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(54) HEAT PUMP DRYING OR WASHING-DRYING MACHINE

(57) The present disclosure provides a heat pump drying or washing-drying machine, including a drum (7) for holding laundry, a heat pump module and a condensed water draining duct (6). The heat pump module includes a heat pump mounting box (1), a condenser (2), an evaporator (3), a fan (5) and a compressor (4), the condenser (2) and the evaporator (3) are mounted in the a heat pump mounting box (1), and a heat pump mounting box (1) is provided with a draining port (104) for draining away a condensed water. An upper end (61) of the condensed water draining duct (6) is connected with the draining port (104), a lower end (62) of the condensed water draining duct (6) is communicated with the drum (7), and the condensed water draining duct (6) extends along a gravity direction from the upper end (661) to the lower end (62).

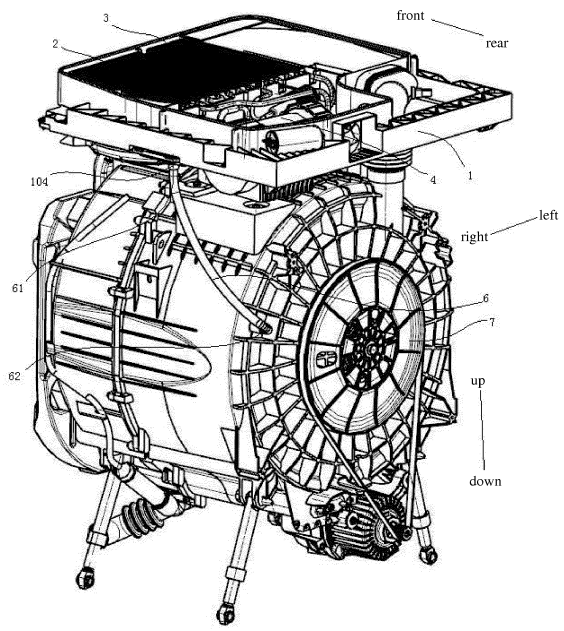

Fig. 1

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Description

FIELD

[0001] The present disclosure relates to a technology field of washing equipment, and more particularly to a heat pump drying or washing-drying machine.

BACKGROUND

[0002] In the heat pump drying or washing-drying machine of the related art, the heat pump system generates much condensed water when condensing airflows, and the collected condensed water is drained away by a draining pump, thus resulting in a relatively complex structure.

SUMMARY

[0003] The present disclosure seeks to solve at least one of problems existing in the related art to at least some extent. For this purpose, the present disclosure provides a heat pump drying or washing-drying machine. A draining structure of a condensed water of the heat pump drying or washing-drying machine has few parts and a strong universality.

[0004] The heat pump drying or washing-drying machine according to embodiments of the present disclosure includes a drum for holding laundry; a heat pump module including a heat pump mounting box, a condenser, an evaporator, a fan and a compressor, in which the condenser and the evaporator are mounted in the heat pump mounting box, and the heat pump mounting box is provided with a draining port for draining away a condensed water; and a condensed water draining duct having an upper end connected with the draining port and a lower end communicated with the drum, and the condensed water draining duct extending along a gravity direction from the upper end to the lower end.

[0005] With the heat pump drying or washing-drying machine according to embodiments of the present disclosure, the condensed water generated in the heat pump module can automatically flow to the drum along the condensed water draining duct under effect of gravity, such that an additional draining pump doesn't need to be provided separately when discharging out the condensed water, thus reducing the number of parts in the heat pump module, improving the universality of the heat pump module and decreasing the cost of the heat pump drying or washing-drying machine.

[0006] In some embodiments, the heat pump mounting box includes a base, the base is provided with an air inlet, an evaporator-condenser mounting chamber, a fan mounting chamber, a fan adapting port and an air outlet, the air inlet is communicated with the evaporator-condenser mounting chamber and the drum respectively, the air outlet is communicated with the fan mounting chamber and the drum respectively, and the evaporator-condenser mounting chamber is communicated with the fan mounting chamber via the fan adapting port, in which the condenser and the evaporator are disposed in the evaporator-condenser mounting chamber, and the fan is disposed in the fan mounting chamber. Thus, the condenser, the evaporator and the fan can be integrally mounted in the base.

[0007] Specifically, the base is further provided with a condensed water gathering chamber communicated with the evaporator-condenser mounting chamber, and the draining port is formed in a bottom wall of the condensed water gathering chamber. Thereby, it is convenient to gather the condensed water in the evaporator-condenser mounting chamber by providing the condensed water gathering chamber.

[0008] Optionally, the condensed water gathering chamber is communicated with the evaporator-condenser mounting chamber via the fan adapting port. Thereby, a flowing direction of the condensed water is the same with a flowing direction of the air, and thus the discharge efficiency of the condensed water is improved.

[0009] Advantageously, the condensed water gathering chamber is disposed adjacent to the fan mounting chamber, and located under the evaporator-condenser mounting chamber. Thereby, the arrangement of each chamber in the base 100 is reasonable and compact, so as to discharge out water and air conveniently.

[0010] Further, the heat pump mounting box further includes an air channel guiding plate, the air channel guiding plate is mounted on the base and defines an air guiding channel with the base, and the air guiding channel has a channel inlet communicated with the air inlet and a channel outlet communicated with the evaporator-condenser mounting chamber. Thereby, before the air condenses and is heated, the airflow can be introduced into the air guiding channel to receive a preprocessing so as to improve the laundry drying performance of the heat pump drying or washing-drying machine and prevent the condensed water from being generated in the air guiding channel.

[0011] In some embodiments, the base is provided with a compressor mounting area, and the compressor is disposed in the compressor mounting area. Thus, the heat pump module can be assembled into a modular structure, and when assembling the heat pump drying or washing-drying machine in a later period, it is very easy to assemble, detach and maintain the heat pump module.

