser 262. In particular, in this embodiment, the suction port 225a, which is the inlet of the suction space I, is wider than the discharge port 225b,

which is the outlet of the discharge space O. In other words, the suction port 225a is widened to increase the amount of initially flowing air, thereby effectively cooling the condenser 262.

5 **[0313]** At this time, the suction space I is blocked except for the suction port 225a, so that the flowing outside air can be concentrated only in the direction of the radiating fan 263 through the condenser 262. Accordingly, the condenser 262 can be cooled more effectively.

10 **[0314]** In addition, the flowing air may evaporate a portion of the defrost water while passing over the defrost water tray 240 (arrow ㉒ direction). At this time, the flowing air is guided by the separation barrier 230. In other words, the flowing air does not flow toward the discharge space O including the compressor 261, but is guided toward the radiating fan 263 along the separation barrier 230. At this time, a radiating fan 263 is installed at the rear end portion of the separation barrier 230, so that the radiating fan 263 becomes a portion of a kind of wall barrier 230.

20 **[0315]** When the flowing air passes through the radiating fan 263 (arrow ㉓ direction), the air is discharged to the compressor 261 facing the radiating fan 263 to cool the compressor 261. Since the radiating fan 263 is perforated, the suction space I and the discharge space O are connected to each other with respect to the radiating fan 263, but when the radiating fan 263 is operated, since air flows from the suction space I to discharge space O, it is difficult for air to flow in the opposite direction. Accordingly, it is possible to effectively prevent the heat of the compressor 261 from being transferred to the condenser 262.

30 **[0316]** In this case, there is a flow guide surface 245 between the defrost water tray 240 and the radiating fan 263, so that the radiating fan 263 is covered by the defrost water tray 240 to prevent the efficiency from decreasing. In other words, the flowing air is naturally guided in the direction of the radiating fan 263 through the downwardly inclined surface of the flow guide surface 245. The flow guide surface 245 may eliminate a kind of dead space that prevents air from flowing between the defrost water tray 240 and the radiating fan 263 or generates a vortex.

35 **[0317]** The air that has passed through the compressor 261 passes through the discharge space O (arrow ㉔ direction). At this time, since the control module 264 is positioned above the discharge space O, the discharge space O is formed between the bottom surface of the control module 264 and the bottom surface of the machine room frame 200 and the air passes through the discharge space. A portion through which air passes under the control module 264 is indicated by a dotted line.

40 **[0318]** Finally, the cooled air is discharged to the outside through the discharge port 225b (Arrow ㉕ direction). As described above, in this embodiment, since the flowing air flows only along a predetermined fixed path, effective cooling is possible. In particular, the suction space I is blocked except for the suction port 225a, so that the flowing outside air can be concentrated only in the direc-

tion of the radiating fan 263 through the condenser 262, whereas after cooling, the air can be discharged in several directions.

[0319] In other words, in the discharge space O of the machine room 201 formed between the radiating fan 263 and the discharge port 225b, a portion of the floor, side surface, or rear surface is opened through the radiating holes 211' and 214 to connect the outside. Therefore, the initial inflow of outside air is limited to a specific direction, that is, toward the condenser 262, but once heat is radiated from the condenser 262 and the compressor 261, it can be discharged in various directions, thereby improving the heat dissipation performance of the machine room.

[0320] Hereinafter, a detailed structure of the above-described rear refrigerator 200 will be described with reference to the drawings.

[0321] FIG. 30 is a perspective view illustrating a rear refrigerator in the unit configuration of the space placement type refrigerator system, FIG. 31 is a perspective view illustrating a state where a drawer of the rear refrigerator is withdrawn, and FIG. 32 is a cross-sectional view illustrating the rear refrigerator.

[0322] As illustrated, the outer appearance of the rear refrigerator 300 may be configured, as a whole, by a cabinet 301 and a drawer door 330 mounted on the cabinet 301 so as to be capable of being introduced or withdrawn. The rear refrigerator 300 may include a machine room frame 200 provided below the cabinet 301 and an air conditioning module provided in the cabinet 301.

[0323] In detail, the cabinet 301 forms the outer appearance of the refrigerator, may be formed in the same size as the cabinet 101 of the front refrigerator 100 described above, and may have the same outer appearance configuration as the cabinet 101. Therefore, a detailed description of the same configuration will be omitted.

[0324] The cabinet 100 is formed of a cylindrical body opened to the front side, and the cabinet 100 is composed of a plurality of parts, largely including an outer case 310 forming an outer wall surface and an inner case 320 forming an inner wall surface. In addition, an adiabatic material may be filled between the outer case 310 and the inner case 320.

[0325] In addition, the machine room frame 200 constituting the machine room 201 may be formed below the cabinet 301. The structures of the machine room 201 and the machine room frame 200 are the same as those of the front refrigerator 100 described above, and detailed descriptions thereof will be omitted and will be denoted using the same reference numerals.

[0326] The inner case 320 forms storage spaces 121a and 121b partitioned vertically, and evaporators 390a and 390b are provided at the rear of the storage spaces 121a and 121b, respectively, so that the storage spaces 121a and 121b can be cooled independently.

[0327] The storage space may be composed of an upper storage space 121a and a lower storage space 121b

and the upper storage space 121a is provided with an upper drawer door 330a, and the lower storage spaces 121a and 121b is provided with lower drawer door 330b. In addition, the upper drawer door and the lower drawer door may be mounted to be capable of being introduced or withdrawn in the front side and may have a structure in which food can be received therein.

[0328] In detail, the upper drawer door 330a is formed in the form of a drawer and is installed in the upper storage space 121a to be capable of being introduced or withdrawn. Food and food containers are stored and kept in the upper drawer door 330a. The upper drawer door 330a includes a door portion 331a and a drawer main body portion 332a, and the lower drawer door 330b may also have the same structure.

[0329] In addition, an upper drawer 333 may be further provided in the upper storage space 121a. The upper drawer 333 may be disposed above the drawer main body portion 332a of the upper drawer door 330a and may be positioned in the upper storage space 121a. Therefore, in order to introduce or withdraw the upper drawer 333, the upper drawer door 330a must be opened first. In other words, the upper storage space 121a may be provided with two-tier drawer that can be introduced or withdrawn, but only the upper drawer door 330a may be exposed when viewed from the outside.

[0330] A lower drawer door 330b is installed in the lower storage space 121b. The lower drawer door 330b is formed in the form of a drawer, and is installed to be introduced to or withdrawn from the inner portion of the lower storage space 121b. Food and food containers are stored and kept in the lower drawer door 330b. The lower drawer door 330b includes a door portion 331b and a drawer main body portion 332b, and the like.

[0331] Meanwhile, the temperature in the upper drawer door 330a and the lower drawer door 330b may be set differently. For example, the upper drawer door 330a may be used as a freezer, and the lower drawer door 330b may be used as a refrigerator, and vice versa. Such temperature adjustment may be performed through the control module 264.

[0332] A grill pan assembly may be provided at the inner rear of the upper storage space 121a and the lower storage space 121b. The grill pan assembly may have the same structure as that of the front refrigerator 100 described above. However, there may be some differences in the flow direction of air and the inflow and outflow structures.

[0333] The grill pan assembly may include a grill plate 360, a blowing fan 381, and a shroud 382.

[0334] Hereinafter, since the grill pan assembly may be disposed in the same structure in the upper storage space 121a and the lower storage spaces 121a and 121b, the grill plate 360 installed in the upper storage space 121a is described below.

[0335] The grill plate 360 is made of a rectangular wall and partitions the upper storage space 121a into a space in which the upper drawer door 330a is provided and a

space in which the evaporators 390a and 390b are provided. Accordingly, the grill plate 360 may shield the evaporators 390a and 390b in a mounted state.

[0336] Discharge portions 361 and 362 and air inflow holes 363 for discharging air to the upper storage space are formed on the front surface of the grill plate 360. The discharge portions 361 and 362 include an upper discharge portion 361 and a central discharge portion 362. An upper discharge portion 361 is formed on the front upper side of the grill plate 360. The upper discharge portion 361 includes a plurality of discharge holes penetrating through the front surface of the grill plate 360 in the front and rear direction.

[0337] A central discharge portion 362 is formed in the central portion of the grill plate 360. The central discharge portion 362 includes a plurality of discharge holes penetrating through the front central portion of the grill plate 360 in the front and rear direction and is disposed side by side in a line at the front center of the grill plate 360. The central discharge portion 362 is a portion that is formed through the central portion of the grill plate 360 in the front and rear direction to discharge cold air toward the center of the storage spaces 121a and 121b.

[0338] An air inflow portion 272 is formed on the lower front surface of the grill plate 360. The air inflow portion 272 may be formed to be long in the left and right direction to form an inlet through which air is introduced into the evaporator 390a, 390b.

[0339] A grill pan module 380 is installed on the rear surface of the grill plate 360. The grill fan module 380 may include a blowing fan 381 and a shroud 382. The blower fan may be provided at the rear side of the grill plate 360 and may be driven by a motor to forcibly circulate air in the storage space to exchange heat with the evaporators 390a and 390b.

[0340] In addition, the shroud is provided on the rear surface of the grill plate 360 and may be configured to accommodate at least a portion of the blowing fan 381. Accordingly, it is possible to effectively discharge the air at the rear side of the grill plate 360 to the front side of the grill plate 360.

[0341] The evaporators 390a and 390b are provided in the rear side of the receiving space and are disposed in the rear space of the grill fan module 380. In other words, during the circulation operation of suctioning air from the lower side in the storage spaces 121a and 121b by the operation of the grill fan module 380 and then discharging the air to the upper side in the corresponding storage spaces 121a and 121b, the air is can exchange heat while passing through the evaporator 390a, 390b.

[0342] These evaporators 390a, 390b are composed of plate-type evaporators 390a, 390b so that heat exchange performance in a narrow space can be improved while being capable of being stably installed in the front side of the rear wall surface of the inner case 320.

Industrial Applicability

[0343] Since space utilization and usability of the space placement type refrigerator system according to the embodiment of the present disclosure are improved, industrial applicability is high.

Claims

1. A space placement type refrigerator system comprising:

a case configured to be positioned in a space away from a wall surface and having an opened front surface and an opened rear surface;
a plurality of refrigerators provided in the case and configured to be exposed to the opened front surface or the opened rear surface of the case; and
a receiving member provided in the case and configured to be exposed to the same surface as the plurality of refrigerators, wherein at least one of the plurality of refrigerators is disposed to be accessible from a direction opposite to that of the other refrigerator.

2. The space placement type refrigerator system of claim 1, wherein the plurality of refrigerator includes

a first refrigerator disposed on the opened front surface of the case; and
a second refrigerator disposed on the opened rear surface of the case.

3. The space placement type refrigerator system of claim 2,

wherein the first refrigerator includes

a first cabinet forming a first storage space in which food is stored at a low temperature, and
a first door rotatably mounted to the cabinet to open and close the first storage space, and

wherein the second refrigerator includes

a second cabinet forming a second storage space in which food is stored at a low temperature; and
a second door mounted on the second cabinet to be capable of being introduced or withdrawn and thus configured to open and close the second storage space.

4. The space placement type refrigerator system of claim 3,
wherein the first refrigerator and the second refrigerator are disposed so that the first door and the second door are exposed in opposite directions to each other.
5. The space placement type refrigerator system of claim 3,
wherein at least a portion of the first door forms a transparent see-through portion so that the inside can be seen through.
6. The space placement type refrigerator system of claim 5,
wherein the second door is disposed at a position facing an indoor wall surface where the sink is disposed.
7. The space placement type refrigerator system of claim 6,
wherein, when being disposed in the indoor space, the indoor space of the space placement type refrigerator system is partitioned so that a second space to which the second door is exposed is narrower than the indoor of a first space facing by the first door.
8. The space placement type refrigerator system of claim 2,
wherein the first refrigerator and the second refrigerator are formed to have the same unit length of a horizontal width, and
wherein in the case, a horizontal width of an accommodation space formed to accommodate the first refrigerator, the second refrigerator, and the receiving member is formed by an integer multiple of the unit length.
9. The space placement type refrigerator system of claim 8,
wherein, with respect to the center line extending in the horizontal direction through the accommodation space, the first refrigerator and the second refrigerator are disposed to be in contact with each other.
10. The space placement type refrigerator system of claim 8,
wherein, with respect to the center line extending through the accommodation space in the horizontal direction, the first refrigerator and the second refrigerator are disposed to be alternated with each other to pass through the center line, respectively.
11. The space placement type refrigerator system of claim 10,
wherein the receiving members are disposed on opposite sides of the first refrigerator and the second refrigerator, respectively.
12. The space placement type refrigerator system of claim 8,
wherein A plurality of the receiving members are provided and the receiving member is formed to have a horizontal width equal to that of the first refrigerator and the second refrigerator by the unit length.
13. The space placement type refrigerator system of claim 3,
wherein the receiving member includes
a first receiving member including a receiving door formed in the same size as the first door and rotated; and
a second receiving member including a drawer formed in the same size as the second door and is introduced or withdrawn.
14. The space placement type refrigerator system of claim 3,
wherein a machine room in which a compressor and a condenser are accommodated is formed at lower ends of the first refrigerator and the second refrigerator, and
wherein all a suction port through which air suctioned into the machine room is introduced and a discharge port through which air inside the machine room is discharged are formed on one surface of the machine room exposed to the front surface and the rear surface.
15. The space placement type refrigerator system of claim 1,
wherein the case includes
an upper plate forming an upper surface;
a pair of side plates extending downward from the lower surface of the upper plate and opened to the front surface and the rear surface to form an accommodation space configured to accommodate the first refrigerator, the second refrigerator, and a receiving member; and
an additional device mounted passing through the upper plate and operable at the upper side of the upper plate,
wherein the additional device is disposed on one side of the upper plate deviating from a vertically upper region of the first refrigerator and the second refrigerator.

