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(54) **VACUUM CLEANER**

STAUBSAUGER

ASPIRATEUR

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The embodiment relates to a vacuum cleaner.

2. Description of the Related Art

[0002] In general, a vacuum cleaner is an apparatus that suctions air containing dust by using suction force generated by a suction motor mounted on the inner part of a main body thereof and filters the dust through a dust separating device.

[0003] Such a vacuum cleaner may be generally classified into a canister type in which a suction nozzle is provided separately from the main body and is connected to the main body by a connection pipe and an upright type in which the suction nozzle is coupled to the main body.

[0004] Meanwhile, the known vacuum cleaner includes a cleaner main body and a dust separating device that is in communication with the cleaner main body to separate dust from air. Such a dust separating device generally separates the dust by using a cyclone principle.

[0005] EP 1 728 459 A2 relates to a cyclone dust collecting apparatus with means for reducing inlet pressure loss, wherein a cyclone dust collecting apparatus according to an embodiment comprises a housing centrifugally separating and collecting dust from drawn-in air and discharging cleaned air, a housing cover connected to an upper part of the housing, a discharge cover openably connected to a lower part of the housing, and a filter assembly. The housing includes an air inlet, a cyclone unit centrifugally separating dust from external air drawn in through the air inlet, an inflow guide pipe having a substantially curved shape and guiding the whole air drawn in through the air inlet to the cyclone unit, a dust collection unit formed at one side of the cyclone unit to collect the separated dust, and an air outlet where the dust-separated air is discharged.

[0006] EP 1 632 162 A2 relates to a cyclonic separator for a suction cleaner and assembly of such separators, wherein a cyclonic separator for a suction cleaner comprises a cyclone body of which at least part is afforded by components which fit together at interfaces extending axially of the cyclone body. The components may also afford air inlet and dust outlet passages, and at least partially define a dust-collecting chamber.

SUMMARY OF THE INVENTION

[0007] The embodiment provides a vacuum cleaner that includes a dust separating device having improved dust separation performance and is easily fabricated.

[0008] According to an aspect of the present invention, a vacuum cleaner includes: a cleaner main body in which

a suction motor is provided; and a dust separating unit which is in communication with the cleaner main body and is configured to separate dust in air, wherein the dust separating unit includes a first main body and a second main body coupled to the first main body and the second main body includes a plurality of sub-bodies coupled to each other.

[0009] According to embodiments, since a dust separating device and a dust chamber are provided as separate articles to be removably mounted on a main body, the dust chamber can have a simple structure and a light weight.

[0010] Further, in order to remove dust stored in the dust chamber, a user merely separates only the dust chamber from the main body. Therefore, user convenience can be improved.

[0011] Further, since a dust separating unit and a filter unit which are coupled to each other are both removably mounted on the main body, the dust separating unit and the filter unit can be cleaned by separating the dust separating unit and the filter unit from the main body.

[0012] Since a first main body constituting the dust separating unit is rotatably coupled to a second main body, the inner part of the dust separating unit can be cleaned while the first main body rotates. In addition, since a first case and a second case that constitute the filter unit are rotatably coupled to each other, a filter housed in the second case can be cleaned or replaced while the second case rotates.

[0013] Further, according to the embodiments, a plurality of bodies is coupled to each other to form a complete dust separating unit. Accordingly, since the bodies are fabricated and thereafter, the bodies are coupled to each other, the number of molds for fabricating the bodies is decreased to save cost and the dust separating unit is easily fabricated.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014]

FIG. 1 is a perspective view of a vacuum cleaner with a dust separating device according to an embodiment;

FIG. 2 is a perspective view of a vacuum cleaner from which a dust chamber is separated;

FIG. 3 is a perspective view of a vacuum cleaner from which the dust separating device is separated;

FIG. 4 is a perspective view of the dust separating device according to the embodiment;

FIG. 5 is an exploded perspective view of the dust separating device;

FIG. 6 is a perspective view of a dust separating device while a first main body rotates;

FIG. 7 is a bottom perspective view of the dust separating device while the first main body rotates;

FIG. 8 is a bottom perspective view of the dust separating device while a second case of a filter unit

rotates in FIG. 7;

FIG. 9 is a cross-sectional view of a dust separating unit according to an embodiment;

FIG. 10 is a perspective view of a distribution unit according to an embodiment;

FIG. 11 is a perspective view of a dust chamber according to an embodiment; and

FIG. 12 is an exploded perspective view of the dust chamber.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0015] Hereinafter, embodiments will be described in detail with reference to the accompanying drawings.

[0016] FIG. 1 is a perspective view of a vacuum cleaner with a dust separating device according to an embodiment, FIG. 2 is a perspective view of a vacuum cleaner from which a dust chamber is separated, and FIG. 3 is a perspective view of a vacuum cleaner from which the dust separating device is separated.

[0017] In FIG. 1, a canister-type vacuum cleaner is shown as one example, but the spirit of the embodiment may also be applied to an upright-type vacuum cleaner.

[0018] Referring to FIGS. 1 to 3, the vacuum cleaner 1 according to the embodiment includes a main body 10 including a suction motor therein, a dust separating device 100 that is removably mounted on the main body 10 and separates dust in air, and a dust chamber 200 that is removably mounted on the main body 10 and stores the dust separated by the dust separating device 100.

[0019] Specifically, a plurality of wheels 12 is provided in the main body 10 to easily move the main body 10. A mounting section 13 on which the dust chamber 200 is mounted is formed in the main body 10. A fixation plate 14 for fixing the dust chamber 200 is formed above the mounting section 13.

[0020] A housing section 18 housing the dust separating device 100 is formed in the upper part of the main body 10. In addition, a cover member 20 covering the dust separating device 100 while the dust separating device 100 is accommodated in the housing section 18 is provided in the main body 10. One end of the cover member 20 is rotatably coupled to the main body 10 by a hinge and the other end of the cover member 20 is removably coupled to the fixation plate 14.