[0012] Optionally, the condensed water draining duct is a rubber duct. Thus, it is ensured that the condensed water draining duct keeps in a reliable connection with the heat pump module and the drum.

[0013] Optionally, the lower end of the condensed water draining duct is connected to a rear end surface of the drum, so as to avoid a poor drainage resulted from interference of other parts.

[0014] Additional aspects and advantages of embodiments of present disclosure will be given in part in the following descriptions, become apparent in part from the

following descriptions, or be learned from the practice of the embodiments of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] These and other aspects and advantages of embodiments of the present disclosure will become apparent and more readily appreciated from the following descriptions made with reference to the drawings, in which:

Fig. 1 is a perspective view of a heat pump drying or washing-drying machine according to embodiments of the present disclosure;
Fig. 2 is a side view of a heat pump drying or washing-drying machine according to embodiments of the present disclosure;
Fig. 3 is a perspective view of a heat pump module according to embodiments of the present disclosure;
Fig. 4 is an exploded view showing a soft-flock filtering mesh assembly detached from a heat pump module according to embodiments of the present disclosure;
Fig. 5 is a sectional view of a heat pump module according to embodiments of the present disclosure from a direction; and
Fig. 6 is a sectional view of a heat pump module according to embodiments of the present disclosure from another direction.

[0016] Reference numerals:

heat pump mounting box 1,
base 100, evaporator-condenser mounting chamber 110, evaporator mounting area 111, condenser mounting area 112, compressor mounting area 117, fan mounting chamber 120, air inlet 101, air outlet 102, fan adapting port 103, draining port 104, air channel guiding plate 200, air guiding channel 210, channel inlet 211, channel outlet 212, soft-flock filtering mesh assembly 300, air-out guiding duct 400, condenser 2, evaporator 3, compressor 4, fan 5, centrifugal wind wheel 51, condensed water draining duct 6, upper end 61 of condensed water draining duct 6, lower end 62 of condensed water draining duct 6, drum 7, access 71.

DETAILED DESCRIPTION

[0017] Reference will be made in detail to embodiments of the present disclosure. The same or similar elements and the elements having same or similar functions are denoted by like reference numerals throughout the descriptions. The embodiments described herein with reference to drawings are explanatory, illustrative, and used to generally understand the present disclosure. The embodiments shall not be construed to limit the present disclosure.

[0018] A heat pump drying or washing-drying machine according to embodiments of the present disclosure will be described with reference to Figs. 1-6 in the following.

[0019] As shown in Figs. 1 and 2, the heat pump drying or washing-drying machine according to embodiments of the present disclosure includes a drum 7 for holding laundry, a heat pump module and a condensed water draining duct 6.

[0020] The heat pump module includes a heat pump mounting box 1, a condenser 2, an evaporator 3, a fan 5 and a compressor 4. The condenser 2 and the evaporator 3 are mounted in the heat pump mounting box 1, and the heat pump mounting box 1 is provided with a draining port 104 for draining away a condensed water. An upper end 61 of the condensed water draining duct 6 is connected with the draining port 104, a lower end 62 of the condensed water draining duct 6 is connected with the drum 7, and the condensed water draining duct 6 extends along a gravity direction from the upper end 61 to the lower end 62.

[0021] Specifically, the compressor 4, the condenser 2 and the evaporator 3 define a refrigeration cycle path of a refrigerant, and the fan 5 is used for driving an airflow flowing through laundry to pass through the evaporator 3 and the condenser 2 successively, and then to flow to the laundry again, so as to form a circulating air.

[0022] When the heat pump module operates, the compressor 4 compresses the refrigerant therein into a high temperature and high pressure gas refrigerant, then the high temperature and high pressure gas refrigerant is pumped into the condenser 2 to release heat and condense into a low temperature and high pressure refrigerant, subsequently the refrigerant turns into a low temperature and low pressure gas-liquid two-phase refrigerant after flowing through a dryer and throttled by a throttling device, and then the low temperature and low pressure refrigerant flows into the evaporator 3 to absorb heat and evaporate into a low temperature and low pressure gas refrigerant, eventually the refrigerant in the evaporator 3 returns to the compressor 4 to be compressed again, and thus a cycle is repeated in such way.

[0023] Due to the condensation and evaporation of the refrigerant in the condenser 2 and the evaporator 3, the air flowing therethrough can be heated and cooled. Under the driving of the fan 5, the air can flow circularly between the heat pump module and the drum 7 to form the circulating air, so as to dry the laundry in the drum 7 gradually.

[0024] Specifically, when the fan 5 is started, the laundry in the drum 7 can be flipped ceaselessly, the heat pump module can provide the drum 7 with a hot and dry air flow, and moisture of the laundry absorbs heat and evaporates into water vapor under the heating of the hot and dry air flow. The airflow mingled with the water vapor flows from the drum 7 into the heat pump module. The wet air in the heat pump module firstly flows through the evaporator 3. Since the refrigerant in the refrigeration cycle path absorbs heat in the evaporator 3, a temperature of the air flowing through the evaporator 3 in an air

circulating path is reduced sharply. After the air is cooled, the water vapor in the air condenses into fluid drops or water mist, and the fluid drops or water mist adhered to the surface of the evaporator 3 can flow downwards along the evaporator 3 under a gravity effect.

[0025] The humidity of the air after being cooled is reduced, and then the air flows through the condenser 2. Since the refrigerant in the refrigeration cycle path releases heat in the condenser 2, the air flowing through the condenser 2 in the air circulating path is heated, so that the airflow turns into the hot and dry air and is blown back to the drum 7 again. The hot and dry air can dry the laundry in the drum 7 after entering the drum 7. The hot and dry air absorbs the moisture of the laundry and then turns into a wet and hot air, and the wet and hot air is blown out again. In such way, the cycle is repeated. The refrigeration cycle of the refrigerant cooperates with the air circulation in the device so as to dry the laundry in the drum 7 quickly.

