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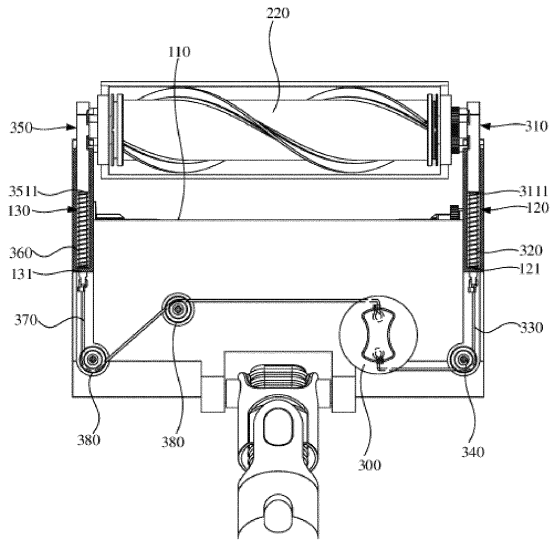
(54) CLEANING APPARATUS AND VACUUM CLEANER

(57) Some embodiments of the present invention provide a cleaning apparatus (10) and a vacuum cleaner (1). The vacuum cleaner (1) has the cleaning apparatus (10). The cleaning apparatus (10) includes a housing (100) and a cleaning assembly (200). The cleaning assembly (200) is rotatably provided at the housing (100). The cleaning assembly (200) includes a first cleaning member (210) and a second cleaning member (220) arranged in parallel to the first cleaning member (210). The cleaning assembly (200) can be operated to rotate so as to selectively move the first cleaning member (210) or the second cleaning member (220) to a cleaning position. When the floor cleaning member needs to be switched from the first cleaning member (210) to the second cleaning member (220), the cleaning assembly (200) can be operated to rotate to a certain angle to move the second cleaning member (220) to the cleaning position. The invention is convenient to operate.

Fig. 5



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Description

Cross-Reference to Related Application

[0001] This application claims priority to Chinese patent application No. 201910850460.6, filed on September 9, 2019 and entitled "Cleaning apparatus and vacuum cleaner", the invention of which is hereby incorporated by reference in its entirety.

Technical Field

[0002] The invention relates to a technical field of ground cleaning apparatuses, in particular to a cleaning apparatus and a vacuum cleaner.

Background

[0003] A vacuum cleaner is generally provided with two different cleaning members, and a user switches different cleaning members for use according to different requirements. However, only one type of cleaning member is mounted on a floor brush of the vacuum cleaner at a moment, when switching of the other type of cleaning member is needed, a fixing structure of the cleaning member needs to be disassembled, an original cleaning member is taken out, and then another type of cleaning member is switched, so that the operation is troublesome.

Summary

[0004] Based on this, some embodiments of the invention provide a cleaning apparatus and a vacuum cleaner.

[0005] The cleaning apparatus includes a housing and a cleaning assembly. The cleaning assembly is rotatably provided at the housing. The cleaning assembly includes a first cleaning member and a second cleaning member arranged in parallel to the first cleaning member. The cleaning assembly is operated to rotate so as to selectively move the first cleaning member or the second cleaning member to a cleaning position.

[0006] According to the above cleaning apparatus, before switching of the cleaning members, it is assumed that the first cleaning member is located at the cleaning position for cleaning the floor and the second cleaning member is a spare cleaning member. When the floor cleaning member needs to be switched from the first cleaning member to the second cleaning member, the cleaning assembly is operated to rotate to a certain angle to move the second cleaning member to the cleaning position, and the operation is convenient.

[0007] In some embodiments, the cleaning apparatus further includes a switching mechanism disposed on the housing, the housing includes a blocking body disposed opposite to the cleaning assembly at an interval, the switching mechanism is rotatably connected with the cleaning assembly, and the switching mechanism is configured to drive the cleaning assembly to be away from the blocking body, so that a movable space for the cleaning assembly to rotate is formed between the cleaning assembly and the blocking body.

[0008] In some embodiments, the switching mechanism includes an operating member and a transmission unit, the transmission unit includes a first guide member rotatably connected with the cleaning assembly and a first transmission assembly in transmission connection with the first guide member, the operating member is in transmission connection with the first transmission assembly, and the operating member is configured to drive the first guide member to move through the first transmission assembly, so that the cleaning assembly is close to or away from the blocking body.

[0009] In some embodiments, the first transmission assembly includes a first elastic pushing member and a first pulling member, the first elastic pushing member is disposed on the housing and is abutted against the first guide member, one end of the first pulling member is connected with the first guide member, and the other end of the first pulling member is connected with the operating member.

[0010] The first elastic pushing member is configured to apply pushing force to the first guide member so that the first guide member has a tendency of moving along a first direction and the cleaning assembly has a tendency of moving away from the blocking body; and the operating member is configured to apply pulling force to the first guide member through the first pulling member so that the first guide member has a tendency of moving along a second direction opposite to the first direction, and the cleaning assembly has a tendency of moving towards the blocking body.

[0011] In some embodiments, the housing is provided with a first abutting portion, the first guide member is provided with a second abutting portion opposite to the first abutting portion at an interval, and two ends of the first elastic pushing member are abutted against the first abutting portion and the second abutting portion respectively.

[0012] In some embodiments, the first guide member further includes a first limiting post, the first elastic pushing member is a spring, and the first elastic pushing member sleeves the first limiting post.

[0013] In some embodiments, the cleaning apparatus further includes a first pulley, wherein the first pulley is disposed on the housing, the first pulling member is a flexible pulling member, and the first pulling member is winded around the first pulley.

[0014] In some embodiments, the operating member is a knob rotatably disposed on the housing, the operating member is configured to pull the first guide member to move along the second direction through the first pulling member when rotating along a third direction, and the first elastic pushing member is configured to push the first guide member to move along the first direction when the operating member rotates along a fourth direction opposite to the third direction.

[0015] In some embodiments, a mounting seat is further disposed on the housing, the mounting seat is provided with a first limiting groove, the operating member is provided with a limiting portion, and the limiting portion is configured to be in positioning fit with the first limiting groove when the cleaning assembly is located at a first position;
and/or a mounting seat is further disposed on the housing, the mounting seat is provided with a second limiting groove, the operating member is provided with a limiting portion, and the limiting portion is configured to be in positioning fit with the second limiting groove when the cleaning assembly is located at a second position.

[0016] In some embodiments, the cleaning apparatus further includes an elastic abutting member, the mounting seat is provided with a through hole, a third abutting portion is disposed on a hole wall of the through hole, the operating member is provided with a mounting post, one end of the mounting post is connected with the limiting portion, the other end of the mounting post is movably penetrated through the through hole, a fourth abutting portion opposite to the third abutting portion is further disposed at the end, passing through the through hole, of the mounting post, the fourth abutting portion is farther from the limiting portion than the third abutting portion, and two ends of the elastic abutting member are respectively connected with the third abutting portion and the fourth abutting portion.

[0017] In some embodiments, the elastic abutting member is a spring, and the elastic abutting member sleeves the mounting post.

[0018] In some embodiments, the cleaning apparatus further includes a first positioning assembly, the cleaning assembly further includes a support, the first cleaning member and the second cleaning member are both disposed on the support, the first positioning assembly is disposed on the support, the first guide member is provided with a first positioning groove and a second positioning groove, the first positioning assembly is configured to be in positioning fit with the first positioning groove when the first cleaning member reaches the cleaning position, and the first positioning assembly is further configured to be in positioning fit with the second positioning groove when the second cleaning member reaches the cleaning position.

[0019] In some embodiments, the first positioning assembly includes a first elastic member and a first positioning member, two ends of the first elastic member are abutted against the first positioning member and the housing, the first positioning member is in movable fit with the first guide member, the first positioning member is configured to be in positioning fit with the first positioning groove when the first cleaning member reaches the cleaning position, and the first positioning member is further configured to be in positioning fit with the second positioning groove when the second cleaning member reaches the cleaning position.

[0020] In some embodiments, the cleaning apparatus further includes a second positioning assembly, the second positioning assembly is disposed on the support, the second positioning assembly is configured to be in positioning fit with the second positioning groove when the first cleaning member reaches the cleaning position, and the second positioning assembly is further configured to be in positioning fit with the second positioning groove when the second cleaning member reaches the cleaning position.

[0021] In some embodiments, the second positioning assembly includes a second elastic member and a second positioning member, two ends of the second elastic member abut against the second positioning member and the housing, the second positioning member is in movable fit with the first guide member, the second positioning member is configured to be in positioning fit with the second positioning groove when the first cleaning member reaches the cleaning position, and the second positioning member is further configured to be in positioning fit with the first positioning groove when the second cleaning member reaches the cleaning position.

[0022] In some embodiments, the housing is further provided with a first guide groove, and the first guide member is in guide fit with the first guide groove.

[0023] In some embodiments, the transmission unit further includes a second guide member and a second transmission assembly in transmission connection with the second guide member, wherein the second transmission assembly is in transmission connection with the operating member, two ends of the cleaning assembly are rotatably connected with the first guide member and the second guide member respectively, and the operating member is further configured to drive the second guide member to move through the second transmission assembly, so that the cleaning assembly is close to or away from the blocking body.

[0024] In some embodiments, the second transmission assembly includes a second elastic pushing member and a second pulling member, wherein the second elastic pushing member is disposed on the housing and is abutted against the second guide member, one end of the second pulling member is connected with the second guide member, and the other end of the second pulling member is connected with the operating member.

[0025] The second elastic pushing member is configured to apply pushing force to the second guide member so that the second guide member has a tendency of moving along a fifth direction and the cleaning assembly has a tendency of moving away from the blocking body; and the operating member is configured to apply pulling force to the second guide member through the second pulling member so that the second guide member has a tendency of moving along a sixth direction opposite to the fifth direction, and the cleaning assembly has a tendency of moving towards the blocking body.

[0026] In some embodiments, the housing is provided with a fifth abutting portion, the second guide member is provided with a sixth abutting portion opposite to the fifth

abutting portion at an interval, and two ends of the second elastic pushing member are abutted against the fifth abutting portion and the sixth abutting portion respectively.

[0027] In some embodiments, the second guide member further includes a second limiting post, the second elastic pushing member is a spring, and the second elastic pushing member is disposed on the second limiting post in a sleeving manner.

[0028] In some embodiments, the cleaning apparatus further includes a second pulley, the second pulley is disposed on the housing, wherein the second pulling member is a flexible pulling member, and the second pulling member is winded around the second pulley.

[0029] In some embodiments, the cleaning apparatus further includes a third positioning assembly, the cleaning assembly further includes a support, the first cleaning member and the second cleaning member are both disposed on the support, the third positioning assembly is disposed on the support, the second guide member is provided with a third positioning groove and a fourth positioning groove, the third positioning assembly is configured to be in positioning fit with the third positioning groove when the first cleaning member reaches the cleaning position, and the third positioning assembly is further configured to be in positioning fit with the fourth positioning groove when the second cleaning member reaches the cleaning position.

[0030] In some embodiments, the third positioning assembly includes a third elastic member and a third positioning member, two ends of the third elastic member are abutted against the third positioning member and the housing respectively, the third positioning member is in movable fit with the second guide member, the third positioning member is configured to be in positioning fit with the third positioning groove when the first cleaning member reaches the cleaning position, and the third positioning member is further configured to be in positioning fit with the fourth positioning groove when the second cleaning member reaches the cleaning position.

[0031] In some embodiments, the cleaning apparatus further includes a fourth positioning assembly, the fourth positioning assembly is disposed on the support, the fourth positioning assembly is configured to be in positioning fit with the fourth positioning groove when the first cleaning member reaches the cleaning position, and the fourth positioning assembly is further configured to be in positioning fit with the third positioning groove when the second cleaning member reaches the cleaning position.

[0032] In some embodiments, the fourth positioning assembly includes a fourth elastic member and a fourth positioning member, two ends of the fourth elastic member are abutted against the fourth positioning member and the housing respectively, the fourth positioning member is in movable fit with the second guide member, the fourth positioning member is configured to be in positioning fit with the fourth positioning groove when the first cleaning member reaches the cleaning position, and the fourth positioning member is further configured to be in positioning fit with the third positioning groove when the second cleaning member reaches the cleaning position.

[0033] In some embodiments, the operating member is a knob rotatably disposed on the housing, the knob is provided with a first connecting portion and a second connecting portion spaced from the first connecting portion, the first pulling member is connected with the first connecting portion, and the second pulling member is connected with the second connecting portion.

