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(54) CLEANING MECHANISM AND CLEANING DEVICE

(57) A cleaning mechanism (100) and a cleaning device. The cleaning mechanism (100) comprises a base (1) and a cleaning assembly (2). The cleaning assembly (2) is arranged on the base (1), and comprises a cleaning member (21) rotatably arranged on the base (1), wherein the cleaning member (21) extends transversely along the base (1); and under the action of a driving force, at least one end of the cleaning member (21) in the transverse direction thereof may at least partially extend out of the base (1). When the cleaning mechanism (100) is cleaning normally, the cleaning member (21) may perform cleaning at a first position where normal sweeping is performed. When the cleaning mechanism (100) cleans an edge area, such as a wall corner area, one end of the cleaning member (21) may be driven to extend out of the base (1), such that the cleaning member (21) may be better attached to the edge of a wall corner for cleaning. Since, the cleaning mechanism (100) does not have a cleaning blind area, the cleaning effect on edge areas such as the wall corners, is better, such that the user experience is also better.

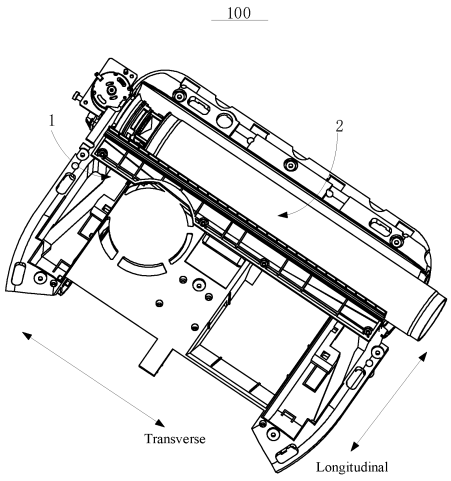

Figure 1

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Description

[0001] The present disclosure claims priority to the following patent application: Chinese Patent Application No. 202220716923.7, filed with the China National Intellectual Property Administration on March 30, 2022 and entitled "CLEANING MECHANISM AND CLEANING DEVICE", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to the technical field of cleaning tools and in particular to a cleaning mechanism and a cleaning device.

BACKGROUND ART

[0003] For a conventional cleaning device, such as a robot vacuum cleaner, a mopping machine or a floor scrubber, when a cleaning mechanism at the bottom of the cleaning device cleans a surface to be cleaned, there is a certain distance between a cleaning member and an edge of a cleaning body due to structural limitations, so that there may be a certain cleaning blind area when the cleaning device sweeps the surface to be cleaned along the edge, e.g., when the cleaning device cleans an edge of a wall, making it impossible for the cleaning device to fit against the edge for cleaning, and dust thus accumulates at a wall corner and in other corner areas over time, thereby resulting in an unsatisfactory cleaning effect and poor user experience.

SUMMARY OF THE INVENTION

[0004] Therefore, a technical problem to be solved by the present disclosure is that there may be a cleaning blind area since a conventional cleaning device cannot fit against an edge for cleaning, resulting in an unsatisfactory cleaning effect and poor user experience.

[0005] In order to solve the above technical problem, the present disclosure provides a cleaning mechanism, including:

a base; and

a cleaning assembly arranged on the base and including a cleaning member rotatably arranged on the base, the cleaning member extending in a transverse direction of the base, and at least one end of the cleaning member in a transverse direction thereof being capable of at least partially extending beyond the base under the action of a driving force.

[0006] Optionally, in the cleaning mechanism, the cleaning member has a first position where normal cleaning is performed, and a second position where one end of the cleaning member extends beyond the base, and the cleaning member is capable of reciprocating between the first position and the second position under the action of the driving force.

[0007] Optionally, the cleaning mechanism further includes a driving mechanism, where the driving mechanism is connected to the cleaning member for driving the cleaning member to reciprocate linearly between the first position and the second position.

[0008] Optionally, in the cleaning mechanism, the driving mechanism includes a first driving member and a connector, the connector being in threaded fit with the cleaning member, and the connector being driven to rotate by the first driving member, so as to drive the cleaning member to reciprocate linearly.

[0009] Optionally, in the cleaning mechanism, the cleaning member is hollow, and the first driving member and the connector are both arranged inside the cleaning member;

when the first driving member drives the connector to rotate in a first direction, the cleaning member is engaged with the connector, and the cleaning member is also driven to rotate in the first position; and when the first driving member drives the connector to rotate in a second direction, the cleaning member is disengaged from the connector, and the cleaning member is driven to move in the transverse direction of the base to the second position, the first direction being opposite to the second direction.

[0010] Optionally, the base is further provided with an adjustment button and a controller, the controller being connected to the adjustment button and the first driving member, where the controller, when receiving a signal from the adjustment button, controls the first driving member to adjust a direction of rotation so as to enable the cleaning member to extend beyond the base.

[0011] Optionally, in the cleaning mechanism, the base is provided with a limiting structure, and the cleaning member is provided with a mating structure which mates with the limiting structure for limiting, the limiting structure mating with the mating structure for limiting a reciprocating stroke of the cleaning member.

[0012] Optionally, in the cleaning mechanism, one of the limiting structure and the mating structure is provided as a limiting baffle and the other is provided as a mating groove, the limiting baffle sliding in the mating groove to limit the reciprocating stroke of the cleaning member.

[0013] Optionally, a plurality of limiting protrusions are provided in the mating groove, the plurality of limiting protrusions being arranged at intervals in an axial direction of the cleaning member, and the limiting baffle abuts against any one of the limiting protrusions to limit the cleaning member to any position between the first position and the second position.

[0014] Optionally, an end of the limiting protrusion is configured in the form of an arc, and the limiting baffle passes over one of the limiting protrusions and is retained at another one of the limiting protrusions.

[0015] Optionally, in the cleaning mechanism, the driving mechanism further includes a second driving mem-

ber, a transmission assembly and a mating member, the mating member being arranged at one end of the cleaning member, the transmission assembly being connected to the mating member and the second driving member, and the second driving member driving the transmission assembly to move so as to drive the mating member to reciprocate in the transverse direction of the base.

[0016] Optionally, in the cleaning mechanism, the transmission assembly includes:

a nut arranged on the mating member; and
a lead screw threadedly connected to the nut and extending in the transverse direction of the base; and the second driving member is connected to the lead screw for driving the lead screw to rotate.

[0017] Optionally, in the cleaning mechanism, the transmission assembly includes:

a slider connected to the mating member, the slider being provided with a sliding groove extending in a longitudinal direction of the base; and
a crank rotatably arranged on the base and having one end nested inside the sliding groove of the slider; and
the second driving member is connected to the other end of the crank for driving the crank to rotate, such that one end of the crank moves along the sliding groove to drive the mating member to reciprocate in the transverse direction of the base.

[0018] The present disclosure also provides a cleaning device, including the cleaning mechanism.

[0019] The technical solutions provided by the present disclosure have the following advantages.