[0026] In the heat pump mounting box 1, the condensed water gathers at the draining port 104, so that the condensed water can flow into the drum 7 through the condensed water draining duct 6, and then the condensed water can be discharged out from the heat pump drying or washing-drying machine, along with the water in the drum 7.

[0027] For example, in some embodiments, after entering the drum 7, the condensed water can be discharged to a draining pump through a lower portion of the drum, in which the draining pump can discharge the condensed water out. That is to say, the draining pump of the whole machine can discharge out the water used for washing the laundry or the water generated by spin drying, and also can discharge out the condensed water generated when drying the laundry, thus achieving the goal of using one pump for a dual function. An additional draining pump doesn't need to be provided separately when discharging out the condensed water, so as to reduce the number of parts in the heat pump module and improve the universality of the heat pump module.

[0028] In the heat pump drying or washing-drying machine according to embodiments of the present disclosure, the condensed water generated in the heat pump module can flow along the condensed water draining duct 6 to the drum 7 automatically under effect of gravity, so that the additional draining pump doesn't need to be provided separately when discharging out the condensed water, thus reducing the number of the parts in the heat pump module, improving the universality of the heat pump module and decreasing the cost of the heat pump drying or washing-drying machine.

[0029] Optionally, the condensed water draining duct 6 is a rubber duct, and thereby the condensed water draining duct 6 can resist a relatively big vibration when being used, so as to ensure that the condensed water draining duct 6 keeps in a good connection with the draining port 104 and the drum 7.

[0030] Optionally, as shown in Figs. 1 and 2, the lower end 62 of the condensed water draining duct 6 is connected with a rear end surface of the drum 7. Herein, an access 71 is formed in a front end surface of the drum 7, and a door of the heat pump drying or washing-drying machine is provided at a front end thereof, in which the door is used for opening or closing the access 71. The rear end surface of the drum 7 is located at a back surface of the heat pump drying or washing-drying machine. Since the lower end 62 of the condensed water draining duct 6 is connected to the rear end surface of the drum 7, the condensed water draining duct 6 encounters few interferential parts, so that the condensed water draining duct 6 can hang down naturally along the gravity direction.

[0031] In a specific embodiment, the condensed water is exported from the heat pump module after being condensed by the evaporator 3. Then, the condensed water is conveyed to a hole in the rear of the drum 7 through the condensed water draining duct 6 configured as the rubber duct, and further discharged to the draining pump of the whole machine through the lower portion of the drum. The draining pump discharges out the condensed water at intervals.

[0032] With a system structural arrangement of the heat pump drying or washing-drying machine designed based on an integrated top-set design, the condensed water is led from the heat pump module to the rear of the drum by the condensed water draining duct 6, and then discharged out by the draining pump of the whole machine after flowing through the lower portion of the drum. Gravity is used for discharging out the condensed water, so that the additional draining pump for the condensed water is not needed and the universality of the parts is improved to the greatest extent.

[0033] In some embodiments, as shown in Figs. 3, 4 and 6, the heat pump mounting box 1 includes a base 100, and the base 100 is provided with an air inlet 101, an evaporator-condenser mounting chamber 110, a fan mounting chamber 120, a fan adapting port 103 and an air outlet 102. The air inlet 101 is communicated with the evaporator-condenser mounting chamber 110 and the drum 7 respectively, the air outlet 102 is communicated with the fan mounting chamber 120 and the drum 7 respectively, and the evaporator-condenser mounting chamber 110 is communicated with the fan mounting chamber 120 via the fan adapting port 103, in which the condenser 2 and the evaporator 3 are disposed in the evaporator-condenser mounting chamber 110, and the fan 5 is disposed in the fan mounting chamber 120, such that the condenser 2, the evaporator 3 and the fan 5 can be integrally mounted in the base 100.

[0034] Specifically, as shown in Fig. 3, the evaporator-condenser mounting chamber 110 includes an evaporator mounting area 111 and a condenser mounting area 112, the evaporator 3 of the heat pump module is disposed in the evaporator mounting area 111, and the condenser 2 of the heat pump module is disposed in the condenser mounting area 112.

[0035] Under the driving of the fan 5, a wet and cold air in the drum 7 is sucked into the evaporator-condenser mounting chamber 110 through the air inlet 101. The airflow in the evaporator-condenser mounting chamber 110 firstly flows through the evaporator 3 for dehumidification by condensation, and then flows through the condenser 2 to be heated. The hot and dry air obtained by heating the airflow is blown to the fan mounting chamber 120 and then to the drum 7 through the air outlet 102. After entering the drum 7, the hot and dry air is mixed with the wet and cold air in the drum 7. Then, the wet and cold air in the drum 7 is blown to the base 100 again, and in such way, the circulating air between the base 100 and the drum 7 is formed.

[0036] Specifically, the base 100 is further provided with a condensed water gathering chamber. The condensed water gathering chamber is communicated with the evaporator-condenser mounting chamber 110, the draining port 104 is formed in a bottom wall of the condensed water gathering chamber, such that the condensed water in the evaporator-condenser mounting chamber 110 can be discharged into the condensed water gathering chamber and then discharged out from the draining port 104. The arrangement of the condensed water gathering chamber is convenient to gather the condensed water in the evaporator-condenser mounting chamber 110, and after providing the condensed water gathering chamber separately, it is also convenient for the condensed water gathering chamber to be communicated with other chamber in the base 100, so that more condensed water can be collected and the condensed water can be discharged more thoroughly.

