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(54) **CONNECTING STRUCTURE AND HANDHELD DUST COLLECTOR**

VERBINDUNGSSTRUKTUR UND HANDHALTBARER STAUBSAMMLER

STRUCTURE DE LIAISON ET COLLECTEUR DE POUSSIÈRE PORTATIF

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Description

Technical Field

[0001] The present disclosure relates to a technical field of dust collectors, and in particular to a connecting structure and a handheld dust collector.

Background

[0002] A handheld dust collector in an art known to inventors has become increasingly popular at present due to its small size and convenient carrying and use. However, since a battery is taken to provide the handheld dust collector with power, the handheld dust collector has a short operating time due to limitation of capacity of the battery, and accordingly does not complete a heavy cleaning task. In order to improve the problem, one of improvement modes of the art known to inventors is to equip with a spare and replaceable battery pack, namely, a main body of the handheld dust collector is provided with a battery box and a battery cover, as to detachably dispose the battery pack in a hollow cavity formed by the battery box and the battery cover. In this way, the battery pack does not be conveniently assembled and disassembled, and a mounting structure of the battery pack is not concise.

[0003] A device for locking an electric tool with a rechargeable battery pack is disclosed in D1 (US 2006/0055369A); a device is disclosed in D2 (US2013154563A1).

Summary

[0004] In view of this, some embodiments of the present disclosure provide a connecting structure with convenient assembling and disassembling and simple structure, and a handheld dust collector.

[0005] An aspect of some embodiments of the present disclosure provides a system, including an accessory, a device main body and a connecting structure for connecting the accessory onto the device main body, the connecting structure includes a locking member. The locking member is disposed on the device main body, and is rotatable relative to the main body.

[0006] Herein, the locking member has a first state and a second state through a rotation of the locking member. In the first state, the locking member is configured to limit a movement of the accessory relative to the device main body, and in the second state, the locking member is configured to unlock the movement of the accessory relative to the device main body, the locking member includes a pivoting portion and a first arm. The pivoting portion includes a first hinge shaft or a first axle hole. The device main body includes a second axle hole cooperated with the first hinge shaft and a second hinge shaft cooperated with the first axle hole. The first arm is connected with the pivoting portion.

[0007] Herein, the accessory is provided with a clamping and stopping structure capable of being cooperated with the first arm; the first arm has a first position and a second position through the rotation of the locking member. At the first position, the first arm is cooperated with the clamping and stopping structure, as to limit the movement of the accessory relative to the device main body. At the second position, the first arm is departed from the cooperating with the clamping and stopping structure, as to unlock the movement of the accessory relative to the device main body.

[0008] In some embodiments, the locking member further includes a second arm.

[0009] The second arm is connected with the pivoting portion, and the locking member switches between the first state and the second state through operating the second arm.

[0010] In some embodiments, a basing member is further included. The basing member is disposed between the second arm and the device main body, to provide the locking member with a biasing force of switching from the second state to the first state.

[0011] In some embodiments, the device main body is provided with a handle. An operating portion is formed by a surface on a side of the second arm opposite to a configuration side of the biasing member. The operating portion is disposed on the handle, and makes the second arm overcome the biasing force of the biasing member when subjected to pressing, so that the locking member switches to the second state from the first state.

[0012] In some embodiments, the device main body includes a beam. A first end of the beam is provided with a first bulge or a first groove. The accessory is provided with a second groove cooperated with the first bulge or a second bulge cooperated with the first groove.

[0013] In some embodiments, the beam and the handle are disposed with an included angle. The first end of the beam or a part close to the first end is connected with the handle, and the first arm is embedded into an accommodating hole disposed on the beam.

[0014] In some embodiments, the first arm includes a first inclined plane. The first inclined plane is configured to gradually incline towards a side on which the accessory is assembled from the pivoting portion to a free end of the first arm in an assembling status. The clamping and stopping structure is configured to push the first inclined plane when the accessory is assembled.

[0015] In some embodiments, the clamping and stopping structure is a bulge formed on the accessory. The clamping and stopping structure includes a limiting surface. A free end of the bulge is configured to push the first inclined plane when the accessory is assembled. In the assembling state, the free end of the first arm is cooperated with the limiting surface to limit the movement of the accessory relative to the device main body.

[0016] In some embodiments, the clamping and stopping structure includes a second inclined plane and a limiting surface. In the assembling state, a direction of

inclination of the second inclined plane is consistent with a direction of inclination of the first inclined plane, and an end of the second inclined plane at a high position is connected with the limiting surface.

[0017] An aspect of some embodiments of the present disclosure provides a handheld dust collector, including a dust collector main body and a battery pack. The battery pack is connected with the dust collector main body through the abovementioned connecting structure. Herein, an accessory includes the battery pack.

[0018] On the basis of the connecting structure and the handheld dust collector of the embodiments of the present disclosure, through the rotation of the locking member, the locking member limits the movement of the accessory relative to the main body, or unlock the movement of the accessory relative to the main body, so that the accessory needs to move relative to the main body only when the accessory is assembled on or disassembled from the device main body, with convenient assembling and disassembling and simple structure.

Brief Description of the Drawings

[0019] Through the following descriptions of the embodiments of the present disclosure with reference to the drawings, the above of the present disclosure and other objectives, features and advantages shall be clearer.

Fig. 1 is a structure diagram of a main body (a handheld portion of a handheld dust collector) in some embodiments of the present disclosure.

Fig. 2 is a structure diagram of an accessory (a battery pack) in some embodiments of the present disclosure.

Fig. 3 is a structure diagram of a locking member in some embodiments of the present disclosure.

Fig. 4 is a structure diagram of a lining structure in some embodiments of the present disclosure.

Fig. 5 is a section view when a locking member and a lining structure in some embodiments of the present disclosure are mounted together.

Fig. 6 is a section view of a battery pack in some embodiments of the present disclosure in an assembling state.

Fig. 7 is an exploded view when a battery pack, a biasing member, a locking member and a lining structure in some embodiments of the present disclosure are mounted together.

Fig. 8 is a structure diagram of a battery pack in some embodiments of the present disclosure in an assembling state.

