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W. G. SECK

2,804,167

SUCTION CLEANER FILTER BAGS

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2 Sheets-Sheet 1

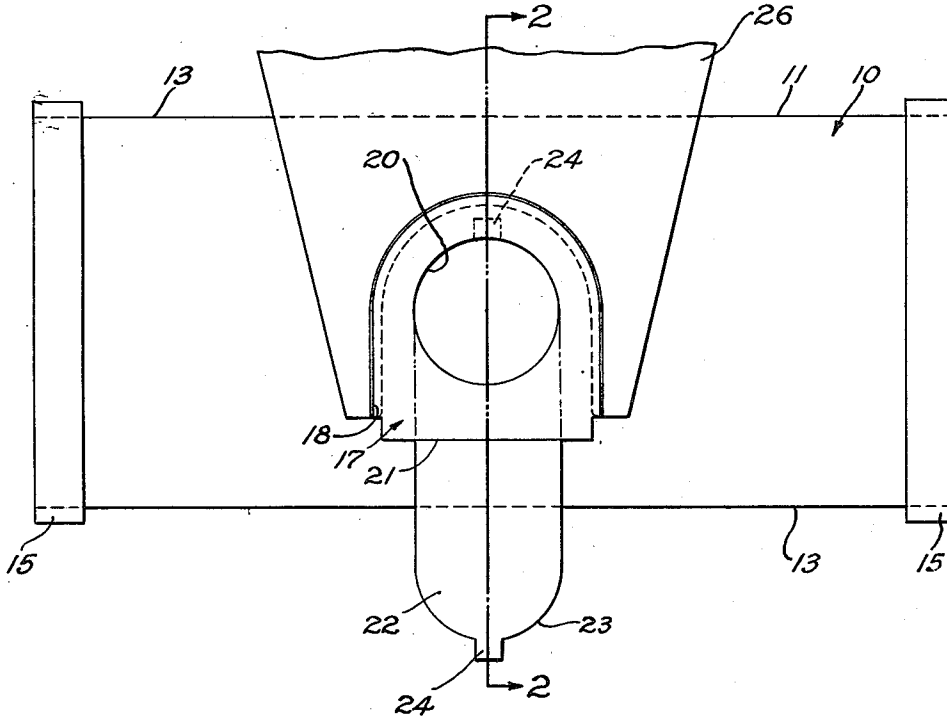


Fig. 1

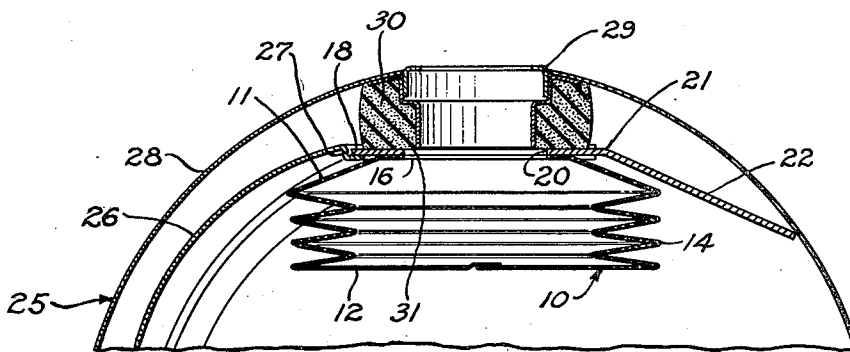


Fig. 2

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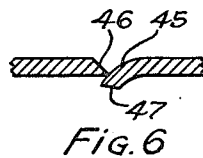
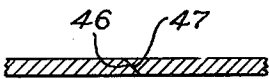
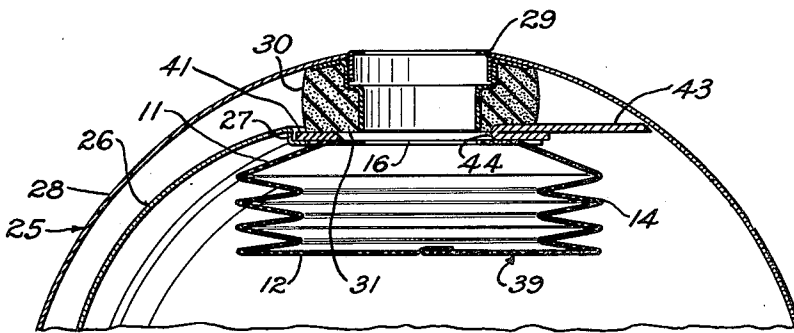
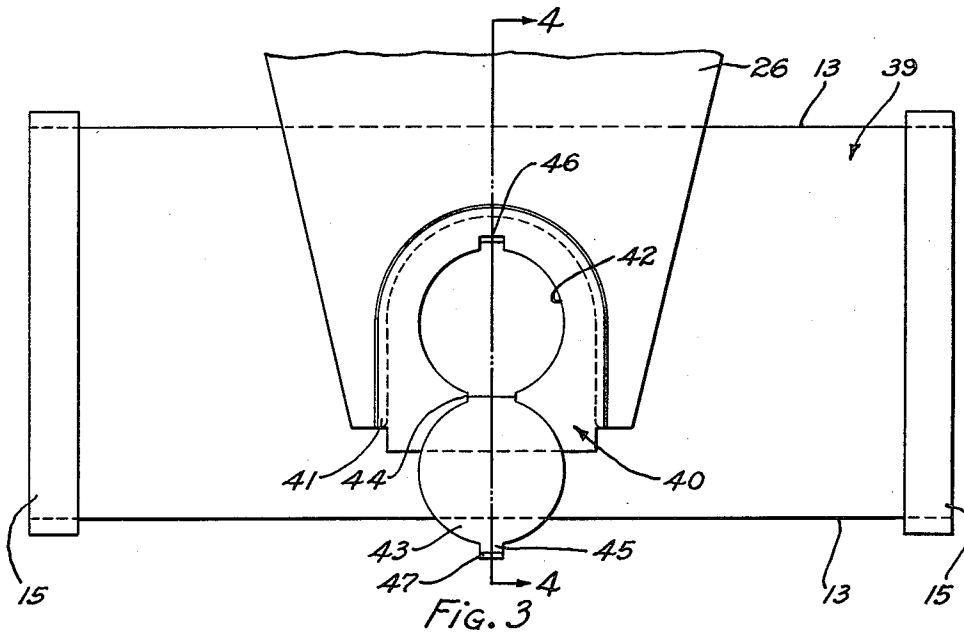
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## SUCTION CLEANER FILTER BAGS

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9 Claims. (Cl. 183—51)

The present invention relates to filter bags adapted for use in suction cleaners.

An object of the invention is to provide a filter bag having a valve for closing the bag inlet. Another object is to provide a filter bag having a valve exteriorly thereof for movement to closed position without disturbing the bag mounting. A further object is to provide a valve exteriorly of a filter bag and having a tab to lock the valve in closed position. Another object is to provide a filter bag having a valve formed from the material which is cut to provide the bag inlet. A further object is to provide a mounting for the filter bag and a valve formed from the mounting. Other objects and advantages of the invention will become apparent from the following description and drawings wherein:

Figure 1 is a top plan view of one embodiment of the filter bag with the valve shown in open position,

Figure 2 is a section along the line 2—2 in Figure 1 and the bag arranged in a suction cleaner,

Figure 3 is a top plan view of another embodiment of the invention showing the valve open,

Figure 4 is a section along the line 4—4 of Figure 3 and the bag arranged in a suction cleaner,

Figure 5 is a sectional detail of the valve of Figure 3 in closed position, and

Figure 6 shows the valve locked in closed position.