[0037] Advantageously, the draining port 104 is located at a lowest site of the bottom wall of the base 100, so that the condensed water in the base 100 can flow to the draining port 104 automatically, which is convenient to discharge out the condensed water completely.

[0038] In some embodiments, the condensed water gathering chamber is communicated with the evaporator-condenser mounting chamber 110 via the fan adapting port 103, so that the condensed water in the evaporator-condenser mounting chamber 110 can flow to the condensed water gathering chamber through the fan adapting port 103 and further be discharged out therefrom.

[0039] Specifically, as shown in Figs. 5 and 6, the fan mounting chamber 120 is located under the evaporator-condenser mounting chamber 110, an air-out guiding duct 400 is connected to a side wall of the fan mounting chamber 120, and an opening of the air-out guiding duct 400 is configured to be the air outlet 102. A centrifugal wind wheel 51 is mounted in the fan mounting chamber 120. When the fan 5 operates, the airflow in the evaporator-condenser mounting chamber 110 is blown to the fan mounting chamber 120 through the fan adapting port 103, and then is blown to the air-out guiding duct 400 through the side of the fan mounting chamber 120. That is to say, under effect of the blowing of the centrifugal wind wheel 51, the airflow in the fan mounting chamber 120 is inhaled from top and blown out from the horizontal side.

[0040] Advantageously, since a flowing direction of the air is configured in such a manner that the airflow in the evaporator-condenser mounting chamber 110 is blown to the fan mounting chamber 120 through the fan adapting port 103, and the condensed water gathering chamber is communicated with the evaporator-condenser mounting chamber 110 via the fan adapting port 103, a flowing direction of the condensed water is the same with the flowing direction of the air, and thus the discharge efficiency of the condensed water is improved.

[0041] Advantageously, the condensed water gathering chamber is disposed adjacent to the fan mounting chamber 120, and located under the evaporator-condenser mounting chamber 110. More specifically, as shown in Figs. 5 and 6, the fan mounting chamber 120 is located under the condenser mounting area 112, and the condensed water gathering chamber is located under the evaporator mounting area 111. In this way, the arrangement of each chamber in the base 100 is reasonable and compact, so as to discharge out water and air conveniently.

[0042] In some embodiments, as shown in Figs. 3 and 4, the heat pump mounting box 1 further includes an air channel guiding plate 200, and the air channel guiding plate 200 is mounted on the base 100 and defines an air guiding channel 210 with the base 100. The air guiding channel 210 has a channel inlet 211 and a channel outlet 212, the channel inlet 211 is communicated with the air inlet 101, and the channel outlet 212 is communicated with the evaporator-condenser mounting chamber 110. An outer top wall surface of the air channel guiding plate 200 is used to schematically indicate the air guiding channel 210 in Figs. 3 and 4.

[0043] Thus, the air in the drum 7 enters the air guiding channel 210 through the channel inlet 211 and further enters the evaporator-condenser mounting chamber 110 through the channel outlet 212. Before the air condenses and is heated, the airflow may be introduced into the air guiding channel 210 to receive a preprocessing, so as to improve the laundry drying performance of the heat pump drying or washing-drying machine.

[0044] It should be noted that, the air channel guiding plate 200 may be fixed on the base 100 by a fastener such as a screw, or be connected with the base 100 by a snap, or be hot melted on the base 100.

[0045] Further, as shown in Fig. 4, the heat mounting box 1 includes a soft-flock filtering mesh assembly 300. The soft-flock filtering mesh assembly 300 is drawably mounted to at least one of the base 100 and the air channel guiding plate 200, thereby removing the soft flocks.

[0046] The soft-flock filtering mesh assembly 300 is drawably mounted to at least one of the base 100 and the air channel guiding plate 200, which includes following three situations: the soft-flock filtering mesh assembly 300 is drawably mounted to the base 100; the soft-flock filtering mesh assembly 300 is drawably mounted to the

air channel guiding plate 200; and the soft-flock filtering mesh assembly 300 is drawably mounted to the base 100 and the air channel guiding plate 200.

[0047] Specifically, as shown in Fig. 4, the soft-flock filtering mesh assembly 300 is disposed at the channel outlet 212, so as to intercept the soft flocks in the dried air blown to the evaporator-condenser mounting chamber 110.

[0048] Thus, on one hand, since the air guiding channel 210 is communicated with the channel inlet 211 and the channel outlet 212 directly, the air flowing out from the drum can entirely enter the air guiding channel 210 through the air inlet 101, then entirely enter the evaporator-condenser mounting chamber 110 through the channel outlet 212 after being intercepted and filtered by the soft-flock filtering mesh assembly 300, and eventually exchange heat with the evaporator 3 and the condenser 2 in the evaporator-condenser mounting chamber 110, thereby avoiding loss of the dried air and preventing the condensed water from being gathered in the air guiding channel 210. On the other hand, since the soft-flock filtering mesh assembly 300 can be separately drawn out from the at least one of the base 100 and the air channel guiding plate 200, the soft-flock filtering mesh assembly 300 can be drawn out to be cleaned easily, thereby avoiding accumulation or even leakage of the soft flocks.

[0049] From the above, the air channel guiding plate 200 is mounted on the base 100 and defines the air guiding channel 210 with the base 100, and the air guiding channel 210 is communicated with the channel inlet 211 and the channel outlet 212 directly. On the other hand, the soft-flock filtering mesh assembly 300 is drawably mounted to the at least one of the base 100 and the air channel guiding plate 200, such that the heat pump mounting box 1 has a good connection leakproofness and is easy to be cleaned, and thereby it is not easy for the air quantity loss and the soft flock accumulation to come about.

