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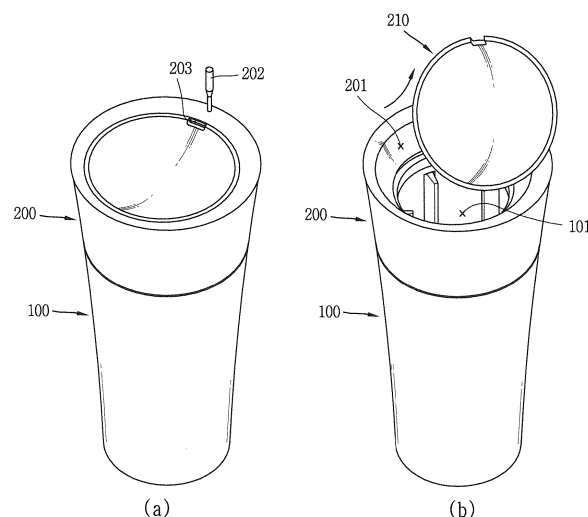
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MULTI-PURPOSE CLEANING DEVICE

(57) The present invention provides a multi-purpose cleaning device including a first body having a washing space in which the laundry is washed, a water supply unit supplying water to the space, a second body installed above the first body and including an accommodation space accommodating water and an opening area allowing water to flow to the washing space therethrough, a cover unit covering the opening area to implement a first state in which water is pooled in the second body and exposing the opening area to implement a second state in which water and the laundry to pass therethrough, and a controller controlling the first and second bodies and the cover unit on the basis of a control command input from the outside.

FIG. 1



Description

[Technical Field]

[0001] The present disclosure relates to a multi-purpose cleaning device performing a cleaning function according to a mode, as a cleaning device for washing clothes.

[Background Art]

[0002] In general, a washing machine is installed in a space where water supply is required in a house. However, as houses for singles have increased, spaces for disposing home appliances has been reduced. Thus, recently, home appliances having a small capacity and products having functions which are simply and quickly performed have been favored.

[0003] As products having various functions and characteristic shapes have been manufactured, it may be difficult to dispose different products in a relatively narrow space.

[Disclosure]

[Technical Problem]

[0004] An aspect of the present disclosure provides a multi-purpose cleaning device capable of effectively utilizing a relatively narrow space.

[Technical Solution]

[0005] According to an aspect of the present invention, there is provided a multi-purpose cleaning device including: a first body having a washing space in which the laundry is washed; a water supply unit supplying water to the space; a second body installed above the first body and including an accommodation space accommodating water and an opening area allowing water to flow to the washing space therethrough; a cover unit covering the opening area to implement a first state in which water is pooled in the second body and exposing the opening area to implement a second state in which water and the laundry to pass therethrough; and a controller controlling the first and second bodies and the cover unit on the basis of a control command input from the outside.

[0006] In an example related to the present disclosure, the multi-purpose cleaning device may further include: a coupling unit formed between the first and second bodies to fix the second body to the first body; and a buffer unit formed in the coupling unit to buffer vibration between the first and second bodies.

[0007] In an example related to the present disclosure, when a washing mode in which the laundry is washed is activated in the first body in which the laundry is washed, the controller may perform control to separate at least portions of the first and second bodies in order to buffer

the vibration.

[0008] In an example related to the present disclosure, the cover unit may include a moving block to move the cover unit, and a guide unit guiding movement of the moving block may be formed in a region of the second body.

[0009] In an example related to the present disclosure, the cover unit may include a plurality of assembly members coupled such that edges thereof are in contact with each other, and the coupling of the plurality of assembly members may be released to allow the water to pass therethrough in the second state.

[0010] In an example related to the present disclosure, the plurality of assembly members may be switched to the second state by pressurization toward an interior of the first body.

[0011] In an example related to the present disclosure, the first body may further include a washing tub forming the washing space, a drainage space may be formed between an inner surface of the first body and an outer circumferential surface of the washing tub to allow water to be discharged outwardly therefrom, and the cover unit may move to cover the washing tub and allow water to flow to the drainage space.

[0012] In an example related to the present disclosure, the controller may control the cover unit to the first state or the second state on the basis of activation of the washing mode in which the laundry is washed in the first body.

[0013] In an example related to the present disclosure, when the first body is driven in a dry stage of the washing mode, the controller may control the cover unit to maintain the first stage.

[0014] In an example related to the present disclosure, when water is supplied from the water supply unit in the first state, the controller may temporarily deactivate the washing mode.

[0015] In an example related to the present disclosure, the multi-purpose cleaning device may further include: a sensing unit sensing whether water is accommodated in the cover unit; and an analyzing unit analyzing a reproducible state of the water.

[0016] In an example related to the present disclosure, when water is accommodated, the controller may control the cover unit to the first state or the second state on the basis of the reproducible state.

[0017] In an example related to the present disclosure, when water is supplied from the water supply unit, the controller may maintain the cover unit in the first state.

[0018] In an example related to the present disclosure, the controller may switch the cover unit to the second state in a water supply stage of the washing mode.

[0019] In an example related to the present disclosure, the cover unit may have a transparent display unit outputting an image, and when the washing mode is activated, the controller may control the display unit to output an opaque image.

[0020] In an example related to the present disclosure, when the washing mode is activated, the controller may

output information associated with the washing mode on the display unit.

[0021] In an example related to the present disclosure, when the sensing unit senses that water is accommodated in the cover unit for a preset period of time, the controller may control the cover unit to allow the water to flow out to the second body on the basis of a driving stage of the washing mode.

[0022] In an example related to the present disclosure, when the washing mode of the first body in which the laundry is washed is changed to an inactive state and water supply from the water supply unit is cut off, the controller may control the cover unit to be switched to the second state.

[0023] In an example related to the present disclosure, the cover unit may include a hole formed to allow the water to pass therethrough and a stopper formed to be inserted into the hole and released therefrom, wherein the stopper may be inserted into the hole or released therefrom according to a user's control command.

[0024] In an example related to the present disclosure, while the washing mode is being activated, the controller may control an insertion or release state of the stopper on the basis of the driving stage of the washing mode.

[Advantageous Effects]

[0025] According to the present disclosure, since a cleaning or washing function may be used in a narrow space, space utilization may be enhanced and a small amount of laundry may be effectively washed.

[0026] In addition, since whether to reuse (or recycle) water is determined according to a mode of the cleaning device, a water resource may be saved.

[Description of Drawings]

[0027]

FIG. 1 is a perspective view illustrating a multi-purpose cleaning device according to an embodiment of the present disclosure.

FIG. 2 is an exploded view of the multi-purpose cleaning device of FIG. 1.

FIG. 3A is conceptual view illustrating changes in states according to various embodiments.

FIG. 4 is a perspective view illustrating a multi-purpose cleaning device according to another embodiment of the present disclosure.

FIGS. 5A and 5B are flow charts illustrating a control method for controlling switching of a state according to each embodiment.

FIG. 6 is a flow chart illustrating a control method for controlling a cover unit on the basis of a driving mode of a multi-function cleaning device.

FIG. 7A is a flow chart illustrating controlling of a body unit according to a driving state of a washing tub.

FIG. 7B is a conceptual view illustrating a control method of a display unit provided in a cover unit.

FIG. 8 is a conceptual view illustrating controlling of first and second body units on the basis of a driving state of the first body unit.

[Best Modes]

[0028] Hereinafter, the embodiments of the present invention will be described with reference to the accompanying drawings, in which like numbers refer to like elements throughout although the embodiments are different, and a description of the like elements a first embodiment will be used for those of the different embodiment.

In the following description, usage of suffixes such as 'module', 'part' or 'unit' used for referring to elements is given merely to facilitate explanation of the present invention, without having any significant meaning by itself. In describing the present invention, if a detailed explanation for a related known function or construction is considered to unnecessarily divert the gist of the present invention, such explanation has been omitted but would be understood by those skilled in the art. The accompanying drawings of the present invention aim to facilitate understanding of the present invention and should not be construed as limited to the accompanying drawings.

