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# (54) DUST BAG, SELF-CLEANING DUST COLLECTION SEAT AND DUST COLLECTION SYSTEM

(57) Provided are a dust bag, a self-cleaning dust collection seat and a dust collection system, the dust bag (2120) being configured to be detachably mounted on a dust bag support (2110), and the dust bag (2120) including: a dust bag body (2121); a snap plate (2122) fixedly connected to the dust bag body (2121), the snap plate (2122) being provided with a snap plate opening (21221), and the snap plate opening (21221) serving as an inlet of the dust bag (2120); and a sliding plate (2123) slidably connected to the snap plate (2122) and configured to switch between a closed position and an open position, in response to the sliding plate (2123) being at the closed position, the sliding plate (2123) shielding the snap plate opening (21221), and in response to the sliding plate (2123) being at the open position, the sliding plate exposing the snap plate opening (21221).

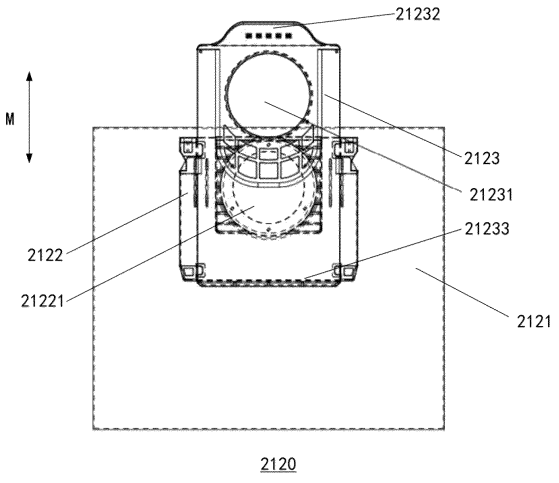


FIG. 8

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## Description

### CROSS-REFERENCE TO RELATED APPLICATIONS

**[0001]** This application claims priority to Chinese Patent Application No. 202111673035.8 filed on December 31, 2021, the disclosure of which is herein incorporated as a part of the present application by reference in its entirety.

### TECHNICAL FIELD

**[0002]** The present disclosure relates to the technical field of cleaning robots, and more particularly to a dust bag, a self-cleaning dust collection seat, and a dust collection system.

### BACKGROUND ART

**[0003]** In recent years, with the development of science and technology, a variety of cleaning products have emerged one after another, which have reduced the work burden of people in cleaning and sweeping, met their needs, and provided great convenience to their lives. Automatic cleaning devices are favored by people for their highly intelligent characteristics.

### BRIEF SUMMARY

**[0004]** Some embodiments of the present disclosure provide a dust bag, wherein the dust bag is configured to be detachably installed on a dust bag holder, and the dust bag includes:

a dust bag body;
a clamping plate, fixedly connected to the dust bag body, the clamping plate having a clamping plate opening that serves as an inlet of the dust bag; and
a sliding plate, slidably connected to the clamping plate and configured to switch between a closed position and an open position, the sliding plate covering the clamping plate opening in response to the sliding plate being in the closed position, and the sliding plate exposing the clamping plate opening in response to the sliding plate being in the open position, wherein
a flexible rubber ring is disposed on an edge of the clamping plate opening, and is configured make that the clamping plate opening and a dust outlet interface on the dust bag holder are sealedly engaged in response to the dust bag being installed on the dust bag holder.

**[0005]** The present disclosure provides a dust collection system, including an automatic cleaning device and the self-cleaning dust collection seat as defined in the foregoing embodiments.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0006]** The accompanying drawings here are incorporated in and constitute part of the specification. They illustrate the embodiments consistent with the present disclosure and serve to, explain the principles of the present disclosure together with the specification. Understandably, the accompanying drawings in the following description are only some embodiments of the present disclosure, and for those of ordinary skills in the art, other drawings may also be derived from these accompanying drawings without creative efforts. In these accompanying drawings:

FIG. 1 shows a schematic diagram of an overall structure of a self-cleaning dust collection seat according to some embodiments of the present disclosure.
FIG. 2 shows a schematic structural diagram of a main body of a self-cleaning dust collection seat according to some embodiments of the present disclosure.
FIG. 3 shows a schematic structural diagram of a dust collection chamber according to some embodiments of the present disclosure.
FIG. 4 shows a schematic structural diagram of a dust collection hood according to some embodiments of the present disclosure.
FIG. 5 shows a sectional view of a dust collection hood according to some embodiments of the present disclosure.
FIG. 6 shows a schematic structural diagram of a dust bag holder according to some embodiments of the present disclosure.
FIG. 7 shows a schematic structural diagram of a dust bag holder according to some embodiments of the present disclosure.
FIG. 8 shows a schematic structural diagram of a dust bag according to some embodiments of the present disclosure.
FIG. 9 shows a schematic structural diagram of a dust bag according to some embodiments of the present disclosure.
FIG. 9A shows a schematic structural diagram of a dust bag according to some embodiments of the present disclosure.
FIG. 9B shows a schematic structural diagram of a section in FIG. 9A.
FIG. 10 shows a schematic diagram of a pre-assembled structure of a dust bag holder and a dust bag according to some embodiments of the present disclosure.
FIG. 11 shows a sectional view of an assembled structure of a dust bag holder and a dust bag according to some embodiments of the present disclosure.
FIG. 12 shows a schematic diagram of an assembled structure of a dust bag holder and a dust bag according to some embodiments of the present disclosure.

FIG. 13 shows a sectional view of a dust bag holder according to some embodiments of the present disclosure.

Description of reference signs:

**[0007]** bottom plate 1000 of self-cleaning dust collection seat; self-cleaning dust collection seat body 2000; dust collection chamber 2100; first side wall 2131 of dust collection chamber; second side wall 2132 of dust collection chamber; rear wall 2134 of dust collection chamber; sealing gasket 2140; circumferential inner wall 2150; first side inner wall 2151; second side inner wall 2152; front inner wall 2153; rear inner wall 2154; water storage chamber 2700; dust collection hood 2800; dust collection hood cover 2810; pull handle 2811; dust collection hood wall 2820; first side wall 2821 of dust collection hood; second side wall 2822 of dust collection hood; front wall 2823 of dust collection hood; rear wall 2824 of dust collection hood; position limiting member 2825; supporting rib 2826; dust collection bin 3000; clean water tank 4000; waste water tank 5000; body base 6000; dust collection port 6100; cleaning tank 6200; dust box 300; dust bag holder 2110; holder side wall 2111; dust outlet interface 2112; sliding baffle 2113; sliding baffle protrusion 21131; sliding chute 2114; snap fastener 21141; elastic component 2115; dust bag 2120; dust bag body 2121; clamping plate 2122; clamping plate opening 21221; clamping plate slot 21222; position limiting component 21223; flexible rubber ring 21224; sliding plate 2123; sliding plate opening 21231; handle 21232; sliding plate protrusion 21233; and position limiting bump (unlocking bump) 21234.

## DETAILED DESCRIPTION

**[0008]** To make the objects, technical solutions, and advantages of the present disclosure clear, the present disclosure will be further described in detail below with reference to the accompanying drawings. Understandably, the described embodiments are only part but not all of the embodiments of the present disclosure. All other embodiments obtained by those of ordinary skill in the art based on the embodiments in the present disclosure, without creative efforts, fall within the protection scope of the present disclosure.

**[0009]** The terms used in the embodiments of the present disclosure are for the purpose of describing particular embodiments only, and are not intended to limit the present disclosure. The singular forms "a/an", "said", and "the" as used in the embodiments of the present disclosure and the appended claims are intended to include the plural forms as well, unless otherwise clearly indicated in the context, and the term "a plurality of' generally means at least two.

**[0010]** It should be understood that the term "and/or" as used herein describes only an association relationship between associated objects, indicating three types of possible relationships. For example, A and/or B may indicate the following three cases: A exists alone; both A and B exist; or B exists alone. In addition, the character "/" herein generally indicates an "or" relationship between preceding and following associated objects.

**[0011]** It should be understood that, although the terms first, second, third, or the like may be used for description in the embodiments of the present disclosure, these should not be limited to these terms. These terms are only used for a distinguishing purpose. For example, without departing from the scope of the embodiments of the present disclosure, "first" may also be referred to as "second", and similarly, "second" may also be referred to as "first".

**[0012]** It should also be noted that the terms "include", "contain", or any other variants thereof are intended to cover the nonexclusive inclusion, such that a commodity or device including a series of elements not only includes those elements, but also includes other unclearly listed elements, or also includes the inherent elements of such a commodity or device. Without more limitations, an element defined by the phrase "including an" does not exclude the existence of other same elements in the commodity or device that includes such an element.

**[0013]** The alternative embodiments of the present disclosure will be described in detail below in conjunction with the accompanying drawings.

**[0014]** In the related art, due to a limited capacity of a dust box of an automatic cleaning device, a user needs to frequently bend down to clean the dust box, resulting in poor user experience. To this end, an embodiment of the present disclosure provides a self-cleaning dust collection seat, and whereby waste in the dust box of the automatic cleaning device is centralized and collected into a dust collection bin of the self-cleaning dust collection seat by means of a dust collection system, such that the number of times for a user to dispose the waste can be reduced, leading to improved user experience. Specifically, the self-cleaning dust collection seat provided by the embodiment of the present disclosure is, by way of example, as shown in FIG. 1 which exemplarily shows a schematic diagram of an overall structure of the self-cleaning dust collection seat, and in FIG. 2 which exemplarily shows a schematic structural diagram of a self-cleaning dust collection seat body with a waste water tank, a clean water tank and a dust collection hood being removed.

**[0015]** In order to describe the behaviors of the self-cleaning dust collection seat more clearly, directions are defined as follows: the self-cleaning dust collection seat may be calibrated by the following three defined axes perpendicular to one another: a horizontal axis Y, an antero-posterior axis X, and a center vertical axis Z. A direction opposite to an arrow of the antero-posterior axis X is marked as a "backward direction", in which the automatic cleaning device enters the self-cleaning dust collection seat; and a direction following the arrow of the antero-posterior axis X is marked as a "forward direction",

in which the automatic cleaning device leaves the self-cleaning dust collection seat. The horizontal axis Y is essentially in a width direction of the self-cleaning dust collection body. The vertical axis Z is a direction that extends upwards along a bottom surface of the self-cleaning dust collection seat.

**[0016]** As shown in FIG. 1, a direction in which a bottom plate 1000 of the self-cleaning dust collection seat protrudes from the self-cleaning dust collection seat body 2000 is the forward direction; a direction of a rear wall of the self-cleaning dust collection seat body 2000 is the backward direction; a dust collection bin 3000 is located at the left side of the self-cleaning dust collection seat; a clean water tank 4000 is located at the right side of the dust collection bin 3000; and a waste water tank 5000 is located at the right side of the clean water tank 4000.

**[0017]** As shown in FIG. 1, the self-cleaning dust collection seat provided in this embodiment includes the bottom plate 1000 of the self-cleaning dust collection seat and the self-cleaning dust collection seat body 2000. The bottom plate 1000 of the self-cleaning dust collection seat and the self-cleaning dust collection seat body 2000 are detachably connected. Specifically, the bottom plate 1000 of the self-cleaning dust collection seat is detachably connected to a body base 6000 at the lower part of the self-cleaning dust collection seat body 2000. The detachable connection can facilitate transportation and maintenance.

**[0018]** The self-cleaning dust collection seat body 2000 is configured to collect waste from a dust box of an automatic cleaning device. In some embodiments, the dust collection bin 3000, the clean water tank 4000, the waste water tank 5000 and other components may further be provided side by side on the self-cleaning dust collection seat body 2000.