[0050] Further, as shown in Figs. 3 and 4, the base 100 is further provided with a compressor mounting area 117, the compressor 4 of the heat pump module is disposed in the compressor mounting area 117, and other parts of the heat pump module (such as the dryer and the throttling device) are also mounted in the heat pump mounting box 1, such that the heat pump module can be assembled into a modular structure. Thus, when assembling the heat pump drying or washing-drying machine in a later period, it is very easy to assemble, detach and maintain the heat pump module.

[0051] In the specification, it is to be understood that terms such as "central," "longitudinal," "lateral," "length," "width," "thickness," "upper," "lower," "front," "rear," "left," "right," "vertical," "horizontal," "top," "bottom," "inner," "outer," "clockwise," and "counterclockwise" should be construed to refer to the orientation as then described or as shown in the drawings under discussion. These relative terms are for convenience of description and do not require that the present disclosure be constructed or operated in a particular orientation.

[0052] In addition, terms such as "first" and "second" are used herein for purposes of description and are not intended to indicate or imply relative importance or significance or to imply the number of indicated technical features. Thus, the feature defined with "first" and "second" may comprise one or more of this feature. In the description of the present disclosure, "a plurality of" means two or more than two, unless specified otherwise.

[0053] In the present disclosure, unless specified or limited otherwise, the terms "mounted," "connected," "coupled," "fixed" and the like are used broadly, and may be, for example, fixed connections, detachable connections, or integral connections; may also be mechanical or electrical connections; may also be direct connections or indirect connections via intervening structures; may also be inner communications of two elements, which can be understood by those skilled in the art according to specific situations.

[0054] In the present disclosure, unless specified or limited otherwise, a structure in which a first feature is "on" or "below" a second feature may include an embodiment in which the first feature is in direct contact with the second feature, and may also include an embodiment in which the first feature and the second feature are not in direct contact with each other, but are contacted via an additional feature formed therebetween. Furthermore, a first feature "on," "above," or "on top of" a second feature may include an embodiment in which the first feature is right or obliquely "on," "above," or "on top of" the second feature, or just means that the first feature is at a height higher than that of the second feature; while a first feature "below," "under," or "on bottom of" a second feature may include an embodiment in which the first feature is right or obliquely "below," "under," or "on bottom of" the second feature, or just means that the first feature is at a height lower than that of the second feature.

[0055] Reference throughout this specification to "an embodiment," "some embodiments," "one embodiment", "another example," "an example," "a specific example," or "some examples," means that a particular feature, structure, material, or characteristic described in connection with the embodiment or example is included in at least one embodiment or example of the present disclosure. Thus, the appearances of the phrases such as "in some embodiments," "in one embodiment", "in an embodiment", "in another example," "in an example," "in a specific example," or "in some examples," in various places throughout this specification are not necessarily referring to the same embodiment or example of the present disclosure. Furthermore, the particular features, structures, materials, or characteristics may be combined in any suitable manner in one or more embodiments or examples.

[0056] Although explanatory embodiments have been shown and described, it would be appreciated by those skilled in the art that the above embodiments cannot be construed to limit the present disclosure, and changes,

alternatives, and modifications can be made in the embodiments without departing from spirit, principles and scope of the present disclosure.

Claims

1. A heat pump drying or washing-drying machine, comprising:

   a drum (7) for holding laundry;
   a heat pump module comprising a heat pump mounting box (1), a condenser (2), an evaporator (3), a fan (5) and a compressor (4), in which the condenser (2) and the evaporator (3) are mounted in the heat pump mounting box (1), and the heat pump mounting box (1) is provided with a draining port (104) for draining away a condensed water; and
   a condensed water draining duct (6) having an upper end (61) connected with the draining port (104) and a lower end (62) communicated with the drum (7), and the condensed water draining duct (6) extending along a gravity direction from the upper end (61) to the lower end (62).

2. The heat pump drying or washing-drying machine according to claim 1, wherein the heat pump mounting box (1) comprises a base (100), the base (100) is provided with an air inlet (101), an evaporator-condenser mounting chamber (110), a fan mounting chamber (120), a fan adapting port (103) and an air outlet (102), the air inlet (101) is communicated with the evaporator-condenser mounting chamber (110) and the drum (7) respectively, the air outlet (102) is communicated with the fan mounting chamber (120) and the drum (7) respectively, and the evaporator-condenser mounting chamber (110) is communicated with the fan mounting chamber (120) via the fan adapting port (103), in which the condenser (2) and the evaporator (3) are disposed in the evaporator-condenser mounting chamber (110), and the fan (5) is disposed in the fan mounting chamber (120).

3. The heat pump drying or washing-drying machine according to claim 2, wherein the base (100) is further provided with a condensed water gathering chamber, the condensed water gathering chamber is communicated with the evaporator-condenser mounting chamber (110), and the draining port (104) is formed in a bottom wall of the condensed water gathering chamber.

4. The heat pump drying or washing-drying machine according to claim 3, wherein the condensed water gathering chamber is communicated with the evaporator-condenser mounting chamber (110) via the fan adapting port (103).

5. The heat pump drying or washing-drying machine according to claim 4, wherein the condensed water gathering chamber is disposed adjacent to the fan mounting chamber (120), and located under the evaporator-condenser mounting chamber (110).

6. The heat pump drying or washing-drying machine according to claim 2, wherein the heat pump mounting box (1) further comprises an air channel guiding plate (200), the air channel guiding plate (200) is mounted on the base (100) and defines an air guiding channel (210) with the base (100), and the air guiding channel (210) has a channel inlet (211) communicated with the air inlet (101) and a channel outlet (212) communicated with the evaporator-condenser mounting chamber (110).

7. The heat pump drying or washing-drying machine according to claim 2, wherein the base (100) is further provided with a compressor mounting area (117), and the compressor (4) is disposed in the compressor mounting area (117).

