United States Patent Application Publication	20250257518
Kind Code	A1
Publication Date	August 14, 2025
Inventor(s)	KANG; Hyungha et al.

CLOTHING TREATMENT APPARATUS

Abstract

The present disclosure relates to a clothing treatment apparatus in which a residual water treatment unit, by means of which water condensed in a circulation duct accommodating a heat exchanger assembly is collected in a drain tank, communicates the drain tank and the inside of the circulation duct so that some of the water collected in the drain tank can be discharged back into the circulation duct, thus making it possible to prevent the water from leaking out even when the drain tank is full.

Inventors: **KANG; Hyungha (Seoul, KR), KIM; Jaehyung (Seoul, KR)**

Applicant: **LG Electronics Inc.** (Seoul, KR)

Family ID: **1000008612623**

Appl. No.: **18/880023**

Filed (or PCT Filed): **June 20, 2023**

PCT No.: **PCT/KR2023/008508**

Foreign Application Priority Data

KR	10-2022-0080292	Jun. 30, 2022

Publication Classification

Int. Cl.: **D06F58/24** (20060101); **D06F58/10** (20060101); **D06F58/20** (20060101)

U.S. Cl.:

CPC **D06F58/24** (20130101); **D06F58/10** (20130101); **D06F58/203** (20130101);

Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] This application is a National Stage application under 35 U.S.C. § 371 of International Application No. PCT/KR2023/008508, filed on Jun. 20, 2023, which claims the benefit of Korean Application No. 10-2022-0080292, filed on Jun. 30, 2022. The disclosures of the prior applications are incorporated by reference in their entirety.

TECHNICAL FIELD
[0002] The present disclosure relates to a clothing treatment apparatus. More specifically, the present disclosure relates to a clothing treatment apparatus that may collect water condensed from air and steam that have passed through clothing in a detachable drainage tank.
BACKGROUND
[0003] A clothing treatment apparatus may include a washing machine that soaks clothing in water so as to be in a wet state and then removes foreign substances via a chemical action of detergent and a physical action such as drum rotation, and a dryer that dries the wet clothing using hot air and steam.
[0004] In some cases, a clothing treatment apparatus may include an apparatus that can keep the clothing in a comfortable and clean state without soaking the clothing in a dry state in water has appeared. In some cases, the clothing treatment apparatus is able to perform a refreshing cycle by supplying steam or hot air while the clothing is mounted to deodorize the clothing and dry or sterilize the clothing.
[0005] In some cases, the clothing treatment apparatus is able to add fragrance to the clothing, and has recently taken up a portion in the clothing treatment apparatus along with the washing machine and the dryer.
[0006] Because the clothing treatment apparatus that performs the refreshing cycle of the clothing accommodates the dry clothing therein, a steam supply may be provided to supply steam to the clothing.
[0007] FIG. **1** shows an example structure of a clothing treatment apparatus in related art, and FIG. **2** shows a machine room and a residual water treatment structure of a clothing treatment apparatus in related art.
[0008] Referring to FIG. **1**, the clothing treatment apparatus may include a cabinet **2** having an accommodating space where the clothing is mounted, a door **6** that opens and closes the cabinet **2**, and a machine room disposed at a lower portion of the cabinet **2**.
[0009] The machine room may include a water supply tank **3** that stores therein water for generating steam inside the cabinet **2**, and a drainage tank **4** that collects moisture condensed from the steam or the clothing, and may additionally include a drawer **5** providing a space for storing an additional item or the like therein.
[0010] Referring to FIG. **2**, the machine room may further include a circulation duct **32** that circulates air inside the cabinet **2**, and a seating stand **38** that is disposed in front of the circulation duct **32** and is able to seat the water supply tank **3**, the drainage tank **4**, and the drawer **5** thereon.
[0011] The circulation duct **32** may be installed with an evaporator that cools air introduced from inside the cabinet **2** to condense moisture, and a heat exchanger such as a condenser that heats the cooled air.
[0012] Water condensed in the circulation duct **32** may be collected along a bottom surface of the circulation duct **32** and collected in the drainage tank **4** via a pump **33**. Thus, the clothing treatment apparatus may continuously perform drying/sterilization/refreshing of the clothing accommodated inside the cabinet **2** via steam and hot air by removing water from air that has treated the clothing and resupplying the same.

[0013] In the clothing treatment apparatus, the drainage tank **4** is generally not in communication with an external drain hole or the like, but is equipped as a container that simply stores water. This increases convenience of installation because the clothing treatment apparatus may not be adjacent to the drain hole or the like.
[0014] In some cases, water collected in the drainage tank **4** may not be automatically discharged unless a user directly discharges the same.
[0015] In some cases, when the drainage tank **4** is full, it may be difficult to collect water in the drainage tank **4**, and thus, water collected in the drainage tank **4** leaks out of the machine room.
[0016] Furthermore, even when the drainage tank **4** is not full at the beginning, when the drainage tank **4** becomes full during the clothing treatment process, water introduced into the drainage tank **4** leaks out.
[0017] In addition, when the clothing treatment apparatus is set to stop operating when the drainage tank **4** is full to prevent the water leakage from the drainage tank **4**, the user is not able to treat the clothing at a desired time point.
[0018] In particular, when the operation of the clothing treatment apparatus is stopped when the drainage tank **4** is full, the operation of the clothing treatment apparatus is stopped even though the clothing treatment is not completed, thereby damaging a reliability of the product.
[0019] In some cases, even when placement of a backflow allowing portion that guides water flowing back from the drainage tank **4** back to the circulation duct **32** is considered, the clothing treatment apparatus may place the backflow allowing portion as a component separate from the circulation duct or place the backflow allowing portion outside the circulation duct.

SUMMARY

[0020] The present disclosure describes a clothing treatment apparatus including a backflow allowing portion that guides water that flows back or is discharged from a drainage tank into a circulation duct where air circulates, wherein a flow channel forming the backflow allowing portion is formed integrally with the circulation duct.
[0021] The present disclosure further describes a clothing treatment apparatus in which the backflow allowing portion may be manufactured or formed integrally with the circulation duct.
[0022] The present disclosure further describes a clothing treatment apparatus in which the backflow allowing portion may be fixed to the circulation duct.
[0023] The present disclosure further describes a clothing treatment apparatus that may block water from leaking to the circulation duct or out of a machine room even when the drainage tank is full.
[0024] The present disclosure further describes a clothing treatment apparatus that may block water from overflowing from the drainage tank even when the drainage tank is full during clothing treatment.
[0025] The present disclosure further describes a clothing treatment apparatus that may still supply steam to the clothing and manage the clothing even when the drainage tank is full.
[0026] The present disclosure further describes a clothing treatment apparatus that may continuously supply water to the drainage tank even when the drainage tank is full.
[0027] The present disclosure further describes a clothing treatment apparatus that may block water from overflowing outside the machine room even when water overflows from the drainage tank.
[0028] The present disclosure further describes a clothing treatment apparatus that may circulate water in the drainage tank to the circulation duct where air circulates.
[0029] According to one aspect of the subject matter described in this application, a clothing treatment apparatus includes a cabinet having an opening defined at a front side thereof, an inner casing disposed inside the cabinet and configured to accommodate clothes therein, a door pivotably coupled to the cabinet and configured to open and close the opening of the cabinet, a circulation duct configured to circulate air discharged from the inner casing, a heat exchanger disposed inside the circulation duct and configured to cool and heat the air, a drainage tank disposed forward relative to the circulation duct and configured to store water condensed from the heat exchanger,

and a residual water treater configured to collect water condensed from the circulation duct into the drainage tank. The residual water treater fluidly connects the drainage tank with the circulation duct such that a portion of the water collected in the drainage tank is dischargeable back into the circulation duct.

[0030] Implementations according to this aspect can include one or more of the following features. For example, the residual water treater can include a backflow allowing portion that extends through a surface of the circulation duct and is in fluid communication with the drainage tank. In some examples, the backflow allowing portion can be spaced apart from a bottom surface of the drainage tank by a predetermined height. In some examples, the residual water treater can further include a drainage pump configured to cause the water collected on a bottom surface of the circulation duct to flow toward the drainage tank, and a discharge pipe that is in fluid communication with the drainage pump and the drainage tank and configured to provide the water to the drainage tank, where the discharge pipe is separately provided from the backflow allowing portion. For instance, the backflow allowing portion and the discharge pipe can be separately provided such that the backflow allowing portion and the discharge pipe are not in direct communication with each other.

[0031] In some implementations, the backflow allowing portion can define a backflow hole that extends through the circulation duct and a recovery flow channel that extends from the backflow hole and is inserted into the drainage tank to thereby fluidly connect the backflow allowing portion and the drainage tank with each other. In some examples, the backflow allowing portion can further define a guide flow channel that extends from the backflow hole in a width direction of an inner surface of the circulation duct, where the guide flow channel is configured to guide the water condensed from the circulation duct to a bottom surface of the circulation duct.

[0032] In some examples, the circulation duct can include a reservoir that is recessed from the bottom surface of the circulation duct and configured to collect the water therein. The drainage tank or the backflow hole can be disposed closer to a first side of the inner surface of the circulation duct than to a second side of the inner surface of the circulation duct opposite to the first side, where the reservoir is disposed closer to the second side of the inner surface of the circulation duct than to the first side of the inner surface of the circulation duct. The guide flow channel can extend from the backflow hole toward the reservoir. In some examples, the guide flow channel can extend downward along the width direction of the inner surface of the circulation duct.

[0033] In some implementations, the backflow allowing portion can further define an inflow channel that extends from the backflow hole to a first end of the guide flow channel, and a discharge flow channel that extends from a second end of the guide flow channel to the bottom surface of the circulation duct. In some examples, the discharge flow channel can have a steeper inclination than the guide flow channel, and the backflow allowing portion can include a flow channel restricting portion that protrudes from a bottom surface of the guide flow channel and that is configured to cause the water in the guide flow channel to flow toward the discharge flow channel.

[0034] In some implementations, the residual water treater is disposed at a front surface of the circulation duct. In some examples, the residual water treater can include a backflow allowing portion that extends through the front surface of the circulation duct and is configured to receive water from the drainage tank, and a blocking portion that is configured to block water in the backflow allowing portion from flowing to the heat exchanger. In some examples, the backflow allowing portion can be configured to guide water introduced from the drainage tank to a bottom surface of the circulation duct at the front surface of the circulation duct, where the blocking portion can be disposed along an edge of the backflow allowing portion that is exposed to an inner surface of the circulation duct to thereby block the water from being flowing into the heat exchanger.

[0035] In some examples, the backflow allowing portion can define a backflow hole that extends

through the front surface of the circulation duct and is in fluid communication with the drainage tank, and an inflow channel that extends from the backflow hole to an inner surface of the circulation duct. The blocking portion can include a recovery partition wall that extends from a distal end of the inflow channel and faces the heat exchanger, and a flow rate adjusting portion that extends from the recovery partition wall toward the front surface of the circulation duct and that is configured to collect a portion of water introduced through the backflow hole.

[0036] In some implementations, the backflow allowing portion can be formed integrally with the circulation duct.

[0037] In some implementations, the backflow allowing portion defines a flow channel, and at least a portion of the discharge pipe is disposed inside the flow channel. In some examples, the discharge pipe protrudes outward from an end of the flow channel. In some examples, ends of the backflow allowing portion are connected to an outer circumferential surface of the discharge pipe. In some examples, a bottom surface of the backflow allowing portion is spaced apart from the outer circumferential surface of the discharge pipe.

[0038] In the present disclosure, a residual water treater that collects water condensed from a circulation duct where a heat exchanger is accommodated into a drainage tank may allow the drainage tank and inside of the circulation duct to be in communication with each other. The drainage tank may be disposed outside the circulation duct.

[0039] As a result, a portion of water collected in the drainage tank may be dischargeable back into the circulation duct.

[0040] Specifically, the residual water treater may include a backflow allowing portion extending through one surface of the circulation duct and in communication with the drainage tank.

[0041] The backflow allowing portion may be disposed at a certain height apart from a bottom surface of the drainage tank, and may be disposed closer to a top surface of the drainage tank.

[0042] The residual water treater may include a drainage pump that allows water collected on a bottom surface of the circulation duct to flow, and a discharge pipe in communication with the drainage pump and the drainage tank to inject water into the drainage tank, and the backflow allowing portion may be equipped separately from the discharge pipe.

[0043] That is, the backflow allowing portion and the discharge pipe may be blocked from being in direct communication with each other. Water introduced into the discharge pipe may first be introduced into the drainage tank without directly flowing back into the backflow allowing portion.

[0044] The residual water treater may further include a recovery flow channel extending from the circulation duct to be inserted into the drainage tank to allow the backflow allowing portion and the drainage tank to be in communication with each other.

[0045] The backflow allowing portion may include a flow channel assembly extending in a width direction of an inner surface of the circulation duct to guide water to a bottom surface of the circulation duct.

[0046] The circulation duct may include a reservoir recessed from the bottom surface thereof to collect water therein, the recovery flow channel may be disposed close to one side of the inner surface of the circulation duct, the reservoir may be disposed close to an opposite side to the one side of the inner surface of the circulation duct, and the flow channel assembly may extend from the backflow allowing portion toward the reservoir.

[0047] The flow channel assembly may include a guide flow channel extending to be lowered along the width direction of the inner surface of the circulation duct.

[0048] The flow channel assembly may include an inflow channel extending from the communication hole to one end of the guide flow channel, and a discharge flow channel extending from the other end of the guide flow channel to the bottom surface of the circulation duct.

