

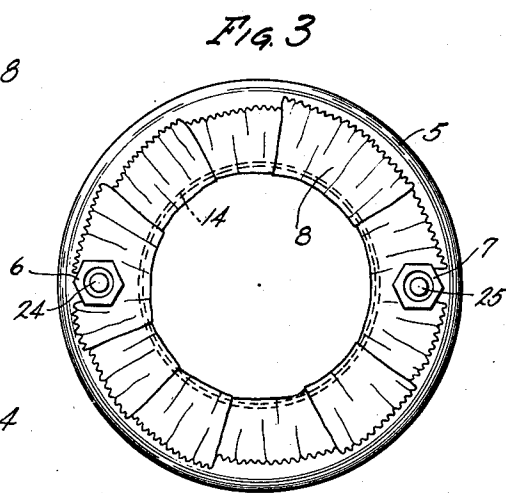
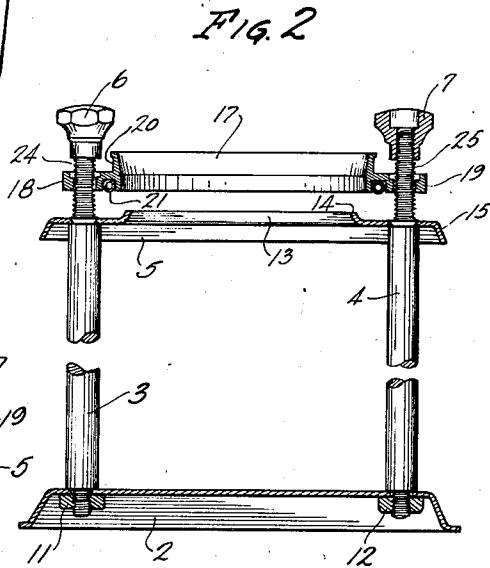
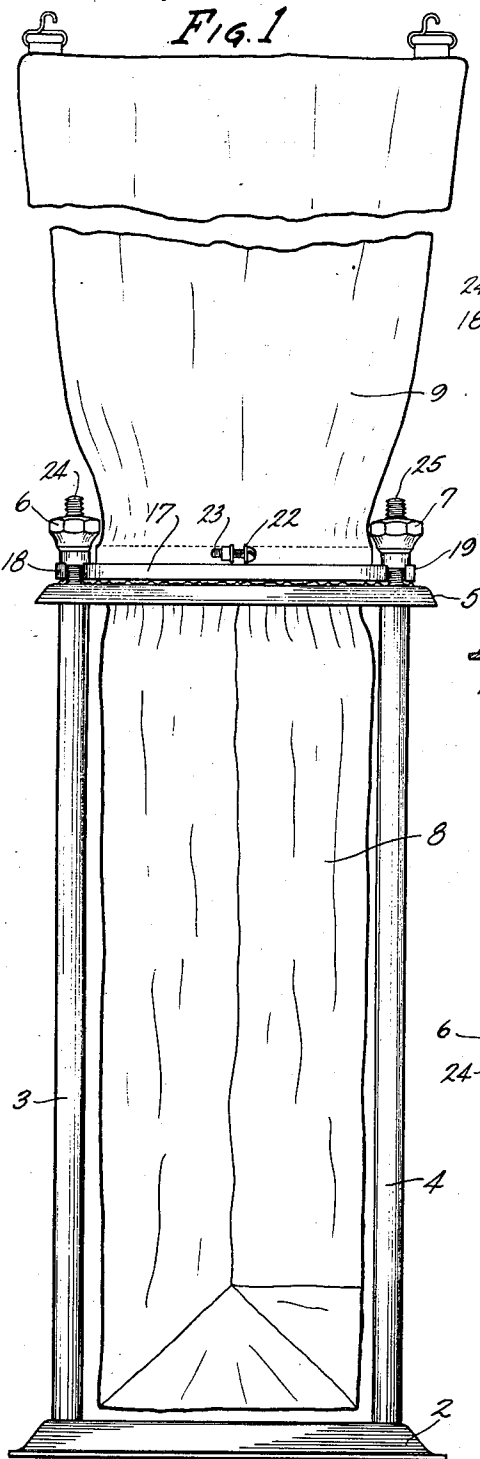
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BAG CLEANING OR EMPTYING DEVICE

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BAG CLEANING OR EMPTYING DEVICE

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5 Claims. (Cl. 248—97)

My invention relates in general to bag cleaning or emptying devices, and more in particular to a device for cleaning or emptying the dust bag of a vacuum cleaner. The object of the invention is a new and improved device of this character, which is simple and efficient in use and economical to manufacture.

The dust bag of a vacuum cleaner accumulates a varied assortment of dust and trash and has to be emptied at frequent intervals, not only to maintain the cleaner in operative condition, but for obvious sanitary reasons. However, insofar as I am aware, no satisfactory arrangement for emptying a vacuum cleaner dust bag is available. The usual procedure is to take the bag out doors where the dust deposited will not be too objectionable, or to empty the bag on a sheet of paper laid on the floor indoors. The first procedure cannot always be followed, especially in large cities or in inclement weather; and it is clear that the latter method is attended with the risk of escaping dust.