[0020] The cleaning mechanism provided by the present disclosure includes the base and the cleaning assembly. By rotating the cleaning member relative to the base, the cleaning mechanism can clean the surface to be cleaned. In addition, when the cleaning member is subject to the driving force, e.g., when a user manually pushes the cleaning member or the driving mechanism drives the cleaning member, at least one end of the cleaning member in a transverse direction thereof may at least partially extend beyond the base. When the cleaning mechanism performs a normal cleaning, the cleaning member may perform cleaning in the first position where a normal sweeping is performed. When the cleaning mechanism cleans an edge area, such as a wall corner area, one end of the cleaning member may be driven to extend beyond the base, such that the cleaning member can better fit against an edge of a wall corner for cleaning. Therefore, the cleaning mechanism has no cleaning blind area, has a better cleaning effect on the edge area such as the wall corner, and provides a better user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] In order to illustrate the technical solutions in the particular implementations of the present disclosure or in the prior art more clearly, the accompanying drawings to be used in the description of the particular implementations or the prior art will be briefly introduced below; obviously, the accompanying drawings in the following description show some of the implementations of the present disclosure, and those of ordinary skill in the art may still derive other drawings from these accompanying drawings without creative effort.

FIG. 1 is a schematic view of the structure of a cleaning device (in a second cleaning position) according to an embodiment of the present disclosure;
FIG. 2 is a schematic sectional view of the structure of a first embodiment of a cleaning mechanism of FIG. 1;
FIG. 3 is a schematic exploded view of the structure of the cleaning mechanism of FIG. 2;
FIG. 4 is a schematic view of the structure of a second embodiment of the cleaning mechanism of FIG. 1;
FIG. 5 is a schematic view of the structure of the second embodiment of the cleaning mechanism of FIG. 4 from another perspective;
FIG. 6 is a schematic exploded view of the structure of the cleaning mechanism of FIG. 4;
FIG. 7 is a schematic view of the structure of a third embodiment of the cleaning mechanism of FIG. 1;
FIG. 8 is a schematic view of the structure of the third embodiment of the cleaning mechanism of FIG. 7 from another perspective;
FIG. 9 is a schematic exploded view of the structure of the cleaning mechanism of FIG. 7; and
FIG. 10 is a schematic exploded view of the structure of the cleaning mechanism (of a cleaning assembly and a base) of FIG. 1.

List of reference signs:

[0022] 100 - Cleaning mechanism; 1 - Base; 2 - Cleaning assembly; 21 - Cleaning member; 22 - Driving mechanism; 221 - First driving member; 222 - Connector; 23 - Second driving member; 231 - Mating member; 232 - Transmission assembly; 2321 - Nut; 2322 - Lead screw; 2324 - Slider; 2325 - Crank; 31 - Limiting structure; 311 - Limiting baffle; 32 - Mating structure; 321 - Mating groove.

DETAILED DESCRIPTION OF EMBODIMENTS

[0023] The technical solutions in the present disclosure will be described clearly and completely below with reference to the drawings; obviously, the described embodiments are some of, rather than all of, the embodiments of the present disclosure. The present disclosure is described in detail below with reference to the accom-

panying drawings and the embodiments. It should be noted that in the case of no conflict, the embodiments in the present disclosure and the features in the embodiments can be combined with each other.

[0024] It should be noted that the terms "first", "second" and the like in the specification, the claims and the accompanying drawings of the present disclosure are used to distinguish similar objects, and are not necessarily used to describe a specific order or sequence.

[0025] In the present disclosure, unless stated to the contrary, the orientation terms used such as "up", "down", "top" and "bottom" are generally intended to refer to the orientation shown in the accompanying drawings, or to the vertical, perpendicular, or gravitational direction of a component itself: and similarly for ease of understanding and description, the terms of "inside" and "outside" refer to the inside and outside relative to the contour of each component itself. These orientation terms are not intended to limit the present disclosure.

Embodiment 1

[0026] This embodiment provides a cleaning mechanism 100. Referring to FIGS. 1 and 2, the cleaning mechanism 100 includes a base 1 and a cleaning assembly 2. The base 1 is configured to mount the cleaning assembly 2, and the cleaning assembly 2 includes a cleaning member 21 rotatably arranged on the base 1. By the rotation of the cleaning member 21, the cleaning member 21 may rub against a surface to be cleaned, so as to roll up impurities such as dust on the surface to be cleaned for cleaning. Moreover, the cleaning member 21 extends in a transverse direction, such that when the cleaning mechanism 100 performs a normal cleaning, the forward direction refers to the front of the base 1, and the transverse direction herein may refer to the left-right direction of the base 1, to which reference may be made for the following descriptions of orientations. Moreover, when the cleaning member 21 is subject to a driving force, e.g., when a user manually pushes the cleaning member 21 or the driving mechanism 22 drives the cleaning member 21, at least one end of the cleaning member 21 in a transverse direction thereof may at least partially extend beyond the base 1. When the cleaning mechanism 100 performs the normal cleaning, the cleaning member 21 may perform cleaning in a first position where normal sweeping is performed. When the cleaning mechanism 100 cleans an edge area, such as a wall corner area, one end of the cleaning member 21 may be driven to extend beyond the base 1, such that the cleaning member 21 can better fit against an edge of a wall corner for cleaning. Therefore, the cleaning mechanism 100 has no cleaning blind area, has a better cleaning effect on the edge area such as the wall corner, and provides a better user experience.

[0027] The cleaning member 21 has the first position where the normal cleaning is performed, and the cleaning member 21 also has a second position where one end thereof extends beyond the base 1. When the cleaning member 21 is subject to a driving force, the cleaning member 21 can reciprocate between the first position and the second position, such that different operation modes can be switched for more flexible operation.

[0028] It can be understood that the movement of the cleaning member 21 may be a linear reciprocating motion or, of course, may be a curvilinear reciprocating motion. For example, the cleaning member 21 may swing about a swing axis. Alternatively, the cleaning member 21 may perform a "concentric square"-shaped reciprocating motion. For example, the cleaning member 21 is driven by a rocker structure of a crank 2325 and thus has many modes of movement. However, apparently, the rectilinear reciprocating motion can make the form of a driving structure of the cleaning member 21 simpler, and the moving space of the cleaning member 21 smaller, so that the size of the cleaning mechanism 100 can be smaller.

[0029] Preferably, the cleaning mechanism 100 further includes a driving mechanism 22. The driving mechanism 22 is connected to the cleaning member 21 for driving the cleaning member 21 to reciprocate linearly between the first position and the second position, achieving more labor-saving and convenient movement.

[0030] The driving mechanism 22 may be configured in various forms. In an implementation, as shown in FIGS. 2 and 3, the driving mechanism 22 includes a first driving member 221 and a connector 222. The connector 222 is in threaded fit with the cleaning member 21, and the connector 222 is driven to rotate by the first driving member 221, such that the cleaning member 21 is driven to reciprocate linearly in the transverse direction, to reciprocate between the first position and the second position.

