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M. MARSHALL

1,924,249

DUST BAG

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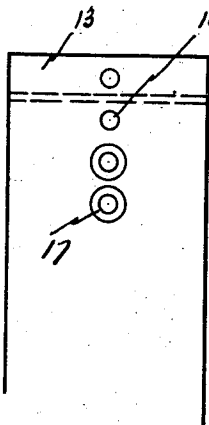
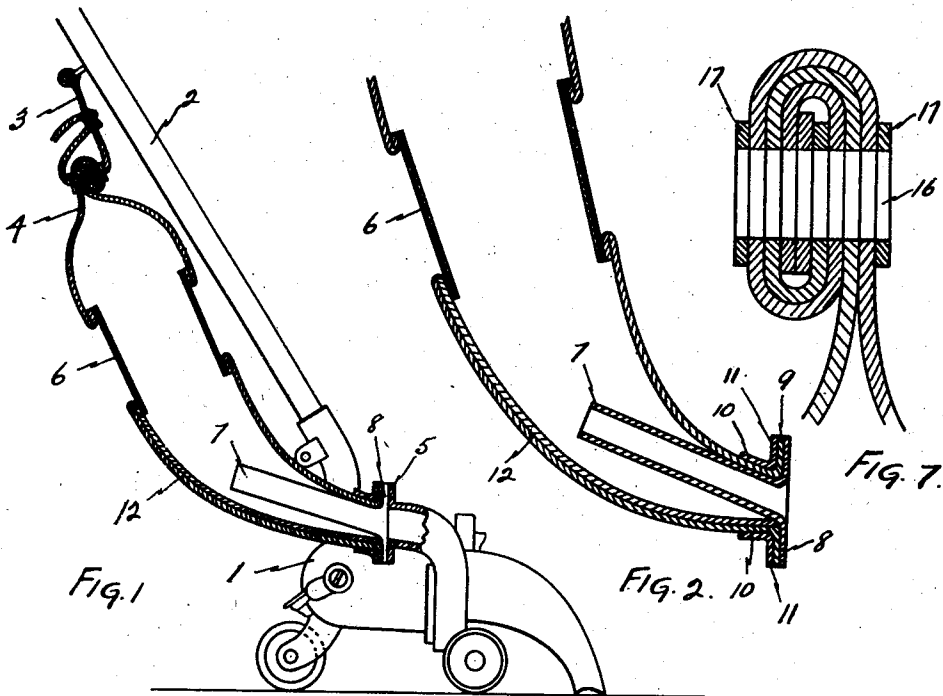


Fig. 3.

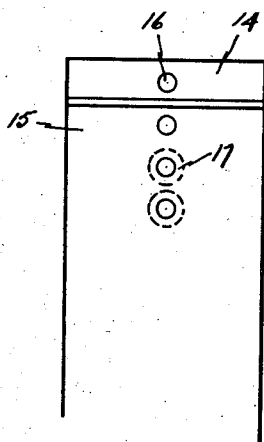


Fig. 4.

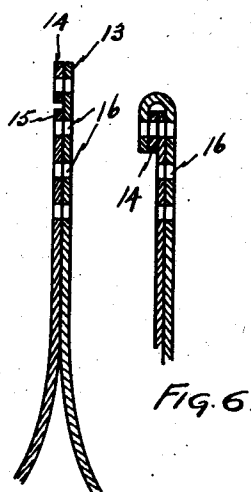


Fig. 5

Fig. 6.

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DUST BAG

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Serial No. 632,853

3 Claims. (Cl. 183—51)

This invention relates to improvements in vacuum cleaner dust bags and is particularly designed as an improvement on my previous application filed January 17th, 1931 under Serial No. 509,465 and issued October 4, 1932 under Patent Number 1,881,086 for an Auxiliary container designed to fit the usual fabric dust bag of a vacuum cleaner.

The present invention has for its particular object the elimination of the continual agitation of the whole of the dust contents of the bag by the air stream from the fan.

Another particular object of my invention is to provide quick, easy and convenient means of discharging the dust contents of the bag.

Still another object of my invention is to provide a more sanitary dust bag than the usual fabric bag and having all the advantages of my previous invention.

A still further object of my present invention is to provide a cheap and economical paper dust bag readily replaceable at small cost and having sanitary features not enjoyed by the usual fabric dust bag.

With these and other objects in view I have invented the subject matter of this application which is hereinafter fully described and illustrated in the accompanying drawing, and specifically pointed out in the appended claims, it being understood, of course, that minor changes may be made so long as they fall within the scope of the claims.

In describing my invention reference will be made to the accompanying drawing, wherein like numerals denote like or corresponding parts throughout the several figures, and in which:

Figure 1 is a sectional view of the paper dust bag attached to a vacuum cleaner and shows the long discharge spout positioned in the bag.

Figure 2 is a part sectional view showing reinforcement of the bottom layer of the bag which receives the full impact of the dust contents from the fan through the long discharge spout and also shows the construction of the attaching neck of the dust bag.

Figure 3 is a detail view of one side of the folding top of the dust bag and shows a row of holes that register when the top is folded over. Two of the holes are shown having reinforcement thereto.

Figure 4 is a detail view of the opposite side of the bag to that shown in Figure 3 and shows the back section of the bag extending beyond the front section and having a reinforcement and folding strip secured thereto.

Figure 5 is a sectional edge or side view of the back and front sections of the paper dust bag when closed together ready for folding to close the top and shows the reinforcing strip secured to the back section.

Figure 6 is a detail sectional view of the top of the bag in the first single fold and shows reinforcing and folding strip intermediate of the front and back sections of the paper dust bag.

Figure 7 is a detail sectional view of the top of the bag completely folded to form a dust tight joint.