[0021] A coupling button 22 for coupling the cover member 20 to the fixation plate 14 is provided in the cover member 20. In addition, an end portion of the coupling button 22 is selectively engaged in the fixation plate 14.

[0022] As described above, as the cover member 20 covers the dust separating device 100, the dust separating device 100 is not viewed from the outside, thereby improving an aesthetic sense.

[0023] In addition, a part of the dust separating device 100 is seated on the fixation plate 14 while the dust separating device 100 is housed in the housing section 18. Further, an opening 16 that allows the dust separated by the dust separating device 100 to move to the dust cham-

ber 200 is formed in the fixation plate 14. The opening 16 is in communication with a dust discharge portion of the dust separating device 100 to be described later.

[0024] In the embodiment, since the dust separating device 100 and the dust chamber 200 are provided as separate articles to be each removably mounted on the main body 10, the dust chamber 200 may have a simple structure and a light weight. Therefore, in order to remove the dust, since a user merely separates only the dust chamber 200 from the main body 10, user convenience is improved.

[0025] Meanwhile, a plurality of suction holes 15 for introducing air containing dust into the dust separating device 100 are formed in the fixation plate 14. In FIG. 3, two suction holes 15 are formed as one example.

[0026] Hereinafter, the structure of the dust separating device will be described in detail.

[0027] FIG. 4 is a perspective view of the dust separating device according to the embodiment, FIG. 5 is an exploded perspective view of the dust separating device, and FIG. 6 is a perspective view of a dust separating device while a first main body rotates.

[0028] Referring to FIGS. 4 to 6, the dust separating device 100 includes a dust separating unit 110 separating dust in air and a filter unit 150 that is coupled to the outer part of the dust separating unit 110 and filters the air discharged from the dust separating unit 110.

[0029] First, the structure of the dust separating unit 110 will be described.

[0030] The dust separating unit 110 separates the dust in air by cyclone flow. The dust separating unit 110 includes a first main body 112 and a second main body 120 to which the first main body 112 is rotatably coupled.

[0031] In addition, the second main body 120 includes a first sub-body 121 and a second sub-body 122 that has a shape corresponding to the first sub-body 121 and is coupled to the first sub-body 121.

[0032] That is, in the embodiment, the dust separating unit 110 has a complete shape by coupling a plurality of bodies. In addition, the first sub-body 121 is coupled to the second sub-body 122 in a direction parallel to a cyclone axis C. Herein, the cyclone axis C represents a central axis of the cyclone flow.

[0033] As such, as the plurality of bodies is coupled to each other to complete the dust separating unit 110, the dust separating unit 110 is easily fabricated.

[0034] That is, compared with a case in which one complete dust separating unit is fabricated, the number of molds for forming the bodies 112, 121, and 122 may be reduced and the structure of the mold may be simple in a case in which the bodies 112, 121, and 122 are separately fabricated. Accordingly, the bodies 112, 121, and 122 may be easily fabricated and a fabrication cost of the dust separating unit 110 may be reduced.

[0035] A dust discharge portion 114 through which the dust separated from air is formed in the first main body 112. The dust discharge portion 114 is formed at the center of the first main body 112. In addition, a coupling lever

113 is formed in the first main body 112 to couple the first main body 112 to the second main body 120.

[0036] A pair of hinges 115 for rotatably coupling the first main body 112 to the second main body 120 is formed in the second main body 120. As the first main body 112 is rotatably coupled to the second main body 120, the inner part of the dust separating unit 110 may be easily cleaned while the first main body 112 rotates.

[0037] Meanwhile, suction portions 123 and 124 for suctioning air and dust are formed in the first sub-body 121 and the second sub-body 122, respectively. That is, the dust separating unit 110 includes plural suction portions 123 and 124. The suction portions 123 and 124 extend in tangential directions of the bodies 121 and 122 in order to generate the cyclone flow.

[0038] In addition, the suction portions 123 and 124 are positioned at both sides of the dust discharge portion 114. In addition, hinge coupled portions 125 and 126 to which the hinges 115 of the first main body 112 are coupled are formed in the first and second sub-bodies 121 and 122. Further, discharge holes (see 137 and 137 of FIG. 9) for discharging air without dust are formed in the first and second sub-bodies 121 and 122, respectively. In addition, filter bodies 127 and 128 for filtering air are coupled onto surfaces on which the discharge holes (see 137 and 138 of FIG. 9) are formed.

[0039] Moreover, air discharge portions 129 and 130 that allow air passing through the discharge holes (see 137 and 138 of FIG. 9) to move to the filter unit 150 are formed in the first and second sub-bodies 121 and 122.

[0040] Coupling portions 133 and 134 that are coupled to each other by fastening a screw and coupling bosses 132 for coupling the first and second sub-bodies 121 and 122 to the filter unit 150 are formed in the first and second sub-bodies 121 and 122. In addition, coupling ribs 135 and 136 to which the coupling lever 113 of the first main body 112 is coupled are formed in the first and second sub-bodies 121 and 122.

[0041] Next, the structure of the filter unit 150 will be described.

[0042] FIG. 7 is a bottom perspective view of the dust separating device while the first main body rotates, FIG. 8 is a bottom perspective view of the dust separating device while a second case of a filter unit rotates in FIG. 7, and FIG. 9 is a cross-sectional view of a dust separating unit according to an embodiment.

[0043] Referring to FIGS. 4 to 9, the filter unit 150 includes a first case 152 coupled to the dust separating unit 110, a second case 160 rotatably coupled to the first case 152, and a filter 170 seated on the second case 160.

[0044] Specifically, a pair of openings 153 for introducing air of the air discharge portions 129 and 130 is formed in the first case 152. In addition, a handle 154 for user's gripping is formed in the upper part of the first case 152.

