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(54) LAUNDRY TREATING APPARATUS

WÄSCHEBEHANDLUNGSVORRICHTUNG

APPAREIL DE TRAITEMENT DU LINGE

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Description

Technical Field

[0001] The present invention relates to a laundry treating apparatus.

Background Art

[0002] The concept of a laundry treating apparatus includes a washing machine that removes contaminants from laundry using wash water and a detergent, a drying device that dries washed laundry, and a device (refresher) that removes odor or wrinkles from the laundry.

[0003] Among conventional laundry treating apparatuses configured to remove wrinkles or odor from the laundry, a device configured to supply steam into the space accommodating laundry and an iron configured to supply heat and steam to the laundry are generally used.

[0004] In the case that a refresh such as an iron is used, an ironing board to support the laundry is provided separately from the iron, and therefore a user needs to inconveniently prepare both an iron and an ironing board every time ironing is needed.

[0005] In addition, a separate space for storing the ironing board and the iron after ironing is needed. Accordingly, storing the ironing board and the iron has also caused inconvenience.

[0006] Moreover, conventional irons have been commonly configured to supply heat and steam together to the laundry or to supply only heat to the laundry, rather than supplying one of heat and steam to the laundry.

[0007] That is, conventional irons capable of supplying steam and heat to the laundry have had a structure that does not allow steam to be supplied to the laundry without heat, and therefore they have disadvantageously caused users to purchase a separate device configured to supply only steam to the laundry.

[0008] EP2196573 A1 discloses a household appliance comprising a cabinet provided with a worktop defining a surface adapted to lying thereon clothes to be treated. A steam generation unit is provided, operable to generate steam, and a steam delivery system is fluidly connected to the steam generation unit and adapted to deliver steam to said surface.

[0009] EP1925703 A1 discloses equipment for carrying out multiple operations on articles of laundry comprising an integrated structure comprising at least one laundry washing machine, one laundry drying machine together with a connecting top located above said machines, said top comprising at least one area for the ironing of items of laundry. The equipment also includes an additional compartment for drying delicate articles of laundry located alongside said laundry drying machine, said compartment being connected to the duct conveying the flow of cooling air from the condensation exchanger of the laundry drying machine.

Disclosure of Invention

Technical Problem

[0010] An object of the present invention devised to solve the problem lies in a laundry treating apparatus having a laundry treating unit (an iron) configured to supply at least one of heat and moisture to laundry and a support part configured to support the laundry.

[0011] Another object of the present invention devised to solve the problem lies in a laundry treating apparatus having a laundry treating unit capable of supplying one or both of heat and moisture to the laundry.

Solution to Problem

[0012] The object of the present invention can be achieved by providing a laundry treating apparatus a cabinet forming an external appearance of the laundry treating apparatus; a support part configured to be withdrawable from the cabinet, the support part comprising a first support plate and a second support plate, the first and second support plates forming a space to support laundry when the first and second support plates are withdrawn from the cabinet and unfolded; a laundry treating unit configured to be withdrawable from the cabinet, the laundry treating unit supplying at least one of heat and moisture to the laundry supported by the support part; a hinge unit to rotatably couple the first support plate with the second support plate; and a withdrawing unit provided in the cabinet to guide the hinge unit such that the hinge unit is withdrawn from or introduced into the cabinet vertically.

[0013] The support part may further include a laundry fixing unit provided to at least one of the first support plate and the second support plate to fix the laundry to surfaces of the first support plate and the second support plate.

[0014] Each of the first support plate and the second support plate may include a support plate base providing a space to accommodate the laundry fixing unit, a cover provided to an upper portion of the support plate base to support the laundry, the cover allowing external air to be supplied into the support plate base therethrough, and an exhaust hole allowing an interior of the support plate base to communicate with an exterior of the support plate base, wherein the laundry fixing unit may be a fan to discharge air from the interior of the support plate base to the exterior of the support plate base through the exhaust hole.

[0015] The withdrawing unit may include a base supporter to support the hinge unit, and a first guider and a second guider provided in the cabinet in a height direction of the cabinet, the first and second guiders guiding movement of the base supporter in the height direction of the cabinet.

[0016] The hinge unit may include a hinge housing fixed to the base supporter, a first guider hole and a second guider hole provided to opposing ends of the hinge

housing facing each other, a first hinge configured to be withdrawable from the first guider hole, the first hinge being fixed to the first support plate, and a second hinge configured to be withdrawable from the second guider hole, the second hinge being fixed to the second support plate.

[0017] The hinge housing may be rotatably coupled to the base supporter.

[0018] The first hinge may include a first fixed flange fixed to the first support plate and a first insertion flange extending from the first fixed flange and forming a curved surface, and the second hinge may include a second fixed flange fixed to the second support plate and a second insertion flange extending from the second fixed flange and forming a curved surface, wherein each of the first guider hole and the second guider hole may include a curved surface to accommodate a corresponding one of the insertion flanges such that the curve surface penetrates opposing ends of the hinge housing facing each other.

[0019] The first guider hole and the second guider hole may be stacked in the height direction of the cabinet, wherein a width of the second fixed flange may be greater than a width of the first fixed flange, and the second insertion flange may be provided to opposing ends of the second fixed flange facing each other such that the second insertion flanges are spaced apart from each other to accommodate the first insertion flange therebetween.

[0020] The laundry treating unit may include a moisture supply unit including a body having a handle and a discharge hole provided to the body to discharge moisture to the laundry, a heat supply unit detachably provided to the body to supply heat to the laundry.

[0021] The cabinet may include a first accommodation portion to accommodate the support part, a second accommodation portion to accommodate the laundry treating unit, and a first partition wall arranged in the height direction of the cabinet to partition the first accommodation portion and the second accommodation portion.

[0022] The second accommodation portion may include an inclined surface configured to support the laundry treating unit and be inclined upward in a direction of withdrawal of the laundry treating unit.

[0023] The laundry treating apparatus may further include a moisture generation unit to generate moisture and supply the same to the moisture supply unit, wherein the cabinet may further include a third accommodation portion positioned under the second accommodation portion to accommodate the moisture generation unit.

[0024] The moisture generation unit may include a steam generation unit to supply steam generated by heating water to the moisture supply unit, a water supply unit configured to be withdrawable from the third accommodation portion, the water supply unit supplying water to the steam generation unit by being connected to the steam generation unit when inserted into the third accommodation portion.

[0025] The cabinet may further include a third accommodation portion door to open and close the third accommodation portion, wherein the third accommodation portion door may include a door body to open and close the third accommodation portion, the door body being rotatably coupled to the cabinet, a supply unit support plate extending from the door body to support a lower surface of the water supply unit.

[0026] The water supply unit may include a supply tank supported on the supply unit support plate and a check valve provided on a bottom surface of the supply tank, and the steam generation unit may include a storage tank to store water, a connection conduit provided to the storage tank to open the check valve and allow water to be introduced into the storage tank when the supply tank is inserted into the third accommodation portion, a heater provided in the storage tank, and a supply tube to supply steam from the storage tank to the laundry treating unit.

[0027] The heat supply unit may include a heating plate detachably provided to the moisture supply unit, and a heating plate through hole penetrating the heating plate and connected to the discharge hole.

[0028] The heating plate may further include a heating plate body formed of a conductor and provided with the heating plate through hole, a heating plate heater to heat the heating plate body, and an insulation part fixed to the heating plate body and detachably coupled to the body, the insulation part blocking transfer of heat of the heating plate body to the body.

[0029] The laundry treating apparatus may further include a sealing groove provided to one of an outer circumferential surface of the discharge hole and an outer circumferential surface of the heating plate through hole, and a sealing conduit provided to the other one of the outer circumferential surface of the discharge hole and the outer circumferential surface of the heating plate through hole to be inserted into the sealing groove.

[0030] The laundry treating apparatus may further include a mounting part to detachably couple the heat supply unit to the moisture supply unit, wherein the mounting part may include a mounting groove provided to one of the body and the heating plate, and a mounting protrusion provided to the other one of the body and the heating plate to be mounted to and detached from the mounting groove.

[0031] The laundry treating unit may further include a power supply to supply power to the heating plate heater, wherein the power supply may include a first terminal provided to the body, the first terminal being connected to a power source, and a second terminal provided to the insulation part to contact the first terminal, the second terminal being configured to supply power from the first terminal to the heating plate heater.

[0032] The laundry treating apparatus may further include a moisture generation unit to generate moisture and supply the same to the discharge hole, the moisture generation unit being provided in the body, wherein the moisture generation unit includes a storage tank provided in the body to store water, a heater provided in the storage

tank to heat the water, and a supply tube connecting the storage tank to the discharge hole.

Advantageous Effects of Invention

[0033] A laundry treating apparatus according to an embodiment of the present invention has a laundry treating unit capable of supplying at least one of heat and moisture to the laundry and a support part configured to support the laundry.

[0034] In addition, a laundry treating apparatus according to an embodiment of the present invention has a laundry treating unit capable of supplying one or both of heat and moisture to the laundry.

Brief Description of Drawings

[0035] The accompanying drawings, which are included to provide a further understanding of the invention, illustrate embodiments of the invention and together with the description serve to explain the principle of the invention.

[0036] In the drawings:

FIG. 1 is a view showing the external appearance of a laundry treating apparatus according to an exemplary embodiment of the present invention;

FIG. 2 is a view illustrating the structure of a laundry treating apparatus according to one embodiment of the present invention;

FIG. 3 is a view illustrating a shelf according to one embodiment of the present invention;

FIG. 4 is a view illustrating a support plate, a hinge unit and a withdrawing unit according to one embodiment of the present invention;

FIG. 5 is an exploded perspective view illustrating a hinge unit according to one embodiment of the present invention;

FIG. 6 is a view illustrating movement of the hinge unit;

FIG. 7 is a view illustrating a laundry treating unit according to one embodiment of the present invention;

FIG. 8 is a view illustrating a laundry treating unit according to another embodiment of the present invention; and

FIGs. 9 and 10 are views illustrating a laundry treating apparatuses according to other examples not forming part of the present invention.

Best Mode for Carrying out the Invention

[0037] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. Configuration of an apparatus or a control method described below is simply provided to illustrate embodiments of the present invention and is not intended to limit the scope of the present invention.

[0038] As shown in FIG. 1, a laundry treating apparatus 100 includes a cabinet 1 forming an external appearance of the laundry treating apparatus 100 and having an accommodation space therein, a support part 2 arranged to be withdrawable from the cabinet 1 to form a space for supporting laundry when withdrawn from the cabinet 1, and a laundry treating unit 5 arranged to be withdrawable from the cabinet 1 to supply at least one of moisture (mist, steam, and the like) and heat to the laundry.

[0039] The cabinet 1 is provided with a power switch 11 configured to control supply of power to a steam generation unit 6, a laundry fixing unit 27 and a heat supply unit 53, which will be described later. Unlike FIG. 1, a plurality of power switch 11 may be provided on the front surface of the cabinet 1.

[0040] In the case that a plurality of power switch 11 is provided, one power switch may control operation of the steam generation unit 6, another power switch may control operation of the laundry fixing unit 27, which will be described later, and a further power switch may control the heat supply unit 53 provided to the laundry treating unit 5.

[0041] As shown in FIG. 2, the cabinet 1 may be further provided with a cabinet handle 12 and a roller 13 which allow the laundry treating apparatus 100 to move.

[0042] The cabinet handle 12 may be withdrawable from the front surface of the cabinet 1, and the roller 13 may be rotatably provided on the bottom surface of the cabinet 1. Accordingly, the cabinet handle 12 and the roller 13 may allow the user to easily move the laundry treating apparatus 100.

