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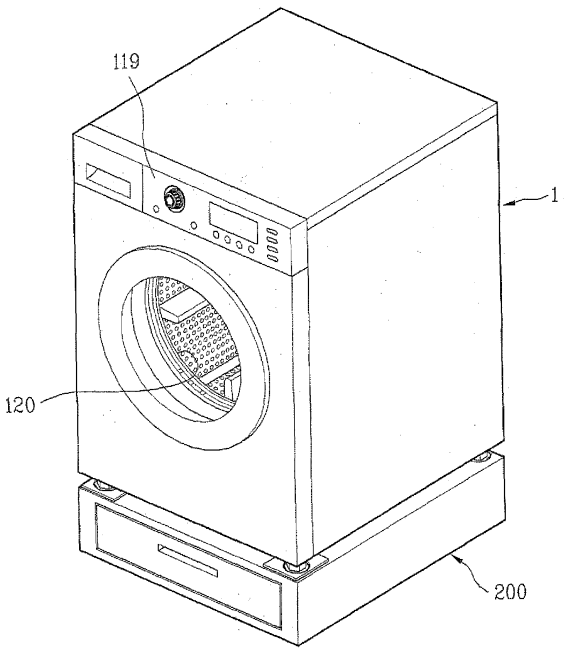
(54) Laundry machine

(57) The present invention relates to a laundry machine capable of washing or drying the laundry.
According to the present invention, there is provided a laundry machine comprising: a first washing tub (120) provided in a cabinet (110); a housing (210) having a space formed therein, drawable from the cabinet or held in the cabinet; a second washing tub (220) provided in the housing to receive a laundry separately from the first washing tub; and a fixing member (250) fixing a second washing tub to restrict a moving of the second washing tub.

FIG. 1



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Description

[0001] The present invention relates to a laundry machine capable of washing or drying the laundry.

[0002] A washing machine is an electric home appliance washing capable of clothing, and a drying machine is an electric home appliance drying capable of wet clothing, etc. Recently, electric home appliances combining the functions of the washing machine and the drying machine have been widely used. Hereinafter, for the sake of explanatory convenience, the washing machine, the drying machine, and the electric home appliances combining the functions of thereof will be commonly called as a laundry machine.

[0003] The laundry machine is generally classified into a top loading type and a front loading type according to the position in which the laundry is put. And, the laundry machine is classified into a vertical axis type where a drum or a pulsator rotates and a horizontal axis type where a horizontally placed drum rotates, according to the manner performing the washing. A representative example of such a horizontal type is a drum laundry machine or a drum dryer.

[0004] The conventional laundry machine is generally directly installed on the bottom surface, wherein the inlet of the front loading type laundry machine is low so that it is inconvenient for a user to draw in and out the laundry. Therefore, it is requested that the height of the inlet of the laundry machine is more raised.

[0005] Generally, each home has one laundry machine. Therefore, when wishing to classify and wash the laundry according to the sorts thereof, the washing machine is used several times. For example, when wishing to wash the laundry by dividing it into the laundry such as adult clothing and the laundry such as underwears and baby clothing, etc., the washing machine is used again in order to wash the latter after the washing of the former is completed. Thereby, a lot of washing time is taken and a lot of energy is also consumed.

[0006] Also, in view of the energy saving, it is not preferable to use a large-sized laundry machine as shown in the prior art when washing a small amount clothing. The washing course provided in the large-sized laundry machine generally expects the case with a lot of washing water so that a lot of water is consumed. And, a lot of power is consumed for rotating a large-sized drum or a pulsator.

[0007] Also, since the washing course expects a large amount laundry, the washing time is comparatively long. And, the large-sized laundry machine is provided with the washing course expecting mainly general clothing, so that it may not be suitable for washing delicate cloth such as underwears or baby clothing.

[0008] And, even in the case where a small amount laundry is frequently washed, the large-sized washing machine is not suitable. A consumer gathers the laundry over several days or more in order to wash it at a time.

[0009] It is not good for underwears and baby clothing, etc. to be left for a long time in view of sanitation. And, if such laundry is left for a long time, dirt is clung to cloth to causes a problem that it is not cleanly washed.

[0010] Therefore, the necessity of a small-sized laundry machine having much smaller capacity than the conventional large-sized laundry machine has increased. However, despite the small-size laundry machine, it is not preferable to provide two laundry machines in one home in view of the space utilization, and it is not good either in appearance.

[0011] It is an object of the present invention to provide a laundry machine having a high positioned laundry inlet for improving the convenience thereof and comprising at least one washing tub.

[0012] The present invention is to provide a laundry machine comprising: a first washing tub provided in a cabinet; a housing having a space formed therein, drawable from the cabinet or held in the cabinet; a second washing tub provided in the housing to receive laundry separately from the first washing tub; and a fixing member fixing a position of the second washing tub to restrict a moving of the second washing tub.

[0013] The fixing member may couple the cabinet with the housing and with the second washing tub.

[0014] The fixing member may be coupled with the bottom surfaces of the cabinet, the housing, and the second washing tub.

[0015] The fixing member may be coupled with the side surfaces of the cabinet, the housing, and the second washing tub.

[0016] The fixing member may couple the cabinet with the second washing tub and penetrate through the housing.

[0017] The fixing member may be coupled with the bottom surfaces of the cabinet and the second washing tub and penetrate through the bottom surface of the housing.

[0018] The fixing member may be coupled with the side surfaces of the cabinet and the second washing tub and penetrate through the side surface of the housing.

[0019] It may further comprise a restriction member selectively restricting the drawing out of the housing.

[0020] The fixing member may couple the housing with the second washing tub.

[0021] The fixing member may be coupled with the bottom surfaces of the housing and the second washing tub;

[0022] The fixing member may be coupled with the side surface of the housing and the second washing tub.

[0023] It may further comprise a restriction member selectively restricting the drawing out of the housing.

[0024] The fixing member is fitted between the housing and the second washing tub to prevent a moving of the second washing tub.

[0025] The present invention provides a first washing tub; a case disposed adjacent to the first washing tub, having a space formed therein; a housing drawable from the case or held in the case; a second washing tub provided in the housing to receive a laundry separately from the first washing tub; and a fixing member to fix the sec-

ond washing tub to restrict a moving of the second washing tub.

[0026] The fixing member may simultaneously couple the case, the housing, and the second washing tub.

[0027] The fixing member may be coupled with the bottom surfaces of the case, the housing, and the second washing tub.

[0028] The fixing member may be coupled with the side surfaces of the case, the housing, and the second washing tub.

[0029] The fixing member may simultaneously couple the case and the second washing tub and penetrate through the housing.

[0030] The fixing member may be coupled with the bottom surfaces of the case and the second washing tub and penetrate through the bottom surface of the housing.

[0031] The fixing member may be coupled with the side surfaces of the case and the second washing tub and may penetrate through the side surface of the housing.

[0032] It may further comprise a restriction member selectively restricting the drawing out of the housing.

[0033] The fixing member may simultaneously couple the housing and the second washing tub.

[0034] The fixing member may be coupled with the bottom surfaces of the housing and the second washing tub;

[0035] The fixing member may be coupled with the side surfaces of the housing and the second washing tub.

[0036] It may further comprise a restriction member selectively restricting the drawing out of the housing.

[0037] The fixing member is fitted between the housing and the second washing tub to prevent a moving of the second washing tub.

[0038] Hereinafter, the embodiments of the present invention which can carry out the technical solutions as above will be described in detail with reference to the accompanying drawings:

[0039] FIG. 1 is a perspective view showing a laundry machine according to a first embodiment of the present invention;

[0040] FIG. 2 is a longitudinal cross-sectional view of FIG. 1;

[0041] FIG. 3 is a perspective view showing that a fixed member is laterally coupled with the laundry machine of FIG. 1;

[0042] FIG. 4 is a cross-sectional view of FIG. 3;

[0043] FIG. 5 is a cross-sectional view of a laundry machine according to a second embodiment of the present invention;

[0044] FIG. 6 is a cross-sectional view showing that a fixed member is laterally coupled with the laundry machine of FIG. 5;

[0045] FIG. 7 is a perspective view of FIG. 6;

[0046] FIG. 8 is a cross-sectional view showing a laundry machine according to a third embodiment of the present invention;

[0047] FIG. 9 is a cross-sectional view showing that a fixed member is laterally coupled with the laundry machine of FIG. 8;

[0048] FIG. 10 is a cross-sectional view showing a laundry machine according to a fourth embodiment of the present invention;

[0049] FIG. 11 is a cross-sectional view of FIG. 10;

[0050] FIG. 12 is a perspective view showing a laundry machine according to a fifth embodiment of the present invention;

[0051] FIG. 13 is a cross-sectional view showing an enlarged part of FIG. 12;

[0052] FIG. 14 is a perspective view showing that a fixed member is laterally coupled with the laundry machine of FIG. 12;

[0053] FIG. 15 is a cross-sectional view showing a laundry machine according to a sixth embodiment of the present invention;

[0054] FIG. 16 is a perspective view showing that a fixed member is laterally coupled with the laundry machine of FIG. 15;

[0055] FIG. 17 is a cross-sectional view showing a laundry machine according to a seventh embodiment of the present invention;

[0056] FIG. 18 is a cross-sectional view showing that a fixed member is laterally coupled with the laundry machine of FIG. 17;

[0057] Hereinafter, the embodiments of the present invention which can carry out the technical solutions as above will be described in detail with reference to the accompanying drawings.

[0058] FIGS. 1 and 2 are views showing one embodiment of a laundry machine according to the present invention.

[0059] The laundry machine 1 according to the present invention comprises a cabinet 110 forming an outer appearance, and a first washing tub 120 provided in the cabinet 110.

[0060] The cabinet 110 comprises a front cover 111 forming a front, side walls forming both side surfaces, a rear wall 114 forming a rear surface, and a top plate 116 forming a top surface.

[0061] The front cover 112 of the cabinet 110 is provided with a door 140, and the front upper of the cabinet 110 is provided with a control panel 119 to allow a user to operate the laundry machine 1.

[0062] And, the first washing tub 120 comprises a first tub 122 storing washing water and a first drum 124 rotatably disposed in the first tub 122.

[0063] The first tub 122 and the first drum 124 are formed to have an opening part formed to be connected to the external for drawing in and out the laundry when the door 140 is opened. Also, the first drum 124 rotates by a motor 130, and the inner surface thereof is provided with a number of lifts 126 to perform the washing in the manner of lifting up and dropping the laundry inside the drum when the drum rotates.

[0064] Meanwhile, the opening part may not be formed at the front of the cabinet but at the upper side thereof, and the first washing tub may be formed in a shape not to lie down but to stand against the ground.

[0065] Meanwhile, when the door 140 of the laundry machine 1 is formed in the front surface of the cabinet 110, a user should bend his/her body to draw in and out the laundry into the inside of the first washing tub 120. Therefore, in order to prevent the user from excessively bending his/her body, it is requested that the washing tub 120 is positioned above a predetermined height.

[0066] To this end, as shown in FIGS. 1 and 2, a case 200 lifting up the height of the first washing tub to a predetermined height may be installed under the laundry machine 1.

[0067] The case 200 may be formed to have a predetermined height so that the cabinet of the laundry machine 1 may be raised to the upper side.

[0068] Also, the case 200 may be formed to have a predetermined space in the inside thereof and to receive the laundry supplies in the space for efficiently using the space.

[0069] Also, in order for the user to conveniently draw in and out things inside the case 200, the inside of the case 200 has a predetermined space capable of receiving supplies and may be further provided with a housing 210 formed to be able to be drawn in and out and received from the space of the case 200.

[0070] Also, the case 200 as above may be installed in the lower of the cabinet 110, and may be installed in the upper side or the side portion thereof, as needed, although not shown in the drawings.

[0071] And, a second washing tub 220 capable of receiving the laundry separately from the first washing tub 120 and then performing the washing may be disposed in the housing 210.

[0072] The first and the second washing tub 220 may be formed to be operable by the common controller 119 provided in the cabinet 110.

[0073] The second washing tub 220 is operable independently from the first washing tub 120, and can comprise a second tub receiving washing water and a second drum rotatably disposed in the second tub. Also, it may be formed of the second tub receiving the washing water and a second drum rotatably disposed in the second tub. Also, it may be formed of a pulsator rotatably provided in the second tub receiving the washing water. Other washing tubs in various manners not described in the present specification may be provided.

[0074] Therefore, as the second washing tub 220 is provided separately from the first washing tub 120, the washing can be promptly performed by selecting a proper washing tub depending on the amount of the laundry, without the waste of washing water and energy.

[0075] Also, as the first washing tub 120 and the second washing tub 220 each are separately provided to be able to independently operate to each other, they may be formed to have different washing manner, and a user can select and use a more proper washing tub according to the kinds and characteristics of the laundry, making it possible to improve washing efficiency and reduce the cloth damage of the laundry.

