US 20050229647A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2005/0229647 A1

Kim et al. (43) Pub. Date: Oct. 20, 2005

(54) DRYER WASHER

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(21) Appl. No.: **11/045,117**

(22) Filed: **Jan. 31, 2005**

(30) **Foreign Application Priority Data**

Apr. 20, 2004 (KR) ..... P2004-26994

Apr. 20, 2004 (KR) ..... P2004-26995

**Publication Classification**

(51) **Int. Cl.**[7] ..... **D06F 25/00**

(52) **U.S. Cl.** ..... **68/20**

(57) **ABSTRACT**

The present invention provides a dryer washer, in which hot air for drying a laundry within a drum is discharged outside the drum after being fully used in drying the laundry and by which a gasket provided between a door and a drum is prevented from being torn. The present invention includes a case, a tub provided within the case, a drum rotatably provided within the tub, a condensing duct connected to the tub, the condensing duct sucking air of the tub therein to condense the sucked-in air, and a drying duct connected to a front portion of the tub and the condensing duct to supply dry and hot air to the tub.

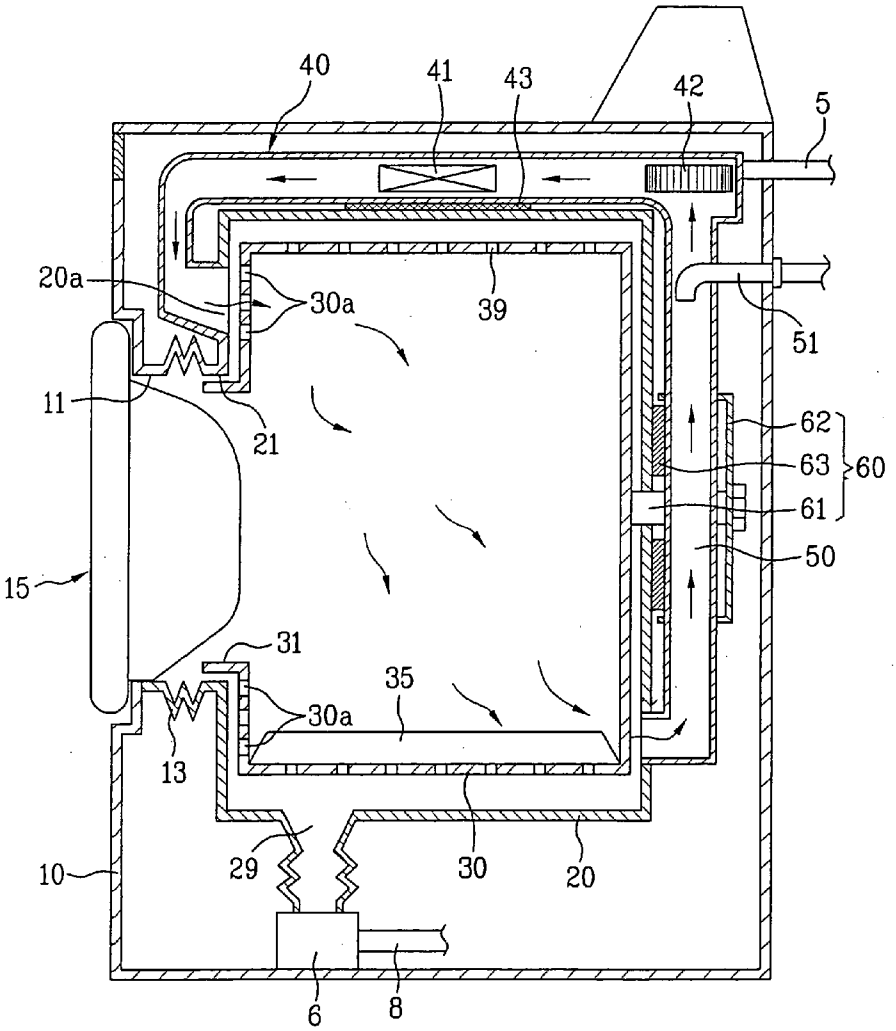

FIG. 1

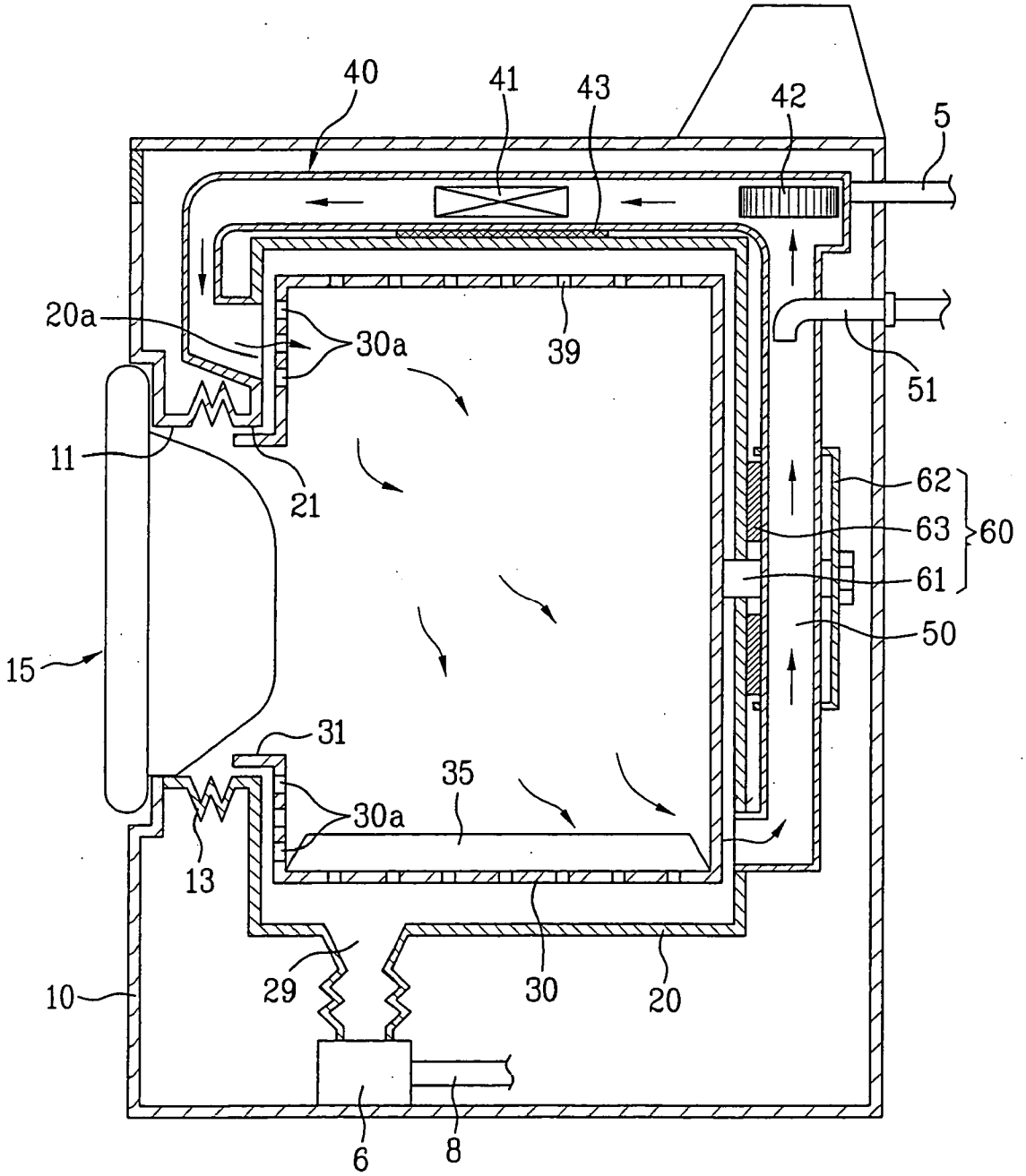
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FIG. 2