[0049] The discharge flow channel may be set to have a steeper inclination than the guide flow channel, and the flow channel assembly may further include a flow channel restricting portion protruding from a bottom surface of the guide flow channel and inducing water flowing along the

guide flow channel to flow toward the discharge flow channel.
[0050] In some implementations, the residual water treater may be placed on a front surface of the circulation duct facing the heat exchanger.
[0051] The residual water treater may include a backflow allowing portion extending through the front surface of the circulation duct and in communication with the drainage tank, and a blocking portion blocking water introduced into the backflow allowing portion from flowing to the evaporator.
[0052] The residual water treater may further include a flow channel assembly disposed on the front surface of the circulation duct to guide water introduced into the backflow allowing portion to a bottom surface of the circulation duct.
[0053] The blocking portion may be disposed along an inner surface of the flow channel assembly to block water flowing along the flow channel assembly from being introduced into the evaporator.
[0054] The blocking portion may include a recovery partition wall extending from one surface of the flow channel assembly to face the backflow allowing portion, and a flow rate adjusting portion extending from the recovery partition wall toward the front surface of the circulation duct to collect a portion of water introduced from the communication hole.
[0055] The present disclosure minimizes a cost of manufacturing the circulation duct and the backflow allowing portion.
[0056] The present disclosure omits a process of manufacturing or installing the backflow allowing portion separately from the circulation duct.
[0057] The present disclosure minimizes a space in which the circulation duct and the backflow allowing portion are disposed.
[0058] The present disclosure blocks a possibility of the backflow allowing portion being separated from the circulation duct.
[0059] The present disclosure blocks a possibility of water leaking from the backflow allowing portion.
[0060] The present disclosure blocks water from leaking out of the machine room where the drainage tank is installed even when the drainage tank that collects residual water is full.
[0061] The present disclosure blocks water from overflowing from the drainage tank even when the drainage tank is full during the clothing treatment.
[0062] The present disclosure still supplies steam to the clothing and manages the clothing even when the drainage tank is full.
[0063] The present disclosure continuously supplies water to the drainage tank even when the drainage tank is full.
[0064] The present disclosure blocks water from overflowing outside the machine room even when water overflows from the drainage tank.
[0065] The present disclosure circulates water in the drainage tank to the circulation duct where air circulates.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
[0066] FIG. **1** shows an example of a clothing treating apparatus in related art.
[0067] FIG. **2** shows a drainage structure of an example of a clothing treating apparatus in related art.
[0068] FIG. **3** shows an outer appearance of an example of a clothing treatment apparatus of the present disclosure.
[0069] FIG. **4** shows an example of a machine room structure of the clothing treatment apparatus of the present disclosure.

[0070] FIG. **5** shows an example of a machine room base structure of the clothing treatment apparatus of the present disclosure.
[0071] FIG. **6** shows an example of a circulation duct structure of the clothing treatment apparatus of the present disclosure.
[0072] FIG. **7** illustrates an example shape of a circulation duct of the clothing treatment apparatus of the present disclosure.
[0073] FIG. **8** is a cross-sectional view of the circulation duct.
[0074] FIG. **9** shows an example of a reservoir of the clothing treatment apparatus of the present disclosure in detail.
[0075] FIG. **10** is a cross-sectional view (S-S′) of the circulation duct cut in a height direction.
[0076] FIG. **11** shows an example of an inclined structure related to a reservoir.
[0077] FIG. **12** shows example structures of the reservoir and a residual water treater.
[0078] FIG. **13** shows an example of a water cover.
[0079] FIG. **14** shows an example state in which a water cover is installed in the circulation duct.
[0080] FIG. **15** shows a detailed structure of the water cover.
[0081] FIG. **16** shows an example structure of a controller installation portion disposed on a base of the clothing treatment apparatus of the present disclosure.
[0082] FIG. **17** shows an example structure of an air discharger of a clothing treatment apparatus of the present disclosure.
[0083] FIG. **18** shows an example structure of a base cover of the clothing treatment apparatus of the present disclosure.
[0084] FIG. **19** shows an example structure of an outside air duct.
[0085] FIG. **20** shows an example of a flow of air flowing through the circulation duct.
[0086] FIG. **21** shows an example of an installation structure of a steam supply.
[0087] FIG. **22** shows a detailed structure of the steam supply.
[0088] FIG. **23** shows an example of an inside of a steam casing.
[0089] FIG. **24** shows an example of a residual water treater of the clothing treatment apparatus of the present disclosure.
[0090] FIG. **25** shows an example of a water supply and storage structure of the clothing treatment apparatus of the present disclosure.
[0091] FIG. **26** shows an example of a residual water collection structure of the clothing treatment apparatus of the present disclosure.
[0092] FIG. **27** shows an example of a leak prevention structure of the clothing treatment apparatus of the present disclosure.
[0093] FIG. **28** shows an example of a structure in which water is introduced into a circulation duct when water overflows from a drainage tank of the clothing treatment apparatus of the present disclosure.
[0094] FIG. **29** shows an example of a structure in which water introduced into the circulation duct is guided.

DETAILED DESCRIPTION

[0095] Hereinafter, implementations disclosed herein will be described in detail with reference to the attached drawings. In the present document, identical or similar components are assigned identical or similar reference numerals even in different implementations, and descriptions thereof are replaced with the first description. A singular expression used herein includes a plural expression unless the context clearly indicates otherwise. In addition, when describing the implementations disclosed herein, when it is determined that a detailed description of a related known technology may obscure the gist of the implementations disclosed herein, the detailed description thereof will be omitted. In addition, it should be noted that the attached drawings are only intended to facilitate easy understanding of the implementations disclosed herein, and the technical ideas disclosed herein should not be construed as being limited by the attached drawings.

[0096] FIG. **3** shows an outer appearance of an example of a clothing treatment apparatus **1** of the present disclosure.
[0097] In some implementations, referring to (a) in FIG. **3**, the clothing treatment apparatus of the present disclosure may include a cabinet **100** forming the outer appearance thereof, and a door **400** pivotably coupled to the cabinet **100**.
[0098] The door **400** may include a main body **410** forming a front surface of the cabinet **100**, and an installation body **420** extending from one side of the main body **410** and on which a display for displaying information of the clothing treatment apparatus may be installed.
[0099] The installation body **420** may form a step **430** from the main body **410** in a rearward direction of the cabinet **100**.
[0100] In one example, at least a portion of the installation body **420** may be disposed at the rear of the main body **410** so as to overlap the main body **410** in a front and rear direction. Accordingly, the step **430** may serve as a handle.
[0101] The installation body **420** may be made of a material or may have a color different from that of the main body **410**. In addition, the installation body **420** may be made of a translucent material through which light emitted from the display may be transmitted.
[0102] Referring to (b) in FIG. **3**, an inner casing **200** having an accommodating space **220** for accommodating clothing may be disposed inside the cabinet **100**. The inner casing **200** may have an opening **210** at a front side thereof through which the clothing enters and exits, and the opening **210** may be shielded by the door **400**.
[0103] The inner casing **200** may be made of a plastic resin-based material, and may be made of a reinforced plastic resin-based material that does not deform even with air at a temperature higher than a room temperature or heated air (hereinafter, hot air) and steam or moisture.
[0104] The inner casing **200** may have a height greater than a width. Accordingly, the clothing may be accommodated in the accommodating space **220** without being folded or wrinkled.
[0105] The clothing treatment apparatus **1** of the present disclosure may include a mounter **500** that may mount the clothing in the accommodating space **220** of the inner casing **200**.
[0106] The mounter **500** may include a hanger **510** disposed on a top surface of the inner casing **200** to mount the clothing thereon.
[0107] When the clothing is mounted on the hanger **510**, the clothing may be placed in a state of floating in air inside the accommodating space **220**.
[0108] In one example, the above mounter **500** may further include a pressurizer **520** that may be coupled to an inner surface of the door **400** to fix the clothing.
[0109] The hanger **510** may be formed in a bar shape disposed along a width direction of the inner casing **200** to support a clothes hanger on which the clothing is mounted. In addition, as illustrated, the hanger **510** may be formed in the clothes hanger shape to enable the clothing to be directly mounted thereon.
[0110] The clothing treatment apparatus of the present disclosure may further include an oscillator that vibrates the hanger **510** to remove foreign substances such as fine dust attached to the clothing.
[0111] The mounter **500** may include the pressurizer **520** that may be disposed on the door **400** and may pressurize and fix the clothing. The pressurizer **520** may include a support **522** that is fixed to the inner surface of the door **400** and supports one surface of the clothing, and a press **521** that pressurizes the clothing supported on the support **522**.
[0112] The press **521** may move toward or away from the support **522**. For example, the press **521** may be pivotably disposed on the support **522** or the inner surface of the door **400**.
[0113] Therefore, the press **521** and the support **522** may pressurize both surfaces of the clothing to remove wrinkles from the clothing and create intended creases.
[0114] The clothing treatment apparatus of the present disclosure may be equipped with a machine room **300** in which various apparatuses that may supply at least one of hot air and steam to the accommodating space **220** or purify or dehumidify outside air of the cabinet **100** are installed.

[0115] The machine room **300** may be disposed separately or partitioned from the inner casing **200**, but may be in communication with the inner casing **200**.
[0116] The machine room **300** may be disposed under the inner casing **200**. Accordingly, when hot air and steam having low specific gravities are supplied to the inner casing **200**, hot air and steam may be naturally supplied to the clothing.
[0117] The machine room **300** may include a heat supply **340** that may supply hot air into the inner casing **200**. The heat supply **340** may be equipped as a heat pump system, or may be equipped as a heater that directly heats air with electric energy.
[0118] When the heat supply **340** is equipped as the heat pump system, it may dehumidify and heat air discharged from the inner casing **200** again and supply air to the inner casing **200**. A detailed structure thereof will be described later.
[0119] The machine room **300** may include a steam supply **800** that may supply steam into the inner casing **200**. The steam supply **800** may be equipped to directly supply steam into the inner casing **200**. A detailed structure thereof will be described later.
[0120] To this end, the inner casing **200** may include a plurality of through-holes **230** that extend through one surface thereof and are in communication with the machine room **300**.
[0121] Via the through-holes **230**, air in the accommodating space **220** may be supplied to the machine room **300**, and at least one of hot air and steam generated in the machine room **300** may be supplied to the accommodating space **220**.
[0122] The through-holes **230** may include an inflow hole **231** extending through a bottom surface of the inner casing **200** and through which air inside the inner casing **200** is discharged or sucked into the machine room **300**, and an exhaust hole **232** extending through the bottom surface of the inner casing **200** and through which hot air generated in the machine room **300** is discharged.
[0123] The exhaust hole **232** may be defined in the bottom surface of the inner casing **200** so as to be biased toward a rear surface of the inner casing **200**. For example, the exhaust hole **232** may be defined so as to be inclined with respect to the ground between the bottom surface and the rear surface of the inner casing **200** and to face the hanger **510**.
[0124] In addition, the inflow hole **231** may be defined in the bottom surface of the inner casing **200** so as to be biased forward. Accordingly, the inflow hole **231** may be defined to be spaced apart from the exhaust hole **232**.
[0125] The through-holes **230** may include a steam hole **233** to which steam generated from the steam supply **800** is supplied. The steam hole **233** may be defined on one side of the exhaust hole **232**.
[0126] In one example, a water supply tank **30** that may supply water to the steam supply **800** and a drainage tank **40** in which condensate condensed in the heat supply **340** is collected may be disposed at a front side of the machine room **300**.
[0127] The water supply tank **30** and the drainage tank **40** may be detachably disposed at the front side of the machine room **300**. Accordingly, the clothing treatment apparatus **1** of the present disclosure may be freely installed without being restricted by a water supply source or a drainage source.
[0128] In one example, a drawer **50** that is extended forward and has a separate accommodating space may be further disposed at the front side of the machine room **300**. The drawer **50** may store a steam generator or an iron therein.
[0129] FIG. **4** shows a machine room structure of a clothing treatment apparatus of the present disclosure.
[0130] (a) in FIG. **4** is a front view of the machine room **300**, and (b) in FIG. **4** is a rear view of the machine room **300**.
[0131] Inside the machine room **300**, components for supplying hot air to a clothing treatment space, circulating air inside the clothing treatment space, supplying steam to the clothing treatment space, or purifying air outside the cabinet may be disposed.

