Dec. 24, 1968 J. J. FESCO 3,417,550

DISPOSABLE VACUUM CLEANER FILTER BAG

Filed Oct. 4, 1965

FIG. 1

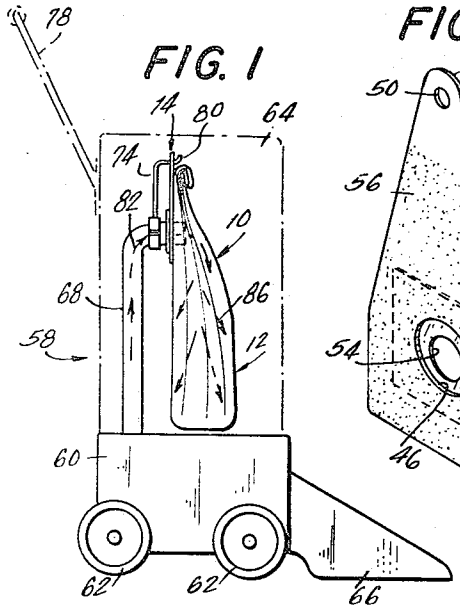


FIG. 2a

FIG. 2

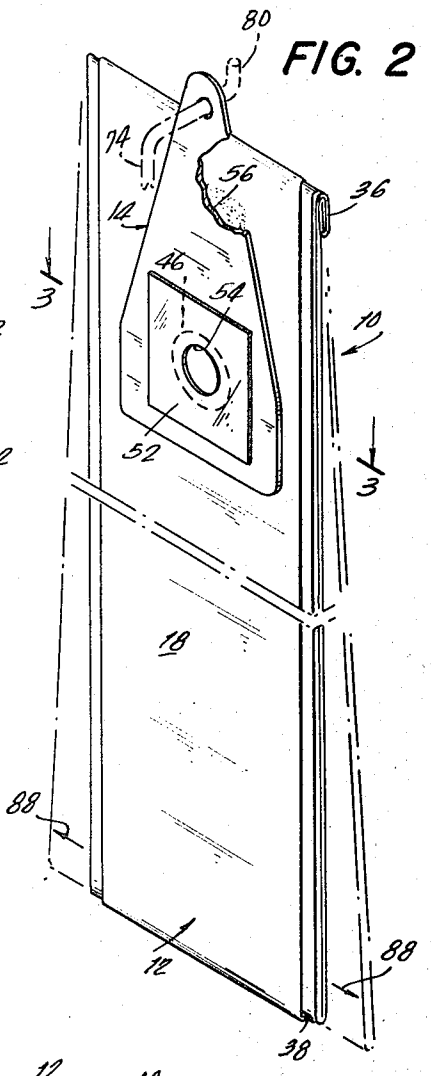


FIG. 3

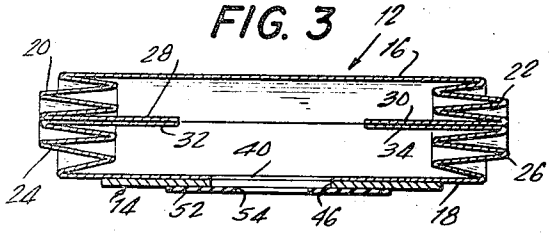
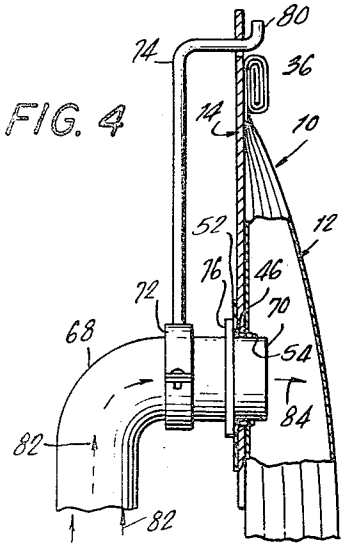


FIG. 4



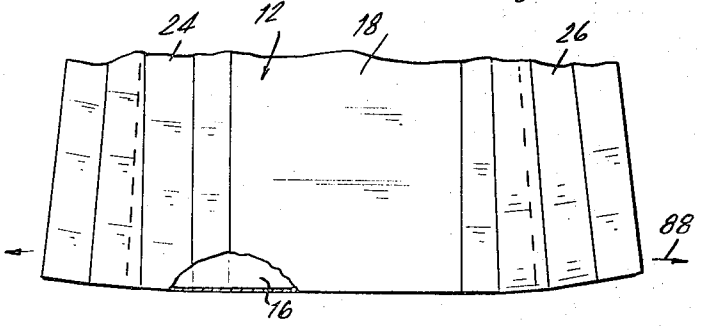


FIG. 5

INVENTOR.
JOHN J. FESCO
BY
Friedman & Goodman
ATTORNEYS

United States Patent Office 3,417,550
Patented Dec. 24, 1968

3,417,550

DISPOSABLE VACUUM CLEANER FILTER BAG

John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York

Filed Oct. 4, 1965, Ser. No. 492,395
3 Claims. (Cl. 55—376)

ABSTRACT OF THE DISCLOSURE

A vacuum cleaner bag provided with a stiff planar collar about the inlet of the bag and extending beyond the upper end of the bag including a support therefor at the upper end.

