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(71) Applicant: **Shen Zhen 3irobotix Co., Ltd.**
Shenzhen, Guangdong 518057 (CN)

(72) Inventor: **YANG, Yong**
Shenzhen, Guangdong 518057 (CN)

(74) Representative: **DehnsGermany Partnerschaft von Patentanwälten**
Theresienstraße 6-8
80333 München (DE)

(54) **FLOOR BRUSH AND FLOOR CLEANING DEVICE**

(57) A scrubber includes: a main scrubber body (1); a scrubbing brush (3) including a front cleaning brush (302) and a rear cleaning brush (303); a front suction port (304) facing toward the front cleaning brush (302) and a rear suction port (305) facing toward the rear cleaning brush (303); a front flow-guiding channel (308) in communication with the main suction port (307) and the front suction port (304); and a rear flow-guiding channel (309) in communication with the main suction port (307) and the rear suction port (305). A central axis of the front flow-guiding channel (308) and a central axis of the rear flow-guiding channel (309) intersect in the front flow-guiding channel (308).

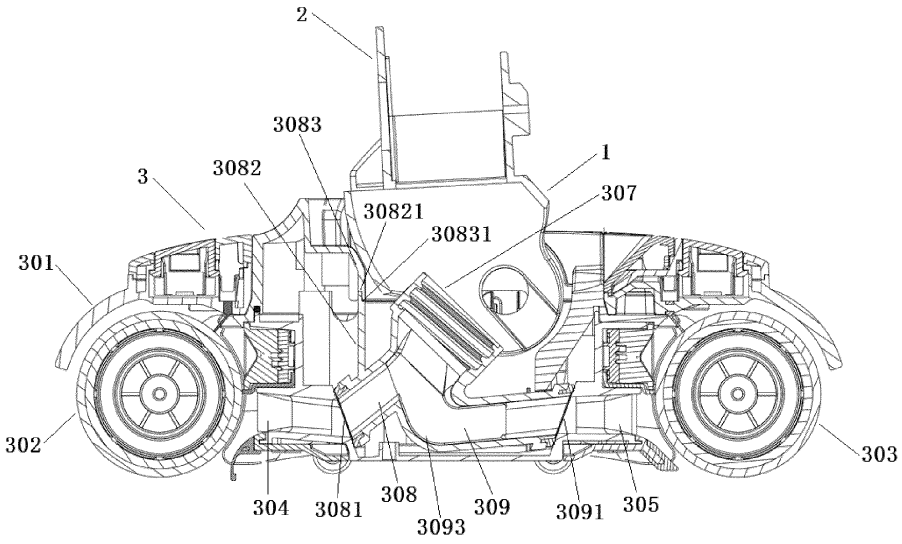

FIG. 1

EP 4 285 804 A1

Description

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application is based on and claims priority to Chinese Patent Application No. 202220143355.6, filed on January 19, 2022, which is incorporated herein by reference in its entirety.

FIELD

[0002] The present disclosure relates to the field of cleaning devices, and more particularly, to a scrubbing brush and a scrubber.

BACKGROUND

[0003] As a cleaning appliance, a scrubber is provided inside with a front cleaning brush and a rear cleaning brush. When the scrubber is working, the front cleaning brush and the rear cleaning brush can move independently and clean a ground during the rotation.

[0004] During the cleaning process of the scrubber, the front cleaning brush and the rear cleaning brush will collect sewage water on the ground. In order to adsorb the collected sewage water, a front flow-guiding channel and a rear flow-guiding channel that are in communication with a main suction port are provided in the scrubber, so that sewage water collected by the front cleaning brush and sewage water collected by the rear cleaning brush are sucked into the main suction port along the front flow-guiding channel and the rear flow-guiding channel, respectively. The main suction port is to adsorb sewage water from the front flow-guiding channel and the rear flow-guiding channel through a vacuum adsorption machine at the same time, which results in insufficient suction inside the front and rear flow-guiding channels, and causes sewage water in the front and rear flow-guiding channels to flow back to the ground, resulting in a need for secondary cleaning and reducing user experience.

[0005] Therefore, there is a need to reduce the loss of the suction inside the front and rear flow-guiding channels to improve the efficiency of the main suction port to adsorb sewage water inside the front and rear flow-guiding channels and prevent sewage water from flowing back to the ground.

SUMMARY

[0006] The purpose of the present disclosure is to provide a scrubber having a front suction port facing toward a front cleaning brush and a rear suction port facing toward the rear cleaning brush, which can reduce the loss of suction inside a front flow-guiding channel and a rear flow-guiding channel. Further, a central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel intersect in the front flow-guiding channel, and the rear flow-guiding channel has a water storage groove provided therein, which can prevent sewage water from flowing back to the ground.

[0007] The purpose of this application is achieved through the following technical solutions.

