Jan. 16, 1940. E. C. POYNTER 2,187,052

DUST RECEPTACLE FOR VACUUM CLEANERS

Filed Jan. 3, 1938 2 Sheets-Sheet 1

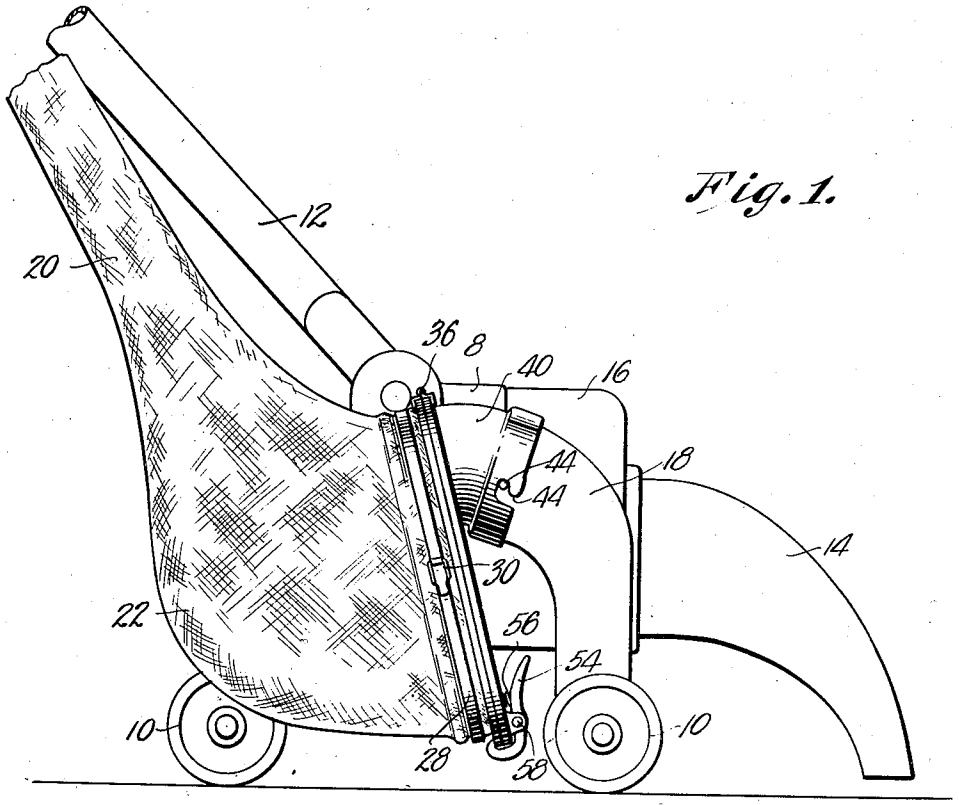


Fig. 1.

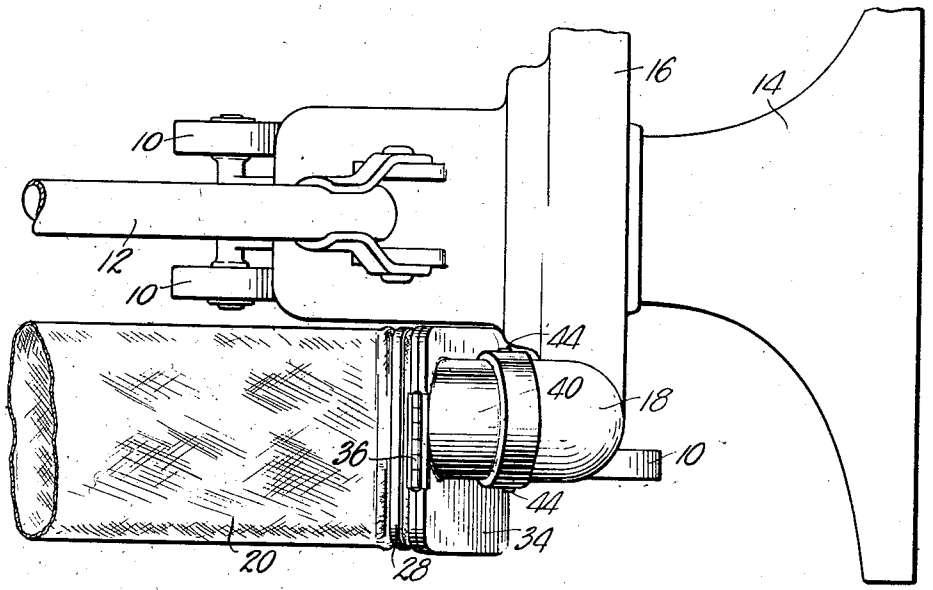


Fig. 2.