[0132] The machine room **300** may include a base **310** that defines a space in which various apparatuses are supported or installed. The base **310** may provide an area size for the various apparatuses to be installed.
[0133] The base **310** may be installed with a circulation duct **320** through which air introduced from the inner casing **200** or the outside of the cabinet **100** flows.
[0134] The circulation duct **320** may be formed in a casing shape with an open top surface, and some components of the heat supply **340** may be installed inside the circulation duct **320**.
[0135] When the heat supply **340** is equipped as the heat pump system, the circulation duct **320** may include heat exchangers **341** and **342** to be described below and a compressor **342** that supplies a high-temperature and high-pressure refrigerant to the heat exchanger.
[0136] The heat exchangers **341** and **342** may be accommodated inside the circulation duct **320** to cool and dehumidify air flowing through the circulation duct **320**, or may heat the air to generate hot air.
[0137] When the circulation duct **320** is equipped to suck air outside the cabinet **100**, an outside air duct **370** that sucks outside air may be installed in front of the circulation duct **320**.
[0138] The circulation duct **320** may be in communication with the outside air duct **370** and may selectively suck outside air.
[0139] The water supply tank and the drainage tank may be detachably coupled to a front surface of the circulation duct **320**. The water supply tank **30** and the drainage tank **40** may be seated and disposed on the outside air duct **370**.
[0140] The circulation duct **320** may be coupled to the base **310**, but may be formed integrally with the base **310**. For example, the base **310** and the circulation duct **320** may be manufactured via injection-molding.
[0141] The machine room **300** may include a base cover **360** that allows the circulation duct **320** and the inflow hole **231** to be in communication with each other.
[0142] The base cover **360** may be coupled to an upper portion of the circulation duct **320** to guide air sucked from the inflow hole **231** into the circulation duct **320**.
[0143] The base cover **360** may block air inside the circulation duct **320** from being discharged to the outside by shielding a top surface of the circulation duct **320**. A lower portion of the base cover **360** and the top surface of the circulation duct **320** may form one surface of a flow channel of the circulation duct **320**.
[0144] The base cover **360** may include an inlet **362** connecting the inflow hole **231** with the circulation duct **320**. The inlet **362** may be formed in a duct shape to serve as an intake duct that delivers air inside the inner casing **200** to the circulation duct **320**.
[0145] The steam supply **800** that is connected to the water supply tank **30** to receive water, generate steam, and supply steam to the inner casing **200** may be installed in the machine room **300**. The steam supply **800** may be seated and disposed on the base cover **360**.
[0146] The steam supply **800** may be disposed at the rear of the inlet **362**.
[0147] The machine room **300** may include a fan installation portion **350** that is in communication with the circulation duct **320** and the inner casing **200**. The fan installation portion **350** may include a blower fan **353** that provides power for air inside the circulation duct **320** to flow in one direction, and a fan housing **351** that accommodates the blower fan **353** therein and is coupled to or extended from the circulation duct **320**.
[0148] The fan installation portion **350** may include an exhaust duct **352** that allows the circulation duct **320** and the exhaust hole **232** to be in communication with each other.
[0149] The exhaust duct **352** may extend from the fan housing **351** toward the exhaust hole **232** with an area size of a cross-section corresponding to the exhaust hole **232**.
[0150] As a result, air inside the inner casing **200** may be introduced via the base cover **360**, then pass through the circulation duct **320**, and then be supplied back into the inner casing **200** via the fan installation portion **350**.

[0151] In one example, the base **310** may include a compressor installation portion **312** in which the compressor **342** that supplies the refrigerant to the heat exchangers **341** and **343** is installed. The compressor installation portion **312** may be disposed outside the circulation duct **320**.
[0152] In addition, a controller or a control panel **700** that controls the clothing treatment apparatus of the present disclosure may be installed on the base **310**.
[0153] The base **310** may include a controller installation portion **313** that defines a space in which the controller **700** may be inserted under the circulation duct **320**.
[0154] The controller **700** may control all electronically controlled components such as the compressor **342**, the steam supply **800**, and the blower fan **353**.
[0155] Because the controller **700** is inserted and supported in the base **310**, vibration or impact applied to the controller **700** may be buffered. In addition, because the controller **700** is disposed close to all of the electronic components, occurrence of control errors such as noise may be minimized.
[0156] In addition, the steam supply is disposed on the circulation duct **320**, and the controller **700** is disposed under the circulation duct **320**. Therefore, the circulation duct **320** may be formed in a straight duct shape between the steam supply **800** and the controller **700**. Therefore, a flow resistance of air passing through the circulation duct **320** may be minimized.
[0157] The circulation duct **320**, the outside air duct **370**, the steam supply **800**, the controller **700**, and the heat supply **340** may be equipped in a module format on the base **310**.
[0158] Accordingly, the base **310** may be easily installed and maintained while being extended forward from and retracted rearward into the machine room **300**.
[0159] FIG. **5** shows a machine room base structure of a clothing treatment apparatus of the present disclosure.
[0160] (a) in FIG. **5** is a front perspective view of the base **310**, and (b) and (c) in FIG. **5** are rear perspective views of the base **310**.
[0161] The base **310** may be installed on a base plate forming a bottom surface of the clothing treatment apparatus. The base **310** may itself form the bottom surface of the clothing treatment apparatus.
[0162] The base **310** may include a base bottom **311** forming a support surface. The base bottom **311** may form the bottom surface of the clothing treatment apparatus. In addition, the base bottom **311** may be installed on a top surface of a bottom surface of the cabinet **100** forming the bottom surface of the clothing treatment apparatus.
[0163] The base **310** may be integrally formed with the circulation duct **320** forming at least a portion of the flow channel through which air flows. The circulation duct **320** may be formed by extending upward from the base bottom **311**.
[0164] The circulation duct **320** may include a duct body **321** that extends from the base bottom **311** to form the flow channel, a heat exchanger installation portion **3212** that provides a space in which an evaporator **341** or a condenser **343** is installed inside the duct body **321**, and an air discharger **323** that is disposed at the rear of the duct body **321** and through which air of the duct body **321** is discharged.
[0165] The air discharger **323** may be formed in a pipe shape that extends rearward from the duct body **321**. A diameter of the air discharger **323** may be smaller than a width of the duct body **321**.
[0166] The air discharger **323** may be connected to a fan housing **350**. Air discharged from the air discharger **323** may be guided into the inner casing **200** via the fan housing **350**.
[0167] The circulation duct **320** may include an outside air intake portion **322** formed by extending through a front surface of the duct body **321**.
[0168] The outside air intake portion **322** may be in communication with the outside air duct **370**. The outside air duct **370** may be supported by being seated in front of the outside air intake portion **322**.
[0169] The circulation duct **320** may include a damper that opens and closes the outside air intake

portion **322**. Introduction of outside air into the circulation duct **320** may be allowed or blocked via the opening and closing of the damper.
[0170] The base **310** may include a compressor installation portion **312** that provides a space in which the compressor **342** is installed. The compressor installation portion **312** may be formed at one side of the base bottom **311** and may be formed integrally with the base bottom **311**.
[0171] The compressor installation portion **312** may be formed with a protrusion that may support the compressor **342**. The compressor installation portion **312** may be disposed to be biased rearward on the base **310**. The compressor installation portion **312** may be disposed to at least partially overlap the air discharger **323** in a width direction.
[0172] The compressor installation portion **312** may be installed with a buffer member that reduces vibration transmitted from the compressor **342**. The buffer member may be fixed to the protrusion.
[0173] The base **310** may include a controller installation portion **313** in which the controller **700** is installed. The controller installation portion **313** may be formed between the base bottom **311** and the circulation duct **320**. The controller installation portion **313** may be formed between the base bottom **311** and a bottom surface of the circulation duct **320**. The controller installation portion **313** may be formed in a duct shape in which one of a front side and a rear side is open under the circulation duct **320**.
[0174] A structure of the controller installation portion **313** will be described later.
[0175] FIG. **6** shows a circulation duct structure of a clothing treatment apparatus of the present disclosure.
[0176] The circulation duct **320** may extend upward from the base bottom to form the flow channel through which air flows. The circulation duct **320** may include the heat exchanger installation portion **3212** that provides the space in which the evaporator **341** and the condenser **343** are installed. The heat exchanger installation portion **3212** may be disposed inside the duct body **321**.
[0177] The duct body **321** may have an open top surface. The condenser **343** and the evaporator **341** may be inserted and installed via the opening of the duct body **321**.
[0178] The opening of the duct body **321** may be shielded by the base cover **360**, and the base cover **360** and the duct body **321** may form the flow channel of a circulation duct **320**.
[0179] The front surface of the duct body **321** may be disposed to be spaced rearwardly apart from a front end of the base bottom **311**.
[0180] As a result, the base bottom **311** may secure a support surface **3111** on which at least one of the water supply tank **30** or the drainage tank **40** and the outside air duct **370** described above is installed and supported.
[0181] In one example, the heat supply **340** may include the evaporator **341** that is installed inside the circulation duct **320** and is equipped as a heat exchanger for cooling and dehumidifying air introduced into the circulation duct **320**, the condenser **343** that is equipped as a heat exchanger for heating air that has passed through the evaporator **341** to generate hot air, the compressor **342** that supplies the refrigerant for heat exchange with air to the condenser **343** and is disposed outside the circulation duct **320**, and an expansion valve **344** that expands and cools the refrigerant that has passed through the condenser **343**.
[0182] In one example, because the duct body **321** is integrally formed with the base **310**, a height of the heat exchanger installation portion **3212** may be secured more, and heights of the condenser **343** and the evaporator **341** may also be increased.
[0183] As a result, widths in the front and rear direction of the condenser **343** and the evaporator **341** may be reduced, so that the number of refrigerant pipes passing through the condenser and the evaporator may be reduced. Accordingly, there is an effect of reducing a flow loss of air passing through the condenser and the evaporator.
[0184] In one example, a sum of a length of the evaporator **341** and a length of the condenser **343** may be smaller than a length of the heat exchanger installation portion **3212**. Accordingly, the length in the front and rear direction of the heat exchanger installation portion **3212** may be equal

to or smaller than half of a length of the duct body **321**.
[0185] Therefore, because the heat exchanger installation portion **3212** may be sufficiently spaced apart from the outside air intake portion **322**, sufficient space for outside air and air inside the inner casing **200** to be introduced into the circulation duct **320** may be secured.
[0186] In one example, the inside of the duct body **321** may include an installation partition wall **3211** that separates the heat exchanger installation portion **3212** from the outside of the heat exchanger installation portion **3212**. The installation partition wall **3211** may protrude from a side surface of the duct body **321** and support a front side of the evaporator **341**.
[0187] In addition, the duct body **321** may extend rearward with a width expanded based on the installation partition wall **3211**.
[0188] As a result, a width of the heat exchanger installation portion **3212** may be greater than half the width of the base **310**. In addition, a width of the circulation duct **320** may be greater than half the width of the base **310**.
[0189] The width of the condenser **343** and the width of the evaporator **341** may also be greater than half the total width of the base **310**.
[0190] As described above, when the widths of the condenser **343** and the evaporator **341** are secured, a heat exchange capacity may be sufficiently secured.
[0191] In addition, the fan housing **350** may be disposed to overlap the condenser **343** or the evaporator **341** in the front and rear direction. Therefore, air that has passed through the evaporator **341** and the condenser **343** may be introduced into the fan housing **350** without bending of the flow channel. In other words, air introduced into the circulation duct **320** may minimize the flow loss because the flow channel is not bent during the process of flowing to the fan housing.
[0192] FIG. **7** illustrates a shape of a circulation duct of a clothing treatment apparatus of the present disclosure.
[0193] The base **310** may have the base bottom **311** and the circulation duct **320** formed integrally with each other via mold injection.
[0194] A mold forming an inner surface of the duct body **321** may be removed by being withdrawn upward from inside of the duct body **321**. In this regard, to facilitate the withdrawal of the mold, a wall surface of the duct body **321** may be inclined at a predetermined angle with respect to the removal direction of the mold.
[0195] A width of a bottom surface **321***a* of the duct body **321** may be greater than a width of a top surface **321***b* of the duct body **321**.
[0196] Specifically, a distance between the wall surfaces of the duct body **321** facing each other may increase as it gets farther from the base bottom **311**. A distance between a left side surface and a right side surface of the circulation duct facing each other may increase along the withdrawal direction of the mold. Accordingly, the removal of the mold may become easier.
[0197] In one example, the air discharger **323** may include an air extension pipe **3231** that extends from a rear side of the duct body **321** such that a diameter or a width thereof decreases, and an air discharge pipe **3232** that extends from the air extension pipe **3231** in a pipe shape with a uniform diameter to define a hollow **3233** therein. The air extension pipe **3231** may perform a function of a nozzle and thus increase a speed of discharged air.
[0198] In addition, a mold forming the air discharger **323** may be removed as shown in the drawing above. The mold may be withdrawn forward from the inside of the air discharger **323** toward the inside of the circulation duct **320**, and then removed toward the upper open surface of the circulation duct **320**. The air discharger **323** may be formed in a structure that facilitates the withdrawal of the mold in such process.
[0199] FIG. **8** is a cross-sectional view of the circulation duct.
[0200] The installation partition wall **3211** may protrude inward from the inner wall of the duct body **321** or may be formed as an outer wall of the circulation duct is recessed inward.
[0201] The heat exchanger installation portion **3212** may be formed between the heat exchanger

