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(19) **United States**(12) **Patent Application Publication****Hwang et al.**(10) **Pub. No.: US 2005/0134157 A1**(43) **Pub. Date: Jun. 23, 2005**(54) **CABINET FOR HOME APPLIANCE****Publication Classification**(76) Inventors: **Sung Gi Hwang**, Changwon-si (KR); **Il Tak Han**, Suwon (KR); **Jeung Gie Ahn**, Seoul (KR)(51) **Int. Cl.<sup>7</sup>** ..... **A47B 47/00**(52) **U.S. Cl.** ..... **312/265.6**

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(57)

**ABSTRACT**

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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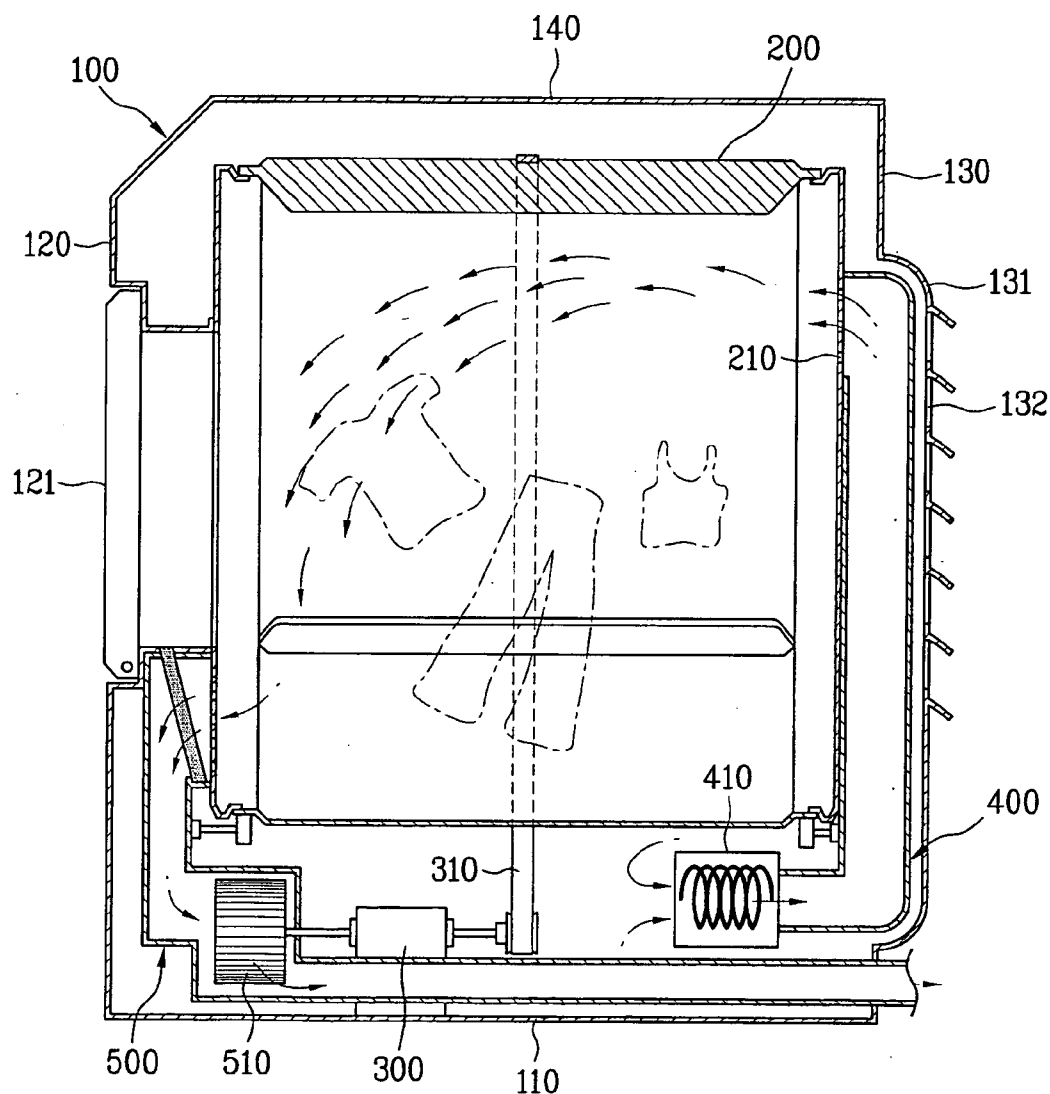