**[0019]** As shown in FIG. 2, the self-cleaning dust collection seat body 2000 includes a water storage chamber 2700 and a dust collection chamber 2100. An opening of the water storage chamber 2700 is disposed upwards and forwards on the top of the self-cleaning dust collection seat body 2000, and the water storage chamber may further include a clean water bin for accommodating the clean water tank 4000, and a waste water bin for accommodating the waste water tank 5000. An opening of the dust collection chamber 2100 is disposed, side by side with the water storage chamber 2700, upwards and forwards at the top end of the self-cleaning dust collection seat body 2000. A dust collection hood 2800 matching the opening of the dust collection chamber 2100 is provided on the dust collection chamber 2100. The dust collection hood 2800 is detachably buckled on the dust collection chamber 2100. The dust collection chamber 2100 together with the dust collection hood 2800 forms the dust collection bin 3000 for accommodating a waste receiving apparatus. At least part of an outer surface of the dust collection hood 2800 serves as part of an exterior surface of the self-cleaning dust collection seat. The upward and forward design of the water storage chamber 2700 and the dust collection chamber 2100 is convenient for the installation and removal of the waste water tank 5000, the clean water tank 4000 and the dust collection hood 2800.

**[0020]** The self-cleaning dust collection seat body 2000 includes the body base 6000 below. In some embodiments, the body base 6000 is integrally disposed below the self-cleaning dust collection seat body 2000. The body base 6000 is further abutted with the bottom plate 1000 of the self-cleaning dust collection seat. Specifically, the bottom plate 1000 of the self-cleaning dust collection seat and the body base 6000 are arranged sequentially in a second direction, which is opposite to the arrow of the antero-posterior axis X.

**[0021]** A dust collection port 6100 is formed on the body base 6000 and is substantially located at an edge position of the body base 6000 where it is connected to the bottom plate 1000 of the self-cleaning dust collection seat. The dust collection port 6100 is configured to be engaged with a dust outlet of the automatic cleaning device, and the waste in the dust box 300 of the automatic cleaning device enters the dust collection chamber 2100 of the self-cleaning dust collection seat body 2000 through the dust collection port 6100. In some embodiments, a sealing gasket is further disposed around the dust collection port 6100 for sealing after the dust collection port 6100 is engaged with the dust outlet of the automatic cleaning device, thereby preventing waste leakage.

**[0022]** In some embodiments, the body base 6000 further includes a cleaning tank 6200, which is configured to clean to-be-cleaned components on the automatic cleaning device, for example, by supplementing a wet cleaning module of the automatic cleaning device with a cleaning solution, and/or housing debris removed from the wet cleaning module, and/or collecting waste water produced during cleaning of the wet cleaning module, thereby facilitating the subsequent treatment of the debris and waste water. In some embodiments, the cleaning tank 6200 is disposed behind the dust collection port 6100.

**[0023]** In some embodiments, the self-cleaning dust collection seat further includes an air duct. One end of the air duct is communicated with the dust collection port 6100 of the body base 6000, and the other end of the air duct is communicated with the dust collection chamber 2100. When the self-cleaning dust collection seat is in a dust collection state, a sufficient negative pressure is created in the dust collection bin 3000 to suck the waste from the dust box 300 into the dust bag in the dust collection chamber 2100 through the dust collection port 6100 and the air duct.

**[0024]** Referring to FIG. 2 and FIG. 3 together, in some embodiments, the dust collection chamber 2100 includes a rear wall 2134 of the dust collection chamber and a pair of oppositely arranged side walls of the dust collection chamber. The side walls of the dust collection chamber further include a first side wall 2131 of the dust collection

chamber and a second side wall 2132 of the dust collection chamber. The first side wall 2131 of the dust collection chamber is close to an outer wall of the self-cleaning dust collection seat body 2000. The first side wall 2131 of the dust collection chamber and the second side wall 2132 of the dust collection chamber are oppositely arranged, and are both adjoined with the rear wall 2134 of the dust collection chamber.

**[0025]** Specifically, an end surface of the side wall of the dust collection chamber may be of an arc-shaped structure, with a height that may gradually decrease along the arrow direction of the antero-posterior axis X. The height of the side wall of the dust collection chamber is equal to the height of the rear wall 2134 of the dust collection chamber at the adjoined point between the side wall of the dust collection chamber and the rear wall 2134 of the dust collection chamber. The side wall of the dust collection chamber has an arc-shaped structure with a low front and a high back, which can facilitate the placement and removal of the dust collection hood 2800, and improve the aesthetics to a certain extent.

**[0026]** In some embodiments, the first side wall 2131 of the dust collection chamber, the second side wall 2132 of the dust collection chamber, and the rear wall 2134 of the dust collection chamber are in an integral structure with the self-cleaning dust collection seat body 2000, such that the stability of the dust collection chamber 2100 can be improved, and the dust collection chamber 2100 can be prevented from shaking relative to the self-cleaning dust collection seat body 2000.

**[0027]** In some embodiments, the dust collection chamber 2100 further includes a circumferential inner wall 2150, which extends from a bottom wall of the dust collection chamber 2100 towards a direction away from the self-cleaning dust collection seat body 2000. The rear wall 2134 of the dust collection chamber and the side walls of the dust collection chamber are disposed around and spaced from the circumferential inner wall 2150. The heights throughout the circumferential inner wall 2150 may be unequal. In some embodiments, the height of the circumferential inner wall 2150 gradually decreases along the arrow direction of the antero-posterior axis X. This structural design of the circumferential inner wall 2150 with a low front and a high back can facilitate the placement and removal of the dust collection hood 2800.

**[0028]** In some embodiments, the circumferential inner wall 2150 may be a closed-ring structure, and further include a front inner wall 2153, a first side inner wall 2151, a rear inner wall 2154, and a second inner wall 2152, which are connected end to end in sequence. Here, the front inner wall 2153 is disposed opposite to the rear inner wall 2154, and the first side inner wall 2151 is disposed opposite to the second side inner wall 2152. Moreover, each inner wall of the circumferential inner wall 2150 may also have a corresponding relationship with the rear wall 2134 and side walls of the dust collection chamber. Specifically, the first side inner wall 2151 and the first side wall 2131 of the dust collection chamber are located at the same side and disposed at intervals; the rear inner wall 2154 and the rear wall 2134 of the dust collection chamber are located at the same side and disposed at intervals; and the second side inner wall 2152 and the second side wall 2132 of the dust collection chamber are located at the same side and disposed at intervals.

**[0029]** In some embodiments, the circumferential inner wall 2150 and the bottom wall of the dust collection chamber 2100 are in an integral structure, such that the stability of the circumferential inner wall 2150 can be improved.

**[0030]** In some embodiments, the dust collection chamber 2100 further includes a sealing gasket 2140, which is disposed around the circumferential inner wall 2150, and the rear wall 2134 of the dust collection chamber and the side walls of the dust collection chamber are disposed around the sealing gasket 2140. In some embodiments, the sealing gasket 2140 is of a closed-ring structure, and the width throughout the sealing gasket 2140 is equal to or slightly greater than an interval between the circumferential inner wall 2150 and the rear wall 2134 of the dust collection chamber and an interval between the circumferential inner wall and the side walls of the dust collection chamber, such that the sealing gasket 2140 is in close contact with the circumferential inner wall 2150, the rear wall 2134 of the dust collection chamber, and the side walls of the dust collection chamber. The sealing gasket 2140 may be made of a variety of natural or synthetic rubber. By means of the sealing gasket 2140, the dust collection chamber 2100 and the dust collection hood 2800 buckled on the dust collection chamber 2100 may be tightly fitted to form a closed dust collection bin 3000.

**[0031]** In some embodiments, a dust bag holder 2110 is further disposed in the dust collection chamber 2100, and the dust bag holder 2110 is configured to install a dust bag. The dust bag holder 2110 is disposed inside the dust collection chamber 2100, and extends from the bottom of the dust collection chamber toward a direction away from the self-cleaning dust collection seat body 2000. The dust bag holder 2110 may be disposed on the circumferential inner wall 2150 of the dust collection chamber 2100 through screws and other fixing components, or fixedly connected to the bottom wall of the dust collection chamber through the bottom of the dust bag holder 2110. In some embodiments, the dust bag holder 2110 is disposed at the first side inner wall 2151, and the side wall of the dust bag holder 2110 away from the dust collection chamber 2100 may be integrally formed with the first side inner wall 2151, such that the steadiness of the dust bag holder 2110 can be improved. A hollow cavity is provided inside the dust bag holder 2110, and the hollow cavity serves as part of the air duct of the self-cleaning dust collection seat, for example, as a tail end of the air duct. The dust bag holder 2110 includes a holder side wall facing the inside of the dust collection bin 3000. The holder side wall is provided with a dust outlet interface, which is communicated with the dust collection port 6100

through the air duct. The air duct is used to guide the waste into a body of the dust collection bin 3000, for example, into the dust bag in the body of the dust collection bin 3000. The dust outlet interface is configured to be communicated with an inlet of the dust bag and is used to collect the waste into the dust bag.

**[0032]** Referring to FIG. 4 and FIG. 5 together, in some embodiments, the dust collection hood 2800 includes: a dust collection hood cover 2810 and a dust collection hood wall 2820. Here, the dust collection hood cover 2810 is positioned above the dust collection hood wall 2820, and the dust collection hood wall 2820 extends from the dust collection hood cover 2810 in a direction away from the dust collection hood cover 2810. The dust collection hood cover 2810 and the dust collection hood wall 2820 define an accommodating space together, and in response to the dust collection hood 2800 being buckled on the dust collection chamber 2100, the circumferential inner wall 2150 is accommodated in an accommodating space. A free end of the dust collection hood wall 2820 away from the dust collection hood cover 2810 is attached to the sealing gasket 2140 to form the closed dust collection bin 3000.

**[0033]** In some embodiments, the dust collection hood wall 2820 further includes a front wall 2823 of the dust collection hood, a first side wall 2821 of the dust collection hood, a rear wall 2824 of the dust collection hood, and a second side wall 2822 of the dust collection hood, which are connected end to end in sequence. Here, the front wall 2823 of the dust collection hood is disposed opposite to the rear wall 2824 of the dust collection hood, and the first side wall 2821 of the dust collection hood is disposed opposite to the second side wall 2822 of the dust collection hood.

**[0034]** In response to the dust collection hood 2800 being buckled on the dust collection chamber 2100, at least part of the first side wall 2821 of the dust collection hood is clamped between the first side wall 2131 of the dust collection chamber and the first side inner wall 2151, at least part of the second side wall 2822 of the dust collection hood is clamped between the second side wall 2132 of the dust collection chamber and the second side inner wall 2152, and the rear wall 2824 of the dust collection hood is clamped between the rear wall 2134 of the dust collection chamber and the rear inner wall 2154.

**[0035]** In some embodiments, the dust collection hood 2800 further includes a pull handle 2811, which is disposed on the side of the dust collection hood cover 2810 away from the dust collection hood wall 2820. The pull handle 2811 may be a pull ring, a pull rod, a handle or the like disposed on the dust collection hood cover 2810. The pull handle 2811 is disposed such that the dust collection hood 2800 can be placed and removed more conveniently, thereby facilitating a user to remove the waste from the dust collection bin 3000 daily.

**[0036]** In some embodiments, the dust collection hood 2800 further includes a position limiting member 2825, which is disposed on the dust collection hood wall 2820. The position limiting member 2825 may cooperate with a position limiting portion disposed in the dust collection chamber 2100, such that the dust collection hood 2800 is firmly buckled on the dust collection chamber 2100 without shaking. The position limiting portion may be disposed on at least one of the rear wall 2134 of the dust collection chamber and the side wall of the dust collection chamber. The position limiting member 2825 is disposed in pair with and to match the position limiting portion. In the embodiment shown in FIG. 4, the position limiting member 2825 is disposed on the second side wall 2822 of the dust collection hood, and the position limiting portion corresponding to this position limiting member 2825 is disposed on the second side wall 2132 of the dust collection chamber. In response to the dust collection hood 2800 being buckled on the dust collection chamber 2100, the position limiting member 2825 is abutted with the position limiting portion.

**[0037]** In some embodiments, a supporting rib 2826 is disposed on at least one of the bottom wall of the dust collection chamber, the circumferential inner wall 2150, and the dust collection hood wall 2820. The supporting rib 2826 may be a strip-like structure that protrudes outward relative to the surface. In the embodiment shown in FIG. 4, the supporting rib 2826 is disposed at least on an inner surface of the second side wall 2822 of the dust collection hood, and a plurality of supporting ribs 2826 is disposed on the inner surface of the second side wall 2822 of the dust collection hood. By the provision of the supporting ribs 2826, the dust bag in the dust collection bin 3000 can be prevented from fitting the bottom wall of the dust collection chamber, the circumferential inner wall 2150, and/or the dust collection hood wall 2820, thereby preventing the airflow from flowing out of the dust bag due to the influence of fitting.

