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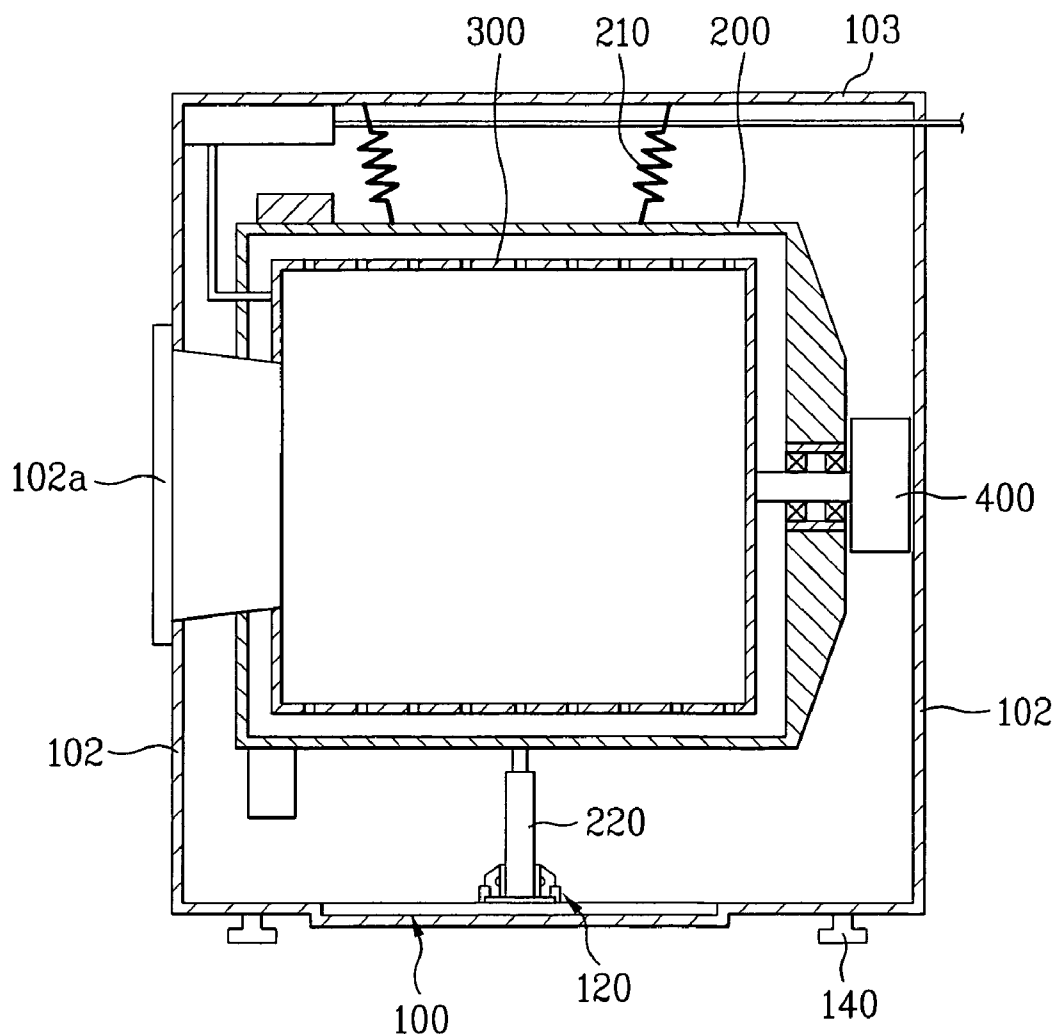


