

June 26, 1956

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2,752,002

DISPOSABLE DUST BAG FOR VACUUM CLEANER

Filed March 16, 1955

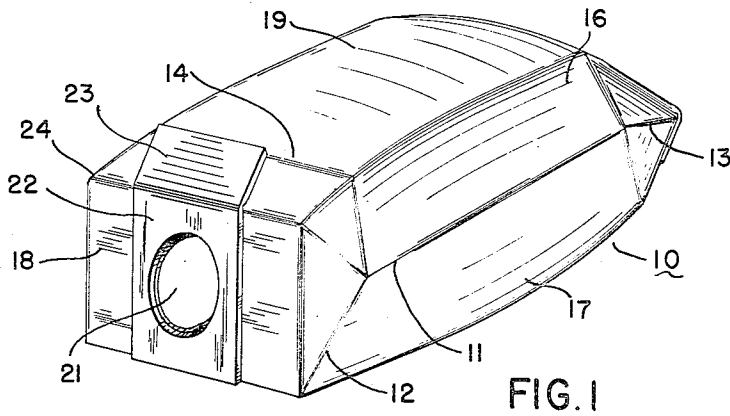


FIG. 1

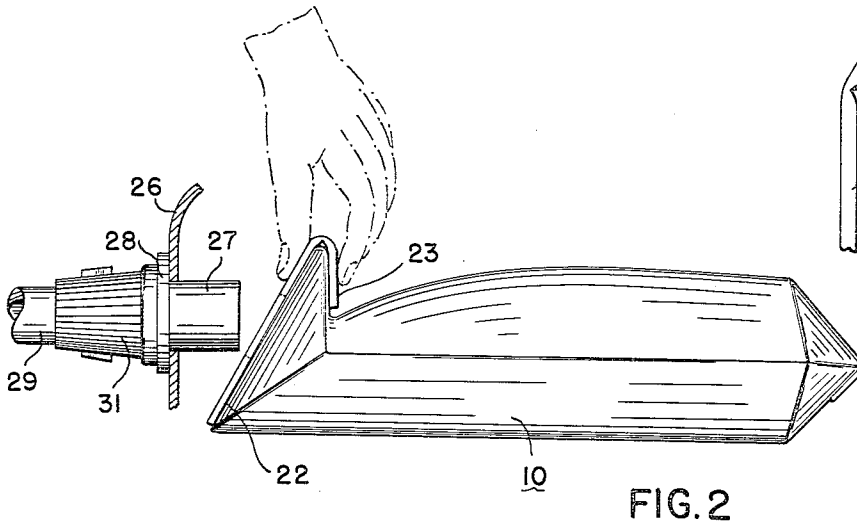


FIG. 2

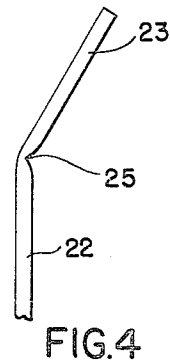


FIG. 4



FIG. 3

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DISPOSABLE DUST BAG FOR VACUUM CLEANER

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Application March 16, 1955, Serial No. 494,707

2 Claims. (Cl. 183—51)

This invention relates to disposable dust bags for vacuum cleaners, and more particularly to an improved gripping means for bags of this type minimizing any tendency to tear the bag upon connection with and removal from the suction inlet of a cleaner.

Disposable dust bags are increasingly used today in association with vacuum cleaners wherein a bag formed of paper having desired porosity is provided with a neck or opening adapted to telescope over a tubular suction inlet in the cleaner. The dirt-laden air from the suction hose is drawn into the bag and relatively clean air filters through the bag walls and is exhausted in a conventional manner, the bag retaining and in effect packaging the major portion of the dirt entrained in the air stream. When the bag is filled to a desired degree the bag is disengaged from the inlet tube and the bag or packaged dirt is disposed of as a relatively clean operation compared to emptying a cloth or non-disposable filter bag.

Inasmuch as the paper bags are disposable, it is important that they be relatively inexpensive but applicant has found that although inexpensive paper will withstand the suction stream and filtering action, the bags are frequently torn in engaging the bag with or removing the same from the inlet tube. This is particularly true since the paper or material forming the bag must be relatively thin and flexible to permit air to be freely filtered there-through.

If the bag is torn during connection to the suction inlet tube, its usefulness for filtering dirt is destroyed and if torn during removal from the tube the dirt spills into the cleaner.

