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(54) **CLEANING EQUIPMENT**

(57) The present disclosure relates to a cleaning equipment includes a main body comprising a machine body and a base, an accommodation cavity is defined by the base and a roller brush rotationally configured by a driver is disposed in the accommodation cavity; a wastewater tank, configured on the main body, with a liquid inlet and a liquid outlet, wherein the liquid inlet connects through the accommodation cavity, and a first flow channel, respectively connects through the accommodation cavity and the wastewater tank; a negative pressure source, provided on the main body, generating negative pressure to lead dirt on a waiting to be cleaned surface to pass through the accommodation cavity and the first flow channel in sequence then be deposited into the wastewater tank; and a water supply tank, configured on the main body, connecting to a suction source and a water divider in sequence with a water outlet channel.

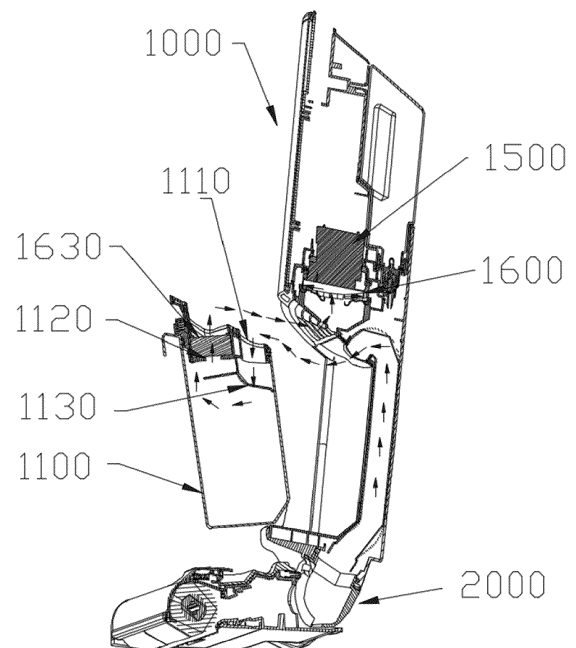


Fig. 1

Description

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application claims priority to Chinese Patent Application 202210120529.1, filed on February 9, 2022, and U.S. Patent Application 17/895,854, filed on August 25, 2022. Chinese Patent Application 202210120529.1 and U.S. Patent Application 17/895,854 are incorporated herein by reference.

TECHNICAL FIELD

[0002] The present disclosure relates to the technical field of household appliances and in particular to cleaning equipment.

BACKGROUND

[0003] With the popularity of automated cleaning products, more and more families choose to use cleaning equipment such as mopping machines to clean their homes. Conventionally, the cleaning equipment integrated with washing and mopping functions needed to be equipped with a sewage tank that can be used to hold sewage and garbage. After the negative pressure source sucks sewage and garbage into the sewage tank, the airflow will be discharged from the sewage tank. However, this will easily cause the cleaning equipment to generate loud noises.

SUMMARY

[0004] An objective of embodiments of the present disclosure is to solve the above technical problems to provide cleaning equipment. In order to solve the aforementioned technical problems, an embodiment of the present disclosure provides cleaning equipment using the following technical solution.

[0005] A cleaning equipment, comprises

a main body, comprising a machine body and a base, wherein an accommodation cavity is defined by the base and a roller brushes is rotationally configured by a driver is disposed in the accommodation cavity; a wastewater tank, configured on the main body, with a liquid inlet and a liquid outlet, wherein the liquid inlet connects through the accommodation cavity, and a first flow channel, respectively connects through the accommodation cavity and the wastewater tank;

a negative pressure source, provided on the main body, generating negative pressure to lead dirt on a to be cleaned surface to pass through the accommodation cavity and the first flow channel in sequence then be deposited into the wastewater tank; and

a water supply tank, configured on the main body,

connecting to a suction source and a water divider in sequence with a water outlet channel, wherein at least one of a first distribution channel or a second distribution channel is defined with the water divider, wherein the first distribution channel connects through the roller brush and the second distribution channel leads a liquid stream outwards from the main body.

[0006] As a further improvement to the aforementioned technical solution, the water supply tank further includes a tank top section, a tank bottom section and a water storage cavity, the water storage cavity of the water supply tank are divided into at least two cavity sections along a direction from the tank top section to the tank bottom section, and an area of cross sections of the cavity portions reduced gradually.

[0007] As a further improvement to the aforementioned technical solution, an air divider is provided on the negative pressure source and includes an air-dividing inlet and at least two air-dividing outlets, the air-dividing inlet connects to the liquid outlet provided with a filter assembly, the filter assembly is located between the liquid outlet and the air-dividing inlet, and the at least two air-dividing outlets connect to an external environment.

[0008] As a further improvement to the aforementioned technical solution, the air divider further includes an air-dividing shell provided on the negative pressure source, the air-dividing inlet is provided at a bottom portion of the air-dividing shell and the at least two air-dividing outlets are provided at side portions of the air-dividing shell and located at two sides of the air-dividing shell symmetrically.

[0009] As a further improvement to the aforementioned technical solution, the negative pressure source is located above the accommodation cavity, the air divider is located at a bottom portion of the negative pressure source, the liquid outlet is provided at a top portion of the wastewater tank, the air-dividing inlet and the liquid outlet connect longitudinally, a flow gap is provided between an outer wall of the wastewater tank and an inner wall of the accommodation cavity, and the at least two air-dividing outlets of the air divider each connect to an upper portion of the flow gap.

[0010] As a further improvement to the aforementioned technical solution, at least one first unidirectional valve is provided, the at least one first unidirectional valve is located between the suction source and the water divider, the at least one first unidirectional valve is configured to connect to the suction source and the water divider under pressure formed when the suction source is turned-on.

[0011] As a further improvement to the aforementioned technical solution, at least one second unidirectional valve is provided, the at least one second unidirectional valve is located between the first distribution channel and the second distribution channel, the at least one second unidirectional valve is configured to open at least one of the first distribution channel or the second distribution

channel under pressure formed when the suction source is turned-on.

[0012] As a further improvement to the aforementioned technical solution, a water outlet structure is able to be provided on the water supply tank, the water outlet structure is located at a bottom portion of the water supply tank, the water outlet structure includes a blocker and a water outlet and an air inlet connecting to the water storage cavity, the blocker blocks the water outlet elastically.

[0013] As a further improvement to the aforementioned technical solution, the cleaning equipment further includes a roller brush cover, the roller brush cover is located on the base, the accommodation cavity is provided between the roller brush cover and the base, an inner wall of the roller brush cover fits with at least a part of bristles of the roller brush.

[0014] As a further improvement to the aforementioned technical solution, a first scraping strip is configured on the roller brush cover to scrape wastewater on the roller brush, and a second scraping strip is configured on the base to scrape ground dust.

[0015] As a further improvement to the aforementioned technical solution, the cleaning equipment includes a rotating device and a locking mechanism, the rotating device is rotatably assembled on the base or the machine body, the machine body is connected to the base through the rotating device, and the locking mechanism is provided on at least one of the rotating device or the base, the locking mechanism is configured to lock the rotating device at a preset rotation angle; a rotation mechanism is arranged between the rotating device and the body, and the body rotates through the rotation mechanism on a fixed axis relative to the rotating device.

[0016] As a further improvement to the aforementioned technical solution, the cleaning equipment includes a main seat detachably configured with the base; wherein a heater, a second fluid channel, and a hot air outlet are provided by the main seat, wherein the second fluid channel is located between the heater and the hot air outlet; the cleaning equipment includes a control panel, a self-cleaning function button with electrical connections is provided on the control panel, the self-cleaning function button defines an initiation of a self-cleaning mode. The cleaning equipment enters a drying mode after the cleaning equipment is initiated into the self-cleaning mode, in which the driver is configured to drive the roller brush to rotate, and the suction source is configured to drive a cleaning medium stored in the water supply tank to supply the roller brush, and the roller brush rotates and self-cleans with the cleaning medium. The heater is configured to heat at least a part of air flowing through the second fluid channel in a self-cleaning mode to form a high-temperature airflow, and the high-temperature airflow is blown toward the roller brush through the hot air outlet. The negative pressure source is configured to drive the high-temperature airflow to flow along the second fluid channel and the first fluid channel. The high-temperature airflow passes through the roller brush to assist the clean-

ing medium to wash and dry the roller brush, and the negative pressure source drives dirt on the roller brush to flow into the wastewater tank along with the first fluid channel.

[0017] As a further improvement to the aforementioned technical solution, the cleaning equipment includes a cleaning cavity for accommodating the roller brush provided on the main seat, a water storage space is provided in the cleaning cavity, at least a part of the roller brush is able to extend into the water storage space. In the self-cleaning mode, the high-temperature airflow heats the water in the water storage space.

[0018] As a further improvement to the aforementioned technical solution, the accommodation cavity is provided with a spray port connecting with the first distribution channel, and an included angle between an injection direction of the spray port and a radial centerline of the roller brush is an acute angle.

[0019] As a further improvement to the aforementioned technical solution, an ultraviolet (UV) generator is provided, the UV generator is configured in the main seat.

[0020] For the above cleaning equipment, at least one inlet blocker is provided at the inlet of the wastewater tank to divide an air stream flowing to the wastewater tank into multiple air streams to make the multiple air streams collide in the wastewater tank.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] To illustrate the solutions in the present disclosure more clearly, the drawings to be used in the description of the embodiments will be introduced briefly as follows. It is apparent that the drawings in the following description are merely some embodiments of the present disclosure. For those of ordinary skill in the art, other drawings can be obtained according to these drawings without any inventive efforts. In the drawings:

FIG. 1 is a schematic three-dimensional schematic diagram of airflow of a wastewater tank and a negative pressure source according to an embodiment of the present disclosure;

FIG. 2 is a schematic plan view of the airflow of the sewage tank and the negative pressure source provided by an embodiment of the present disclosure;

FIG. 3 is a three-dimensional schematic diagram of airflow inside a wastewater tank provided by an embodiment of the present disclosure;

FIG. 4 is a schematic plan view of the airflow inside the wastewater tank as shown in Fig. 3;

FIG. 5 is a perspective view of cleaning equipment provided by an embodiment of the present disclosure;

FIG. 6 is a cross-sectional view of cleaning equipment provided by an embodiment of the present disclosure;

FIG. 7 is a schematic diagram of a connection structure of a water supply tank and a water divider provided by an embodiment of the present disclosure;

FIG. 8 is a plan view of a water supply tank provided by an embodiment of the present disclosure;

FIG. 9 is a cross-sectional schematic diagram of the water supply tank along line J-J in Fig. 8;

FIG. 10 is a partially enlarged schematic view of the water supply tank as shown in Fig. 9;

FIG. 11 is an exploded view of the water supply tank shown in FIG. 10;

FIG. 12 is a perspective view of a fuselage provided by an embodiment of the present disclosure;

FIG. 13 is a cross-sectional schematic diagram of the machine body along line L-L in FIG. 12;

FIG. 14 is a plan view of a main body provided in an embodiment of the present disclosure;

FIG. 15 is a cross-sectional view of the main body along line K-K in FIG. 14;

FIG. 16 is a partially enlarged schematic diagram of the main body as shown in FIG. 15;

FIG. 17 is an exploded view of the main body as shown in FIG. 16;

FIG. 18 is a perspective view of a water divider provided in an embodiment of the present disclosure;

FIG. 19 is an exploded view of the water divider as shown in FIG. 18;

FIG. 20 is a plan view of the water divider as shown in FIG. 18;

FIG. 21 is a cross-sectional view of the water divider along line M-M in FIG. 20;

FIG. 22 is a partially enlarged view of the water divider as shown in FIG. 21;

FIG. 23 is a perspective view of a water divider provided in another embodiment of the present disclosure;

FIG. 24 is an exploded view of the water divider as

shown in FIG. 23;

FIG. 25 is a plan view of the water divider as shown in FIG. 23;

FIG. 26 is a cross-sectional view of the water divider along line N-N in FIG. 25;

FIG. 27 is a perspective view of a first unidirectional valve provided in an embodiment of the present disclosure;

FIG. 28 is a schematic structural diagram of the spary port in the accommodation cavity of the base seat according to an embodiment of the present disclosure;

FIG. 29 is cross-sectional view of the base seat along line O-O in FIG. 28;

FIG. 30 is a schematic diagram of a first rotation state of a rotating device provided in an embodiment of the present disclosure;

FIG. 31 is a partially enlarged schematic diagram of the first rotating state of the rotating device as shown in FIG. 30.

FIG. 32 is a schematic diagram of the second rotation state of the rotating device provided in an embodiment of the present disclosure;

FIG. 33 is a partially enlarged schematic diagram of the second rotating state of the rotating device as shown in FIG. 32;

FIG. 34 is a schematic diagram of a third rotating state of the rotating device provided in an embodiment of the present disclosure;

FIG. 35 is a partially enlarged schematic diagram of the third rotating state of the rotating device as shown in FIG. 34;

FIG. 36 is a schematic diagram of the first state of the locking mechanism provided in an embodiment of the present disclosure;

FIG. 37 is a partially enlarged schematic diagram of the first state of the locking mechanism as shown in FIG. 36;

FIG. 38 is a schematic diagram of the second state of the locking mechanism provided in an embodiment of the present disclosure;

FIG. 39 is a partially enlarged schematic diagram of the second state of the locking mechanism as shown

in FIG. 38;

FIG. 40 is a cross-sectional view of a locking mechanism provided in another embodiment of the present disclosure;

FIG. 41 is a perspective view of a locking mechanism provided in another embodiment of the present disclosure;

FIG. 42 is a perspective view of a rotation mechanism provided in another embodiment of the present disclosure;

FIG. 43 is a cross-sectional view of a rotation mechanism provided in another embodiment of the present disclosure;

FIG. 44 is a schematic diagram of a first rotation state of a rotation mechanism provided in an embodiment of the present disclosure;

FIG. 45 is a schematic diagram of a second rotation state of a rotation mechanism provided in an embodiment of the present disclosure; and

FIG. 46 is a schematic diagram of a third rotation state of a rotation mechanism provided in an embodiment of the present disclosure.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0022] In order to make the above objects, features, and advantages of the present invention more clearly understood, the specific embodiments of the present invention will be described in detail below with reference to the accompanying drawings. In the following description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, the present invention can be implemented in many other ways different from those described herein, and those skilled in the art can make similar improvements without departing from the connotation of the present invention. Therefore, the present invention is not limited by the specific embodiments disclosed below.

[0023] In the description of the present invention, it should be understood that the terms "center", "longitudinal", "lateral", "length", "width", "thickness", "upper", "lower", "front", "back", "left", "right", "vertical", "horizontal", "top", "bottom", "inner", "outer", "clockwise", "counterclockwise", "axial", "radial", "circumferential", and other indicated orientations or positional relationships are based on the orientations or positional relationships shown in the accompanying drawings, and are only for the convenience of describing the present invention and simplifying the description, rather than indicating or implying the indicated device or elements must have a particular orientation, be constructed, and operate in a par-

ticular orientation and are therefore not to be construed as limitations of the invention.

[0024] In addition, the terms "first" and "second" are only used for descriptive purposes and should not be construed as indicating or implying relative importance or implying the number of indicated technical features. Thus, a feature delimited with "first", "second" may expressly or implicitly include at least one of that features. In the description of the present invention, "plurality" means at least two, such as two, three, etc., unless otherwise expressly and specifically defined.

[0025] In the present invention, unless otherwise expressly specified and limited, terms such as "installation", "connected", "connection", "fixation", and other terms should be understood in a broad sense, for example, it may be a fixed connection or a detachable connection, or integrated; it can be a mechanical connection or an electrical connection; it can be directly connected or indirectly connected through an intermediate medium, it can be the internal connection of two elements or the interaction relationship between the two elements, unless otherwise specified limit. For those of ordinary skill in the art, the specific meanings of the above terms in the present invention can be understood according to specific situations.