[0008] A scrubbing brush includes: a housing having a front part and a rear part that are opposite to each other; a front cleaning brush disposed in the front part of the housing; a rear cleaning brush disposed on in the rear part of the housing; a main suction port, sewage water collected with the aid of the front cleaning brush and the rear cleaning brush entering the main suction port; a front suction port facing toward the front cleaning brush; a rear suction port facing toward the rear cleaning brush; and a guide member. The guide member includes a front flow-guiding channel in communication with the front suction port and the main suction port and configured to guide sewage water collected with the aid of the front cleaning brush to the main suction port; and a rear flow-guiding channel in communication with the rear suction port and the main suction port and configured to guide sewage water collected with the aid of the rear cleaning brush to the main suction port. A central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel intersect in the front flow-guiding channel.

[0009] In some embodiments, an included angle between the central axis of the front flow-guiding channel and the central axis of the rear flow-guiding channel is in a range greater than 20° and smaller than 50°.

[0010] In some embodiments, an included angle between the front flow-guiding channel and a ground is in a range greater than 30° and smaller than 40°.

[0011] In some embodiments, an included angle between the rear flow-guiding channel and a ground is in a range smaller than 15°.

[0012] In some embodiments, the front flow-guiding channel includes a front flow-guiding channel inlet, a positioning plate being disposed close to the front flow-guiding channel inlet; and the housing has a fixing plate provided therein, the fixing plate and the positioning plate being engaged with each other.

[0013] In some embodiments, at least one fixing screw hole is further defined close to the front flow-guiding channel inlet and at a side of the positioning plate facing away from the front flow-guiding channel inlet.

[0014] In some embodiments, an end, in communication with the main suction port, of the rear flow-guiding channel is of a corner structure, the corner structure having a water storage groove formed therein.

[0015] In some embodiments, the water storage groove has an arc angle in a range greater than 60° and smaller than 100°.

[0016] In some embodiments, the flow-guiding member is a three-way flow-guiding member, and the main suction port, the front flow-guiding channel, and the rear flow-guiding channel are all disposed on the three-way flow-guiding member.

[0017] In some embodiments, the three-way flow-guid-

ing member includes a main body and a cover body, the main body has an opening defined on a side surface thereof, and the cover body is configured to block the opening.

[0018] The purpose of this application is also achieved through the following technical solutions.

[0019] A scrubber includes: a handle; a main scrubber body; and a scrubbing brush located at an end of the main scrubber body. The scrubbing brush includes: a housing having a front part and a rear part that are opposite to each other; a front cleaning brush disposed in the front part of the housing; a rear cleaning brush disposed in the rear part of the housing; a main suction port, sewage water collected with the aid of the front cleaning brush and the rear cleaning brush entering the main suction port; a front suction port facing toward the front cleaning brush; a rear suction port facing toward the rear cleaning brush; a front flow-guiding channel having an end in communication with the main suction port and another end in communication with the front suction port, and configured to guide sewage water collected with the aid of the front cleaning brush to the main suction port; and a rear flow-guiding channel having an end in communication with the main suction port and another end in communication with the rear suction port, and configured to guide sewage water collected with the aid of the rear cleaning brush to the main suction port. A central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel intersect in the front flow-guiding channel.

[0020] In some embodiments, an included angle between a central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel is in a range greater than 20° and smaller than 50°.

[0021] In some embodiments, an included angle between the front flow-guiding channel and a ground is in a range greater than 30° and smaller than 40°.

[0022] In some embodiments, an included angle between the rear flow-guiding channel and a ground is in a range smaller than 15°.

[0023] In some embodiments, the end, in communication with the main suction port, of the rear flow-guiding channel is of a corner structure, the corner structure having a water storage groove formed therein.

[0024] The purpose of this application is also achieved through the following technical solutions.

[0025] A scrubber includes: a handle; a main scrubber body; and a scrubbing brush located at an end of the main scrubber body. The scrubbing brush includes: a housing having a front part and a rear part that are opposite to each other; a front cleaning brush disposed in the front part of the housing; a rear cleaning brush disposed in the rear part of the housing; a main suction port, sewage water collected with the aid of the front cleaning brush and the rear cleaning brush entering the main suction port; a front suction port facing toward the front cleaning brush; a rear suction port facing toward the rear cleaning brush; a front flow-guiding channel having an end in communication with the main suction port and another end in communication with the front suction port, and configured to guide sewage water collected with the aid of the front cleaning brush to the main suction port; and a rear flow-guiding channel having an end in communication with the main suction port and another end in communication with the rear suction port, and configured to guide sewage water collected with the aid of the rear cleaning brush to the main suction port. A central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel intersect in the front flow-guiding channel. The scrubbing brush further includes a three-way flow-guiding member, and the main suction port, the front flow-guiding channel, and the rear flow-guiding channel are all disposed on the three-way flow-guiding member.

[0026] In some embodiments, the three-way flow-guiding member includes a main body and a cover body, the main body has an opening defined on a side surface thereof, and the cover body is configured to block the opening.