In certain types of vacuum cleaners, the filter bags are maintained in an upright or vertical disposition, the filter-laden air entering near the upper end of the bag and then passing down through the bag to deposit its contents at the bottom of the bag. This type of bag is mounted on the output end of the air input conduit of the vacuum cleaner and is supported solely by said conduit. As the amount of dirt within the bag continues to increase, the weight thereof also increases and applies a downward pull or pressure at the portion of the bag which is mounted on the air input conduit. This frequently results in wrinkling of the bag so as to decrease the capacity thereof and it also frequently results in the tearing or rupturing of the bag due to the weight of the contents thereof.

It is an object of the present invention to obviate the foregoing disadvantages of prior art vacuum cleaner filter bags.

It is another object of the present invention to provide a bag of the type which is mounted in upright disposition within a vacuum cleaner and which is provided with sufficient support means to prevent the rupturing thereof by the weight of the contents thereof.

It is another object of the present invention to provide a generally improved vacuum cleaner filter bag which can be manufactured and sold at a relatively low cost and which will have a long and useful life span.

Other and further objects and advantages of the present invention will be readily apparent to one skilled in the art from a consideration of the following specification taken in connection with the appended drawings.

In the drawings, which illustrates the best mode presently contemplated for carrying out the invention:

FIGURE 1 illustrates a vacuum cleaner bag pursuant to the present invention, mounted in operative disposition within a vacuum cleaner;

FIGURE 2 is an elevation view of a bag pursuant to the present invention with a portion thereof broken away for purposes of illustration;

FIGURE 2A is an elevation view of the collar utilized with the bag of the present invention;

FIGURE 3 is a sectional view on an enlarged scale taken along the line 3—3 of FIGURE 2;

FIGURE 4 is a fragmentary detailed view similar to FIGURE 1 and illustrates the bag in operative disposition within a vacuum cleaner; and

FIGURE 5 is a fragmentary detailed view similar to FIGURE 2 and illustrates the bag in an expanded condition thereof.

Referring now to the drawings in detail, there is shown a vacuum cleaner bag **10** pursuant to the present invention. The bag **10** comprises a bag body **12** which is provided with a collar **14** pursuant to the present invention.

The bag body **12** is formed of suitable filter-sheet material preferably paper of the type which is used for vacuum cleaner bags. The bag body **12** may be formed in any suitable material and as here shown, the bag body

12 is of the type illustrated and described in my Patent No. 2,961,063, issued Nov. 22, 1960. The bag body may be manufactured or formed in the manner described in said patent. As here shown, the bag body **12** comprises a front wall panel **16** and a complementary rear wall panel **18**. The front wall panel **16** is provided with opposing end pleats **20** and **22**, and the rear wall panel is provided with similar opposing end pleats **24** and **26**. The front wall panel is provided also with inturned free end portions **28** and **30** and the rear wall panel is provided with similar free inturned end portions **32** and **34** which are adhesively secured to the inturned end portions **28** and **30** respectively. The bag is closed at its upper end as at **36** and is also closed at its lower end as at **38**. The rear wall panel **18** is provided with a conventional aperture **40** for the entry of dust-laden air into the bag.

Pursuant to an important aspect of the present invention, the bag body **12** is provided with the collar **14**. As here shown, the collar **14** is substantially in the form of a teardrop, being provided with a relatively wide lower or bottom portion **42** and with a narrower tapering upper portion **44**. The lower portion **42** is provided with an enlarged aperture **46** and adjacent the tapered end **48** thereof the narrower collar portion **44** is provided with a smaller aperture **50**. The outer surface of the collar **14** is provided with a resilient fitting **52**, preferably a portion of rubber-like sheet material which is secured thereto to overlie the aperture **46** defined therein. The fitting **52** is provided with an aperture **54** which is in registry with the aperture **46** and it will be noted that the diameter of the aperture **54** is less than the diameter of the aperture **46**. The greater portion of the inner surface of the collar **14** is provided with a suitable adhesive **56** as best shown in FIGURE 2A. It will be noted that the adhesive extends almost up to the aperture **50**. The adhesive covered surface of the collar **14** is secured to the rear wall panel **18** so that the two apertures **54** and **46** in the fitting **52** and the collar respectively, are in registry with the aperture **40** in the panel **18** as best shown in FIGURE 2 with the outer surface of the collar and the fitting **52** exposed. It will be noted that the narrow end portion **48** of the collar **14** and the aperture **50** defined therein extend above the upper closed end **36** of the bag body **12** as best shown in FIGURE 2.