FIG. 1

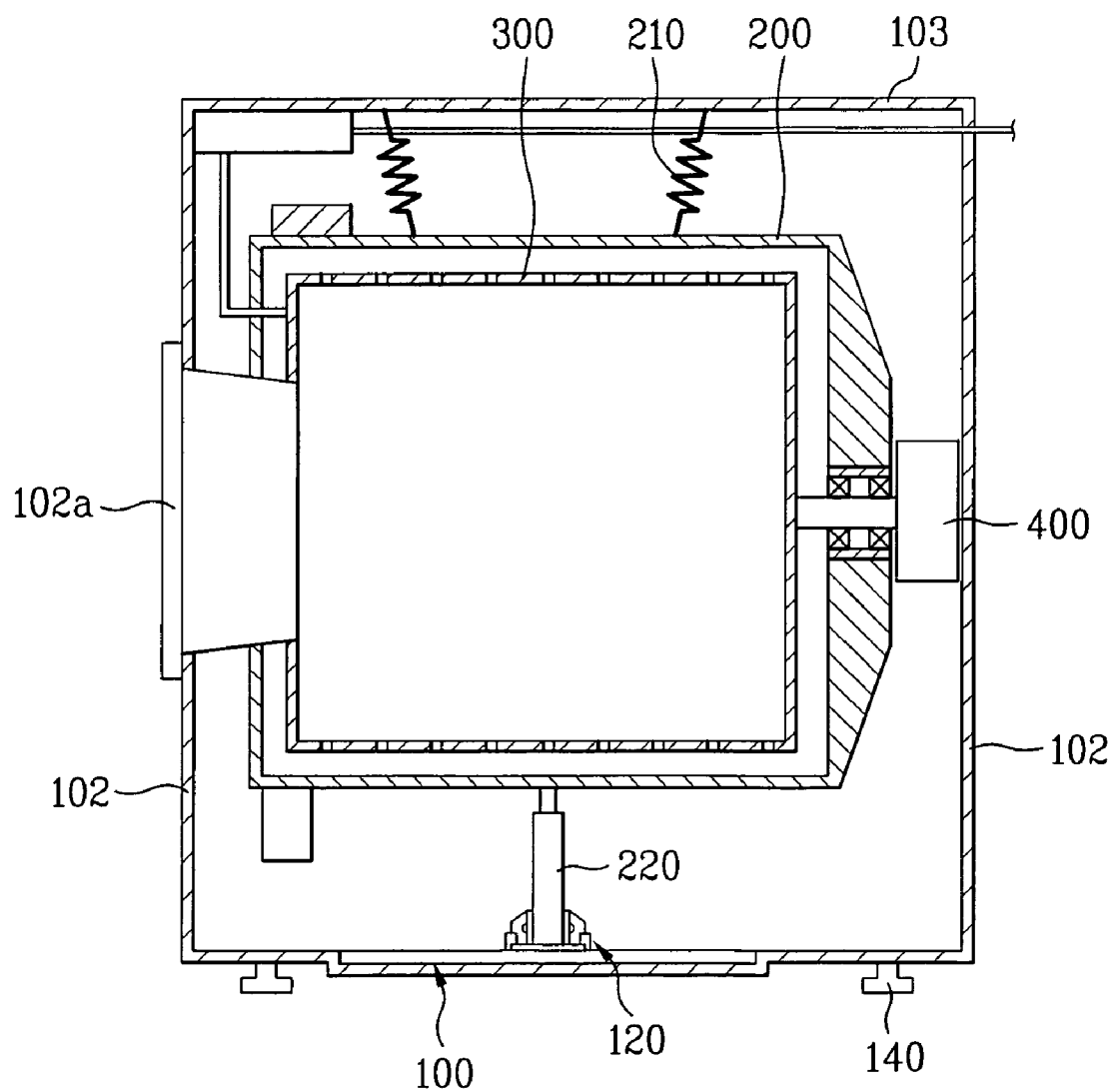


FIG. 2

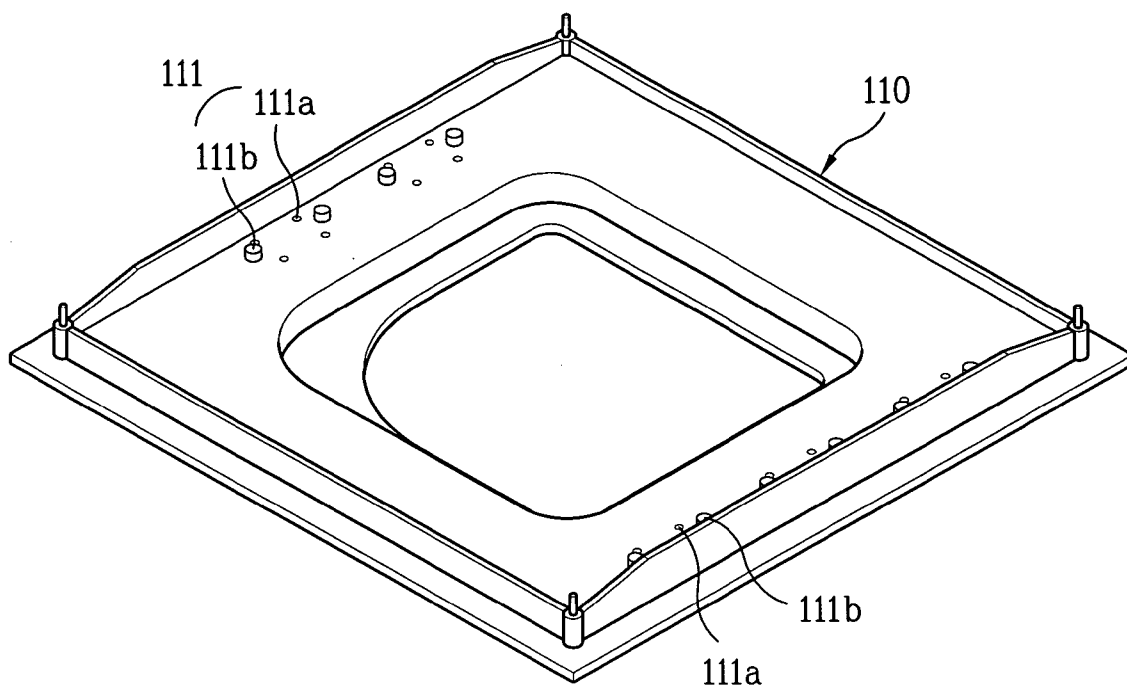


