Dec. 30, 1930. H. B. WHITE 1,787,224

SUCTION CLEANER

Filed April 16, 1927

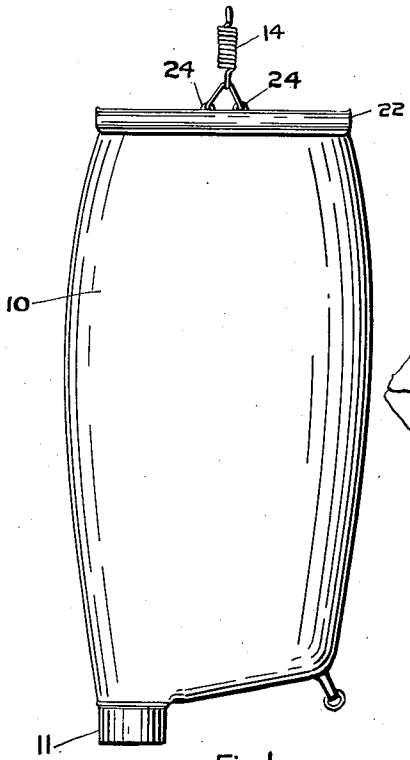


Fig.1

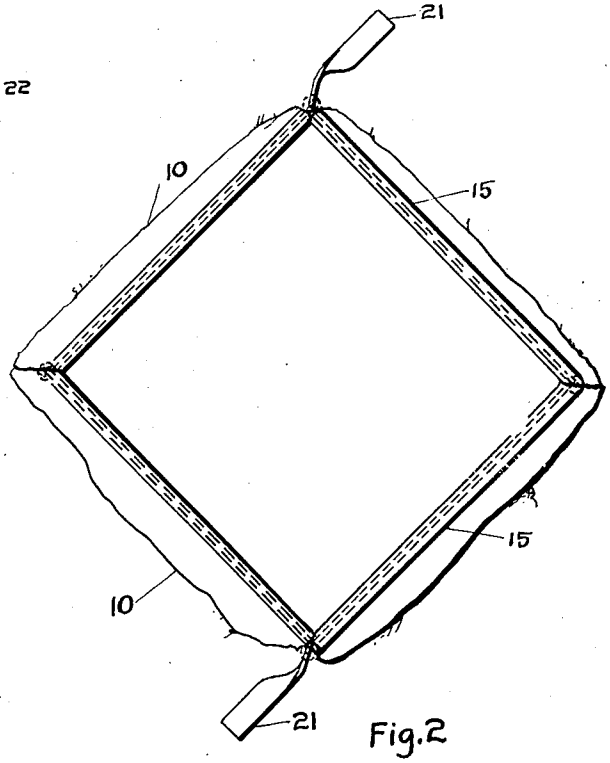


Fig.2

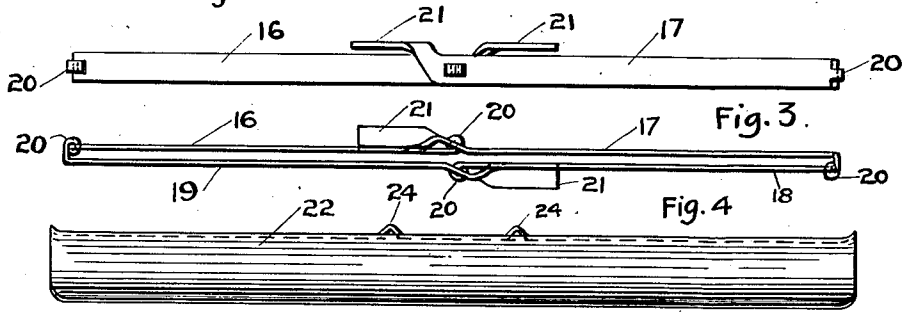


Fig.3.

Fig.4

Fig.5

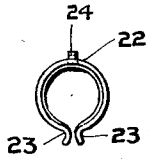


Fig.6

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UNITED STATES PATENT OFFICE

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SUCTION CLEANER

Application filed April 16, 1927. Serial No. 184,218.

This invention relates to suction cleaners and particularly to dust bags therefor.

The object of the invention is to provide a dust separator for a suction cleaner wherein improved means is provided for emptying a dust separator bag whereby the dirt collected in the bag may be easily and conveniently discharged therefrom.

An additional object of the invention is to provide a dust bag for suction cleaners wherein the rear end of the bag is so constructed that a large opening is provided for the discharge of dirt from the bag, and further, that the discharge of collected dirt may be conveniently and neatly accomplished.

Other objects of the invention will be apparent on inspection of the drawings taken in connection with the specification herewith.