The bag **10** of the present invention may be used in the industrial type of vacuum cleaner **58** shown in FIGURE 1. As here shown, the vacuum cleaner **58** comprises a chassis **60** mounted on wheels **62**. The chassis mounts a removable cannister **64**. The chassis **60** is provided with a conventional air intake **66** which is connected to an air input conduit **68**. At its outlet end **70**, the conduit **68** mounts a fixture **72** which is provided with a hanger rod **74**. The conduit **68** also mounts a baffle **76** between the fixture **72** and the end **70** thereof.

In order to mount the bag **10** in position on the outlet end **70** of the conduit **68**, the cannister **64** provided with a handle **78**, is removed from the chassis **60**. The bag is then mounted on the conduit end **70** so that the latter extends through the fitting **52**, the collar **14** and the rear wall **18** of the bag into the latter through the registering apertures **54**, **46** and **40** as best shown in FIGURE 4. The hook end **80** on the hanger rod **74** is inserted through the aperture **50** at the upper end of the collar **14** so that the bag and the collar are suspended from the hanger rod. The cannister **64** may then be replaced on the chassis **60**.

When the vacuum cleaner **58** is in operation, dirt-laden air is drawn in the usual manner into the air intake **66** so as to pass upwardly through the conduit **68** as indicated by the arrows **82**. The air then passes out of the end **70** of the conduit into the bag **10** as indicated by the ar-

row **84**. The dirt-laden air drops to the bottom of the bag as the air flows to the bottom of the bag as indicated by the arrows **86** in FIGURE 1. When the bag is filled with the air entering therein through the conduit **68**, the bag extends from the full-line position thereof shown in FIGURE 2 to the broken-line position thereof shown in said figure, the bag assuming the expanded condition thereof shown in FIGURE 5, the arrows **88** indicating the direction in which the bag spreads under the influence of the air drawn therein through the conduit **68**.

As the dirt drawn in with the air settles to the bottom of the bag and builds up, the weight thereof increases. However, the added weight will not cause the bag to wrinkle or tear due to the support provided by the collar **14**. Prior art bags were supported solely on the end **70** of the conduit with the result that the weight of the dirt carried into the bag frequently caused the bag to rip at the conduit or to wrinkle around the conduit end **70** so as to decrease the capacity of the bag. However, pursuant to the present invention, the collar **14** being mounted on the hook **80** provides additional support for the bag so that the collar now serves the additional function of being a support for the bag. Any pressure applied to the collar by the weight of the contents of the bag is spread over a large area of the bag extending between the hanger hook **80** and the conduit end **70** and over a relatively large portion of the panel **18** to which the support collar is secured.

In view of the foregoing, it will be apparent that there has been illustrated and described a highly novel vacuum cleaner filter bag provided with a collar **14** which serves the additional function of being a support for the bag.

I claim:

1. A vacuum cleaner filter bag comprising a bag body constructed of an air pervious material and having a pair of side walls which oppose one another and are closed at the opposite ends thereof, one of said side walls having an air inlet aperture defined therein, and a relatively stiff planar member secured to said one wall, said member having a collar portion provided with an aperture in registry with said air inlet aperture and a support portion projecting from said collar portion, said support portion having a free end which projects beyond the adjacent end of the bag body, and an aperture defined in said free end.

2. A vacuum cleaner filter bag comprising a bag body constructed of an air pervious material and having a pair of side walls which oppose one another and are closed at the opposite ends thereof, one of said side walls having an air inlet aperture defined therein, and a relatively stiff planar member secured to said one wall, said member having a collar portion provided with an aperture in registry with said air inlet aperture and a support portion projecting from said collar portion, said support portion having a free end which projects beyond the adjacent end of the bag body, and an aperture defined in said free end, said collar portion being wider than said support portion, and said support portion tapering from said collar portion to said free end thereof.

3. A vacuum cleaner filter bag comprising a bag body constructed of an air pervious material and having a pair of side walls which oppose one another and are closed at the opposite ends thereof, one of said side walls having an air inlet aperture defined therein, and a relatively stiff planar member secured to said one wall, said member having a collar portion provided with an aperture in registry with said air inlet aperture and a support portion projecting from said collar portion, said support portion having a free end which projects beyond the adjacent end of the bag body, and an aperture defined in said free end, and a resilient fitting overlying said collar portion, said fitting having an aperture which is in registry with said air inlet aperture and which has a smaller diameter than the latter.

References Cited

UNITED STATES PATENTS

1,835,770	12/1931	Gasner et al.	25—366
2,784,800	3/1957	Segesman	55—375 X
2,815,090	12/1957	Humphrey	55—375 X
2,961,063	11/1960	Fesco	55—381
3,017,070	1/1962	London	229—62
3,107,989	10/1963	Fesco	55—381
3,197,118	7/1965	Meyerhoeffer	55—361 X
3,227,358	1/1966	LaGuerre	229—54
3,242,654	3/1966	Kornstein et al.	55—376

HARRY B. THORNTON, *Primary Examiner.*

B. NOZICK, *Assistant Examiner.*

U.S. Cl. X.R.

55—378; 229—54