[0076] Also, dark colored clothes and light colored clothes should be separated and washed in order to prevent them from dyeing. In this case, the first washing tub 120 and the second washing tub 220 are separated so that the washing can be performed at a time without washing twice, making it possible to reduce washing time.

[0077] The second washing tub 220 is received in the housing 210, and a vibration may be generated depending on eccentricity of the inside laundry when the second washing tub 220 rotates. Although not shown, it is suspended to the inside of the housing 210 in order to reduce the vibration.

[0078] Therefore, the second washing tub 220 may be vibrated in the housing 210 by means of its own vibration and may be also vibrated by means of an external force applied to from the external during a transportation of the laundry machine.

[0079] Generally, the suspension apparatus supporting the second washing tub 220 is designed not to contact the second washing tub 220 to the wall surface of the housing 210 to prevent the vibration generated from the second washing tub 220 itself during the operation thereof. However, the suspension apparatus is hard to cope with the vibration of the second washing tub 220 due to the external force so that the second tub 220 is greatly shaken in the housing 210. As a result, there is a risk that the second washing tub 220 may be collided with the wall surface of the housing or the parts thereof may be damaged. Such an external force may be mainly generated during the movement of the laundry machine.

[0080] Also, as the housing 210 is unexpectedly drawn out during the movement of the laundry machine, a person moving the laundry machine may be hurt, the laundry machine may be damaged due to the collision with other things, or the laundry machine may be damaged due to the impact caused when the housing is drawn out.

[0081] Therefore, according to the present invention a fixing member 250 capable of fixing the housing 210 or the second washing tub 220 during the movement of the laundry machine is provided.

[0082] FIGS. 2 to 4 are a view showing a first embodiment of the present invention.

[0083] In the present embodiment, the fixing member 250 may be provided to be simultaneously coupled with the case 200, the housing 210, and the second washing tub 220.

[0084] The fixing member 250 is formed in a bar shape with a predetermined length and the case 200. The housing 210 are provided with holes 202 and 212 through which the fixing member 250 may be inserted and the bottom surface of the second washing tub 220 is formed with a groove 222 through which it may be coupled with the fixing member 250.

[0085] At this time, the outer circumferential surface of the fixing member 250 is formed with a screw thread and the inner circumferential surfaces of the holes 202 and 212 formed in the case 200 and the housing 210 and the

groove 222 formed in the second washing tub 220 are formed with screw threads corresponding to the screw threads of the fixing member 250.

[0086] Therefore, the fixing member 250 is coupled with the holes 202 and 212 formed in the case 200 and the housing 210 and the groove 222 formed in the second washing tub 220.

[0087] The fixing member 250 as above may be coupled with the bottom surfaces of the case 200, the housing 210, and the second washing tub 220, as shown in FIG. 2. In other words, the bottom surfaces of the case 200 and the housing 210 are formed with the holes 202 and 212 and the bottom surface of the second washing tub 220 is formed with the groove 222.

[0088] Therefore, the fixing member 250 is inserted from the bottom surfaces of the case 200 and the housing 210 to be coupled with the holes 202 and 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 and the housing 210 are fixed to the case 200.

[0089] Also, the fixing member 250 may be coupled with the side surfaces of the case 200 and the housing 210, as shown in FIGS. 3 and 4. In other words, the side surfaces of the case 200 and the housing 220 are formed with the holes 202 and 212 and the side surface of the second washing tub 220 is formed with the groove 222.

[0090] Therefore, the fixing member 250 is inserted from the side surfaces of the case 200 and the housing 210 to be coupled with the holes 202 and 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 and the housing 210 are fixed to the case 200.

[0091] Herein, the side surface is referred to as a portion having a surface perpendicular to a ground surface such as the front surface and the rear surface or the left and right side surfaces of the case 200, the housing 210, or the second washing tub 220, etc., not the bottom surface thereof.

[0092] Therefore, the fixing member 250 fixes the second washing tub 220 and the housing 210 to the case 200 so that an excessive vibration of the second washing tub 220 capable of being caused during the movement of the laundry machine or an unexpected opening of the housing 210 can be prevented and the user can open the housing 210 and use the second washing tub 220, if the fixing member 250 is removed after the movement of the laundry machine is completed.

[0093] Meanwhile, the present invention may be implemented by embodiments different than the aforementioned embodiments.

[0094] FIGS. 5 and 6 are views showing a case according to a second embodiment of the present invention.

[0095] The description of the same portions as the above mentioned embodiment prior to describing the present embodiment will be omitted.

[0096] According to the second embodiment of the present invention, the fixing member 250 is simultaneously coupled with the case 200 and the second washing tub 220 and the housing 210 is not coupled and may be penetrated.

[0097] In other words, the case 200 is provided with the hole 202 through which it may be coupled with the fixing member 250 and the second washing tub 220 is provided with the groove 222 through which it may be coupled with the fixing member 250.

[0098] Also, the housing 210 is formed with an opening part 214 through which the fixing member 250 may be penetrated.

[0099] The fixing member 250 may be coupled with the bottom surfaces of the case 200 and the second washing tub 220, as shown in FIG. 5. In other words, the bottom surface of the case 200 is provided with the hole 202 and the bottom surface of the second washing tub 220 is provided with the groove 222. Also, at least any one portion of the bottom surface of the housing 210 may be formed with the opening part 214 through which the fixing member 250 may be penetrated.

[0100] Therefore, the fixing member 250 is inserted from the bottom surface of the case 200 to be coupled with the hole 202 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 is fixed to the case 200.

[0101] The fixing member 250 may be coupled with the side surfaces of the case 200 and the second washing tub 220, as shown in FIG. 6. In other words, the side surface of the case 200 is formed with the hole 202 and the side surface of the second washing tub 220 is formed with the groove 222. Also, any one portion of the side surface of the housing 210 may be formed with the opening part 214 through which the fixing member 250 may be penetrated.

[0102] Therefore, the fixing member 250 is inserted from the side surface of the case 200 to be coupled with the hole 202 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 is fixed to the case 200.

[0103] In the present embodiment, since the housing 210 is not fixed by means of the fixing member 250, there is a risk that the housing may be opened during the movement of the laundry machine. In order to prevent this, the present embodiment further comprises a restriction member 254 capable of selectively restricting the opening of the housing 210.

[0104] The restriction member 254 rotates as shown in FIG. 7 so that it may be formed of at lever capable of restricting the housing 210. Although not shown, it may be implemented by various methods, that is, it may be implemented by a hook and a latch, etc., differently therefrom.

[0105] Therefore, according to the present embodiment the second washing tub 220 is fixed to the case 200 to prevent the moving thereof and the housing 210 may be fixed by means of the restriction member 254 to prevent it from being unexpectedly opened, making it possible to prevent safety accident and damage.

[0106] Meanwhile, the present invention may be im-

plemented by embodiments different than the aforementioned embodiments.

[0107] FIGS. 8 and 9 are views showing a case according to a third embodiment of the present invention.

[0108] The description of the same portions as the above mentioned embodiment prior to describing the present embodiment will be omitted for sake of convenience.

[0109] According to the third embodiment of the present invention, the fixing member 250 is simultaneously coupled with the housing 210 and the second washing tub 220.

[0110] The fixing member 250 may be coupled with the bottom surfaces of the housing 210 and the second washing tub 220, as shown in FIG. 8. In other words, the bottom surface of the housing 210 is provided with the hole 212 and the bottom surface of the second washing tub 220 is provided with the groove 222. Also, at least one portion of the bottom surface of the case 200 may be formed with the opening part through which the fixing member 250 may be penetrated or may form a continued surface on which the opening part is not formed, so that the user may couple or decouple the fixing member 250 through the bottom surface of the opened housing 210 in a state where the housing 210 is drawn out from the case.

[0111] Therefore, the fixing member 250 is inserted from the bottom surface of the housing 210 to be coupled with the hole 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 is fixed to the housing 210.

[0112] The fixing member 250 may be coupled with the side surfaces of the housing 210 and the second washing tub 220, as shown in FIG. 9. In other words, the side surface of the housing 210 is formed with the hole 212 and the side surface of the second washing tub 220 is formed with the groove 222. Also, at least any one portion of the side surface of the case 210 may be formed with the opening part through which the fixing member 250 is penetrated or may form a continued surface on which the opening part is not formed, so that the user may couple or decouple the fixing member 250 through the side surface of the opened housing 210 in a state where the housing 210 is drawn out from the case 200.

[0113] Therefore, the fixing member 250 is inserted from the side surface of the case 200 to be coupled with the hole 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 is fixed to the case 200.

[0114] In the present embodiment, since the housing 210 is not fixed by means of the fixing member 250, there is a risk that the housing may be opened during the movement of the laundry machine. In order to prevent this, the present embodiment may further comprise a restriction member 250 capable of selectively restricting the opening of the housing 210.

[0115] The restriction member is the same as the foregoing restriction member 250 and the detailed description thereof will be thus omitted.

[0116] Therefore, according to the present embodiment the second washing tub 220 is fixed to the housing 200 and the housing 210 may be fixed by means of the restriction member 250 so that the excessive moving of the second washing tub 220 or the unexpected opening of the housing 210 is prevented, making it possible to prevent safety accident and damage.

[0117] Meanwhile, the present invention may be implemented by embodiments different than the aforementioned embodiments.

[0118] FIGS. 10 and 11 are views showing a fourth embodiment of the present invention.

[0119] According to the fourth embodiment of the present invention, the fixing member 254 may be fitted between the housing 210 and the second washing tub 220.

[0120] In other words, the fixing member 254 is fitted between the housing 210 and the second washing tub 220 to fill a space between the second washing tub 220 and the housing 210 so that the second washing tub 220 is fixed no to be moved.

[0121] The fixing member 254 as above may be not necessarily coupled with the housing 210 or the second washing tub 220 and may be provided in plural. Also, the fixing member 254 may be formed of a soft material such as tree or styrofoam to be able to absorb impact.

[0122] Therefore, after the movement of the laundry machine is completed, the user opens the housing 210 and if the fixing member fitted between the housing 210 and the second washing tub 220, the second washing tub 220 may be used.

[0123] Meanwhile, in the aforementioned embodiments the housing 210 is provided in the case 200 separately from the cabinet 110 receiving the first washing tub 120. However, differently therefrom, the inside of the cabinet 110 receiving the first washing tub 120 may be provided the housing 210 comprising the second washing tub 220.

[0124] FIG. 12 is a view showing a laundry machine according to another embodiment of the present invention.

[0125] As described above, the housing 210 comprising the second washing tub 220 therein is provided in the cabinet 110.

[0126] Also, the inside of the case 201 assures a predetermined space to receive with the housing 210. Preferably, the case 201 is provided at the lower side of the first washing tub 120.

[0127] Also, in the case where the case 201 is provided, the bottom surface of the case 201 and the bottom surface of the cabinet 110 may be simultaneously formed.

[0128] And, during the movement of the laundry machine, the fixing member 250 capable of fixing the housing 210 or the second washing tub 220 is provided.

[0129] FIGS. 13 and 14 are views showing a fifth embodiment of the present invention.

[0130] In the present embodiment, the fixing member 250 may be provided to be simultaneously coupled with the cabinet 110, the housing 210, and the second washing tub 220.

[0131] The fixing member 250 is formed of a bar member with a predetermined length. The cabinet 110 and the housing 210 are provided with holes 112 and 212 through which the fixing member 250 may be inserted and the bottom of the second washing tub 220 is provided with the groove 222 through which it may be coupled with the fixing member 250.

[0132] At this time, an outer circumferential surface of the fixing member 250 is provided with a screw thread and the inner circumferential surfaces of the holes 112 and 212 formed in the cabinet 110 and the housing 210 and the groove 222 formed in the second washing tub 220 are formed with screw threads corresponding to the screw threads of the fixing member 250.

[0133] Therefore, the fixing member 250 is coupled with the holes 112 and 212 formed in the cabinet 110 and the housing 210 and the screw thread formed in the second washing tub 220.

[0134] The fixing member 250 as above may be coupled with the bottom surfaces of the cabinet 110, the housing 210, and the second washing tub 220, as shown in FIG. 13. In other words, the bottom surfaces of the cabinet 110 and the housing 210 are formed with the holes 112 and 212 and the bottom surface of the second washing tub 220 is formed with the groove 222.

[0135] Therefore, the fixing member 250 is inserted from the bottom surfaces of the cabinet 110 and the housing 210 to be coupled with the holes 112 and 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 and the housing 210 are fixed to the cabinet 110.

[0136] Also, the fixing member 250 may be coupled with the side surfaces of the cabinet 110 and the housing 210, as shown in FIGS. 14. In other words, the side surfaces of the cabinet 110 and the housing 210 are formed with the holes 112 and 212 and the side surface of the second washing tub 220 is formed with the groove 222.

[0137] Therefore, the fixing member 250 is inserted from the side surfaces of the cabinet 110 and the housing 210 to be coupled with the holes 112 and 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 and the housing 210 are fixed to the cabinet 110.