[0034] The knob is configured to pull the first guide member to move along the second direction through the first pulling member and pull the second guide member to move along the fourth direction through the second pulling member when rotating along the fifth direction; and when the knob rotates along the sixth direction, the first elastic pushing member is configured to push the first guide member to move along the first direction, and the second elastic pushing member is configured to push the second guide member to move along the third direction.

[0035] In some embodiments, the housing is further provided with a second guide groove, and the second guide member is in guide fit with the second guide groove.

[0036] Based on the same application idea, the invention further provides a vacuum cleaner, including the abovementioned cleaning apparatus.

Brief Description of the Drawings

[0037]

Fig. 1 illustrates a structural schematic diagram of a vacuum cleaner according to an embodiment of the invention.

Fig. 2 illustrates an enlarged partial schematic diagram of A of the vacuum cleaner shown in Fig. 1.

Fig. 3 illustrates a partial schematic diagram I of a top view of the vacuum cleaner according to an embodiment of the invention.

Fig. 4 illustrates a partial schematic diagram of a side view of the vacuum cleaner shown in Fig. 3.

Fig. 5 illustrates a partial schematic diagram II of a top view of the vacuum cleaner according to an embodiment of the invention.

Fig. 6 illustrates a partial schematic diagram of a side view of the vacuum cleaner shown in Fig. 5.

Fig. 7 illustrates an exploded schematic diagram of a cleaning apparatus according to an embodiment of the invention.

Fig. 8 illustrates an enlarged partial schematic diagram of B of the cleaning apparatus shown in Fig. 7.

Fig. 9 illustrates an enlarged partial schematic diagram of C of the cleaning apparatus shown in Fig. 7.

Fig. 10 illustrates a partial schematic diagram I of a sectional view of a cleaning apparatus according to an embodiment of the invention.

Fig. 11 illustrates a partial schematic diagram II of a sectional view of a cleaning apparatus according to an embodiment of the invention.

Description of Reference Numerals:

[0038] 1. Vacuum cleaner; 10. Cleaning apparatus; 100. Housing; 110. Blocking body; 120. First guide groove; 121. First abutting portion; 130. Second guide groove; 131. Fifth abutting portion; 140. Mounting seat; 141. Through hole; 1411. Third abutting portion; 142. First limiting groove; 143. Second limiting groove; 200. Cleaning assembly; 210. First cleaning member; 220. Second cleaning member; 230. Support; 231. First rotating shaft; 232. First blind hole; 233. Second blind hole; 234. First stopping strip; 300. Operating member; 301. Elastic abutting member; 302. Abutting screw; 3021. Fourth abutting portion; 303. Limiting portion; 304. Mounting post; 310. First guide member; 311. First guide portion; 3111. Second abutting portion; 312. First limiting post; 320. First elastic pushing member; 330. First pulling member; 340. First pulley; 350. Second guide member; 351. Second guide portion; 3511. Sixth abutting portion; 3512. Second mounting hole; 3513. Third positioning groove; 3514. Fourth positioning groove; 352. Second limiting post; 360. Second elastic pushing member; 370. Second pulling member; 380. Second pulley; 400. First positioning assembly; 401. First elastic member; 402. First positioning member; 410. Second positioning assembly; 411. Second elastic member; 412. Second positioning member; 420. Third positioning assembly; 421. Third elastic member; 422. Third positioning member; 430. Fourth positioning assembly; 431. Fourth elastic member; 432. Fourth positioning member.

Detailed Description of the Embodiments

[0039] In order to make the purpose, technical solutions and advantages of the invention clearer, the invention will be further described below in combination with the drawings and the specific implementation modes in detail. It is to be understood that the specific implementation modes described herein are for the purpose of explaining the invention only and are not intended to limit the scope of the invention.

[0040] It is be to noted that when an element is referred to as being 'fixed' to another element, it may be directly on the other element or a medium element may also be present. When an element is referred to as being "connected" to another element, it may be directly connected to the other element or a medium element may also be present. As used herein, the terms "vertical", "horizontal", "left", "right", and similar expressions are only adopted for description, and are not meant to be the only implementation modes.

[0041] Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood by those skill in the art to which this invention belongs. The terms used in the specification of the invention herein are for the purpose of describing the specific implementation modes only and are not intended to be limiting of the invention. As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items.

[0042] The terms "first" and "second" in the invention do not denote any specific quantity or sequence, but rather are used to distinguish one name from another.

[0043] As shown in Figs. 1-2, some embodiments of the present invention provide a vacuum cleaner 1. The vacuum cleaner 1 is provided with a cleaning apparatus 10. The cleaning apparatus 10 includes a housing 100 and a cleaning assembly 200 with a cleaning position. The cleaning assembly 200 is rotatably provided at the housing 100. The cleaning assembly 200 includes a first cleaning member 210 and a second cleaning member 220 arranged in parallel to the first cleaning member 210. The cleaning assembly 200 is operated to rotate so as to selectively move the first cleaning member 210 or the second cleaning member 220 to the cleaning position.

[0044] As shown in Fig. 2, in some embodiments, the first cleaning member 210 and the second cleaning member 220 are both roller brushes, the cleaning assembly 200 further includes a support 230 having two opposite sides, the first cleaning member 210 and the second cleaning member 220 are respectively disposed on two sides of the support 230, and the first cleaning member 210 and the second cleaning member 220 are disposed in parallel. The first cleaning member 210 and the second cleaning member 220 are located at the lower side of the cleaning assembly 200, when the first cleaning member 210 moves to the cleaning position, the first cleaning member 210 is configured to clean the floor, the second cleaning member 220 serves as a spare cleaning member, and when the second cleaning member 220 moves to the cleaning position, the second cleaning member 220 is configured to clean the floor, and the first cleaning member 210 serves as a spare cleaning member.

[0045] Firstly, the cleaning apparatus 10 will be described, before switching of the cleaning members, it is assumed that the first cleaning member 210 is located at the cleaning position for cleaning the floor and the second cleaning member 220 is a spare cleaning member. When the floor cleaning member needs to be switched from the first cleaning member 210 to the second cleaning member 220, the cleaning assembly 200 is operated to rotate to a certain angle to move the second cleaning member 220 to the cleaning position, and the operation is convenient.

[0046] As shown by Figs. 3 and 5, in some embodi-

ments, the cleaning apparatus 10 further includes a switching mechanism disposed on the housing 100, the housing 100 includes a blocking body 110 disposed opposite to the cleaning assembly 200 at an interval, the switching mechanism is rotatably connected with the cleaning assembly 200, and the switching mechanism is configured to drive the cleaning assembly 200 to be away from the blocking body 110, so that a movable space for the cleaning assembly 200 to rotate is formed between the cleaning assembly 200 and the blocking body 110.

[0047] The blocking body 110 is a baffle at an end of the housing 100, the blocking body 110 is configured to prevent dirt such as dust from entering the housing 100, when the cleaning assembly 200 is located at a working position (i.e., a position of the cleaning assembly shown in Figs. 3 and 4), the cleaning assembly 200 is closer to the blocking body 110, and in this case, the blocking body 110 hinders the cleaning assembly 200 from rotating. The cleaning assembly 200 is driven to move away from the blocking body 110 by the switching assembly, so that a distance between the cleaning assembly 200 and the blocking body 110 is increased, and the movable space (as shown in Figs. 5 and 6) for the cleaning assembly 200 to rotate is formed between the cleaning assembly 200 and the blocking body 110, thereby preventing the blocking body 110 from hindering the rotation of the cleaning assembly 200.

[0048] As shown in Figs. 3 and 5, in some embodiments, the switching mechanism includes an operating member 300 and a transmission unit, the transmission unit includes a first guide member 310 rotatably connected with the cleaning assembly 200 and a first transmission assembly in transmission connection with the first guide member 310, the operating member 300 is in transmission connection with the first transmission assembly, and the operating member 300 is configured to drive the first guide member 310 to move through the first transmission assembly, so that the cleaning assembly 200 is close to or away from the blocking body 110. The user changes a position of the first guide member 310 by operating the operating member 300, thereby changing the position of the cleaning assembly 200 connected with the first guide member 310.

[0049] As shown in Figs. 3, 5 and 7, in some embodiments, a first rotating shaft 231 is disposed on the support 230 of the cleaning assembly 200, a first mounting hole is formed in the first guide member 310, the first rotating shaft 231 is penetrated through the first mounting hole, and the cleaning assembly 200 is rotatably connected with the first guide member 310 through the first rotating shaft 231. In some embodiments, the operating member 300 drives the first guide member 310 to move in a first direction through the first transmission assembly; or the operating member 300 drives the first guide member 310 to move in a second direction opposite to the first direction, when the first guide member 310 moves in the first direction, the first guide member 310 drives the cleaning assembly 200 to move away from the blocking body 110, and when the first guide member 310 moves in the second direction, the first guide member 310 drives the cleaning assembly 200 to move towards the blocking body 110.

[0050] As shown in Figs. 3 and 5, in some embodiments, the first transmission assembly includes a first elastic pushing member 320 and a first pulling member 330, the first elastic pushing member 320 is disposed on the housing 100 and is abutted against the first guide member 310, one end of the first pulling member 330 is connected with the first guide member 310, and the other end of the first pulling member 330 is connected with the operating member 300.

[0051] The first elastic pushing member 320 is configured to apply pushing force to the first guide member 310 so that the first guide member 310 has a tendency of moving along the first direction and the cleaning assembly 200 has a tendency of moving away from the blocking body 110; and the operating member 300 is configured to apply pulling force to the first guide member 330 through the first pulling member 330 so that the first guide member 310 has a tendency of moving along the second direction, and the cleaning assembly 200 has a tendency of moving towards the blocking body 110.

[0052] It is to be understood that the first elastic pushing member 320 is configured to apply pushing force to the first guide member 310, the operating member 300 is configured to apply pulling force to the first guide member 310 through the first pulling member 330, and a difference between the pushing force and the pulling force applied to the first guide member 310 determines the moving direction of the first guide member 310. When the pushing force applied to the first guide member 310 is greater than the pulling force, the first guide member 310 moves along the first direction to move the cleaning assembly 200 away from the blocking body 110, when the pushing force applied to the first guide member 310 is smaller than the pulling force, the first guide member 310 moves along the second direction to move the cleaning assembly 200 towards the blocking body 110, and when the pushing force applied to the first guide member 310 is equal to the pulling force, the position of the first guide member 310 does not change.

[0053] Before switching of the cleaning members (as shown in Fig. 3), and the cleaning assembly 200 is located at the working position, the first elastic pushing member 320 is in a compressed state, and the pulling force and the pushing force applied to the first guide member 310 are balanced; when the operating member 300 is operated, such that the pulling force applied to the first guide member 310 is smaller than the pushing force, the first elastic pushing member 320 is extended and pushes the first guide member 310 to move along the first direction (as shown in Fig. 5), so as to move the cleaning assembly 200 away from the blocking body 110; when the cleaning assembly 200 is at a certain distance from the blocking body 110 and a movable space for the cleaning assembly 200 to rotate is formed between the

cleaning assembly 200 and the blocking body 110, the cleaning assembly 200 is manually rotated at the moment, and then the operation of switching the cleaning members is completed; and after the cleaning assembly 200 completes the operation of switching the cleaning members, the operating member 300 is operated to make the pulling force applied to the first guide member 310 greater than the pushing force, so that the first guide member 310 moves along the second direction, and the cleaning assembly 200 moves towards the blocking body 110 and returns to the working position.

[0054] In some embodiments, the first elastic pushing member 320 includes a spring, a spring sheet, an elastic rubber, or the like.

[0055] As shown in Fig. 5. in some embodiments, the housing 100 is provided with a first abutting portion 121, the first guide member 310 is provided with a second abutting portion 3111 opposite to the first abutting portion 121 at an interval, and two ends of the first elastic pushing member 320 are abutted against the first abutting portion 121 and the second abutting portion 3111 respectively. In this way, the first elastic pushing member 320 is mounted, and the first elastic pushing member 320 applies pushing force to the first guide member 310.

[0056] In some embodiments, the second abutting portion 3111 is disposed opposite to the first abutting portion 121 at an interval along the first section, the first elastic pushing member 320 is disposed between the first abutting portion 121 and the second abutting portion 3111, two ends of the first elastic pushing member 320 are abutted against the first abutting portion 121 and the second abutting portion 3111 respectively, and the first elastic pushing member 320 provides a pushing force to move the first guide member 310 along the first direction.

