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(54) **VACUUM CLEANER**

STAUBSAUGER

ASPIRATEUR

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Description

BACKGROUND

[0001] Embodiments relate to a vacuum cleaner.

[0002] Generally, vacuum cleaners are devices that suck air containing dusts using a suction force generated by a suction motor installed inside a main body to filter the dusts in the main body.

[0003] Such a vacuum cleaner may be largely classified into a canister type in which a suction nozzle is separated from a main body to connect thereto through a connection tube and an upright type in which a suction nozzle is coupled to a main body.

[0004] WO 2007/021147 A1 relates to a vacuum cleaner comprising a main body, a dust container installed to the main body, and a handle formed at an outer periphery of the dust container and having a fastening part to allow the dust container to be detachably fastened to the main body. The fastening part is formed to the handle of the dust container such that the dust container is easily mounted in or separated from the main body of the vacuum cleaner, and cannot be unintentionally separated from the main body of the vacuum cleaner, thereby preventing a floor from being soiled by contaminants due to an accidental opening of the dust container, and thus enhancing convenience of a user.

SUMMARY

[0005] The present invention provides a vacuum cleaner which prevents a dust container from being separated from a main body while a user grasps a handle disposed on the dust container in a state where the dust container is mounted on the main body to move the main body. The objects are solved by the features of the independent claim.

[0006] The vacuum cleaner of the present invention includes: a main body; a dust container separably coupled to the main body; a handle disposed on the dust container; a lever unit movably disposed on the handle, the lever unit being selectively coupled to the main body; and a stopper for selectively restricting the movement of the lever unit.

[0007] The details of one or more embodiments are set forth in the accompanying drawings and the description below. Other features will be apparent from the description and drawings, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

Fig. 1 is a perspective view of a vacuum cleaner including a dust separation device according to an embodiment.

Fig. 2 is a perspective view of the vacuum cleaner from which a container is separated.

Fig. 3 is a perspective view of the vacuum cleaner from which a dust separation device is separated.

Fig. 4 is a perspective view of the dust container according to an embodiment.

Fig. 5 is an exploded perspective view of the dust container according to an embodiment.

Fig. 6 is a sectional view taken along line A-A of Fig. 1.

Fig. 7 is a view of a state in which a main body stands upright in a state where the dust container is separated from the main body.

Fig. 8 is a sectional view illustrating an inner structure of a handle in the state of Fig. 7.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0009] Reference will now be made in detail to the embodiments of the present disclosure, examples of which are illustrated in the accompanying drawings.

[0010] Fig. 1 is a perspective view of a vacuum cleaner including a dust separation device according to an embodiment. Fig. 2 is a perspective view of the vacuum cleaner from which a container is separated. Fig. 3 is a perspective view of the vacuum cleaner from which a dust separation device is separated.

[0011] Referring to Figs. 1 to 3, a vacuum cleaner 1 according to the current embodiment includes a main body 10 in which a suction motor is built, a dust separation device 100 separably mounted on the main body 10 and separating dusts from air, and a dust container 200 separably mounted on the main body 10 and storing the dusts separated by the dust separation device 100.

[0012] In detail, a plurality of wheels 12 for easily moving the main body 10 is disposed on the main body 10. A first mounting part 13 is disposed on the main body 10 to mount the dust container 200. A fixing plate 14 for fixing the dust container 200 is disposed above the first mounting part 13.

[0013] A second mounting part 18 is disposed at an upper portion of the main body to mount the dust separation device 100. A cover member 20 for covering the dust separation device 100 in a state where the dust separation device 100 is mounted on the second mounting part 18 is disposed on the main body 10. The cover member 20 has one end rotatably coupled to the main body 10 by a hinge and the other end separably coupled to the fixing plate 14. A coupling button 22 is disposed on the cover 20 to couple the cover 20 to the fixing plate 14.

[0014] A coupling button 22 is disposed on the cover member 20 to couple the cover member 20 to the fixing plate 14. An end of the coupling button 22 is selectively hung on the fixing plate 14.

[0015] As described above, since the cover member 20 covers the dust separation device 100, the dust separation device 100 is not viewed from the outside to improve a sense of beauty.

[0016] A portion of the dust separation device 100 is seated on the fixing plate 14 in a state where the dust

separation device 100 is seated on the second mounting part 18. An opening 16 for moving dusts separated by the dust separation device 100 into the dust container 200 is defined in the fixing plate 14. The opening 16 communicates with a dust discharge part (that will be described later) of the dust separation device 100.

