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(54) CABINET FOR HOME APPLIANCE

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(57) ABSTRACT

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A cabinet for a dryer is disclosed. The cabinet includes a rear panel which includes a plurality of reinforcement beads and a recess area. The plurality of reinforcement beads is projected from the rear panel so as to enhance an overall structural strength of the rear panel. The recess area is recessed outward from the rear panel for providing an additional space. The plurality of reinforcement beads may be provided between the recess area and a rim of the rear panel. Each reinforcement bead may include one or more auxiliary reinforcement beads.

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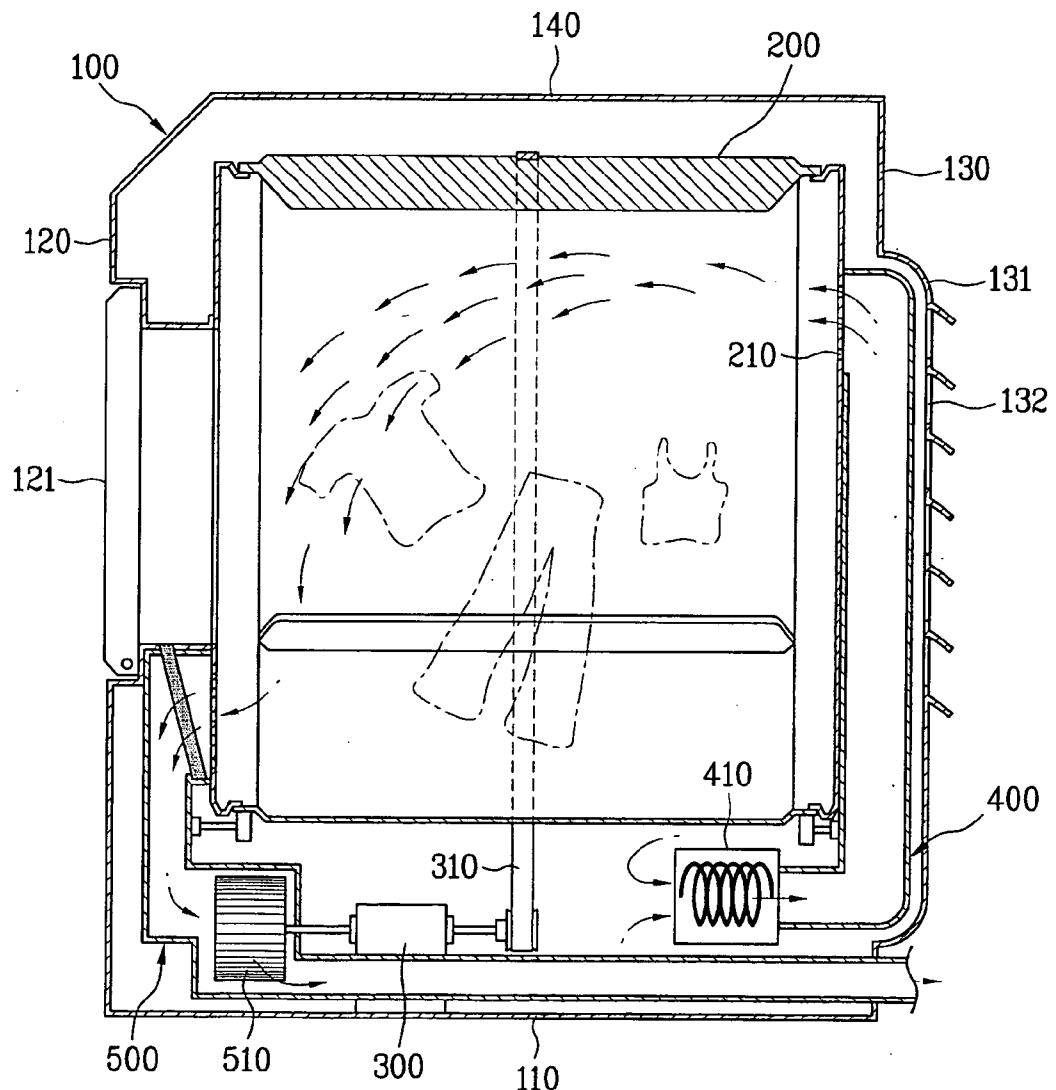