[0029] FIG. 1 is a perspective view illustrating a multi-purpose cleaning device according to an embodiment of the present disclosure, FIG. 2 is an exploded view of the multi-purpose cleaning device of FIG. 1, and FIG. 3A is a conceptual view illustrating changes in states according to various embodiments.

[0030] Referring to FIGS. 1 and 2, a multi-purpose cleaning device includes a first body 100, a second body 200, and a coupling unit 300. The second body 200 is mounted on the first body 100 through the coupling unit 300. The first and second bodies 100 and 200 are configured as independent members and connected by the coupling unit 300, and while the multi-purpose cleaning device is being driven, the first and second body units 100 and 200 are not separated.

[0031] The multi-purpose cleaning device includes a water supply unit 203 includes a water supply unit 230 formed in the second body unit 200 and supplying water to the first and second body units 100 and 200. A shape of the water supply unit 230 is not limited to that illustrated in FIG. 1 and the water supply unit 230 may include a plurality of structures installed in different regions.

[0032] For example, the water supply unit 230 may include a first water supply structure installed in the second body unit 200 and supplying water to both the first and second body units 100 and 200 and a second water supply structure installed within the second body unit 200 and supplying water only to the second body unit 200.

[0033] The first body unit 100 includes a washing space 101 for washing the laundry therein. That is, the washing tub washing clothes, or the like, using water and a detergent is received in the washing space 101.

[0034] Also, the second body unit 200 may include an accommodation space 201 formed to accommodate water that pools therein. The accommodation space 201 and the washing space 101 communicate with each other to allow water to flow therein. The second body unit 200 further includes a cover unit 210 formed to allow water to pool in the accommodation space 201.

[0035] The cover unit 210 is formed between the first and second body units 100 and 200 or formed in a region of the second body 200. The cover unit 210 may operate to a first state and a second state in which movement states of water are different to each other.

[0036] Here, the first state is a state in which the washing space 101 and the accommodation space 201 communicate with each other to allow water to flow from the accommodation space 201 to the washing space 101. The controller may switch the multi-purpose cleaning device to the first state or the second state on the basis of a position of the cover unit 210 or a control command from a user. (a) of FIG. 1 illustrates the first state and (b) of FIG. 1 illustrates the second state.

[0037] For example, as illustrated in (a) and (b) of FIG. 1, the cover unit 210 is installed in the first and second body units 100 and 200 such that the washing space 101 and the accommodation space 201 are separated. The cover unit 210 is formed to allow water supplied from the water supply unit 203 to pool in the cover unit 210 and the second body unit 200 in the first state.

[0038] In the first state, the water supply unit 203 is preferably formed to be higher than a position of the cover unit 210 in the second body unit 200. Thus, in the first state, water is supplied to the second body unit 200, and in the second state, water is supplied to the first body unit 100.

[0039] A shape of the cover unit 210 is not limited, but the cover unit 210 may have a curved surface allowing water to pool therein, and may have a concave shape to allow a user to use water. Also, the cover unit 210 is preferably formed to have a shape corresponding to a shape of a cross-section of the washing space 101 and the accommodation space 201. That is, in the first state, an outer circumferential surface of the cover unit 210 is formed to be in contact with a portion of an outer circumferential surface of the second body unit 200 forming the accommodation space 201. Although not shown in the drawings, a packing ring formed of rubber to block a flow of water may be formed on an outer circumferential surface of the second body unit 200.

[0040] In the second state in which the cover unit 210 has moved, water pooled in the cover unit 210 flows out to the washing space 101. Also, in the second state, water flowing out by the water supply unit 203 may directly move to the washing space.

[0041] The second body unit 200 may further include a control unit 202 receiving a control command for driving the multi-purpose cleaning device. The control unit included in the multi-purpose cleaning device may control the water supply unit 203, the cover unit 210, and the

washing tub formed in the first body unit 100 or may switch the first state to the second state or the second state to the first state.

[0042] Referring to FIG. 2, the multi-purpose cleaning device further includes the coupling unit 300 assembling the first and second body units 100 and 200. The coupling unit 300 includes a first coupling member 310 protruding from the first body unit 100, a second coupling member 320 formed by depressing a region of the second body unit 200 such that the first coupling member 310 is inserted therein, and a buffer unit 330 formed in the second coupling member 320 and the first coupling member 310.

[0043] The buffer unit 330 is formed to surround the first coupling member 330 in a state in which the first coupling member 310 is inserted into the second coupling member 320, thus elastically supporting the first and second body units 100 and 200.

[0044] The buffer unit 330 may be formed to be outwardly disposed or may not be exposed in a state in which the first and second body units 100 and 200 are coupled. The buffer unit 330 may be formed of an elastic material or a material absorbing an impact. For example, the buffer unit 330 may be formed of a spring.

[0045] Thus, the buffer unit 330 may absorb an impact (vibrations) that occurs when the washing tub within the first body unit 100 is driven and rotate to wash the laundry such that the impact may not be transmitted to the second body unit 200.

[0046] A movement structure of the cover unit 210 according to an embodiment of the present disclosure will be described with reference to FIGS. 2 and (a) and (b) of FIG. 3A. The cover unit 210 includes a moving block 221 moving along a region of the second body unit 200 to switch the first state to the second state. Also, the second body unit 200 includes a guide unit 222 formed on an inner circumferential surface and fixed to a region of the moving block 221 to guide rotation (movement) of the cover unit 210. The moving block 221 and the guide unit 222 may be formed in plurality. That is, as an inner surface of the cover unit 210 may move to scrape along an inner circumferential surface of the second body unit 200 by the moving block 221 and the guide unit, the cover unit 210 may be switched to the second state. Accordingly, water pooled in the cover unit 210 passes through the accommodation space 201 to move to the washing space 101.

[0047] Hereinafter, specific examples in which the first state is switched to the second state according to other embodiments will be described.

[0048] Referring to (a) and (c) of FIG. 3A, the cover unit 210 includes a hole formed in a region thereof and a stopper 211 formed to block the hole. The stopper 211 is formed to open and close the hole. For example, the stopper 211 is formed to close the hole in the first state to prevent movement of water flowing out through the hole, and open the hole to allow water to flow out in the second state. That is, in the second state, the stopper

211 is formed to move upwardly or downwardly from the cover unit 210. For example, the stopper 211 may be moved on the basis of pressure applied by the user or a control command input to the control device 202 and may be returned, thus switching from the first state to the second state or from the second state to the first state.

[0049] In the second state, water pooled in the cover unit 210 may flow out to the washing space 101 of the first body unit 100.

[0050] Preferably, the hole is formed at the center of the cover unit 210. For example, in a case in which the cover unit 210 is formed to have a concave shape, when the stopper 211 is separated from the hole, water pooled at the center of the cover unit 210 may entirely flow toward the first body unit 100 by gravity.

[0051] Referring to (a) and (d) of FIG. 3A, the cover unit 210 is formed to be movable in a gravitation direction (that is, a direction in which water moves) in a state in which water is discharged to outside of the second body unit 200 but movement thereof toward the washing space 101 is prevented.

[0052] For example, the washing tub is received in the washing space 101 of the first body unit 100, and the washing space 101 may have a drainage space 102 differentiated from an internal space of the washing tub. In the third state, the cover unit 210 may be moved such that the accommodation space 201 communicates with the drainage space 102, while blocking the washing tub. An arrest portion on which the cover unit 210 is mounted may be further formed to block the washing tub, or the washing tub may further include a mounting structure on which the cover unit 210 is mounted.

[0053] According to the present embodiment, water provided from the water supply unit 203 in the third state cannot move to the washing tub but is separately drained through the drainage space 102.

[0054] In the first state, the user may use water accommodated by the accommodation space 201 and the cover unit 210. In the second state, the user may drain water or drive the washing tub using used water or using water supplied by the water supply unit 203. In the third state, drained water cannot flow to the washing tub, thus being prevented from being used again, and may be drained.