[0045] A pair of hinge coupled portions 155 to which a pair of hinges 164 of the second case 160 are coupled are formed in the lower part of the first case 152. Further, a coupling protrusion 156 to which a coupling lever 162

of the second case 160 is selectively coupled is formed in the first case 152.

[0046] Therefore, while the second case 160 rotates with respect to the first case 150, the user may replace the filter 170 or clean the filter 170.

[0047] In addition, a plurality of fastening holes 157 to which screws are fastened is formed in the first case 152. Therefore, when the screws are fastened to the plurality of fastening holes 157, the screws are fastened to fastening bosses 132 of the dust separating unit 110, such that the filter unit 150 and the dust separating unit 110 are coupled to each other. In addition, an outlet 161 for discharging air passing through the filter 170 is formed in the second case 160.

[0048] As such, since the dust separating unit 110 and the filter unit 150 are coupled to each other, when the user raises the filter unit 150 while gripping the handle 154, both the dust separating unit 110 and the filter unit 150 may be drawn out from the main body 10.

[0049] Meanwhile, at least one noise reducing portion 139 for reducing noise generated while air flows is formed in the air discharge portions 129 and 130. The noise reducing portion partitions passages of the air discharge portions 129 and 130 into a plurality of passages and extends in a direction parallel to an air flowing direction in the air discharge portions.

[0050] Hereinafter, an operation of the dust separating device 100 will be described.

[0051] Air containing dust is suctioned into the dust separating unit 110 through the pair of suction portions 123 and 124. Therefore, as air is suctioned into the dust separating unit 110 through each of the suction portions 123 and 124, a pair of cyclone flows corresponding to each other is formed in the dust separating unit 110.

[0052] As such, as the pair of cyclone flows occur in a single space, an air flow passage area is increased and air passage loss is decreased, such that separation performance may be increased.

[0053] The pair of cyclone flows are generated at each of both sides of the dust separating unit 110 to move to the center and the cyclone flows meet each other in the center. As a result, a stronger cyclone flow than the cyclone flow which occurs at each of the suction portions 123 and 124 occurs in the center of the dust separating unit 110.

[0054] Therefore, in a case in which the pair of cyclone flows concentrate on the center of the dust separating unit 110, a flow intensity is increased, such that dust separation performance may be further improved compared with a case in which a single cyclone flow occurs in the same space.

[0055] In addition, the dust which moves to the center of the dust separating unit 110 may be discharged to the outside through the dust discharge portion 114 by the strong cyclone flow, as a result, the discharge performance of the dust may be improved.

[0056] While the air which is suctioned into the dust separating unit 110 circles on the inner peripheral surface

of the dust separating unit 110, the air moves to and concentrates on the center of the dust separating unit 110. During this process, air and dust are separated from each other while receiving different centrifugal forces by a difference between their weights.

[0057] In addition, the separated dust is discharged from the center of the dust separating unit 110 to the dust discharge portion 114 and the discharged dust moves along the dust discharge portion 114 to be introduced into the dust chamber 200.

[0058] On the contrary, air from which the dust is separated passes through the filter bodies 127 and 128 and thereafter, moves to the air discharge portions 129 and 130 through the discharge holes 137 and 138. In addition, the air discharged to the air discharge portions 129 and 130 moves to the filter unit 150.

[0059] Meanwhile, the user may clean the inner part of the dust separating unit 110 or replace the filter bodies 127 and 128 while the first main body 112 rotates.

[0060] FIG. 10 is a perspective view of a distribution unit according to an embodiment.

[0061] Referring to FIG. 10, the distribution unit 300 according to the embodiment distributes the air introduced into the main body 10 to the dust separating device 100. Although not shown, the distribution unit 300 may be provided in the main body 10.

[0062] The distribution unit 300 includes a body 310 in which a main passage 312 is formed in the inner part thereof, an inlet 320 through which air containing dust is suctioned into the body 310, and a pair of branch portions 332 and 334 that allow the air introduced into the body 310 to separately flow.

[0063] Therefore, the air which is introduced into the main passage 312 through the inlet 320 moves to each of the suction portions 123 and 124 of the dust separating unit 110 while being separated into the branch portions 332 and 334.

[0064] In this case, the inlet 320 inclines to any one branch portion in order to prevent a big foreign material introduced into the main passage 312 from being hung in the main passage.

[0065] FIG. 11 is a perspective view of a dust chamber according to an embodiment and FIG. 12 is an exploded perspective view of the dust chamber.

[0066] Referring to FIGS. 11 and 12, the dust chamber 200 includes a dust collecting body 210 storing dust and a cover member 250 coupled to the upper part of the dust collecting body 210.

[0067] Specifically, a handle 212 which can be gripped by the user is formed in the dust collecting body 210. In addition, a coupling lever 214 which is selectively coupled to the fixation plate 14 is formed in the upper part of the handle 212.

[0068] A plurality of pressing members for pressing the stored dust is formed in the dust collecting body 210. The plurality of pressing members include a first pressing member 220 rotatably coupled to the dust collecting body 210 and a second pressing member 230 formed integral-

ly with the dust collecting body 210. The second pressing member 230 is formed integrally with a fixation shaft 232 which protrudes upwards on the bottom of the dust collecting body 210.

5 [0069] The first pressing member 220 includes a pressing plate 221 for pressing dust by the interaction with the second pressing member 230 and a rotation shaft 222 which is formed integrally with the pressing plate 221. In addition, the rotation shaft 222 is coupled to the fixation shaft 232.

10 [0070] Further, a driven gear (not shown) for transferring a driving force to the first pressing member 220 is coupled to the outer part of the dust collecting body 210. A shaft of the driven gear penetrates the dust collecting body 210 to be coupled to the rotation shaft 222. The driven gear engages with a driving gear (not shown) and the driving gear is coupled to a shaft of a compression motor. Accordingly, when the compression motor rotates, the driving gear rotates and the driven gear rotates by the rotation of the driving gear. In addition, the first pressing member 220 coupled to the driven gear rotates by the rotation of the driven gear. Further, the dust stored in the dust collecting body is compressed while the first pressing member 220 rotates. In this case, as the compression motor, a motor which is rotatable in both directions may be adopted, as a result, the first pressing member 220 is rotatable in both directions (clockwise direction and counterclockwise direction). In addition, the compression motor and the driving gear may be provided in the main body 10 as an example.