[0026] In the present invention, unless otherwise expressly specified and limited, a first feature "on" or "under" a second feature may be in direct contact between the first and second features, or the first and second features indirectly contact through an intermediary touch. Also, the first feature being "above", "over" and "above" the second feature may mean that the first feature is directly above or indirectly above the second feature, or simply means that the first feature is at a level higher than the second feature. The first feature being "below" the second feature may mean that the first feature is directly below or indirectly below the second feature, or simply means that the first feature is at a lower level than the second feature.

[0027] It should be noted that when an element is referred to as being "fixed to" or "disposed on" another element, it can be directly on the other element, or an intervening element may also be present. When an element is referred to as being "connected" to another element, it can be directly connected to the other element or intervening elements may also be present. The terms "vertical", "horizontal", "upper", "lower", "left", "right", and similar expressions used herein are for the purpose of illustration only and do not represent the only embodiment.

[0028] As shown in FIG. 1 to FIG. 46, one embodiment of the present application discloses cleaning equipment. The cleaning equipment includes a main body, a wastewater tank **1100**, a first fluid channel, a negative pressure source **1500**, and a water supply tank **1200**. The main body includes a machine body **1000** and a base **2000**. An accommodation cavity **2300** is defined by the base **2000**. A roller brush is rotationally configured through a

driver in the accommodation cavity **2300**. The wastewater tank **1100** is configured on the main body.

[0029] A fluid inlet **1110** and a fluid outlet **1120** are provided with the wastewater tank **1100**. The fluid inlet **1110** connects through the accommodation cavity **2300**, and an inner wall of the wastewater tank **1100** is arc-shaped or its cross section is formed as a ring shape. At least one inlet blocker **1130** is provided at the inlet of the wastewater tank **1100** to divide an air stream flowing to the wastewater tank **1100** into multiple air streams and to make the multiple air streams collide in the wastewater tank **1100**.

[0030] The first fluid channel is respectively connected with the accommodation cavity **2300** and the wastewater tank **1100**, and the negative pressure source **1500** is configured on the main machine. The negative pressure source **1500** generates negative pressure to make the dirt on the surface be cleaned to enter the wastewater tank **1100** through the accommodation cavity **2300** and the first fluid channel in sequence. The first fluid channel is able to play the role of wastewater intake, which is equivalent to the wastewater intake pipeline. The water supply tank **1200** is assembled on the main body, and the water supply tank **1200** is sequentially connected with a suction source **1300** and a water divider **1400** through a water outlet. The water divider **1400** includes a first distribution channel **1410** connected to the roller brush and/or a second distribution channel **1420** for leading fluid streams outwards from the main body.

[0031] The fluid inlet **1110** is selectively provided at the top portion or the side portion of the wastewater tank **1100**, which will determine whether the airflow of the accommodation cavity **2300** enters the inner cavity of the wastewater tank **1100** from the top portion of the wastewater tank **1100** or enters the inner cavity of the wastewater tank **1100** from the side portion. The wastewater tank **1100** can include a wastewater tank body and a wastewater tank cover, and both the fluid inlet **1110** and the fluid outlet **1120** can be arranged on the wastewater tank cover. Therefore, when the fluid inlet **1110** is located on the top of the wastewater tank **1100**, the fluid inlet **1110** can be directly installed on the upper surface of the wastewater tank cover of the top portion of the wastewater tank **1100**. In addition, when the fluid inlet **1110** is located at the side of the wastewater tank **1100**, the fluid inlet **1110** can also be arranged on the side surface of the wastewater tank cover on the top portion of the wastewater tank **1100**, or the fluid inlet **1110** can also be arranged on the side surface of the wastewater tank body. The wastewater tank **1100** can be provided with a wastewater tank handle, and the fluid inlet **1110** can be located on the side of the wastewater tank **1100**, so the wastewater tank handle and the fluid inlet **1110** can be respectively arranged on the opposite sides of the wastewater tank **1100**.

[0032] The negative pressure source **1500** has an air-dividing structure **1600**, and the air-dividing structure **1600** has an air-dividing inlet **1610** and at least two air-

dividing outlets **1620**. The air-dividing inlet **1610** communicates with the fluid outlet **1120**, and the fluid outlet **1120** is provided with a filter assembly **1630**. The filter assembly **1630** is located between the fluid outlet **1120** and the air-dividing inlet **1610**, and the at least two air-dividing outlets **1620** connect through the outer environment. The air-dividing structure **1600** can be formed on the basis of the negative pressure source **1500** or can be a structure that is independent of the negative pressure source **1500** and assembled opposite to the negative pressure source **1500**. In one embodiment, the air-dividing structure **1600** includes an air-dividing shell configured on the negative pressure source **1500**. The air-dividing inlet **1610** is provided at the bottom of the air-dividing shell, and the air-dividing outlets **1620** are provided at two side portions of the air-dividing shell. The two air-dividing outlets **1620** are symmetrically located on both sides of the air-dividing shell. Moreover, the negative pressure source **1500** is located above the accommodation cavity **2300**, and the air-dividing structure **1600** is located at the bottom of the negative pressure source **1500**. The fluid outlet **1120** is provided at the top of the wastewater tank **1100**, and the air-dividing inlet **1610** is in longitudinal connection with the fluid outlet **1120**.

[0033] The accommodation cavity **2300** can be connected with the fluid inlet **1110** of the wastewater tank **1100** through a channel formed by itself on the main body or a separately provided channel. Under the action of the negative pressure source **1500**, after the air flows from the accommodation cavity to the fluid inlet **1110** of the wastewater tank **1100**, the air can enter the wastewater tank **1100** from the fluid inlet **1110** at the top or the side of the wastewater tank **1100**. After the wastewater is separated and precipitated, under the suction of the negative pressure source **1500**, the air can flow out from the fluid outlet **1120** of the wastewater tank **1100**, wherein, the fluid outlet **1120** may be provided with the filter assembly **1630**. The filter assembly **1630** is located between the fluid outlet **1120** and the air-dividing inlet **1610**, so that the air can flow out after being filtered by the filter assembly **1630**.

[0034] The air flowing out from the fluid outlet **1120** will enter into the air-dividing structure **1600** on the negative pressure source **1500** based on the connection between the air-dividing inlet **1610** and the fluid outlet **1120**. The air-dividing structure **1600** is configured to divide the air inhaled by the negative pressure source **1500** into two bundles, the left bundle and the right bundle (as shown by the arrows in FIG. 1 and FIG. 2, the arrows point to the flow trace of the airflow). The air of the left bundle and the right bundle flows out through the two air-dividing outlets **1620** of the air-dividing structure **1600** respectively, so as to flow out of the main body. The directions of the two air-dividing outlets **1620** are different and may be opposite directions or directions having a certain angle, as long as the directions are different. In one embodiment, there may be a flow gap **1140** between the outer wall of the wastewater tank **1100** and the inner wall of

the accommodation cavity **2300**. At this time, both the two air-dividing outlets **1620** of the air-dividing structure **1600** can be connected with the upper portion of the flow gap **1140**. Therefore, referring to FIG. 2, the air flowing out from the two air-dividing outlets **1620** of the air-dividing structure **1600** will flow along the flow gap **1140** and then flow to the outside environment. In particular, both of the two air-dividing outlets **1620** connect with the upper portion of the flow gap **1140**. This allows the air to flow longitudinally along the flow gap **1140** after flowing out from the two air-dividing outlets **1620**, from the top to the bottom of the main body, and finally flows out from the bottom of the main body. Because the wastewater tank **1100** is installed in front of the main body, the air is discharged from the front of the main body. The user stands behind the main body to operate it, so the outgoing wind will not blow directly to the user, which increases the user experience as well. Moreover, the air-dividing structure **1600** can change the airflow from one bundle to two bundles, which avoids the problem of noise caused by excessive concentration of the outlet air and is more conducive to the noise reduction of the product. It should be noted that the outlets of the air-dividing structure **1600** may be set in multiples according to requirements, such as three, four, five, six, etc.

[0035] In one embodiment, an inlet blocker **1130** is provided at the fluid inlet **1110** of the wastewater tank **1100**. The inlet blocker **1130** can be configured on the cover of the wastewater tank **1100** or on the body of the wastewater tank **1100**, and the inlet blocker **1130** is configured horizontally or vertically in the inner cavity of the wastewater tank **1100**. The inlet blocker **1130** shields the fluid inlet **1110** to a certain extent, so that the air entering the wastewater tank **1100** can form two or more air streams in different directions after passing through the inlet blocker **1130**, or the direction of the air streams can be changed by the inlet blocker **1130**. If the airflow has only one direction during the process of entering the wastewater tank **1100** through the fluid inlet **1110**, the airflow and water droplets (flow) cannot be easily separated inside the wastewater tank **1100**. Under above condition, the airflow and water droplets (flow) are easy to simultaneously discharge from the fluid outlet **1120** of the wastewater tank **1100** under the suction of the negative pressure source **1500** at the same time. Therefore, the inlet blocker **1130** in the wastewater tank **1100** is used to stop the incoming airflow at first and then make the airflow enter the bottom of the wastewater tank **1100**.

[0036] The inlet blocker **1130** can adopt to any structural form to cooperate with the inner wall of the wastewater tank **1100**, thereby forming an inlet drainage channel **1131** for airflow. In addition, the inlet blocker **1130** can also be formed to cooperate with the location (for example, top or side) of the fluid inlet **1110** on the wastewater tank **1100** in order to make the inlet blocker **1130** play a role in blocking the airflow when the airflow enters the wastewater tank **1100** through the fluid inlet **1110**. Moreover, to what extent or direction the inlet blocker

1130 blocks the airflow. For example, the inlet blocker **1130** can be laterally configured in the inner cavity of the wastewater tank **1100**. At this time, an inlet drainage channel **1131** is formed between the inlet blocker **1130** and the inner wall of one side of the wastewater tank **1100**, and the airflow can enter the interior of the wastewater tank **1100** only through one inlet drainage channel **1131**. Alternatively, the inlet blocker **1130** may be longitudinally configured in the inner cavity of the wastewater tank **1100**. At this time, two inlet drainage channels **1131** in opposite directions are formed between the inlet blocker **1130** and the inner walls on opposite sides of the wastewater tank **1100**. In view of the above, the airflow can pass through the inlet blocker **1130** into two symmetrical bundles and enter the interior of the wastewater tank **1100**. Besides, those skilled in the art can also set the position of the inlet blocker **1130** according to actual requirements, which is not limited here.

[0037] In one embodiment, the inner wall of the wastewater tank **1100** is an arc-shaped inner wall surface, such as a circular inner wall surface, or the cross-section of the inner wall of the wastewater tank **1100** is annular. The air stream of the accommodation cavity flows to the wastewater tank **1100** and, after entering through the fluid inlet **1110** of the wastewater tank **1100**, when the inner wall of the wastewater tank **1100** is an arc-shaped inner wall or the cross-section of the inner wall is annular, the two or more streams divided by the inlet blocker **1130** can move along the circular or annular inner wall of the wastewater tank **1100**, then the inlet blocker **1130** makes the multiple air streams collide in the wastewater tank **1100** so as to avoid the air continuing to fall and mix with the wastewater and waste to stir up the wastewater and waste. In view of the above, this can effectively prevent the wastewater and waste in the wastewater tank **1100** from being sucked into the negative pressure source **1500**, and not only can it avoid damage to the negative pressure source **1500** but also prevent wastewater and waste from being blown to the outside of the cleaning equipment so that the space utilization rate of the wastewater tank **1100** is increased. If the inner wall of the wastewater tank **1100** is not annular or circular, but other shapes, the collision of two or more air streams divided by the inlet blocker **1130** will be reduced, and the deposition of dirt cannot be achieved after the air streams enter the wastewater tank **1100**. This is because, if the inner wall of the wastewater tank **1100** is not circular or annular, the direction of the airstream after entering will be chaotic, so that the direction and angle of the airstreams in the wastewater tank **1100** are difficult to cause the airstreams to form a hedging collision and offset the kinetic energy of each other, and therefore it is impossible to realize the separation of dirt and moisture deposition in the air streams.

[0038] Moreover, the cleaning equipment includes the main body, a rotating device **2500**, and a locking mechanism **2510**. The main body includes a machine body **1000** and a base **2000**. An accommodation cavity is de-

fined by the base, and a roller brush is rotationally configured by a driver in the accommodation cavity. The rotating device **2500** is rotatably assembled on the base **2000** or the machine body **1000**. The machine body **1000** is connected to the base **2000** through the rotating device **2500**. The locking mechanism **2510** is provided on the rotating device **2500** and/or the base **2000**. The locking mechanism **2510** is configured to lock the rotating device **2500** at a preset rotation angle.

[0039] Since the rotating device **2500** can be rotated relative to the base **2000**, the machine body **1000** can be indirectly rotated relative to the base **2000** through the rotation of the rotating device **2500**. Therefore, the machine body **1000** can swing forward or backward relative to the base **2000** to adjust the rotation angle of the machine body **1000** to the base **2000**. The adjustment of the rotation angle of the machine body **1000** can facilitate the extension of the base **2000** into a narrow space for cleaning operations and improve the cleaning efficiency in the narrow space.

[0040] The rotating device **2500** can form a fixed rotating axis through a structure such as a rotating shaft to make the machine body **1000** be rotatably assembled on the base **2000** through the rotating device **2500**. When the machine body **1000** rotates with the rotating device **2500**, the machine body **1000** can achieve the effect of swinging forward or backward. In one embodiment, a rotating groove **2520** is defined on the base **2000**, and the rotating device **2500** is rotatably assembled in the rotating groove **2520** through the rotation shaft.

[0041] During the rotation of the rotating device **2500** along the rotation axis, the locking mechanism **2510** can lock the rotating device **2500** when the rotating device **2500** rotates to a preset rotation angle, so that the rotating device **2500** cannot continue to rotate at this rotation angle. Therefore, the machine body **1000** can be fixed relative to the base **2000** at the preset rotation angle. In one of the embodiments, the rotating device **2500** includes a latching member **2511** and a latching position **2512** respectively disposed between the base **2000** and the rotating device **2500**. The latching member **2511** is engaged with the latching position **2512**, and the locking of the rotating device **2500** at the preset rotation angle can be achieved by the mutual latching of the latching member **2511** and the latching position **2512**. The latching member **2511** can be an elastic part or indirectly assembled through an elastic part, so as to enable the latching member **2511** to be elastically latch-fitted with the latching position **2512**. The latching position **2512** may be a corresponding matching structure such as a groove, a protrusion, etc., as long as the latching position **2512** can form an elastic limit latching connection with the elastically assembled latching member **2511**.

[0042] In one embodiment, the latching position **2512** is provided on the rotating device **2500**, and the latching member **2511** is elastically assembled in the rotating groove **2520** through the elastic retractable member **2513**. The latching member **2511** is elastically latched

with the latching position **2512** through the elastic retractable member **2513** so that when the rotating device **2500** is assembled and rotated in the rotating groove **2520**, the rotating device **2500** can be locked by the locking mechanism **2510** at the preset rotation angle.

[0043] In one of the embodiments, both the number of the latching member **2511** and the latching position **2512** is one, and the latching member **2511** is located on the front groove wall or the bottom groove wall of the rotating groove **2520**. The latching position **2512** is located at the front or bottom of the rotating device **2500**, and/or the number of the latching member **2511** and the latching position **2512** is two. The two latching members **2511** are symmetrically arranged on two opposite side groove walls of the rotating groove **2520**. The two latching positions **2512** are symmetrically arranged on two opposite sides of the rotating device **2500**. Moreover, the numbers and positions of the latching member **2511** and the latching position **2512** can be set according to requirements, which are not limited herein.