[0020] It is to be understood that sizes of all parts shown in the drawings are not drawn according to a practical proportional relation. In addition, identical or similar reference numbers indicate identical or similar components.

[0021] Description of the following reference numbers:

1, Device main body; 11, Handle; 111, Gap; 12, Beam; 121, Bulge; 122, Accommodating hole; 13, Support column; 14, Bearing platform; 141, First bulge; 1411, Base plate; 1412, Side plate; 1413, Groove; 15, Lining structure; 151, Mounting groove; 1511, Axle hole; 1512, Second mounting column; 2, Locking member; 21, First arm; 211, First block; 212, First rod; 213, First inclined plane; 22, Second arm; 221, Second block; 2211, First mounting column; 222, Second rod; 223, Operating portion; 23, Pivoting portion; 231, Hinge shaft; 3, Accessory; 31, Groove structure; 311, Opening; 312, Groove; 32, Wiring portion; 33, Second bulge; 34, Clamping and stopping structure; 341, Limiting surface; 342, Second inclined plane; 4, Biasing member.

Detailed Description of the Embodiments

[0022] Various exemplary embodiments of the present disclosure are being described now in detail with reference to drawings. The description of the exemplary embodiments is illustrative only, and will never be intended to limit the present disclosure and application or use thereof. The present disclosure may be realized in many different forms which are not limited to the embodiments elaborated herein. These embodiments are provided to make the present disclosure thoroughly and integrally disclosed, and fully express range of the present disclosure to those skilled in the art. It is to be noted that, unless otherwise specified, relative configuration of parts and steps illustrated in these embodiments should be explained to be exemplary only rather than to limit the present disclosure.

[0023] Terms "first", "second" and the like used in the present disclosure are used for distinguishing different parts rather than indicating any order, quantity or significance. Terms "comprise" and "include" and the like are intended to indicate that factors before the terms cover factors listed after the terms, and do not rule out possibility of covering other factors. Terms "upper", "lower", "left", "right" and the like are used for indicating relative position relationships. When an absolute position of a described object is changed, the relative position relationship may be correspondingly changed.

[0024] In some embodiments of the present disclosure, when a specific device is described to be located between a first device and a second device, there may be or may not be an intermediate device between the specific device and the first device or the second device. When the specific device is described to be connected with other devices, the specific device may have or may not have the intermediate device due to being directly connected or not being directly connected with the other devices.

[0025] All terms (including technical terms or scientific terms) used in the present disclosure should have meanings identical with those understood by those of ordinary

skill in the art of the present disclosure, unless otherwise particularly defined. It is also to be understood that terms defined, for example, in a general dictionary should be explained to have the meanings consistent with those thereof in a context of the related art, rather than explained with idealized or highly formalized meanings, unless otherwise explicitly defined herein.

[0026] Technologies, methods and devices known by those of ordinary skill in the art may not be discussed in detail. However, the technologies, methods and devices should be considered as part of the description where appropriate. As shown in Fig. 1 - Fig. 8, a connecting structure of the present disclosure is arranged to connect an accessory 3 onto a device main body 1. For example, a battery pack (an accessory) is mounted on a main body of a handheld dust collector.

[0027] In some embodiments of the present disclosure, the connecting structure is shown in Fig. 1 and Fig. 6- Fig. 8. The device main body 1 is provided with a locking member 2. The locking member 2 is rotated relative to the device main body 1. The locking member 2 is provided with a first state and a second state through a rotation of the locking member 2. In the first state, the locking member 2 limits a movement of the accessory 3 relative to the device main body 1. In the second state, the locking member 2 unlocks the movement of the accessory 3 relative to the device main body 1. In this way, the accessory 3 needs to move relative to the device main body 1 only when the accessory 3 is assembled on or disassembled from the device main body 1, with convenient assembling and disassembling. Moreover, a box body and a cover body for mounting the accessory are prevented from being disposed on the device main body 1, and accordingly the structure is simpler.

[0028] As shown in Fig. 1 and Fig. 6-Fig. 8, in some embodiments, the device main body 1 includes a handle 11, a beam 12 and a support column 13. The beam 12 and the handle 11 are disposed with an included angle. A middle part of a first end of the beam 12 is connected with the handle 11. Two sides of the middle part of the first end of the beam 12 are provided with two bulges 121, and a second end of the beam 12 is connected with the support column 13.

[0029] A bearing platform 14 is disposed on the support column 13 and located at a lower side of the beam 12. The bearing platform 14 is constructed as a first bulge 141 and extends towards the first end of the beam 12. In some embodiments of the present disclosure, the first bulge 141 includes a base plate 1411 and side plates 1412 connected with the base plate 1411 and located on two sides of the base plate 1411. In some embodiments, the support column between the two side plates 1412 is provided with a groove 1413. An upper wall of the groove 1413 inclines towards a direction far away from the accessory 3 in an assembling state in a direction from a position far away from the base plate 1411 to a position of the base plate 1411.

[0030] As shown in Fig. 2 and Fig. 6 -Fig. 8, in some

embodiments, the accessory 3 includes a groove structure 31 disposed on an upper part thereof, and a second end of the groove structure 31 is disposed as an opening 311. When the battery pack serves as the accessory 3, a first end of the groove structure 31 is provided with a wiring portion 32. The wiring portion 32 is used to provide the device main body 1 with power. Two grooves 312 cooperated with the bulge 121 are configured on two sides of the wiring portion 32 and located on a side wall of the groove structure 31. In other embodiments, the first end of the beam 12 is further provided with the groove, and the accessory 3 is provided with the bulge that is capable of being cooperated with the groove.

[0031] An end part of the accessory 3 located on the second end of the groove structure 31 is provided with a second bulge 33. In the assembling state, the beam 12 is embedded on the groove structure 31, the bulge 121 is inserted into a corresponding groove 312, and the second bulge 33 is supported on the base plate 1411. In this way, the accessory 3 is suspended on the device main body 1, so that configuration of a cavity structure for accommodating the accessory is omitted, and the structure is simpler.