[0017] In the current embodiment, since the dust separation device 100 and the dust container are provided as separate parts and separably disposed on the main body 10, the dust container 200 may have a simple structure and a light weight. Thus, since a user separates only the dust container 200 from the main body so as to empty out the dusts within the dust container 200, user's convenience may be improved.

[0018] A plurality of suction holes 15 for introducing air containing dusts into the dust separation device 100 is defined in the fixing plate 14.

[0019] The dust separation device 100 includes a dust separation unit 110 for separating dusts contained in air by a cyclone flow and a filter unit 150 coupled to the dust separation unit 110 and filtering the air discharged from the dust separation unit 110.

[0020] The dust separation unit 110 includes a first cyclone body 112 and a second cyclone body 120 to which the first cyclone body 112 is rotatably coupled. That is, the first cyclone body 112 and the second cyclone body 120 are coupled to each other to form a completed configuration of the dust separation unit 110.

[0021] A plurality of suction parts 123 is disposed in the second cyclone body 120, and a dust discharge part 114 for discharging the dusts separated from the air is disposed in the first cyclone body 112. When the dust separation device 100 is mounted on the second mounting part 18, the plurality of suction parts 123 communicates with the suction holes 15, respectively.

[0022] Hereinafter, a structure of the dust container 200 will be described in detail.

[0023] Fig. 4 is a perspective view of the dust container according to an embodiment. Fig. 5 is an exploded perspective view of the dust container according to an embodiment. Fig. 6 is a sectional view taken along line A-A of Fig. 1.

[0024] Referring to Figs. 4 to 6, the dust container 200 according to an embodiment includes a dust collection body for storing the dusts separated by the dust separation device 100 and a cover member 280 coupled to an upper portion of the dust collection body 210.

[0025] In detail, a handle 240 grasped by the user is disposed on the dust collection body 210. A plurality of pressing members for pressing the stored dust is disposed within the dust collection body 210. The plurality of pressing members includes a first pressing member 220 rotatably coupled to the dust collection body 210 and a second pressing member 230 integrated with the dust collection body 210. The second pressing member 230 is integrated with a fixed shaft 232 protruding upward from a bottom surface of the dust collection body 210.

[0026] The first pressing member 220 includes a press-

ing plate 221 for pressing the dusts by an interaction with the second pressing member 230 and a rotating shaft 222 integrated with the pressing plate 221. The rotating shaft 222 is coupled to the fixed shaft 232.

[0027] A driven gear 236 for transmitting a driving force into the first pressing member 220 is coupled to the outside of the dust collection body 210. A shaft of the driven gear 236 passes through the dust collection body 210 and is coupled to the rotation shaft 222. The driven gear 236 is engaged with a driving gear (not shown), and the driving gear is coupled to a compressor motor disposed in the main body. Thus, when the compressor motor is rotated, the driving gear is rotated and the driven gear is rotated by the rotation of the driving gear. Then, the first pressing member 220 coupled to the driven gear is rotated by the rotation of the driven gear. Thus, the dusts stored in the dust collection body 210 are pressed while the first pressing member 220 is rotated. Here, a motor rotatable in both directions may be applied as the compressor motor. Thus, the first pressing member 220 may be rotated in both directions (in clockwise and counter-clockwise directions).

[0028] A dust inflow part 282 through which the dusts separated by the dust separation device 100 are introduced is disposed in the cover member 280. The dust inflow part 282 communicates with the opening 16 of the fixing plate 14.

[0029] The handle 240 includes a handle body 242, a lever unit 260 vertically movably coupled to the handle body 242, and a handle cover 250 coupled to the handle body 242.

[0030] In the current embodiment, the upward movement of the lever unit 260 represents a movement direction of the lever unit 260 to be coupled to the main body (or the fixing plate), and the downward movement of the lever unit 260 represents a movement direction of the lever unit 260 to be separated from the main body (or the fixing plate).

[0031] Upper and lower guides 245 and 243 for guiding the vertical movement of the lever unit 260 are disposed on the handle body 242. Insertion holes 262 and 264 in which the guides 245 and 243 are inserted are defined in the lever unit 260.

[0032] An elastic member 247 for elastically supporting the lever unit 260 is disposed around the upper guide 245.

[0033] A first coupling part (261) selectively coupled to the fixing plate 14 is disposed above the lever unit 260, and a second coupling part 265 selectively coupled to a hook part 13a disposed on the first mounting part 13 is disposed below the lever unit 260.

[0034] The hook part 13a is supported by the elastic member 13b. In a state where the dust container 200 is not mounted on the first mounting part 13, the hook part 13a protrudes upward from the first mounting part 13.