[0043] A first accommodation portion 14 to accommodate the support part 2, a second accommodation portion 15 to accommodate the laundry treating unit 5, and a third accommodation portion 16 to accommodate moisture generation units 6 and 7 configured to generate moisture and supply the same to the laundry treating unit 5 may be provided in the cabinet 1.

[0044] The second accommodation portion 15 and the third accommodation portion 16 are caused to form a space distinguishable from the first accommodation portion 14 by a first partition wall 17 arranged in the height direction of the cabinet 1. In addition, the second accommodation portion 15 and the third accommodation portion 16 are caused to form spaces distinguished from each other, by a second partition wall 18 arranged in the longitudinal direction of the cabinet 1 and fixed to the first partition wall 17.

[0045] The first accommodation portion 14 includes a open surface 141 positioned at the upper surface of the cabinet 1 and a first accommodation portion door 143 (see FIG. 1) to open and close the open surface 141. Accordingly, the user may open the first accommodation portion door 143 to withdraw or insert the support part 2 from or into the first accommodation portion 14.

[0046] The second accommodation portion 15 may include a second accommodation portion door 151 rotat-

ably provided on the front surface of the cabinet 1 to open and close the second accommodation portion 15. In addition, an inclined surface 153 supporting the lower surface of the laundry treating unit 5 is provided in the second accommodation portion 15.

[0047] The inclined surface 153 may be inclined upward in the direction in which the laundry treating unit 5 is withdrawn from the second accommodation portion 15. This allows the user to easily withdraw or insert the laundry treating unit 5 from or into the second accommodation portion 15.

[0048] The third accommodation portion 16 may be positioned under the second accommodation portion 15. The third accommodation portion 16 may include a third accommodation portion door 161 rotatably fixed to the front surface of the cabinet 1.

[0049] The third accommodation portion door 161 includes a door body 163 arranged in parallel with the bottom surface of the cabinet 1 and rotated by a door rotating shaft 169, and a tank support plate 165 extending from the door body 163 into the third accommodation portion 16 to support a water supply unit 7 provided to the moisture generation unit. The door body 163 may be provided with a door handle 167.

[0050] The support part 2 includes a first support plate 21 and a second support plate 23, which provide a space where the laundry is supported by being unfolded when they are withdrawn from the first accommodation portion 14.

[0051] The first support plate 21 and the second support plate 23 are rotatably coupled to each other by a hinge unit 3, which will be described later. The hinge unit 3 is withdrawn from or inserted into the first accommodation portion 14 by a withdrawing unit 4.

[0052] Accordingly, the first support plate 21 and the second support plate 23 are withdrawn from the first accommodation portion 14 and then rotated in different directions by the hinge unit 3 and the withdrawing unit 4 to form a space where the laundry is supported. Structures of the hinge unit 3 and the withdrawing unit 4 will be described later.

[0053] The support part 2 may further include a laundry fixing unit 27 provided to at least one of the first support plate 21 and the second support plate 23 to fix laundry positioned on the support plates 21 and 23 to the surfaces of the support plates 21 and 23.

[0054] FIG. 2 illustrates a case in which the laundry fixing unit 27 is provided to each of the first support plate 21 and the second support plate 23.

[0055] The first support plate 21 includes a first base 211 providing a space to arrange the laundry fixing unit 27 in, a first exhaust hole 213 penetrating the first base 211, and a first cover 215 positioned at the upper portion of the first base 211 to support the laundry.

[0056] The first cover 215 provides a space where the laundry is supported and allows air to be introduced into the first base 211 therethrough.

[0057] That is, the first cover 215 may be formed of a material such as fabric that allows flow of air therethrough and fixed to the upper portion of the first base 211. The first cover 215 may include a plate fixed to the upper portion of the first base 211 and a hole penetrating the plate to allow the interior of the first base 211 to communicate with the exterior of the first base 211.

[0058] The second support plate 23 may have the same structure as that of the first support plate 21. Accordingly, the second support plate 23 may also include a second base 231 providing a space in which to arrange the laundry fixing unit 27, a second cover 235 positioned at the upper portion of the second base 231 to support the laundry, and a second exhaust hole 233 penetrating the second base 231.

[0059] The laundry fixing unit 27 may include fans provided to the first exhaust hole 213 and the second exhaust hole 233 respectively to discharge air from the bases 211 and 231.

[0060] When the air is discharged from the bases 211 and 231 through the exhaust holes 213 and 233, the air outside the bases 211 and 231 is introduced into the bases 211 and 231 through the covers 215 and 235. Thereby, the laundry placed on the covers 215 and 235 may be fixed to the surfaces of the support plates.

[0061] The support part 2 may further include a shelf 25 on which the laundry treating unit 5 is placed. The shelf 25 may be provided to at least one of the first support plate 21 and the second support plate 23. FIGs. 2 and 3 illustrate an example of a structure of the shelf 25 that is withdrawable from the first support plate 21.

[0062] The hinge unit 3 connects the first support plate 21 to the second support plate 23 such that the first support plate 21 and the second support plate 23 are unfolded and folded. The withdrawing unit 4 allows the hinge unit 3 to reciprocate in the first accommodation portion 14 in the direction of height of the cabinet 1 such that the support part 2 is withdrawn from and inserted into the first accommodation portion 14.

[0063] As shown in FIG. 4, the withdrawing unit 4 includes a first guider 41 and a second guider 43, which are arranged in the first accommodation portion 14 in the direction of height of the cabinet 1, and a base supporter 45 movably fixed to the first guider 41 and second guider 43. The hinge unit 3 is fixed to the base supporter 45.

[0064] Each of the first guider 41 and second guider 43 may include a vertical rail 411, 431 positioned in the first accommodation portion 14 in the direction of height of the cabinet 1 and a groove 413, 433 provided to the vertical rail 411, 431 to accommodate the base supporter 45.

[0065] The hinge unit 3 may include a base 33 fixed to the base supporter 45, a hinge housing 31 fixed to the base 33, and a first hinge 35 and a second hinge 37 arranged to be withdrawable from the hinge housing 31 and respectively coupled to the first support plate 21 and the second support plate 23.

[0066] The base 33 may be rotatably coupled to the base supporter 45 through a base rotation shaft 47 (see

FIG. 5). This is intended to allow the first support plate 21 and the second support plate 23 withdrawn from the first accommodation portion 14 and unfolded to rotate in a direction desired by the user and thus facilitate laundry treatment.

[0067] As shown in FIG. 5, the hinge housing 31 is provided therein with a first guider hole 311 penetrating the opposite ends of the hinge housing 31 facing each other to accommodate the first hinge 35 and a second guider hole 313 (which may penetrate the opposite ends of the hinge housing 31 facing each other) positioned under the first guider hole 311 to accommodate the second hinge 37.

[0068] The first hinge 35 may include a first fixed flange 351 fixed to the first support plate 21 and a first insertion flange 353 extending from the first fixed flange 351 and inserted into the first guider hole 311 to guide rotation of the first support plate 21.

[0069] The first fixed flange 351 and the first insertion flange 353 may be arranged in the form of plates coupled to each other. The first insertion flange 353 may be fixed to the first fixed flange 351 such that a predetermined angle (e.g., right angle) is formed between the first insertion flange 353 and the first fixed flange 351. The first insertion flange 353 may form a curved surface having a certain curvature.

[0070] In this case, the first guider hole 311 preferably has a curvature allowing the first insertion flange 353 to be movable in the hinge housing 31.

[0071] The second hinge 37 includes a second fixed flange 371 and a second insertion flange 373, which are formed in the shape of a plate and coupled to each other.

[0072] Herein, the second fixed flange 371 is coupled to the second support plate 23, and the second insertion flange 373 is inserted into the second guider hole 313 to guide rotation of the second support plate 23.

[0073] The second insertion flange 373 may also have a curved surface, and the second guider hole 313 may have a curvature allowing the second insertion flange 373 to be movable in the hinge housing 31.

[0074] In the case that the width of the second fixed flange 371 is greater than that of the first fixed flange 351, the second insertion flange 373 is preferably provided with two plates spaced a predetermined distance from each other to prevent the first hinge 35 from interfering with the second hinge 37 when the first hinge 35 is inserted into the hinge housing 31.

[0075] The hinge unit 3 configured as above allows the first hinge 35 and the second hinge 37 to move toward the interior of the hinge housing 31 (see the arrows shown in FIG. 6(b)) when the first support plate 21 and the second support plate 23 are unfolded, as shown in FIG. 6. Therefore, when the first support plate 21 and the second support plate 23 are unfolded, surfaces of the first support plate 21 and the second support plate 23 may contact each other with no gap therebetween (FIG. 6(a)).

[0076] The laundry treating unit 5 (an iron capable of selectively supplying moisture and heat) according to the illustrated embodiment serves to supply one of moisture and heat to the laundry supported on the support part 2. FIG. 7 illustrates an iron capable of selectively supplying moisture and heat to the laundry to remove wrinkles and odor from the laundry, as an example the laundry treating unit 5.

[0077] The laundry treating unit 5 may include a moisture supply unit 51 to supply moisture to the laundry, a heat supply unit 53 detachably provided to the moisture supply unit 51 to supply heat to the laundry, a moisture generation units 6 and 7 to supply moisture to the moisture supply unit 51.

[0078] The moisture generation units 6 and 7 may be integrally provided to the laundry treating unit 5, or may be provided separately from the laundry treating unit 5. The case of providing the moisture generation units 6 and 7 separately from the laundry treating unit 5 will be described first and then the case of integrally providing the moisture generation units 6 and 7 to the laundry treating unit 5 will be described.

[0079] The moisture supply unit 51 includes a body 511 forming the external appearance of the moisture supply unit 51 and a discharge hole 513 provided in the bottom surface of the body 511 to discharge moisture supplied from the moisture generation units 6 and 7 positioned in the third accommodation portion 16 to the laundry.

[0080] The body 511 is provided with a handle 5111 allowing the user to move the laundry treating unit 5.

[0081] The heat supply unit 53 may be provided with a heating plate 531 mountable to and detachable from the bottom surface of the body 511. The heating plate 531 may be provided with a heating plate body 5311 (provided with a conductor) in which a heating plate heater 5313 is installed.

[0082] Meanwhile, the heating plate body 5311 may be provided with a heating plate through hole 533 penetrating the heating plate body 5311 to allow the moisture supplied through the discharge hole 513 to be supplied to the laundry through the heating plate body 5311. This is intended to improve removal of odor and wrinkles from the laundry by supplying heat and moisture to the laundry at the same time.

[0083] The heating plate 531 may further include an insulation part 532 (which may be formed of a non-conductive material) fixed to the heating plate body 5311 and blocking transfer of heat from the heating plate body 5311 to the body 511.

[0084] In this case, the sealing conduit 5533 may need to be arranged penetrating the insulation part 532 and the heating plate body 5311.

[0085] In addition, the laundry treating unit 5 may further include sealing parts 551 and 553 preventing the moisture discharged through the discharge hole 513 from leaking into the space between the bottom surface of the body 511 and the insulation part 532.

[0086] The sealing parts may include a sealing groove provided to one of the body 511 and the insulation part

532 and a sealing conduit provided to the other one of the body 511 and the insulation part 532 and inserted into the sealing groove.

[0087] In the example illustrated in FIG. 7, the sealing groove 551 is formed by concavely curving the bottom surface of the body 511 along the outer circumferential surface of the discharge hole 513, and the sealing conduit 553 protrudes from the insulation part 532 along the outer circumferential surface of the heating plate through hole 533 so as to be inserted into the sealing groove 551.

