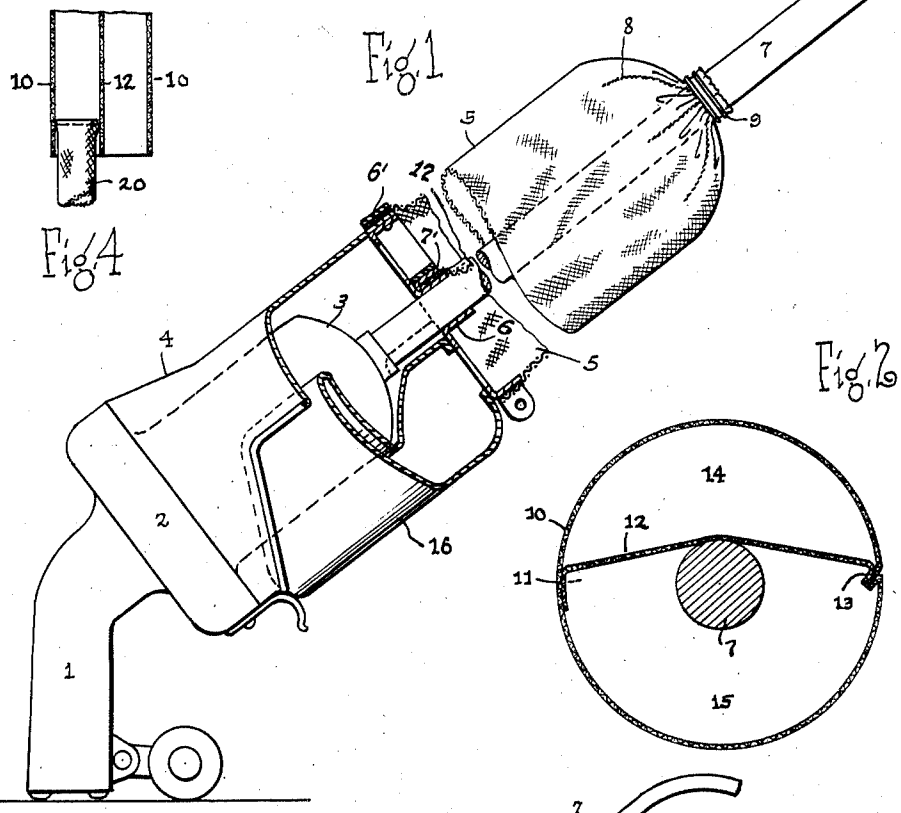
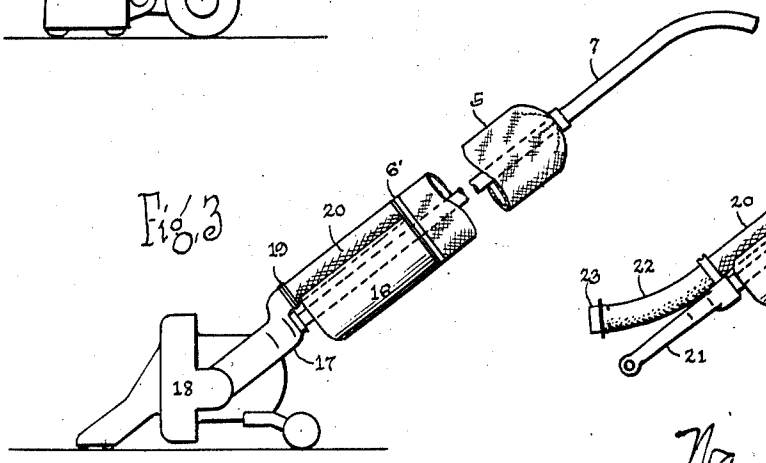
Dec. 5, 1933. W. LEATHERS 1,937,766

DIVIDED FILTER

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INVENTOR.

Ward Leathers

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DIVIDED FILTER

Ward Leathers, Haworth, N. J., assignor to The Quadrex Corporation, a corporation of Connecticut

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3 Claims. (Cl. 183—36)

The object of my invention is to produce a vacuum-cleaner filter of simple and inexpensive form, primarily for lighter duty vacuum-cleaners wherein the dirt is deposited in a receptacle. I obtained this object by the use of a filter material in substantially cylindrical form, at least maintained so by the pressure of the air within and by dividing it by a piece of fabric in such manner that the dirt-laden air will first be carried to the top of the filter where its direction will be reversed, in order to carry the final filtering process in the direction of gravity, so that the dirt may be properly disposed.

In order to set forth my invention in such form that all familiar with these arts may understand, I have prepared the following specification, and appended drawing thereto, of which—

Figure I is a partially broken side view of a handle-supported-motor-type cleaner.