[0035] When the dust container 200 is mounted on the first mounting part 13, the hook part 13a is pressed downward by the second coupling part 265. When the dust container 200 is completely mounted on the first mount-

ing part 13, the hook part 13a is hung on the second coupling part 265.

[0036] When the lever unit 260 is moved downward to separate the dust container 200 from the first mounting part 13, the hook part 13a is moved downward by the second coupling part 265. In this state, when the dust container 200 is pulled forward, the second coupling part 265 goes over the hook part 13a.

[0037] A middle guide 252 for guiding the vertical movement of the lever unit 260 is disposed on the handle cover 250. A guide hole 263 in which the middle guide 252 is inserted is defined in the lever unit 260. The guide hole 263 is defined in a vertical direction.

[0038] A stopper 270 for selectively restricting the movement of the lever unit 260 is rotatably coupled to the handle cover 250. A rotation shaft 257 to which the stopper 270 is coupled is disposed on the handle cover 250.

[0039] The stopper 270 prevents the lever unit 260 from being rotated in a state where the stopper 270 is rotated with respect to the lever unit 260.

[0040] In detail, the stopper 270 includes a rotation body coupled to the rotation shaft 257 and a stop guide 274 protruding from the rotation body 272.

[0041] Also, a space part 268 for receiving the stopper 270 is defined in the lever unit 260. Also, the lever unit 260 includes a contact part 267 selectively contacting the stopper 270 when the lever unit 260 is moved downward.

[0042] Hereinafter, an operation of the stopper 270 will be described.

[0043] Fig. 7 is a view of a state in which a main body stands upright in a state where the dust container is separated from the main body. Fig. 8 is a sectional view illustrating an inner structure of a handle in the state of Fig. 7.

[0044] Referring to Figs. 1 and 6 to 8, in the state of Fig. 1, the rotation body 272 and the stop guide 274 of the stopper 270 are spaced from the contact part 267 in a state where the stopper 270 is received into the space part 268 of the lever unit 260 (see Fig. 6). This state of the stopper 270 is referred to as a first state.

[0045] Then, when the lever unit 260 is vertically movable within the handle 240, and thus, the dust container 200 is coupled or separated to/from the main body 10.

[0046] On the other hand, in case where the main body 10 stands upright as shown in Fig. 7, the stopper 270 is rotated to dispose the stop guide 274 between the rotation shaft 257 and the contact part 267 as shown in Fig. 8. This rotated state of the stopper 270 is referred to as a second state.

[0047] That is, the stop guide 274 is disposed on the movement path of the lever unit 260 in the second state of the stopper 270 to prevent the contact part 267 from being moved.

[0048] In this state, when the lever unit 260 is pressed, since the contact part 267 of the lever unit 260 contacts the stop guide 274, the movement of the lever unit 260

is prevented.

[0049] The state of Fig. 7, for example, the state in which the dust container 200 is mounted on the main body 10 is a state in which the user grasps the handle 240 of the dust container 200 to move the main body 10. According to the present embodiment, since the movement of the lever unit 260 is prevented by the rotation of the stopper 270 in the state of Fig. 7, it may prevent the main body 10 from dropping onto a floor due to the separation of the dust container 100 and the main body 10.

[0050] According to the proposed embodiments, when the user grasps the handle of the dust container to move the main body in the state where the dust container is mounted on the main body, the stopper disposed within the handle is rotated to prevent the lever unit from being moved.

[0051] Thus, it may prevent the main body from being broken or damaged due to the separation of the dust container and the main body and the dropping of the main body.

[0052] Also, since the stopper is rotated corresponding to the movement of the dust container, a user's cumbersome operation may be removed.

[0053] Although embodiments have been described with reference to a number of illustrative embodiments thereof, it should be understood that numerous other modifications and embodiments can be devised by those skilled in the art that will fall within the scope of the present invention, which is defined by the appended claims.

Claims

1. A vacuum cleaner comprising:

a main body (10);
a dust container (200) separably coupled to the main body (10); and
a handle (240) disposed on the dust container (200);
a lever unit (260) movably disposed on the handle (240), the lever unit (260) being selectively coupled to the main body (10); and
a stopper (270) for selectively restricting the movement of the lever unit (260),
characterized in that
the stopper (270) is rotatably coupled to a handle cover (250) of the handle (240); and
a rotation shaft (257) to which the stopper (270) is coupled, is disposed on the handle cover (250);
wherein the stopper is configured to prevent the lever unit (260) from being rotated in a state where the stopper (270) is rotated with respect to the lever unit (260).