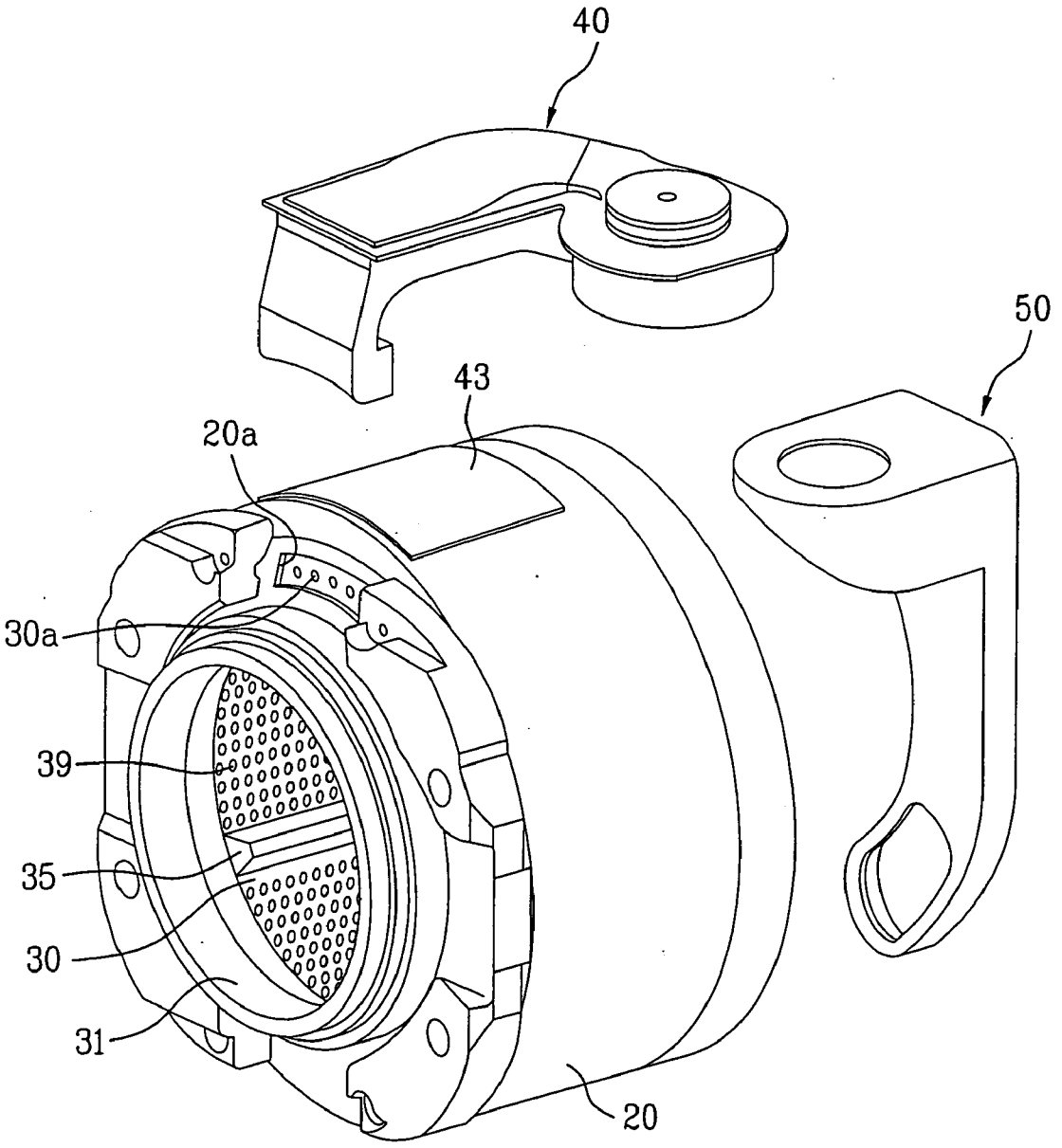


FIG. 3A

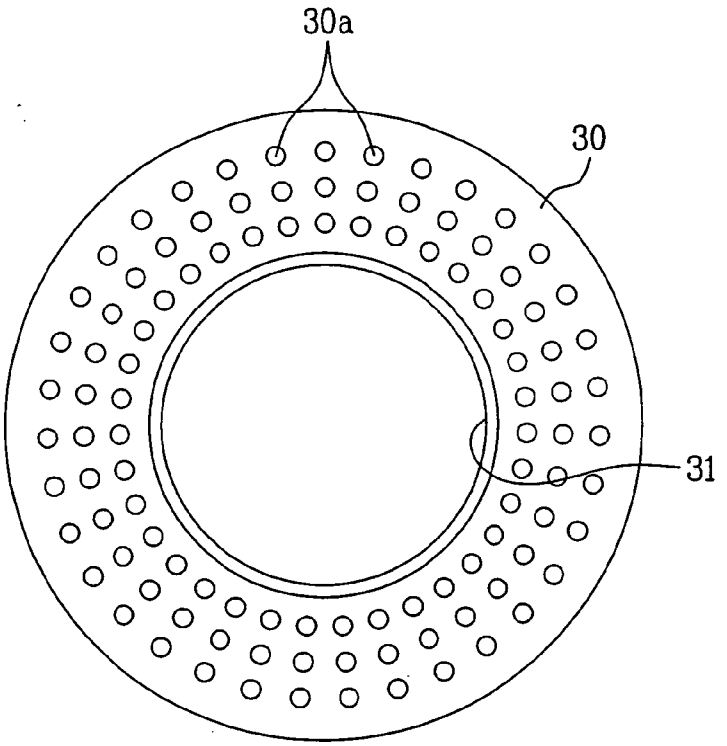



FIG. 3B

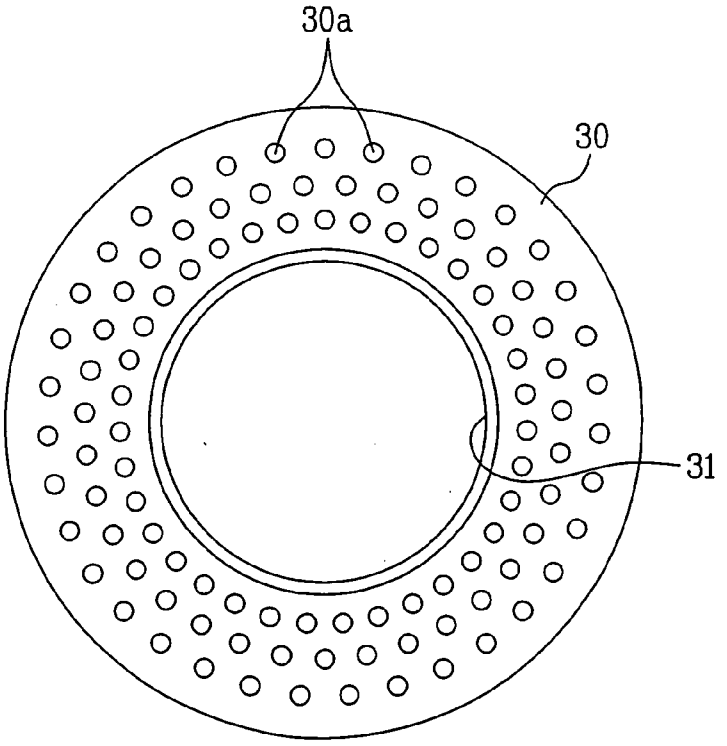


FIG. 4

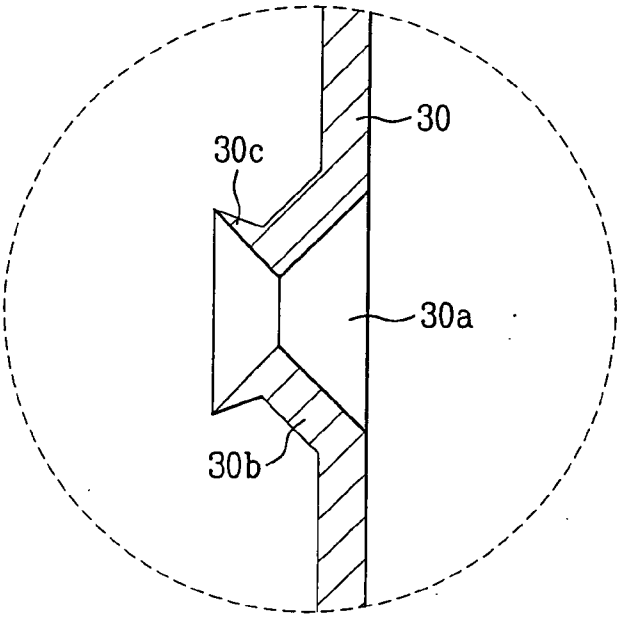
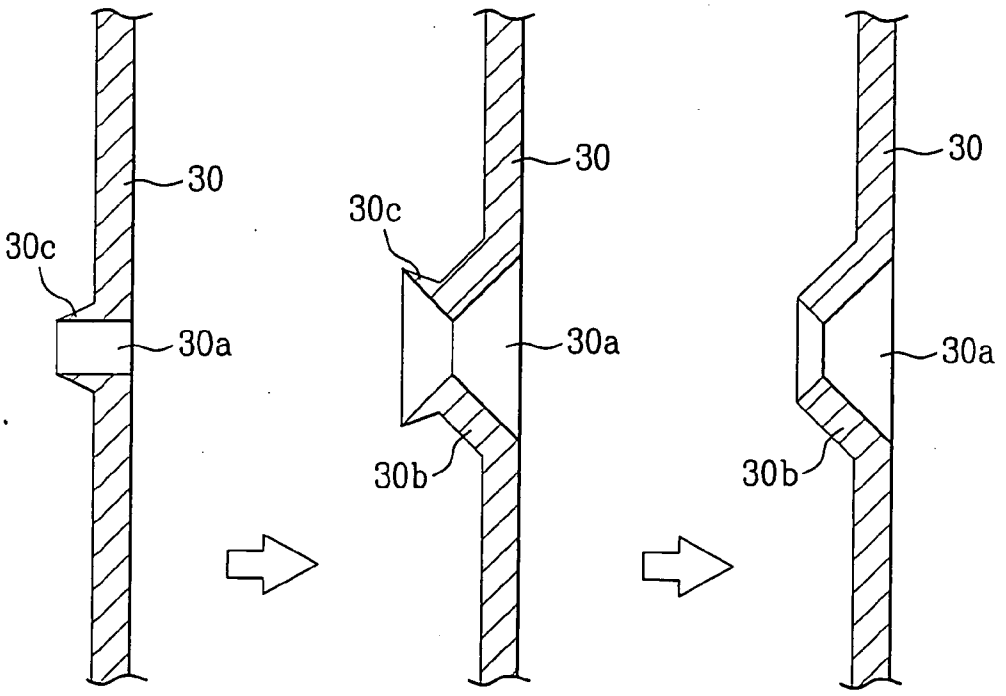



FIG. 5



# DRYER WASHER

[0001] This application claims the benefit of the Korean Application Nos. P2004-26994 and P2004-26995 both filed on Apr. 20, 2004 which are hereby incorporated by reference.

## BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a washer, and more particularly, to a dryer washer which can dry a laundry using hot air after completion of washing and dewatering.

[0004] 2. Discussion of the Related Art

[0005] Generally, a washer is a representative home appliance for washing a laundry using a detergent and water. Such a washer can be categorized according to a laundry loading position into a top loading type and a front loading type. The top loading type washer generally consists of a vertical tub containing a laundry therein, a pulsator rotatably provided within the tub to wash the laundry, and a lid provided to a top portion of the washer to open/close the tub. And, the front loading type washer generally