In the drawing the numeral 1 indicates a vacuum cleaner generally and 2 the handle portion to the upper end of which is attached a cord 3 for securing thereto the top of a paper dust bag 4, the lower end of which is affixed to the usual discharge end 5 of the vacuum cleaner.

The paper dust bag shown in the drawing is provided with foraminous air vents 6 to permit the escape of air from the bag while retaining the dust contents.

Fitted inside the lower end of the bag 4 is a long discharge spout 7, the outer end of which is flanged at 8 to comprise a registering flange to fit the discharge end 5 of the vacuum cleaner.

The lower end of the paper dust bag 4 is restricted to fit snugly around the spout 7 and the ends of the bag are crimped and turned right-angularly at 9 to comprise a reinforcement to the flange 8 of the spout.

Around the outside of the restricted end of the bag 4 surrounding the spout 7 is a binding and reinforcing strip 10, one edge of which is turned right-angularly at 11 to comprise additional reinforcement to the flange 8.

The lower portion of the bag 4 is of double thickness at 12 and the inside bottom edge abuts the flange 8 while the outer edge is turned right-angularly at 9 to reinforce the flange 8.

The construction above recited is clearly shown in Figure 2.

The top of the paper bag is open-ended and has one portion 13 (the back) a little longer than the other portions of the bag.

To the longer portion is attached a reinforcing and folding strip 14 (see Figures 4 and 5) and the opposite or front side of the bag is designed to fit immediately below the strip 14 when the two sides of the bag are closed together (see Figure 5). In the centre of the two sides of the bag 13 and 15 is formed a longitudinal row of apertures 16, one of which

apertures is through the reinforcing and folding strip 14.

The two lower apertures on the back 13 are reinforced at 17 for purposes which will appear apparent a little later in this description. The apertures 16 are spaced apart in such order that when the top of the bag 4 is closed and folded over the folding strip 14 they will all register together.

The bag 4 is designed to be closed by being folded in a number of times over the folding strip 14 to comprise a dust-proof joint and when so folded all the apertures register and the two lower reinforced apertures appear one on each side of the folded end of the bag (see Figure 7).

Figure 6 shows the first step or fold when closing the end of the bag 4 and shows the folding strip 14 acting as a spacer whereby the apertures 16 are caused to register when the end of the bag is completely closed and folded, as in Figure 7.

The particular object and purpose served by the inner extending end of the spout 7 is to create a settling chamber for the dust contents discharged into the bag from the vacuum cleaner.

In ordinary vacuum cleaners and dust bags the accumulated dust contents are kept in a continual stage of agitation by the incoming air stream discharged into the bag from the fan and when a large amount of dust has accumulated in the bag the air stream keeps the dust contents in a violent stage of agitation that in time penetrates into every interstice of the dust bag and causes the bag to leak fine dust particles into the room.

With my invention of providing a settling chamber within the bag immediately around the neck of the discharge spout 7 this objection is largely removed as the length of the spout is such that when sufficient dust has accumulated in the bag to cover the inner end of the spout 7 the bag should be emptied and cleaned of the contents.

After the bag 4 has its upper end closed by being folded over to cause the apertures 16 to register, it is secured to the handle 2 of the vacuum cleaner by passing the end of the cord 3 through the apertures 16 and tying the cord upon itself.

The spout 7 is formed from smooth, stiff paper that permits of ready passage of dust laden air from the fan of the vacuum cleaner and the inner extremity is positioned opposite the reinforced bottom 12 of the bag 4 and such reinforcement is vitally necessary in a paper bag, as such articles as matches that are readily picked up by the suction of a powerful fan will readily penetrate a single ply paper as they are dis-

charged into the bag with considerable force. The walls of the bag 4 are constructed of a tough and flexible paper that will not permit the passage of fine dust contents therethrough.

Having now described my invention, what I claim and desire to be protected in by Letters Patent, is:

1. In a paper dust bag for vacuum cleaners having an air vent, comprising in combination therewith an elongated discharge spout extending inwardly of said bag, said spout having its outer end turned approximately right angularly to form a flange, a restricted bottom portion to said bag adapted to fit snugly around said discharge spout and to reinforce said flange, a binding and reinforcing strip wrapped around the restricted bottom portion of said bag surrounding said spout and having one edge turned angularly to build up and reinforce said flange, a reinforced bottom layer to said bag positioned to receive the impact of the incoming air stream and dust contents from said vacuum cleaner, an open top to said bag, and means to close said top to comprise a dust-proof joint, and means to hang said top to the handle of a vacuum cleaner.

2. In a paper dust bag for vacuum cleaners having an air vent comprising in combination therewith, an elongated discharge spout positioned at the bottom of said bag and extending inwardly thereof, a settling chamber formed entirely around said spout, a reinforced bottom layer to said bag, an open top to said bag having one portion longer than the other portions of said bag, a reinforcing and folding strip secured upon said longer portion, a series of apertures formed in two sides of said open top, said apertures designed to register when said sides are closed together and folded to comprise a dust-proof joint, and means to secure said folded top to the handle of a vacuum cleaner.

3. In a paper dust bag for vacuum cleaners having an air vent comprising in combination therewith, an elongated discharge spout positioned at the bottom of said bag and extending inwardly thereof, a settling chamber formed entirely around said spout, a reinforced bottom layer to said bag, an open top to said bag having one portion longer than the other portions of said bag, a reinforcing and folding strip secured upon said longer portion, a series of apertures formed in two sides of said open top, said apertures designed to register when said sides are closed together and folded to comprise a dust-proof joint, and means to secure said folded top to the handle of a vacuum cleaner, said means comprising passing a cord through said registered and folded apertures and securing the end of said cord to the handle of a vacuum cleaner.

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