[0088] In addition, the laundry treating unit 5 may further include a mounting part 57 allowing the heating plate 531 to be attached to and detached from the body 511. The mounting part 57 may include a mounting groove 571 provided to one of the body 511 and the insulation part 532 and a mounting protrusion 573 provided to the other one of the body 511 and the insulation part 532 and inserted into the mounting groove 571.

[0089] In the example illustrated in FIG. 7(a), the mounting groove 571 is provided to the insulation part 532, and the mounting protrusion is provided to the body 511. In this case, the handle 5111 may be provided with a separation button 5113 configured to separate the mounting protrusion from mounting groove 571.

[0090] The heating plate heater 5313 installed in the heating plate body 5311 receives power through a power supply 535. The power supply 535 may include a first terminal 5351 provided to the body 511 to receive power through a power cable 515 (a means receiving external power supplied through an electrical outlet), and a second terminal 5353 provided to the sealing part 55 to contact the first terminal 5351 to transfer power supplied to the first terminal 5351 to the heating plate heater 5313.

[0091] The laundry treating unit 5 configured as above receives moisture through the moisture generation units 6 and 7 positioned in the third accommodation portion 16.

[0092] In the example illustrated in FIG. 2, the moisture generation units 6 and 7 supplies steam generated by heating water to the moisture supply unit 51.

[0093] The moisture generation units 6 and 7 of this embodiment may include a steam generation unit 6 configured to generate steam and a water supply unit 7 configured to supply water to the steam generation unit 6 and be withdrawable from the third accommodation portion 16.

[0094] The steam generation unit 6 may include a storage tank 61 provided to the bottom surface of the third accommodation portion 16, a heater 63 provided in the storage tank 61, and a supply tube 67 connecting the discharge hole 513 of the moisture supply unit 51 to the storage tank 61. The heater 63 is turned on/off by the power switch 11 provided to the cabinet 1.

[0095] The water supply unit 7 may include a supply tank 71 supported by the tank support plate 165 provided to the third accommodation portion door 161, a discharge port 75 provided to the bottom surface of the supply tank 71, a valve 77 (a check valve) to open and close the discharge port 75, and an introduction port 73 allowing water to be introduced into the supply tank 71 therethrough.

[0096] In this case, the steam generation unit 6 is preferably provided with a connection conduit 65 that opens the valve 77 to allow the water in the supply tank 71 to be introduced into the storage tank 61 when the supply tank 71 is inserted into the third accommodation portion 16.

[0097] Accordingly, when the supply tank 71 is withdrawn from the third accommodation portion 16 by the third accommodation portion door 161, it is separated from the storage tank 61. When the supply tank 71 is inserted into the third accommodation portion 16 by the third accommodation portion door 161, water may be supplied to the storage tank 61.

[0098] In addition, since the supply tank 71 is withdrawn from the third accommodation portion 16 by rotating the third accommodation portion door 161, the use may separate the supply tank 71 from the third accommodation portion door 161 and then fill the supply tank 71 with water or drain the supply tank 71.

[0099] FIG. 8 is a view illustrating a laundry treating unit 5 according to another embodiment of the present invention. In this embodiment, a moisture generation unit is provided in the laundry treating unit 5.

[0100] That is, the moisture generation unit provided in the body 511 may be provided only with a steam generation unit 6 discharging steam through the discharge hole 513.

[0101] The steam generation unit 6 may include a storage tank 61 provided in the body 511 to store water, a heater 63 provided in the storage tank 61 and receiving power through the power cable 515, a supply tube 67 connecting the storage tank 61 to the discharge hole 513, and a supply port 69 allowing the storage tank 61 to communicate with the exterior of the body 511 therethrough such that water is supplied to the storage tank 61.

[0102] In this embodiment, the heat supply unit 53 may be detachably provided to the moisture supply unit 51. The heat supply unit 53 may receive power through a power supply 535 having the same structure as described above.

[0103] FIGs. 9 and 10 respectively illustrate laundry treating apparatuses 200 and 300 according to other examples not forming part of the present invention. In these examples, the support part 2 may rotate when withdrawn from the first accommodation portion 14, in a plane parallel to the upper surface of the cabinet 1 and be fixed in the direction of height of the cabinet 1.

[0104] In the case that the surface of the support part 2 (the flat surfaces provided by the first support plate and the second support plate) is fixed in the direction of height of the cabinet 1, laundry treatment may be performed with the laundry hung on a ring 29 provided to the support part 2 (i.e., a loop formed by concavely deforming the surface of the support part).

[0105] The structure allowing the surface of the support part 2 to be fixed in the direction of height of the cabinet

1 may be implemented in various manners. FIG. 9 illustrates an example of such structure in which the surface of the support part 2 is fixed in the direction of height of the cabinet 1 through the structure of the withdrawing unit 4.

[0106] The withdrawing unit 4 of this example basically has the same structure as that of the withdrawing unit illustrated in FIG. 4. In this example, the withdrawing unit 4 further includes a horizontal rail provided to the first guider and second guider.

[0107] That is, the withdrawing unit 4 of this example includes a first guider 41 and a second guider (not shown), which are provided in the first accommodation portion 14 in the direction of height of the cabinet 1, and a base supporter 45 allowed to reciprocate within the first accommodation portion by the first guider and the second guider.

[0108] Each of the first guider 41 and the second guider may include a vertical rail 411 fixed in the first accommodation portion 14 in the direction of height of the cabinet 1, a horizontal rail 415 extending from the upper end of the vertical rail 411 toward the rear surface of the cabinet 1, and a groove 413 provided to the vertical rail 411 and horizontal rail 415 and coupled to the base supporter 45 such that the base supporter 45 is movable.

[0109] In this case, the base supporter 45 may be provided with a roller 451 facilitating movement of the base supporter 45 and allowing rotation of the base supporter 45.

[0110] Accordingly, when withdrawn from the first accommodation portion 14 through the vertical rail 411, the support part 2 is allowed to move toward the rear surface of the cabinet 1 through the horizontal rail 415. Once moved toward the rear surface of the cabinet 1, the support part 2 is allowed to rotate about the roller 451. Therefore, the laundry treating apparatus 200 of this embodiment may fix the surface of the support part 2 in the height direction of the cabinet 1.

[0111] FIG. 10 illustrates an example not forming part of the invention in which the surface of the support part 2 is fixed in the height direction of the cabinet 1 through the structure of the hinge unit 3.

[0112] The hinge unit 3 provided in this example basically has the same structure as that of the hinge unit illustrated in FIG. 5. In this example, the hinge unit 3 further includes a housing rotating part 39 provided between the base 33 and the hinge housing 31.

[0113] The housing rotating part 39 includes a bar 391 extending from the hinge housing 31 and a bar rotation shaft 393 rotatably fixing the bar 391 to the base 33.

[0114] Accordingly, when withdrawn from the first accommodation portion 14, the support part 2 is allowed to rotate toward a side surface of the cabinet 1 by the housing rotating part 39, and thus the laundry treating apparatus 300 of this embodiment may fix the surface of the support part 2 in the direction of height of the cabinet 1.

Industrial Applicability

[0115] The present invention provides a laundry treating apparatus having a laundry treating unit capable of supplying at least one of heat and moisture to the laundry and a support part configured to support the laundry.

Claims

1. A laundry treating apparatus (100) comprising:

a cabinet (1) forming an external appearance of the laundry treating apparatus (100);
a support part (2) configured to be withdrawable from the cabinet (1), the support part (2) comprising a first support plate (21) and a second support plate (23), the first and second support plates are configured to form a space to support laundry when the first and second support plates are withdrawn from the cabinet and unfolded;
a laundry treating unit (5) configured to be withdrawable from the cabinet (1), the laundry treating unit (5) is configured to supply at least one of heat and moisture to laundry supported by the support part (2);
a hinge unit (3) configured to rotatably couple the first support plate (21) with the second support plate (23); and
a withdrawing unit (4) provided in the cabinet (1) and configured to guide the hinge unit (3) such that the hinge unit (3) can be withdrawn from or introduced into the cabinet (1) vertically.

2. The laundry treating apparatus (100) according to claim 1, wherein the support part (2) comprises a laundry fixing unit (27) provided to at least one of the first support plate (21) and the second support plate (23) to fix the laundry to surfaces of the first support plate (21) and the second support plate (23).

3. The laundry treating apparatus (100) according to claim 2, wherein each of the first support plate (21) and the second support plate (23) comprises a support plate base providing a space to accommodate the laundry fixing unit (27), a cover provided to an upper portion of the support plate base to support the laundry, the cover allowing external air to be supplied into the support plate base therethrough, and an exhaust hole allowing an interior of the support plate base to communicate with an exterior of the support plate base, wherein the laundry fixing unit (27) is a fan to discharge air from the interior of the support plate base to the exterior of the support plate base through the exhaust hole.

4. The laundry treating apparatus (100) according to claim 3, wherein the withdrawing unit (4) comprises:

a base supporter (45) to support the hinge unit (3); and a first guider (41) and a second guider (43) provided in the cabinet (1), the first and second guiders (41, 43) guiding vertical movement of the base supporter (45).

5. The laundry treating apparatus (100) according to claim 4, wherein the hinge unit (3) comprises: a hinge housing (31) fixed to the base supporter (45) and rotatably coupled to the base supporter (45); a first guider hole (311) and a second guider hole (313) provided to opposing ends of the hinge housing (31) facing each other; a first hinge configured to be withdrawable from the first guider hole, the first hinge (35) being fixed to the first support plate (21); and a second hinge (37) configured to be withdrawable from the second guider hole (313), the second hinge (37) being fixed to the second support plate (23).

6. The laundry treating apparatus (100) according to claim 5, wherein: the first hinge (35) comprises a first fixed flange (351) fixed to the first support plate (21) and a first insertion flange (353) extending from the first fixed flange (351) and forming a curved surface; and the second hinge (37) comprises a second fixed flange (371) fixed to the second support plate (23) and a second insertion flange (373) extending from the second fixed flange (371) and forming a curved surface, wherein each of the first guider hole (311) and the second guider hole (313) comprises a curved surface to accommodate a corresponding one of the insertion flanges such that the curve surface penetrates opposing ends of the hinge housing (31) facing each other, wherein the first guider hole (311) and the second guider hole (313) are stacked vertically, wherein a width of the second fixed flange (371) is greater than a width of the first fixed flange (351), and the second insertion flange (371) is provided to opposing ends of the second fixed flange (371) facing each other such that the second insertion flanges are spaced apart from each other to accommodate the first insertion flange (353) therebetween.

7. The laundry treating apparatus (100) according to any one of claims 1 to 6, wherein the laundry treating unit (5) comprises: a moisture supply unit (51) comprising a body (511) having a handle (5111) and a discharge hole (513) provided to the body (511) to discharge moisture to the laundry; a heat supply unit (53) detachably provided to the body (511) to supply heat to the laundry, wherein the heat supply unit (53) comprises: a heating plate (531) detachably provided to the moisture supply unit (51); and a heating plate through hole (533) penetrating the heating plate (531) and connected to the discharge hole (513).

8. The laundry treating apparatus (100) according to claim 7, wherein the cabinet (1) comprises: a first accommodation portion (14) to accommodate the support part (2); a second accommodation portion (15) to accommodate the laundry treating unit (5); and a first partition wall (17) arranged vertically to partition the first accommodation portion (14) and the second accommodation portion (15).