30 [0071] Meanwhile, a dust introduction portion 252 into which the dust separated from the dust separating device 100 is introduced is formed in the cover member 250. In addition, the dust introduction portion 252 is in communication with the opening 16 of the fixation plate 14.

35 [0072] Hereinafter, the flow of air in the vacuum cleaner will be described.

[0073] When suction force is generated by the suction motor provided in the main body 10, air containing dust is introduced into the main body 10. The air introduced into the main body 10 is introduced into the distribution unit 300 and thereafter, is distributed into the suction portions 123 and 124 of the dust separating unit 110.

40 [0074] The air introduced into the dust separating unit 110 is separated from the dust while spirally flowing on the inner peripheral surface of the dust separating unit 110. In addition, the separated dust is discharged into the dust discharge portion 114 and the air of the dust discharge portion 114 passes through the opening 16 of the fixation plate 14 and thereafter, moves to the dust chamber 200 through the dust introduction portion 252.

45 [0075] On the contrary, the separated air is discharged from the dust separating unit 110 to move to the filter unit 150. The air which moves to the filter unit 150 is filtered while passing through the filter 170 and thereafter, is introduced into the main body 10. The air introduced into the main body 10 passes through the suction motor and thereafter, is discharged to the outside of the main body

10.

the dust chamber (200) is removably mounted on the other side of the main body (10).

Claims

1. A vacuum cleaner (1), comprising:

a cleaner main body (10) in which a suction motor is provided; and
a dust separating unit (110) which is in communication with the cleaner main body (10) and is configured to separate dust in air, wherein the dust separating unit (110) includes a first main body (112) and a second main body (120) coupled to the first main body (112), and the second main body (120) includes a plurality of sub-bodies (121, 122) coupled to each other, **characterized in that** the first main body (112) includes a dust discharge portion (114) through which the dust separated from the air is discharged, and each of the plurality of sub-bodies (121, 122) includes a suction portion (123, 124) into which air containing dust is introduced.

2. The vacuum cleaner (1) of claim 1, wherein the first main body (112) is rotatably coupled to the second main body (120).

3. The vacuum cleaner (1) of claim 1, wherein the dust separating unit (110) separates the dust in the air by cyclone flow, and the plurality of sub-bodies (121, 122) are coupled to each other in a direction parallel to a cyclone flow axis.

4. The vacuum cleaner (1) of claim 1, wherein an air discharge portion (129, 130) for discharging air and a filter member (127, 128) filtering the discharged air are provided in each of the plurality of sub-bodies (121, 122).

5. The vacuum cleaner (1) of claim 1, further comprising:

a filter unit (150) coupled to the outer part of the dust separating unit (110) and including a filter (170) filtering the air discharged from the dust separating unit (110).

6. The vacuum cleaner (1) of claim 5, further comprising:

a dust chamber (200) storing the dust separated from the dust separating unit (110), wherein the dust separating unit (110) is removably mounted on one side of the main body (10) while being coupled to the filter unit (150), and

7. The vacuum cleaner (1) of claim 6, wherein a cover member (20) covering the dust separating unit (110) and the filter unit (150) is included in the main body (10) while the dust separating unit (110) and the filter unit (150) are mounted on the main body (10).

8. The vacuum cleaner (1) of claim 6, wherein a fixation plate (14) to which the dust chamber (200) is fixed is provided on the main body (10), and an opening (16) for allowing the dust separating unit (110) and the dust chamber (200) to be in communication with each other is formed on the fixation plate (14).

9. The vacuum cleaner (1) of claim 5, wherein a first case (152) coupled to the dust separating unit (110) and a second case (160) coupled to the first case (152) are included in the filter unit (150), and the filter (170) is positioned between the first case (152) and the second case (160).

Patentansprüche

1. Staubsauger (1), der Folgendes umfasst:

einen Reiniger-Hauptkörper (10), in dem ein Saugmotor vorgesehen ist; und
eine Staub-Trenneinheit (110), die in Kommunikation mit dem Reiniger-Hauptkörper (10) steht und konfiguriert ist, Staub in der Luft zu trennen, wobei die Staub-Trenneinheit (110) einen ersten Hauptkörper (112) und einen zweiten Hauptkörper (120), der an den ersten Hauptkörper gekoppelt ist, umfasst und der zweite Hauptkörper (120) mehrere Unterkörper (121, 122), die aneinander gekoppelt sind, umfasst, **dadurch gekennzeichnet, dass** der erste Hauptkörper (112) einen Staub-Abgabeabschnitt (114), durch den der Staub, der von der Luft getrennt worden ist, abgegeben wird, umfasst, und jeder der mehreren Unterkörper (121, 122) einen Saugabschnitt (123, 124), in den Luft, die Staub enthält, eingeleitet wird, umfasst.

2. Staubsauger (1) nach Anspruch 1, wobei der erste Hauptkörper (112) an den zweiten Hauptkörper (120) drehbar gekoppelt ist.

3. Staubsauger (1) nach Anspruch 1, wobei die Staub-Trenneinheit (110) den Staub in der Luft durch einen Zyklonstrom trennt und

die mehreren Unterkörper (121, 122) in einer Richtung parallel zu einer Zyklonstrom-Achse aneinander gekoppelt sind.