2. The vacuum cleaner according to claim 1, wherein the stopper (270) is rotatably disposed on the handle

(240), in a state where the stopper (270) is rotated in one direction, the movement of the lever unit (260) is allowable, and in a state where the stopper (270) is rotated in the other direction, the movement of the lever unit (260) is restricted.

3. The vacuum cleaner according to claim 1, wherein the stopper (270) comprises a body (272) and a stop guide (274) protruding from the body (272), and the stop guide (274) is selectively disposed on a movement path of the lever unit (260).
4. The vacuum cleaner according to claim 3, wherein the lever unit (260) comprises a contact part (267) selectively contacting the stopper (270), wherein when the lever unit (260) is manipulated in a state where the stopper (270) is moved in one direction, the contact part (267) contacts the body (272), and when the lever unit (260) is manipulated in a state where the stopper (270) is moved in the other direction, the contact part (267) contacts the stop guide (274).
5. The vacuum cleaner according to claim 3, wherein the lever unit (260) has a space part (268) in which the stopper (270) is received.
6. The vacuum cleaner according to claim 1, wherein the handle (240) comprises: a handle body (242) and a handle (240) cover coupled to the handle (240) body, wherein the stopper (270) is coupled to the handle cover (250).
7. The vacuum cleaner according to claim 6, wherein first and second coupling parts (265) coupled to the main body (10) are disposed above and below the lever unit (260).
8. The vacuum cleaner according to claim 6, wherein a guide (274) for guiding the movement of the lever unit (260) is disposed on the handle body (242) or the handle cover (250).

Patentansprüche

1. Staubsauger, der Folgendes umfasst:

einen Hauptkörper (10);
einen Staubbehälter (200), der mit dem Hauptkörper (10) trennbar gekoppelt ist; und
einen Griff (240), der an dem Staubbehälter (200) angeordnet ist;
eine Hebeleinheit (260), die an dem Griff (240) beweglich angeordnet ist, wobei die Hebeleinheit (260) wahlweise mit dem Hauptkörper (10) gekoppelt ist; und
ein Anschlagelement (270), um die Bewegung

der Hebeleinheit (260) wahlweise einzuschränken,

dadurch gekennzeichnet, dass

das Anschlagelement (270) mit einer Griffabdeckung (250) des Griffs (240) drehbar gekoppelt ist; und

eine drehbare Welle (257), mit der das Anschlagelement (270) gekoppelt ist, an der Griffabdeckung (250) angeordnet ist;

wobei das Anschlagelement konfiguriert ist, zu verhindern, dass die Hebeleinheit (260) in einem Zustand gedreht wird, in dem das Anschlagelement (270) in Bezug auf die Hebeleinheit (260) gedreht ist.

2. Staubsauger nach Anspruch 1, wobei das Anschlagelement (270) an dem Griff (240) drehbar angeordnet ist, wobei in einem Zustand, in dem das Anschlagelement (270) in eine Richtung gedreht ist, die Bewegung der Hebeleinheit (260) zulässig ist, und in einem Zustand, in dem das Anschlagelement (270) in die andere Richtung gedreht ist, die Bewegung der Hebeleinheit (260) eingeschränkt ist.

3. Staubsauger nach Anspruch 1, wobei das Anschlagelement (270) einen Körper (272) und eine Anschlagführung (274), die von dem Körper (272) vorsteht, umfasst, und wobei die Anschlagführung (274) wahlweise auf einem Bewegungspfad der Hebeleinheit (260) angeordnet ist.

4. Staubsauger nach Anspruch 3, wobei die Hebeleinheit (260) ein Kontaktbauteil (267) umfasst, das mit dem Anschlagelement (270) wahlweise in Kontakt kommt, wobei dann, wenn die Hebeleinheit (260) in einem Zustand, in dem das Anschlagelement (270) in eine Richtung bewegt wird, betätigt wird, das Kontaktbauteil (267) mit dem Körper (272) in Kontakt kommt, und dann, wenn die Hebeleinheit (260) in einem Zustand, in dem das Anschlagelement (270) in die andere Richtung bewegt wird, betätigt wird, das Kontaktbauteil (267) mit der Anschlagführung (274) in Kontakt kommt.

5. Staubsauger nach Anspruch 3, wobei die Hebeleinheit (260) eine Aussparung (268) aufweist, in der das Anschlagelement (270) aufgenommen wird.

6. Staubsauger nach Anspruch 1, wobei der Griff (240) Folgendes umfasst: einen Griffkörper (242) und eine Abdeckung für den Griff (240), die mit dem Griffkörper (240) gekoppelt ist, wobei das Anschlagelement (270) mit der Griffabdeckung (250) gekoppelt ist.