9. The laundry treating apparatus (100) according to claim 8, further comprising a moisture generation unit (6, 7)

to generate moisture and supply the same to the moisture supply unit (51), wherein the cabinet (1) further comprises a third accommodation portion (16) positioned under the second accommodation portion (15) to accommodate the moisture generation unit (6, 7), wherein the second accommodation portion (15) comprises an inclined surface configured to support the laundry treating unit (5) and be inclined upward in a direction of withdrawal of the laundry treating unit (5), wherein the moisture generation unit (6, 7)

comprises: a steam generation unit (6) to supply steam generated by heating water to the moisture supply unit (51); a water supply unit (7) configured to be withdrawable from the third accommodation portion (16), the water supply unit (7) supplying water to the steam generation unit (6) by being connected to the steam generation unit (6) when inserted into the third accommodation portion (16).

10. The laundry treating apparatus (100) according to claim 9, wherein the cabinet further comprises a third accommodation portion door (161) to open and close the third accommodation portion (16), wherein the third accommodation portion door (161) comprises: a door body (163) to open and close the third accommodation portion (16), the door body (163) being rotatably coupled to the cabinet (1); and a supply unit support plate (165) extending from the door body (163) to support a lower surface of the water supply unit (7).

11. The laundry treating apparatus (100) according to claim 10, wherein: the water supply unit (7) comprises a supply tank (71) supported on the supply unit support plate (165) and a check valve (77) provided on a bottom surface of the supply tank (71); and the steam generation unit (6) comprises a storage tank (61) to store water, a connection conduit (65) provided to the storage tank (61) to open the check valve (77) and allow water to be introduced into the storage tank (61) when the supply tank (71) is inserted into the third accommodation portion (16), a heater (63) provided in the storage tank (61), and a supply tube

(67) to supply steam from the storage tank (61) to the laundry treating unit (5).

12. The laundry treating apparatus (100) according to claim 7, wherein the heating plate (531) further comprises: a heating plate body (5311) formed of a conductor and provided with the heating plate through hole (533); a heating plate heater (5313) to heat the heating plate body (5311); and an insulation part (532) fixed to the heating plate body (5311) and detachably coupled to the body (511), the insulation part (532) blocking transfer of heat of the heating plate body (5311) to the body (511).

13. The laundry treating apparatus (100) according to claim 12, further comprising: a sealing groove (551) provided to one of an outer circumferential surface of the discharge hole (513) and an outer circumferential surface of the heating plate through hole (533); and a sealing conduit (553) provided to the other one of the outer circumferential surface of the discharge hole (513) and the outer circumferential surface of the heating plate through hole (533) to be inserted into the sealing groove (551); a mounting part (57) to detachably couple the heat supply unit (53) to the moisture supply unit (51), wherein the mounting part (57) comprises: a mounting groove (571) provided to one of the body (511) and the heating plate (531); and a mounting protrusion (573) provided to the other one of the body (511) and the heating plate (531) to be mounted to and detached from the mounting groove (571).

14. The laundry treating apparatus (100) according to claim 12, wherein the laundry treating unit (5) further comprises a power supply (535) to supply power to the heating plate heater (5313), wherein the power supply (535) comprises: a first terminal (5351) provided to the body, the first terminal (5351) being connected to a power source; and a second terminal (5353) provided to the insulation part (532) to contact the first terminal (5351), the second terminal (5353) being configured to supply power from the first terminal (5351) to the heating plate heater (5313).

Patentansprüche

1. Wäschebehandlungsvorrichtung (100), umfassend:

ein Gehäuse (1), das ein äußeres Erscheinungsbild der Wäschebehandlungsvorrichtung (100) bildet,
ein Trageteil (2), das aus dem Gehäuse (1) herausziehbar ausgestaltet ist, wobei das Trageteil (2) eine erste Trageplatte (21) und eine zweite Trageplatte (23) umfasst, wobei die erste und die zweite Trageplatte dazu ausgestaltet sind, einen Platz zum Tragen von Wäsche zu bilden, wenn die erste und die zweite Trageplatte aus dem Gehäuse herausgezogen und aufgeklappt worden sind,
eine Wäschebehandlungseinheit (5), die aus dem Gehäuse (1) herausziehbar ausgestaltet ist, wobei die Wäschebehandlungseinheit (5) dazu ausgestaltet ist, der durch das Trageteil (2) getragenen Wäsche Wärme und/oder Feuchtigkeit zuzuführen,
eine Scharniereinheit (3), die dazu ausgestaltet ist, die erste Trageplatte (21) drehbar mit der zweiten Trageplatte (23) zu koppeln, und
eine Herausznieheinheit (4), die in dem Gehäuse (1) vorgesehen und dazu ausgestaltet ist, die Scharniereinheit (3) so zu führen, dass die Scharniereinheit (3) vertikal aus dem Gehäuse (1) herausgezogen oder in dieses eingeführt werden kann.

2. Wäschebehandlungsvorrichtung (100) nach Anspruch 1, wobei das Trageteil (2) eine Wäschefixiereinheit (27) umfasst, mit der die erste Trageplatte (21) und/oder die zweite Trageplatte (23) versehen ist, um die Wäsche an Flächen der Trageplatte (21) und der zweiten Trageplatte (23) zu fixieren.

3. Wäschebehandlungsvorrichtung (100) nach Anspruch 2, wobei die erste Trageplatte (21) und die zweite Trageplatte (23) jeweils eine Trageplattenbasis umfassen, die einen Platz zur Aufnahme der Wäschefixiereinheit (27), eine für einen oberen Abschnitt der Trageplattenbasis bereitgestellte Abdeckung zum Tragen der Wäsche, wobei die Abdeckung die Zufuhr von Außenluft dort hindurch in die Trageplattenbasis gestattet, und ein Ablassloch bereitstellt, dank dessen ein Inneres der Trageplattenbasis mit einer Außenseite der Trageplattenbasis kommunizieren kann, wobei die Wäschefixiereinheit (27) ein Gebläse zum Austragen von Luft aus dem Inneren der Trageplattenbasis an die Außenseite der Trageplattenbasis durch das Ablassloch ist.

4. Wäschebehandlungsvorrichtung (100) nach Anspruch 3, wobei die Herausznieheinheit (4) Folgendes umfasst: einen Basisträger (45) zum Tragen der Scharniereinheit (3) und eine erste Führung (41) und eine zweite Führung (43), die in dem Gehäuse (1) vorgesehen sind, wobei die erste und die zweite Führung (41, 43) die vertikale Bewegung des Basisträgers (45) führen.

5. Wäschebehandlungsvorrichtung (100) nach Anspruch 4, wobei die Scharniereinheit (3) Folgendes umfasst: ein Scharniergehäuse (31), das an dem Basisträger (45) fixiert und drehbar an dem Basisträger (45) gekoppelt ist, ein erstes Führungsloch (311) und ein zweites Führungsloch (313), die an gegenüber-

liegenden Enden des Scharniergehäuses (31) einander zugewandt vorgesehen sind, ein erstes Scharnier (35), das an der ersten Trageplatte (21) fixiert ist, ein zweites Scharnier (37), das aus dem zweiten Führungsloch (313) herausziehbar ausgestaltet ist, wobei das zweite Scharnier (37) an der zweiten Trageplatte (23) fixiert ist.

6. Wäschebehandlungsvorrichtung (100) nach Anspruch 5, wobei: das erste Scharnier (35) einen ersten fixierten Flansch (351), der an der ersten Trageplatte (21) fixiert ist, und einen ersten Einführflansch (353) umfasst, der sich von dem ersten fixierten Flansch (351) erstreckt und eine gekrümmte Fläche bildet, und das zweite Scharnier (37) einen zweiten fixierten Flansch (371), der an der zweiten Trageplatte (23) fixiert ist, und einen zweiten Einführflansch (373) umfasst, der sich von dem zweiten fixierten Flansch (371) erstreckt und eine gekrümmte Fläche bildet, wobei das erste Führungsloch (311) und das zweite Führungsloch (313) jeweils eine gekrümmte Fläche zur Aufnahme eines entsprechenden der Einführflansche umfassen, so dass die Krümmungsfläche gegenüberliegende, einander zugewandte Enden des Scharniergehäuses (31) durchdringt, wobei das erste Führungsloch (311) und das zweite Führungsloch (313) vertical gestapelt sind, wobei eine Breite des zweiten fixierten Flanschs (371) größer als eine Breite des ersten fixierten Flanschs (351) ist und der zweite Einführflansch (371) gegenüberliegenden, einander zugewandten Enden des zweiten fixierten Flanschs (371) bereitgestellt ist, so dass die zweiten Einführflansche voneinander beabstandet sind, um den ersten Einführflansch (353) dazwischen aufzunehmen.

7. Wäschebehandlungsvorrichtung (100) nach einem der Ansprüche 1 bis 6, wobei die Wäschebehandlungsvorrichtung (5) Folgendes umfasst: eine Feuchtigkeitszuführeinheit (51), die einen Körper (511) mit einem Griff (5111) und einem an dem Körper (511) vorgesehenen Austragloch (513) zum Austragen von Feuchtigkeit an die Wäsche umfasst, eine Wärmezuführeinheit (53), die lösbar an dem Körper (511) vorgesehen ist, um der Wäsche Wärme zuzuführen, wobei die Wärmezuführeinheit (53) Folgendes umfasst: eine Heizplatte (531), die lösbar an der Feuchtigkeitszuführeinheit (51) vorgesehen ist, und eine Heizplatte durch das Loch (533), das durch die Heizplatte (531) geht und mit dem Austragloch (513) verbunden ist.

8. Wäschebehandlungsvorrichtung (100) nach Anspruch 7, wobei das Gehäuse (1) Folgendes umfasst: einen ersten Aufnahmeabschnitt (14) zur Aufnahme des Trageteils (2), einen zweiten Aufnahmeabschnitt (15) zur Aufnahme der Wäschebehandlungseinheit (5) und eine erste vertikal angeordnete Trennwand (17) zum Unterteilen des ersten Aufnahmeabschnitts (14) und des zweiten Aufnahmeabschnitts (15).

9. Wäschebehandlungsvorrichtung (100) nach Anspruch 8, ferner umfassend eine Feuchtigkeitserzeugungseinheit (6, 7), um Feuchtigkeit zu erzeugen und diese der Feuchtigkeitszuführeinheit (51) zuzuführen, wobei das Gehäuse (1) ferner einen unter dem zweiten Aufnahmeabschnitt (15) positionierten dritten Aufnahmeabschnitt (16) zur Aufnahme der Feuchtigkeitserzeugungseinheit (6, 7) umfasst, wobei der zweite Aufnahmeabschnitt (15) eine geneigte Fläche umfasst, die zum Tragen der Wäschebehandlungseinheit (5) ausgestaltet und nach oben in einer Herausziehrichtung der Wäschebehandlungseinheit (5) geneigt ist, wobei die Feuchtigkeitserzeugungseinheit (6, 7) Folgendes umfasst: eine Dampferzeugungseinheit (6), um durch Erhitzen von Wasser erzeugten Dampf der Feuchtigkeitszuführeinheit (51) zuzuführen, eine Wasserzuführeinheit (7), die aus dem dritten Aufnahmeabschnitt (16) herausziehbar ausgestaltet ist, wobei die Wasserzuführeinheit (7) der Dampferzeugungseinheit (6) Wasser zuführt, indem sie mit der Dampferzeugungseinheit (6) verbunden wird, wenn sie in den dritten Aufnahmeabschnitt (16) eingeführt wird.