The embodiment of the invention disclosed in Figures 1 and 2 comprises a rectangular paper bag 10 having a filtering area formed from top and bottom walls 11 and 12 respectively, connected by side walls 13 provided with a plurality of pleats 14 which extend between closed pinched ends 15, and the pleats are unfolded when the bag is inflated. In the center of the top wall 11 is an opening 16, and the area of the top wall adjacent the opening 16 is cemented to a member 17 formed of relatively stiff paper. The marginal edge of the member 17 is unattached to the top wall 11 to provide a bag mounting flange 18.

An inlet 20 is provided in the member 17 in alignment with the bag opening 16 for entrance of dirt laden air into the bag. Formed in the member 17 is an integral hinge 21 from which extends a valve 22 projecting laterally beyond the mounting flange 18 and the side wall of the bag, so that the valve 22 is easily grasped by the operator to move it to closed position. The free end 23 of the valve is arcuate to conform to one half the periphery of the inlet 20. A locking tab 24 is formed on the end 23 of the valve and is adapted to enter the inlet 20 to engage the lower surface of the member 17 adjacent the periphery of the inlet 20 to lock the valve in closed position as shown in dotted lines in Figure 1.

The bag is adapted to be arranged in a suction cleaner 25 provided with a suitable bracket 26 herein shown as having a U-shaped shoulder 27 to receive the bag mounting flange 18 to support the bag. A cover 28 is provided with a conduit 29 adapted to receive one end of an unshown suction cleaner hose, the other end

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of the latter having a suitable surface cleaning nozzle. A ring of resilient material 30 about the conduit 29 has a surface 31 which engages the member 17 to form an airtight seal therewith for passage of dirt laden air from the hose through the conduit 29 to the inlet 20 into the bag 10 which removes the dirt from the air stream. A suitable unshown suction creating motor-fan unit is mounted on the cleaner to draw dirt laden air into the bag.