Fig. 1

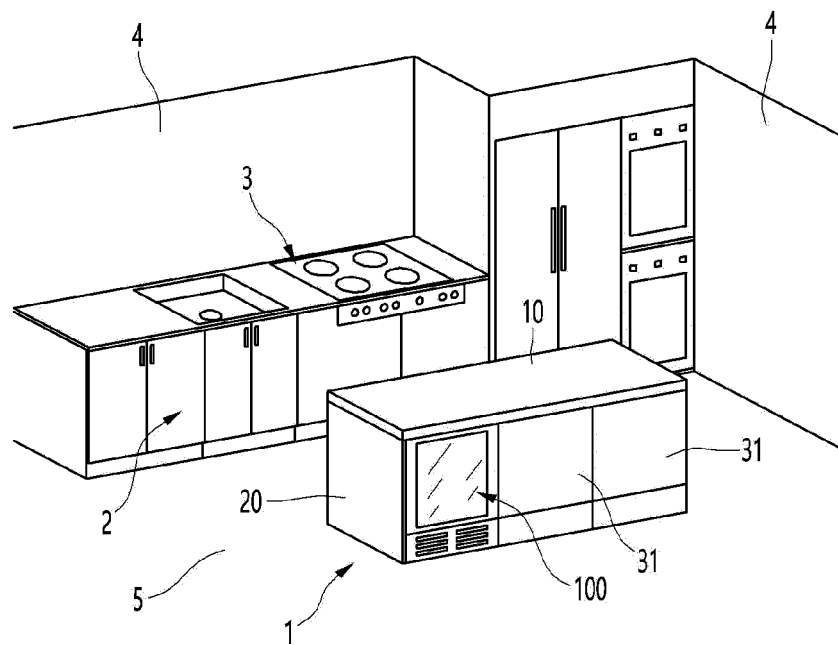


Fig. 2

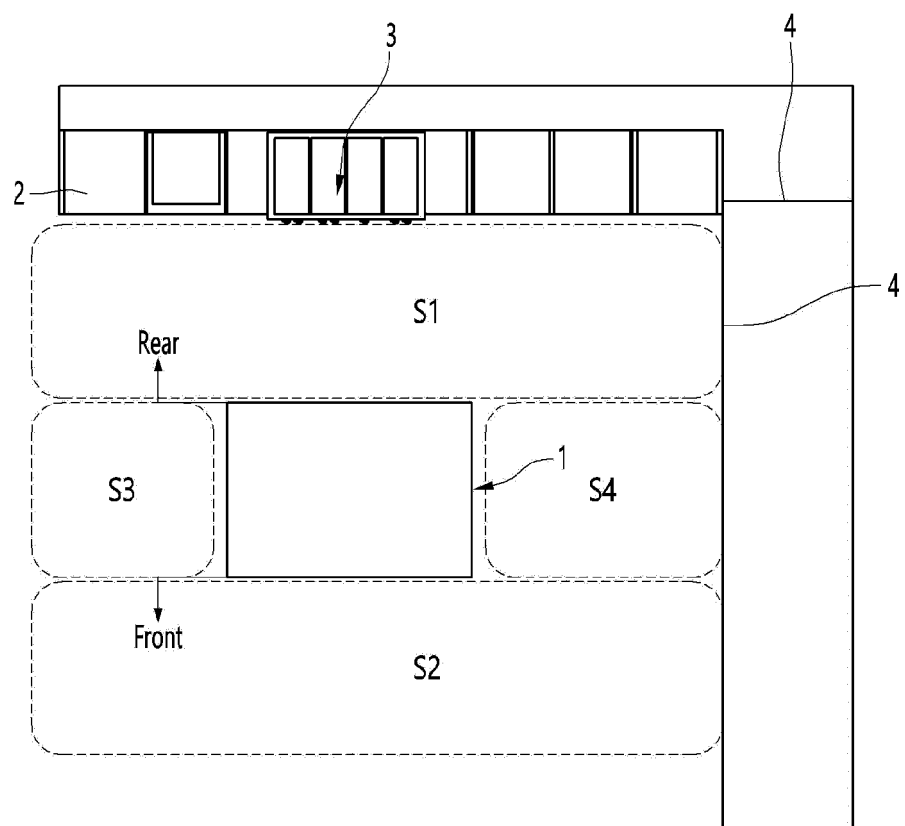


Fig. 3

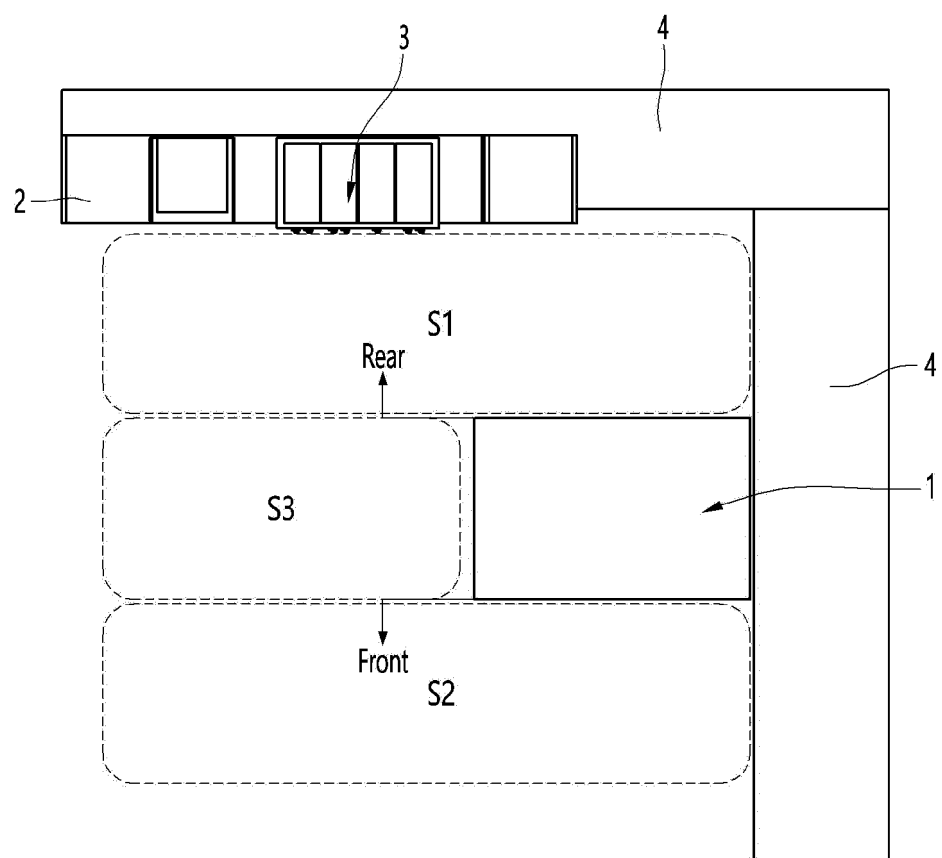


Fig. 4

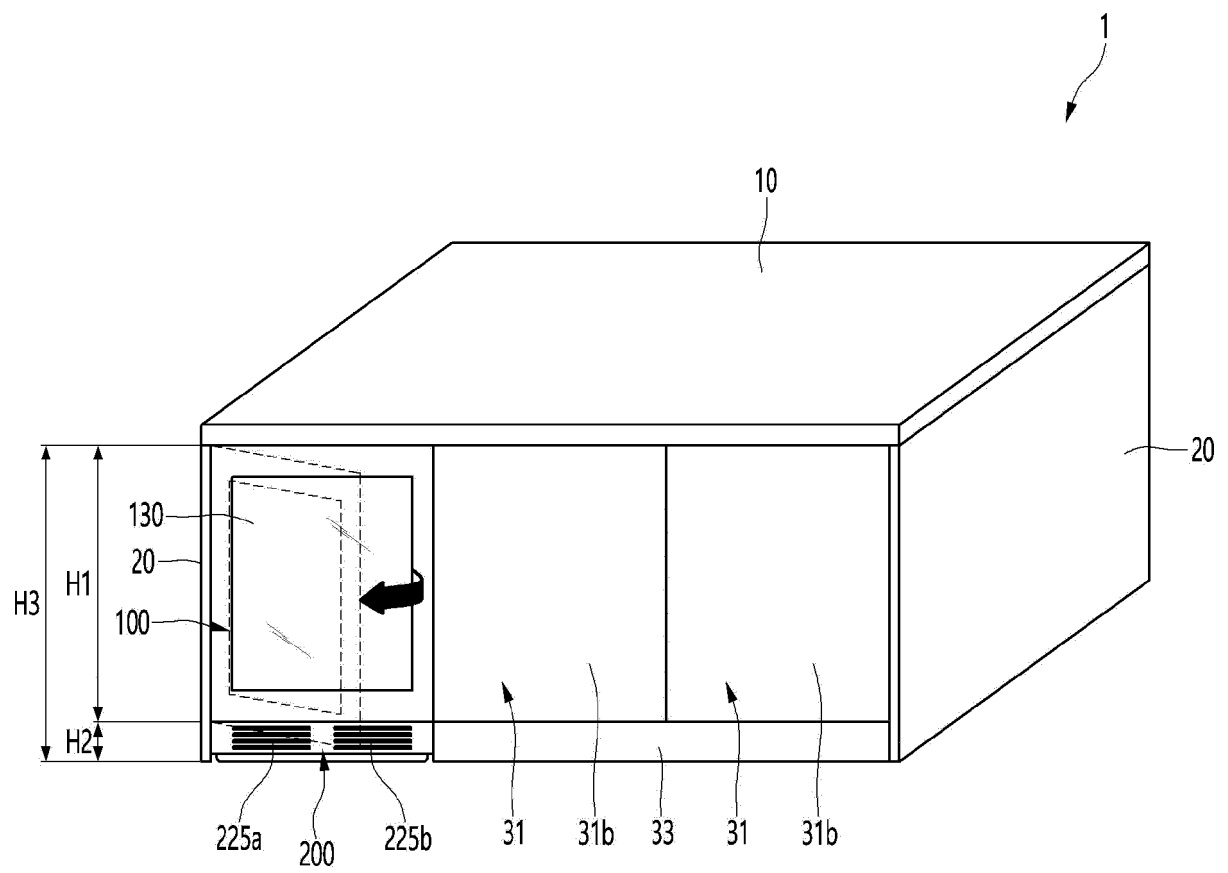


Fig. 5

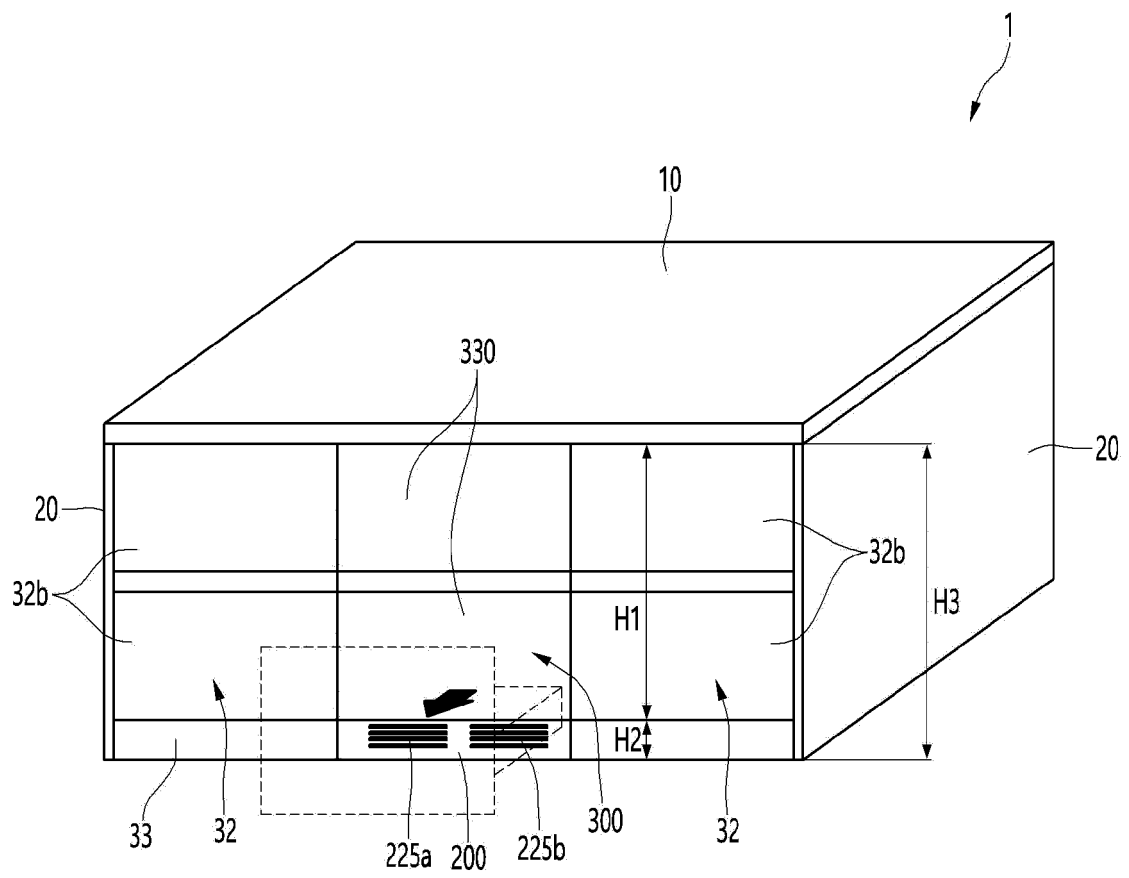


Fig. 6

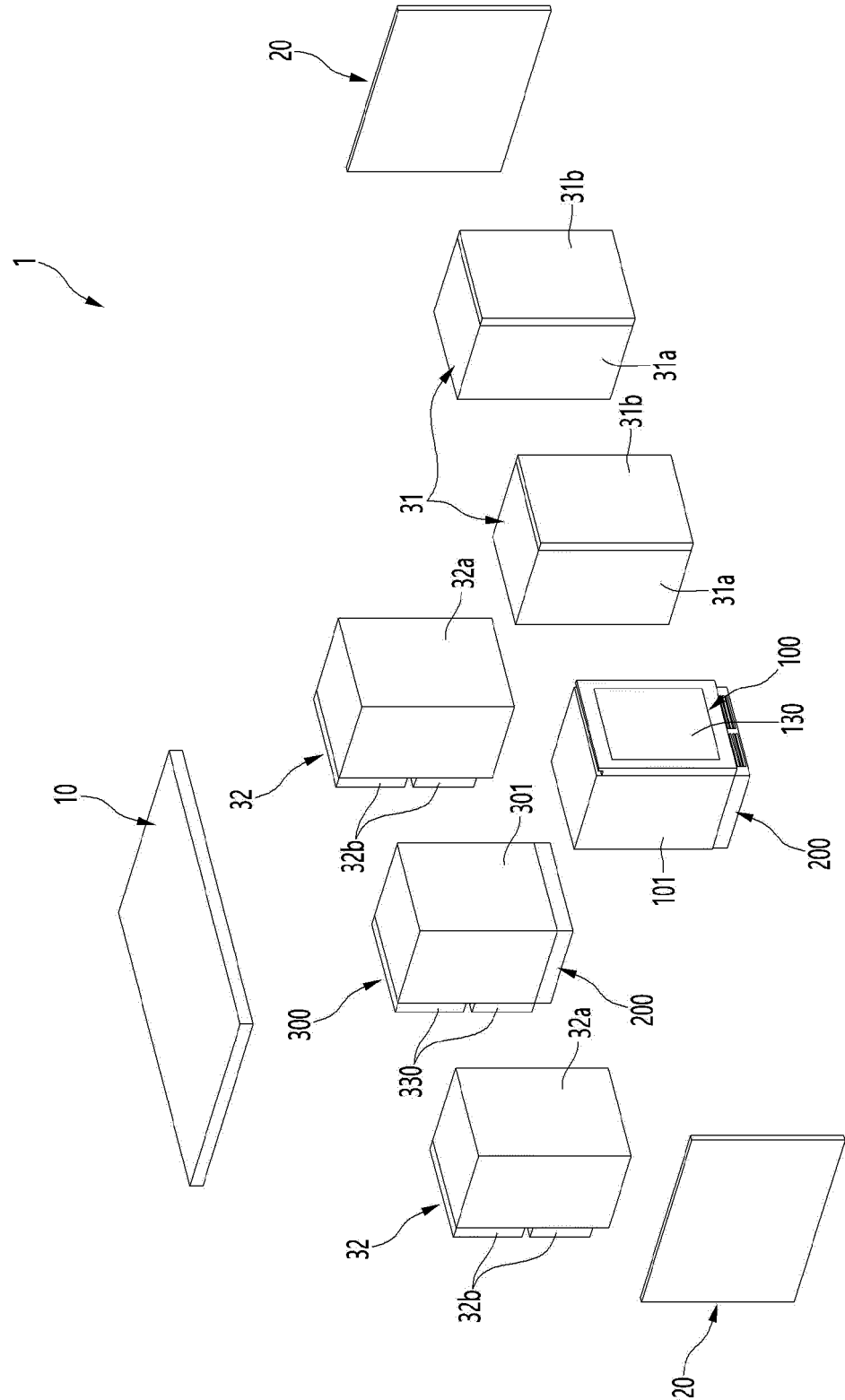


Fig. 7

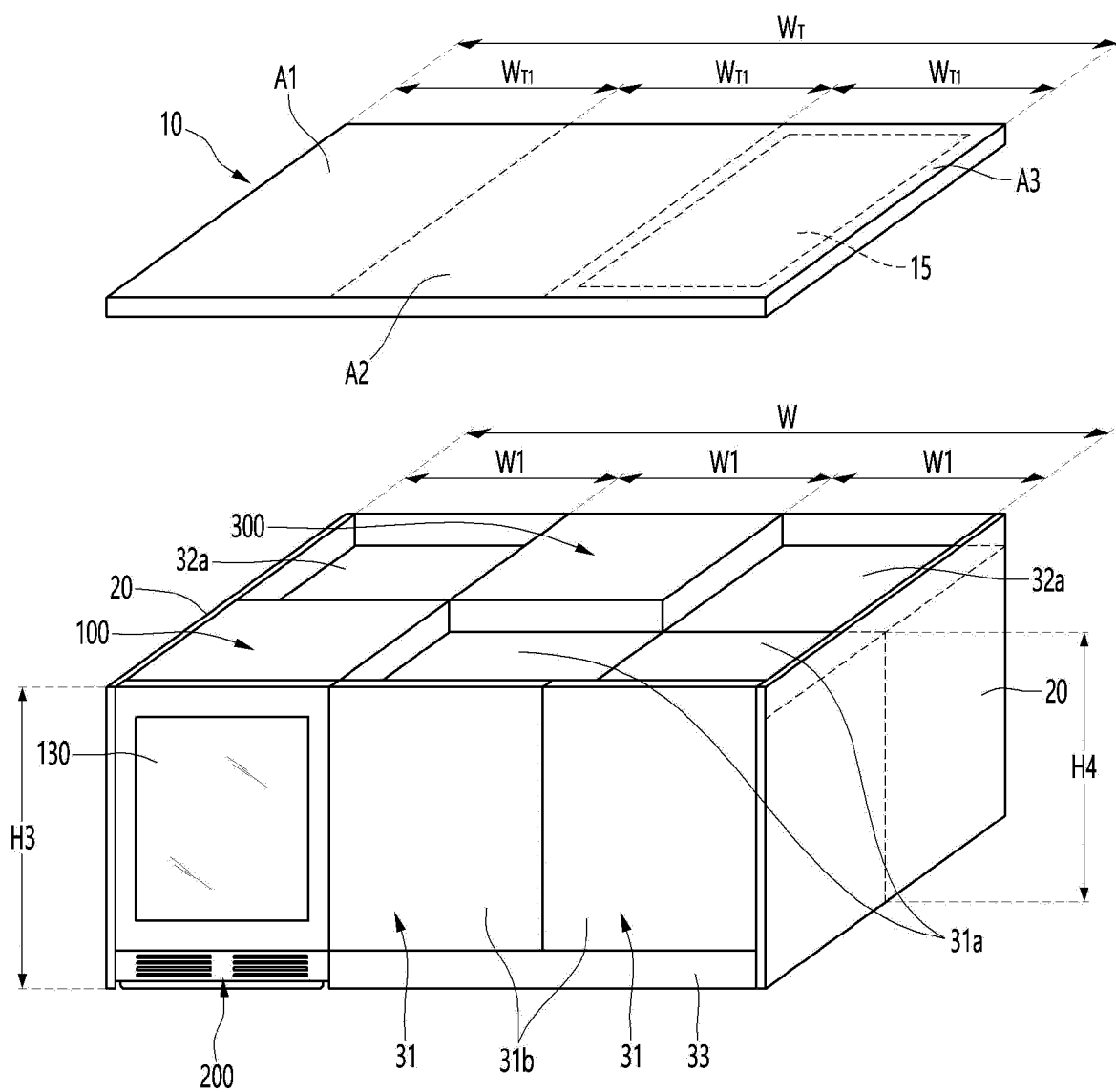


Fig. 8

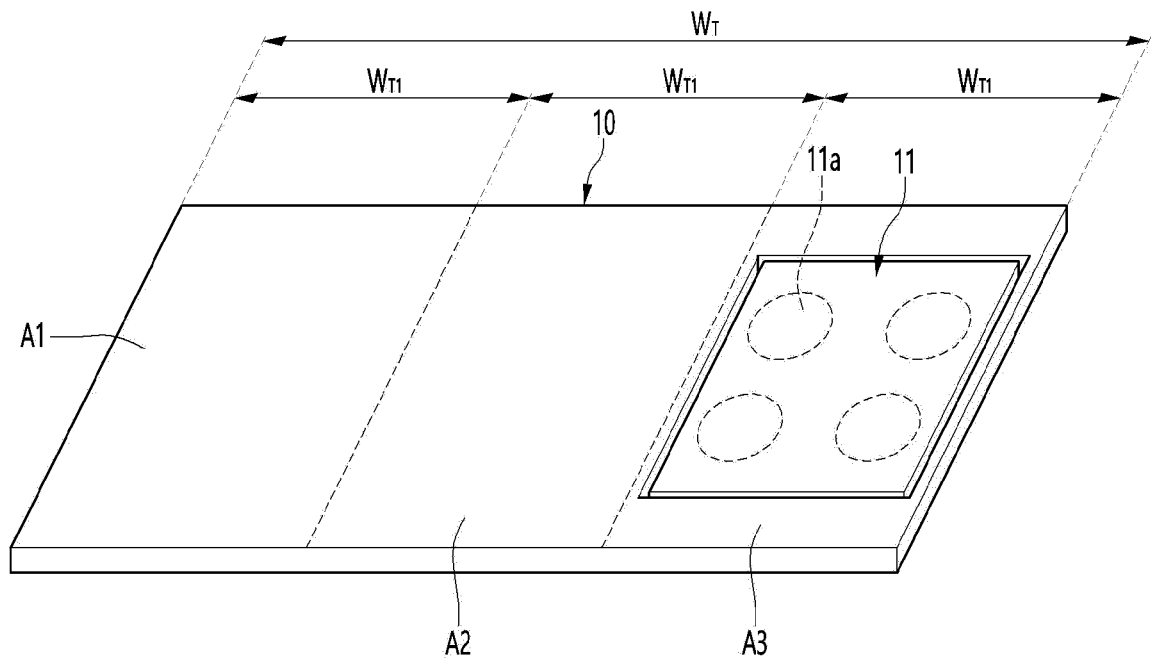


Fig. 9

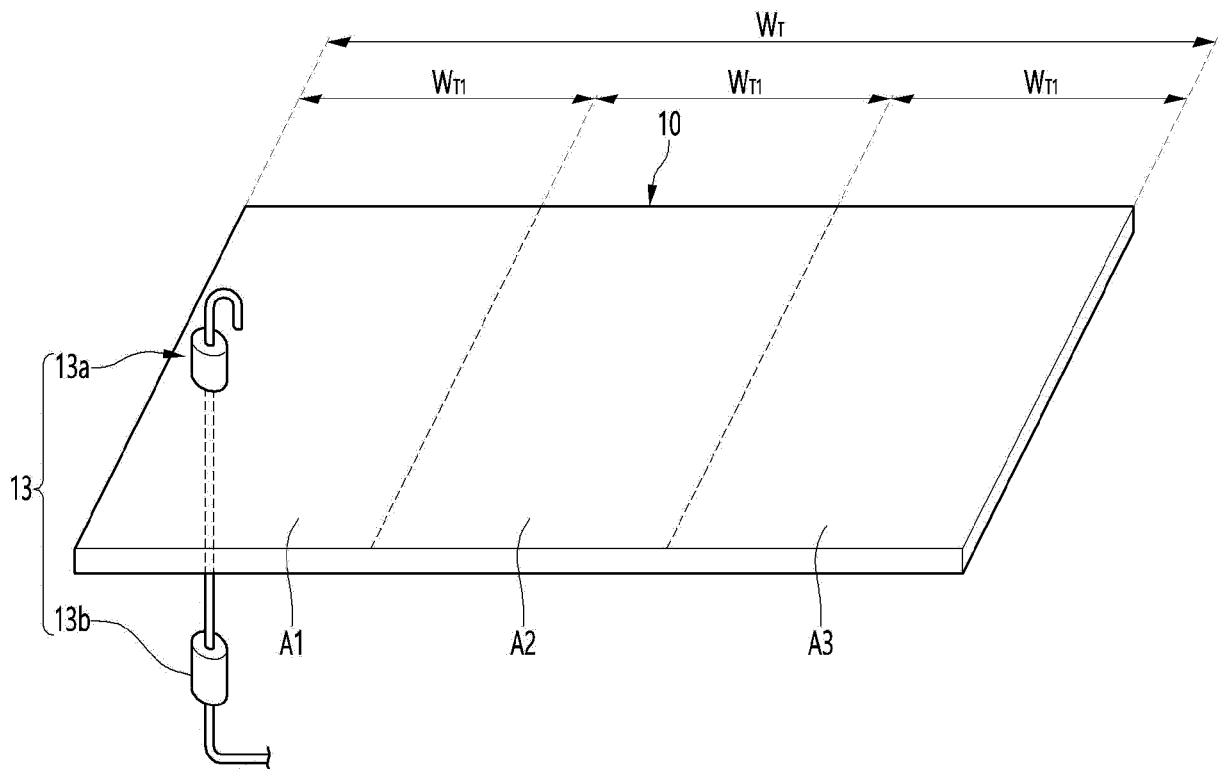


Fig. 10】

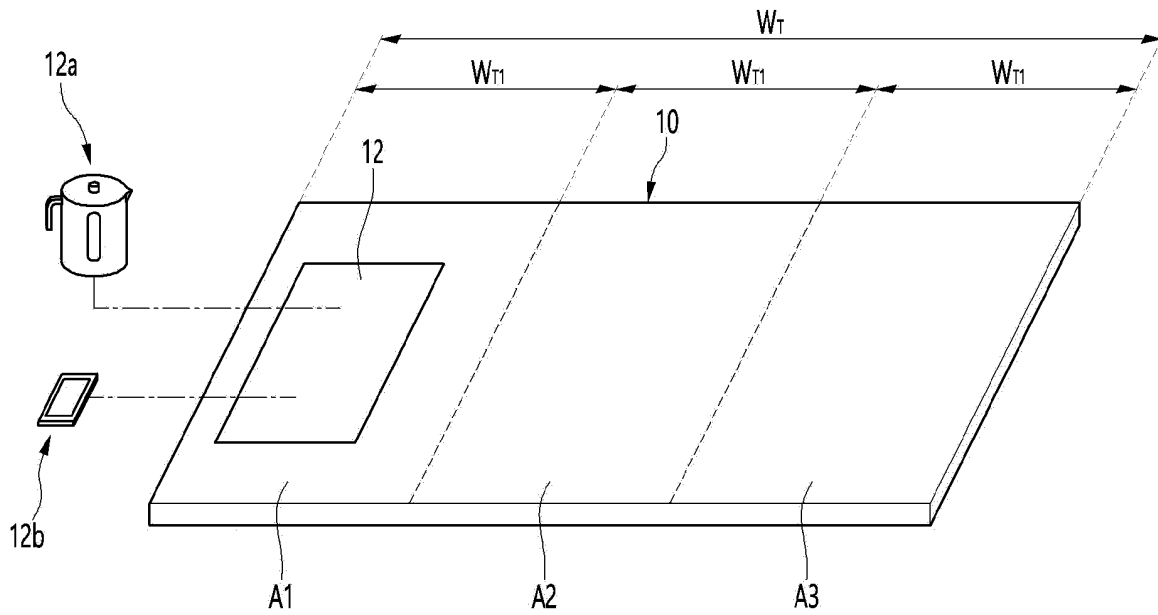


Fig. 11