[0032] As shown in Fig. 3 and Fig. 5 -Fig. 8, in some embodiments, the locking member 2 includes a first arm 21 and a second arm 22 that are connected with an included angle. Two ends of a connecting position of the first arm 21 and the second arm 22 are provided with a pivoting portion 23 respectively, and the pivoting portion 23 includes a hinge shaft 231. The device main body 1 includes a lining structure 15, and one end of the lining structure 15 is provided with a mounting groove 151. A groove wall of the mounting groove 151 is provided with an axle hole 1511, and the locking member 2 is mounted on the lining structure 15 by mounting the hinge shaft 231 in the axle hole 1511. In other embodiments, the pivoting portion further includes the axle hole, and the device main body includes a hinge shaft cooperated with the axle hole.

[0033] In some embodiments, the first arm 21 includes a first block 211 and a first rod 212 that are integrally formed, and the second arm 22 includes a second block 221 and a second rod 222 that are integrally formed. The first rod 212 is connected with the second rod 222. Through the first arm 21 formed by the first block 211 and the first rod 212 and the second arm 22 formed by the second block 221 and the second rod 222, structural strength is ensured, and a material is reduced.

[0034] As shown in Fig. 5, in some embodiments, a biasing member 4, for example, a spring is disposed between the second block 221 and the lining structure 15. As shown in Fig. 3, a side surface of a side of the second block 221 facing the lining structure 15 is provided with a first mounting column 2211. As shown in Fig. 4, the lining structure 15 is provided with a second mounting column 1512, and the spring is disposed on the first mounting column 2211 and the second mounting column 1512.

[0035] In some embodiments, the handle 11 is a tubular structure. The lining structure 15 is fixedly mounted in a hollow cavity of the handle 11. In some embodiments, the lining structure 15 is mounted on the handle 11 in an interference fit manner. The beam 12 is provided with an accommodating hole 122, and a gap 111 is formed by a side wall of a part of the accommodating hole 122 passing through the tubular structure. In this way, in the assembling state, the first arm 21 is embedded into the accommodating hole 122, a partial structure of the second arm 22 is exposed outside through the gap 111, and an operating portion 223 is formed by a side surface of a side of the partial structure of the second arm 22 opposite to a side on which the spring is mounted. It is apparent that the operating portion 223 is exposed on the handle 11 through the gap 111, thereby facilitating a user to operate.

[0036] As shown in Fig. 3 and Fig. 6, in some embodiments, the first arm 21 includes a first inclined plane 213, and the first inclined plane 213 is disposed on the first block 211 and the first rod 212. In the assembling state, the first inclined plane 213 gradually inclines towards a side on which the accessory 3 is assembled from the pivoting portion 23 to a free end of the first arm 21.

[0037] In some embodiments, the second end of the groove structure 31 of the accessory 3 is provided with a clamping and stopping structure 34. As shown in Fig. 2, in some embodiments, the clamping and stopping structure 34 is constructed to a bulge disposed on the accessory 3, and the clamping and stopping structure 34 includes a limiting surface 341 and a second inclined plane 342. In the assembling state, a direction of inclination of the second inclined plane 342 is consistent with that of the first inclined plane 213, and an end of the second inclined plane 342 at a high position is connected with the limiting surface 341. When the accessory 3 is mounted into the device main body 1, namely, when the accessory 3 moves along the beam 12 relative to the device main body 1, a free end of the bulge of the clamping and stopping structure 34 pushes the first inclined plane 213, so that the accessory 3 moves successfully. When the accessory 3 moves to a position that the free end of the bulge of the clamping and stopping structure 34 is departed from the pushing of the first inclined plane 213, the locking member 2 resets under an action of the spring, so that the free end of the first arm 21 abuts against the limiting surface 341, the movement of the accessory 3 relative to the device main body 1 is limited, and accordingly the accessory 3 is reliably mounted on the device main body 1.

[0038] Some embodiments of the present disclosure provide the connecting structure, when the accessory 3 needs to be mounted on the device main body 1, the accessory 3 is made to slide along the beam 12 first. During sliding, the beam 12 is embedded into the groove structure 31, and the groove structure 31 guides the accessory 3 to slide, as to ensure that the accessory 3 successfully slide in place. Meanwhile, the free end of the bulge of the clamping and stopping structure 34 pushes

the first inclined plane 213 of the first arm 21, so that the locking member 2 rotates by taking the hinge shaft 231 as a rotation shaft.

[0039] When the free end of the clamping and stopping structure 34 pushes the first inclined plane 213, the spring is in a state of compression. When the accessory 3 continues to slide to the free end of the clamping and stopping structure 34 and is departed from the first inclined plane 213, the locking member 2 rotates under an action of the spring, so that limitation on the limiting surface 341 of the clamping and stopping structure 34 is formed by the free end of the first arm 21. Meanwhile, the bulge 121 is mounted in the groove 312 in a clamping manner, and the second bulge 33 is supported on the base plate 1411, so that the accessory 3 is ensured to be suspended at a lower part of the device main body 1.

[0040] When the accessory 3 needs to be disassembled from the device main body 1, the operating portion 223 exposed at a position of the gap 111 of the handle 11 needs to be pressed only. When the operating portion 223 is pressed, the operating portion 223 extrudes the spring, so that the locking member 2 rotates, as to ensure that the free end of the first arm 21 is departed from the limitation on the limiting surface 341 of the clamping and stopping structure 34. In this way, the accessory 3 slides out of the device main body 1 successfully.

[0041] Some embodiments of the present disclosure further provide a handheld dust collector, the handheld dust collector includes a dust collector main body and a battery pack. The battery pack is connected with the dust collector main body through the abovementioned connecting structure. Herein, an accessory includes the battery pack. As a device main body, the dust collector main body is connected with the accessory including the battery pack through the connecting structure.

[0042] It is easy for those skilled in the art to understand that all of the abovementioned embodiments are freely combined and superimposed without conflict.