[0027] In some embodiments, the front flow-guiding channel includes a front flow-guiding channel inlet, a positioning plate being disposed close to the front flow-guiding channel inlet; and the housing has a fixing plate defined therein, the fixing plate and the positioning plate being engaged with each other.

[0028] In some embodiments, the end, in communication with the main suction port, of the rear flow-guiding channel is of a corner structure, the corner structure having a water storage groove formed therein.

[0029] In some embodiments, the water storage groove has an arc angle in a range greater than 60° and smaller than 100°.

[0030] In some embodiments, a first sealing ring is disposed between the front flow-guiding channel and the front suction port, and a second sealing ring is disposed between the rear flow-guiding channel and the rear suction port.

[0031] Compared with the related art, the present disclosure has the following beneficial effects.

[0032] In the scrubber provided by the present disclosure, front and rear suction ports are respectively arranged facing toward the front and rear cleaning brushes, which can reduce the loss of the suction inside the front and rear flow-guiding channels. Besides, the central axis of the front flow-guiding channel and the central axis of the rear flow-guiding channel intersect in the front flow-guiding channel, and the rear flow-guiding channel has a water storage groove provided therein, which can prevent sewage water from flowing back to the ground.

BRIEF DESCRIPTION OF THE DRAWINGS

[0033] In order to illustrate the technical solutions in the embodiments of the present disclosure more clearly, the accompanying drawings used in the description of the embodiments are introduced briefly below. Apparent-

ly, the drawings in the following description are only some embodiments of the present disclosure. For those of ordinary skill in the art, other figures can also be obtained based on these drawings without creative effort.

FIG. 1 is a schematic structural diagram of a scrubber according to the present disclosure.

FIG. 2 is a side-view schematic structure diagram of a three-way flow-guiding member of the scrubber shown in FIG. 1.

FIG. 3 is a schematic structural diagram of a three-way flow-guiding member, in a disassembled state, of the scrubber shown in FIG. 1.

[0034] Reference numerals: 1, main scrubber body; 2, handle; 3, scrubbing brush; 301, housing; 302, front cleaning brush; 303, rear cleaning brush; 304, front suction port; 305, rear suction port; 306, three-way flow-guiding member; 307, main suction port; 308, front flow-guiding channel; 309, rear flow-guiding channel; 3081, front flow-guiding channel inlet; 3082, positioning plate; 3083, fixing plate; 3084, first sealing ring; 3085, fixing screw hole; 30821, first stepped structure; 30831, second stepped structure; 3091, rear flow-guiding channel inlet; 3092, second sealing ring; 3093, water storage groove; 3061, main body; 3062, cover body; 3063, opening.

DESCRIPTION OF EMBODIMENTS

[0035] In order to make the above objects, features and advantages of the present disclosure more understandable, the specific embodiments of the present disclosure will be described in detail below with reference to the accompanying drawings. It should be understood that the specific embodiments described herein are only used to explain the present disclosure, but not to limit the present disclosure. In addition, it should be noted that, for the convenience of description, the drawings only show some but not all of the structures related to the present disclosure. Based on the embodiments in the present disclosure, all other embodiments obtained by those of ordinary skill in the art without creative efforts shall fall within the protection scope of the present disclosure.

[0036] Referring to FIGS. 1 to 3, a scrubber is provided by embodiments of the present disclosure. The scrubber includes a main scrubber body 1, a handle 2, and a scrubbing brush 3. One end of the main scrubber body 1 is rotatably connected to the handle 2, and another end of the main scrubber body 1 is provided with a scrubbing brush 3. A user holds the handle 2 to drive the scrubbing brush 3 to move on the ground.

[0037] The scrubbing brush 3 includes a housing 301, a front cleaning brush 302, and a rear cleaning brush 303. The housing 301 has a front part and a rear part that are opposite to each other. The front cleaning brush and the rear cleaning brush are disposed in the front part and the rear part of the housing, respectively. The front cleaning brush 302 and the rear cleaning brush 303 are respectively in driving connection with a motor (not shown in the figure). Under the driving of the motor, the front cleaning brush 302 and the rear cleaning brush 303 rotate to clean the ground by rolling.

[0038] The scrubbing brush 3 further includes a front suction port 304 facing toward the front cleaning brush 302 and a rear suction port 305 facing toward the rear cleaning brush 303. The front suction port 304 and the rear suction port 305 are each substantially trumpet-shaped as a whole. One end, with a larger opening, of the front suction port 304 faces toward the front cleaning brush 302, and one end, with a larger opening, of the rear suction port 305 faces toward the rear cleaning brush 303. The front suction port 304 and the rear suction port 305 are configured to respectively adsorb sewage water attached to the surfaces of the front cleaning brush 302 and the rear cleaning brush 303 during the cleaning of the ground. The front suction port 304 and the rear suction port 305 can independently adsorb the front cleaning brush 302 and the rear cleaning brush 303, which reduces the loss of suction for the front cleaning brush 302 and the rear cleaning brush 303, and prevents sewage water from flowing back to the ground.