8. The heat pump drying or washing-drying machine according to claim 1, wherein the condensed water draining duct (6) is a rubber duct.

9. The heat pump drying or washing-drying machine according to claim 1, wherein the lower end (62) of the condensed water draining duct (6) is connected to a rear end surface of the drum (7).

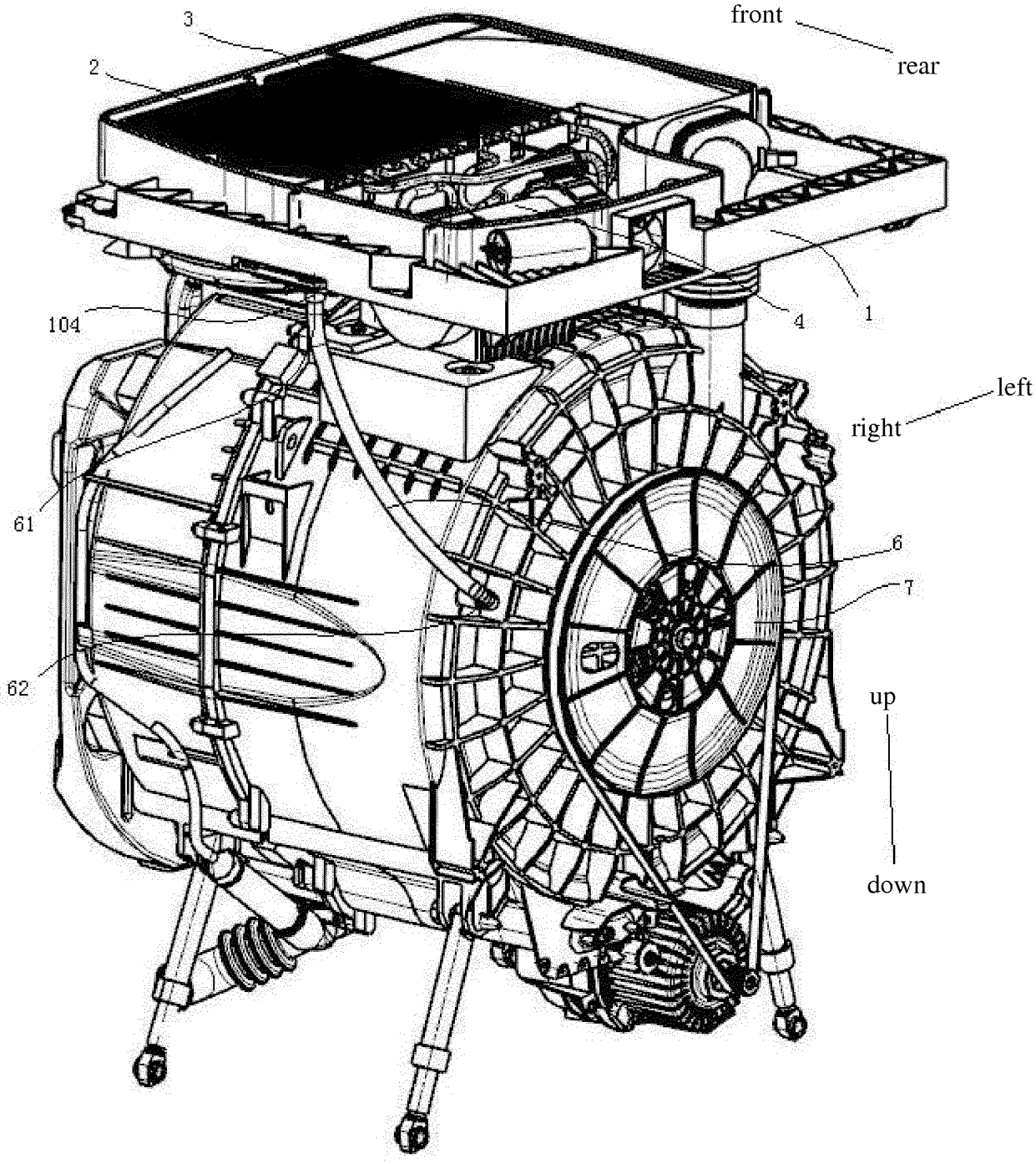


Fig. 1

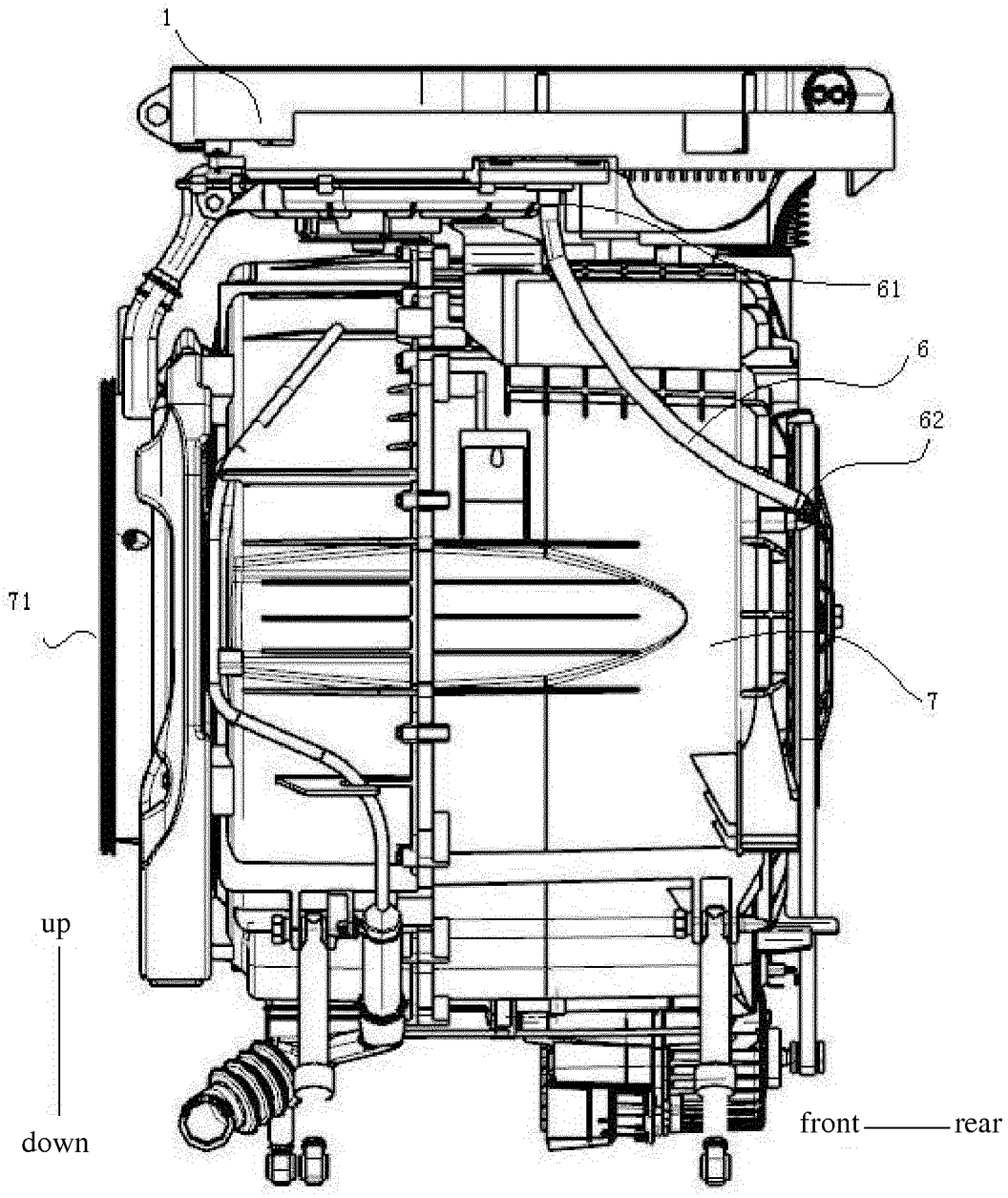
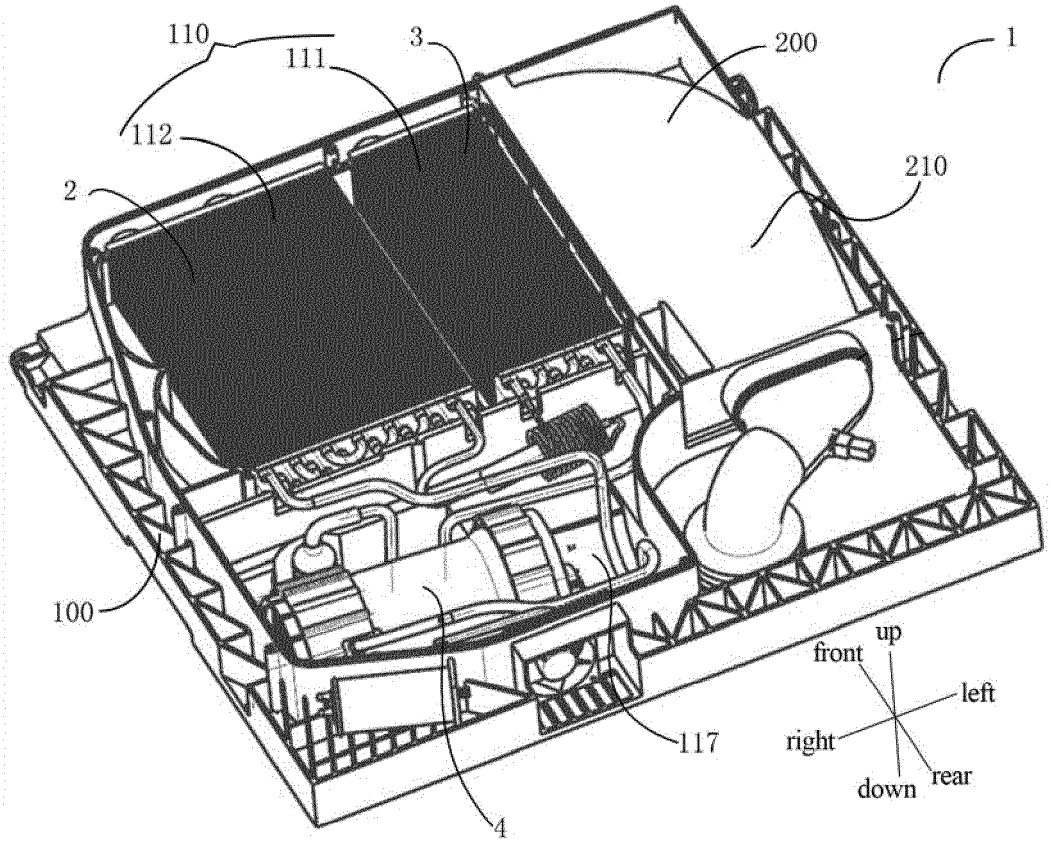


Fig. 2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3
200
1
112
210
2
100
117
4
up
front
left
right
down
rear