[0055] A structure of the cover unit and switching of a state according to another embodiment will be described with reference to FIG. 3B.

[0056] Referring to FIG. 3B, the cover unit 210 includes a plurality of assembly members formed such that edges thereof are in contact with each other. The number of the assembly members forming the cover unit 210 is not limited to those illustrated in the drawing. The assembly members may be separated to be spaced apart from one another and assembled again on the basis of the first and second states.

[0057] Referring to (a) and (b) of FIG. 3B, in the first state, the plurality of assembly members are formed to be in contact with each other. That is, the assembly members do not form a gap therebetween, limiting movement

of water provided from the water supply unit 203.

[0058] Referring to (b) of FIG. 3B, the plurality of assembly members are moved such that the edges thereof in contact with each other are separated on the basis of user's pressure or a control command. Here, however, one edge of each of the plurality of assembly members is maintained to be in contact with an outer circumferential surface of the second body unit 200 in the second state.

[0059] That is, the plurality of assembly members are rotatably moved at a preset angle in relation to the sides thereof in contact with the second body unit 200, and are changed to form an opening area allowing water to move therethrough at a central portion of the cover unit 210 on the basis of the rotational movement of the assembly members.

[0060] Alternatively, the plurality of assembly members may be formed of an elastic material having elasticity. Thus, the cover unit 210 may have the opening area formed to allow water to move therethrough as the assembly members are deformed by pressurization of the user and the edges in contact with each other are open. In this case, when the pressurization by the user is released, the assembly members are changed to come into contact with each other.

[0061] According to the present embodiment, water accommodated by the cover unit 210 moves to the washing space 101.

[0062] Meanwhile, referring to (c) of FIG. 3B, the cover unit 210 includes a plurality of assembly members having edges in contact with each other. Also, a central portion of the plurality of assembly members protrudes upwardly to form an opening area.

[0063] On the basis of the shape of the edge of the second body unit 200, the cover unit 210 may be switched to the second state or the third state according to movement of the plurality of assembly members. In a case in which a region of the second body unit 200 surrounding the cover unit 210 has a concave shape, the cover unit 210 is switched to the second state. Meanwhile, in a case in which a region of the second body unit 200 surrounding the cover unit 210 is formed to be narrow, the cover unit 210 may be switched to the third state.

[0064] According to the present embodiment, the user may discharge water accommodated by the cover unit 210 to outside of the first and second body units.

[0065] FIG. 4 is a perspective view illustrating a multi-purpose cleaning device according to another embodiment of the present disclosure. The multi-purpose cleaning device according to the present embodiment includes a body unit 310 having an internal space and a cover unit 320 formed in a region of the body unit 310 to open and close the internal space.

[0066] An outer surface of the body unit 310 may have a quadrangular shape, and a washing tub formed to wash the laundry may be received in the internal space.

[0067] The cover unit 320 may be formed to traverse one cross-section of the body unit 310 formed in a direc-

tion perpendicular to the gravitation direction (parallel to the ground) in order to divide the internal space. The cover unit 320 may move in a direction parallel to the ground so as to be driven to open and close the washing tub. The cover unit 320 may be driven by pressurization of the user or a control command. A state in which the cover unit 320 divides the internal space may be defined as a first state, and a state in which the washing tub is exposed by the cover unit 320 may be defined as a second state.

[0068] The cover unit 320 may expose the washing tub in a sliding manner. Through slidable movement of the cover unit 320, a region of the cover unit 320 may be received to a region of the body unit 310 or may protrude to outside of the body unit 310.

[0069] A water supply unit 340 is preferably formed in a region of the cover unit 320 of the body unit 310. The body unit 310 may further include a control device 330 formed in a region to control the cover unit 320 and driving of the washing tub.

[0070] FIGS. 5A and 5B are flow charts illustrating a control method for controlling switching of a state according to each embodiment.

[0071] A control method for controlling reuse of water will be described with reference to FIG. 5A. A controller provided in the multi-purpose cleaning device may control movement of water on the basis of a control command applied by the user or a driving state of the multi-purpose cleaning device.

[0072] The controller determines whether water is accommodated in the cover unit 210 (S10). The controller further includes a sensing sensor (not shown) for determining whether water is accommodated in the cover unit 210. The sensing sensor may be installed in the cover unit 210 and implemented as a pressure sensor sensing a weight of the accommodated water.

[0073] When it is sensed that water is accommodated in the cover unit 210, the controller determines whether the first body unit (the washing tub received in the first body unit) is in a washing mode (S20). Here, the washing mode refers to a state in which the laundry is being washed by the washing tub, that is, a state in which the washing tub is activated. Meanwhile, a cleaning mode refers to a state in which water provided by the water supply unit 203 is accommodated by the cover unit 210.

[0074] The controller controls the cover unit 210 to maintain the accommodation state of water in case of the washing mode (S31). Also, when the washing mode is maintained, the controller controls the cover unit 210 to drain water (S32). Here, a state in which water is drained refers to a state in which water is not introduced to the washing tub but is discarded through a draining unit.

[0075] In case of the cleaning mode, the controller determines whether the water is to be reused (S40). Here, whether to reuse water may be determined on the basis of a user setting or a control command by the user.

[0076] When it is determined to reuse the water, the

controller switches the cover unit 210 to the second state to allow water to flow to the washing space 101 (S51). That is, water pooled in the cover unit 210 after being used flows out to the washing tub and is used to wash the laundry.

[0077] However, the present disclosure is not limited thereto and, after the wafer moves to the washing tub, if the washing tub is not driven or if the washing tub undergoes a draining stage, the water may not be reused but be drained.

[0078] When the water is determined not to be reused, the controller controls the cover unit 210 to drain the water (S32).

[0079] Hereinafter, a control method for controlling a reuse state of water according to a driving state of the multi-purpose cleaning device will be described.

[0080] When the washing tub of the first body unit 100 is in a washing mode, the controller determines a driving stage of the washing mode (S21). Here, the driving stage may include a water supply stage, a detergent application stage, a cleaning stage, a rinsing stage, a spin-dry stage, and a dry stage.

[0081] When the washing mode is in the water supply stage, the controller determines a state of the accommodated water (S41). Here, the accommodated water refers to water which does not flow but is accommodated by the cover unit 210.

[0082] Also, the multi-purpose cleaning device may further include a sensing unit (not shown) recognizing a contamination state of water accommodated in the cover unit 210. The sensing unit is preferably formed in a region of the cover unit 210 or the second body unit 200 where water is accommodated.

[0083] The sensing unit senses a contamination state of water. For example, the sensing unit may detect a material dissolved in water to determine water quality, or detect a contaminated concentration of water. For example, the sensing unit may detect whether a material that may damage clothes is dissolved in water, or an amount of impurities mixed in water.

[0084] When it is determined that water is contaminated in excess of a preset reference, the controller may control the cover unit 210 to drain the water.

[0085] Meanwhile, when it is determined that a contaminated state of water is less than the preset reference so as to be good, the controller checks a washing level of the washing mode (S42).

[0086] Here, the washing level is a type of the laundry to be washed or a driving level of the washing tub according to a user setting. For example, when the washing level is a washing level of cloth that can be easily damaged (for example, cloth that can be easily damage) or a washing level with a highly set disinfection (for example, infant clothing), the washing tub may be driven at different washing levels.

[0087] When a washing level of the washing tub being currently driven does not correspond to a preset reference, the controller may control the cover unit 210 to

supply the accommodated water to the washing space (S52).

[0088] Thus, reusing water in an environment appropriate according to circumstances, the multi-purpose cleaning device may save water and prevent damage to the laundry.

[0089] FIG. 6 is a flow chart illustrating a control method for controlling a cover unit on the basis of a driving mode of a multi-function cleaning device.

[0090] When water is supplied by the water supply unit (S11), the controller determines whether the multi-purpose cleaning device is in a washing mode or a cleaning mode (S20).