7. Staubsauger nach Anspruch 6, wobei das erste und das zweite Kopplungsbauteil (265), die mit dem Hauptkörper (10) gekoppelt sind, oberhalb und unterhalb der Hebeleinheit (260) angeordnet sind.

8. Staubsauger nach Anspruch 6, wobei eine Führung (274) zum Führen der Bewegung der Hebeleinheit (260) an dem Griffkörper (242) oder der Griffabdeckung (250) angeordnet ist.

Revendications

1. Aspirateur comprenant :

un corps principal (10) ;
 un conteneur à poussière (200) couplé de façon séparable au corps principal (10) ; et
 une poignée (240) disposée sur le conteneur à poussière (200) ;
 une unité à levier (260) disposée de façon mobile sur la poignée (240), l'unité à levier (260) étant sélectivement couplée au corps principal (10) ; et
 un arrêt (270) pour restreindre sélectivement le mouvement de l'unité à levier (260),
caractérisé en ce que
 l'arrêt (270) est couplé en rotation à un couvercle de poignée (250) de la poignée (240) ; et
 un arbre rotatif (257) auquel est couplé l'arrêt (270) est disposé sur le couvercle de poignée (250) ;
 dans lequel l'arrêt est configuré pour empêcher à l'unité à levier (260) d'être mise en rotation dans un état dans lequel l'arrêt (270) est tourné par rapport à l'unité à levier (260).

2. Aspirateur selon la revendication 1, dans lequel l'arrêt (270) est disposée en rotation sur la poignée (240), dans un état dans lequel l'arrêt (270) est tourné dans une direction le mouvement de l'unité à levier (260) est permis, et dans un état dans lequel l'arrêt (270) est tourné dans l'autre direction le mouvement de l'unité à levier (260) est restreint.
3. Aspirateur selon la revendication 1, dans lequel l'arrêt (270) comprend un corps (272) et un guide d'arrêt (274) qui se projette depuis le corps (272), et le guide d'arrêt (274) est sélectivement disposé sur un trajet de mouvement de l'unité à levier (260).
4. Aspirateur selon la revendication 3, dans lequel l'unité à levier (260) comprend une partie de contact (267) qui vient sélectivement en contact avec l'arrêt (270), dans lequel quand l'unité à levier (260) est manipulée dans un état dans lequel l'arrêt (270) est déplacé dans une direction la partie de contact (267) vient en contact avec le corps (272) et, quand l'unité à levier (260) est manipulée dans un état dans lequel l'arrêt (270) est déplacé dans l'autre direction, la partie de contact (267) vient en contact avec le guide d'arrêt (274).

5. Aspirateur selon la revendication 3, dans lequel l'unité à levier (260) comprend une partie formant espace (268) dans lequel l'arrêt (270) est reçu.

6. Aspirateur selon la revendication, dans lequel la poignée (240) comprend : un corps de poignée (242) et un couvercle de poignée (240) couplé au corps de poignée (242), dans lequel l'arrêt (270) est couplé au couvercle de poignée (250).

7. Aspirateur selon la revendication 6, dans lequel une première et une seconde partie de couplage (265) couplées au corps principal (10) sont disposées au-dessus et au-dessous de l'unité à levier (260).

8. Aspirateur selon la revendication 6, dans lequel un guide (274) pour guider le mouvement de l'unité à levier (260) est disposé sur le corps de poignée (242) ou sur le couvercle de poignée (250).

