

March 6, 1956

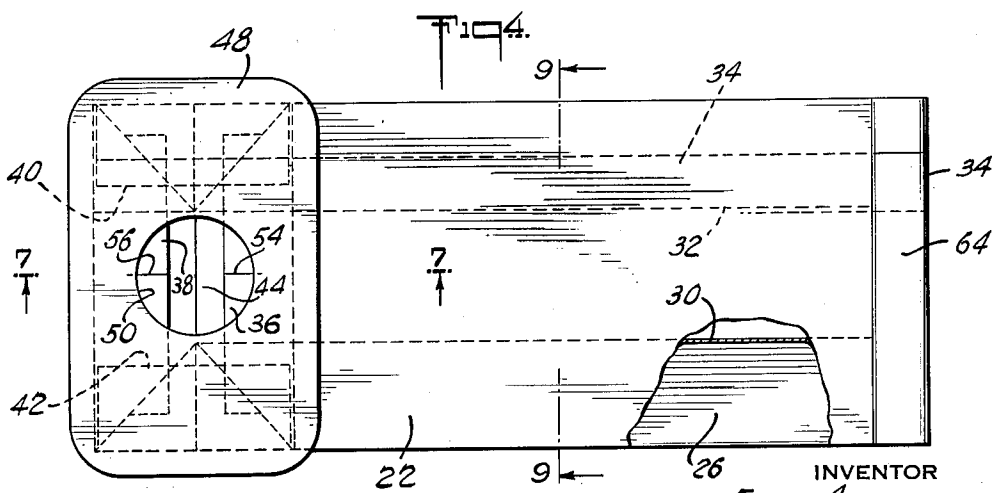
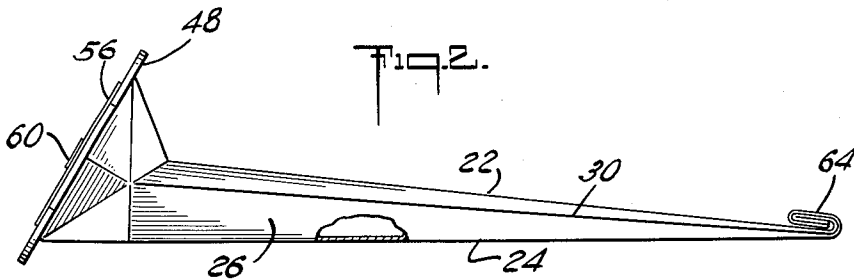
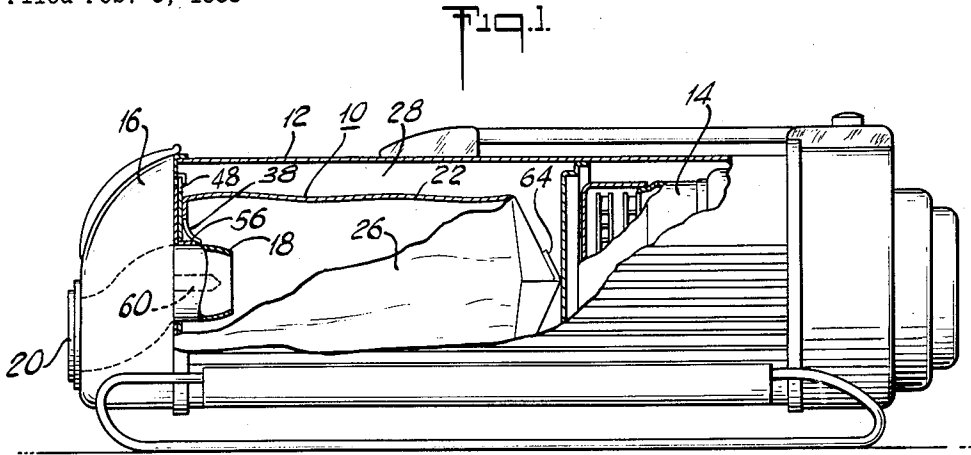
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2,737,263