[0091] In the case of the washing mode, the controller switches the cover unit to the first state (S53). Thus, in the case of the washing mode, a flow of water is first cut off. Accordingly, inflow of water may be cut off in each driving stage of the washing mode.

[0092] Also, when a user's control command is applied, the controller switches the first state to the third state (S54). That is, the user may control the cover unit 210 to drain used water. Accordingly, when the multi-purpose cleaning device is in the washing mode, inflow of water to the washing tub is blocked, solving a problem in which driving of the washing tub is interfered.

[0093] Meanwhile, in the case of the cleaning mode, the controller may switch the cover unit to any one of the first to third states on the basis of a control command input from the user (S55). That is, in the case of the cleaning mode, the user may make used water introduced to the washing tub to reuse the same or may drain or accommodate the same by adjusting the cover unit.

[0094] FIG. 7A is a flow chart illustrating controlling of a body unit according to a driving state of a washing tub. The controller checks a driving state of the washing tub received in the first body unit 100 (S22). When the washing tub is being driven, the controller maintains the cover unit in the first state (S61).

[0095] That is, since water is prevented from being introduced to the washing tub by the cover unit 210, contamination of the laundry due to water flowing to the washing tub may be prevented. Also, the controller may change a display unit provided in the cover unit 210 to a blocking mode (S62).

[0096] Referring to FIG. 7B, the controller 210 may have a transparent display unit. Accordingly, the user may recognize a state of the washing space 101 of the first body unit 100 in the first state.

[0097] When the washing tub is driven, the transparent display unit is switched to the blocking mode so that the user may not view a state in which the washing tub is being driven, in a case in which the washing tub is being driven. For example, the blocking mode is a state in which an opaque image is output such that the transparent display unit has an opaque color.

[0098] Thus, since the user may not be able to view the washing space 101, when water is accommodated using the cover unit 210, a cleaning function may be per-

formed in a state independent from driving of the first body unit 100.

[0099] Also, the display unit provided in the cover unit 210 may further include a touch sensing unit (not shown) receiving a user's touch input. However, the touch sensing unit (not shown) may be controlled to be activated only when water is not accommodated in the cover unit 210.

[0100] That is, when a touch input is applied to the display unit, the controller may receive the same and control the display unit to output a graphic image 210' receiving a touch input to control the washing tub. That is, when water is not in use in the first state, the cover unit 210 may be utilized as a control device for driving the washing tub.

[0101] According to the present embodiment, the user may check a state of the washing space 101 in the first state by using the cover unit formed of a transparent material, use the cleaning function independently from driving of the washing tub by an output opaque image, or control the washing tub in the first state by applying a touch input to the cover unit.

[0102] FIG. 8 is a conceptual view illustrating controlling of first and second body units on the basis of a driving state of the first body unit.

[0103] Referring to FIG. 8, the first body unit 100 vibrates on the basis of driving of the washing tub. In a state in which the first and second body units 100 and 200 are inserted into each other by the coupling unit 300, vibration of the first body unit 100 is transmitted to the second body unit 200.

[0104] In this case, the controller may move the second body unit 200 to form a space between the first and second body units 100 and 200. For example, the controller controls the multi-purpose cleaning device to move the second body unit 200 in a direction opposite to gravity. That is, the multi-purpose cleaning device may further include a support device formed to move the second body unit 200.

[0105] When a space is formed between the first and second body units 100 and 200 and the buffer unit 330 supports the second body unit 200, vibrations due to driving of the washing tub may be alleviated by the buffer unit 330.

[0106] As for the multi-purpose cleaning device described above, the configuration and method according to the embodiments of the present disclosure described above are not limited in its application, but the entirety or a portion of the embodiments may be selectively combined to be configured into various modifications.

[Industrial applicability]

[0107] The embodiments of the present disclosure propose forms and control method of an integrated cleaning device able to perform a cleaning function and a washing function, so as to be applied to various industrial fields related thereto.

Claims**1.** A multi-purpose cleaning device comprising:

a first body having a washing space in which the laundry is washed;
 a water supply unit supplying water to the space;
 a second body installed above the first body and including an accommodation space accommodating water and an opening area allowing water to flow to the washing space therethrough;
 a cover unit covering the opening area to implement a first state in which water is pooled in the second body and exposing the opening area to implement a second state in which water and the laundry to pass therethrough; and
 a controller controlling the first and second bodies and the cover unit on the basis of a control command input from the outside.

2. The multi-purpose cleaning device of claim 1, further comprising:

a coupling unit formed between the first and second bodies to fix the second body to the first body; and
 a buffer unit formed in the coupling unit to buffer vibration between the first and second bodies.

3. The multi-purpose cleaning device of claim 2, wherein when a washing mode in which the laundry is washed is activated in the first body in which the laundry is washed, the controller performs control to separate at least portions of the first and second bodies in order to buffer the vibration.**4.** The multi-purpose cleaning device of claim 1, wherein the cover unit includes a moving block to move the cover unit, and a guide unit guiding movement of the moving block is formed in a region of the second body.**5.** The multi-purpose cleaning device of claim 1, wherein the cover unit includes a plurality of assembly members coupled such that edges thereof are in contact with each other, and the coupling of the plurality of assembly members is released to allow the water to pass therethrough in the second state.**6.** The multi-purpose cleaning device of claim 5, wherein the plurality of assembly members are switched to the second state by pressurization toward an interior of the first body.**7.** The multi-purpose cleaning device of claim 1, wherein the first body further includes a washing tub forming the washing space, a drainage space is formed between an inner surface of the first body and an

outer circumferential surface of the washing tub to allow water to be discharged outwardly therefrom, and the cover unit moves to cover the washing tub and allow water to flow to the drainage space.

8. The multi-purpose cleaning device of claim 1, wherein the controller controls the cover unit to the first state or the second state on the basis of activation of the washing mode in which the laundry is washed in the first body.**9.** The multi-purpose cleaning device of claim 8, wherein when the first body is driven in a dry stage of the washing mode, the controller controls the cover unit to maintain the first stage.**10.** The multi-purpose cleaning device of claim 8, wherein when water is supplied from the water supply unit in the first state, the controller temporarily deactivates the washing mode.**11.** The multi-purpose cleaning device of claim 1, further comprising:

a sensing unit sensing whether water is accommodated in the cover unit; and
 an analyzing unit analyzing a reproducible state of the water.

12. The multi-purpose cleaning device of claim 11, wherein when water is accommodated, the controller controls the cover unit to the first state or the second state on the basis of the reproducible state.**13.** The multi-purpose cleaning device of claim 12, wherein when water is supplied from the water supply unit, the controller maintains the cover unit in the first state.**14.** The multi-purpose cleaning device of claim 12, wherein the controller switches the cover unit to the second state in a water supply stage of the washing mode in which the laundry is washed.**15.** The multi-purpose cleaning device of claim 11, wherein the cover unit has a transparent display unit outputting an image, and when the washing mode is activated, the controller controls the display unit to output an opaque image.**16.** The multi-purpose cleaning device of claim 15, wherein when the washing mode in which the laundry is washed is activated, the controller outputs information associated with the washing mode on the display unit.**17.** The multi-purpose cleaning device of claim 11, wherein when the sensing unit senses that water is

accommodated in the cover unit for a preset period of time, the controller controls the cover unit to allow the water to flow out to the second body on the basis of a driving stage of the washing mode in which the laundry is washed.