10. Wäschebehandlungsvorrichtung (100) nach Anspruch 9, wobei das Gehäuse ferner eine Tür (161) für den dritten Aufnahmeabschnitt umfasst, um den dritten Aufnahmeabschnitt (16) zu öffnen und zu schließen, wobei die Tür (161) für den dritten Aufnahmeabschnitt Folgendes umfasst: einen Türkörper (163) zum Öffnen und Schließen des dritten Aufnahmeabschnitts (16), wobei der Türkörper (163) drehbar an das Gehäuse (1) gekoppelt ist, und eine sich von dem Türkörper (163) erstreckende Zuführeinheittrageplatte (165) zum Tragen einer unteren Fläche der Wasserzuführeinheit (7).

11. Wäschebehandlungsvorrichtung (100) nach Anspruch 10, wobei: die Wasserzuführeinheit (7) einen von der Zuführeinheittrageplatte (165) getragenen Vorratstank (71) und ein an einer Bodenfläche des Vorratstanks (71) vorgesehenes Rückschlagventil (77), und die Dampferzeugungseinheit (6) Folgendes umfasst: einen Lagertank (61) zum Lagern von Wasser, eine Verbindungsleitung (65), mit der der Lagertank (61) versehen ist, um das Rückschlagventil (77) zu öffnen und zu gestatten, dass Wasser in den Lagertank (61) eingeführt werden kann, wenn der Vorratstank (71) in dem dritten Aufnahmeabschnitt (16) eingeführt ist, eine in dem Lagertank (61) vorgesehene Heizvorrichtung (63) und ein Zuführrohr (67) zum Zuführen von Dampf von dem Lagertank (61) zu der Wäschebehandlungseinheit (5).

12. Wäschebehandlungsvorrichtung (100) nach Anspruch 7, wobei die Heizplatte (531) ferner Folgendes umfasst: einen Heizplattenkörper (5311), der aus einem Leiter gebildet und mit dem Heizplattendurchgangsloch (533) versehen ist, eine Heizplattenheizvorrichtung (5313) zum Erhitzen des Heizplattenkörpers (5311) und ein Isolierungsteil (532), das an dem Heizplattenkörper (5311) befestigt und lösbar an dem Körper (511) gekoppelt ist, wobei das Isolierteil (532) die Übertragung von Wärme des Heizplattenkörpers (5311) an den Körper (511) blockiert.

13. Wäschebehandlungsvorrichtung (100) nach Anspruch 12, ferner umfassend: eine Dichtnut (551), mit der eine Außenumfangsfläche des Austraglochs (513) oder eine Außenumfangsfläche des Heizplattendurchgangslochs (533) versehen ist, und einen Dichtkanal (553), mit dem die jeweils andere der Außenumfangsfläche des Austraglochs (513) oder die Außenumfangsfläche des Heizplattendurchgangslochs (533) versehen ist und der in die Dichtnut (551) einzuführen ist, ein Montageteil (57) zum lösbaren Koppeln der Wärmezuführeinheit (53) an der Feuchtigkeitszuführeinheit (51), wobei das Montageteil (57) Folgendes umfasst: eine Montagenut (571), mit der der Körper (511) oder die Heizplatte (531) versehen ist, und einen Montagevorsprung (573), mit dem der jeweils andere Körper (511) bzw. Heizplatte (531) versehen ist und der in der Montagenut (571) zu montieren und daraus zu lösen ist.

14. Wäschebehandlungsvorrichtung (100) nach Anspruch 12, wobei die Wäschebehandlungseinheit (5) ferner eine Energieversorgung (535) umfasst, um die Heizplattenheizvorrichtung (5313) mit Energie zu versorgen, wobei die Energieversorgung (535) Folgendes umfasst: einen an dem Körper vorgesehenen ersten Anschluss (5351), wobei der erste Anschluss (5351) mit einer Energiequelle verbunden ist, und einen an dem Insolierteil (532) vorgesehenen zweiten Anschluss (5353), um den ersten Anschluss (5351) zu kontaktieren, wobei der zweite Anschluss (5353) dazu ausgestaltet ist, die Heizplattenheizvorrichtung (5313) von dem ersten Anschluss (5351) mit Energie zu versorgen.

Revendications

1. Appareil de traitement du linge (100) comprenant :

un caisson (1) formant un aspect extérieur de l'appareil de traitement du linge (100) ;
une partie de support (2) conçue pour pouvoir être extraite du caisson (1), la partie de support (2) comprenant une première plaque de support (21) et une seconde plaque de support (23), les première et seconde plaques de support étant conçues pour former un espace destiné à supporter le linge lorsque les première et seconde plaques de support sont extraites du caisson et dépliées ;
une unité de traitement du linge (5) conçue pour être extraite du caisson (1), l'unité de traitement du linge (5) étant conçue pour appliquer de la chaleur et/ou de l'humidité au linge supporté par la partie de support (2) ;
une unité d'articulation (3) conçue pour accoupler à rotation la première plaque de support (21) avec la seconde plaque de support (23) ; et
une unité d'extraction (4) placée dans le caisson (1) et conçue pour guider l'unité d'articulation (3) de telle sorte que l'unité d'articulation (3) puisse être extraite du caisson (1) ou introduite dans celui-ci verticalement.

2. Appareil de traitement du linge (100) selon la revendication 1, dans lequel la partie de support (2) comprend une unité de fixation du linge (27) associée à au moins une de la première plaque de support (21) et la seconde plaque de support (23) pour fixer le linge à des surfaces de la première plaque de support (21) et la seconde plaque de support (23).

3. Appareil de traitement du linge (100) selon la revendication 2, dans lequel chacune de la première plaque de support (21) et la seconde plaque de support (23) comprend une base de plaque de support définissant un espace destiné à accueillir l'unité de fixation du linge (27), une couverture associée à une partie supérieure de la base de plaque de support pour supporter le linge, la couverture permettant l'introduction d'air extérieur dans la base de plaque de support à travers elle, et un orifice de rejet permettant qu'un intérieur de la base de plaque de support communique avec un extérieur de la base de plaque de support, l'unité de fixation du linge (27) étant un ventilateur destiné à expulser de l'air de l'intérieur de la base de plaque de support vers l'extérieur de la base de plaque de support à travers l'orifice de rejet.

4. Appareil de traitement du linge (100) selon la revendication 3, dans lequel l'unité d'extraction (4) comprend : un dispositif de support de base (45) destiné à supporter l'unité d'articulation (3) ; et un premier dispositif de guidage (41) et un second dispositif de guidage (43) placés dans le caisson (1), les premier et second dispositifs de guidage (41, 43) guidant un déplacement vertical du dispositif de support de base (45) .

5. Appareil de traitement du linge (100) selon la revendication 4, dans lequel l'unité d'articulation (3) comprend : un logement d'articulation (31) fixé au dispositif de support de base (45) et accouplé à ro-

tation avec le dispositif de support de base (45) ; un premier orifice de guidage (311) et un second orifice de guidage (313) formés en regard à des extrémités opposées du logement d'articulation (31) ; une première pièce d'articulation conçue pour pouvoir être extraite du premier orifice de guidage, la première pièce d'articulation (35) étant fixée à la première plaque de support (21) ; et une seconde pièce d'articulation (37) conçue pour pouvoir être extraite du second orifice de guidage (313), la seconde pièce d'articulation (37) étant fixée à la seconde plaque de support (23).

6. Appareil de traitement du linge (100) selon la revendication 5, dans lequel : la première pièce d'articulation (35) comprend une première ailette fixe (351) fixée à la première plaque de support (21) et une première ailette d'insertion (353) s'étendant à partir de la première ailette fixe (351) et formant une surface incurvée ; et la seconde pièce d'articulation (37) comprend une seconde ailette fixe (371) fixée à la seconde plaque de support (23) et une seconde ailette d'insertion (373) s'étendant à partir de la seconde ailette fixe (371) et formant une surface incurvée, dans lequel chacun du premier orifice de guidage (311) et du second orifice de guidage (313) comprend une surface incurvée destinée à accueillir une ailette correspondante parmi les ailettes d'insertion de telle sorte que la surface incurvée pénètre dans des extrémités opposées du logement d'articulation (31) situées en regard, dans lequel le premier orifice de guidage (311) et le second orifice de guidage (313) sont superposés verticalement, dans lequel une largeur de la seconde ailette fixe (371) est supérieure à une largeur de la première ailette fixe (351), et la seconde ailette d'insertion (371) est placée à des extrémités opposées de la seconde ailette fixe (371) situées en regard de telle sorte que les secondes ailettes d'insertion soient espacées l'une de l'autre pour accueillir la première ailette d'insertion (353) entre elles.

7. Appareil de traitement du linge (100) selon l'une quelconque des revendications 1 à 6, dans lequel l'unité de traitement du linge (5) comprend : une unité d'application d'humidité (51) comprenant un corps (511) comportant une poignée (5111) et un orifice d'expulsion (513) formé dans le corps (511) pour expulser de l'humidité vers le linge ; une unité d'application de chaleur (53) associée de manière amovible au corps (511) pour appliquer de la chaleur au linge, dans lequel l'unité d'application de chaleur (53) comprend : une plaque chauffante (531) associée de manière amovible à l'unité d'application d'humidité (51) ; et un orifice traversant de plaque chauffante (533) pénétrant dans la plaque chauffante (531) et raccordé à l'orifice d'expulsion (513).

8. Appareil de traitement du linge (100) selon la revendication 7, dans lequel le caisson (1) comprend : une première partie de réception (14) destinée à accueillir la partie de support (2) ; une deuxième partie de réception (15) destinée à accueillir l'unité de traitement du linge (5) ; et une première paroi de séparation (17) placée verticalement pour séparer la première partie de réception (14) et la deuxième partie de réception (15).

9. Appareil de traitement du linge (100) selon la revendication 8, comprenant en outre une unité de génération d'humidité (6, 7) destinée à générer de l'humidité et à fournir celle-ci à l'unité d'application d'humidité (51), dans lequel le caisson (1) comprend en outre une troisième partie de réception (16), positionnée sous la deuxième partie de réception (15), destinée à accueillir l'unité de génération d'humidité (6, 7), dans lequel la deuxième partie de réception (15) comprend une surface inclinée conçue pour supporter l'unité de traitement du linge (5) et être inclinée vers le haut dans une direction d'extraction de l'unité de traitement du linge (5), dans lequel l'unité de génération d'humidité (6, 7) comprend : une unité de génération de vapeur (6) destinée à fournir de la vapeur générée en chauffant de l'eau à l'unité d'application d'humidité (51) ; une unité d'alimentation en eau (7) conçue pour pouvoir être extraite de la troisième partie de réception (16), l'unité d'alimentation en eau (7) fournissant de l'eau à l'unité de génération de vapeur (6) en étant reliée à l'unité de génération de vapeur (6) lorsqu'elle est insérée dans la troisième partie de réception (16).

10. Appareil de traitement du linge (100) selon la revendication 9, dans lequel le caisson comprend en outre une porte de troisième partie de réception (161) destinée à ouvrir et fermer la troisième partie de réception (16), dans lequel la porte de troisième partie de réception (161) comprend : un corps de porte (163) pour ouvrir et fermer la troisième partie de réception (16), le corps de porte (163) étant accouplé à rotation avec le caisson (1) ; et une plaque de support d'unité d'alimentation (165), s'étendant à partir du corps de porte (163), destinée à supporter une surface inférieure de l'unité d'alimentation en eau (7).