FIG. 3

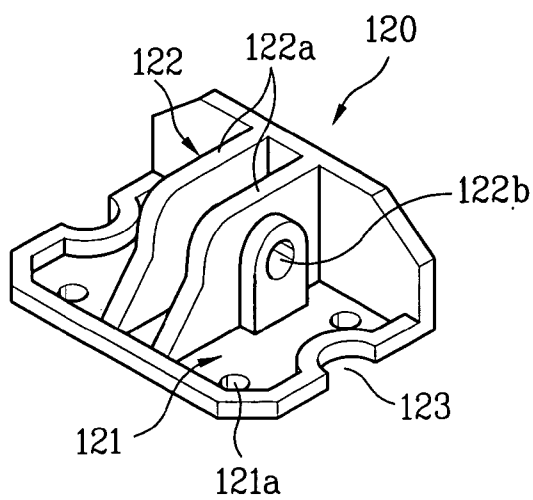


FIG. 4

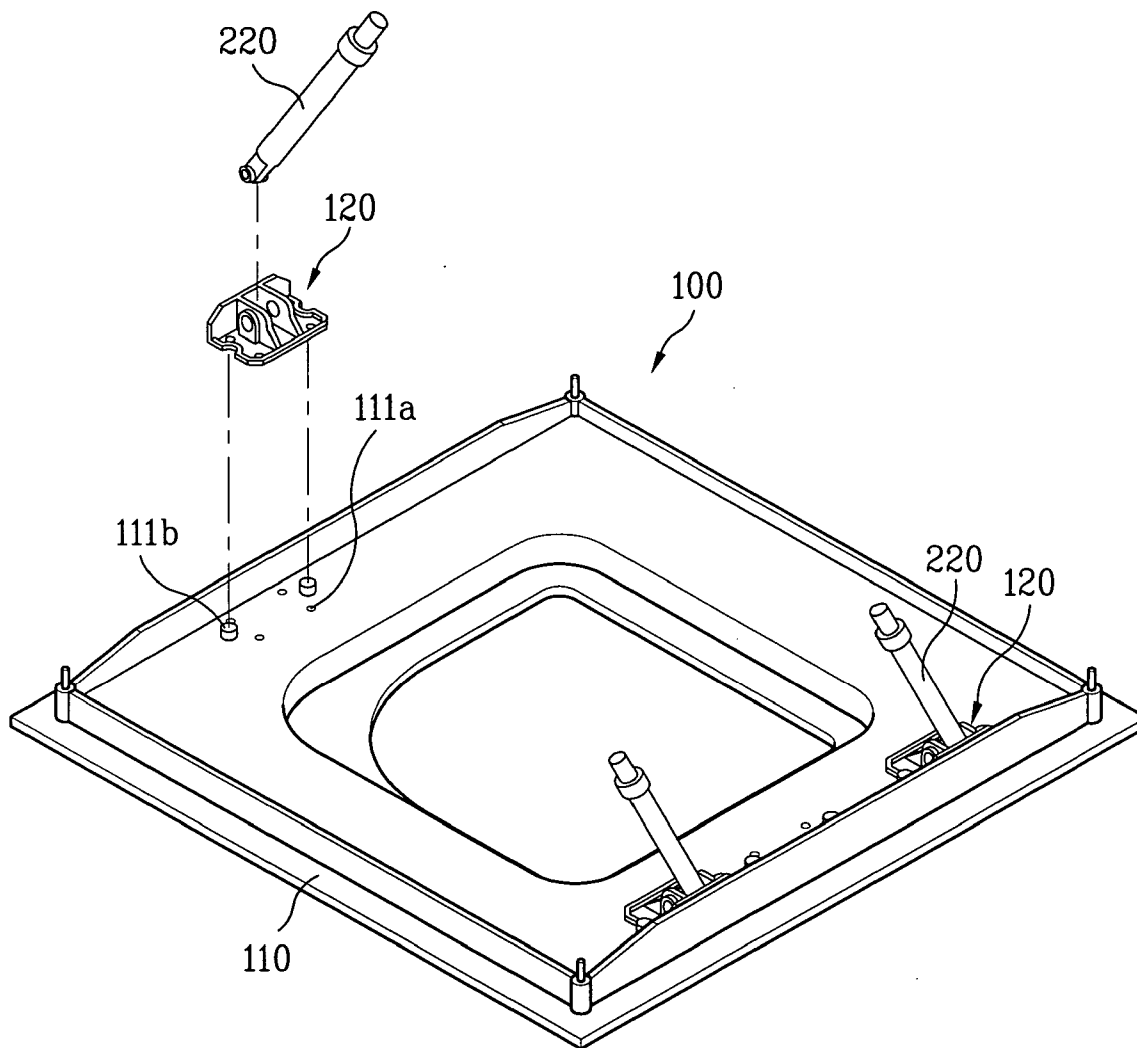
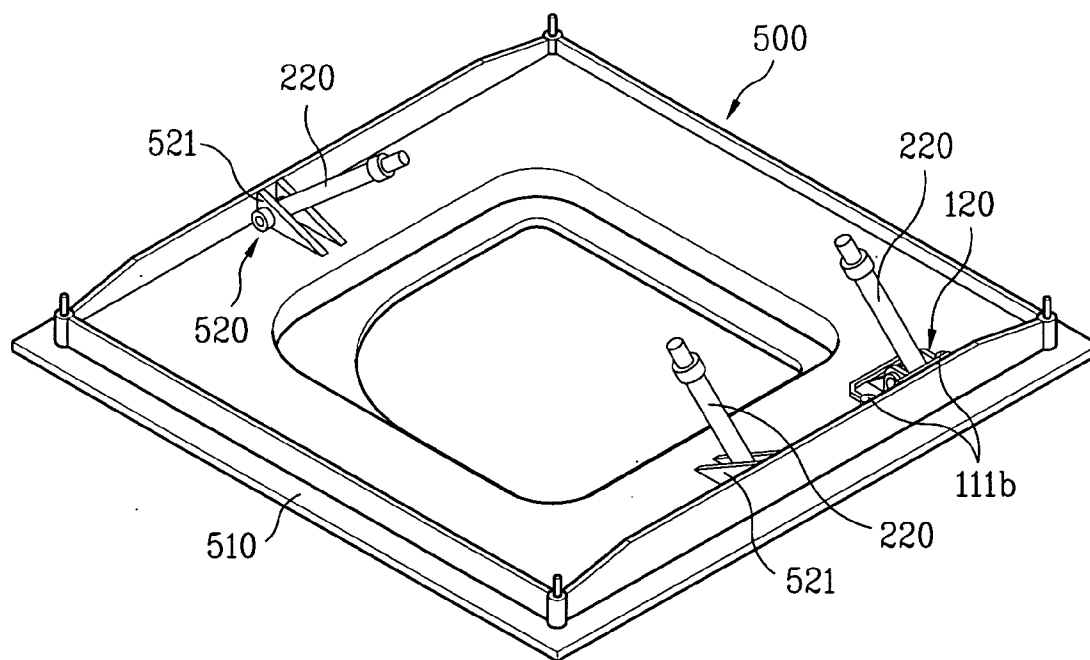