[0039] The scrubbing brush 3 further includes a three-way flow-guiding member 306 in a space between the front cleaning brush 302 and the rear cleaning brush 303. The three-way flow-guiding member 306 includes a main suction port 307, a front flow-guiding channel 308, and a rear flow-guiding channel 309. The main suction port 307 is disposed above the three-way flow-guiding member 306 and is in sealed connection with a vacuum adsorption machine (not shown in the figures) inside the scrubbing brush 3. When the vacuum adsorption machine is working, a negative pressure suction is applied to the interior of the three-way flow-guiding member 306 through the main suction port 307 to adsorb sewage water collected by the front cleaning brush 302 and the rear cleaning brush 303, and transport the adsorbed sewage water to a sewage water tank inside the scrubber, for collection.

[0040] The front flow-guiding channel 308 has one end in communication with the main suction port 307 and another end in communication with the front suction port 304, the front flow-guiding channel being configured to guide the sewage water collected by the front cleaning brush 302 to the main suction port 307. A first sealing ring 3084 is provided at a front flow-guiding channel inlet 3081, in communication with the front suction port 304, of the front flow-guiding channel 308, to realize the sealed connection between the front flow-guiding channel 308 and the front suction port 304, and prevent sewage water from leaking at the joint between the front flow-guiding channel 308 and the front suction port 304. The first sealing ring 3084 can be, but is not limited to, a silicone sealing ring.

[0041] An included angle between the front flow-guiding channel 308 and the ground is in a range greater than

30° and smaller than 40°, preferably 35°. The above-mentioned included angle range can ensure that sewage water in the front flow-guiding channel 308 is quickly transported to the main suction port 307, and prevent the front flow-guiding channel 308 from being inclined too much relative to the ground to cause sewage water to flow back.

[0042] The front flow-guiding channel 308 has a positioning plate 3082 provided vertically at a position close to the front flow-guiding channel inlet 3081. A fixing plate 3083 is provided at a position in the housing 301 corresponding to the positioning plate 3082. The fixing plate 3083 and the positioning plate 3082 are engaged with each other, the three-way flow-guiding member 306 as a whole is fixed in the housing 301, the front flow-guiding channel 308 is aligned with and connected to the front suction port 304, and the rear flow-guiding channel 309 is aligned with and connected to the rear suction port 305. The positioning plate 3082 has a first stepped structure 30821 provided on the top thereof. The fixing plate 3083 has a second stepped structure 30831 provided at the bottom thereof. The second stepped structure 30831 and the first stepped structure 30821 are aligned with and embedded in each other to achieve that the positioning plate 3082 and the fixed plate 3083 are engaged and fixed.

[0043] The front flow-guiding channel 308 has at least one fixing screw hole 3085 defined at a position close to the front flow-guiding channel inlet 3081. The at least one fixing screw hole 3085 is defined at a side of the positioning plate 3082 facing away from the front flow-guiding channel inlet 3081. When the positioning plate 3082 and the fixing plate 3083 are aligned and engaged with each other, bolts pass through the at least one fixing screw hole 3085 to be threadedly connected to the housing 301. In this way, the three-way flow-guiding member 306 as a whole is installed in the housing 301.

[0044] The rear flow-guiding channel 309 has one end in communication with the main suction port 307, and another end in communication with the rear suction port 305, the rear flow-guiding channel 309 being configured to guide sewage water collected by the rear cleaning brush 303 to the main suction port 307. A second sealing ring 3092 is provided at a rear flow-guiding channel inlet 3091, in communication with the rear suction port 305, of the rear flow-guiding channel 309, to realize the sealed connection between the rear flow-guiding channel 309 and the rear suction port 305, and prevent sewage water from leaking at the joint between the rear flow-guiding channel 309 and the rear suction port 305. The second sealing ring 3092 can be, but is not limited to, a silicone sealing ring.

[0045] An included angle between the rear flow-guiding channel 309 and the ground is in a range smaller than 15°, preferably 10°. This included angle range can ensure that sewage water in the rear flow-guiding channel 309 is quickly transported to the main suction port 307, and prevent the rear flow-guiding channel 309 from being inclined too much relative to the ground to cause sewage water to flow back.

[0046] The end of the rear flow-guiding channel 309 in communication with the main suction port 307 is of a corner structure, the corner structure having a water storage groove 3093 defined therein. When the scrubber stops working, a certain amount of residual sewage water remains in the rear flow-guiding channel 309, and the residual sewage water is stored in the water storage groove 3093 to effectively prevent the sewage water from flowing back to the ground. The water storage groove 3093 as a whole is in a shape of an arc groove, and extends by an arc angle a greater than 60° and smaller than 100°, preferably 90° within the corner structure. By setting the water storage groove 3093 having an arc angle in the above range, the space of the corner structure can be fully utilized and the water storage space of the water storage groove 3093 can be increased.

