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(54) **DISPENSER AND WASHING APPLIANCE**

(57) Provided is a dispenser (100), used for a washing appliance (1000), and a dispenser (100) body (10) and cover body (20). The body (10) is formed having an accommodating cavity (111) and a water inlet channel (61) in communication with the accommodating cavity (111); the accommodating cavity (111) is formed having an opening (110) located at the top of the body (10); the opening (110) is used for placing detergent; the opening (110) is also used for overflowing the liquid injected from a water inlet channel (61) into the accommodating cavity (111) so as to discharge the liquid to the exterior of the dispenser (100); the cover body (20) is configured to selectively open or close the opening (110).

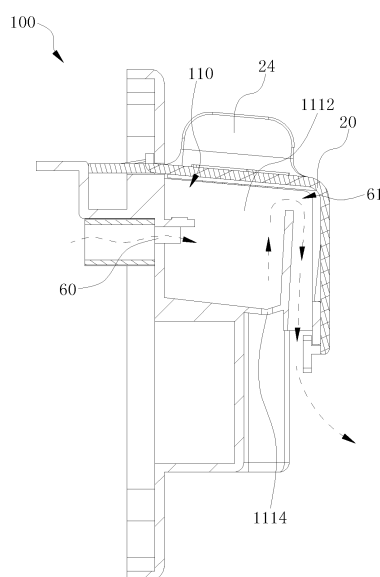


FIG. 5

EP 3 981 313 A1

Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to and benefits of Chinese Patent Applications No. 201910603596.7, 201921053613.6, 201910603908.4, 201921053592.8, and 201921053591.3, filed with China National Intellectual Property Administration on July 5, 2019, the entire disclosures of which are incorporated herein by their references.

TECHNICAL FIELD

[0002] The present disclosure relates to the field of washing technologies, and more particularly, to a dispenser and a washing appliance.

BACKGROUND

[0003] At present, in dishwashers, dispensers are usually used to dispense washing substances, such as powders, liquids, or tablets, into the dishwashers. The powders, liquids, or tablets dissolve to form detergents for washing dishes. However, a washing substance in a dispenser may fail to fall into the dishwasher totally. For example, a powder washing substance may stick to the dispenser.

SUMMARY

[0004] Implementations of the present disclosure provide a dispenser and a washing appliance. The dispenser according to the implementations of the present disclosure is used in a washing appliance. The dispenser includes: a main body having an accommodating chamber and a water inlet channel in communication with the accommodating chamber, wherein the accommodating chamber has an opening located at a top portion of the main body, the opening allows a detergent to be added and allows a liquid injected from the water inlet channel into the accommodating chamber to overflow to be discharged to an outside of the dispenser; and a cover body configured to selectively open or close the opening.

[0005] In the dispenser according to the implementations of the present disclosure, with the configuration of the water inlet channel and the accommodating chamber of the dispenser, water is allowed to flow into the accommodating chamber through the water inlet channel, and further, since the opening is located at the top portion of the main body, it is difficult for the water in the accommodating chamber to flow out of the dispenser, so that there is enough water in the accommodating chamber to dissolve a detergent. Therefore, the detergent can be fully mixed with the water before overflowing through the opening to the outside of the dispenser. Such a structure is simple and easy to implement.

[0006] The washing appliance according to the imple-

mentations of the present disclosure includes the dispenser as described above.

[0007] In the washing appliance according to the implementations of the present disclosure, with the configuration of the water inlet channel and the accommodating chamber of the dispenser, water is allowed to flow into the accommodating chamber through the water inlet channel, and further, since the opening is located at the top portion of the main body, it is difficult for the water in the accommodating chamber to flow out of the dispenser, so that there is enough water in the accommodating chamber to dissolve a detergent. Therefore, the detergent can be fully mixed with the water before overflowing to the outside of the dispenser through the opening. Such a structure is simple and easy to implement.

[0008] Additional aspects and advantages of the present disclosure will be given at least in part in the following description, or become apparent at least in part from the following description, or can be learned from practicing of the present disclosure.

BRIEF DESCRIPTION OF DRAWINGS

[0009] The above and/or additional aspects and advantages of the present disclosure will become more apparent and more understandable from the following description of implementations in conjunction with the accompanying drawings, in which:

FIG. 1 is a schematic three-dimensional view of a washing appliance according to an implementation of the present disclosure;

FIG. 2 is a schematic diagram showing a structure of a dispenser according to an implementation of the present disclosure;

FIG. 3 is another schematic diagram showing a structure of a dispenser according to an implementation of the present disclosure;

FIG. 4 is a schematic three-dimensional exploded view of a dispenser according to an implementation of the present disclosure;

FIG. 5 is a schematic cross-sectional view of a dispenser according to an implementation of the present disclosure;

FIG. 6 is another schematic diagram showing a structure of a dispenser according to an implementation of the present disclosure;

FIG. 7 is a yet another schematic diagram showing a structure of a dispenser according to an implementation of the present disclosure;

FIG. 8 is a schematic diagram showing a structure of a drive assembly of a dispenser according to an implementation of the present disclosure;

FIG. 9 is another schematic diagram showing a structure of a drive assembly of a dispenser according to an implementation of the present disclosure;

FIG. 10 is yet another schematic diagram showing a structure of a dispenser according to an implemen-

tation of the present disclosure;

FIG. 11 is yet another schematic diagram showing a structure of a dispenser according to an implementation of the present disclosure;

FIG. 12 is yet another schematic diagram showing a structure of a dispenser according to an implementation of the present disclosure;

FIG. 13 is a schematic diagram showing a structure of a dispensing apparatus observed from another angle according to an implementation of the present disclosure; and

FIG. 14 is a schematic exploded view of a drive assembly and a bottom plate according to an implementation of the present disclosure.

DESCRIPTION OF IMPLEMENTATIONS

[0010] The implementations of the present disclosure are described in detail below. Examples of the implementations are shown in the accompanying drawings, throughout which the same or similar reference numerals indicate the same or similar elements or elements with the same or similar functions. The implementations described below with reference to the accompanying drawings are exemplary, and are intended to explain the present disclosure, but should not be construed as limiting the present disclosure.

[0011] In the description of the present disclosure, it should be understood that the orientation or position relationship indicated by the terms "center", "longitudinal", "transverse", "length", "width", "thickness", "upper", "lower", "front", "rear", "left", "right", "vertical", "horizontal", "top", "bottom", "inner", "outer", "clockwise", or "counter-clockwise" etc. is based on the orientation or position relationship shown in the drawing, and is only for the convenience of describing the present disclosure and simplifying the description, rather than indicating or implying that the pointed device or element must have a specific orientation, or be constructed and operated in a specific orientation, and therefore cannot be understood as a limitation of the present disclosure. In addition, the terms "first" and "second" are only used for descriptive purposes, and cannot be understood as indicating or implying relative importance or implicitly indicating the number of indicated technical features. Therefore, the features defined with "first" and "second" may explicitly or implicitly include at least one of the features. In the description of the present disclosure, "plurality" means at least two, unless otherwise specifically defined.

Embodiment 1

[0012] FIG. 1 illustrates a schematic three-dimensional view of a washing appliance 1000 according to an implementation of the present disclosure. In an example illustrated in FIG. 1, the washing appliance 1000 is a drawer-type washing appliance. It can be understood that, in other implementations, the washing appliance 1000 may

be a washing appliance with other structures, e.g., a washing appliance having a pull-down door. Detailed description will be made below by taking the washing appliance 1000 being the drawer-type washing appliance as an example.

[0013] The washing appliance 1000 according to the implementation of the present disclosure includes a chamber body 200 and a dispenser 100. The chamber body 200 has a washing chamber 201 formed therein, and the dispenser 100 is mounted on an inner wall 2011 of the chamber body 200.

[0014] Specifically, in this implementation, the washing appliance 1000 may be, e.g., a dishwasher (for example, a drawer-type dishwasher) and a cleaning machine (for example, a drawer-type cleaning machine). In addition, generally, referring to FIG. 1, the washing appliance 1000 further includes a housing 300, and the chamber body 200 is located in the housing 300. The housing 300 may be made of a metallic material, e.g., a lightweight aluminum material, such that the housing 300 may have a relatively light weight. In this case, the chamber body 200 can also be made of a metallic material or a heat-resistant plastic material, as long as strength and heat resistance of the chamber body 200 can be guaranteed.

[0015] It should be noted that, in this implementation, the dispenser 100 is mounted on the inner wall 2011 of the washing chamber 201. It can be understood that, in other implementations, the dispenser 100 may be separately placed in the washing chamber 201 as a separate component. For example, the dispenser 100 may be detachably mounted on a carrying basket such as a dish basket of a dishwasher in a preferable manner that a cover body 20 is not hindered by dishware from opening. In the present disclosure, description is made by taking the dispenser 100 being mounted on the inner wall 2011 of the washing chamber 201 (as illustrated in FIG. 1) as an example.

[0016] In the implementations of the present disclosure, description is made by taking the washing appliance 1000 being the drawer-type dishwasher as an example. In the implementation illustrated in FIG. 1, the washing appliance 1000 is the drawer-type dishwasher. The chamber body 200 can be connected to the housing 300 through a guide rail (not illustrated in the figure), and the chamber body 200 can slide relative to the housing 300 to slide out of or into the housing 300 to open or close the washing chamber 201, such that the chamber body 200 can be loaded with tableware, and the drawer-type dishwasher can clean the tableware (an arrow A in FIG. 1 indicates a sliding direction of the chamber body 200).

[0017] It can be understood that, in other implementations, the washing appliance 1000 may alternatively be other types of dishwashers, such as a dishwasher having a pull-down door, which is not specifically limited here. It should be noted that in implementations in which the washing appliance 1000 is a dishwasher having a pull-down door, the dispenser 100 is not mounted on an inner wall of a door body but mounted on the inner wall 2011

of the washing chamber 201.

[0018] In the example of FIG. 1, the dispenser 100 is mounted on an inner wall 2011 perpendicular to the sliding direction of the chamber body 200. It can be understood that, in other implementations, the dispenser 100 may alternatively be mounted on an inner wall 2011 parallel to the sliding direction of the chamber body 200.

[0019] Referring to FIG. 2 to FIG. 6, in this implementation, the dispenser 100 includes a main body 10, the cover body 20, a bottom plate 30, and a drive assembly 40. The cover body 20 is slidably connected to the main body 10. The bottom plate 30 is movably connected to the main body 10, and the drive assembly 40 is connected to the cover body 20 and the bottom plate 30. It should be noted that the cover body 20 being movably arranged on the main body 10 may mean that the cover body 20 is slidably or rotatably arranged on the main body 10. In the present disclosure, detailed explanation is made by taking the cover body 20 being slidably arranged on the main body 10 as an example. It can be understood that, in other implementations, the cover body 20 may alternatively be rotatably arranged on the main body 10, e.g., the cover body 20 may be arranged in an upward flip cover style.

[0020] Referring to FIG. 4, specifically, the main body 10 includes an accommodating chamber body 11, a first guiding portion 12, and a mounting plate 14, and the accommodating chamber body 11 is mounted on the mounting plate 14. The accommodating chamber body 11 is connected on the mounting plate 14.

[0021] The accommodating chamber body 11 has an accommodating chamber 111 defined therein, and the accommodating chamber 111 has an opening 110 located at a top portion of the main body 10. The first guiding portion 12 is configured to guide the cover body 20 to slide on the main body 10. The main body 10 may be made of a plastic material. In an example, the main body 10 may be made of a polypropylene (PP) material. It can be understood that the main body 10 may be an integrally formed structure or a split-body molded structure, which is not specifically limited here.

[0022] The accommodating chamber 111 can be configured to carry a detergent for cleaning tableware, and the detergent can be in a form of powder, liquid, or tablet. That is, the user can open the opening 110 of the accommodating chamber 111 by sliding the cover body 20, and then load the detergent into the accommodating chamber 111 from the opening 110.

[0023] It should be noted that, in this implementation, the opening 110 being located at the top portion of the main body 10 can be understood as the opening 110 facing upwards, or the opening 110 being defined on a side wall of the accommodating chamber body 11, where the opening 110 faces towards an outer side of the side wall, or the opening 110 is defined in a side wall of the accommodating chamber body 11 and is inclined upwards.

[0024] In the examples illustrated in FIG. 1 and FIG.

2, the opening 110 of the washing chamber 201 of the chamber body 200 and the opening 110 of the accommodating chamber 111 of the dispenser 100 have the same direction and both face upwards.