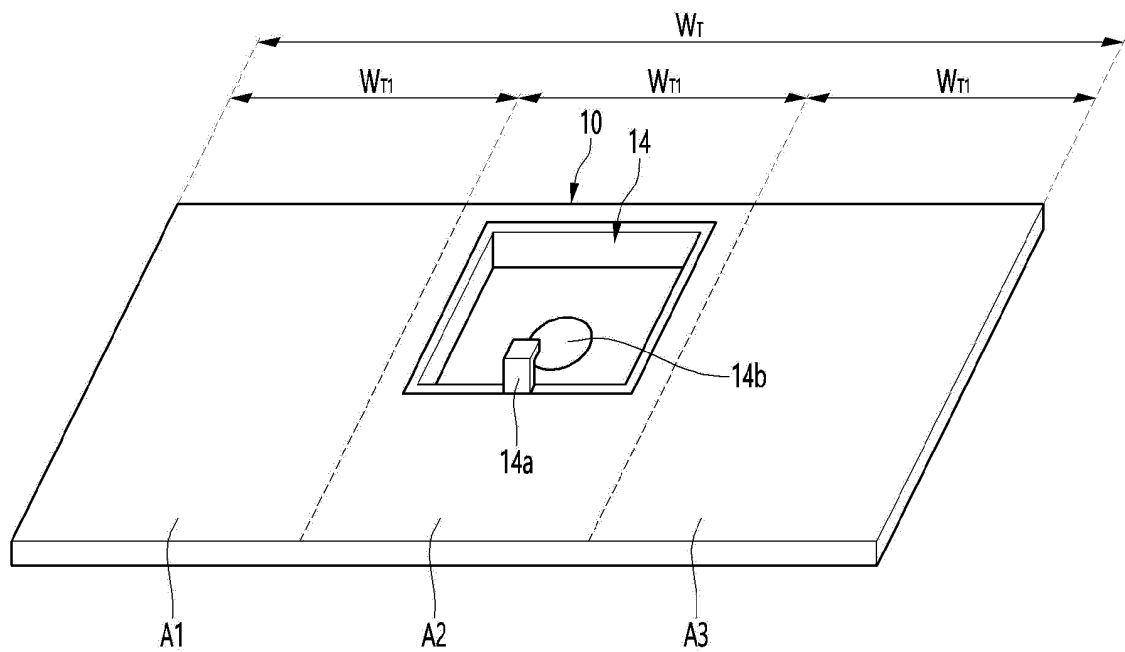


Fig. 12

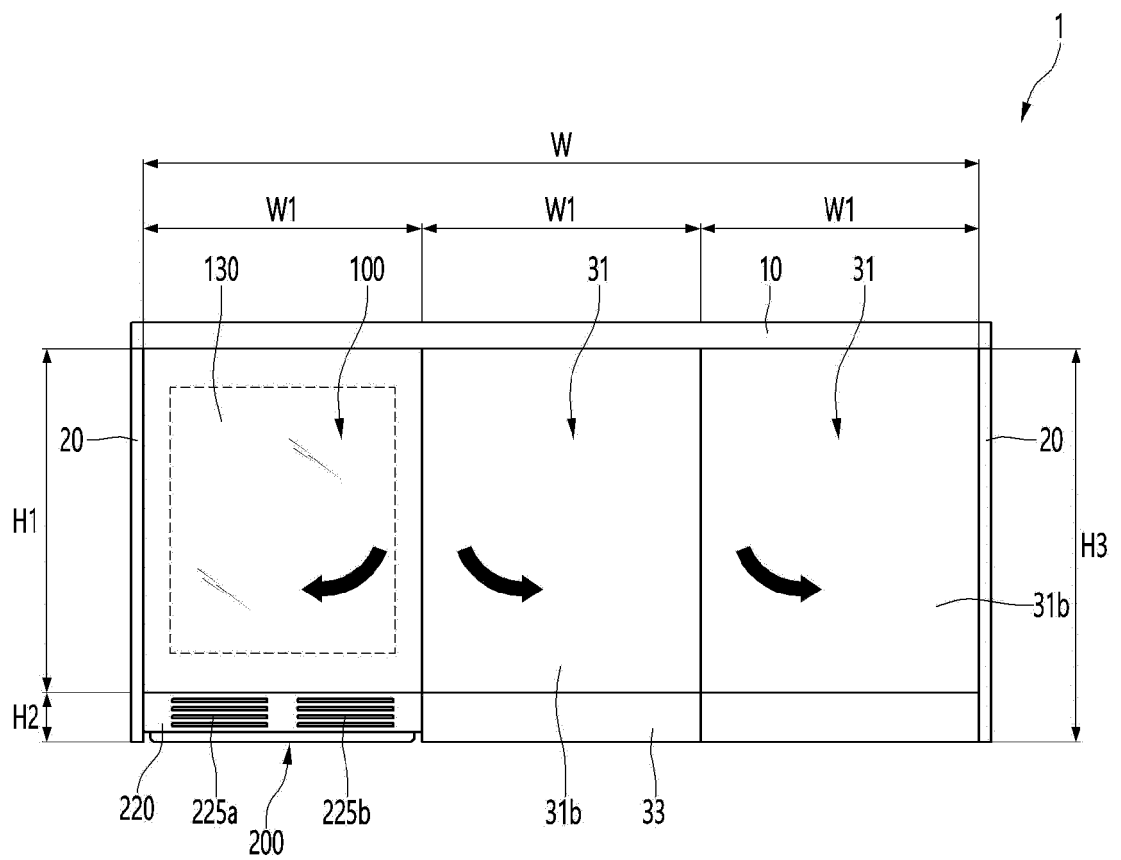


Fig. 13

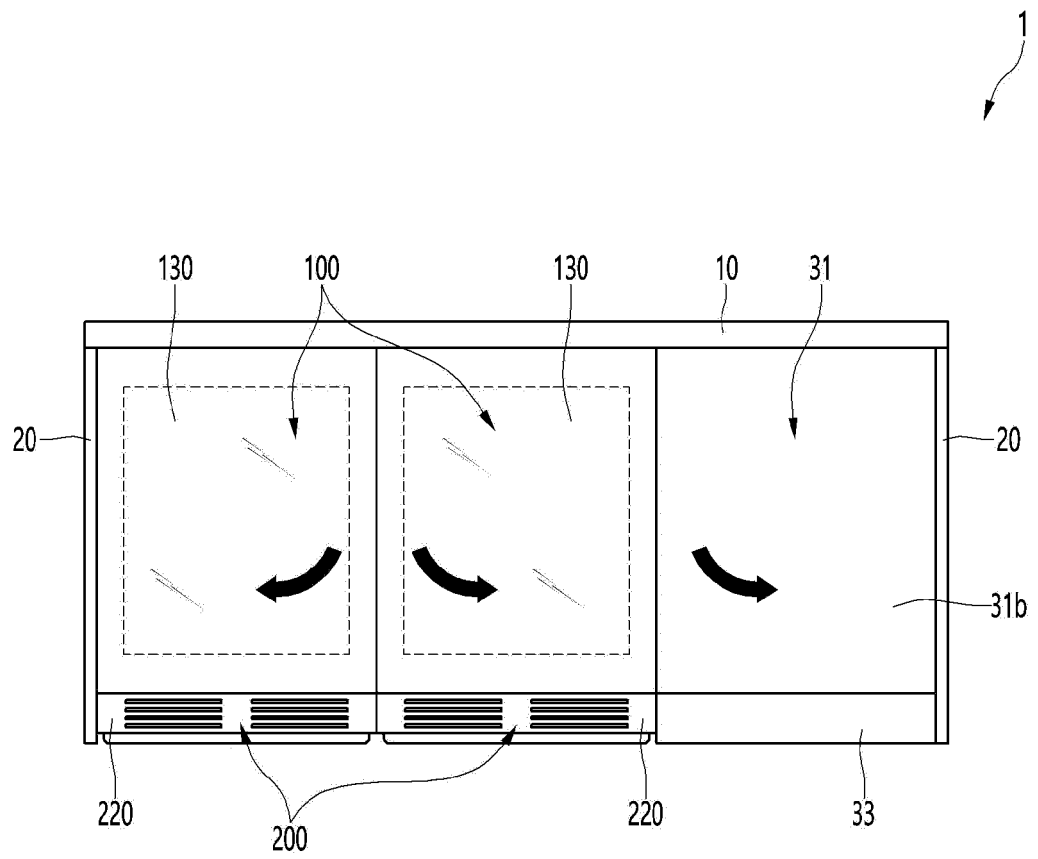


Fig. 14

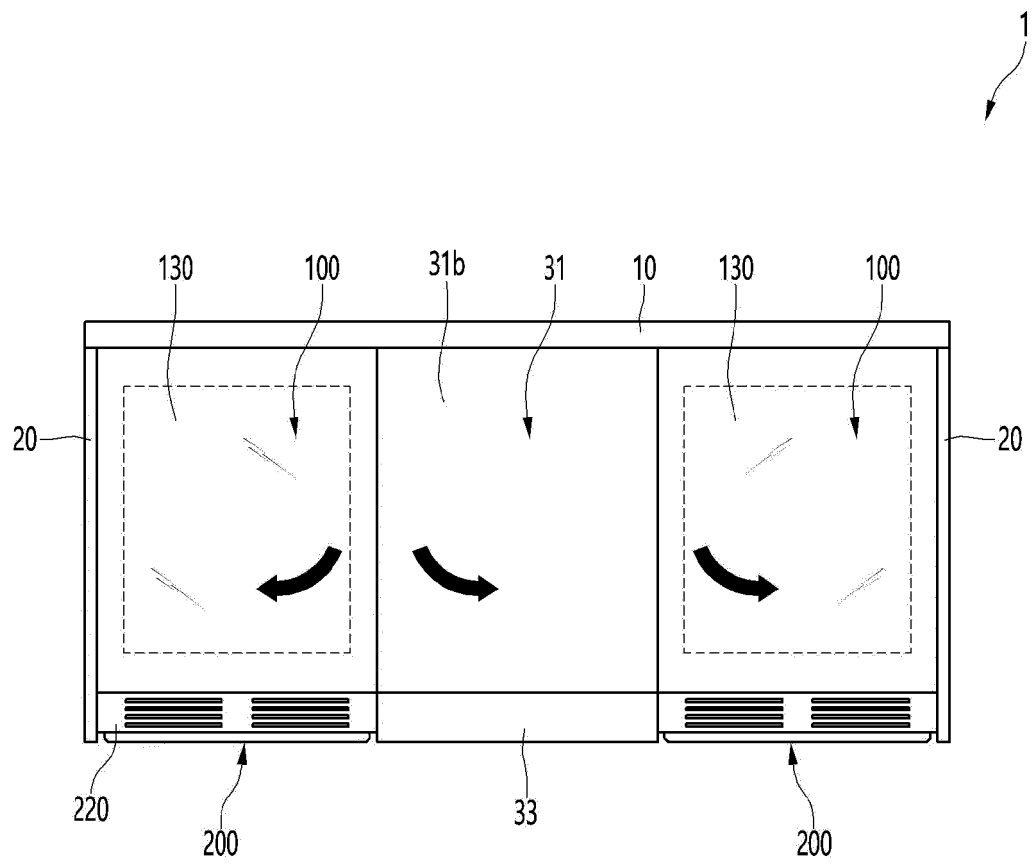


Fig. 15

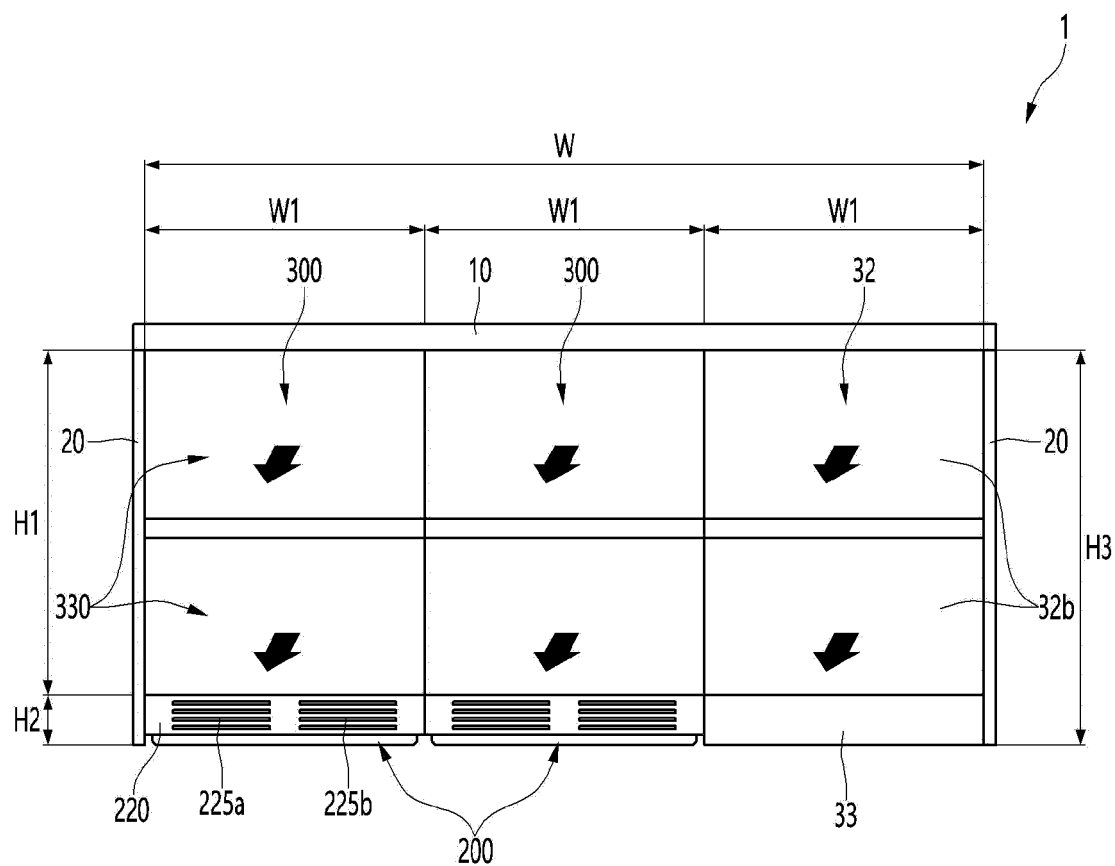


Fig. 16

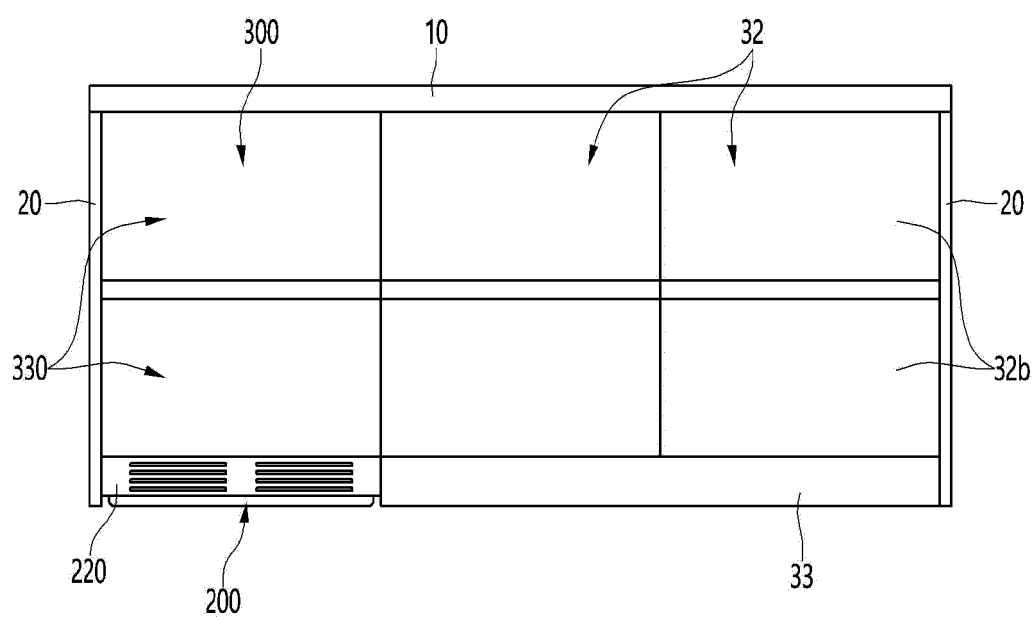


Fig. 17

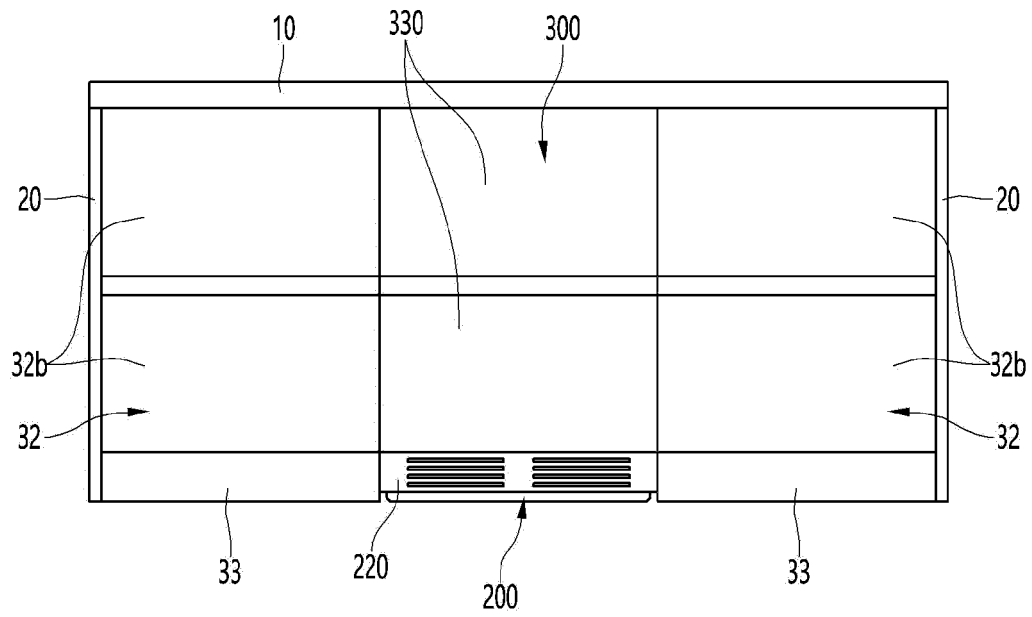


Fig. 18

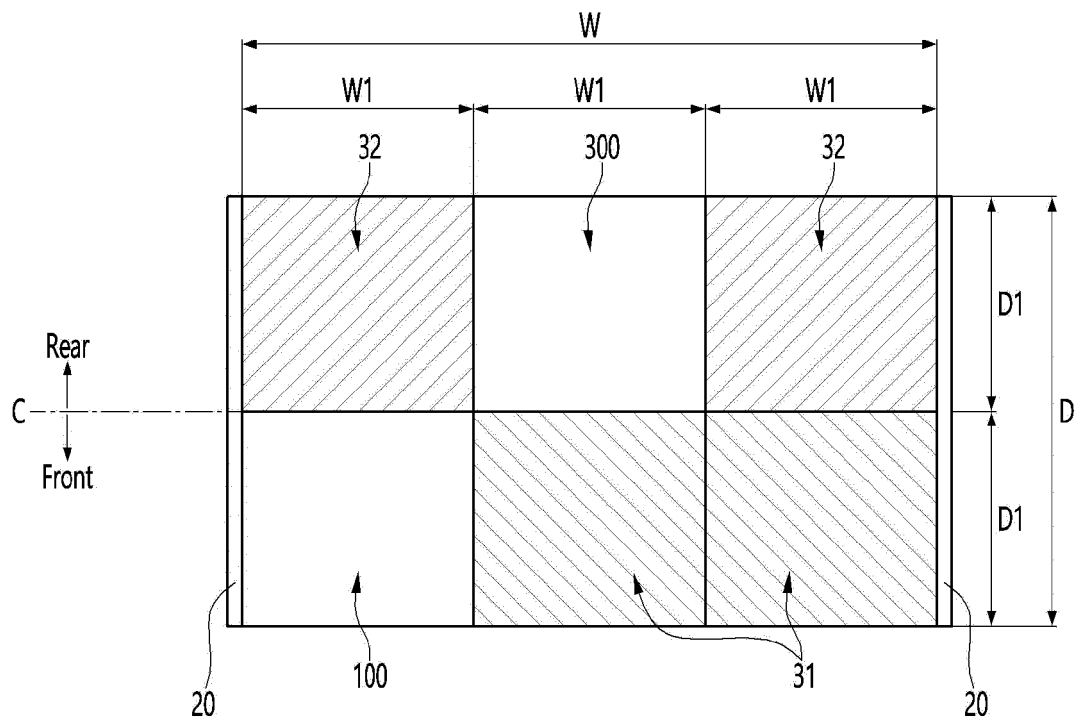


Fig. 19

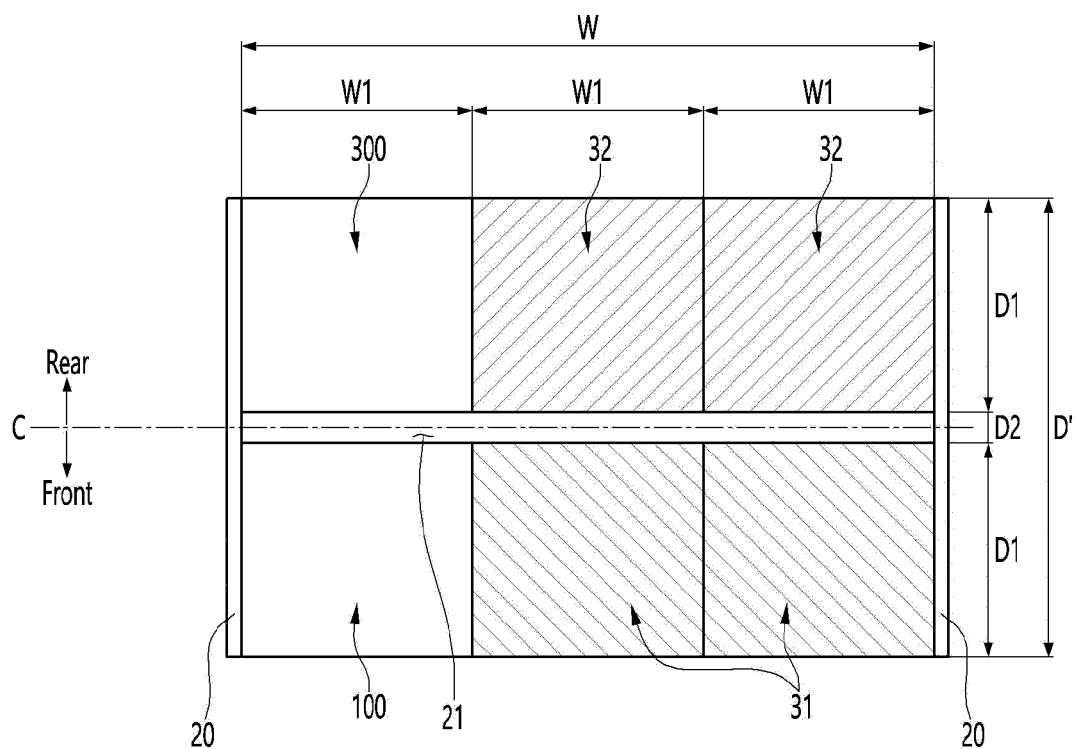


Fig. 20

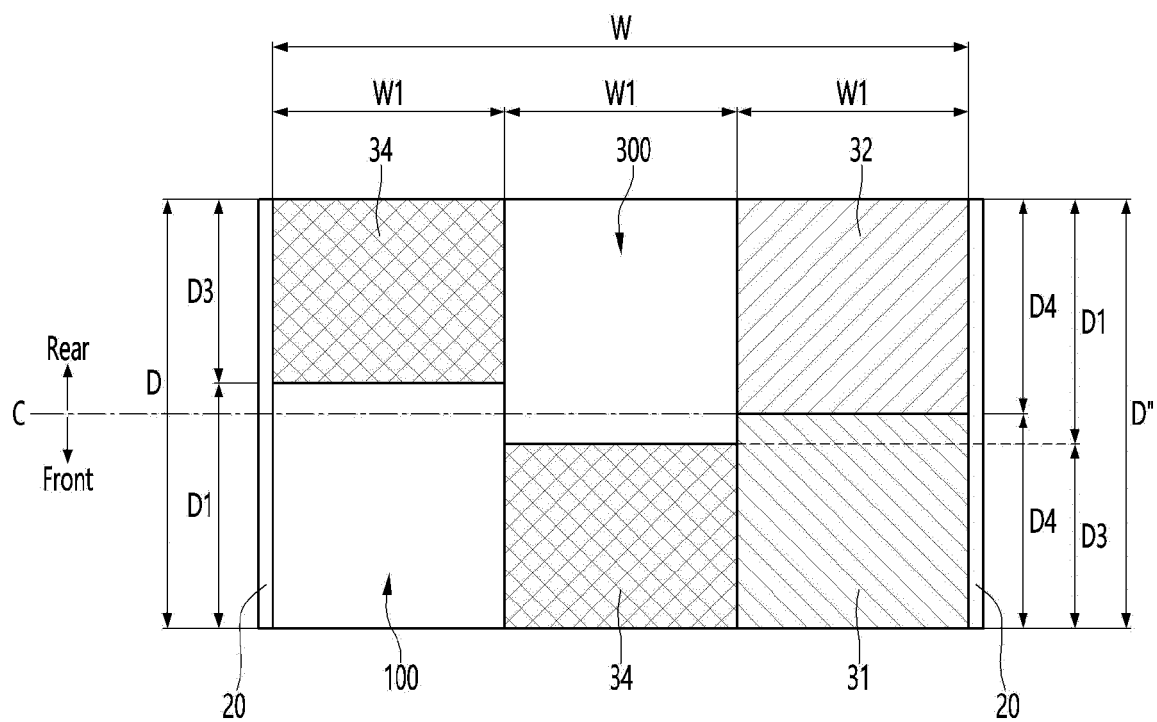


Fig. 21