installation partition wall **3211** and the air discharger **323**.
[0202] The mold forming the air discharger **323** may be removed by being withdrawn forward from the air discharger **323** and then being withdrawn upward. It may be necessary to prevent the mold for forming the above air discharger **323** from interfering with the heat exchanger installation partition wall when it is withdrawn forward from the inside of the air discharger **323**. To this end, a design value of the air discharger **323** may be adjusted.
[0203] Specifically, when forming the air discharger **323**, a mold for forming a front side and a mold for forming a rear side based on a parting line **3251** of the air discharger **323** in the drawing may be separately disposed. Accordingly, removal directions of the molds may also be different from each other. The mold for forming the portion located forward of the parting line of the air discharger **323** may be withdrawn forward, and the mold for forming the portion located rearward of the parting line of the air discharger **323** may be withdrawn rearward.
[0204] That is, to prevent the mold withdrawn forward from interfering with the heat exchanger installation partition wall during the withdrawal process, a distance 1 **323***a* may be smaller than a distance 2 **321***c* in the drawing. The distance 1 **323***a* may mean a distance between the parting line of the air discharger **323** and a front end of the air discharger **323**. In addition, the distance 1 **323***a* may mean a distance between the parting line of the air discharger **323** and a rear opening of the circulation duct. The distance 2 **321***c* may mean a distance between the front end of the air discharger **323** and the heat exchanger installation partition wall. In addition, the distance 2 **321***c* may mean a distance between the rear opening of the circulation duct and the heat exchanger installation partition wall **3211**.
[0205] FIG. **9** shows a structure of a reservoir of a clothing treatment apparatus of the present disclosure in detail.
[0206] In the clothing treatment apparatus of the present disclosure, when the compressor **342** and the blower fan **353** are operated, air supplied from the outside of the cabinet **100** and air supplied from the inner casing **200** are cooled while passing through the evaporator **341**, and water vapor contained in air is condensed.
[0207] Water condensed in the evaporator **341** may accumulate on the bottom surface of the circulation duct **320**.
[0208] The clothing treatment apparatus of the present disclosure may include a reservoir **326** formed as a portion of the bottom surface of the duct body **321** is recessed to collect condensate condensed in the evaporator **341**.
[0209] The reservoir **326** is a space defined as the portion of the bottom surface of the duct body **321** is recessed, and is also able to form one side surface of the controller installation portion **313**.
[0210] The reservoir **326** may be formed to be recessed downward from the bottom surface of the circulation duct **320**.
[0211] The reservoir **326** may be formed integrally with the circulation duct **320**. The reservoir **326** may be formed by forming the portion of the bottom surface of the circulation duct **320** to be recessed when injection-molding the circulation duct **320** onto the base **310**.
[0212] At least a portion of a top surface of the reservoir **326** may be disposed parallel to the heat exchanger installation portion **2312**.
[0213] The base **310** may include a drain pipe **3263** that discharges water collected in the reservoir **326** to the outside.
[0214] The drain pipe **3263** may protrude from a lower portion of the reservoir **326** to the outside of the circulation duct **320**. The drain pipe **3263** may discharge water stored in the reservoir to the outside of the base. As a result, water collected in the reservoir **326** may be prevented from rotting or flowing back to the bottom surface of the circulation duct **320**.
[0215] The circulation duct **320** has the partition wall **3211** that extends from an inner surface of the duct body **321**. The partition wall **3211** may protrude inward from the inner wall of the circulation duct **320** or may protrude inward as an outer wall of the circulation duct **320** is recessed

inward. The partition wall **3211** may guide the locations where the heat exchangers **341** and **343** are installed, and may prevent air entering the heat exchanger from bypassing the heat exchanger.
[0216] The partition wall **3211** may be disposed in the reservoir **326**.
[0217] FIG. **10** is a cross-sectional view (S-S′) of a circulation duct cut in a height direction.
[0218] The reservoir **326** may include a bottom surface **3261** where water accumulates, and a recessed portion **3262** that is recessed further downward from the bottom surface **3261**. The drain pipe **3263** may be disposed on an outer surface of the circulation duct **320** at a location corresponding to the recessed portion **3262**. As a result, the drain pipe **3263** may be disposed at a portion of the reservoir **326** with the lowest water level. Water collected in the reservoir **326** may flow to the drain pipe **3263** by its own weight.
[0219] FIG. **11** shows an inclined structure related to a reservoir.
[0220] (a) in FIG. **11** shows a vertical cross-section parallel to the width direction of the base, and (b) in FIG. **11** shows a vertical cross-section parallel to the front and rear directions of the base.
[0221] The bottom surface of the circulation duct **320** and the bottom surface of the reservoir **326** may have a predetermined inclination.
[0222] In particular, a bottom surface **325** of the circulation duct may be inclined toward the reservoir **326**, and the bottom surface **3261** of the reservoir may be inclined toward the drain pipe **3263**.
[0223] The bottom surface **325** of the circulation duct may be disposed to be inclined at an angle 1 a toward the reservoir **326** based on the ground or the bottom surface of the base **310**.
[0224] In addition, the bottom surface **325** of the circulation duct may be inclined downward in a forward direction toward the drain pipe **3263**. The bottom surface **325** of the circulation duct may be disposed to be inclined forward at an angle 2 b based on the bottom surface of the base **310**.
[0225] As a result, water condensed on the bottom surface of the circulation duct may flow forward and toward the reservoir **326**.
[0226] In one example, the bottom surface **3261** of the reservoir may also have a predetermined inclination.
[0227] The drain pipe **3263** may be disposed to be biased on an inner surface of the reservoir **326** rather than on the outer surface thereof.
[0228] The bottom surface **3261** of the reservoir may have a downward inclination toward the inside of the circulation duct **320** based on the bottom surface of the base **310**.
[0229] The bottom surface **3261** of the reservoir may be inclined at an angle 3 c based on the bottom surface of the base **310**, and the bottom surface **3261** of the reservoir may have an inclination direction opposite to the inclination of the bottom surface **325** of the circulation duct.
[0230] The angle 3 c may be an angle of downward inclination in a direction away from the partition wall **3211**.
[0231] The bottom surface **3261** of the reservoir may have a downward inclination toward the drain pipe **3263**.
[0232] The bottom surface **3261** of the reservoir **326** may have a downward inclination in a forward direction at an angle 4 d based on the base **310**.
[0233] The above-described angles 1 to 4 may be determined by a mold during a molding process of the base **310**. The angles 1 to 4 may be determined during a molding process of the circulation duct **320** or the reservoir **326**. The angles 2 b and 4 d may form inclinations in the same direction.
[0234] A mold for molding the reservoir **326** may be removed by being withdrawn upward. In this regard, side walls of the reservoir **326** may be tapered to facilitate the removal of the mold. Specifically, a cross-sectional area of the reservoir **326** may increase based on the withdrawal direction of the mold. In other words, a perimeter of the top surface of the reservoir **326** may be greater than a perimeter of the bottom surface of the reservoir **326**.
[0235] A front surface of the reservoir **326** may be inclined forward in an upward direction. A rear surface of the reservoir **326** may be inclined rearward in the upward direction. Left and right side

surfaces of the reservoir **326** may be inclined leftward and rightward in the upward direction, respectively.

[0236] FIG. **12** shows structures of the reservoir and a residual water treater.

[0237] (a) in FIG. **12** is a cross-sectional view in a front and rear direction of the reservoir, and (b) in FIG. **12** shows a front portion of the bottom surface of the circulation duct **320**.

[0238] The reservoir **326** may be disposed such that the bottom surface **3261** is inclined downward in a forward direction, and the bottom surface **325** of the circulation duct **320** may also be inclined downward in the forward direction.

[0239] A filter **3264** may be disposed in the recessed portion **3262** to prevent foreign substances from being discharged outside the drain pipe **3263**.

[0240] The clothing treatment apparatus of the present disclosure may include a residual water treater **330** that collects water collected in the reservoir **326** into the drainage tank **40**.

[0241] The residual water treater **330** may include a drainage pump **331** that discharges water collected in the reservoir **326** into the drainage tank **40**. The drain pipe **3263** and the drainage pump **331** may be connected to each other via a first drainage hose **3351**, and water discharged from the drainage pump **331** may flow along a second drainage hose **3352**.

[0242] The drain pipe **3263** may be disposed upward of the drainage pump **331**. As a result, water collected in the reservoir **326** by its own weight may be collected to the drainage pump **331**.

[0243] Water collected to the drainage pump **331** may be collected in the drainage tank **40** when the drainage pump **331** operates.

[0244] FIG. **13** shows an example of a water cover.

[0245] The clothing treatment apparatus of the present disclosure may further include a water cover **327** that is seated on the bottom surface of the circulation duct **320**. The water cover **327** may support at least one of the evaporator **341** and the condenser **343**, may block water condensed in the evaporator **341** from flowing to the condenser **343**, and guide water to the reservoir **326**.

[0246] The water cover may prevent the bottom surface of the circulation duct from being exposed to the outside. In addition, the water cover may form the support surface on which the evaporator and the condenser are supported. The water cover may support the evaporator and the condenser so as to be spaced apart from the bottom surface of the circulation duct. The water cover may shield the top surface of the reservoir. That is, the water cover may perform a cover function of the reservoir.

[0247] The water cover **327** may also shield an upper portion of the reservoir **326**. As a result, air introduced into the circulation duct **320** may be blocked from being obstructed by a step between the reservoir **326** and the circulation duct **320**.

[0248] The water cover **327** may include a water body **3271** having a plate shape and supporting at least one of the evaporator **341** and the condenser **343**, and a support rib **3278** extending downward from the water body **3271** to maintain a vertical level or an inclination of the water body **3271**.

[0249] One of the support ribs **3278** may be supported by the recessed portion **3262** or the filter **3264**. As a result, the support rib **3278** may directly guide water flowing along the water body **3271** to the drain pipe **3263**.

[0250] FIG. **14** shows a state in which the water cover is installed in a circulation duct.

[0251] The water cover **327** may be formed in a plate shape that shields at least a portion of the bottom surface of the circulation duct **320**.

[0252] The water cover **327** may block the reservoir **326** from being exposed to an area facing the inlet **362** or an area into which outside air is introduced.

[0253] The water cover **327** may support lower ends of the evaporator **341** and the condenser **343**. Even when the bottom surface of the circulation duct **320** is disposed to be inclined because of the water cover **327**, the evaporator **341** and the condenser **343** may be disposed at the same vertical level.

[0254] In addition, the water cover **327** may prevent locations of the evaporator **341** and the

condenser **343** from changing.
[0255] The water body **3271** of the water cover **327** may be disposed with an inclination to be parallel to the base **310**. This prevents air introduced into the evaporator **341** from receiving unnecessary inclination resistance.
[0256] FIG. **15** shows a detailed structure of a water cover.
[0257] The water cover may include the water body **3271** positioned upward of the bottom surface of the circulation duct or the bottom surface of the reservoir. The water body **3271** may prevent the bottom surface **325** of the circulation duct or the bottom surface **3261** of the reservoir from being exposed to the outside.
[0258] The water cover **327** may include a seating rib **3274** protruding upward from the water body **3271**. The seating rib **3274** may fix at least one of the evaporator **341** and the condenser **343**, and may also maintain a gap between the evaporator **341** and the condenser **343**.
[0259] The water cover **327** may include a through-hole **3272** extending through the water body **3271**. The through-hole **3272** may be defined between the evaporator **341** and the condenser **343**. Thus, water condensed in the evaporator **341** may be guided downward of the water cover.
[0260] The water cover **327** may further include a water outlet **3275** extending through the water body **3271** and defined to be spaced apart from the through-hole **3272**. The water outlet **3275** may be defined in an area facing the reservoir **326**.
[0261] The water outlet **3275** may discharge water flowing along the top surface of the water body **3271** to the reservoir **326**.
[0262] In addition, the water outlet **3275** may also guide water overflowing from the drainage tank **40** to the reservoir **326**.
[0263] The water cover **327** may include a spacing rib **3273** supported on the bottom surface of the circulation duct **320** from the water body **3271**. The spacing rib **3273** may have an inclination corresponding to the inclination of the bottom surface of the circulation duct **320**, and may be in contact with the bottom surface of the circulation duct **320**, thereby blocking the air from flowing between the water body **3271** and the bottom surface of the circulation duct **320**.
[0264] In one example, the spacing rib **3273** may be disposed along a periphery of the water body **3271**.
[0265] In one example, the water cover **327** may further include an avoidance portion **3277** that prevents interference with the partition wall **3211** of the circulation duct. The avoidance portion **3277** may be formed to be recessed from a side surface of the water body **3271**. The avoidance portion **3277** may have a shape corresponding to a shape of the partition wall.
[0266] The water cover **327** may include a discharge rib **3276** supported by the reservoir **326**. The discharge rib **3276** may be formed in a shape that does not shield the drain pipe **3263**.
[0267] FIG. **16** shows a structure of a controller installation portion disposed on a base of a clothing treatment apparatus of the present disclosure.
[0268] (a) in FIG. **16** shows an aspect in which the controller **700** is installed in the controller installation portion **313**.
[0269] The controller **700** may control all or a portion of devices for the clothing treatment apparatus of the present disclosure to perform an arbitrary course of performing the refreshing cycle of the clothing. The controller **700** may be equipped as a PCB board, but may not be limited thereto and may be equipped as various devices for control.
[0270] The controller **700** may be inserted into and seated in the controller installation portion **313**.
[0271] The controller installation portion **313** may be disposed downward of the circulation duct **320**.
[0272] The bottom surface of the circulation duct **320** may form a top surface of the controller installation portion **313**. The controller installation portion **313** may be disposed downward of the air discharger **323**.
[0273] The controller installation portion **313** may be formed integrally with the base bottom **311**.