4. Staubsauger (1) nach Anspruch 1, wobei ein Luft-Abgabeabschnitt (129, 130) zum Abgeben von Luft und ein Filterelement (127, 128), das die abgegebene Luft filtert, in jedem der mehreren Unterkörper (121, 122) vorgesehen sind. 5
5. Staubsauger (1) nach Anspruch 1, der ferner Folgendes umfasst: 10

eine Filtereinheit (150), die an den äußeren Abschnitt der Staub-Trenneinheit (110) gekoppelt ist und einen Filter (170), der die Luft, die von der Staub-Trenneinheit (110) abgegeben worden ist, filtert, umfasst. 15
6. Staubsauger (1) nach Anspruch 5, der ferner Folgendes umfasst: 20

eine Staubkammer (200), die den Staub, der von der Staub-Trenneinheit (110) getrennt worden ist, lagert, 25

wobei die Staub-Trenneinheit (110) an einer Seite des Hauptkörpers (10) abnehmbar befestigt ist, während sie an die Filtereinheit (150) gekoppelt ist und 30

die Staubkammer (200) an der anderen Seite des Hauptkörpers (10) abnehmbar befestigt ist. 35
7. Staubsauger (1) nach Anspruch 6, wobei ein Abdeckungselement (20), das die Staub-Trenneinheit (110) und die Filtereinheit (150) abdeckt, in dem Hauptkörper (10) enthalten ist, während die Staub-Trenneinheit (110) und die Filtereinheit (150) an dem Hauptkörper (10) befestigt sind. 40
8. Staubsauger (1) nach Anspruch 6, wobei eine Fixierplatte (14), an der die Staubkammer (200) fixiert ist, auf dem Hauptkörper (10) vorgesehen ist und eine Öffnung (16), die ermöglicht, dass die Staub-Trenneinheit (110) und die Staubkammer (200) miteinander in Kommunikation stehen, an der Fixierplatte (14) gebildet ist. 45
9. Staubsauger (1) nach Anspruch 5, wobei ein erstes Gehäuse (152), das an die Staub-Trenneinheit (110) gekoppelt ist, und ein zweites Gehäuse (160), das an das erste Gehäuse (152) gekoppelt ist, in der Filtereinheit (150) enthalten sind und der Filter (170) zwischen dem ersten Gehäuse (152) und dem zweiten Gehäuse (160) positioniert ist. 50

Revendications

1. Aspirateur (1), comprenant :

un corps principal d'aspirateur (10) dans lequel est prévu un moteur d'aspiration ; et une unité de séparation de poussière (110) qui est en communication avec le corps principal d'aspirateur (10) et qui est configurée pour séparer la poussière dans l'air, dans lequel l'unité de séparation de poussière (110) inclut un premier corps principal (112) et un second corps principal (120) couplé au premier corps principal (112), et le second corps principal (120) inclut une pluralité de sous-corps (121, 122) couplés les uns aux autres, **caractérisé en ce que** le premier corps principal (112) inclut une portion de décharge de poussière (114) à travers laquelle la poussière séparée vis-à-vis de l'air est déchargée, et chacun de la pluralité de sous-corps (121, 122) inclut une portion d'aspiration (123, 124) dans laquelle de l'air contenant des poussières est introduit.

2. Aspirateur (1) selon la revendication 1, dans lequel le premier corps principal (112) est couplé de manière rotative au second corps principal (120).

3. Aspirateur (1) selon la revendication 1, dans lequel l'unité de séparation de poussière (110) sépare la poussière dans l'air par un écoulement en cyclone, et la pluralité de sous-corps (121, 122) sont couplés les uns aux autres dans une direction parallèle à un axe de l'écoulement en cyclone.

4. Aspirateur (1) selon la revendication 1, dans lequel une portion de décharge d'air (129, 130) pour décharger l'air, et un élément filtre (127, 128) qui filtre l'air déchargé sont prévus dans chacun de la pluralité de sous-corps (121, 122).

5. Aspirateur (1) selon la revendication 1, comprenant en outre :

une unité de filtre (150) couplée à la partie extérieure de l'unité de séparation de poussière (110) et incluant un filtre (170) qui filtre l'air déchargé de l'unité de séparation de poussière (110).

6. Aspirateur (1) selon la revendication 5, comprenant en outre :

une chambre à poussière (200) qui stocke la poussière séparée par l'unité de séparation de poussière (110),

dans lequel l'unité de séparation de poussière (110) est montée de manière amovible sur un côté du corps principal (10) tout en étant couplée à l'unité de filtre (150), et la chambre à poussière (200) est montée de manière amovible sur l'autre côté du corps principal (10).

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7. Aspirateur (1) selon la revendication 6, dans lequel un élément de couvercle (200) qui couvre l'unité de séparation de poussière (110) et l'unité de filtre (150) est inclus dans le corps principal (10), alors que l'unité de séparation de poussière (110) et l'unité de filtre (150) sont montées sur le corps principal (10).
8. Aspirateur (1) selon la revendication 6, dans lequel une plaque de fixation (14) sur laquelle est fixée la chambre à poussière (200) est prévue sur le corps principal (10), et une ouverture (16) pour permettre à l'unité de séparation de poussière (110) et à la chambre à poussière (200) d'être en communication l'une avec l'autre est formée sur la plaque de fixation (14).
9. Aspirateur (1) selon la revendication 5, dans lequel un premier boîtier (152) couplé à l'unité de séparation de poussière (110) et un second boîtier (160) couplé au premier boîtier (152) sont inclus dans l'unité de filtre (150), et le filtre (170) est positionné entre le premier boîtier (152) et le second boîtier (160).