[0044] In one embodiment, a rotation mechanism **2530** is configured between the rotating device **2500** and the machine body **1000**. The machine body **1000** rotates relative to the rotating device **2500** through the rotation mechanism **2530** in a fixed axis. For example, the rotation axis of the rotation mechanism **2530** and the rotation axis of the rotating device **2500** are perpendicular to each other. At this time, the rotation of the rotating device **2500** can be responsible for driving the machine body **1000** to achieve forward and backward swing motions relative to the base **2000**, and the rotation mechanism **2530** can be responsible for driving the machine body **1000** to rotate left and right relative to the base **2000**.

[0045] The rotation mechanism **2530** can adopt various structural forms. In one of the embodiments, the rotation mechanism **2530** includes an annular groove **2531** and an annular protrusion **2532** respectively provided on the rotating device **2500** and the machine body **1000**. The annular groove **2531** and the annular protrusion **2532** are slidably assembled, and the machine body **1000** rotates relative to the rotating device **2500** through the sliding assembly of the annular groove **2531** and the annular protrusion **2532**. The user can hold the machine body **1000** and exert a control force on the machine body **1000**, so that the annular protrusion **2532** can rotate relative to the annular groove **2531** in the circumferential direction. When the annular protrusion **2532** slides circumferentially relative to the annular groove **2531**, the machine body **1000** can rotate relative to the rotating device **2500**, which means turns right or left. Therefore, the machine body **1000** rotates indirectly relative to the base **2000**, and turns right or left. In this way, when the cleaning equipment needs to enter some smaller space areas during operation, the machine body **1000** needs to be able to rotate to facilitate access to some narrow corners and low surfaces to be cleaned, such as under the bed, under the table, and in other more hidden spaces. Compared with cleaning equipment whose machine

body cannot rotate left and right, the above disclosed cleaning equipment that can be rotated left and right can obviously have a more prominent cleaning effect on the cleaning of narrow areas and the easy avoidance of obstacles during the cleaning process. The front and rear rotation of the above disclosed cleaning equipment can better solve the problems with cleaning equipment entering areas with restricted heights. The left and right rotation of the disclosed cleaning equipment can easily realize the operation of cleaning equipment, and the left and right rotation of the machine body can easily avoid furniture and obstacles. The cleaning device is provided with front and rear and left and right rotation functions, which makes it easy for users to clean low and narrow areas during the cleaning process.

[0046] In one of the embodiments, the bottom of the machine body 1000 is provided with a detachable bottom cover 2533, and the bottom cover 2533 and the bottom of the machine body 1000 are respectively provided with a part of the annular groove 2531 or a part of the annular protrusion 2532. The bottom cover 2533 and the bottom of the machine body 1000 are assembled to form the annular groove 2531 or the annular protrusion 2532. The separation of the bottom cover 2533 relative to the machine body 1000 can crack the annular groove 2531 or the annular protrusion 2532. The mapping of the bottom cover 2533 relative to the machine body 1000 can form the complete annular groove 2531 or the annular protrusion 2532. Therefore, when the bottom cover 2533 is separated from the machine body 1000, the assembly of the machine body 1000 and the annular groove 2531 and the annular protrusion 2532 on the rotating device 2500 can be facilitated. When the bottom cover 2533 is assembled relative to the machine body 1000, the annular groove 2531 and the annular protrusion 2532 can form a stable assembly structure.

[0047] The wastewater tank 1100 is configured on the main body, and the wastewater tank 1100 connects with the accommodation cavity 2300 of the base 2000. The wastewater and dirt enter the wastewater tank 1100 after passing through the accommodation cavity 2300. The water supply tank 1200 is configured on the main body, and the water supply tank 1200 is connected with the suction source 1300 and the water divider 1400 in sequence through the water outlet channel 1370. The water divider 1400 includes a first distribution channel 1410 that connects to the roller brush and/or a second distribution channel 1420 for dividing flow out of the main body.

[0048] In one embodiment, a tank top portion 1310 and a tank bottom portion 1320 are provided from the water supply tank 1200. Further, a water storage cavity is provided in the water supply tank 1200. The water storage cavity of the water supply tank 1200 is divided into at least two inner cavity sections 1330 from the tank top portion 1310 to the tank bottom portion 1320. In the direction from the tank top portion 1310 to the tank bottom portion 1320, the cross-sectional areas of the plurality of inner cavity sections 1330 gradually decrease. In addition,

the cross-sectional area is perpendicular to the direction from the tank top portion 1310 to the tank bottom portion 1320.

[0049] The phenomenon of the cross-sectional area of the plurality of the inner cavity sections 1330 of the water supply tank 1200 gradually decreasing can be specifically expressed as the width of the different inner cavity sections 1330 gradually decreasing. In other words, the plurality of inner cavity sections 1330 of the water supply tank 1200 gradually decrease in width in the direction from the tank top portion 1310 to the tank bottom portion 1320. When the water supply tank 1200 is installed in the main body, comparing with the design of overall cross-sectional area of the water supply tank 1200 being the same, the water flow rate is faster in the inner cavity sections 1330 with smaller cross-sectional areas. Therefore, it can still ensure that the water outlet speed of the water supply tank 1200 remains relatively constant after the water level drops. It will not cause the output in the water supply tank 1200 to be significantly reduced due to the reduction of the water volume to better improve the water outlet efficiency of the water supply tank 1200 and reduce the impact on the water outlet speed. Under above, the water outlet speed of the water supply tank 1200 is made more uniform and stable, and the cleaning efficiency of the cleaning equipment is improved.

[0050] A water outlet structure may be provided on the water supply tank 1200, and the water outlet structure is arranged on the tank bottom portion 1320 of the water supply tank 1200. The water outlet structure includes a blocking member 1350, a water outlet 1360, and an air inlet 1341 connecting with the water storage cavity. The blocking member 1350 is used for elastically blocking the water outlet 1360. Therefore, in the case that the water supply tank 1200 is separated from the main body, the blocking member 1350 can block the water outlet 1360 by using elastic force, so that the water inside the water supply tank 1200 cannot flow out from the water outlet 1360. When the water supply tank 1200 is assembled with the host, a corresponding structure can be provided to overcome the elastic force of the blocking member 1350 to make the blocking member 1350 release the blocking of the water outlet 1360. Then, the water in the water supply tank 1200 can flow out through the water outlet 1360 and be supplied to the outside of the roller brush or the main body under the driving action of the suction source 1300.

[0051] In one embodiment, the water tank structure includes a tank cover 1340, and the water outlet 1360 is opened on the tank bottom portion 1320. The tank cover 1340 is configured on the water outlet 1360, and an external port 1343 is opened on the tank cover 1340 to communicate with the water outlet 1360. The blocking member 1350 is configured on the tank cover 1340, and the blocking member 1350 is used to elastically block the external port 1343 to block the water outlet 1360. The air inlet 1341 is opened on the tank cover 1340, and the main body is provided with a top opening 1354. The water

supply tank **1200** is configured on the main body. The top opening **1354** abuts against and cooperates with the blocking member **1350** for pushing the blocking member **1350** to open the water outlet **1360**. At this time, the top opening **1354** serves as a structure for overcoming the elastic force of the blocking member **1350** and can be mutually matched with the structure of the blocking member **1350**, such as column or protrusion structures.

[0052] The tank cover **1340** can be assembled on the water outlet **1360** of the water supply tank **1200** through a screw-threaded structure. The blocking member **1350** is configured on the tank cover **1340**. After the tank cover **1340** is screwed off, the water outlet **1360** of the water supply tank **1200** can also be used as a water inlet for replenishing water into the water storage cavity of the water supply tank **1200**. It is convenient to add water to the water supply tank **1200** and does not require an additional independent water inlet on the water supply tank **1200**. In addition, the blocking member **1350** elastically assembled on the tank cover **1340** can also be directly designed at the position of the water outlet **1360** of the water supply tank **1200** so as to bypass the use of the tank cover **1340** and design independent water outlet **1360**. Those skilled in the art can select a corresponding design structure according to requirements, which is not limited here.

[0053] In one embodiment, a limiting stage **1351** is provided in the external port **1343**, and a limiting portion **1352** is provided on the blocking member **1350**. The blocking member **1350** is elastically assembled in the external port **1343** through an elastic member **1353**, and the limiting portion **1352** of the blocking member **1350** is in elastic contact with the limiting stage **1351** through the elastic force exerted by the elastic member **1353**. In addition, the limiting portion **1352** and the limiting stage **1351** elastically contact each other to block the external port **1343**.

[0054] The mutually abutting surfaces of the limiting stage **1351** and the limiting portion **1352** may be a cooperating plane or cooperating bevels. When the limiting stage **1351** and the limiting portion **1352** abut each other to make the surface of the limiting stage **1351** and the surface of the limiting portion **1352** fit with each other, it can form a good blocking of the external port **1343**, and the water outlet **1360** is further blocked by blocking the external port **1343**. It prevents the water in the water supply tank **1200** from flowing out from the water outlet **1360**. Only when the elastic force exerted by the elastic member **1353** is overcome will the limiting portion **1352** and the limiting stage **1351** of the blocking member **1350** be separated. It causes the external port **1343** to be opened, and then the water outlet **1360** is opened, so that the water in the water supply tank **1200** flows out from the water outlet **1360**.

[0055] In one embodiment, the water tank structure includes an unidirectional valve **1342**, and the unidirectional valve **1342** is configured on the air inlet **1341**. The unidirectional valve **1342** only allows air to enter the water

storage cavity along the air inlet **1341** and the water in the water storage cavity will not flow out of the water supply tank **1200** through the air inlet **1341**. The unidirectional valve **1342** can be tubular, and the bottom of the unidirectional valve **1342** can form a V-shape. The inner walls on the opposite sides of the V-shaped section are fitted closed to each other under normal conditions. It can only be separated at the pressure value developed when the suction source **1300** is activated. Therefore, when the suction source **1300** is continuously pumping water, the negative pressure in the water supply tank **1200** is continuously increased. When the air pressure outside the water supply tank **1200** to the unidirectional valve **1342** is greater than the water pressure inside the water supply tank **1200** to the unidirectional valve **1342**, the outside air of the water supply tank **1200** can enter the water supply tank **1200** through the unidirectional valve **1342** along the air inlet **1341** to supplement the air (intake) of the water supply tank **1200**. When the air pressure inside the water supply tank **1200** is balanced with the air pressure outside the water supply tank **1200**, the unidirectional valve **1342** can be closed under the extrusion of the water pressure in the water supply tank **1200**. In other words, it means the inner pipe walls on the opposite sides of the V-shaped pipe section fit with each other. In this way, the unidirectional valve **1342** can be closed to prevent the water in the water supply tank **1200** from flowing out of the water supply tank **1200** through the air inlet **1341**.

[0056] In one embodiment, the water tank structure includes a first filter, and the first filter is configured at the water outlet **1360**. Therefore, the water in the water supply tank **1200** can be filtered and then flow out through the water outlet **1360**, so as to prevent solid matter in water supply tank **1200** from clogging the water outlet **1360** and downstream channel.

[0057] The water supply tank **1200** can be provided with an elastic buckle structure **1390**, and the water supply tank **1200** is configured to be detachably mounted on the main body of the cleaning equipment through the elastic buckle structure **1390**. The elastic buckle structure **1390** can more firmly connect the water supply tank **1200** and the main body when the water supply tank **1200** is configured on the main body. Moreover, the elastic buckle structure **1390** will generate a sound when the water supply tank **1200** is connected to the main body. The sound can remind the user that the water supply tank **1200** has been configured on the main body.

[0058] In one of the embodiments, the water tank structure includes at least one first unidirectional valve **1430**, and the first unidirectional valve **1430** is connected between the suction source **1300** and the water divider **1400**. The first unidirectional valve **1430** can connect the suction source **1300** and the water divider **1400** under the pressure value formed when the suction source **1300** is activated. The suction source **1300** can use a water pump. When the suction source **1300** is turned on, the water of the water supply tank **1200** can be supplied to

the water divider **1400**, thereby generating a larger water pressure value. Only then can a sufficient water pressure value be generated to open the first unidirectional valve **1430**. When the suction source **1300** is turned-off, the water in the water supply tank **1200** cannot generate a sufficient water pressure value, so as to be unable to open the first unidirectional valve **1430**. The above state makes the water in the water supply tank **1200** not able to pass through the first unidirectional valve **1430** when the main body is shut down or stops working.

[0059] When there is residual water in the channel between the first unidirectional valve **1430** and the water divider **1400**, the first unidirectional valve **1430** can prevent the water of the water supply tank **1200** from being delivered downstream. At this time, the end of the channel with water and downstream of the first unidirectional valve **1430** is closed, and one end of the water divider **1400** is in connection with the air. Under the action of atmospheric pressure, due to the sealing effect of the first unidirectional valve **1430**, it prevents the water in the pipeline between the first unidirectional valve **1430** and the water divider **1400** from flowing out of the main body so as to solve the problem of water leakage and ensure the cleanliness of the ground.

[0060] In one embodiment, the tank structure includes at least one second unidirectional valve **1440**. The second unidirectional valve **1440** is provided on the first distribution channel **1410** and/or the second distribution channel **1420**. The second unidirectional valve **1440** can open the first distribution channel **1410** and/or the second distribution channel **1420** at a pressure value established when the suction source **1300** is activated. The second unidirectional valve **1440** can close one end of the first distribution channel **1410** or the second distribution channel **1420** and open the other end when the first unidirectional valve **1430** is closed. Under the action of atmospheric pressure, no matter how the height and horizontal inclination of the first distribution channel **1410** or the second distribution channel **1420** change, or no matter how the main body shakes, it will not cause the residual water in the main body to flow out along the first distribution channel **1410** or the second distribution channel **1420** so as to avoid the problem of water leakage after the main body is turned-off or the suction source **1300** stops working.

[0061] The design principle is that when both ends of a water pipe with water are open, as long as the two ends of the water pipe are at different heights, the water in the water pipe will leak out. But if one end of the water pipe is blocked, no matter how the water pipe is placed, whether the water pipe is vertical or horizontal, even if there is a height difference between the two ends of the water pipe, the water in the water pipe will not leak out of the water pipe if they are not at the same height.

[0062] It should be noted that the unidirectional valve **1342**, the first unidirectional valve **1430**, or the second unidirectional valve **1440** can all be of a type such as a soft type unidirectional valve, a mechanical spring valve,

or an electronic valve. For example, when a soft type unidirectional valve is used, the unidirectional valve **1342**, the first unidirectional valve **1430**, or the second unidirectional valve **1440** may include a main pipe section **1431** and a flexible pipe section **1432**. The inner cavity of the flexible pipe section **1432** is communicated with the inner cavity of the main pipe section **1431**, and the inner pipe walls of the opposite sides of the flexible pipe section **1432** are fitted and closed with each other. The inner tube wall on the opposite side of the flexible pipe section **1432** can only be separated at the pressure values developed when the suction source **1300** is activated so that only the pneumatic or hydraulic pressure value formed when the suction source **1300** is activated can cause the soft one-way valve to open. Alternatively, when a mechanical spring valve is used, and only the air pressure or hydraulic pressure value is greater than the elastic force of the spring in the mechanical spring valve, the gas or liquid can flow out of this mechanical spring valve. Alternatively, when the electronic valve is used, the unidirectional valve **1342**, the first unidirectional valve **1430**, or the second unidirectional valve **1440** can be automatically controlled to close when the main body is turned off or the water pump is not working.