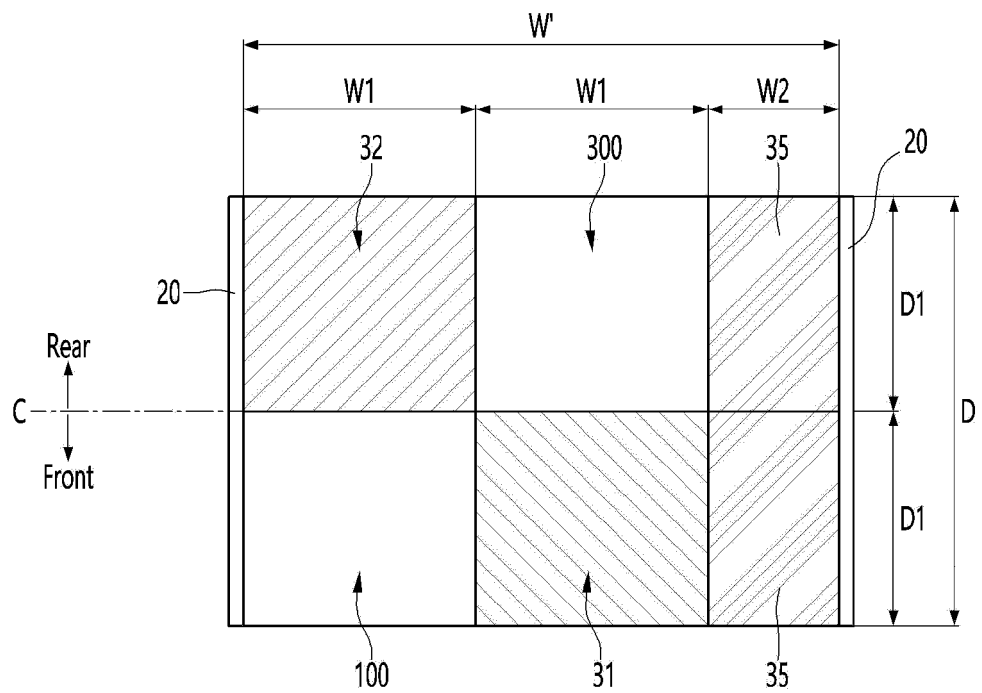


Fig. 22

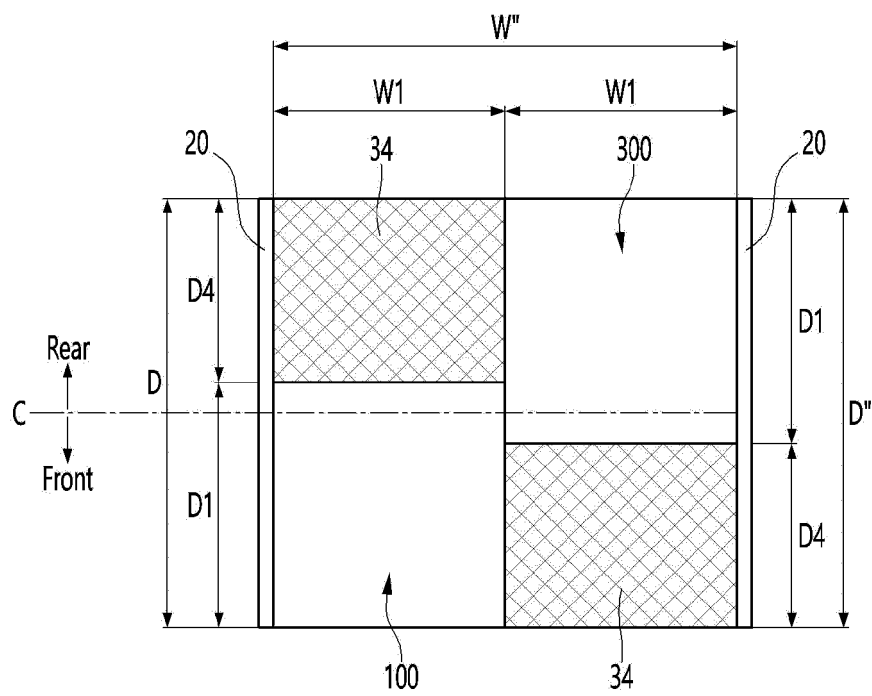


Fig. 23

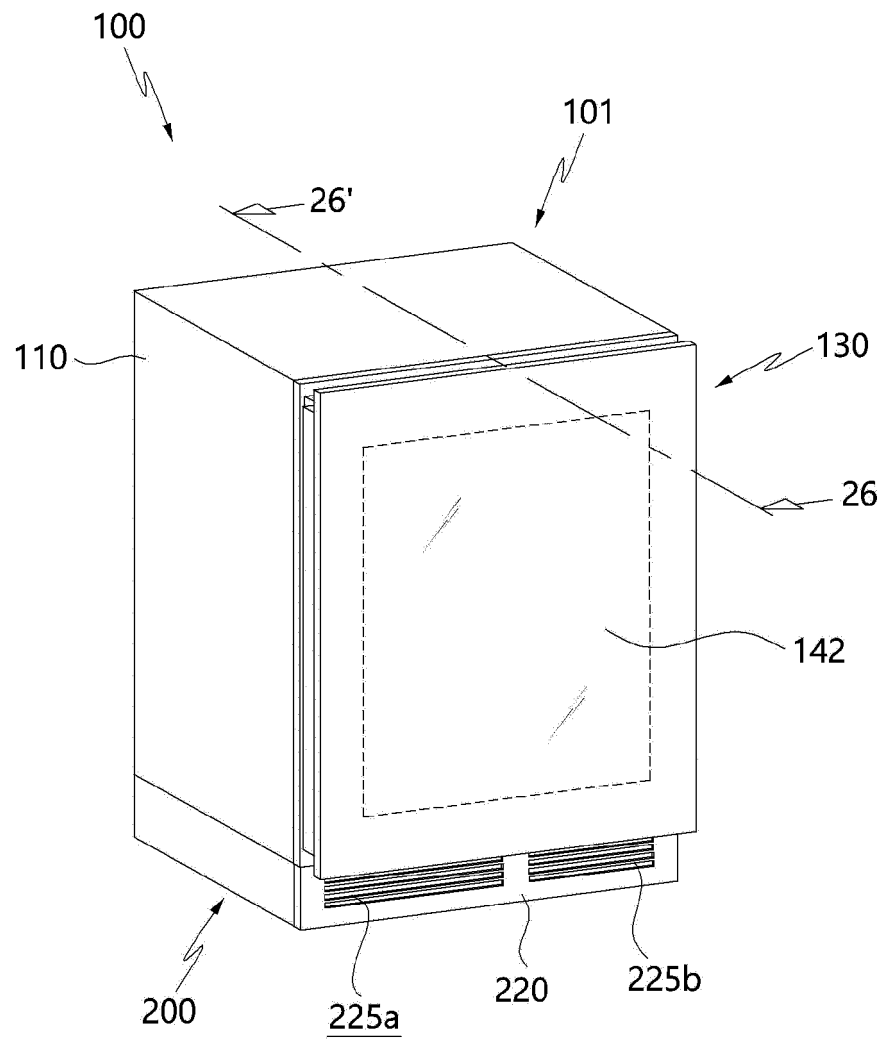


Fig. 24

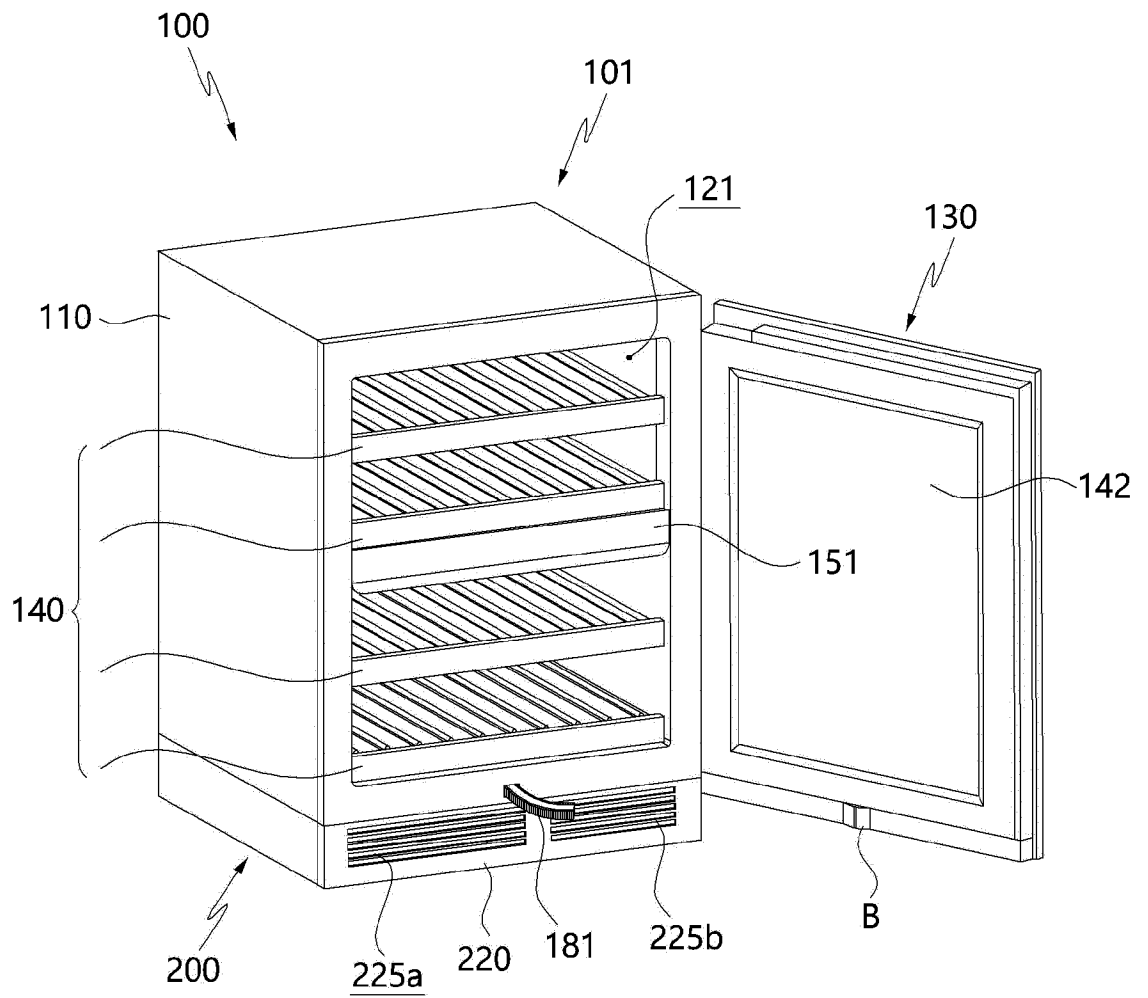


Fig. 25

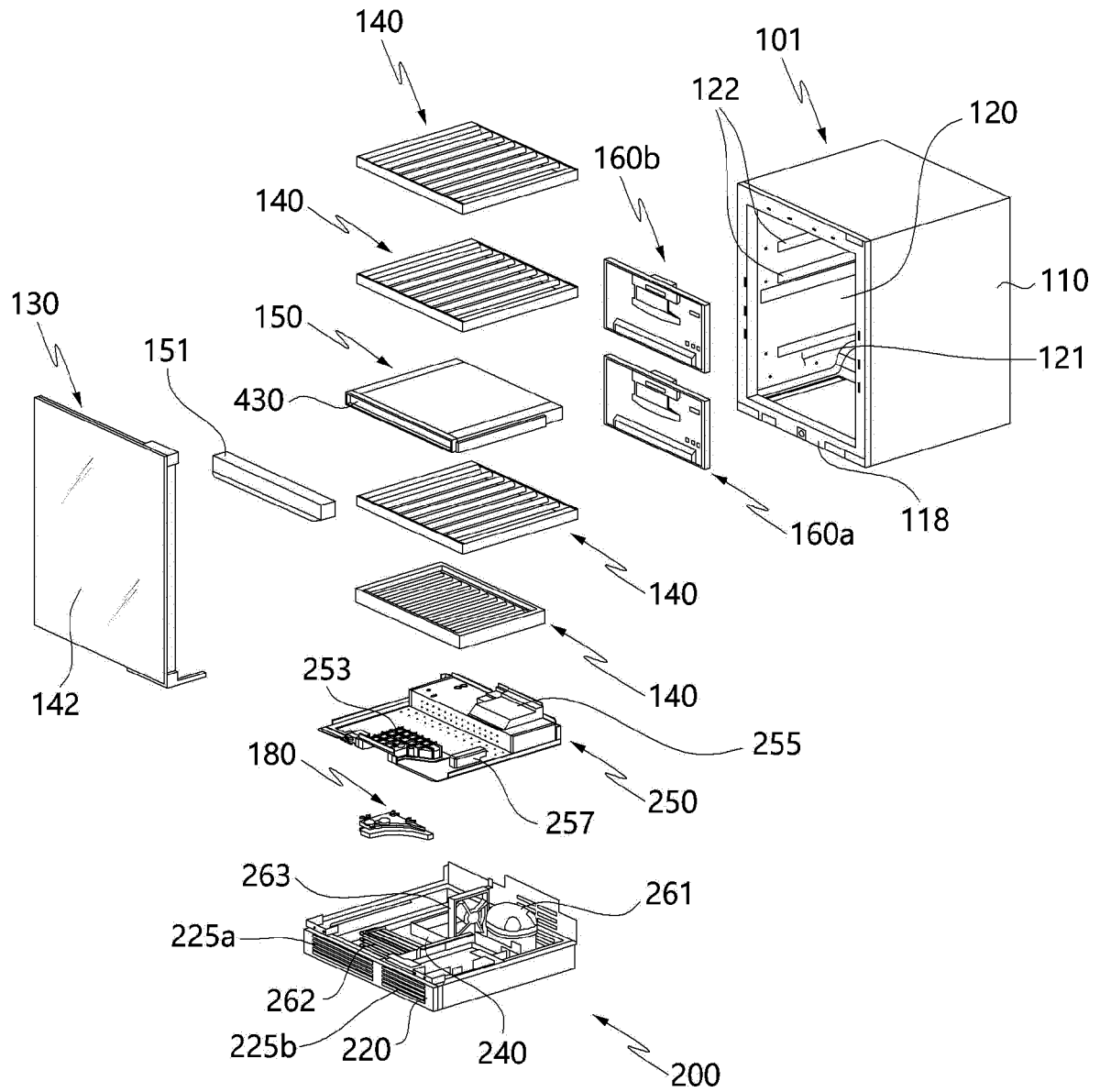


Fig. 26

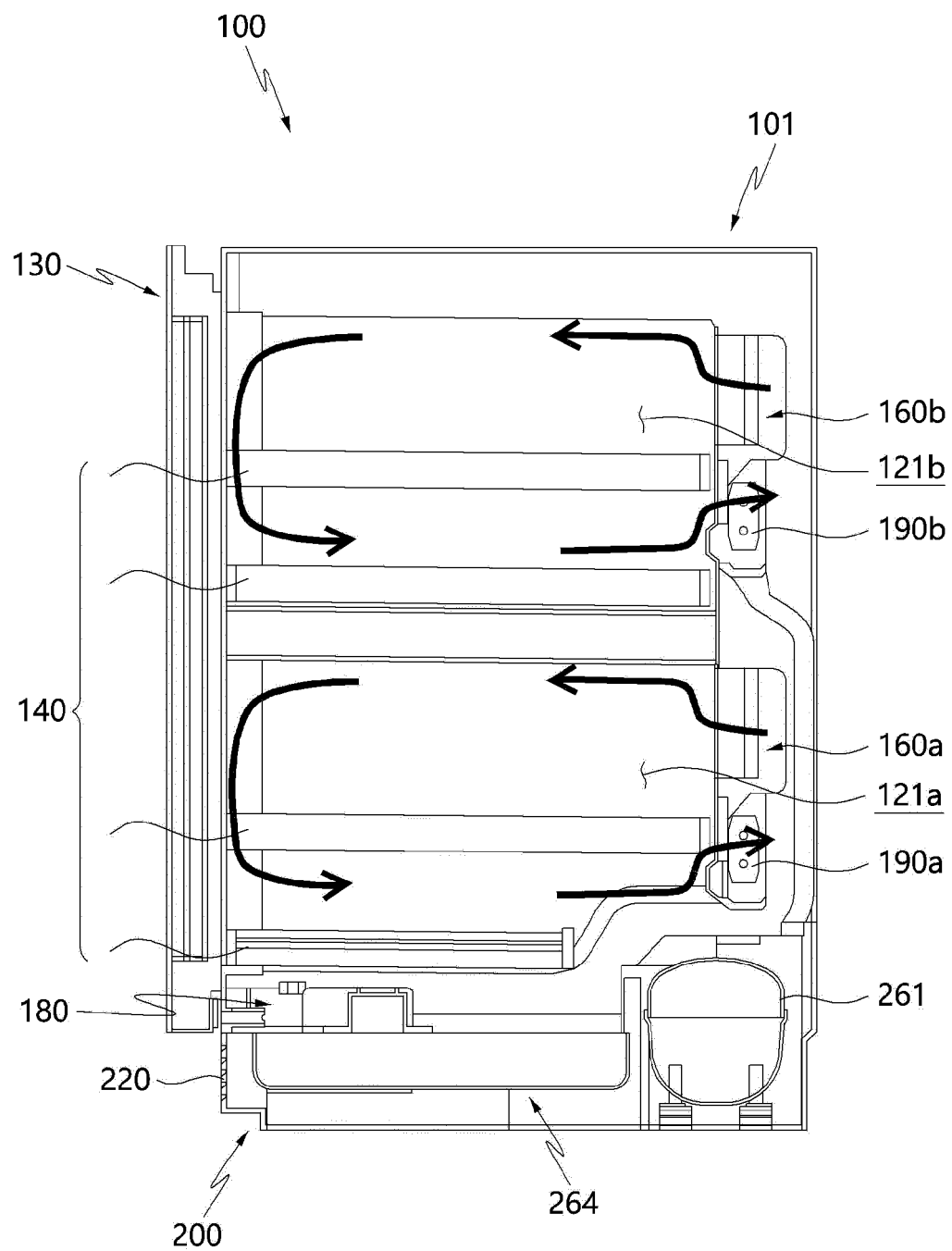


Fig. 27

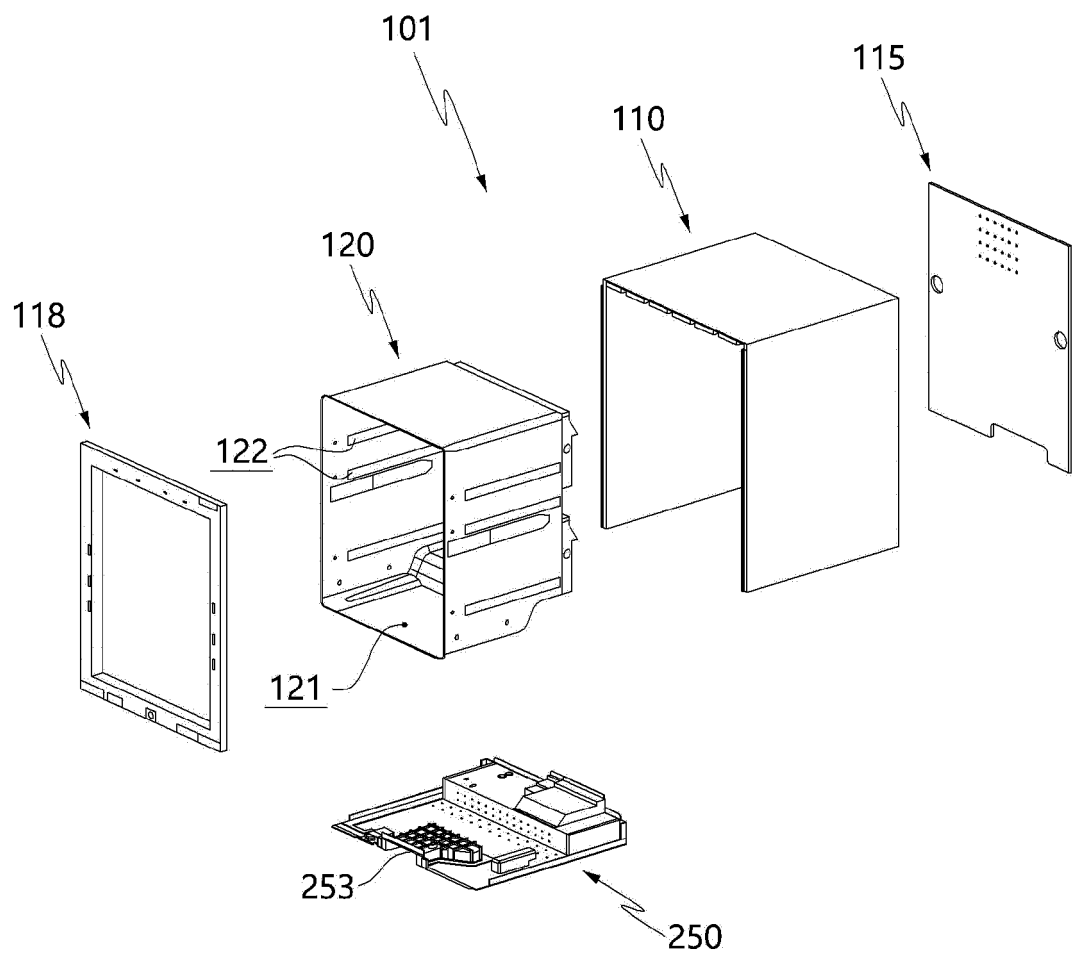


Fig. 28

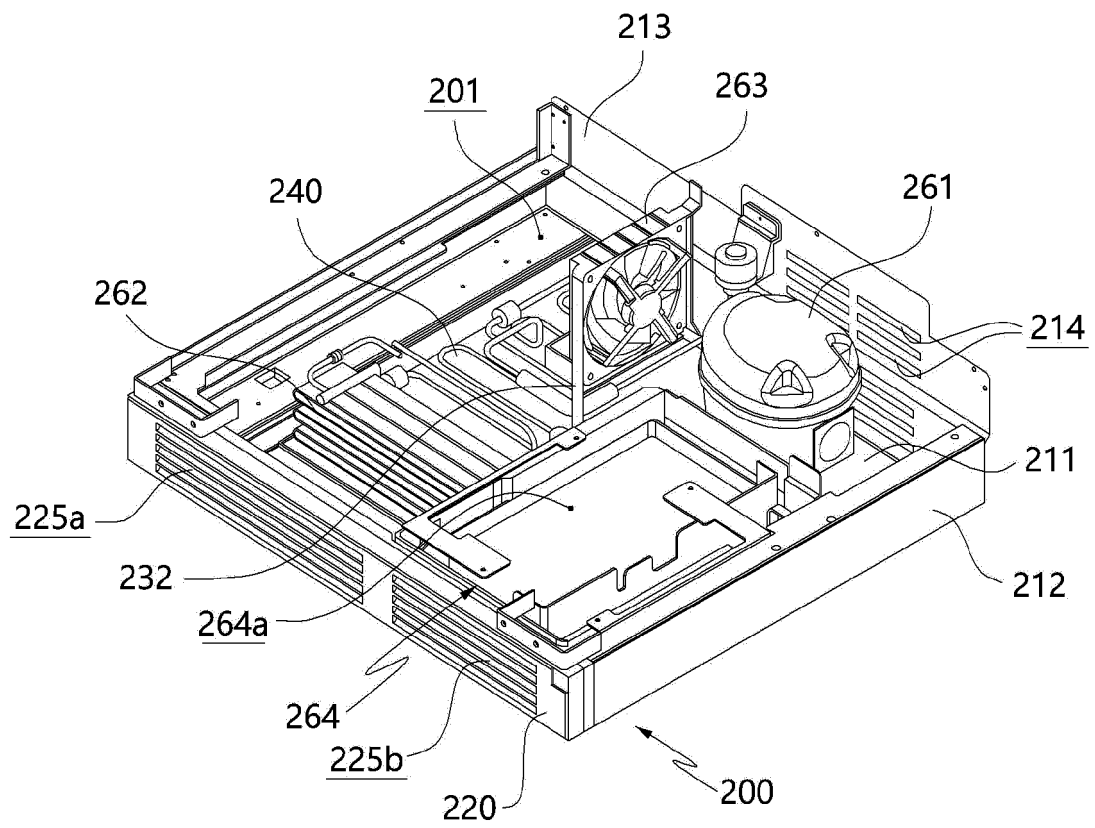


Fig. 29

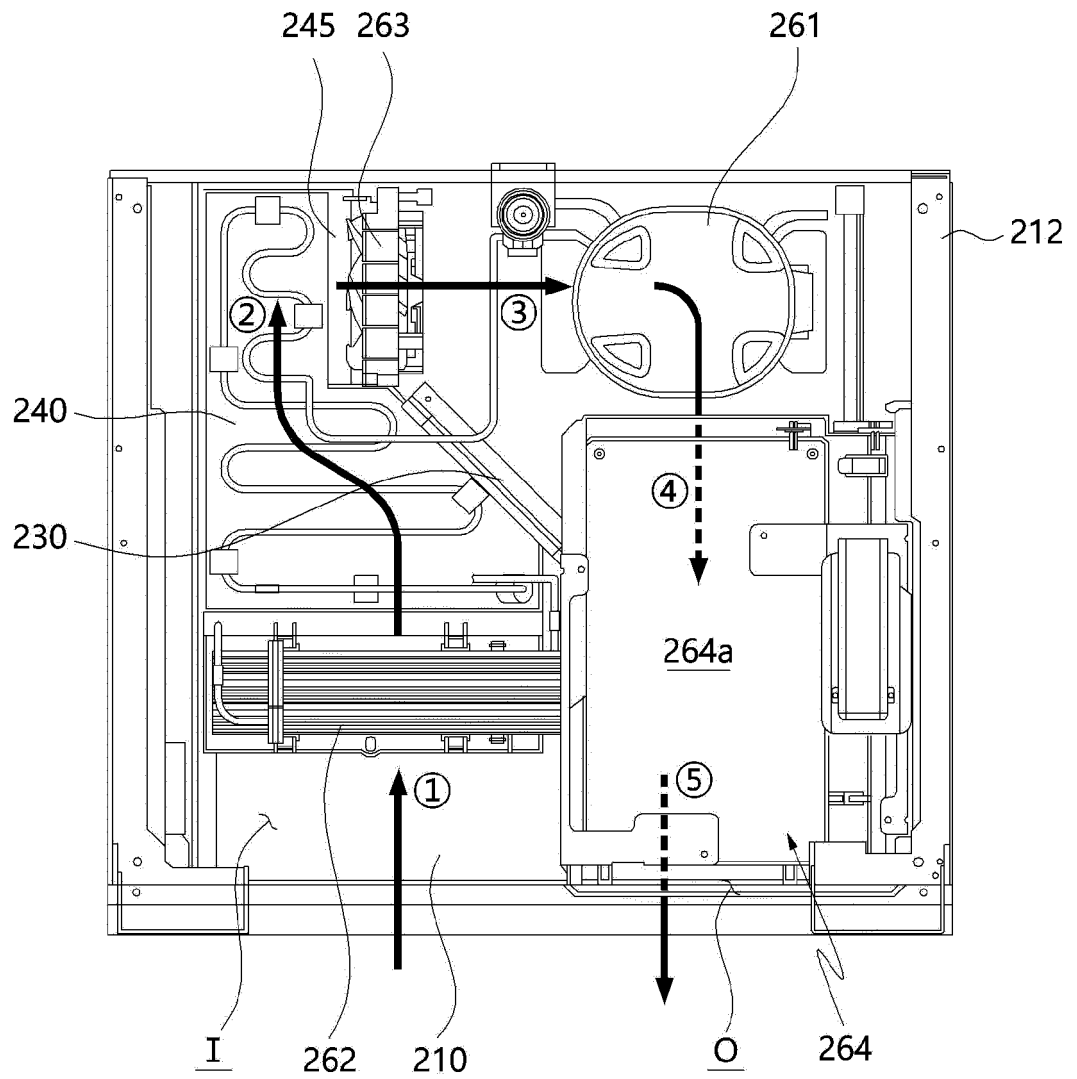


Fig. 30

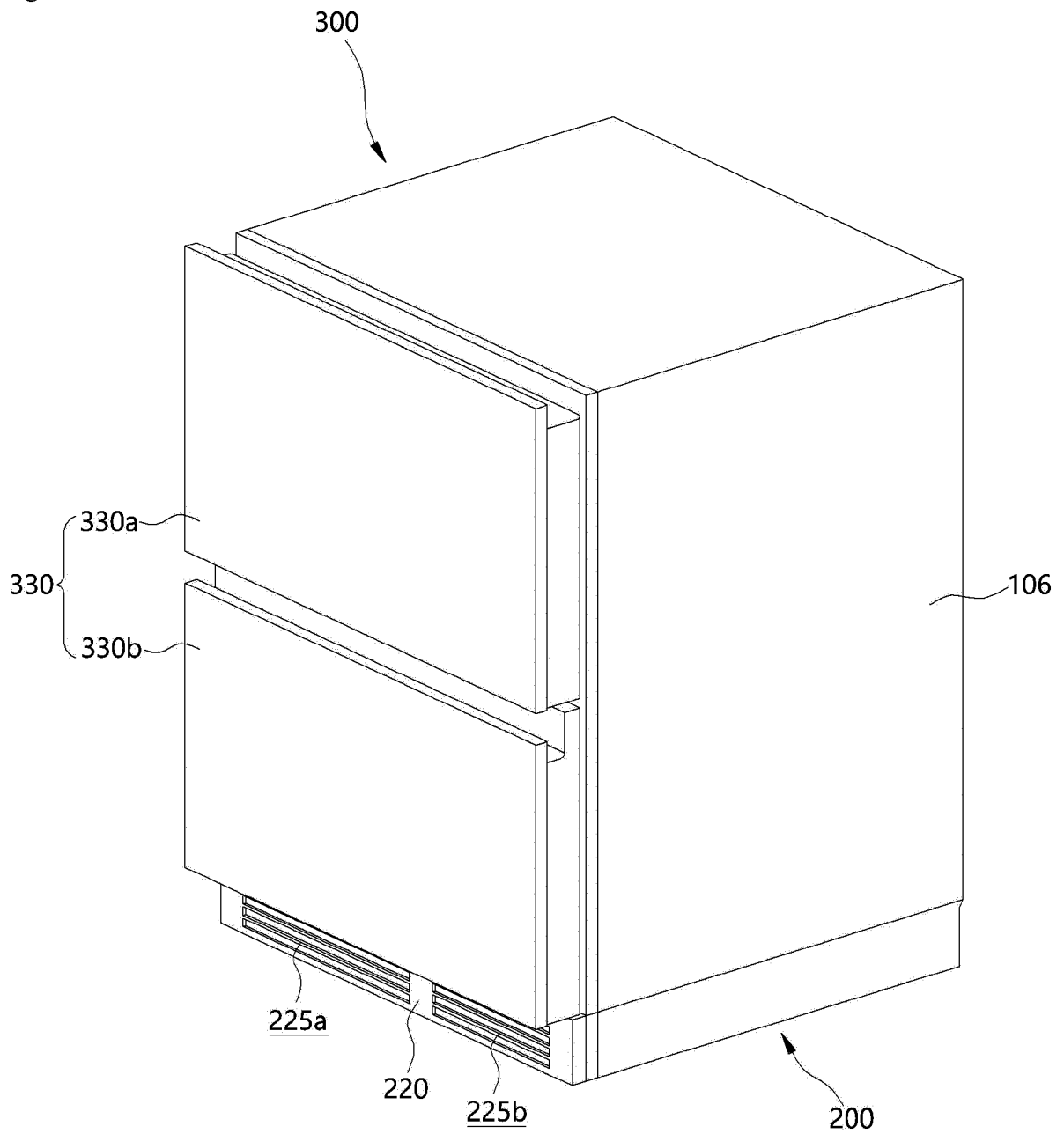


Fig. 31