[0025] Referring to FIG. 3 and FIG. 4, in this implementation, the accommodating chamber 111 includes a first accommodating chamber 1111 and a second accommodating chamber 1112 that are arranged in parallel. Specifically, the first accommodating chamber 1111 and the second accommodating chamber 1112 are arranged along a sliding direction of the cover body 20 (an arrow B in FIG. 3 indicates the sliding direction of the cover body). The opening 110 includes a first opening 1101 and a second opening 1102, both of which are located at the top portion of the main body 10. The first accommodating chamber 1111 has the first opening 1101. The second accommodating chamber 1112 has the second opening 1102.

[0026] In the example of FIG. 3, both the first accommodating chamber 1111 and the second accommodating chamber 1112 are substantially in a cuboid shape. Both the first opening 1101 and the second opening 1102 are substantially in a rectangular shape. It can be understood that, in other implementations, the first accommodating chamber 1111 and the second accommodating chamber 1112 may alternatively have other regular or irregular shapes, and the first opening 1101 and the second opening 1102 may also have other regular or irregular shapes.

[0027] Specifically, a tableware washing process of the drawer-type dishwasher usually includes a prewashing stage and a main washing stage. Here, a powder detergent can be used for cleaning in the prewashing stage, and a tablet detergent can be used for cleaning in the main washing stage. In this implementation, the first accommodating chamber 1111 can be configured to carry the powder detergent used in the prewashing stage, and the second accommodating chamber 1112 can be configured to carry the tablet detergent used in the main washing stage. That is, the user can load the powder detergent into the first accommodating chamber 1111 via the first opening 1101, and load the tablet detergent into the second accommodating chamber 1112 via the second opening 1102.

[0028] Referring to FIG. 2 to FIG. 4, the cover body 20 is slidable on the main body 10 to open or close the opening 110. Specifically, the cover body 20 can slide relative to the main body 10 to open or close the first opening 1101 and the second opening 1102. In this implementation, detailed description is made by taking the cover body 20 being able to open or close the first opening 1101 and the second opening 1102 as an example. It should be understood that, in other implementations, the cover body 20 may be configured to only open one of the first opening 1101 and the second opening 1102, while the other one of the first opening 1101 and the second opening 1102 may be opened in other ways such as by providing another cover body, which is not specifically limited here.

[0029] It should be noted that, in this implementation, the expression "the cover body 20 is slidable on the main body 10" means that the cover body 20 can arbitrarily translate and slide in a three-dimensional space enclosed by the main body 10, or that the cover body 20 can arbitrarily translate and slide within a desired range larger than a space enclosed by the main body 10 (for example, a range that extends beyond the space enclosed by the main body 10 but does not abut against tableware placed in the washing chamber 201). It should be noted that the three-dimensional space enclosed by the main body 10 is a smallest space formed by a regular three-dimensional pattern that can completely accommodate the entire body 10, such as a cuboid, or a cube, or other regular patterns.

[0030] In addition, in the implementation illustrated in FIG. 1, the dispenser 100 is mounted on the inner wall 2011 perpendicular to the sliding direction of the chamber body 200. The sliding direction of the cover body 20 is perpendicular to the sliding direction of the chamber body 200. It can be understood that, in other implementations, the dispenser 100 may alternatively be mounted on the inner wall 2011 parallel to the sliding direction of the chamber body 200, and in these implementations, the sliding direction of the cover body 20 is parallel to the sliding direction of the chamber body 200.

[0031] Specifically, the cover body 20 has a second guiding portion 21 and a protruding portion 24. The second guiding portion 21 is configured to cooperate with and be connected to the first guiding portion 12 to guide sliding of the cover body 20 relative to the main body 10. The protruding portion 24 is configured to be operated to drive the cover body 20 to slide relative to the main body 10. In this manner, when the user needs to slide the cover body 20, the user can push the protruding portion 24 to drive the cover body 20 to slide on the main body 10, thereby opening or closing the first opening 1101 and the second opening 1102.

[0032] Specifically, referring to FIG. 4, the first guiding portion 12 includes a first sliding groove 121 defined in the mounting plate 14 and a second sliding groove 122 defined in the accommodating chamber body 11, and both the first sliding groove 121 and the second sliding groove 122 are defined along the sliding direction of the cover body 20. A vertical plane where an extension direction of the second sliding groove 121 is located is different from a vertical plane where an extension direction of the second sliding groove 122 is located, and in this way, a plurality of degrees of freedom can be defined for the cover body 20 and thus the cover body 20 can slide more smoothly and stably.

[0033] In this implementation, the cover body 20 is L-shaped, and includes a horizontal folding portion 22 and a vertical folding portion 23. The horizontal folding portion 22 is located at the top portion of the main body 10, and is configured to open or close the first opening 1101 and the second opening 1102. The protruding portion 24 is arranged on the horizontal folding portion 22. The vertical

folding portion 23 is bent relative to the horizontal folding portion 22 and is located on a side of the horizontal folding portion 22. The second guiding portion 21 includes a first convex portion 211 formed on the horizontal folding portion 22 and a first convex portion 212 formed on the vertical folding portion 23. The first convex portion 211 is slip fit with the first sliding groove 121, and the first convex portion 212 is slip fit with the second sliding groove 122, thereby guiding the cover body 20 to slide on the main body 10.

[0034] It can be understood that, in other implementations, the first guiding portion 12 may be a convex portion and the second guiding portion 21 may be a sliding groove, or the first guiding portion 12 and the second guiding portion 21 each may include a convex portion and a sliding groove, specific arrangements of which are not limited here, as long as relative sliding between the cover body 20 and the main body 10 is attainable. In this implementation, the cover body 20 can be made of a heat-resistant plastic material, such that the plastic is easy to be molded and has low cost, and further, the cover body 20 has good heat resistance. In one example, the main body 10 can be made of the PP material.

[0035] In addition, in other implementations, the vertical folding portion 23 may be omitted to make the structure of the cover body 20 simpler.

[0036] In addition, in this implementation, the cover body 20 is directly arranged at the top portion of the main body 10, and is usually a rigid member that is neither compressible nor bendable. It can be understood that, in some implementations, the cover body 20 may be a flexible member that is compressible and bendable. In such an implementation, a winding mechanism may be arranged on a side of the accommodating chamber body 11, and the cover body 20 is at least partially wound in the winding mechanism. When there is a need to close the first opening 1101 and the second opening 1102, the cover body 20 may be pulled out of the winding mechanism and then pulled to slide on the main body 10 to close the first opening 1101 and the second opening 1102. After the first opening 1101 and the second opening 1102 are closed, one end of the cover body 20 can be fixed on the main body 10 to prevent the cover body 20 from being erroneously wound in the winding mechanism. When there is a need to open the first opening 1101 and the second opening 1102, once upon loosening the one end of the cover body 20, the winding mechanism may automatically wind the cover body 20 back to open the first opening 1101 and the second opening 1102. Of course, the cover body 20 can alternatively be bent instead of being wound.

[0037] Further, referring to FIG. 3 to FIG. 5, the main body 10 has a water inlet channel 60 and a water outlet channel 61 formed therein, the water inlet channel 60 is in communication with the second accommodating chamber 1112, the water outlet channel 61 is located at the top portion of the main body 10 and is in communication with the opening 110, and the water outlet channel

61 is configured to discharge a liquid, which is injected from the water inlet channel 60 into the accommodating chamber 111 and overflows from the opening 110, to an outside of the dispenser 100.

[0038] Here, the water inlet channel 60 is defined in the mounting plate 14. That is, the water inlet channel 60 is formed on the mounting plate 14.

[0039] Specifically, the accommodating chamber body 11 includes a first plate 112 connected to the mounting plate 14, and a second plate 113 connected to the first plate 112 and the second plate 113 faces towards the mounting plate 14. Here, the opening 110 is defined by the second plate 113, the first plate 112, and the mounting plate 14 together, and a top of the first plate 112 is higher than a top of the second plate 113 to define the water outlet channel 61.

[0040] Since the top of the first plate 112 is higher than the top of the second plate 113, water in the first accommodating chamber 1111 and water in the second accommodating chamber 1112 can be prevented from being exchanged with each other. That is, if a height of the top of the first plate 112 is smaller than a height of the top of the second plate 113, when water is fed into the first accommodating chamber 1111 from the water inlet channel 60, the water in the first accommodating chamber 1111 may flow from the first plate 112 into the second accommodating chamber 1112, rather than flowing from the second plate 113 into the washing chamber 201 of the washing appliance 1000. Therefore, the top of the first plate 112 being higher than the top of the second plate 113 can prevent the water in the first accommodating chamber 1111 from flowing into the second accommodating chamber 1112. Here, in this implementation, the first plate 112 is perpendicular to the mounting plate 14. It can be understood that, in other implementations, the first plate 112 and the mounting plate 14 are not limited to being perpendicular to each other. A specific positional relationship between the first plate 112 and the mounting plate 14 can be set based on different situations, which is not limited here.

[0041] Further, an end of the first plate 112 that faces away from the mounting plate 14 extends beyond the second plate 113, so as to guide the water to a desired position. That is, water flowing out from the second plate 113 does not flow to two sides of the second plate 113. Here, the water inlet channel 60 and the water outlet channel 61 match each other in quantity. That is, one water inlet channel 60 corresponds to one water outlet channel 61. Specific numbers of water inlet channels 60 and water outlet channels 61 are illustrated below with examples.

[0042] In an example, referring to FIG. 4, FIG. 6, and FIG. 7, the dispenser 100 includes the bottom plate 30 movably arranged on the main body 10. When the cover body 20 opens the opening 110 completely, a bottom of the first accommodating chamber 1111 is closed by the bottom plate 30, and when the cover body 20 closes the opening 110 completely, the bottom of the first accom-

modating chamber 1111 is opened by the bottom plate 30. That is, the bottom plate 30 is movably arranged at the bottom of the first accommodating chamber 1111 and configured to open or close the bottom of the first accommodating chamber 1111. In this case, a bottom of the second accommodating chamber 1112 is in a closed state. That is, the bottom of the second accommodating chamber 1112 is not provided with the bottom plate 30.

[0043] In such an example, one water inlet channel 60 and one water outlet channel 61 are provided, the water inlet channel 60 is located in the second accommodating chamber 1112, and the water outlet channel 61 is in communication with the second opening 1102. Therefore, a detergent in the first accommodating chamber 1111 can be discharged to the outside of the dispenser 100 through the bottom plate 30, and for a detergent in the second accommodating chamber 1112, as water is fed into the second accommodating chamber 1112 through the water inlet channel 60, the water in the second accommodating chamber 1112 dissolves the detergent in the second accommodating chamber 1112, and when a height of water in the second accommodating chamber 1112 is higher than a height of the second opening 1102, the water mixed with the detergent in the second accommodating chamber 1112 can be discharged to the outside of the dispenser 100 from the second opening 1102.

[0044] Referring to FIG. 7, in this implementation, a dispensing opening 1113 is defined at the bottom of the first accommodating chamber 1111. The bottom plate 30 is configured to open or close the dispensing opening 1113.

[0045] Referring to FIG. 7 to FIG. 9, in this implementation, the drive assembly 40 is connected to the bottom plate 30 and the cover body 20, and the drive assembly 40 is configured to, in a process of the cover body 20 closing the opening 110, drive the bottom plate 30 to move to open the bottom of the first accommodating chamber 1111.

[0046] The drive assembly 40 includes a first propelling member 41, a second propelling member 42, and a first elastic member 43.

[0047] The first propelling member 41 is connected to the cover body 20, the second propelling member 42 is connected to the bottom plate 30, and the first propelling member 41 is configured to, in a process of the cover body 20 closing the opening 110, abut against the second propelling member 42 to enable the bottom plate 30 to gradually open the bottom of the first accommodating chamber 1111.

[0048] Specifically, the first propelling member 41 is configured to, in a process of the cover body closing the first opening 1101 and the second opening 1102, drive the bottom plate 30 to move relative to the main body 10 to gradually open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111.

[0049] The first elastic member 43 is connected to the bottom plate 30, and configured to apply an elastic force to the bottom plate 30 to maintain a tendency of the bot-

tom plate 30 to close a bottom of the accommodating chamber 111. The first elastic member 43 may be an elastic element such as a spring.

[0050] Specifically, in this implementation, the first elastic member 43 is connected to the bottom plate 30, and the first elastic member 43 is configured to apply an elastic force to the bottom plate 30 to maintain a tendency of the bottom plate 30 to close the dispensing opening 1113 at the bottom of the first accommodating chamber 1111.