[0057] As shown in Figs. 5 and 7, in some embodiments, the first guide member 310 further includes a first limiting post 312, the first elastic pushing member 320 is a spring, and the first elastic pushing member 320 is provided on the first limiting post 312 in a sleeving manner. Therefore, the first elastic pushing member 320 is limited, the second elastic pushing member 360 is prevented from being bent along the axial direction when being compressed, and the stability is improved.

[0058] As shown in Figs. 5 and 7, in some embodiments, the first guide member 310 includes a first guide portion 311 rotatably connected with the cleaning assembly 200, and a first limiting post 312 connected with the first guide portion 311, a second abutting portion 3111 is disposed at the end, close to the first limiting post 312, of the first guide portion 311, a through hole is formed in the first abutting portion 121, the first elastic pushing member 320 is disposed between the second abutting portion and the first abutting portion, and the first limiting post 312 is penetrated through the first elastic pushing member 320 and the through hole and is connected with the first pulling member 330.

[0059] As shown in Figs. 5 and 7, in some embodiments, the housing 100 is further provided with a first guide groove 120, and the first guide member 310 is in guide fit with the first guide groove 120. The first guide groove 120 is configured to guide the first guide member 310 to move along the first direction or the second direction, so that the movement path of the first guide member 310 is prevented from deviating, and the stability of the apparatus is improved.

[0060] In some embodiments, the guide path of the first guide groove 120 is extended along the first direction, the first guide member 310 is in sliding fit with the groove wall of the first guide groove 120, and the groove wall of the first guide groove 120 guides the moving direction of the first guide member 310, so as to guide the first guide member 310 to move along the first direction or the second direction.

[0061] As shown in Figs. 3 and 5, in some embodiments, the cleaning apparatus 10 further includes a first pulley 340, the first pulley 340 is disposed on the housing 100, the first pulling member 330 is a flexible pulling member, and the first pulling member 330 is winded around the first pulley 340. The first pulley 340 is configured to provide tension to the first pulling member 330, so that the first pulling member 330 is always in a stretched state, thereby ensuring the operation accuracy of the operating member 300 on the first pulling member 330.

[0062] In some embodiments, the first pulling member 330 includes a flexible connector such as a cord or a chain.

[0063] In some embodiments, the first pulley 340 is disposed on the housing 100 through a screw, one end of the first pulling member 330 is connected with the first guide member 310, the other end of the first pulling member 330 is connected with the operating member 300 after bypassing the first pulley 340, and a position of a joint between the operating member 300 and the first pulling member 330 is changed through the operating member 300, so that the position of the first guide member 310 is changed under the combined action of the first pulling member 330 and the first elastic pushing member 320.

[0064] As shown in Figs. 3, 5 and 7, in some embodiments, the operating member 300 is a knob rotatably disposed on the housing 100, the operating member 300 is configured to pull the first guide member 310 to move along the second direction through the first pulling member 330 when rotating along a third direction, and the first elastic pushing member 320 is configured to push the second guide member 350 to move along the first direction when the operating member 300 rotates along a fourth direction opposite to the third direction. The moving direction of the first guide member 310 is changed through the rotation of the operating member 300, and the operation is convenient.

[0065] In some embodiments, the operating member 300 rotates along a third direction refers to that the operating member 300 rotates in a clockwise direction, the operating member 300 is rotated along a fourth direction refers to that the operating member 300 rotates in a coun-

terclockwise direction, the first pulling member 330 is fixedly connected with the operating member 300, and the position of the joint between the operating member 300 and the first pulling member 330 is changed through rotation of the operating member 300, so that the position of the first guide member 310 is changed under the combined action of the first pulling member 330 and the first elastic pushing member 320.

[0066] As shown in Figs. 7, 9 and 10, in some embodiments, a mounting seat is 140 further disposed on the housing 100, the mounting seat 140 is provided with a first limiting groove 142, the operating member 300 is provided with a limiting portion 303, and the limiting portion 303 is configured to be in positioning fit with the first limiting groove 142 when the cleaning assembly 200 is located at a first position.

[0067] The first position refers to that the cleaning assembly 200 is located at the working position (the position of the cleaning assembly 200 in Fig. 3), and when the cleaning assembly 200 is located at the first position, the limiting portion 303 is sunk into the first limiting groove 142 to prevent the position of the cleaning assembly 200 from being unstable due to the rotation of the operating member 300 under the action of the first elastic pushing member 320.

[0068] As shown in Figs. 7, 9 and 10, in some embodiments, the mounting seat 140 is further provided with a second limiting groove 143, and the limiting portion 303 is configured to be in positioning fit with the first limiting groove 143 when the cleaning assembly 200 is located at a second position.

[0069] The second position refers to that when the cleaning assembly 200 is located at the second position, a movable space (the position of the cleaning assembly 200 in Fig. 5) for the cleaning assembly 200 to rotate is formed between the cleaning assembly 200 and the blocking body 110. When the cleaning assembly 200 is located at the second position, the limiting portion 303 sank into the second limiting groove 143 to prevent the position of the cleaning assembly 200 from being unstable due to the rotation of the operating member 300 under the action of the first elastic pushing member 320.

[0070] As shown in Figs. 7, 9 and 10, in some embodiments, the first cleaning member 210 and the second cleaning member 220 of the cleaning assembly 200 are disposed in parallel, and when the first cleaning member 210 or the second cleaning member 220 is located at the cleaning position, the first cleaning member 210 and the second cleaning member 220 are arranged in parallel along the vertical direction, and the first limiting groove 142 and the second limiting groove 143 on the mounting seat 140 are distributed at an angle of 90 degrees along the circumferential direction of the mounting seat 140. When the cleaning assembly 200 is located at the first position, the limiting portion 303 of the operating member 300 is sunk into the first limiting groove 142, when the cleaning assembly 200 needs to be moved from the first position to the second position, the operating number 300 is lifted, so that the limiting portion 303 is pulled out of the first limiting groove 142, then the operating member 300 is rotated by 90 degrees in the fourth direction, so that the cleaning assembly 200 moves to the second position under the action of the elastic pushing member, and then the limiting portion 303 is sunk into the second limiting groove 143, thereby positioning the operating member 300.

[0071] As shown in Figs. 7, 9 and 10, in some embodiments, the cleaning apparatus further includes an elastic abutting member 301, the mounting seat 140 is provided with a through hole 141, a third abutting portion 1411 is disposed on a hole wall of the through hole 141, the operating member 300 is provided with a mounting post 304, one end of the mounting post 304 is connected with the limiting portion 303, the other end of the mounting post 304 is movably penetrated through the through hole 141, a fourth abutting portion 3021 opposite to the third abutting portion 1411 is further disposed at the end, penetrating through the through hole 141, of the mounting post 304, the fourth abutting portion 3021 is farther from the limiting portion 303 than the third abutting portion 1411, and two ends of the elastic abutting member 301 are respectively connected with the third abutting portion 1411 and the fourth abutting portion 3021. The elastic abutting member 301 is disposed between the third abutting portion 1411 and the fourth abutting portion 3021 of the operating member 300, the elastic abutting member 301 applies a force toward the mounting seat 140 to the operating member 300, so that the operating member 300 is tightly attached to the mounting seat 140, and thus, when the limiting portion is 303 sunk into the first limiting groove 142 or the second limiting groove 143, the operating member 300 is prevented from popping out of the first limiting groove 142 or the second limiting groove 143.

[0072] As shown in Fig. 10, in some embodiments, the mounting seat 140 is provided with a protrusion extending toward the operating member 300, the protrusion is enclosed to form a through hole 141, the end, close to the operating member 300, of the hole wall of the through hole 141 is provided with a third abutting portion 1411, the third abutting portion 1411 is annular, and one end of the elastic abutting member 301 is abutted against the third abutting portion 1411; a threaded hole is formed in the end, away from the limiting portion 303, of the mounting post 304, an abutting screw 302 is penetrated through the threaded hole, a head of the abutting screw is a fourth abutting portion 3021, the fourth abutting portion 3021 is opposite to the third abutting portion 1411 at an interval, the fourth abutting portion 3021 is farther away from the limiting portion 303 than the third abutting portion 1411, and the other end of the elastic abutting member 301 is abutted against the head of the screw.

[0073] In some embodiments, the elastic abutting member 301 includes a spring, a spring sheet, an elastic rubber, or the like.

[0074] In some embodiments, the elastic abutting member 301 is a spring, and the elastic abutting member

301 is disposed on the mounting post 304 in a sleeving manner. The mounting post 304 limits the elastic abutting member 301, so as to prevent the elastic abutting member 301 from falling off between the third abutting portion 1411 and the fourth abutting portion 3021 of the operating member 300.

[0075] As shown in Fig. 7, in some embodiments, the cleaning apparatus 10 further includes a first positioning assembly 400, the first positioning assembly 400 is disposed on the support 230, the first guide member 310 is provided with a first positioning groove, and the first positioning assembly 400 is configured to be in positioning fit with the first positioning groove when the first cleaning member 210 reaches the cleaning position. Thus, when the first cleaning member 210 reaches the cleaning position, the first positioning member 400 is inserted into the first positioning groove, so that the user feels that the first cleaning member 210 has been rotated in place.

[0076] In some embodiments, the first positioning assembly 400 includes a first elastic member 401 and a first positioning member 402, two ends of the first elastic member 401 are abutted against the first positioning member 402 and the housing 100, the first positioning member 402 is in movable fit with the first guide member 310, and the first positioning member 402 is configured to be in positioning fit with the first positioning groove when the first cleaning member 210 reaches the cleaning position. The first elastic member 401 is configured to apply a force toward the first guide member 310 to the first positioning member 402, the first positioning member 402 is always abutted against the first guide member 310 during the rotation of the cleaning assembly 200, and when the first cleaning member 210 reaches the cleaning position, the first positioning member 402 is inserted into the first positioning groove, so that the user feels that the first cleaning member 210 has been rotated in place.

[0077] In some embodiments, a groove wall of the first positioning groove is of an arc shape, when the cleaning assembly 200 is driven to rotate by external force after the first guide member 310 is inserted into the first positioning groove and is abutted against the groove wall of the first positioning groove, the first guide member 310 is also moved out of the positioning groove along the groove wall of the first positioning groove.

[0078] As shown in Figs. 7 and 11, in some embodiments, the support 230 is provided with a first blind hole 232, the first elastic member 401 is disposed in the first blind hole 232, one end of the first elastic member 401 is abutted against the end of the first blind hole 232, and one end of the first positioning member 402 is penetrated through the first blind hole 232 and is abutted against the other end of the first elastic member 401. Thus, the first elastic member 401 and the first positioning member 402 are mounted, and a hole wall of the first blind hole 232 also prevents the first elastic member 401 and the first positioning member 402 from displacing.

[0079] As shown in Fig. 11, in still some embodiments, the hole wall of the first blind hole 232 is provided with a first stopping strip 234, one end of the first elastic member 401 is abutted against the first stopping strip 234, and the other end of the first elastic member 401 is abutted against the first positioning member 402, so that the first elastic member 401 and the first positioning member 402 are mounted.

[0080] In some embodiments, the first elastic member 401 is a spring, a spring sheet, an elastic rubber, or the like, and the first positioning member 402 is a positioning pin, a positioning post, or the like.

[0081] As shown in Fig. 7, in some embodiments, the first guide member 310 is further provided with a second guide groove, and the first positioning assembly 400 is also configured to be in positioning fit with the second positioning groove when the second cleaning member 220 reaches the cleaning position. Thus, when the second cleaning member 220 reaches the cleaning position, the first positioning assembly 400 is inserted into the second positioning groove, so that the user feels that the second cleaning member 220 has been rotated in place.

[0082] In some embodiments, the second positioning groove and the first positioning groove are spaced from each other in the horizontal direction, the second positioning groove and the first positioning groove are distributed on two sides of the first mounting hole, the second positioning groove and the first positioning groove have substantially the same shape, and the first positioning member 402 is configured to be in positioning fit with the second positioning groove when the second cleaning member 220 reaches the cleaning position.

[0083] As shown in Fig. 7, in some embodiments, the cleaning apparatus 10 further includes a second positioning assembly 410, the second positioning assembly 410 is disposed on the support 230, the second positioning assembly 410 is configured to be in positioning fit with the second positioning groove when the first cleaning member 210 reaches the cleaning position, and the second positioning assembly 410 is further configured to be in positioning fit with the first positioning groove when the second cleaning member 220 reaches the cleaning position. Thus, it is possible to further make the user feel that the first cleaning member 210 or the second cleaning member 220 has been rotated in place.