FIG. 5



BASE ASSEMBLY AND WASHING MACHINE WITH THE SAME

[0001] This application claims the benefit of the Korean Application No. P2004-39560 filed on Jun. 1, 2004, which is hereby incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a washing machine, and more particularly, to a base assembly of a washing machine, which defines a bottom of a cabinet of the washing machine.

[0004] 2. Discussion of the Related Art

[0005] Generally, a washing machine is designed to perform washing, rinsing and spinning cycles by rotating a drum installed in a tube. At this point, laundry is loaded in the drum while water mixed with detergent is barreled in an inner-lower portion of the tub.

[0006] That is, the washing machine is a device for removing stain or dirties from the laundry by using detergent and applying mechanical force.

[0007] Particularly, in a drum-type washing machine, the drum is horizontally disposed and driven by driving force of the motor to remove the dirty from the laundry loaded therein. The drum-type washing machine has an advantage in that the laundry is not tangled and damaged while using a less amount of water.

[0008] A conventional washing machine includes a cabinet defining an outer appearance of the washing machine, a tub disposed in the cabinet to receive washing water, a cylindrical drum rotatably disposed in the tub to receive laundry, and a damper for absorbing vibration of the tub, and a base defining a bottom of the cabinet.

[0009] The cabinet is provided with a control panel with buttons and switches for inputting an operating condition and a detergent box connected to a water supply unit to supply washing water together with the detergent.

[0010] In the conventional washing machine, the laundry is washed by chemical reaction of the detergent and by water current and frictional force generated by the drum rotation.

[0011] The damper has an upper end connected to a lower outer surface of the tub and a lower end connected to a corner of the base, thereby attenuating the vibration generated from the tub.

[0012] Accordingly, the base functions to define the bottom of the cabinet and to support the damper connected to the tub.

[0013] That is, a damper supporting member is integrally formed with the base. The integration of the damper supporting member with the base makes it difficult to displace and exchange the damper supporting member.

[0014] Therefore, there is a need for a base assembly to which a damper supporting member is detachably attached and which can be used regardless of the volume variation and vibration property of the tub.

SUMMARY OF THE INVENTION

[0015] Accordingly, the present invention is directed to a base assembly and a washing machine with the same that substantially obviate one or more problems due to limitations and disadvantages of the related art.

[0016] An object of the present invention is to provide a washing machine with a base assembly having a detachable damper supporting member.

[0017] Another object of the present invention is to provide a washing assembly with a base assembly that can be used regardless of the volume variation and vibration property of a tub.

[0018] 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.

[0019] To achieve these objects and other advantages and in accordance with the purpose of the invention, as embodied and broadly described herein, there is provided a base assembly including: a base plate defining a bottom; and at least one first damper supporting member detachably provided on the base plate to support the damper absorbing vibration of an object.

[0020] The first damper supporting member comprises a base coupling portion coupled to the base plate; and a damper connecting portion provided on a top of the base coupling portion to support the damper.

[0021] The damper connecting portion comprises a pair of supporting walls spaced away from each other to support lower both sides of the damper; and hinge holes formed on the respective supporting walls.

[0022] The base plate comprises at least one mounting portion on which the first damper supporting portion is selectively mounted.

[0023] The mounting portion is provided along at least one corner of the base plate.

[0024] The mounting portion comprises an aligning portion aligning the first damper supporting member.