consists of a horizontal drum containing a laundry therein, lifters provided to an inside of the drum to left the laundry on rotating the drum, and a door provided to a front portion of the washer to open/close the drum.

[0006] Recently, a function of drying a washed and dewatered laundry using hot air is applied to a front loading type washer. Hence, such a front loading type dryer washer is generally provided with a condensing duct for condensing air flowing out of a tub and a drying duct for heating the dry air flowing from the condensing duct to supply the heated air to the tub.

[0007] Generally, the drying duct supplies hot air to the drum via a space between a front portion of the drum and the door, and the condensing duct sucks the air within the drum via a lateral side of the tub. In doing so, the hot air supplied to the drum via the drying duct fails to be fully used in drying the laundry within the drum but then proceeds to the condensing duct. Hence, drying efficiency is lowered, a drying time is elongated, and power consumption is raised.

[0008] Meanwhile, a gasket is provided between the door and a front portion of the drum to prevent leakage of water and hot air. And, the drying duct is configured to penetrate the gasket. Hence, a connection part between the drying duct and the gasket is occasionally torn by vibration of the tub.

[0009] Moreover, the drying duct is closely provided over the tub. The air heated in the drying duct is blown downward via the space and is then introduced into the drum along a tilted portion of the door. Hence, the tub and door are unnecessarily heated to waste energy.

## SUMMARY OF THE INVENTION

[0010] Accordingly, the present invention is directed to a dryer washer that substantially obviates one or more problems due to limitations and disadvantages of the related art.

[0011] An object of the present invention is to provide a dryer washer, in which hot air for drying a laundry within a drum is discharged outside the drum after being fully used in drying the laundry.

[0012] Another object of the present invention is to provide a dryer washer, by which a gasket provided between a door and a drum is prevented from being torn.

[0013] Another object of the present invention is to provide a dryer washer, by which a tub and door are prevented from being unnecessarily heated by hot air.

