

Sept. 27, 1966

H. O. PARMAN

3,274,758

DISPOSABLE VACUUM CLEANER DUST CONTAINERS

Filed Jan. 9, 1963

2 Sheets-Sheet 1

Fig. 1

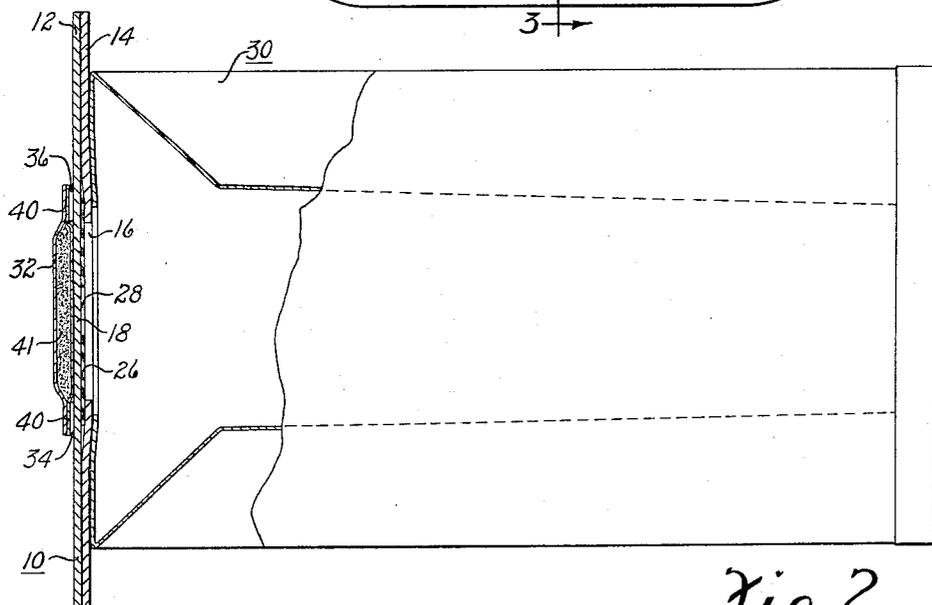
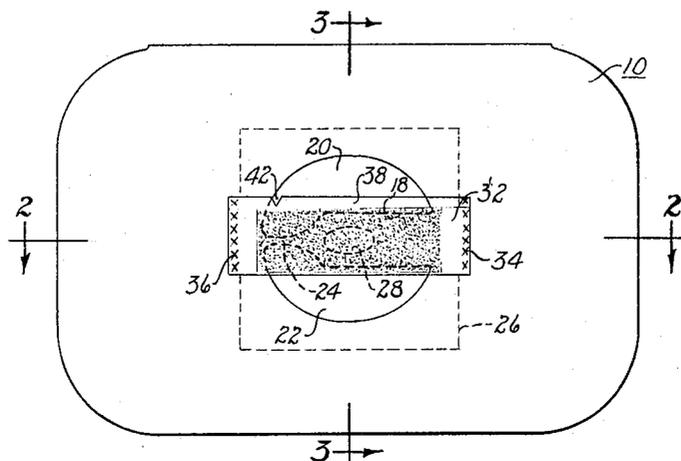


Fig. 2

Fig. 3

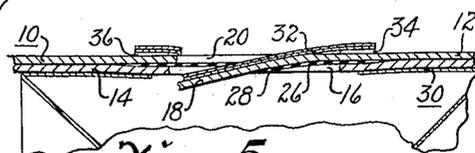
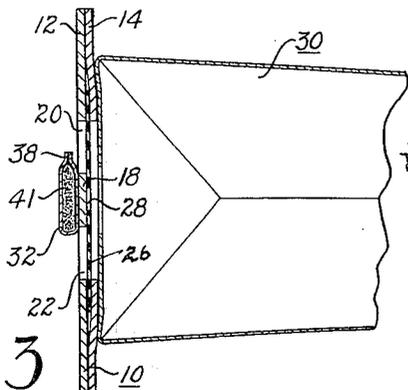