[0063] In one embodiment, the accommodation cavity **2300** is provided with a spray port **2310** communicating with the first distribution channel **1410**. The angle between the injection direction of the spray port **2310** and the radial centerline of the roller brush is an acute angle. The radial centerline is perpendicular to the central axis of the tube brush. Both ends of the roller brush are symmetrical with respect to the radial centerline. At this time, when the injection direction and the radial centerline are at an acute angle, the area of the injection can be expanded so as to make water sprayed more evenly on the roller brush. If the injection direction does not form an acute angle with the radial centerline, such as the injection direction being parallel to the radial centerline, when the spray port **2310** sprays along the radial centerline of the roller brush, it can only spray to one point on the roller brush. The roller brush can only form a circle area at most after rotation but is unable to spray evenly.

[0064] In one embodiment, a roller brush cover **2400** is provided. The roller brush cover **2400** is located on the base **2000**, the accommodation cavity **2300** is provided between the roller brush cover **2400** and the base **2000**, and the inner wall of the roller brush cover **2400** fits with at least a part of the bristles of the roller brush. The bristles of the roller brush can be made of fluff or soft fiber materials. The abutment of the roller brush cover **2400** with at least a part of the bristles of the roller brush can be defined as the direct contact between the roller brush cover **2400** and the bristles of the roller brush. Alternatively, it can be defined as a distance of 0mm-5mm between the roller brush cover **2400** and the bristles of the roller brush.

[0065] After the roller brush cover **2400** is fitted to the bristles of the roller brush, the friction and squeezing force

will be formed between the roller brush, the roller brush cover **2400**, and the water. The surface of the roller brush and the roller brush cover **2400** can be cleaned by the friction and squeezing force between the three so as to make the cleaning equipment always keep the roller brush and the roller brush cover **2400** clean during the operation of the equipment. Moreover, the roller brush and the roller brush cover **2400** can also be kept very clean after the cleaning equipment is self-cleaning. If the roller brush and roller brush cover **2400** are not designed to fit with each other, the roller brush or the roller brush cover **2400** is difficult to keep clean during operation of the cleaning equipment and after the machine is self-cleaning.

[0066] In one embodiment, the cleaning equipment includes a water leakage channel **1380**, and the water leakage channel **1380** connects with the water storage cavity of the water supply tank **1200**. The inlet of the water leakage channel **1380** is located at the lowest position of the water storage cavity, therefore, the water remaining in the water storage cavity of the water supply tank **1200** can be discharged through the water leakage channel **1380**. At this time, a matching water tank can be provided on the main body, and the water discharged from the water leakage channel **1380** can be collected through the matching water tank.

[0067] In one embodiment, the cleaning equipment includes a second filter, the second filter is configured at the air outlet of the wastewater tank **1100**. Therefore, the second filter can filter the airflow in the wastewater tank **1100** and then discharges the air to the outside of the main body of the cleaning equipment.

[0068] In one embodiment, the cleaning device includes a base seat **3000**, a power supply **3100**, and a control panel, and the base **2000** and the base seat **3000** can be assembled separately. The base seat **3000** is provided with a heater **3400**, a second fluid channel **3500**, and a hot air outlet **3600**, and the second fluid channel **3500** is provided between the heater **3400** and the hot air outlet **3600**. There is a blower **3700** in the base seat **3000**, which can play the role of hot air diversion through the second fluid channel **3500**. The second fluid channel **3500** is equivalent to the hot air channel in the base seat **3000**. The base seat **3000** is provided with a first charging contact **3200**, and the first charging contact **3200** is configured to connect to an external power supply. A power supply **3100** is provided on the main body, and the power supply **3100** is a rechargeable power supply **3100**. The base **2000** is provided with a second charging contact **3300**, and the second charging contact **3300** is electrically connected to the power supply **3100**. The first charging contact **3200** and the second charging contact **3300** are configured to be able to be electrically connected in a state in which the base **2000** is assembled to the base seat **3000** to charge the power supply **3100** with the external power supply. The control panel is at least electrically connected to the power supply **3100**, the negative pressure source **1500**, and the suction source **1300**. The

control panel has a self-cleaning function button, and the self-cleaning function button is electrically connected to the control assembly **2200**. The self-cleaning function button is configured to start a self-cleaning working mode, and in the self-cleaning working mode, the ultra-violet generator **2100** is turned off by the control assembly **2200**.

[0069] When the base **2000** of the cleaning equipment is placed on the base seat **3000**, the user can press the self-cleaning function button, and the control panel can control the cleaning equipment to start the self-cleaning working mode through the corresponding control system. In the self-cleaning working mode of the cleaning equipment, the power supply **3100** can energize the negative pressure source **1500**, the drive motor, the suction source **1300**, etc. The suction source **1300** can control the clean water in the water supply tank **1200** to be delivered to the roller brush through the water outlet channel **1370**, and the drive motor drives the roller brush to rotate to realize the self-cleaning of the roller brush. After the negative pressure source **1500** is activated, the suction force of the negative pressure source **1500** can suck the remaining stains on the roller brush or cleaning equipment into the wastewater tank **1100**. Specifically, when the cleaning equipment is started in the self-cleaning working mode, the cleaning equipment enters the drying mode. In the drying mode, the driver is configured to drive the roller brush to rotate, the suction source **1300** is configured to drive the cleaning medium stored in the water supply tank **1200** to provide to the roller brush, and the roller brush rotates and self-cleans with the cleaning medium. The heater **3400** is configured to heat at least a part of the gas flowing through the second fluid channel **3500** to form a high temperature air in the self-cleaning working mode. The high temperature air is blown towards the roller brush through the hot air outlet **3600**. The negative pressure source **1500** is configured to drive the high temperature air to flow along the second fluid channel **3500** and the first fluid channel. The high temperature air passes through the roller brush to assist the cleaning medium to dry the roller brush. The negative pressure source **1500** can also drive the dirt on the roller brush to flow into the wastewater tank **1100** along the first fluid channel.

[0070] The control panel also has an interactive display module. The interactive display module can display the charging status or other working mode status when the cleaning equipment is charging to alert the user about the actual working condition of the current cleaning equipment. In addition, during the charging period of the cleaning equipment, the cleaning equipment can start the self-cleaning working mode at the same time to carry out the self-cleaning operation of the roller brush. Of course, the charging function can also be selectively deactivated in the self-cleaning working mode of the cleaning equipment. Meanwhile, when the cleaning equipment is not placed on the base seat **3000**, the user can also start the self-cleaning working mode to perform the self-cleaning

operation of the roller brush. Moreover, whether the base **2000** and the base seat **3000** are docked can be determined by detecting whether the first charging contact **3200** and the second charging contact **3300** are connected with each other. Alternatively, whether the main body and the base seat **3000** are docked can be detected through distance sensors, infrared sensors, etc. The implemented detection manner may also be other detection manners, which will not be repeated here.

[0071] The base seat **3000** is provided with a cleaning cavity for accommodating the roller brush, and a water storage tank is opened in the cleaning cavity. At least a part of the roller brush can extend into the water storage tank. A hot air blower is provided on the main body or the base seat **3000**, and the hot air blower is used to provide hot air to the cleaning assembly and/or the water storage tank. The hot air blower may be configured to provide hot air to the roller brush or the water storage tank. Alternatively, the hot air blower may be configured to simultaneously provide hot air to the roller brush and the water storage tank. The hot air blower can include a heating module and a fan. During the process of the hot air blower providing hot air, the heating module can heat the surrounding air and the fan blows heated air to form hot air. The base seat **3000** can have pipelines and structures that cooperate with the hot air blower and use the pipeline structure to guide the hot air reasonably. For example, in one of the embodiments, the hot air blower may be connected with a hot air pipeline, and the outlet of the hot air pipeline communicates with the accommodation cavity. For instances, the outlet of the hot air pipeline is set on the base seat **3000** close to the end of the roller brush on the main body, and then the hot air blower is started to form hot air, and the hot air is blown out against the roller brush. While the hot air dries the surface of the roller brush on the main body, the hot air will also heat the water in the water storage tank. The heated water will clean the roller brush more thoroughly, making it easier for the dirt and dust attached to the roller brush to dissolve in hot water and separate from the roller brush. In addition, in one embodiment, a heater **3400** may also be provided on the base seat **3000**, and the heater **3400** is thermally connected to the water storage tank. The heater **3400** directly heats the water in the water storage tank to assist the cleaning of the roller brush.

[0072] The technical features of the above-described embodiments can be combined arbitrarily. For the sake of brevity, all possible combinations of the technical features in the above-described embodiments are not described. However, as long as there is no contradiction between the combinations of these technical features, all should be regarded as the scope described in this specification.

[0073] The above-mentioned embodiments only represent several embodiments of the present invention, and the descriptions thereof are more specific and detailed, but should not be construed as a limitation on the scope of the invention patent. It should be pointed out

that for those skilled in the art, without departing from the concept of the present invention, several modifications and improvements can be made, which all belong to the protection scope of the present invention. Therefore, the protection scope of the patent of the present invention should be subject to the appended claims.

Claims

1. A cleaning equipment, comprising:

a main body comprising a machine body and a base, wherein an accommodation cavity is defined by the base and a roller brush rotationally configured by a driver is disposed in the accommodation cavity; a wastewater tank, configured on the main body, with a liquid inlet and a liquid outlet, wherein the liquid inlet connects through the accommodation cavity, an inner wall of the wastewater tank is arc-shaped or a cross-section of the inner wall is ring shaped, an inlet blocker is provided at an inlet of the wastewater tank to divide an air stream flowing to the wastewater tank into multiple air streams to make the multiple air streams collide in the wastewater tank, and a first flow channel respectively connects through the accommodation cavity and the wastewater tank;

a negative pressure source, provided on the main body, generating negative pressure to lead dirt on a waiting to be cleaned surface to pass through the accommodation cavity and the first flow channel in sequence then be deposited into the wastewater tank; and

a water supply tank, configured on the main body, connecting to a suction source and a water divider in sequence with a water outlet channel, wherein at least one of a first distribution channel or a second distribution channel is provided with the water divider, wherein the first distribution channel connects through the roller brush and the second distribution channel leads a liquid stream outwards from the main body.

2. The cleaning equipment according to claim 1, wherein:

the water supply tank further includes a tank top portion, a tank bottom portion, and a water storage cavity, a water storage cavity of the water supply tank is divided into at least two cavity portions along a direction from the tank top portion to the tank bottom portion, and an area of cross sections of the cavity portions is reduced gradually.

3. The cleaning equipment according to claim 1, wherein:

an air divider is provided on the negative pressure

source and includes an air-dividing inlet and at least two air-dividing outlets, the air-dividing inlet connects to the liquid outlet provided with a filter assembly, the filter assembly is located between the liquid outlet and the air-dividing inlet, and the at least two air-dividing outlets connect to an external environment.

4. The cleaning equipment according to claim 3, wherein:

the air divider further includes an air-dividing shell configured on the negative pressure source, the air-dividing inlet is provided at a bottom portion of the air-dividing shell and the at least two air-dividing outlets are provided at side portions of the air-dividing shell and located at two sides of the air-dividing shell symmetrically.

5. The cleaning equipment according to claim 4, wherein:

the negative pressure source is located above the accommodation cavity, the air divider is located at a bottom portion of the negative pressure source, the liquid outlet is provided at atop portion of the wastewater tank, the air-dividing inlet and the liquid outlet connect longitudinally, a flow gap is provided between an outer wall of the wastewater tank and an inner wall of the accommodation cavity, and the at least two air-dividing outlets of the air divider each connect to an upper portion of the flow gap.

6. The cleaning equipment according to claim 1, wherein:

at least one first unidirectional valve is provided, the at least one first unidirectional valve is located between the suction source and the water divider, the at least one first unidirectional valve is configured to connect to the suction source and the water divider under pressure formed when the suction source is turned-on.

7. The cleaning equipment according to claim 1, wherein:

at least one second unidirectional valve is provided, the at least one second unidirectional valve is located between the first distribution channel and the second distribution channel, the at least one second unidirectional valve is configured to open at least one of the first distribution channel or the second distribution channel under pressure formed when the suction source is turned-on.

8. The cleaning equipment according to claim 2, wherein:

a water outlet structure is provided on the water supply tank, the water outlet structure is located at a bottom portion of the water supply tank, the water outlet structure includes a blocker, a water outlet, and an air inlet connecting to the water storage cavity,

the blocker is used to block the water outlet elastically.

9. The cleaning equipment according to claim 1, wherein:

the cleaning equipment further includes a roller brush cover, the roller brush cover is located on the base, the accommodation cavity is defined between the roller brush cover and the base, an inner wall of the roller brush cover fits with at least a part of bristles of the roller brush.

10. The cleaning equipment according to claim 9, wherein:

a first scraping strip is configured on the roller brush cover to scrape wastewater on the roller brush, and a second scraping strip is configured on the base to scrape ground dust.

11. The cleaning equipment according to claim 1, wherein:

a rotating device and a locking mechanism are provided, the rotating device is rotatably assembled on the base or the machine body, the machine body is connected to the base through the rotating device, and the locking mechanism is provided on at least one of the rotating device or the base, the locking mechanism is configured to lock the rotating device at a preset rotation angle, a rotation mechanism is arranged between the rotating device and the machine body, and the machine body rotates through the rotation mechanism on a fixed axis relative to the rotating device.

12. The cleaning equipment according to claim 1, comprising:

a main seat detachably configured with the base, wherein a heater, a second fluid channel, and a hot air outlet are provided by the main seat, wherein the second fluid channel is located between the heater and the hot air outlet; and a control panel, wherein a self-cleaning function button with electrical connections is provided on the control panel, wherein the self-cleaning function button defines an initiation of a self-cleaning mode, wherein the cleaning equipment enters a drying mode after the cleaning equipment is initiated into the self-cleaning mode, in which the driver is configured to drive the roller brush to rotate, and the suction source is configured to drive a cleaning medium stored in the water supply tank to supply the roller brush, and the roller brush rotates and self-cleans with the cleaning medium, wherein the heater is configured to heat at least a part of air flowing through the second fluid channel in a self-cleaning mode to form a high-

temperature airflow, and the high-temperature airflow is blown toward the roller brush through the hot air outlet, wherein the negative pressure source is configured to drive the high-temperature airflow to flow along the second fluid channel and a first fluid channel, wherein the high-temperature airflow passes through the roller brush to assist the cleaning medium to wash and dry the roller brush, and the negative pressure source drives dirt on the roller brush to flow into the wastewater tank along with the first fluid channel.

13. The cleaning equipment according to claim 12, wherein:
a cleaning cavity for accommodating the roller brush is provided on the main seat, a water storage space is provided in the cleaning cavity, at least a part of the roller brush extends into the water storage space, in the self-cleaning mode, the high-temperature airflow heats water in the water storage space.
14. The cleaning equipment according to claim 1, wherein:
the accommodation cavity is provided with a spray port connecting with the first distribution channel, and an included angle between an injection direction of the spray port and a radial centerline of the roller brush is an acute angle.
15. The cleaning equipment according to claim 1, wherein:
an ultraviolet (UV) generator is provided, the UV generator is configured in the base.