FIG. 1
Prior Art

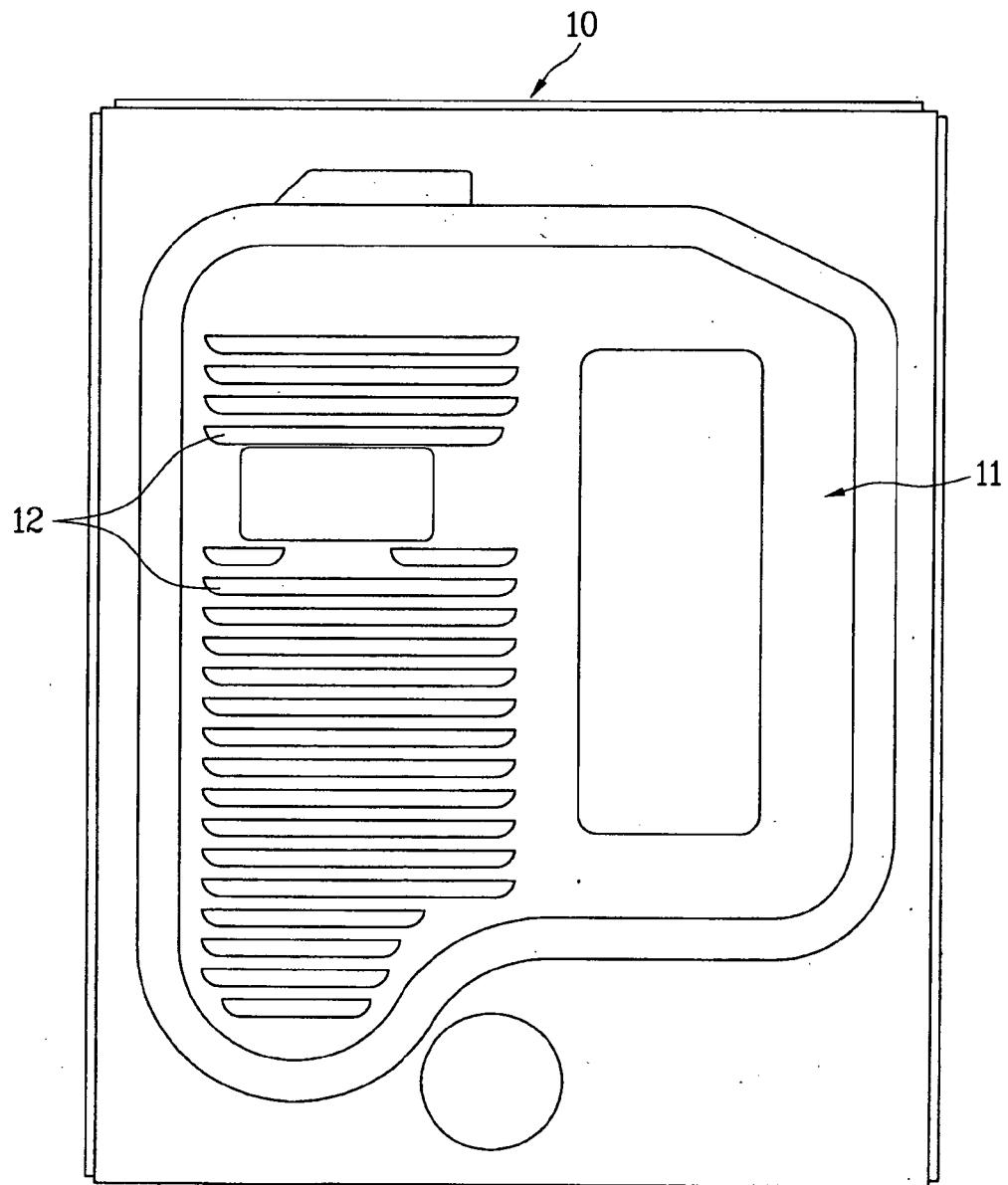


FIG. 2

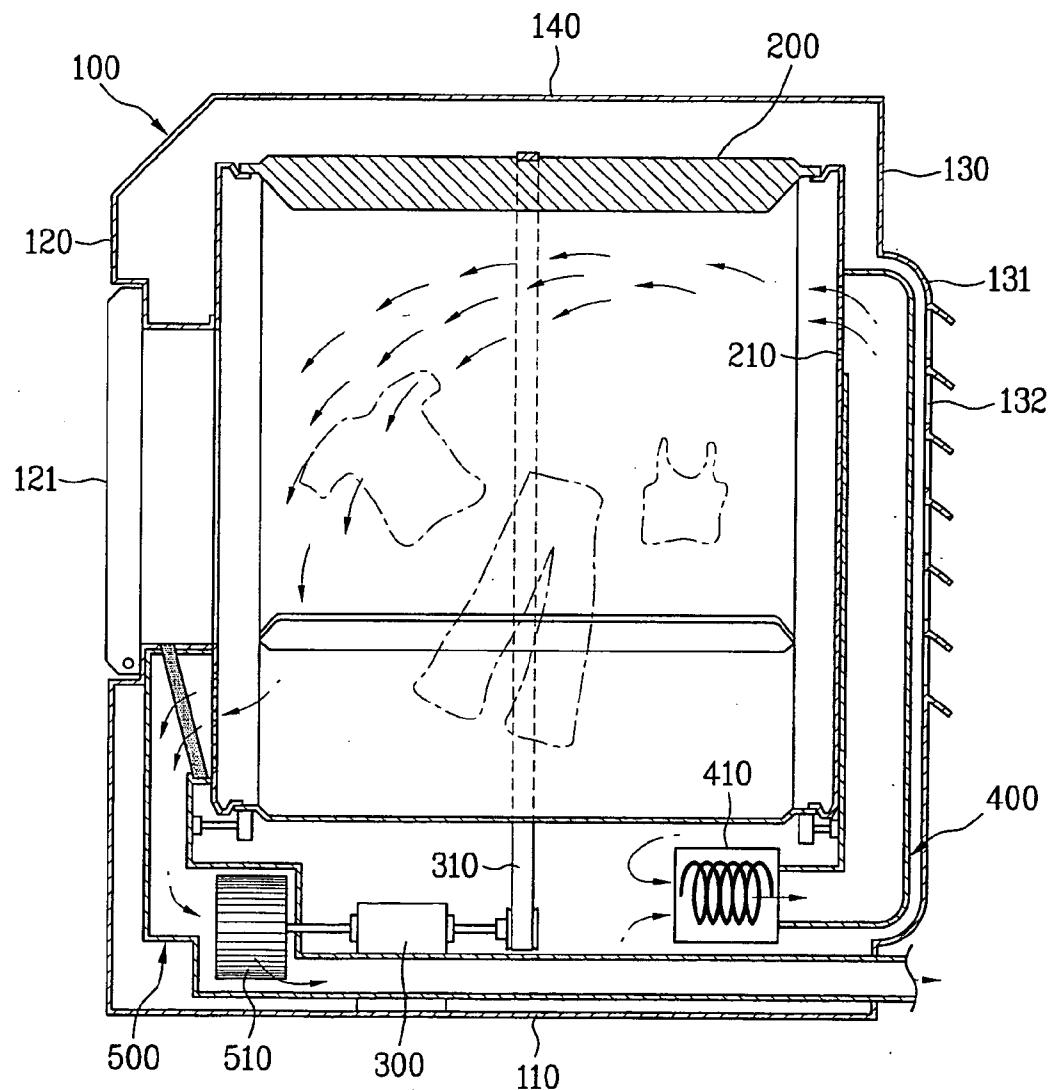
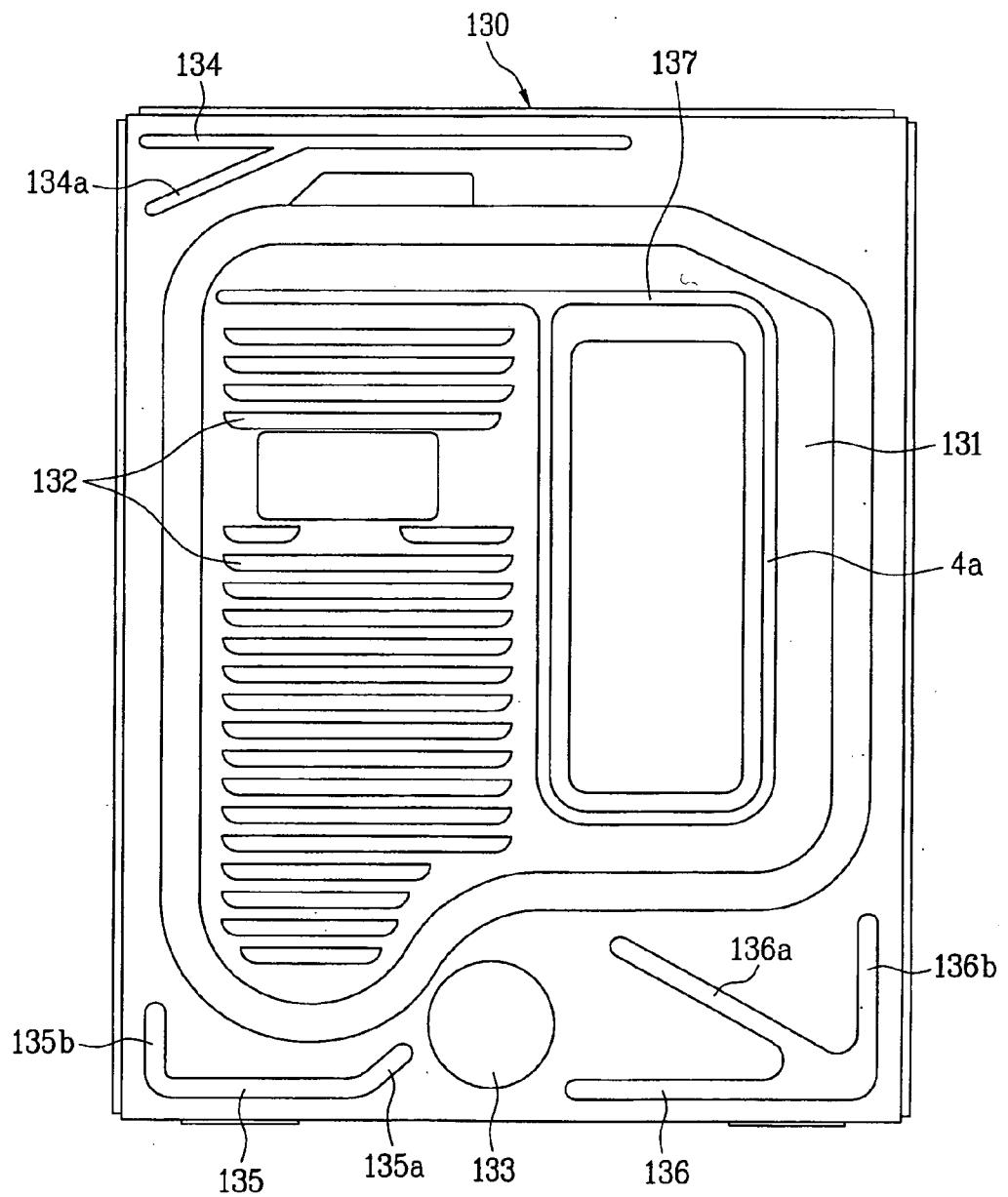


FIG. 3



CABINET FOR HOME APPLIANCE

[0001] This application claims the benefit of Korean Application No. P2003-094253, filed on Dec. 20, 2003, which is hereby incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a cabinet forming an exterior of a home appliance, and more particularly, to a cabinet for a home appliance having a reinforced rigidity configuration.