Figure II is a cross-section of the filter.

Figure III is a side view of the filter applied to a conventional cleaner.

Figure IV is a detail of the air inlet.

Figure V is a detail modification.

In Figure I, 1 is a nozzle-housing shown integral with the blower-casing 2. The motor-housing 3, shown in dotted lines, is surrounded by a casing 4, permitting of the upward movement of the dirt-laden air to the filter 5. 4 is provided with cross-members 6, which support the end of the filter. A handle 7 may be supported, if preferred, both in the end of the motor-housing 3 and by the cross-members 6. The cross-members 6, preferably of stamped sheet metal, are designed to hold tightly in any suitable manner, both the outer fabric of the filter, and the inner separator 12 (as shown in Figure II). Openings in these members 6, which may be joined together as by rivets, or any other suitable manner, provide for the movement of the dirt-laden air into the upper passage of the filter, and of the dirt from the lower passage of said filter. The cylindrical casing of the filter 5 may be provided with sewn gores, as at 8, for the purpose of lessening its diameter at its point of attachment 9 with the handle 7. It may be attached in any suitable manner, as by tying, and covering with a ferrule.

In Figure II, which is a cross-section of the filter 5, taken in any typical location, an outer sleeve 10 of fabric, or other suitable filter material, has first joined to it at 11, as by sewing, a cross piece of fabric or separator 12. The other edge of 12, and the two edges of the piece 10 may be joined by a single seam at 13. The seam may be located on the inside, if desired, by turning the sleeve, after sewing. The filter is now divided into two chambers, an upper chamber 14, through which the dirt-laden air is carried upward to the top edge of the baffle or separator 12, which is located a reasonable distance from the top of the filter. The remaining dirt-laden air then passes to the chamber 15, for its downward movement in the direction of gravity, toward the dirt receptacle 16 (Figure I), said receptacle is a complete enclosure (see Figure V) made of any suitable material, such as sheet metal, or molded material provided at the top with an opening of such shape as will best cover in air-tight manner the largest possible opening in the bottom of chamber 15.

It is now evident that approximately half of the dirt-laden air, both in speed and volume, will pass to the chamber 15, and the same is sufficient to carry the dirt from 14 to 15 and permit its continuous movement, aided by gravity, toward the dirt receptacle. The dirt receptacle may be latched into place by any suitable latch, or other means, and is similar to those shown in my co-pending patent applications.

In Figure III, I have shown my divided filter applied to a conventional type of vacuum-cleaner. The handle 7 is joined to a hollow yoke 17, which receives the dirt-laden air from the blower 18. 17 is provided with a point of attachment 19 for a fabric sleeve 20, which is sewn to the filter 5 and passed through a suitable opening in the cross-members 6.

In Figure IV, I have illustrated a means of applying my divided filter to a conventional type vacuum-cleaner, without using the hollow yoke 17 of Figure III, but by joining the handle 7 to a conventional yoke 21, and extending the tube 20 in the form of a flexible attachment 22 to a conventional means of juncture with the motor-blower at 23.

Having set forth my invention in clear terms, I wish it understood that the principles involved may be applied in many and devious forms of design without departing from the spirit thereof.

I claim:

1. In a vacuum-cleaner, a motor-blower, a handle with no functional air passage therein, said handle surrounded by a filter sleeve, a separator in said filtering sleeve joined to the sides thereof dividing it into two chambers with the handle passing through one of them, said chambers being in communication at the top of the separator, and a dirt receptacle in operable en-

gagement with the bottom opening of one of said chambers.

2. In a vacuum-cleaner, a motor-blower, a handle with no functional air passage therein, disposed within a filtering sleeve, a separator in said filtering sleeve joined to the sides thereof, on one side of the handle, dividing the sleeve into two chambers, said chambers communicating at the top edge of the separator, one chamber adapted at its bottom end to receive the dirt-laden air from the blower and the other adapted over substantially its entire bottom end to deposit dirt in an air-tight receptacle detachably connected therewith.

3. In a vacuum cleaner, the combination of a motor-blower having a casing, a handle with no functional air passage therein, said handle surrounded by a filter sleeve closed and joined to said handle at the top, a dirt receptacle detachably associated with the motor blower casing, said sleeve having a duct adapted to receive dirt-laden air at the bottom from the motor-blower, said duct being disposed within said sleeve and communicating with the interior of the filter sleeve at a point below the top thereof and thereby being in communication with said detachable dirt receptacle at the bottom of the sleeve for receiving the falling dirt.

WARD LEATHERS.