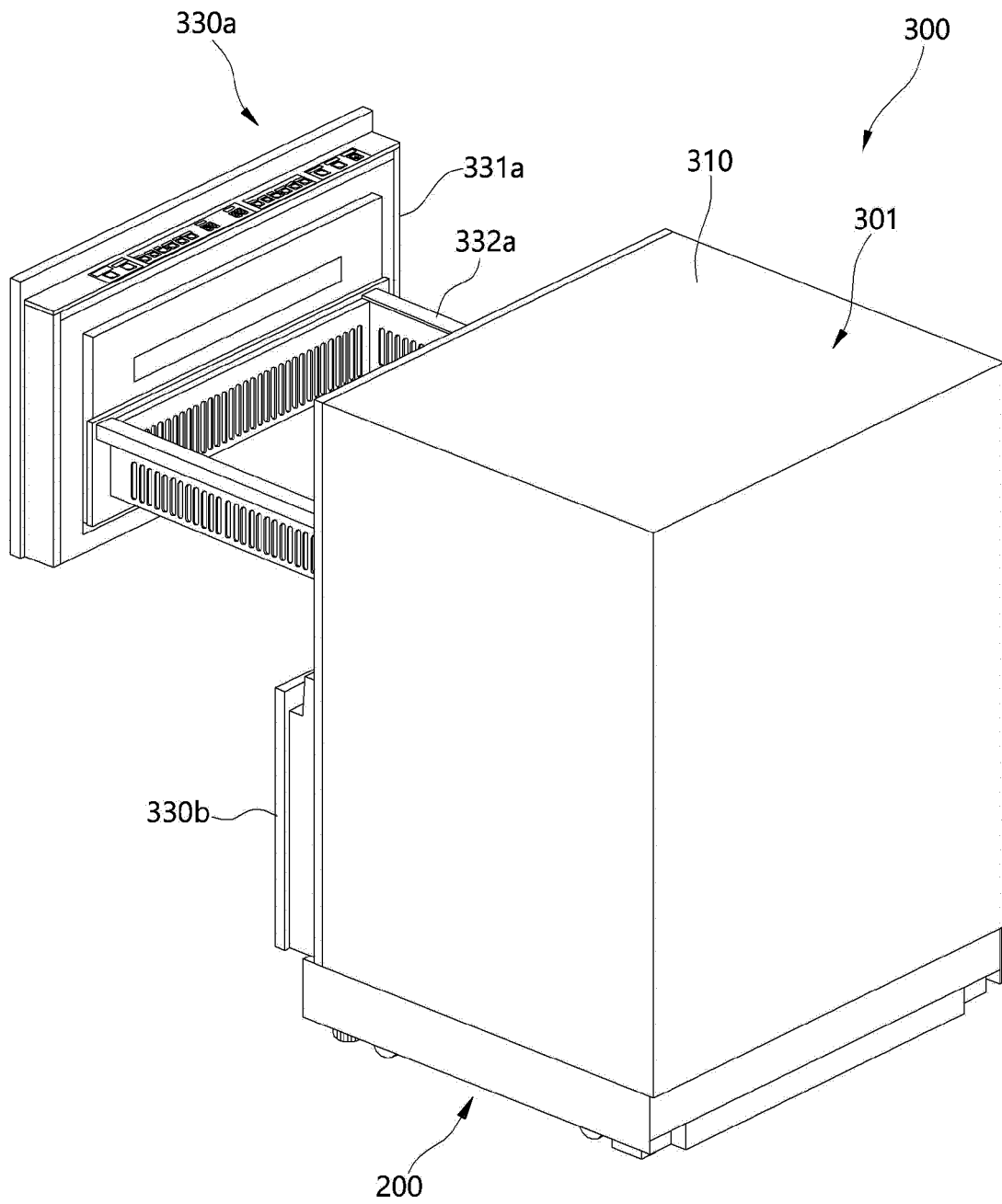
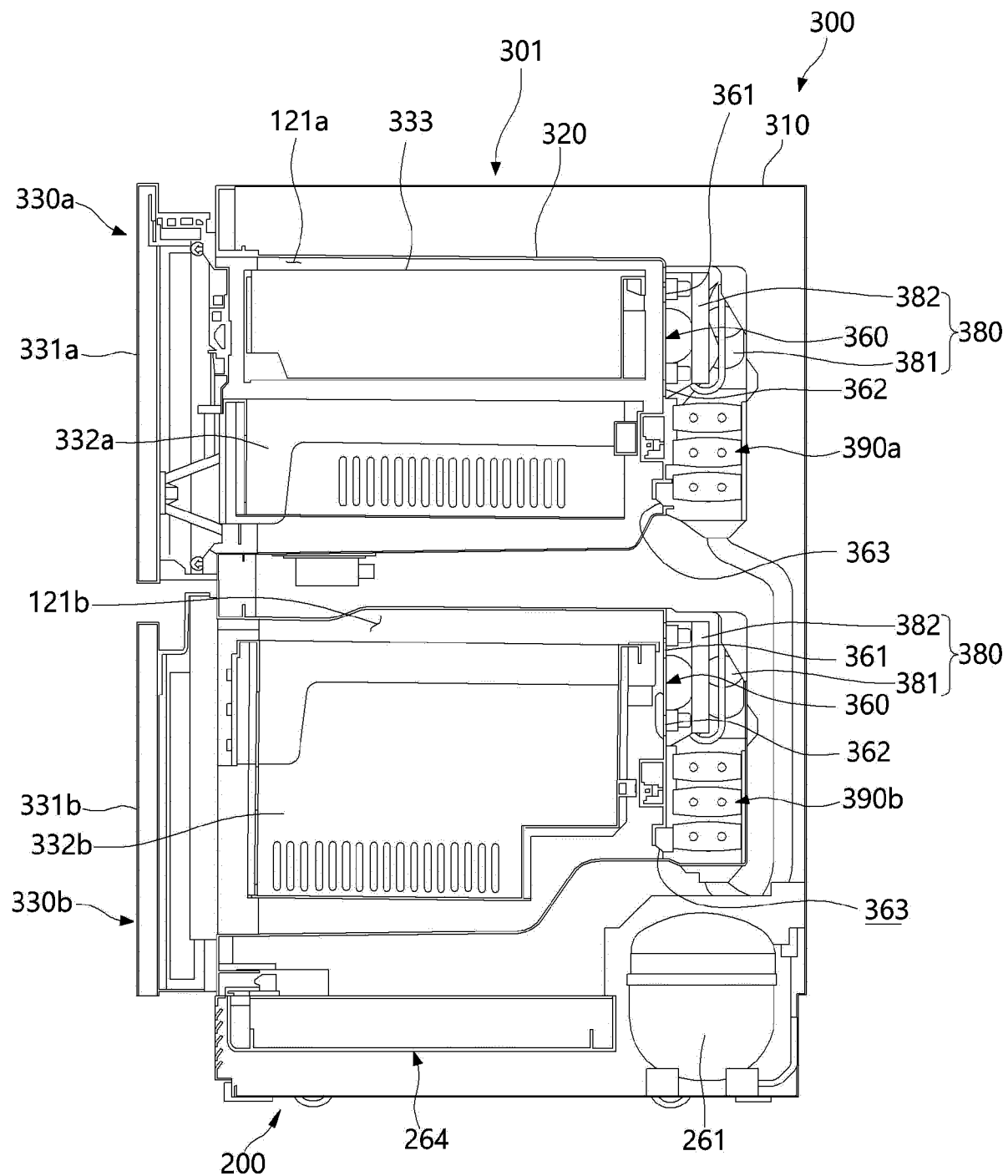


Fig. 32



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2020/016020

A. CLASSIFICATION OF SUBJECT MATTER**F25D 23/10**(2006.01)i; **A47B 77/08**(2006.01)i; **F25D 23/02**(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)

F25D 23/10(2006.01); A47B 17/00(2006.01); A47B 77/10(2006.01); A47B 77/14(2006.01); F25D 11/00(2006.01);
F25D 13/04(2006.01); F25D 19/00(2006.01); F25D 23/06(2006.01); F25D 29/00(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: 