[0051] That is, the first elastic member 43 can be configured to, when the cover body 20 opens the first opening 1101 and the second opening 1102, apply an elastic force to the bottom plate 30 to enable the bottom plate 30 to maintain a state of closing the first accommodating chamber 1111, and the first propelling member 41 can be configured to, in a process of the cover body 20 closing the first opening 1101 and the second opening 1102, abut against the second propelling member 42 to enable the bottom plate 30 to overcome the elastic force of the first elastic member 43 and gradually open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111.

[0052] It should be noted that, in this implementation, the bottom plate 30 being movable relative to the main body 10 to open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111 may mean that the bottom plate 30 is rotatable relative to the main body 10 to open the dispensing opening 1113 or the bottom plate 30 is slidable relative to the main body 10 to open the dispensing opening 1113.

[0053] Specifically, referring to FIG. 7, in an example, the bottom plate 30 is rotatably arranged at the bottom of the first accommodating chamber 1111. That is, the bottom plate 30 is rotatable relative to the main body 10 to open or close the dispensing opening 1113.

[0054] Referring to FIG. 7 to FIG. 9, the bottom plate 30 includes a first rotating shaft portion 311 rotatably connected to the main body 10, the bottom plate 30 is rotatable about the first rotating shaft portion 311 relative to the main body 10, and the first elastic member 43 is sleeved on the first rotating shaft portion 311 and abuts against the main body 10. The first propelling member 41 is a first resisting portion 411 arranged on the cover body 20, and the second propelling member 42 is a second resisting portion 421 arranged on the bottom plate 30.

[0055] Referring to FIG. 7 to FIG. 9, in such an example, when the cover body 20 opens the entire first opening 1101, the first resisting portion 411 is separated from the second resisting portion 421, and the bottom plate 30 closes the dispensing opening 1113 at the bottom of the first accommodating chamber 1111 under an action of the elastic force of the first elastic member 43.

[0056] Referring to FIG. 8 and FIG. 9, in the process of the cover body 20 closing the first opening 1101 and the second opening 1102 (an arrow C in FIG. 7 indicates the sliding direction along which the cover body 20 opens

the first opening 1101), first the first resisting portion 411 gradually approaches the second resisting portion 421, and then the first resisting portion and the second resisting portion 421 abut against each other, at this moment, the cover body 20 slides further under an action of an external force, the first resisting portion 411 applies a force to the second resisting portion 421, and the second resisting portion 421 is rotated under driving of the first resisting portion 411, such that the bottom plate 30, after overcoming the elastic force of the first elastic member 43, is rotated relative to the main body 10 to open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111 (an arrow D in FIG. 7 indicates a rotation direction of the bottom plate 30). Then, the powder detergent in the first accommodating chamber 1111 is dispensed down into the washing chamber 201 of the chamber body 200 to meet a washing requirement in the prewashing stage of the drawer-type dishwasher.

[0057] In addition, referring to FIG. 9, when the bottom plate 30 opens the first accommodating chamber 1111, the first resisting portion 411 and the second resisting portion 421 still abut against each other and are in surface contact with each other. In this way, the first resisting portion 411 can stably abut against the second resisting portion 421, thereby preventing erroneous rotation of the bottom plate 30 due to an action of the first elastic member 43 from closing the bottom of the first accommodating chamber 1111.

[0058] It should be noted that since the prewashing stage is a first started washing stage of the dishwasher, the user can close the first opening 1101 and the second opening 1102 through the cover body 20 after the detergents are loaded in the first accommodating chamber 1111 and the second accommodating chamber 1112. During a process of closing the first opening 1101 and the second opening 1102, due to the presence of the drive assembly 40, the cover body 20 may drive the bottom plate 30 to open the bottom of the first accommodating chamber 1111 to directly dispense the detergent required in the prewashing stage in a quantitative manner.

[0059] It can be understood that, in other examples, the first elastic member 43 can also be configured to, in a process of the cover body 20 closing the first opening 1101 and the second opening 1102, maintain a tendency of the bottom plate 30 to open the first accommodating chamber 1111. That is, in such examples, in a process of the cover body 20 opening the first opening 1101 and the second opening 1102, the elastic force of the first elastic member 43 needs to be overcome to enable the bottom plate 30 to close the first accommodating chamber 1111.

[0060] In addition, in an implementation illustrated in FIG. 7, the first rotating shaft portion 311 is rotatably connected to a side of the first accommodating chamber 1111, and the bottom plate 30 is configured to rotate about the side of the first accommodating chamber 1111 to open the dispensing opening 1113. It can be under-

stood that, in other implementations, the first rotating shaft portion 311 may be rotatably connected to a middle position of the bottom of the first accommodating chamber 1111, such that when the bottom plate 30 is rotated, one portion of the bottom plate 30 is rotated towards an interior of the first accommodating chamber 1111, and the other portion of the bottom plate 30 is rotated towards an exterior of the first accommodating chamber 1111, a specific arrangement manner of which is not limited here.

[0061] In addition, referring to FIG. 10 and FIG. 11, as described above, in some implementations, instead of being rotatably connected to the main body 10, the bottom plate 30 may be slidably arranged at the bottom of the first accommodating chamber 1111. That is, the bottom plate 30 can slide relative to the main body 10 to open or close the dispensing opening 1113.

[0062] In such an example, the first propelling member 41 may be a third resisting portion 412 and a fourth resisting portion 413 that are arranged on two sides of the cover body 20, and the second propelling member 42 may be a fifth resisting portion 422 arranged on the bottom plate 30 and located between the third resisting portion 412 and the fourth resisting portion 413.

[0063] Specifically, with continued reference to FIG. 10 and FIG. 11, when the cover body 20 opens the first opening 1101 and the second opening 1102 completely, the bottom plate 30 closes the dispensing opening 1113 at the bottom of the first accommodating chamber 1111 (see FIG. 10), and the third resisting portion 412 abuts against the fifth resisting portion 422.

[0064] Referring to FIG. 11, when there is a need to close the first opening 1101 and the second opening 1102, the cover body 20 can be slid to close the first opening 1101 and the second opening 1102. In this process, the fourth resisting portion 413 gradually approaches the fifth resisting portion 422, and when the fourth resisting portion 413 abuts against the fifth resisting portion 422, the fourth resisting portion 413 continues to drive the fifth resisting portion 422 to drive the bottom plate 30 to slide relative to the main body 10 (the sliding direction of the bottom plate 30 is the same as the sliding direction of the cover body 20), such that the bottom plate 30 opens the dispensing opening 1113 (see FIG. 11) at the bottom of the first accommodating chamber 1111 to dispense the powder detergent in the first accommodating chamber 1111 into the washing chamber 201 of the chamber body 200. When dispensing of the detergent is completed and a next time of loading is required, the cover body 20 can be slid to open the first opening 1101 and the second opening 1102. During a sliding process of the cover body 20, the third resisting portion 412 gradually approaches the fifth resisting portion 422, and when the third resisting portion 412 abuts against the fifth resisting portion 422, the third resisting portion 412 continues to drive the fifth resisting portion 422 to move to drive the bottom plate 30 to slide relative to the main body 10 (the sliding direction of the bottom plate 30 is the same as the sliding direction of the cover body 20), such that

the bottom plate 30 gradually closes the dispensing opening 1113 at the bottom of the first accommodating chamber 1111 (see FIG. 11). When the cover body 20 opens the entire first opening 1101, the bottom plate 30 closes the entire dispensing opening 1113, and at this time, the user can load the detergent into the first accommodating chamber 1111 through the first opening 1101.

[0065] It can be understood that, in such an example, a linkage mechanism 40 may not include the first elastic member 43 as described above.

[0066] For example, in an example, the drive assembly 40 can be configured in such a manner that when the cover body 20 closes the first opening 1101 and the second opening 1102, the bottom plate 30 moves in a direction opposite to a direction indicated by the bottom plate 30 to open the bottom of the first accommodating chamber 1111, a specific arrangement manner of which can be set based on actual situations.

[0067] Referring to FIG. 6 and FIG. 7, a working principle of the dispenser 100 of the present disclosure will be introduced below by taking the bottom of the first accommodating chamber 1111 being provided with the bottom plate 30 and the bottom of the second accommodating chamber 1112 being closed as an example.

[0068] First, when there is a need to load the detergent, the cover body 20 is slid to open the first opening 1101 and the second opening 1102, and at this time, the bottom plate 30 closes the bottom of the first accommodating chamber 1111 under the action of the first elastic member 43. In this manner, the powder detergent used in the pre-washing stage can be loaded in the first accommodating chamber 1111, and the tablet detergent used in the main washing stage can be loaded in the second accommodating chamber 1112.

[0069] Subsequently, the cover body 20 can be slid to close the first opening 1101 and the second opening 1102. During the sliding process, the cover body 20 drives, via the drive assembly 40, the bottom plate 30 to rotate to open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111, thereby implementing dispensing of the powder detergent. At this time, the chamber body 200 of the drawer-type dishwasher can be pushed into the housing 300 and the prewashing stage is entered.

[0070] After the prewashing stage is over, the main washing stage is entered. In the main washing stage, external water is delivered into the second accommodating chamber 1112 through the water inlet channel 60. After entering the second accommodating chamber 1112, the water can dissolve the detergent in the second accommodating chamber 1112, such that the water and the detergent in the second accommodating chamber 1112 are fully mixed with each other. When the water in the second accommodating chamber 1112 is higher than the second opening 1102, since the water outlet channel 60 is in communication with the second opening 1102, the water in the second accommodating chamber 1112 will overflow from the second opening 1102, and then

flows along the water outlet channel 61 to the washing chamber 201 of the washing appliance 1000 for use in the main washing stage.

[0071] In another example, the bottom plate 30 and the dispensing opening 1113 in the first accommodating chamber 1111 can be omitted. That is, bottoms of both the first accommodating chamber 1111 and the second accommodating chamber 1112 are in the closed state.

[0072] In such an example, two water inlet channels 60 and two water outlet channels 61 are provided, and arranged in one-to-one correspondence in the first accommodating chamber 1111 and the second accommodating chamber 1112. That is, one water inlet channel 60 and one water outlet channel 61 are arranged in the first accommodating chamber 1111, and one water inlet channel 60 and one water outlet channel 61 are arranged in the second accommodating chamber 1112.

[0073] In this case, the bottoms of both the first accommodating chamber 1111 and the second accommodating chamber 1112 are in the closed state. That is, neither of the bottoms of the first accommodating chamber 1111 and the second accommodating chamber 1112 is provided with the bottom plate 30 and the dispensing opening 1113.

[0074] Referring to FIG. 5 (in which dashed arrows indicate a water flow direction in the second accommodating chamber 1112, and a water flow direction in the first accommodating chamber 1111 is the same as the water flow direction in the second accommodating chamber 1112), in such an example, water enters the first accommodating chamber 1111 from the water inlet channel 60 in the first accommodating chamber 1111 and enters the second accommodating chamber 1112 from the water inlet channel 60 in the second accommodating chamber 1112. In this case, both the first accommodating chamber 1111 and the second accommodating chamber 1112 are fully filled with water. The water in the first accommodating chamber 1111 and the water in the second accommodating chamber 1112 dissolve the detergent in the first accommodating chamber 1111 and the detergent in the second accommodating chamber 1112. When the water in the first accommodating chamber 1111 is higher than the first opening 1101 and the water in the second accommodating chamber 1112 is higher than the second opening 1102, the water in the first accommodating chamber 1111 and the water in the second accommodating chamber 1112 overflow the first opening 1101 and the second opening 1102, respectively, and then flow into the washing chamber 201 of the washing appliance 1000.

[0075] Referring to FIG. 3 and FIG. 12, a working principle of the dispenser of the present disclosure will be introduced below by taking the bottoms of both the first accommodating chamber 1111 and the second accommodating chamber 1112 being closed as an example.

[0076] First, when there is a need to load the detergent, the cover body 20 is slid to open the first opening 1101 and the second opening 1102, such that the tablet or

powder detergent used in the prewashing stage can be loaded in the first accommodating chamber 1111, and the tablet or powder detergent used in the main washing stage can be loaded in the second accommodating chamber 1112.

[0077] Subsequently, the cover body 20 can be slid to close the first opening 1101 and the second opening 1102. After the cover body 20 closes the first opening 1101 and the second opening 1102, external water is delivered into the first accommodating chamber 1111 through the water inlet channel 60. After entering the first accommodating chamber 1111, the water can dissolve the detergent in the first accommodating chamber 1111, such that the water and the detergent in the first accommodating chamber 1111 are fully mixed with each other. When the water in the first accommodating chamber 1111 is higher than the first opening 1101, since the water outlet channel 60 is in communication with the first opening 1101, the water in the first accommodating chamber 1111 overflows from the first opening 1101, and then flows along the water outlet channel 61 to the washing chamber 201 of the washing appliance 1000 for use in the prewashing stage.