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Fig.1

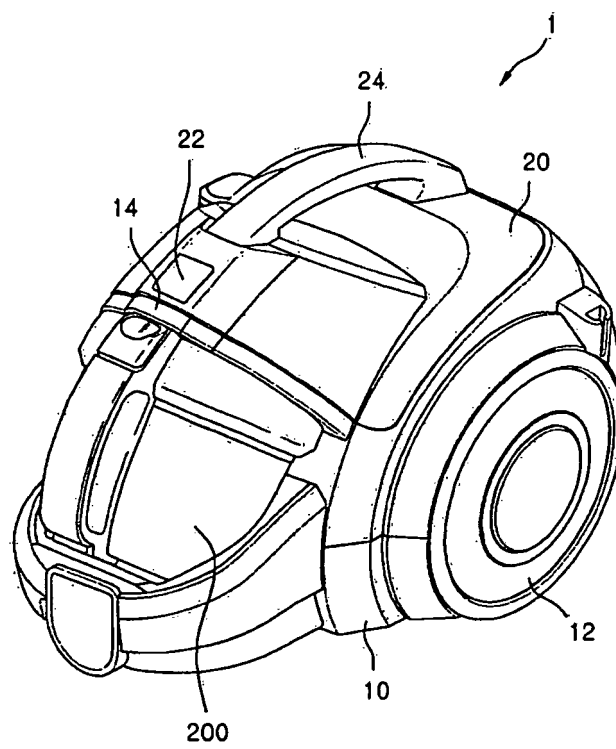


Fig.2

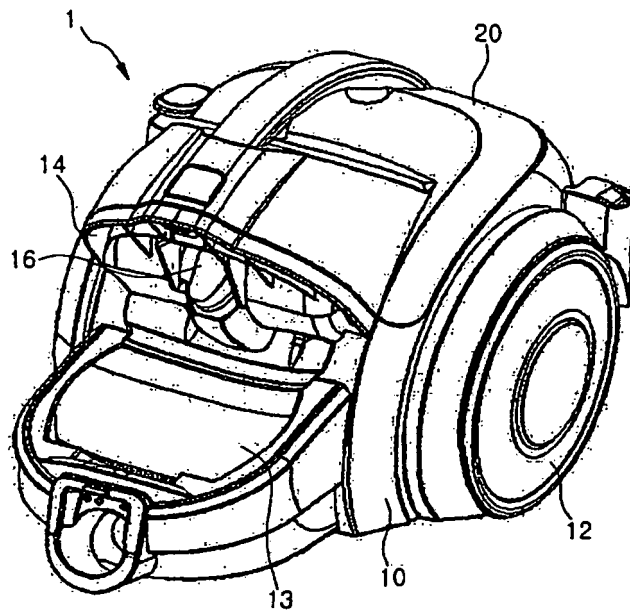


Fig. 3

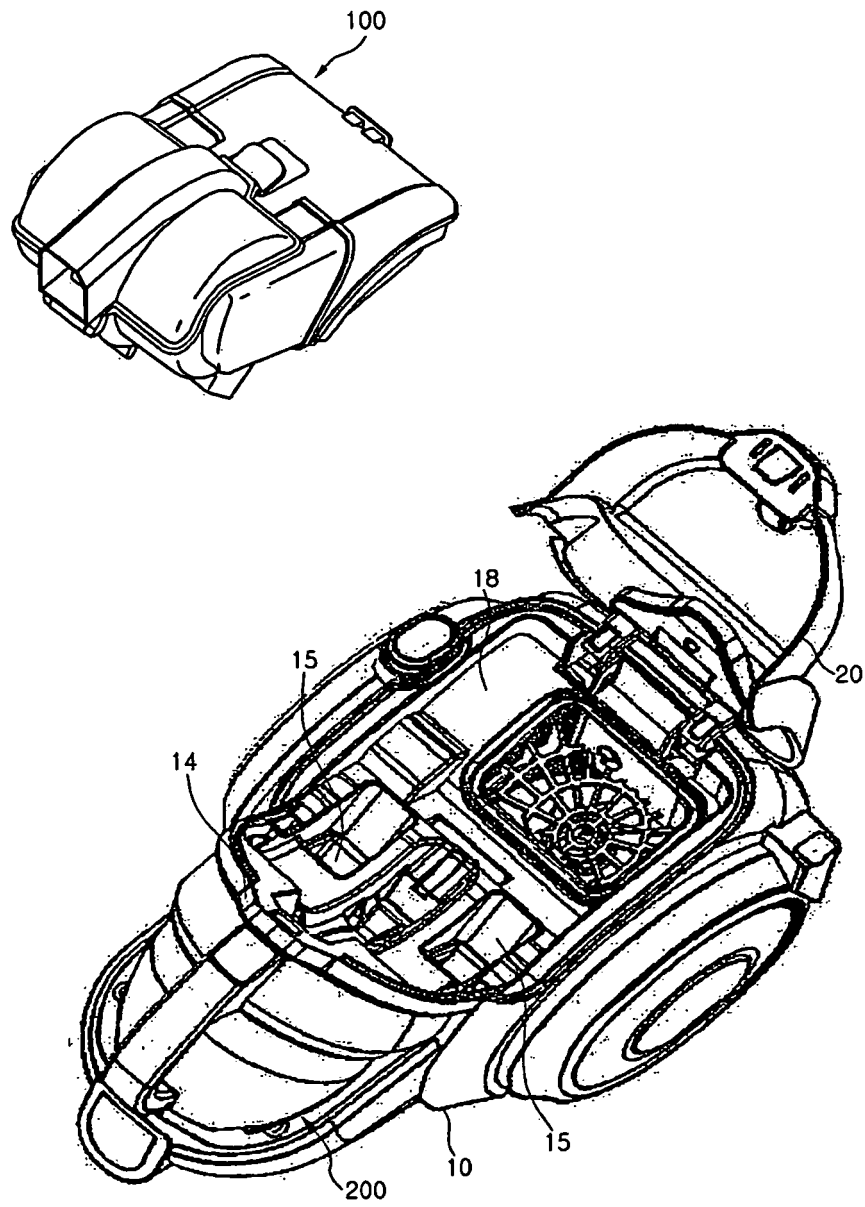


Fig. 4

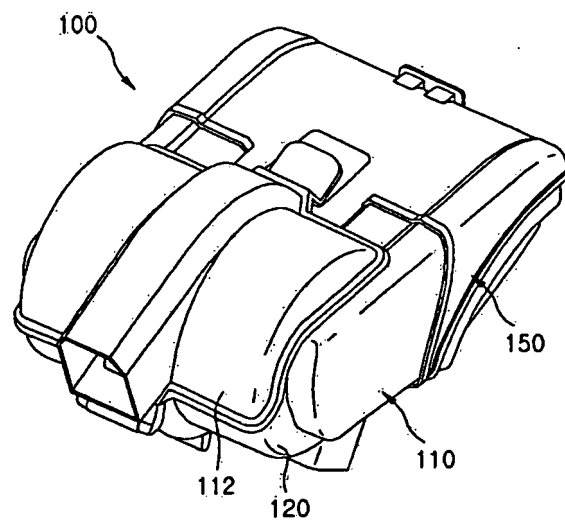