[0138] Therefore, the fixing member 250 fixes the second washing tub 220 and the housing 210 to the cabinet 110 so that an excessive vibration of the second washing tub 220 capable of being caused during the movement of the laundry machine or an unexpected opening of the housing 210 can be prevented and the user can open the housing 210 and use the second washing tub 220, if the fixing member 250 is removed after the movement of the laundry machine is completed.

[0139] Also, the case 200 partitioning the space comprising the first washing tub and the housing 210 in the cabinet 110 may be further provided as described above.

[0140] In the case where the case 200 is provided, the hole engaging the fixing member 250 to the case 200 or the opening part penetrating through the fixing member 250 may be formed.

[0141] FIGS. 15 and 16 are views showing a sixth embodiment of the present invention.

[0142] In the present embodiment, the fixing member 250 may be simultaneously coupled with the cabinet 110 and the second washing tub 220 and the housing 210 may be formed to be penetrated.

[0143] In other words, the cabinet 110 is formed with the hole 112 with which the fixing member 250 may be coupled and the second washing tub 220 is formed with the groove 222 with which the fixing member 250 may be coupled.

[0144] Also, any one portion of the housing 210 is formed with the opening part 214 through which the fixing member 250 may be penetrated.

[0145] The fixing member 250 as above may be coupled with the bottom surfaces of the cabinet 110 and the second washing tub 220, as shown in FIG. 15. In other words, the bottom surface of the cabinet 110 is formed with the hole 112 and the bottom surface of the second washing tub 220 is formed with the groove 222. Also, at least one portion of the bottom surface of the housing 210 may be formed with the opening part through which the fixing member 250 can be penetrated.

[0146] Therefore, the fixing member 250 is inserted from the bottom surfaces of the cabinet 110 to be coupled with the hole 112 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 are fixed to the cabinet 110.

[0147] Also, the fixing member 250 may be coupled with the side surfaces of the cabinet 110 and the second washing tub 220, as shown in FIG. 16. In other words, the side surface of the cabinet 110 are formed with the hole 112 and the side surface of the second washing tub 220 is formed with the groove 222. Also, any one portion of the side surface of the housing 210 may be formed with the opening part 214 through which the fixing member 250 may be penetrated.

[0148] Therefore, the fixing member 250 is inserted from the bottom surfaces of the cabinet 110 to be coupled with the hole 112 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 are fixed to the cabinet 110.

[0149] In the present embodiment, since the housing 210 is not fixed by means of the fixing member 250, there is a risk that it may be opened during the movement of the laundry machine. In order to prevent this, in the present embodiment the restriction member 250 capable of selectively restricting the opening of the housing 210 may be further provided.

[0150] The restriction member 250 rotates as shown in FIG. 16 so that it may be formed of a lever capable of restricting the housing 210. Differently therefrom, it may be implemented by various methods, such as a hook and

a latch, etc.

[0151] Therefore, according to the present embodiment, the second washing tub 220 is fixed to the cabinet 110 to prevent its moving and the housing 210 may be fixed by means of the restriction member 250 to prevent it from being unexpectedly opened, making it possible to prevent safety accident and damage.

[0152] Meanwhile, the present invention may be implemented by embodiments different than the aforementioned embodiments.

[0153] FIGS. 17 and 18 are views showing a laundry machine according to a seventh embodiment of the present invention.

[0154] The description of the same portions as the above mentioned embodiment prior to describing the present embodiment will be omitted for sake of convenience.

[0155] According to the seventh embodiment of the present invention, the fixing member 250 is simultaneously coupled with the housing 210 and the second washing tub 220.

[0156] The fixing member 250 as above may be coupled with the bottom surfaces of the housing 210 and the second washing tub 220, as shown in FIG. 17. In other words, the bottom surface of the housing 210 is provided with the hole 212 and the bottom surface of the second washing tub 220 is provided with the groove 222. Also, at least one portion of the bottom surface of the cabinet 110 may be formed with the opening part through which the fixing member 250 may be penetrated or may form a continued surface on which the opening part is not formed, so that the user may couple or decouple the fixing member 250 through the bottom surface of the opened housing 210 in a state where the housing 210 is drawn out from the cabinet 110.

[0157] Therefore, the fixing member 250 is inserted from the bottom surface of the housing 210 to be coupled with the hole 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 is fixed to the housing 210.

[0158] Also, the fixing member 250 may be coupled with the side surfaces of the housing 210 and the second washing tub 220, as shown in FIG. 18. In other words, the side surface of the housing 210 is formed with the hole 212 and the side surface of the second washing tub 220 is formed with the groove 222. Also, at least any one portion of the side surface of the case 200 may be formed with the opening part through which the fixing member 250 may be penetrated or may form a continued surface on which the opening part is not formed, so that the user may couple or decouple the fixing member 250 through the side surface of the opened housing 210 in a state where the housing 210 is drawn out from the case.

[0159] Therefore, the fixing member 250 is inserted from the side surface of the cabinet 110 to be coupled with the hole 212 and at the same time, also coupled with the groove 222 of the second washing tub 220 so that the second washing tub 220 is fixed to the cabinet 110.

[0160] In the present embodiment, since the housing 210 is not fixed by means of the fixing member 250, there is a risk that the housing may be opened during the movement of the laundry machine. In order to prevent this, the present embodiment may further comprise a restriction member 254 capable of selectively restricting the opening of the housing 210. The restriction member 254 is the same as the restriction member 254 as described above and the detailed description thereof will be thus omitted.

[0161] Therefore, according to the present embodiment the second washing tub 220 is fixed to the housing 210 and the housing 210 may be fixed by means of the restriction member 254 so that the excessive moving of the second washing tub 220 or the unexpected opening of the housing 210 is prevented, making it possible to prevent safety accident and damage.

[0162] In the present embodiment, since the housing 210 is not fixed by means of the fixing member 250, there is a risk that the housing may be opened during the movement of the laundry machine. In order to prevent this, the present embodiment may further comprise a restriction member 254 capable of selectively restricting the opening of the housing 210. The restriction member 254 is the same as the restriction member 254 of the second embodiment as described above and the detailed description thereof will be thus omitted.

[0163] Therefore, according to the present embodiment since the second washing tub 220 is fixed to the housing 210 and the housing 210 may be fixed by means of the restriction member 254 so that the excessive moving of the second washing tub 220 or the unexpected opening of the housing 210 is prevented, making it possible to prevent safety accident and damage.

[0164] With the laundry machine according to the present invention, there are the following acting effects:

[0165] First, 1 as the height of a first washing tub of the laundry machine is raised, it is not needed for a user to excessively bend his body when taking the laundry into the first washing tub and taking it out of the first washing tub, making it possible to improve convenience in use.

[0166] Second, as a small capacity second washing tub is installed adjacent to the first washing tub, the user can select a proper washing tub according to the amount of the laundry, making it possible to reduce unnecessary washing water and waste of energy.

[0167] Third, as the second washing tub may be formed to use a different washing manner from that of the first washing tub, making it possible to select a proper washing manner depending on sorts of the laundry.

[0168] Fourth, as the second washing tub is fixed to the mobile body, it can prevent a risk of the damage of the second washing tub the due to the impact, etc., during the transportation of the laundry machine.

Fifth, as the mobile body is fixed to the cabinet, it can prevent a risk of the occurrence of safety accident due to the unexpected opening of the mobile body during the transportation.

[0169] Also, the mobile body and the second washing tub can simultaneously fixed to the cabinet to prevent the occurrence of safety accident due to the unexpected opening of the mobile and the second washing tub during the transportation thereof and prevent the failure of the laundry machine due to the excessive vibration of the second washing tub by means of the external force transferred from the external during the transportation of the laundry machine.

[0170] Although a few embodiments of the present invention have been shown and described, it would be appreciated by those skilled in the art that changes might be made in this embodiment without departing from the principles and spirit of the invention, the scope of which is defined in the claim and their equivalents.

Claims

1. A laundry machine comprising:

a first washing tub provided in a cabinet;
a housing having a space formed therein, the housing being drawable from the cabinet or held in the cabinet;
a second washing tub provided in the housing to receive laundry separately from the first washing tub; and
a fixing member fixing the position of the second washing tub to restrict a moving of the second washing tub.

2. The laundry machine as claimed in claim 1, wherein the fixing member couples the cabinet with the housing and with the second washing tub.

3. The laundry machine as claimed in claim 2, wherein the fixing member is coupled with the bottom surfaces of the cabinet, the housing, and the second washing tub.

4. The laundry machine as claimed in claim 2, wherein the fixing member is coupled with the side surfaces of the cabinet, the housing, and the second washing tub.

5. The laundry machine as claimed in claim 1, wherein the fixing member couples the cabinet with the second washing tub and penetrates through the housing.

6. The laundry machine as claimed in claim 5, wherein the fixing member is coupled with the bottom surfaces of the cabinet and the second washing tub and penetrates through the bottom surface of the housing.

7. The laundry machine as claimed in claim 5, wherein the fixing member is coupled with the side surfaces of the cabinet and the second washing tub and penetrates through the side surface of the housing.

8. The laundry machine as claimed in claim 1, wherein the fixing member couples the housing with the second washing tub.

9. The laundry machine as claimed in claim 8, wherein the fixing member is coupled with the bottom surfaces of the housing and the second washing tub;

10. The laundry machine as claimed in claim 8, wherein the fixing member is coupled with the side surface of the housing and the second washing tub.

11. The laundry machine as claimed in claim 8, further comprising a restriction member selectively restricting the drawing out of the housing from the cabinet.

12. The laundry machine as claimed in claim 1, wherein the fixing member is fitted between the housing and the second washing tub to prevent a moving of the second washing tub.

13. A laundry machine comprising:

a first washing tub;
a case disposed adjacent to the first washing tub, having a space formed therein; a housing drawable from the case or held in the case;
a second washing tub provided in the housing to receive a laundry separately from the first washing tub; and
a fixing member to fix the second washing tub to restrict a moving of the second washing tub.

14. The laundry machine as claimed in claim 13, wherein the fixing member couples the case with the housing and with the second washing tub.

15. The laundry machine as claimed in claim 14, wherein the fixing member is coupled with the bottom surfaces of the case, the housing, and the second washing tub.

16. The laundry machine as claimed in claim 14, wherein the fixing member is coupled with the side surfaces of the case, the housing, and the second washing tub.

17. The laundry machine as claimed in claim 13, wherein the fixing member couples the case with the second washing tub and penetrates through the housing.

18. The laundry machine as claimed in claim 17, wherein the fixing member is coupled with the bottom surfaces of the case and the second washing tub and pen-

etrates through the bottom surface of the housing.

19. The laundry machine as claimed in claim 17, wherein the fixing member is coupled with the side surfaces of the case and the second washing tub and penetrates through the side surface of the housing.

20. The laundry machine as claimed in claim 17, further comprising a restriction member selectively restricting the drawing out of the housing.

21. The laundry machine as claimed in claim 13, wherein the fixing member couples the housing with the second washing tub.

22. The laundry machine as claimed in claim 21, wherein the fixing member is coupled with the bottom surfaces of the housing and the second washing tub;

23. The laundry machine as claimed in claim 21, wherein the fixing member is coupled with the side surfaces of the housing and the second washing tub.

24. The laundry machine as claimed in claim 21, further comprising a restriction member selectively restricting the drawing out of the housing.

25. The laundry machine as claimed in claim 13, wherein the fixing member is fitted between the housing and the second washing tub to prevent a moving of the second washing tub.

26. The laundry machine of any of the preceding claims, further comprising a common controller to control the first and the second washing tubs.