11. Appareil de traitement du linge (100) selon la revendication 10, dans lequel : l'unité d'alimentation en eau (7) comprend un réservoir d'alimentation (71) supporté sur la plaque de support d'unité d'alimentation (165) et un clapet antiretour (77) placé sur une surface inférieure du réservoir d'alimentation (71) ; et l'unité de génération de vapeur (6) comprend un réservoir de stockage (61) destiné à stocker de l'eau, un conduit de raccord (65) associé au réservoir de stockage (61) pour ouvrir le clapet antiretour (77) et permettre l'introduction d'eau dans le réservoir de

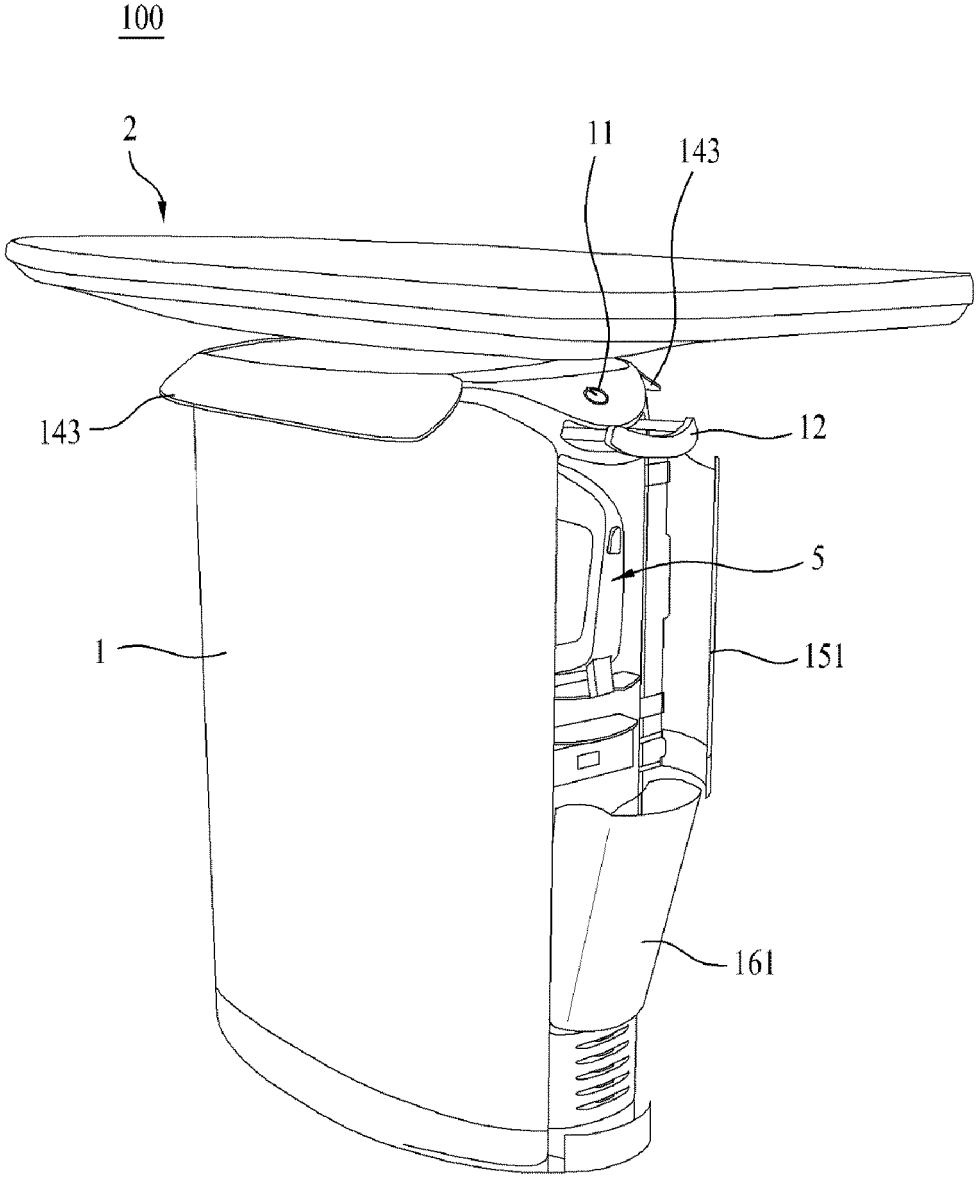
stockage (61) lorsque le réservoir d'alimentation (71) est inséré dans la troisième partie de réception (16), un dispositif de chauffage (63) placé dans le réservoir de stockage (61), et un tube d'alimentation (67) pour acheminer de la vapeur du réservoir de stockage (61) à l'unité de traitement du linge (5).

12. Appareil de traitement du linge (100) selon la revendication 7, dans lequel la plaque chauffante (531) comprend en outre : un corps de plaque chauffante (5311) constitué d'un conducteur et pourvu d'un orifice traversant de plaque chauffante (533) ; un dispositif de chauffage de plaque chauffante (5313) pour chauffer le corps de plaque chauffante (5311) ; et une partie d'isolation (532) fixée au corps de plaque chauffante (5311) et accouplée de manière amovible avec le corps (511), la partie d'isolation (532) bloquant le transfert de chaleur du corps de plaque chauffante (5311) vers le corps (511).

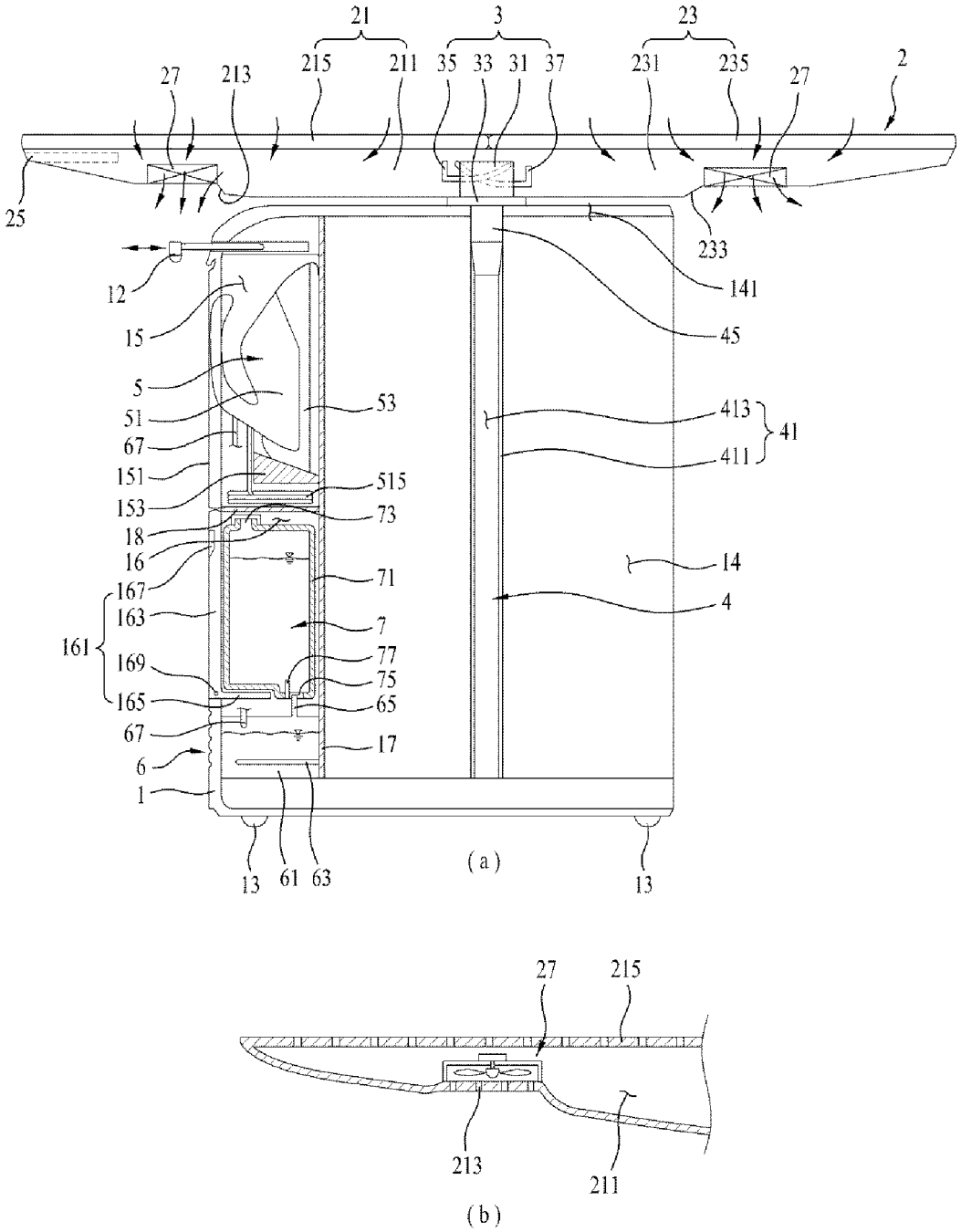
13. Appareil de traitement du linge (100) selon la revendication 12, comprenant en outre : une rainure d'étanchéité (551) formée dans une surface circonférentielle extérieure de l'orifice d'expulsion (513) ou dans une surface circonférentielle extérieure de l'orifice traversant de plaque chauffante (533) ; et un conduit d'étanchéité (553) associé à l'autre de la surface circonférentielle extérieure de l'orifice d'expulsion (513) et la surface circonférentielle extérieure de l'orifice traversant de plaque chauffante (533), destiné à être inséré dans la rainure d'étanchéité (551) ; une partie d'assemblage (57) pour accoupler de manière amovible l'unité d'application de chaleur (53) avec l'unité d'application d'humidité (51), dans lequel la partie d'assemblage (57) comprend : une rainure d'assemblage (571) formée dans le corps (511) ou la plaque chauffante (531) ; et une saillie d'assemblage (573) formée sur l'autre du corps (511) et de la plaque chauffante (531), destinée à être assemblée avec la rainure d'assemblage (571) et détachée de celle-ci.

14. Appareil de traitement du linge (100) selon la revendication 12, dans lequel l'unité de traitement du linge (5) comprend en outre un dispositif d'alimentation électrique (535) pour assurer l'alimentation électrique du dispositif de chauffage de plaque chauffante (5313), dans lequel le dispositif d'alimentation électrique (535) comprend : une première borne (5351) associée au corps, la première borne (5351) étant connectée à une source d'énergie électrique ; et une seconde borne (5353) associée à la partie d'isolation (532), destinée à venir en contact avec la première borne (5351), la seconde borne (5353) étant conçue pour acheminer de l'énergie électrique de la première borne (5351) au dispositif de chauffage de plaque chauffante (5313).