The controller installation portion **313** may be defined as a recessed space beneath the circulation duct during the process of forming the circulation duct **320** on the base **310**.
[0274] The controller **700** may be introduced in a sliding manner in the forward direction into the controller installation portion **313**.
[0275] A bracket **3131** may be further disposed on a surface of the controller **700** to surround the controller. The brackets **3131** may be disposed top and bottom surfaces of the controller to prevent the foreign substances from entering the controller.
[0276] In addition, the bracket **3131** may prevent damage to a circuit board inside the controller **700** resulted from heat or vibration transmitted to the controller **700**. The bracket **3131** may be made of a metal material.
[0277] (b) in FIG. **16** shows a state in which a controller is installed in a controller installation portion.
[0278] As shown in the drawing, the controller **700** may be installed at a predetermined angle with the base bottom **311**.
[0279] For example, the controller **700** may be disposed to be inclined toward the reservoir **326**. Accordingly, when water leaks onto the top surface of the controller **700**, the water may quickly escape the controller **700**, and the bottom surface of the circulation duct **320** may be formed to be inclined toward the reservoir **326**.
[0280] The controller **700** may include a supporter **3132** that is formed to protrude laterally.
[0281] The controller installation portion **313** may include a rib **3134** that protrudes from each of both side surfaces of the installation portion. The supporter **3132** of the controller may be disposed on the rib **3134**.
[0282] The supporter **3132** of the controller may support a load of an entirety of the controller **700**. When the supporter **3132** of the controller is supported on the rib **3134**, the controller **700** may be spaced apart from the base bottom **311** by a predetermined distance.
[0283] The rib **3134** may be formed integrally with the base **310**. The rib **3134** may be formed together with the base **310** when the base **310** is injection-molded, and may be formed integrally with the base bottom **311**, the circulation duct **320**, and the like.
[0284] A protrusion **3133** may be formed to protrude on a front surface of the controller **700**. In addition, a guide protruding rearward may be disposed on an inner surface of the controller installation portion **313**. The protrusion may be coupled with the guide. The protrusion may be inserted into the guide. When inserting the controller into the controller installation portion, the controller may be aligned at a correct location by coupling the protrusion to the guide.
[0285] In addition, locations of both side surfaces of the controller may be determined in the manner in which the supporter is seated on the rib as described above. Using such coupling process, the controller may be coupled at the correct location of the controller installation portion without a separate fastening member.
[0286] FIG. **17** shows a structure of an air discharger **323** of a clothing treatment apparatus of the present disclosure.
[0287] The base **310** may include the air discharger **323** that discharges treated air toward the fan housing.
[0288] The air discharger **323** may allow the inside of the circulation duct **320** or the duct body **321** to be in communication with the fan housing **350**. The air discharger **323** may be formed in a bell mouth shape. The bell mouth shape may reduce the flow loss of air and improve an air circulation efficiency.
[0289] The air discharge pipe **3232** of the air discharger **323** may be formed in a pipe shape, and in the mold removal process, based on the parting line **3251**, the mold disposed forward of the parting line **3251** may be withdrawn forward, and the mold disposed rearward of the parting line **3251** may be withdrawn rearward.
[0290] The fan installation portion **350** may be supported by being coupled to the air discharge pipe

3232. The fan housing **351** may have a coupling hole coupled with an outer circumferential surface of the air discharge pipe **3232**, and the blower fan **353** may be disposed in the coupling hole.
[0291] The fan housing **351** may include the exhaust duct **352** extending from an outer circumferential surface or an outer side of the blower fan **353** to the exhaust hole **232**.
[0292] The fan housing **351** and the exhaust duct **352** may form therein a flow channel that accommodates the blower fan **353** therein and allows air to flow.
[0293] A motor that rotates the blower fan **353** may be supported by being coupled to the outer side of the fan housing **351**.
[0294] FIG. **18** shows a structure of a base cover of a clothing treatment apparatus of the present disclosure.
[0295] The base cover **360** may be coupled to the top surface of the circulation duct **320** to prevent the inside of the circulation duct **320** from being exposed.
[0296] The base cover **360** may include an inflow body **361** coupled to the top surface of the circulation duct **320** to allow the inner casing **200** and the circulation duct **320** to be in communication with each other, and a shielding body **363** extending from the inflow body **361** to shield the circulation duct **320**.
[0297] The inflow body **361** may be formed in a duct shape to allow the inflow hole **231** of the inner casing and the inside of the circulation duct **320** to be in communication with each other. The inflow body **361** may protrude higher than the shielding body **363**.
[0298] The inflow body **361** may be disposed forward of the evaporator **341** so as not to face the evaporator **341** and the condenser **343**, and may be disposed forward of the partition wall **3211**.
[0299] The inflow body **361** may serve as an inflow duct that moves air of the inner casing **200** to the circulation duct **320**.
[0300] The inflow body **361** may include the inlet **362** therein through which air of the inner casing **200** may pass.
[0301] Specifically, the base cover **360** may include a first rib **362***a* extending along a width direction of the inflow body **361** and a second rib **362***b* extending along the width direction of the inflow body **361** and spaced rearwardly apart from the first rib **362***a*.
[0302] The first rib **362***a* and the second rib **362***b* may be disposed to be in parallel with each other. The first rib **362***a* and the second rib **362***b* may be formed in a plate shape extending in a vertical direction, and a height thereof may correspond to a height of the inflow body **361**.
[0303] A front edge of the inflow body **361** and the first rib **362***a* may form a first inlet **3621**, the first rib **362***a* and the second rib **362***b* may form a second inlet **3623**, and the second rib **362***b* and a rear edge of the inflow body **361** may form a third inlet **3622**.
[0304] The first inlet **3621** and the third inlet **3622** may have the same area size, and the second inlet **3623** may have a smaller area size than the first inlet **3621** and the third inlet **3622**.
[0305] The base cover **360** may include a damper assembly **364** that opens and closes the inlet **362**, and a driver **365** coupled to the first damper **3641** to control the opening and closing of the damper assembly **364**.
[0306] The damper assembly **364** may include a first damper **3641** that opens and closes the first inlet **3621**, and a second damper **3642** that opens and closes the third inlet **3622**.
[0307] The first damper **3641** may be formed in a plate shape with an area size corresponding to that of the first inlet **3621**, and may be rotatably coupled to both side surfaces of the inflow body **361** inside the first inlet **3621**.
[0308] The second damper **3642** may be formed in a plate shape with an area size corresponding to that of the third inlet **3622**, and may be rotatably coupled to both side surfaces of the inflow body **361** inside the third inlet **3622**.
[0309] The second inlet **3623** may include a blocking filter **366** that allows air to pass therethrough, but is able to filter out the foreign substances such as fine dust and lint.
[0310] The blocking filter **366** may be inserted into the second inlet **3623** to partition the first inlet

3621 and the third inlet **3622** from each other. The blocking filter **366** may be disposed in the second inlet **3623** to extend so as to be in contact with the bottom surface of the circulation duct **320**.

[0311] The blocking filter **366** may be equipped as a filter that may filter even moisture. For example, the blocking filter **366** may be equipped as a HEPA filter or the like.

[0312] In one example, when the blocking filter **366** is inserted into the second inlet **3623**, a shielding member that shields the second inlet **3623** may be further coupled.

[0313] The driver **365** may include a motor that provides power to selectively rotate the first damper **3641** and the second damper **3642**, and a plurality of gear members that may selectively rotate the first damper **3641** and the second damper **3642** while rotating in a state of being engaged with the motor.

[0314] The first inlet **3621** and the third inlet **3622** may be selectively opened by the driver **365**.

[0315] Because of the driver **365**, air contained within the inner casing **200** may be introduced into the circulation duct **320** along the first inlet **3621** or may be introduced into the circulation duct **320** along the third inlet **3622**.

[0316] In one example, the driver **365** may control the first damper **3641** and the second damper **3642** to open both the first inlet **3621** and the third inlet **3622**, and may control the first damper **3641** and the second damper **3642** to shield both the first inlet **3621** and the third inlet **3622**.

[0317] The driver **365** may be formed with any structure as long as it may rotate the first damper **3641** and the second damper **3642**. For example, the driver **365** may be formed with a combination of the motor, a driving gear that rotates by the motor, and a driven gear that is coupled to the first damper and the second damper and rotates by the rotation of the driving gear.

[0318] The base cover **360** may include the shielding body **363** that may extend from the inflow body **361** and shield the evaporator **341** and the condenser **343**. The shielding body **363** may be formed in a plate shape.

[0319] The base cover **360** may be detachably coupled to the top surface of the circulation duct **320** via an inflow hook **3612** that extends from the bottom surface of the inflow body **361**.

[0320] The circulation duct **320** may include a coupling portion that is detachably coupled to the inflow hook **3612**.

[0321] FIG. **19** shows a structure of an outside air duct.

[0322] Referring to (a) in FIG. **19**, the outside air duct **370** may be coupled to the base **310**.

[0323] The outside air duct **370** may be in communication with the outside air intake portion **322**.

[0324] The outside air duct **370** may include an outside air damper **373** that opens and closes the outside air intake portion **322**, and an outside air driver **374** that rotates the outside air damper **373** to selectively open the outside air intake portion **322**.

[0325] The outside air damper **373** may be formed in a plate shape that may seal the outside air intake portion **322**, and may be rotatably coupled to both side surfaces of the outside air intake portion **322**.

[0326] The outside air driver **374** may be equipped as an actuator that is coupled to the outside air duct **370** or the circulation duct **320** and rotates the outside air damper **373**.

[0327] The outside air duct **370** may include an extension duct **372** that extends forward from the outside air intake portion **322**, and an intake duct **371** that extends forward from the extension duct **372** and allows outside air to be introduced.

[0328] The intake duct **371** may extending from a lower portion of the extension duct **372**, and may have the water supply tank **30** and the drainage tank **40** disposed thereon. The water supply tank **30** and the drainage tank **40** may be coupled to or seated on the intake duct **371**.

[0329] The intake duct **371** may include an outside air port **3711** into which outside air is sucked and a partition rib **3712** that partitions the outside air port **3711** at one end or a free end thereof.

[0330] The outside air port **3711** may be disposed downward of the door **400** so as not to be shielded by the door **400**.

[0331] The partition rib **3712** may partition the inside of the outside air port **3711** so as to block the foreign substances or a user's body from being inserted.
[0332] Referring to (b) in FIG. **19**, when the outside air driver **374** rotates the outside air damper **373** to open the outside air intake portion **322**, the intake duct **371** and the circulation duct **320** may be in communication with each other.
[0333] In this regard, when the blower fan **353** is operated, air outside the cabinet may be introduced into the circulation duct **320**. When the compressor **342** is operated, the outside air may be dehumidified while passing through the circulation duct **320** and supplied into the inner casing **200**.
[0334] The door **400** may further include an exhaust port that discharges air inside the inner casing **200** to the outside, and an exhaust damper that selectively opens and closes the exhaust port. The exhaust port may be disposed to face the accommodating space of the inner casing **200**. Thus, the dehumidified air may be discharged via the exhaust port.
[0335] In addition, the outside air may be filtered while passing through the blocking filter **366** and discharged back to the outside of the cabinet **100**.
[0336] FIG. **20** shows a flow of air flowing through the circulation duct.
[0337] Referring to (a) in FIG. **20**, the outside air damper **373** may be controlled to shield the outside air intake portion **322**, the first damper **3641** may be controlled to open the first inlet **3621**, and the second damper **3642** may be controlled to shield the third inlet **3622**.
[0338] When the blower fan **353** is operated, air inside the inner casing **200** may be introduced into the first inlet **3621** and filtered while passing through the blocking filter **366**.
[0339] When the compressor **342** is operated, air that has passed through the blocking filter **366** may be dehumidified and heated while passing through the evaporator **341** and the condenser **343**.
[0340] Air that has also passed through the heat exchanger may be supplied into the inner casing **200** by passing through the fan installation portion **350**.
[0341] This state may be a state in which steam is not supplied to the inner casing **200**. This is because when steam is supplied to the inner casing **200**, moisture will wet the filter **600**, and a performance of the blocking filter **366** will not be guaranteed.
[0342] As a result, when steam has not been supplied to the inner casing **200**, before steam is supplied to the inner casing **200**, or when humidity is lowered even after steam is supplied to the inner casing **200**, air inside the inner casing **200** may pass through the first inlet **3621** and may filter out the foreign substances such as lint while passing through the blocking filter **366**.
[0343] Referring to (b) in FIG. **20**, the outside air damper **373** may be controlled to shield the outside air intake portion **322**, the first damper **3641** may be controlled to shield the first inlet **3621**, and the second damper **3642** may be controlled to open the third inlet **3622**.
[0344] When the blower fan **353** is operated, air inside the inner casing **200** may be introduced into the third inlet **3622**. Because the third inlet **3622** is disposed downstream of the blocking filter **366**, air introduced into the third inlet **3622** may not pass through the blocking filter **366**.
[0345] When the compressor **342** is operated, air that has passed through the blocking filter **366** may be dehumidified and heated while passing through the evaporator **341** and the condenser **343**.
[0346] Air that has also passed through the heat exchanger may be supplied into the inner casing **200** by passing through the fan installation portion **350**.
[0347] As a result, when steam has been supplied to the inner casing **200** or the humidity inside the inner casing **200** is high, air of the inner casing **200** may be allowed to be introduced into the third inlet **3622** and blocked from being introduced into the first inlet **3621**, thereby preventing the blocking filter **366** from being exposed to moisture.
[0348] Referring to (c) in FIG. **20**, the outside air damper **373** may be controlled to open the outside air intake portion **322**, the first damper **3641** may be controlled to shield the first inlet **3621**, and the second damper **3642** may be controlled to shield the third inlet **3622**.
[0349] When the blower fan **353** is operated, air inside the inner casing **200** may be blocked from