[0084] In some embodiments, the second positioning assembly 410 includes a second elastic member 411 and a second positioning member 412, two ends of the second elastic member 411 is abutted against the second positioning member 412 and the housing 100, the second positioning member 412 is in movable fit with the first guide member 310, the second positioning member 412 is configured to be in positioning fit with the second positioning groove when the first cleaning member 210 reaches the cleaning position, and the second positioning member 412 is also configured to be in positioning fit with the first positioning groove when the second cleaning member 220 reaches the cleaning position. The second elastic member 411 is configured to apply a force toward the first guide member 310 to the second positioning

member 412, the second positioning member 412 always is abutted against the first guide member 310 during the rotation of the cleaning assembly 200, and when the first cleaning member 210 reaches the cleaning position, the second positioning member 412 is inserted into the second positioning groove, so that the user feels that the first cleaning member 210 has been rotated in place.

[0085] As shown in Fig. 7, in some embodiments, the support 230 is provided with a second blind hole 233, the second elastic member 411 is disposed in the second blind hole 233, one end of the second elastic member 411 abuts against the end of the second blind hole 233, and one end of the second positioning member 412 is penetrated through the second blind hole 233 and is abutted against the other end of the second elastic member 411. Thus, the second elastic member 411 and the second positioning member 412 are mounted, and the hole wall of the second blind hole 233 also prevents the second elastic member 411 and the second positioning member 412 from displacing.

[0086] In still some embodiments, the hole wall of the second blind hole 233 is provided with a second stopping strip, one end of the second elastic member 411 is abutted against the second stopping strip, and the other end of the second elastic member 411 is abutted against the second positioning member 412, so as to implement the mounting of the second elastic member 411 and the second positioning member 412.

[0087] In some embodiments, the second elastic member 411 is a spring, a spring sheet, an elastic rubber, or the like, and the second positioning member 412 is a positioning pin, a positioning post, or the like.

[0088] As shown in Figs. 3, 5 and 7, in some embodiments, the transmission unit further includes a second guide member 350 and a second transmission assembly in transmission connection with the second guide member 350, the second transmission assembly is in transmission connection with the operating member 300, two ends of the cleaning assembly are rotatably connected with the first guide member 310 and the second guide member 350, and the operating member 300 is further configured to drive the second guide member 350 to move through the second transmission assembly, so that the cleaning assembly 200 is close to or away from the blocking body 110.

[0089] The first guide member 310 and the second guide member 350 are connected with two ends of the cleaning assembly 200 respectively, which is beneficial for improving the stability of the transmission unit driving the cleaning assembly 200 to move, and the user changes the positions of the first guide member 310 and the second guide member 350 simultaneously by operating the operating member 300, thereby changing the position of the cleaning assembly 200.

[0090] As shown in Figs. 7 and 8, in some embodiments, a first rotating shaft 231 is disposed on one end of the support 230 of the cleaning assembly 200, a second rotating shaft is disposed on the other end of the support 230 of the cleaning assembly 200, a first mounting hole is formed in the first guide member 310, a second mounting hole 3512 is formed in the second guide member 350, the first rotating shaft 231 is penetrated through the first mounting hole, the cleaning assembly 200 is rotatably connected with the first guide member 310 through the first rotating shaft 231, the second rotating shaft penetrates through the second mounting hole 3512, and the cleaning assembly 200 is rotatably connected with the second guide member 310 through the second rotating shaft 231. The operating member 300 drives the second guide member 350 to move along the fifth direction through the second transmission assembly while driving the first guide member 310 to move along the first direction through the first transmission assembly; and the operating member 300 drives the second guide member 350 to move along the sixth direction opposite to the fifth direction through the second transmission assembly while driving the first guide member 310 to move along the second direction opposite to the first direction through the first transmission assembly. When the first guide member 310 moves along the first direction and the second guide member 350 moves along the fifth direction, the first guide member 310 and the second guide member 350 drive the cleaning assembly 200 to move away from the blocking body 110, and when the first guide member 310 moves along the second direction and the second guide member 350 moves along the sixth direction, the first guide member 310 and the second guide member 350 drive the cleaning assembly 200 to move towards the blocking body 110.

[0091] As shown in Figs. 3, 5 and 7, in some embodiments, the second transmission assembly includes a second elastic pushing member 360 and a second pulling member 370, the second elastic pushing member 360 is disposed on the housing 100 and is abutted against the second guide member 350, one end of the second pulling member 370 is connected with the second guide member 350, and the other end of the second pulling member 330 is connected with the operating member 300.

[0092] The second elastic pushing member 360 is configured to apply pushing force to the second guide member 350 so that the second guide member 350 has a tendency of moving along the fifth direction and the cleaning assembly 200 has a tendency of moving away from the blocking body 110; and the operating member 300 is configured to apply pulling force to the second guide member 350 through the second pulling member 370 so that the second guide member 350 has a tendency of moving along the sixth direction opposite to the fifth direction, and the cleaning assembly 200 has a tendency of moving towards the blocking body 110.

[0093] It is to be understood that the second elastic pushing member 360 is configured to apply pushing force to the second guide member 350, the operating member 300 is configured to apply pulling force to the second guide member 350 through the second pulling member 370, and the difference between the pushing force and

the pulling force applied to the second guide member 350 determines the moving direction of the second guide member 350. When the pushing force applied to the second guide member 350 is greater than the pulling force, the second guide member 350 moves along the fifth direction to move the cleaning assembly 200 away from the blocking body 110, when the pushing force applied to the second guide member 350 is smaller than the pulling force, the second guide member 350 moves in the sixth direction to move the cleaning assembly 200 towards the blocking body 110, and when the pushing force applied to the second guide member 350 is equal to the pulling force, the position of the second guide member 350 does not change.

[0094] Before switching of the cleaning members, and the cleaning assembly 200 is located at the working position (as shown in Fig. 3), the second elastic pushing member 360 is in a compressed state, and the pulling force and the pushing force applied to the second guide member 350 are balanced; when the operating member 300 is operated, such that the pulling force applied to the second guide member 350 is smaller than the pushing force, the second elastic pushing member 360 extends and pushes the second guide member 350 to move along the fifth direction (as shown in Fig. 5), so as to move the cleaning assembly 200 away from the blocking body 110; when the cleaning assembly 200 is at a certain distance from the blocking body 110 and a movable space for the cleaning assembly 200 to rotate is formed between the cleaning assembly 200 and the blocking body 110, the cleaning assembly 200 is manually rotated at the moment, and then the operation of switching the cleaning members may be completed; and after the cleaning assembly 200 completes the operation of switching the cleaning members, the operating member 300 is operated to make the pulling force applied to the second guide member 350 greater than the pushing force, so that the second guide member 350 moves along the sixth direction, and the cleaning assembly 200 moves towards the blocking body 110 and returns to the working position.

[0095] In some embodiments, the second elastic pushing member 360 includes a spring, a spring sheet, an elastic rubber, or the like.

[0096] As shown in Fig. 5, in some embodiments, the housing 100 is provided with a fifth abutting portion 131, the second guide member 350 is provided with a sixth abutting portion 3511 opposite to the fifth abutting portion 131 at an interval, and two ends of the second elastic pushing member 360 abut against the fifth abutting portion 131 and the sixth abutting portion 3511 respectively. In this way, the second elastic pushing member 360 is mounted, and the second elastic pushing member 360 applies pushing force to the second guide member 350.

[0097] In some embodiments, the fifth abutting portion 131 is disposed opposite to the sixth abutting portion 3511 at an interval along the fifth direction, the second elastic pushing member 360 is disposed between the fifth abutting portion 131 and the sixth abutting portion 3511, two ends of the second elastic pushing member 360 are abutted against the fifth abutting portion 131 and the sixth abutting portion 3511 respectively, and the second elastic pushing member 360 provides pushing force to move the second guide member 350 along the fifth direction.

[0098] As shown in Figs. 5 and 7, in some embodiments, the second guide member 350 further includes a second limiting post 352, the second elastic pushing member 360 is a spring, and the second elastic pushing member 360 is disposed on the second limiting post 352 in a sleeving manner. Therefore, the second elastic pushing member 360 is limited, the second elastic pushing member 360 is prevented from being bent along the axial direction when being compressed, and the stability is improved.

[0099] As shown in Figs. 5 and 7, in some embodiments, the second guide member 350 includes a second guide portion 351 rotatably connected with the cleaning assembly 200, and a second limiting post 352 connected with the second guide portion 351, a sixth abutting portion 3511 is disposed at the end, close to the second limiting post 352, of the second guide portion 351, the fifth abutting portion 131 is provided with a through hole, the second elastic pushing member 360 is disposed between the sixth abutting portion 3511 and the fifth abutting portion 131, and the second limiting post 352 is penetrated through the second elastic pushing member 360 and the through hole and is connected with the second pulling member 370.

[0100] As shown in Figs. 5 and 7, in some embodiments, the housing 100 is further provided with a second guide groove 130, the second guide groove 130 and the first guide groove 120 are located on two sides of the housing 100 respectively, and the second guide member 350 is in guide fit with the second guide groove 130. The second guide groove 130 is configured to guide the second guide member 350 to move along the fifth direction or the sixth direction, so that the movement path of the second guide member 350 is prevented from deviating, and the stability of the apparatus is improved.

[0101] In some embodiments, the guide path of the second guide groove 130 is extended along the fifth direction, the second guide member 350 is in sliding fit with the groove wall of the second guide groove 130, and the groove wall of the second guide groove 130 guides the moving direction of the second guide member 350, so as to guide the second guide member 350 to move along the fifth direction or the sixth direction.

[0102] As shown in Figs. 3, 5 and 7, in some embodiments, the cleaning apparatus 10 further includes a second pulley 380, the second pulley 380 is disposed on the housing 100, the second pulling member 370 is a flexible pulling member, and the second pulling member 370 is winded around the second pulley 380. The second pulley 380 is configured to provide tension to the second pulling member 370, so that the second pulling member 370 is always in a stretched state, thereby ensuring the opera-

tion accuracy of the operating member 300 on the second pulling member 370.

[0103] The second pulling member 370 includes a flexible connector such as a cord or a chain.

[0104] In some embodiments, the second pulley 380 is disposed on the housing 100 through a screw, one end of the second pulling member 370 is connected with the second guide member 350, the other end of the second pulling member 370 is connected with the operating member 300 after bypassing the second pulley 380, and the position of the joint between the operating member 300 and the second pulling member 370 is changed through the operating member 300, so that the position of the second guide member 350 is changed under the combined action of the second pulling member 370 and the second elastic pushing member 360.

[0105] As shown in Figs. 3, 5 and 7, in some embodiments, the operating member 300 is a knob rotatably disposed on the housing 100, the knob is provided with a first connection portion and a second connection portion spaced from the first connection portion, the first pulling member 330 is connected with the first connection portion, the second pulling member 370 is connected with the second connection portion, the knob is configured to pull the first guide member 310 to move along the second direction through the first pulling member 330 and pull the second guide member 350 to move along the sixth direction through the second pulling member 370 when rotating along the third direction, and the first elastic pushing member 320 is configured to push the first guide member 310 to move along the first direction and the second elastic pushing member 360 is configured to push the second guide member 350 to move along the fifth direction when the knob rotates along the fifth direction.

[0106] As shown in Figs. 7 and 8, in some embodiments, the cleaning apparatus 10 further includes a third positioning assembly 420, the third guide member is provided with a third positioning groove 3513, and the third positioning assembly 420 is configured to be in positioning fit with the third positioning groove 3513 when the first cleaning member 210 reaches the cleaning position. Thus, when the first cleaning member 210 reaches the cleaning position, the third positioning member 420 is inserted into the third positioning groove 3513, so that the user feels that the first cleaning member 210 has been rotated in place.

[0107] In some embodiments, the third positioning assembly 420 includes a third elastic member 421 and a third positioning member 422, two ends of the third elastic member 421 are abutted against the third positioning member 422 and the housing 100, the third positioning member 422 is in movable fit with the second guide member 350, and the third positioning member 422 is configured to be in positioning fit with the third positioning groove 3513 when the first cleaning member 210 reaches the cleaning position. The third elastic member 421 is configured to apply a force toward the second guide member 350 to the third positioning member 422, the third positioning member 422 is always abutted against the second guide member 350 during the rotation of the cleaning assembly 200, and when the first cleaning member 210 reaches the cleaning position, the third positioning member 422 is inserted into the third positioning groove 3513, so that the user feels that the first cleaning member 210 has been rotated in place.

