

Feb. 2, 1971

J. J. FESCO

3,559,381

VACUUM CLEANER FILTER BAG

Filed Oct. 31, 1968

3 Sheets-Sheet 1

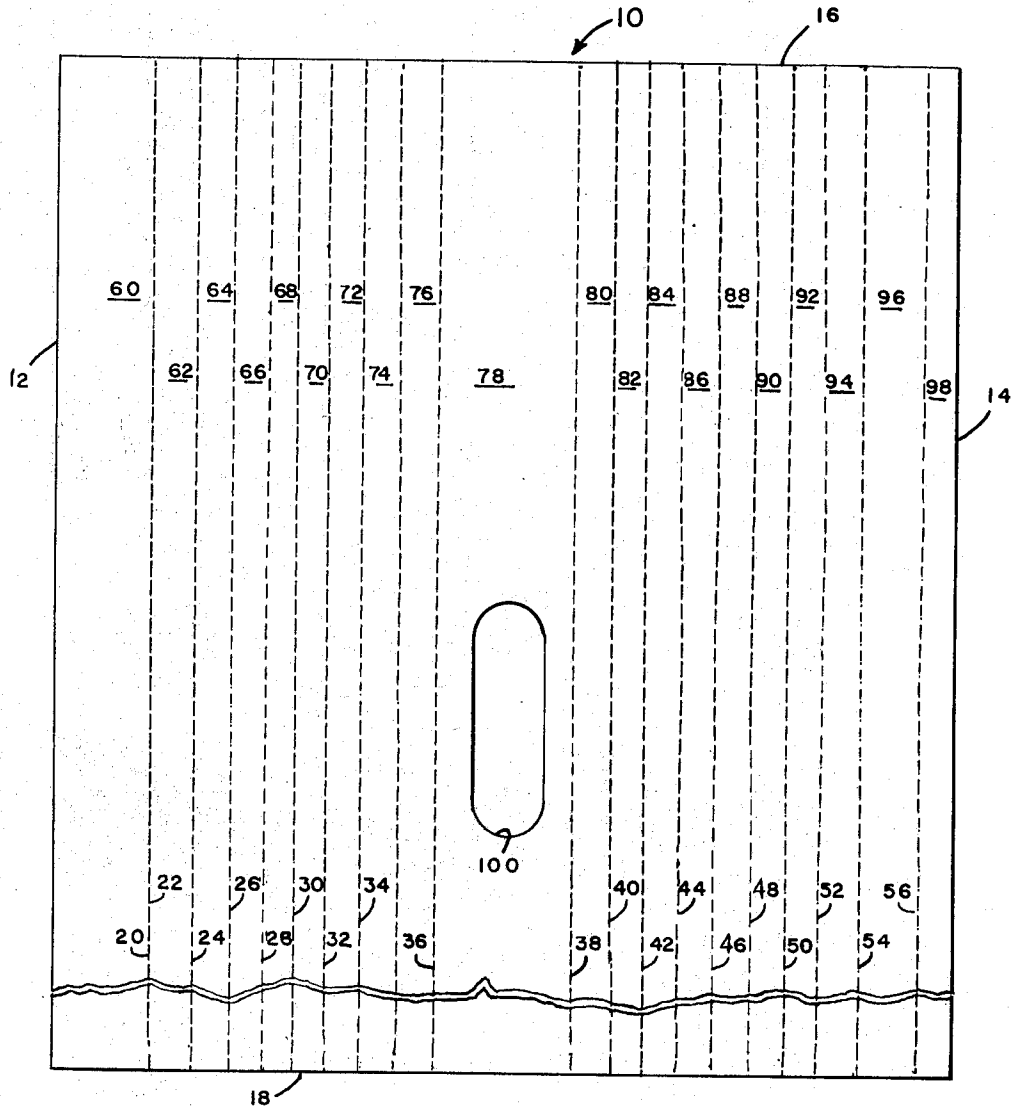


FIG. 1.