When the bag 10 is mounted in the cleaner the valve 22 is in its open position and projects laterally beyond the mounting member 17 and the side wall of the bag. If it is desired to remove the bag from the cleaner the cover 28 is moved to open position to expose the bag mounting 17 and the valve 22. While the bag is supported on the cleaner bracket 26 the operator grasps the projecting valve 22 and pivots it about the hinge 21 to insert the tab 24 through the inlet 20 into engagement with the member 17 adjacent the periphery of the inlet to lock the valve in closed position. The bag is then removed from the supporting U-shaped shoulder 27 and discarded. The valve 22 being locked in closed position prevents escape of dirt from the bag opening 16 through the inlet 20.

The embodiment of the invention disclosed in Figures 3 to 6 includes a bag 39 provided with a member 40 cemented to the bag top wall 11 to provide a mounting flange 41 which is seated in the U-shaped shoulder 27 to support the bag in the suction cleaner. Formed in the member 40 is an inlet 42 in register with the bag opening 16. A valve 43 is formed by the material cut from the member 40 in providing the inlet 42. A portion of the material forming the valve 43 is uncut from the member 40 to provide an integral hinge 44 in the periphery of the inlet 42. Opposite the hinge 44 on the valve 43 is a tab 45 formed from the periphery of the inlet 42. The tab is cut from the member 40 at angle as shown in Figure 5 to provide skewed lips 46 and 47, the latter being on the tab 45 for movement inwardly of the lip 46 to lock the valve 43 in closed position as shown in Figure 6.

The bag 39 is supported in the cleaner 25 by placing the flange 41 in the U-shaped shoulder 27 and when the cover 28 is closed the gasket 30 seats against the member 40 and the hinge 44 to provide an airtight seal between the conduit 29 and the bag inlet 42. When the bag is to be removed from the cleaner the cover 28 is opened and the valve 43 which projects laterally beyond the bracket 26 and flange 41 is accessible to the operator and is moved on its hinge 44 to close the inlet 42. The lip 47 on the tab 45 is depressed inwardly of the lip 46 to lock the valve 43 in closed position as shown in Figure 6 to prevent escape of dirt from the bag 39 when the latter is removed from the cleaner and discarded.

While I have shown and described several embodiments of my invention, it is to be understood that those embodiments are to be taken as illustrative only and not in a limiting sense. I do not wish to be limited to the particular structure shown and described but to include all equivalent variations except as limited by the scope of the claims.

I claim:

1. A filter bag for use in suction cleaners comprising a body having an opening for dirt laden air, a member attached to said body and having an inlet registering with said opening, a valve for said inlet and formed by cutting said member to provide said inlet, and hinge means formed by the remaining uncut portion of said member forming said inlet for movement of said valve to open and close said inlet.

2. A filter bag as described in claim 1, and said member secured to said body adjacent said opening to pro-

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vide a flange free of said body for attachment to a suction cleaner.

3. A filter bag as described in claim 1, and locking means formed by an inclined cut on said valve and the periphery of said inlet and adapted to overlap when said valve is closed to retain said valve in closed position.

4. A filter bag for attachment to suction cleaners comprising a body having an opening for dirt laden air, a mounting plate having an inlet registering with said opening and secured to said body adjacent the area of said inlet to provide a flange free of said body for attachment to a suction cleaner, a valve formed of said mounting plate and integrally hinged thereto exteriorly of said bag body and extending beyond said mounting flange when in open position to be grasped by the operator's hand for movement to close said inlet, and locking means on said valve engageable with the periphery of said inlet to retain said valve in its closed position.

5. A filter bag for use in suction cleaners comprising a body having an opening for dirt laden air, a member attached to said body and having an inlet registering with said opening, and a valve hinged on said member for movement exteriorly of said bag body to open and close said inlet, and said hinge being arranged on said member beyond the periphery of said inlet.

6. A filter bag for use in suction cleaners comprising a body having an opening for dirt laden air, a member attached to said body and having an inlet registering with said opening, and a valve hinged on said member for movement exteriorly of said bag body to open and close said inlet, said hinge arranged on said member beyond the periphery of said inlet, and said valve extending beyond said member when in open position to be grasped by the operator's hand for movement to close said inlet.

7. A filter bag for use in suction cleaners comprising a body having an opening for dirt laden air, a member attached to said body and having an inlet registering with said opening, and a valve hinged on said member for movement exteriorly of said bag body to open and close said inlet, said member secured to said body adjacent said opening to provide a flange free of said body for attachment to a suction cleaner, and said hinge arranged on said member beyond the periphery of said inlet.

8. A filter bag for use in suction cleaners comprising a body having an opening for dirt laden air, a member attached to said body and having an inlet registering with said opening, and a valve hinged on said member for movement exteriorly of said bag body to open and close said inlet, and locking means on said valve engageable with the periphery of said inlet to retain said valve in closed position.

9. A filter bag for use in suction cleaners comprising a body having an opening for dirt laden air, a member attached to said body and having an inlet registering with said opening, and a valve hinged on said member for movement exteriorly of said bag body to open and close said inlet, the hinge being arranged on said member beyond the periphery of said inlet, and locking means on said valve engageable with the periphery of said inlet to retain said valve in closed position.

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