[0004] 2. Discussion of the Related Art

[0005] Generally, a home appliance cabinet forms an exterior of a home appliance such as a washing machine, dryer, and the like for protecting various parts held inside. A dryer adopting the related art home appliance cabinet equipped with the above function is explained as follows. A dryer is an apparatus for drying an object in a manner of supplying hot air to the drying object such as wet clothes after washing. A dryer according to a related art consists of a cabinet forming a dryer exterior and a drum provided within the cabinet to hold a drying object therein.

[0006] The cabinet for the dryer consists of a base, a front panel having a lower end connected to a front end of the base to form a front side of the cabinet, a pair of side panels connected to both ends of a topside of the base to form both lateral sides of the cabinet, respectively, a rear panel having a lower end connected to a rear end of the base to form a rear side of the cabinet, and a top panel connected to upper ends of the front, side, and rear panels to form a topside of the cabinet. A control panel for operating the dryer is provided to an upper part of the front panel. An opening is formed at a central part of the front panel so that a drying object can be received via the opening. And, a door is provided to one side of the opening to open/close the opening.

[0007] The rear panel 10 according to the related art is explained by referring to FIG. 1 as follows. A recess 11 recessed backward at a predetermined depth is provided to the rear panel 10 to form a space for installing an inlet duct assembly for supplying hot air to the drum. And, an intake grill 12 is provided to the recess 11 to let air flow in the cabinet. However, in the related art dryer, vibration is generated when the drum is rotated to dry a laundry and the like, whereby the rear panel is vulnerable to shaking or transformation. Such a problem becomes more serious in lightening the weight of the rear panel.

SUMMARY OF THE INVENTION

[0008] Accordingly, the present invention is directed to a cabinet for a home appliance that substantially obviates one or more of the problems due to limitations and disadvantages of the related art.

[0009] An object of the present invention, which has been devised to solve the foregoing problem, lies in providing a cabinet for a home appliance, by which rigidity of a rear panel is reinforced to prevent transformation caused by external weight or impact or shaking caused by vibration.

[0010] Another object of the present invention, which has been devised to solve the foregoing problem, lies in provid-

ing a cabinet for a home appliance, by which a rigidity-reinforced rear panel can be lightened.

[0011] Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent to those having ordinary skill in the art upon examination of the following or may be learned from a practice of the invention. The objectives and other advantages of the invention will be realized and attained by the subject matter particularly pointed out in the specification and claims hereof as well as in the appended drawings.

[0012] To achieve these objects and other advantages in accordance with the present invention, as embodied and broadly described herein, a cabinet for a home appliance includes a rear panel comprising at least one reinforcement bead which is projected from the rear panel so as to enhance an overall structural strength of the rear panel. The at least one reinforcement bead may be provided to a fringe area of the rear panel. The at least one reinforcement bead is projected outward from the rear panel. Herein, the rear panel may include a recess area recessed outward for providing an additional space. And, a thickness of the rear panel is about 0.5 to 0.7 millimeters (mm).

[0013] In another aspect of the present invention, a cabinet for a dryer includes a rear panel comprising a plurality of reinforcement beads projected from fringe areas of the rear panel so as to enhance an overall structural strength of the rear panel. Herein, the plurality of reinforcement beads is provided on upper and lower fringe areas of the rear panel. The plurality of reinforcement beads is provided on lower left and lower right areas of the rear panel.