VACUUM CLEANER FILTER BAG

Filed Feb. 9, 1953

2 Sheets-Sheet 1



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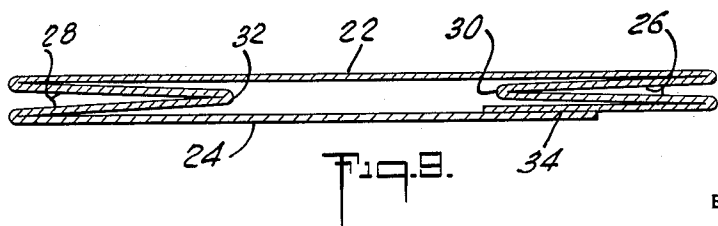
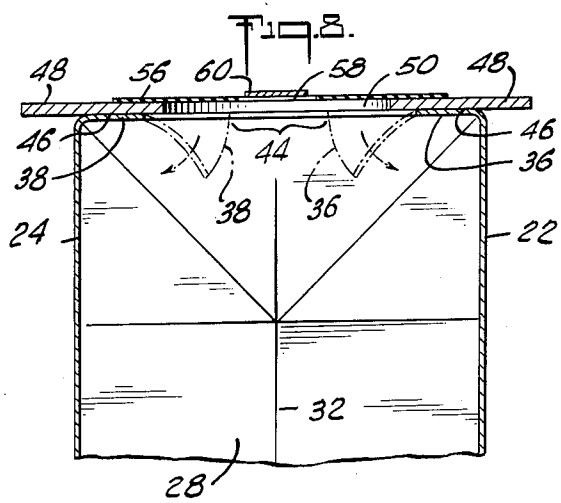
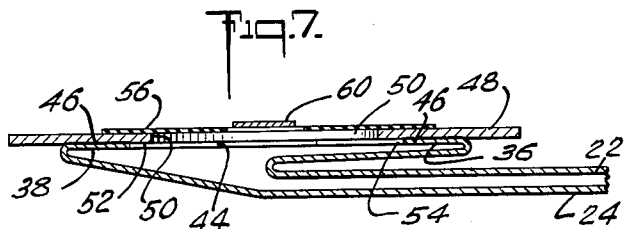
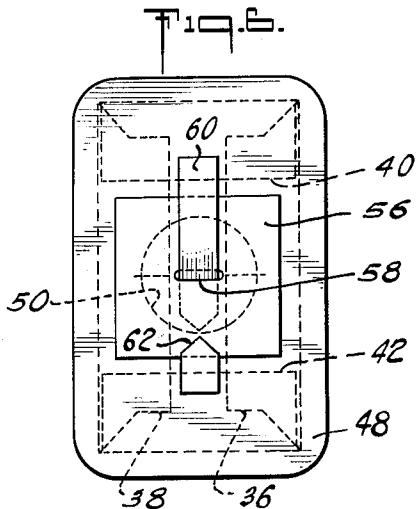
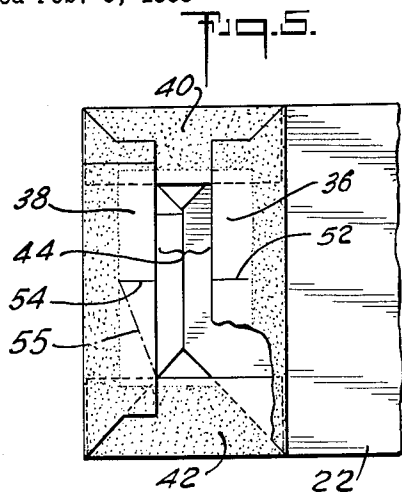
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VACUUM CLEANER FILTER BAG

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2 Sheets-Sheet 2



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1

2,737,263

VACUUM CLEANER FILTER BAG

Emil Anderson, Briarcliff Manor, N. Y., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Application February 9, 1953, Serial No. 335,775

1 Claim. (Cl. 183—51)

My invention relates to disposable filter bags for vacuum cleaners of the type disclosed in my Patent No. 2,621,757 issued December 16, 1952. In that patent there is shown a container which includes a bag portion having a plurality of side walls, each wall having an extension at one end folded at right angles to the wall and overlapping similar extensions from the other walls to form a flat end portion of the bag. A disc of relatively stiff material, such as cardboard, is secured to this flat end portion, as by gluing, and the disc and end portion are formed with aligned apertures constituting an inlet to the bag. The aperture in the otherwise closed flat end portion of the bag is formed at an intermediate point in the manufacture of the bag by folding the flat end portion along a center line thereof and cutting out a semi-circular piece, with the result that when the end portion is unfolded there is a circular hole therethrough.

However, this folding, cutting and unfolding the end portion involves additional steps in the manufacture of the bag, and also the cutout piece must be removed and disposed of.

In accordance with my present invention I make the extensions at the ends of the side walls of the bag of such length that they do not form a completely closed end portion, but on the contrary form an end portion which as initially made has an opening therethrough.

Further objects and advantages of my invention will be apparent from the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a side view, partially in cross section, showing a container in accordance with my invention in place in a vacuum cleaner;

Fig. 2 is a side view of the container shown in Fig. 1, but in partially collapsed condition;

Fig. 3 is a side view of the same container in fully collapsed condition;

Fig. 4 is a top view of the container shown in the previous figures, but with certain inlet sealing means omitted for the sake of clarity;

Fig. 5 is a view similar to Fig. 4, but shows the bag portion before the cardboard disc has been applied thereto;

Fig. 6 is an end view of the bag in expanded condition, showing seal means for the inlet opening thereof;

Fig. 7 is a cross-sectional view taken on the line 7—7 of Fig. 4;

Fig. 8 is a cross-sectional view similar to Fig. 7, but with the bag portion in expanded condition; and

Fig. 9 is a cross-sectional view taken on the line 9—9 of Fig. 4.