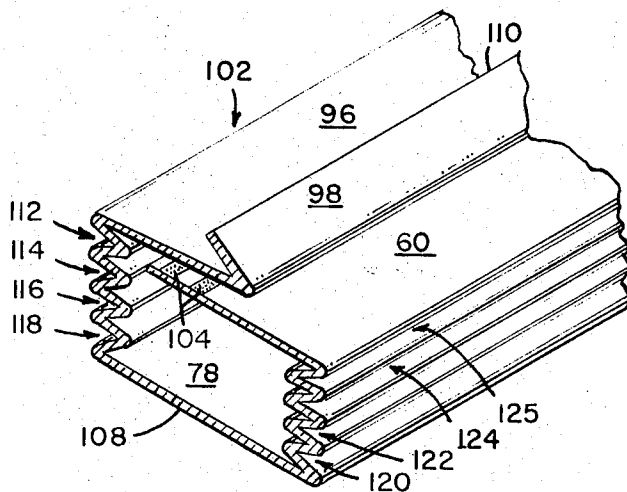


FIG. 2.

INVENTOR.

JOHN J. FESCO

BY *Fredman Goodman*
Attorneys

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J. J. FESCO

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3 Sheets-Sheet 2

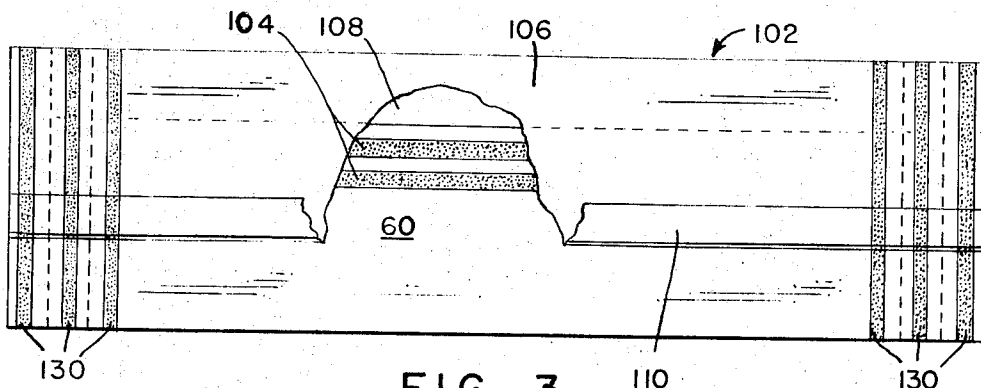


FIG. 3.

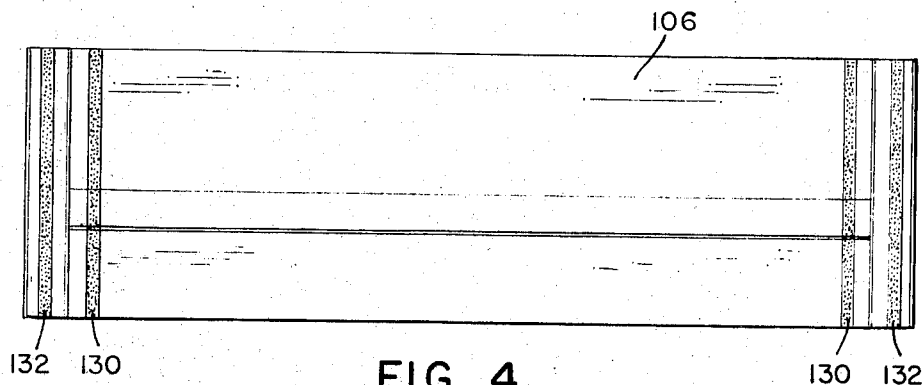


FIG. 4.