[0014] Herein, the reinforcement beads are provided on left and right fringe areas of the panel, and wherein the reinforcement beads are elongated vertically. And, the reinforcement beads are provided on a plurality of corner areas of the rear panel and have a perpendicular shape. At least one of the plurality of reinforcement beads may include one or more auxiliary reinforcement beads, each auxiliary reinforcement bead being extended from a predetermined portion of the at least one reinforcement bead. Furthermore, the plurality of reinforcement beads is projected outward from the rear panel.

[0015] In a further aspect of the present invention, a cabinet for a dryer includes a rear panel including a plurality of reinforcement beads projected from the rear panel so as to enhance an overall structural strength of the rear panel, and a recess area recessed outward from the rear panel for providing an additional space, wherein the plurality of reinforcement beads is provided between the recess area and a rim of the rear panel. At least one of the plurality of reinforcement beads may include one or more auxiliary reinforcement beads, each auxiliary reinforcement bead being extended from a predetermined portion of the at least one reinforcement bead.

[0016] Herein, the plurality of reinforcement beads is projected outward from the rear panel. An air inlet louver is provided on the recess area for receiving external air. Furthermore, the rear panel may include at least one additional reinforcement bead projected from the recess area of the rear panel. The at least one additional reinforcement bead may be projected inward from the recess area of the rear panel.

[0017] It is to be understood that both the foregoing explanation and the following detailed description of the present invention are exemplary and illustrative and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] 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 embodiments of the invention and together with the description serve to explain the principle of the invention. In the drawings:

[0019] FIG. 1 is a layout of a rear panel forming a rear side of a cabinet for a dryer according to a related art;

[0020] FIG. 2 is a cross-sectional diagram of a dryer provided with a cabinet according to the present invention; and

[0021] FIG. 3 is a layout of a rear panel forming a rear side of a cabinet for a dryer according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. Throughout the drawings, like elements are indicated using the same or similar reference designations where possible.

[0023] As one preferred embodiment of the present invention, a cabinet for a dryer is explained in detail by referring to FIGS. 2 and 3 as follows. A dryer includes a cabinet 100 forming a dryer exterior and a drum 200 provided within the cabinet 100 to hold a drying object therein. The cabinet 100 of the dryer includes a base 110, a front panel 120 having a lower end connected to a front end of the base 110 to form a front side of the cabinet 100, a pair of side panels (not shown) connected to both ends of a topside of the base 110 to form both lateral sides of the cabinet 100, respectively, a rear panel 130 having a lower end connected to a rear end of the base 110 to form a rear side of the cabinet, and a top panel 140 connected to upper ends of the front plate, side plates, and back cover to form a topside of the cabinet.

[0024] A control panel (not shown) for operating the dryer is provided to an upper part of the front panel 120. A cabinet opening (not shown) is formed at a central part of the front panel 120 so that a drying object can be received in the drum 200 via the cabinet opening. And, a door 121 is provided to one side of the cabinet opening to open/close the cabinet opening. The drum 200 is configured to rotate by being connected to a belt 310 connected to a drive motor 300 provided to a lower space of the cabinet 100. For this, a belt groove (not shown) is formed on an outer circumference of the drum 200.

[0025] An inlet duct assembly 400 for supplying hot air to the drum is provided in rear of the drum 200 to provide hot air to the drum via an air inlet 210 provided to a rear side of the drum. And, a heater 410 is provided under the inlet duct assembly 400 to heat air flowing in the inlet duct assembly 400. An exhaust duct assembly 500 is connected to a front

side of the drum 200 to guide the air discharged from the drum 200 outside the cabinet. And, a blower 510 is provided on a passage of the exhaust duct assembly 500 to drive a flow of air. Preferably, the blower 510 is rotated by the drive motor 300 connected to the belt 310.

[0026] The rear panel 130 of the cabinet according to the present invention is explained by referring to FIG. 3 as follows. A recess (or recess area) 131 is formed in a middle part of the rear panel 130 to provide a space for installing the inlet duct assembly 400 for supplying hot air to the drum 200. By drawing processing, an inside of the recess 131 is recessed in a rear direction and an outside of the recess 131 is projected in the rear direction. An intake louver (or inlet louver) 132 is provided to a predetermined part of the recess 131, and more particularly, to a left lateral part of the recess 131 to suck external air into the cabinet. And, the inlet duct assembly 400 is accommodated between a right lateral part of the recess 131 and the drum 200.