flowing into the inlet **362**, and only outside air of the cabinet **100** may flow into the circulation duct **320** and pass through the blocking filter **366**. As a result, the foreign substances such as fine dust contained in outside air may be filtered by the blocking filter **366**.
[0350] When the compressor **342** is operated, air that has passed through the blocking filter **366** may be dehumidified while passing through the evaporator **341** and the condenser **343**.
[0351] Air that has also passed through the heat exchanger may be supplied into the inner casing **200** by passing through the fan installation portion **350** to supply fresh hot air to the clothing.
[0352] In this regard, when an apparatus for discharging air inside the inner casing **200** to the outside is disposed in the door **400**, air outside the cabinet may be discharged in a purified and dehumidified state while passing through the blocking filter **366** and the heat supply **340**.
[0353] As a result, the clothing treatment apparatus of the present disclosure may determine flow directions of air inside the inner casing **200** and air outside the cabinet as the controller **700** controls the outside air driver **374** and the inlet driver **365**.
[0354] FIG. **21** shows an installation structure of a steam supply.
[0355] The steam supply **800** may be supported by being seated on the base cover **360**.
[0356] The steam supply **800** may include a steam generator **810** that is seated on the base cover **360** and stores water that generates steam.
[0357] The steam supply **800** may further include an installation bracket **870** that may fix the steam generator **810** to the base cover **360**.
[0358] The installation bracket **870** may be coupled to the base cover **360** to fix the steam generator **810**.
[0359] The installation bracket **870** may include a lower panel **871** that supports a bottom surface of the steam generator **810** and side panels **872** that support both side surfaces of the steam generator **810** on the lower panel **871**.
[0360] The installation bracket **870** may further include one or more fixing clips **873** that extend from the side panels **872** to prevent the steam generator **810** from being detached.
[0361] The fixing clip **873** may be detachably disposed on a top surface or the side surface of the steam generator **810**.
[0362] The compressor **342** may be disposed downward of the steam supply **800**.
[0363] The installation bracket **870** may block heat generated from the compressor or heat generated from a refrigerant compressed in the compressor from being transferred to the steam supply **800**.
[0364] The installation bracket **870** may also block fire from being transferred to the steam supply **800** in the event of fire occurring in the compressor **342**.
[0365] In one example, the base cover **360** may include a fastener **3631** disposed on the shielding body **363** and detachably coupled with the steam supply **800**. The fastener **3631** may have a structure detachably coupled with a protrusion protruding from a lower portion of the steam generator **810**.
[0366] As a result, even when a large amount of water is contained inside the steam generator **810**, the steam generator **810** may be stably seated on the base cover **360**.
[0367] In addition, because the steam generator **810** is positioned upward of the circulation duct **320** and thus a distance thereof to the inner casing **200** becomes smaller, condensation of steam generated in the steam generator **810** before reaching the inner casing **200** may be minimized.
[0368] FIG. **22** shows a detailed structure of the steam supply.
[0369] Referring to (a) in FIG. **22**, the steam supply **800** may include a steam generator **810** that may receive water to generate steam and store water therein, and a heater assembly **840** that is accommodated in the steam generator **810** and heats the water to generate steam.
[0370] The steam generator **810** may be formed in a casing shape that defines a space for accommodating the heater assembly **840**.
[0371] For example, the steam generator **810** may be formed in a casing shape with an open top,

and may accommodate the heater assembly **840** therein.
[0372] The steam supply **800** may further include a casing cover **820** that is coupled to the steam generator **810** to prevent the heater assembly **840** from being exposed to the outside and prevent water from leaking.
[0373] The casing cover **820** may be installed with a water level sensor **850** that senses a water level of the steam generator **810** and a steam sensor **860** that senses a temperature inside the steam generator **810** or senses whether steam is generated inside the steam generator **810**.
[0374] Referring to (b) in FIG. **22**, the steam generator **810** may include a casing body **811** that provides a space for storing the water and accommodating the heater assembly **840** therein.
[0375] The casing body **811** may be formed in a shape with an open top, so that various components may be easily installed inside the casing body **811**.
[0376] The casing body **811** may include a heater insertion hole **8111** extending through one side thereof and through which the heater assembly **840** may be inserted or withdrawn.
[0377] The casing body **811** may include a recovery pipe **814** that receives water to generate steam therein.
[0378] The recovery pipe **814** may discharge water accommodated inside the casing body **811** to the outside.
[0379] The recovery pipe **814** may be kept closed by a shielding plug **8141** so as to be opened only when removing residual water inside the steam generator **810**, and may include a shielding clip **8142** that keeps the shielding plug **8141** coupled to the recovery pipe **814** such that the shielding plug **8141** is prevented from being removed arbitrarily.
[0380] Therefore, when repairing the steam generator **810** or preventing freezing or the like of the steam generator **810**, water inside the steam generator **810** may be discharged via the recovery pipe **814**.
[0381] In one example, the recovery pipe **814** may receive water from the water supply tank **30**. Details will be described later.
[0382] In one example, a heater fixer **830** that may support or fix the heater assembly **840** may be installed inside the casing body **811**. The heater fixer **830** may include a fixing clip **831** that fixes the heater assembly **840**, and a clip fastening member **833** that fixes the fixing clip **831** to the casing body **811**.
[0383] The fixing clip **831** may accommodate or surround at least a portion of the heater assembly **840**.
[0384] In one example, the steam supply **800** may include a water supply pipe **815** that receives water. The water supply pipe **815** may be in communication with the water supply tank **30** to receive water.
[0385] The water supply pipe **815** may be disposed on the casing cover **820** or may be disposed at an upper portion of the steam generator **810**. As a result, water may be prevented from flowing back via the water supply pipe **815**.
[0386] The steam supply **800** may include a steam pipe **813** that discharges steam generated by the operation of the heater assembly **840** to the outside. The steam pipe **813** may also be disposed at an upper portion of the casing cover **820**, so that water may be prevented from being discharged arbitrarily into the steam pipe **813**.
[0387] The steam pipe **813** may be in communication with the steam hole **233** of the inner casing **200**.
[0388] The casing cover **820** may include a water level sensor hole **855** in which the water level sensor may be installed.
[0389] The water level sensor **850** may include one or more contact protrusions **852** that are inserted into the water level sensor hole **855** and immersed in water to sense the water level, and a sensor body **851** that is coupled to the water level sensor hole **855** or supported by the casing cover **820** to maintain the contact protrusions **852** in a floating state inside the steam generator **810**.

[0390] The sensor body **851** may be coupled to the casing cover **820** via a sensor fastening member **853**.
[0391] In one example, the casing cover **820** may include an insertion hole **864** into which the steam sensor **860** may be installed. The steam sensor **860** may include a sensing device **861** that is inserted into the insertion hole **864** to sense whether steam is generated inside the steam generator **810**, a support member **863** that fixes the sensing device **861** to the casing cover **820**, and a coupling member **862** that couples the support member **863** to the casing cover **820**.
[0392] The sensing device **861** may be equipped as a humidity sensor or a temperature sensor and may sense whether steam is generated inside the steam generator **810**.
[0393] In one example, the casing cover **820** may include a cover hook **821** that extends forward to be coupled to the base cover **360**.
[0394] In addition, a fixing protrusion **822** that may fix a lower portion of the inner casing **200** or a separate steam discharger may also be disposed at a rear side of the casing cover **820**.
[0395] The heater assembly **840** may be inserted into the heater insertion hole **8111**, be accommodated in the steam generator **810**, and receive power to heat water.
[0396] The heater assembly **840** may be equipped as a sheath heater or the like, and may be controlled by the controller **700** such that operation and stopping may be repeated.
[0397] The heater assembly **840** may include a first heater **841** that receives first power to heat water, and a second heater **842** that receives power greater than the first power to heat water.
[0398] As a result, the second heater **842** may heat a larger amount of water and generate more steam than the first heater **841**.
[0399] The first heater **841** and the second heater **842** may consume maximum heater power allowed for the heater assembly **840** in the clothing treatment apparatus in a shared manner. That is, when the first heater **841** consumes a portion of the maximum heater power, the second heater **842** may consume the remainder of the maximum heater power.
[0400] For example, when the general maximum heater power allowed for the heater assembly **840** is 1500 W, the first heater **841** may consume 600 W, and the second heater **842** may consume 880 W. The remaining 20 W may be allocated as a margin to account for an error or the like.
[0401] In one example, the heater assembly **840** may include three or more heaters. For example, the first heater **841**, the second heater **842**, and a third heater may be included, and the first heater **841**, the second heater **842**, and the third heater may consume the maximum heater power in the shared manner.
[0402] Hereinafter, a description will be made based on the heater assembly **840** being composed of the first heater **841** and the second heater **842**.
[0403] Each of the first heater **841** and the second heater **842** may be formed as a U-shaped metal pipe.
[0404] The heater assembly **840** may include a heater sealer **843** that may fix the first heater **841** and the second heater **842** and seal the heater through-hole **8111**, and may include a terminal assembly **844** that supplies current to the first heater **841** and the second heater **842**.
[0405] The terminal assembly **844** may include a first terminal **844***a* that supplies current to the first heater **841** and a second terminal **844***b* that supplies current to the second heater **842**.
[0406] The first heater **841** and the second heater **842** may be arranged at the same vertical level. Accordingly, the first heater **841** and the second heater **842** may heat water at the same water level to generate steam.
[0407] Therefore, the controller **700** may adjust an amount of steam generated and an amount of power consumed using both or selectively the first heater **841** and the second heater **842**. FIG. **23** shows inside of the steam generator.
[0408] The steam generator **810** may have a heating space **817** that stores water therein and accommodates the heater assembly **840** therein.
[0409] In addition, the steam generator **810** may receive water to generate steam via a water supply

hose **8151** connected to the water supply pipe **815**.
[0410] In one example, steam generated by operating the heater assembly **840** in the steam generator **810** may be discharged to the outside of the steam supply **800** via the steam discharge pipe **813** along a steam hose **8131**.
[0411] The steam hose **8131** may be in communication with the steam hole **233** of the inner casing **200**.
[0412] In one example, the steam generator **810** may include a separation partition wall **812** that may separate the heating space **817** and the water level sensor **850** from each other. That is, the separation partition wall **812** may separate the heater assembly **840** and the water level sensor **850** from each other, and may be disposed to be biased to one side of the casing body **811**.
[0413] The water level sensor **850** may be disposed between the separation partition wall **812** and an inner surface of the casing body **811**.
[0414] As a result, vibration of water occurring when the water boils may be prevented from being transmitted to the water level sensor **850**, and heat generated in the heater assembly **840** may be prevented from being directly transmitted to the water level sensor **850**.
[0415] FIG. **24** shows a water tank structure of a clothing treatment apparatus of the present disclosure.
[0416] In some examples, the drainage tank **40** may be disposed in front of the duct body **321** so that the user may easily remove the drainage tank **40** from the machine room **300** and discharge water collected in the drainage tank **40** to the outside.
[0417] In addition, the water supply tank **30** may also be disposed in front of the duct body **321** so that the user may easily remove the water supply tank **30** from the machine room **300** and then fill the water supply tank **30** with water.
[0418] To this end, the clothing treatment apparatus of the present disclosure may further include a support stand **380** that detachably supports the water supply tank **30** and the drainage tank **40** in front of the circulation duct **320**.
[0419] The support stand **380** may be disposed upward of the outside air duct **370**, and may support a load of at least one of the water supply tank **30**, the drainage tank **40**, and the drawer **50**.
[0420] The support stand **380** may be fixed in front of the circulation duct **320**.
[0421] The clothing treatment apparatus of the present disclosure may include a residual water treater **330** that guides condensate condensed inside the circulation duct **320** to the drainage tank **40**.
[0422] The residual water treater **330** may be concentratedly disposed in front of the duct body **321** to set a length of a flow channel with the drainage tank **40** to be small.
[0423] FIG. **25** shows a residual water collection structure of a clothing treatment apparatus of the present disclosure.
[0424] The drainage tank **40** may include a storage body **41** that stores condensate therein, and a handle **42** that is detachably coupled to an upper portion of the storage body and supports a load of the storage body **41**.
[0425] The storage body **41** may be formed in a box shape that stores water therein. The storage body **41** may include a stopper **43** that protrudes at one side thereof and is detachably fastened to the support stand **380**.
[0426] The storage body **41** may include a supply hole **44** that extends through one surface to receive the condensate.
[0427] The supply hole **44** may extend through a rear surface of the storage body **41** and may be defined closer to a top surface than to a bottom surface of the storage body **41**. As a result, the storage body **41** may stably store water up to a portion where the supply hole **44** is located.
[0428] The support stand **380** may include a load support **381** on which the drainage tank **40**, the water supply tank **30**, and the drawer **50** may be supported, and a detachment support **382** disposed on the load support **381** in front of the circulation duct **320** so that the drainage tank **40** and the

water supply tank **30** may be seated.
[0429] The load support **381** may be formed in a plate shape to support bottom surfaces of the water supply tank **30** and the drainage tank **40**, and the detachment support **382** may also be formed in a plate shape to support rear surfaces of the water supply tank **30** and the drainage tank **40**.
[0430] The support stand **380** may include a spacer **383** protruding from the load support **381** so as to be disposed between the water supply tank **30** and the drainage tank **40**. The spacer **383** may separate the water supply tank **30** and the drainage tank **40** from each other by a predetermined spacing. As a result, when one of the water supply tank **30** and the drainage tank **40** is withdrawn, the other of the water supply tank **30** and the drainage tank **40** may be prevented from being withdrawn arbitrarily.
[0431] In one example, the residual water treater **330** may include the drainage pump **331** that receives water from the drain pipe **3263** and a drainage hose **335** that discharges water from the drainage pump **331**.
[0432] The drainage hose **335** may guide water supplied from the drainage pump **331** to the drainage tank **40**.
[0433] In one example, the support stand **380** may include a communicating portion **384** that extends through the detachment support **382** so as to allow the drainage hose **335** and the drainage tank **40** to be in communication with each other.
[0434] The communicating portion **384** may be defined in an area facing the supply hole **44** when the drainage tank **40** is seated on the load support **381**.
[0435] In one example, the residual water treater **330** of the present disclosure may further include a discharge pipe **334** that allows the drainage hose **335** and the drainage tank **40** to be in communication with each other. The discharge pipe **334** may receive water from the drainage hose **335** and guide water to the supply hole **44**.
[0436] The discharge pipe **334** may extend from the circulation duct **320** or may extend from the support stand **380**. The discharge pipe **334** may be formed as an injection-molded product. Accordingly, the discharge pipe **334** may stably fix a distal end of the drainage hose **335** and prevent the drainage hose **335** from being bent abruptly.
[0437] In addition, the discharge pipe **334** may be formed as an injection-molded product in a shape of a pipe that is fixed to the circulation duct **320** or the support stand **380**, so that an installation location thereof may always be fixed. Accordingly, a distal end of the discharge pipe **334** and the supply hole **44** may always be positioned at correct locations, so that condensate supplied from the drainage pump **331** may be stably introduced into the drainage tank **40**.
[0438] In one example, the clothing treatment apparatus of the present disclosure may further include a backflow allowing portion **333** that allows water accommodated inside the drainage tank **40** to flow back into the circulation duct **320** or the residual water treater **330**.
[0439] The backflow allowing portion **333** may also be installed at a location facing the supply hole **44**, and may receive water inside the drainage tank **40**. A detailed structure thereof will be described later.
[0440] FIG. **26** shows an example of a residual water treater of a clothing treatment apparatus of the present disclosure.
[0441] The drain pipe **3263** may discharge condensate condensed in the reservoir **326** to the outside of the reservoir **326**. The drain pipe **3263** may extend forward from the base **310**.
[0442] The drainage pump **331** may provide power to transfer water discharged via the drain pipe **3263** to the drainage tank **40**.
[0443] The drainage hose **335** may be connected to the drainage pump **331** to discharge water discharged from the drainage pump **331** to the drainage tank **40**.
[0444] The drainage pump **331** and the drain pipe **3263** may be disposed downward of the reservoir **326** to facilitate collecting condensate. Therefore, the drainage pump **331** may be disposed downward of the support stand **380**.