FIG. 1  
Prior Art

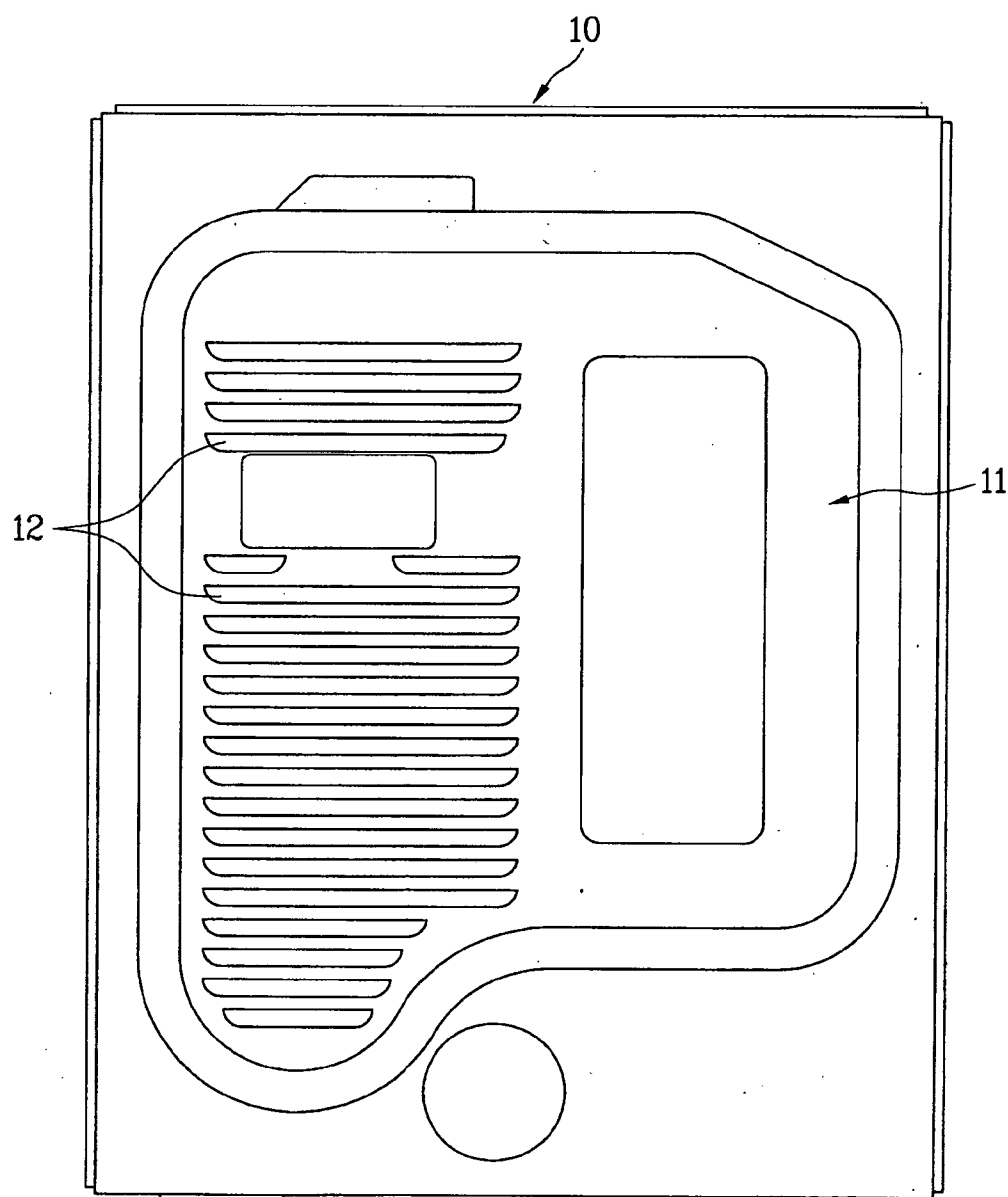


FIG. 2

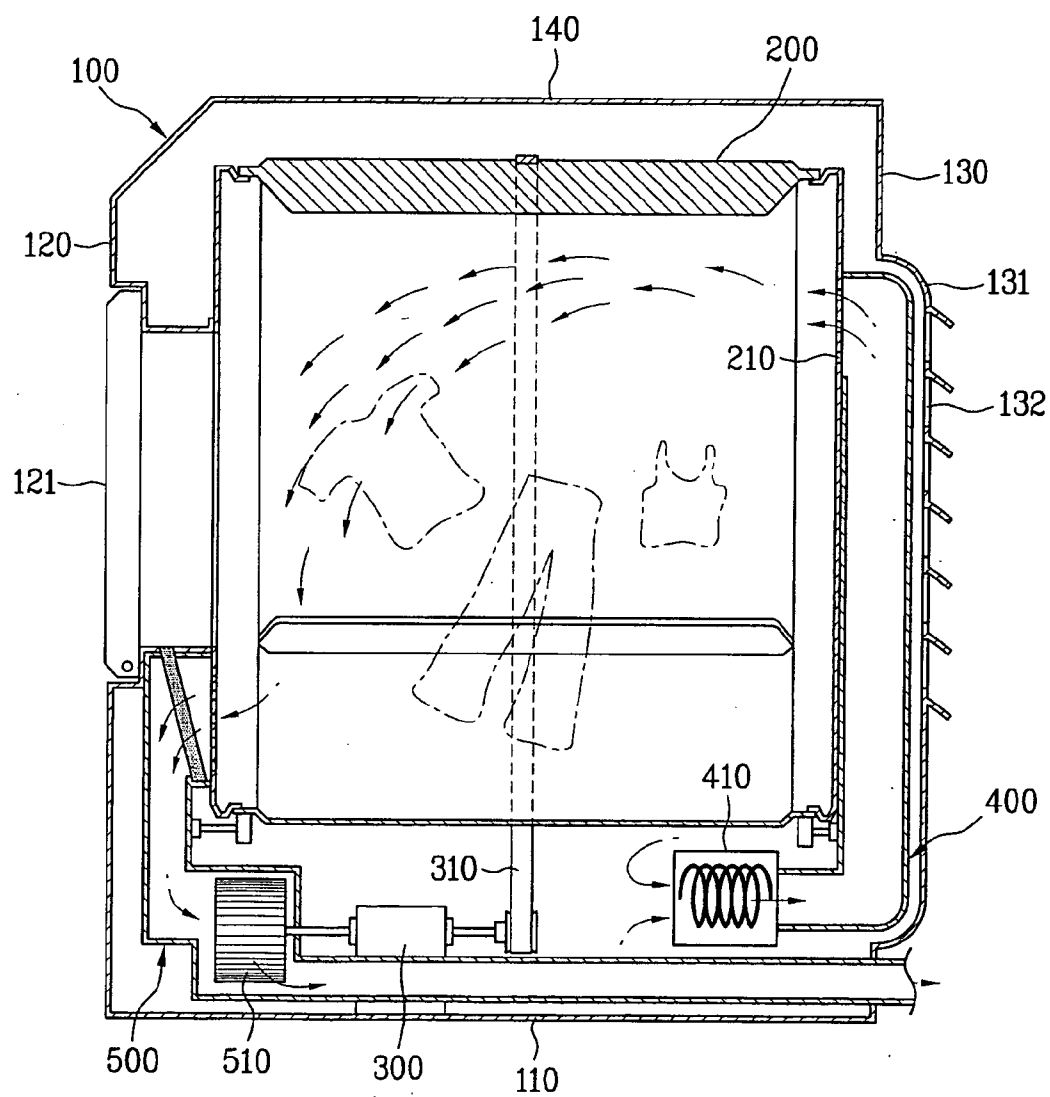