The problem thus presented has been solved in a practical and efficient manner by my invention, which provides an arrangement by means of which a dust bag, after being disconnected from the cleaner, may be connected or clamped to an ordinary paper bag. The connection is quickly and easily made and is dust tight. The arrangement also provides for holding the paper bag in a suitable upright position while the contents of the dust bag are being transferred to it. After the dust bag is emptied it is unclamped from the paper bag and replaced on the cleaner, while the paper bag and its contents are disposed of in the furnace or garbage can.

The invention will be described more in detail with reference to the accompanying drawing in which—

Fig. 1 is a plan view showing the device in operative position, with the dust bag of a vacuum cleaner clamped to an ordinary paper bag;

Fig. 2 is a view from the same direction as in Fig. 1, with the dust bag and paper bag removed, and with the parts partly in section; while

Fig. 3 is a top view showing how a paper bag is placed in position on the device ready for clamping to a dust bag.

Referring to the drawing, which is approximately half size, the device provided by my invention comprises a circular base 2 and a ring shaped top member 5, together with the vertical rods 3 and 4 which hold the base and top member together in spaced relation. The base and top member may be steel stampings and should be

made from fairly heavy stock so as to provide the requisite stiffness and rigidity.

The shape of the parts and the manner in which they are secured together will be clear from the drawing, but will be explained briefly. The base is circular, as mentioned before, and has a central flat portion and a down turned rim adapted to rest on the floor. The lower ends of rods 3 and 4 are of reduced diameter, forming shoulders, and the ends of the rods, which are threaded, pass through holes in the base with the shoulders resting against the flat upper surface thereof. Nuts 11 and 12 serve to hold the rods 3 and 4 securely in position, all as seen clearly in Fig. 2.

The upper ends of rods 3 and 4 are also of reduced diameter, forming shoulders on which the top member 5 rests. The top member is preferably secured in place by a staking or riveting operation. The ends of rods 3 and 4 are threaded above the top member 5 to receive the clamping nuts 6 and 7. It will be seen that the ends of rods 3 and 4 form two threaded studs 24 and 25 projecting upwardly from the top member 5.

As seen clearly in Fig. 2, the top member 5 has a central opening 13, defined by the upturned inner rim 14. There is also a down turned rim 15 on the outside. Between these rims there is a flat circular surface on the upper side of the top member against which the top of a paper bag may be clamped as will presently be explained.

The invention as disclosed in the drawing is especially adapted for emptying the dust bags of the well known Hoover vacuum cleaners, and Fig. 1 shows a Hoover dust bag, indicated by reference character 9. This bag is made of cloth, is closed at the upper end, and has an attachment ring 17 secured to the lower end. The bag 9 is clamped to the ring 17 by means of a steel band 22 under which the lower end of the bag is folded and which is drawn up tight by a small bolt 23. The band 22 lies in a shallow groove 20 in the outside of the upper portion of ring 17. This groove is seen in Fig. 2, which shows the ring 17 with the dust bag detached so that the ring can be more clearly seen.

The dust bag of the Hoover cleaner is connected to the dust outlet by means of the attachment ring, which has two lugs 18 and 19, spaced 180° apart. These lugs are slotted as seen in the drawing and are counter-bored or recessed on top to provide seats for nuts such as the nuts 6 and 7. Surrounding the dust outlet of the cleaner, there is a flat circular surface from which project two

studs. This flat circular surface of course conforms to the lower surface of ring 17.

To attach the bag the attachment ring is presented to the dust outlet with the lugs 18 and 19 to one side of the studs and with the slots facing them. The ring is then slid toward the studs until the latter fully enter the slots in the lugs, after which the nuts with which the studs are provided are tightened down and the connection is made. The lower surface of ring 17 may have a rubber gasket such as 21 in order to aid in making a dust proof connection. It will be clear that the dust bag may be quickly detached by reversing the described operations.

The cleaning device of my invention is so designed and the parts are so proportioned that the dust bag of the Hoover cleaner can be interchangeably connected either to the cleaner or to the cleaning device. To this end the upper surface of the top member 5 has a portion which is a flat circular surface corresponding to the surface surrounding the dust outlet of the cleaner, and the studs 24 and 25 correspond in size and spacing to the studs with which the cleaner is provided. Thus the attachment ring 17 may be clamped to the top member 5 of the cleaning device for the purpose of emptying it in the same way that it is clamped to the vacuum cleaner when in use.

The operation of the invention will now be described. The cleaning device is placed on the floor in an upright position as seen in Fig. 1. An ordinary paper bag, a ten lb. bag is about the right size, is then opened up and the top is passed up through the opening 13 in top member 5 until the top of the bag protrudes an inch or more above the top member. The top of the bag is then folded down over the inner rim 14 so that it lies flat on the upper surface of the top member. Fig. 3 shows the device with a paper bag in position. The paper bag should be torn for a short distance at points adjacent the studs 24 and 25 to enable the top of the bag to lie flat. As there is nothing in the bag it will readily stay in this position while the dust bag is being detached from the vacuum cleaner.