[0031] Further, the cleaning member 21 is hollow, and the first driving member 221 and the connector 222 are both arranged inside the cleaning member 21, thereby saving more space, so that the size of the entire cleaning mechanism 100 can be smaller. The first driving member 221 can drive the connector 222 to rotate in a first direction, and can also drive the connector 222 to rotate in a second direction. The first direction is opposite to the second direction. For example, the second direction may be a counterclockwise direction when the first direction is a clockwise direction, or the second direction may be a clockwise direction when the first direction is a counterclockwise direction. When the first driving member 221 drives the connector 222 to rotate in the first direction, the cleaning member 21 is engaged with the connector 222, and the cleaning member 21 rotates and performs cleaning in the first position; and when the first driving member 221 drives the connector 222 to rotate in the second direction, the cleaning member 21 may be disengaged from the connector 222, and under the action of the connector 222, the cleaning member 21 may be driven to move in the transverse direction of the base 1 to the second position, such that the cleaning member 21 can perform a cleaning operation in the second position. The

first driving member 221 may be provided as a drive motor to drive the connector 222 to rotate. The cleaning member 21 is driven to rotate by means of the first driving member 221 and the connector 222, and has a direction of rotation adjusted by means of the first driving member 221, such that the cleaning member 21 can reciprocate between the first position and the second position, achieving a simple structure. In addition, the first driving member 221 and the connector 222 are both arranged inside the cleaning member 21, not occupying the outer space of the cleaning member 21 and thus occupying a small space, so that the cleaning mechanism 100 can have both a smaller size and low manufacturing costs.

[0032] Of course, the base 1 may be further provided with an adjustment button and a controller (not shown). The controller is electrically connected to the adjustment button and the first driving member 221. When the user performs cleaning using the cleaning mechanism 100, the cleaning member 21 may perform cleaning in the first position if the cleaning mechanism 100 is in an initial state. When the user cleans a corner area such as a wall corner, the user may send an adjustment signal by pressing the adjustment button, and control, by means of the controller, the first driving member 221 to adjust the direction of rotation, thereby adjusting the steering of the cleaning member 21, such that the cleaning member 21 can extend beyond the base 1 to better fit against the corner area for use, making the operation easier and achieving a better cleaning effect.

[0033] Moreover, the base 1 is further provided with a limiting structure 31, and the cleaning member 21 is provided with a mating structure 32 which mates with the limiting structure 31 for limiting, in order to prevent the cleaning member 21 from extending too much and the cleaning member 21 from being prone to fall off or operating unstably. The limiting structure 31 mates with the mating structure 32 to limit a reciprocating stroke of the cleaning member 21, such that the extension length of the cleaning member 21 is more appropriate for both thorough cleaning and better cleaning of the corner area, achieving a more desirable cleaning effect.

[0034] Preferably, one of the limiting structure 31 and the mating structure 32 is provided as a limiting baffle 311, and the other is provided as a mating groove 321. The limiting baffle 311 slides in the mating groove 321 to limit the reciprocating stroke of the cleaning member 21. Specifically, as shown in FIGS. 1 and 10, the cleaning member 21 may be provided as a cleaning roller brush. The cleaning roller brush has a first end connected to the base 1 and a second end arranged in a suspended state, and the connector 222 may extend into the interior of the cleaning roller brush from the first end of the cleaning roller brush, so as to be connected to the cleaning roller brush to drive the cleaning roller brush to rotate. The base 1 is provided with an arc-shaped cover body covering a peripheral side of the cleaning roller brush, the limiting baffle 311 is arranged on the cleaning roller brush, and the mating groove 321 runs over the arc-shaped cover body of the base 1. The limiting baffle 311 extends into the mating groove 321 when the cleaning member 21 is mounted on the base 1. The mating groove 321 has a first groove wall and a second groove wall arranged opposite to each other in an axial direction of the cleaning roller brush. The limiting baffle 311 abuts against the first groove wall when the cleaning member 21 is in the first position for normal operation; and the limiting baffle 311 abuts against the second groove wall when the cleaning member 21 is in the second position. The movement stroke of the cleaning member 21 is consistent with the length of the mating groove 321 in the axial direction of the cleaning roller brush, such that the cleaning member 21 is in a better cleaning position, improving the cleaning efficiency.

[0035] Moreover, when the cleaning member 21 reciprocates between the first position and the second position, the cleaning member 21 may stay in any position between the first position and the second position to perform the cleaning operation, such that the cleaning member 21 has more flexible operation modes to adapt to different operation environments. Preferably, a plurality of limiting protrusions (not shown) may be provided in the mating groove 321. The plurality of limiting protrusions are arranged at intervals in an axial direction of the cleaning member 21, and the limiting baffle 311 may abut against any one of the limiting protrusions, such that the cleaning member 21 can be limited to any position between the first position and the second position. An end of each limiting protrusion may be configured in the form of an arc, and the limiting baffle 311 may pass over one limiting protrusion and be retained at another one of the limiting protrusions, such that the cleaning member 21 has more operation positions and more diversified cleaning modes.

[0036] In another implementation, the driving mechanism 22 may include a second driving member 23, a transmission assembly 232 and a mating member 231. The mating member 231 is arranged at one end of the cleaning member 21. The transmission assembly 232 is connected to the mating member 231 and the second driving member 23. The transmission assembly 232 is driven to move by the second driving member 23, so as to drive the mating member 231 to reciprocate in the transverse direction of the base 1, such that the cleaning member 21 can reciprocate in the transverse direction of the base 1 to switch the cleaning member 21 between the first position and the second position, so as to switch different operation modes.

[0037] It can be understood that the transmission assembly 232 may be configured in various forms. In an example, the transmission assembly 232 includes a nut 2321 and a lead screw 2322. The nut 2321 is arranged on the mating member 231. The lead screw 2322 is threadedly connected to the nut 2321 and extends in the transverse direction of the base 1. The second driving member 23 is connected to the lead screw 2322 for driving the lead screw 2322 to rotate. When the lead screw 2322 rotates,

the nut 2321 can be driven to move along the lead screw 2322, so as to drive the mating member 231 to move in the transverse direction of the base 1. By means of the mating member 231, the cleaning member 21 is driven to move in the transverse direction of the base 1.

[0038] Specifically, as shown in FIGS. 4 to 6, the second driving member 23 may be provided as a drive motor, and the second driving member 23 is arranged on the base 1. The mating member 231 is configured in the form of a flat plate and arranged at an end of the cleaning member 21 that is connected to the base 1. The nut 2321 is mounted on one side of the mating member 231. The lead screw 2322 is threadedly connected to a screw thread, and has one end connected to the second driving member 23, such that the mating member 231 is driven to move through the sliding of the nut 2321 along the lead screw 2322, and at the same time, the cleaning member 21 can move in the transverse direction of the base 1. Moreover, the lead screw 2322 may be driven to change the direction of rotation when the second driving member 23 changes the direction of rotation, such that the direction of movement of the nut 2321 can be adjusted, and the cleaning member 21 can reciprocate in the transverse direction of the base 1.

[0039] In another example, as shown in FIGS. 7 to 9, the transmission assembly 232 may include a slider 2324 and a crank 2325. The slider 2324 is connected to the mating member 231, and the slider 2324 is provided with a sliding groove extending in a longitudinal direction of the base 1. The longitudinal direction herein may refer to the front-rear direction of the base 1. The crank 2325 is rotatably arranged on the base 1, and has one end nested in the sliding groove of the slider 2324 and the other end connected to the second driving member 23. The crank 2325 is driven to rotate by the second driving member 23, such that one end of the crank 2325 can slide along the sliding groove. The crank 2325 is pressed against the groove wall of the sliding groove, such that the mating member 231 can be driven to reciprocate in the transverse direction of the base 1.