[0078] After the prewashing stage is over, the main washing stage is entered. In the main washing stage, external water is delivered into the second accommodating chamber 1112 through the water inlet channel 60. After entering the second accommodating chamber 1112, the water dissolves the detergent in the second accommodating chamber 1112, such that the water and the detergent in the second accommodating chamber 1112 are fully mixed with each other. When the water in the second accommodating chamber 1112 is higher than the second opening 1102, since the water outlet channel 60 is in communication with the second opening 1102, the water in the second accommodating chamber 1112 overflows from the second opening 1102, and then flows along the water outlet channel 60 to the washing chamber 201 of the washing appliance 1000 for use in the main washing stage.

[0079] In addition, it should be noted that in the above different examples, volumes of the first accommodating chamber 1111 and the second accommodating chamber 1112 are set in advance, such that when the user loads the detergents, the first accommodating chamber 1111 and the second accommodating chamber 1112 can measure the detergents. It is appropriate to set the volume of the first accommodating chamber 1111 to be equal to a volume of the detergent to be dispensed in each prewashing stage, and the volume of the second accommodating chamber 1112 to be greater than a volume of the tablet detergent used in each main washing stage.

[0080] Further, when the bottom of the accommodating chamber 111 is in the closed state, the accommodating chamber body 11 has a drain hole 1114 defined at the bottom of the accommodating chamber 111. That is, when the bottom of the first accommodating chamber

1111 is in the closed state, the drain hole 1114 is defined in the bottom of the first accommodating chamber 1111, and when the bottom of the second accommodating chamber 1112 is in the closed state, the drain hole 1114 is defined in the bottom of the second accommodating chamber 1112.

[0081] Since the water in the accommodating chamber 111 overflows from the opening 110 to the washing chamber 201 of the washing appliance 1000 when a height of the water in the accommodating chamber 111 is higher than a height of the opening 110, i.e., the water in the accommodating chamber 111 does not overflow from the opening 110 when the height of the water in the accommodating chamber 111 is lower than the height of the opening 110, a large amount of water may remain in the accommodating chamber 111. With the drain hole 1114, the water lower than the opening 110 in the accommodating chamber 111 can flow out of the accommodating chamber 111 from the drain hole 1114, thereby avoiding a residual of the water mixed with the detergent in the accommodating chamber 111. In this manner, the water mixed with the detergent in the accommodating chamber 111 can fully flow into the washing chamber 201, further, washing efficiency of the washing appliance 1000 is improved, and the residual of the water mixed with the detergent in the accommodating chamber 111 is avoided. Here, the drain hole 1114 may be circular. Of course, in other implementations, the drain hole 1114 may not limited to being circular. A specific shape of the drain hole 1114 can be set based on different situations. For example, the drain hole 1114 may be triangular, rectangular, or the like, and the specific shape of the drain hole 1114 is not limited here.

[0082] Specifically, a bottom surface of the accommodating chamber 111 is inclined downwardly towards the drain hole 1114.

[0083] When the bottom surface of the accommodating chamber 111 is horizontally flat, the water in the accommodating chamber 111 may not fully enter the drain hole 1114, thereby leading to a residual of water in the accommodating chamber 111. When the bottom surface of the accommodating chamber 111 is inclined downwardly towards the drain hole 1114, i.e., the bottom surface of the accommodating chamber 111 has an inclined surface, the inclined surface is inclined along the drain hole 1114, and the water in the accommodating chamber 111 can enter the drain hole 1114 along the inclined surface, such that the water in the accommodating chamber 111 can fully enter the drain hole 1114 before entering the washing chamber 201 of the washing appliance 1000, and it is possible to prevent the residual of water in the washing chamber 201.

[0084] In summary, the dispenser 100 according to the implementations of the present disclosure includes the main body 10 and the cover body 20. The main body 10 is formed with the accommodating chamber 111 and the water inlet channel 60 in communication with the accommodating chamber 111. The accommodating chamber

111 has the opening located at the top portion of the main body 10. The opening 110 is used for addition of the detergent, and allows the liquid injected from the water inlet channel 60 into the accommodating chamber 111 to overflow to be discharged to the outside of the dispenser 100. The cover body 20 is configured to selectively open or close the opening 110.

[0085] In the dispenser 100 according to the implementations of the present disclosure, the water inlet channel 60 and the accommodating chamber 111 of the dispenser 100 are arranged in such a manner that water can flow into the accommodating chamber 111 from the water inlet channel 60, and further, the opening 110 is located at the top portion of the main body 10, such that it is difficult for the water in the accommodating chamber 111 to flow out of the dispenser 100, hence there is enough water in the accommodating chamber 111 to dissolve the detergent. Therefore, the detergent and the water can be fully mixed with each other before overflowing from the opening 100 to the outside of the dispenser 100. Such a structure is simple and easy to implement.

Embodiment 2

[0086] Features of the washing appliance 1000 in Embodiment 2 are substantially the same as those of the washing appliance in Embodiment 1. Explanation of the washing appliance in Embodiment 1 is applicable to the washing appliance in Embodiment 2. For simplicity, only differences between the washing appliance in Embodiment 1 and the washing appliance in Embodiment 2 will be described in detail below, and for contents other than the differences, reference may be made to the same or similar contents of the washing appliance in Embodiment 1. The features of the washing appliance in Embodiment 1 and the features of the washing appliance in Embodiment 2 can be combined with each other without contradiction.

[0087] Referring to FIG. 2 to FIG. 4, the cover body 20 is slidable on the main body 10 to open or close the opening 110. Specifically, the cover body 20 is slidable on the main body 10 to open or close at least one of the first opening 1101 and the second opening 1102. That is, the cover body 20 is configured to selectively open or close at least one of the first opening 1101 and the second opening 1102.

[0088] In this implementation, detailed description is made by taking the cover body 20 being able to open or close the first opening 1101 and the second opening 1102 as an example. It should be understood that, in other implementations, the cover body 20 may open only one of the first opening 1101 and the second opening 1102, while the other one of the first opening 1101 and the second opening 1102 may be opened in other ways such as by providing another cover body, which not specifically limited here. In this implementation, the cover body 20 is arranged in the accommodating chamber body 11.

[0089] Referring to FIG. 7, FIG. 13, and FIG. 14, the

drive assembly 40 is arranged on the main body 10, and configured to drive the bottom plate 30 to move, enabling the bottom plate 30 to close and open the dispensing opening.

[0090] Specifically, the drive assembly 40 includes a drive member 41 and a transmission member 42, the transmission member 42 is connected to the bottom plate 30, and the drive member 41 is configured to drive, via the transmission member 42, the bottom plate 30 to move to enable the bottom plate 30 to close and open the dispensing opening 1113.

[0091] The drive assembly 40 is configured to drive the bottom plate 30 to move to open the dispensing opening 1113.

[0092] It should be noted that, in this implementation, the bottom plate 30 being configured to move in the three-dimensional space enclosed by the main body 10 to close or open the dispensing opening 1113 means that the bottom plate 30 is rotatable relative to the main body 10 under the drive of the drive assembly 40 to open the dispensing opening 1113, or the bottom plate 30 is slidable relative to the main body 10 to open the dispensing opening 1113. That is, the bottom plate 30 is rotatably or slidably connected to the main body 10. In this implementation, description is mainly given by taking the bottom plate 30 being rotatably connected to the main body 10 as an example.

[0093] Specifically, referring to FIG. 6 and FIG. 7, in an example, the bottom plate 30 is rotatably arranged at the bottom of the first accommodating chamber 1111. That is, the bottom plate 30 is rotatable relative to the main body 10 to open or close the dispensing opening 1113. Referring to FIG. 6, FIG. 7, FIG. 13, and FIG. 14, the drive assembly 40 may be a driving device such as a solenoid valve or a motor. The bottom plate 30 includes a rotating shaft 311, and is rotatably connected to the main body 10 through the rotating shaft 311, and the rotating shaft 311 is located on a side of the bottom plate 30. The transmission member 42 is connected to the rotating shaft 311. The drive member 41 is configured to drive, via the transmission member 42, the rotating shaft 311 to rotate to enable the bottom plate 30 to rotate.

[0094] That is, the drive member 41 can drive, via the transmission member 42, the bottom plate 30 to rotate relative to the main body 10 to open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111 (FIG. 7 is a schematic diagram showing a state in which the bottom plate 30 opens the dispensing opening 1113).

[0095] Specifically, referring to FIG. 13 and FIG. 14, in an example, the drive member 41 is a solenoid valve. Specifically, the solenoid valve may include a retractable ejector pin. When the solenoid valve is energized, the ejector pin is ejected, and when the solenoid valve is de-energized, the ejector pin is retracted. The transmission member 42 includes a transmission rod, and the ejector pin abuts against the transmission rod. One end of the transmission rod abuts against the ejector pin of the so-

lensoid valve, and the other end of the transmission rod is fixedly connected to the rotating shaft 311 of the bottom plate 30.

[0096] When there is a need to open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111, simply by energizing the solenoid valve, the ejector pin of the solenoid valve is ejected to make the transmission rod rotate, such that the rotating shaft 311 drives the bottom plate 30 to rotate to open the bottom of the first accommodating chamber 1111, thereby realizing the dispensing of the powder detergent in the prewashing stage of the drawer-type dishwasher.

[0097] In such an example, the prewashing stage may require no manual dispensing, and the detergent can be dispensed automatically when washing is started. Such a dispensing operation is simple and reliable, and improves user experience.

[0098] In addition, it can be understood that, in such an implementation, the drive assembly 40 may further include an elastic member 43 connected to the bottom plate 30. The elastic member 43 is configured to apply an elastic force to the bottom plate 30 to maintain a tendency of the bottom plate 30 to close the dispensing opening 1113 at the bottom of the first accommodating chamber 1111. Specifically, the elastic member 43 can be sleeved on the rotating shaft 311 and abut against the main body 10. The elastic member 43 may be an elastic element such as a spring.

[0099] That is, the elastic member 43 can be configured to: when the solenoid valve is not in operation, apply an elastic force to the bottom plate 30 to enable a state of the bottom plate 30 closing the first accommodating chamber 1111. When the solenoid valve is energized and operates, the ejector pin drives the transmission member 42 to drive the bottom plate 30 to rotate, such that the bottom plate 30 can overcome the elastic force of the elastic member 43 to gradually open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111.

[0100] It should be noted that, in such an example, due to the presence of the elastic member 43, the elastic member 43 may apply the elastic force to the bottom plate 30 constantly. Therefore, when the bottom plate 30 opens the bottom of the first accommodating chamber 1111, the solenoid valve needs to be kept in an energized state to enable the bottom plate 30 to be kept in a state of opening the bottom of the first accommodating chamber 1111.

[0101] It can be understood that, in such an example, the elastic member 43 may also be configured to apply an elastic force to the bottom plate 30 to maintain a tendency of the bottom plate 30 to open the dispensing opening 1113 at the bottom of the first accommodating chamber 1111. In this manner, when the solenoid valve is de-energized, the elastic member 43 enables the bottom plate 30 to be kept in a state of opening the dispensing opening 1113 at the bottom of the first accommodating chamber 1111. When there is a need to load the deter-

gent, the solenoid valve needs to be energized to enable the bottom plate 30 to close the dispensing opening 1113. When the detergent needs to be dispensed, simply by powering off the solenoid valve, the bottom plate 30 can open the dispensing opening 1113 under the action of the elastic member 43, a specific arrangement manner of which can be set based on actual situations.

[0102] In addition, it can be understood that, in some implementations, the drive member 41 may be a motor, a motor shaft of the motor may be connected to the rotating shaft 311 of the bottom plate 30 through the transmission member 42, and the motor, when rotated, can drive a rotation of the bottom plate 30 via the transmission member. In such implementations, the transmission member 42 may be a transmission structure in other forms, such as a gear transmission assembly, a pulley transmission assembly, and so on. A specific transmission manner is not limited here, as long as it can be ensured that the motor, when operating, is capable of driving the bottom plate 30 to rotate.

[0103] It should be noted that since the prewashing stage is the first washing stage of the dishwasher to begin, after the detergents are loaded in the first accommodating chamber 1111 and the second accommodating chamber 1112, the drive assembly 40 can drive the bottom plate 30 to open the bottom of the first accommodating chamber 1111 for directly and automatically dispensing the detergent required in the prewashing stage in a quantitative manner.