FIG. 1

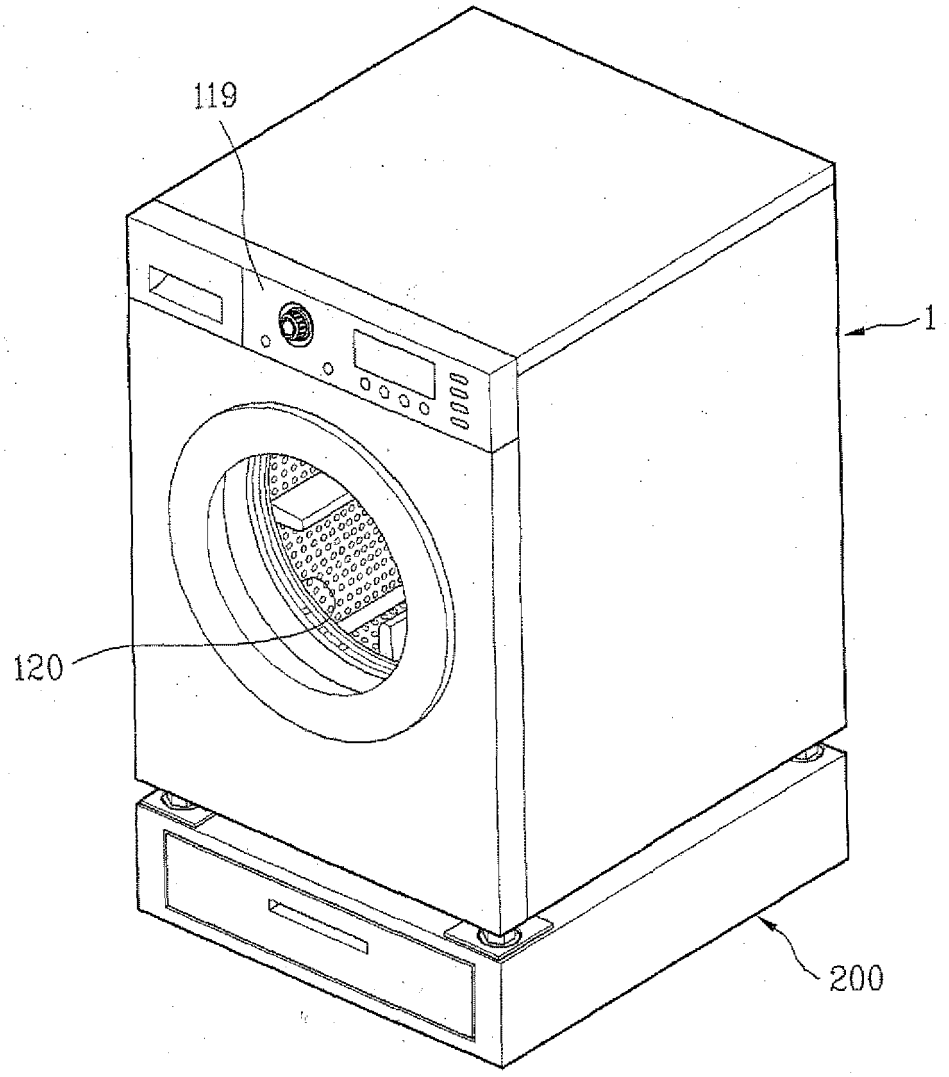

FIG. 2

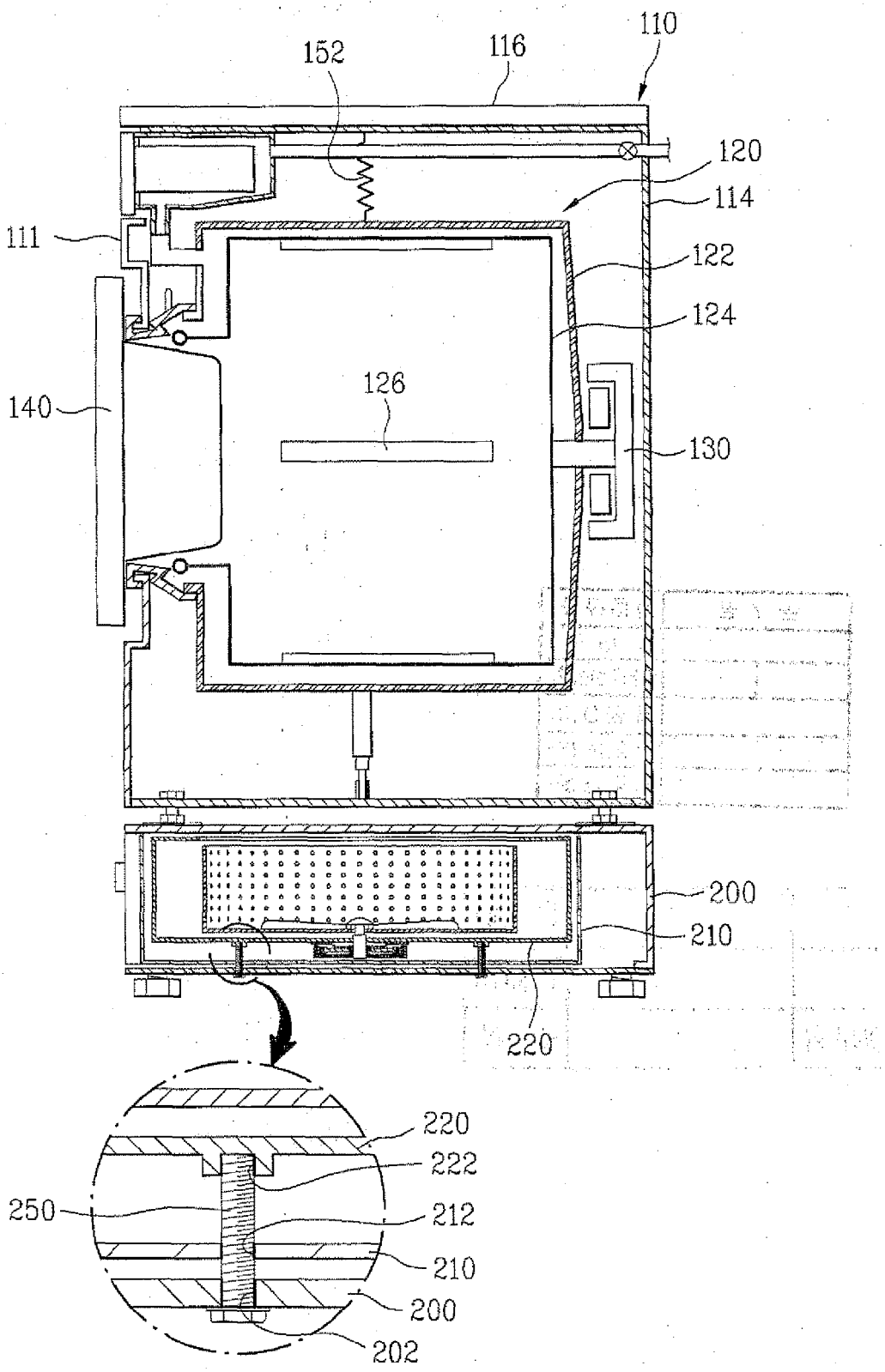
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FIG. 3