Fig.1

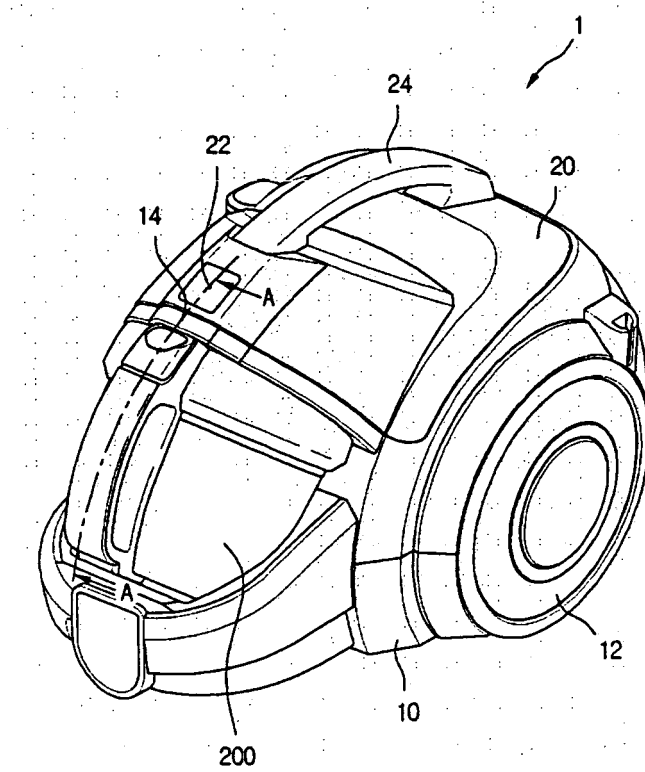


Fig.2

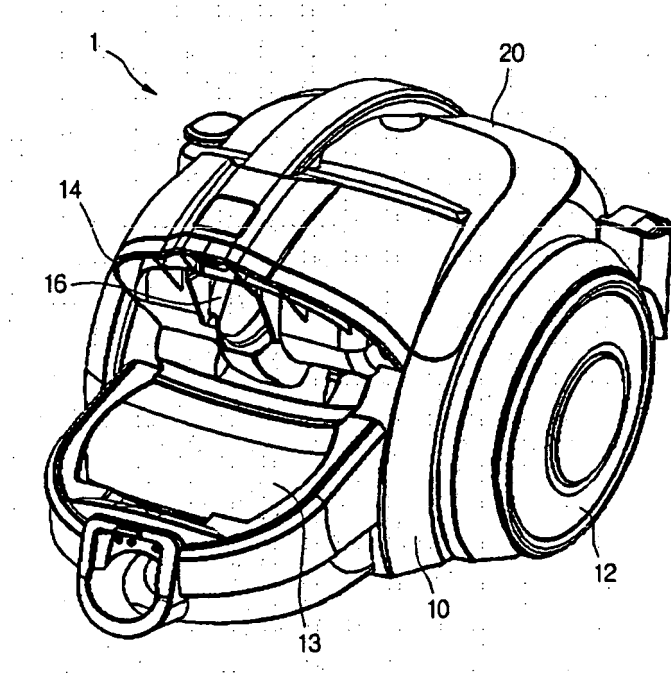


Fig. 3

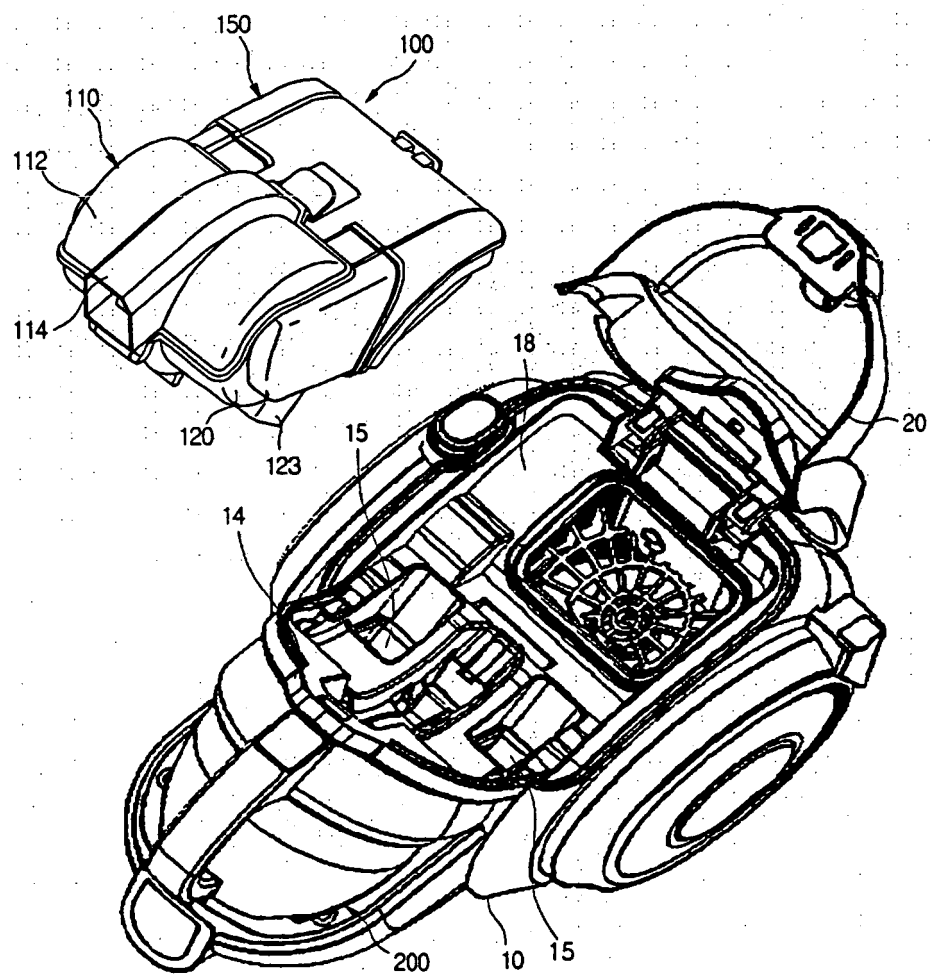


Fig.4