INVENTOR.
Emery C. Poynter
BY
Howey & Hamilton
ATTORNEYS

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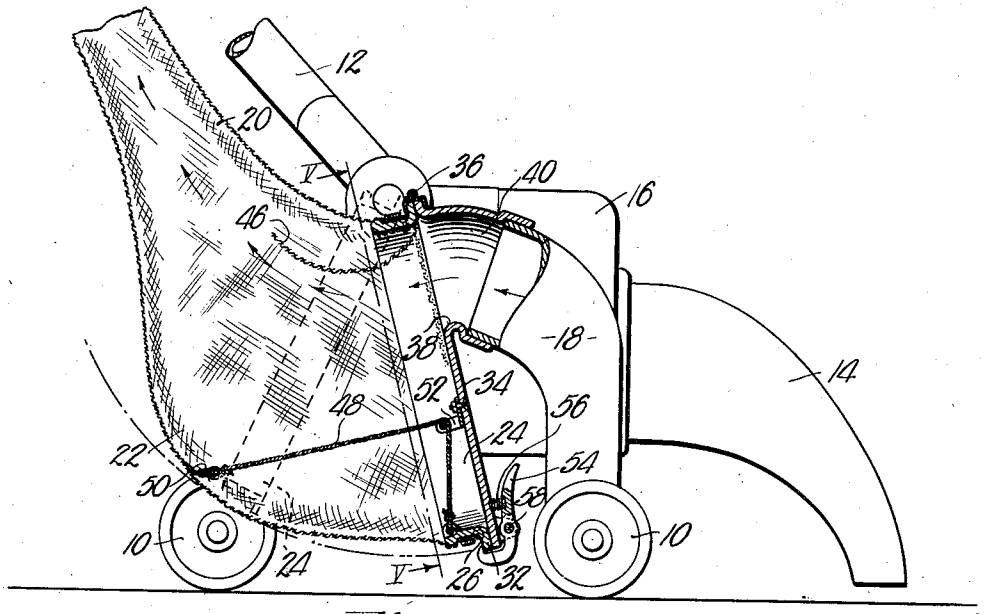


Fig. 3.

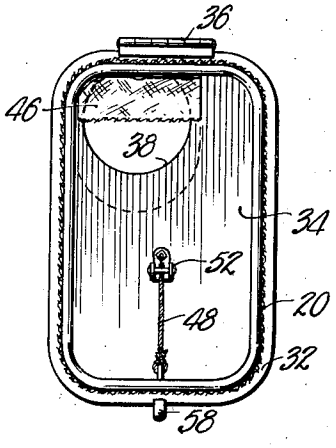


Fig. 5.

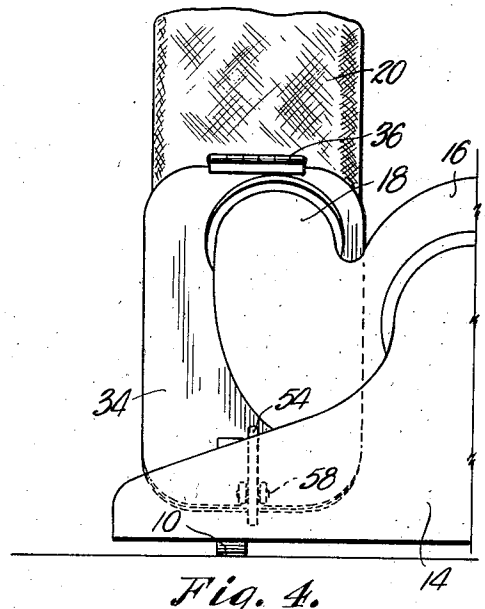


Fig. 4.

INVENTOR.
Emery C. Poynter
BY Howes & Hamilton
ATTORNEYS

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UNITED STATES PATENT OFFICE

2,187,052

DUST RECEPTACLE FOR VACUUM CLEANERS

Emery C. Poynter, Kansas City, Mo.

Application January 3, 1938, Serial No. 183,032

4 Claims. (Cl. 183—51)

This invention relates to suction cleaners, or so called vacuum sweepers, in the nature of those equipped with a motor driven fan which draws sweepings from the surface being cleaned through the conventional nozzle and into a receptacle carried by the cleaner.