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18. The multi-purpose cleaning device of claim 1, wherein when the washing mode of the first body in which the laundry is washed is changed to an inactive state and water supply from the water supply unit is cut off, the controller controls the cover unit to be switched to the second state. 10
19. The multi-purpose cleaning device of claim 1, wherein the cover unit includes a hole formed to allow the water to pass therethrough and a stopper formed to be inserted into the hole and released therefrom, wherein the stopper is inserted into the hole or released therefrom according to a user's control command. 15 20
20. The multi-purpose cleaning device of claim 19, wherein while the washing mode in which the laundry is washed is being activated, the controller controls an insertion or release state of the stopper on the basis of the driving stage of the washing mode. 25

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FIG. 1

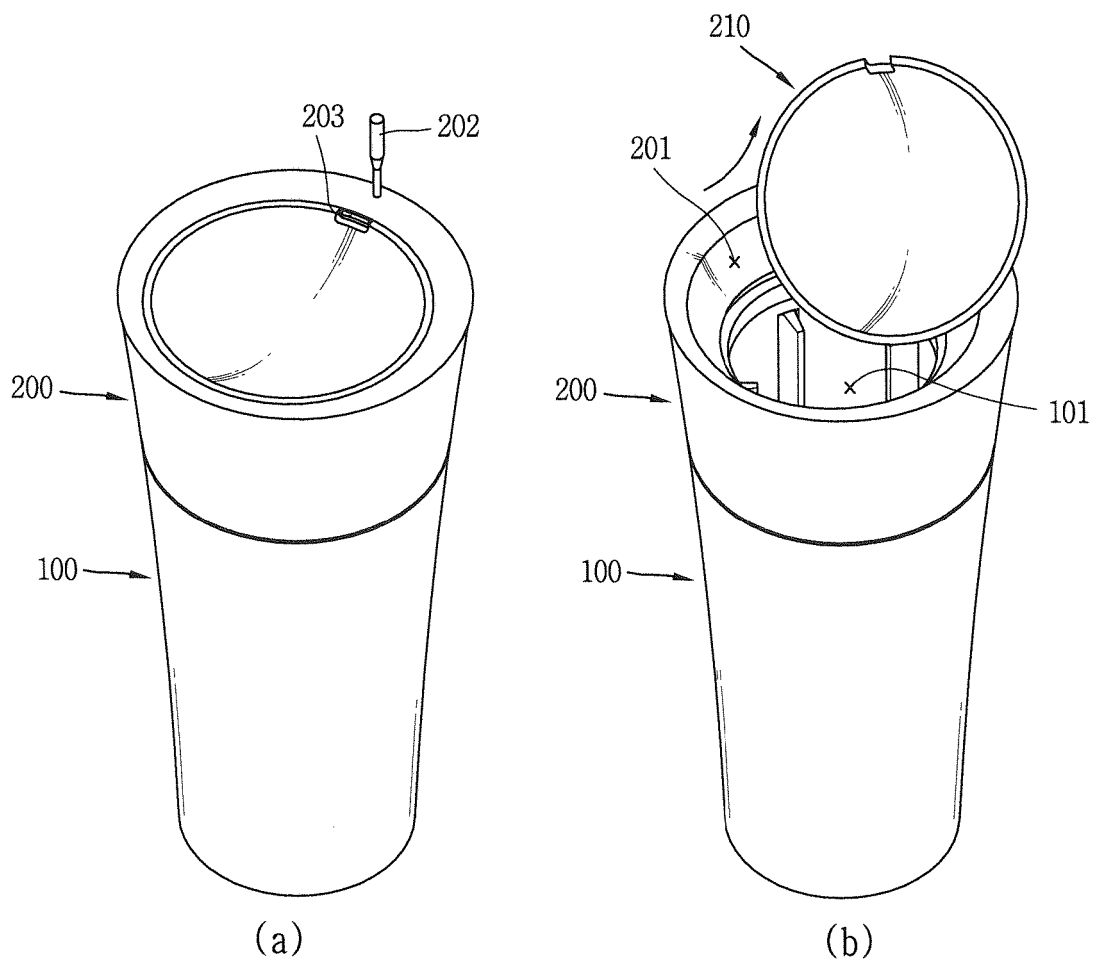


FIG. 2

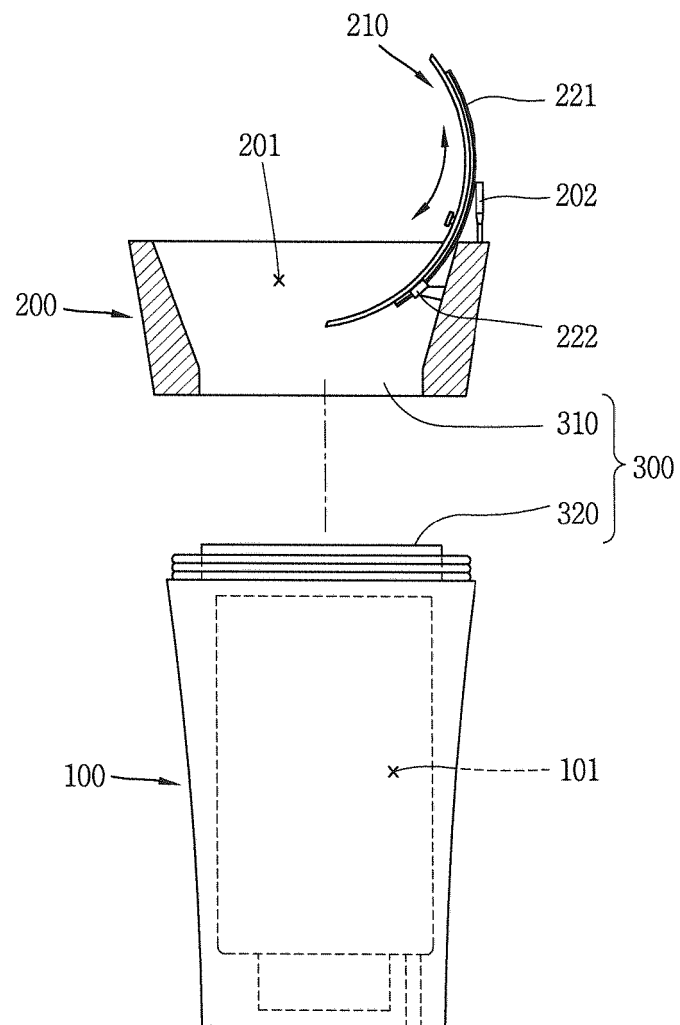


FIG. 3A

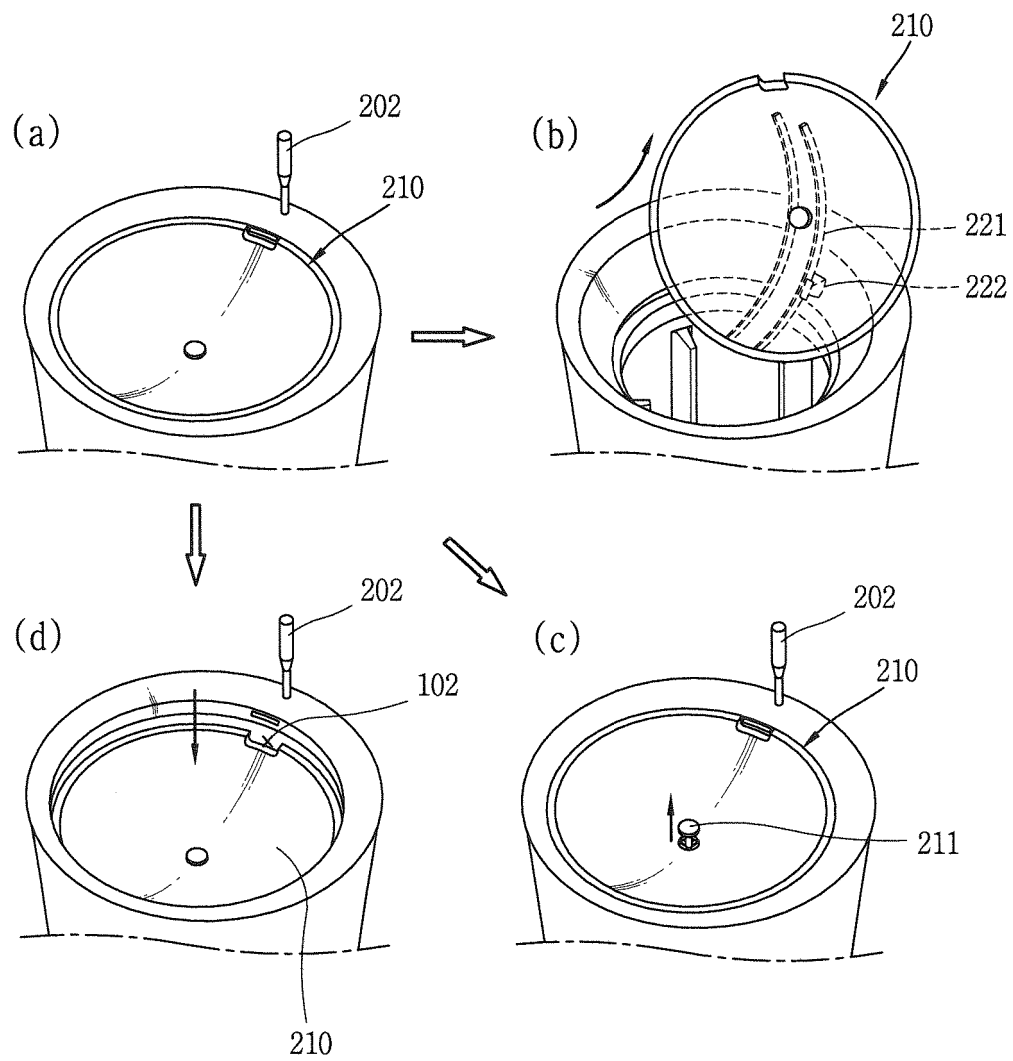


FIG. 3B

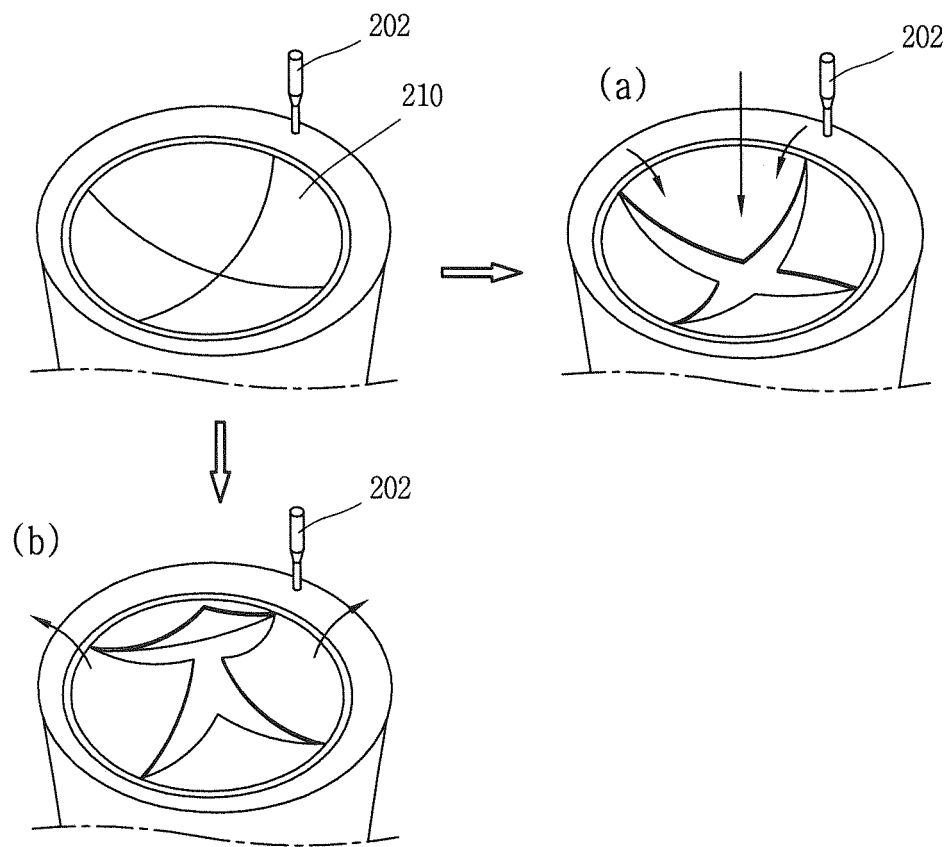


FIG. 4

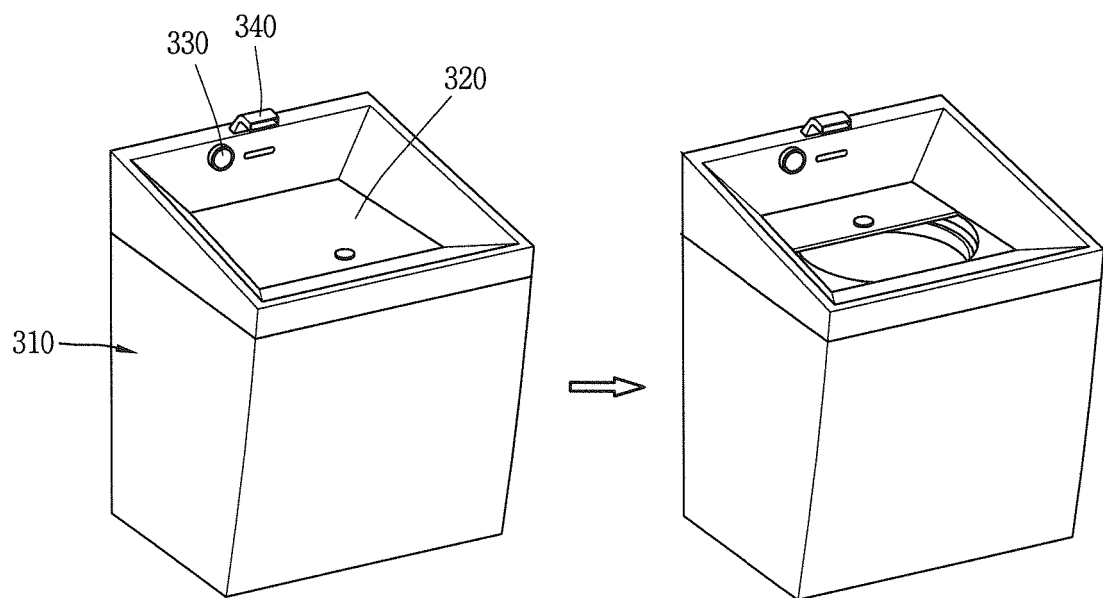


FIG. 5A

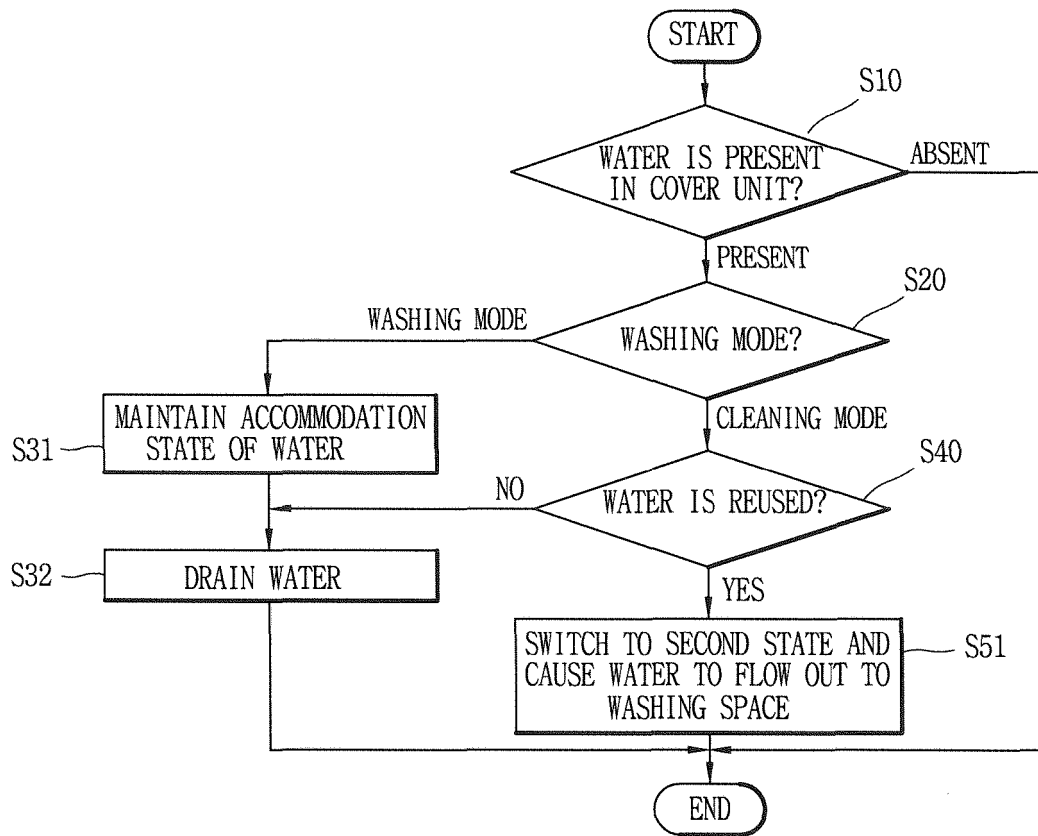


FIG. 5B

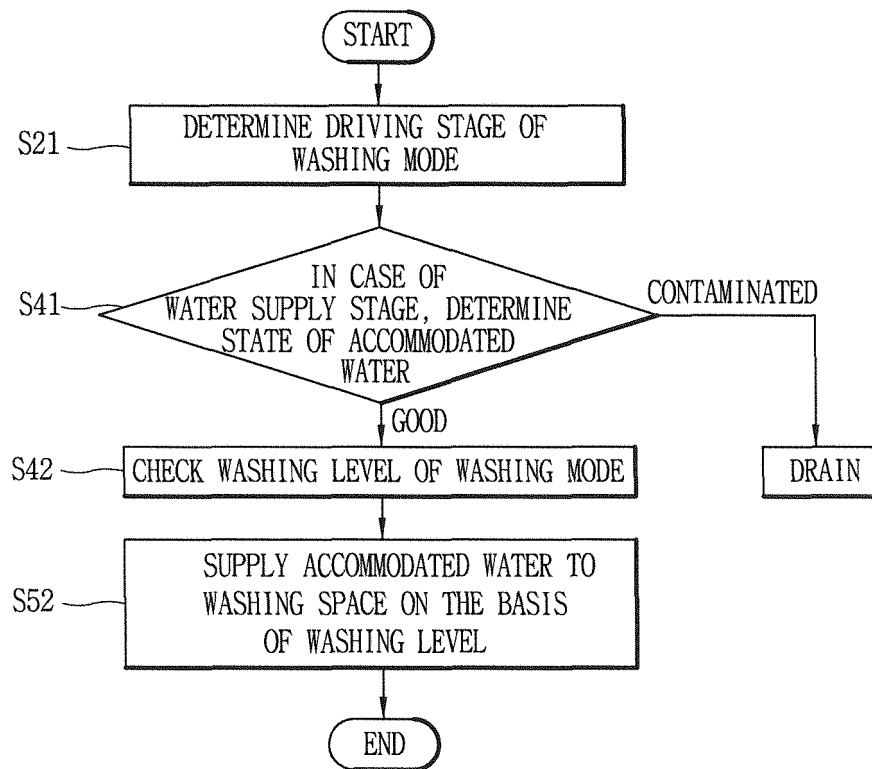


FIG. 6

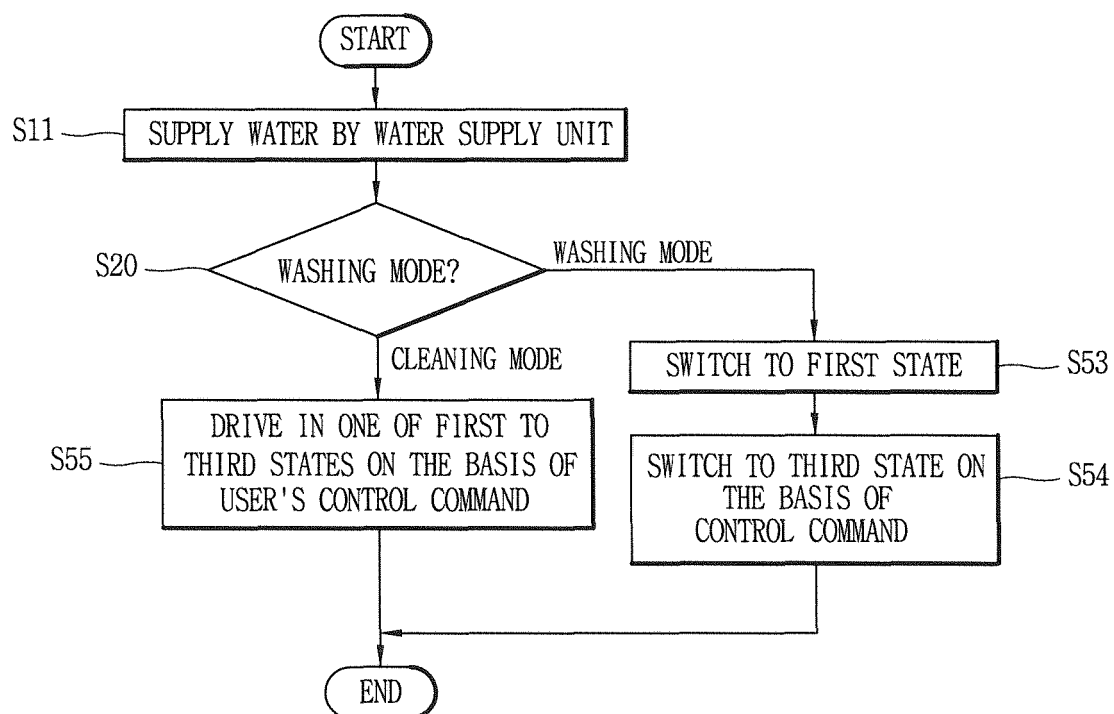


FIG. 7A

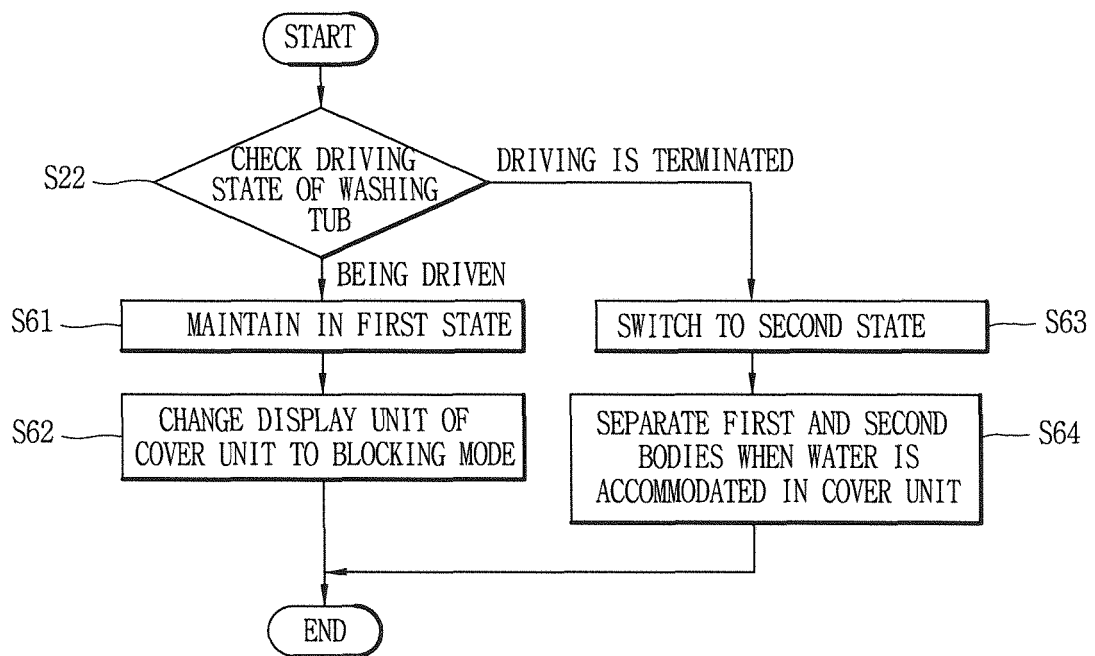


FIG. 7B

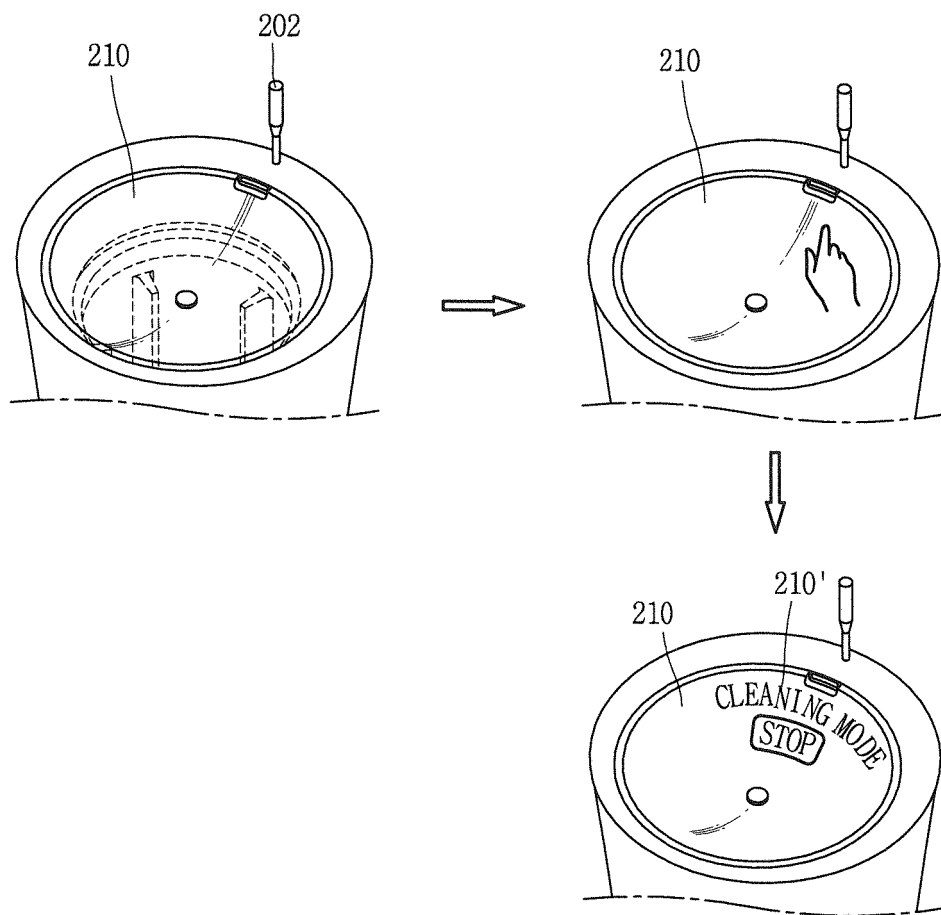
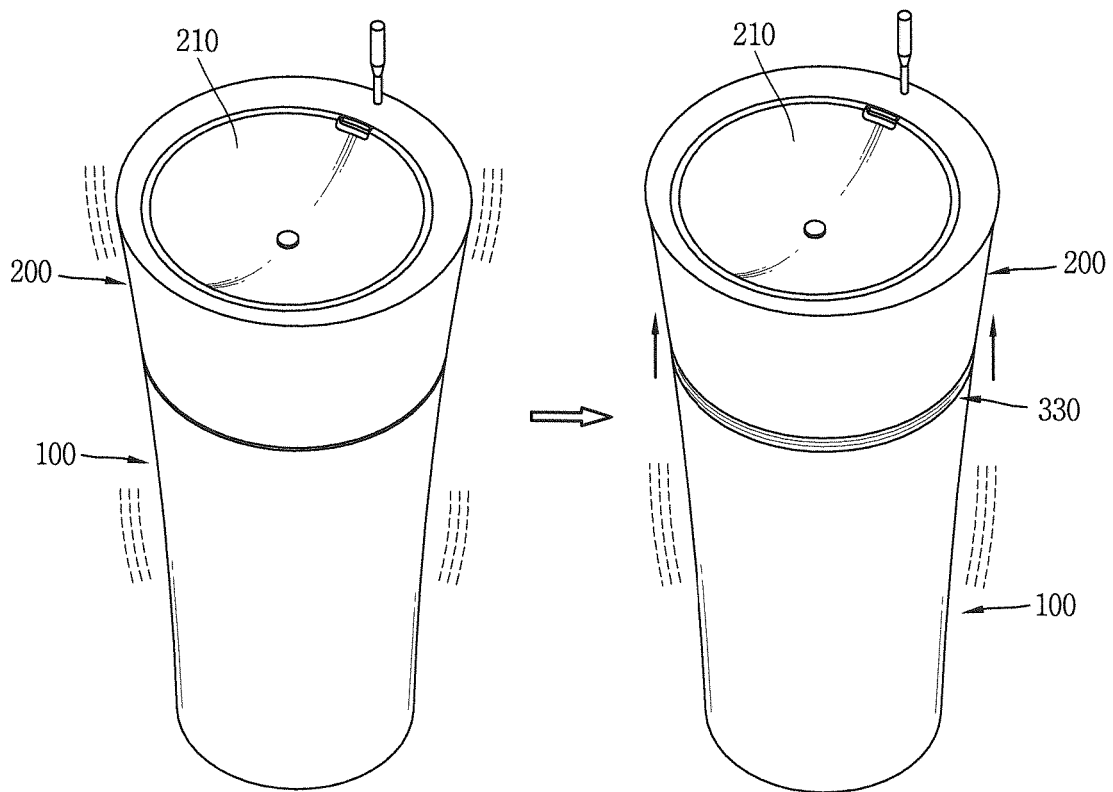


FIG. 8



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2013/012196

A. CLASSIFICATION OF SUBJECT MATTER

D06F 33/02(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