[0040] Specifically, as shown in FIG. 9, the mating member 231 is configured in the form of a flat plate, and the slider 2324 is arranged on one side of the mating member 231 in a protruding manner. The sliding groove is in the form of a square elongated hole. At least a part of the crank 2325 is nested in the sliding groove and can slide along the sliding groove. The second driving member 23 is arranged on the base 1 and has an output end connected to the other end of the crank 2325 to drive the crank 2325 to rotate along a horizontal plane, such that the mating member 231 has a reciprocating stroke in the transverse direction of the base 1, thereby driving the cleaning member 21 to reciprocate in the transverse direction of the base 1.

[0041] It can be understood that there are many ways to drive the cleaning member 21 to reciprocate, which can be adaptively adjusted according to the actual structure of the cleaning mechanism 100 and will not be listed herein.

Embodiment 2

[0042] This embodiment provides a cleaning device. The cleaning device includes the cleaning mechanism 100 described above. The cleaning device, when performing cleaning, may adjust the operation position of the cleaning member 21 according to different areas to be cleaned. For example, when the cleaning device performs a normal cleaning, the cleaning member 21 of the cleaning mechanism 100 may perform cleaning in the first position; and when the cleaning device cleans a corner area such as a wall corner and a table corner, the driving mechanism 22 of the cleaning mechanism 100 may be activated to adjust the cleaning member 21 of the cleaning mechanism 100 to the second position for cleaning, such that the cleaning member 21 can better fit against the corner area of the wall corner for cleaning. Therefore, the cleaning device does not have a cleaning blind area and thus has a better cleaning effect. In addition, the cleaning device has more diversified cleaning modes and is more convenient to perform cleaning.

[0043] Apparently, the embodiments described above are merely some rather than all of the embodiments of the present disclosure. Based on the embodiments of the present disclosure, those of ordinary skills in the art can make other changes or variations in different forms without creative efforts, which shall all fall within the scope of protection of the present disclosure.

Claims

1. A cleaning mechanism, comprising:

   a base; and
   a cleaning assembly arranged on the base and comprising a cleaning member rotatably arranged on the base, the cleaning member extending in a transverse direction of the base, and at least one end of the cleaning member in a transverse direction thereof being capable of at least partially extending beyond the base under the action of a driving force.

2. The cleaning mechanism according to claim 1, wherein the cleaning member has a first position where normal cleaning is performed, and a second position where one end of the cleaning member extends beyond the base, and the cleaning member is capable of reciprocating between the first position and the second position under the action of the driving force.

3. The cleaning mechanism according to claim 2, further comprising a driving mechanism, wherein the driving mechanism is connected to the cleaning

member for driving the cleaning member to reciprocate linearly between the first position and the second position.

4. The cleaning mechanism according to claim 3, wherein the driving mechanism comprises a first driving member and a connector, the connector being in threaded fit with the cleaning member, and the connector being driven to rotate by the first driving member, so as to drive the cleaning member to reciprocate linearly.

5. The cleaning mechanism according to claim 4, wherein the cleaning member is hollow, and the first driving member and the connector are both arranged inside the cleaning member;
when the first driving member drives the connector to rotate in a first direction, the cleaning member is engaged with the connector, and the cleaning member is also driven to rotate in the first position; and when the first driving member drives the connector to rotate in a second direction, the cleaning member is disengaged from the connector, and the cleaning member is driven to move in the transverse direction of the base to the second position, the first direction being opposite to the second direction.

6. The cleaning mechanism according to claim 4 or 5, wherein the base is further provided with an adjustment button and a controller, the controller being connected to the adjustment button and the first driving member, wherein the controller, when receiving a signal from the adjustment button, controls the first driving member to adjust a direction of rotation so as to enable the cleaning member to extend beyond the base.

7. The cleaning mechanism according to any one of claims 2 to 6, wherein the base is provided with a limiting structure, and the cleaning member is provided with a mating structure which mates with the limiting structure for limiting, the limiting structure mating with the mating structure for limiting a reciprocating stroke of the cleaning member.

8. The cleaning mechanism according to claim 7, wherein one of the limiting structure and the mating structure is provided as a limiting baffle and the other is provided as a mating groove, the limiting baffle sliding in the mating groove to limit the reciprocating stroke of the cleaning member.

9. The cleaning mechanism according to claim 8, wherein a plurality of limiting protrusions are provided in the mating groove, the plurality of limiting protrusions being arranged at intervals in an axial direction of the cleaning member, and the limiting baffle abuts against any one of the limiting protrusions to limit the cleaning member to any position between the first position and the second position.

10. The cleaning mechanism according to claim 9, wherein an end of the limiting protrusion is configured in the form of an arc, and the limiting baffle passes over one of the limiting protrusions and is retained at another one of the limiting protrusions.

11. The cleaning mechanism according to claim 3, wherein the driving mechanism further comprises a second driving member, a transmission assembly and a mating member, the mating member being arranged at one end of the cleaning member, the transmission assembly being connected to the mating member and the second driving member, and the second driving member driving the transmission assembly to move so as to drive the mating member to reciprocate in the transverse direction of the base.

12. The cleaning mechanism according to claim 11, wherein the transmission assembly comprises:

a nut arranged on the mating member; and
a lead screw threadedly connected to the nut and extending in the transverse direction of the base; and
the second driving member is connected to the lead screw for driving the lead screw to rotate.

13. The cleaning mechanism according to claim 11, wherein the transmission assembly comprises:

a slider connected to the mating member, the slider being provided with a sliding groove extending in a longitudinal direction of the base; and
a crank rotatably arranged on the base and having one end nested inside the sliding groove of the slider; and
the second driving member is connected to the other end of the crank for driving the crank to rotate, such that one end of the crank moves along the sliding groove to drive the mating member to reciprocate in the transverse direction of the base.