[0014] Additional advantages, objects, and features of the invention will be set forth in part in the description which follows and in part will become apparent to those having ordinary skill in the art upon examination of the following or may be learned from practice of the invention. The objectives and other advantages of the invention may be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

[0015] To achieve these objects and other advantages and in accordance with the purpose of the invention, as embodied and broadly described herein, a dryer washer according to the present invention includes a case, a tub provided within the case, a drum rotatably provided within the tub, a condensing duct connected to the tub, the condensing duct sucking air of the tub therein to condense the sucked-in air, and a drying duct connected to a front portion of the tub and the condensing duct to supply dry and hot air to the tub.

[0016] Preferably, an air inlet connected to the drying duct is provided to the front portion of the tub to introduce the hot air to the tub. And, the air inlet can be provided to an upper part of the front portion of the tub.

[0017] A plurality of air holes can be provided to a front portion of the drum confronting the front portion of the tub to introduce the hot air in the tub into the drum. And, a plurality of the air holes can be provided to the front portion of the drum in a circumferential direction.

[0018] A plurality of embossed portions can be provided to the front portion of the drum to be outwardly projected from the drum and a plurality of the air holes are provided to centers of a plurality of the embossed portions, respectively. In this case, tips of a plurality of the embossed portions are smoothly cut.

[0019] The condensing duct can be connected to a lower rear portion of the drum. And, the condensing duct can further include a water supply pipe connected to an upper portion of the condensing duct to supply cooling water for condensing the air to the condensing duct.

[0020] And, the dryer washer may further include an insulator provided between the tub and the drying duct to prevent heat of the drying duct from being transferred to the tub.

[0021] In another aspect of the present invention, a dryer washer according to the present invention includes a case, a tub provided within the case, a drum rotatably provided within the tub, a drying duct connected to the tub to supply dry and hot air to the tub, and a condensing duct connected to a rear portion of the tub and the drying duct, the condensing duct sucking air of the tub therein to condense the sucked-in air, the condensing duct leading the condensed air to the drying duct.

[0022] Preferably, the condensing duct sucks the air from the drum along an axial direction of the tub.

[0023] The condensing duct is connected to a lower rear portion of the drum. And, the condensing duct can include a water supply pipe connected to an upper portion of the condensing duct to supply cooling water for condensing the air to the condensing duct.

[0024] The dryer washer may further include an insulator provided between the tub and the drying duct to prevent heat of the drying duct from being transferred to the tub.

[0025] In another aspect of the present invention, a dryer washer includes a case, a tub provided within the case, a drum rotatably provided within the tub, a condensing duct connected either a front or rear portion of the tub, the condensing duct sucking air of the tub therein to condense the sucked-in air, and a drying duct connected to either the rear or front portion of the tub and the condensing duct to supply dry and hot air to the tub.

[0026] Preferably, the air within the drum continuously flows in a diagonal direction within the drum.

[0027] The drying duct supplies the hot air to the drum along an axial direction of the drum. And, the drying duct is connected to an upper part of the front portion of the tub.

[0028] A plurality of air holes can be provided to a front portion of the drum confronting the front portion of the tub to introduce the hot air in the tub into the drum. And, a plurality of the air holes are provided to the front portion of the drum in a circumferential direction.

[0029] A plurality of embossed portions can be provided to the front portion of the drum to be outwardly projected from the drum and wherein a plurality of the air holes are provided to centers of a plurality of the embossed portions, respectively. And, tips of a plurality of the embossed portions are smoothly cut.

[0030] The condensing duct sucks the air from the drum along an axial direction of the drum. And, the condensing duct is connected to a lower part of the rear portion of the drum. Moreover, the condensing duct can include a water supply pipe connected to an upper portion of the condensing duct to supply cooling water for condensing the air to the condensing duct.

[0031] And, the dryer washer may further include an insulator provided between the tub and the drying duct to prevent heat of the drying duct from being transferred to the tub.

[0032] In a further aspect of the present invention, a method of manufacturing a drum of a washer includes the steps of forming a plurality of holes at a front portion of the drum of the washer and removing a plurality of burrs of a plurality of the holes, respectively.

[0033] Preferably, a plurality of the holes are formed by punching an inside of the drum outwardly. And, the method may further include the step of embossing each vicinity of a plurality of the holes toward an outside of the drum. Moreover, a plurality of the burrs are removed in a manner of cutting tips of embossed portions of a plurality of the holes, respectively.

[0034] It is to be understood that both the foregoing general description and the following detailed description of the present invention are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0035] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this application, illustrate embodiment(s) of the invention and together with the description serve to explain the principle of the invention. In the drawings:

[0036] **FIG. 1** is a cross-sectional diagram of a dryer washer according to the present invention;

[0037] **FIG. 2** is a projected perspective diagram of a tub, drum, condensing duct, and drying duct of the dryer washer in **FIG. 1**;

[0038] **FIG. 3A** is a front diagram of a drum according to one embodiment of the present invention;

[0039] **FIG. 3B** is a front diagram of a drum according to another embodiment of the present invention;

[0040] **FIG. 4** is a magnified cross-sectional diagram of an air hole provided to a front portion of a drum of the dryer washer in **FIG. 1**; and

[0041] **FIG. 5** is a cross-sectional diagram for explaining a process of forming the air hole in **FIG. 4**.

## DETAILED DESCRIPTION OF THE INVENTION

[0042] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

[0043] **FIG. 1** is a cross-sectional diagram of a dryer washer according to the present invention.