냉장고(refrigerator), 케이스(case), 수납부재(storage), 캐비닛(cabinet), 도어(door)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 10-2014-0025955 A (HANBAT NATIONAL UNIVERSITY INDUSTRY-ACADEMIC COOPERATION FOUNDATION) 05 March 2014 (2014-03-05) See paragraphs [0021]-[0034] and [0040] and figures 1-2.	1-15
Y	KR 20-1995-0001850 U (LEE, Choon-Hwan) 04 January 1995 (1995-01-04) See claims 1-2 and figures 1-3.	1-15
Y	JP 05-017483 U (TOSHIBA CORP.) 05 March 1993 (1993-03-05) See paragraphs [0013]-[0026] and figures 1-2.	14
A	KR 10-2019-0089601 A (LG ELECTRONICS INC.) 31 July 2019 (2019-07-31) See paragraphs [0033]-[0041] and figure 1.	1-15
A	US 2008-0211360 A1 (EUBANKS, Timothy) 04 September 2008 (2008-09-04) See paragraph [0015] and figures 1-3.	1-15

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

* Special categories of cited documents:	"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
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"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	

Date of the actual completion of the international search

22 February 2021

Date of mailing of the international search report

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Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR2020/016020

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KR	20-1995-0001850	U	04 January 1995	None	
JP	05-017483	U	05 March 1993	None	
KR	10-2019-0089601	A	31 July 2019	None	
US	2008-0211360	A1	04 September 2008	None	

REFERENCES CITED IN THE DESCRIPTION

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