14. A cleaning device, comprising a cleaning mechanism of any one of claims 1 to 13.

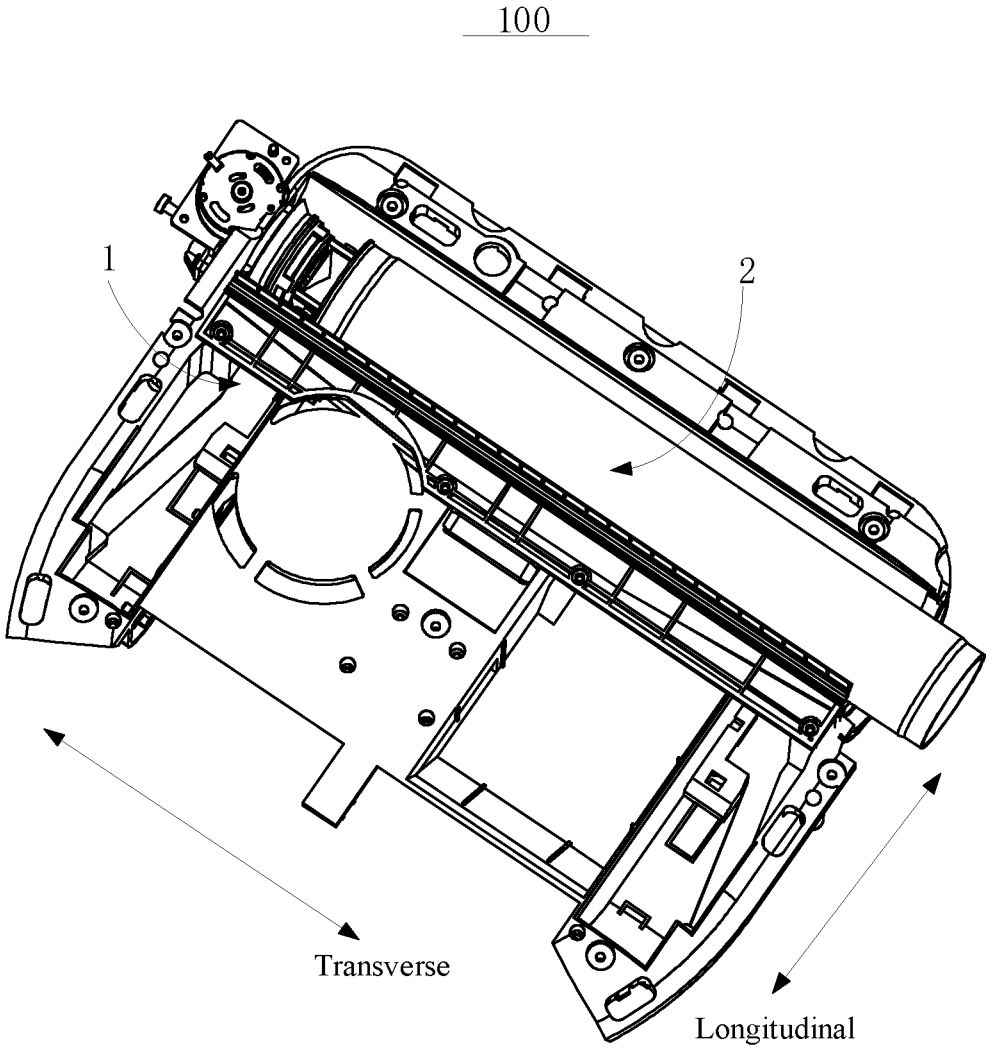

Figure 1

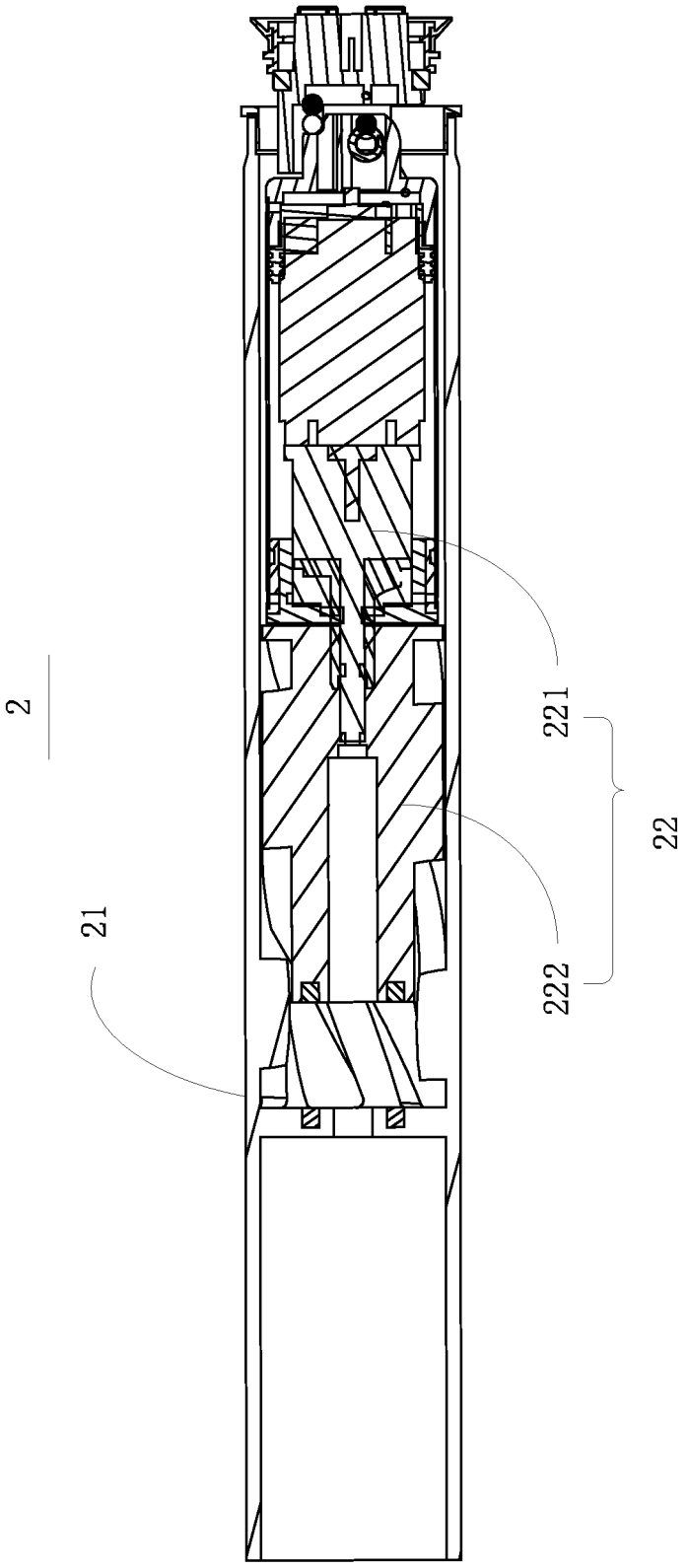

Figure 2

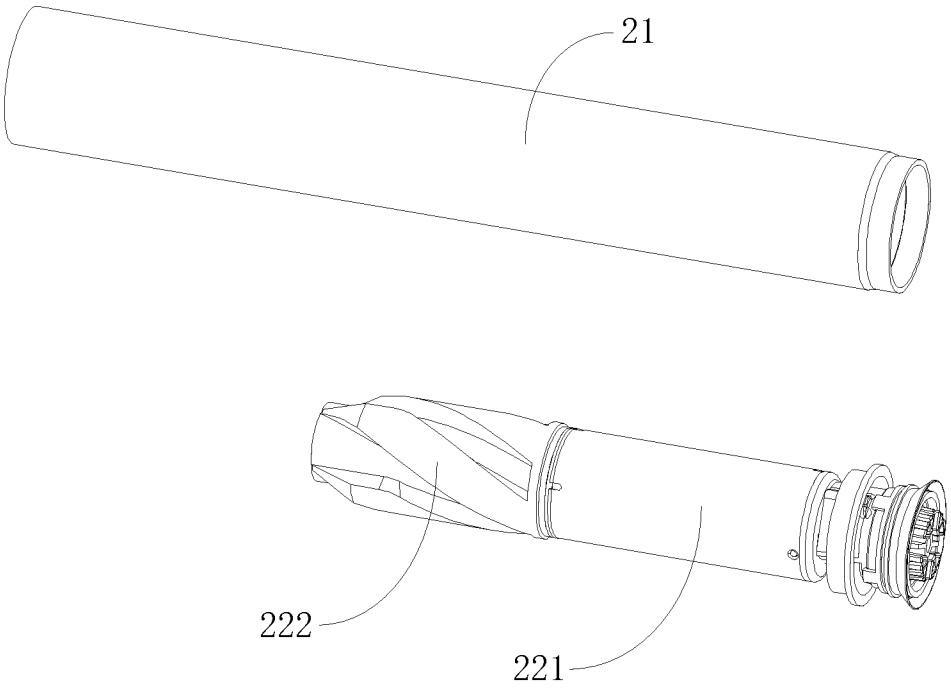

Figure 3

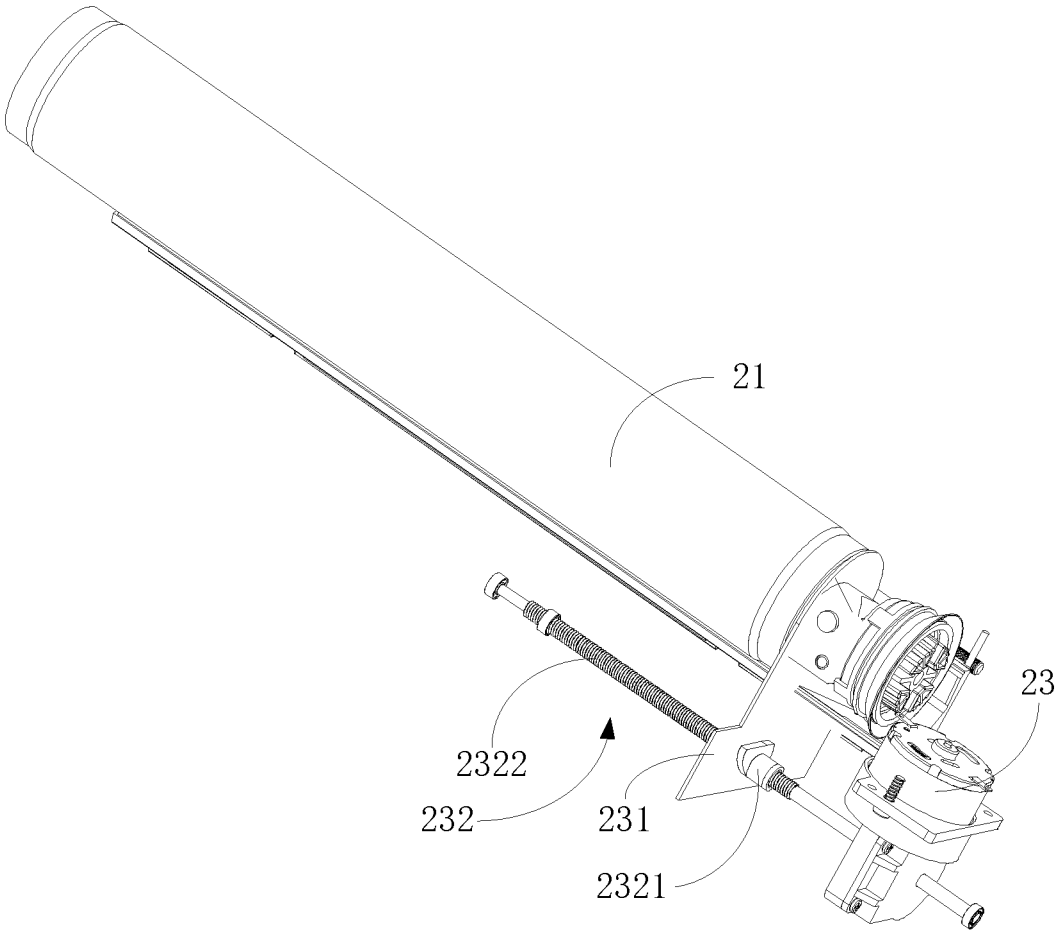

Figure 4

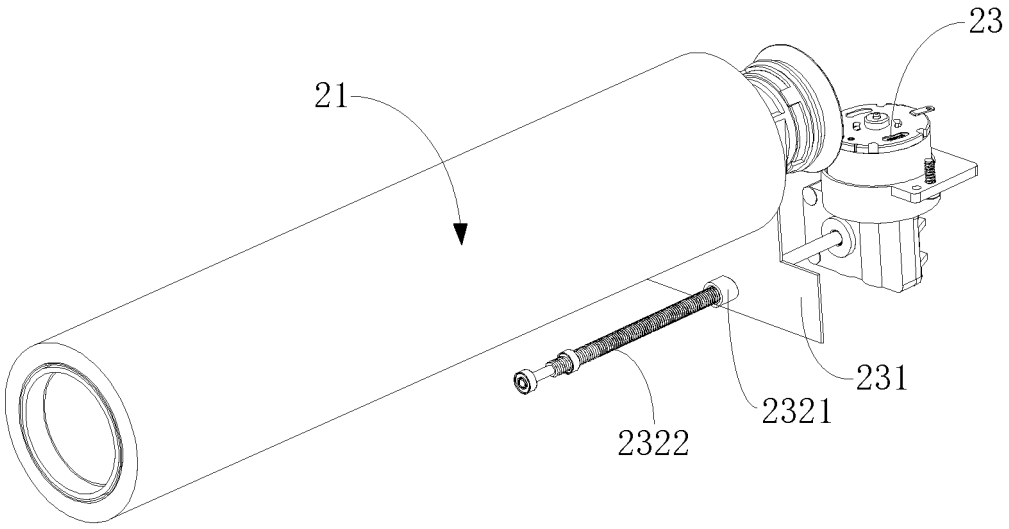

Figure 5

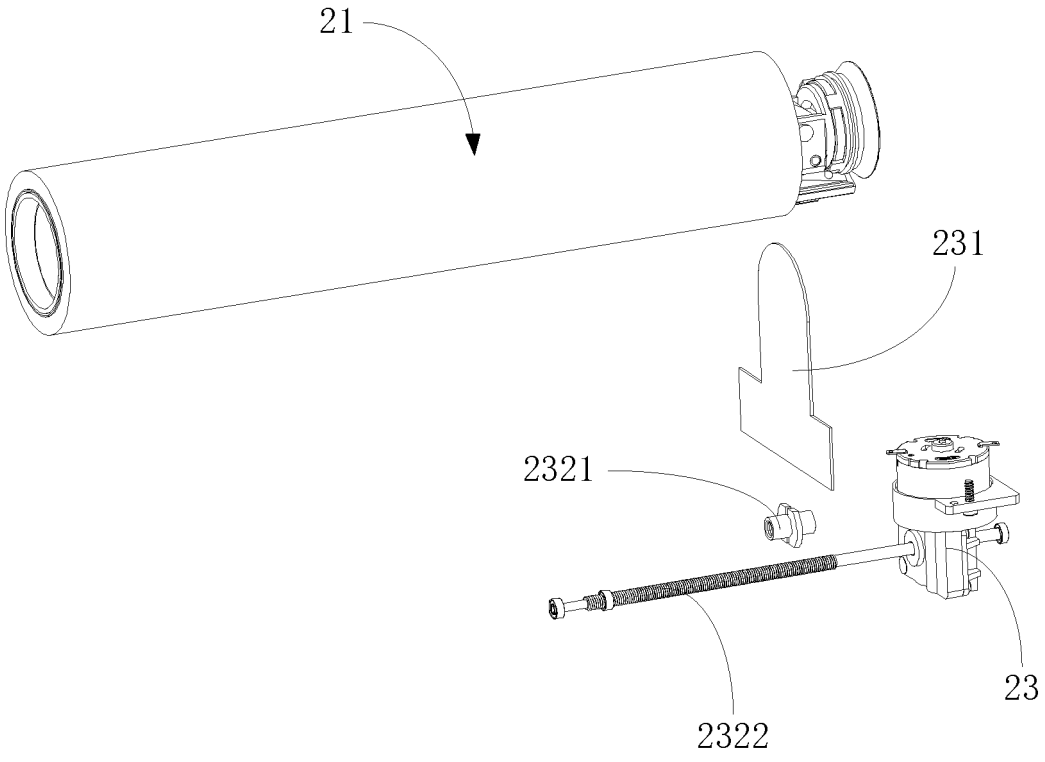

Figure 6

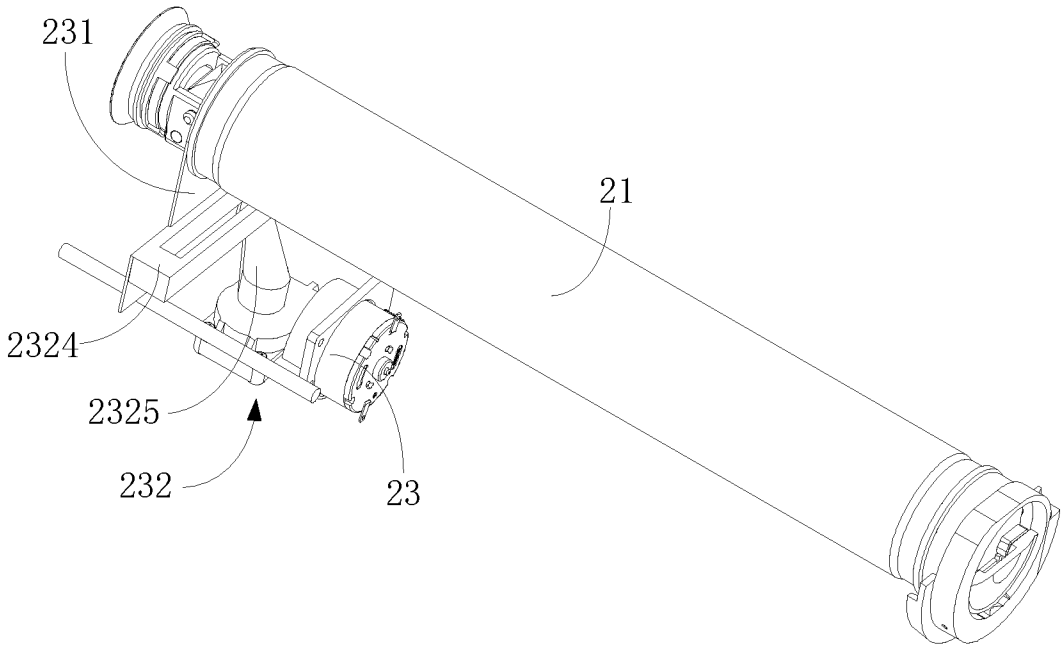

Figure 7

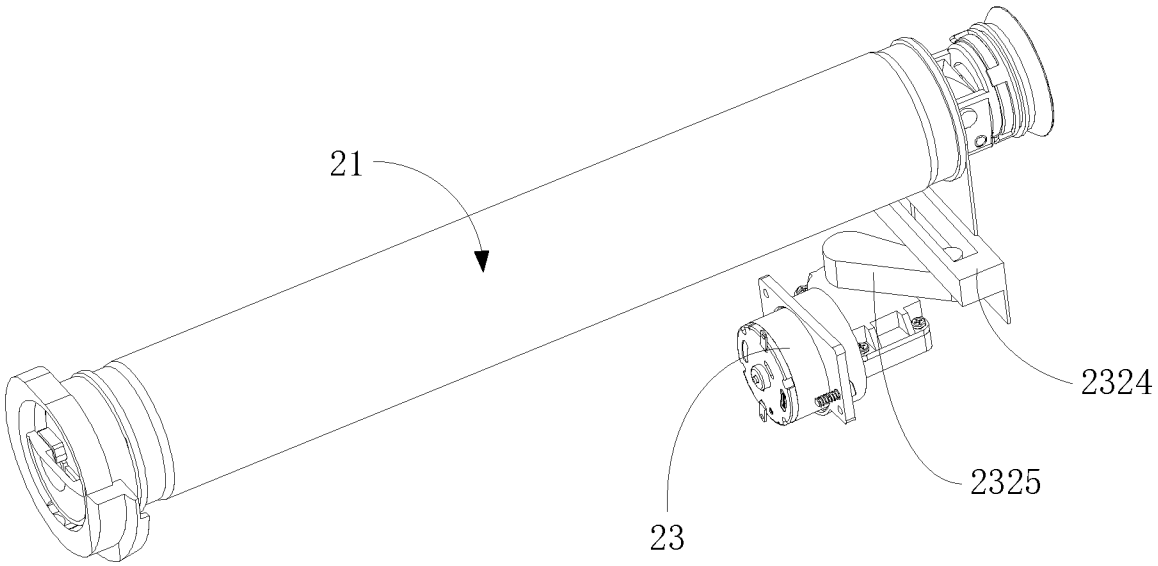

Figure 8

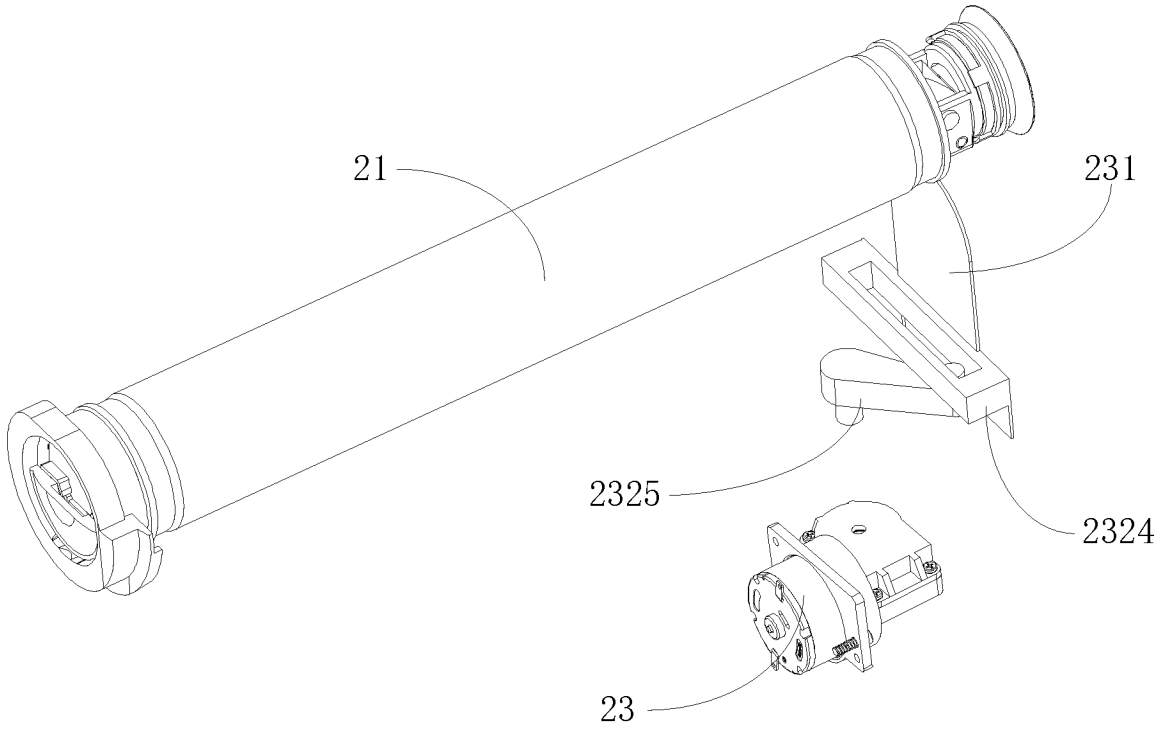

Figure 9

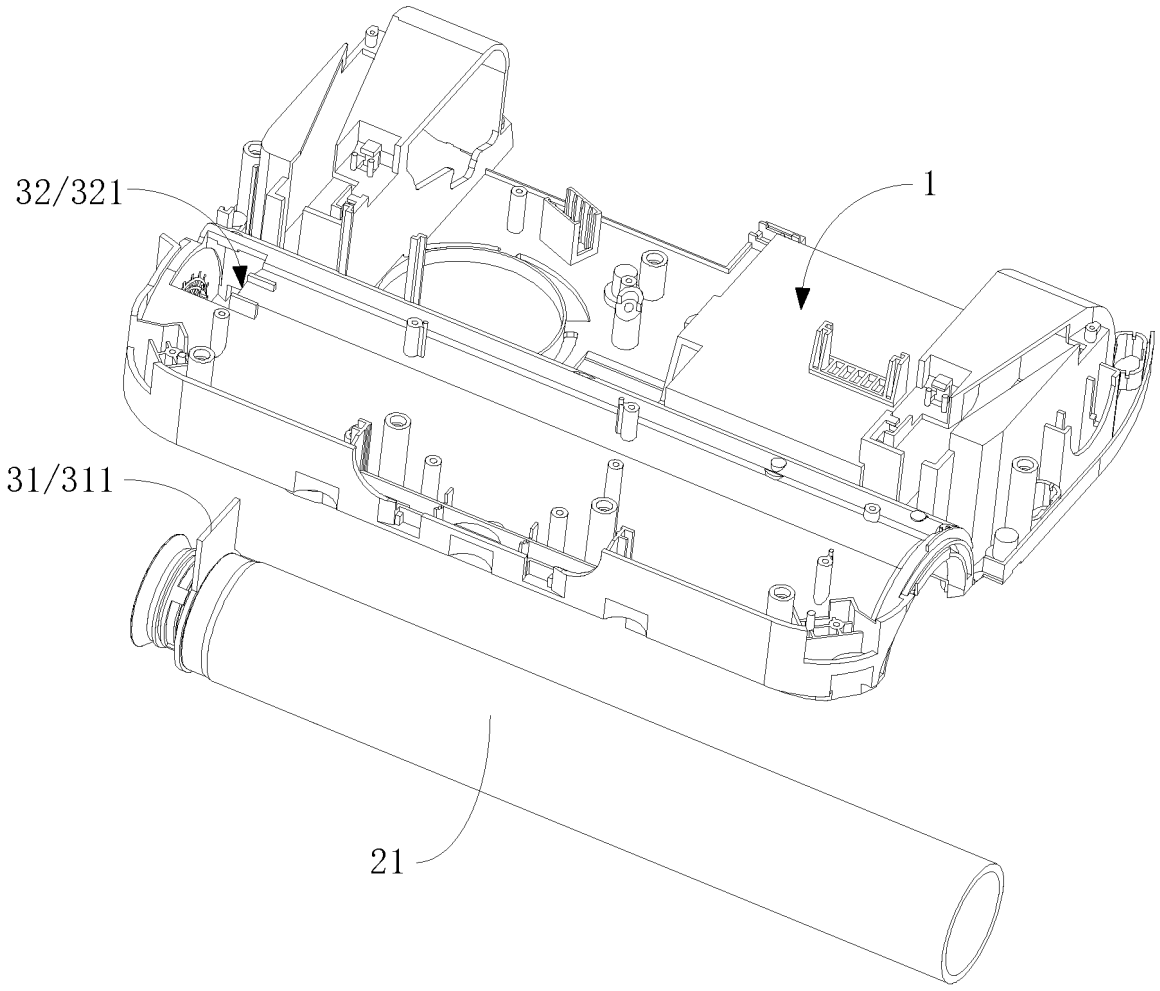

Figure 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/074212

A. CLASSIFICATION OF SUBJECT MATTER

A47L11/24(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)

IPC: 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)