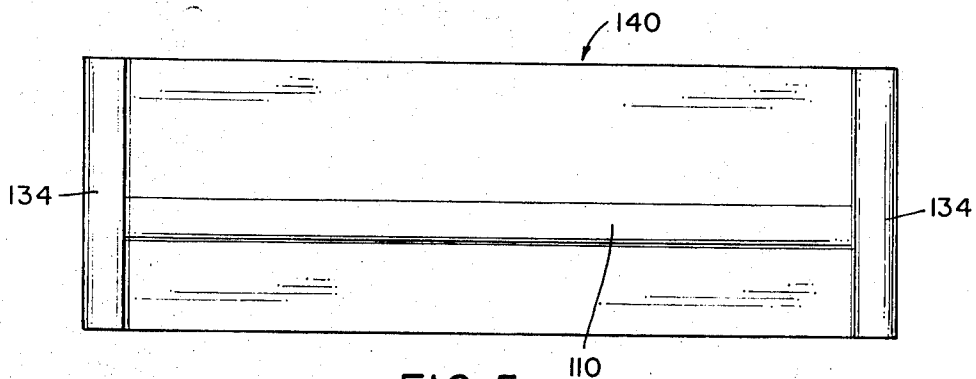


FIG. 5.

INVENTOR.

JOHN J. FESCO

BY

Friedman & Friedman
Attorneys

Feb. 2, 1971

J. J. FESCO

3,559,381

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3 Sheets-Sheet 3

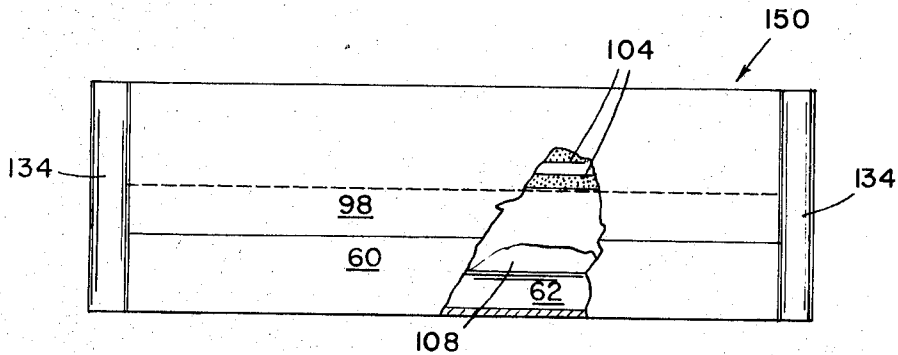


FIG. 6.

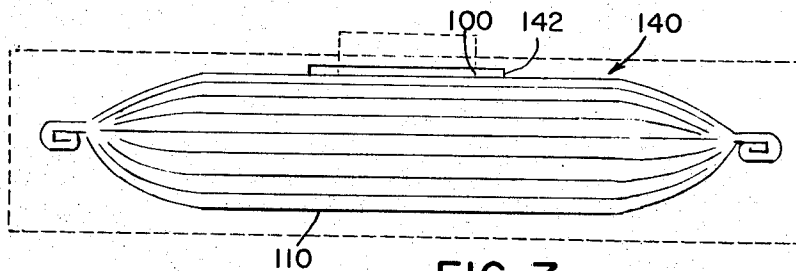


FIG. 7.

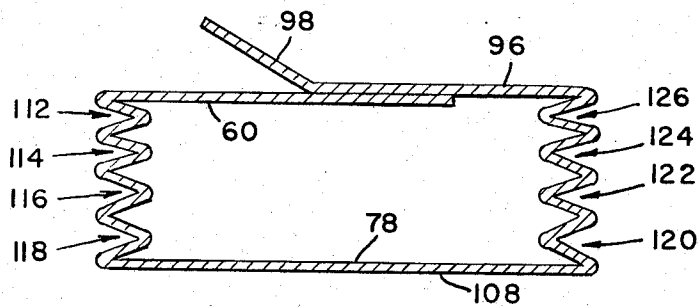


FIG. 8.

INVENTOR.