Claims

1. A system, comprising an accessory, a device main body and a connecting structure for connecting the accessory onto the device main body, the connecting structure comprises:

a locking member (2), disposed on the device main body (1), and being rotatable relative to the device main body;

wherein, the locking member (2) has a first state and a second state through a rotation of the locking member (2); in the first state, the locking member (2) is configured to limit a movement of the accessory (3) relative to the device main body (1); and in the second state, the locking member (2) is configured to unlock the movement of the accessory (3) relative to the device

main body (1); the locking member (2) comprises:

a pivoting portion (23), comprising a first hinge shaft or a first axle hole, the device main body (1) comprising a second axle hole cooperated with the first hinge shaft or a second hinge shaft cooperated with the first axle hole; and

a first arm (21), connected with the pivoting portion (23);

wherein, the accessory (3) is provided with a clamping and stopping structure (34) capable of being cooperated with the first arm (21);

characterized in that, the first arm having a first position and a second position through the rotation of the locking member (2); at the first position, the first arm (21) is cooperated with the clamping and stopping structure (34), as to limit the movement of the accessory (3) relative to the device main body; and at the second position, the first arm (21) is departed from the cooperating with the clamping and stopping structure (34), as to unlock the movement of the accessory (3) relative to the device main body; the locking member (2) further comprises:

a second arm (22), connected with the pivoting portion (23), and the locking member (2) switches between the first state and the second state through operating the second arm (22);

a biasing member (4), disposed between the second arm (22) and the device main body (1), and arranged to provide the locking member (2) with a biasing force of switching from the second state to the first state;

the device main body (1) is provided with a handle (11); an operating portion (223) is formed by a surface of a side of the second arm (22) opposite to a configuration side of the biasing member (4); and the operating portion (223) is disposed on the handle (11), and makes the second arm (22) overcome the biasing force of the biasing member (4) when subjected to pressing, so that the locking member (2) switches to the second state from the first state;

the device main body (1) comprises a beam, the beam and the handle (11) are disposed with an included angle; and the first arm (21) is embedded into an accommodating hole disposed on the beam.

2. The system as claimed in claim 1, wherein, a first end of the beam is provided with a first bulge or a first groove; and the accessory (3) is provided with a second groove cooperated with the first bulge or a second bulge cooperated with the first groove.

3. The system as claimed in claim 2, wherein, the first end of the beam or a part close to the first end is connected with the handle (11).

4. The system as claimed in any one of claims 1-3, wherein, the first arm (21) comprises a first inclined plane (213); the first inclined plane (213) is configured to gradually incline towards a side on which the accessory (3) is assembled from the pivoting portion (23) to a free end of the first arm (21) in an assembling state; and the clamping and stopping structure (34) is configured to push the first inclined plane (213) when the accessory (3) is assembled.

5. The system as claimed in claim 4, wherein, the clamping and stopping structure (34) is a bulge formed on the accessory (3); the clamping and stopping structure (34) comprises a limiting surface (341); a free end of the bulge is configured to push the first inclined plane (213) when the accessory (3) is assembled; and in the assembling state, the free end of the first arm (21) is cooperated with the limiting surface (341) to limit the movement of the accessory (3) relative to the device main body (1).

6. The system as claimed in claim 4, wherein, the clamping and stopping structure (34) comprises a second inclined plane (342) and a limiting surface (341); and in the assembling state, a direction of inclination of the second inclined plane (342) is consistent with a direction of inclination of the first inclined plane (213), and an end of the second inclined plane (342) at a high position is connected with the limiting surface (341).

7. A handheld dust collector, comprising a dust collector main body and a battery pack; and the battery pack being connected with the dust collector main body through the system as claimed in any one of claims 1-6, wherein, the accessory (3) comprises the battery pack.

Patentansprüche

1. System, umfassend ein Zubehöriteil, einen Vorrichtungshauptkörper und eine Verbindungsstruktur zum Verbinden des Zubehöriteils mit dem Vorrichtungshauptkörper, wobei die Verbindungsstruktur Folgendes umfasst:

ein Arretierelement (2), das auf dem Vorrich-

tungshauptkörper (1) eingerichtet ist und relativ zum Vorrichtungshauptkörper drehbar ist; wobei das Arretierelement (2) durch eine Drehung des Arretierelements (2) einen ersten Zustand und einen zweiten Zustand aufweist; das Arretierelement (2) im ersten Zustand dazu konfiguriert ist, eine Bewegung des Zubehörteils (3) relativ zum Vorrichtungshauptkörper (1) zu begrenzen; und das Arretierelement (2) im zweiten Zustand dazu konfiguriert ist, die Bewegung des Zubehörteils (3) relativ zum Vorrichtungshauptkörper (1) zu lösen; das Arretierelement (2) Folgendes umfasst:

einen Schwenkabschnitt (23), der eine erste Scharnierwelle oder ein erstes Achsloch umfasst, wobei der Vorrichtungshauptkörper (1) ein mit der ersten Scharnierwelle zusammenwirkendes zweites Achsloch oder eine mit dem ersten Achsloch zusammenwirkende zweite Scharnierwelle umfasst; und

einen ersten Arm (21), der mit dem Schwenkabschnitt (23) verbunden ist; wobei das Zubehörteil (3) mit einer Klemm- und Stoppstruktur (34) versehen ist, die mit dem ersten Arm (21) zusammenwirken kann;

dadurch gekennzeichnet, dass der erste Arm durch die Drehung des Arretierelements (2) eine erste Position und eine zweite Position aufweist; der erste Arm (21) in der ersten Position mit der Klemm- und Stoppstruktur (34) zusammenwirkt, um die Bewegung des Zubehörteils (3) relativ zum Vorrichtungshauptkörper zu begrenzen; und der erste Arm (21) in der zweiten Position vom Zusammenwirken mit der Klemm- und Stoppstruktur (34) abgehalten wird, um die Bewegung des Zubehörteils (3) relativ zum Vorrichtungshauptkörper zu lösen; wobei das Arretierelement (2) ferner Folgendes umfasst:

einen zweiten Arm (22), der mit dem Schwenkabschnitt (23) verbunden ist, und wobei das Arretierelement (2) durch Betätigen des zweiten Arms (22) zwischen dem ersten Zustand und dem zweiten Zustand hin- und herschaltet; ein Vorspannelement (4), das zwischen dem zweiten Arm (22) und dem Vorrichtungshauptkörper (1) eingerichtet ist und angeordnet ist, um das Arretierelement (2) mit einer Vorspannkraft zum Schalten vom zweiten Zustand in den ersten Zustand zu versehen; der Vorrichtungshauptkörper (1) mit einem

Griff (11) versehen ist; durch eine Oberfläche einer Seite des zweiten Arms (22) gegenüber einer Konfigurationsseite des Vorspannelements (4) ein Betätigungsabschnitt (223) gebildet ist; und der Betätigungsabschnitt (223) auf dem Griff (11) eingerichtet ist und bewirkt, dass der zweite Arm (22) die Vorspannkraft des Vorspannelements (4) überwindet, wenn Druck auf ihn ausgeübt wird, sodass das Arretierelement (2) vom ersten Zustand in den zweiten Zustand schaltet;

der Vorrichtungshauptkörper (1) einen Träger umfasst, wobei der Träger und der Griff (11) in einem eingeschlossenen Winkel eingerichtet sind; und der erste Arm (21) in einem Aufnahmeloch eingebettet ist, das auf dem Träger eingerichtet ist.