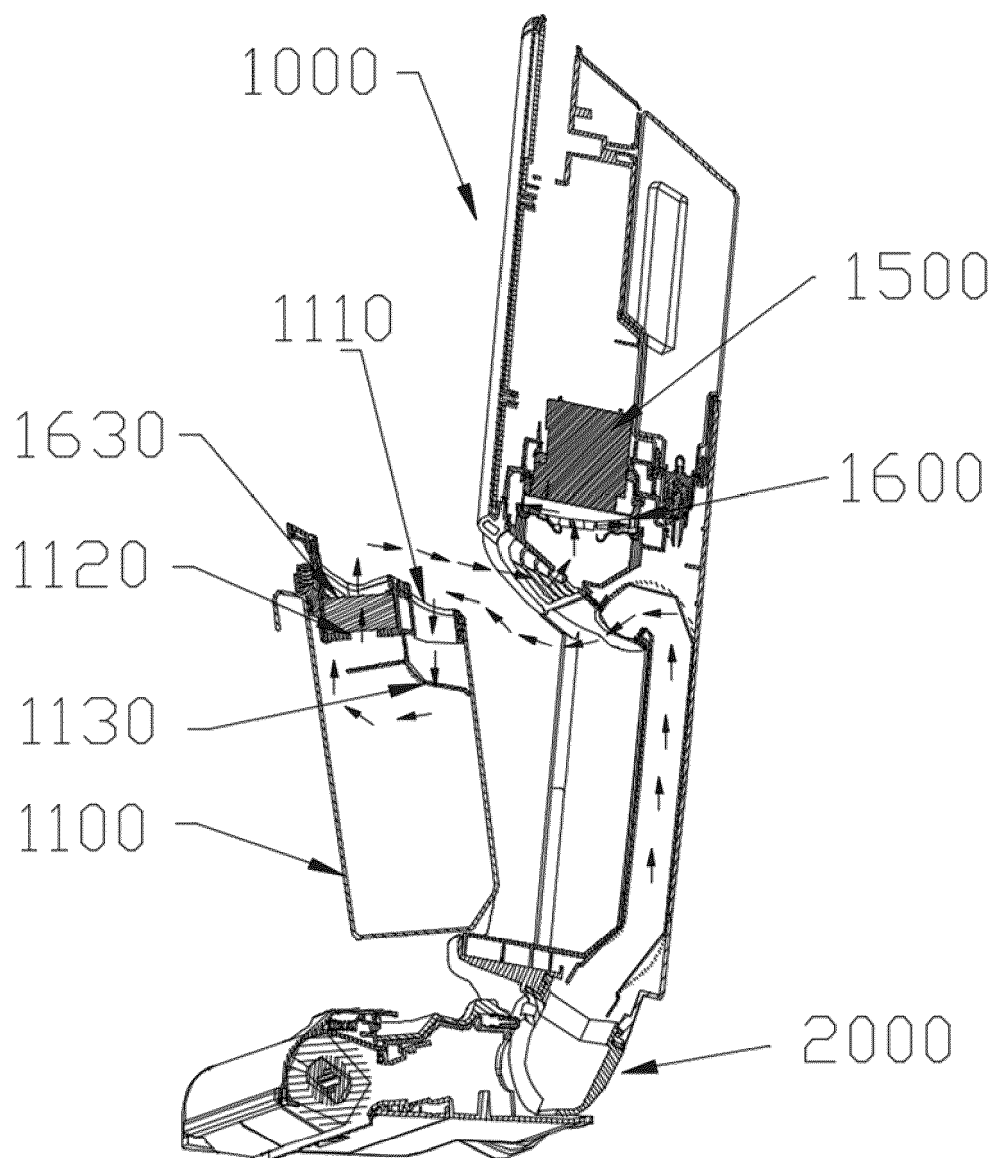


Fig. 1

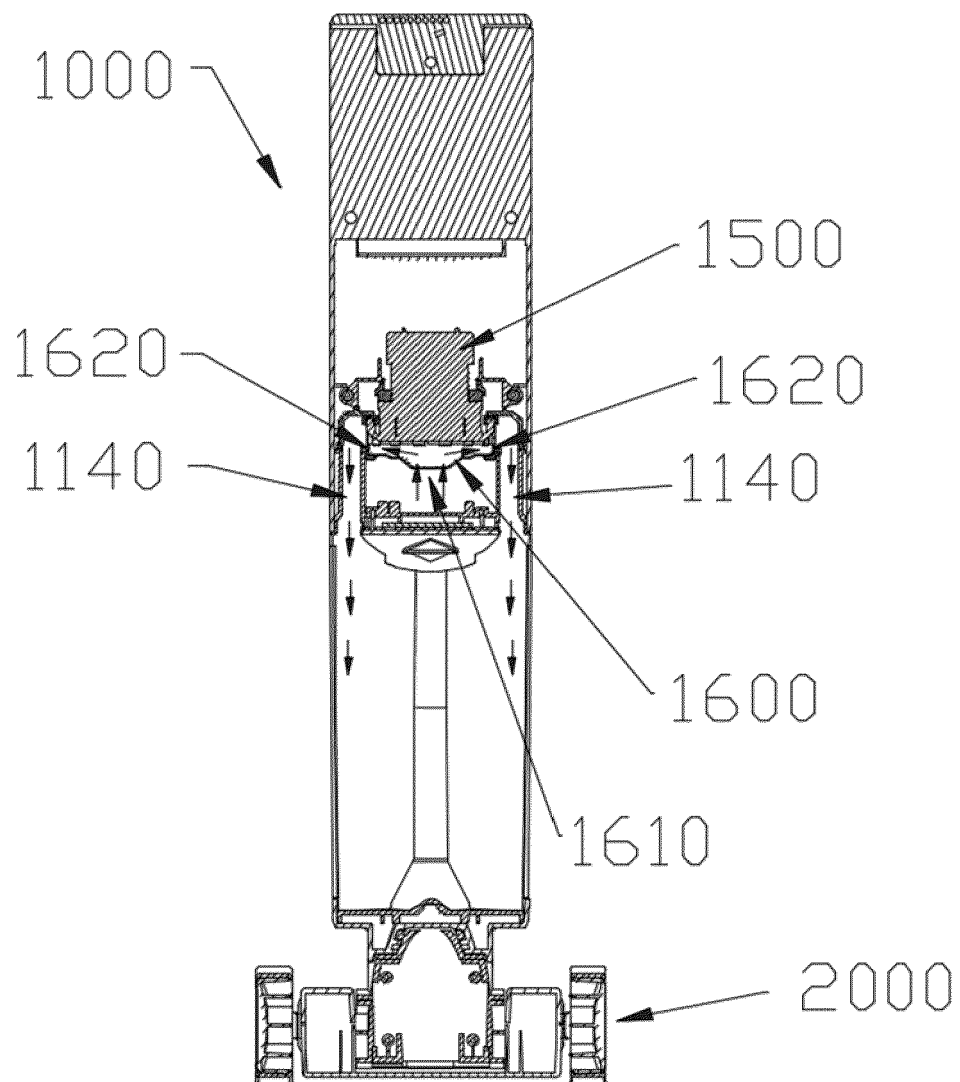


Fig. 2

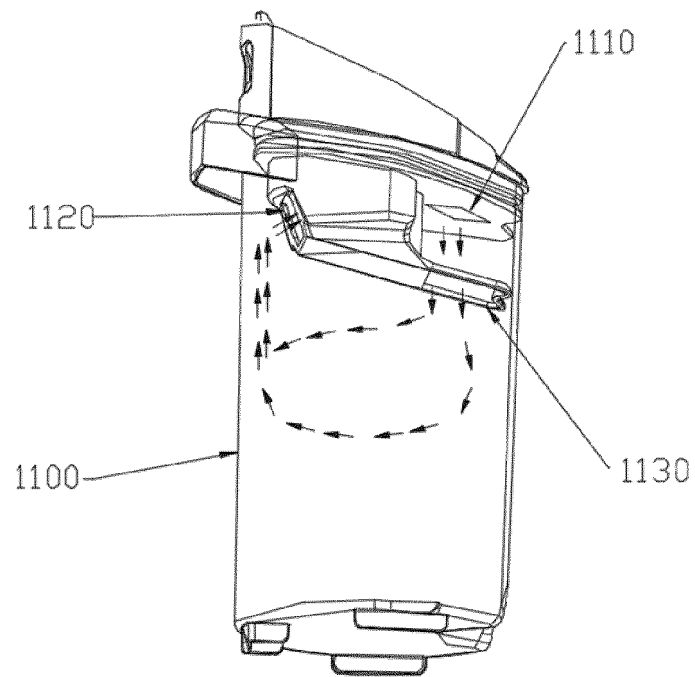


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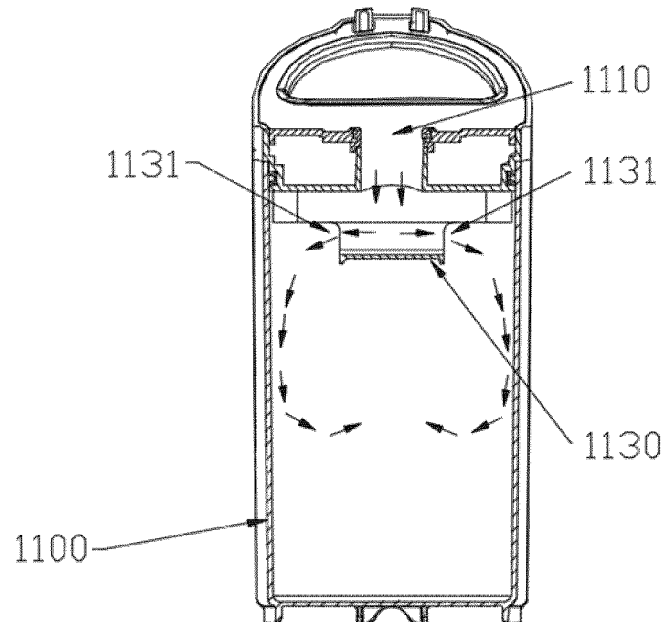


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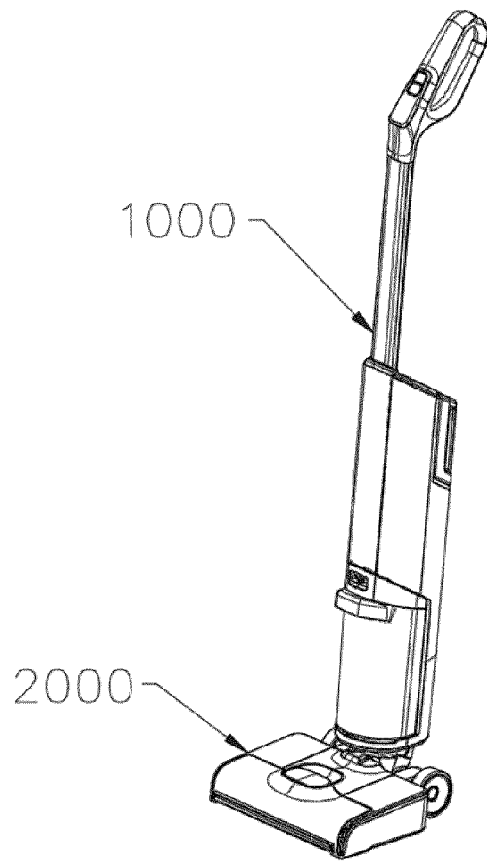


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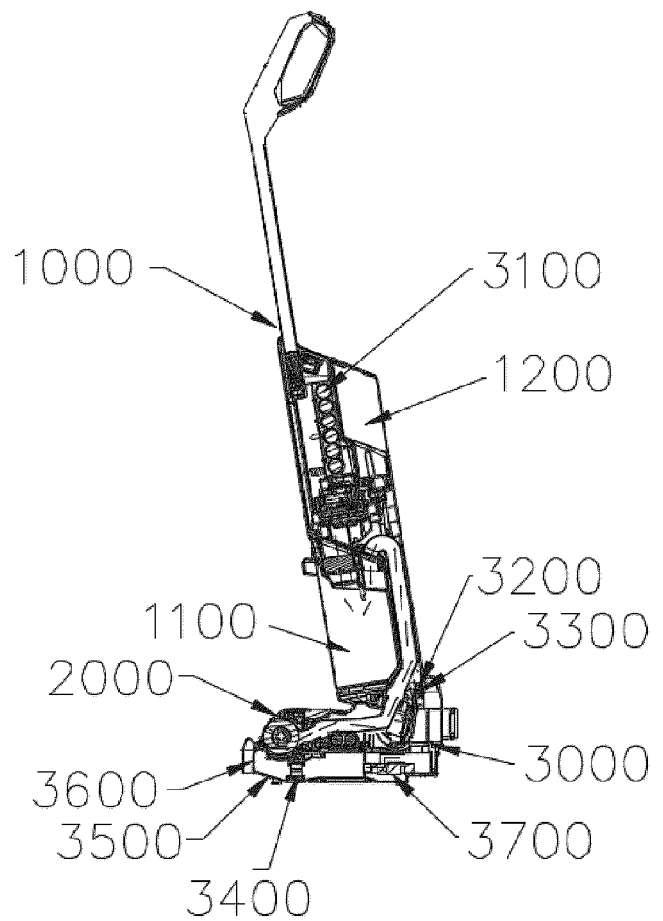


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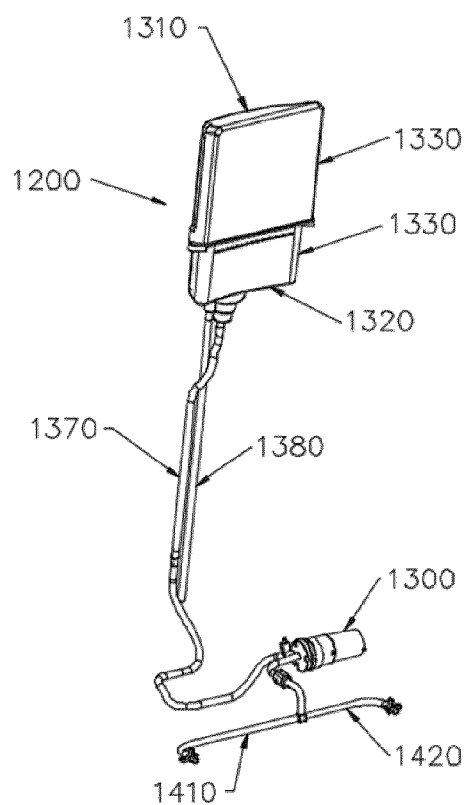


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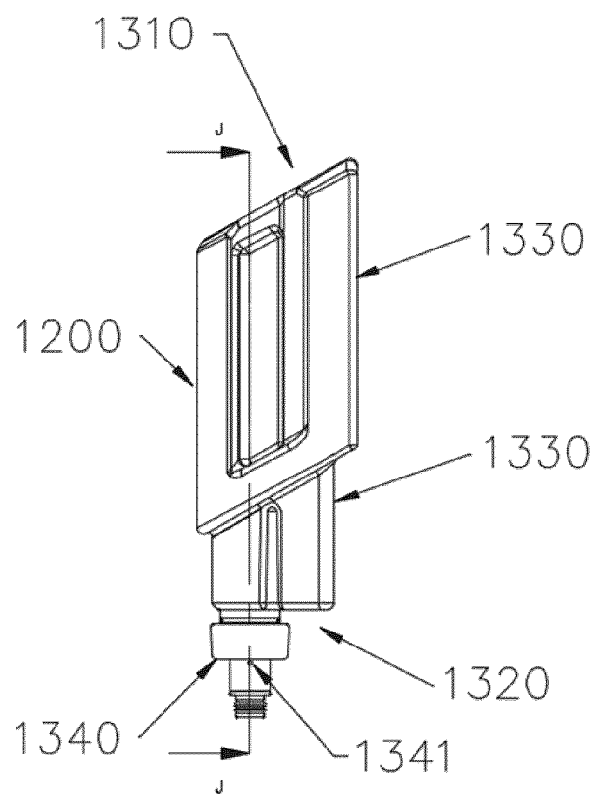