In the drawings;

Figure 1 represents in elevation a dust bag for use in connection with suction cleaners;

Fig. 2 illustrates the rear end of the bag open for discharge of dirt therefrom;

Fig. 3 illustrates an elevation of the frame for opening the bag as shown in Fig. 2;

Fig. 4 is a plan view of the construction shown in Fig. 3;

Fig. 5 is a side elevation of the clip used to hold the dust discharge opening closed; and

Fig. 6 is an end view of the construction shown in Fig. 5.

The invention comprises a dust separation bag for use in connection with suction cleaners wherein an air stream carrying dust enters one end, the other end of the bag being provided with an opening for the discharge of the dirt separated out of the air stream and collected in the bag.

The rear, or discharge end, of the bag is provided with a hinged frame which when closed in conjunction with a clip holds the bag tightly closed. When the frame is opened it forms a relatively large rectangular discharge opening and there is provided in connection with the frame members means facilitating the opening of the discharge which members also constitute means for holding the opening down relative to a paper or other surface in order that when emptying the bag collected dust will not be allowed to escape freely.

In the drawings, 10 indicates a fabric dust separator having an entrance for the dust ladened air stream at 11. At the end of the dust separator opposite to inlet 11 there is provided a discharge opening held closed by a clip to be described later.

The upper end of the fabric dust separator bag 10 is hemmed as at 15 and there is inserted in this hemmed portion a hinged frame such as is more particularly disclosed in Figures 3 and 4.

The hinged member inserted in hem 15 of the dust bag 10 comprises four more or less rigid members 16, 17, 18 and 19, which are shown as flat strips hinged one to the other as at 20. Two of these hinged members are provided with extensions 21 past their hinged point which extensions are employed as means on which the feet of the operator may be placed in order that the opening may be held in close proximity to the surface on which the bag is being emptied. Extensions 21 also serve as means by which the frame may be manually opened before the cleaning operation takes place they being outstanding and easily held.

At 22 there is indicated a clip closing the discharge opening of the bag when a machine is in normal operation. This clip is substantially cylindrical in shape, slit axially and having the edges 23 turned out as indicated. This clip is slipped over the hemmed portion 15 of the bag when the parts are in the position shown in Figure 4, and in this condition the ears 23 hold the bag cloth in close contact, and thus dust is prevented from escaping from the bag. Clip

22 is provided with two struck-up members 24 to which a suspension means such as 14 may be attached for suspending the bag from the handle of a cleaner.

In a suction cleaner bag equipped with the opening disclosed in this application, the hinged frame when closed will assume a position as shown in Figure 4 and on application of the clip shown in Figure 5 the sides of the bag opening will be held in closed relation, so that there will be no tendency for dirt to leak out through the emptying end of the bag.

When it is desired to empty the bag the frame-work will be opened into the position as shown in Fig. 2, and the upper end of the bag placed on a piece of paper, or other material on which the dirt is to be emptied and the feet may be placed on ears 21 of frame work 16, 17, 18, 19 and the open end of the bag will be held closely against the dirt receiving material. The bag may then be shaken and the dirt deposited on the material without having it freed into the room. After the bag has been cleaned the frame work will be collapsed into the position shown in Figure 4 and the clip replaced, thus putting the bag in condition to receive further dirt ladened air for the separation of the dirt from the air.

Having described my invention with that degree of particularity required by statute, I claim:—

1. A dust bag having a discharge opening adjacent one end thereof, means defining the discharge opening comprising links and levers connected one to another, the links secured to the peripheral edge of the bag, the levers also secured to that edge between their fulcrums and one end, that portion of the lever between the fulcrum and the other end lying outside the enclosure defined by the connecting links and levers and forming holding means for preventing the frame from collapsing when the bag is being emptied.

2. A bag having a discharge opening adjacent one end thereof and an expansible frame secured within the edges of said bag at said opening comprising a plurality of hinged members at least two of which are provided with portions which extend beyond the edges of the opening and in the plane thereof when the frame is in the expanded position and which serve as holding means.

3. In combination with a bag for a suction cleaner having a discharge opening, a frame secured to said bag along the edge of said opening, said frame comprising hinged members, projecting portions carried by said frame which extend rigidly in the plane of the frame outside the periphery of the bag opening when the frame is in the expanded position.

4. In a suction cleaner bag having a discharge opening a frame, said frame comprising a plurality of hinged members between the hinges of which the edges of the discharge opening are secured, at least two of said hinged members being hinged at points intermediate their ends thereby forming extensions which extend substantially in the plane of the discharge opening in the collapsed condition but outside the periphery of the opening in the extended position.

Signed at North Canton, in the county of Stark, and State of Ohio, this 12 day of April, A. D. 1927.

HARRY B. WHITE.