2. System nach Anspruch 1, wobei ein erstes Ende des Trägers mit einer ersten Aufwölbung oder einer ersten Nut versehen ist; und das Zubehörteil (3) mit einer zweiten Nut versehen ist, die mit der ersten Aufwölbung oder einer zweiten Aufwölbung, die mit der ersten Nut zusammenwirkt, zusammenwirkt.

3. System nach Anspruch 2, wobei das erste Ende des Trägers oder ein Teil nahe dem ersten Ende mit dem Griff (11) verbunden ist.

4. System nach einem der Ansprüche 1-3, wobei der erste Arm (21) eine erste geneigte Ebene (213) umfasst; die erste geneigte Ebene (213) dazu konfiguriert ist, sich allmählich zu einer Seite zu neigen, auf der das Zubehörteil (3) vom Schwenkabschnitt (23) zu einem freien Ende des ersten Arms (21) in einen Zusammenfügungszustand zusammengefügt wird; und die Klemm- und Stoppstruktur (34) dazu konfiguriert ist, auf die erste geneigte Ebene (213) zu drücken, wenn das Zubehörteil (3) zusammengefügt wird.

5. System nach Anspruch 4, wobei die Klemm- und Stoppstruktur (34) eine auf dem Zubehörteil (3) gebildete Aufwölbung ist; die Klemm- und Stoppstruktur (34) eine Begrenzungsfläche (341) umfasst; ein freies Ende der Aufwölbung dazu konfiguriert ist, auf die erste geneigte Ebene (213) zu drücken, wenn das Zubehörteil (3) zusammengefügt wird; und das freie Ende des ersten Arms (21) im Zusammenfügungszustand mit der Begrenzungsfläche (341) zusammenwirkt, um die Bewegung des Zubehörteils (3) relativ zum Vorrichtungshauptkörper (1) zu begrenzen.

6. System nach Anspruch 4, wobei die Klemm- und

Stoppstruktur (34) eine zweite geneigte Ebene (342) und eine Begrenzungsfläche (341) umfasst; und eine Neigungsrichtung der zweiten geneigten Ebene (342) im Zusammenfügezustand mit einer Neigungsrichtung der ersten geneigten Ebene (213) übereinstimmt und ein Ende der zweiten geneigten Ebene (342) an einer hohen Position mit der Begrenzungsfläche (341) verbunden ist.

7. Handhaltbarer Staubsammler, der einen Staubsammlerhauptkörper und einen Akku umfasst; und wobei der Akku mit dem Staubsammlerhauptkörper durch das System nach einem der Ansprüche 1-6 verbunden ist, wobei das Zubehörteil (3) den Akku umfasst.

Revendications

1. Système comprenant un accessoire, un corps principal de dispositif et une structure de liaison pour lier l'accessoire au corps principal de dispositif, la structure de liaison comprenant :
- un élément de verrouillage (2), disposé sur le corps principal de dispositif (1), et pouvant tourner par rapport au corps principal de dispositif ; dans lequel l'élément de verrouillage (2) a un premier état et un second état grâce à une rotation de l'élément de verrouillage (2) ; dans le premier état, l'élément de verrouillage (2) est configuré pour limiter un mouvement de l'accessoire (3) par rapport au corps principal de dispositif (1) ; et dans le second état, l'élément de verrouillage (2) est configuré pour déverrouiller le mouvement de l'accessoire (3) par rapport au corps principal de dispositif (1) ; l'élément de verrouillage (2) comprenant :
- une partie pivotante (23), comprenant un premier arbre de charnière ou un premier trou d'essieu, le corps principal de dispositif (1) comprenant un second trou d'essieu coopérant avec le premier arbre de charnière ou un second arbre de charnière coopérant avec le premier trou d'essieu ; et un premier bras (21), relié à la partie pivotante (23) ; dans lequel l'accessoire (3) est pourvu d'une structure de serrage et d'arrêt (34) capable de coopérer avec le premier bras (21) ;
- caractérisé en ce que** le premier bras ayant une première position et une seconde position grâce à la rotation de l'élément de verrouillage (2) ; dans la première position, le premier bras

(21) coopère avec la structure de serrage et d'arrêt (34), de manière à limiter le mouvement de l'accessoire (3) par rapport au corps principal de dispositif ; et dans la seconde position, le premier bras (21) s'écarte de la coopération avec la structure de serrage et d'arrêt (34), de manière à débloquent le mouvement de l'accessoire (3) par rapport au corps principal de dispositif ; l'élément de verrouillage (2) comprend en outre :

un second bras (22), relié à la partie pivotante (23), et l'élément de verrouillage (2) commute entre le premier état et le second état par l'actionnement du second bras (22) ; un élément de base (4), disposé entre le second bras (22) et le corps principal de dispositif (1), et agencé pour fournir à l'élément de verrouillage (2) une force de sollicitation permettant de passer du second état au premier état ; le corps principal de dispositif (1) est pourvu d'une poignée (11) ; une partie fonctionnelle (223) est formée par une surface d'un côté du second bras (22) opposé à un côté de configuration de l'élément de sollicitation (4) ; et la partie fonctionnelle (223) est disposée sur la poignée (11) et permet au second bras (22) de surmonter la force de sollicitation de l'élément de sollicitation (4) lorsqu'il est soumis à une pression, de sorte que l'élément de verrouillage (2) passe en second état à partir du premier état ; le corps principal de dispositif (1) comprend une poutre, la poutre et la poignée (11) sont disposées en comportant un angle ; et le premier bras (21) est intégré dans un trou de réception disposé sur la poutre.