[0025] The aligning portion comprises at least one aligning projection extending upward to align the first damper supporting member.

[0026] The first damper supporting member comprises at least one aligning groove corresponding to the aligning projection.

[0027] The base assembly may further comprise at least one second damper supporting member integrally formed on the base plate.

[0028] The second damper supporting member is provided at least one corner of the base plate.

[0029] In another aspect of the present invention, there is provided a washing machine, including: a cabinet defining an outer appearance; a tub provided in the cabinet to store

washing water; a drum rotatably provided in the tub to receive laundry; and a base assembly provided on a lower portion of the cabinet, wherein the base assembly comprises a base plate defining a bottom of the cabinet; and at least one first damper supporting member detachably provided on the base plate to support the damper absorbing vibration of the tub.

[0030] 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

[0031] 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:

[0032] **FIG. 1** is a sectional view of a washing machine with a base assembly according to a first embodiment of the present invention;

[0033] **FIG. 2** is a perspective view of a base plate of a base assembly according to a first embodiment of the present invention;

[0034] **FIG. 3** is a perspective view of a first damper supporting member of a base assembly according to a first embodiment of the present invention;

[0035] **FIG. 4** is an exploded perspective view of a first damper supporting member at a corner portion of a base assembly according to a first embodiment of the present invention; and

[0036] **FIG. 5** is a perspective view of a base assembly according to a second embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0037] 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.

[0038] **FIG. 1** shows a drum-type washing machine with a base assembly according to a first embodiment of the present invention.

[0039] Referring to **FIG. 1**, a washing machine of this embodiment is a drum-type, including a cabinet defining an outer appearance of the drum-type washing machine, a base assembly **100** defining the outer appearance together with the cabinet, a tub **200** provided in the cabinet, a drum **300** rotatably installed in the tub **200**, and a rotating unit **400** rotating the drum **300**.

[0040] The cabinet includes a pair of side plates (not shown), a rear plate **101** provided on rear portions of the side plates and the base assembly **100**, a front plate **102** provided on front portions of the side plates and the base assembly **100**, and a top plate **103** provided tops of the side plates, the rear plate **101** and the front plate **102**.

[0041] Here, the front plate **102** is provided with an opening (not shown) through which laundry is loaded and unloaded and a door **102a** opening/closing the opening.

[0042] A control panel (not shown) for controlling the operation of the washing machine is installed on an upper portion of the front plate **102** or a rear corner of the top plate **103**.

[0043] The tub **200** is supported by a spring **210** connected between the top of the top plate **103** and the upper portion of the tub **200** and a damper **220** disposed between the base assembly **100** and the lower portion of the tub **200**. The tub **200** is provided at a front portion with an inlet opening (not shown) corresponding to the opening of the cabinet.

[0044] The drum **300** is provided with a plurality of through holes (not shown) through which washing water passes. The drum **300** is further provided at an inner wall with a lifter (not shown) for lifting the laundry to a predetermined height.

[0045] When the drum **300** rotates, the laundry loaded in the drum is repeatedly lifted by the lifter and dropped by gravity, thereby performing the washing cycle.

[0046] The drum **300** is provided at a front portion with an inlet opening (not shown) corresponding to the inlet opening of the tub **200**, thereby defining a laundry loading/unloading portion into/from the drum **300** together with the openings of the cabinet and the tub **200**.

[0047] The rotating unit **400** may be formed of an induction motor or a brushless direct current (BLDC) motor that is provided rearward of the tub **200**. A rotational shaft of the motor is connected to a rear end center of the drum to rotate the drum **300** in a bi-direction.

[0048] Installed on a lower portion of the tub **200** are a drain pump and a drain hose. A water supply unit is connected to an upper portion of the tub **200** and a detergent box connected to the water supply to supply the water together with the detergent.

[0049] **FIGS. 1 through 4** show the base assembly according to a first embodiment of the present invention.

[0050] Referring to **FIGS. 1 through 4**, the base assembly **100** according to the first embodiment includes a base plate **110** defining a bottom of the cabinet and one or more first damper supporting members **120** detachably provided on the base plate **110**.

[0051] Legs **139** are detachably coupled to corners of the base plate **110** to support the same.