[0108] In some embodiments, the groove wall of the third positioning groove 3513 is of an arc shape, when the cleaning assembly 200 is driven to rotate by external force after the third guide member is inserted into the third positioning groove 3513 and is abutted against the groove wall of the third positioning groove 3513, the third guide member also moves out of the positioning groove along the groove wall of the third positioning groove 3513.

[0109] In some embodiments, the support 230 is provided with a third blind hole, the third elastic member 421 is disposed in the third blind hole, one end of the third elastic member 421 is abutted against the end of the third blind hole, and one end of the third positioning member 422 is penetrated through the third blind hole and is abutted against the other end of the third elastic member 421. Thus, the third elastic member 421 and the third positioning member 422 are mounted, and the hole wall of the third blind hole also prevents the third elastic member 421 and the third positioning member 422 from displacing.

[0110] In some embodiments, the hole wall of the third blind hole is provided with a third stopping strip, one end of the third elastic member 421 is abutted against the third stopping strip, and the other end of the third elastic member 421 is abutted against the third positioning member 422, so as to implement the mounting of the third elastic member 411 and the third positioning member 422.

[0111] In some embodiments, the third elastic member 421 is a spring, a spring sheet, an elastic rubber, or the like, and the third positioning member 422 is a positioning pin, a positioning post, or the like.

[0112] As shown in Figs. 7 and 8, in some embodiments, the second guide member 350 is further provided with a fourth positioning groove 3514, and the third positioning assembly 420 is also configured to be in positioning fit with the fourth positioning groove 3514 when the second cleaning member 220 reaches the cleaning position. Thus, when the second cleaning member 220 reaches the cleaning position, the third positioning assembly 420 is inserted into the fourth positioning groove 3514, so that the user feels that the second cleaning member 220 has been rotated in place.

[0113] In some embodiments, the fourth positioning groove 3514 and the third positioning groove 3513 are spaced from each other in the horizontal direction, the fourth positioning groove 3514 and the third positioning groove 3513 are distributed on two sides of the second mounting hole 3512, the fourth positioning groove 3514 and the third positioning groove 3513 have substantially the same shape, and the third positioning member 422

is configured to be in positioning fit with the second positioning groove when the second cleaning member 220 reaches the cleaning position.

[0114] As shown in Figs. 7 and 8, in some embodiments, the cleaning apparatus 10 further includes a fourth positioning assembly 430, the fourth positioning assembly 430 is disposed on the support 230, the fourth positioning assembly 430 is configured to be in positioning fit with the fourth positioning groove 3514 when the first cleaning member 210 reaches the cleaning position, and the fourth positioning assembly 430 is further configured to be in positioning fit with the third positioning groove 3513 when the second cleaning member 220 reaches the cleaning position. In this manner, it is possible to further make the user feel that the first cleaning member 210 or the second cleaning member 220 has been rotated in place.

[0115] In some embodiments, the fourth positioning assembly 430 includes a fourth elastic member 431 and a fourth positioning member 432, two ends of the fourth elastic member 431 are abutted against the fourth positioning member 432 and the housing 100, the fourth positioning member 432 is in movable fit with the second guide member 350, the fourth positioning member 432 is configured to be in positioning fit with the fourth positioning groove 3514 when the first cleaning member 210 reaches the cleaning position, and the fourth positioning member 432 is further configured to be in positioning fit with the third positioning groove 3513 when the second cleaning member 220 reaches the cleaning position. The fourth elastic member 431 is configured to apply a force toward the second guide member 350 to the fourth positioning member 432, the fourth positioning member 432 is always abutted against the second guide member 350 during the rotation of the cleaning assembly 200, and when the first cleaning member 210 reaches the cleaning position, the fourth positioning member 432 is inserted into the fourth positioning groove 3514, so that the user feels that the first cleaning member 210 has been rotated in place.

[0116] In some embodiments, the support 230 is provided with a fourth blind hole, the fourth elastic member 431 is disposed in the fourth blind hole, one end of the fourth elastic member 431 is abutted against the end of the fourth blind hole, and one end of the fourth positioning member 432 is penetrated through the fourth blind hole and is abutted against the other end of the fourth elastic member 431. Thus, the fourth elastic member 431 and the fourth positioning member 432 are mounted, and the hole wall of the fourth blind hole also prevents the fourth elastic member 431 and the fourth positioning member 432 from displacing.

[0117] In some embodiments, the hole wall of the fourth blind hole is provided with a fourth stopping strip, one end of the fourth elastic member 431 is abutted against the fourth stopping strip, and the other end of the fourth elastic member 431 is abutted against the fourth positioning member 432, so as to implement the mounting of the fourth elastic member 431 and the fourth positioning member 432.

[0118] In some embodiments, the fourth elastic member 431 is a spring, a spring sheet, an elastic rubber, or the like, and the fourth positioning member 432 is a positioning pin, a positioning post, or the like.

[0119] The technical features of the above-described embodiments may be randomly combined, and not all possible combinations of the technical features in the above-described embodiments are described for simplicity of description, however, as long as the combinations of the technical features do not contradict each other, they should be considered to be within the scope of the description of the present specification.

[0120] The embodiments described above represent only several implementation modes of the invention, and the description thereof is specific and detailed, but should not be construed as limiting the scope of invention accordingly. It should be pointed out that those of ordinary skill in the art can also make some modifications and improvements without departing from the concept of the invention, and these modifications and improvements all fall within the scope of protection of the invention. Accordingly, the scope of the patent of the present application should be subject to the appended claims.

Claims

1. A cleaning apparatus, comprising:

   a housing; and
   a cleaning assembly, wherein the cleaning assembly has a cleaning position, the cleaning assembly is rotatably provided at the housing, and the cleaning assembly comprises a first cleaning member and a second cleaning member arranged in parallel to the first cleaning member, and the cleaning assembly is operated to rotate so as to selectively move the first cleaning member or the second cleaning member to the cleaning position.

2. The cleaning apparatus according to claim 1, further comprising a switching mechanism disposed on the housing , the housing comprises a blocking body disposed opposite to the cleaning assembly at an interval, the switching mechanism is rotatably connected with the cleaning assembly, and the switching mechanism is configured to drive the cleaning assembly to be away from the blocking body, so that a movable space for the cleaning assembly to rotate is formed between the cleaning assembly and the blocking body.

3. The cleaning apparatus according to claim 2, wherein the switching mechanism comprises an operating member and a transmission unit, the transmission

unit comprises a first guide member rotatably connected with the cleaning assembly and a first transmission assembly in transmission connection with the first guide member, the operating member is in transmission connection with the first transmission assembly, and the operating member is configured to drive the first guide member to move through the first transmission assembly, so that the cleaning assembly is close to or away from the blocking body.

4. The cleaning apparatus according to claim 3, wherein the first transmission assembly comprises a first elastic pushing member and a first pulling member, the first elastic pushing member is disposed on the housing and is abutted against the first guide member, one end of the first pulling member is connected with the first guide member, and the other end of the first pulling member is connected with the operating member;
the first elastic pushing member is configured to apply pushing force to the first guide member so that the first guide member has a tendency of moving along a first direction and the cleaning assembly has a tendency of moving away from the blocking body; and the operating member is configured to apply pulling force to the first guide member through the first pulling member so that the first guide member has a tendency of moving along a second direction opposite to the first direction, and the cleaning assembly has a tendency of moving towards the blocking body.

5. The cleaning apparatus according to claim 4, wherein the housing is provided with a first abutting portion, the first guide member is provided with a second abutting portion opposite to the first abutting portion at an interval, and two ends of the first elastic pushing member are abutted against the first abutting portion and the second abutting portion respectively.

6. The cleaning apparatus according to claim 4, wherein the first guide member further comprises a first limiting post, the first elastic pushing member comprises a spring, and the first elastic pushing member is disposed on the first limiting post in a sleeving manner.

7. The cleaning apparatus according to claim 4, further comprising a first pulley, wherein the first pulley is disposed on the housing, the first pulling member is a flexible pulling member, and the first pulling member is winded around the first pulley.

8. The cleaning apparatus according to claim 4, wherein the operating member is a knob rotatably disposed on the housing, the operating member is configured to pull the first guide member to move along the second direction through the first pulling member when rotating along a third direction, and the first elastic pushing member is configured to push the first guide member to move along the first direction when the operating member rotates along a fourth direction opposite to the third direction.

9. The cleaning apparatus according to claim 8, wherein a mounting seat is further disposed on the housing, the mounting seat is provided with a first limiting groove, the operating member is provided with a limiting portion, and the limiting portion is configured to be in positioning fit with the first limiting groove when the cleaning assembly is located at a first position;
and/or a mounting seat is further disposed on the housing, the mounting seat is provided with a second limiting groove, the operating member is provided with a limiting portion, and the limiting portion is configured to be in positioning fit with the second limiting groove when the cleaning assembly is located at a second position.

10. The cleaning apparatus according to claim 9, further comprising an elastic abutting member, the mounting seat is provided with a through hole, a third abutting portion is disposed on a hole wall of the through hole, the operating member is provided with a mounting post, one end of the mounting post is connected with the limiting portion, the other end of the mounting post is movably penetrated through the through hole, a fourth abutting portion opposite to the third abutting portion is further disposed at an end, passing through the through hole, of the mounting post, the fourth abutting portion is farther from the limiting portion than the third abutting portion, and two ends of the elastic abutting member are respectively connected with the third abutting portion and the fourth abutting portion.

11. The cleaning apparatus according to claim 10, wherein the elastic pushing member is a spring, and the elastic pushing member sleeves the mounting post.

12. The cleaning apparatus according to claim 3, wherein the cleaning apparatus further comprises a first positioning assembly, the cleaning assembly further comprises a support, the first cleaning member and the second cleaning member are both disposed on the support, the first positioning assembly is disposed on the support, the first guide member is provided with a first positioning groove and a second positioning groove, the first positioning assembly is configured to be in positioning fit with the first positioning groove when the first cleaning member reaches the cleaning position, and the first positioning assembly is further configured to be in positioning fit with the second positioning groove when the second cleaning member reaches the cleaning position.

13. The cleaning apparatus according to claim 12, wherein the first positioning assembly comprises a first elastic member and a first positioning member, two ends of the first elastic member are abutted against the first positioning member and the housing respectively, the first positioning member is in movable fit with the first guide member, the first positioning member is configured to be in positioning fit with the first positioning groove when the first cleaning member reaches the cleaning position, and the first positioning member is further configured to be in positioning fit with the second positioning groove when the second cleaning member reaches the cleaning position.

14. The cleaning apparatus according to claim 12, wherein the cleaning apparatus further comprises a second positioning assembly, the second positioning assembly is disposed on the support, the second positioning assembly is configured to be in positioning fit with the second positioning groove when the first cleaning member reaches the cleaning position, and the second positioning assembly is further configured to be in positioning fit with the first positioning groove when the second cleaning member reaches the cleaning position.

15. The cleaning apparatus according to claim 14, wherein the second positioning assembly comprises a second elastic member and a second positioning member, two ends of the second elastic member are abutted against the second positioning member and the housing respectively, the second positioning member is in movable fit with the first guide member, the second positioning member is configured to be in positioning fit with the second positioning groove when the first cleaning member reaches the cleaning position, and the second positioning member is further configured to be in positioning fit with the first positioning groove when the second cleaning member reaches the cleaning position.

16. The cleaning apparatus according to claim 3, wherein the housing is further provided with a first guide groove, and the first guide member is in guide fit with the first guide groove.

17. The cleaning apparatus according to any of claims 3-16, wherein the transmission unit further comprises a second guide member and a second transmission assembly in transmission connection with the second guide member, wherein the second transmission assembly is in transmission connection with the operating member, two ends of the cleaning assembly are rotatably connected with the first guide member and the second guide member respectively, and the operating member is further configured to drive the second guide member to move through the second transmission assembly, so that the cleaning assembly is close to or away from the blocking body.