[0044] Referring to **FIG. 1**, an opening **11** as a laundry entrance is provided to a front portion of a case **10**, and a door **15** is assembled to the case **10** to open/close the opening **11**. A tub **20** is provided within the case **10** to contain a laundry therein. The tub **20** is suspended within the case **10** by a spring (not shown in the drawing) connected to both sides of the case **10** and a damper (not shown in the drawing) connected to a bottom of the case **10** elastically supports a bottom of the tub **20**. The spring and damper elastically support the tub **20** and plays a role in attenuating vibration appearing on the tub on operating the washer not to transfer to the case **10**.

[0045] The tub **20** is horizontally arranged in general. An opening **21** is provided to a front portion to confront the opening **11** of the case **10**. A water supply inlet (not shown in the drawing) for supplying water is provided to one upper side of the tub **20**, and a drain **29** for draining the water is provided to one lower side of the tub **20**. A gasket **13** is provided between the opening **21** of the tub **20** and the opening **11** of the case **10** to prevent water leakage and laundry escape. The water supply inlet of the tub **20** is connected to a water supply hose **5** via a detergent box (not shown in the drawing), and the drain **29** is connected to a drain hose **8** via a drain pump **6**.

[0046] A drum **30** is rotatably provided within the tub **20**. For instance, the drum **30** is rotated by a motor **60** attached to a rear portion of the tub **20**. And, the motor **60** includes a stator **63** fixed to the rear portion of the tub **20**, a rotatable rotor **62** enclosing the stator **63** therein, and a shaft **61** connecting the drum **30** and the rotor **62** to rotate the drum **30**. An opening **31** is provided to a center of a front portion of the drum **30** to confront the opening **21** of the tub **20** and to be closed/opened by the door **15**, and a plurality of lifters **35** are provided within the drum **30**. A plurality of the lifters **35** lift the laundry contained within the drum **30** that is rotating. Water is stored in the tub **20**. And, a multitude of apertures **39** are provided to a circumference of the drum **30** to allow the water to communicate between the tub **20** and the drum **30**.

[0047] A condensing duct **50** is connected to the tub **20** to draw out air from the tub **20** and the drum **30**. Specifically, the condensing duct **50**, as shown in **FIG. 1** and **FIG. 2**, is connected to a lower rear portion of the tub **20** to condense the air introduced therein using cooling water. For this, a water supply pipe **51**, as shown in **FIG. 1**, is connected to the condensing duct **50** to supply the cooling water to the condensing duct **50**.

[0048] The water supply pipe **51** is connected to an upper portion of the condensing duct **50**. The cooling water supplied to the condensing duct **50** from the water supply pipe **51** flows down along an inner circumference of the condensing duct **50** to be collected on a bottom of the tub **20**. Hence, humidity contained in the warm and humid air introduced into the condensing duct **50** becomes condensed by the cold cooling water flowing along the inner circumference of the condensing duct **50**, whereby the air flowing in the condensing duct **50** becomes drier.

[0049] A drying duct **40** is connected to the condensing duct **50** and the tub **20** to supply dry and hot air to an inside of the tub **20**. Specifically, provided within the drying duct **40** are a fan **42** sucking the air from the tub **20** and the drum **30** via the condensing duct **50** into the tub **20** via the drying duct **50** and a heater **41** heating the dry air supplied to the tub **20** via the drying duct **40**. Hence, the dry air, which was sucked into the drying duct **50** to have its humidity removed, is heated on passing through the drying duct **40** and is then re-supplied to the tub **20**.

[0050] Both ends of the drying duct **40** are connected to an upper end of the condensing duct **50** and a front portion of the tub **20**, respectively. Specifically, one end of the drying duct **40**, as shown in **FIG. 1** and **FIG. 2**, is connected to an upper front portion of the tub **20**. For this, an air inlet **20***a*, which is connected to the drying duct **40** and introduces the hot air supplied from the drying duct **40** into the tub **20**, is provided to the upper front portion of the tub **20**. The hot air introduced into the tub **20** via the air inlet **20***a* can be supplied to the drum **30** via the apertures **39** provided to the circumference of the drum **30**.

[0051] In order to supply the hot air to the drum **30** more effectively, a plurality of air holes **30***a* are provided to a front portion of the drum **30** to introduce the ht air **30** into the drum **30**. A plurality of the air holes **30***a*, as shown in **FIG. 1** and **FIG. 2**, are provided to the front portion of the drum confronting the front portion of the tub **20**, and more particularly, are provided to confront the air inlet **20***a* on rotating the drum **30**.

[0052] For this, the air holes **30***a*, as shown in **FIG. 3A** and **FIG. 3B**, are provided to the front portion of the drum **30** in a circumferential direction. In other words, the opening **31** is formed at a center of the front portion of the drum **30** and a plurality of air holes **30***a* are arranged on the front portion of the drum **30** to enclose the opening **31** therein. Specifically, each column of the air holes **30***a*, as shown in **FIG. 3A**, forms a straight line in a radial direction. Alternatively, each column of the air holes **30***a*, as shown in **FIG. 3B**, slants against the radial direction.

[0053] If a plurality of the air holes **30***a* are provided to the front portion circumference of the drum **30**, the hot air introduced into the tub **20** via the air inlet **20***a* of the tub can be effectively introduced into the drum **30** via the air holes **30***a* of the drum **30** despite the rotation of the drum **30**.