**[0038]** The present disclosure further provides a dust collection system, including an automatic cleaning device and the self-cleaning dust collection seat in the foregoing embodiments.

**[0039]** By the design of buckling the dust collection hood on the dust collection chamber, the combination between the dust collection hood and the dust collection chamber is tighter under the action of a fan, which further improves the dust collection efficiency. Furthermore, the design of exposing the dust collection hood may facilitate a user to observe a condition inside the hood more visually, allowing for disposing the dust collection chamber more timely, for instance, in the case of replacing the dust bag.

**[0040]** In the related art, due to a limited capacity of the dust box in the automatic cleaning device, a user needs to frequently bend down to clean the dust box, resulting in poor user experience. To this end, an embodiment of the present disclosure provides a self-cleaning dust collection seat, whereby waste in the dust box of the automatic cleaning device is centralized and collected into the dust collection bin of the self-cleaning dust collection seat by

means of the dust collection system, and the waste in the dust box is transferred into the dust bag in the dust collection bin in a substantially leakless way by means of the dust bag holder and the dust bag that are disposed in the dust collection bin, such that the number of times for a user to dispose the waste can be reduced, leading to improved user experience. Moreover, the design of allowing for cooperation between a clamping plate and a sliding plate is applied to the dust bag, such that when the dust bag is disassembled from the dust bag holder, the sliding plate is in a closed position, preventing the waste in the dust bag from being littered in the dust collection bin.

**[0041]** Specifically, the self-cleaning dust collection seat provided by the embodiment of the present disclosure is, by way of example, as shown in FIG. 1 which exemplarily shows a schematic diagram of an overall structure of the self-cleaning dust collection seat, and in FIG. 2 which exemplarily shows a schematic structural diagram of a self-cleaning dust collection seat body with a waste water tank, a clean water tank and a dust collection hood being removed.

**[0042]** As shown in FIG. 1, the direction in which a bottom plate 1000 of the self-cleaning dust collection seat protrudes from the self-cleaning dust collection seat body 2000 is the forward direction; the direction of a rear wall of the self-cleaning dust collection seat body 2000 is the backward direction, a dust collection bin 3000 is located at the left side of the self-cleaning dust collection seat, a clean water tank 4000 is located at the right side of the dust collection bin 3000, and a waste water tank 5000 is located at the right side of the clean water tank 4000.

**[0043]** The self-cleaning dust collection seat body 2000 is configured to collect waste from a dust box of an automatic cleaning device. In some embodiments, the self-cleaning dust collection seat body 2000 may further be provided with the dust collection bin 3000, the clean water tank 4000, the waste water tank 5000 and other components side by side. Specifically, as shown in FIG. 2, the self-cleaning dust collection seat body 2000 includes a water storage chamber 2700 and a dust collection chamber 2100. An opening of a water storage chamber 2700 is disposed upwards and forwards on the top of the self-cleaning dust collection seat body 2000, and the water storage chamber may further include a clean water bin for accommodating the clean water tank 4000, and a waste water bin for accommodating the waste water tank 5000. An opening of the dust collection chamber 2100 is disposed, side by side with the water storage chamber 2700, upwards and forwards at a top end of the self-cleaning dust collection seat body 2000. The dust collection chamber 2100 is provided with a dust collection hood 2800 matching the opening of the dust collection chamber 2100. The dust collection hood 2800 is detachably buckled on the dust collection chamber 2100. The dust collection chamber 2100 together with the dust collection hood 2800 forms a dust collection bin 3000. The upward and forward design of the water storage chamber 2700 and the dust collection chamber 2100 is convenient for the installation and removal of the waste water tank 5000, the clean water tank 4000 and the dust collection hood 2800.

**[0044]** The self-cleaning dust collection seat body 2000 includes a body base 6000 below. In some embodiments, the body base 6000 is integrally disposed below the self-cleaning dust collection seat body 2000. The body base 6000 is further abutted with the bottom plate 1000 of the self-cleaning dust collection seat. Specifically, the bottom plate 1000 of the self-cleaning dust collection seat and the body base 6000 are arranged sequentially in a second direction, which is opposite to the arrow of the antero-posterior axis X.

**[0045]** A dust collection port 6100 is formed on the body base 6000 and is substantially located at an edge position of the body base 6000 where it is connected to the bottom plate 1000 of the self-cleaning dust collection seat. The dust collection port 6100 is configured to be engaged with a dust outlet of the automatic cleaning device, and the waste in the dust box 300 of the automatic cleaning device enters the dust collection chamber 2100 of the self-cleaning dust collection seat body 2000 through the dust collection port 6100. In some embodiments, a sealing gasket is further disposed around the dust collection port 6100 for sealing after the dust collection port 6100 is engaged with a dust outlet of the automatic cleaning device, thereby preventing waste leakage.

**[0046]** In some embodiments, the body base 6000 further includes a cleaning tank 6200, which is configured to clean to-be-cleaned components on the automatic cleaning device, for example, by supplementing a wet cleaning module of the automatic cleaning device with a cleaning solution, and/or housing debris removed from the wet cleaning module, and/or collecting waste water produced during cleaning of the wet cleaning module, thereby facilitating the subsequent treatment of the debris and waste water. In some embodiments, the cleaning tank 6200 is disposed behind the dust collection port 6100.

**[0047]** In some embodiments, the self-cleaning dust collection seat further includes an air duct. One end of the air duct is communicated with the dust collection port 6100 of the body base 6000, and the other end of the air duct is communicated with the dust collection chamber 2100. When the self-cleaning dust collection seat is in a dust collection state, a sufficient negative pressure is created in the dust collection bin 3000 to suck the waste from the dust box 300 into the dust bag in the dust collection chamber 2100 through the dust collection port 6100 and the air duct.

**[0048]** FIG. 6 shows a schematic structural diagram of a dust bag holder according to some embodiments of the present disclosure, with a sliding baffle in a first position; and FIG. 7 shows a schematic structural diagram of a dust bag holder according to some embodiments of the present disclosure, with the sliding baffle in a second

position.

**[0049]** In combination with FIG. 1 and FIG. 2, in some embodiments, the self-cleaning dust collection seat further includes a dust bag holder 2110, which is configured for installation of the dust bag. The dust bag holder 2110 is disposed in the dust collection bin 3000, for example, disposed on an inner side wall of the dust collection bin 3000 by means of screws or other fixing components, or fixedly connected to a bottom surface of the dust collection bin 3000 through the bottom of the dust bag holder 2110.

**[0050]** A hollow cavity is provided inside the dust bag holder 2110, and the hollow cavity serves as part of the air duct of the self-cleaning dust collection seat, for example, as a tail end of the air duct.

**[0051]** The dust bag holder 2110 includes a holder side wall 2111 facing the inside of the dust collection bin 3000, and the holder side wall 2111 is provided with a dust outlet interface 2112. The dust outlet interface 2112 is communicated with the dust collection port 6100 through the air duct. The air duct is used to guide the waste into a body of the dust collection bin 3000, for example, into the dust bag in the body of the dust collection bin 3000. The dust outlet interface 2112 is configured to be communicated with an inlet of the dust bag and is used to collect the waste into the dust bag.

**[0052]** The dust bag holder 2110 further includes a sliding baffle 2113 that is slidable on the holder side wall 2111. The sliding baffle 2113 is configured to be switchable between the first position and the second position. In response to the sliding baffle 2113 being in the first position, the sliding baffle 2113 shields the dust outlet interface 2112; and in response to the sliding baffle 2113 being in the second position, the sliding baffle 2113 exposes the dust outlet interface 2112. The dust bag as a consumable may be detachably installed on the dust bag holder 2110. Before the dust bag is installed into the dust bag holder 2110, the dust bag holder with the design described above may allow the sliding baffle 2113 to shield the dust outlet interface 2112 to isolate the dust collection bin 3000 from the air duct, such that a sucking force produced by the fan cannot enter the air duct via the dust collection bin, preventing the waste from entering the dust collection bin 3000 without the dust bag being installed.

**[0053]** FIG. 8 shows a schematic structural diagram of a dust bag according to some embodiments of the present disclosure, with a sliding plate in a closed position; FIG. 9 shows a schematic structural diagram of the dust bag according to some embodiments of the present disclosure, with the sliding plate in an open position; FIG. 9A shows a partially schematic structural diagram of the dust bag according to some embodiments of the present disclosure; and FIG. 9B shows a schematic structural diagram of a section in FIG. 9A. Here, the section of the dust bag is shown in FIG. 9A, and the dust bag is not shown in FIG. 9 and FIG. 9B.

**[0054]** In some embodiments, as shown in FIG. 8 to FIG. 9B, the present disclosure further provides a dust bag 2120. The dust bag 2120 is configured to be detachably installed on a dust bag holder 2110 to collect waste.

**[0055]** The dust bag 2120 includes a dust bag body 2121, a clamping plate 2122, and a sliding plate 2123. The dust bag body 2121, for example, is made of a material that is breathable and may filter fine particles, for example, a non-woven fabric or a paper material, and the dust bag body is configured to receive the waste. The clamping plate 2122 is fixedly connected to the dust bag body 2121. The clamping plate 2122 has a clamping plate opening 21221, which serves as an inlet of the dust bag body 2121. The sliding plate 2123 is slidably connected to the clamping plate 2122, and is configured to switch between a closed position and an open position. The sliding plate 2123 shields the clamping plate opening 21221 in response to the sliding plate 2123 being in the closed position, and exposes the clamping plate opening 21221 in response to the sliding plate 2123 being in the open position.

**[0056]** Specifically, as shown in FIG. 8 and FIG. 6, the sliding plate 2123 has a sliding plate opening 21231. In response to the sliding plate 2123 being in the closed position, an orthographic projection of the sliding plate opening 21231 on the clamping plate 2122 does not overlap with the clamping plate opening 2821, and the sliding plate 2123 shields the clamping plate opening 22121, as shown in FIG. 8. In response to the sliding plate 2123 being in the open position, the orthographic projection of the sliding plate opening 21231 on the clamping plate 2122 at least partially overlaps with the clamping plate opening 21221, and the sliding plate 2123 exposes at least part of the clamping plate opening 21221 by means of the sliding plate opening 21231, as shown in FIG. 9.

**[0057]** In some embodiments, a size of the sliding plate opening 21231 is for example larger than that of the clamping plate opening 21221, and in response to the sliding plate 2123 being in the closed position, the orthographic projection of the sliding plate opening 21231 on the clamping plate 2122 covers the clamping plate opening 21221. In some embodiments, a size of the sliding plate opening 21231 is for example smaller than that of the clamping plate opening 21221, and in response to the sliding plate 2123 being in the closed position, the orthographic projection of the sliding plate opening 21231 on the clamping plate 2122 falls within the clamping plate opening 21221. In some embodiments, the size of the sliding plate opening 21231 is for example equal to that of the clamping plate opening 21221, and in response to the sliding plate 2123 being in the closed position, the orthographic projection of the sliding plate opening 21231 on the clamping plate 2122 substantially coincides with the clamping plate opening 21221.

**[0058]** By means of the sliding fit between the sliding plate 2123 and the clamping plate 2122, an inlet of the dust bag can be closed to avoid the leakage of waste from the dust bag.

**[0059]** In some embodiments, as shown in FIG. 8 to FIG. 9B, the edge of the clamping plate opening 21221 is provided with a flexible rubber ring 21224 that protrudes towards the sliding plate 2123. In response to the sliding plate 2123 being in the open position, the flexible rubber ring 21224 protrudes through the sliding plate opening 21231 towards a direction away from the sliding plate 2123, such that when the sliding plate opening 21231 and the clamping plate opening 21221 are engaged, a slit between the sliding plate 2123 and the clamping plate 2122 at the joint of the two openings is blocked, such that the sliding plate opening 21231 and the clamping plate opening 21221 are sealedly engaged. In response to the sliding plate 2123 being not in the open position, for example, being in the closed position, at least part of the flexible rubber ring 21224 may be squeezed between the sliding plate 2123 and the clamping plate 2122 to increase a friction force therebetween, such that the sliding plate 2123 and the clamping plate 2122 can slide relative to each other only under the action of an external force, allowing for stably keeping the sliding plate 2123 in the closed position to avoid the littering of waste from the dust bag.