[0445] In addition, the drainage hose **335** may be disposed at the rear of or downward of the support stand **380** to avoid hindering the drainage tank **40** from being withdrawn forward from the support stand **380**.
[0446] As a result, the drainage hose **335** may be connected to the drainage pump **331** rearward of the support stand **380** and be connected to the drainage tank **40** disposed at a front side of the support stand **380** so as to supply water thereto. In some examples, when the drainage hose **335** connects the drainage pump **331** with the drainage tank **40** at once, the drainage hose **335** may be excessively bent, so that a volume occupied by the drainage hose **335** may excessively increase, or it may be difficult to ensure durability of the drainage hose **335**.
[0447] In addition, because the drainage tank **40** is disposed so as to deviate forward from the support stand **380**, a separate component may ensure that the drainage hose **335** and the drainage tank **40** are stably in communication with each other.
[0448] Therefore, the residual water treater **330** may further include a discharge pipe **334** that is disposed between the drainage hose **335** and the drainage tank **40** and transfers water supplied from the drainage hose **335** to the drainage tank **40**.
[0449] The discharge pipe **334** may receive water transferred from the drainage hose **335** therein, but may be fixed to the support stand **380** or the circulation duct **320**. The discharge pipe **334** may be disposed in an area facing the supply hole **44** when the drainage tank **40** is coupled to the support stand **380**. Therefore, even when the drainage tank **40** is detached from or coupled to the support stand **380**, the discharge pipe **334** may supply water supplied from the drainage hose **335** to the drainage tank **40**.
[0450] In one example, the residual water treater **330** may further include an inlet pipe **332** connected to one side of the discharge pipe **334** and coupled with the drainage hose **335**. The inlet pipe **332** may be coupled to a distal end of the drainage hose **335** and serve as a connector that changes a flow direction of water supplied from the drainage hose **335**. The inlet pipe **332** may prevent the drainage hose **335** from being excessively bent.
[0451] The discharge pipe **334** may be disposed at the rear of the drainage tank **40** and may extend in the front and rear direction, and the inlet pipe **332** may be disposed to extend in a width direction from the discharge pipe **334**.
[0452] The discharge pipe **334** and the inlet pipe **332** may be formed in a pipe shape that is fixed to the support stand **380** or the circulation duct **320** and supplies water.
[0453] The residual water treater **330** may install some of the components that allow the drainage pump **331** and the drainage tank **40** to be in communication with each other in the circulation duct **320**. For example, the discharge pipe **334** and the inlet pipe **332** may be formed integrally with the circulation duct **320**.
[0454] A flow channel that introduces condensate of the drainage tank **40** back into the circulation duct **320** and allows condensate to flow to the reservoir **326** when the drainage tank **40** is full or water contained in the drainage tank **40** overflows to the outside may be easily designed.
[0455] The residual water treater **330** may further include the backflow allowing portion **333** that introduces water contained in the drainage tank **40** into the circulation duct **320**. The backflow allowing portion **333** may extend through the circulation duct **320** and be in communication with the supply hole **44** of the drainage tank **40**.
[0456] To prevent water introduced into the discharge pipe **334** and the inlet pipe **332** from being introduced into the circulation duct **320** instead of flowing to the drainage tank **40**, the backflow allowing portion **333** may not be in direct communication with the discharge pipe **334** and the inlet pipe **332**.
[0457] The backflow allowing portion **333** may be formed adjacent to the discharge pipe **334** so as to allow water overflowing from the supply hole **44** to be re-introduced into the circulation duct **320**.
[0458] The backflow allowing portion **333** may be insertable into the supply hole **44**. That is, when

the drainage tank **40** is seated on the support stand **380**, the backflow allowing portion **333** may be inserted into the supply hole **44**.
[0459] Therefore, water supplied at a water level higher than the supply hole **44** may be guided into the circulation duct **320** along the backflow allowing portion **333**.
[0460] The backflow allowing portion **333** may be disposed downward of the discharge pipe **334**. As a result, water supplied from the discharge pipe **334** may be completely introduced into the drainage tank **40**, and water excessively supplied above a water level corresponding to the supply hole **44** may be recovered into the circulation duct **320** along the backflow allowing portion **333**.
[0461] As a result, the residual water treater **330** may continuously circulate condensate into the circulation duct **320** and the drainage tank **40**.
[0462] Accordingly, even when the drainage tank **40** is full, water collected in the reservoir **326** may be continuously introduced into the drainage tank **40** without leaking to the outside.
[0463] That is, even when the drainage tank **40** is full, condensate collected in the drainage tank **40** may be blocked from leaking to the outside of the machine room **300**.
[0464] In addition, even when the drainage tank **40** is full, separate from notifying the water level state of the drainage tank **40** to the outside, the clothing treatment apparatus may operate normally. In addition, even when the drainage tank **40** becomes full during the operation of the clothing treatment apparatus, management of the clothing may be completed without stopping the clothing treatment apparatus.
[0465] FIG. **27** shows a structure of a backflow allowing portion of a clothing treatment apparatus of the present disclosure in detail.
[0466] The circulation duct **320** may have the evaporator **341** and the condenser **343** disposed therein. In this regard, the evaporator **341** may be disposed forward of the condenser **343** in the circulation duct **320**.
[0467] The backflow allowing portion **333** may be disposed on a front surface of the circulation duct **320**. In this regard, when water introduced into the circulation duct **320** from the backflow allowing portion **333** comes into contact with the evaporator **341** or the like, the evaporator **341** may be unnecessarily corroded or contaminated, and an efficiency of the evaporator **341** in cooling air may decrease.
[0468] Therefore, the evaporator **341** may be disposed closer to a rear side of the circulation duct **320** than the backflow allowing portion **333** such that water supplied from the backflow allowing portion **333** does not come into contact with the evaporator **341** along air directed toward the evaporator **341**.
[0469] As a result, the water cover **327** may be exposed as it is between the evaporator **341** and the backflow allowing portion **333**.
[0470] In addition, the evaporator **341** may be disposed to be spaced apart from the backflow allowing portion **333** by a width in the front and rear direction of the water cover **327**.
[0471] The backflow allowing portion **333** or the discharge pipe **334** may be exposed forward of the circulation duct **320** by extending through the communicating portion **384**. When the drainage tank **40** is seated on the detachment support **382**, a distal end of the backflow allowing portion **333** or the discharge pipe **334** may be located inside the drainage tank **40**.
[0472] The drain hose **335** may be disposed between the detachment support **382** and the front surface of the circulation duct **320**, and the drain hose **335** may be disposed to connect the drainage pump **331** and the inlet pipe **332** to each other.
[0473] FIG. **28** shows a backflow allowing portion and a front surface of a circulation duct of a clothing treatment apparatus of the present disclosure in detail.
[0474] Referring to (a) in FIG. **28**, the backflow allowing portion **333** may include a backflow hole **3330** extending through the front surface of the circulation duct **320**.
[0475] The backflow hole **3330** may be defined in an area that may at least partially face the supply hole **44**. The backflow hole **3330** may be defined adjacent to one side surface of the circulation

duct **320**.
[0476] The backflow allowing portion **333** may further include a recovery flow channel **3331** that extends from the backflow hole **3330** defined in the front surface of the circulation duct **320** to be inserted into the supply hole **44** of the drainage tank **40**.
[0477] The recovery flow channel **3331** may be formed in a duct shape having an open top surface and protruding both side surfaces in a longitudinal direction (the front and rear direction). Accordingly, water inside the drainage tank **40** may be introduced into the drainage tank **40** along the recovery flow channel **3331** without leaking to the outside.
[0478] The backflow allowing portion **333** may further include an inflow channel **3332** that protrudes inward from inside of the front surface of the circulation duct **320** to form a flow channel through which water introduced along the recovery flow channel **3331** flows.
[0479] The inflow channel **3332** may block water introduced into the recovery flow channel **3331** from flowing downward along an inner surface of the circulation duct **320**. Accordingly, recovered condensate may be prevented from being discharged to the outside air intake portion **322** or remaining in the front surface of the circulation duct **320**.
[0480] The front surface of the circulation duct **320** may be formed such that an area where the backflow allowing portion **333** is disposed has a greater thickness than other areas because of the inflow channel **3332**, a flow channel to be described below, and the like. The circulation duct **320** may define a through-hole between the recovery flow channel **3331** and the inflow channel **3332** to receive water inside the drainage tank **40**.
[0481] In one example, the drainage tank **40** may be disposed closer to one side surface of the circulation duct **320** than to the other side surface, and the supply hole **44** may be defined in the drainage tank **40** closer to one side surface of the circulation duct **320**.
[0482] The recovery flow channel **3331** and the inflow channel **3332** may also be disposed closer to one side surface of the circulation duct **320**. Accordingly, the residual water treater **330** may secure more flow channel space that may allow water introduced into the inflow channel **3332** to flow in the width direction of the circulation duct **320**. Accordingly, water introduced into the inflow channel **3332** may secure a sufficient flow rate to flow along the width direction in the front surface of the circulation duct **320**. Therefore, water may not remain in the residual water treater **330** and may be entirely collected back into the reservoir **326** along the residual water treater **330**.
[0483] The inflow channel **3332** may have a width equal to or greater than that of the recovery flow channel **3331** such that water introduced into the recovery flow channel **3331** may flow along the width direction of the front surface of the circulation duct **320**, and may have one end blocked at one side surface of the circulation duct **320** or blocked by a separate rib and the other end open.
[0484] The residual water treater **330** may further include a flow rate adjusting portion **3373** that may collect a certain amount of water in the inflow channel **3332** such that water may flow to the bottom surface of the circulation duct **320** after a sufficient flow rate is secured in the inflow channel **3332**.
[0485] The flow rate adjusting portion **3373** may reduce a passage diameter of the inflow channel **3332**.
[0486] The flow rate adjusting portion **3373** may be disposed in the width direction or a diameter direction, not a flow channel direction of the inflow channel **3332**. The flow rate adjusting portion **3373** may be formed in a plate shape that extends from one surface of the inflow channel **3332** toward the other surface. For example, the flow rate adjusting portion **3373** may be disposed to face forward on rear one side surface of the inflow channel **3332**.
[0487] The flow rate adjusting portion **3373** partially restricts the flow of water introduced into the inflow channel **3332**, and thus is able to be viewed as a component of a blocking portion **337** to be described later.
[0488] The blocking portion **337** may block water introduced into the inflow channel **3332** from flowing to the evaporator **341**.