Fig. 5

INVENTOR.
HENRY O. PARMAN

BY

Thomas C. Betts
HIS ATTORNEY

Sept. 27, 1966

H. O. PARMAN

3,274,758

DISPOSABLE VACUUM CLEANER DUST CONTAINERS

Filed Jan. 9, 1963

2 Sheets-Sheet 2

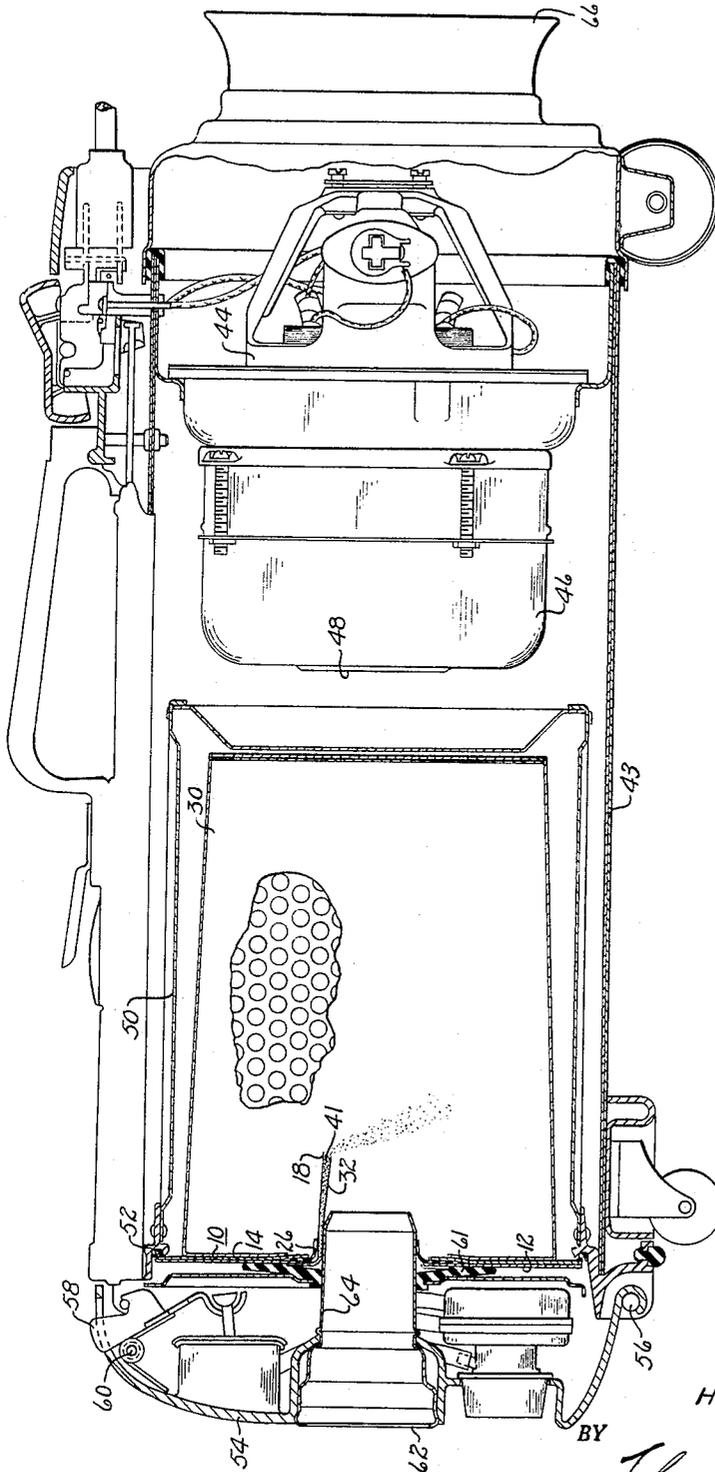


Fig. 4

INVENTOR.
HENRY O. PARMAN

BY
Thomas C. Betts
HIS ATTORNEY

1

3,274,758

DISPOSABLE VACUUM CLEANER DUST CONTAINERS

Henry O. Parman, Owensboro, Ky., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Jan. 9, 1963, Ser. No. 250,414
1 Claim. (Cl. 55-279)

My invention relates to vacuum cleaners and more particularly to disposable dirt containers for use in connection therewith.

When the dirt which is collected in the dust bag or other dust container of a vacuum cleaner is permitted to remain therein, objectionable odors frequently develop, particularly if animal hair is present which is the case in any house where fur bearing pets are kept. Previously, when most vacuum cleaners were provided with permanent cloth dust bags, the accumulated dirt could be emptied therefrom whenever the odor became noticeable, but with disposable dust bags which are in wide use today, it is not intended that they should be emptied, but the chief advantage resides in the fact that they may be thrown away with the dirt contained therein. Hence, should objectionable odors emanate from such a disposable bag before it is filled, it is necessary to dispose of it sooner than would ordinarily be the case. This of course results in a reduction of the useful life of the bag, with a corresponding increase in the cost of maintaining the vacuum cleaner supplied with bags.