JOHN J. FESCO

BY

Friedman & Goodman
Attorneys

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3,559,381

VACUUM CLEANER FILTER BAG

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

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Int. Cl. B01d 46/02

U.S. Cl. 55—357

4 Claims

ABSTRACT OF THE DISCLOSURE

A vacuum cleaner filter bag formed of a blank sheet of material folded to define a front wall, a rear wall and opposing accordion folded side walls, said bag being closed at both ends and access means being provided into the interior of said bag in said front wall, said rear wall being provided with a convenient hand grip for causing expansion of the bag.

BACKGROUND OF THE INVENTION

(1) Field of the invention

The invention relates generally to vacuum cleaner filter bags and particularly to expansible vacuum cleaner filter bags.

(2) Description of the prior art

Disposable vacuum cleaner filter bags have, of course, become well known. It is quite often highly desirable to provide economical means for opening or causing expansion of such bags.

SUMMARY OF THE INVENTION

It is therefore among one of the principal objectives of the invention to provide a vacuum cleaner filter bag which is adapted to be unfolded or expanded.

In accordance with the present invention there is now provided such a vacuum cleaner filter bag formed of a blank sheet of material folded to define a front wall, a rear wall and a pair of opposing accordion folded side walls, said bag being closed at both ends and access means being provided into the interior of said bag in said front wall, said rear wall being provided with a hand grip for conveniently unfolding the side walls, said hand grip being provided without unduly complicating the manufacture of the bag.

BRIEF DESCRIPTION OF THE DRAWING

The invention will be hereinafter more fully described with reference to the accompanying drawing, in which:
FIG. 1 is a plan view of a blank utilized in the manufacture of an expansible bag pursuant to the present invention;

FIG. 2 is a fragmentary sectional perspective view of a bag tube formed from the blank of FIG. 1;

FIGS. 3, 4 and 5 illustrate successive steps in forming the bag bottom closures on the tube illustrated by FIG. 2, the bag being shown in the contracted and collapsed condition;

FIG. 6 is a view similar to FIG. 5 showing yet another embodiment of the invention;

FIG. 7 is a view showing the invention bag within a vacuum canister shown by dotted lines; and

FIG. 8 is a sectional end view of the bag illustrated by FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the figures of the drawing, FIG. 1 illustrates a blank 10 of paper sheet material, the blank as here shown being essentially rectangular in conforma-

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tion. As here shown, the blank has a pair of opposing longitudinal marginal edges 12, 14, and a pair of opposing transverse marginal edges 16, 18. Between transverse edge 16 and the opposing transverse edge 18, the blank is provided with nineteen longitudinal fold lines which are spaced laterally between the longer end edges 12, 14 of the rectangular blank, said fold lines being indicated by the reference numerals 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54 and 56, respectively. It will be noted that end edge 12 and fold line 20 define a panel 60; fold lines 20 and 22 a panel 62; fold lines 22, 24 a panel 64; fold lines 24, 26 a panel 66; fold lines 26, 28 a panel 68; fold lines 28, 30 a panel 70; fold lines 30, 32 a panel 72; fold lines 32, 34 a panel 74; fold lines 34, 36 a panel 76; fold lines 36, 38 a panel 78; fold lines 38, 40 a panel 80; fold lines 40, 42 a panel 82; fold lines 42, 44 a panel 84; fold lines 44, 46 a panel 86; fold lines 46, 48 a panel 88; fold lines 48, 50 a panel 90; fold lines 50, 52 a panel 92; fold lines 52, 54 a panel 94; fold lines 54, 56 a panel 96; and fold line 56 and edge 14 define a panel 98. Additionally, a longitudinally oriented oval shaped aperture 100 is provided in panel 78.