[0104] In addition, in the implementation illustrated in FIG. 6, the rotating shaft 311 is located on a side of the bottom plate 30, and the bottom plate 30 is rotated about a side of the accommodating chamber 1111 to open the dispensing opening 1113. It can be understood that, in other implementations, the rotating shaft 311 may be located at a middle position of the bottom plate, when the bottom plate 30 is rotated, one portion of the bottom plate 30 is rotated towards the interior of the first accommodating chamber 1111, and the other portion of the bottom plate 30 is rotated towards the exterior of the first accommodating chamber 1111. A specific arrangement manner of the rotating shaft 311 is not limited here.

[0105] In addition, it can be understood that, in some implementations, the bottom plate 30 may be slidably arranged on the main body 10, and the drive member 41 is configured to drive, via the transmission member 42, the bottom plate 30 to slide relative to the main body 10, enabling the bottom plate 30 to close or open the dispensing opening 1113.

[0106] In such implementations, transmission via the transmission member 42 can be implemented through a gear and rack transmission mode or a screw and nut mode. For example, a rack portion is arranged on the bottom plate 30 and engages with a gear, and the motor drives the gear to rotate to drive the rack portion to move, thereby driving the bottom plate 30 to move relative to the main body 10. A specific arrangement manner of the transmission member 42 is not limited here.

[0107] In summary, the dispenser 100 according to the implementation of the present disclosure includes the main body 10, the cover body 20, the bottom plate 30, and the drive assembly 40. The first accommodating chamber 1111, the second accommodating chamber 1112, and the water inlet channel 60 are formed in the main body 10.

[0108] The second accommodating chamber 1112 and the second accommodating chamber 1112 are arranged in parallel. The first accommodating chamber 1111 has the first opening 1101 located at the top portion of the main body 10 and the dispensing opening 1113 located at the bottom of the first accommodating chamber 1111, and the second accommodating chamber 1112 has the second opening 1102 located at the top portion of the main body 10. The water inlet channel 60 is in communication with the second accommodating chamber 1112. The liquid injected from the water inlet channel 60 into the second accommodating chamber 1112 overflows from the second opening 1102 to be discharged to the outside of the dispenser 100. The cover body 20 is configured to selectively open or close at least one of the first opening 1101 and the second opening 1102.

[0109] The bottom plate 30 is movably arranged on the main body 10. The drive assembly 40 is connected to the bottom plate 30. The drive assembly 40 is configured to drive the bottom plate 30 to move, enabling the bottom plate 30 to close or open the dispensing opening 1113. In the dispenser 100 according to the implementations of the present disclosure, the drive assembly 40 can drive the bottom plate 30 to open the dispensing opening 1113 for dispensing the detergent in the first accommodating chamber 1111, such that the dispensing of the detergent in the first accommodating chamber 1111 can be automatically controlled. In this case, the operation is simple and the user experience is improved. In addition, the second accommodating chamber 1112 can contain a sufficient amount of water to dissolve the detergent in the second accommodating chamber 1112, thereby preventing falling of the solid detergent into the washing chamber 201 of the washing appliance 1000 and interfering with the normal operation of the washing appliance 1000.

[0110] In the description of this specification, descriptions with reference to the terms "an implementation", "some implementations", "illustrative implementation", "examples", "specific examples", or "some examples", etc. mean that specific features, structures, materials or characteristics described in conjunction with the implementation or example are included in at least one implementation or example of the present disclosure. In this specification, the schematic representations of the above terms do not necessarily refer to the same implementation or example. Moreover, the described specific features, structures, materials or characteristics may be combined in any one or more implementations or examples in a suitable manner.

[0111] Although the implementations of the present disclosure have been shown and described above, those

skilled in the art can understand that various changes, modifications, substitutions, and variations can be made to these implementations without departing from the principle and purpose of the present disclosure. The scope of the present disclosure is defined by the claims as attached and their equivalents.

Claims

1. A dispenser, for use in a washing appliance, the dispenser comprising:

a main body having an accommodating chamber and a water inlet channel in communication with the accommodating chamber, wherein the accommodating chamber has an opening located at a top portion of the main body, the opening configured to allow a detergent to be added and to allow a liquid injected from the water inlet channel into the accommodating chamber to overflow to be discharged to an outside of the dispenser; and
a cover body configured to selectively open or close the opening.

2. The dispenser according to claim 1, wherein the main body further has a water outlet channel in communication with the opening, and the water outlet channel is configured to discharge, to the outside of the dispenser, the liquid injected from the water inlet channel into the accommodating chamber and overflowing through the opening.
3. The dispenser according to claim 2, wherein the main body comprises a mounting plate and an accommodating chamber body connected to the mounting plate, the accommodating chamber and the water outlet channel are defined in the accommodating chamber body, the water inlet channel is defined in the mounting plate, and the cover body is arranged on the accommodating chamber body.
4. The dispenser according to claim 3, wherein the accommodating chamber body has a drain hole formed at a bottom of the accommodating chamber.
5. The dispenser according to claim 4, wherein a bottom surface of the accommodating chamber is inclined downwards towards the drain hole.
6. The dispenser according to claim 3, wherein the accommodating chamber body comprises a first plate connected to the mounting plate and a second plate connected to the first plate and facing towards the mounting plate, and a top of the first plate is higher than a top of the second plate to define the water outlet channel.

7. The dispenser according to claim 6, wherein an end of the first plate facing away from the mounting plate extends beyond the second plate.

8. The dispenser according to claim 5, wherein the accommodating chamber comprises a first accommodating chamber and a second accommodating chamber that are arranged in parallel, the opening comprises a first opening and a second opening, the first accommodating chamber comprises the first opening located at the top portion of the main body, the second accommodating chamber comprises the second opening located at the top portion of the main body, and the water inlet channel is in communication with at least one of the first accommodating chamber and the second accommodating chamber.

9. The dispenser according to claim 1, wherein the cover body is slidably arranged on the main body, and the cover body is configured to slide on the main body to open or close the opening.

10. The dispenser according to claim 8, further comprising a bottom plate and a drive assembly connected to the bottom plate, wherein the first accommodating chamber comprises the first opening located at the top portion of the main body and a dispensing opening located at a bottom of the first accommodating chamber, the bottom plate is movably arranged on the main body, and the drive assembly is configured to drive the bottom plate to move to enable the bottom plate to close or open the dispensing opening.

11. The dispenser according to claim 10, wherein the drive assembly comprises a drive member and a transmission member, the transmission member is connected to the bottom plate, and the drive member is configured to drive, via the transmission member, the bottom plate to move to enable the bottom plate to close or open the dispensing opening.

12. The dispenser according to claim 11, wherein the bottom plate is rotatably arranged on the main body via a rotating shaft, the transmission member is connected to the rotating shaft, and the drive member is configured to drive, via the transmission member, the rotating shaft to rotate to enable the rotating shaft the bottom plate to rotate.

13. The dispenser according to claim 11, wherein the bottom plate is slidably arranged on the main body, and the drive member is configured to drive, via the transmission member, the bottom plate to slide relative to the main body, to enable the bottom plate to close or open the dispensing opening.

14. The dispenser according to claim 11, wherein the drive assembly comprises an elastic member con-

nected to the transmission member, and the elastic member is configured to maintain, via the transmission member, a tendency of the bottom plate to close the dispensing opening or a tendency of the bottom plate to open the dispensing opening.

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15. The dispenser according to claim 8, further comprising a drive assembly configured to connect the cover body and the bottom plate, wherein the drive assembly is configured to drive, in a process of the cover body closing the first opening and the second opening, the bottom plate to move to open the dispensing opening. 10
16. The dispenser according to claim 15, wherein the drive assembly comprises a first propelling member connected to the cover body and a second propelling member connected to the bottom plate, and the first propelling member is configured to, in a process of the cover body closing the first opening, abut against the second propelling member to enable the bottom plate to open the dispensing opening. 15 20
17. The dispenser according to claim 16, wherein the drive assembly further comprises a first elastic member connected to the second propelling member and configured to maintain, via the second propelling member, a tendency of the bottom plate to close the dispensing opening. 25 30
18. The dispenser according to claim 15, wherein the cover body is slidably arranged on the main body to selectively open or close at least one of the first opening and the second opening. 35
19. The dispenser according to claim 15, wherein the bottom plate is slidably arranged on the main body, and the drive assembly is configured to drive, in the process of the cover body closing the first opening and the second opening, the bottom plate to slide to open the dispensing opening. 40
20. A washing appliance, comprising the dispenser according to any one of claims 1 to 19. 45

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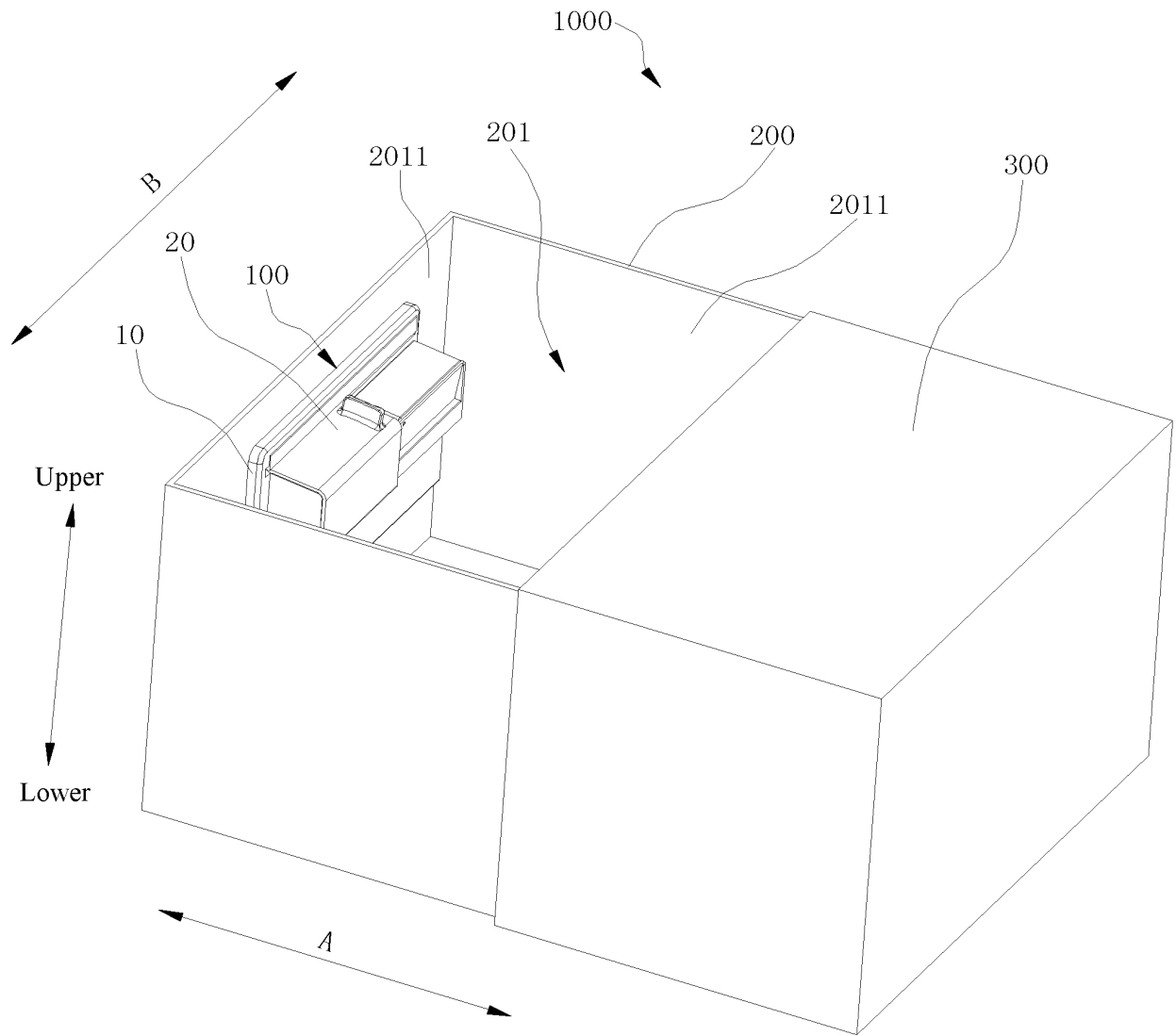