CNTXT; ENTXTC; ENTXT; VEN: 滚刷, 滚轴, 地刷, 清洁件, 清洁刷, 刷子, 清洁辊, 清洁布, 清洁体, 清洁轴, 移动, 伸缩, 伸出, 外伸, 突出, 凸出, 延伸, 墙角, 边缘, 墙边, 墙壁, 四角, 死角, 盲区, scrubber, cleaning piece, roller, cleaner, cleaning, mop, brush, moving, stretching, expand+, extend+, corner+, edge+, border+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 208784605 U (NINGXIA CHUANGGE TECHNOLOGY CO., LTD.) 26 April 2019 (2019-04-26) description, paragraphs 22-29, and figures 1-2	1-14
X	CN 208784608 U (NINGXIA CHUANGGE TECHNOLOGY CO., LTD.) 26 April 2019 (2019-04-26) description, paragraphs 23-30, and figures 1-3	1-14
A	JP 2015000116 A (SHARP K. K.) 05 January 2015 (2015-01-05) entire document	1-14
A	WO 2009128762 A1 (ELECTROLUX ABP; POHL ANDREAS; NYGREN HENRIK; PILSMO BO;) 22 October 2009 (2009-10-22) entire document	1-14
PX	CN 217447588 U (DREAME INNOVATION TECHNOLOGY (SUZHOU) CO., LTD.) 20 September 2022 (2022-09-20) description, paragraphs 42-60, and figures 1-10	1-14