[0047] In addition, a central axis of the front flow-guiding channel 308 and a central axis of the rear flow-guiding channel 309 intersect in the front flow-guiding channel 308. When the scrubber stops working, the residual sewage water in the front flow-guiding channel 308 will flow into the rear flow-guiding channel 309 to be stored in the water storage groove 3093. In this way, the sewage water in the front flow-guiding channel 308 is prevented from flowing back to the ground, and the transport efficiency of sewage water transported from the front flow-guiding channel 308 and the rear flow-guiding channel 309 to the main suction port 307 is improved.

[0048] An included angle between the central axis of the front flow-guiding channel 308 and the central axis of the rear flow-guiding channel 309 is in a range greater than 20° and smaller than 50°, preferably 30°. By setting the included angle between the central axis of the front flow-guiding channel 308 and the central axis of the rear flow-guiding channel 309 in the above range, a flow velocity of sewage water in a communication and connection region between the front flow-guiding channel 308 and the rear flow-guiding channel 309 and the main suction port 307 can be increased, to avoid the backflow of sewage water in the communication and connection region.

[0049] In some embodiments, the three-way flow-guiding member 306 includes a main body 3061 and a cover body 3062. The main body 3061 has the main suction port 307, the front flow-guiding channel 308, and the rear flow-guiding channel 309 provided therein. The main body 3061 may be fabricated by plastic injection molding. The three-way flow-guiding member 306 has an opening 3063 defined on a side surface thereof. The cover body 3062 is in a shape matching the opening 3063 and is used to block the opening 3063 to avoid leakage of sewage water from the opening 3063. The three-way flow-guiding member 306 is a structural member with three channel openings, and its internal structure is complicated. The three-way flow-guiding member 306 is set as two separated components, the main body 3061 and the cov-

er body 3062, which can reduce the production difficulty and production cost of the three-way flow-guiding member 306.

[0050] The above are only some specific embodiments of the present disclosure, and any other improvements made based on the ideas of the present disclosure shall fall in the protection scope of the present disclosure.

Claims

1. A scrubbing brush, comprising:

a housing having a front part and a rear part that are opposite to each other;
a front cleaning brush disposed in the front part of the housing;
a rear cleaning brush disposed on in the rear part of the housing;
a main suction port, sewage water collected with the aid of the front cleaning brush and the rear cleaning brush entering the main suction port;
a front suction port facing toward the front cleaning brush;
a rear suction port facing toward the rear cleaning brush; and
a flow-guiding member comprising:

a front flow-guiding channel in communication with the front suction port and the main suction port and configured to guide sewage water collected with the aid of the front cleaning brush to the main suction port; and
a rear flow-guiding channel in communication with the rear suction port and the main suction port and configured to guide sewage water collected with the aid of the rear cleaning brush to the main suction port,
wherein a central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel intersect in the front flow-guiding channel.

2. The scrubbing brush according to claim 1, wherein an included angle between the central axis of the front flow-guiding channel and the central axis of the rear flow-guiding channel is in a range greater than 20° and smaller than 50°.

3. The scrubbing brush according to claim 1, wherein an included angle between the front flow-guiding channel and a ground is in a range greater than 30° and smaller than 40°.

4. The scrubbing brush according to claim 1, wherein an included angle between the rear flow-guiding channel and a ground is in a range smaller than 15°.

5. The scrubbing brush according to claim 1, wherein the front flow-guiding channel comprises a front flow-guiding channel inlet, a positioning plate being disposed close to the front flow-guiding channel inlet; and wherein the housing has a fixing plate provided therein, the fixing plate and the positioning plate being engaged with each other.

6. The scrubbing brush according to claim 5, wherein at least one fixing screw hole is further defined close to the front flow-guiding channel inlet and at a side of the positioning plate facing away from the front flow-guiding channel inlet.

7. The scrubbing brush according to claim 1, wherein an end, in communication with the main suction port, of the rear flow-guiding channel is of a corner structure, the corner structure having a water storage groove formed therein.

8. The scrubbing brush according to claim 7, wherein the water storage groove has an arc angle in a range greater than 60° and smaller than 100°.

9. The scrubbing brush according to claim 1, wherein the flow-guiding member is a three-way flow-guiding member, wherein the main suction port, the front flow-guiding channel, and the rear flow-guiding channel are all disposed on the three-way flow-guiding member.

10. The scrubbing brush according to claim 9, wherein the three-way flow-guiding member comprises a main body and a cover body, wherein the main body has an opening defined on a side surface thereof, and wherein the cover body is configured to block the opening.

11. A scrubber, comprising:

a handle;
a main scrubber body; and
a scrubbing brush located at an end of the main scrubber body and comprising:

a housing having a front part and a rear part that are opposite to each other;
a front cleaning brush disposed in the front part of the housing;
a rear cleaning brush disposed in the rear part of the housing;
a main suction port, sewage water collected with the aid of the front cleaning brush and the rear cleaning brush entering the main suction port;
a front suction port facing toward the front cleaning brush;
a rear suction port facing toward the rear

cleaning brush;
a front flow-guiding channel having an end in communication with the main suction port and another end in communication with the front suction port, and configured to guide sewage water collected with the aid of the front cleaning brush to the main suction port; and

a rear flow-guiding channel having an end in communication with the main suction port and another end in communication with the rear suction port, and configured to guide sewage water collected with the aid of the rear cleaning brush to the main suction port,
wherein a central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel intersect in the front flow-guiding channel.