2. Système selon la revendication 1, dans lequel une première extrémité de la poutre est pourvue d'un premier renflement ou d'une première rainure ; et l'accessoire (3) est pourvu d'une seconde rainure coopérant avec le premier renflement ou d'un second renflement coopérant avec la première rainure.
3. Système selon la revendication 2, dans lequel la première extrémité de la poutre ou une partie proche de la première extrémité est reliée à la poignée (11).
4. Système selon l'une quelconque des revendications

1 à 3, dans lequel le premier bras (21) comprend un premier plan incliné (213) ;

le premier plan incliné (213) est configuré pour s'incliner progressivement vers un côté sur lequel l'accessoire (3) est assemblé depuis la partie pivotante (23) jusqu'à une extrémité libre du premier bras (21) dans un état d'assemblage ; et la structure de serrage et d'arrêt (34) est configurée pour pousser le premier plan incliné (213) lorsque l'accessoire (3) est assemblé.

5. Système selon la revendication 4, dans lequel la structure de serrage et d'arrêt (34) est un renflement formé sur l'accessoire (3) ; la structure de serrage et d'arrêt (34) comprend une surface de limitation (341) ;

une extrémité libre du renflement est configurée pour pousser le premier plan incliné (213) lorsque l'accessoire (3) est assemblé ; et dans l'état d'assemblage, l'extrémité libre du premier bras (21) coopère avec la surface de limitation (341) pour limiter le mouvement de l'accessoire (3) par rapport au corps principal de dispositif (1).

6. Système selon la revendication 4, dans lequel la structure de serrage et d'arrêt (34) comprend un second plan incliné (342) et une surface de limitation (341) ; et dans l'état d'assemblage, un sens d'inclinaison du second plan incliné (342) est cohérent avec un sens d'inclinaison du premier plan incliné (213), et une extrémité du second plan incliné (342) en position haute est reliée avec la surface de limitation (341) .

7. Collecteur de poussière portatif, comprenant un corps principal de collecteur de poussière et un bloc-batterie ; et le bloc-batterie étant connecté au corps principal du collecteur de poussière par l'intermédiaire du système selon l'une quelconque des revendications 1 à 6, dans lequel l'accessoire (3) comprend le bloc-batterie.