Fig. 5

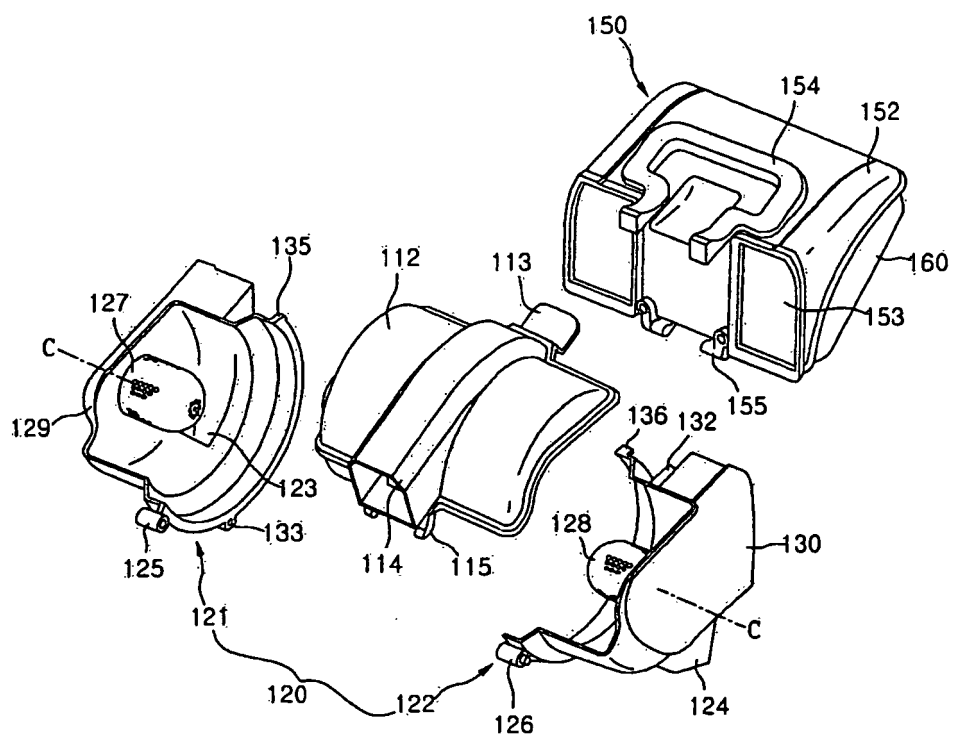


Fig.6

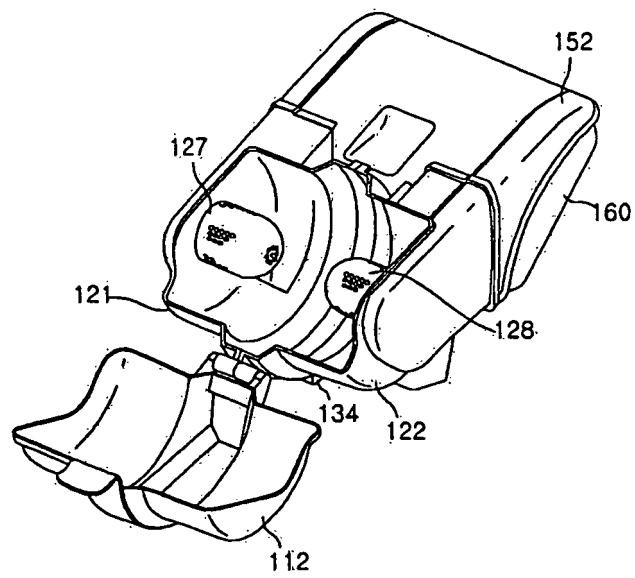


Fig.7

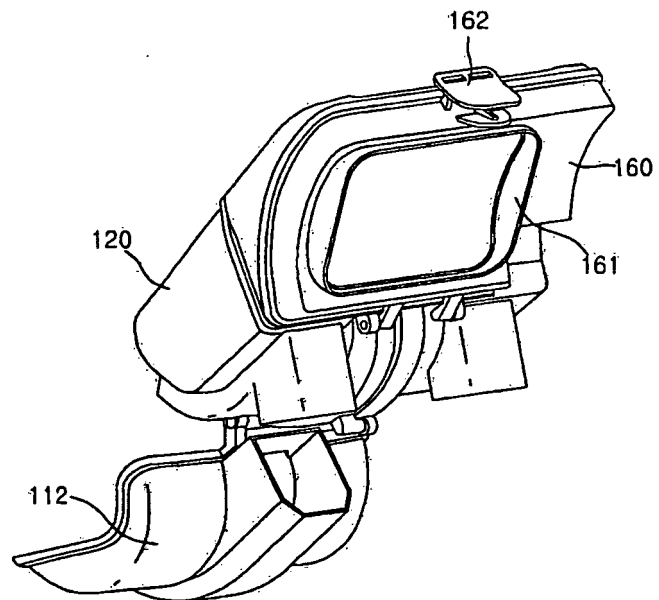


Fig. 8

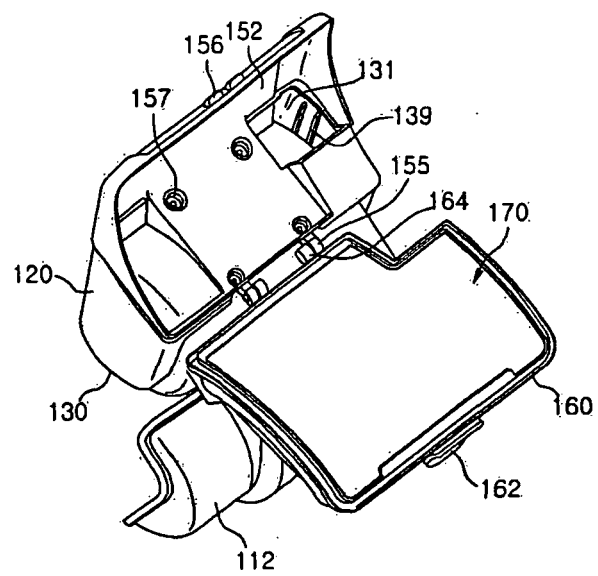


Fig. 9

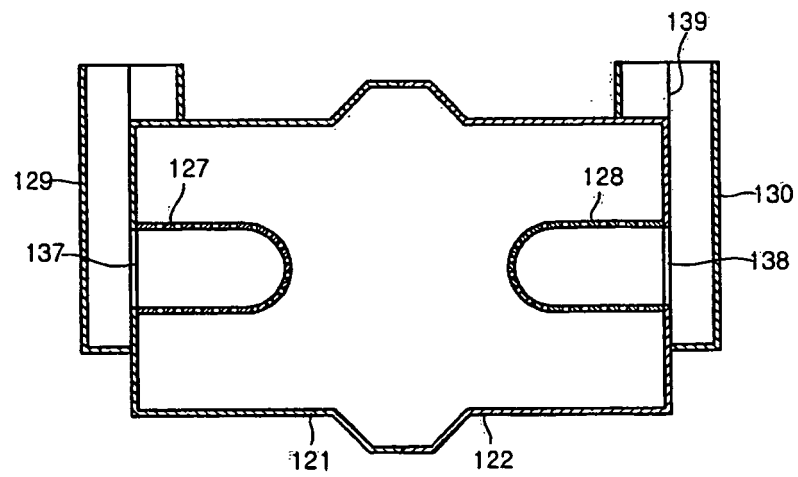