Fig. 3

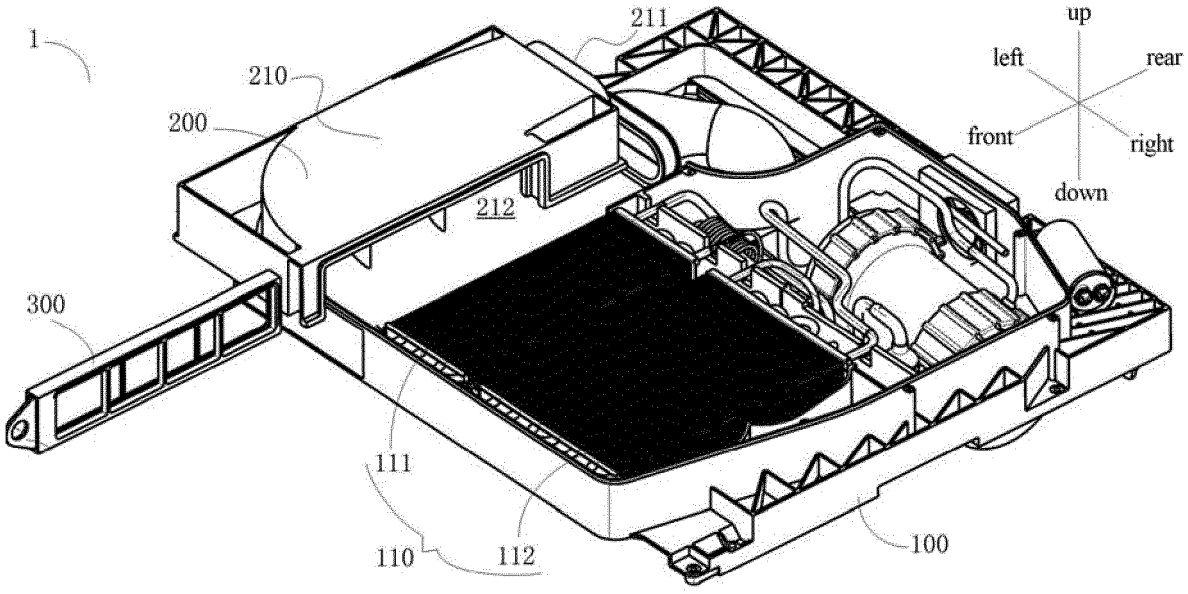
1
211
210
200
212
300
111
110
112
100
up
left
rear
front
right
down

Fig. 4

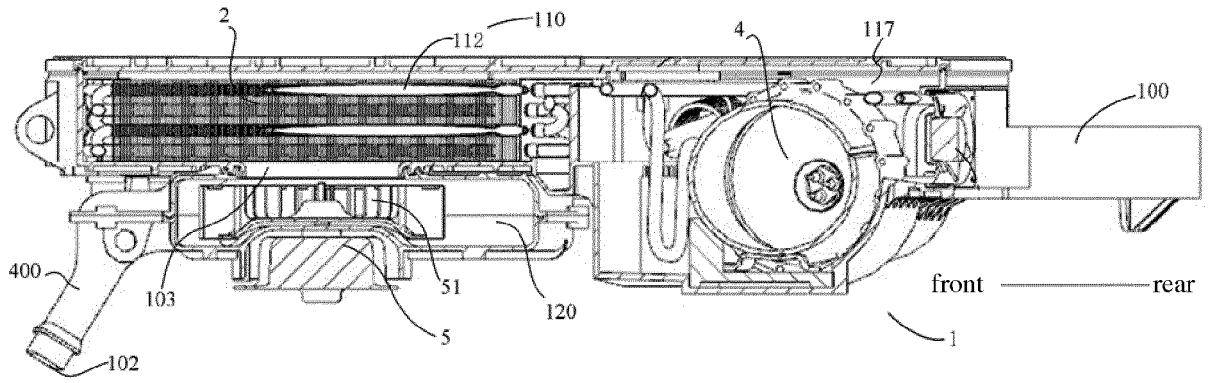
2
112
110
4
117
100
400
103
51
120
front
rear
5
1
102

Fig. 5

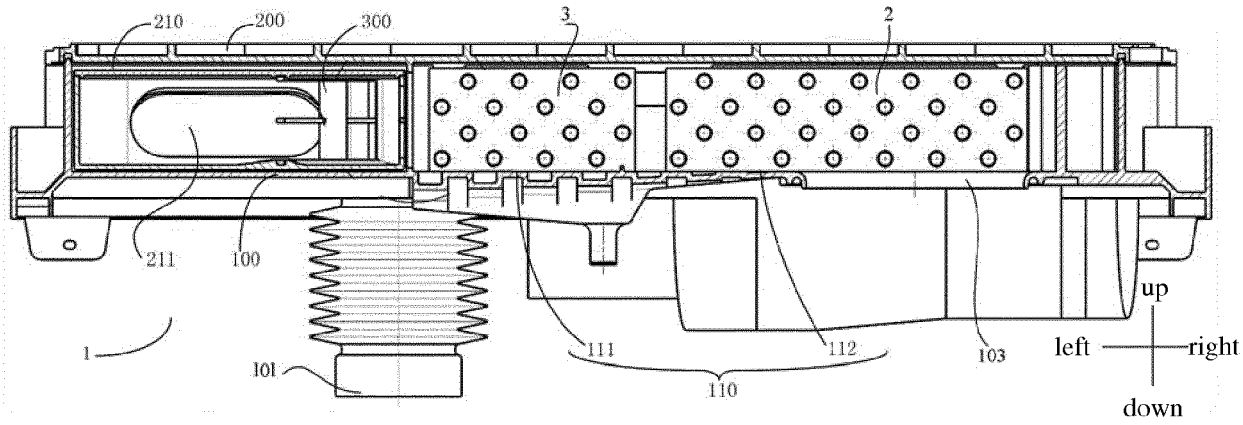
210
200
300
3
2
211
100
up
left
right
1
111
112
103
101
110
down

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 17 15 0088

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D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	23 June 2017	Weinberg, Ekkehard

CATEGORY OF CITED DOCUMENTS

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