The primary object of this invention is the provision of a dust receptacle for vacuum cleaners of the aforementioned type having a substantially tubular fabric bag closed at its lower end by a plate or cover provided with an opening therethrough which, when the receptacle is in the operative position, is in communication with the cleaner neck.

One of the important aims of the instant invention is to provide a dust receptacle for vacuum cleaners having a hinged cover at one end thereof; means for releasably maintaining the hinged cover in a closed position; means for removably affixing the said cover to the cleaner neck and parts associated with the said cover for assisting the emptying of sweepings from the bag when the operator hinges the cover to open one end of the receptacle.

A yet further object of this invention is the provision of a dust receptacle of such a character as to permit the quick and efficient removal of sweepings therefrom without disengaging the same from the cleaner neck, said receptacle having a relatively solid cover closing the lower end thereof and disposed in such a position as to present, with the rim of the bag, a downwardly directed opening through which the sweepings may fall by gravity when the cover is hinged from the bag-closing position.

Minor objects of the invention include specific details shown in the accompanying drawings and contributing towad the formation of a more efficient, strong, durable and desirable receptacle that is convenient to affix to the ordinary suction cleaner and easy to manipulate while the same is in the operative position.

An illustrative embodiment of this invention is shown in the accomponying drawings wherein:

Figure 1 is a side elevation of a vacuum cleaner having as a part thereof, a dust receptacle made in accordance with the present invention.

Fig. 2 is a top plan view of the assembly shown in Fig. 1.

Fig. 3 is a fragmentary vertical cross section through the lower portion of the dust receptacle and a part of the cleaner neck to which it is affixed.

Fig. 4 is a partial front elevation of a vacuum cleaner showing the receptacle in position; and,

Fig. 5 is a cross sectional view taken on line V—V of Fig. 3 and looking in the direction of the arrows.

Users of vacuum cleaners are constantly encountering difficulty and unsatisfactory results when attempting to empty the receptacle forming a part of the cleaner because of the necessity for removing the receptacle before the sweepings, or collected dirt in the bag can be dumped on a sheet of paper or into a container. Efforts have heretofore been made to construct dust receptacles for vacuum cleaners in such a manner as to permit their being emptied without removing the receptacle from the operative position on the sweeper. Such efforts have met with meager success and there is still a need for a practical receptacle for vacuum cleaners which may be dumped or emptied while the same is still affixed to the cleaner.

It is well-known in the art that vacuum cleaners or suction sweepers are operated by an electric motor 8, which is wheeled over the surface to be cleaned by rollers 10 through the manipulation of a handle 12 by the operator.

Nozzle 14 extends forwardly of fan housing 16 and is in communication therewith, as is fan outlet 18, through which is forced the dirt and sweepings collected from the surface directly below nozzle 14.

It is to this type of cleaner that the novel receptacle embodying this invention, is affixed. This receptacle comprises a fabric bag 20 constructed so as to present a substantially tubular member having a bulge 22 adjacent one end thereof. This end is the normally lower end into which is emptied the sweepings passing through neck 18. The upper end of bag 20 is not illustrated in the drawings because it is well-known that this upper end is merely closed and affixed to some part of handle 12.

In constructing the receptacle, bag 20 is equipped with a metallic frame 24 having a channel 26 formed in the outer continuous periphery thereof so as to receive the marginal edge of bag 20 adjacent the normally lower end. This marginal edge of bag 20 is secured in channel 26 by a band 28 that may be made of flexible sheet metal or suitable fabric. In the instance illustrated, band 28 is a thin steel ribbon secured together as at 30 so that bag 20 is securely affixed to frame 24. Obviously the joint between frame 24 and bag 20 should be dust tight to eliminate the escape of sweepings.

Frame 24 has a continuous laterally projecting flange 32 at one edge thereof against which

rests cover 34 that is fastened to frame 24 through the medium of a hinge 36, located at the normally upper portions of frame 24 and cover 34.

Cover 34 has an opening 38 provided therethrough adjacent the upper edge thereof, which is in communication with a short hollow fixture 40, that in turn is in communication with fan outlet 18. Fixture 40 has a bayonet slot 42 formed therein and fan outlet 18 is provided with a pin 44 to the end that fan outlet and fixture 18 and 40 respectively, might be fastened together in the conventional maner.

A fabric flap 46 secured along its upper edge to the upper stretch of frame 24 is free to move to and from a position across opening 38. The position shown in dotted lines of Fig. 3 indicates that assumed when the sweeper is not functioning and air is not entering bag 20 along the path of travel, indicated by the arrows in that figure. When air is being drawn into bag 20, flap 46 is in the position illustrated in full lines of Fig. 3 and sweepings are free to pass into bag 20 despite the presence of flap 46.