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

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"E" earlier application or patent but published on or after the international filing date
"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
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"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
25 April 2023	**25 April 2023**

Name and mailing address of the ISA/CN
China National Intellectual Property Administration (ISA/CN)
China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088

Authorized officer

Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/074212

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 217987484 U (DREAME INNOVATION TECHNOLOGY (SUZHOU) CO., LTD.) 09 December 2022 (2022-12-09) description, paragraphs 35-51, and figures 1-7	1-14
PX	CN 218128376 U (GUANGDONG HOTATA TECHNOLOGY GROUP CO., LTD.) 27 December 2022 (2022-12-27) description, paragraphs 38-74, and figures 1-8	1-14

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/074212

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 208784605 U	26 April 2019	None	
CN 208784608 U	26 April 2019	None	
JP 2015000116 A	05 January 2015	None	
WO 2009128762 A1	22 October 2009	WO 2009128762 A8	21 October 2010
		SE 0800858 L	16 October 2009
		SE 532296 C2	08 December 2009
		EP 2268182 A1	05 January 2011
		EP 2268182 A4	27 November 2013
		EP 2268182 B1	10 June 2015
CN 217447588 U	20 September 2022	None	
CN 217987484 U	09 December 2022	None	
CN 218128376 U	27 December 2022	None	

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 202220716923 **[0001]**