[0054] Meanwhile, the air holes **30***a* provided to the front portion of the drum **30** are formed by punching for example. Specifically, in manufacturing the drum **30**, the front portion of the drum **30** is punched from its inside to its outside. Hence, if the air holes **30***a* are formed in the above manner, a burr **30**C occurring in the vicinity of each of the air holes **30***a*, as shown in **FIG. 4** and **FIG. 5**, faces outwardly. Hence, the laundry within the drum **30** is effectively prevented from being damaged by the burrs **30***c*.

[0055] Yet, in drying the laundry, lint is included in the hot air introduced into the tub **20** via the air inlet **20***a* of the drying duct **40**. Hence, the lint included in the hot air may be caught on the burr **30***c* in the vicinity of the air hole **30***a* when the hot air passes through the air hole **30***a*. And, it is highly probable that the corresponding air hole **30***a* is clogged with a bunch of the lint. Preferably, the burr **30***c* needs to be removed in spite of being located at an outside of the drum **30**. For this, in manufacturing the drum **30**, the burr **30***c* formed in the vicinity of each of the air holes **30***a* is cut from the outside of the drum **30** to provide a smooth surface thereof.

[0056] Meanwhile, if a plurality of the air holes **30***a* are provided to the front portion of the drum **30**, rigidity of the drum **30** can be lowered. To prevent the lowered rigidity of the drum **30**, embossing processing is carried out on the front portion of the drum **30**. Specifically, after the air hole **30***a* has been formed in manufacturing the drum **30**, an outer rim of the air hole **30***a*, as shown in **FIG. 5**, is embossed outward to form an embossed portion **30***b* projected outward. As a result, the corresponding air hole **30***a* is provided to a center of a tip of the embossed portion **30***b* and the corresponding burr **30***c* is formed around the tip of the embossed portion **30***b*. Hence, by cutting the tip of the embossed after completion of the embossing processing, the burr **30***c*, as shown in **FIG. 5**, can be cleanly removed.

[0057] Meanwhile, the drying duct **40** is stably fixed over an upper portion of the tub **20** by a locking member such as a screw or bolt. A prescribed space is provided between the top portion of the tub **20** and a bottom of the drying duct **40**, and an insulator **43** is provided to the prescribed space to prevent heat of the drying duct from being transferred to the tub **20**.

[0058] The insulator **43**, as shown in **FIG. 1** and **FIG. 2**, is attached to the top portion of the tub **20** to be fixed thereto and has a size and thickness enough to effectively prevent the heat of the drying duct **40** from being transferred to the

tub **20**. And, a middle part of the drying duct **40** can be installed to be supported by the insulator **43**. Since the insulator **43** supporting the drying duct **40** is capable of absorbing vibration of the drying duct **40**, a separate vibration-absorbing member is unnecessary.

[**0059**] A process of drying a laundry in the above-configured washer according to the present invention is explained as follows.

[**0060**] First of all, once a drying cycle is initiated, the heater **41** and the fan **42** within the drying duct **40** are actuated. The hot air generated from the heater and fan **41** and **42** within the drying duct **40** is introduced into the drum **30** via the air lent **20***a* of the tub **20** and the air holes **30***a* of the drum **30**. In doing so, the hot air is introduced into an inner upper part of the drum **30** in an axial direction of the drum **30**. Hence, the hot air is supplied to a rear part of the drum **30**, thereby drying the laundry contained in the drum **30** effectively.

[**0061**] The warm and humid air having dried the laundry within the drum **30** is discharged outside the tub **20** via the condensing duct **50**. In doing so, the condensing duct **40** sucks the air in the lower inner part of the drum along the axial direction of the drum **30**, for example. Then, the air in the inner front lower part of the drum **30** is sucked into the condensing duct **50**, whereby the laundry contained within the drum **30** can be effectively dried.

[**0062**] As mentioned in the foregoing description, the drying duct **40** supplies the hot air to the upper space of the drum **30** along the axial direction of the drum **30** and the condensing duct **50** sucks the air in the lower space of the drum **30** along the axial direction of the drum **30** as well. With the flow of the air, another airflow is generated in the drum **30** in a diagonal direction. Namely, a portion of the air having supplied to the drum **30** via the upper front portion of the drum **30** traverses a diagonal path that is the shortest path to be passed through the drum **30** via the lower rear potion of the drum **30**. Hence, the hot air smoothly circulates the entire parts within the drum **30** to evenly dry the laundry.

[**0063**] Meanwhile, the drum **30** keeps being rotated by the motor **60**. The laundry within the drum **30** is lifted by the lifters **35** to fall, thereby being evenly exposed to the hot air supplied to the drum **30**. Hence, drying efficiency is enhanced.

[**0064**] The warm and humid air having dried the laundry within the drum **30** is then introduced into the condensing duct **50**. The humidity of the warm and humid air is condensed by the cooling water supplied to the condensing duct **50** via the water supply pipe **51**. The humidity-removed dry air passes through the fan **42** and the heater **41** to be transformed into hot air and the hot air is then supplied to the tub **20** again.

[**0065**] As explained in the above description of the present invention, the hot air is introduced into the drum via the front portion of the drum and the air within the drum is drawn out via the rear portion of the drum. Hence, the air can be supplied to everywhere within the drum, thereby drying the laundry effectively.

[**0066**] And, the drying duct is directly connected to the tub, whereas the related art drying duct is connected to the gasket. Hence, the gasket is previously prevented from being damaged.

[**0067**] Moreover, the hot air is directly supplied to the drum without guidance of the tilted portion of the door. And, the insulator prevents the heat of the drying duct from being transferred to the tub. Therefore, the present invention prevents the door and the tub from being unnecessarily heated, thereby reducing energy consumption and enhancing the drying performance.