Referring to the drawings, and more particularly to Fig. 1, reference character 10 designates a disposable container in accordance with my invention in place within a vacuum cleaner. The vacuum cleaner includes a housing 12 within which the container is disposed. A motor fan unit 14 is mounted in one end of the housing, while the other end may be closed by a removable cover member 16. The cover member is provided with an

2

inlet conduit 18 which, when the cover is in place, extends some distance into the housing 12. The outer end of the inlet conduit is provided with one element 20 of a separable hose coupling, by means of which a flexible hose may be connected by the inlet conduit. Operation of the fan serves to draw air and entrained dust inwardly through the inlet conduit to within the container 10. The bag portion of this container is preferably made of flexible or pliable paper which is pervious with respect to air, but impervious with respect to dust. Consequently, the air passes through the walls of the bag portion, while the dust is retained therein.

The container 10, as above stated, comprises a bag portion having a first pair of side walls 22 and 24 and a second pair of side walls 26 and 28, all four of these walls being best shown in Fig. 9. The side walls 26 and 28 are formed with longitudinally extending center creases 30 and 32, whereby these walls may be folded flat between the walls 22 and 24 when the container is in collapsed condition. This bag portion is made from an initially flat sheet of paper, the longitudinal edges of which are secured together by a seam 34 in the side wall 24.

When the bag is in expanded condition, as is shown in Figs. 1 and 8, the side walls of each pair are disposed parallel to each other, while the side walls of the different pairs are disposed substantially at right angles to each other.

The left-hand ends of the side walls, as viewed, for example in Fig. 5, are formed with extensions which, when the bag portion is in extended condition, extend inwardly and substantially at right angles with respect to the side walls. Thus, the side walls 22 and 24 are formed with extensions 36 and 38, respectively, while the side walls 26 and 28 are formed with extensions 40 and 42, respectively. As will be seen particularly in Fig. 5, the length of each extension is less than one half the distance from the respective side wall to the other side wall of the same pair, thus forming a rectangular opening 44 in the flat end portion of the bag.

Secured to the flat end portion, as by means of a suitable adhesive 46, is a flat comparatively stiff disc 48 of cardboard or the like having a preferably circular aperture 50. It will be noted that the diameter of this aperture 50 is less than the space between the inner ends or edges of the extensions 40 and 42, but is greater than the space between the inner edges of extensions 36 and 38. Consequently, portions of the extensions 36 and 38 extend within the boundary of the aperture 50 and, in order that they will not interfere with the introduction of the inlet conduit 18, these extensions are formed with slits 52 and 54, respectively, which permit the extensions to be bent or folded out of the way by the inlet conduit as shown in Fig. 8, the bending taking place along lines, such as the broken line 55 in Fig. 5.

In order to provide a self-closing seal for the inlet to the container, a sheet of stretchable and elastic material 56 is secured, as by gluing, to the outer surface of the disc 48. This sheet is formed with a hole 58 of preferably oblong configuration which is normally much smaller than the aperture 50 in the disc. There is also provided a strip 60 of light cardboard or the like which initially extends across the sheet 56 and over the hole 58. Where the strip 60 crosses one of the edges of the aperture 50 the strip is formed with a weakened section 62 so that, when the inlet conduit is inserted, the strip is broken at this point and the longer end is bent and pushed through the hole 58 by the conduit and lies along the side of the conduit and at the same time the sheet material is stretched so as to enlarge the hole 58 sufficiently to accommodate the inlet conduit, as is shown in Fig. 1. Thereafter, when the front cover is

3

removed and the inlet conduit withdrawn, the hole 58 returns to its original small size and straightens out the strip 60 which continues to extend through the hole so as to provide a substantial seal therefor, as is clearly shown in Fig. 6.

It will be noted that the strip 60 is disposed parallel to the inner ends or edges of the extensions 36 and 38 and that the distance between these extensions is greater than the width of the strip. This is desirable, as otherwise the extensions might interfere with the strip being straightened out and properly sealing the hole 58 when the inlet conduit is withdrawn.

It will be also noted that the adhesive 46 is so placed on the extensions 36 and 38 that it does not extend inwardly beyond the outer boundary of the aperture 50 in the disc, as otherwise it might adhere to the elastic sheet 56 and interfere with the proper stretching of this material upon insertion of the inlet conduit.

The end of the bag portion, opposite from the disc 48, is closed by having the side walls folded over on themselves several times and glued, as shown at 64.

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

What I claim is:

A disposable dust container for a suction cleaner,

4

said container including a bag composed of pliable porous sheet material of porosity to permit the passage of air but to preclude the passage of dust particles there-through, said bag having a plurality of pairs of side walls, the walls of each pair being substantially parallel to each other and disposed at an angle to the walls of any other pair, said sheet material forming an extension at one end of each side wall and being folded inwardly substantially at right angles to the respective wall, said extensions being disposed in overlapping relationship to form a flat end portion, each of said extensions having a length less than one half the distance between the respective side wall and the other side wall of the same pair whereby an opening is provided through said end portion, and a flat end member of relatively stiff material secured to said end portion and having an aperture communicating with said opening and with the interior of said bag.

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