[0489] The blocking portion **337** may be equipped as a partition wall or a step that extends higher than a flow channel on one surface of the flow channel including the inflow channel **3332** facing the evaporator **341**.
[0490] The blocking portion **337** may be formed integrally with the circulation duct **320**.
[0491] The blocking portion **337** may be disposed on an outer surface of the flow channel forming the backflow allowing portion **333** to prevent water flowing through the backflow allowing portion **333** from deviating from the backflow allowing portion **333**.
[0492] For example, the blocking portion **337** may include a recovery partition wall **3371** disposed on a distal end of the inflow channel **3332** or on one surface of the inflow channel **3332** facing the evaporator **341**.
[0493] The recovery partition wall **3371** may be formed in a shape of a partition wall that is spaced apart from the through-hole of the circulation duct **320**, in which the recovery flow channel **3331** or the inflow channel **3332** is disposed, toward the evaporator **341** and shields the through-hole.
[0494] The recovery partition wall **3371** may be disposed to be spaced apart from the front surface of the circulation duct **320** by a width of the inflow channel **3332**, and may face the supply hole **44**.
[0495] The recovery partition wall **3371** may have an area size greater than that of the through-hole of the circulation duct. The recovery partition wall **3371** may extend from an outer surface or a rear surface of the inflow channel **3332** to one side surface of the circulation duct **320**.
[0496] Water introduced into the inflow channel **3332** may be blocked by the recovery partition wall **3371** and flow along an extension direction of the inflow channel **3332**. Therefore, water introduced into the inflow channel **3332** may be blocked from flowing to the evaporator **341**.
[0497] Water introduced into the inflow channel **3332** may flow by passing through the flow rate adjusting portion **3373** after being collected in a certain amount by the recovery partition wall **3371** and the flow rate adjusting portion **3373**.
[0498] Referring to (b) in FIG. **28**, the backflow allowing portion **333** may include a guide flow channel **3333** that extends along the width direction of the circulation duct **320** from the inflow channel **3332**. The guide flow channel **3333** may be disposed in an inner surface of the front surface of the circulation duct **320**, and may have a thickness corresponding to that of the inflow channel **3332**.
[0499] The guide flow channel **3333** may include an area that is defined to be lowered as it gets farther away from the inflow channel **3332**. In addition, an inlet of the guide flow channel **3333**, where the guide flow channel **3333** and the inflow channel **3332** are connected to each other, may be disposed higher than an outlet of the guide flow channel **3333**.
[0500] As a result, water introduced into the guide flow channel **3333** may flow along the width direction of the circulation duct **320** by gravity.
[0501] In one example, a sensor installation portion **338** where the water level sensor **850** that senses the water level of the water supply tank **30**, a power device that opens and closes the air intake portion **322**, and the like may be fixed may be further disposed inside the circulation duct **320**. The sensor installation portion **338** may extend from an exposed surface of the guide flow channel **3333**.
[0502] The guide flow channel **3333** may have a width greater than that of the sensor installation portion **338**.
[0503] The sensor installation portion **338** may further include a sensor partition wall **3381** disposed upstream of the sensor installation portion **338** or spaced apart therefrom toward the inflow channel **3332** to block water introduced from the guide flow channel **3333** from being introduced into the sensor installation portion **338** at a high flow rate. The sensor partition wall **3381** may have a width smaller than that of the guide flow channel **3333**.
[0504] The guide flow channel **3333** may guide water introduced from the inflow channel **3332** directly to an upper portion of the reservoir **326** of the circulation duct **320**. As a result, an amount of water introduced from the inflow channel **3332** remaining inside the circulation duct **320** may be

minimized.
[0505] The guide flow channel **3333** may have a variable curvature or inclination along an extension direction thereof. The guide flow channel **3333** may have a steeper inclination in an area adjacent to the inflow channel **3332** than in an area furthest from the inflow channel **3332**. As a result, water introduced into the guide flow channel **3333** may be prevented from remaining in the guide flow channel **3333**.
[0506] The blocking portion **337** may include a guide partition wall **3372** that is disposed along an inner surface or one surface of the guide flow channel **3333** facing the evaporator **341** to have a height greater than that of the inside of the guide flow channel **3333**.
[0507] The guide partition wall **3372** may prevent water flowing in the guide flow channel **3333** from deviating to the outside of the guide flow channel **3333**.
[0508] The guide partition wall **3372** may correspond to the highest portion of the guide flow channel **3333**, may extend along a longitudinal direction of the guide flow channel **3333**, and may form the outer surface of the guide flow channel **3333**.
[0509] FIG. **29** shows a downstream of the backflow allowing portion.
[0510] (a) in FIG. **29** shows a structure of guiding water to the bottom surface of the circulation duct **320**.
[0511] The guide flow channel **3333** may extend from the inflow channel **3332** to the reservoir **326**.
[0512] The backflow allowing portion **333** may include a discharge flow channel **3334** extending from a distal end of the guide flow channel **3333** and guiding water flowing along the guide flow channel **3333** to the reservoir **326**.
[0513] The discharge flow channel **3334** may guide water flowing through the guide flow channel **3333** toward the bottom surface of the reservoir **326**. The discharge flow channel **3334** may extend downward along the inner surface of the front surface of the circulation duct **320** from the guide flow channel **3333**.
[0514] In addition, the discharge flow channel **3334** may be formed as a length of a distal end of the guide partition wall **3372** formed in the guide flow channel **3333** is smaller than a length of the guide flow channel **3333**.
[0515] The discharge flow channel **3334** may be formed as a width of the guide partition wall **3372** is smaller than a width of the front surface of the circulation duct **320** at the inner step surface of the front surface of the circulation duct **320** where the guide flow channel **3333** is disposed.
[0516] That is, the discharge flow channel **3334** may be formed between the guide partition wall **3372** and the other side surface of the circulation duct **320**.
[0517] Water discharged from the discharge flow channel **3334** may flow downward along the inner surface of the front surface of the circulation duct **320** and may be collected in the reservoir **326**. Condensate collected in the reservoir **326** may flow along the reservoir bottom surface **3261** to the recessed portion **3262**. Condensate may flow again along the drain pipe **3263** to the drainage pump **331**.
[0518] The blocking portion **337** may further include a discharge partition wall **3374** that guides water flowing along the guide flow channel **3333** to the reservoir **326**.
[0519] The discharge partition wall **3374** may protrude from the inner surface of the circulation duct **320** to extend from a distal end of the guide partition wall **3372** toward the reservoir bottom surface **3261**. The discharge partition wall **3374** may extend in a height direction from the inner surface of the circulation duct **320** and may extend up to the reservoir bottom surface **261**.
[0520] In one example, the backflow allowing portion **333** may further include a flow channel restricting portion **3335** that protrudes from the guide flow channel **3333**.
[0521] The flow channel restricting portion **3335** may be disposed at a certain distance from the distal end of the guide partition wall **3372** toward the other side surface of the circulation duct **320**.
[0522] The guide flow channel **3333** and the inflow channel **3332** may be formed to protrude while forming a step on the inner surface of the circulation duct **320**, and the flow channel restricting

portion **3335** may be formed to protrude upward from the step surface (a top surface).
[0523] The discharge flow channel **3334** may be disposed between the flow channel restricting portion **3335** and the guide flow channel **3333**, and may be formed between the flow channel restricting portion **3335** and the guide partition wall **3372**.
[0524] The flow channel restricting portion **3335** may have the same width as the guide flow channel **3333**.
[0525] The flow channel restricting portion **3335** may be disposed at a certain distance from the other side surface of the circulation duct **320** toward the inflow channel **3332**. As a result, water flowing through the guide flow channel **3333** may quickly flow to the reservoir **326**.
[0526] (b) in FIG. **29** shows that the water cover **327** is seated on the bottom surface of the circulation duct **320**.
[0527] The water cover **327** shields the reservoir **326** and maintains the bottom surface of the circulation duct **320** flat. As a result, the backflow allowing portion **333** may allow water flowing along the guide flow channel **3333** to the water cover **327**.
[0528] The water cover **327** may include a water outlet **3275** that allows condensate to pass therethrough in an area facing the discharge flow channel **3334**. Water dropped onto the water cover **327** may flow to the reservoir **326** via the water outlet **3275**.
[0529] In one example, the water cover **327** may be seated on the bottom surface of the circulation duct **320**, but may have a width smaller than the width of the circulation duct **320** in consideration of assembly tolerance or the like so as to be easily withdrawn or installed in the circulation duct **320**. In some examples, because of the tolerance, the water cover **327** may shake and generate noise or the like when the clothing treatment apparatus operates, or may be installed crookedly.
[0530] To prevent such problem, the discharge partition wall **3374** may further include a cover fixing stand **3375** with an expanded thickness. The cover fixing stand **3375** may have a thickness greater than that of the discharge partition wall **3374**.
[0531] The water cover **327** may have a groove in a front edge into which the cover fixing stand **3375** may be inserted. As a result, the cover fixing stand **3375** may be seated in the groove of the water cover **327**. As a result, the water cover **327** may be prevented from shaking or vibrating inside the circulation duct **320**.
[0532] The cover fixing stand **3375** may be disposed to be spaced downwardly apart from an upper end of the discharge partition wall **3374**. As a result, the groove of the water cover **327** may be easily secured to the cover fixing stand **3375**.
[0533] In addition, the cover fixing stand **3375** may extend up to the bottom surface of the reservoir **326**, and may have a thickness that increases in an upward direction.
[0534] An exposed surface of the cover fixing stand **3375** may be formed in a curved shape. Accordingly, the water cover **327** may be easily installed in or separated from the circulation duct **320** without being restricted by the cover fixing stand **3375**.
[0535] The present disclosure may be modified and implemented in various forms, so that the scope of rights thereof is not limited to the above-described implementations. Therefore, when the modified implementation includes elements of the claims of the present disclosure, it may be considered to fall within the scope of the present disclosure.

Claims

1-**16**. (canceled)
17. A clothing treatment apparatus comprising: a cabinet having an opening defined at a front side thereof; an inner casing disposed inside the cabinet and configured to accommodate clothes therein; a door pivotably coupled to the cabinet and configured to open and close the opening of the cabinet; a circulation duct configured to circulate air discharged from the inner casing; a heat exchanger disposed inside the circulation duct and configured to cool and heat the air; a drainage

tank disposed forward relative to the circulation duct and configured to store water condensed from the heat exchanger; and a residual water treater configured to collect water condensed from the circulation duct into the drainage tank, wherein the residual water treater fluidly connects the drainage tank with the circulation duct such that a portion of the water collected in the drainage tank is dischargeable back into the circulation duct.

18. The clothing treatment apparatus of claim 17, wherein the residual water treater comprises a backflow allowing portion that extends through a surface of the circulation duct and is in fluid communication with the drainage tank.

19. The clothing treatment apparatus of claim 18, wherein the backflow allowing portion is spaced apart from a bottom surface of the drainage tank by a predetermined height.

20. The clothing treatment apparatus of claim 19, wherein the residual water treater further comprises: a drainage pump configured to cause the water collected on a bottom surface of the circulation duct to flow toward the drainage tank; and a discharge pipe that is in fluid communication with the drainage pump and the drainage tank and configured to provide the water to the drainage tank, the discharge pipe being separately provided from the backflow allowing portion.

21. The clothing treatment apparatus of claim 20, wherein the backflow allowing portion and the discharge pipe are separately provided such that the backflow allowing portion and the discharge pipe are not in direct communication with each other.

22. The clothing treatment apparatus of claim 18, wherein the backflow allowing portion defines: a backflow hole that extends through the circulation duct; and a recovery flow channel that extends from the backflow hole and is inserted into the drainage tank to thereby fluidly connect the backflow allowing portion and the drainage tank with each other.

23. The clothing treatment apparatus of claim 22, wherein the backflow allowing portion further defines a guide flow channel that extends from the backflow hole in a width direction of an inner surface of the circulation duct, the guide flow channel being configured to guide the water condensed from the circulation duct to a bottom surface of the circulation duct.

24. The clothing treatment apparatus of claim 23, wherein the circulation duct comprises a reservoir that is recessed from the bottom surface of the circulation duct and configured to collect the water therein, wherein the drainage tank or the backflow hole is disposed closer to a first side of the inner surface of the circulation duct than to a second side of the inner surface of the circulation duct opposite to the first side, wherein the reservoir is disposed closer to the second side of the inner surface of the circulation duct than to the first side of the inner surface of the circulation duct, and wherein the guide flow channel extends from the backflow hole toward the reservoir.

25. The clothing treatment apparatus of claim 23, wherein the guide flow channel extends downward along the width direction of the inner surface of the circulation duct.

26. The clothing treatment apparatus of claim 25, wherein the backflow allowing portion further defines: an inflow channel that extends from the backflow hole to a first end of the guide flow channel; and a discharge flow channel that extends from a second end of the guide flow channel to the bottom surface of the circulation duct.

27. The clothing treatment apparatus of claim 26, wherein the discharge flow channel has a steeper inclination than the guide flow channel, and wherein the backflow allowing portion comprises a flow channel restricting portion that protrudes from a bottom surface of the guide flow channel and that is configured to cause the water in the guide flow channel to flow toward the discharge flow channel.

28. The clothing treatment apparatus of claim 17, wherein the residual water treater is disposed at a front surface of the circulation duct.

29. The clothing treatment apparatus of claim 28, wherein the residual water treater comprises: a backflow allowing portion that extends through the front surface of the circulation duct and is configured to receive water from the drainage tank; and a blocking portion that is configured to

block water in the backflow allowing portion from flowing to the heat exchanger.

30. The clothing treatment apparatus of claim 29, wherein the backflow allowing portion is configured to guide water introduced from the drainage tank to a bottom surface of the circulation duct at the front surface of the circulation duct, and wherein the blocking portion is disposed along an edge of the backflow allowing portion that is exposed to an inner surface of the circulation duct to thereby block the water from being flowing into the heat exchanger.

31. The clothing treatment apparatus of claim 29, wherein the backflow allowing portion defines: a backflow hole that extends through the front surface of the circulation duct and is in fluid communication with the drainage tank; and an inflow channel that extends from the backflow hole to an inner surface of the circulation duct, and wherein the blocking portion comprises: a recovery partition wall that extends from a distal end of the inflow channel and faces the heat exchanger, and a flow rate adjusting portion that extends from the recovery partition wall toward the front surface of the circulation duct and that is configured to collect a portion of water introduced through the backflow hole.

32. The clothing treatment apparatus of claim 18, wherein the backflow allowing portion is formed integrally with the circulation duct.

33. The clothing treatment apparatus of claim 20, wherein the backflow allowing portion defines a flow channel, and at least a portion of the discharge pipe is disposed inside the flow channel.

34. The clothing treatment apparatus of claim 33, wherein the discharge pipe protrudes outward from an end of the flow channel.

35. The clothing treatment apparatus of claim 33, wherein ends of the backflow allowing portion are connected to an outer circumferential surface of the discharge pipe.

36. The clothing treatment apparatus of claim 35, wherein a bottom surface of the backflow allowing portion is spaced apart from the outer circumferential surface of the discharge pipe.