**[0060]** In summary, the sliding design for the clamping plate 2122 and the sliding plate 2123 in the dust bag allows for the slidable connection between the sliding plate 2123 and the clamping plate 2122, and the sliding plate is configured to switch between the closed position and the open position to close or expose the inlet of the dust bag, such that the waste in the dust bag can be prevented from leakage in the case of closing the inlet of the dust bag.

**[0061]** The flexible rubber ring 21224 provided on the edge of the clamping plate opening 21221 ensures a good sealing performance between the dust bag and the dust outlet interface 2112, which can further improve the dust collection efficiency, and which also plays a role in preventing dust from falling out of a gap between the dust outlet interface 2112 and the clamping plate 2122 and a gap between the clamping plate 2122 and the sliding plate 2123 in a dust collection process to in turn pollute the dust collection chamber, thereby reducing the workload of the user in maintaining the dust collection chamber and improving the user experience.

**[0062]** In some embodiments, as shown in FIG. 8 and FIG. 9, the sliding plate 2123 is slidable in a first direction M relative to the clamping plate 2122. The sliding plate 2123 includes a position limiting bump 21243, which is disposed on at least one side of the sliding plate 2123, for example, on both sides of the sliding plate 2123, in which case the number of the position limiting bumps 21243 is 2, for example. The limiting bump protrudes from the sliding plate 2123 in a second direction perpendicular to the first direction M. The clamping plate 2122 includes position limiting components 21223, which are disposed on both ends of the clamping plate 2122 in the first direction, and are configured to block the position limiting bump 21233 in the first direction M, thereby preventing the sliding plate 2123 from being disengaged from the clamping plate 2122. The number of the position limiting components 21223 is 4, for example, and the limiting components are symmetrically distributed on both sides of the clamping plate 2122. When the sliding plate 2123 slides relative to the clamping plate 2122, the position limiting bump 21233 can only move between the corresponding position limiting components 21223 at both ends of the clamping plate 2122 in the first direction.

**[0063]** In some embodiments, the sliding plate 2123 further includes a handle 21232, which is disposed on an end of the sliding plate in the first direction M and is configured to facilitate an operator to hold and then move the sliding plate 2123.

**[0064]** The dust bag 2120 is configured to be detachably installed on the dust bag holder 2110. In response to the dust bag 2120 being installed on the dust bag holder 2110, the sliding baffle 2123 is in the second position to expose the dust outlet interface, the sliding plate is in the open position, and the clamping plate opening 21221 is engaged with the dust outlet interface 2112. Based on the configuration described above, before the dust bag 2120 is installed into the dust bag holder 2110, the sliding baffle 2113 of the dust bag holder is in the first position to shield the dust outlet interface 2112, such that the sucking force produced by the fan cannot enter the air duct via the dust collection bin, preventing the waste from entering the dust collection bin 3000 without the dust bag 2120 being installed.

**[0065]** When the dust bag 2120 is disassembled from the dust bag holder 2110, the sliding plate is in the closed position 2123, thereby preventing the waste in the dust bag from being littered in the dust collection bin. Moreover, the sealed dust bag also prevents the waste in the dust bag from being littered in the external environment.

**[0066]** Before the dust bag 2120 is installed into the dust bag holder 2110, the sliding plate 2123 shields the clamping plate opening 21221 of the clamping plate 2122, such that when the dust bag is installed into the dust bag holder 2110, the sliding baffle 2113 can be pushed from the first position to the second position and fixed in the second position by means of the joint action of the sliding plate 2123 and the clamping plate 2122; and when the dust bag 2120 is pulled away from the dust bag holder 2110, the sliding plate 2123 shields the clamping plate opening 21221 to avoid waste leakage. After the dust bag 2120 is installed into the dust bag holder 2110, the clamping plate opening 21221 (i.e., the inlet of the dust bag) is engaged with the dust outlet interface 2112, and the waste in the dust box of the automatic cleaning device may be collected into the dust bag body 2121 through the dust collection port 6100 in the body base 6000, the air duct inside the self-cleaning dust collection seat, the dust outlet interface 2112 on the dust bag holder 2110, and the clamping plate opening 21221 in the dust bag 2120 in sequence under the action of an airflow provided by the fan.

**[0067]** FIG. 10 shows a schematic diagram of a pre-

assembled structure of a dust bag holder and a dust bag according to some embodiments of the present disclosure; and FIG. 11 shows a schematic diagram of an assembled structure of a dust bag holder and a dust bag according to some embodiments of the present disclosure.

**[0068]** In some embodiments, as shown in FIG. 6 to FIG. 11, the dust bag holder 2110 includes a sliding chute 2114, and at least part of the sliding baffle 2113 is located in the sliding chute 2114, such that the sliding baffle 2113 may slide in an extension direction X' of the sliding chute 2114, and then switch between the first position and the second position. For example, the number of the sliding chute 2114 is one or more. As shown in FIG. 6 to FIG. 11, the number of the sliding chute 2114 is 2, for example, in which case the sliding chutes are disposed on two opposite ends of a holder side wall 2111 of the dust bag holder 2110 respectively, and receive two opposite ends of the sliding baffle 2113, respectively, such that the sliding baffle 2113 may slide in the extension direction X' of the sliding chute 2114.

**[0069]** As shown in FIG. 6 to FIG. 11, the clamping plate 2122 and the sliding plate 2123 of the dust bag 2120 are configured to be insertable into the sliding chute 2114, to slide in the extension direction X' of the sliding chute 2114, and to push the sliding baffle 2113 to slide in the extension direction X' of the sliding chute, allowing for the installation of the dust bag 2120 on the dust bag holder 2110. Specifically, both ends of the clamping plate 2122 and the sliding plate 2123 of the dust bag 2120 may be inserted into the two sliding chutes 2114 described above, respectively. In response to the dust bag 2120 being installed on the dust bag holder 2110, the sliding plate 2123 is in the open position to expose the clamping plate opening 21221, and the sliding baffle 2113 is in the second position to expose the dust outlet interface 2112, such that the clamping plate opening 21221 is engaged with the dust outlet interface 2112.

**[0070]** As shown in FIG. 10, during the process of installing the dust bag 2120 on the dust bag holder 2110, the dust bag 2120 moves in the extension direction X' of the sliding chute 2114 relative to the dust bag holder 2110. When they are installed, the clamping plate 2122 and the sliding plate 2123 of the dust bag 2120 face the holder side wall 2111 of the dust bag holder 2110; and during the process of inserting the clamping plate 2122 and the sliding plate 2123 into the sliding chute 2114 in the extension direction X' of the sliding chute 2114, the sliding baffle 2113 may be pushed to move from the first position to the second position.

**[0071]** In some embodiments, a lower end of the sliding baffle 2113 is provided with a sliding baffle protrusion 21131, which is a strip-like protrusion along a lower edge of the sliding baffle 2113 towards the dust collection bin 3000. After the sliding plate 2123 is inserted into the sliding chute 2114, a lower end of the sliding plate 2123 may be abutted against the sliding baffle protrusion 21131. The mutual abutting between the lower end of the sliding plate 2123 and the sliding baffle protrusion 21131 allows the sliding plate 2123, when sliding downwards in the extension direction X' of the sliding chute 2114, to push the sliding baffle 2113 to slide in the extension direction X' of the sliding chute together. In some embodiments, the lower end of the sliding plate 2123 is further provided with a sliding plate protrusion 21233, which is a strip-like protrusion along the lower edge of the sliding plate 2123 towards the dust collection bin 3000. After the sliding plate 2123 is inserted into the sliding chute 2114, the sliding plate protrusion 21233 may be just abutted against the upper side of the sliding baffle protrusion 21131. The mutual abutting between the sliding plate protrusion 21233 and the sliding baffle protrusion 21131 allows the sliding plate 2123, when sliding downwards in the extension direction X' of the sliding chute 2114, to push the sliding baffle 2113 to also slide in the extension direction X' of the sliding chute together.

**[0072]** FIG. 11 shows a sectional view of an assembled structure of a dust bag holder and a dust bag according to some embodiments of the present disclosure, and FIG. 12 shows a schematic diagram of an assembled structure of a dust bag holder and a dust bag according to some embodiments of the present disclosure.

**[0073]** In combination with FIG. 11 and FIG. 12, a snap fastener 21141, e.g., an elastic snap fastener, is disposed in the sliding chute 2114, and the snap fastener may move approximately in an arc as shown by an arrow in FIG. 12. The clamping plate 2122 has a clamping plate slot 21222 matching the snap fastener 21141; and in response to the dust bag 2120 being installed on the dust bag holder 2110, the snap fastener 21141 is clamped in the clamping plate slot 21222. The clamping plate 2122 slides to a clamping position in the extension direction X' of the sliding chute 2114. The clamping plate opening 21221 is engaged with the dust outlet interface 2112; and the snap fastener 21141 matches and is clamped with the clamping plate slot 21222, such that the dust bag 2120 is fixed on the dust bag holder 2110.

**[0074]** A position limiting bump 212234 on the sliding plate 2123 also acts as, or is called, an unlocking bump 21234, which is configured such that during the process of pulling the sliding plate 2123 away from the slot 2114, the snap fastener 21141 is squeezed to enable disengagement of the snap fastener 21141 from the clamping plate slot 21222, thereby releasing the fixing of the snap fastener 21141 to the clamping plate 2122, and smoothly disengaging the dust bag 2120 from the dust bag holder 2110. In some embodiments, the unlocking bump 21234 also has a position limiting effect, and cooperates with a position limiting component 21223 on the clamping plate 2122 to prevent the sliding plate 2123 from disengagement from the clamping plate 2122.

**[0075]** In some embodiments, as shown in FIG. 13, the dust bag holder 2110 is provided with an elastic component 2115, e.g., a spring. The elastic component 2115 is connected to the sliding baffle 2113 and is configured such that the sliding baffle 2113 has a tendency to be in

the first position. When the sliding baffle 2113 is not subjected to an external force, the sliding baffle 2113 is in the first position under the action of the elastic component 2115, such that the sliding baffle 2113 shields the dust outlet interface 2112. In some embodiments, the elastic component 2115 is located inside the dust bag holder 2110; an extension direction of the elastic component 2115 is basically the same as an extension direction of the sliding chute 2114; and one end of the elastic component 2115 is fixed on the upper part of the dust bag holder 2110, and the other end of the elastic component is connected to the sliding baffle 2113. The number of the elastic component 2115 is one or more, e.g., 2, in which case the two elastic components may be disposed on two opposite ends of the dust bag holder 2110, respectively.

**[0076]** The following specifically describes the process of installing and disassembling the dust bag 2120 and the dust bag holder 2110.

**[0077]** Before the dust bag 2120 is installed into the dust bag holder 2110, the sliding baffle 2113 on the dust bag holder 2110 is located in the first position to shield the dust outlet interface 2112, and the sliding plate 2123 on the dust bag 2120 is located in the closed position to shield the clamping plate opening 2122, such as in a state shown in FIG. 8. During the process of installing the dust bag 2120 into the dust bag holder 2110, the clamping plate 2122 and the sliding plate 2123 are inserted into the sliding chute 2114 in the extension direction X' of the sliding chute 2114; and during the process in which a user holds the handle 21232 of the sliding plate 2123 and pushes the dust bag 2120 into the sliding chute 2114, the sliding plate 2123 gradually moves from the closed position to the open position relative to the clamping plate 2122, such that the sliding plate opening 21231 in the sliding plate 2123 is aligned with the clamping plate opening 21221 in the clamping plate 2122, and at the same time, the clamping plate 2122 and the sliding plate 2123 push against the sliding baffle 2113 to move from the first position to the second position, allowing the sliding baffle 2113 to expose the dust outlet interface 2112. When the clamping plate 2122 slides to a clamping position in the extension direction X' of the sliding chute 2114, the clamping plate opening 21221 is engaged with the dust outlet interface 2112, and the snap fastener 21141 matches and is clamped with the slot 21222, such that the dust bag 2120 is fixed on the dust bag holder 2110. At this point, the flexible rubber ring 21224 on the dust bag is abutted against an edge of the dust outlet interface 2112 through the sliding plate opening 21231, such that the clamping plate opening 21221 of the dust bag is sealedly engaged with the dust outlet interface 2112 of the dust bag holder, avoiding waste leakage during the process of dust collection.