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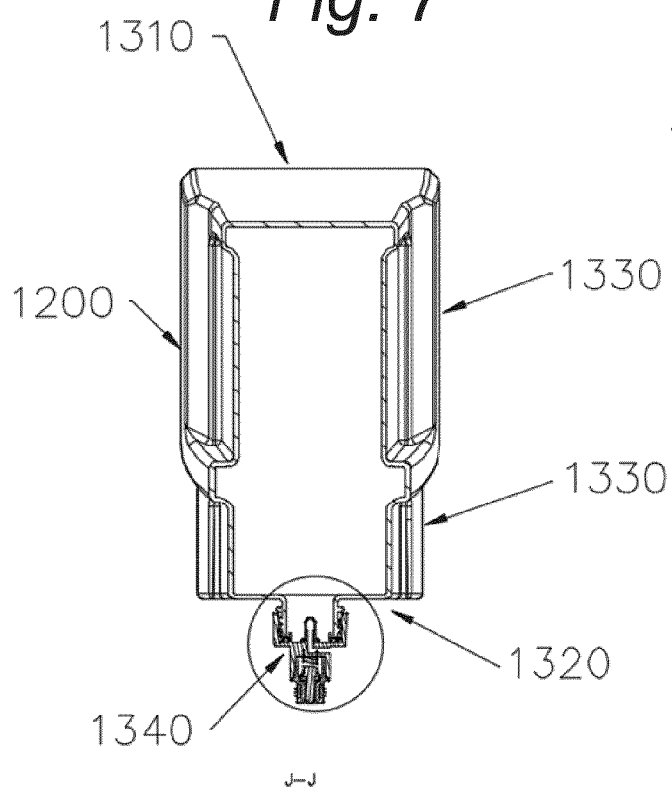


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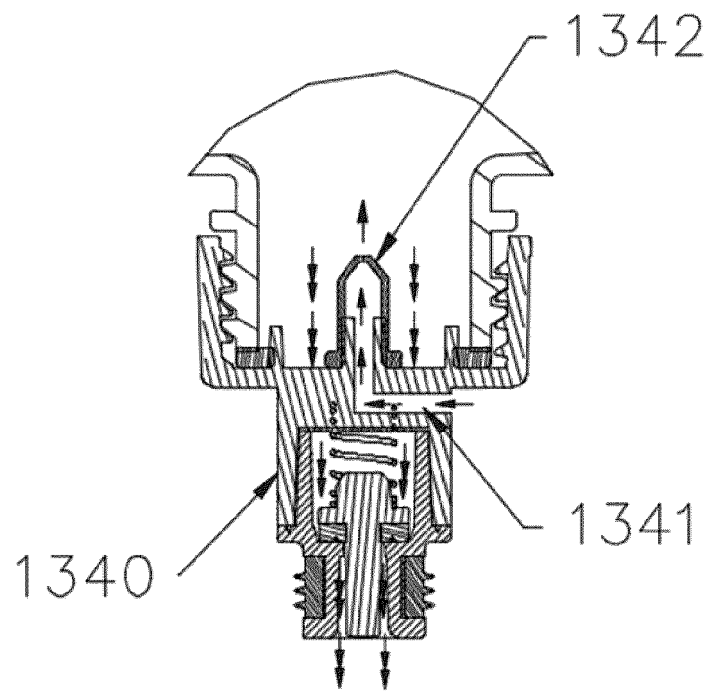


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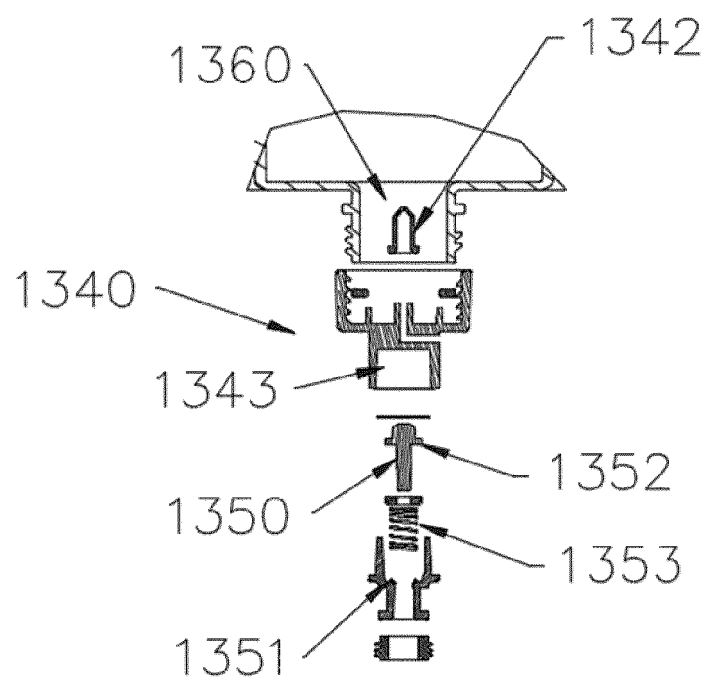


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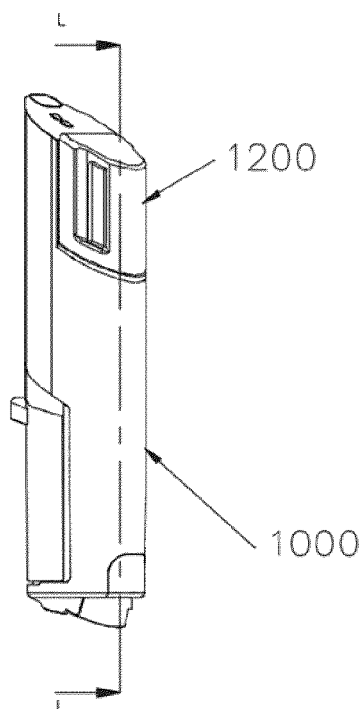


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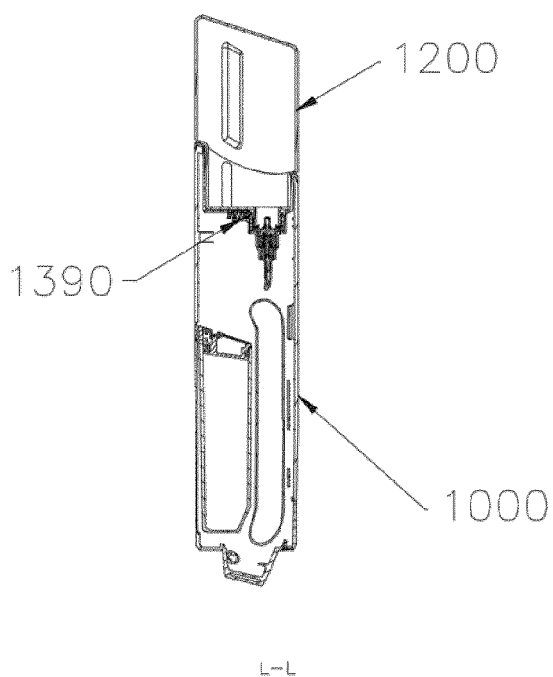


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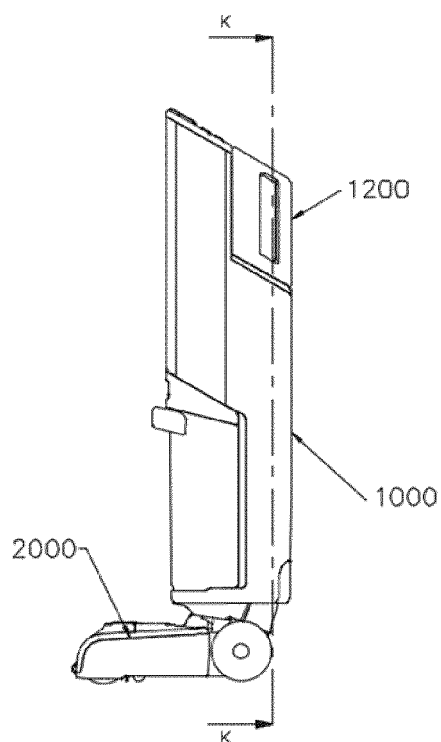


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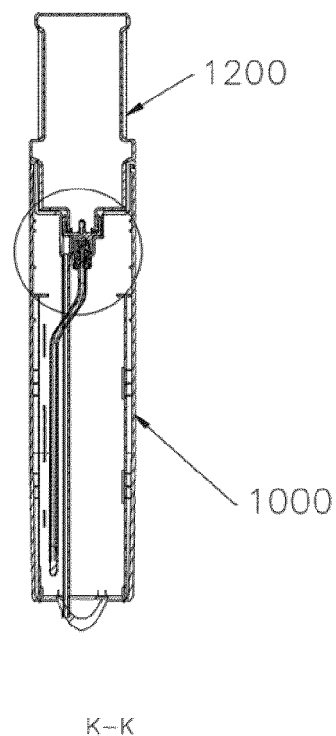


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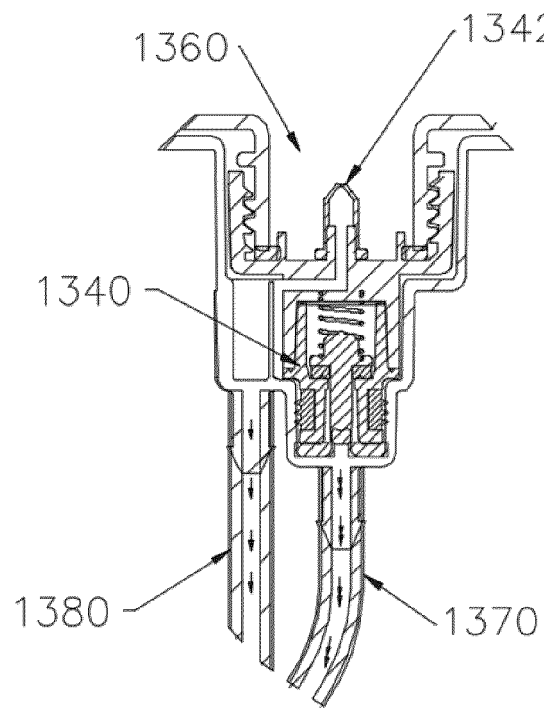


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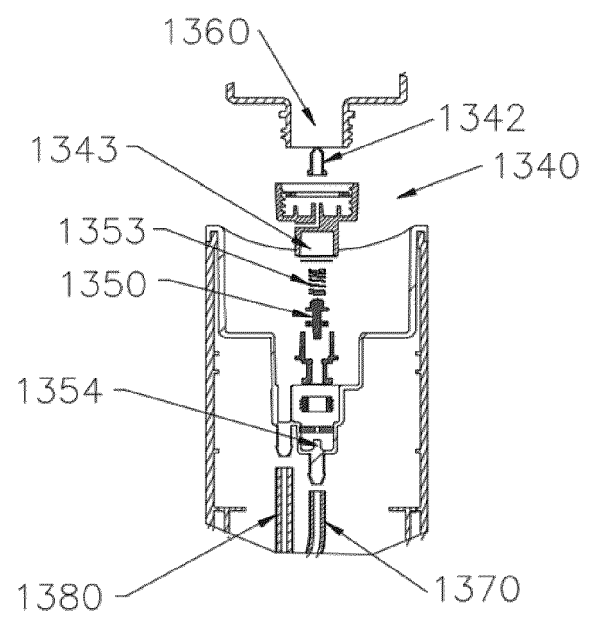


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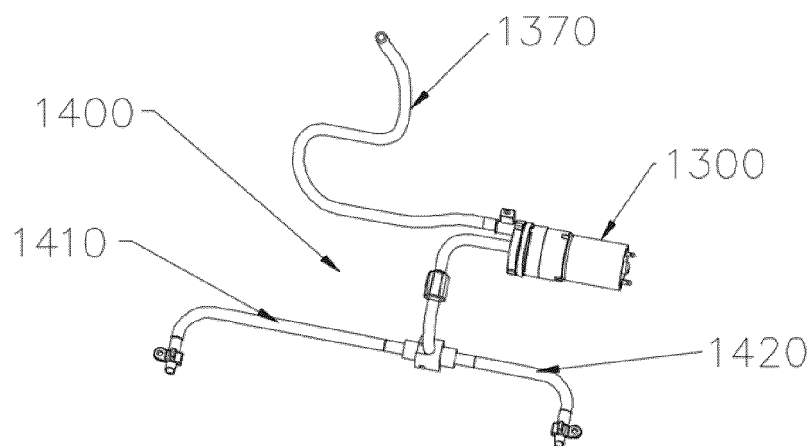


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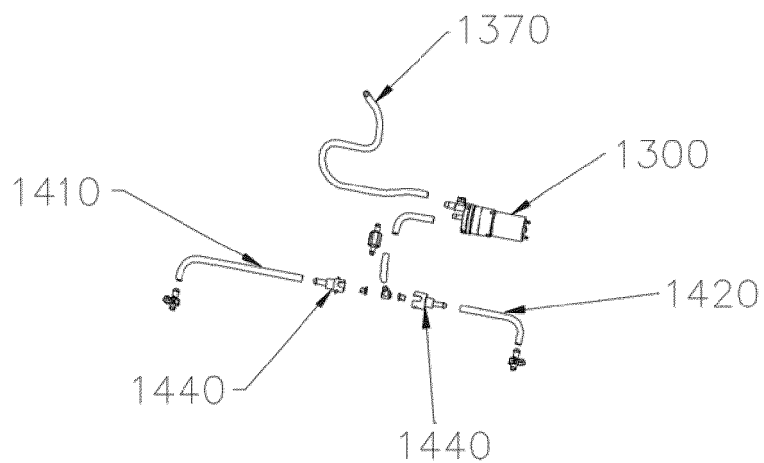


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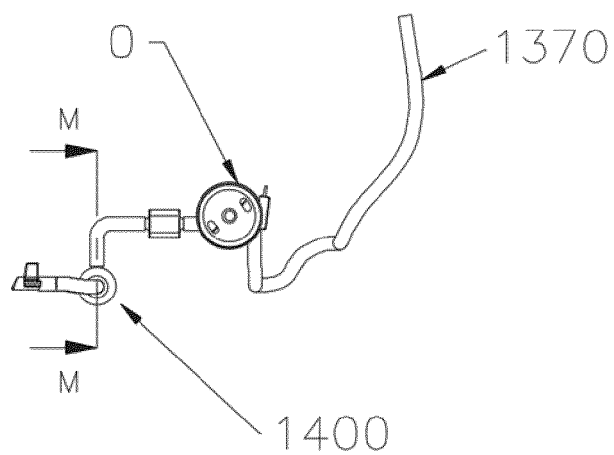


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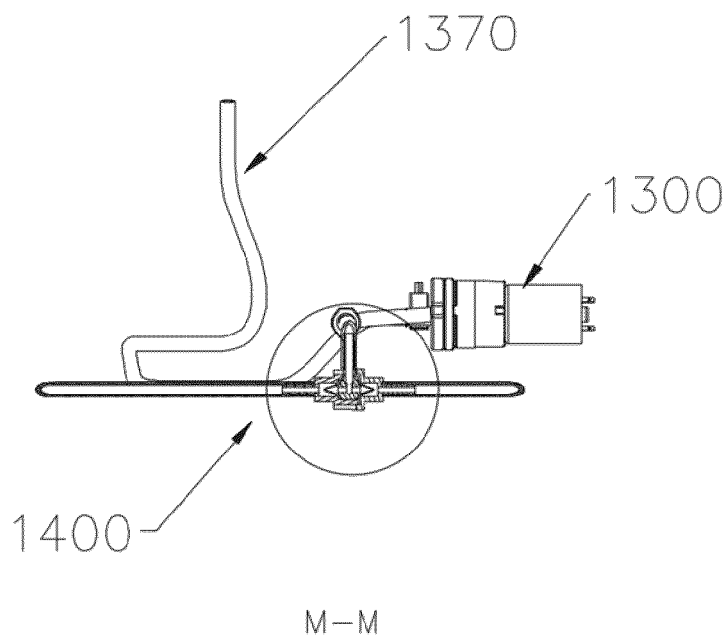