[0027] Moreover, an air outlet 133 is provided to a lower part of the rear panel 130, and more particularly, under the recess 131 to be connected to the exhaust duct assembly 500 for discharging air outside the cabinet 100. Meanwhile, the rear panel 130 includes a reinforcement means for preventing transformation or distortion caused by external weight or impact and shaking generated from vibration. The reinforcement means includes a plurality of reinforcement beads 134, 135, and 136 projected from a surface of the rear panel 130. Each of the reinforcement beads 134, 135, and 136 is formed in a manner of recessing one side of the rear panel 130 to project the other side of the rear panel 130.

[0028] The above-configured reinforcement beads 134, 135, and 136 are projected from a fringe area of the rear panel 130, and more particularly, between the recess 131 and a rim of the rear panel 130. Specifically, the reinforcement beads 134, 135, and 136 include an upper bead 134 provided to an upper fringe area of the rear panel 130 and a pair of lower beads 135 and 136 provided to a lower fringe area of the rear panel 130.

[0029] In this case, a pair of the lower beads 135 and 136 provided to the lower fringe area of the rear panel 130 are a left lower bead 135 and right lower bead 136 provided to left and right parts of the lower fringe area, respectively. It is a matter of course that the reinforcement beads 134, 135, and 136 can be connected in one body. Moreover, first auxiliary reinforcement beads 134a, 135a, and 136a extend from predetermined portions of the reinforcement beads 134, 135, and 136, respectively. Furthermore, second auxiliary reinforcement beads 135b and 136b can be added to the above configuration in directions vertical to the reinforcement beads 134, 135, and 136, respectively. The reinforcement beads may extend long on both lateral fringe areas of the rear panel 130 in top-to-bottom direction, respectively, or may have right-angled shapes on corner areas of the rear panel 130, respectively.

[0030] Meanwhile, it is preferable that an inner reinforcement bead 137 is provided to the recess 131. Specifically, the inner reinforcement bead 137 is projected on an upper fringe part of the recess 131 and a fringe part of the recess 131 failing to have the intake louver 132 formed thereon. Moreover, the inner reinforcement bead 137 can be variously modified according to a design condition to have such a shape as a one-bodied configuration, separated configura-

tion, and so on. In the reinforcement beads 134 to 137 including the auxiliary reinforcement beads 134a, 134a, 135b, 136a, and 136b, the upper bead 134, lower beads 135 and 136, and auxiliary reinforcement beads 134a, 134a, 135b, 136a, and 136b are projected outward from the rear panel 130. And, the inner reinforcement bead 137 is projected inward from the rear panel 130. Yet, the configurations of the reinforcement beads can be variously modified overall. By providing the reinforcement beads 134, 135, 136, and 137 and the auxiliary reinforcement beads 134a, 134a, 135b, 136a, and 136b, the rear panel 30 can be decreased more in thickness to lighten the cabinet in weight.

[0031] In the related art cabinet, the rear panel is transformed or distorted by the external weight or impact or is shaken or bent by the vibration generated from a rotation of the drum despite having a sufficient thickness. By providing the reinforcement beads 134, 135, 136, and 137, the present invention enables to prevent the transformation or shaking of the rear panel 130 even if the thickness of the rear panel 130 is in the range of 0.5 to 0.7 millimeters (mm). Meanwhile, the reinforcement means may include reinforcement ribs (not shown) protruding from a surface of the rear panel.