**[0078]** During the process of disassembling the dust bag 2120 from the dust bag holder 2110, an operator holds the handle 21232 of the sliding plate 2123 and gradually pulls the sliding plate 2123 away from the sliding chute 2114 of the dust bag holder 2110. In this process, the sliding plate 2123 gradually moves from the open position to the closed position relative to the clamping plate 2122, such that the sliding plate 2123 shields the clamping plate opening 21221, and the unlocking bump 21234 on the sliding plate 2123 extrudes the snap fastener 21141 to disengage the snap fastener 21141 from the slot 21222. At the same time, due to the interaction between the unlocking bump 21234 and the position limiting component 21223 on the clamping plate 2122, the handle 21232 of the sliding plate 2123 is continuously pulled to pull out the sliding plate 2123 and the clamping plate 2122 from the sliding chute 2114 of the dust bag holder 2110, and the dust bag 2120 is disengaged from the dust bag holder 2110. Under the action of the elastic component, the sliding baffle 2113 returns to the first position, such that the sliding baffle 2113 shields the dust outlet interface 2112.

**[0079]** The present disclosure further provides a dust collection system, including an automatic cleaning device and the self-cleaning dust collection seat in the foregoing embodiments.

**[0080]** According to the self-cleaning dust collection seat provided by the embodiments of the present disclosure, waste in the dust box of the automatic cleaning device is centralized and collected into the dust collection bin of the self-cleaning dust collection seat by means of the dust collection system, and the waste in the dust box is transferred into the dust bag in the dust collection bin in a substantially leakless way by means of the dust bag holder and the dust bag that are disposed in the dust collection bin, such that the number of times for a user to dispose the waste can be reduced, leading to improved user experience.

**[0081]** Finally, it should be noted that the embodiments in the specification are described in a progressive manner, with each embodiment focusing on its difference from other embodiments, and cross reference may be made for the same or similar sections between the embodiments.

**[0082]** The above embodiments are for the purpose of illustrating the technical solutions of the present disclosure only, and are not intended to limit the present disclosure. Although the present disclosure has been described in detail with reference to the foregoing embodiments, those of ordinary skill in the art should understand that: they can still make modifications to the technical solutions described in the foregoing embodiments, or make equivalent substitutions to some of the technical features. These modifications or substitutions do not deviate the essence of the corresponding technical solutions from the spirit and scope of the technical solutions of the embodiments of the present disclosure.

## Claims

**1.** A dust bag, wherein the dust bag is configured to be

detachably installed on a dust bag holder, and the dust bag comprises:

a dust bag body;
a clamping plate, fixedly connected to the dust bag body, wherein the clamping plate has a clamping plate opening, and the clamping plate opening serves as an inlet of the dust bag; and
a sliding plate, slidably connected to the clamping plate and configured to switch between a closed position and an open position, wherein the sliding plate shields the clamping plate opening in response to the sliding plate being in the closed position and the sliding plate exposes the clamping plate opening in response to the sliding plate being in the open position,
wherein a flexible rubber ring is disposed on an edge of the clamping plate opening, and is configured that, in response to the dust bag being installed on the dust bag holder, the clamping plate opening and a dust outlet interface on the dust bag holder are sealedly engaged.

**2.** The dust bag according to claim 1, wherein the sliding plate has a sliding plate opening;
in response to the sliding plate being in the closed position, the sliding plate opening and the clamping plate opening do not overlap, such that the sliding plate shields the clamping plate opening; and in response to the sliding plate being in the open position, the sliding plate opening and the clamping plate opening substantially coincide, such that the sliding plate exposes the clamping plate opening.

**3.** The dust bag according to claim 2, wherein the flexible rubber ring protrudes from an edge of the clamping plate opening towards the sliding plate; and in response to the sliding plate being in the open position, the flexible rubber ring protrudes through the sliding plate opening towards a direction away from the sliding plate, and is configured that the sliding plate opening and the clamping plate opening are sealedly engaged.

**4.** The dust bag according to any one of claims 1 to 3, wherein the sliding plate is slidable in a first direction relative to the clamping plate; the sliding plate comprises a position limiting bump, the position limiting bump is disposed on at least one side of the sliding plate and protrudes from the sliding plate in a second direction perpendicular to the first direction; and
the clamping plate comprises position limiting components, the position limiting components are disposed at two ends of the clamping plate in the first direction, and configured to block the position limiting bump in the first direction.

**5.** The dust bag according to any one of claims 1 to 3, wherein the sliding plate further comprises a handle, the handle is disposed on an end of the sliding plate in the first direction.

**6.** A self-cleaning dust collection seat, comprising:

a dust bag holder, disposed in a dust collection bin of the self-cleaning dust collection seat; and the dust bag according to any one of claims 1 to 5, configured to be detachably installed on the dust bag holder,
wherein a hollow cavity is provided inside the dust bag holder, and the hollow cavity serves as part of an air duct of the self-cleaning dust collection seat.

**7.** The self-cleaning dust collection seat according to claim 6, wherein

a holder side wall of the dust bag holder facing inside of the dust collection bin is provided with the dust outlet interface, the dust outlet interface is configured to be engaged with an inlet of the dust bag; and
the dust bag holder further comprises a sliding baffle slidable on the holder side wall and configured to switch between a first position and a second position, and the sliding baffle shields the dust outlet interface in response to the sliding baffle being in the first position, and the sliding baffle exposes the dust outlet interface in response to the sliding baffle being in the second position.

**8.** The self-cleaning dust collection seat according to claim 7, wherein the dust bag holder comprises a sliding chute, and at least part of the sliding baffle is located inside the sliding chute, such that the sliding baffle slides along an extension direction of the sliding chute; and
the clamping plate and the sliding plate are configured to be inserted into the sliding chute to slide along the extension direction of the sliding chute and to push the sliding baffle to slide along the extension direction of the sliding chute, such that the dust bag is installed on the dust bag holder; in response to the dust bag being installed on the dust bag holder, the sliding plate is located in the open position to expose the clamping plate opening, and the sliding baffle is located in the second position to expose the dust outlet interface; and the flexible rubber ring is abutted against an edge of the dust outlet interface, such that the clamping plate opening and the dust outlet interface are engaged.

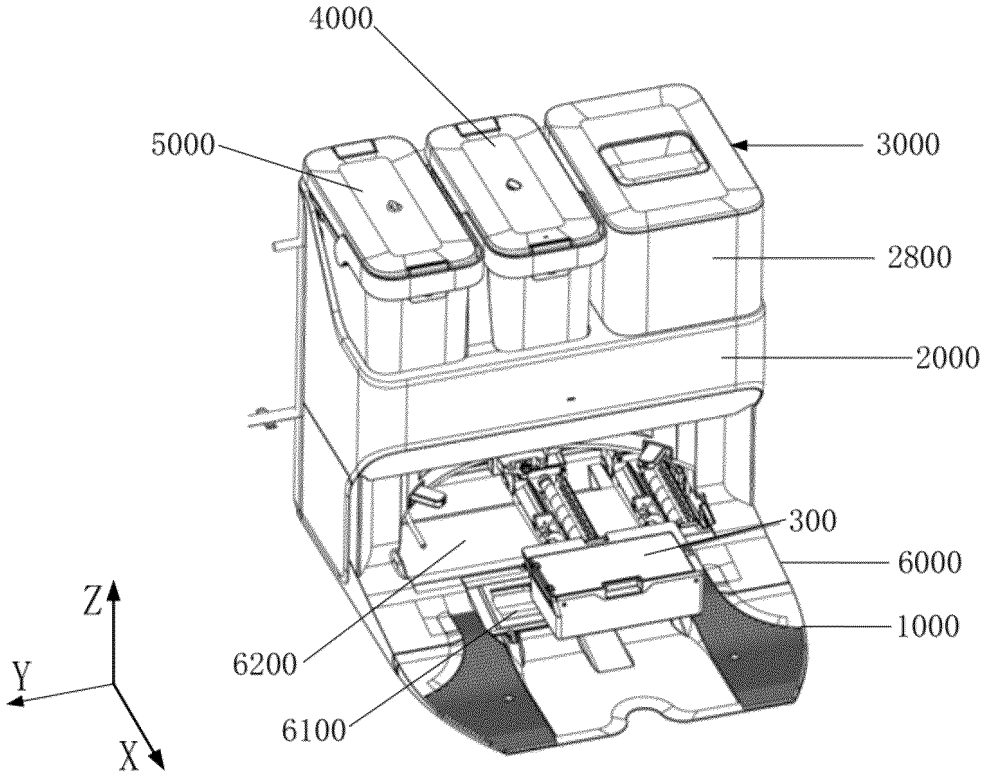
**9.** The self-cleaning dust collection seat according to claim 8, wherein the dust bag holder is provided with an elastic component, the elastic component is con-

nected to the sliding baffle and configured such that the sliding baffle has a tendency to be in the first position.

**10.** The self-cleaning dust collection seat according to claim 8, wherein the clamping plate is provided with a clamping plate slot; a snap fastener is disposed in the sliding chute; and in response to the dust bag being installed on the dust bag holder, the snap fastener is clamped into the clamping plate slot.

**11.** The self-cleaning dust collection seat according to claim 10, wherein the sliding plate is further provided with an unlocking bump, the unlocking bump is configured to disengage the snap fastener from the clamping plate slot during a process of disassembling the dust bag from the dust bag holder.

**12.** A dust collection system, comprising an automatic cleaning device and the self-cleaning dust collection seat according to any one of claims 6 to 11.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6000
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6200
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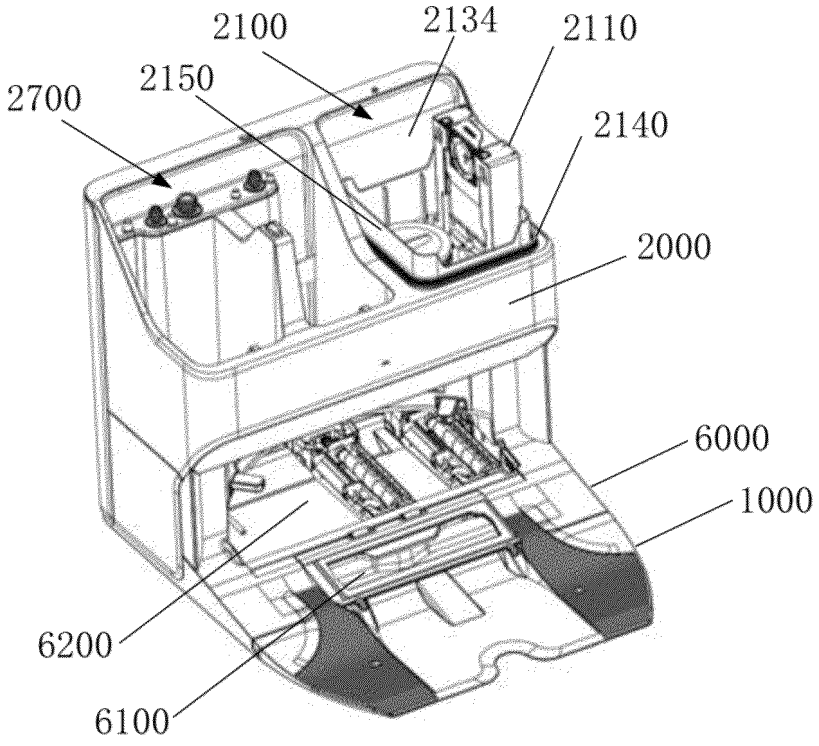
Z
Y
X