12. The scrubber according to claim 11, wherein an included angle between a central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel is in a range greater than 20° and smaller than 50°.

13. The scrubber according to claim 11, wherein an included angle between the front flow-guiding channel and a ground is in a range greater than 30° and smaller than 40°.

14. The scrubber according to claim 11, wherein an included angle between the rear flow-guiding channel and a ground is in a range smaller than 15°.

15. The scrubber according to claim 11, wherein the end, in communication with the main suction port, of the rear flow-guiding channel is of a corner structure, the corner structure having a water storage groove formed therein.

16. A scrubber, comprising:

a handle; and
a main scrubber body; and
a scrubbing brush located at an end of the main scrubber body and comprising:

a housing having a front part and a rear part that are opposite to each other;
a front cleaning brush disposed in the front part of the housing;
a rear cleaning brush disposed in the rear part of the housing;
a main suction port, sewage water collected with the aid of the front cleaning brush and the rear cleaning brush entering the main suction port;
a front suction port facing toward the front cleaning brush;
a rear suction port facing toward the rear cleaning brush;
a front flow-guiding channel having an end in communication with the main suction port and another end in communication with the front suction port, and configured to guide sewage water collected with the aid of the front cleaning brush to the main suction port; and
a rear flow-guiding channel having an end in communication with the main suction port and another end in communication with the rear suction port, and configured to guide sewage water collected with the aid of the rear cleaning brush to the main suction port,

wherein a central axis of the front flow-guiding channel and a central axis of the rear flow-guiding channel intersect in the front flow-guiding channel; and
wherein the scrubbing brush further comprises a three-way flow-guiding member, wherein the main suction port, the front flow-guiding channel, and the rear flow-guiding channel are all disposed on the three-way flow-guiding member.

17. The scrubber according to claim 16, wherein the three-way flow-guiding member comprises a main body and a cover body, wherein the main body has an opening defined on a side surface thereof, and the cover body is configured to block the opening.

18. The scrubber according to claim 16, wherein the front flow-guiding channel comprises a front flow-guiding channel inlet, a positioning plate being disposed close to the front flow-guiding channel inlet; and wherein the housing has a fixing plate defined therein, the fixing plate and the positioning plate being engaged with each other.

19. The scrubber according to claim 16, wherein the end, in communication with the main suction port, of the rear flow-guiding channel is of a corner structure, the corner structure having a water storage groove formed therein.

20. The scrubber according to claim 19, wherein the water storage groove has an arc angle in a range greater than 60° and smaller than 100°.

21. The scrubber according to claim 16, wherein a first sealing ring is disposed between the front flow-guiding channel and the front suction port, and wherein a second sealing ring is disposed between the rear flow-guiding channel and the rear suction port.

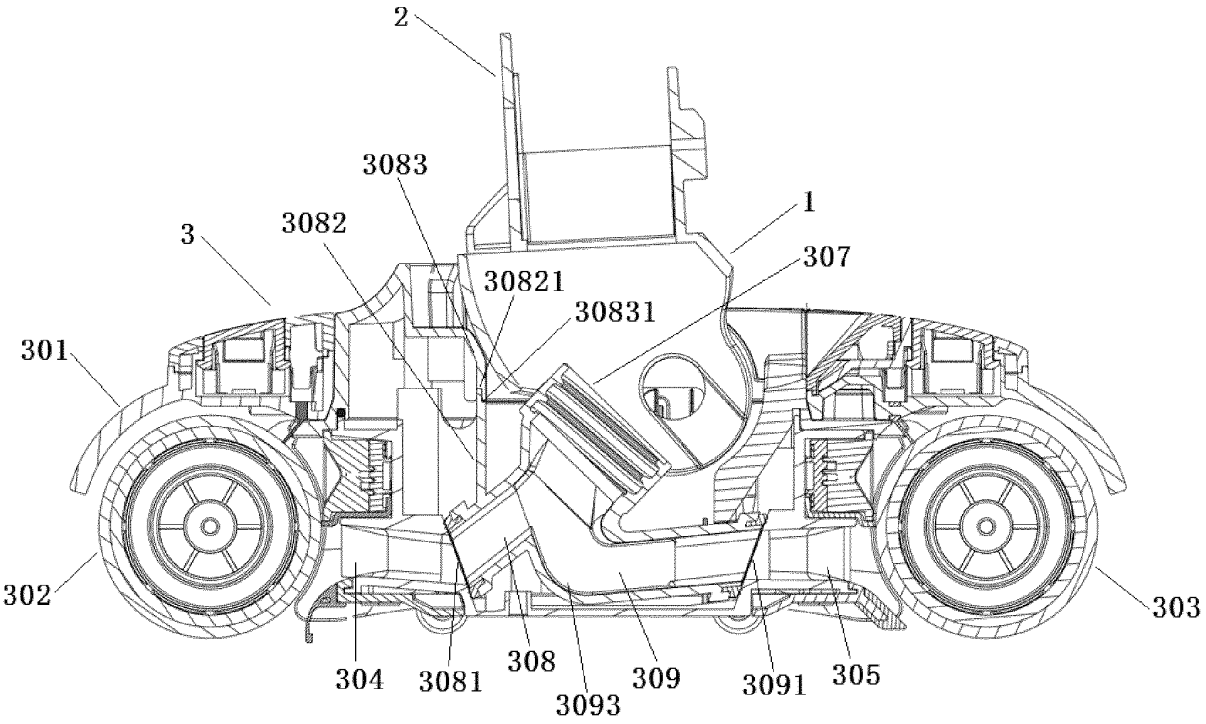
2
3083
1
3082
3
307
30821
30831
301
302
303
304
3081
308
3093
309
3091
305