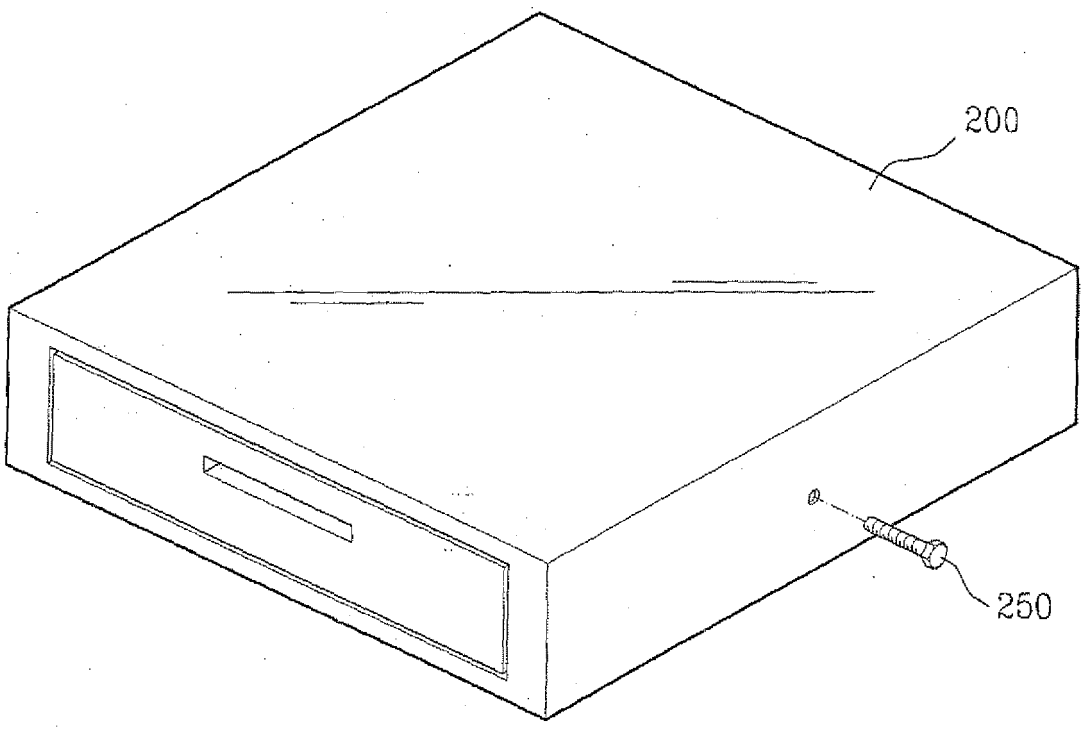

FIG. 4

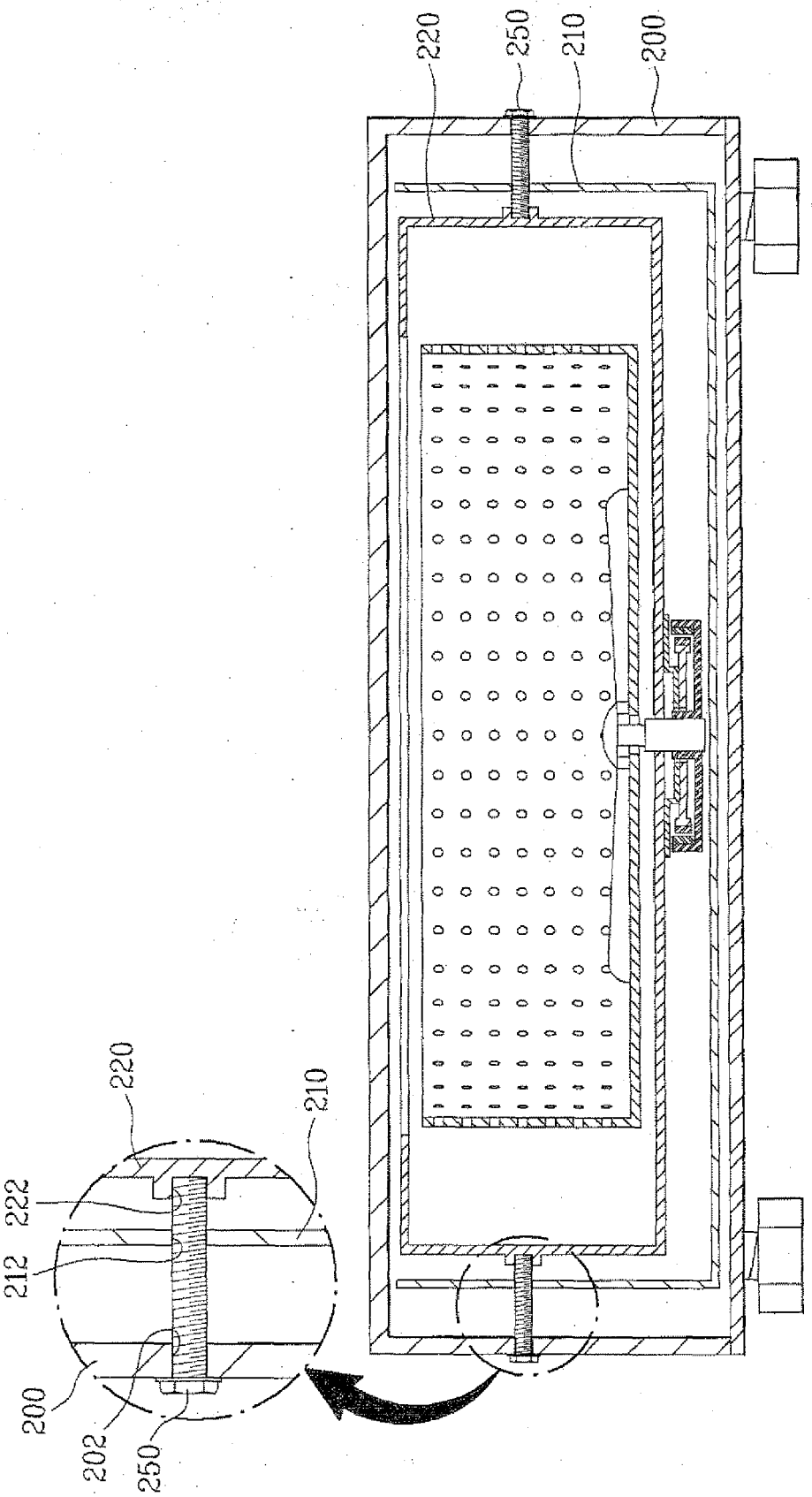

FIG. 5

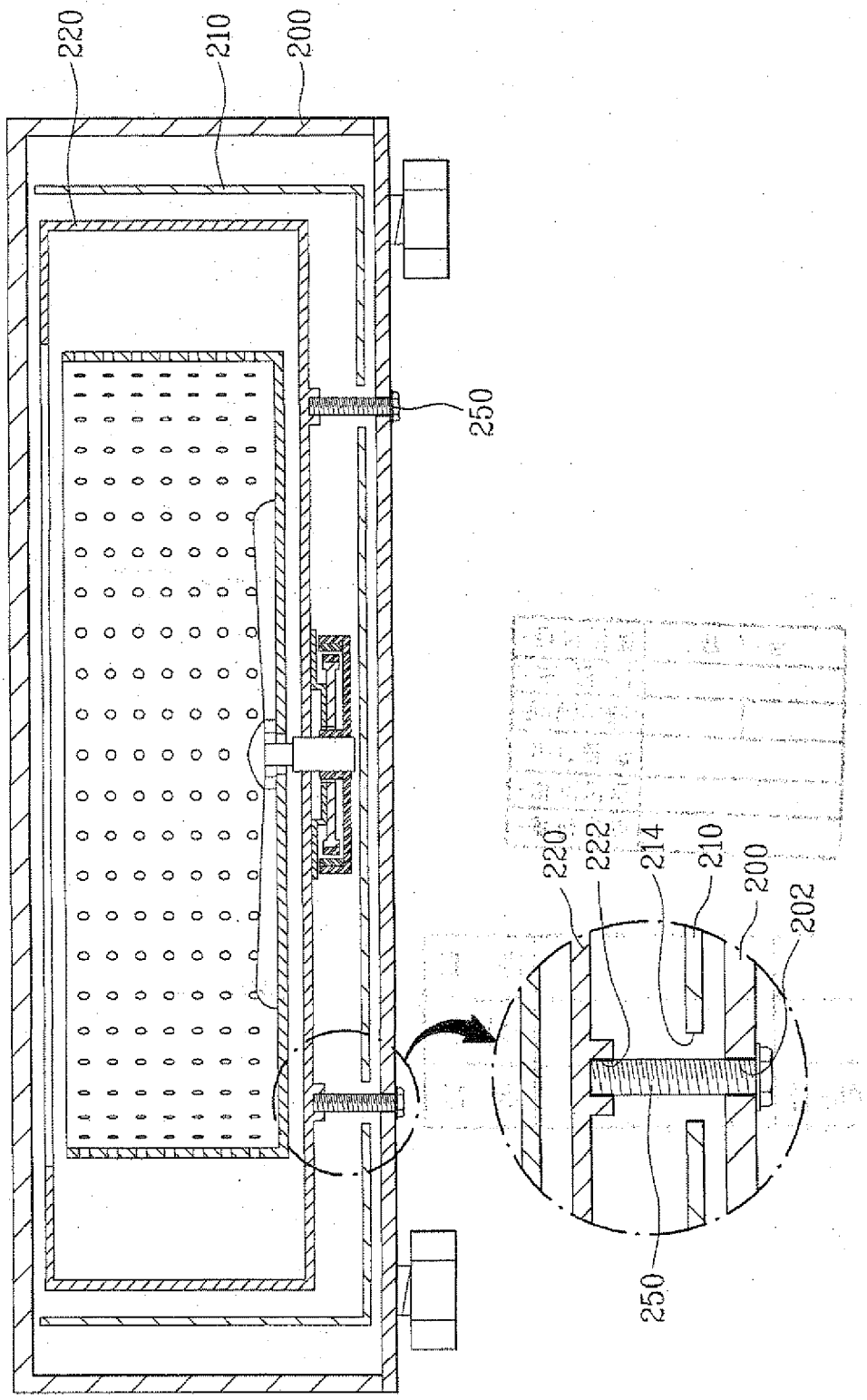

FIG. 6

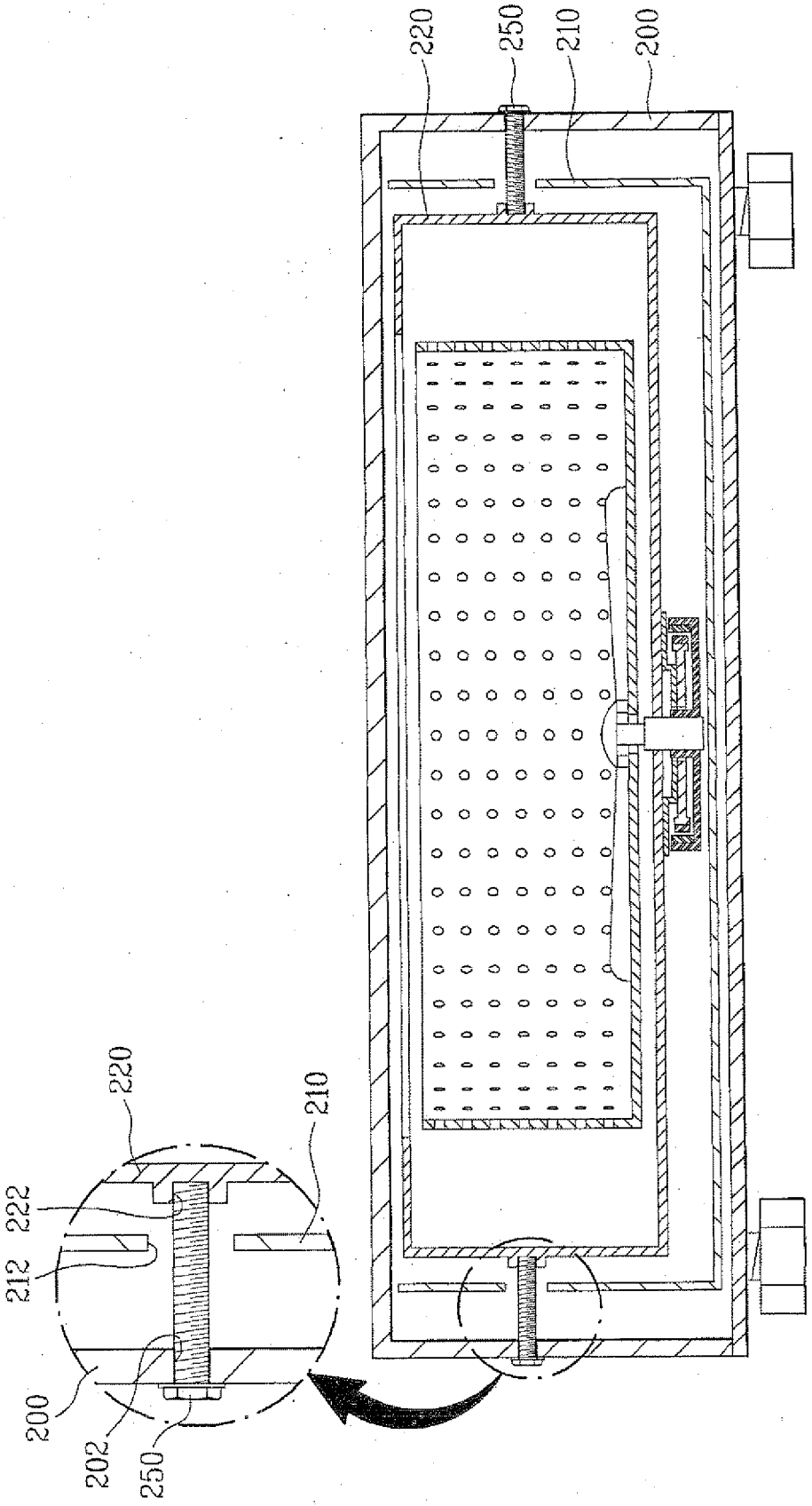

FIG. 7

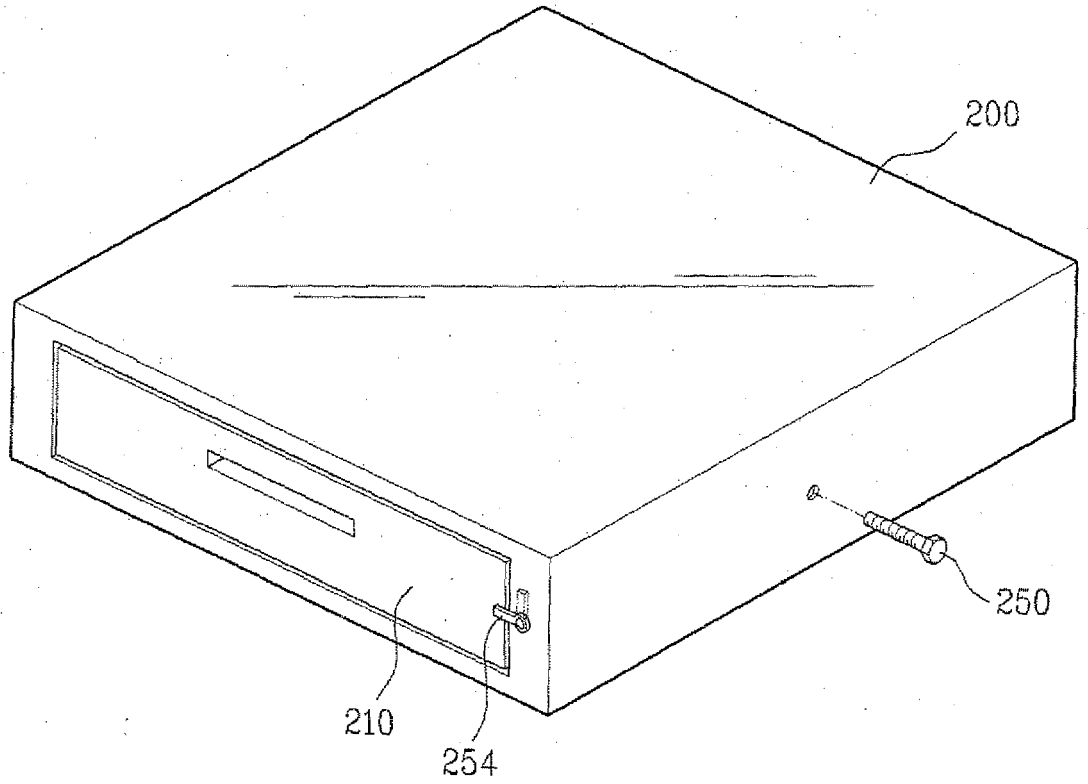

FIG. 8

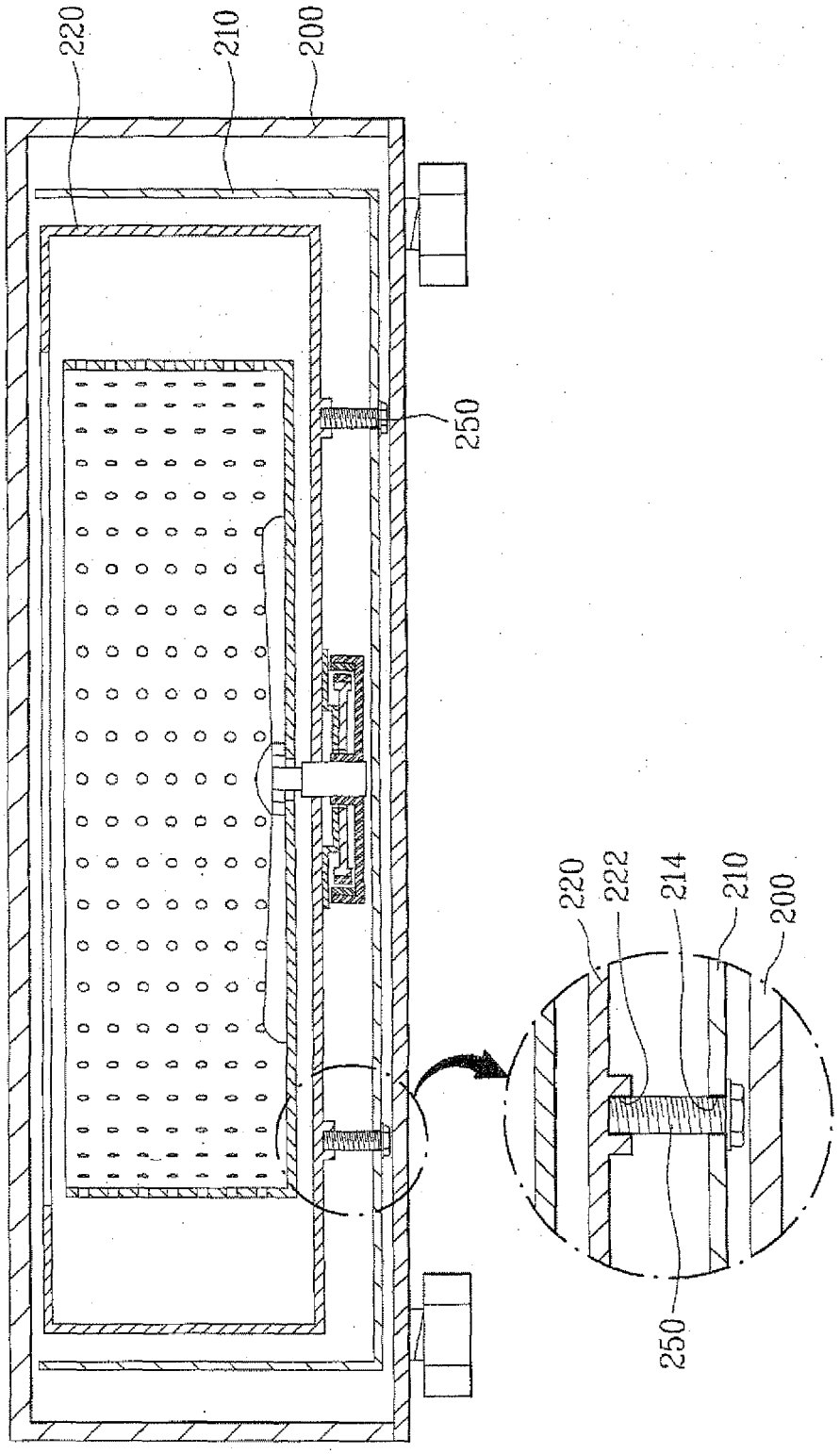

FIG. 9

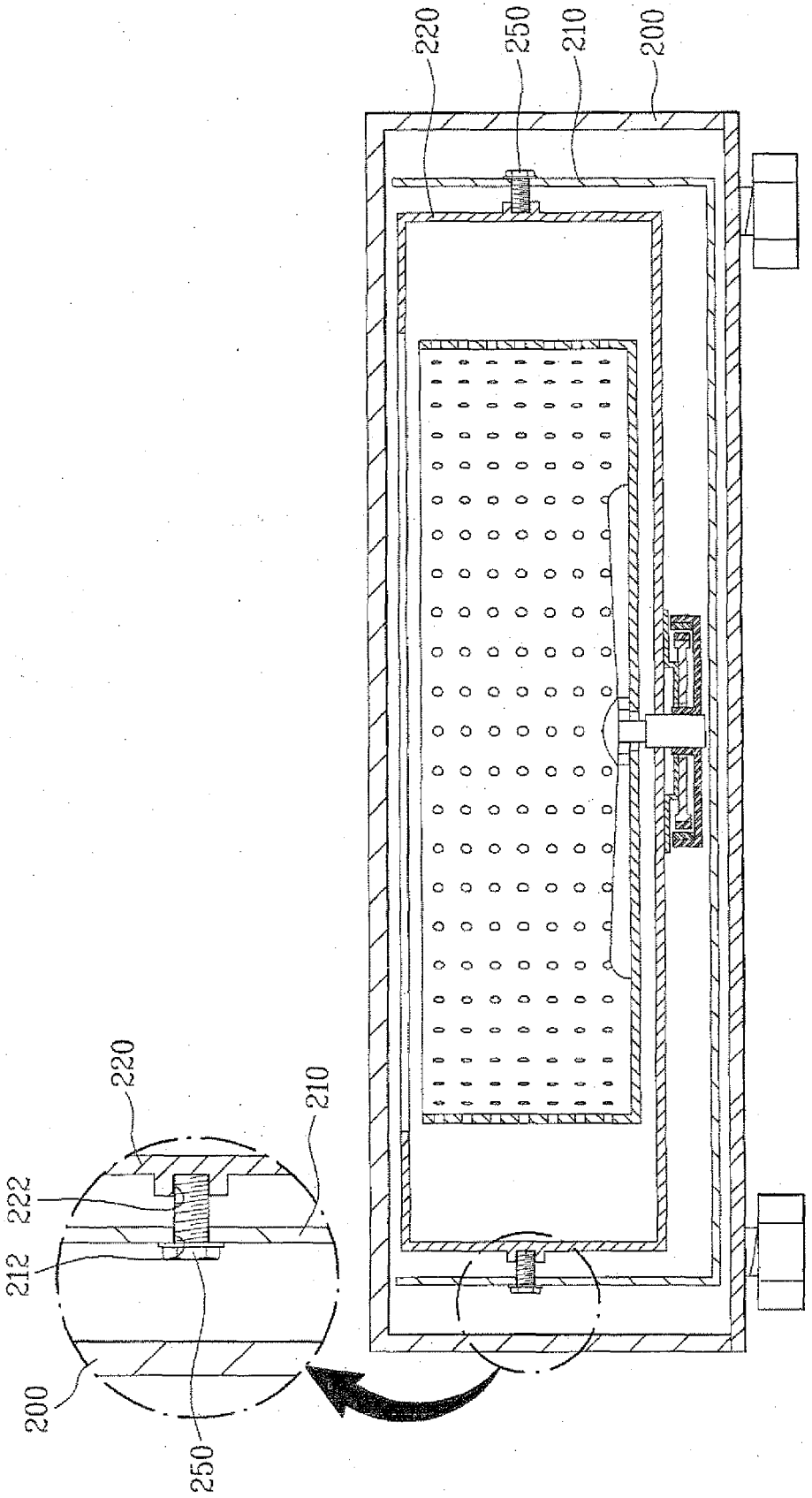

FIG. 10

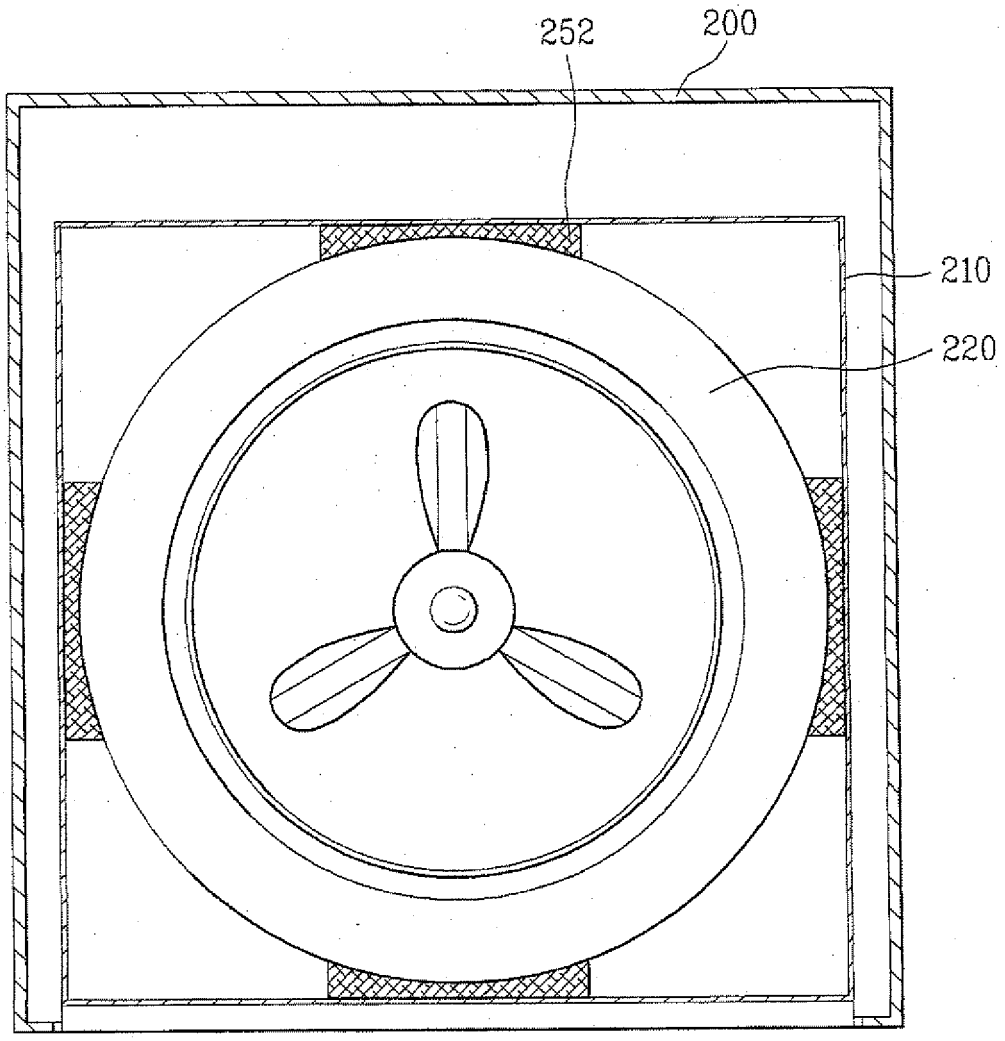

FIG. 11

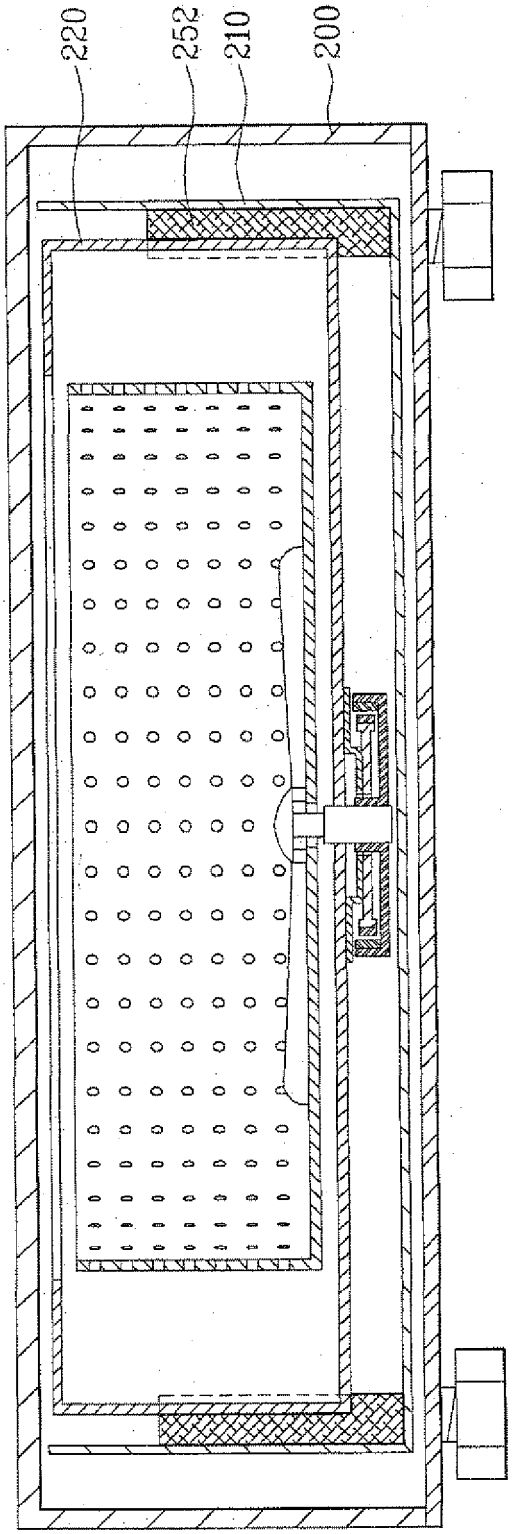

FIG. 12