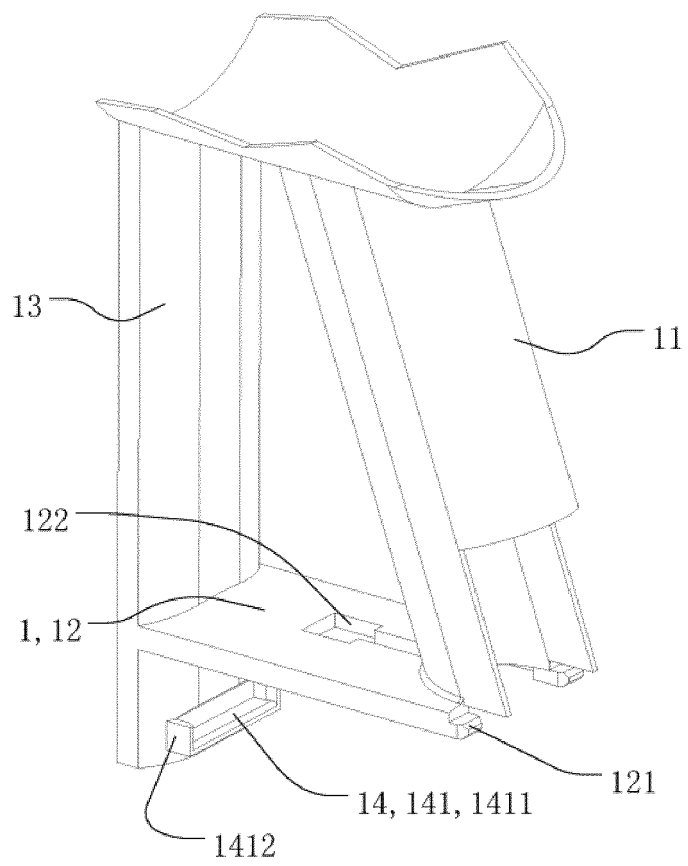


Fig. 1

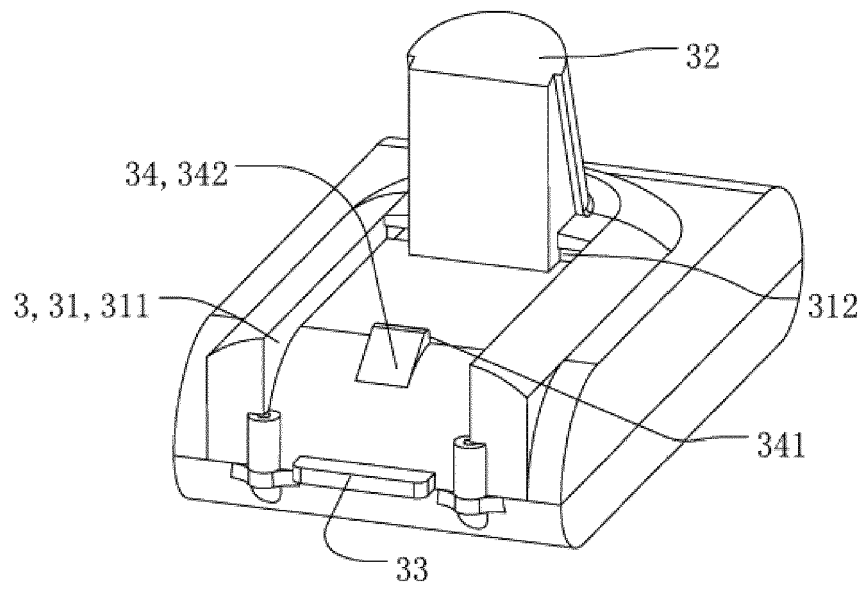


Fig. 2

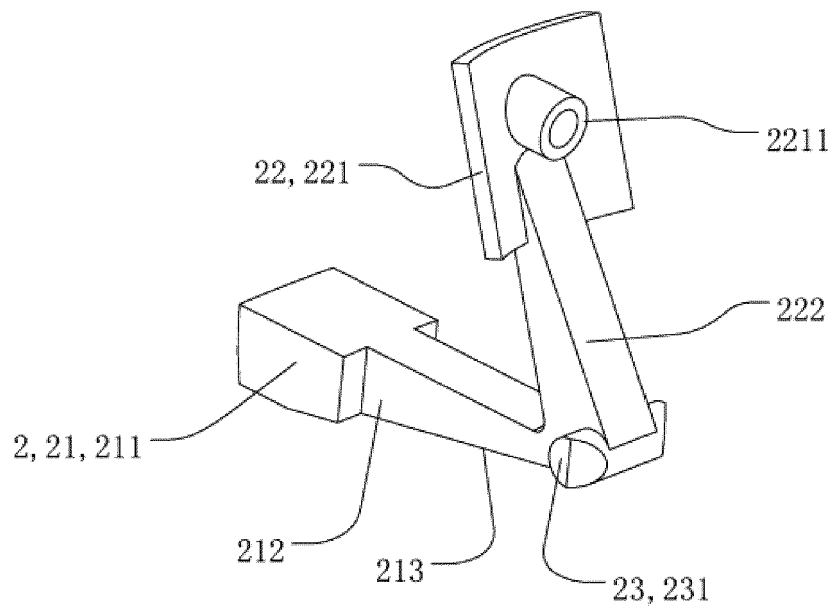


Fig. 3

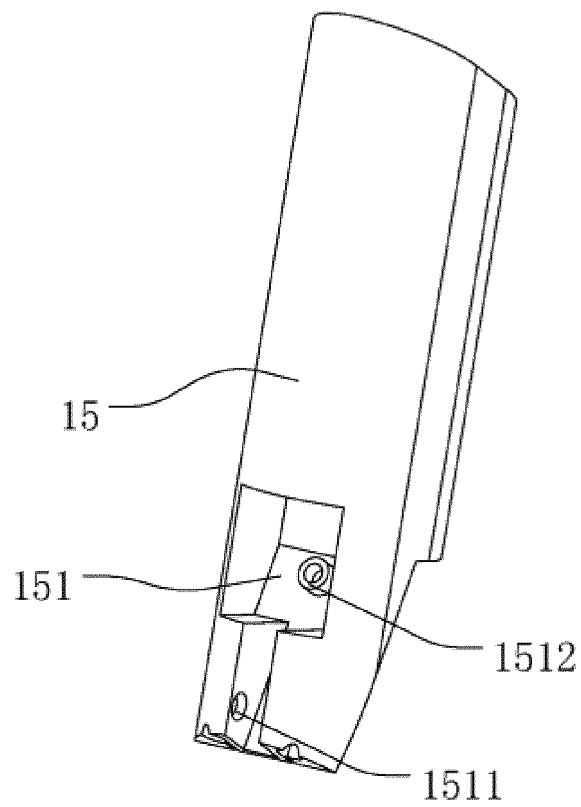


Fig. 4

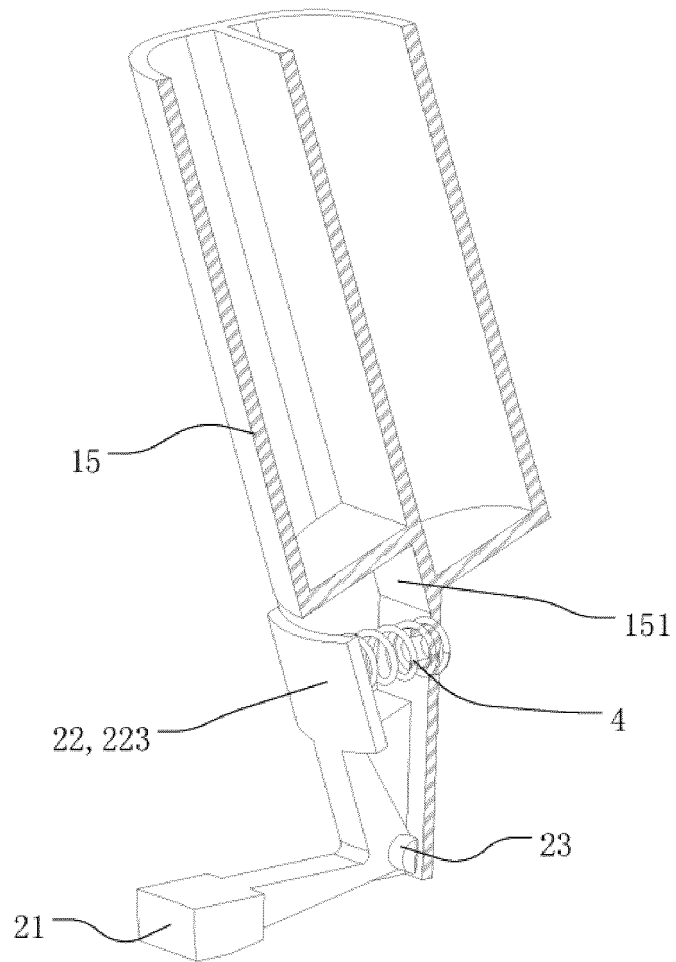


Fig. 5