There are available deodorants which may be introduced into a dust bag at the time the bag is placed in the vacuum cleaner, or at any time thereafter, but this requires an additional operation on the part of the user as well as necessitating that a separate supply of deodorant be kept available. It has also been suggested that the material of the bag be impregnated with a deodorant at the time of manufacture, but deodorants, which usually are perfumes which mask objectionable odors or substances which deaden the olfactory nerves, are volatile and would be substantially or entirely dissipated before the bag reached the user through the usual channels of trade.

My invention overcomes the foregoing objections by providing a sealed container made of material, such as cellophane, which is impermeable with respect to the vapor of the deodorant and which is affixed to the dust container at the time of its manufacture. This container or envelope is so arranged as to be automatically ruptured when the dust bag is placed in the vacuum cleaner so that the contents of the envelope will be introduced at that time into the interior of the dust bag. This requires no conscious effort on the part of the user and assures that none of the deodorizing material will have been dissipated before the dust bag is put into actual use, no matter how long a time may have elapsed since its manufacture.

Further objects and advantages of my invention will be apparent from the following description considered in connection with the accompanying drawings which form part of this specification and of which:

FIG. 1 is an end view of a dust bag embodying my invention;

FIGS. 2 and 3 are cross-sectional views taken on the lines 2-2 and 3-3, respectively, on FIG. 1, the thickness of certain of the parts being exaggerated for the sake of clearness;

FIG. 4 is a cross-sectional view of a vacuum cleaner, including the dust bag shown in the previous figures and;

FIG. 5 is a fragmentary view, similar to FIG. 2, but showing the dust bag after it has been removed from the vacuum cleaner.

2

Referring more particularly to FIGS. 1 through 3, reference character 10 designates generally a disc structure, preferably made of cardboard having the substantially rectangular shape shown in FIG. 1. As is clearly shown in FIGS. 2 and 3, disc 10 actually comprises 2 layers of cardboard 12 and 14 which are secured together by suitable adhesive. The inner layer 14 is formed with a relatively large centrally located opening 16, while the outer layer 12 is formed with a similar opening, except that a strip or tab of material 18, which is preferably integral with the outer layer, extends across the opening to actually produce two substantially semicircular openings 20 and 22, which together with the opening 16 constitute an inlet through disc 10. At one end the strip 18 is narrowed down to form a frangible section 24.

Secured between layers 12 and 14 is a sheet 26 of rubber or rubber-like material which is formed with a relatively small aperture 28 substantially centered with respect to the opening 16.

The structure so far described is not at this time novel per se, but is disclosed in U.S. Patent No. 3,108,736, issued October 29, 1963.

Attached to the layer 14 of the disc 10 is a paper dust bag designated generally by reference character 30 which has an open mouth communicating with the inlet opening through the disc. This bag is made of suitable paper which is pervious with respect to air, but will retain dust and other solid particles.

In accordance with my invention a suitable container, such as the envelope 32 is secured to the outer surface of the layer 12 and extends across the inlet opening. As shown in FIG. 1, opposite ends of the envelope are secured to the disc by adhesive as is indicated at 34 and 36 and the envelope is disposed parallel to the tab 18. As appears more particularly in FIG. 3, the envelope has a lengthwise extending seam 38 and, as is shown in FIG. 2, seams 40 at either end. A notch or slit 42 preferably extends part way through seam 38 at the end of the envelope adjacent to the frangible section 24 of the tab 18 in order to facilitate tearing of the material of the envelope at the same time that the tab is broken, as will be explained hereinafter.

The envelope is made of a thin sheet or film and is filled during manufacture with a deodorizing material 41 in solid form, preferably granular, before being sealed closed. The deodorizing material is volatile and is capable of passing directly from the solid to the gaseous phase at ordinary room temperatures. The material of the sheet or film is impermeable with respect to this vapor and suitably may be a plastic, such as cellophane. Thus, solid deodorant sealed within the envelope 32 will not be dissipated but will remain in the solid phase as long as the envelope remains closed.

The above described dust bag is intended for use in a vacuum cleaner of the type shown in FIG. 4. Reference character 43 designates a housing within which is mounted at one end an electric motor 44 for driving a fan 46 having an inlet 48. A perforated body 50 is disposed in the other end of the housing 43 for receiving the dust bag 30, the disc 10 of which is adapted to seat on a gasket 52.

A cover member 54 is pivotally secured to body 43 by the hinge 56 and may be retained in closed position by the latch 58 which is pivotally mounted in the cover at 60. A flexible ring 61 is secured to the cover and bears against the front of disc 10 and holds the disc seated against gasket 52 when the cover is closed.