FIG. 2 illustrates a bag tube 102 which is formed by folding the blank 10 along the various longitudinal fold lines 20 through 56 thereof. It will be understood that the tube 102 is formed by adhesively securing the end edges 12 and 14 according to the manner of the invention; and that a pair of stripes of adhesive 104 are applied to the longitudinal edge 12, and longitudinal edge 14 is placed in overlying relation therewith, the stripes of adhesive being disposed such that a minor marginal portion of panel 96 and all of panel 98 remain unglued, for a reason which will be subsequently described. When the bag tube 102 is formed panels 60 and 96 now define a rear wall 106, panel 78 a front wall 108 and panel 98, which has been folded over upon itself along fold line 56, a flap 110. Panels 62, 64, 66, 68, 70, 72, 74 and 76 in turn define gussets 112, 114, 116 and 118, respectively, while panels 80, 82, 84, 86, 88, 90, 92 and 94 define gussets 120, 122, 124 and 126, respectively.

The tube 102 is closed at both ends by applying three parallel stripes of adhesive material to the extreme ends of rear wall 106, as at 130, and a single stripe of adhesive material at the extreme ends of front wall 108, as at 132, and the respective ends are then folded over upon themselves to form the "triple-lock" closures 134 conventionally known to the art.

To form the vacuum cleaner bag 140 of the invention a conventional suitable mounting collar 142 is adhesively secured to front wall 108 to overlie the oval shaped aperture 100, which aperture 100 provides access into the interior of the bag 140. The bag 140 can then be mounted within a suitable vacuum cleaner, as shown by dotted lines in FIG. 7. With the bag mounted in place, the bag according to the manner of the invention, can then be expanded by gripping flap 110 with the fingers and pulling outwardly. It is then in the expanded condition, shown by FIG. 7, and the vacuuming operation can proceed. Alternatively, the bag can be expanded by holding the mounting collar 142 in one hand and pulling the flap 110 outwardly with the other hand, before the mounting operation, aforementioned.

FIGS. 6 and 8 illustrate yet another embodiment of the invention. A vacuum cleaner bag 150 is formed from the same blank 10 shown in FIG. 1, in exactly the same manner as for the embodiment shown by FIGS. 2-5, except that in this embodiment, panel 98 is not folded back upon itself, as shown by flap 110, previously. Instead, it is allowed to remain in a flat, abutting condition against panel 60, which forms a part of wall 106. Panel 98, however, remains free to be used to expand the bag, since it is not adhesively secured by stripes 104. Thus,

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panel 98 is identical in function to flap 110, being used as a means to expand the bag by grasping it with the fingers and pulling outwardly. This can readily be seen by referring specifically to FIG. 8 wherein the panel 98 is shown in a free, readily graspable condition.

Thus, according to the invention, a bag has been provided which is adapted to be readily expansible. Thus, according to the invention a bag has been provided in which each embodiment is formed from the same blank.

What is claimed is:

1. A vacuum cleaner filter bag formed of a blank sheet of air permeable filter material folded to define a front wall, a rear wall, and a pair of opposing accordion folded side walls interconnecting said front wall with said rear wall and forming a tube like member, said rear wall being formed by two overlapping panels secured together by securement means which is spaced apart from the edges of said panels, one of said panels being folded over upon itself along a fold line extending longitudinally the full length of said tube like member and forming a bag opening facilitating flap which is unsecured by said securement means, said flap having sufficiently large transverse dimension to enable the same to be grasped by the fingers of a user for opening said bag from a collapsed position to an expanded use position; said tube like member having closing means at both ends thereof, said flap being secured at each of its respective longitudinally spaced apart ends by a respective one of said

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closing means and said front wall having therein aperture means for permitting the passage of air to be filtered into the interior of said bag.

2. A bag according to claim 1 wherein said aperture means is in the form of a generally oval shaped aperture.

3. A bag according to claim 1 wherein said securement means comprises two spaced apart glue stripes.

4. A bag according to claim 1, wherein said opposing side walls are each provided with at least one gusset.

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25 DENNIS E. TALBERT, Jr., Primary Examiner

U.S. Cl. X.R.

55—381; 93—35; 229—53