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G. E. LOFGREN
DISPOSABLE DUST BAGS

2,909,238

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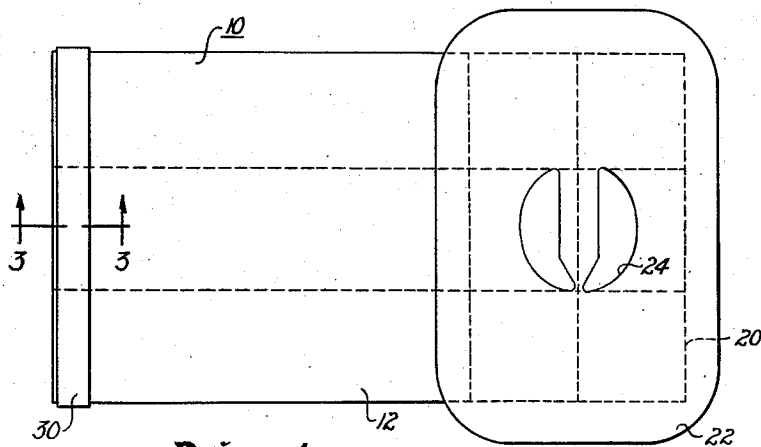


Fig. 1

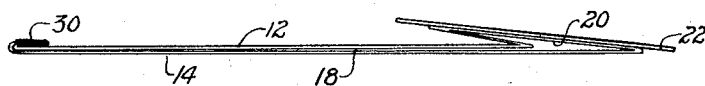


Fig. 2

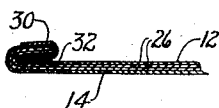


Fig. 3

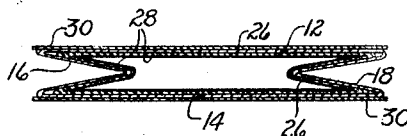


Fig. 5

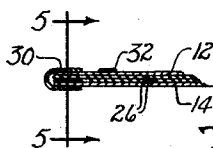


Fig. 4

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2,909,238

DISPOSABLE DUST BAGS

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2 Claims. (Cl. 183—51)

My invention relates to flexible containers and more specifically to disposable paper dust bags for use with vacuum cleaners.

The object of my invention is to provide an improved closure for the end of such a bag. Heretofore it has been the practice to fold over the end in a double fold in order to effect a dust tight closure. However, I have discovered that an improved closure may be obtained by introducing adhesive into the open end of the bag, applying a piece of tape along the open end and then folding over this end in a single fold. This results in a substantial saving in the amount of paper required to make a bag of given finished size and it also results in a less bulky construction, which is of advantage when packing bags for shipment.

Further objects and advantages of my invention will be apparent from the following description when considered in connection with the accompanying drawings which form a part of this specification and of which;

Fig. 1 is a top view of a dust bag in accordance with my invention;

Fig. 2 is a side view of the bag shown in Fig. 1;

Fig. 3 is a cross-sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 3, but showing the bag before the end is folded over; and

Fig. 5 is a cross-sectional view taken on the line 5—5 of Fig. 4, but with the walls slightly separated for the sake of clarity.

Referring to the drawings, reference character 10 designates generally a bag portion of a flexible disposable dust container. The bag 10 comprises a front wall 12, a rear wall 14, and side walls 16 and 18, which walls are preferably made of a single sheet of paper with its opposite edges glued together, as is customary with paper bags. At the right-hand end, as viewed in Figs. 1 and 2, the walls are folded so as to provide a rectangular end wall 20 to which may be attached a cardboard disc 22 formed with a central aperture 24. The end wall 20 is formed with an opening in alignment with aperture 24, constituting the inlet into the bag.

The paper constituting bag 10 is porous so as to permit the passage therethrough of air, but not of dust and other solid particles picked up by the vacuum cleaner. Preferably the bag is provided with a liner 26 of fibrous sheet material which has a greater porosity and a greater thickness than the paper constituting the bag 10. While this liner 26 is shown in the drawings as a single layer, it may advantageously be made of several plies. The advantages of a lined bag of this nature are fully set forth in Patent No. 2,804,166 issued August 27, 1957 to myself, Henry W. Stevens, Raymond L. Brown and Arnold H. Beede.

As is shown more particularly in Fig. 5, the side walls 16 and 18 together with the corresponding portions of the liner 26 are folded so as to lie flat between the front

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wall 12 and the back wall 14. During the fabrication of the dust bag, adhesive designated by reference character 28 in Fig. 5 is applied to the inner surfaces of the front, back and side walls adjacent to the end of the bag opposite to the end to which the disc 22 is attached. This adhesive impregnates and penetrates through the porous liner 26 and contacts the inner surfaces of the outer walls. Thereafter, a strip of paper tape 30, one side of which has been coated with adhesive, is folded over and applied to the end of the bag, as shown in Fig. 4. The adhesive 28 within the bag serves to secure the front, back and side walls together at this end of the bag so as to form a dust tight closure. The tape glued around the end of the bag as above described, serves primarily to add mechanical strength to the glued joint between the inner faces of the wall, and particularly to prevent opening of the joint by peeling when the bag is inflated during use.

After the tape has been affixed as shown in Fig. 4, a glue line 32 is applied across either the front wall 12 or the rear wall 14 of the bag adjacent to the edge of the tape. As illustrated in Fig. 4, the glue is applied to the front wall 12, and the end is folded over as shown in Fig. 3 so that an outer surface of the tape comes in contact with the glue line to retain the end in folded condition. This further reinforces the closure and enables it to better resist rupture when the bag is inflated during use.

Elimination of the second fold over in accordance with my invention saves about one-half inch of both paper and liner which amounts to approximately 5% of these materials required to make a bag. While it necessitates the additional strip of tape 30, the paper of which this is made is considerably cheaper than the porous paper used for the bag 10 and the fibrous sheet material used for the liner 26. Furthermore, an additional fold over would increase the thickness of the bag at the closed end by 50% which is substantially greater than the thickness of the two folds of the tape 30. In accordance with the present invention the thickness of this closed end of the bag is no greater than the thickness of the bag and disc 22 at the other end, whereas with a double folded end the maximum thickness would occur at the folded end. It is advantageous to maintain the maximum thickness of the bag as small as possible in order to conserve space in packing the bags for shipment.

While I have shown and described one more or less specific embodiment of my invention, this has been done for the purpose of illustration only and that the scope of my invention is not to be limited thereby, but it is to be determined from the appended claims.

What I claim is:

1. A disposable dust container comprising a bag of porous paper having front, back and side walls folded to lie flat in parallel planes, an adhesive on the inner surfaces of said walls adjacent to one end of the bag for securing said walls together in dust tight relationship, a strip of tape folded over said end of the bag, adhesive between the inner surface of said tape and the outer surfaces of said front and back walls to secure said tape thereto, said walls being folded over adjacent to said piece of tape, and adhesive between the outer surface of said tape and the outer surface of said front wall to maintain the walls in folded condition.

2. A disposable dust container comprising a bag of porous paper having front, back and side walls folded to lie flat in parallel planes, a liner of fibrous sheet material within said bag, adhesive impregnating said liner adjacent to one end of the bag and contacting the inner surfaces of said walls for securing the walls and

liner together in dust tight relationship, a strip of tape folded over said end of the bag, adhesive between the inner surface of said tape and the outer surfaces of said front and back walls to secure said tape thereto, said walls and liner being folded over adjacent to said piece of tape, and adhesive between the outer surface of said tape and the outer surface of said front wall to maintain the walls and liner in folded condition.

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