The nuts on the vacuum cleaner which hold the attachment ring of the dust bag are now loosened up and the ring is slipped off the studs. The lower end of the dust bag, being thus disconnected from the vacuum cleaner, is raised up to prevent escape of dust and is presented to the top member of the cleaning device, which latter is preferably grasped by one of the rods 3 or 4 and turned to a horizontal position. The nuts 6 and 7 have of course been partially backed off, which permits the attachment ring to be quickly placed in position, with the studs 24 and 25 in the slots of the lugs 18 and 19. The ring 17 is now pressed against the top member, with the folded top of the paper bag between, and the device can be replaced in a vertical position on the floor. The nuts 6 and 7 are now tightened up and the connection between the dust bag and paper bag is complete. Fig. 1 illustrates the complete assembly.

The upper end of the dust bag is now unhooked from the handle of the vacuum cleaner and the bag is vigorously shaken to transfer its contents to the paper bag. During this operation the operator preferably places one foot on the base 2 so as to hold the device on the floor. When the dust bag is empty it is detached and the top of the paper bag is straightened up and closed together so as to prevent the escape of dust. The

paper bag with its contents may then be disposed of in any convenient manner.

It will be seen that my invention provides a new and improved device for quickly and easily cleaning or emptying the dust bag of a vacuum cleaner indoors and without any danger of dust escaping.

While the invention is especially designed for cleaning the dust bags of Hoover vacuum cleaners, it is applicable also to cleaning other types of dust bags. A dust bag which is quite extensively used on other vacuum cleaners has a relatively small opening at the lower end, where it is attached to the outlet of the vacuum cleaner and has an open top of larger size which is normally kept closed by clamps suspended from the handle of the vacuum cleaner. In order to adapt the invention to cleaning or emptying a bag of this type I provide a ring similar to the ring 17, except that the upper or barrel portion of the ring is considerably longer, preferably about an inch in length. I also provide a steel band such as the band 22, but a little wider. The ring and band constitute an adapter, which may be readily attached to the open end of the dust bag after the same has been unclamped and enable it to be clamped to a paper bag by means of the cleaning device in the manner heretofore described. The lower end of the dust bag is then uncoupled from the vacuum cleaner and the contents are shaken into the paper bag, the process being substantially the same as when cleaning a Hoover bag.

Other modifications or adaptations are possible, and I do not therefore desire to be limited to the exact embodiments shown and described, but desire to include and have protected by Letters Patent all forms and variations of my invention which come within the scope of the appended claims.

What I claim is:

1. A cleaning device for the dust bag of a vacuum cleaner, comprising a base, a top member supported above said base with a space between, said member having a central opening adapted to have inserted therein the top of a paper bag positioned in the space between the base and said top member, said top member having a portion of its surface over which the top of said bag may be folded conforming to the shape and dimensions of the attachment ring of a vacuum cleaner bag, and means for clamping such attachment ring to the surface of said top member with the top of the paper bag between, thereby effecting a dust tight connection between the dust bag and paper bag.

2. A cleaning device for the dust bag of a vacuum cleaner, comprising an upright stand having a top member with a central opening therein, said opening adapted to receive the top of a paper bag, said top member having a surface surrounding said opening upon which the top of the paper bag may be folded down, a plurality of threaded studs projecting upward from said surface, the spacing of said studs conforming to the spacing of lugs on a ring shaped member secured in one end of the dust bag, and nuts threaded on said studs for clamping such member against said top member with the down folded top of the paper bag between them, thereby effecting a connection between the dust bag and paper bag.

3. A cleaning device for the dust bag of a vacuum cleaner, said device comprising a member having a surface conforming in shape and dimensions to the surface surrounding the dust outlet of a vacuum cleaner and against which the attachment ring of the dust bag is adapted to be

clamped, and clamping means associated with said member corresponding to the clamping means of the vacuum cleaner, whereby the attachment ring may be interchangeably clamped either to the vacuum cleaner dust outlet or to said member, said member having a central opening through which the top of a disposal bag may be inserted and connected to the dust bag by clamping it between the attachment ring and the surface of said member.

4. A cleaning device for the dust bag of a vacuum cleaner, comprising a base, a plurality of rods secured to said base and extending upwardly therefrom, a top member supported on said rods, each of which has a threaded portion projecting above the top member, said threaded portions constituting studs corresponding in spacing to the studs with which a vacuum cleaner is provided for securing thereto the attachment ring of a dust bag, said top member having a central opening through which the top of a paper bag

may be inserted and connected to a vacuum cleaner dust bag by clamping the down folded top of the bag between the attachment ring of the dust bag and the upper surface of said top member, and means threaded on said studs for effecting the clamping action as set forth.

5. Apparatus for transferring to a disposal bag the contents of a vacuum cleaner dust bag of the type which is provided with an attachment ring by means of which it is secured to the vacuum cleaner, said apparatus comprising a member having a portion of its upper surface conforming in shape and dimensions to the lower surface of the attachment ring, means for supporting said member so that a disposal bag having its top inserted in the opening in the member will hang free, and means for clamping the attachment ring to said member with the top of the disposal bag gripped between their respective lower and upper surfaces.

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