FIG. 1

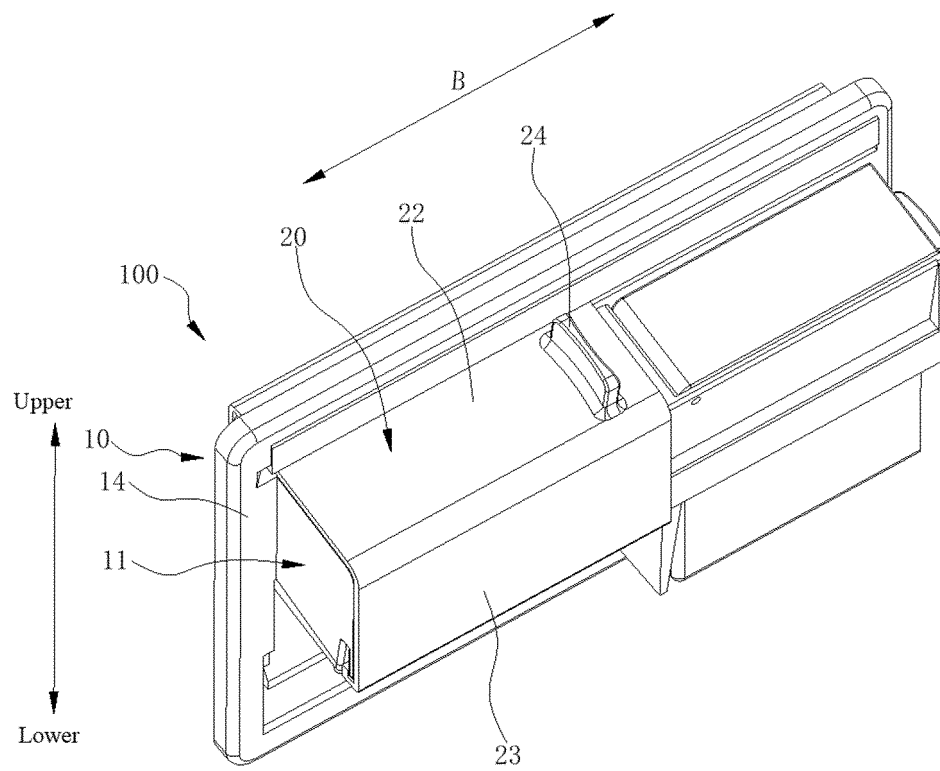


FIG. 2

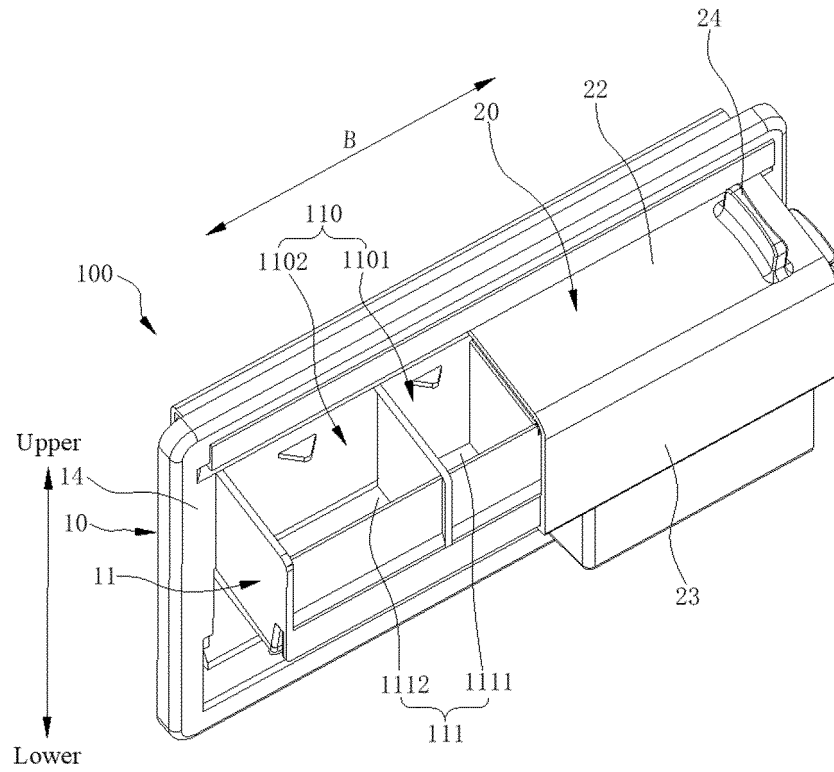


FIG. 3

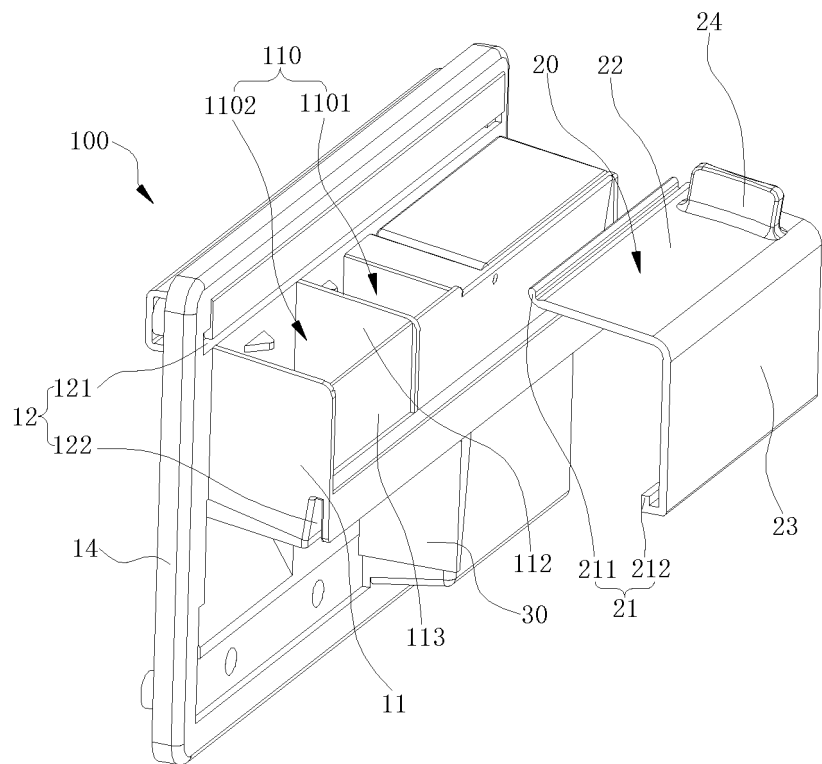


FIG. 4

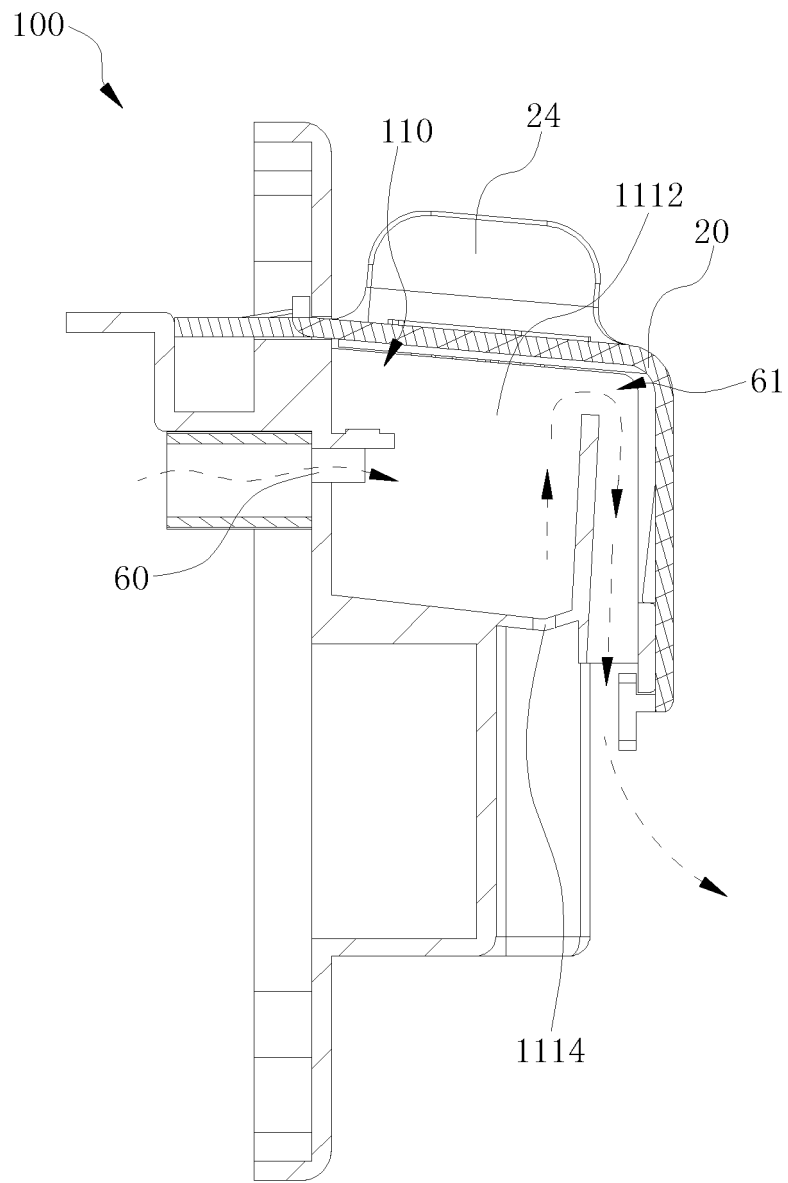


FIG. 5

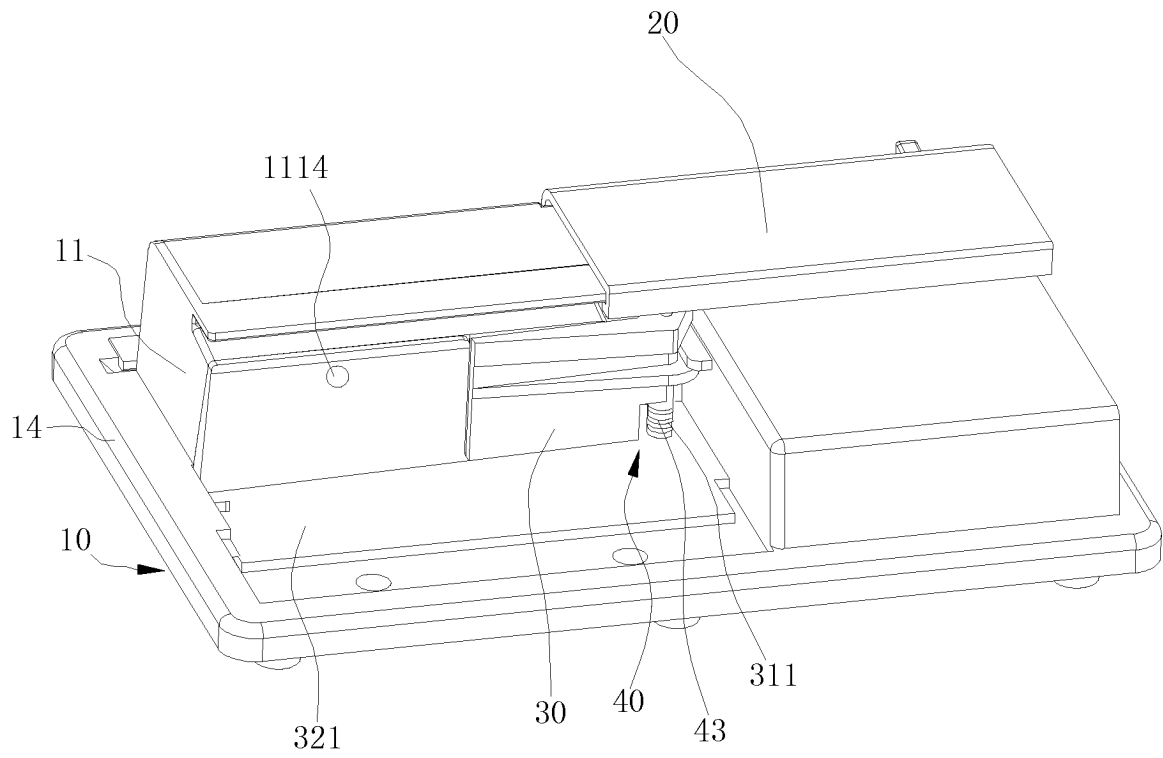


FIG. 6

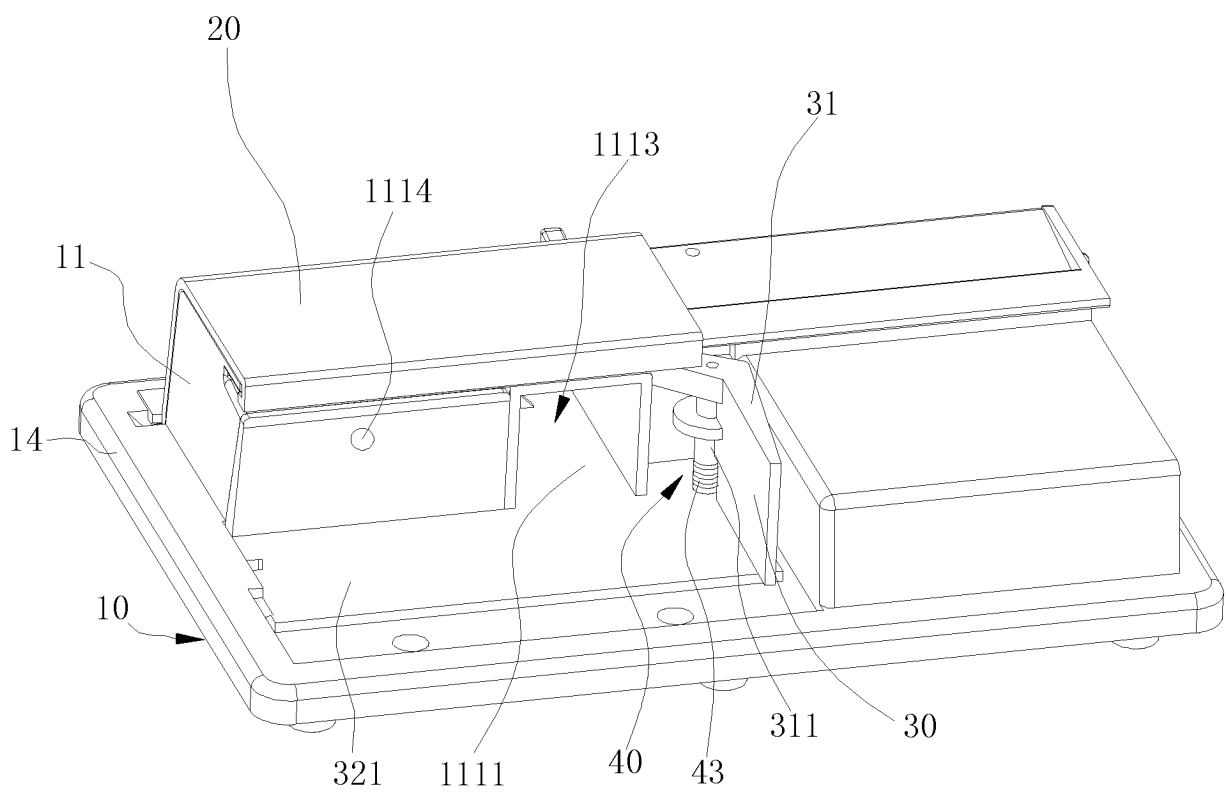


FIG. 7

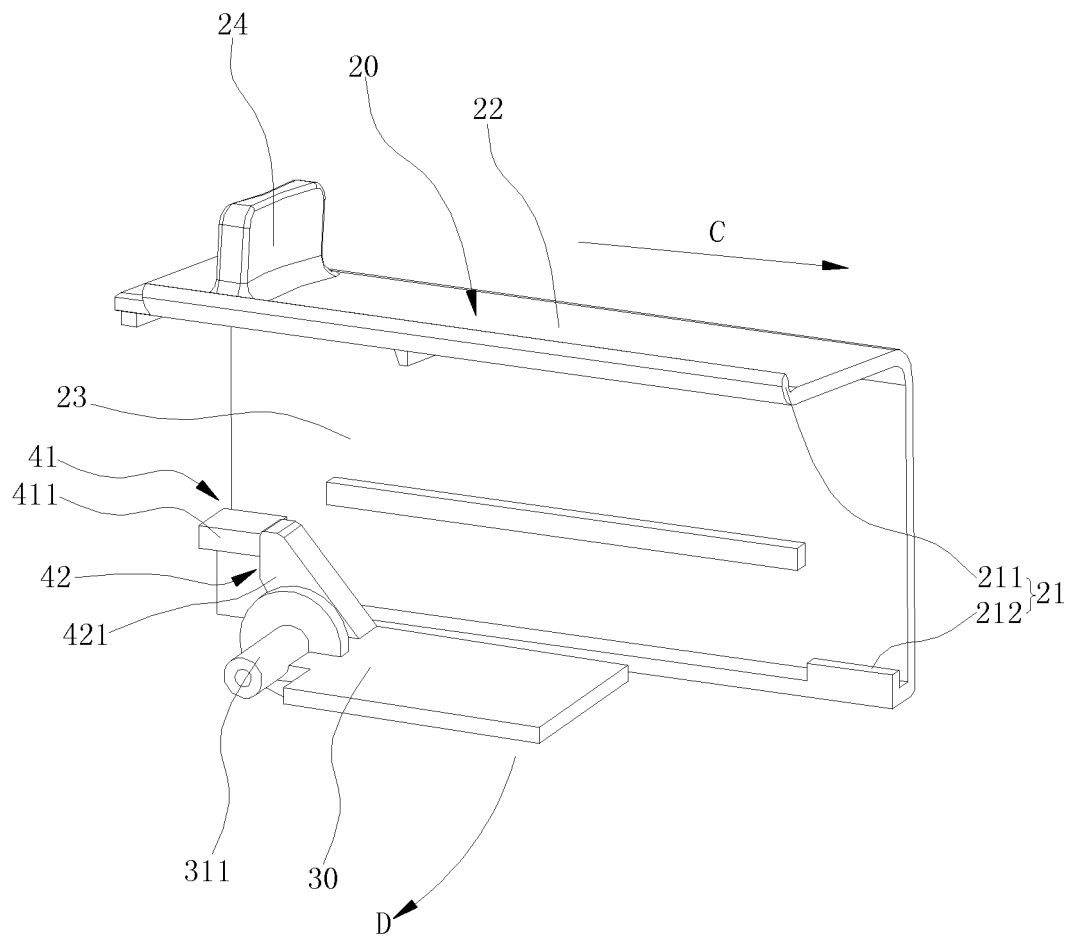


FIG. 8

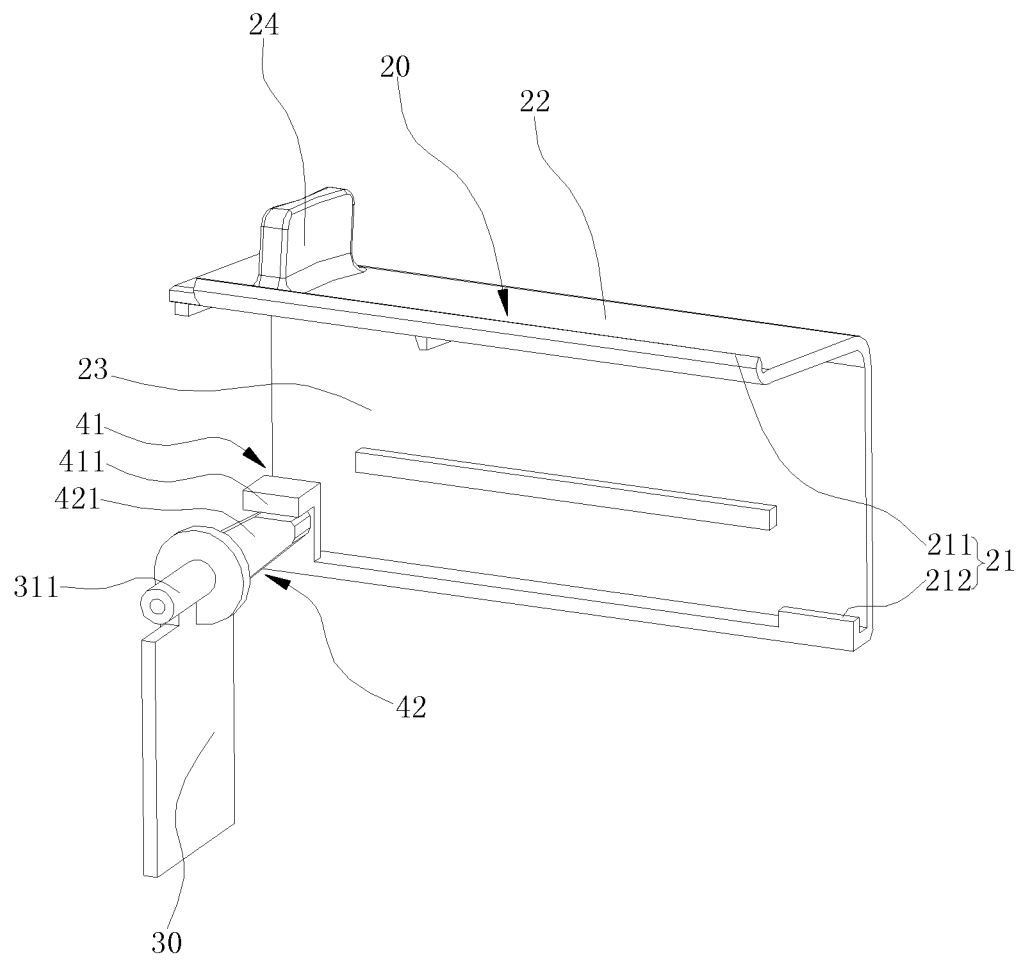


FIG. 9

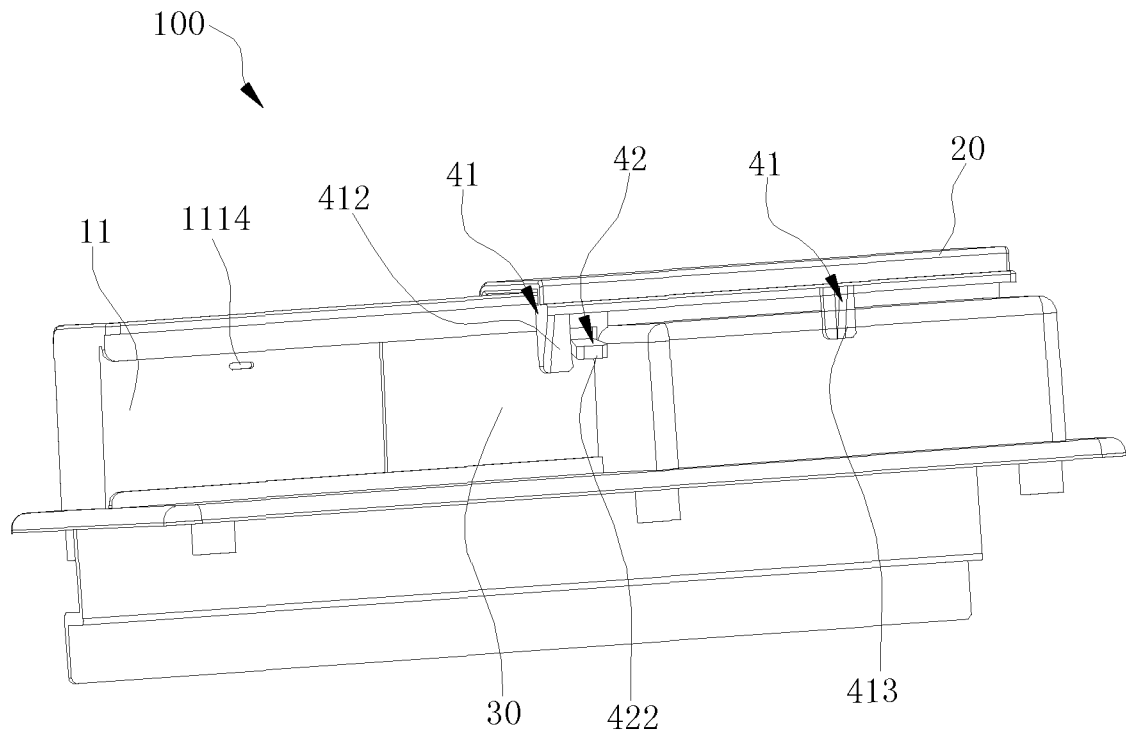


FIG. 10

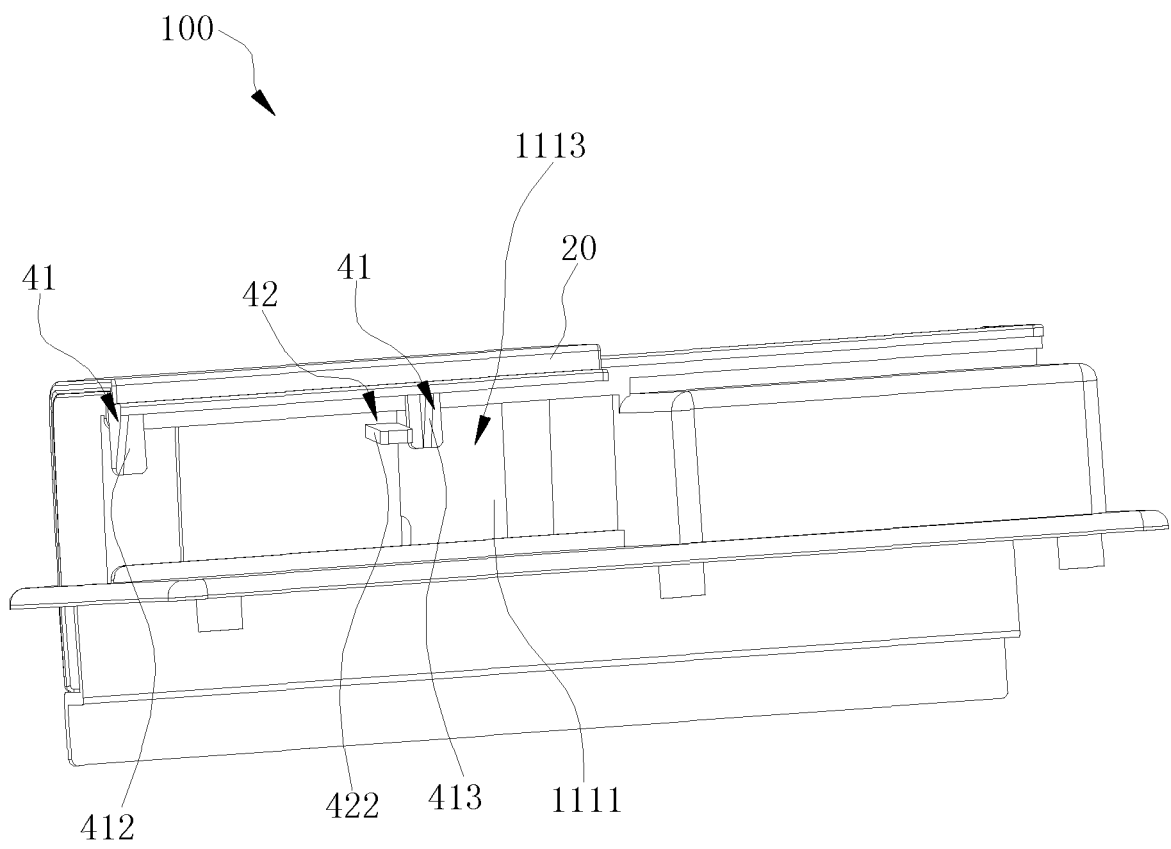


FIG. 11

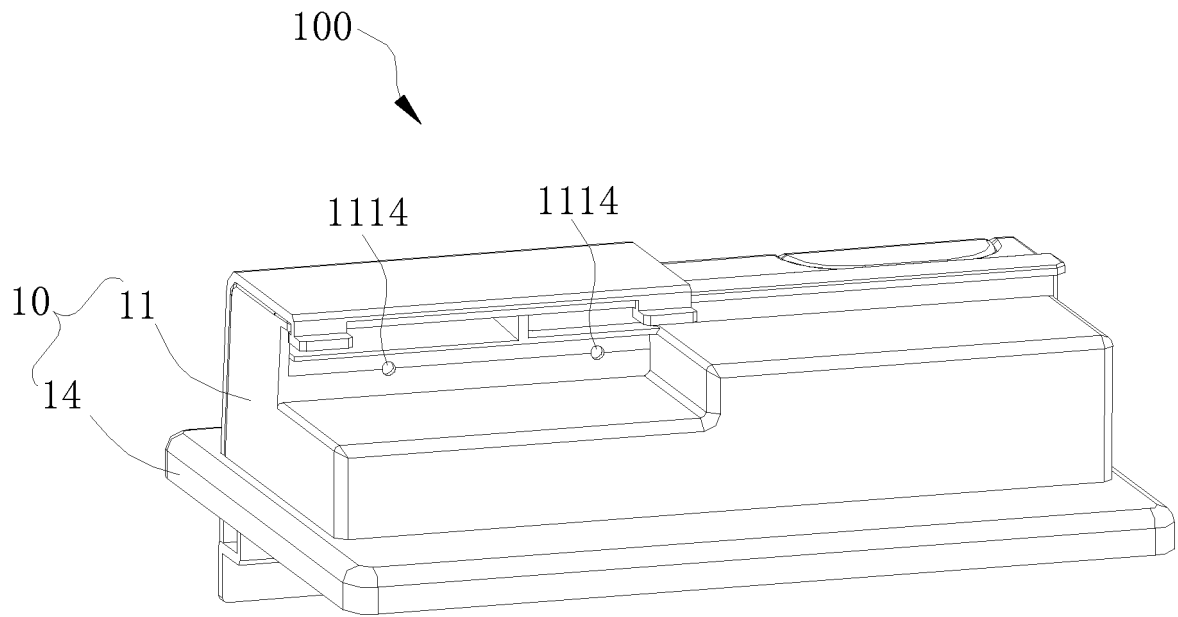


FIG. 12

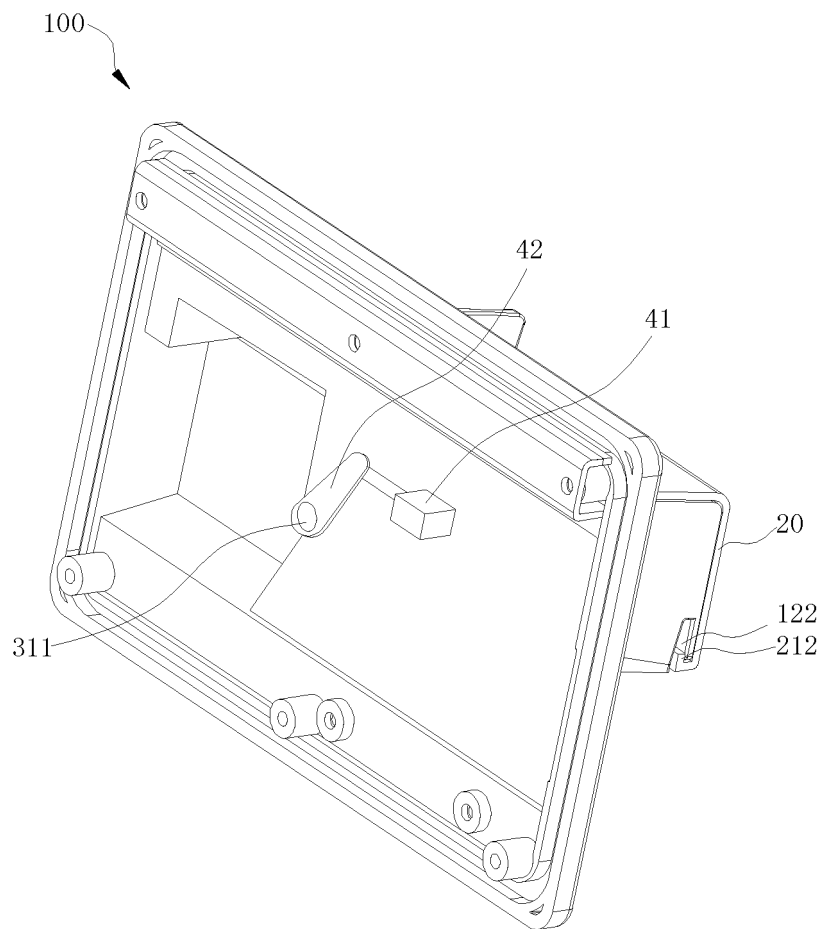


FIG. 13

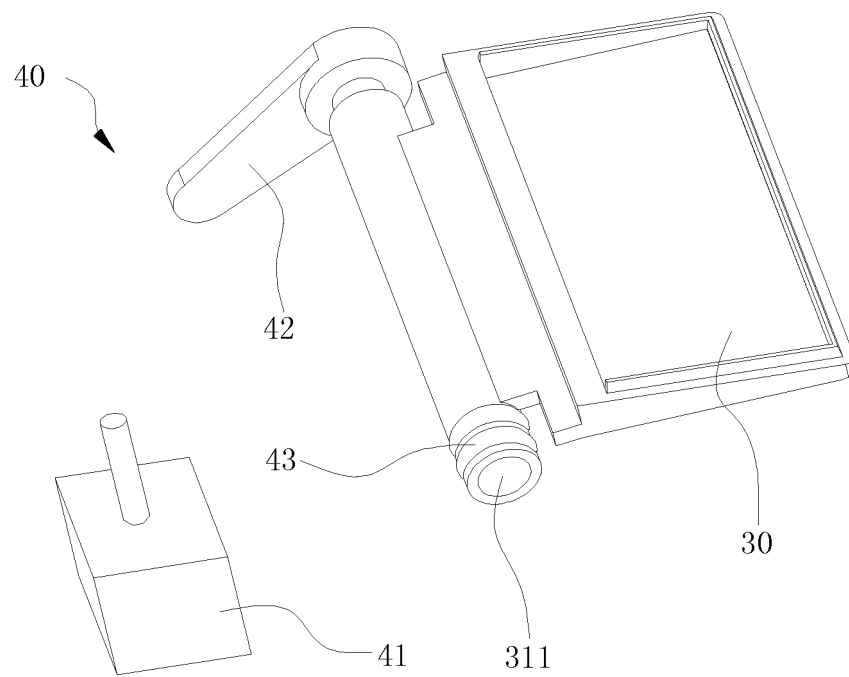


FIG. 14

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/090888

A. CLASSIFICATION OF SUBJECT MATTER A47L 15/42(2006.01)i; A47L 15/44(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) A47L15/-; D06F39/02; D06F39/07 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched																					
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNABS, DWPI, SIPOABS: 盖, 开口, 顶, 溢流, 出口, cover, lid?, top? flow+, outlet, open+																					