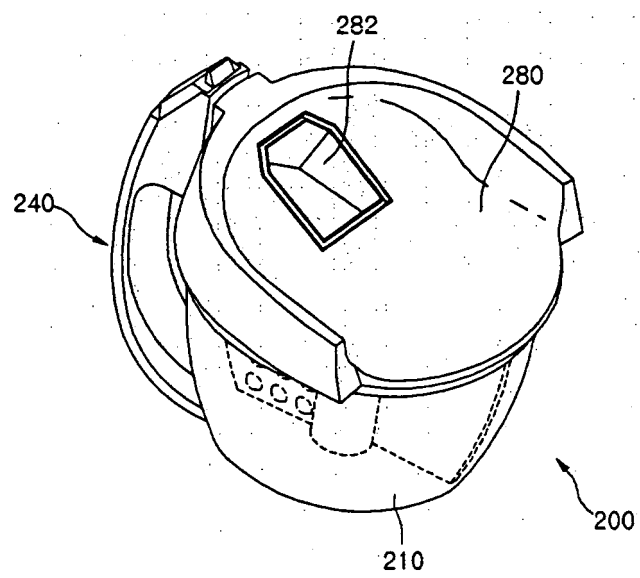


Fig.5

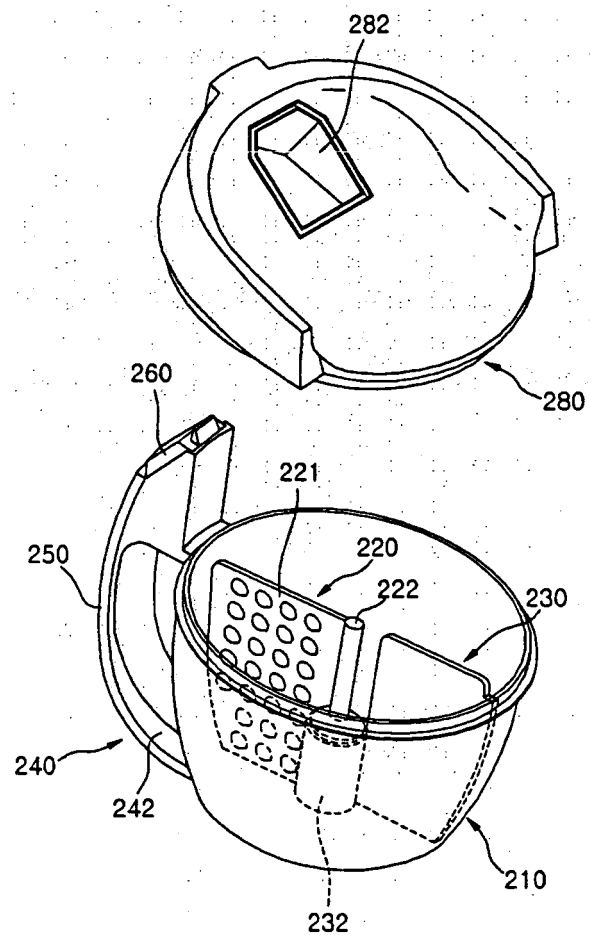


Fig.6

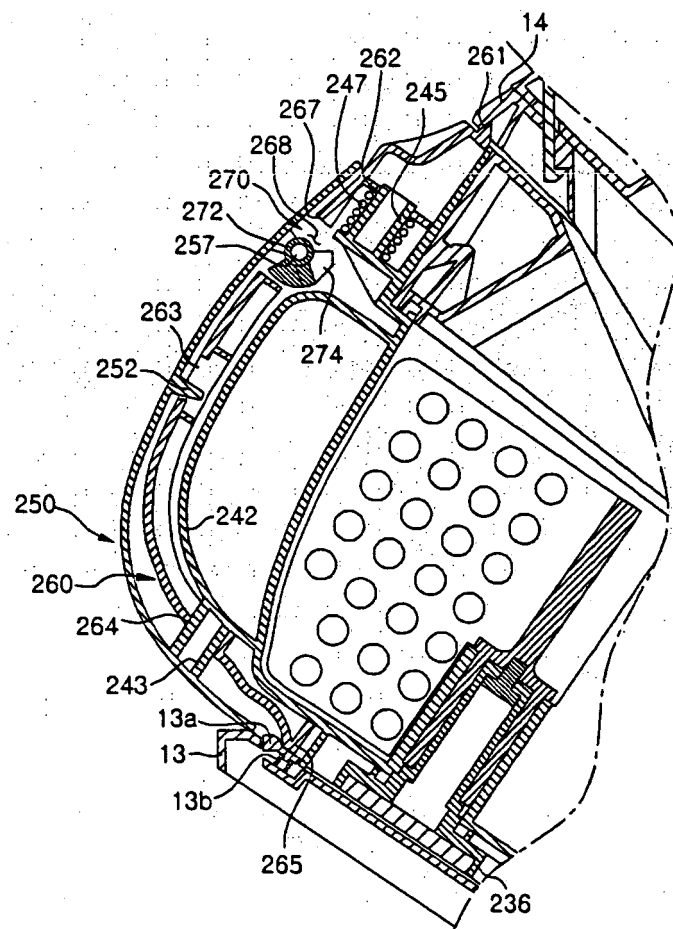


Fig.7