FIG. 1

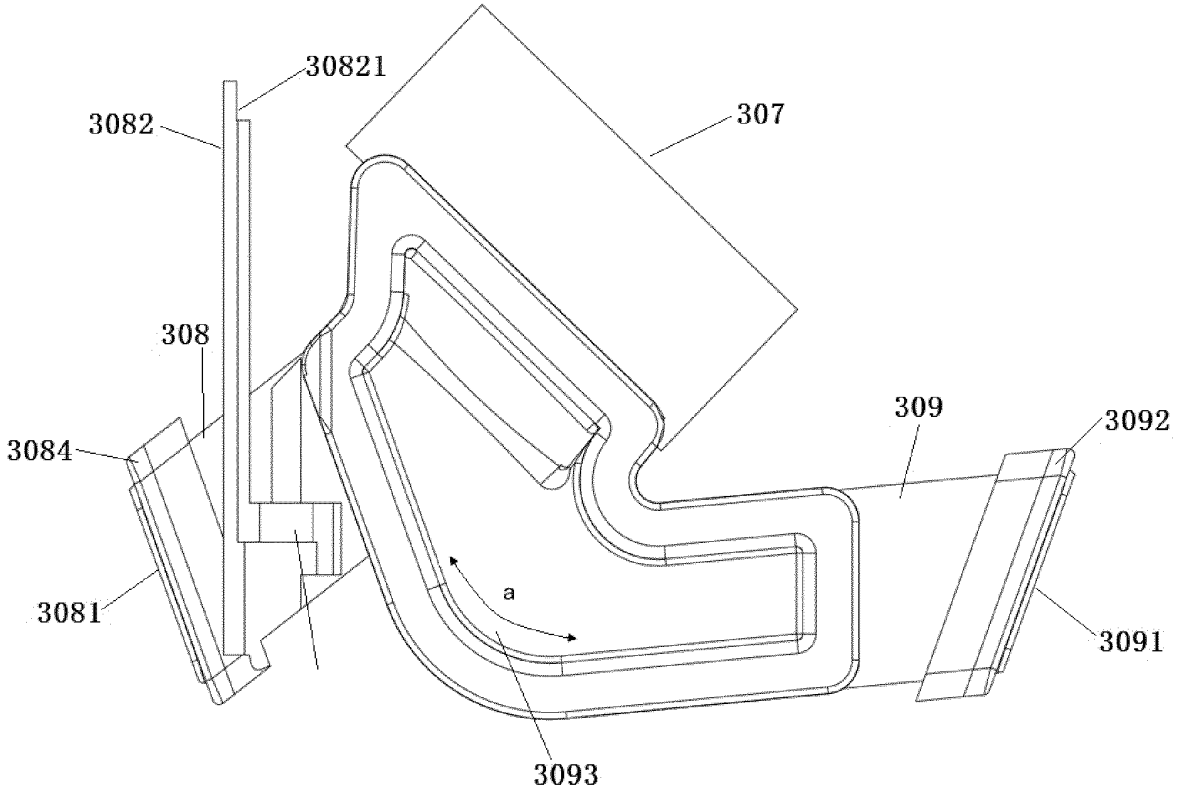
30821
3082
307
308
309
3092
3084
3081
a
3091
3093