As will more fully hereinafter appear, this flap precludes the accidental re-entry of sweepings into fan outlet 18 and the portions associated therewith, when the sweeper is not in operation and especially when the emptying act is occurring.

A flexible tape 48 is arranged in a novel manner so as to pull not only the collected sweepings through the end of the bag when the same is open, but to draw a portion of the bag per se toward and perhaps through the opening formed by the end of bag 20 and circumscribed by frame 24. This tape 48 has one end secured to the lower stretch of frame 24, the other end thereof is attached as at 49 to the inner face of bulge 22 formed by bag 20.

A small yoke 52 carried by cover 34 slidably engages tape 48 intermediate the secured ends so that when frame and cover are swung apart, a portion of bulge 22 will be drawn toward the frame and the opening created by the parting of this said frame 24 and cover 34.

In the normal position, cover 34 is substantially vertical but disposed at an angle so that the lower edge thereof is slightly in front of the upper edge—thus, when frame 24 is swung to the dotted position shown in Fig. 3, a downwardly directed opening is created through which sweepings are easily passed, and in fact, dumped as said opening is formed. When this action of dumping the sweepings takes place, flap 46 is extended across opening 38 and a shaking of the upper portion of bag 20 may take place without danger of directing sweepings through the opening and back into neck 18.

When cover and frame are in the operative position a suitable latch 54 releasably holds together these parts. A spring 56 yieldably holds latch member 54 in the operative position and as shown in Fig. 3, latch member 54 is pivotally mounted as at 58 upon cover 34. After emptying, as made clear hereinabove, frame and cover 24 and 34 respectively, may be forced together and latch 54 will automatically come into play to hold the parts together. Manifestly, the joint between frame and cover should be a tight one and if necessary, the well-known mechanical expedient of interposing a washer or gasket, may be followed.

It is understood that changes and modifications so far as the structure of a vacuum cleaner receptacle is concerned, might be made so as to present a device different from that shown and described without departing from the spirit of the invention or scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A receptacle for vacuum cleaners comprising a tubular fabric bag; a frame at one end of the bag; a substantially vertical cover closing one end of the bag and the frame, said cover being provided with an opening in communication with the fan outlet; means hingedly interconnecting the frame and cover along the normally upper edges thereof; and a tape interconnecting the cover and inner face of said bag, at a point spaced inwardly from the end thereof whereby when the cover and bag are swung apart about the hinge connection, a part of the bag is drawn toward the open end thereof.

2. A receptacle for vacuum cleaners comprising a tubular fabric bag; a frame at one end of the bag; a substantially vertical, rigid cover, closing one end of the bag and the frame, said cover being provided with an opening in communication with the fan outlet; means hingedly interconnecting the frame and cover along the normally upper edges thereof; a bulge formed in the bag adjacent to said one end; and a tape interconnecting the cover and the inner face of said bag at the bulge at a point spaced inwardly from the said end of the bag.

3. A receptacle for vacuum cleaners comprising a tubular fabric bag, a rigid frame at one end of the bag to hold the bag end distended; a substantially vertical, rigid cover, closing the distended end of the bag and provided with an opening in communication with the fan outlet; means hingedly interconnecting the cover and frame at the normally upper portions thereof; a latch to secure the cover in the closed position; and a tape having one end secured to the frame and the other end attached to the inner face of the bag at a point spaced inwardly from the said end thereof, said tape being slidably engaged intermediate its ends by a member on the door whereby upon opening the end of the bag a portion thereof adjacent to the end will be drawn toward the said end to force collected sweepings through the frame and out of the bag.

4. A receptacle for vacuum cleaners comprising a tubular fabric bag, a rigid frame at one end of the bag to hold the bag end distended; a substantially vertical, rigid cover, closing the distended end of the bag and provided with an opening in communication with the fan outlet; means hingedly interconnecting the cover and frame at the normally upper portions thereof; a latch to secure the cover in the closed position; and a tape having one end secured to the frame and the other end attached to the inner face of the bag at a point spaced inwardly from the said end thereof, said tape being slidably engaged intermediate its ends by a member on the door whereby upon opening the end of the bag, a portion thereof adjacent to the end will be drawn toward the said end to force collected sweepings through the frame and out of the bag, said cover having a flap to close the opening therethrough when the cleaner is not operating and while the cover and bag are relatively moved to dump the bag.

EMERY C. POYNTER.