[0052] The first damper supporting member **120** is designed to support the damper **220** such as a friction damper connected to a lower-outer circumference of the tub **200** to absorb vibration of the tub **200**.

[0053] The first damper supporting member **120** includes a base coupling portion **121** coupled to the base plate **110** and a damper connection portion **122** integrally formed on an upper portion of the base coupling portion **121** to rotatably support the lower end of the damper **220**.

[0054] The damper connection portion **122** includes a pair of supporting walls **122a** extending upward from a top of the base coupling portion **121** and a pair of hinge holes **122b** respectively formed on the supporting walls **122a**.

[0055] The damper connection portion **122** is connected to the damper by damper pins or bolts inserted in the hinge holes **122b**.

[0056] Alternatively, hinge shafts may be integrally formed on a lower end of the damper and inserted into the hinge holes **122b**.

[0057] The base plate **110** is provided with one or more mounting portions **111** on which the first damper supporting member **120** is selectively mounted.

[0058] The mounting portion **111** is formed along at least one corner of the base plate **110**. A plurality of mounting portions **111** on which the first damper supporting member **120** is selectively mounted are provided on opposing corners of the base plate **110**.

[0059] The mounting portions **111** are arranged along the corners of the base plate with a predetermined space from each other.

[0060] Each of the mounting portions **111** is provided with a first coupling holes **11a** used for screw-coupling to the base coupling portion **121**. The base coupling portion **121** is provided with a second coupling hole **121a** corresponding to the first coupling hole **11a**.

[0061] The mounting portion is further provided with an aligning portion **111b** aligning the first supporting member **120** on the mounting portion.

[0062] The aligning portion **111b** includes at least one aligning projection formed extending from a top of the base plate **110** to align the base coupling portion **121**.

[0063] In this embodiment, each of the mounting portions **111** of the base plate **110** is provided with a pair of aligning projections for guiding both sides of the base coupling portion.

[0064] Here, the aligning projections are formed in a cylindrical shape. The base coupling portion **121** is provided at both surfaces with a semicircular aligning grooves **123** corresponding to the aligning projections.

[0065] The number and shape of the mounting portion are not limited to the above.

[0066] The assembling process of the first damper supporting member **120** on the base plate **110** will be described hereinafter.

[0067] The number of dampers **220**, which is proper to a size and vibration property of the tub **200**, is first determined and the mounting portions formed on a portion corresponding to the damper **220** are selected.

[0068] The first supporting member **120** is aligned on the aligning portion **111b** of the selected mounting portion **111**.

[0069] At this point, the pair of aligning projections are inserted into the aligning grooves **123** formed on the both surfaces of the base coupling portion **121** to align the location of the first damper supporting member **120**.

[0070] Next, the first damper supporting member **120** is securely coupled to the base plate **110** by, for example, a screw in a state where the first coupling holes **11a** formed on the base plate **110** are aligned to the second coupling holes **121a** formed on the base coupling portion **121**.

[0071] Then, a lower end of the damper **220** is inserted between the pair of supporting walls **122a** of the damper coupling portion **122** and a damper pin or a bolt is inserted through a hinge hole **122b** formed on the supporting walls **122a** to rotatably connect the first damper supporting member **120** to the damper **220**.

[0072] When the detachable first damper supporting member **120** is used, it can be provided on a proper location to support the proper number of dampers **220** that are provided on proper locations in accordance with the volume of the tub **200**. Therefore, there is no need to prepare a special base plate to support the dampers **220**.

[0073] FIG. 5 shows a perspective view of a base assembly according to a second embodiment of the present invention. The same reference numbers will be used in this embodiment to refer to the same or like parts as in the first embodiment. The detailed description of the like parts will be omitted herein.

[0074] Referring to FIG. 5, a base assembly **500** of this embodiment includes a base plate **510** defining a bottom of the cabinet, a first damper supporting member **120** detachably provided on the base plate **510**, and at least one second damper supporting member **520** integrally formed on the base plate **510**.

[0075] Describing in more detail, four legs supporting the base plate **510** are provided on respective corners of the base plate **510**. At least one mounting portion on which the first damper supporting member **120** is mounted is at least one corner of the base plate.