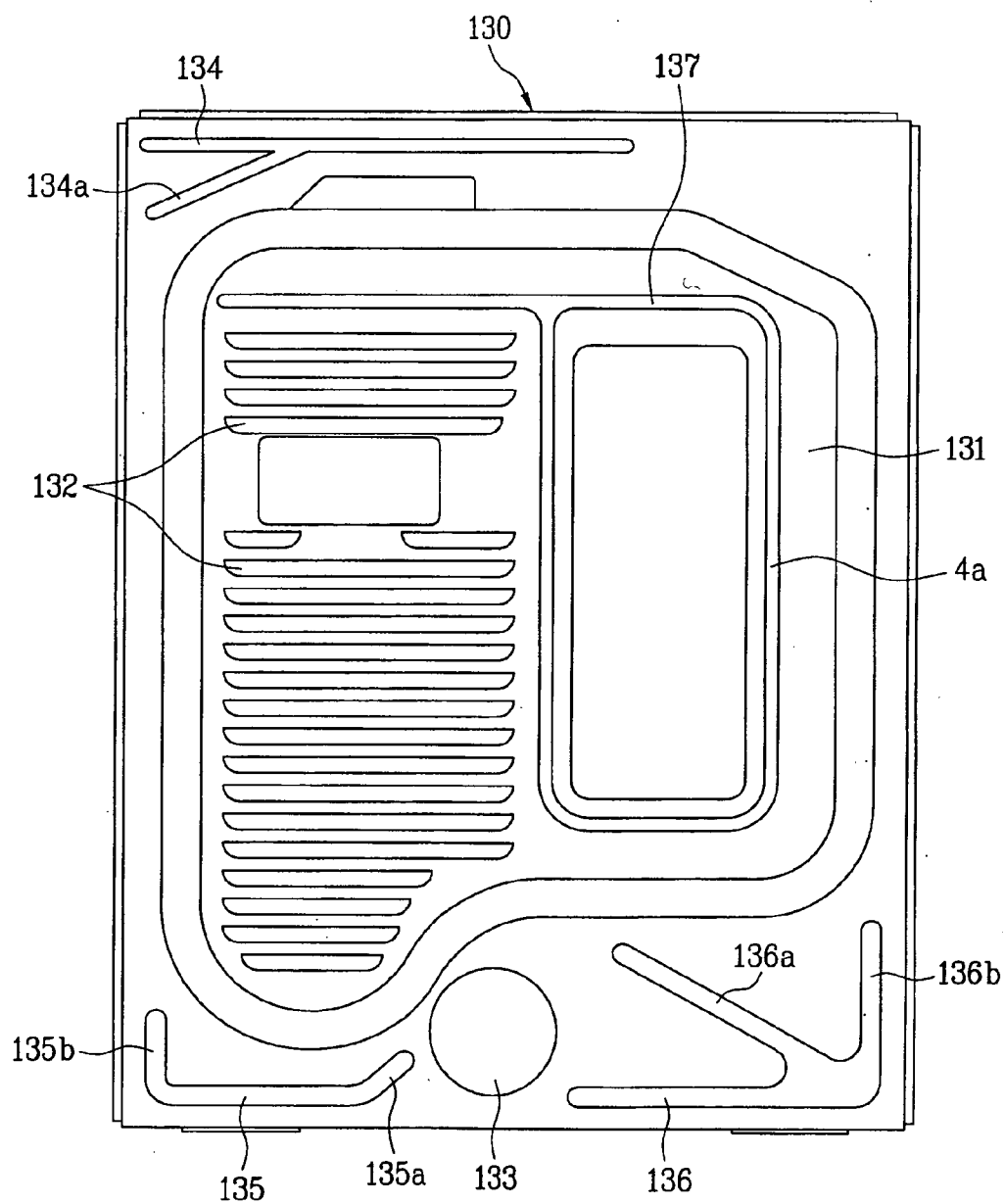


FIG. 3



## 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 rear 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.