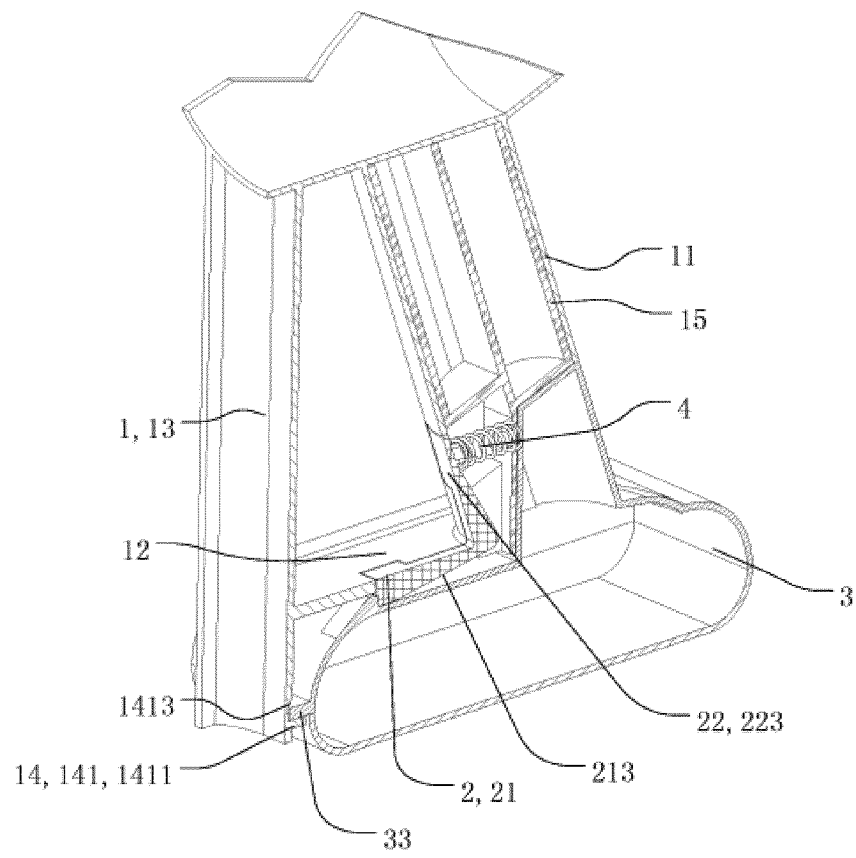


Fig. 6

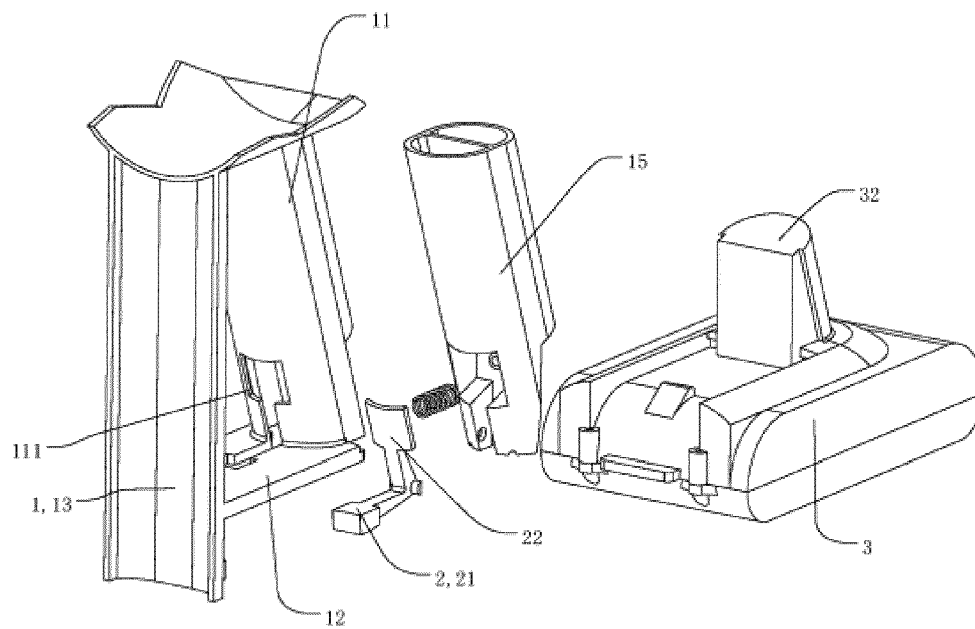


Fig. 7

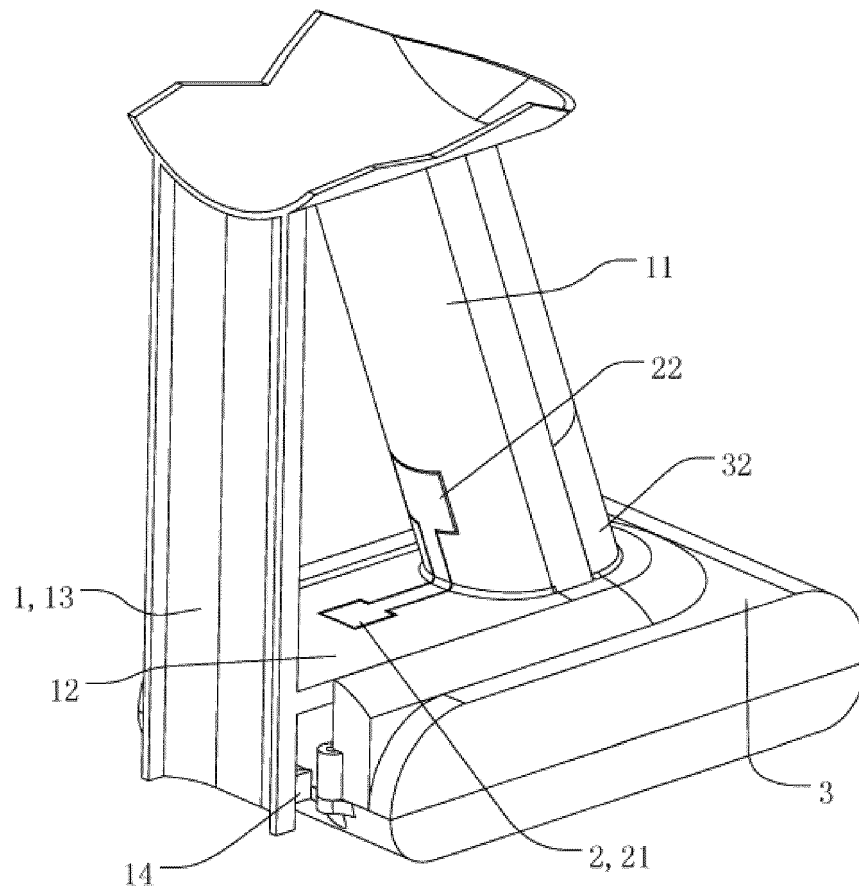


Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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