Sept. 2, 1930. P. R. BROESKE 1,774,589

SUCTION CLEANER

Filed Oct. 27, 1926

Fig. 1

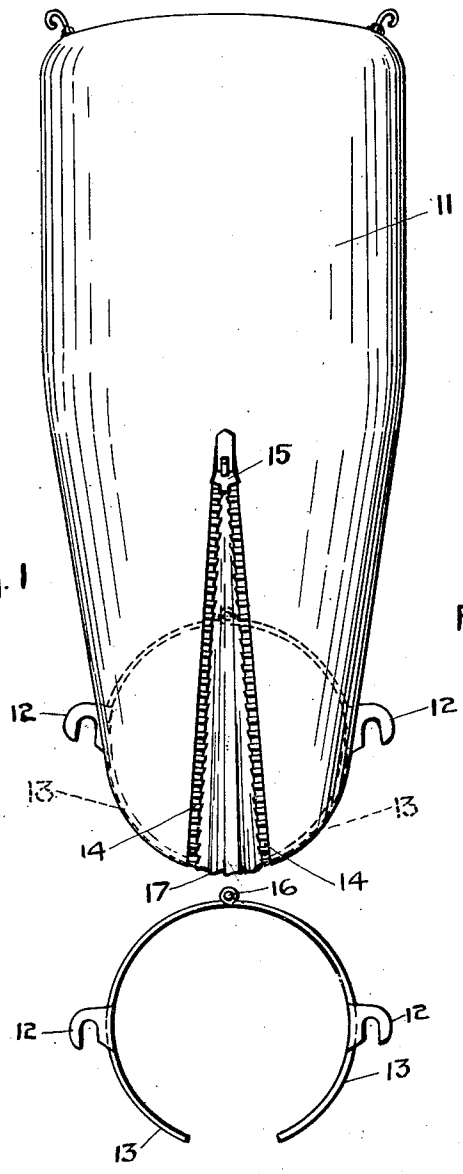
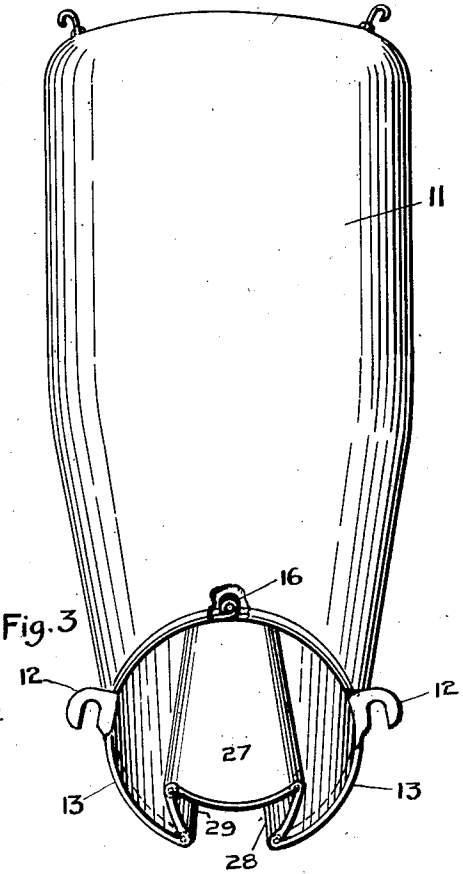


Fig. 2.

Fig. 3



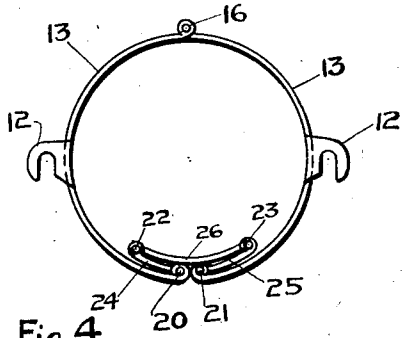


Fig. 4.

INVENTOR

Paul Raymond Broeske

BY

ATTORNEY

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UNITED STATES PATENT OFFICE

PAUL RAYMOND BROESKE, OF NORTH CANTON, OHIO, ASSIGNOR TO THE HOOVER COMPANY, A CORPORATION OF OHIO

SUCTION CLEANER

Application filed October 27, 1926. Serial No. 144,501.

The invention relates to an improved form of dust bag as used in connection with portable suction cleaners, particularly, but which invention may also be employed in like manner in connection with other uses and machines, for instance, in connection with a floor surfacing machine.

Specifically, an object of the invention is to provide a dust bag for suction cleaners which has a large discharge opening for convenience in emptying the dirt which is collected in the bag.

In using a suction cleaner there are ordinarily picked up various kinds of dirt which are classified in three groups: first, surface litter, comprising strings, hair, paper and cloth scraps, etc.; second, grit, which is mostly sand that has been carried in and dropped on the carpet in some manner; and third, light dirt such as is always floating about in the air and a portion of which is deposited on the carpet.

When the various dirts above mentioned are taken up by a vacuum cleaner they pass with the air stream into the dust bag which is designed to allow escapement of the air and to retain the dirts. In the bag these various dirts are intermingled and if allowed to collect in any appreciable amount, form into a large mass more or less tied together by surface litter, particularly by hairs and string which have been picked up by the cleaner.