[0076] Since the first damper supporting member **120** and the mounting portion are identical to those of the first embodiment, the description thereof will be omitted herein.

[0077] The second damper supporting member **520** includes a pair of supporting ribs **521** extending upward from the corners of the base plate **510** and hinge holes provided on the respective supporting ribs **521** and rotatably support the damper **220**.

[0078] In this embodiment, the second damper supporting member **520** is formed on each of the opposing corners of the base plate **510**. The present invention however is not limited to this case.

[0079] Since the base assembly of this embodiment has also the detachable first damper supporting member **120**, a special base assembly proper to the number and location of the dampers supporting the tub is not required even when the size and volume of the tub **20** are varied.

[0080] The effect of the above-described washing machine of the present invention will be described hereinafter.

[0081] 1. Since the first damper supporting member is detachably provided, it is possible to exchange the first damper supporting member when it is damaged or broken.

[0082] 2. Since the number and location of the first damper supporting members can be properly selected in response to the volume variation and vibration property of the tub, the base assembly can be commonly used.

[0083] 3. Since the aligning portions are provided to align the first damper supporting member to a predetermined location, it is easy to assemble the first damper assembly.

[0084] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention. 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 base assembly comprising:
 - a base plate defining a bottom; and
 - at least one first damper supporting member detachably provided on the base plate to support the damper absorbing vibration of an object.
2. The base assembly of claim 1, wherein the first damper supporting member comprises:
 - a base coupling portion coupled to the base plate; and
 - a damper connecting portion provided on a top of the base coupling portion to support the damper.
3. The base assembly of claim 2, wherein the damper connecting portion comprises:
 - a pair of supporting walls spaced away from each other to support lower both sides of the damper; and
 - hinge holes formed on the respective supporting walls.
4. The base assembly of claim 1, wherein the base plate comprises at least one mounting portion on which the first damper supporting portion is selectively mounted.
5. The base assembly of claim 4, wherein the mounting portion is provided along at least one corner of the base plate.
6. The base assembly of claim 4, wherein the mounting portion comprises an aligning portion aligning the first damper supporting member.
7. The base assembly of claim 6, wherein the aligning portion comprises at least one aligning projection extending upward to align the first damper supporting member.
8. The base assembly of claim 7, wherein the first damper supporting member comprises at least one aligning groove corresponding to the aligning projection.
9. The base assembly of claim 1, further comprising at least one second damper supporting member integrally formed on the base plate.
10. The base plate of claim 9, wherein the second damper supporting member is provided at least one corner of the base plate.

11. A washing machine comprising:
 - a cabinet defining an outer appearance;
 - a tub provided in the cabinet to store washing water;
 - a drum rotatably provided in the tub to receive laundry; and
 - a base assembly provided on a lower portion of the cabinet,
 wherein the base assembly comprises:
 - a base plate defining a bottom of the cabinet; and
 - at least one first damper supporting member detachably provided on the base plate to support the damper absorbing vibration of the tub.
12. The base assembly of claim 11, wherein the first damper supporting member comprises:
 - a base coupling portion coupled to the base plate; and
 - a damper connecting portion provided on a top of the base coupling portion to support the damper.
13. The base assembly of claim 12, wherein the damper connecting portion comprises:
 - a pair of supporting walls spaced away from each other to support lower both sides of the damper; and
 - hinge holes formed on the respective supporting walls.
14. The base assembly of claim 11, wherein the base plate comprises at least one mounting portion on which the first damper supporting portion is selectively mounted.
15. The base assembly of claim 14, wherein the mounting portion is provided along at least one corner of the base plate.
16. The base assembly of claim 14, wherein the mounting portion comprises an aligning portion aligning the first damper supporting member.
17. The base assembly of claim 16, wherein the aligning portion comprises at least one aligning projection extending upward to align the first damper supporting member.
18. The base assembly of claim 17, wherein the first damper supporting member comprises at least one aligning groove corresponding to the aligning projection.
19. The base assembly of claim 11, further comprising at least one second damper supporting member integrally formed on the base plate.
20. The base plate of claim 19, wherein the second damper supporting member is provided at least one corner of the base plate.

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