18. The cleaning apparatus according to claim 17, wherein the second transmission assembly comprises a second elastic pushing member and a second pulling member, wherein the second elastic pushing member is disposed on the housing and is abutted against the second guide member, one end of the second pulling member is connected with the second guide member, and the other end of the second pulling member is connected with the operating member;
the second elastic pushing member is configured to apply pushing force to the second guide member so that the second guide member has a tendency of moving along a fifth direction and the cleaning assembly has a tendency of moving away from the blocking body; and the operating member is configured to apply pulling force to the second guide member through the second pulling member so that the second guide member has a tendency of moving along a sixth direction opposite to the fifth direction, and the cleaning assembly has a tendency of moving towards the blocking body.

19. The cleaning apparatus according to claim 18, wherein the housing is provided with a fifth abutting portion, the second guide member is provided with a sixth abutting portion opposite to the fifth abutting portion at an interval, and two ends of the second elastic pushing member are abutted against the fifth abutting portion and the sixth abutting portion respectively.

20. The cleaning apparatus according to claim 18, wherein the second guide member further comprises a second limiting post, the second elastic pushing member is a spring, and the second elastic pushing member is disposed on the second limiting post in a sleeving manner.

21. The cleaning apparatus according to claim 18, wherein the cleaning apparatus further comprises a second pulley, wherein the second pulley is disposed on the housing, the second pulling member is a flexible pulling member, and the second pulling member is winded around the second pulley.

22. The cleaning apparatus according to claim 17, wherein the cleaning apparatus further comprises a third positioning assembly, the cleaning assembly further comprises a support, the first cleaning member and the second cleaning member are both disposed on the support, the third positioning assembly is disposed on the support, the second guide member is provided with a third positioning groove and a fourth positioning groove, the third positioning as-

sembly is configured to be in positioning fit with the third positioning groove when the first cleaning member reaches the cleaning position, and the third positioning assembly is further configured to be in positioning fit with the fourth positioning groove when the second cleaning member reaches the cleaning position.

23. The cleaning apparatus according to claim 22, wherein the third positioning assembly comprises a third elastic member and a third positioning member, two ends of the third elastic member are abutted against the third positioning member and the housing respectively, the third positioning member is in movable fit with the second guide member, the third positioning member is configured to be in positioning fit with the third positioning groove when the first cleaning member reaches the cleaning position, and the third positioning member is further configured to be in positioning fit with the fourth positioning groove when the second cleaning member reaches the cleaning position.

24. The cleaning apparatus according to claim 22, wherein the cleaning apparatus further comprises a fourth positioning assembly, the fourth positioning assembly is disposed on the support, the fourth positioning assembly is configured to be in positioning fit with the fourth positioning groove when the first cleaning member reaches the cleaning position, and the fourth positioning assembly is further configured to be in positioning fit with the third positioning groove when the second cleaning member reaches the cleaning position.

25. The cleaning apparatus according to claim 24, wherein the fourth positioning assembly comprises a fourth elastic member and a fourth positioning member, wherein two ends of the fourth elastic member are abutted against the fourth positioning member and the housing respectively, the fourth positioning member is in movable fit with the second guide member, the fourth positioning member is configured to be in positioning fit with the fourth positioning groove when the first cleaning member reaches the cleaning position, and the fourth positioning member is further configured to be in positioning fit with the third positioning groove when the second cleaning member reaches the cleaning position.

26. The cleaning apparatus according to claim 18, wherein the operating member is a knob rotatably disposed on the housing, the knob is provided with a first connecting portion and a second connecting portion spaced from the first connecting portion, the first pulling member is connected with the first connecting portion, and the second pulling member is connected with the second connecting portion; the knob is configured to pull the first guide member to move in the second direction through the first pulling member and pull the second guide member to move in the fourth direction through the second pulling member when rotating along the fifth direction; and when the knob rotates along the sixth direction, the first elastic pushing member is configured to push the first guide member to move along the first direction, and the second elastic pushing member is configured to push the second guide member to move along the third direction.

27. The cleaning apparatus according to claim 17, wherein the housing is further provided with a second guide groove, and the second guide member is in guide fit with the second guide groove.