[0032] An operation of the dryer according to the present invention is explained as follows. First of all, a drying object such as clothes is put in the drum 200 via the cabinet opening, the door 121 is closed, and the control panel is operated to actuate the dryer. The blower 510 provided to the exhaust duct assembly is rotated by the drive motor 300 to generate air suction so that external air is sucked into the cabinet via the intake louver 132 of the rear panel 130. The air sucked into cabinet is heated by the heater 410 and then flows in the drum 200 via the inlet duct assembly 400. In doing so, while the drum 200 is rotated by the drive motor 300 via the belt 310 to dry the drying object well, the hot air having flown in the rotating drum 200 removes water contents from the drying object to flow in the exhaust duct assembly 500. The air having flown in the exhaust duct assembly 500 is discharged outside the cabinet via the air outlet 133 connected to the rear panel 130. The cabinet provided with the above-configured rear panel 130 is applicable to various home appliances such as a washing machine and the like as well as the dryer.

[0033] Accordingly, a cabinet for a dryer according to the present invention has the following advantages or effects. First of all, the reinforcement beads prevent the transformation and shaking of the rear panel, whereby product endurance is prolonged and noise of the driven dryer is reduced. Secondly, the reinforcement beads supplement the rigidity of the rear panel, whereby the thickness of the real panel can be reduced. Therefore, the product cost of the rear panel is reduced. Moreover, the rear panel can lose its weight to facilitate production, maintenance, and repair.

[0034] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the spirit or scope of the invention. Thus, it is intended that the present invention cover such modifications and variations, provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A cabinet for a home appliance, comprising:

a rear panel comprising at least one reinforcement bead which is projected from the rear panel so as to enhance an overall structural strength of the rear panel.

2. The cabinet of claim 1, wherein the at least one reinforcement bead is provided to a fringe area of the rear panel.

3. The cabinet of claim 1, wherein the at least one reinforcement bead is projected outward from the rear panel.

4. The cabinet of claim 1, wherein the rear panel further comprises a recess area recessed outward for providing an additional space.

5. The cabinet of claim 1, wherein a thickness of the rear panel is about 0.5 to 0.7 millimeters (mm).

6. A cabinet for a dryer, comprising:

a rear panel comprising a plurality of reinforcement beads projected from fringe areas of the rear panel so as to enhance an overall structural strength of the rear panel.

7. The cabinet of claim 6, wherein the plurality of reinforcement beads is provided on upper and lower fringe areas of the rear panel.

8. The cabinet of claim 6, wherein the plurality of reinforcement beads is provided on lower left and lower right areas of the rear panel.

9. The cabinet of claim 6, wherein the reinforcement beads are provided on left and right fringe areas of the panel, and wherein the reinforcement beads are elongated vertically.

10. The cabinet of claim 6, wherein the reinforcement beads are provided on a plurality of corner areas of the rear panel and have a perpendicular shape.

11. The cabinet of claim 6, wherein at least one of the plurality of reinforcement beads comprises one or more auxiliary reinforcement beads, each auxiliary reinforcement bead being extended from a predetermined portion of the at least one reinforcement bead.

12. The cabinet of claim 6, wherein the plurality of reinforcement beads is projected outward from the rear panel.

13. A cabinet for a dryer, comprising:

a rear panel comprising:

a plurality of reinforcement beads projected from the rear panel so as to enhance an overall structural strength of the rear panel; and

a recess area recessed outward from the rear panel for providing an additional space, wherein the plurality of reinforcement beads is provided between the recess area and a rim of the rear panel.

14. The cabinet of claim 13, wherein at least one of the plurality of reinforcement beads comprises one or more auxiliary reinforcement beads, each auxiliary reinforcement bead being extended from a predetermined portion of the at least one reinforcement bead.

15. The cabinet of claim 13, wherein the plurality of reinforcement beads is projected outward from the rear panel.

16. The cabinet of claim 13, wherein an air inlet louver is provided on the recess area for receiving external air.

17. The cabinet of claim 13, wherein the rear panel further comprises at least one additional reinforcement bead projected from the recess area of the rear panel.

18. The cabinet of claim 17, wherein the at least one additional reinforcement bead is projected inward from the recess area of the rear panel.