FIG. 2

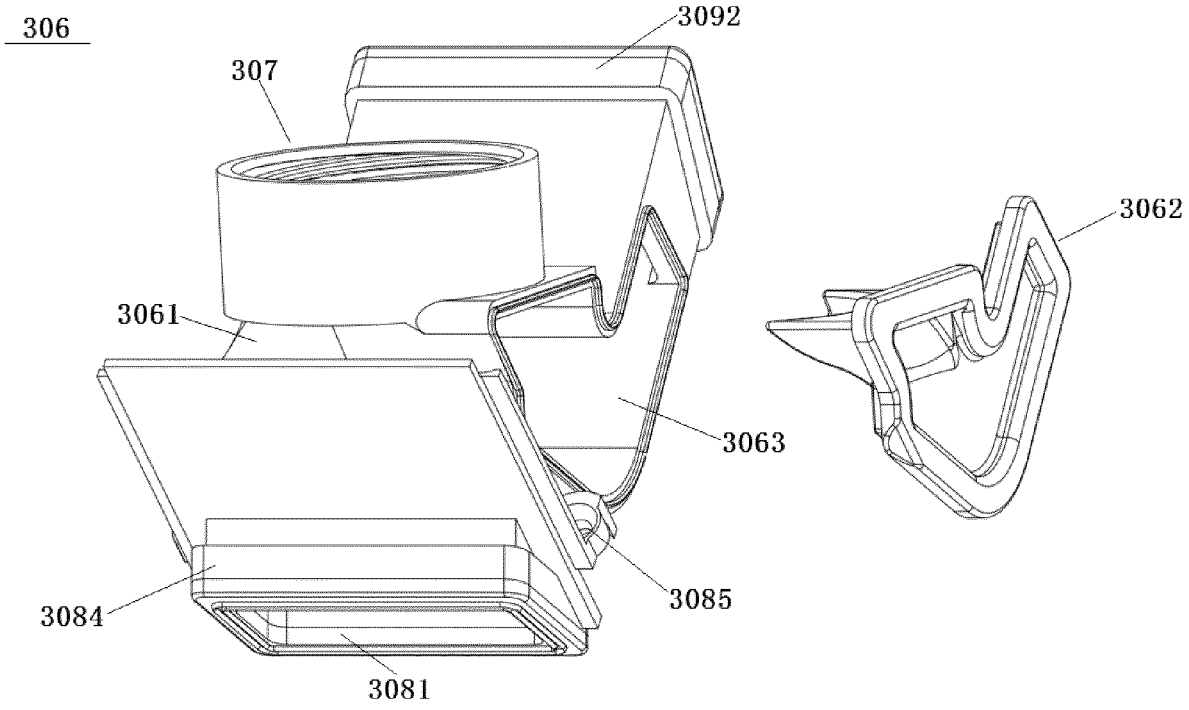

FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2022/086709

A. CLASSIFICATION OF SUBJECT MATTER

A47L 11/30(2006.01)i; A47L 11/40(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)

A47L

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)

CNPAT, CNKI, WPI, EPODOC: 杉川机器人, 扫地, 拖地, 洗地, 清洁, 清洗, 吸尘器, 污水, 脏水, 地刷, 清洁刷, 滚刷, 吸口, 吸入, 导流, 流道, 通道, 储水, 存水, 回流, 逆流, 积水, 凹, 槽, 三通, floor scrub+, clean+, suction, vacuum+, brush+, mop+, channel, pipe, tube, water, liquid, flow, sewage

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 215305564 U (SHENZHEN 3IROBOTIX CO., LTD.) 28 December 2021 (2021-12-28) description, paragraphs [0049]-[0086], and figures 1-7	1-21
X	CN 112971637 A (SHENZHEN 3IROBOTIX CO., LTD.) 18 June 2021 (2021-06-18) description, paragraphs [0039]-[0073], and figures 1-5	1-21
X	CN 109157156 A (SUZHOU CHENGHE CLEANING EQUIPMENT CO., LTD.) 08 January 2019 (2019-01-08) description, paragraphs [0022]-[0042], and figures 1-8	1, 7, 9, 11, 15-16, 19
X	CN 112842170 A (SHENZHEN 3IROBOTIX CO., LTD.) 28 May 2021 (2021-05-28) description, paragraphs [0035]-[0056], and figures 1-4	1-21
X	CN 214856429 U (SHENZHEN 3IROBOTIX CO., LTD.) 26 November 2021 (2021-11-26) description, paragraphs [0036]-[0064], and figures 1-4	1-21
A	CN 215383682 U (SUZHOU XUEYAN TECHNOLOGY CO., LTD.) 04 January 2022 (2022-01-04) entire document	1-21
A	CN 215348734 U (YANG WEI) 31 December 2021 (2021-12-31) entire document	1-21

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

* Special categories of cited documents:
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 October 2022	**19 October 2022**
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

International application No.
PCT/CN2022/086709

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP H09149872 A (AMANO CORP.) 10 June 1997 (1997-06-10) entire document	1-21

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2022/086709

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 215305564 U	28 December 2021	None	
CN 112971637 A	18 June 2021	None	
CN 109157156 A	08 January 2019	CN 109157156 B	03 July 2020
CN 112842170 A	28 May 2021	None	
CN 214856429 U	26 November 2021	None	
CN 215383682 U	04 January 2022	None	
CN 215348734 U	31 December 2021	None	
JP H09149872 A	10 June 1997	JP 3338265 B2	28 October 2002

Form PCT/ISA/210 (patent family annex) (January 2015)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 202220143355 **[0001]**