28. A vacuum cleaner, comprising the cleaning apparatus according to any of claims 1-27.

Fig. 1

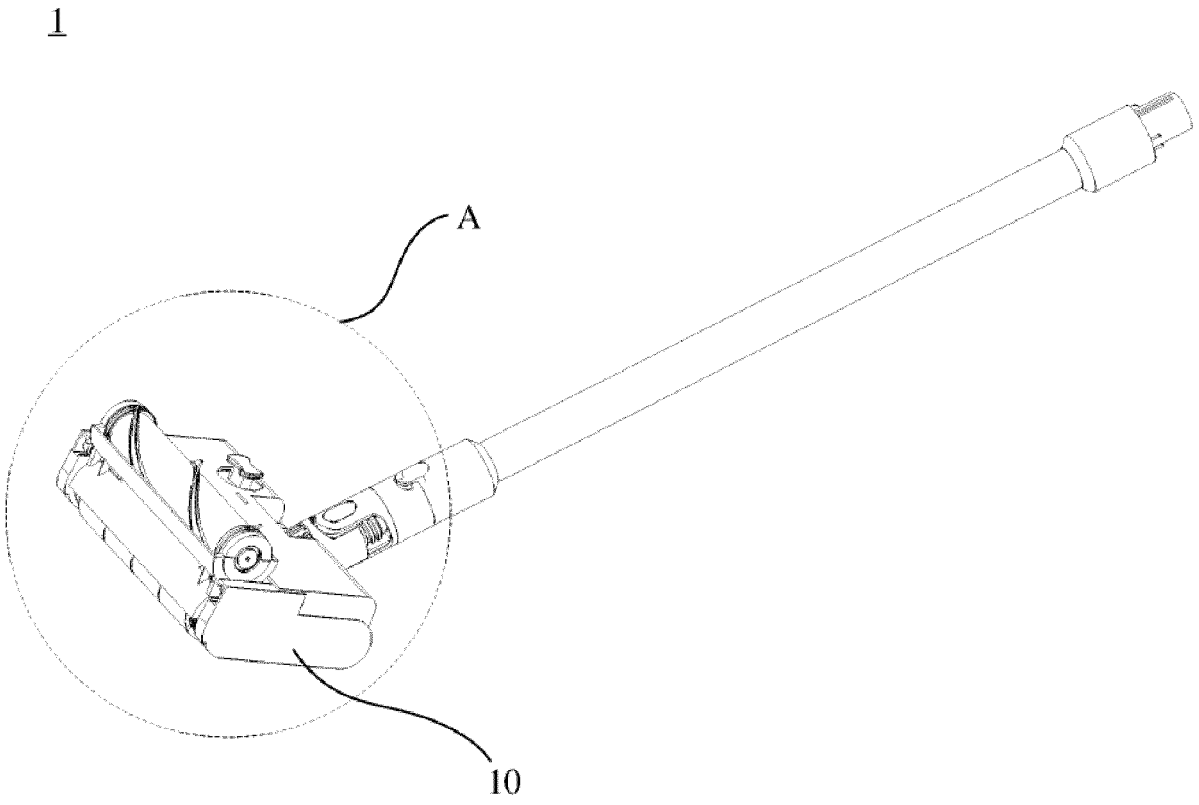

Fig. 2

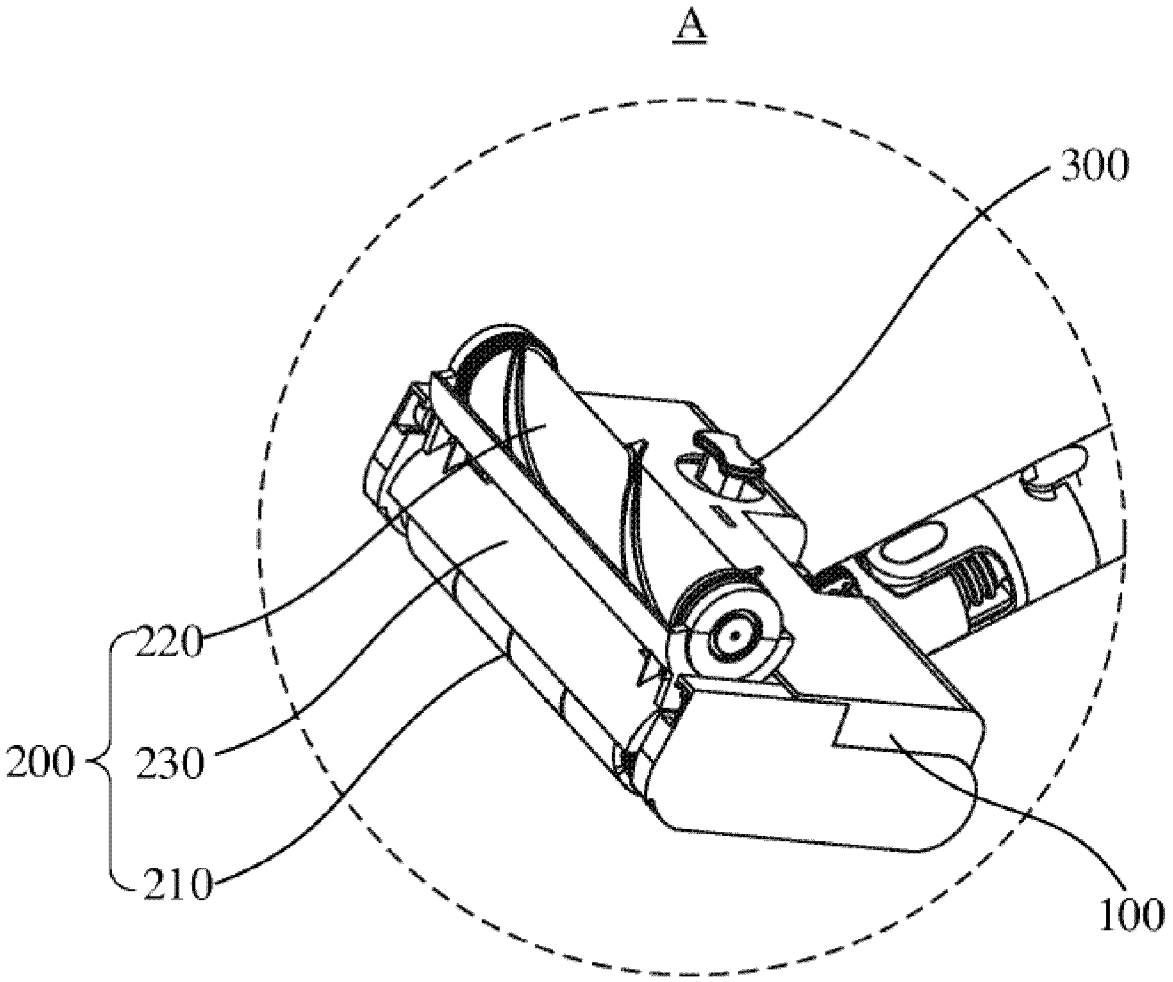

Fig. 3

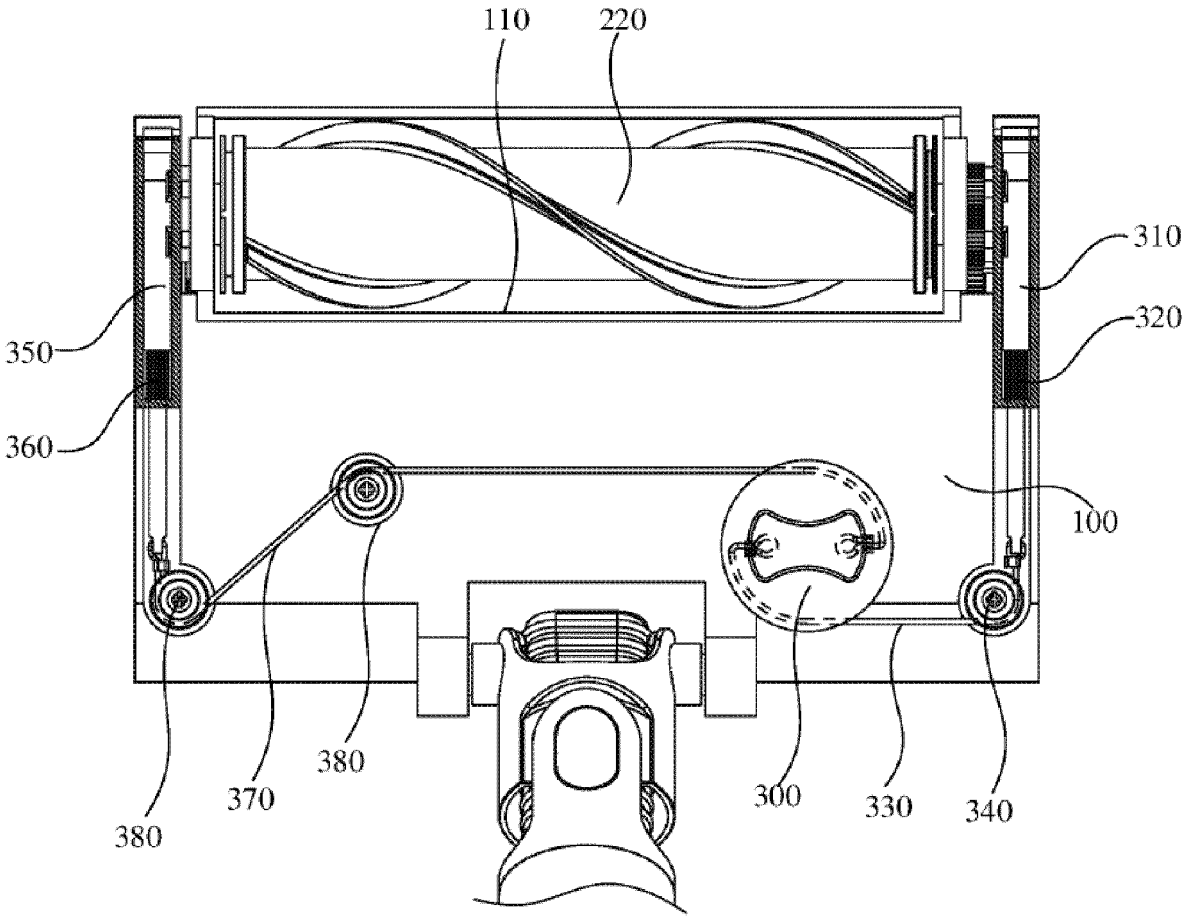

Fig. 4

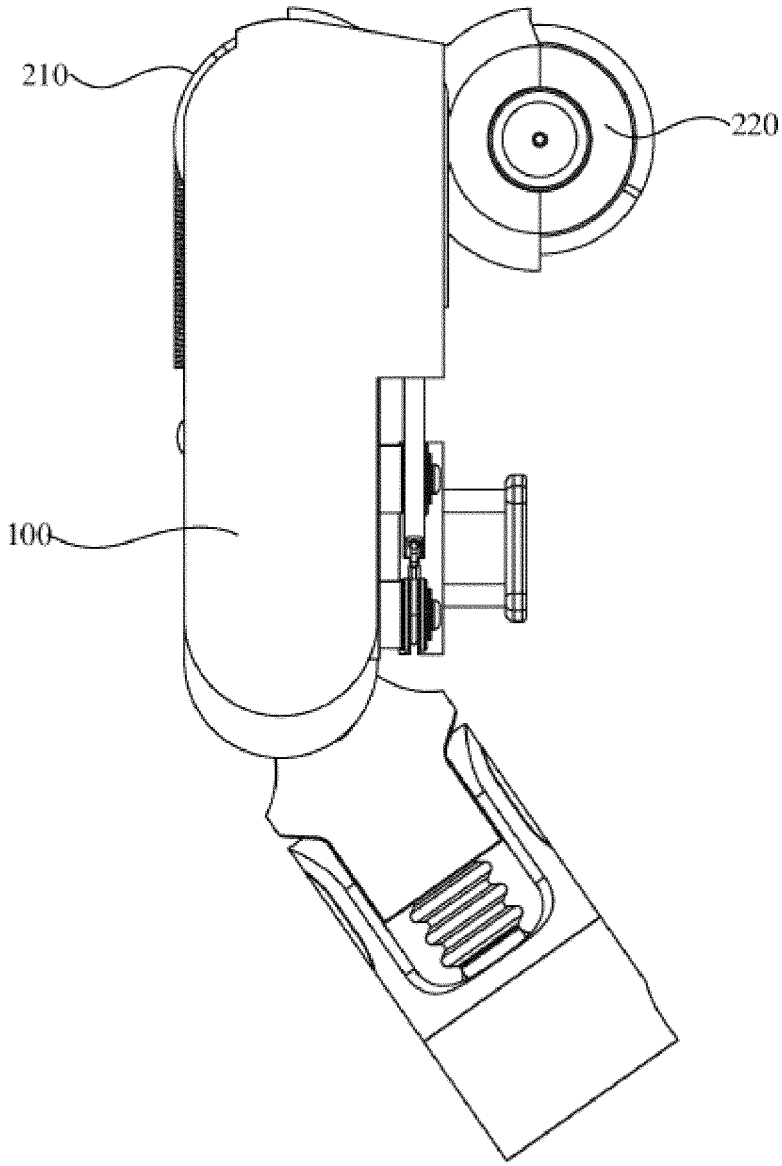

Fig. 5

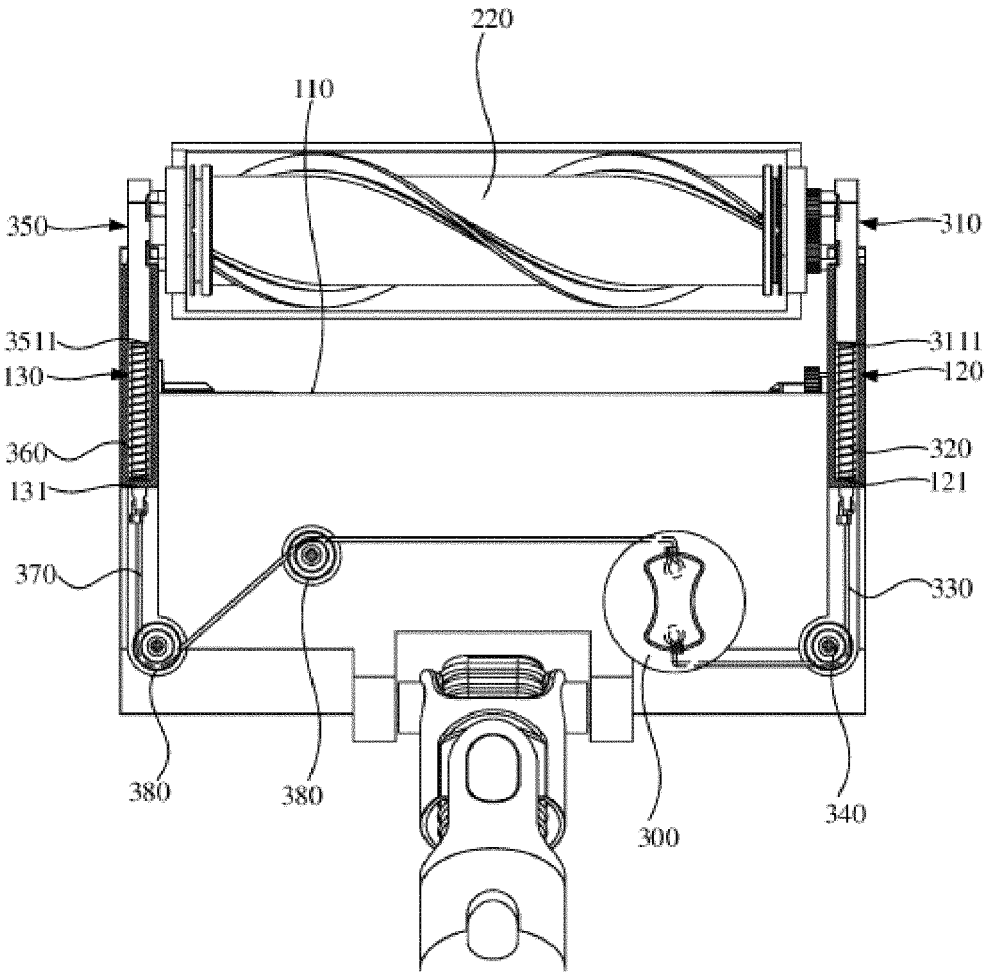
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Fig. 6

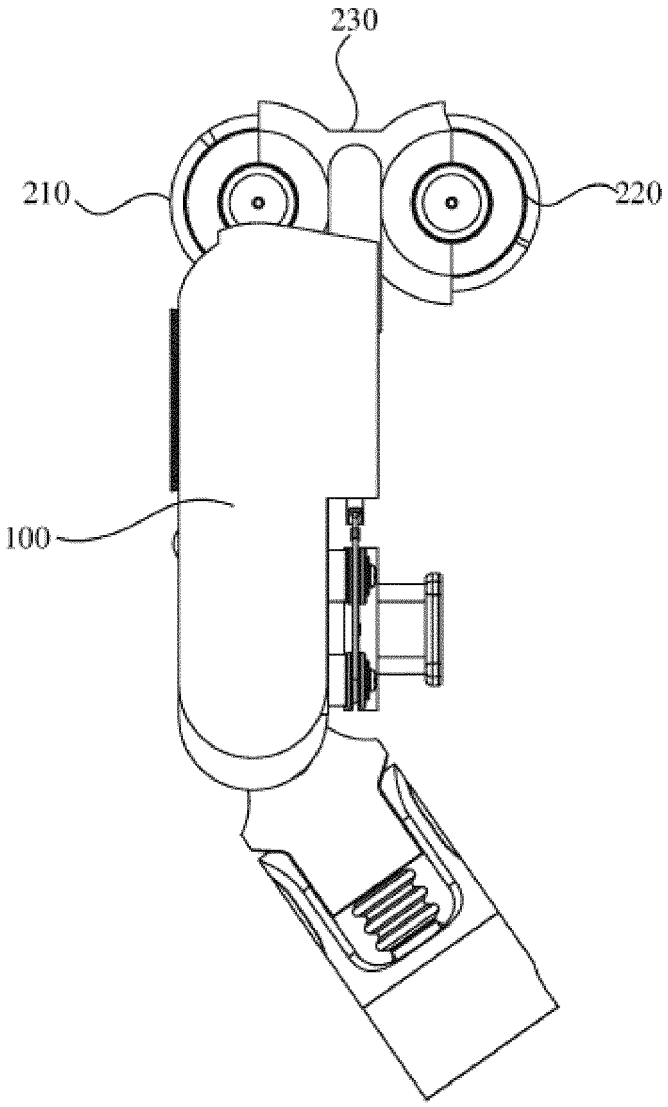

Fig. 7

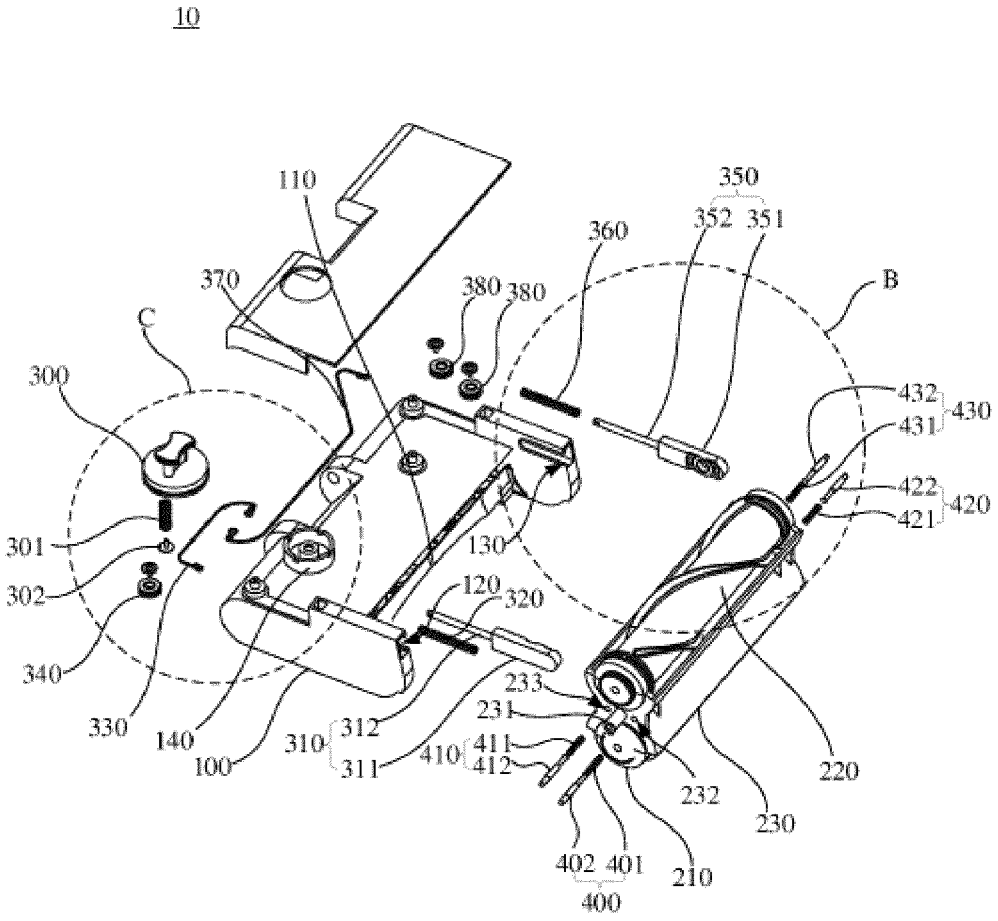
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Fig. 8