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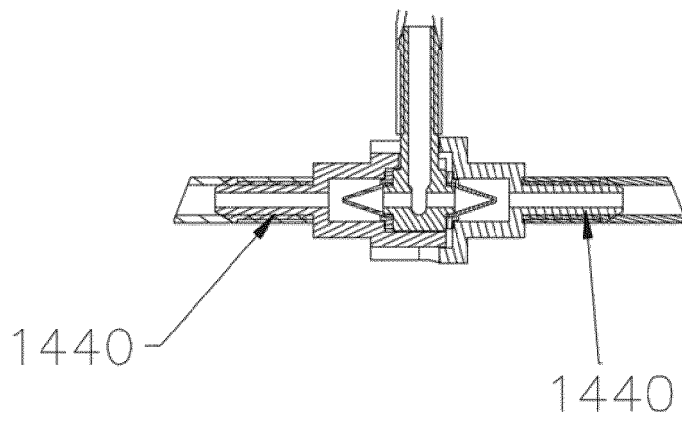


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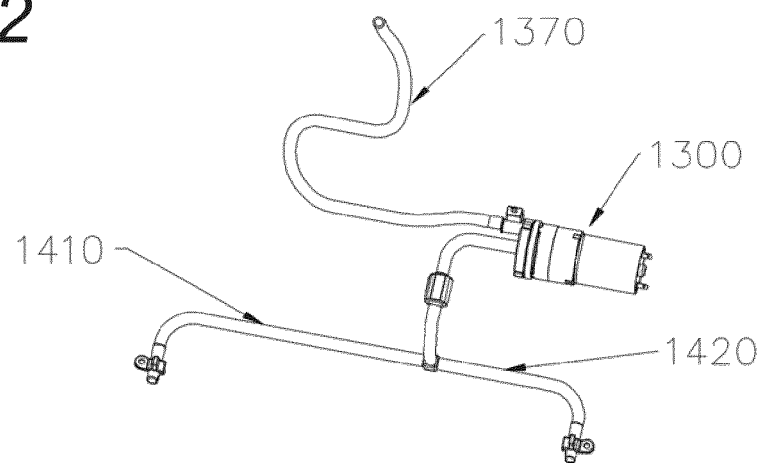


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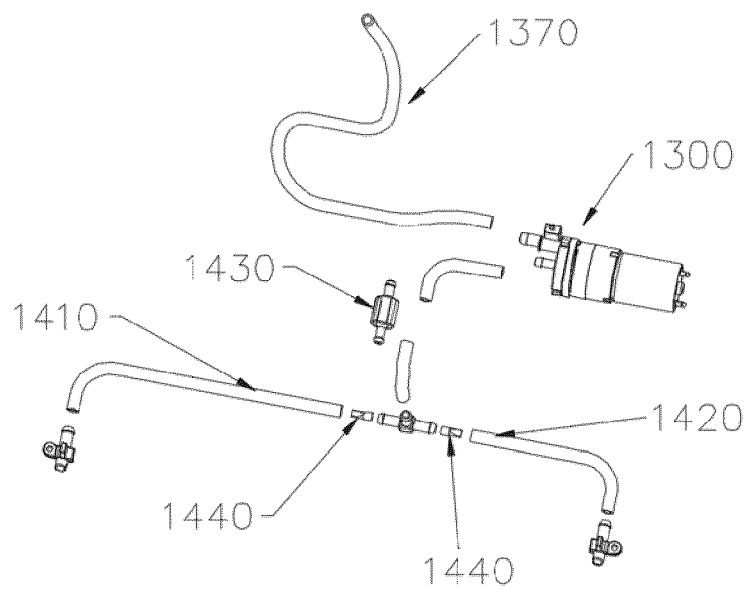


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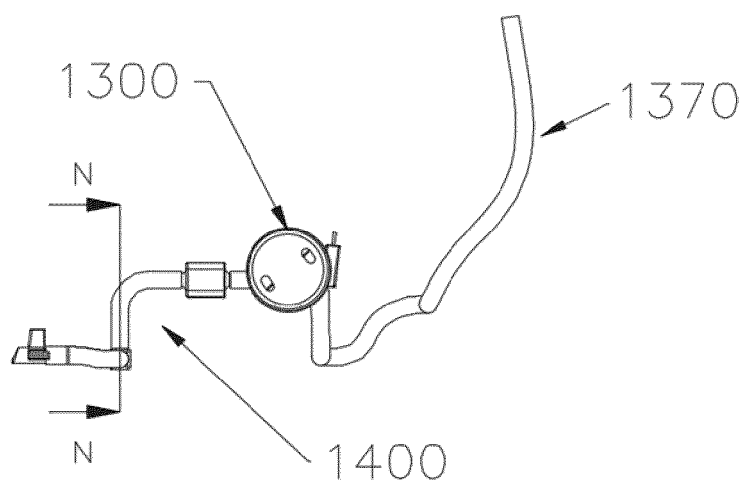


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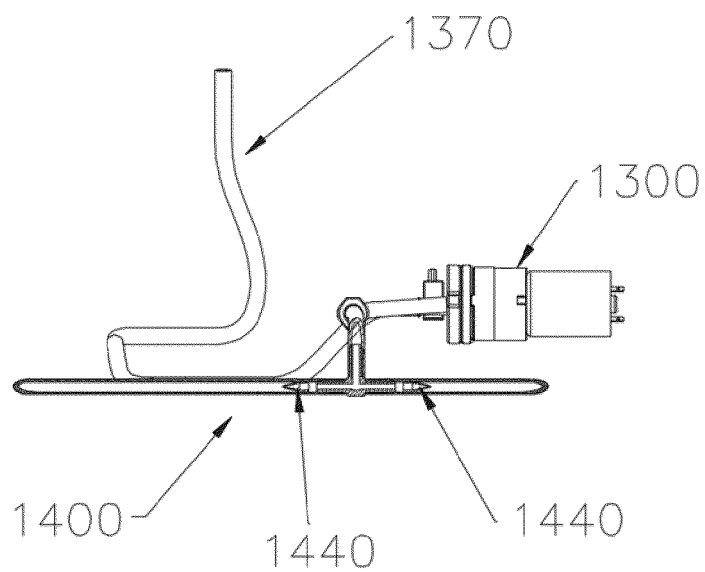


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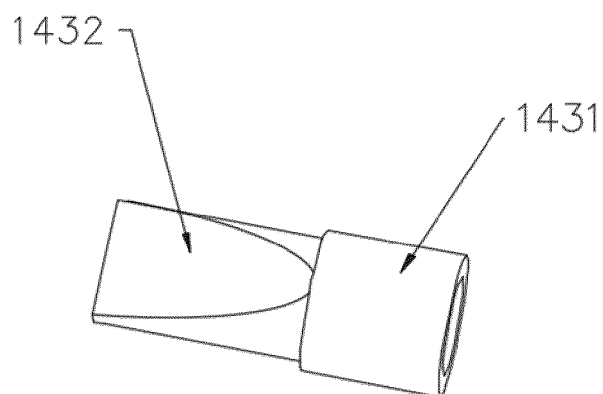


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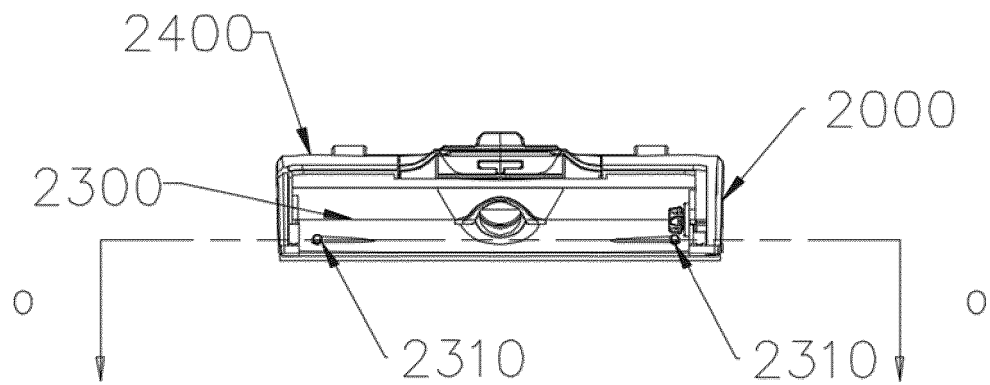


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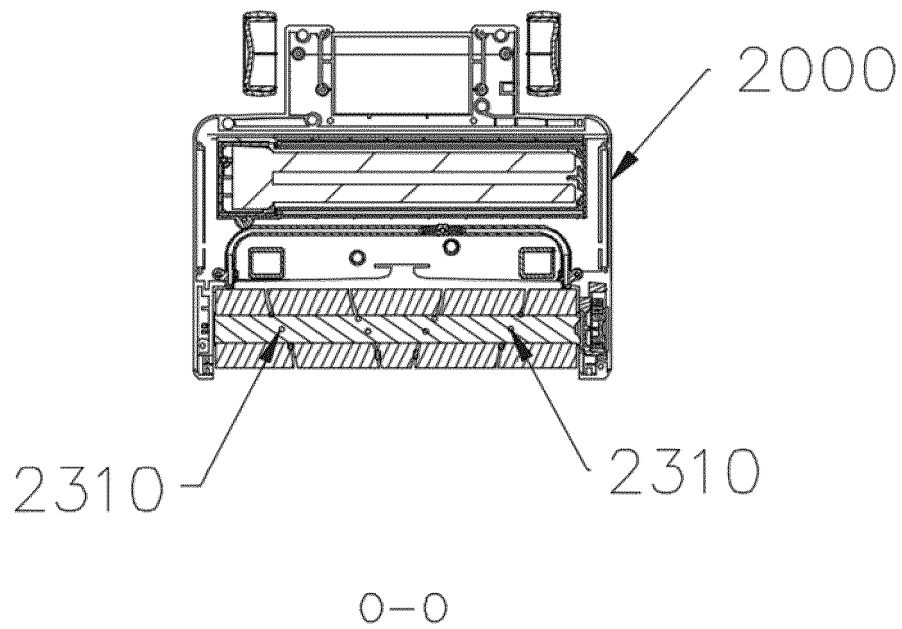


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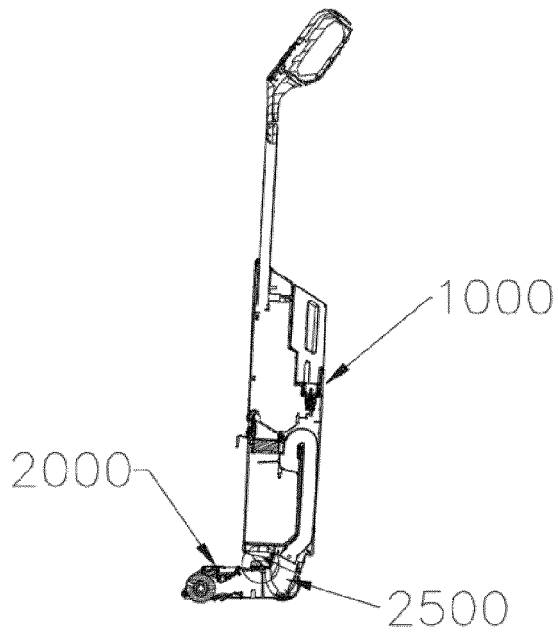


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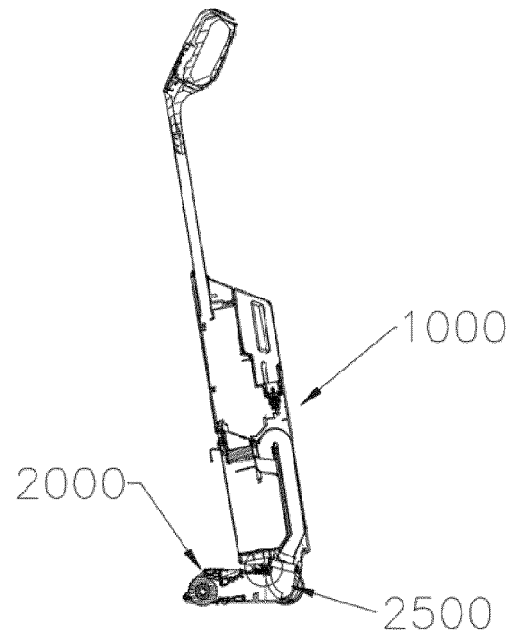


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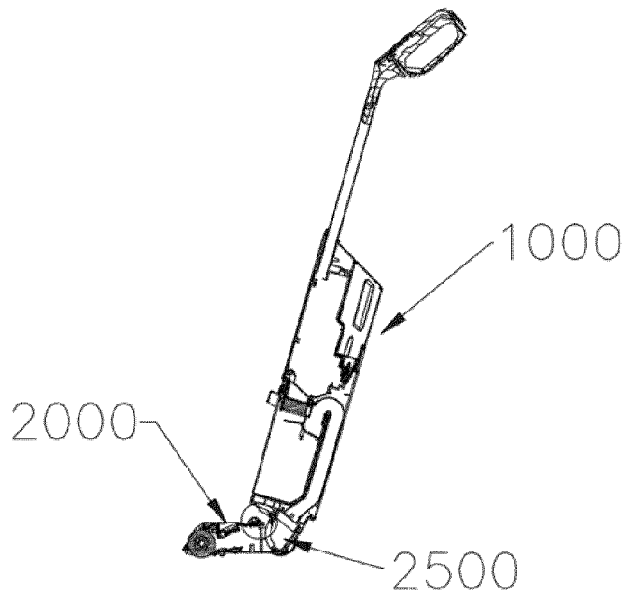


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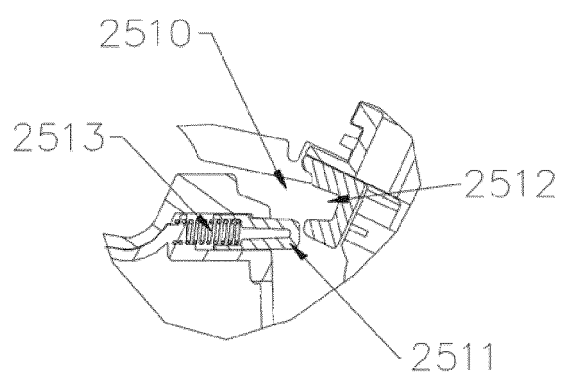


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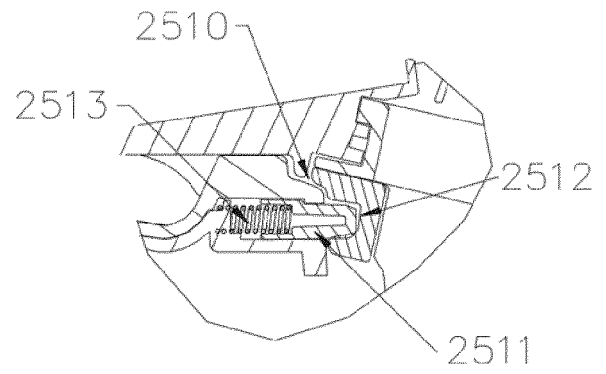