Cover 54 is provided with an inlet opening 62 to which the usual suction hose may be attached. The inlet opening communicates with a conduit 64 which extends inwardly from the front cover so as to enter the inlet

3

opening in the disc 10 of the dust bag upon closing of the cover. In order to enter the bag it is necessary for the conduit 64 to rupture the envelope 32 by tearing it, the notch 42 providing a weakened section to facilitate tearing. The conduit 64 also breaks the tab 18 at its weakened section 24 and pushes the envelope 32 and the tab 18 through the aperture 28 in the rubber sheet 26, the aperture being enlarged in the process.

When the cover is fully closed the parts occupy the position shown in FIG. 4, where it will be seen that the free end of tab 18 and the open end of ruptured envelope 32 extend well within the bag 30 and the solid contents of the envelope may pass through the ruptured end thereof and into the bag. If the deodorant is in granular form, it may not all be discharged from the container immediately, but may be gradually shaken out as a result of movement of the cleaner during use, and may even be vaporized within the container in which event the vapor passes into the interior of the bag.

During use of the vacuum cleaner, the fan 46 causes air to be drawn into the cleaner through the conduit 64 and dirt picked up by this air is deposited within the bag, the air passing through the walls thereof and through the perforated inner body 50 to the inlet 48 of the fan, from whence it flows through the motor 44 and out of housing 10 through an outlet 66. In the average household a dust bag of this type has sufficient capacity so that it may be in use up to a month, or sometimes even longer, before it becomes filled. Particularly if there are pets in the household which shed hair, the latter is of course picked up during the cleaning operation and deposited within the bag where it may produce a disagreeable odor before sufficient dirt has been accumulated to require disposal of the bag. During use of the cleaner, this odor is picked up by the air passing through bag and is discharged from the cleaner into the room.

However, the deodorizing material which is discharged from the ruptured container 32 into the bag vaporizes and the resulting vapor may be of a pleasing odor which serves to mask the objectionable odor which would otherwise emanate from the dust bag, or it may be a vapor which deadens the olfactory nerves.

When the bag has become filled it may be removed from the vacuum cleaner by opening the front cover, as by depressing the latch 58, whereupon the inlet conduit 64 is withdrawn from the inlet opening in the disc 10. When this occurs the tab 18 tends to follow the inlet conduit, but the aperture 28 in the rubber sheet 26 contracts so as to retain the free end of the tab and the now empty envelope 32 within the bag, as is shown in FIG. 5. As will be seen, the tab and the container extend through the opening 28 and substantially close the latter so as to prevent spilling the contents of the bag while the latter is

4

being carried to a suitable place of disposal such as a trash can.

While I have shown one more or less specific embodiment of my invention it is to be understood that this has been done for the purpose of illustration only and the scope of my invention is not to be limited thereby, but is to be determined from the appended claim.

What I claim is:

A disposable dust bag for use in a vacuum cleaner having an inlet conduit, said bag including a relatively stiff end member having an inlet opening, a sheet of rubber-like material secured to said end member and extending across said opening, said sheet having a normally small aperture approximately centered with respect to said inlet opening, a strip of flexible material secured to said end member and extending across said opening and over said aperture, said strip having a frangible section adjacent to one end thereof so as to be severed and forced through said aperture by the introduction of said inlet conduit into said inlet opening, a container of impermeable frangible material secured to said end member and extending across said inlet opening in substantially parallel relation to said strip and notched adjacent to said frangible section so as to be ruptured and forced through said inlet opening along with said strip by the aforesaid introduction of the inlet conduit, and a volatile deodorizing substance in said container releasable to the interior of said bag by the rupturing of the container.

References Cited by the Examiner

UNITED STATES PATENTS

1,648,657	11/1927	Mock	206—10
1,931,165	10/1933	Martinet.	
2,130,484	9/1938	Cummings	21—127
2,337,354	12/1943	Smith.	
2,435,105	1/1948	Solomon	220—87
2,529,158	11/1950	Hunter et al.	15—347 X
2,596,808	5/1952	Lofgren.	
2,752,036	6/1956	Parkhurst.	
2,759,228	8/1956	Gordon.	
2,804,166	8/1957	Stevens et al.	229—62.5 X
2,964,128	12/1960	Bartos et al.	55—367 X
2,994,404	8/1961	Schifferly	55—359 X
3,096,148	7/1963	Walker.	
3,108,736	10/1963	Anderson et al.	55—367 X

FOREIGN PATENTS

873,706 7/1961 Great Britain.

HARRY B. THORNTON, *Primary Examiner.*

D. TALBERT, L. H. McCARTER, *Assistant Examiners.*