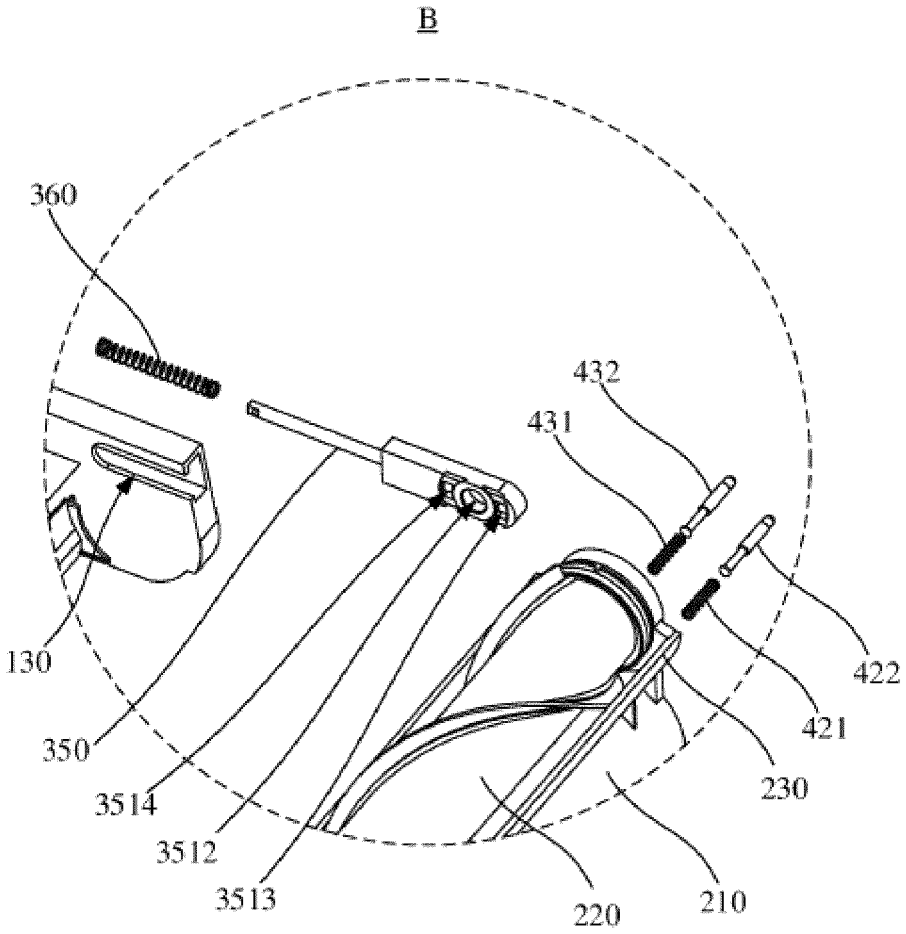


Fig. 9

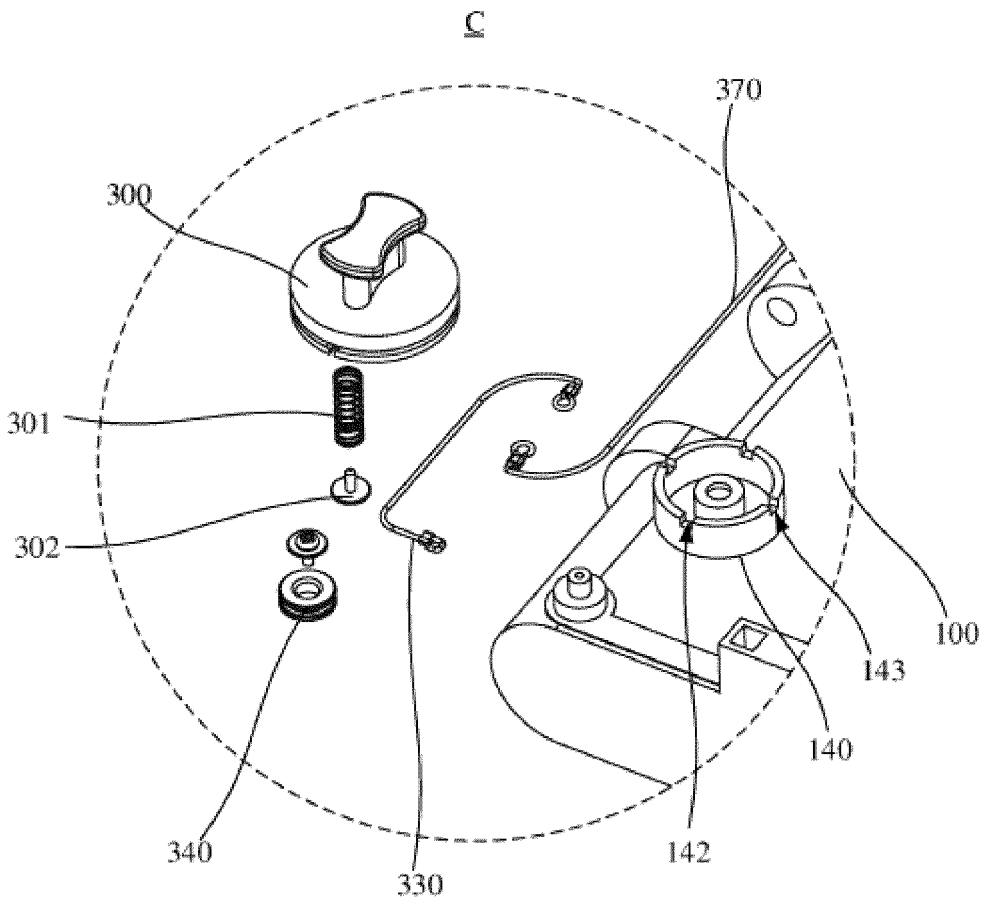


Fig. 10

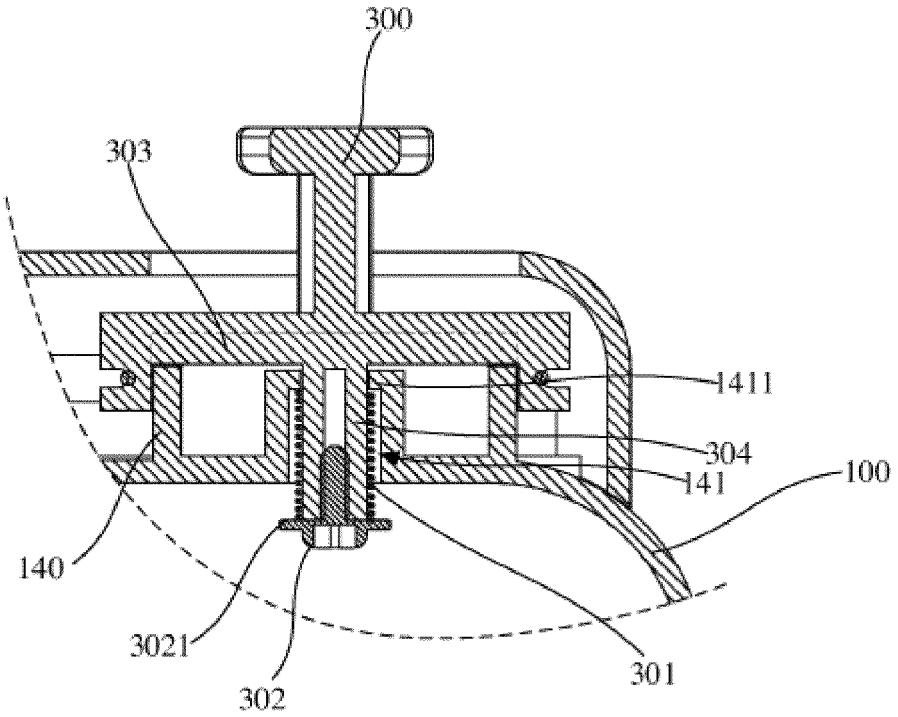
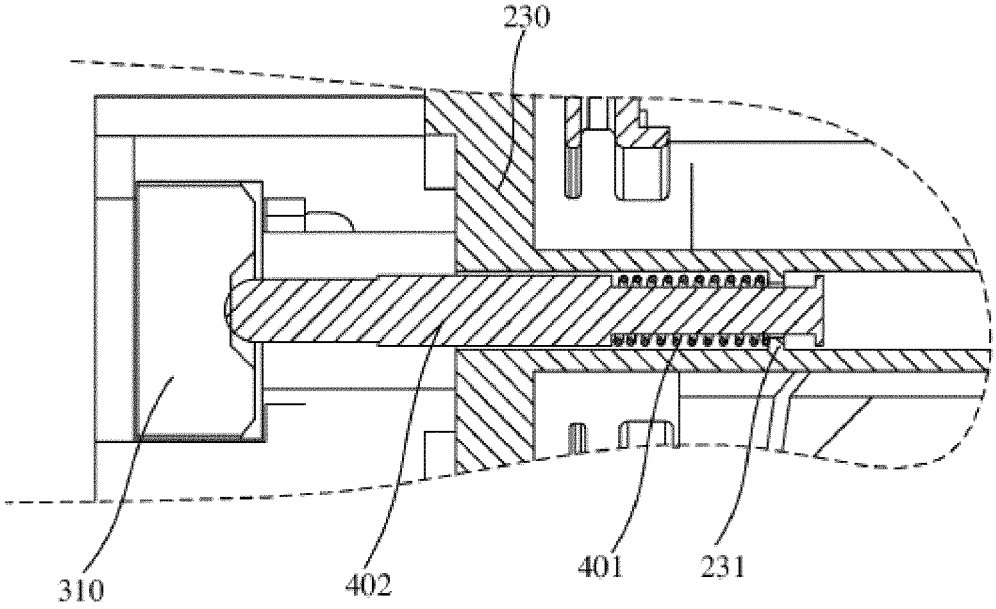


Fig. 11



INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2019/127699

A. CLASSIFICATION OF SUBJECT MATTER

A47L 5/28(2006.01)i; A47L 9/04(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)

CNKI, CNPAT, WPI, EPODOC: 清洁, 滚刷, 地刷, 滚筒, 卷筒, 吸尘, 移动, 替换, 更替, 轮流, 操作, 旋转, 转动, 远离, 切换, 导向, 第一, 第二, 两个, clean+, brush, replace+, turn+, rotat+, couple

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 110537869 A (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 06 December 2019 (2019-12-06) claims 1-28	1-28
X	CN 209153434 U (ZHEJIANG YILI CLEANING APPLIANCES CO., LTD.) 26 July 2019 (2019-07-26) description, paragraphs [0022]-[0024], and figures 1-7	1, 28
A	CN 106073636 A (SKYBEST ELECTRIC APPLIANCE (SUZHOU) CO., LTD.) 09 November 2016 (2016-11-09) entire document	1-28
A	CN 109602331 A (DONGGUAN ULEGEND INTELLIGENT HOUSEHOLD ELECTRICAL APPLIANCE CO., LTD.) 12 April 2019 (2019-04-12) entire document	1-28
A	CN 102940471 A (NINGBO BEARI ELECTRIC CO., LTD.) 27 February 2013 (2013-02-27) entire document	1-28
A	JP 5051733 B2 (KAO CORPORATION) 17 October 2012 (2012-10-17) entire document	1-28

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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 May 2020	**28 May 2020**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088** **China**	Authorized officer
Facsimile No. **(86-10)62019451**	Telephone No.

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

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2019/127699

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	110537869	A	06 December 2019	None			
CN	209153434	U	26 July 2019	None			
CN	106073636	A	09 November 2016	None			
CN	109602331	A	12 April 2019	None			
CN	102940471	A	27 February 2013	CN	102940471	B	03 June 2015
JP	5051733	B2	17 October 2012	JP	2010221063	A	07 October 2010

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 201910850460 **[0001]**