[Fig. 1]



[Fig. 2]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(a)
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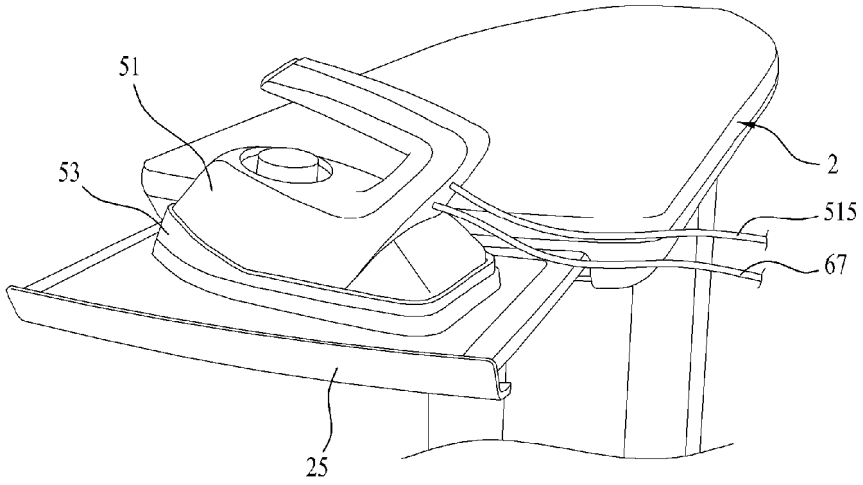
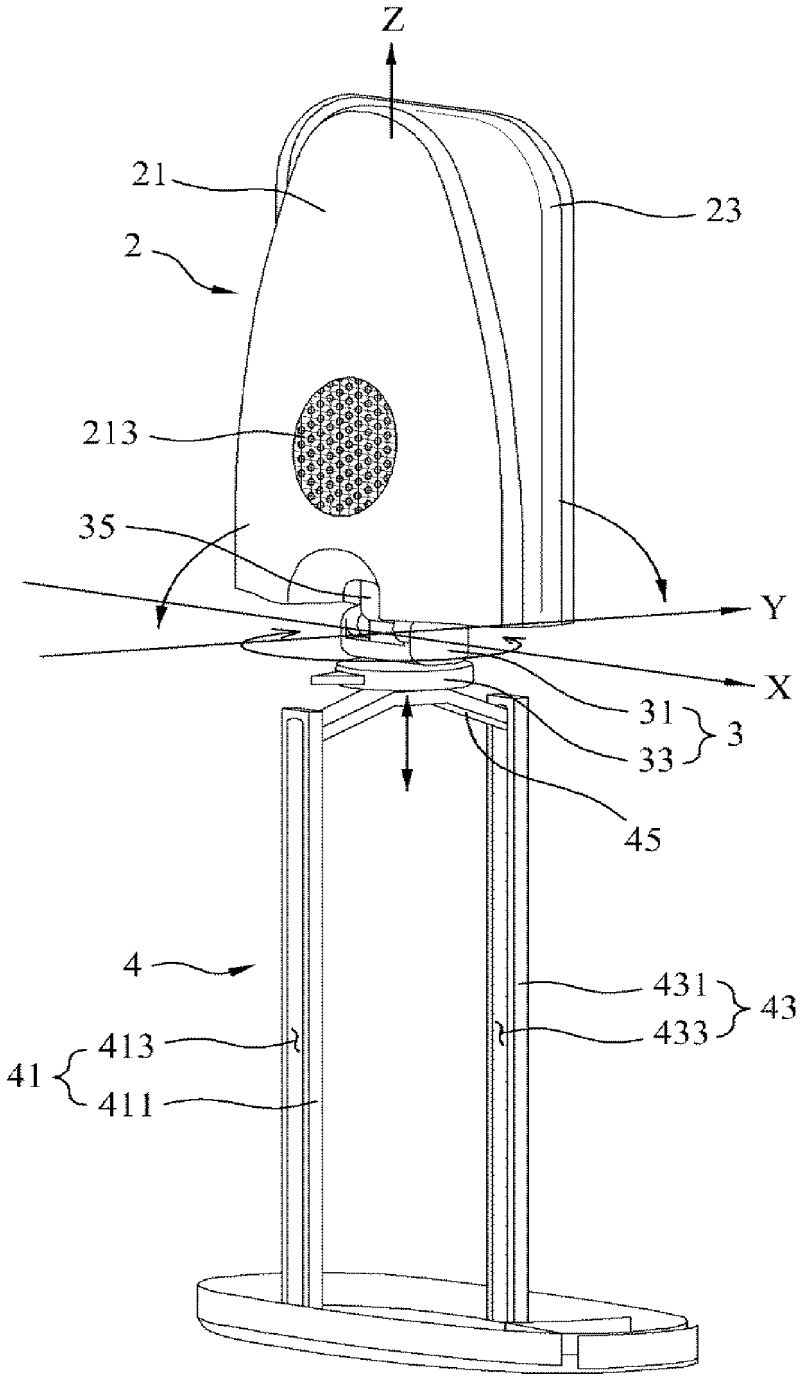
(b)

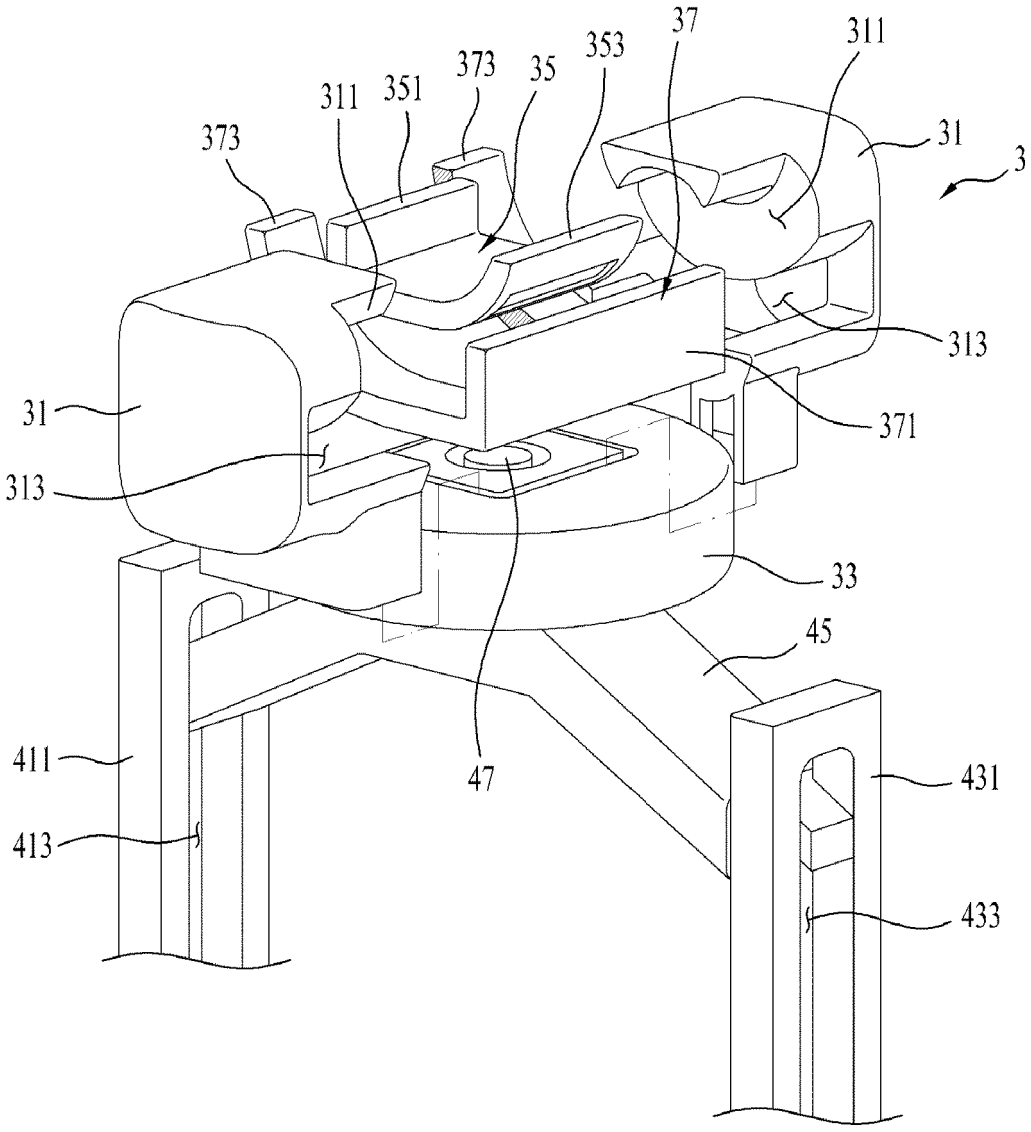
[Fig. 3]



[Fig. 4]



[Fig. 5]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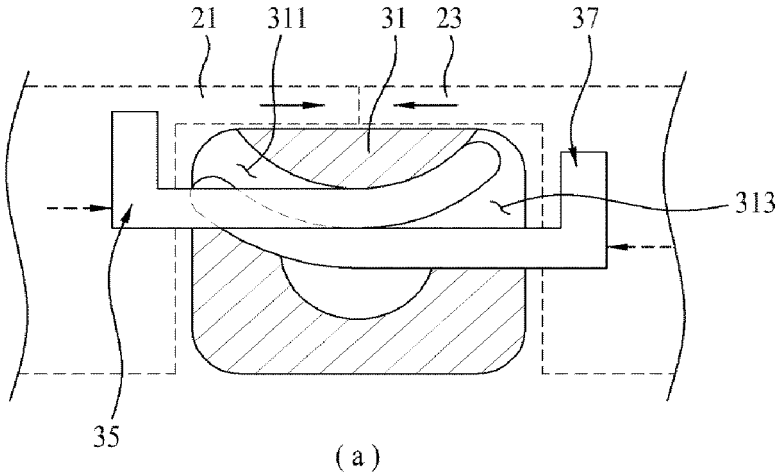
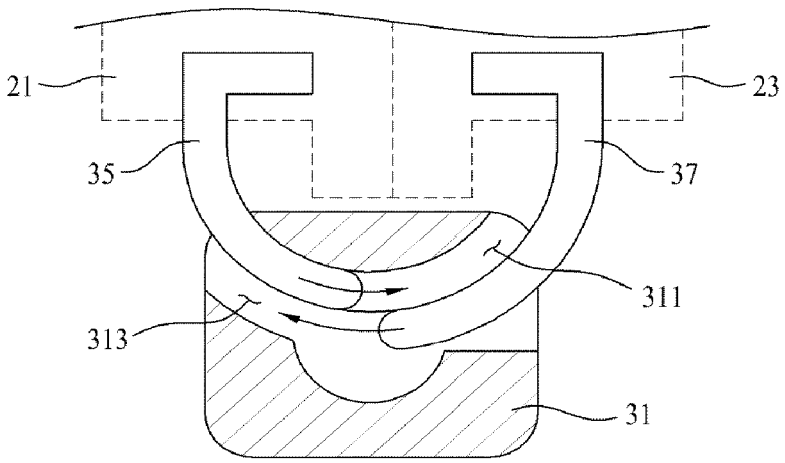
[Fig. 6]

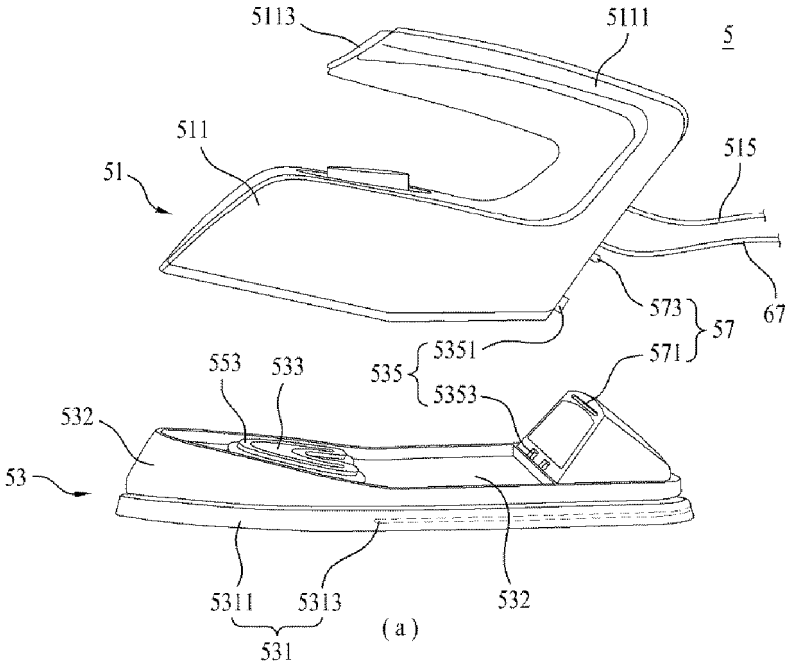


(a)