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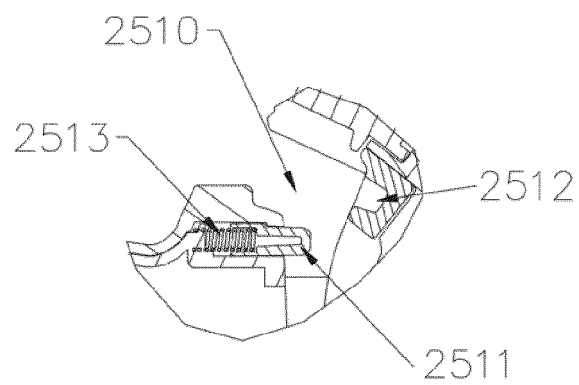


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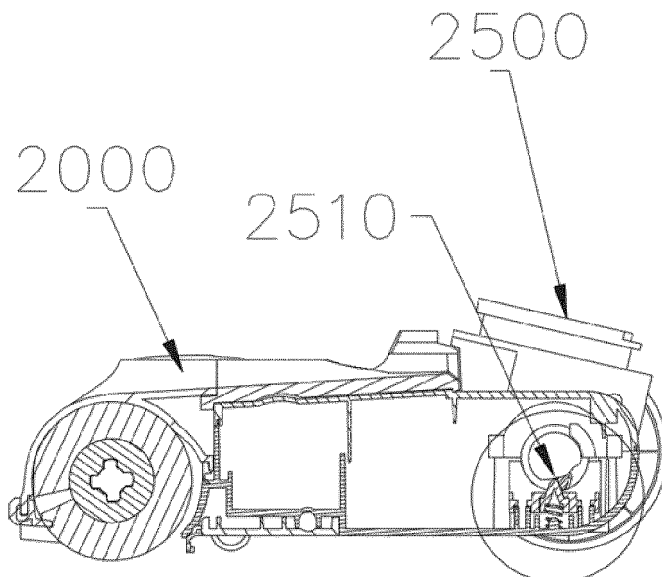


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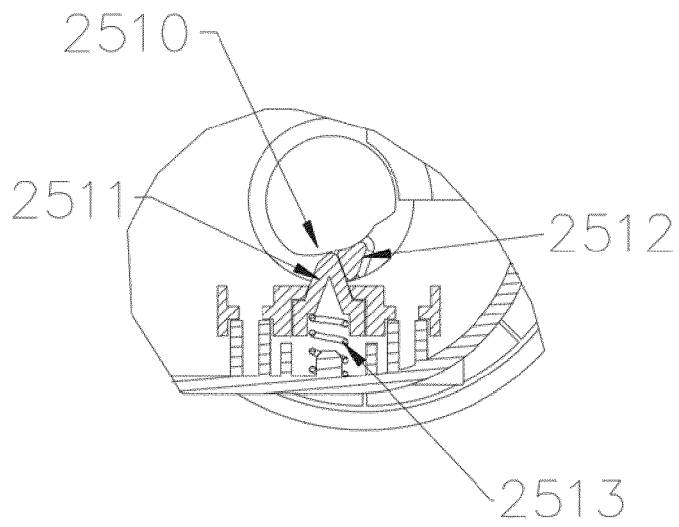


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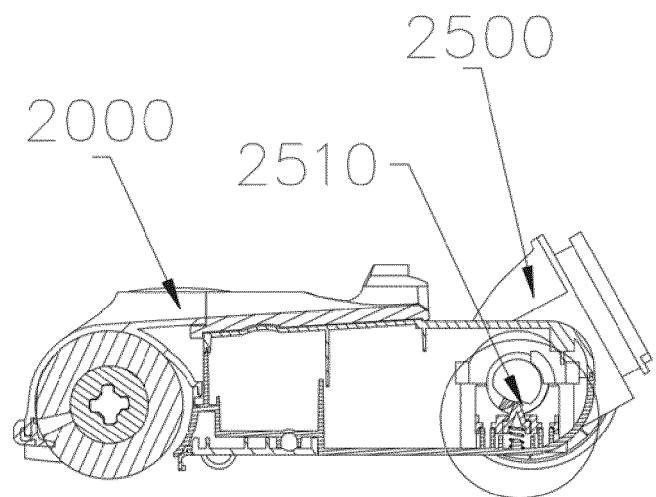


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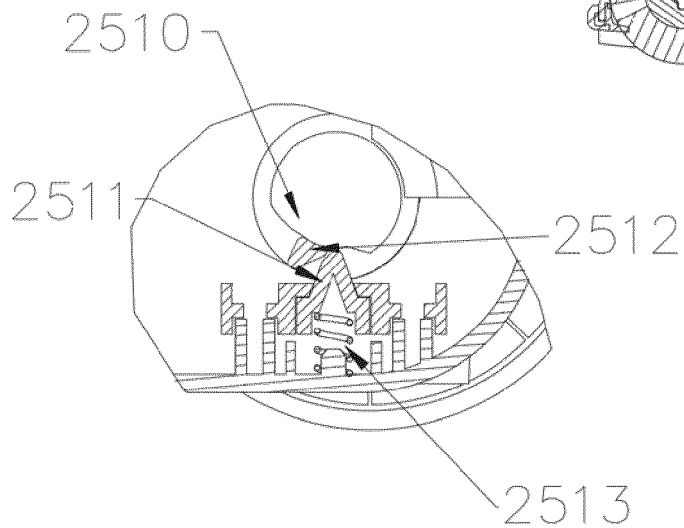


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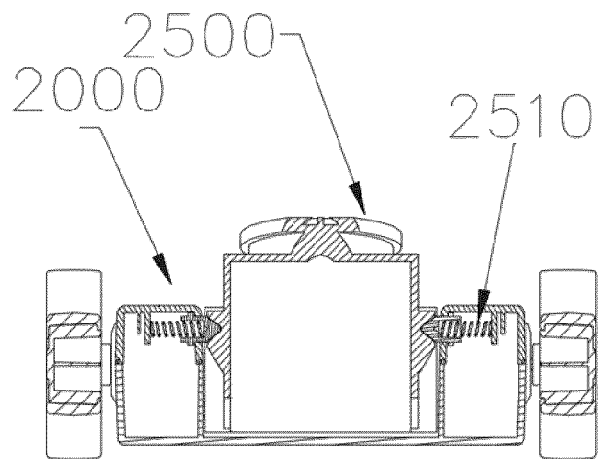


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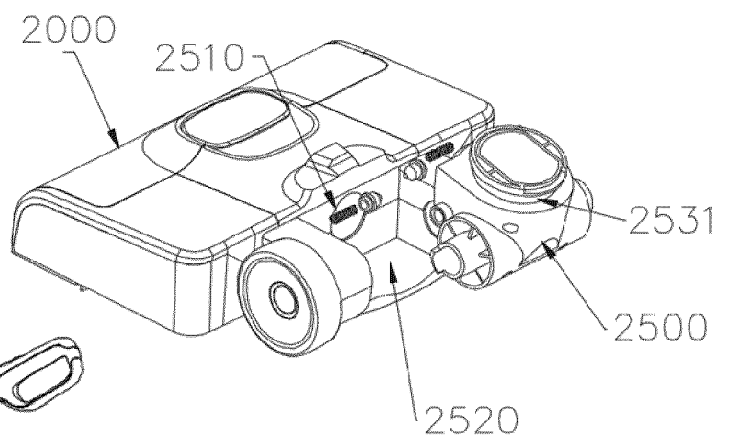


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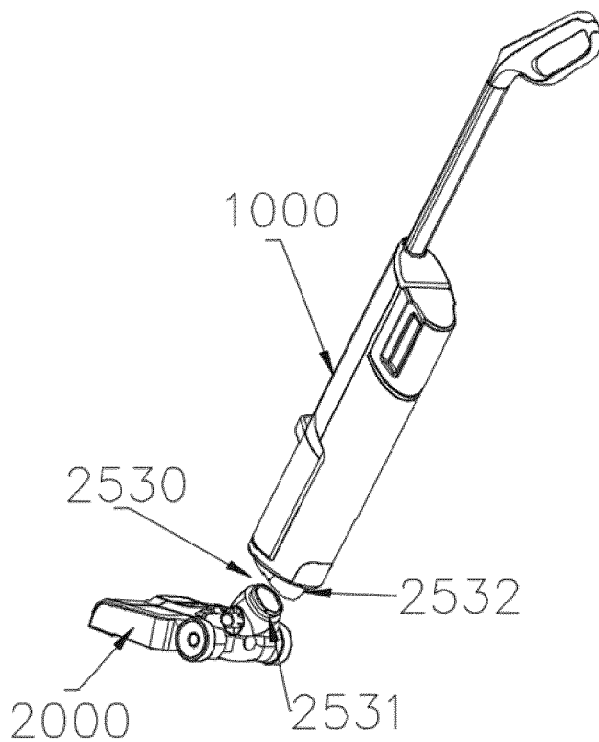


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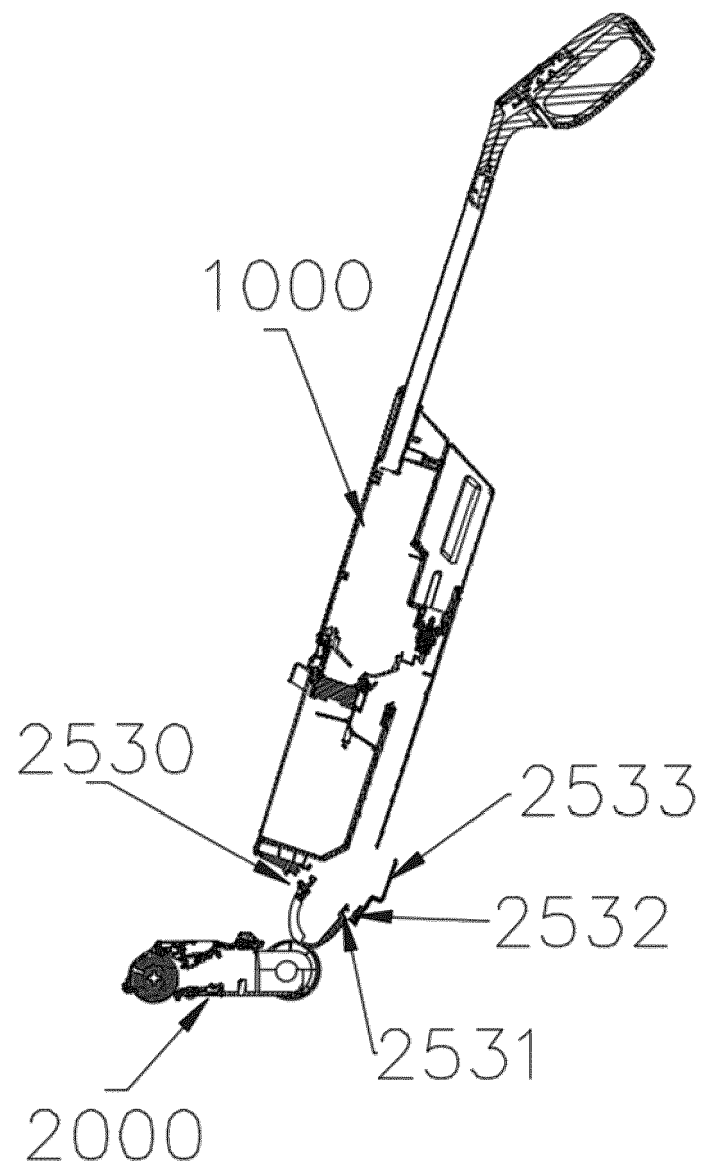


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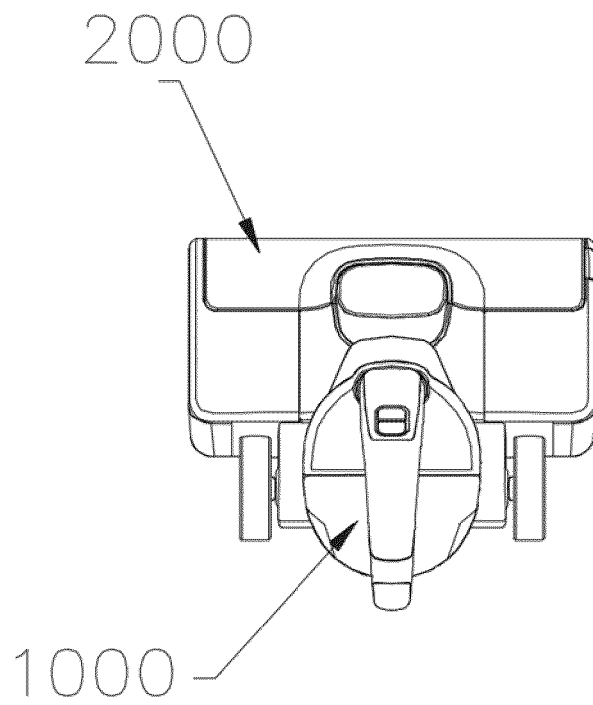


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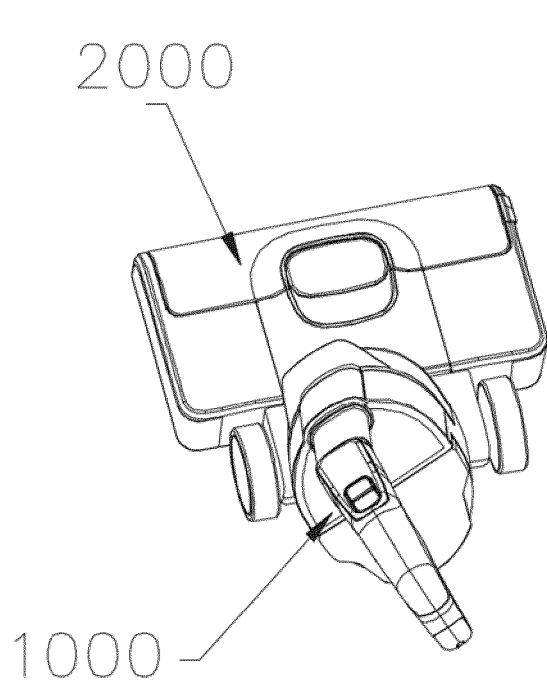


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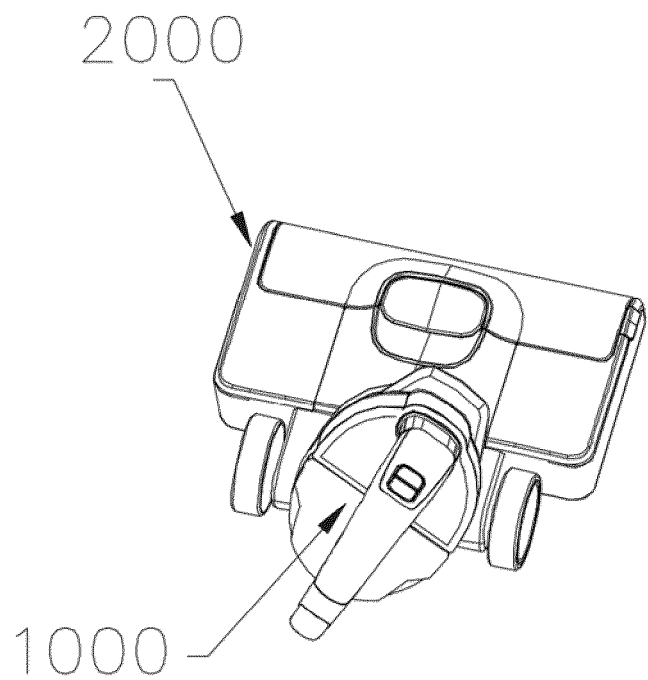


Fig. 46

REFERENCES CITED IN THE DESCRIPTION

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