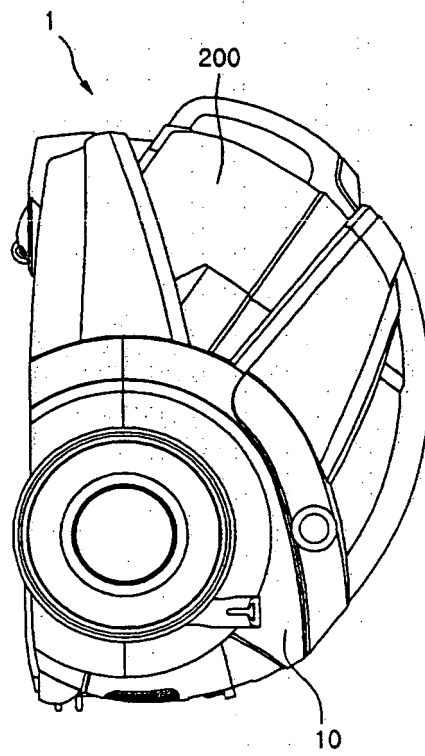
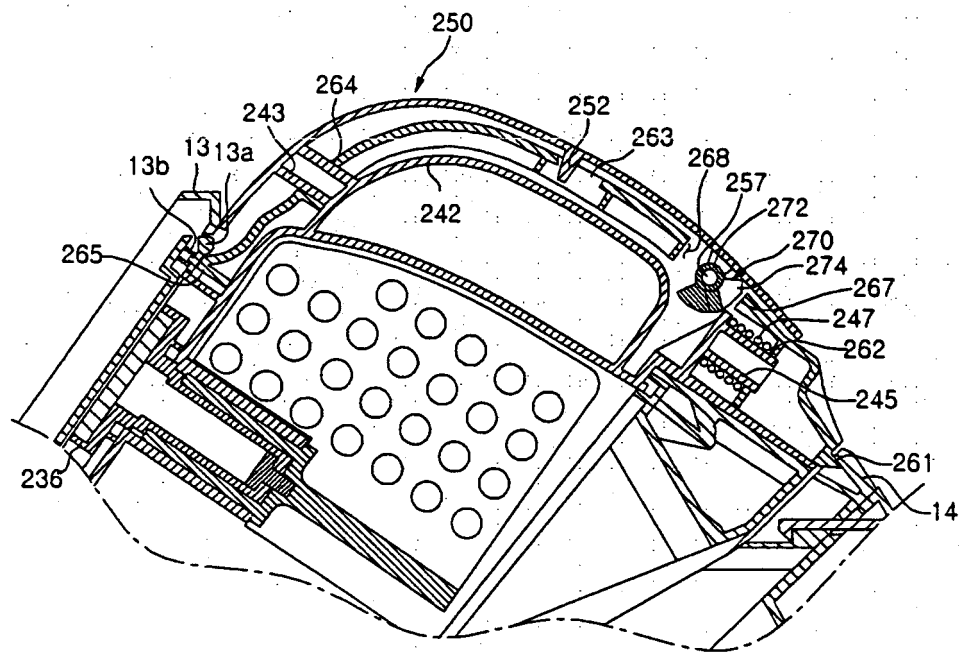


Fig.8



REFERENCES CITED IN THE DESCRIPTION

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