D06F 33/02; D06F 37/10; D06F 39/14; D06F 37/24; D06F 37/12; G06F 3/038

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models: IPC as above

Japanese Utility models and applications for Utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & Keywords: washing machine, basin, multi-purpose, coupling, transparent display.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 20-0360443 Y1 (OH, Kwang Choul) 30 August 2004 See line 1 on page 4 - line 11 on page 7; figure 3; and claim 1.	1-2,4-14,17-20
Y		3,15-16
Y	KR 10-2012-0044569 A (DONGBU DAEWOO ELECTRONICS CORPORATION) 08 May 2012 See paragraph [0017]; and claim 1.	3
Y	KR 10-2010-0120049 A (LG ELECTRONICS INC.) 12 November 2010 See paragraphs [0056]-[0057]; and figures 1, 2.	15-16
A	CN 20200137 U (YU WED) 05 October 2011 See paragraphs [0009]-[0010]; and figure 1.	1-20
A	US 2012-0256886 A1 (GRAMI RYU et al.) 11 October 2012 See paragraphs [0641]-[0642].	1-20

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

18 SEPTEMBER 2014 (18.09.2014)

Date of mailing of the international search report

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Name and mailing address of the ISA/KR



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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2013/012196

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		WO 2010-128729 A3	14/07/2011
CN 20200137 U	05/10/2011	NONE	
US 2012-0256886 A1	11/10/2012	CN 102682663 A	19/09/2012
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		KR 10-2012-0104476 A	21/09/2012
		KR 10-2012-0104477 A	21/09/2012
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		US 08823663 B2	02/09/2014
		US 08823741 B2	02/09/2014
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