(b)

[Fig. 7]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5
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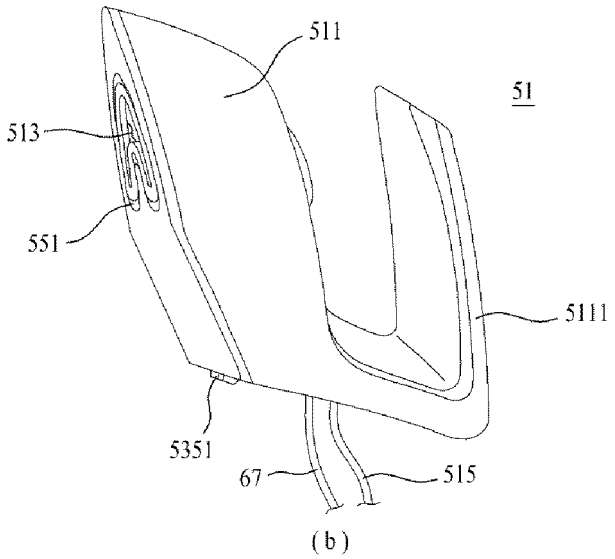
5311
5313
532
531
(a)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513
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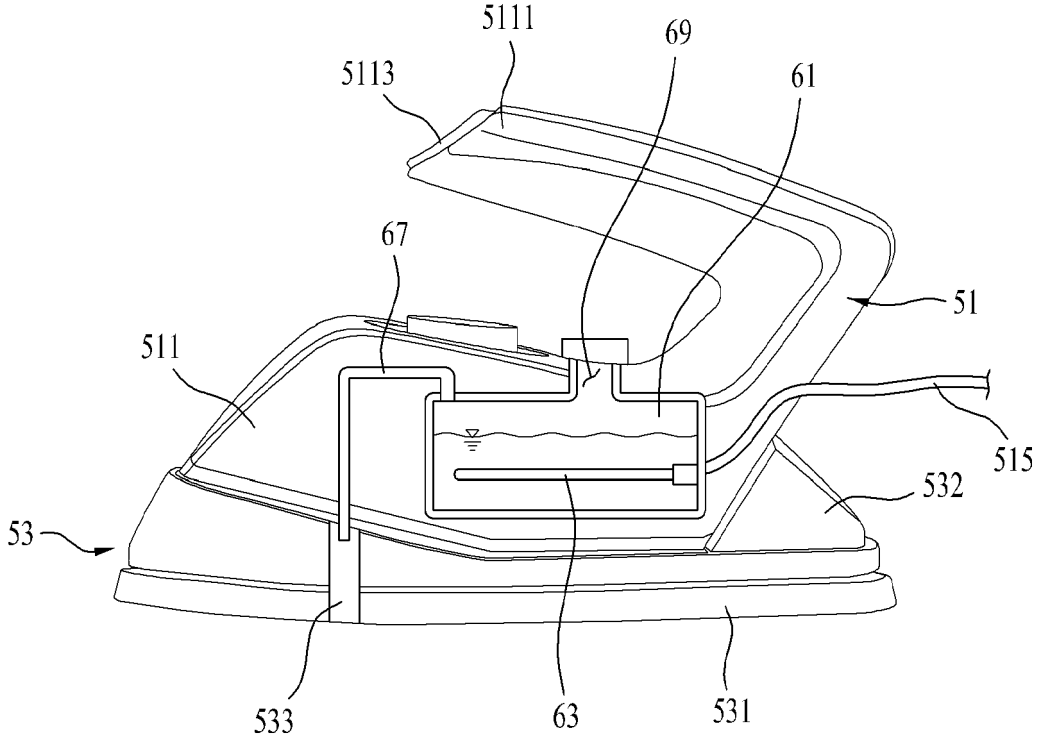
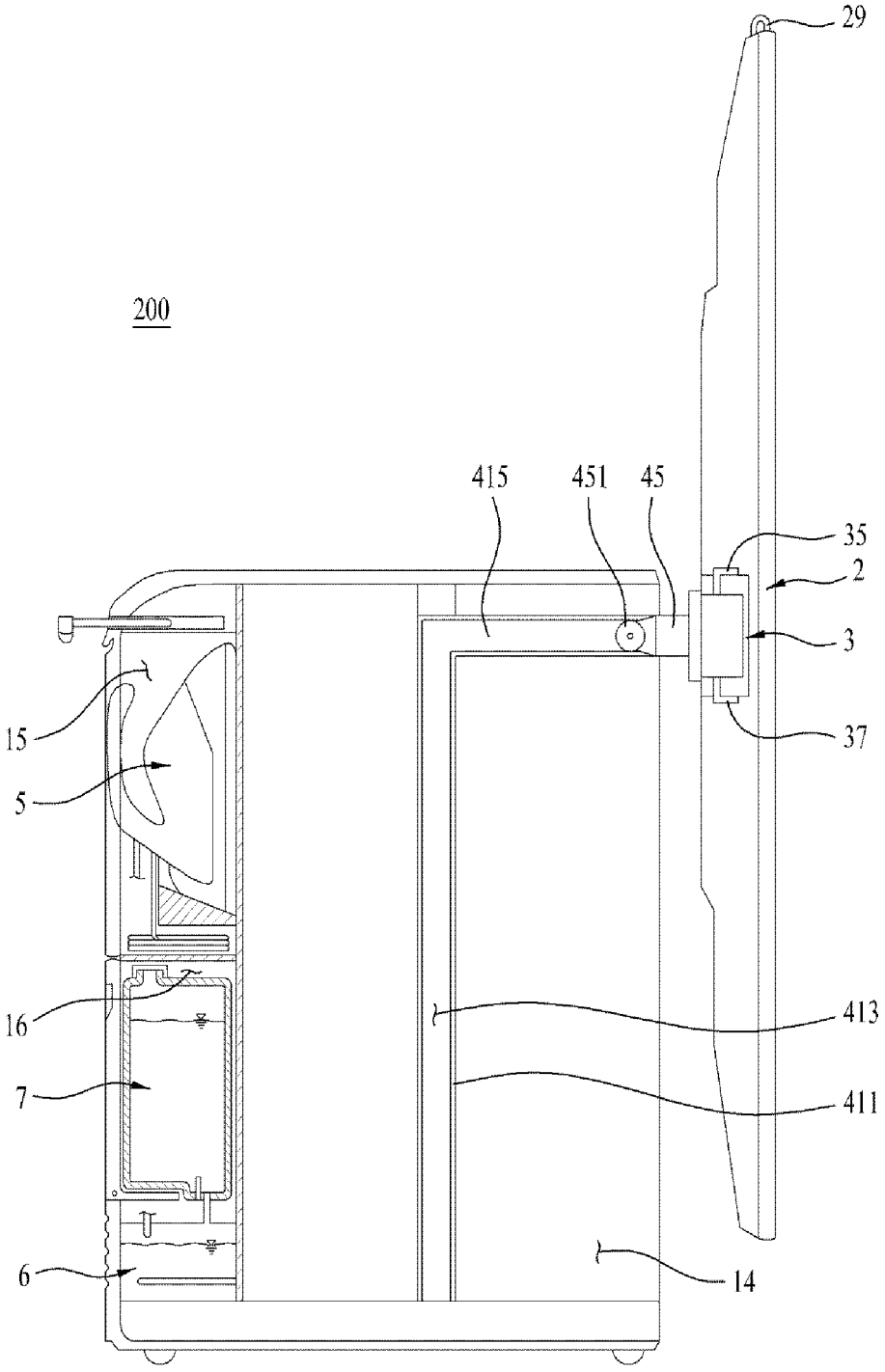
(b)

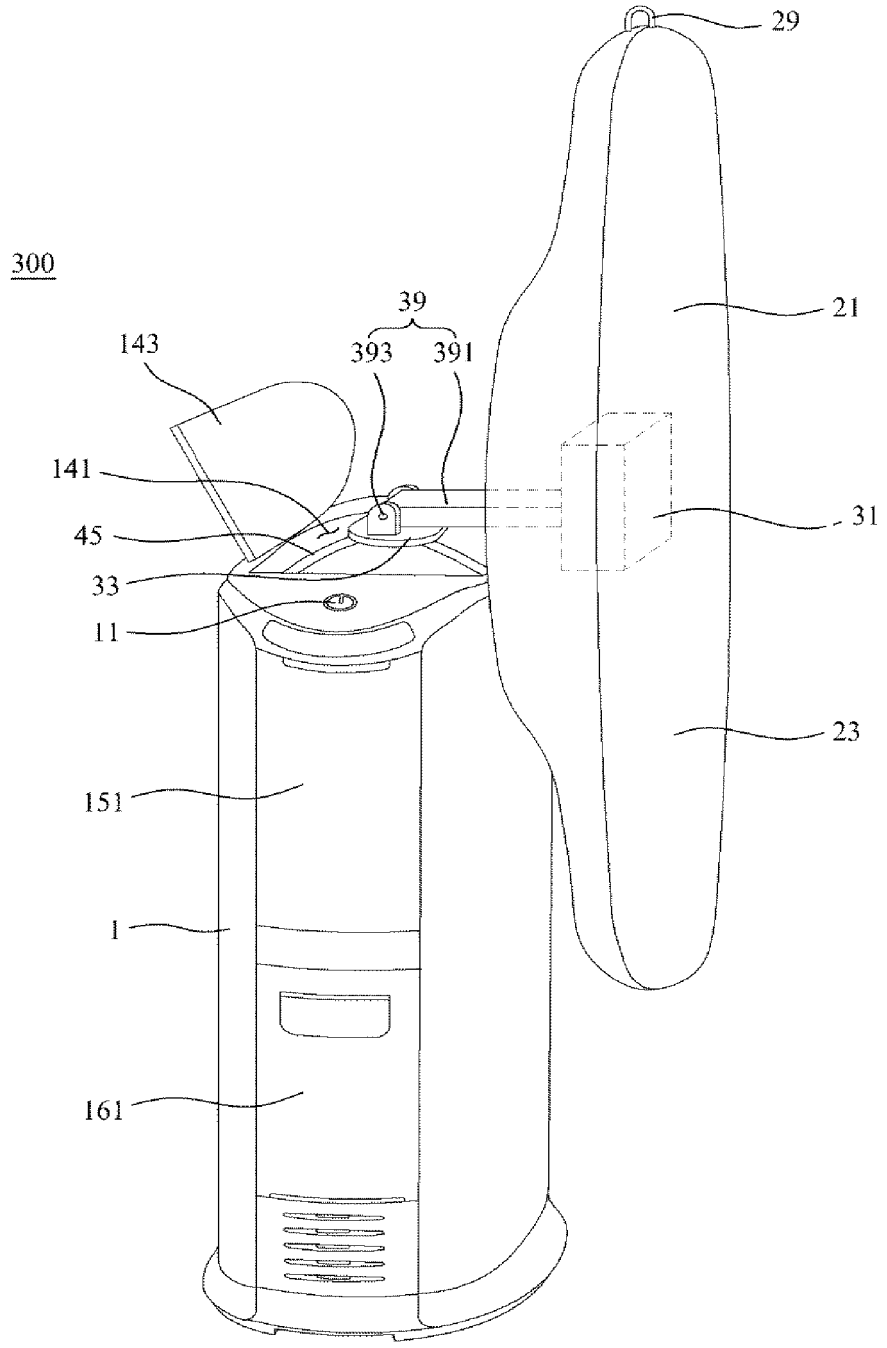
[Fig. 8]



[Fig. 9]



[Fig. 10]



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- EP 1925703 A1 **[0009]**