Fig.10

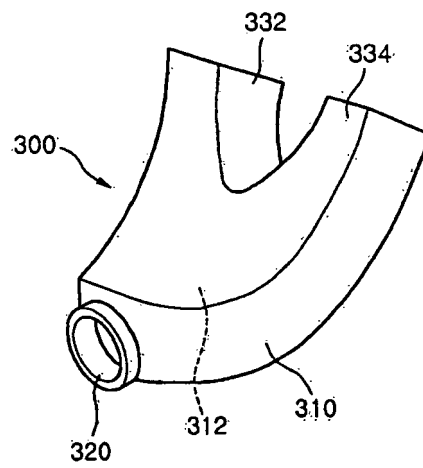


Fig.11

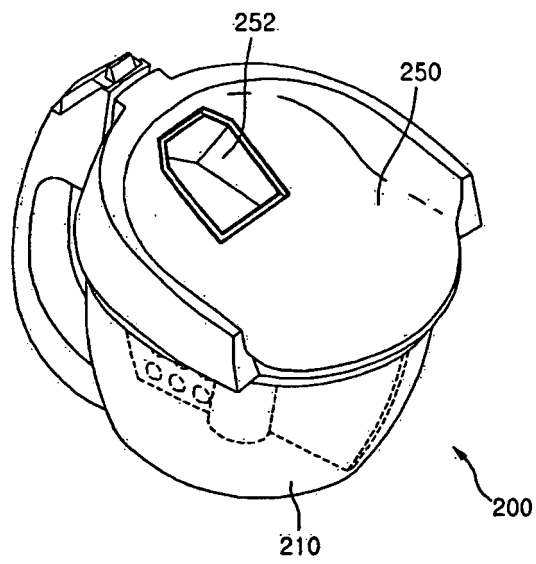
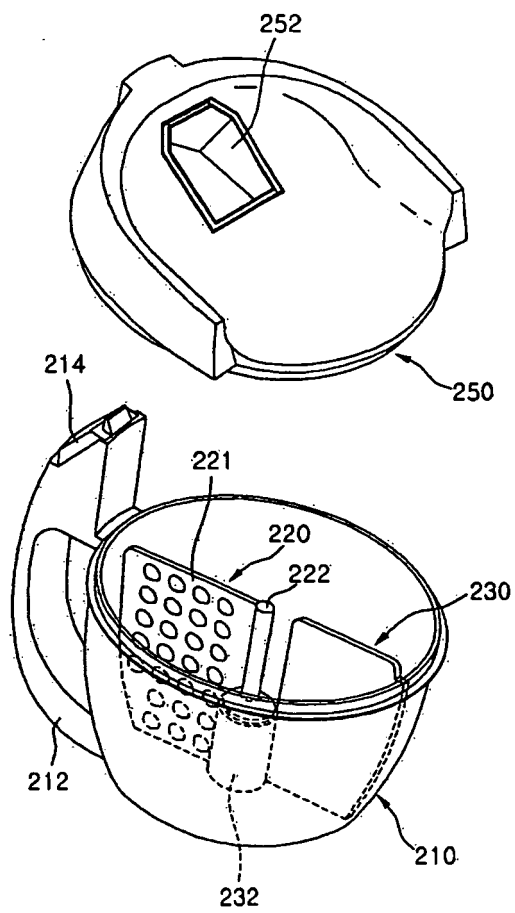


Fig.12



REFERENCES CITED IN THE DESCRIPTION

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