Ordinarily, to empty a bag which has any appreciable amount of dirt collected therein is a rather unpleasant operation. Because of the matting of the dirt, unless the discharge opening is quite large, it is necessary that the mass of dirt be literally pulled out by the handful.

By providing a large opening as disclosed in the drawings and specifically described in the specification, it is possible to empty the entire mass of dirt from the bag without using the hands to pull the mass out piecemeal.

The object of the invention is accomplished by forming the bag ring, which clamps to the cleaner, in several parts, so that by forming the lower end of the bag with a closed tongue it is possible to have a bag with a relatively small intake opening which may be appreciably enlarged for the discharge of the collected dirt therefrom.

The invention is particularly disclosed in the accompanying drawings, wherein

Figure 1 is an elevation of a dust bag showing one form of application of the invention; and

Fig. 2 is a plan view of the hinged bag ring.

Figs. 3 and 4 are views similar to Figs. 1 and 2 but showing a different form of application of the invention.

As shown in the drawings the fabric dust bag 11 is provided at its lower end with a two-piece bag ring 13 hinged at 16 and provided with lugs 12 by which the bag assemblage may be fastened to a cleaner.

The bag is preferably formed with an open slit at the back extending upwardly from the lower end. Each edge of this slit has secured thereto an edge of a tongue member 17, and one portion of an interlocking securing means indicated at 14. A member 15 is provided which co-operates with the securing means to draw together the edges 14 and mesh the interlocking members.

In the bag construction above described the outward appearance is identical with that of an ordinary suction sweeper dust bag with the exception of the row of interlocked members which will show on the back. When edges 14 are secured together the bag ring 13 is closed, that is, its ends abut and lugs 12 may secure it to a cleaner. To empty the bag the lugs are released from the cleaner and member 15 slid to the upper end of the slit when parts of bag ring 3 may be swung about hinge 16 and the lower ends separated to the limit of motion allowed by tongue 17, thus providing an enlarged opening from which the dirt may be removed.

The modified dust bag construction shown in Figs. 3 and 4 is quite similar to that shown in Figs. 1 and 2, except that bag ring 13 has additional hinge joints 20, 21, 22 and 23, and connecting portions 24, 25 and 26. In this form of construction the bag 11 is formed with a slit up the back to each edge of which is secured a side edge of a tongue member

27 at 28 and 29. The lower edge of this tongue 27 is secured to connectors 24, 25 and 26.

With a dust bag as just described when the portions of the ring 13 are brought together, a circle is formed with the members 24, 25 and 26 inside as shown in Fig. 4. To remove dirt from the bag the bag is removed from the sweeper and the bag ring 13 spread. The tongue piece being secured to the connectors, it will open out of its folds as the connectors open out on spreading the bag ring. After the mouth of the bag has been enlarged as just described it is then easy to empty.

The tongue member 17 which has been described as a separate piece set in may be instead an integral part, it being described as separate only because such form is slightly preferable for manufacturing reasons.

I claim:—

1. A dust separator for suction cleaners comprising a fabric bag having an opening at one end, an expansible clamping ring secured to said open end and provided with means whereby said ring may be secured to a suction cleaner, the fabric bag having a slit portion, a tongue portion secured to the edges of the slit and means to draw together its edges.

2. A fabric dust separator for suction cleaner having one end thereof open, an expansible mounting ring secured in said open end, the free perimeter of the fabric at said open end being greater than that of the mounting ring, and means for causing the greater amount of fabric at the open end to be folded interiorly of the dust separator.

3. A dust separator for suction cleaners comprising a fabric bag having an opening at one end for the reception and discharge of dust and an extensible clamping ring secured to the open end of the bag and provided with means whereby said ring may be secured to a suction cleaner, the fabric bag having a slit extending from said opening, a tongue portion secured to the edges of the slit and means to secure together its edges, the securing means comprising interlocking members secured to the edges of the slit and means to cause interlocking of such members.

4. A dust bag for suction cleaners having an open end and a slit therein extending from said open end, an expansible member secured to said bag at its open end, and means for closing said slit and for holding the ends of said expansible member in juxtaposition.

5. A dust bag for suction cleaners having an opening and a slit therein extending from said opening, a ring having a plurality of jointed members arranged in said opening and attached to said bag, and means for holding the edges of said slit together when said jointed members are in folded position.

6. A dust separator for use with suction cleaners, comprising a bag open at one end and narrowed adjacent the opening to form a neck, said neck having a slit therein extending from said open end, an extensible broken ring attached to said bag at its open end and having its ends located adjacent the edges of said slit, and means for closing said slit.

7. A dust separator for use with suction cleaners, comprising a bag open at one end and having a portion thereof folded inwardly adjacent the open end to form a narrowing neck portion, an extensible ring attached to said bag at said open end and having means thereon for attachment to a vacuum cleaner, and means for holding said neck portion in narrowed condition.

Signed at North Canton, in the county of Stark and State of Ohio, this 13th day of October, A. D., 1926.

PAUL R. BROESKE.