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 110279379 A (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MANUFACTURING CO., LTD.) 27 September 2019 (2019-09-27) entire document</td> <td>1-20</td> </tr> <tr> <td>PX</td> <td>CN 210673266 U (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MANUFACTURING CO., LTD.) 05 June 2020 (2020-06-05) entire document</td> <td>1-20</td> </tr> <tr> <td>PX</td> <td>CN 210228069 U (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MANUFACTURING CO., LTD.) 03 April 2020 (2020-04-03) entire document</td> <td>1-20</td> </tr> <tr> <td>A</td> <td>CN 101328668 A (HAIER ELECTRONICS GROUP CO., LTD.; QINGDAO HAIER WASHING MACHINE CO., LTD.) 24 December 2008 (2008-12-24) entire document</td> <td>1-20</td> </tr> <tr> <td>A</td> <td>CN 107747194 A (WUXI LITTLE SWAN CO., LTD.) 02 March 2018 (2018-03-02) entire document</td> <td>1-20</td> </tr> <tr> <td>A</td> <td>US 10034596 B2 (WHIRLPOOL CO.) 31 July 2018 (2018-07-31) entire document</td> <td>1-20</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 110279379 A (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MANUFACTURING CO., LTD.) 27 September 2019 (2019-09-27) entire document	1-20	PX	CN 210673266 U (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MANUFACTURING CO., LTD.) 05 June 2020 (2020-06-05) entire document	1-20	PX	CN 210228069 U (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MANUFACTURING CO., LTD.) 03 April 2020 (2020-04-03) entire document	1-20	A	CN 101328668 A (HAIER ELECTRONICS GROUP CO., LTD.; QINGDAO HAIER WASHING MACHINE CO., LTD.) 24 December 2008 (2008-12-24) entire document	1-20	A	CN 107747194 A (WUXI LITTLE SWAN CO., LTD.) 02 March 2018 (2018-03-02) entire document	1-20	A	US 10034596 B2 (WHIRLPOOL CO.) 31 July 2018 (2018-07-31) entire document	1-20
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Date of the actual completion of the international search 17 August 2020	Date of mailing of the international search report 24 August 2020																				
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China Facsimile No. (86-10)62019451	Authorized officer Telephone No.																				

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2020/090888

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