FIG. 1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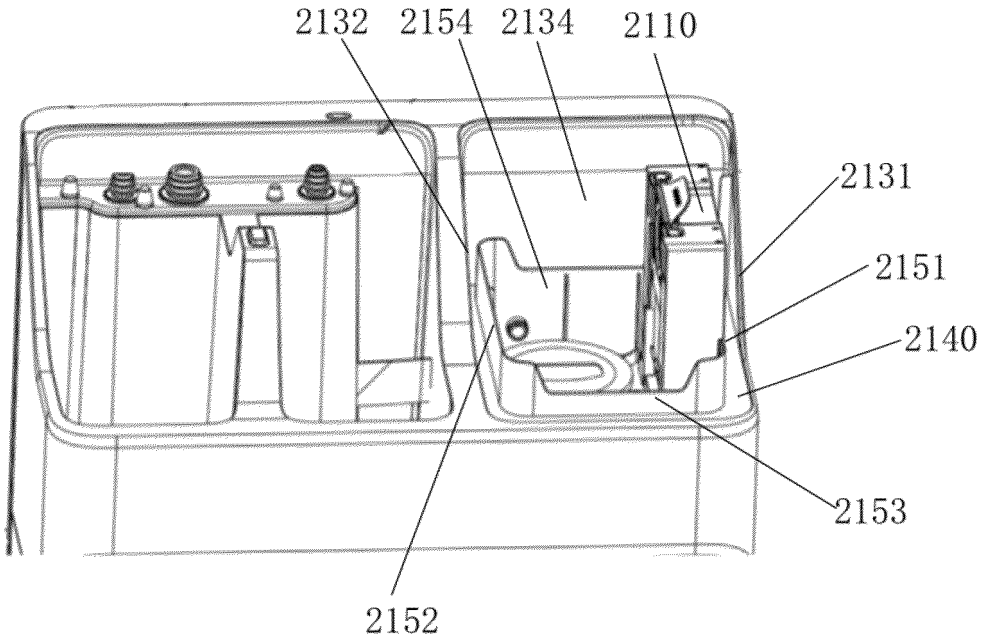
6200
6100

FIG. 2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2152

FIG. 3

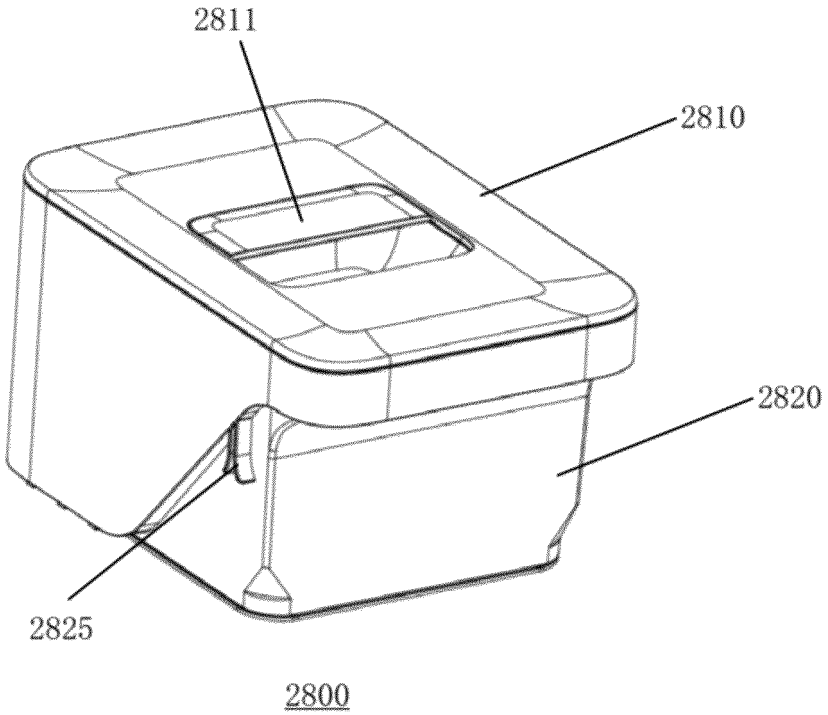
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FIG. 4

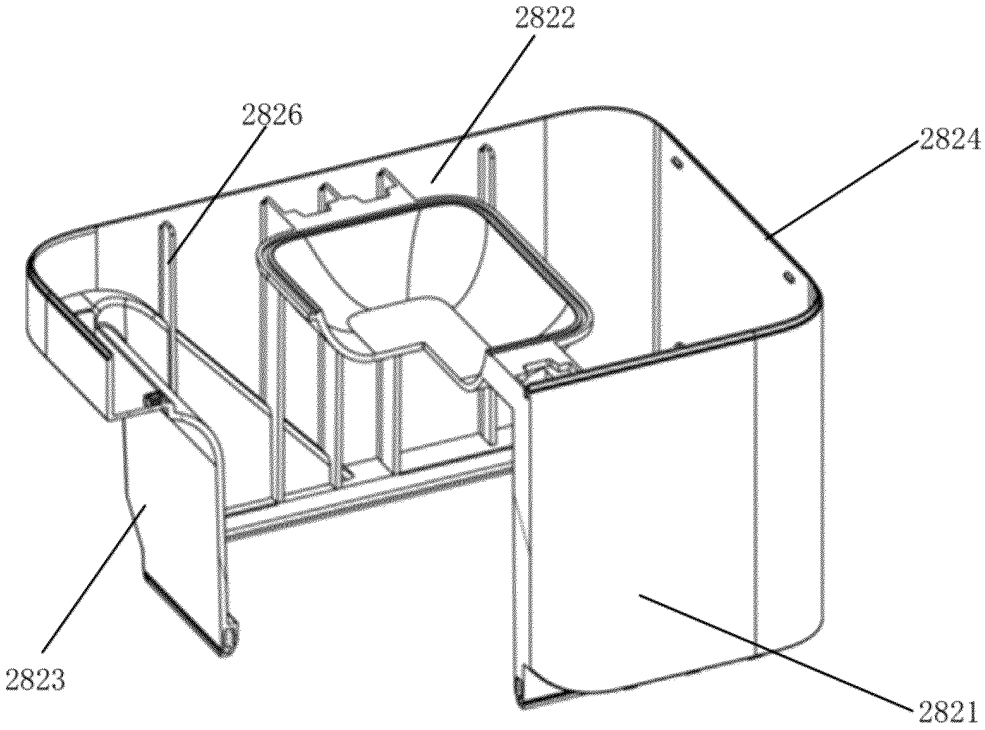



FIG. 5

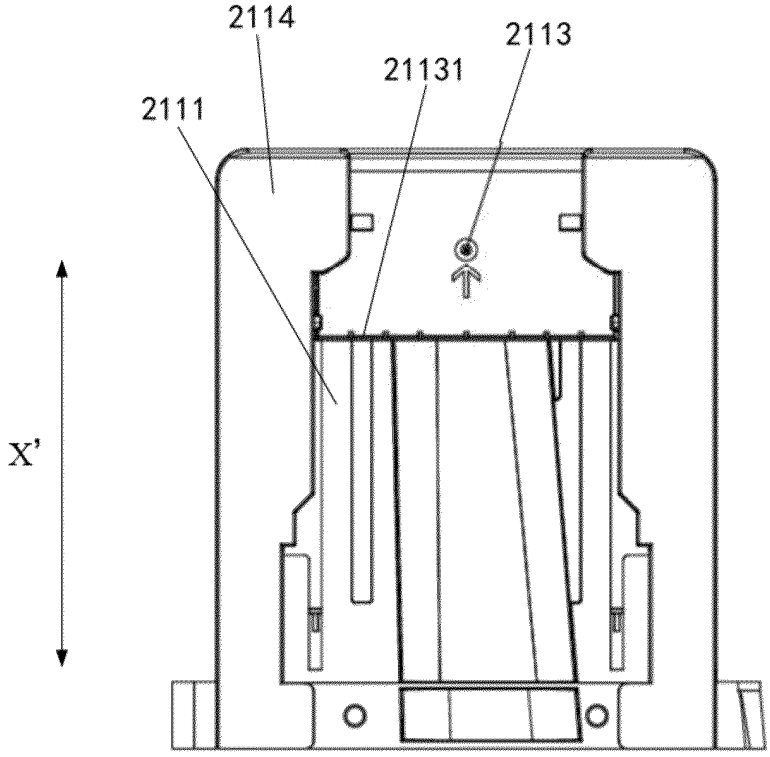



FIG. 6

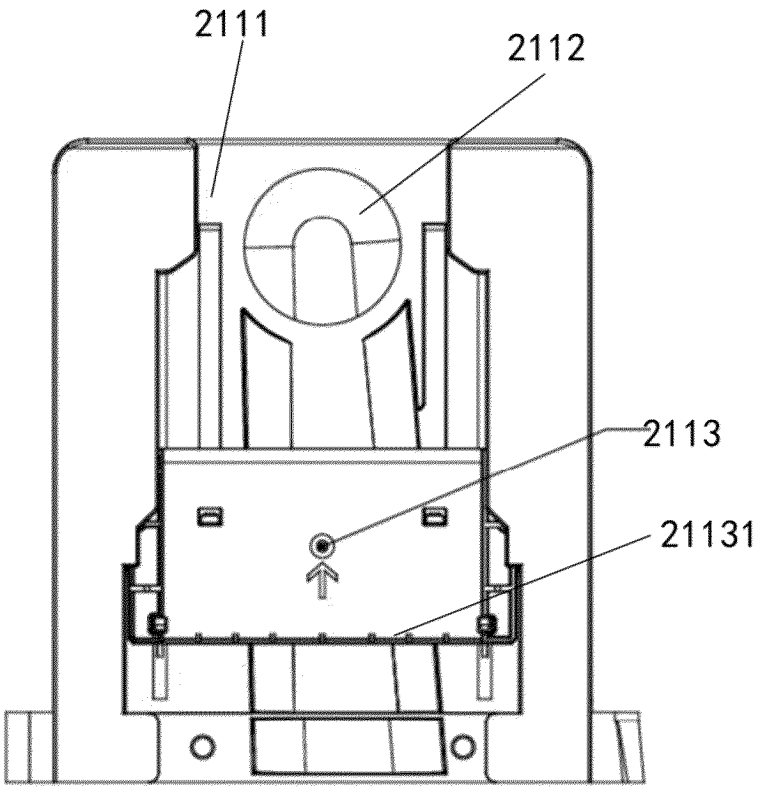
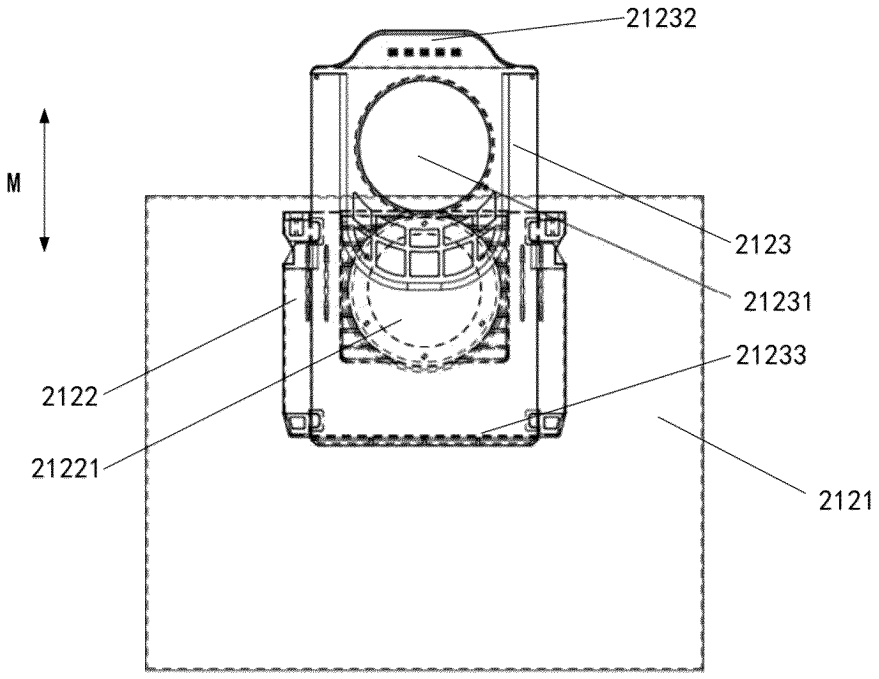