[**0068**] Furthermore, the drum of the present invention is provided with the air hoes at its front portion to introduce the hot air therein. And, the air holes are formed by punching, embossing, and deburring. Therefore, the present invention effectively prevents the rigidity reduction of the drum and the laundry damage and air hole clogging.

[**0069**] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention. For instance, the drying duct can be connected to the rear portion of the drum and the condensing duct can connected to the front portion of the tub. Thus, it is intended that the present invention covers the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

**1**. A dryer washer comprising:

a case;

a tub provided within the case;

a drum rotatably provided within the tub;

a condensing duct connected to the tub, the condensing duct sucking air of the tub therein to condense the sucked-in air; and

a drying duct connected to a front portion of the tub and the condensing duct to supply dry and hot air to the tub.

**2**. The dryer washer of claim 1, wherein the drying duct supplies the hot air along an axial direction of the drum.

**3**. The dryer washer of claim 1, wherein an air inlet connected to the drying duct is provided to the front portion of the tub to introduce the hot air to the tub.

**4**. The dryer washer of claim 3, wherein the air inlet is provided to an upper part of the front portion of the tub.

**5**. The dryer washer of claim 1, wherein a plurality of air holes are provided to a front portion of the drum confronting the front portion of the tub to introduce the hot air in the tub into the drum.

**6**. The dryer washer of claim 5, wherein a plurality of the air holes are provided to the front portion of the drum in a circumferential direction.

**7**. The dryer washer of claim 5, wherein a plurality of embossed portions are provided to the front portion of the drum to be outwardly projected from the drum and wherein a plurality of the air holes are provided to centers of a plurality of the embossed portions, respectively.

**8**. The dryer washer of claim 7, wherein tips of a plurality of the embossed portions are smoothly cut.

**9**. The dryer washer of claim 1, further comprising an insulator provided between the tub and the drying duct to prevent heat of the drying duct from being transferred to the tub.

**10**. A dryer washer comprising:

a case;

a tub provided within the case;

a drum rotatably provided within the tub;

a drying duct connected to the tub to supply dry and hot air to the tub; and

a condensing duct connected to a rear portion of the tub and the drying duct, the condensing duct sucking air of the tub therein to condense the sucked-in air, the condensing duct leading the condensed air to the drying duct.

**11**. The dryer washer of claim 10, wherein the condensing duct sucks the air from the drum along an axial direction of the tub.

**12**. The dryer washer of claim 10, wherein the condensing duct is connected to a lower rear portion of the drum.

**13**. The dryer washer of claim 10, wherein the condensing duct comprises a water supply pipe connected to an upper portion of the condensing duct to supply cooling water for condensing the air to the condensing duct.

**14**. The dryer washer of claim 10, further comprising an insulator provided between the tub and the drying duct to prevent heat of the drying duct from being transferred to the tub.

**15**. A dryer washer comprising:

a case;

a tub provided within the case;

a drum rotatably provided within the tub;

a condensing duct connected either a front or rear portion of the tub, the condensing duct sucking air of the tub therein to condense the sucked-in air; and

a drying duct connected to either the rear or front portion of the tub and the condensing duct to supply dry and hot air to the tub.

**16**. The dryer washer of claim 15, wherein the air within the drum continuously flows in a diagonal direction within the drum.

**17**. The dryer washer of claim 15, wherein the drying duct supplies the hot air to the drum along an axial direction of the drum.

**18**. The dryer washer of claim 15, wherein the drying duct is connected to an upper part of the front portion of the tub.

**19**. The dryer washer of claim 15, wherein a plurality of air holes are provided to a front portion of the drum confronting the front portion of the tub to introduce the hot air in the tub into the drum.

**20**. The dryer washer of claim 19, wherein a plurality of the air holes are provided to the front portion of the drum in a circumferential direction.

**21**. The dryer washer of claim 19, wherein a plurality of embossed portions are provided to the front portion of the drum to be outwardly projected from the drum and wherein a plurality of the air holes are provided to centers of a plurality of the embossed portions, respectively.

**22**. The dryer washer of claim 21, wherein tips of a plurality of the embossed portions are smoothly cut.

**23**. The dryer washer of claim 15, wherein the condensing duct sucks the air from the drum along an axial direction of the drum.

**24**. The dryer washer of claim 15, wherein the condensing duct is connected to a lower part of the rear portion of the drum.

**25**. The dryer washer of claim 15, wherein the condensing duct comprises a water supply pipe connected to an upper portion of the condensing duct to supply cooling water for condensing the air to the condensing duct.

**26**. The dryer washer of claim 15, further comprising an insulator provided between the tub and the drying duct to prevent heat of the drying duct from being transferred to the tub.

**27**. A method of manufacturing a drum of a washer, comprising the steps of:

forming a plurality of holes at a front portion of the drum of the washer; and

removing a plurality of burrs of a plurality of the holes, respectively.

**28**. The method of claim 27, wherein a plurality of the holes are to introduce hot air flowing from a front portion of tub into the drum.

**29**. The method of claim 27, wherein a plurality of the holes are formed by punching an inside of the drum outwardly.

**30**. The method of claim 27, further comprising the step of embossing each vicinity of a plurality of the holes toward an outside of the drum.

**31**. The method of claim 30, wherein a plurality of the burrs are removed in a manner of cutting tips of embossed portions of a plurality of the holes, respectively.

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