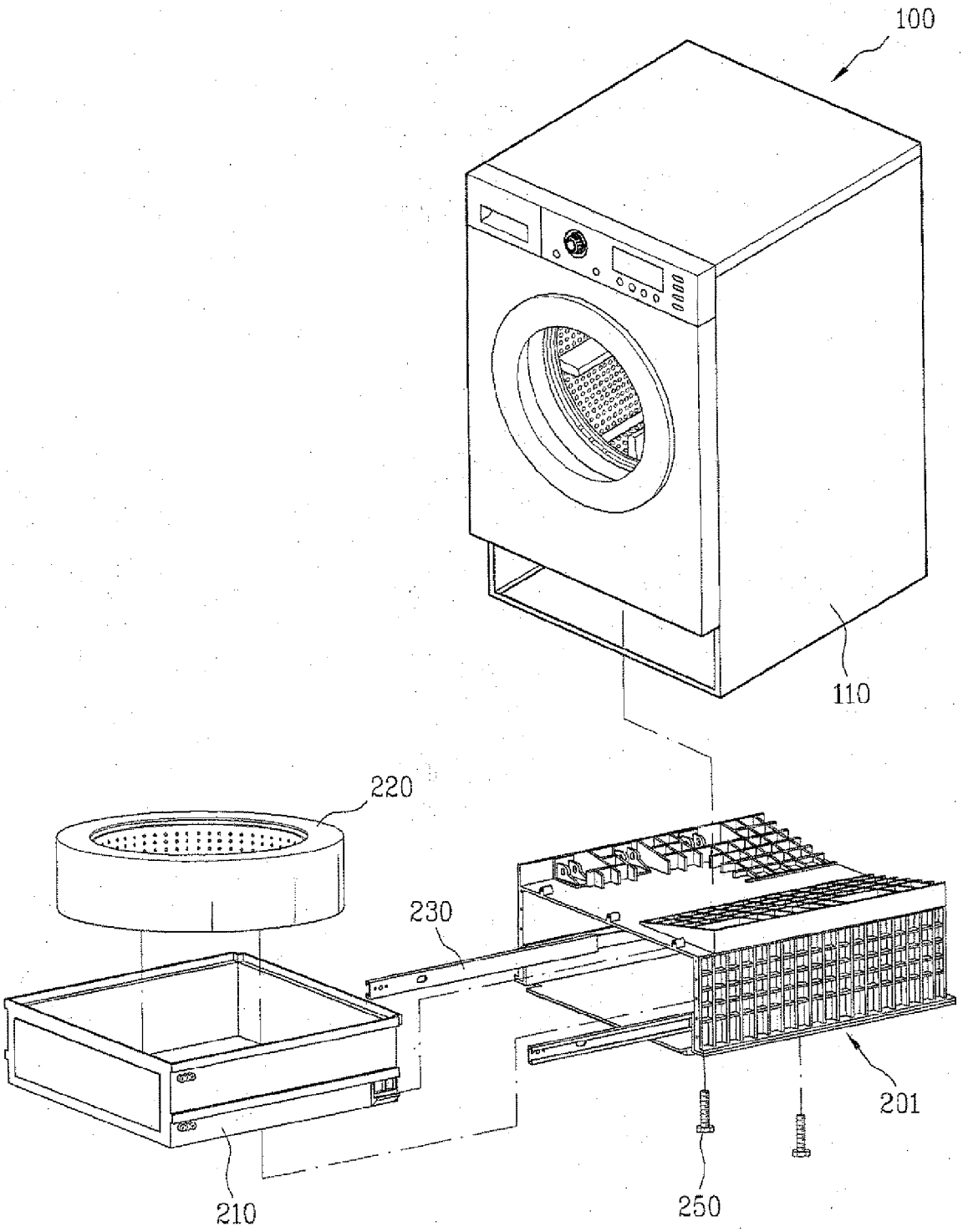

FIG. 13

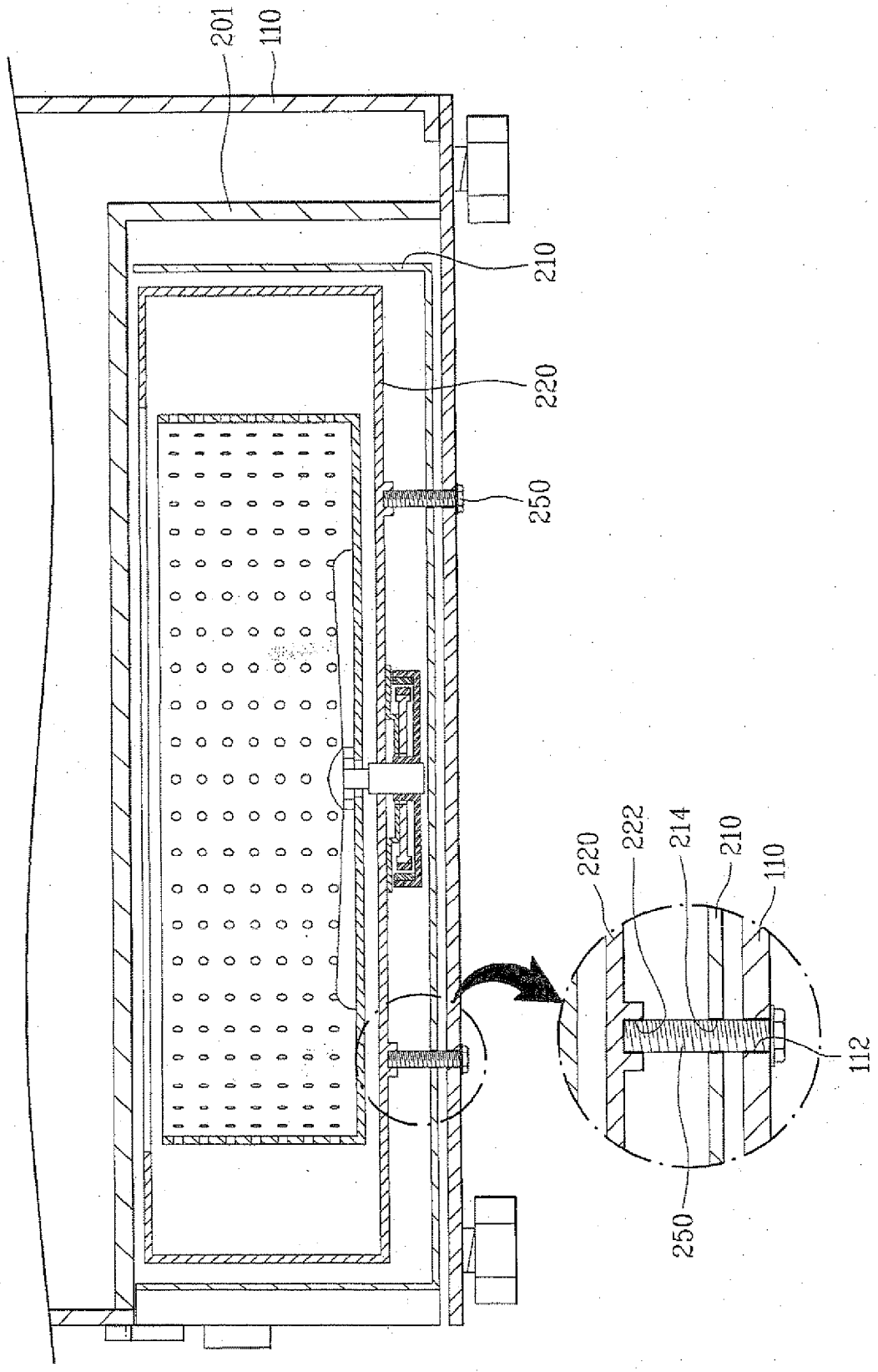

FIG. 14

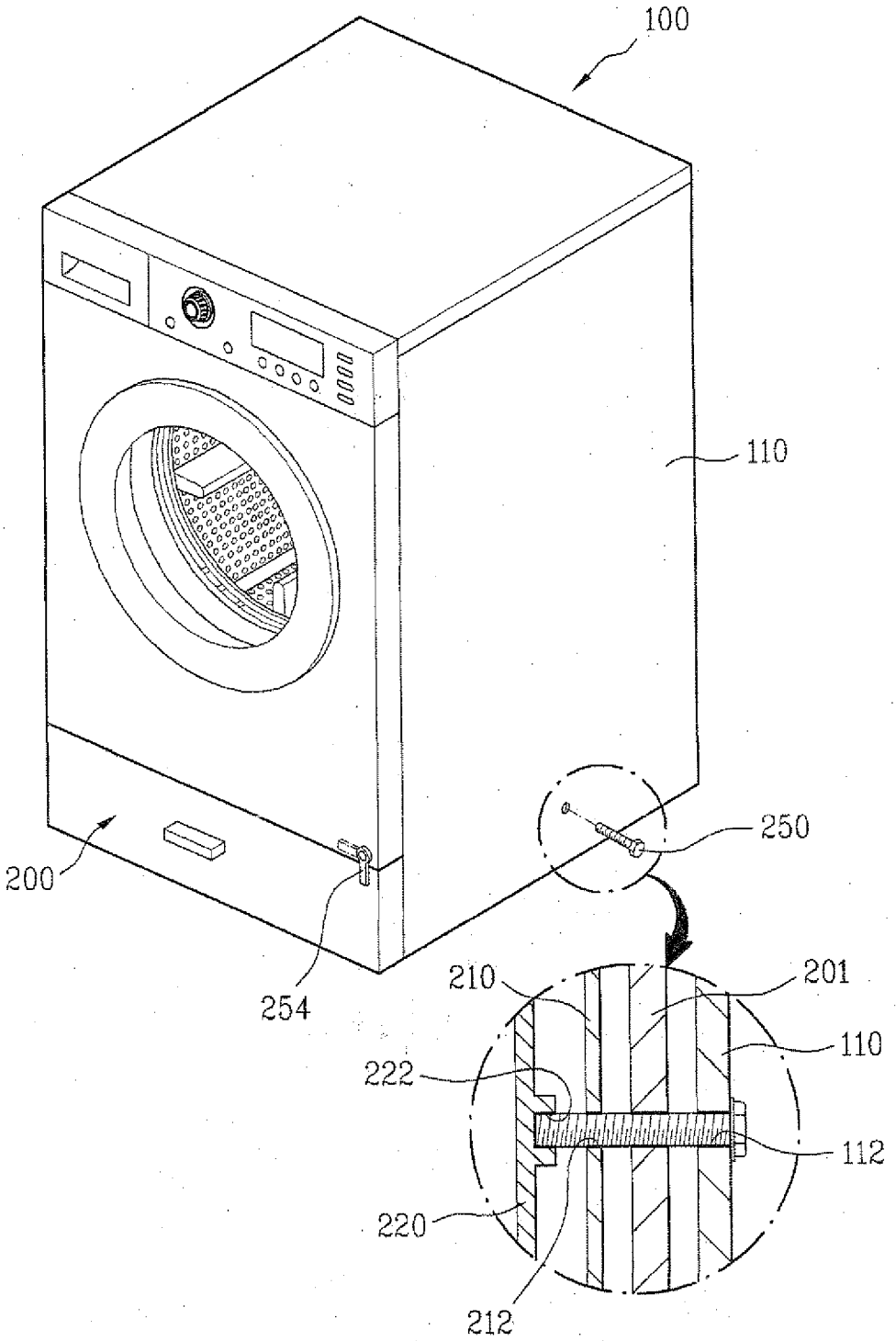

FIG. 15

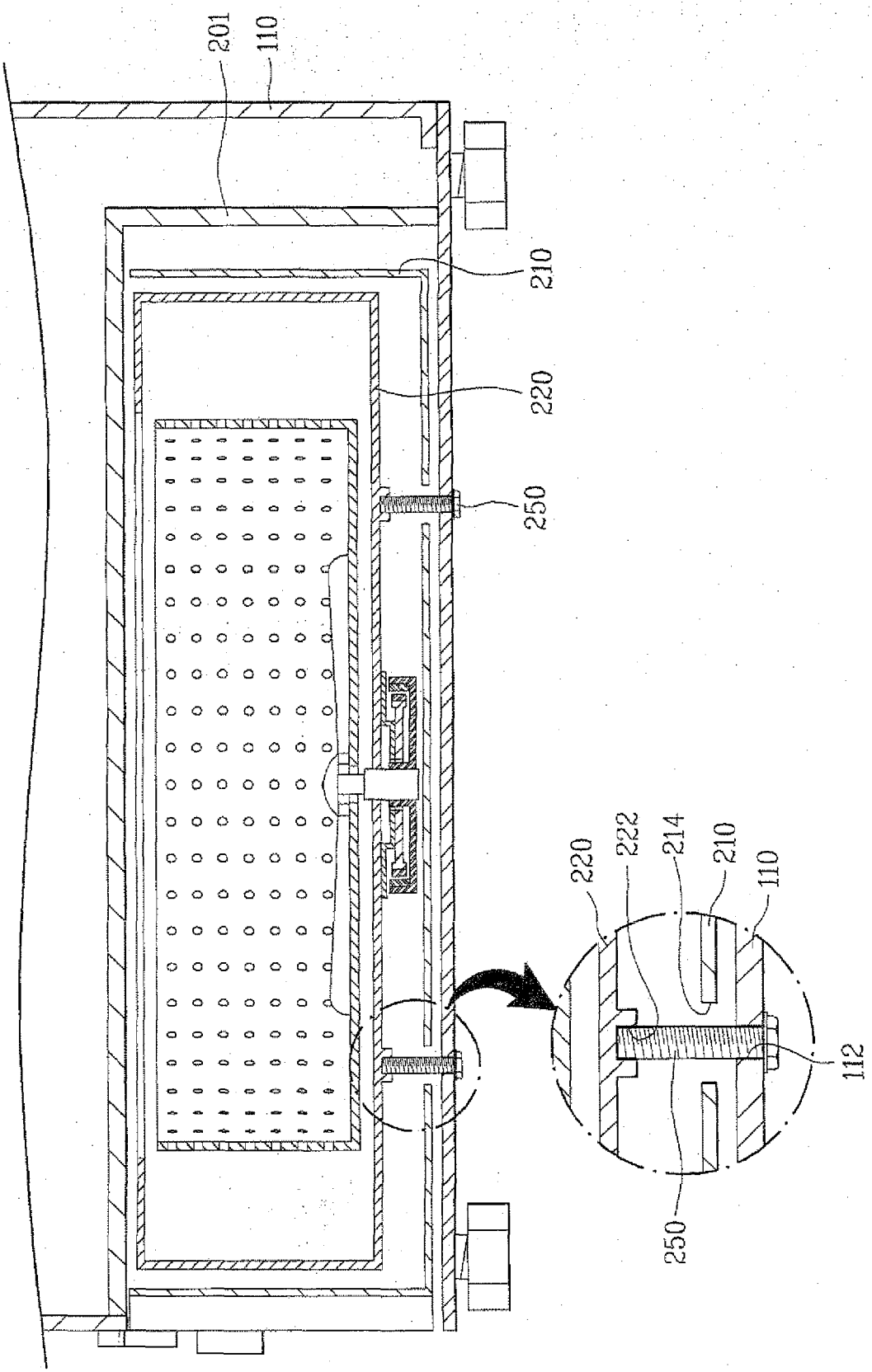

FIG. 16

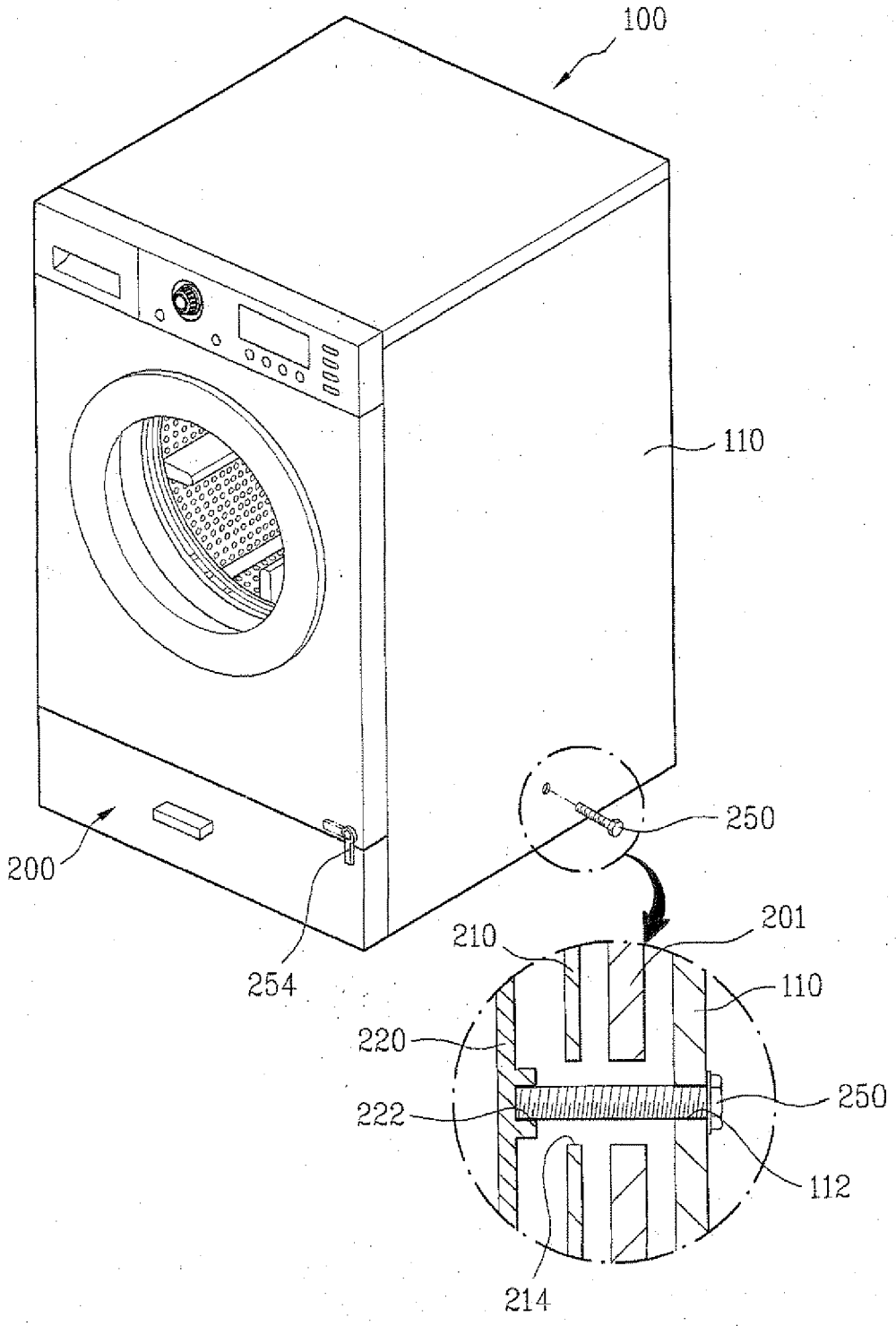

FIG. 17

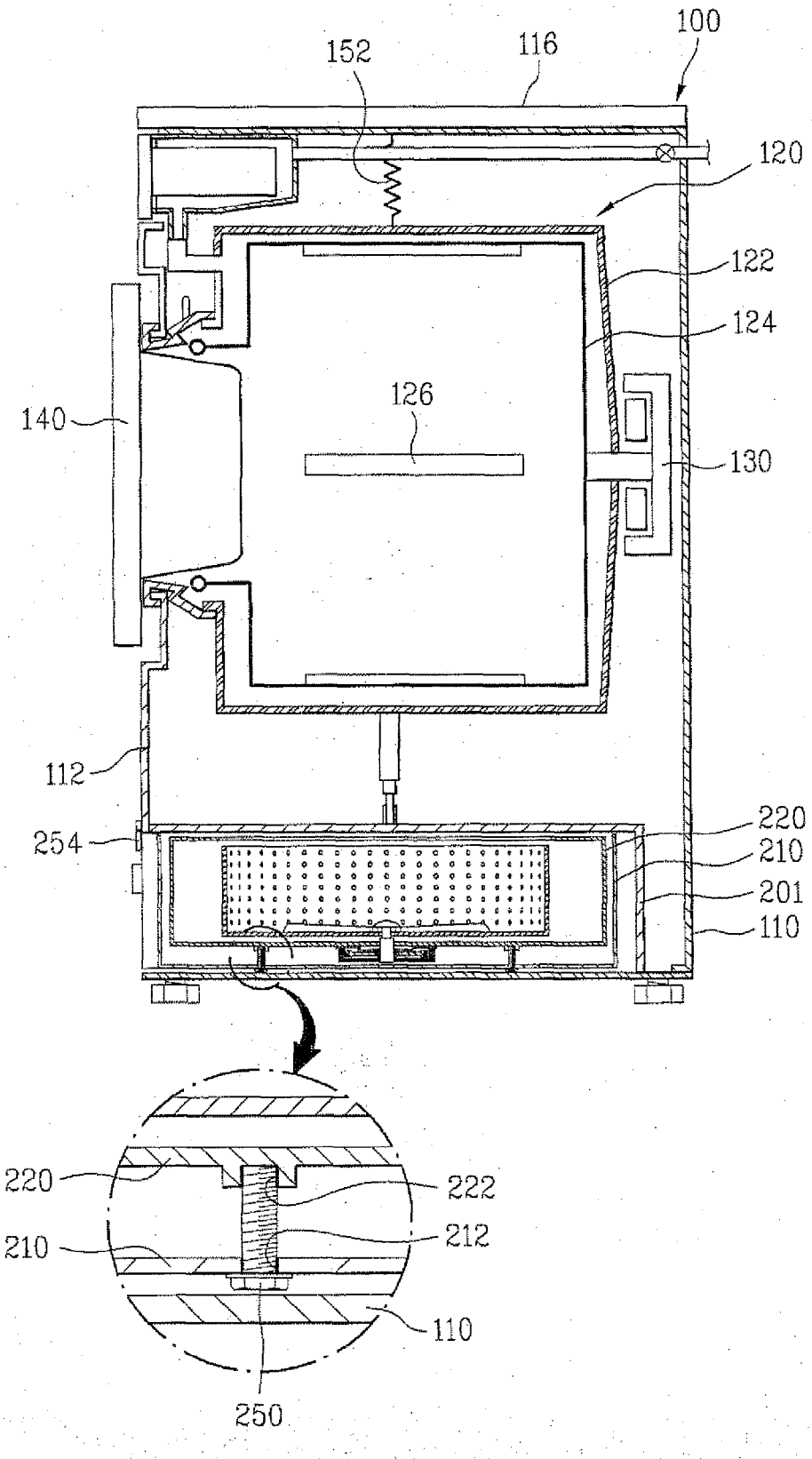
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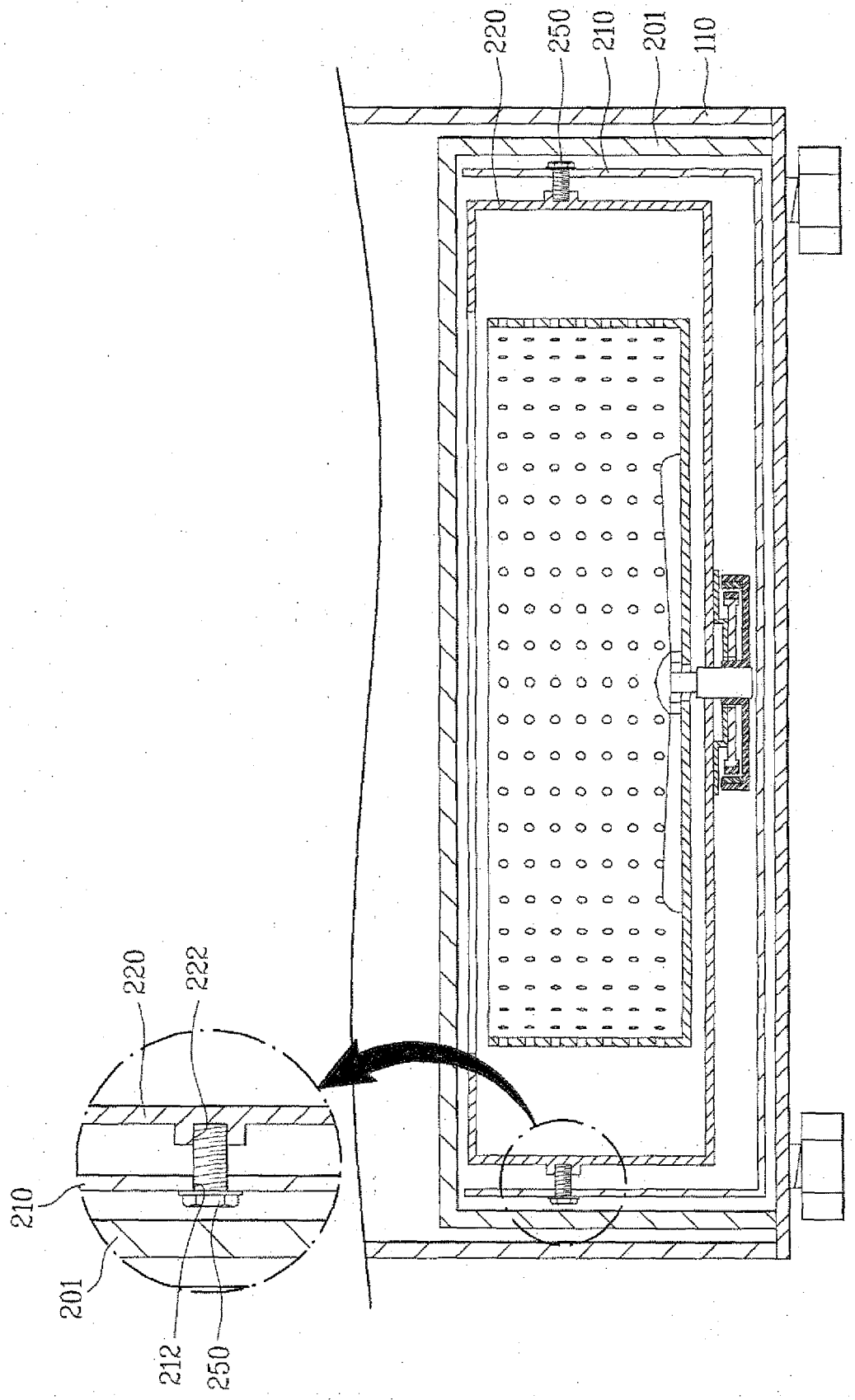
FIG. 18



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EUROPEAN SEARCH REPORT

Application Number
EP 08 15 1272

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
E	WO 2008/069607 A (LG ELECTRONICS INC [KR]; JEONG SEONG HAE [KR]; JO SEONG JIN [KR]) 12 June 2008 (2008-06-12) * paragraph [0055] - paragraph [0067]; figures 3,7 *	1-26	INV. D06F37/20 ADD. D06F31/00
E	WO 2008/084932 A (LG ELECTRONICS INC [KR]; JEONG SEONG HAE [KR]; JO SEONG JIN [KR]) 17 July 2008 (2008-07-17) * figures 4-9 *	1,8,10, 12,13, 21,23,25	
A	US 5 784 901 A (YANASE SHUJI [JP] ET AL) 28 July 1998 (1998-07-28) * column 5, line 59 - column 7, line 60; figure 1 *	1-26	

TECHNICAL FIELDS SEARCHED (IPC)

D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	20 March 2009	Hannam, Martin

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 15 1272

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20-03-2009

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WO 2008084932 A	17-07-2008	NONE	
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82