2111
2112
2113
21131

FIG. 7


21232
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2120

FIG. 8

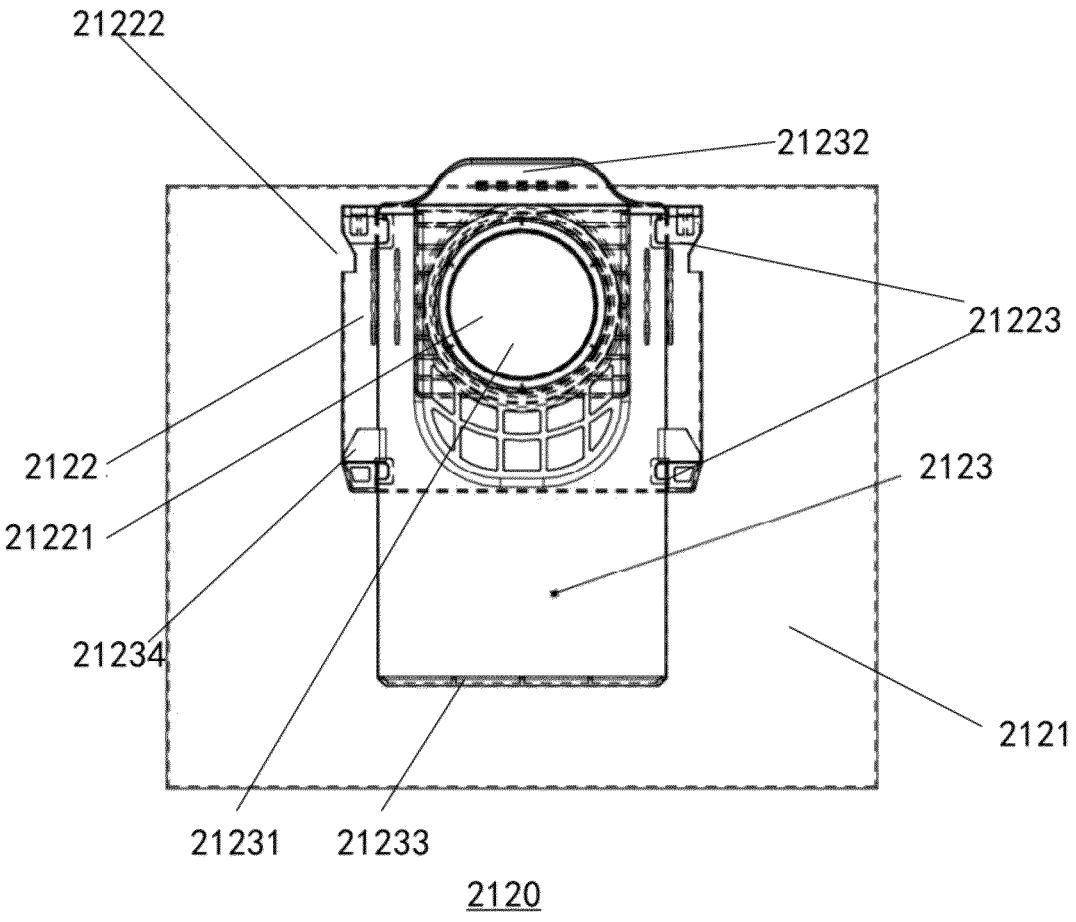
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FIG. 9