According to the invention, the bag opening which is adapted to receive the suction inlet tube is reinforced by a cardboard strip which has sufficient rigidity to hold the bag in engagement with the tube during operation of the cleaner and the strip is extended upwardly about the bag end adapted to engage the inlet and scored adjacent the top edge of said end whereby the top portion of the strip may be folded back in the form of an inverted V with a portion of the bag end and a portion of the top wall of the bag between the strip portions forming the V. In this manner the strip provides the gripping means for inserting the bag on the inlet tube and for removal, thereby minimizing any tendency to tear the bag during these operations as might occur if the bag were directly gripped. A double wall thickness of the bag is disposed between the strip V portions.

It is a primary object of the invention to provide a disposable dust bag for vacuum cleaners having improved gripping means minimizing any tendency to tear the bag when connecting the bag to a suction inlet tube or in disconnecting the same.

Another object of the invention is to provide a disposable dust bag of the above type which is relatively inexpensive.

Other objects of the invention and the invention itself will become increasingly apparent from a consideration of the following description and drawings wherein:

Figure 1 is a perspective view of an opened disposable dust bag embodying the invention.

Figure 2 is a diagrammatic view showing the manner of engaging the bag with the suction inlet tube of a vacuum cleaner.

Figure 3 is a side elevational view showing the bag in folded or shipping position, and

Figure 4 is an enlarged view showing the scoring or grooving in the reinforcing strip.

Referring now to the drawing, a disposable dust bag is generally indicated at 10 which is formed of suitable filter paper. The bag is creased or formed to fold along lines indicated at 11, 12, 13 and 14 whereby in folded or shipping position, as indicated in Figure 3, the side wall portion 16 above line 11 will shut the lower portion 17 below line 11 and the bag end 18 will fold flat over a portion of the bag top wall 19.

The bag end 18 is formed with a circular opening 21 and a reinforcing strip 22, preferably formed of light weight corrugated cardboard, is provided with an aligned opening. The strip 22 is fixed to the front face of bag end 18, preferably by glue, and the strip has a top portion 23 extending above the top edge 24. The strip is scored as indicated at 25 of Figure 4 for ease in bending the top portion 23 although the strip may be scored at both the rear and front faces of the strip. Printed instructions such as "Fold back over bag for hand grip to install" are preferably placed on the front face of strip top portion 23.

In Figure 2, I have indicated at 26 the top portion of the side wall of a vacuum cleaner, such as a canister type cleaner, and projecting inwardly therefrom is a tubular suction inlet 27 which is secured to the wall in leak-proof relation. Inlet 27 is preferably slightly tapered or progressively reduced in diameter proceeding towards the bag receiving end of the tube. Secured to the external face of wall 26 is a coupling member 28 adapted to have a suction hose 29 coupled thereto by a coupling 31. In connecting the bag to tube 27 the lower lip forming opening 21 is projected forwardly to engage the bottom of tube 27 and then the bag end 18 and strip 22 are rocked counter-clockwise to project the tube through opening 21. The fit between the tube and the opening is reasonably tight and I have found that as dirt-laden air is drawn into the bag the strip 22 tends to cock to a slight degree gripping the tube with a wedging action and holding the bag securely locked to the tube during operation of the cleaner. In removing the bag 10 from tube 27 the action is reversed and the strip 22 and bag are rocked clockwise.

It will now be apparent that I have provided a relatively inexpensive disposable dust bag for vacuum cleaners having hand grip means which to a large degree prevents tearing of the relatively fragile paper bag since a double thickness of the bag wall is gripped between the strip portions 22 and 23 when the strip is folded as indicated in Figure 2 and there is little danger of an operator accidentally projecting the thumb or fingers through the bag wall. Also the folded strip engages a substantial area of the bag wall or surface providing a firm grip during insertion or removal of the bag.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

What I claim is:

1. A disposable dust bag for a canister type vacuum cleaner provided with a removable top cover, a bag compartment in the upper portion of the cleaner, and a suction inlet tube projecting into said compartment, the bag being adapted to be detachably secured to said tube against the pressure of indrawn air solely by frictional engagement with said tube, said bag being formed of filter paper

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and having an opening adapted to receive said tube, said bag in open position having flat generally parallel top and bottom walls and a flat end wall in which said opening is formed, a cardboard reinforcing strip fixed to the front face of said end wall and encircling the opening therein, said strip terminating downwardly substantially at the bag bottom wall and having a top portion extending upwardly about the bag top wall, and the strip being scored substantially in the plane of the bag top wall whereby the strip top portion may be folded back to form an inverted V with the lower portion of the strip and provide a hand grip means for connecting and disconnecting the strip.

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2. The dust bag as defined in claim 1 and wherein the bag top wall is transversely creased adjacent the strip whereby when the strip is folded to hand grip position a double wall thickness of bag material comprising a portion of the said end wall and top wall is included between the strip portions.

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