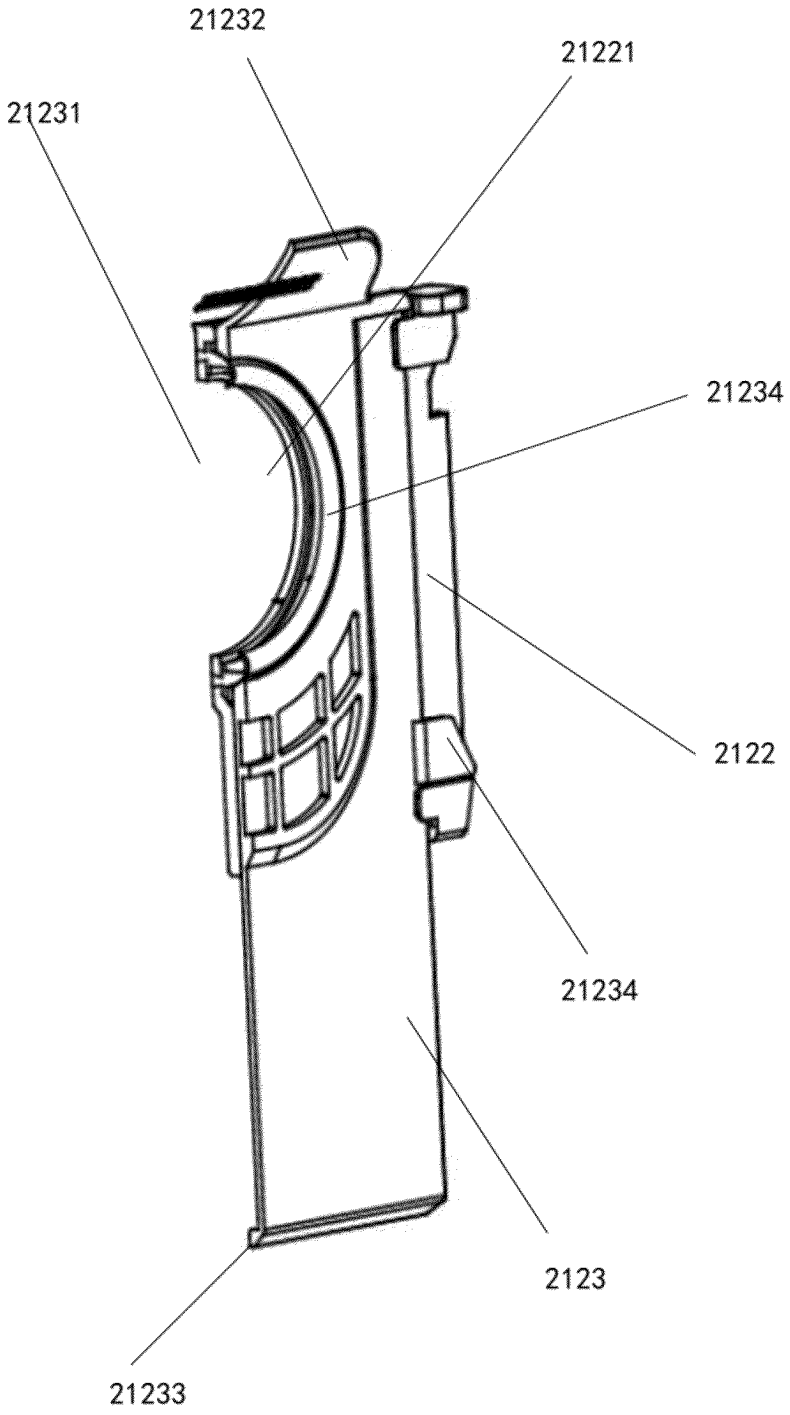



FIG. 9A

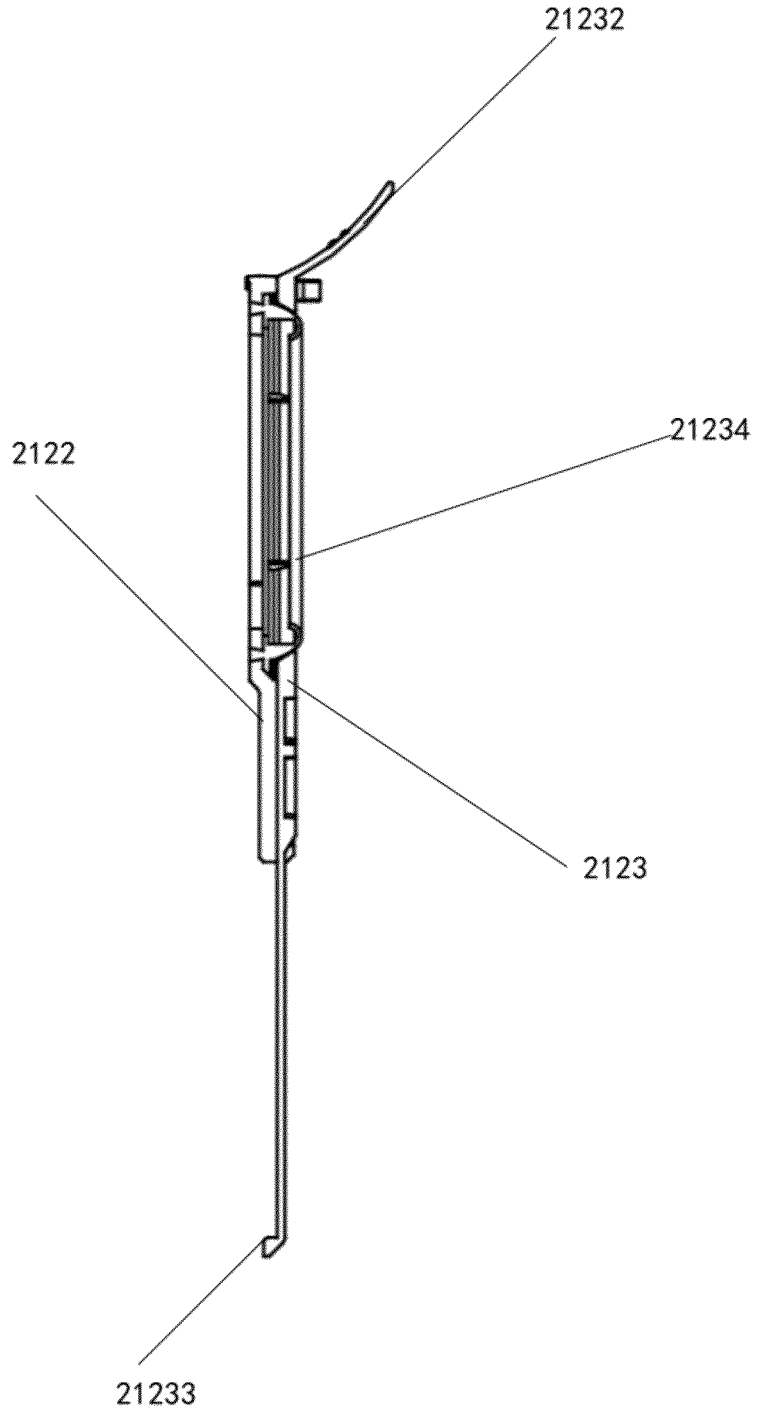



FIG. 9B

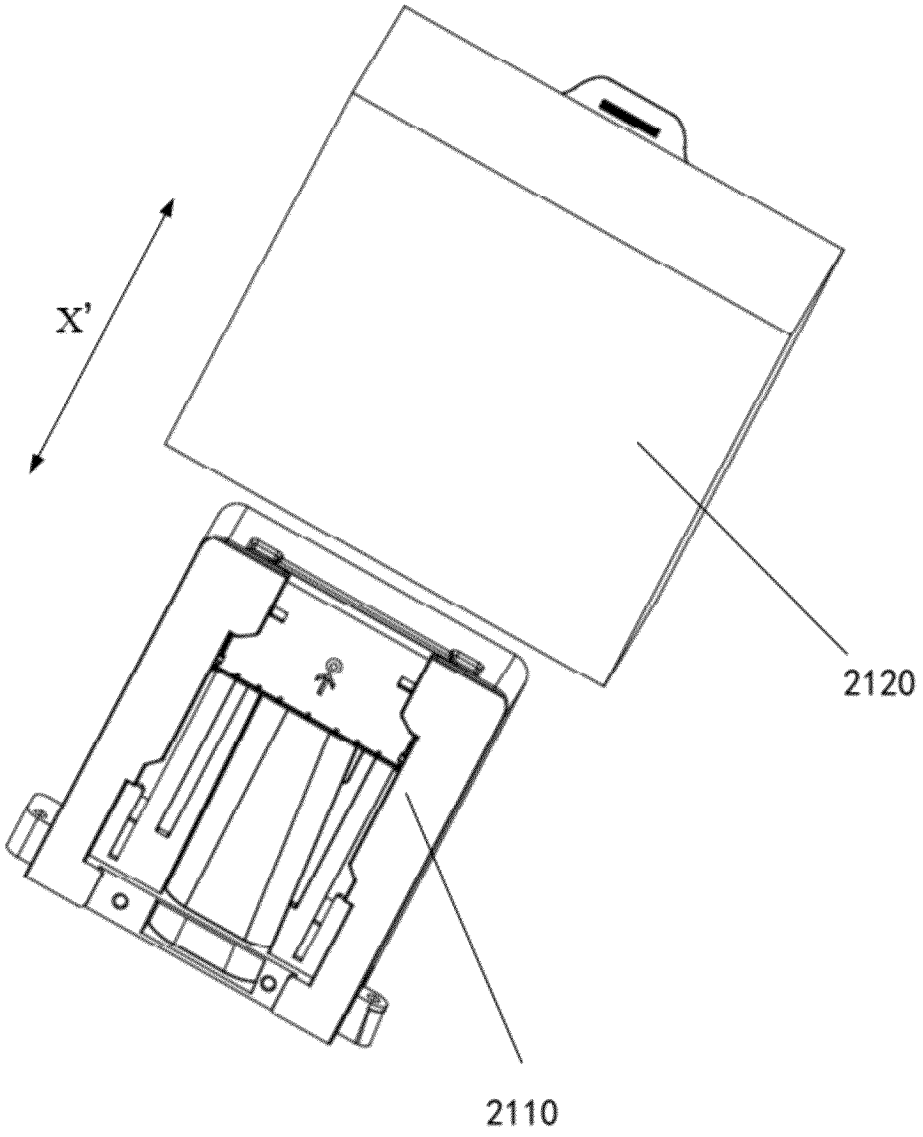
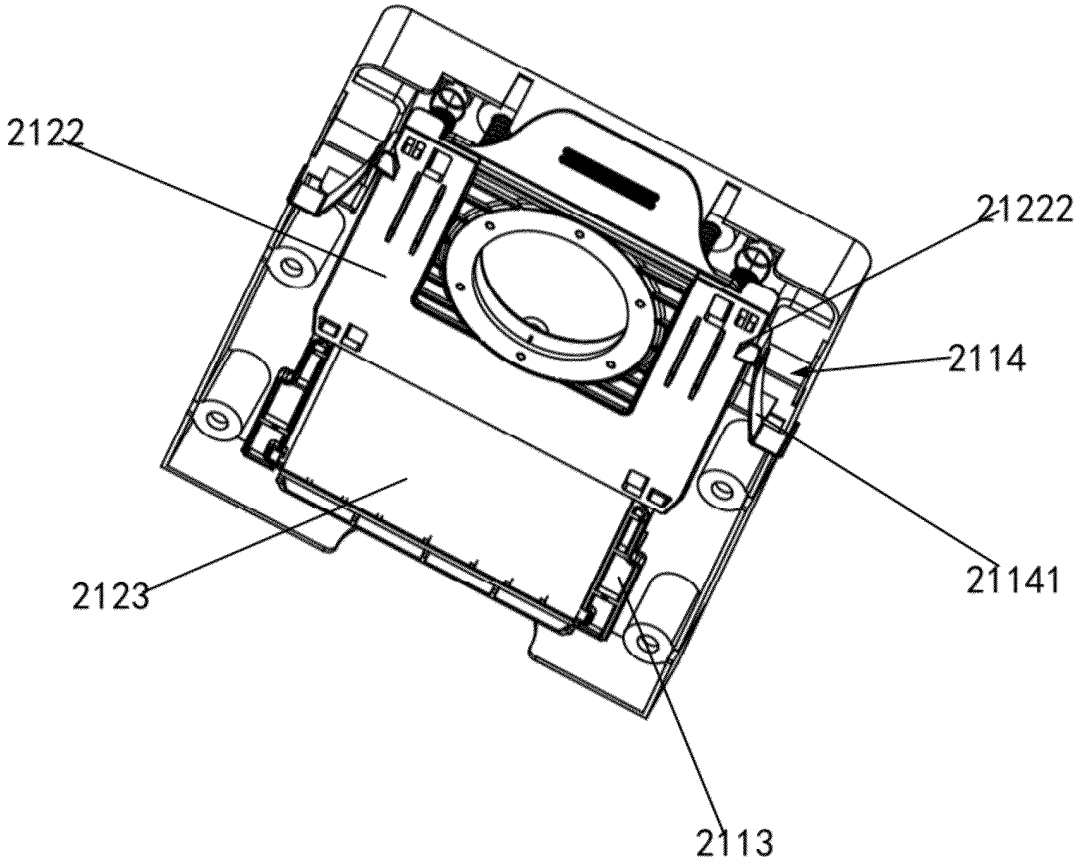



FIG. 10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21222
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21141
2123
2113

FIG. 11

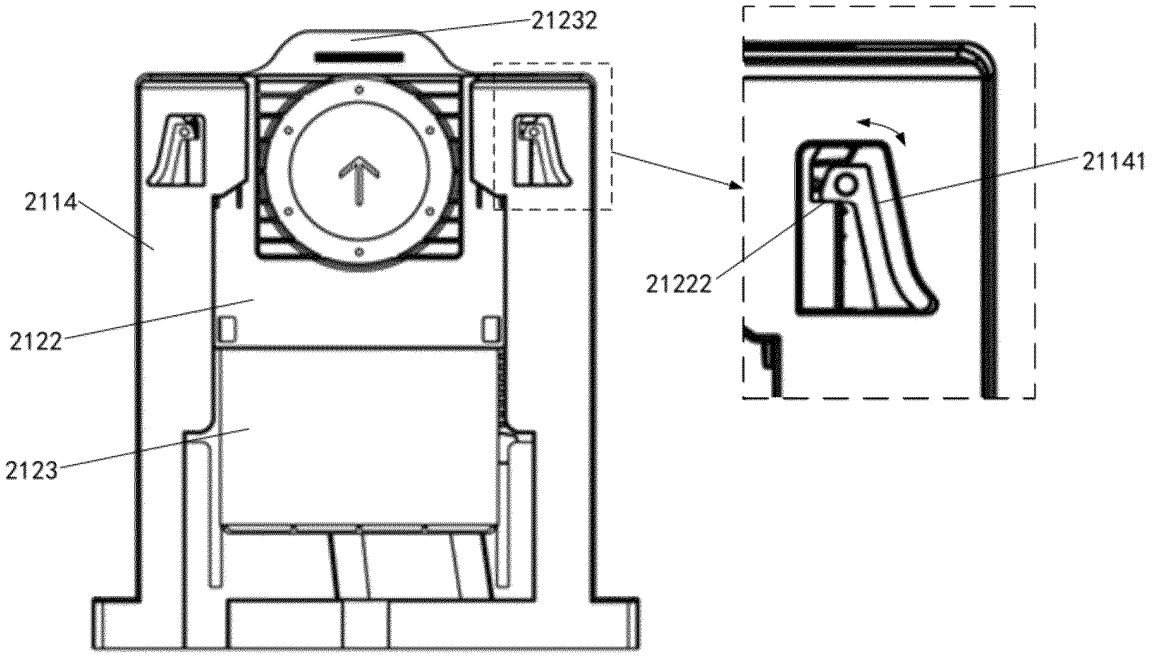
21232
2114
2122
2123
21222
21141

FIG. 12

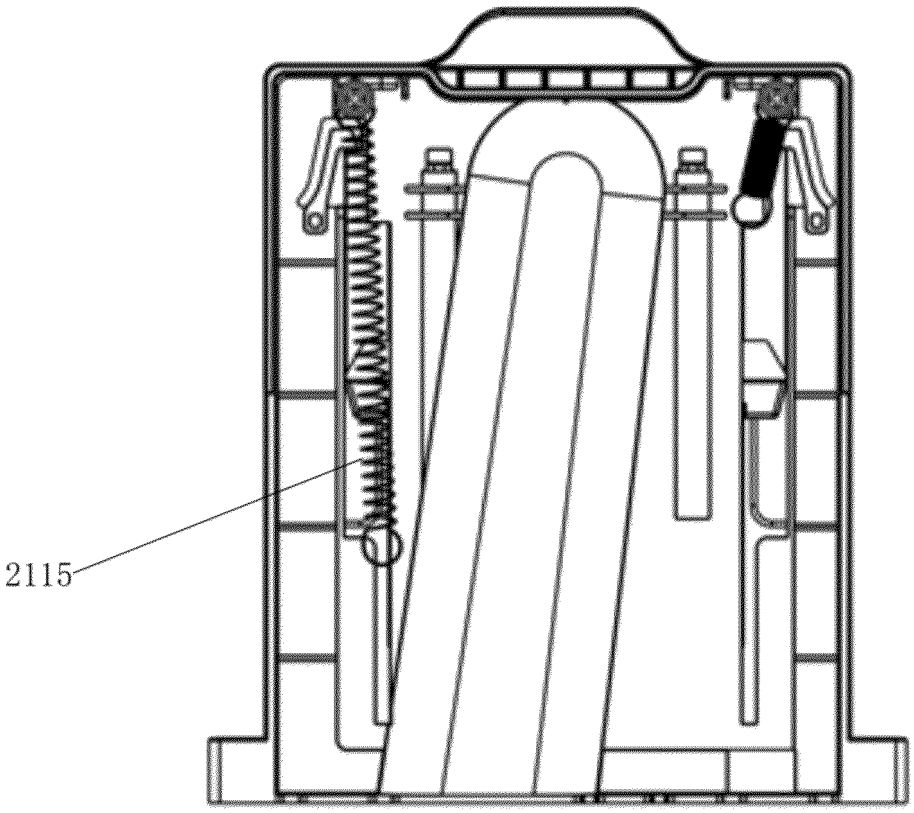


FIG. 13

# INTERNATIONAL SEARCH REPORT

International application No.
**PCT/CN2022/109756**

**A. CLASSIFICATION OF SUBJECT MATTER**

A47L 11/40(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

A47L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNTXT, VEN, DWPI, WPABS, ENTXT: 尘袋, 集尘, 卡板, 滑动, 切换, 改变, 封闭, 开启, 打开, 关闭, 遮蔽, 遮挡, 插板, 插槽, 柔性, 胶圈, dust, collection, bag, detachably, sliding, plate, clamping, switch, open, close, flexible, insert, change

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| X | CN 212186371 U (FOSHAN VIOMI ELECTRICAL TECHNOLOGY CO., LTD. et al.) 22 December 2020 (2020-12-22)<br>description, paragraphs [0041]-[0067], and figures 1-8 | 1-12 |
| X | CN 215310885 U (SHANGHAI GAUSSIAN AUTOMATION TECHNOLOGY DEVELOPMENT CO., LTD.) 28 December 2021 (2021-12-28)<br>description, paragraphs [0033]-[0047], and figures 1-5 | 1-12 |
| X | JP H07100086 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.) 18 April 1995 (1995-04-18)<br>description, paragraphs [0095]-[0154], and figures 1-37 | 1-12 |
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☑ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
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"O" document referring to an oral disclosure, use, exhibition or other means
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| **19 September 2022** | **26 September 2022** |
| Name and mailing address of the ISA/CN<br>**China National Intellectual Property Administration (ISA/CN)**<br>**No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China**<br>Facsimile No. **(86-10)62019451** | Authorized officer<br><br>Telephone No. |

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2022/109756

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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| A | US 5766283 A (VORWERK AND CO. INTERHOLDING GMBH) 16 June 1998 (1998-06-16) entire document | 1-12 |
| A | EP 0409038 A1 (SIEMENS AKTIENGESELLSCHAFT) 23 January 1991 (1991-01-23) entire document | 1-12 |

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**INTERNATIONAL SEARCH REPORT**
**Information on patent family members**

International application No.
**PCT/CN2022/109756**

| Patent document cited in search report | Publication date (day/month/year) | Patent family member(s) | Publication date (day/month/year) |
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## REFERENCES CITED IN THE DESCRIPTION

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